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# MULTIDISCIPLINARY ACCIDENT INVESTIGATION DATA FILE

## Editing Manual and Reference Information

### Volume I

## 1975 EDITING MANUAL

HIGHWAY SAFETY RESEARCH INSTITUTE  
THE UNIVERSITY OF MICHIGAN  
ANN ARBOR, MICHIGAN 48104

MARCH 1975

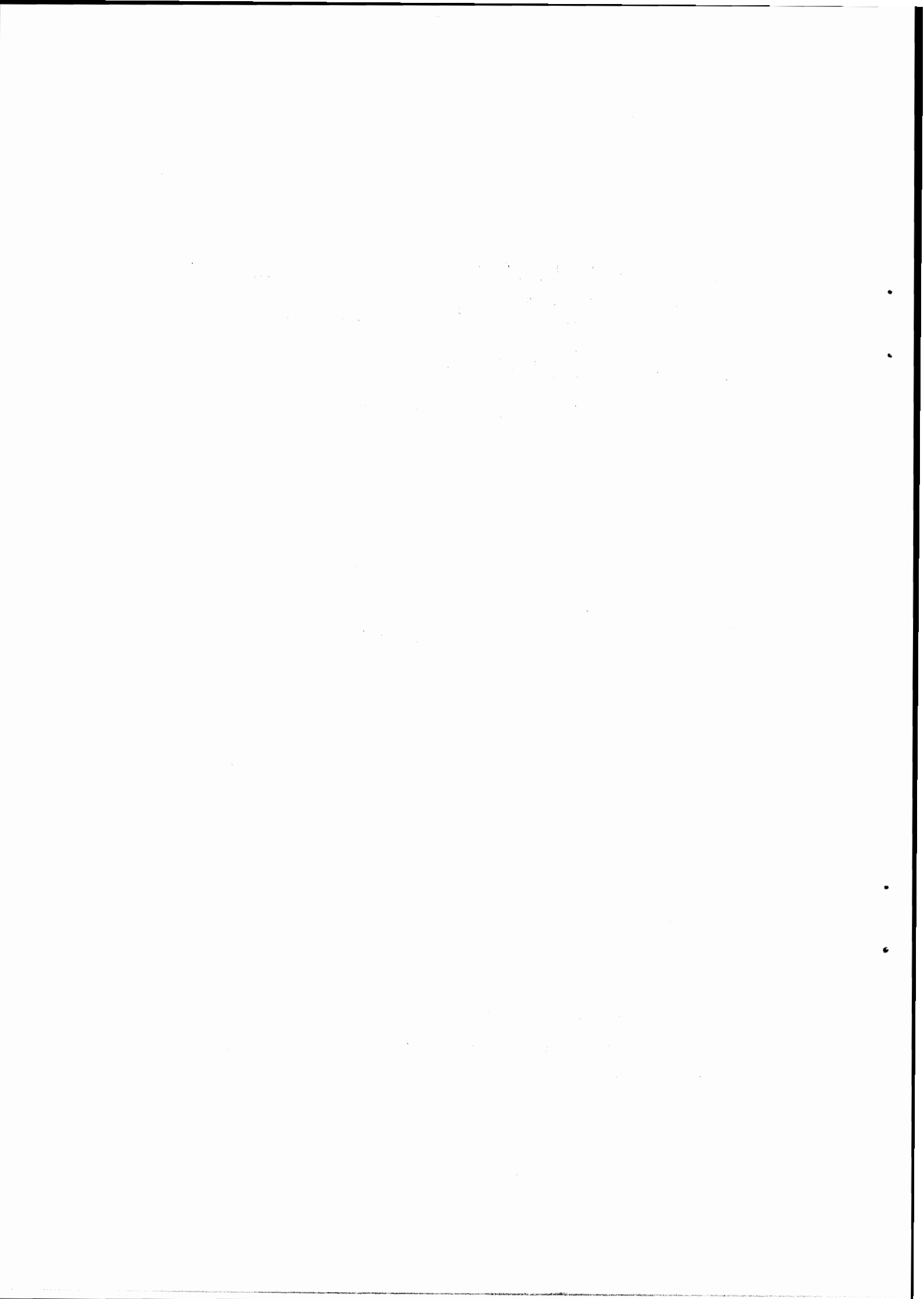
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Washington, D.C. 20590



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| 16. Abstract<br><br><p>This report documents in two volumes the editing conventions and reference information used in processing Multidisciplinary Accident Investigation reported case vehicles into a time-shared accident data bank.</p> <p>Volume I (Editing Manual) uses an annotated "Collision Performance and Injury Report" Revision 3 to document editing conventions and new code values. The text documents the editing procedure and the interpretations of each question (variable) on the CPIR form and its supplements. Volume II (Reference Information) is a compilation of reference information (e.g., original steering column angles) available to the data editors.</p> |  |  |  |   |           |
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MULTIDISCIPLINARY ACCIDENT INVESTIGATION DATA FILE  
EDITING MANUAL AND REFERENCE INFORMATION

VOLUME I  
1975 EDITING MANUAL

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

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## SECTION 1

### INTRODUCTION

Traffic accident data reported on the General Motors Collision Performance And Injury Report (CPIR) Long Form Revision 3 (reference 1) plus certain supplementary information is edited and maintained as an on-line computer file in the HSRI accident data bank. This notebook is a compilation of reference information (e.g., original dimensions) and editing conventions used in preparing newly received reports for inclusion in the computer data bank.

This is the basic reference and instructional document used in daily operations and in the training of new case editors. It also serves to document the editing process. While prepared from the case editor's viewpoint, the manual may also be usefully employed by accident investigators preparing CPIR Revision 3 forms and data analysts using the CPIR computer files.

The editing conventions precede the reference information and are organized around the CPIR form itself. The conventions are documented in two formats. In section 2, editing rules and code values are included on the annotated CPIR pages for quick reference. Section 3 describes the editing process and the interpretations for each question.

A three part number has been used to reference the appropriate CPIR page number, punch card number, and column number for each question. Thus, the sequence (7.3.12-24) refers to CPIR page 7, card 3, and columns 12 thru 24, which is the Case Vehicle Identification Number.

Page Number  
| Card Number  
| | Column Numbers  
| | |  
(7.3.12-24)

This manual should be maintained in a loose-leaf notebook, because new and revised information sheets will be continually issued. If you wish to receive future updates as issued, please contact Joe Marsh (313/764-0248) or the National Highway Traffic Safety Administration, Accident Investigation Division. Any comments, criticisms, or suggestions for improvement are welcome. For your convenience reply sheets are included at the end of the Manual.

## BACKGROUND

While the compilation and publication of this manual was sponsored by the DOT National Highway Traffic Safety Administration under contract number DOT-HS-4-00898, its contents are intended to represent a consensus of the experience of HSRI and others in editing CPIR data, computer data processing requirements, Motor Vehicle Manufacturers Association and Department of Transportation sponsored field investigators, NHTSA Accident Investigation Division, MVMA member companies and others involved in the utilization and analysis of the CPIR data files--a mix of everyone interested in the evolution of these materials.

This notebook documents the current editing practices and available reference information. It does not represent the ultimate set of editing conventions and procedures. There is room for many improvements in recording and processing MDAI data. By the nature and diversity of the problems relating to crash investigation, recording and analysis, a universally applicable set of coding conventions and procedures will probably never exist. Thus, this notebook will continue to change and grow.

The editing conventions (e.g., use of (888) for other vehicle speed when "not applicable") have evolved over several years of editing cases for computer processing. They are documented as a guide to our current editors and to assist training new editors in order to help assure consistency of interpretation. While helpful to the field investigator as an aid to consistent preparation of the CPIR form, they are not an "accident investigation protocol". While also helpful to the data analyst, they will not document biases in the investigators' interpretations, for instance.

The Reference Information section has been compiled from all available sources, primarily the Vehicle Data and Code Supplement (references 2-5,8) published each year by the Motor Vehicle Manufacturers Association. Other information has been obtained from motor vehicle manufacturers, the National Highway Traffic Safety Administration, field accident investigators, and original measurements of new cars. Again, notification of any added information or corrections would be appreciated.



SECTION 2

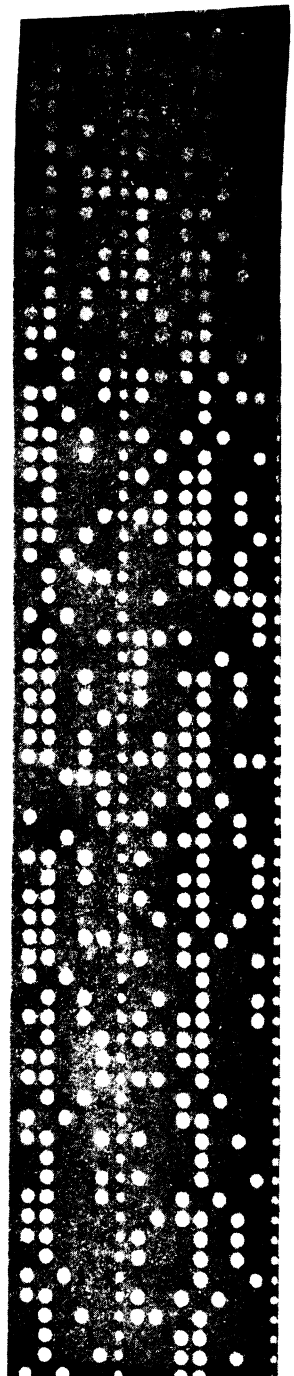
ANNOTATED CPIR FORM

This section contains a reproduction of the CPIR form and supplementary data forms used to encode the accident information. The forms have been annotated with editing conventions and new codes in order to provide the editor with a quick reference source. The editing procedure and the interpretation of each specific question are documented in Section 3.

ANNOTATED

# COLLISION PERFORMANCE and INJURY REPORT

LONG FORM  
(REVISION NUMBER 3)  
(1/75)





|   |   |  |
|---|---|--|
| <b>FORM VERSION NUMBER</b> <span style="float: right;"><u>3</u><br/>1</span>  | <b>TIME OF COLLISION</b> _____ <span style="float: right;">AM PM</span>   | <b>KEYPUNCH ONLY:</b><br><b>DATE REC'D.</b><br><br><b>PUNCHED</b><br><br><b>VERIFIED</b> |
| <b>REPORT NUMBER</b> <span style="float: right;">2 3 4 5 6 7 8 9</span>   | <b>DATE OF FIELD INVESTIGATION</b> _____  |  |
| <b>CARD NUMBER</b> <span style="float: right;"><u>01</u><br/>10 11</span>   | <b>INVESTIGATOR</b> _____   |  |
| <b>DATE OF COLLISION</b> <span style="float: right;">MO. / DAY / YR.</span><br><span style="float: right;">12 13 / 14 15 / 16 17</span><br>(99/99/99) Unknown | <b>CIRCLE PHOTO RECORDS MADE:</b><br><b>SLIDES NEGATIVES POLAROIDS</b><br><b>LOCATION WHERE VEHICLE WAS EVALUATED:</b><br>_____ |  |
|   | <b>REPORT PREPARED BY</b> _____   |  |

|   | PUNCH CODE | CARD COL. |   | PUNCH CODE | CARD COL. |
|---|------------|-----------|---|------------|-----------|
| <b>LOCATION</b><br>STATE: (FIPS Code)<br>(CODE TO BE INSERTED BY ANALYSIS GROUP)<br>CITY, TOWNSHIP, ETC.: _____   | --         | 18-19     | <b>ROAD ALIGNMENT</b><br><b>VERTICAL PLANE</b><br>(1) LEVEL<br>(2) CREST OF HILL<br>(3) SLOPE- 2% grade<br>(4) BOTTOM OF HILL<br>(0) UNKNOWN  | ---        | 26        |
| <b>AREA</b><br>(1) URBAN<br>(2) RURAL<br>(0) UNKNOWN  | ---        | 20        | <b>HORIZONTAL PLANE</b><br>(1) STRAIGHT<br>(2) CURVE<br>(0) UNKNOWN   | ---        | 27        |
| <b>LOCALITY</b><br>(1) MANUFACTURING OR INDUSTRIAL<br>(2) SHOPPING OR BUSINESS<br>(3) APARTMENTS<br>(4) SCHOOL OR PLAYGROUND<br>(5) RESIDENTIAL<br>(6) FARM<br>(7) UNDEVELOPED<br>(0) UNKNOWN   | ---        | 21        | <b>SURFACE COVERING</b><br>(01) DRY<br><b>WATER</b><br>(02) DAMP<br>(03) WET<br>(04) PUDDLED<br>(05) UNKNOWN AMOUNT<br><b>SNOW</b><br>(06) LOOSE<br>(07) PACKED<br>(08) CONDITION UNKNOWN<br>(09) ICE<br>(10) SLUSH<br>(11) SPILLED GRAVEL<br>(12) OTHER: _____<br>(00) UNKNOWN | --         | 28-29     |
| <b>ENVIRONMENTAL CONDITIONS</b><br><b>LIMITED ACCESS HIGHWAY</b><br>(1) YES<br>(2) NO<br>(0) UNKNOWN  | ---        | 22        | <b>PRECIPITATION</b><br>(1) NONE<br>(2) RAIN<br>(3) SNOW<br>(4) HAIL<br>(5) SLEET<br>(6) OTHER: _____<br>(0) UNKNOWN  | ---        | 30        |
| <b>ROAD TOTAL TRAFFIC LANES</b><br>(1) 1-Lane<br>(2) 2-Lane <span style="float: right;">Case Vehicle</span><br>(3) 3-Lane<br>(4) 4 or More Lanes<br>(5) 4 or More Lanes Divided<br>(6) Parking Lot, Driveway<br>(7) Other, e.g. RR Tracks, Ramps<br>(0) Unknown | ---        | 23        | <b>RATE OF PRECIPITATION</b><br>(3) NOT APPLICABLE<br>(4) LIGHT, MIST<br>(5) MODERATE<br>(6) HEAVY<br>(0) UNKNOWN   | ---        | 31        |
| <b>OTHER ROAD TOTAL TRAFFIC LANES (IF AT INTERSECTION)</b><br>CHOOSE FROM ABOVE LIST OR<br>(9) NOT APPLICABLE   | ---        | 24        | <b>SURFACE SLIPPERY</b><br>(1) YES<br>(2) NO<br>(0) UNKNOWN   | ---        | 32        |
| <b>TYPE OF ROAD SURFACE</b><br>(1) Asphalt, Bituminous Concrete<br>(2) CONCRETE<br>(3) GRAVEL<br>(4) MORE THAN ONE TYPE<br>(5) OTHER: _____<br>(0) UNKNOWN  | ---        | 25        |   |            |           |

COLLISION DESCRIPTION

**ENVIRONMENTAL CONDITIONS**

|  | PUNCH CODE | CARD COL. |
|--|------------|-----------|
| <b>SPEED LIMIT</b><br>(1) 5-25 MPH<br>(2) 26-30<br>(3) 31-35<br>(4) 36-40<br>(5) 41-45<br>(6) 46-55<br>(7) 56-65<br>(8) 66-75<br>(9) OVER 75 MPH<br>(0) UNKNOWN  | _____      | 33        |
| <b>ROAD DEFECTS</b> (not design deficiencies)<br>(1) YES<br>(2) NO<br>(0) UNKNOWN  | _____      | 34        |
| <b>TEMPERATURE, F</b><br>(1) BELOW ZERO<br>(2) 0-19<br>(3) 20-29<br>(4) 30-34<br>(5) 35-39<br>(6) 40-59<br>(7) 60-79<br>(8) 80-99<br>(9) 100 OR OVER<br>(0) UNKNOWN  | _____      | 35        |
| <b>CROSSWIND</b><br>(1) NONE<br>(2) LIGHT<br>(3) STRONG<br>(4) STRONG & GUSTY<br>(0) UNKNOWN   | _____      | 36        |
| <b>TIME OF DAY</b><br>(1) DAY<br>(2) NIGHT<br>(3) DUSK<br>(4) DAWN<br>(0) UNKNOWN  | _____      | 37        |
| <b>VISIBILITY LIMITATION (for accident)</b><br>(1) None<br>(2) Cloudy - Dark<br>(3) Fog<br>(4) Smoke<br>(5) Windshield Condition<br>(6) Glare<br>(7) Other: _____<br>(8) Rain<br>(9) Snow<br>(0) Unknown                         | _____      | 38        |
| <b>VISIBILITY OBSTRUCTION (for accident)</b><br>(1) None<br>(2) Building<br>(3) Sign<br>(4) Bushes<br>(5) Tree<br>(6) Hill or Curve in Road<br>(7) Other: _____<br>(8) Vehicle in Transport<br>(9) Parked Vehicle<br>(0) Unknown | _____      | 39        |

**POSSIBLE MECHANICAL MALFUNCTION**

**INVESTIGATION OF THE POSSIBILITY OF MECHANICAL MALFUNCTION**

THIS SECTION SHOULD BE FILLED OUT IF A MECHANICAL MALFUNCTION IS RECOGNIZED, OR SUSPECTED BY THE INVESTIGATOR OR WAS ALLEGED TO HAVE CONTRIBUTED TO THE ACCIDENT INVOLVING THIS VEHICLE. SUPPORT ANY ITEMS CHECKED OR NOTATED BY COMMENTS.

- CHECK ITEMS INVOLVED:
- |  |  |
|--|--|
| <input type="checkbox"/> BRAKE SYSTEM      | <input type="checkbox"/> THROTTLE CONTROLS |
| <input type="checkbox"/> EXHAUST SYSTEM    | <input type="checkbox"/> DRIVER CONTROLS   |
| <input type="checkbox"/> STEERING SYSTEM   | <input type="checkbox"/> POWER TRAIN       |
| <input type="checkbox"/> SUSPENSION SYSTEM | <input type="checkbox"/> FUEL SYSTEM       |
| <input type="checkbox"/> TIRES             | <input type="checkbox"/> VISIBILITY ITEMS  |
| <input type="checkbox"/> ELECTRICAL SYSTEM | <input type="checkbox"/> OTHER: _____      |

NUMBER OF ITEMS INVOLVED

| PUNCH CODE | CARD COL. |
|------------|-----------|
| _____      | 40        |
| _____      | 41        |

WAS COMMENT ABOUT MECHANICAL MALFUNCTION MADE BY ANY PERSON(S)?

- (1) YES  
(2) NO

IF "YES", GIVE COMMENT(S) AND NAME(S) AND ADDRESS(ES) OF PERSON(S):

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ENVIRONMENTAL CONDITIONS

POSSIBLE MECHANICAL MALFUNCTION



GENERAL INFORMATION

IMPAIRMENT

| COLLISION CONFIGURATION<br>(of case vehicle)            | PUNCH CODE | CARD COL. |
|---|------------|-----------|
| VEHICLE TO OBJECT (1,2,0)*                              | —          | 42        |
| ROLLOVER (1,2,0)*<br>(90° or more)                      | —          | 43        |
| RAN OFF THE ROADWAY (1,2,0)*<br>(Before first impact)   | —          | 44        |
| VEHICLE TO VEHICLE                                      |            |           |
| (1) Yes, Configuration unknown                          |            |           |
| (2) No  |            |           |
| (3) Head-on (F to F)                                    |            |           |
| (4) Intersection type L                                 |            |           |
| (5) Side-swipe  |            |           |
| (6) Rear-impact (F and B)                               | —          | 45        |
| (7) Other: _____  |            |           |
| (8) Intersection type T                                 |            |           |
| (0) Unknown   |            |           |
| VEHICLE TO STOPPED VEHICLE (1,2,0)*<br>(Either vehicle) | —          | 46        |
| VEHICLE TO MOVING VEHICLE (1,2,0)*                      | —          | 47        |
| (5) Non-Collision only                                  |            |           |
| (6) Vehicle-part to Vehicle                             |            |           |
| (7) Vehicle to O.V. Trailer                             |            |           |
| OTHER (8) Self-induced                                  | —          | 48        |
| (9) Veh to Object to Veh                                |            |           |

COLLISION TYPE

|   |   |    |
|---|---|----|
| VEHICLES INVOLVED   |   |    |
| TOTAL NUMBER (INCLUDING CASE VEHICLE) <u>In Accident</u>          | — | 49 |
| <b>OBJECTS CONTACTED</b>  |   |    |
| (02) None (00) Unknown Object                                     |   |    |
| (03) Other Automobile   |   |    |
| (04) Ground (rollover only)                                       |   |    |
| (05) Guardrail  |   |    |
| (06) Bridge (rail)  |   |    |
| (07) Sign   |   |    |
| (08) Ditch  |   |    |
| (09) Embankment (snowbank)  |   |    |
| (10) Culvert  |   |    |
| (11) Fence  |   |    |
| (12) Pole or Tree   |   |    |
| (13) Pedestrian   |   |    |
| (14) Large Animal   |   |    |
| (15) Motorcycle   |   |    |
| (16) Large Truck - Type Unknown<br>(see 20-25) below              |   |    |
| (17) Train  |   |    |
| (18) Pedacycle (bicycle+)   |   |    |
| (19) Building   |   |    |
| (20) Light truck/pickup truck                                     |   |    |
| (22) Tractor without Trailer                                      |   |    |
| (23) Van delivery truck   |   |    |
| (24) Straight truck   |   |    |
| (25) Tractor-trailer combination                                  |   |    |
| (26) Multi-purpose vehicle (jeep)                                 |   |    |
| (40) Object disengaging from other vehicle (i.e., loose tire, box |   |    |
| (50) Hydrants, short posts, stumps                                |   |    |
| (51) Mailbox (rural), small posts/trees                           |   |    |
| (52) Pier, Pillar (e.g., bridge support)                          |   |    |
| (53) Retaining wall, abutment                                     |   |    |
| Highway Fixtures:   |   |    |
| (54) Impact attenuator  |   |    |
| (55) Breakaway Fixtures   |   |    |
| (59) Other: _____   |   |    |
| (28) Bus  |   |    |
| (29) Trailer  |   |    |

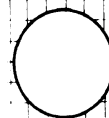
| CASE VEHICLE DRIVER'S ABILITY TO DRIVE IMPAIRED BY        | PUNCH CODE | CARD COL. |
|---|------------|-----------|
| (CHOOSE NO MORE THAN TWO)                                 |            |           |
| (00) UNKNOWN  |            |           |
| (02) NONE   |            |           |
| (03) DRINKING INVOLVED (Broad)                            |            |           |
| (04) Drunk By Local Legal Standards                       |            |           |
| (05) ASLEEP   |            |           |
| (06) FATIGUE  |            |           |
| (07) RECKLESSNESS   |            |           |
| (08) INATTENTION  |            |           |
| (09) LACK OF TRAINING                                     |            |           |
| (10) EMOTIONAL STATE                                      |            |           |
| (11) MEDICATION   |            |           |
| (12) Drugs (narcotic)                                     | —          | 58-59     |
| (13) ILLNESS (or otherwise)                               |            |           |
| (14) INFIRMITIES  |            |           |
| (15) PHYSICALLY HANDICAPPED                               |            |           |
| (16) OTHER: _____   | —          | 60-61     |
| SOURCE OF INFORMATION:                                    |            |           |
| _____   |            |           |
| _____   |            |           |
| <b>TRAFFIC VIOLATION</b><br>(EITHER DRIVER)               |            |           |
| (1) YES   |            |           |
| (2) NO  |            |           |
| (0) UNKNOWN   |            |           |
| DESCRIBE VIOLATION: _____                                 | —          | 62        |
| _____   |            |           |
| Citation need not be issued, but only indicated.          | —          |           |
| <b>LEGAL ACTION</b>                                       |            |           |
| WAS TRAFFIC VIOLATION CITATION ISSUED TO ANYONE? (1,2,0)* | —          | 63        |
| IF "YES", CIRCLE VIOLATOR:                                |            |           |
| DRIVER OF CASE VEHICLE                                    |            |           |
| DRIVER OF OTHER VEHICLE                                   |            |           |
| PEDESTRIAN  |            |           |
| OTHER: _____  |            |           |
| _____   |            |           |
| (Accident Point of View)                                  |            |           |
| <b>TYPE OF LOSS</b>                                       |            |           |
| PERSONAL INJURY (1,2,0)*                                  | —          | 64        |
| PROPERTY DAMAGE (1,2,0)*                                  | —          | 65        |

\*WHERE (1,2,0) IS INDICATED, USE 1 FOR YES  
2 FOR NO  
0 FOR UNKNOWN

# COLLISION SKETCH

Based on Information From \_\_\_\_\_

INDICATE NORTH  
BY ARROW



1. Draw heavy lines to show highway detail at the location of collision.
2. Give name of streets and highways and US, State and Interstate Route numbers, if any.
3. Identify all objects in sketch. Case vehicle should always be labeled "A". Time sequence numbers may be added (e.g., A1, A2).
4. Include dimensions when possible.

DESCRIBE COLLISION EVENTS \_\_\_\_\_

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INFORMATION SOURCES: \_\_\_\_\_

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REPORTED BY: \_\_\_\_\_

(Attach Police Report)

COMMENTS \_\_\_\_\_

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| CASE VEHICLE           | PUNCH CODE | CARD COL. |
|------------------------|------------|-----------|
| ESTIMATED SPEED* (MPH) |            |           |
| PRIOR TO IMPACT        | _____      | 66-68     |
| ESTIMATED BY:          |            |           |
| _____                  |            |           |
| At FIRST Impact        | _____      | 69-71     |
| ESTIMATED BY:          |            |           |
| _____                  |            |           |

| OTHER VEHICLE          | PUNCH CODE | CARD COL. |
|------------------------|------------|-----------|
| ESTIMATED SPEED* (MPH) |            |           |
| PRIOR TO IMPACT        | _____      | 72-74     |
| ESTIMATED BY:          |            |           |
| _____                  |            |           |
| At FIRST Impact        | _____      | 75-77     |
| ESTIMATED BY:          |            |           |
| _____                  |            |           |

\*IF SPEEDS ARE UNKNOWN, ENTER 999: 888 for Other Vehicle Not Applicable

COLLISION SKETCH

SPEEDS

# OTHER VEHICLE

NOTE: A complete analysis of this accident requires that a minimum amount of information be obtained on the other vehicle(s) involved. Therefore, the information on this page should be completed even though a separate long form may be filled out on these other vehicles.

DUPLICATE COLUMNS 1-9 FROM PRECEDING CARD  $\frac{0}{10}$   $\frac{2}{11}$

## OTHER VEHICLE DESCRIPTION

VEHICLE IDENTIFICATION NUMBER

|    |    |    |    |    |    |    |    |    |    |    |    |    |  |  |  |  |  |  |  |
|----|----|----|----|----|----|----|----|----|----|----|----|----|--|--|--|--|--|--|--|
|    |    |    |    |    |    |    |    |    |    |    |    |    |  |  |  |  |  |  |  |
| 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 |  |  |  |  |  |  |  |

MAKE \_\_\_\_\_

MODEL \_\_\_\_\_

CODE TO BE INSERTED

$\frac{\quad}{25}$   $\frac{\quad}{26}$   $\frac{\quad}{27}$   $\frac{\quad}{28}$   $\frac{\quad}{29}$

MODEL YEAR  $\frac{19}{30}$   $\frac{\quad}{31}$

WEIGHT OF VEHICLE, LBS.  $\frac{\quad}{32}$   $\frac{\quad}{33}$   $\frac{\quad}{34}$   $\frac{\quad}{35}$

ODOMETER READING  
(IF OVER 100,000: USE 99 999)  $\frac{\quad}{36}$   $\frac{\quad}{37}$   $\frac{\quad}{38}$   $\frac{\quad}{39}$   $\frac{\quad}{40}$

### BODY STYLE

(Code Sun Roof as 1 to 5, not 6)

- (1) 2-Door Hardtop (no upper B pillar)
- (2) 2-Door Sedan or Coupe (any upper B)
- (3) 4-Door Hardtop
- (4) 4-Door Sedan
- (5) Station Wagon or Pickup Car
- (6) Convertible - soft or hard shell
- (7) Van (not walk-in)
- (8) Truck
- (9) Other (e.g. bus, jeep, train)
- (0) Unknown

PUNCH CODE CARD COL.

— 41

NUMBER OF CYLINDERS OR ROTORS  
(Enter "0" if Unknown)

— 42

HIGH PERFORMANCE/AIR BAG EQUIPPED

- (0) No A/B; Unk is High Perf.
  - (1) No A/B; High Performance
  - (2) No A/B; Not High Perf.
- Air Bag Equipped (any engine) and:
- (4) Any Deployments
  - (5) No Deployments
  - (6) Deployment Unknown
  - (9) Both High Performance and A/B Equipped Unknown

— 43

NUMBER OF OCCUPANTS

— — 44-45

VEHICLE LOADING

- (4) BELOW FULL RATED LOAD
- (5) NEAR FULL RATED LOAD
- (6) ABOVE FULL RATED LOAD
- (0) UNKNOWN

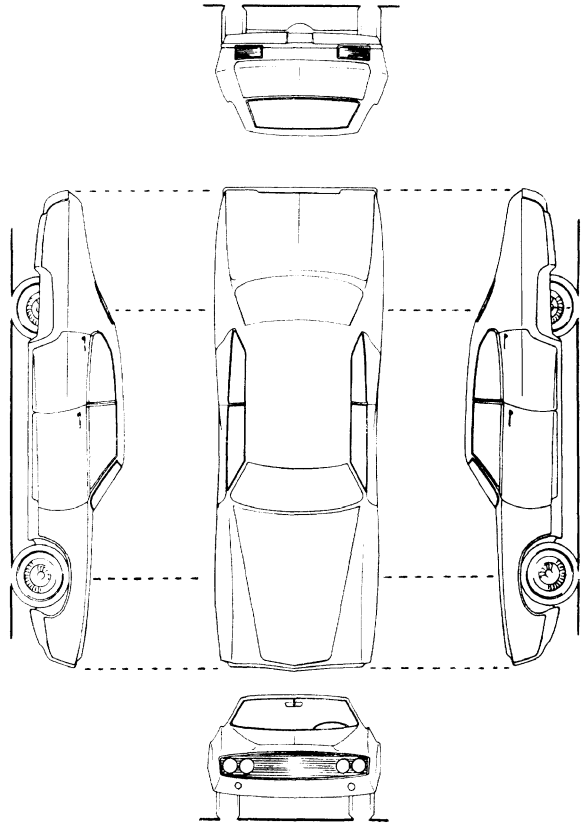
— 46

## DAMAGE INDEX (OTHER VEHICLE)

$\frac{\quad}{47}$   $\frac{\quad}{48}$   $\frac{\quad}{49}$   $\frac{\quad}{50}$   $\frac{\quad}{51}$   $\frac{\quad}{52}$   $\frac{\quad}{53}$

## VEHICLE DAMAGE

(This space may be used to enter details and notes about the other vehicle. See page 9 for instructions.)



COMMENTS: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

IF SEPARATE REPORT WAS MADE, GIVE REPORT NUMBER \_\_\_\_\_

OTHER VEHICLE

\*WHERE (1,2,0) IS INDICATED, USE 1 FOR YES  
2 FOR NO  
0 FOR UNKNOWN



# CASE VEHICLE

DUPLICATE COLUMNS 1-9 FROM PRECEDING CARD 0 3  
10 11

**CASE VEHICLE DESCRIPTION**  
VEHICLE IDENTIFICATION NUMBER

|    |    |    |    |    |    |    |    |    |    |    |    |    |  |  |
|----|----|----|----|----|----|----|----|----|----|----|----|----|--|--|
|    |    |    |    |    |    |    |    |    |    |    |    |    |  |  |
| 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 |  |  |

MAKE \_\_\_\_\_

MODEL \_\_\_\_\_

CODE TO BE INSERTED

|    |    |    |    |    |
|----|----|----|----|----|
|    |    |    |    |    |
| 25 | 26 | 27 | 28 | 29 |

MODEL YEAR 19 \_\_\_\_\_  
30 31

Shipping Weight (pounds) \_\_\_\_\_  
32 33 34 35

ODOMETER READING \_\_\_\_\_  
( IF OVER 100,000: )  
USE 99 999 36 37 38 39 40

|   |            |           |
|---|------------|-----------|
| <b>BODY STYLE</b><br><br>(Code Sun Roof as 1 to 5, not 6)<br><br>(1) 2-Door Hardtop (no upper B pillar)<br>(2) 2-Door Sedan or Coupe (any upper B)<br>(3) 4-Door Hardtop<br>(4) 4-Door Sedan<br>(5) Station Wagon or Pickup Car<br>(6) Convertible - soft or hard shell<br>(7) Van (not walk-in)<br>(8) Truck<br>(9) Other (e.g. bus, jeep, train)<br>(0) Unknown | PUNCH CODE | CARD COL. |
|   | _____      | 41        |
|   | _____      | 42        |
|   | _____      | 43        |

|   |       |    |
|---|-------|----|
| <b>BODY STRUCTURE</b><br><br>(1) BODY AND FRAME<br>(2) UNITIZED<br>(3) INTEGRAL - STUB FRAME<br>(4) OTHER: _____<br>(0) UNKNOWN | _____ | 44 |
|   | _____ | 44 |

|   |       |    |
|---|-------|----|
| NUMBER OF CYLINDERS OR ROTORS<br>(Enter "0" if Unknown) | _____ | 43 |
|   | _____ | 43 |

|   |       |    |
|---|-------|----|
| HIGH PERFORMANCE/AIR BAG EQUIPPED<br>(0) No A/B; Unk is High Perf.<br>(1) No A/B; High Performance<br>(2) No A/B; Not High Perf.<br>Air Bag Equipped (any engine) and:<br>(4) Any Deployments<br>(5) No Deployments<br>(6) Deployment Unknown<br>(9) Both High Performance and A/B Equipped Unknown | _____ | 44 |
|   | _____ | 44 |

|   |       |       |
|---|-------|-------|
| <b>NUMBER OF OCCUPANTS</b><br><br>(Enter 99 if unknown) | _____ | 45-46 |
|---|-------|-------|

|   |            |           |
|---|------------|-----------|
| <b>VEHICLE LOADING</b><br><br>(4) BELOW FULL RATED LOAD<br>(5) NEAR FULL RATED LOAD<br>(6) ABOVE FULL RATED LOAD<br>(0) UNKNOWN | PUNCH CODE | CARD COL. |
|   | _____      | 47        |
|   | _____      | 48        |
|   | _____      | 49        |

|  |       |    |
|--|-------|----|
| <b>EQUIPMENT OPTIONS</b><br><br><b>TRANSMISSION</b><br><br>(4) AUTOMATIC + Semi Automatic<br>(5) MANUAL<br>(0) UNKNOWN | _____ | 48 |
|  | _____ | 49 |
|  | _____ | 50 |

|   |       |    |
|---|-------|----|
| <b>STEERING</b><br><br>(4) POWER<br>(5) MANUAL<br>(0) UNKNOWN | _____ | 49 |
|   | _____ | 50 |

|   |       |    |
|---|-------|----|
| <b>BRAKES</b><br><br>(4) POWER<br>(5) MANUAL<br>(0) UNKNOWN | _____ | 50 |
|   | _____ | 51 |

|  |       |    |
|--|-------|----|
| <b>BRAKES - TYPE</b><br><br>(4) DRUM - ALL WHEELS<br>(5) DISC - FRONT WHEELS<br>(6) DISC - ALL WHEELS<br>(0) UNKNOWN | _____ | 51 |
|  | _____ | 52 |

|   |       |    |
|---|-------|----|
| <b>BRAKE ANTI-LOCK DEVICE</b><br><br>(2) NONE INSTALLED<br>(4) TWO-WHEEL<br>(5) FOUR-WHEEL<br>(0) UNKNOWN | _____ | 52 |
|   | _____ | 53 |

|  |       |    |
|--|-------|----|
| <b>Top Position at Time of Collision</b><br><br>(3) Solid Top - Not Applicable<br>(4) Convertible Soft Top Up or Closed<br>(5) Retracted Soft Top or Hard Shell Removed<br>(6) Removable Hard Shell Installed<br>(7) Sun Roof - Closed<br>(8) Sun Roof - Open<br>(0) Unknown | _____ | 53 |
|  | _____ | 53 |

|  |
|--|
| <b>CASE VEHICLE REPAIR OR REPLACEMENT COST</b><br>Unknown (9999) \$ _____<br>54 55 56 57 |
|--|

|  |
|--|
| <b>CASE VEHICLE DAMAGE INDEX</b><br><b>PRIMARY DAMAGE</b><br>_____<br>58 59 60 61 62 63 64 |
| <b>SECONDARY DAMAGE</b><br>_____<br>65 66 67 68 69 70 71                                   |

Unknown or None (99-0000-0) END OF CARD 03

CASE VEHICLE

\*WHERE (1,2,0) IS INDICATED, USE 1 FOR YES  
2 FOR NO  
0 FOR UNKNOWN

EXTERIOR DAMAGE

DUPLICATE COLUMNS 1-9 FROM PRECEDING CARD

0 4  
10 11

SHEET METAL DAMAGE

FRONT (1,2,0)\*

PUNCH  
CODE

CARD  
COL.

—

12

REAR (1,2,0)\*

—

13

LEFT SIDE (1,2,0)\*

—

14

RIGHT SIDE (1,2,0)\*

—

15

ROOF (1,2,0)\*

—

16

OTHER (1,2,0)\*: \_\_\_\_\_

—

17

REMARKS: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

SHEET METAL CRUSH

TO BE FILLED IN BY ANALYSIS GROUP.  
INSERT MAXIMUM CRUSH DIMENSION TO  
THE NEAREST INCH. DIMENSIONS MUST  
AGREE WITH DIAGRAMS ON FACING PAGE.  
(INSERT "99", IF UNKNOWN  
INSERT "98", IF 98 INCHES OR OVER)

FRONT (INCHES)

— —

18-19

REAR

— —

20-21

LEFT SIDE

— —

22-23

RIGHT SIDE

— —

24-25

ROOF

— —

26-27

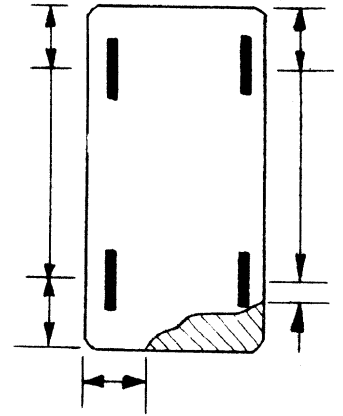
OTHER:

— —

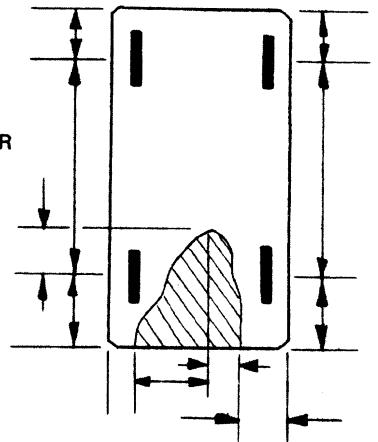
28-29

EXAMPLES.

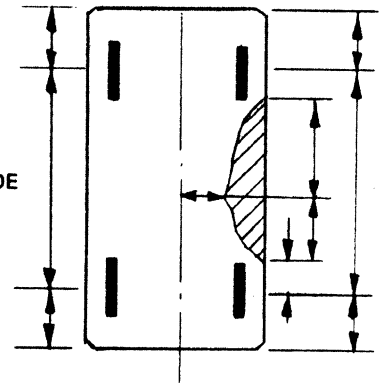
FRONT OR REAR



FRONT OR REAR

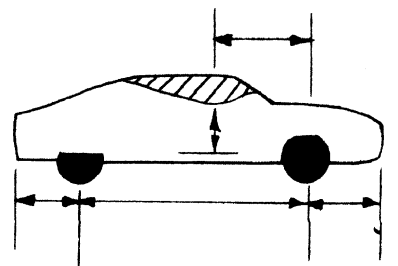


SIDE



ROOF

(REFERENCE TO TOP  
OF DOOR SILL OR  
WINDOW SILL)



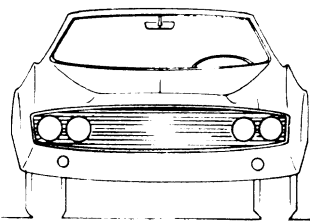
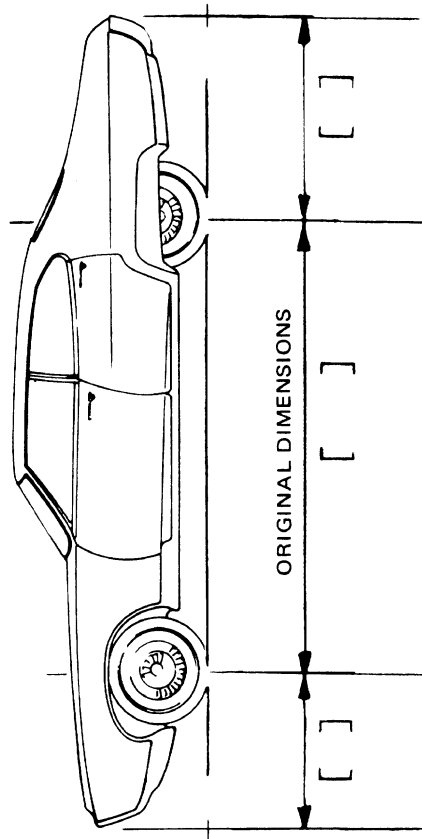
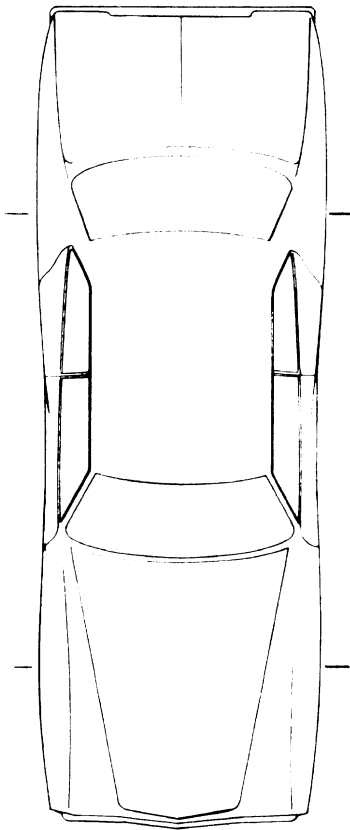
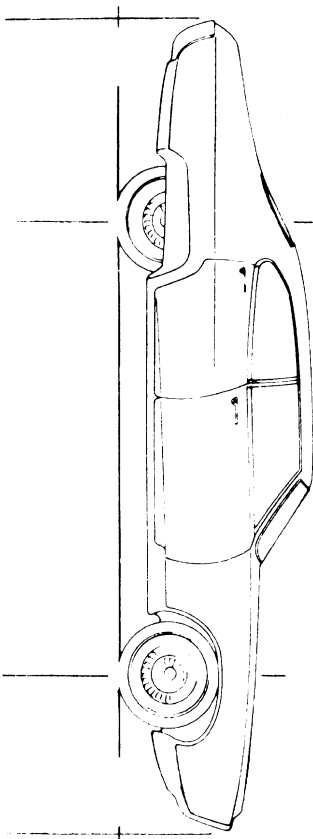
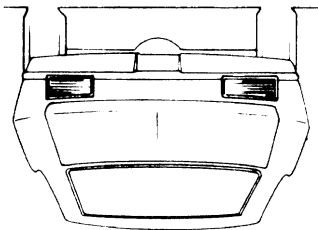
\*WHERE (1,2,0) IS INDICATED, USE 1 FOR YES  
2 FOR NO  
0 FOR UNKNOWN

SHEET METAL

# EXTERIOR DAMAGE

## FIELD INVESTIGATOR INSTRUCTIONS:

1. Indicate crushed areas by outlining new perimeter of vehicle and shading the damaged areas on the large sketch below. Use as many sketches as necessary to completely describe the damage.
2. Enter the dimensions on the sketch(es) measured to the point of maximum penetration by the object(s) contacted. Use the examples on the facing page as a guide.
3. Enter the three dimensions to the center of the wheels (wheelbase, front and rear overhangs) on both sides of the car.
4. Add other dimensions as necessary to completely describe the damage.



VEHICLE SKETCH

WHEELS AND TIRES

| WHEELS                              | PUNCH CODE | CARD COL. |
|-------------------------------------|------------|-----------|
| ORIGINAL EQUIPMENT TYPE             |            |           |
| FRONT (1,2,0)*                      | ___        | 30        |
| REAR (1,2,0)*                       | ___        | 31        |
| DAMAGED (1,2,0)*                    | ___        | 32        |
| DESCRIBE DAMAGE AND NON O.E. WHEELS |            |           |
| _____                               |            |           |
| _____                               |            |           |
| _____                               |            |           |
| <b>TIRES</b>                        |            |           |
| TREAD TYPE                          |            |           |
| (4) REGULAR                         | } FRONT    | ___ 33    |
| (5) NON-STUDED SNOW                 |            |           |
| (6) STUDED SNOW                     |            |           |
| (7) 'SLICK'                         |            |           |
| (8) LEFT AND RIGHT SIDES DIFFERENT  | } REAR     | ___ 34    |
| (9) OTHER: _____                    |            |           |
| (0) UNKNOWN                         |            |           |
| TREAD WEAR                          |            |           |
| (4) LIGHT                           | } FRONT    | ___ 35    |
| (5) MEDIUM                          |            |           |
| (6) HEAVY                           |            |           |
| (7) BALD                            |            |           |
| (8) LEFT AND RIGHT SIDES DIFFERENT  | } REAR     | ___ 36    |
| (9) OTHER: _____                    |            |           |
| (0) UNKNOWN                         |            |           |
| PROFILE                             |            |           |
| (4) REGULAR 80,78                   | } FRONT    | ___ 37    |
| (5) WIDE OVAL 70,60,50              |            |           |
| (6) LEFT AND RIGHT SIDES DIFFERENT  |            |           |
| (7) OTHER: _____                    | } REAR     | ___ 38    |
| (0) UNKNOWN                         |            |           |
| CARCASS TYPE                        |            |           |
| (4) BIAS PLY                        | } FRONT    | ___ 39    |
| (5) BELTED-BIAS PLY                 |            |           |
| (6) RADIAL PLY                      |            |           |
| (7) LEFT AND RIGHT SIDES DIFFERENT  |            |           |
| (8) OTHER: _____                    | } REAR     | ___ 40    |
| (0) UNKNOWN                         |            |           |

| TIRES (CONT'D.) |       | SIZE  |
|-----------------|-------|-------|
| FRONT           | LEFT  | _____ |
|                 | RIGHT | _____ |
| REAR            | LEFT  | _____ |
|                 | RIGHT | _____ |
| MANUFACTURER    |       |       |
| FRONT           | LEFT  | _____ |
|                 | RIGHT | _____ |
| REAR            | LEFT  | _____ |
|                 | RIGHT | _____ |
| MODEL           |       |       |
| FRONT           | LEFT  | _____ |
|                 | RIGHT | _____ |
| REAR            | LEFT  | _____ |
|                 | RIGHT | _____ |
| CODE            |       |       |
| FRONT           | LEFT  | _____ |
|                 | RIGHT | _____ |
| REAR            | LEFT  | _____ |
|                 | RIGHT | _____ |
| LOAD RANGE      |       |       |
| FRONT           | LEFT  | _____ |
|                 | RIGHT | _____ |
| REAR            | LEFT  | _____ |
|                 | RIGHT | _____ |

\*WHERE (1,2,0) IS INDICATED, USE 1 FOR YES  
 2 FOR NO  
 0 FOR UNKNOWN

WHEELS & TIRES

FRONT EXTERIOR

|  | PUNCH CODE | CARD COL. |
|--|------------|-----------|
| <b>HOOD PERFORMANCE</b><br>(FRONT OF VEHICLE)            |            |           |
| <b>HOOD LATCH(ES)</b>                                    |            |           |
| RELEASED (1,2,3,0)*                                      | —          | 41        |
| DAMAGED (1,2,3,0)*                                       | —          | 42        |
| JAMMED (1,2,3,0)*  | —          | 43        |
| <b>HOOD HINGES</b>                                       |            |           |
| LEFT { DAMAGED (1,2,3,0)                                 | —          | 44        |
| SEPARATED (1,2,3,4,5,0)**                                | —          | 45        |
| RIGHT { DAMAGED (1,2,3,0)                                | —          | 46        |
| SEPARATED (1,2,3,4,5,0)**                                | —          | 47        |
| HOOD REMAINED ON VEHICLE (1,2,0)*                        | —          | 48        |
| <b>REAR EDGE OF HOOD</b>                                 |            |           |
| ELEVATED (1,2,3,0)                                       | —          | 49        |
| CONTACTED WINDSHIELD (1,2,3,0)                           | —          | 50        |
| PENETRATED WINDSHIELD (1,2,3,0)*                         | —          | 51        |
| OPTIONAL HOOD INSTALLED (1,2,3,0)                        | —          | 52        |
| <b>ENGINE OR TRANSMISSION MOUNT SEPARATION (1,2,3,0)</b> | —          | 53        |
| <b>STEERING COLUMN FLEXIBLE COUPLING</b>                 |            |           |
| EQUIPPED (2) No →  | —          | 54        |
| Yes<br>(1) Type Unknown                                  | —          | 55        |
| (6) Rag  | —          | 55        |
| (7) Pot  | —          | 55        |
| (8) Universal  | —          | 55        |
| (9) Other  | —          | 55        |
| (0) Unknown  | —          | 56        |
| SEPARATED (1,2,3,4,5,0)**                                | —          | 56        |
| OTHER DAMAGE (1,2,3,0)*                                  | —          | 56        |
| DESCRIBE: _____  |            |           |

**ENGINE COMPARTMENT TELESCOPING UNIT**  
(SEE DRAWING ON PAGE 18 FOR LOCATION)

**TYPE OF UNIT**

(5) None Installed  
(1-6) See Sketch Above  
(9) Others \_\_\_\_\_  
(0) UNKNOWN

**ORIGINAL LENGTH**  
(See Table (F) \_\_\_\_\_ Above)

**TELESCOPED LENGTH**  
(Measure, See (G) \_\_\_\_\_ Diagrams Above)

**DIFFERENCE**  
(F minus G) \_\_\_\_\_

(ENTER 99.9 IF UNKNOWN) tolerance ± 0.6

**PUNCH**

57

**IF NONE (888)**

88 88 60

**END OF CARD 04**

LOWER TELESCOPING SHAFT

HOOD

\*USE: 1=YES 2=NO 3=NOT APPLICABLE 0=UNKNOWN \*\*USE: 1=YES, TYPE UNKNOWN 2=NO 3=NOT APPLICABLE 4=PARTIAL SEPARATION 5=COMPLETE SEPARATION 0=UNKNOWN

**FIRE**

**LEFT EXTERIOR**

DUPLICATE COLUMNS 1-9 FROM PRECEDING CARD 0 5  
10 11

**FIRE (Accident View Point)**

- (1) - time unknown
- (2) No Fire
- (4) Pre-Crash Fire Start
- (5) At-Crash Fire Start
- (6) Post-Crash Fire Start
- (0) Unknown

| PUNCH CODE | CARD COL. |
|------------|-----------|
| —          | 12        |
| —          | 13        |
| —          | 14        |

**EXTENT OF FIRE (to Case Vehicle)**

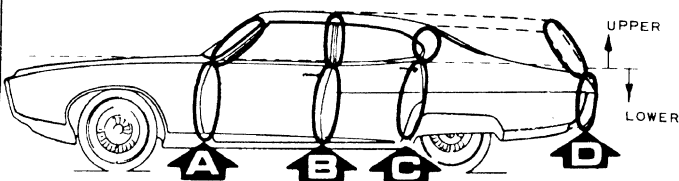
- (3) No Fire, Not Applicable
- (4) Minor - easily extinguished
- (5) Major (e.g., entire interior or engine)
- (0) Unknown

**FIRE ORIGIN (in Case Vehicle)**

- (3) No Fire, Not Applicable
- (4) Engine Compartment
- (5) Passenger Compartment
- (6) Luggage Compartment
- (7) Fuel Tank, lines, filler
- (8) Other: \_\_\_\_\_
- (0) Unknown

NOTES ABOUT FIRE: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**LEFT PILLARS**



**LEFT PILLARS**

If left pillars were not damaged or separated or left roof side rail was not damaged or buckled, place a "1" in code column.

**A-PILLAR**

|                           | PUNCH CODE | CARD COL. |
|---------------------------|------------|-----------|
| UPPER { DAMAGED (1,2,0)*  | —          | 16        |
| SEPARATED (1,2,3,4,5,0)** | —          | 17        |
| LOWER { DAMAGED (1,2,0)*  | —          | 18        |
| SEPARATED (1,2,3,4,5,0)** | —          | 19        |

**B-PILLAR (Also Rear Pillar on Pick-Up Truck, Corvette, '71 Camaro, '71 Firebird)**

|                            |   |    |
|----------------------------|---|----|
| UPPER { DAMAGED (1,2,3,0)* | — | 20 |
| SEPARATED (1,2,3,4,5,0)**  | — | 21 |
| LOWER { DAMAGED (1,2,0)*   | — | 22 |
| SEPARATED (1,2,3,4,5,0)**  | — | 23 |

**C-PILLAR**

|                            |   |    |
|----------------------------|---|----|
| UPPER { DAMAGED (1,2,3,0)* | — | 24 |
| SEPARATED (1,2,3,4,5,0)**  | — | 25 |
| LOWER { DAMAGED (1,2,3,0)* | — | 26 |
| SEPARATED (1,2,3,4,5,0)**  | — | 27 |

**D-PILLAR (Station Wagon & Limousine)**

|                            |   |    |
|----------------------------|---|----|
| UPPER { DAMAGED (1,2,3,0)* | — | 28 |
| SEPARATED (1,2,3,4,5,0)**  | — | 29 |
| LOWER { DAMAGED (1,2,3,0)* | — | 30 |
| SEPARATED (1,2,3,4,5,0)**  | — | 31 |

**LEFT ROOF SIDE RAILS**

|                    |   |    |
|--------------------|---|----|
| DAMAGED (1,2,3,0)* | — | 32 |
| BUCKLED (1,2,3,0)* | — | 33 |

\*USE: 1=YES 3=NOT APPLICABLE  
2=NO 0=UNKNOWN

\*\*USE: 1=YES, TYPE UNKNOWN  
2=NO  
3=NOT APPLICABLE

4=PARTIAL SEPARATION  
5=COMPLETE SEPARATION  
0=UNKNOWN

FIRE

LEFT PILLARS

LEFT EXTERIOR

REAR EXTERIOR

| SIDE STRUCTURE — LEFT SIDE   |                           | PUNCH CODE | CARD COL. |
|--|---------------------------|------------|-----------|
| LEFT BODY MOUNT SEPARATION (1,2,3,0)*<br><i>Unitised</i>   |                           | —          | 34        |
| If door hinges and latches were not damaged and doors did not jam or open during collision, and continuity of the side structure was maintained, place a "1" in code column. |                           | —          | 35        |
| DOOR LATCHES   |                           |            |           |
| LEFT FRONT   | DAMAGED (1,2,3,0)*        | —          | 36        |
|  | RELEASED (1,2,3,0)*       | —          | 37        |
| LEFT REAR  | DAMAGED (1,2,3,0)*        | —          | 38        |
|  | RELEASED (1,2,3,0)*       | —          | 39        |
| DOOR HINGES  |                           |            |           |
| LEFT FRONT   | DAMAGED (1,2,3,0)*        | —          | 40        |
|  | SEPARATED (1,2,3,4,5,0)** | —          | 41        |
| LEFT REAR  | DAMAGED (1,2,3,0)*        | —          | 42        |
|  | SEPARATED (1,2,3,4,5,0)** | —          | 43        |
| CONTINUITY OF SIDE STRUCTURE MAINTAINED (1,2,3,0)*<br><i>i.e., Is Side Boundary Broken</i><br>Not restricted to vehicles with reinforced side structure.                     |                           | —          | 44        |
| DOORS OPENED DURING COLLISION  |                           |            |           |
| LEFT   | FRONT (1,2,0)*            | —          | 45        |
|  | REAR (1,2,3,0)*           | —          | 46        |
| DOORS JAMMED CLOSED  |                           |            |           |
| LEFT   | FRONT (1,2,0)*            | —          | 47        |
|  | REAR (1,2,3,0)*           | —          | 48        |

| FUEL TANK AND LINES  |  | PUNCH CODE | CARD COL. |
|--|--|------------|-----------|
| APPROXIMATE FUEL LEVEL AT TIME OF IMPACT   |  |            |           |
| (4) LESS THAN 1/2<br>(5) 1/2 OR MORE<br>(0) UNKNOWN  |  | —          | 49        |
| TANK RETENTION   |  |            |           |
| (4) COMPLETE RETENTION<br>(5) PARTIAL DISENGAGEMENT<br>(6) COMPLETE DISENGAGEMENT<br>(0) UNKNOWN   |  | —          | 50        |
| TANK DEFORMED (1,2,0)*<br><i>includes neck</i>   |  | —          | 51        |
| FUEL LEAKAGE PRESENT (1,2,0)*  |  | —          | 52        |
| LOCATION OF LEAKS  |  |            |           |
| FROM THE TANK (1,2,3,0)*   |  | —          | 53        |
| FROM THE NECK (1,2,3,0)*   |  | —          | 54        |
| FROM THE LINES (1,2,3,0)*  |  | —          | 55        |
| TRAILER AND HITCH  |  |            |           |
| (1) Yes, Type Unknown<br>(2) No<br>(3) Ball and Socket, Temporary Bumper (e.g., rental clamp-on)<br>(4) Ball and Socket, Bumper only (e.g., light truck)<br>(5) Ball and Socket - Frame Hitch (e.g., frame and bumper)<br>(6) Equalizing, load distributing<br>(7) Ring and Pintle (e.g., double tractor)<br>(8) Fifth Wheel (e.g., semi)<br>(9) Other (e.g., clevis and pin)<br>(0) Unknown |  | —          | 56        |
| TRAILER BEING TOWED (AT TIME OF COLLISION)   |  |            |           |
| (1) Yes, Type Unknown<br>(2) No (hitch, no trailer)<br>(3) Not Applicable (no hitch)<br>(4) Travel Trailer/Camper<br>(5) Mobile Home<br>(6) Boat/Snowmobile/ATV Trailer<br>(7) Rental/Cargo Trailer<br>(8) Car<br>(9) Other: _____<br>(0) Unknown  |  | —          | 57        |

TRAILER

FUEL TANK

LEFT SIDE STRUCTURE

\*USE: 1=YES 2=NO 3=NOT APPLICABLE 0=UNKNOWN

\*\*USE: 1=YES, TYPE UNKNOWN 2=NO 3=NOT APPLICABLE

4=PARTIAL SEPARATION 5=COMPLETE SEPARATION 0=UNKNOWN

REAR EXTERIOR

TRUNK

TAILGATE

LUGGAGE AREA

| FILL IN TRUNK LID OR TAILGATE DETAILS AND REST OF PAGE.                |                           | PUNCH CODE | CARD COL. |
|--|---------------------------|------------|-----------|
| <b>TAILGATE (HATCHBACK) PERFORMANCE</b><br>Includes back doors of Vans |                           |            |           |
| <b>LATCHES</b>   |                           |            |           |
| RELEASED   | (1,2,3,0)*                | _____      | 58        |
| DAMAGED  | (1,2,3,0)*                | _____      | 59        |
| LATCH OR TAILGATE JAMMED   | (1,2,3,0)*                | _____      | 60        |
| <b>HINGES OR TRACKS (CLAM SHELL)</b>                                   |                           |            |           |
| BOTTOM LEFT  | DAMAGED (1,2,3,0)*        | _____      | 61        |
|  | SEPARATED (1,2,3,4,5,0)** | _____      | 62        |
| BOTTOM RIGHT   | DAMAGED (1,2,3,0)*        | _____      | 63        |
|  | SEPARATED (1,2,3,4,5,0)** | _____      | 64        |
| TOP LEFT   | DAMAGED (1,2,3,0)*        | _____      | 65        |
|  | SEPARATED (1,2,3,4,5,0)** | _____      | 66        |
| TOP RIGHT  | DAMAGED (1,2,3,0)*        | _____      | 67        |
|  | SEPARATED (1,2,3,4,5,0)** | _____      | 68        |
| EQUIPPED WITH TWO-WAY TAILGATE (1,2,3,0)*<br>(6) Disappearing Tailgate |                           | _____      | 69        |
| TAILGATE ELECTRIC WINDOW OPERABLE (1,2,3,0)*                           |                           | _____      | 70        |
| END OF CARD 05   |                           |            |           |

| DUPLICATE COLUMNS 1-9 FROM PRECEDING CARD <u>0</u> <u>6</u><br>10 11        |                           |            |           |
|---|---------------------------|------------|-----------|
| TRUNK LID PERFORMANCE (REAR OF VEHICLE)                                     |                           | PUNCH CODE | CARD COL. |
| <b>LATCHES</b>  |                           |            |           |
| RELEASED  | (1,2,3,0)*                | _____      | 12        |
| DAMAGED   | (1,2,3,0)*                | _____      | 13        |
| LATCH OR LID JAMMED   | (1,2,3,0)*                | _____      | 14        |
| <b>HINGES</b>   |                           |            |           |
| LEFT  | DAMAGED (1,2,3,0)*        | _____      | 15        |
|   | SEPARATED (1,2,3,4,5,0)** | _____      | 16        |
| RIGHT   | DAMAGED (1,2,3,0)*        | _____      | 17        |
|   | SEPARATED (1,2,3,4,5,0)** | _____      | 18        |
| <b>TRUNK or LUGGAGE AREA</b>  |                           |            |           |
| DAMAGED   | (1,2,0)*                  | _____      | 19        |
| SPARE TIRE SEPARATION (1,2,0)*<br>(4) for spare tire not initially attached |                           | _____      | 20        |
| TRUNK - PASSENGER COMPARTMENT PARTITION DAMAGE (1,2,3,0)*                   |                           | _____      | 21        |
| <b>BACKLIGHT HEADER (REAR WINDOW TOP FRAME)</b>                             |                           |            |           |
| BACKLIGHT HEADER DAMAGED OR BUCKLED (1,2,3,0)*<br>convertible               |                           | _____      | 22        |
| <b>RIGHT PILLARS</b>  |                           |            |           |
| <p>UPPER</p> <p>LOWER</p> <p>D C B A</p>                                    |                           |            |           |

\*USE: 1=YES 3=NOT APPLICABLE 2=NO 0=UNKNOWN \*\*USE: 1=YES,TYPE UNKNOWN 2=NO 3=NOT APPLICABLE 4=PARTIAL SEPARATION 5=COMPLETE SEPARATION 0=UNKNOWN



RIGHT EXTERIOR

| RIGHT PILLARS  |   | PUNCH CODE | CARD COL. | SIDE STRUCTURE – RIGHT SIDE  |   | PUNCH CODE | CARD COL.                                   |
|--|---|------------|-----------|--|---|------------|---|
| If right pillars were not damaged or separated or right roof side rail was not damaged or buckled, place a "1" in code column. |   | _____      | 23        | RIGHT BODY MOUNT SEPARATION (1,2,3,0)*   |   | _____      | 43  |
| A-PILLARS  |   |            |           | If door hinges and latches were not damaged and doors did not jam or open during collision, and continuity of the side structure was maintained, place a "1" in code column. |   | _____      | 44  |
| UPPER  | { DAMAGED (1,2,0)*<br>SEPARATED (1,2,3,4,5,0)**   | _____      | 24        | DOOR LATCHES   |   |            |   |
|  |   | _____      | 25        | RIGHT FRONT  | { DAMAGED (1,2,3,0)*<br>RELEASED (1,2,3,0)*       | _____      | 45  |
| LOWER  | { DAMAGED (1,2,0)*<br>SEPARATED (1,2,3,4,5,0)**   | _____      | 26        |  |   | RIGHT REAR | { DAMAGED (1,2,3,0)*<br>RELEASED (1,2,3,0)* |
|  |   | _____      | 27        | _____  | 48  |            |   |
| B-PILLAR (ALSO REAR PILLAR ON PICK-UP TRUCK, CORVETTE, '71 CAMARO, '71 FIREBIRD)   |   |            |           | DOOR HINGES  |   |            |   |
| UPPER  | { DAMAGED (1,2,3,0)*<br>SEPARATED (1,2,3,4,5,0)** | _____      | 28        | RIGHT FRONT  | { DAMAGED (1,2,3,0)*<br>SEPARATED (1,2,3,4,5,0)** | _____      | 49  |
|  |   | _____      | 29        |  |   | _____      | 50  |
| LOWER  | { DAMAGED (1,2,0)*<br>SEPARATED (1,2,3,4,5,0)**   | _____      | 30        | RIGHT REAR (Hinge or track)  | { DAMAGED (1,2,3,0)*<br>SEPARATED (1,2,3,4,5,0)** | _____      | 51  |
|  |   | _____      | 31        |  |   | _____      | 52  |
| C-PILLAR   |   |            |           | CONTINUITY OF SIDE STRUCTURE MAINTAINED (1,2,3,0)*   |   | _____      | 53  |
| UPPER  | { DAMAGED (1,2,3,0)*<br>SEPARATED (1,2,3,4,5,0)** | _____      | 32        | i.e., <u>Is Side Boundary Broken</u><br>Not restricted to vehicles with reinforced side structure.   |   |            |   |
|  |   | _____      | 33        | DOORS OPENED DURING COLLISION  |   |            |   |
| LOWER  | { DAMAGED (1,2,3,0)*<br>SEPARATED (1,2,3,4,5,0)** | _____      | 34        | RIGHT  | { FRONT (1,2,0)*<br>REAR (1,2,3,0)*               | _____      | 54  |
|  |   | _____      | 35        |  |   | _____      | 55  |
| D-PILLAR (STATION WAGON & LIMOUSINE)   |   |            |           | DOORS JAMMED CLOSED  |   |            |   |
| UPPER  | { DAMAGED (1,2,3,0)*<br>SEPARATED (1,2,3,4,5,0)** | _____      | 36        | RIGHT  | { FRONT (1,2,0)*<br>REAR (1,2,3,0)*               | _____      | 56  |
|  |   | _____      | 37        |  |   | _____      | 57  |
| LOWER  | { DAMAGED (1,2,3,0)*<br>SEPARATED (1,2,3,4,5,0)** | _____      | 38        |  |   |            |   |
|  |   | _____      | 39        |  |   |            |   |
| RIGHT ROOF SIDE RAILS  |   |            |           |  |   |            |   |
| DAMAGED (1,2,3,0)*   |   | _____      | 40        |  |   |            |   |
| BUCKLED (1,2,3,0)*   |   | _____      | 41        |  |   |            |   |
| WINDSHIELD HEADER  |   |            |           |  |   |            |   |
| DAMAGED OR BUCKLED (1,2,0)*  |   | _____      | 42        |  |   |            |   |

RIGHT SIDE STRUCTURE

RIGHT PILLARS

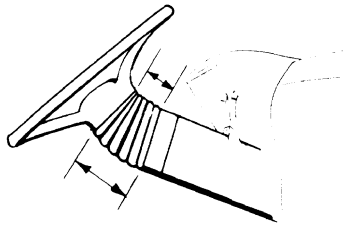
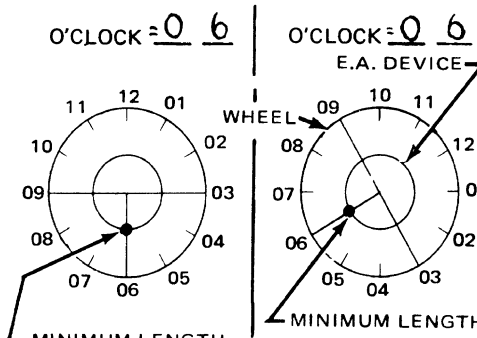
\*USE: 1=YES 3=NOT APPLICABLE  
2=NO 0=UNKNOWN

\*\*USE: 1=YES, TYPE UNKNOWN  
2=NO  
3=NOT APPLICABLE

4=PARTIAL SEPARATION  
5=COMPLETE SEPARATION  
0=UNKNOWN

STEERING WHEEL

|   |       |                         |                         |            |           |
|---|-------|-------------------------|-------------------------|------------|-----------|
| <b>STEERING WHEEL</b>   |       |                         |                         | PUNCH CODE | CARD COL. |
| TYPE GM only, others and unknown use (99).  |       |                         |                         | ___        | 58-59     |
| NOTES ON NON-ORIGINAL EQUIPMENT STEERING WHEEL:                                     |       |                         |                         |            |           |
| STEERING WHEEL RIM  |       |                         |                         |            |           |
| DAMAGE  |       |                         |                         |            |           |
| (2) NONE<br>(4) SLIGHTLY DEFORMED<br>(5) SEVERELY BENT<br>(6) BROKEN<br>(0) UNKNOWN |       |                         |                         | ___        | 60        |
| OCCUPANT CONTACT (1,2,0)*   |       |                         |                         | ___        | 61        |
| STEERING WHEEL SPOKES   |       |                         |                         |            |           |
| NUMBER OF SPOKES<br>(ENTER "0" IF UNKNOWN)  |       |                         |                         | ___        | 62        |
| DAMAGE  |       |                         |                         |            |           |
| (2) NONE<br>(4) SLIGHTLY DEFORMED<br>(5) SEVERELY BENT<br>(6) BROKEN<br>(0) UNKNOWN |       |                         |                         | ___        | 63        |
| OCCUPANT CONTACT (1,2,0)*   |       |                         |                         | ___        | 64        |
| HORN RING, HORN BUTTON(S), OR SPOKE SHROUD  |       |                         |                         |            |           |
| DAMAGED (1,2,0)*  |       |                         |                         | ___        | 65        |
| OCCUPANT CONTACT (1,2,0)*   |       |                         |                         | ___        | 66        |
| <b>STEERING WHEEL ENERGY ABSORBING DEVICE TABLE</b>                                 |       |                         |                         |            |           |
| Corporation   | Year  | Make                    | Length                  |            |           |
| Chrysler  | 70    | Barracuda<br>Challenger | 4.9"                    |            |           |
| Ford  | 70-72 | Capri                   | 6" total<br>3" external |            |           |

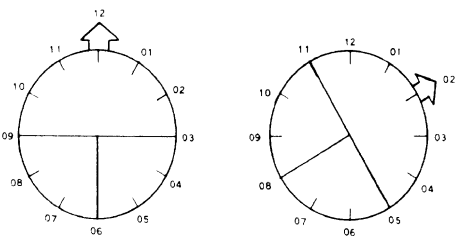
|  |  |                     |           |
|--|--|---------------------|-----------|
| <b>STEERING WHEEL ENERGY ABSORBING DEVICE</b><br>(SEE DRAWING ON PAGE 18 FOR LOCATION)<br>EQUIPPED (1,2,0)*  |  | PUNCH CODE          | CARD COL. |
|  |  | ___                 | 67        |
| <b>ENERGY ABSORBING DEVICE FINAL POSITION</b>  |  |                     |           |
| MEASURE THE MINIMUM AND MAXIMUM OVERALL LENGTH OF THE ENERGY ABSORBING DEVICE (BETWEEN THE STEERING WHEEL AND STEERING COLUMN).  |  |                     |           |
| ENTER THESE LENGTHS BELOW  |  |                     |           |
|    |  |                     |           |
| MAX. = ___ in.; MIN. = ___ in.   |  |                     |           |
| THE E.A. DEVICE ROTATES WITH THE STEERING WHEEL. WE WANT TO KNOW WHERE THIS MINIMUM LENGTH OCCURRED (AROUND THE CIRCUMFERENCE OF THE E.A. DEVICE) WITH RESPECT TO THE SPOKES. RECORD BELOW THE O'CLOCK POSITION AT WHICH THIS MINIMUM LENGTH WAS MEASURED. |  |                     |           |
| EXAMPLES   |  |                     |           |
|    |  |                     |           |
| (ENTER 00 IF UNKNOWN)  |  |                     |           |
|  |  | 68                  | 69        |
| <b>ENERGY ABSORBING DEVICE COMPRESSION</b>   |  |                     |           |
| FOLLOWING TO BE FILLED IN BY ANALYSIS GROUP<br>(ENTER 99.9 IF UNKNOWN)   |  |                     |           |
| ORIGINAL LENGTH (H) ___ IN.  |  | (SEE TABLE AT LEFT) |           |
| DAMAGED MAX. LENGTH (X) ___ IN.  |  |                     |           |
| DIFFERENCE (H-X) ___ IN.   |  |                     |           |
| ORIGINAL LENGTH (H) ___ IN.  |  | (SEE TABLE AT LEFT) |           |
| DAMAGED MIN. LENGTH (Y) ___ IN.  |  |                     |           |
| DIFFERENCE (H-Y) ___ IN.   |  |                     |           |
| DEVICE EXTENDED  |  |                     |           |
| (4) X GREATER THAN H<br>(5) X AND Y GREATER THAN H<br>(6) NEITHER<br>(0) UNKNOWN   |  |                     |           |
|  |  | 70                  | 71        |
|  |  | 73                  | 74        |
|  |  |                     | 75        |
|  |  | ___ 76              |           |

\*WHERE (1,2,0) OR (1,2,3,0) ARE INDICATED, USE 1 FOR YES 2 FOR NO 3 FOR NOT APPLICABLE 0 FOR UNKNOWN

STEERING WHEEL

### STEERING WHEEL AND COLUMN

DUPLICATE COLUMNS 1-9 FROM PRECEDING CARD 0 7  
10 11

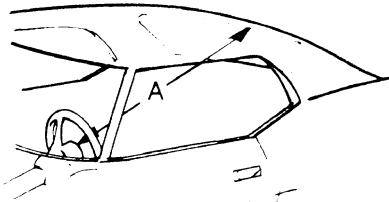
|  |            |           |
|--|------------|-----------|
| <b>STEERING WHEEL POSITION AT TIME OF COLLISION</b>  | PUNCH CODE | CARD COL. |
| IN WHAT O'CLOCK POSITION WAS THE NORMAL TOP OF THE WHEEL POINTED WHEN THE COLLISION OCCURRED?<br><br>EXAMPLES<br><br>O'CLOCK = <u>1</u> <u>2</u> O'CLOCK = <u>0</u> <u>2</u><br><br><br>(NORMAL STRAIGHT AHEAD)<br>(00) UNKNOWN      O'CLOCK = _____ | _____      | 12-13     |

|   |            |           |
|---|------------|-----------|
| <b>Steering Wheel Pad or Air Bag</b><br>S.W. Pad Equipped (1,2,0)*<br>Steering Wheel Air Bag:<br>(4) Deployment<br>(5) Equipped-No Deployment<br>(6) Deployment Unknown<br>(9) Both Pad and Air Bag Unknown<br><br>S.W. Pad Deformed (1,2,3,0)* | PUNCH CODE | CARD COL. |
| _____   | _____      | 14        |
| _____   | _____      | 15        |

|   |            |           |
|---|------------|-----------|
| <b>TILT FEATURE</b>   | PUNCH CODE | CARD COL. |
| EQUIPPED (1,2,0)*   | _____      | 16        |
| FINAL POSITION<br><br>(3) NOT APPLICABLE<br>(4) NORMAL<br>(5) TILTED UP<br>(6) TILTED DOWN<br>(0) UNKNOWN | _____      | 17        |

|   |            |           |
|---|------------|-----------|
| <b>TELESCOPING FEATURE</b>  | PUNCH CODE | CARD COL. |
| EQUIPPED (1,2,0)*   | _____      | 18        |
| FINAL POSITION<br><br>(3) NOT APPLICABLE<br>(4) NORMAL<br>(5) ABOVE NORMAL<br>(6) BELOW NORMAL<br>(0) UNKNOWN | _____      | 19        |

|  |            |           |
|--|------------|-----------|
| <b>SWING-AWAY FEATURE</b>  | PUNCH CODE | CARD COL. |
| EQUIPPED (1,2,0)*  | _____      | 20        |
| FINAL POSITION<br>(3) NOT APPLICABLE<br>(4) NORMAL<br>(5) RIGHT OF NORMAL<br>(0) UNKNOWN | _____      | 21        |

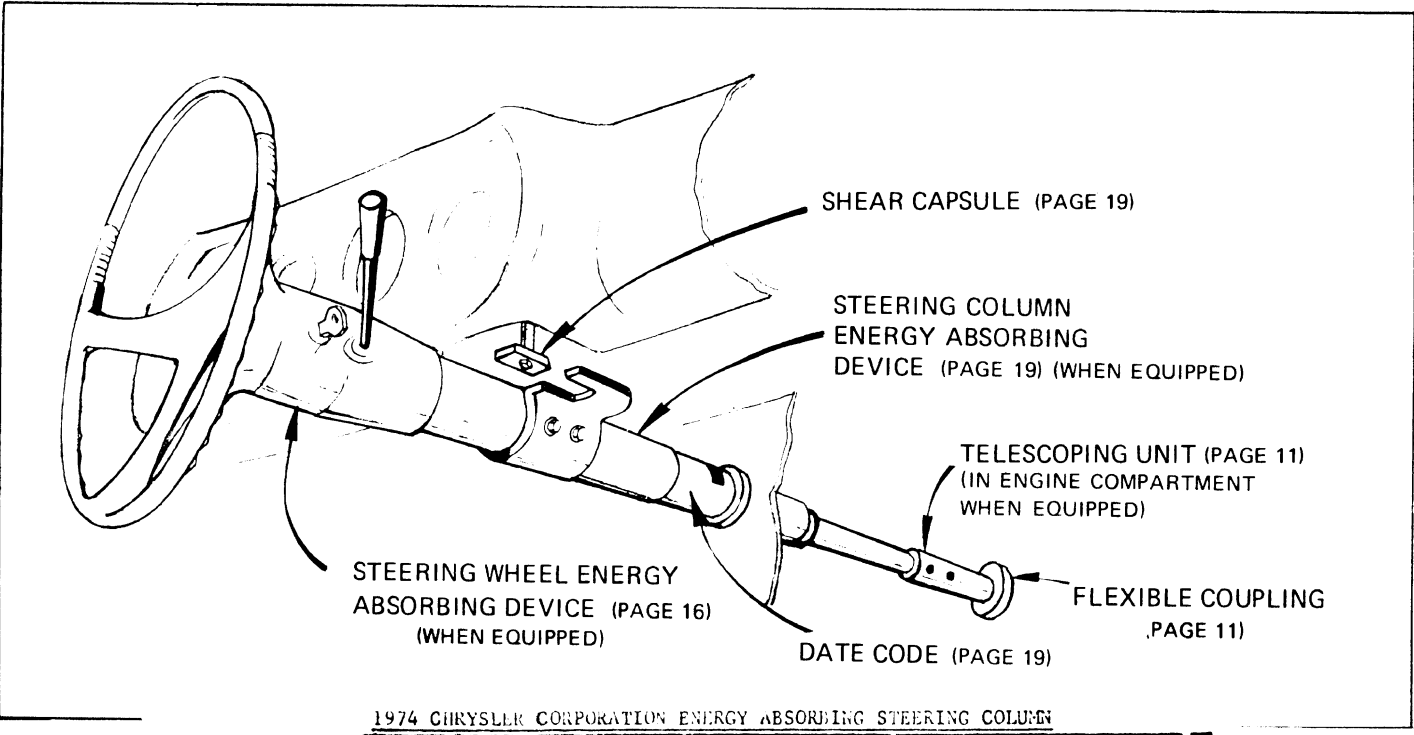
|   |  |
|---|--|
| <b>FINAL COLUMN POSITION</b><br>MEASURE THE DISTANCE FROM THE STEERING WHEEL CENTER TO THE TOP OF THE REAR WINDOW GLASS, DIRECTLY BEHIND THE HUB. ("A" IN SKETCH).<br><br>ENTER THIS DISTANCE IN BLANK "A".<br><br><br>A: _____ INCHES |  |
|---|--|

|   |                         |
|---|-------------------------|
| <b>COLUMN MOVEMENT</b>  |                         |
| If top or rear window glass is displaced, then use (999)<br><br>(ENTER 99.9 IF UNKNOWN)<br><br>FROM A CORRESPONDING UNDAMAGED VEHICLE, MAKE A MEASUREMENT SIMILAR TO "A" ABOVE, AND RECORD IT IN BLANK "B". (PLACE TILT STEERING WHEEL IN MID-POSITION AND TELESCOPING COLUMNS IN FULL DOWN POSITION).<br><br>ORIGINAL DIMENSION (B) _____ IN.<br>DAMAGED VEHICLE DIMENSION (A) _____ IN.<br>DIFFERENCE  A-B  _____<br><small style="margin-left: 100px;">tolerance ± 1.0</small> | _____<br>22    23    24 |
| DIRECTION OF MOTION<br><br>(4) FORWARD (A GREATER THAN B)<br>(5) REARWARD (A LESS THAN B)<br>(6) NEITHER<br>(0) UNKNOWN   | _____<br>25             |

\*WHERE (1,2,0) OR (1,2,3,0) ARE INDICATED, USE 1 FOR YES 3 FOR NOT APPLICABLE  
2 FOR NO 0 FOR UNKNOWN

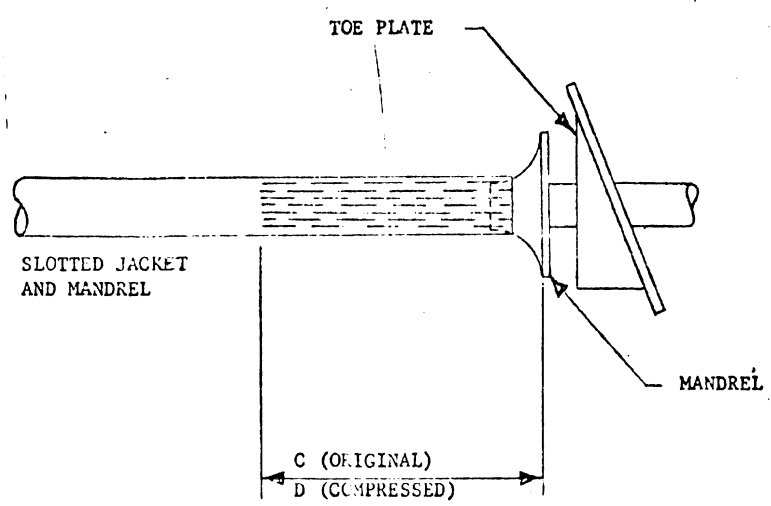
STEERING WHEEL AND COLUMN

STEERING COLUMN (CONT'D.)



1974 CHRYSLER CORPORATION ENERGY ABSORBING STEERING COLUMN

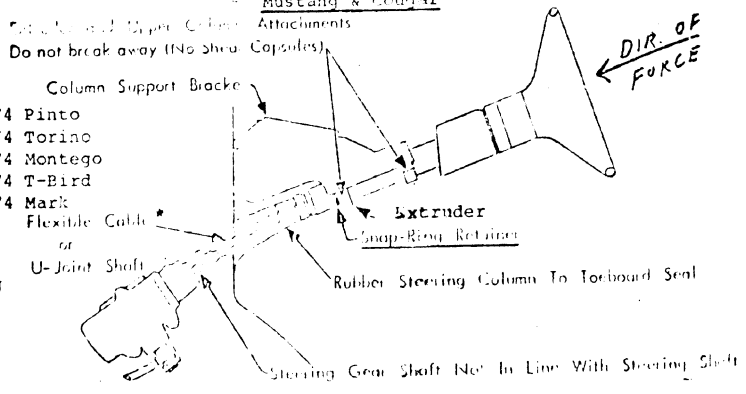
9



FORD ENERGY ABSORBING "MINI" COLUMN

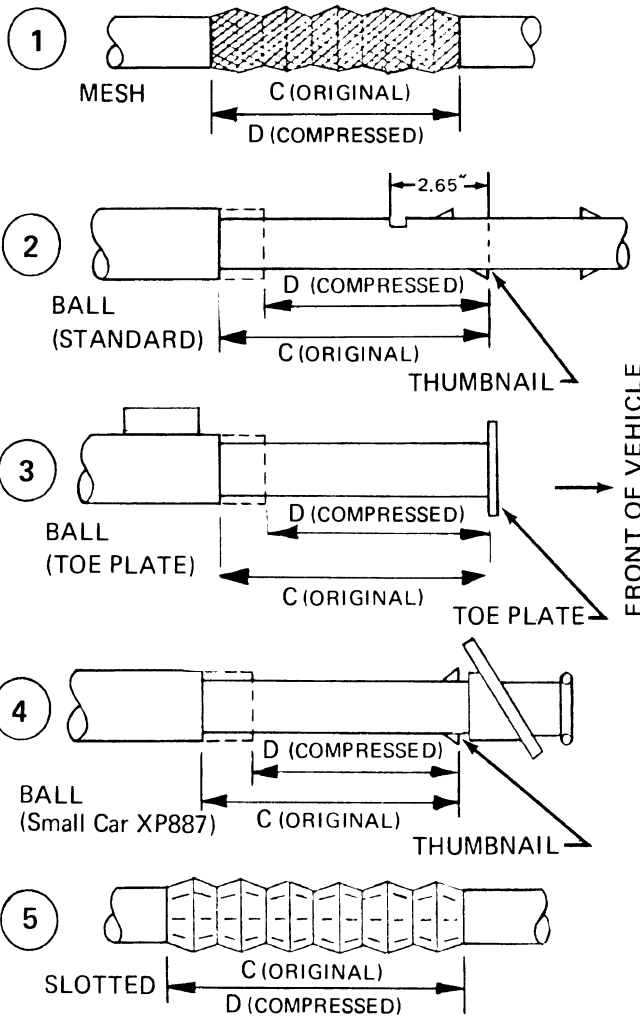
8 (1971-'74 PINTO, 1972-'74 TORINO, MONTEGO, T-BIRD, MARK I, II & III, MUSTANG & COUGAR)

- USED IN:
- '71 thru '74 Pinto
  - '72 thru '74 Torino
  - '72 thru '74 Montego
  - '72 thru '74 T-Bird
  - '72 thru '74 Mark I
  - '74 Mustang
  - '74 Cougar



STEERING COLUMN (CONT'D.)

STEERING COLUMN ENERGY ABSORBING DEVICE SEE ALSO: page 18



STEERING COLUMN ENERGY ABSORBING DEVICE

TYPE OF DEVICE

- (7) Not Equipped
- (1) Mesh
- (2) Ball (Standard)
- (3) Ball (with Toe Plate)
- (4) Ball (Vega)
- (5) Slotted
- (6) Other: \_\_\_\_\_ (e.g. Colt)
- (8) Ford Mini-Column
- (9) Chrysler Slotted Jacket and Mandrel (1974+)
- (0) Unknown

(SEE DRAWING ON PAGE 18 FOR LOCATION)

ORIGINAL LENGTH  
(See Table on Page 18) (C) \_\_\_\_\_

COMPRESSED LENGTH  
(Measure, See Diagrams above) (D) \_\_\_\_\_

COMPRESSION (C minus D) \_\_\_\_\_  
(ENTER 99.9 IF UNKNOWN)

NOTE: ALL DIMENSIONS IN PUNCH COLUMN SHOULD BE IN INCHES AND TENTHS.

PUNCH

26

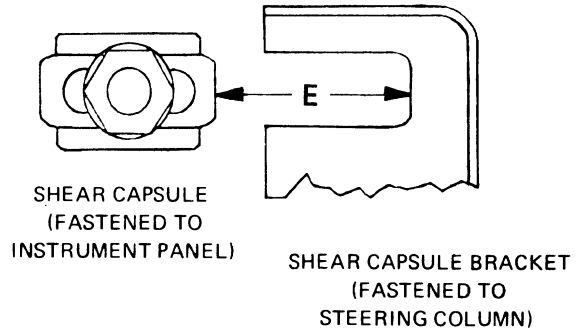
8's for Not Equipped

27 28 29

(777) Device Extended

SHEAR CAPSULE SEPARATION

(SEE DRAWING ON PAGE 18 FOR LOCATION)



NOTE: WHEN CAPSULES HAVE SEPARATED IT MAY BE NECESSARY TO LIFT COLUMN ASSEMBLY INTO POSITION AGAINST INSTRUMENT PANEL BEFORE MEASURING.

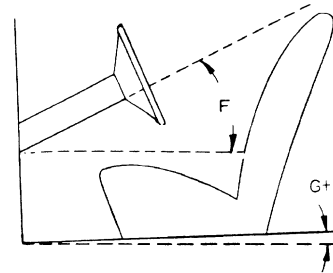
SHEAR CAPSULE SEPARATION DISTANCE ('E' IN DIAGRAM ABOVE)

(ENTER 99.9 IF UNKNOWN)  
888 if not equipped

PUNCH

30 31 32  
tolerance + 0.1

STEERING COLUMN VERTICAL ANGLE



MEASURE THE ANGLE THE STEERING COLUMN MAKES WITH THE HORIZONTAL ('F' IN DIAGRAM ABOVE), AND THE ANGLE THE DOOR SILL MAKES WITH THE HORIZONTAL ('G' IN DIAGRAM) AND ENTER THEM BELOW. ANGLES WHICH TILT DOWN TOWARD THE FRONT OF THE CAR ARE POSITIVE.

(NOTE: LIFT COLUMN INTO POSITION FOR MEASUREMENT)

F: \_\_\_\_\_ DEGREES; G: \_\_\_\_\_ DEGREES

COLUMN VERTICAL ROTATION

PUNCH

FINAL COLUMN POSITION

COLUMN ANGLE (F) \_\_\_\_\_  
(Relative to Ground)

VEHICLE ANGLE (G) \_\_\_\_\_

COLUMN ANGLE (F-G=H) \_\_\_\_\_  
(Relative to Vehicle)

FROM A CORRESPONDING UNDAMAGED VEHICLE, MAKE A MEASUREMENT SIMILAR TO "H" ABOVE AND RECORD IT IN BLANK "J"

ORIGINAL DEMENSION (J) \_\_\_\_\_

DAMAGED VEHICLE DIMENSION (H) \_\_\_\_\_

COLUMN ROTATION (H-J) \_\_\_\_\_

(ENTER 99 IF UNKNOWN) tolerance  $\pm 1^\circ$   
98 Rotated - Unknown amount

Either + or -

33 34

PASSENGER COMPARTMENT

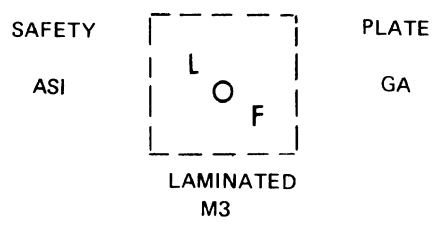
GENERAL INFORMATION

| GENERAL INFORMATION   | PUNCH CODE | CARD COL. |
|---|------------|-----------|
| PASSENGER COMPARTMENT REDUCED IN SIZE (1,2,0)*                      | _____      | 35        |
| EXTERNAL OBJECT INTRUSION (1,2,0)*<br>DESCRIBE ON FOLD-OUT FLY-LEAF | _____      | 36        |
| INTERNAL LOOSE OBJECT (1,2,0)*                                      | _____      | 37        |
| VERTICAL ROTATION OF INSTRUMENT PANEL (1,2,0)*                      | _____      | 38        |
| FIREWALL (COWL) DEFORMATION (1,2,0)*                                | _____      | 39        |
| FLOORPAN DEFORMATION (1,2,0)*<br>(INCLUDING TOEPAN)                 | _____      | 40        |
| <b>WINDSHIELD</b>   |            |           |
| CRACKED (1,2,3,0)*  | _____      | 41        |
| BROKEN (1,2,3,0)*<br>(Plastic Interlayer Torn)                      | _____      | 42        |
| OCCUPANT CONTACT (1,2,3,0)*   | _____      | 43        |
| CRACKED OR BROKEN BY OCCUPANT CONTACT (1,2,3,0)*                    | _____      | 44        |
| BOND SEPARATED (1,2,0)*<br>(IF "YES", ESTIMATE PERCENT _____)       | _____      | 45        |
| <b>WINDSHIELD CODE</b><br>(XX) Unknown                              | ____       | 46-47     |

WINDSHIELD MARK

DRAW GLASS MANUFACTURER'S WINDSHIELD MARK WHICH IS LOCATED ALONG THE BOTTOM OF THE WINDSHIELD AT CENTER OR AT ONE CORNER.

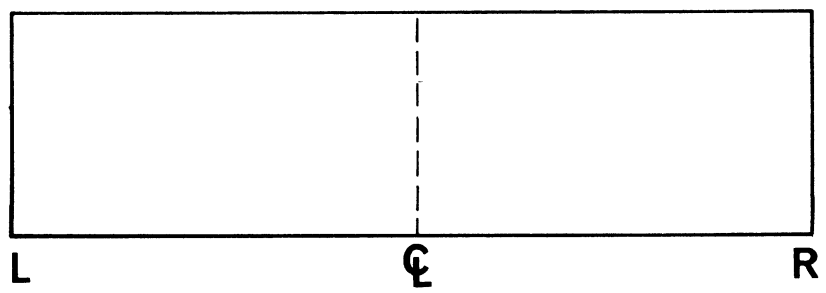
EXAMPLE OF TYPICAL MARK:



MARK ON CASE VEHICLE:

WINDSHIELD

LOCATE AREA OF WINDSHIELD INTEREST OR DAMAGE WITH DIMENSIONS (VERTICAL & HORIZONTAL) ON THIS DIAGRAM OF THE WINDSHIELD AS VIEWED FROM INSIDE.



\*WHERE (1,2,3,0) IS INDICATED, USE 1 FOR YES 3 FOR NOT APPLICABLE  
2 FOR NO 0 FOR UNKNOWN

PASSENGER COMPARTMENT

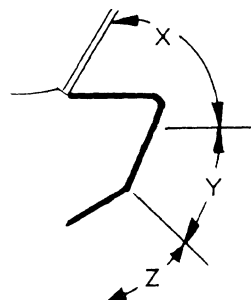
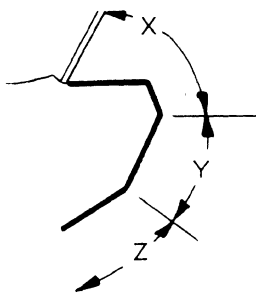
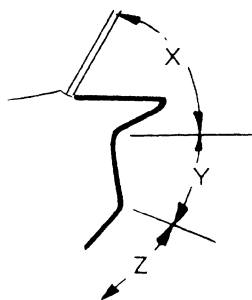
NOTE: IF THERE WERE NO OCCUPANTS,  
CIRCLE THIS NOTE AND STOP HERE.

| INSTRUMENT PANEL                                      | EQUIPPED<br>(1,2,0)* |              | DAMAGED<br>(1,2,3,0)* |              | OCCUPANT<br>CONTACT<br>(1,2,3,0)* |              |
|---|----------------------|--------------|-----------------------|--------------|-----------------------------------|--------------|
|   | PUNCH<br>CODE        | CARD<br>COL. | PUNCH<br>CODE         | CARD<br>COL. | PUNCH<br>CODE                     | CARD<br>COL. |
| UPPER PANEL ("X" IN DIAGRAMS) -----                   |                      |              |                       | 48           |                                   | 49           |
| MIDPANEL ("Y" IN DIAGRAMS)-----                       |                      |              |                       | 50           |                                   | 51           |
| LOWER PANEL ("Z" IN DIAGRAMS) -----                   |                      |              |                       | 52           |                                   | 53           |
| ASHTRAY -----   |                      |              |                       | 54           |                                   | 55           |
| CONTROL KNOBS AND LEVERS -----                        |                      |              |                       | 56           |                                   | 57           |
| GLOVE COMPARTMENT AREA -----                          |                      |              |                       | 58           |                                   | 59           |
| INSTRUMENTS -----                                     |                      |              |                       | 60           |                                   | 61           |
| PARKING BRAKE RELEASE OR BRACKET -----                |                      | 62           |                       | 63           |                                   | 64           |
| AIR CONDITIONING OUTLETS OR UPPER VENTILATION OUTLETS |                      | 65           |                       | 66           |                                   | 67           |
| HEATER OR AIR CONDITIONING DUCTS -----                |                      | 68           |                       | 69           |                                   | 70           |
| RADIO -----   |                      | 71           |                       | 72           |                                   | 73           |
| OTHER: _____<br>(MORE THAN ONE ITEM MAY BE NOTED)     |                      |              |                       | 74           |                                   | 75           |

Instrument Panel - Air Bag:  
 (4) Deployment  
 (5) Equipped-No Deployment  
 (6) Deployment Unknown  
 (9) Both Other Damage and Air Bag Equipped Unknown

END OF CARD 07

e.g. package shelf, CB radio, tape deck  
 TYPICAL PANEL DIAGRAMS



INSTRUMENT PANEL

\*WHERE (1,2,0) OR (1,2,3,0) ARE INDICATED, USE 1 FOR YES 3 FOR NOT APPLICABLE  
 2 FOR NO 0 FOR UNKNOWN

PASSENGER COMPARTMENT




| DUPLICATE COLUMNS 1-9 FROM PRECEDING CARD $\frac{0}{10}$ $\frac{8}{11}$ |  | EQUIPPED<br>(1,2,0)* |              | DAMAGED<br>(1,2,3,0)* |              | OCCUPANT<br>CONTACT<br>(1,2,3,0)* |              |
|---|--|----------------------|--------------|-----------------------|--------------|-----------------------------------|--------------|
| OTHER INTERIOR ITEMS (FRONT OF VEHICLE)                                 |  | PUNCH<br>CODE        | CARD<br>COL. | PUNCH<br>CODE         | CARD<br>COL. | PUNCH<br>CODE                     | CARD<br>COL. |
| FOOT CONTROLS -----   |  |                      |              | ---                   | 12           | ---                               | 13           |
| IGNITION KEYS -----   |  |                      |              | ---                   | 14           | ---                               | 15           |
| REAR VIEW MIRROR -----  |  |                      |              | ---                   | 16           | ---                               | 17           |
| SUNVISOR AND FITTINGS -----   |  |                      |              | ---                   | 18           | ---                               | 19           |
| WINDSHIELD TOP MOLDING -----  |  |                      |              | ---                   | 20           | ---                               | 21           |
| LEFT A-PILLAR (UPPER OR LOWER) -----                                    |  |                      |              | ---                   | 22           | ---                               | 23           |
| RIGHT A-PILLAR (UPPER OR LOWER) -----                                   |  |                      |              | ---                   | 24           | ---                               | 25           |
| CONSOLE -----   |  | ---                  | 26           | ---                   | 27           | ---                               | 28           |
| TRANSMISSION SELECTOR LEVER   |  |                      |              |                       |              |                                   |              |
| ON STEERING COLUMN -----  |  | ---                  | 29           | ---                   | 30           | ---                               | 31           |
| ON CONSOLE OR FLOOR -----   |  | ---                  | 32           | ---                   | 33           | ---                               | 34           |

OTHER INTERIOR DAMAGE

\*WHERE (1,2,0) OR (1,2,3,0) ARE INDICATED, USE 1 FOR YES 3 FOR NOT APPLICABLE  
2 FOR NO 0 FOR UNKNOWN



PASSENGER COMPARTMENT (CONT'D.)

| SEATS   |  | PUNCH CODE | CARD COL. | POSITION OF SEAT PRIOR TO CRASH   |                             | PUNCH CODE | CARD COL. |
|---|--|------------|-----------|---|-----------------------------|------------|-----------|
| <b>TYPE OF FRONT SEAT</b><br>(4)  (7)<br>(5)  (8)<br>(6)  (9)<br>(0) UNKNOWN<br><b>3) Drivers Seat Only</b><br>FOLDING BACKS (1,2,0)*<br><b>DELUXE ACCESSORIES</b><br>(1) Deluxe Accessories<br>(2) None<br>(4) Reclining Seatbacks<br>(0) Unknown |  | —          | 35        | <b>DRIVERS SEAT</b><br>(4) FORWARD<br>(5) MIDDLE<br>(6) REARWARD<br>(0) UNKNOWN   | —                           | 44         |           |
| <b>TYPE OF SEAT ADJUSTERS</b><br><b>Driver's Side</b><br>(4) MANUAL<br>(5) POWER<br>(6) RIGID<br>(7) OTHER: _____<br>(0) UNKNOWN  |  | —          | 36        | <b>RIGHT FRONT PASSENGER'S SEAT</b><br>(3) NOT APPLICABLE (No Seat)<br>(4) FORWARD<br>(5) MIDDLE<br>(6) REARWARD<br>(0) UNKNOWN   | code the same if bench seat | 45         |           |
| <b>TYPE OF SEAT ADJUSTMENT</b><br>(3) NONE (NOT APPLICABLE)<br>(4) 2-WAY<br>(5) 4-WAY<br>(6) 6-WAY<br>(7) OTHER: _____<br>(0) UNKNOWN<br>(8) Swivel Seats   |  | —          | 37        | <b>DAMAGE TO FRONT SEAT</b><br>BACKREST DAMAGE (1,2,0)*<br>CUSHION DAMAGE (1,2,0)*<br>CONTACTED BY REAR OCCUPANT (1,2,3,0)*<br>If no rear occupant  | —                           | 46         |           |
| <b>DAMAGE TO ADJUSTERS (1,2,0)*</b><br>Include Rigid  |  | —          | 38        | <b>SEAT CENTER ARMRESTS (FRONT)</b><br>EQUIPPED (1,2,0)*<br>DAMAGED (1,2,3,0)*  | —                           | 47         |           |
| <b>TYPE OF DAMAGE TO ADJUSTERS (CHOOSE TWO)</b><br>(2) None<br>(4) Chucking (some free play)<br>(5) Deformed and Released<br>(6) Separated<br>(0) Unknown<br>(8) Swivel Damaged   |  | —          | 39        | <b>HEAD RESTRAINTS Driver's Side (FRONT)</b><br>EQUIPPED (1,2,0)*<br>REMOVED PRIOR TO COLLISION (1,2,3,0)*<br>RETAINED DURING COLLISION (1,2,3,0)*<br>DAMAGED (1,2,3,0)*<br>OCCUPANT CONTACT (1,2,3,0)* | Integral                    | 48         |           |
| <b>LOCATION OF SEPARATION</b><br>(3) NOT APPLICABLE<br>(4) AT FLOOR<br>(5) AT ADJUSTER<br>(6) AT SEAT<br>(0) UNKNOWN  |  | —          | 40        | <b>HEAD RESTRAINT Driver's Side ADJUSTMENT AT TIME OF COLLISION</b><br>(3) Not Applicable, None<br>(4) UP from seat top<br>(5) DOWN on seat top<br>(0) Unknown<br>(6) Integral                          | —                           | 49         |           |
|   |  | —          | 41        |   | —                           | 50         |           |
|   |  | —          | 42        |   | —                           | 51         |           |
|   |  | —          | 43        |   | —                           | 52         |           |
|   |  | —          | 44        |   | —                           | 53         |           |
|   |  | —          | 45        |   | —                           | 54         |           |
|   |  | —          | 46        |   | —                           | 55         |           |
|   |  | —          | 47        |   | —                           | 56         |           |

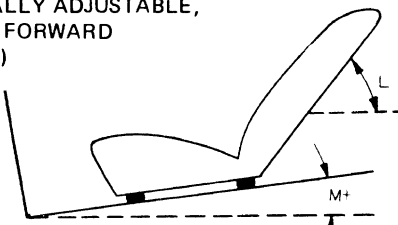
SEATS

PASSENGER COMPARTMENT (CONT'D.)

WINDOWS

SEATS

| SEATS (CONT'D)               |                     | PUNCH CODE | CARD COL. |
|------------------------------|---------------------|------------|-----------|
| <b>FRONT SEAT BACK LOCKS</b> |                     |            |           |
| LEFT<br>or center            | EQUIPPED (1,2,3,0)* | ___        | 57        |
|                              | HELD (1,2,3,0)*     | ___        | 58        |
| RIGHT                        | EQUIPPED (1,2,3,0)* | ___        | 59        |
|                              | HELD (1,2,3,0)*     | ___        | 60        |

| FRONT SEAT BACK ANGLE   |                       |
|---|-----------------------|
| <p>MEASURE THE FRONT SEAT BACK ANGLE AT THE LEFT AND RIGHT SEAT BACK FRAMES. (IF SEAT BACK ANGLE IS NORMALLY ADJUSTABLE, MOVE TO FORWARD POSITION)</p>  <p>MEASURE THE ANGLE THE SEAT BACK MAKES WITH HORIZONTAL (L IN DIAGRAM), AND THE ANGLE THE DOOR SILL MAKES WITH HORIZONTAL (M IN DIAGRAM) AND ENTER BELOW.</p> |                       |
| LEFT SIDE   | RIGHT SIDE            |
| L ___ DEG. M ___ DEG.   | L ___ DEG. M ___ DEG. |

| SEAT BACK ROTATION  |  | PUNCH CODE                    | CARD COL. |      |       |     |     |     |     |     |     |  |  |
|---|--|-------------------------------|-----------|------|-------|-----|-----|-----|-----|-----|-----|--|--|
| <p>FINAL SEAT ANGLE (ENTER 99 IF UNKNOWN)</p> <p>SEAT ANGLE (L) (Relative to Ground)</p> <p>VEHICLE ANGLE (M)</p> <p>SEAT ANGLE (L-M=P) (Relative to Vehicle)</p> <p>FROM A CORRESPONDING UNDAMAGED VEHICLE, MAKE A MEASUREMENT SIMILAR TO "P" ABOVE AND RECORD IT IN BLANK "R" BELOW.</p> <p>ORIGINAL ANGLE (R)</p> <p>DAMAGED SEAT ANGLE (P)</p> <p>DIFFERENCE  R-P  tolerance ±2°</p> <p>LEFT SEAT ANGLE DIFFERENCE</p> <p>RIGHT SEAT ANGLE DIFFERENCE</p> |  |                               |           |      |       |     |     |     |     |     |     |  |  |
|   | <table border="1"> <thead> <tr> <th colspan="2">DEGREES</th> </tr> <tr> <th>LEFT</th> <th>RIGHT</th> </tr> </thead> <tbody> <tr> <td>___</td> <td>___</td> </tr> <tr> <td>___</td> <td>___</td> </tr> <tr> <td>___</td> <td>___</td> </tr> </tbody> </table> | DEGREES                       |           | LEFT | RIGHT | ___ | ___ | ___ | ___ | ___ | ___ |  |  |
| DEGREES   |  |                               |           |      |       |     |     |     |     |     |     |  |  |
| LEFT  | RIGHT  |                               |           |      |       |     |     |     |     |     |     |  |  |
| ___   | ___  |                               |           |      |       |     |     |     |     |     |     |  |  |
| ___   | ___  |                               |           |      |       |     |     |     |     |     |     |  |  |
| ___   | ___  |                               |           |      |       |     |     |     |     |     |     |  |  |
|   |  | (98) Rotated - Unknown amount |           |      |       |     |     |     |     |     |     |  |  |
|   |  | ___                           | 61-62     |      |       |     |     |     |     |     |     |  |  |
|   |  | ___                           | 63-64     |      |       |     |     |     |     |     |     |  |  |
| <b>TYPE OF REAR SEAT</b>  |  |                               |           |      |       |     |     |     |     |     |     |  |  |
| (2) NO SEAT   |  |                               |           |      |       |     |     |     |     |     |     |  |  |
| (4) NON-FOLDING   |  |                               |           |      |       |     |     |     |     |     |     |  |  |
| (5) FOLDING   |  |                               |           |      |       |     |     |     |     |     |     |  |  |
| (0) UNKNOWN   |  | ___                           | 65        |      |       |     |     |     |     |     |     |  |  |

| DUPLICATE COLUMNS 1-9 FROM PRECEDING CARD            |                     | 0   | 9  |
|--|---------------------|-----|----|
|  |                     | 10  | 11 |
| <b>DAMAGE TO REAR SEAT</b>                           |                     |     |    |
| BACKREST DAMAGED OR LOOSENED (1,2,3,0)*              |                     | ___ | 12 |
| CUSHION DAMAGED OR LOOSENED (1,2,3,0)*               |                     | ___ | 13 |
| <b>SEAT CENTER ARMRESTS (REAR)</b>                   |                     |     |    |
| EQUIPPED (1,2,3,0)*                                  |                     | ___ | 14 |
| DAMAGED (1,2,3,0)*                                   |                     | ___ | 15 |
| <b>REAR SEAT BACK LOCKS</b>                          |                     |     |    |
| LEFT OR CENTER                                       | EQUIPPED (1,2,3,0)* | ___ | 16 |
|  | HELD (1,2,3,0)*     | ___ | 17 |
| RIGHT  | EQUIPPED (1,2,3,0)* | ___ | 18 |
|  | HELD (1,2,3,0)*     | ___ | 19 |
| <b>THIRD SEAT</b>                                    |                     |     |    |
| EQUIPPED (1,2,0)*                                    |                     | ___ | 20 |
| BACKREST DAMAGED (1,2,3,0)*                          |                     | ___ | 21 |
| CUSHION DAMAGED (1,2,3,0)*                           |                     | ___ | 22 |
| <b>BACKLIGHT (REAR WINDOW)</b>                       |                     |     |    |
| DAMAGED (1,2,3,0)*                                   |                     | ___ | 23 |
| OCCUPANT CONTACT (1,2,3,0)*                          |                     | ___ | 24 |
| <b>BACKLIGHT HEADER</b>                              |                     |     |    |
| DAMAGED (1,2,3,0)* convertible                       |                     | ___ | 25 |
| OCCUPANT CONTACT (1,2,3,0)*                          |                     | ___ | 26 |
| <b>WINDOWS CLOSED AT TIME OF COLLISION</b>           |                     |     |    |
| LEFT FRONT (1,2,3,0)*                                |                     | ___ | 27 |
| LEFT REAR (1,2,3,0)*                                 |                     | ___ | 28 |
| RIGHT FRONT (1,2,3,0)*                               |                     | ___ | 29 |
| RIGHT REAR (1,2,3,0)*                                |                     | ___ | 30 |
| BACKLIGHT (1,2,3,0)*                                 |                     | ___ | 31 |
| ALL SIDE WINDOWS OPERABLE AFTER COLLISION (1,2,3,0)* |                     | ___ | 32 |
| POWER SIDE WINDOWS EQUIPPED (1,2,0)*                 |                     | ___ | 33 |
| (PUT NOTES ON FOLD-OUT FLY-LEAF)                     |                     |     |    |

END OF CARD 08

\*WHERE (1,2,0) OR (1,2,3,0) ARE INDICATED, USE 1 FOR YES 3 FOR NOT APPLICABLE  
2 FOR NO 0 FOR UNKNOWN

PASSENGER COMPARTMENT (CONT'D.)

| LEFT SIDE INTERIOR  |                 | DAMAGED<br>(1,2,3,0)* |           | OCCUPANT CONTACT<br>(1,2,3,0)* |           |
|---|-----------------|-----------------------|-----------|--------------------------------|-----------|
|   |                 | PUNCH CODE            | CARD COL. | PUNCH CODE                     | CARD COL. |
| FRONT   | DOOR -----      | ---                   | 34        | ---                            | 35        |
|   | HARDWARE -----  | ---                   | 36        | ---                            | 37        |
|   | ARMREST -----   | ---                   | 38        | ---                            | 39        |
|   | GLASS -----     | ---                   | 40        | ---                            | 41        |
| REAR  | DOOR AREA ----- | ---                   | 42        | ---                            | 43        |
|   | HARDWARE -----  | ---                   | 44        | ---                            | 45        |
|   | ARMREST -----   | ---                   | 46        | ---                            | 47        |
|   | GLASS -----     | ---                   | 48        | ---                            | 49        |
| ROOF SIDE RAIL -----  |                 | ---                   | 50        | ---                            | 51        |
| B-PILLAR (ALSO REAR PILLAR ON PICK-UP TRUCK, CORVETTE, '71 FIREBIRD & CAMARO) ----- |                 | ---                   | 52        | ---                            | 53        |
| C-PILLAR -----  |                 | ---                   | 54        | ---                            | 55        |
| D-PILLAR (REAR PILLAR ON STATION WAGONS & LIMOUSINES) -----                         |                 | ---                   | 56        | ---                            | 57        |
| OTHER: _____  |                 | ---                   | 58        | ---                            | 59        |
|   |                 |                       |           | END OF<br>CARD 09              |           |

LEFT SIDE INTERIOR

\*WHERE (1,2,0) OR (1,2,3,0) ARE INDICATED, USE 1 FOR YES 3 FOR NOT APPLICABLE  
2 FOR NO 0 FOR UNKNOWN

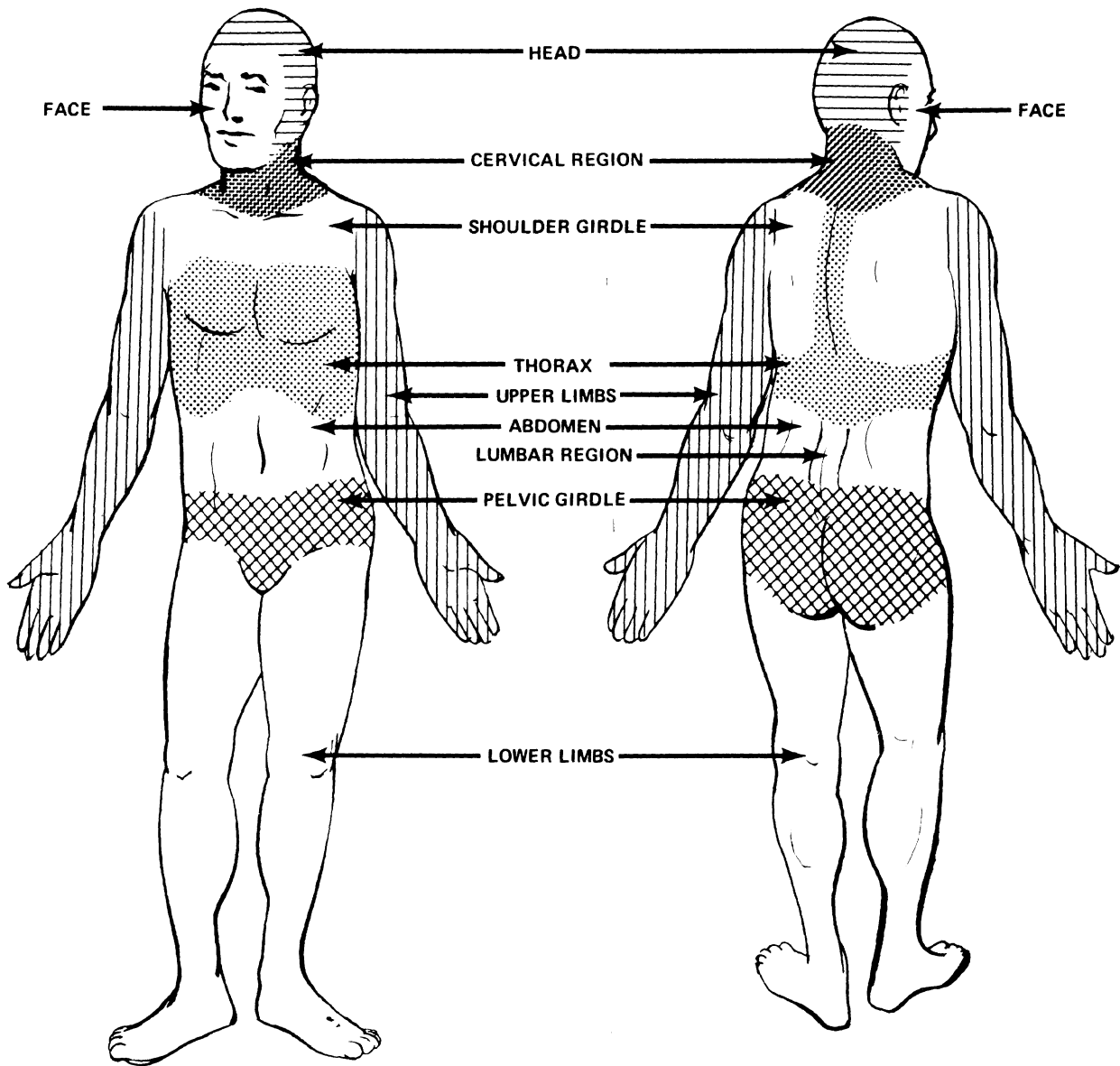
PASSENGER COMPARTMENT (CONT'D.)

| DUPLICATE COLUMNS 1-9 FROM PRECEDING CARD $\frac{1}{10}$ $\frac{0}{11}$          |                      | DAMAGED<br>(1,2,3,0)* |              | OCCUPANT<br>CONTACT<br>(1,2,3,0)* |              |
|--|----------------------|-----------------------|--------------|-----------------------------------|--------------|
|  |                      | PUNCH<br>CODE         | CARD<br>COL. | PUNCH<br>CODE                     | CARD<br>COL. |
| <b>RIGHT SIDE INTERIOR</b>   |                      |                       |              |                                   |              |
| FRONT  | DOOR -----           | _____                 | 12           | _____                             | 13           |
|  | HARDWARE -----       | _____                 | 14           | _____                             | 15           |
|  | ARMREST -----        | _____                 | 16           | _____                             | 17           |
|  | GLASS -----          | _____                 | 18           | _____                             | 19           |
| REAR   | DOOR AREA -----      | _____                 | 20           | _____                             | 21           |
|  | HARDWARE -----       | _____                 | 22           | _____                             | 23           |
|  | ARMREST -----        | _____                 | 24           | _____                             | 25           |
|  | GLASS -----          | _____                 | 26           | _____                             | 27           |
| ROOF SIDE RAIL -----   |                      | _____                 | 28           | _____                             | 29           |
| B-PILLAR (ALSO REAR PILLAR ON PICK-UP TRUCK, CORVETTE, '71 FIREBIRD & CAMARO) -- |                      | _____                 | 30           | _____                             | 31           |
| C-PILLAR -----   |                      | _____                 | 32           | _____                             | 33           |
| D-PILLAR (REAR PILLAR ON STATION WAGONS & LIMOUSINES) -----                      |                      | _____                 | 34           | _____                             | 35           |
| OTHER: _____   |                      | _____                 | 36           | _____                             | 37           |
| ROOF INTERIOR  | HEADLINING -----     | _____                 | 38           | _____                             | 39           |
|  | ROOF STRUCTURE ----- | _____                 | 40           | _____                             | 41           |
|  |                      |                       |              | END OF<br>CARD 10                 |              |

\*WHERE (1,2,0) OR (1,2,3,0) ARE INDICATED, USE 1 FOR YES 3 FOR NOT APPLICABLE  
2 FOR NO 0 FOR UNKNOWN

### OCCUPANT INFORMATION SECTION

1. THIS SECTION IS TO BE FILLED IN FOR EACH OCCUPANT, WHETHER INJURED OR NOT.
2. IF THERE ARE MORE THAN THREE OCCUPANTS, USE ADDITIONAL BLANK COPIES OF THIS FORM AND ATTACH OCCUPANT PAGES TO THIS REPORT.
3. THE FOLLOWING FIGURE IS AN EXPLANATION OF THE BODY REGIONS LISTED ON PAGES 30 and 30D.



OCCUPANT

OCCUPANT INFORMATION

OCCUPANT

| DUPLICATE COLUMNS 1-9 FROM PRECEDING CARD $\frac{1}{10}$ $\frac{1}{11}$   |  | PUNCH CODE | CARD COL. | RESTRAINT SYSTEM   | PUNCH CODE | CARD COL. |
|---|--|------------|-----------|--|------------|-----------|
| <b>OCCUPANT NUMBER</b>  |  | ___        | 12-13     | <b>LAP BELT</b>  |            |           |
| <b>SEAT LOCATION</b><br>(4) FRONT<br>(5) REAR<br>(6) THIRD<br>(7) OTHER: _____<br>(0) UNKNOWN   |  |            |           | EQUIPPED FOR THIS POSITION (1,2,0)*  | ___        | 27        |
| <b>POSITION ON SEAT</b><br>(4) LEFT<br>(5) LEFT CENTER<br>(6) CENTER<br>(7) RIGHT CENTER<br>(8) RIGHT<br>(9) ALL (Lying on seat)<br>(0) UNKNOWN   |  |            |           | WORN BY OCCUPANT (1,2,3,0)*  | ___        | 28        |
| <b>POSTURE</b><br>(1) SITTING ON SEAT<br>(2) ON LAP OR IN ARMS<br>(3) STANDING ON SEAT<br>(4) STANDING ON FLOOR<br>(5) IN BASSINET<br>(6) IN CHILD SEAT<br>(7) LYING ON SEAT<br>(8) LYING OR SITTING ON FLOOR<br>(9) EXTERNAL TO PASS. COMP.<br>(0) UNKNOWN |  |            | 16        | WORN SNUGGLY (1,2,3,0)*  | ___        | 29        |
| <b>AGE</b><br>YEARS, <u>OR</u><br>MONTHS (INFANTS)<br>to 24 months<br>(ENTER "0" S IF UNKNOWN)  |  | ___        | 17-18     | LOCKING RETRACTOR (1,2,3,0)*   | ___        | 30        |
| <b>WEIGHT, LBS.</b><br>(ENTER "0" S, IF UNKNOWN)  |  | ___        | 21-23     | <b>UPPER TORSO RESTRAINT</b><br>Upper Torso Belt and/or Air Bag Equipped   |            |           |
| <b>HEIGHT, INCHES</b><br>(ENTER "0" S, IF UNKNOWN)  |  | ___        | 24-25     | (1) No A/B & Upper Belt Equipped<br>(2) No A/B & Upper Belt Not Equipped<br>(0) No A/B & Upper Belt Unk if Equipped<br>(4) A/B Equipped & Upper Belt Equipped<br>(5) A/B Equipped & Upper Belt Not Equipped<br>(6) A/B Equipped & Upper Belt Unk if Equipped<br>(9) Both A/B & Upper Belt Unk if Equipped  |            | 31        |
| <b>SEX</b><br>(4) Male<br>(5) Female<br>(6) Large Animal<br>(0) Unknown   |  | ___        | 26        | Upper Torso Belt and/or Air Bag Used   |            |           |
|   |  |            |           | (1) No Deployment or No Bag; Upper Belt Worn<br>(2) No Deployment or No Bag; Upper Belt Not Worn<br>(3) No Deployment or No Bag; No Upper Belt<br>(0) No Deployment or No Bag; Unknown if Worn<br>(4) Deployment; Upper Belt Worn<br>(5) Deployment; Upper Belt Not Worn<br>(6) Deployment; No Upper Belt<br>(7) Deployment; Upper Belt Unknown if Worn<br>(9) Both Upper Torso Worn or Air Bag Deployed Unknown |            | 32        |
|   |  |            |           | WORN CORRECTLY (1,2,3,0)*  | ___        | 33        |
|   |  |            |           | INERTIA REEL (1,2,3,0)*  | ___        | 34        |
|   |  |            |           | <b>LAP AND/OR UPPER TORSO RESTRAINT USAGE CODE</b>   |            |           |
|   |  |            |           | <b>TYPE OF SYSTEM USED</b><br>(3) Not Applicable, Not Used<br>(4) 3-point<br>(5) 4-point<br>(6) Other (Not 2-point)<br>(7) Air Bag Deployed & No Belts Used<br>(8) Air Bag Deployed & Any Belts Used<br>(9) Air Bag Deployed & Unknown Belt Use<br>(0) Unknown   |            | 37        |
|   |  |            |           | <b>CHILD RESTRAINT SYSTEM:</b><br>NOTE MAKE AND MODEL NUMBER<br>_____<br>_____   |            |           |
|   |  |            |           | <b>CHILD RESTRAINT CODE</b>  | ___        | 38-39     |
|   |  |            |           |  | ___        | 40        |
|   |  |            |           |  | ___        | 41        |

\*WHERE (1,2,0) OR (1,2,3,0) ARE INDICATED, USE 1 FOR YES 3 FOR NOT APPLICABLE  
2 FOR NO 0 FOR UNKNOWN

OCCUPANT INFORMATION

CODES FOR AREAS OF OCCUPANT CONTACT

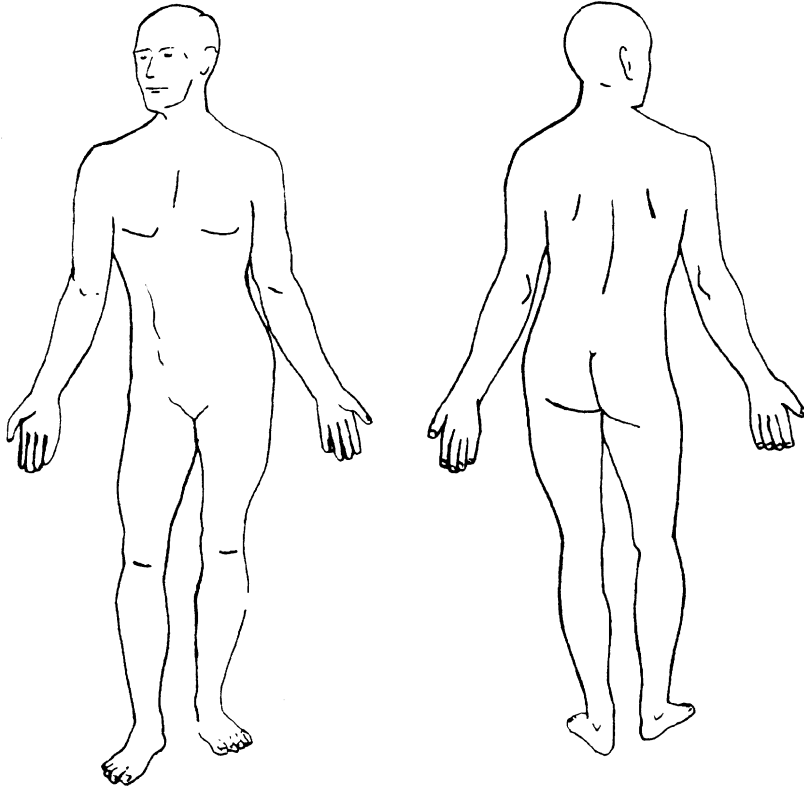
See Page 30A

| EJECTION   | PUNCH CODE         | CARD COL.    |
|--|--------------------|--------------|
| <p><b>DEGREE OF EJECTION</b></p> <p>(2) NONE<br/>                     (4) PARTIAL<br/>                     (5) COMPLETE<br/>                     (0) UNKNOWN</p> <p><b>AREA OF EJECTION</b></p> <p>(3) NOT APPLICABLE<br/>                     (1) WINDOW, LEFT SIDE<br/>                     (2) " , RIGHT SIDE<br/>                     (4) " , REAR<br/>                     (5) DOOR, LEFT SIDE<br/>                     (6) " , RIGHT SIDE<br/>                     (7) TAILGATE<br/>                     (8) WINDSHIELD<br/>                     (9) ROOF OR OPEN CONVERTIBLE<br/>                     (0) UNKNOWN</p>   | <p>—</p>           | <p>42</p>    |
| <p><b>TREATMENT/MORTALITY</b></p> <p>(0) None<br/>                     (1) First Aid - On-scene or outpatient<br/>                     (2) Hospitalized - Observation under 24 hours<br/>                     (3) Hospitalized - Significant Treatment or over 24 hours<br/>                     (4) Fatal - Dead at Scene<br/>                     (5) Fatal - Dead on Arrival at Hospital<br/>                     (6) Fatal - Dead within 24 hours<br/>                     (7) Fatal - Dead 24 hours to 1 year<br/>                     (8) Fatal - Time of Death Unknown<br/>                     (9) Unknown</p>   | <p>—</p>           | <p>44</p>    |
| <p><b>OVERALL SEVERITY OF INJURIES</b><br/>                     (SEE INSIDE OF BACK COVER)</p> <p>(00) NONE<br/>                     (01) MINOR<br/>                     (02) NON-DANGEROUS, MODERATE<br/>                     (03) NON-DANGEROUS, SEVERE<br/>                     (04) DANGEROUS, SERIOUS<br/>                     (05) DANGEROUS, CRITICAL<br/>                     (06) FATAL LESIONS IN 1 REGION<br/>                     (07) FATAL LESIONS IN 1 REGION<br/>                     (08) FATAL LESIONS IN 2 REGIONS<br/>                     (09) FATAL LESIONS IN 3 OR MORE REGIONS<br/>                     (98) INJURY UNKNOWN<br/>                     (99) INJURED, SEVERITY UNKNOWN<br/>                     (10) FATAL, details unknown</p> | <p>— —</p>         | <p>45-46</p> |
|  | <p>END OF CARD</p> |              |

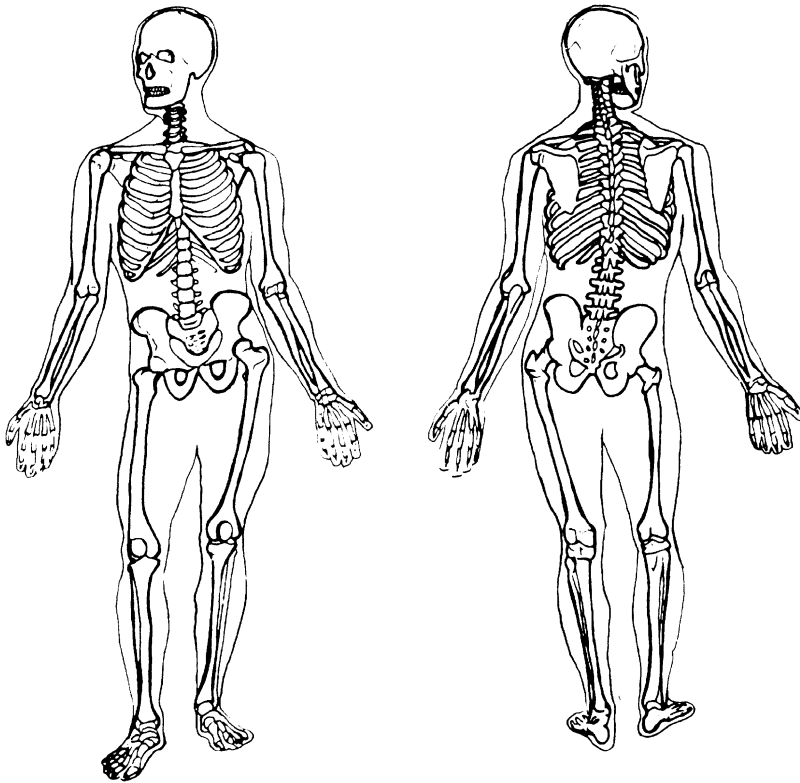
OCCUPANT

\*HOSPITALIZED: INJURIES REQUIRING HOSPITAL RECUPERATION AND TREATMENT FOR A PERIOD OF AT LEAST ONE DAY. "HELD FOR OBSERVATION ONLY" IS NOT CONSIDERED "HOSPITALIZED" IN THIS DEFINITION.

INDICATE LOCATION OF INJURIES, INCLUDING MAJOR BRUISES



SOFT TISSUE INJURIES



SKELETAL INJURIES

Source of Information \_\_\_\_\_

OCCUPANT



### OCCUPANT INJURY DETAIL

1. This page is only for the occupant just described.
2. Enter occupant number from page 28. (This refers only to the order in which occupant information is entered and is not related to seated position.)
3. Enter severity code (only one per box) for each type of injury to each body region. (Mark boxes with 1-6, X, Z only, as instructed inside back cover.)
4. Do not fill in the boxes where there was no injury.
5. If you are reasonably assured that one or more specific components or area(s) contacted by this occupant resulted in an associable injury, enter the proper code(s) in the starred (★) section. (See Page 29 for codes.)
6. Do not fill in the boxes where there was no contact.

| D<br>U<br>P<br>L<br>I<br>C<br>A<br>T<br>E<br>F<br>R<br>O<br>M<br>P<br>R<br>E<br>C<br>E<br>D<br>I<br>N<br>G<br>C<br>A<br>R<br>D | C<br>A<br>R<br>D<br>N<br>U<br>M<br>B<br>E<br>R | O<br>C<br>C<br>U<br>P<br>A<br>N<br>T<br>N<br>O. | B<br>O<br>D<br>Y<br>R<br>E<br>G<br>I<br>O<br>N | ★<br>E<br>N<br>T<br>E<br>R<br>C<br>O<br>D<br>E<br>(<br>S)<br>F<br>O<br>R<br>A<br>R<br>E<br>(<br>S)<br>O<br>F<br>P<br>O<br>S<br>S<br>I<br>B<br>L<br>E<br>C<br>O<br>N<br>T<br>A<br>C<br>T |  |  |  | E<br>N<br>T<br>E<br>R<br>S<br>E<br>V<br>E<br>R<br>I<br>T<br>Y<br>C<br>O<br>D<br>E<br>S |       |       |       |       |   |                                      |  |   |   |                                      |   |                  |
|--|--|---|--|---|--|--|--|--|-------|-------|-------|-------|---|--------------------------------------|--|---|---|--------------------------------------|---|------------------|
|  | 1-9  | 10-11   |  |   |  |  |  | 12-13  | 14-15 | 16-17 | 18-19 | 20-21 | O<br>V<br>E<br>R<br>A<br>L<br>L<br>I<br>N<br>J<br>U<br>R<br>Y<br>T<br>O<br>B<br>O<br>D<br>Y<br>R<br>E<br>G<br>I<br>O<br>N | F<br>R<br>A<br>C<br>T<br>U<br>R<br>E | L<br>A<br>C<br>E<br>R<br>A<br>T<br>I<br>O<br>N | C<br>O<br>N<br>T<br>U<br>S<br>I<br>O<br>N | C<br>O<br>M<br>P<br>L<br>A<br>I<br>N<br>T<br>O<br>F<br>P<br>A<br>I<br>N | A<br>B<br>R<br>A<br>S<br>I<br>O<br>N | C<br>O<br>N<br>C<br>U<br>S<br>I<br>O<br>N | B<br>U<br>R<br>N |
|  | 12   |   | INTERNAL<br>ORGANS                             |   |  |  |  |  |       |       |       |       |   |                                      |  |   |   |                                      |   |                  |
|  | 13   |   | BRAIN  |   |  |  |  |  |       |       |       |       |   |                                      |  |   |   |                                      |   |                  |
|  | 14   |   | FACE   |   |  |  |  |  |       |       |       |       |   |                                      |  |   |   |                                      |   |                  |
|  | 15   |   | HEAD   |   |  |  |  |  |       |       |       |       |   |                                      |  |   |   |                                      |   |                  |
|  | 16   |   | NECK<br>(CERVICAL<br>REGION)                   |   |  |  |  |  |       |       |       |       |   |                                      |  |   |   |                                      |   |                  |
|  | 17   |   | SHOULDER<br>GIRDLE                             |   |  |  |  |  |       |       |       |       |   |                                      |  |   |   |                                      |   |                  |
|  | 18   |   | RIGHT<br>UPPER<br>LIMB                         |   |  |  |  |  |       |       |       |       |   |                                      |  |   |   |                                      |   |                  |
|  | 19   |   | LEFT<br>UPPER<br>LIMB                          |   |  |  |  |  |       |       |       |       |   |                                      |  |   |   |                                      |   |                  |
|  | 20   |   | CHEST &<br>UPPER BACK<br>(THORAX)              |   |  |  |  |  |       |       |       |       |   |                                      |  |   |   |                                      |   |                  |
|  | 21   |   | LOWER BACK<br>(LUMBAR<br>REGION)               |   |  |  |  |  |       |       |       |       |   |                                      |  |   |   |                                      |   |                  |
|  | 22   |   | ABDOMEN  |   |  |  |  |  |       |       |       |       |   |                                      |  |   |   |                                      |   |                  |
|  | 23   |   | PELVIC<br>GIRDLE                               |   |  |  |  |  |       |       |       |       |   |                                      |  |   |   |                                      |   |                  |
|  | 24   |   | RIGHT<br>LOWER<br>LIMB                         |   |  |  |  |  |       |       |       |       |   |                                      |  |   |   |                                      |   |                  |
|  | 25   |   | LEFT<br>LOWER<br>LIMB                          |   |  |  |  |  |       |       |       |       |   |                                      |  |   |   |                                      |   |                  |
|  | 26   |   | WHOLE BODY                                     |   |  |  |  |  |       |       |       |       |   |                                      |  |   |   |                                      |   |                  |

OCCUPANT

KEYPUNCH NOTE: Each line represents one card. Punch only the lines with handwritten information.

## FRONT OF PASSENGER COMPARTMENT

(12) WINDSHIELD  
 (05) INSTRUMENT PANEL (SPECIFIC AREA UNKNOWN)  
 (54) UPPER INSTRUMENT PANEL (X)  
 (55) MIDDLE INSTRUMENT PANEL (Y)  
 (56) LOWER INSTRUMENT PANEL (Z)  
 (57) BENEATH INSTRUMENT PANEL  
 (28) FOOT CONTROLS (INCLUDES PARKING BRAKE PEDAL)  
 (84) PARKING BRAKE HANDLE (IN FRONT)  
 (07) PARKING BRAKE HANDLE (LOCATION UNKNOWN)  
 (09) STEERING ASSEMBLY (SPECIFIC AREA UNKNOWN)  
 (65) STEERING WHEEL  
 (66) STEERING WHEEL COLUMN  
 (59) TRANSMISSION LEVER ON COLUMN  
 (11) TRANSMISSION SELECTOR LEVER (LOCATION UNKNOWN)  
 (67) IGNITION KEYS  
 (06) MIRRORS  
 (02) GLOVE COMPARTMENT AREA  
 (03) HARDWARE ITEMS (SPECIFIC ITEM UNKNOWN)  
 (81) ASHTRAY (INSTRUMENT PANEL)  
 (82) INSTRUMENTS  
 (83) CONTROL KNOBS AND LEVERS  
 (04) HEATER OR AC DUCTS  
 (01) AIR CONDITIONING OR VENTILATION OUTLETS  
 (08) RADIO  
 (58) ADD-ON TAPE DECK, RADIO, AIR CONDITIONER  
 (53) PARCEL TRAY  
 (86) VERTICAL CONSOLE  
 (48) KNEE RESTRAINT

## SIDES

(20) SURFACE OF SIDE INTERIORS  
 (19) HARDWARE  
 (13) ARMRESTS  
 (22) WINDOW GLASS  
 (21) WINDOW FRAMES  
 (14) A-PILLAR  
 (15) B-PILLAR  
 (16) C-PILLAR  
 (17) D-PILLAR

## INTERIOR

(29) FRONT SEATBACKS  
 (33) RESTRAINT SYSTEM HARDWARE  
 (34) RESTRAINT SYSTEM WEBBING  
 (87) AIR CUSHION SKIN (AIRBAG)  
 (30) HEAD RESTRAINTS  
 (32) OTHER OCCUPANTS  
 (31) INTERIOR LOOSE OBJECT  
 (50) REAR SEAT CUSHION AND BACK  
 (51) FRONT SEAT CUSHION  
 (52) INTERNAL FLYING GLASS (FROM ANY SOURCE)  
 (89) UNDER SEAT BOTTOM  
 (40) FLOOR  
 (27) CONSOLE  
 (44) TRANSMISSION LEVEL (ON FLOOR OR CONSOLE)  
 (8) PARKING BRAKE HANDLE (ON FLOOR OR CONSOLE)  
 (4) ARMREST (ON SEAT)

## ROOF

(26) ROOF SIDE RAILS  
 (10) SUNVISORS & FITTINGS AND/OR TOP MOULDING  
 (HEADER)  
 (25) ROOF OR CONVERTIBLE TOP  
 (39) BACKLIGHT HEADER  
 (24) COAT HOOKS  
 (18) DOME LIGHT

## REAR

(88) SURFACE OF REAR INTERIOR  
 (23) BACKLIGHT (REAR WINDOW)

## EXTERIOR SURFACE OF CASE VEHICLE

(37) OUTSIDE SURFACE OF CASE VEHICLE  
 (SPECIFIC AREA UNKNOWN)  
 (35) HOOD OF CASE VEHICLE  
 (60) EXTERIOR OF CASE VEHICLE HARDWARE  
 (E.G., OUTSIDE MIRRORS, ANTENNA, TRIM, DOOR  
 HANDLES, ETC.)  
 (62) EXTERIOR SIDE ROOF RAIL OF CASE VEHICLE  
 (63) TRUNK LID OF CASE VEHICLE  
 (64) TIRES OF CASE VEHICLE

## BEYOND CASE VEHICLE BOUNDARY

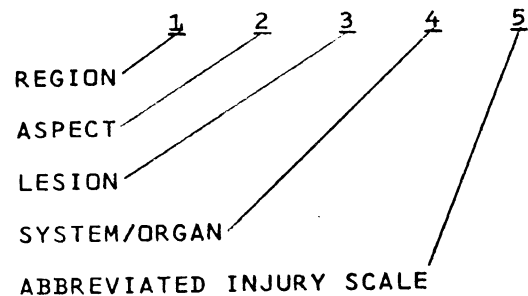
(36) AREA EXTERIOR TO CAR (SPECIFIC AREA UNKNOWN)  
 (70) HOOD OF OTHER VEHICLE  
 (71) OTHER VEHICLE EXTERIOR HARDWARE (E.G., OUTSIDE MIR-  
 RORS, ANTENNA, TRIM, ORNAMENTS, DOOR HANDLES, ETC.)  
 (73) EXTERIOR SIDE ROOF RAIL OF OTHER VEHICLE  
 (74) HEADLIGHT OR FRONT GRILL OF OTHER VEHICLE  
 (75) TRUNK OF OTHER VEHICLE  
 (76) OUTSIDE SURFACE OF OTHER VEHICLE  
 (77) TIRES OF OTHER VEHICLE  
 (78) GROUND  
 (79) WATER  
 (80) EXTERIOR OBJECT (NOT VEHICLE, GROUND OR WATER):

## PENETRATING OBJECTS

(61) OTHER VEHICLE  
 (72) OBJECTS: \_\_\_\_\_

## MISCELLANEOUS

(38) OTHER: \_\_\_\_\_  
 (98) IMPACT FORCE, "WHIPLASH", HYPEREXTENSION/COMPRESSION  
 (99) MISSING/NO CONTACT  
 (00) UNKNOWN AREA OF CONTACT



| <u>1</u> BODY REGION | <u>2</u> ASPECT  | <u>3</u> LESION | <u>4</u> SYSTEM/ORGAN   | <u>5</u> AIS |
|----------------------|------------------|-----------------|-------------------------|--------------|
| H HEAD-SKULL         | R RIGHT          | L LACERATION    | S SKELETAL              | 0 NONE       |
| F FACE               | L LEFT           | C CONTUSION     | V VERTEBRAE             | 1 MINOR      |
| N NECK               | B BILATERAL      | A ABRASIONS     | J JOINTS                | 2 MODERATE   |
| S SHOULDER           | C CENTRAL        | F FRACTURES     | D DIGESTIVE             | 3 SEVERE     |
| X UPPER EXTREMITIES  | A ANTERIOR/FRONT | P PAIN          | L LIVER                 | 4 SERIOUS    |
| A ARM (UPPER)        | P POSTERIOR/BACK | K CONCUSSION    | N NERVOUS SYSTEM        | 5 CRITICAL   |
| E ELBOW              | S SUPERIOR/UPPER | H HEMORRHAGE    | B BRAIN                 | 6 FATAL      |
| R FOREARM            | I INFERIOR/LOWER | V AVULSION      | C SPINAL CORD           | 9 UNKNOWN    |
| W WRIST-HAND         | W WHOLE REGION   | R RUPTURE       | E EYES, EARS            |              |
| C CHEST              | U UNKNOWN        | S SPRAINS       | CARDIOVASCULAR          |              |
| M ABDOMEN            |                  | D DISLOCATIONS  | A ARTERIES              |              |
| B BACK               |                  | N CRUSHING      | H HEART                 |              |
| P PELVIC-HIP         |                  | M AMPUTATION    | Q SPLEEN                |              |
| Y LOWER EXTREMITIES  |                  | B BURN          | G UROGENITAL            |              |
| T THIGH              |                  | X ASPHYXIA      | K KIDNEYS               |              |
| K KNEE               |                  | O OTHER         | R RESPIRATORY           |              |
| L LEG (LOWER)        |                  | U UNKNOWN       | P PULMONARY, LUNGS      |              |
| Q ANKLE-FOOT         |                  |                 | M MUSCLES               |              |
| O WHOLE BODY         |                  |                 | I INTEGUMENTARY         |              |
| U UNKNOWN            |                  |                 | W ALL SYSTEMS IN REGION |              |
|                      |                  |                 | U UNKNOWN               |              |

OCUPANT SUPPLEMENT

30C

7 CASE I.D. NUMBER

CARD 8 0

OCUPANT NUMBER

2 - 4 - 9

12

Role of Individual at First Impact. (Note: Record Driver Information for Code 1 below)

- (0) Unknown
- (1) Motor Vehicle Driver
- (2) Motor Vehicle Passenger (not driver)
- (3) Not Applicable, No Occupant

14

OCUPANT ALCOHOL INVOLVEMENT

Occupant Alcohol Involvement/ Test

- (0) Unknown (999 Below)
- (1) No Test, Alcohol Not Suspected (000 Below)
- (2) No Test, Alcohol Indicated & No Test Requested (999 Below)
- (3) No Test, Test Requested & Refused (999 Below)
- (4) No Test, Reason Unknown & Alcohol Indicated (999 Below)
- (5) No Test, But Charged (DWI Booked Drunk)
- (6) No Test, Fled Scene
- (8) BAC Tested, Results Not Provided (999 Below)
- (9) BAC Tested and Results Reported (BAC Below)

18

Occupant Blood Alcohol Level (MG %)

- (999) Unknown, No Results
- (000) No Drinking or "-Results" Record Actual MG %

19

Occupant Alcohol Test

- (1) Yes, Type Unknown
- (2) None
- (4) Urine
- (5) Spinal
- (6) Breath
- (7) Blood
- (8) Other:
- (9) Several of Above
- (0) Unknown

22

Posture

- (10) Sitting on Seat
- (11) Sitting on Seat in Abnormal Position (e.g. Feet on Dash, Sideways, Etc.)
- (12) Sitting on Console
- (13) Sitting on Folded Seat-Back (e.g. Station Wagons)
- (20) On Lap or in Arms
- (30) Standing on Seat
- (40) Standing on Floor
- (50) In Bassinet
- (60) In Child Seat
- (65) In Child Harness
- (70) Lying on Seat
- (80) Lying or Sitting on Passenger Floor
- (85) On Station Wagon Cargo Floor
- (90) External to Passenger Compartment
- (00) Unknown
- (98) Other
- (83) Sitting on Other Object

15

Non-Impact Medical Conditions For Each Occupant

- (0) None
- (1) Yes - Time and Type Unknown
- (2) Pre-Crash Fatal (Clinical Death at Wheel)
- (3) Pre-Crash Non-Fatal (Prior Injury, Stroke)
- (4) Pregnant
- (5) Post-Crash Fatal (Drowning)
- (6) Post-Crash Non-Fatal Injury
- (8) Other:
- (9) Unknown

17

Seat Belt Buzzer/Interlock Equipped

- (0) Unknown if Equipped
- (1) Equipped, Type Unknown
- (2) Not Equipped
- (4) Non-Cycled Buzzer
- (5) Ignition Interlock
- (9) Other:

Seat Belt Buzzer Operational

- (0) Unknown if Operational
- (1) Yes, Operational
- (2) Not Operational, Reason Unknown
- (3) Not Applicable, Not Equipped

System Inhibited by:

- (4) Fastening Belts Together (Behind Occupant, Behind Seat, Under Seat, in Front of Seat, Etc.)
- (5) Disconnection, Removal, Intentional Destruction
- (6) Fixing in Pulled-Out Position (Knotted, Taped, Twisted, Folded Back, Tucked into Seat, Hook to Upper Belt, Etc.)
- (7) Temporarily Fixing (Sitting on Belt, Holding Onto Belt, Hook on Door, Etc.)
- (8) Letting it Buzz
- (9) Other: (Defective)

Ignition Interlock Operational (1,2,3,0)

Passive Restraint System Equipped

- (1) Yes, Type Unknown
- (2) No
- (4) Air Bag
- (9) Other:
- (0) Unknown

23

Activated

- (1) Yes
- (2) No
- (3) Inapplicable
- (0) Unknown

26

27

Restraint System Malfunction or Separation

- (1) Yes, Area Unknown
- (2) No
- (3) Not Applicable, No Restraints Equipped
- (4) At Buckle
- (5) In Webbing
- (6) At Anchorage
- (7) In Retractor
- (0) Unknown Whether Malfunction Occurred
- (8) In Passive System

24

28

Investigator Judgement of Restraint System Effectiveness

- (0) Unknown
- (1) Reduced Injury Severity
- (2) Could Have Reduced Severity if Worn
- (3) No Opinion
- (4) Could Not Have Reduced Severity if Worn
- (5) Did Not Reduce Overall Severity
- (6) Did Increase Overall Severity
- (7) Would Have Increased Severity
- (8) More Restraints Would Have Reduced Severity Even More

25

29

1/3/75

OCCUPANT INJURY CLASSIFICATION

PRIMARY OIC

| BODY REGION | ASPECT | LESION | SYSTEM/ORGAN | SEVERITY |
|-------------|--------|--------|--------------|----------|
| 22          |        |        |              |          |
| 23          |        |        |              |          |
| 24          |        |        |              |          |
| 25          |        |        |              |          |
| 26          |        |        |              |          |

ASSOCIATED OIC'S

| BODY REGION | ASPECT | LESION | SYSTEM/ORGAN | SEVERITY |
|-------------|--------|--------|--------------|----------|
| 27          |        |        |              |          |
| 28          |        |        |              |          |
| 29          |        |        |              |          |
| 30          |        |        |              |          |
| 31          |        |        |              |          |

| BODY REGION | ASPECT | LESION | SYSTEM/ORGAN | SEVERITY |
|-------------|--------|--------|--------------|----------|
| 32          |        |        |              |          |
| 33          |        |        |              |          |
| 34          |        |        |              |          |
| 35          |        |        |              |          |
| 36          |        |        |              |          |

| ★ ENTER CODE(S) FOR AREA(S) OF POSSIBLE CONTACT |      |  |  |  |
|---|------|--|--|--|
| 1819  | 2021 |  |  |  |
| 1617  |      |  |  |  |
| 1415  |      |  |  |  |
| 1213  |      |  |  |  |

OCCUPANT NO.

CARD NUMBER

- 30
- 81
- 82
- 83
- 84
- 85
- 86
- 87
- 88
- 89
- 90
- 91
- 92
- 93
- 94
- 95

D U P L I C A T E . F R O M P R E C E D I N G C A R D

CRASH OCCUPANT MEDICAL Treatment/Mortality

- (00) None
- (01) First Aid at Scene
- (02) Treated at Hospital/Clinic but not Admitted
- (03) Hospitalized (Observation less than 24 Hrs.
- (04) Hospitalized for Over 24 Hours or Significant Treatment
- (05) Fatal - Dead at Scene
- (06) Fatal - DCA
- (07) Fatal - Dead Within 24 Hours
- (08) Fatal - Dead 24 Hours - 1 Year
- (09) Fatal - Dead, Period Unknown
- (99) Unknown

EMS Contributory to Severity (0,1,2)

- 32
- 33
- 34
- Has Emergency Medical Services (EMS) contributory to injury severity or fatality, e.g., because of delays or due to improper/insufficient/no treatment on-scene or in-transport? (4) Exemplary Service
- Autopsy Performed (0,1,2,3)
- Overall Police Injury Severity (KABC) (Note: Report Police Judgment)

- (0) O.D No Injury
- (1) C Possible Injury
- (2) B Nonincapacitating Injury
- (3) A Incapacitating Injury
- (4) K Fatal Injury
- (9) Unknown
- (5) Reported as Injured



CPIR Supplement 1/75 3  
 Report Number  
 Card Number  $\frac{90}{1011}$

REPORTING DATA (99999) for Unknown

Date of Field Investigation  
 MO DAY YEAR

$\frac{12}{13} \frac{14}{15} \frac{16}{17}$   
 Date Submitted/Published  
 (inside title page)

$\frac{18}{19} \frac{20}{21} \frac{22}{23}$   
 Team case number

$\frac{24}{25} \frac{26}{27} \frac{28}{29} \frac{30}{31} \frac{32}{33} \frac{34}{35}$   
 HSRI CPIR Editor (J) AT (U) CC  
 (1) JD (A) DS (K) BW (V) LC  
 (2) PG (B) HS (L) JS (W) KT  
 (3) BB (C) TS/BJ (M) JW (X) MH  
 (4) BP (D) DL (N) ST (Y) RP  
 (5) BG (E) JA/KP (P) KF (Z) GZ  
 (6) SV (F) PJ/BM (Q) BP  
 (7) PK (G) TM/PC (R) PS  
 (8) JW (H) JD/AR (S) MH  
 (9) AM (I) GB/WB (T) RC  
 (0) Unknown

Number of CASE VEHICLES reported  
 in accident (Completed CPIRs)  $\frac{33}{36}$

Original Vehicle Report Form

- (0) No Form (MDC)
- (1) CPIR - R1
- (2) CPIR - R2
- (3) CPIR - R3
- (7) CPIR - Baylor
- (8) UCLA - TRG
- (5) Truck Form (1/74)  $\frac{37}{37}$

Recommendations/Conclusions

31

Matrix Cell

Number

(9) for "9 or More"

|   |             |     |
|---|-------------|-----|
| 1 | Human       |     |
|   | Pre-Crash   | 38  |
| 2 | Crash       | --- |
| 3 | Post-Crash  | --- |
|   | Vehicle     |     |
| 4 | Pre-Crash   | --- |
| 5 | Crash       | --- |
| 6 | Post-Crash  | --- |
|   | Environment |     |
| 7 | Pre-Crash   | --- |
| 8 | Crash       | --- |
| 9 | Post-Crash  | --- |

$\frac{H}{47} \frac{S}{48} \frac{49}{50} \frac{51}{52} \frac{53}{54} \frac{55}{56}$

$\frac{P}{57} \frac{B}{58} \frac{59}{60} \frac{61}{62} \frac{63}{64} \frac{65}{66}$

Other Vehicle CPIR Report No.  
 If 3 Case Vehicles, link 1 to 2, 2 to 3, and 3 to 1.

$\frac{67}{68} \frac{69}{70} \frac{71}{72} \frac{73}{74}$

Date Edited

$\frac{75}{76} \frac{77}{78} \frac{79}{80}$

end of card 90

2nd edited by:

Date:

Duplicate Col 1-9 from Preceding 91

32

**SUPPORTING DATA**

- (1) Yes
- (2) No
- (3) Not applicable
- (0) Unknown

Psychological Factors

- Psychological Review
- Any Personal Interviews
- Katz Adjustment Scales (KAS)
- Michigan Alcoholism Screening Test (UM)
- Driver's License Record (Previous Accidents)

Medical Factors (included)

- Medical Examiners/Autopsy
- AFIP Medicolegal Autopsy

Toxicological/Alcohol Test  
Includes Case Driver Only  
Breathalyzer

- Injury Causation Analysis
- Injury Summary Diagram
- X-Rays (taken or included)
- Medical History

Accident Factors (included)

- Map Location
- Collision Diagram/Sketch
- Site Accident History
- Narrative Description
- Police Report
- Who Estimated Speeds for Case Vehicle
- (0) No One
- (1) Investigator
- (2) Police
- (3) Driver
- (4) Witness/Passenger
- (8) Other: \_\_\_\_\_
- (9) Unknown

Prior to Impact

At Impact

| Code | Col. |
|------|------|
| —    | 12   |
| —    | 13   |
| —    | 14   |
| —    | 15   |
| —    | 16   |
| —    | 17   |
| —    | 18   |
| —    | 19   |
| —    | 20   |
| —    | 21   |
| —    | 22   |
| —    | 23   |
| —    | 24   |
| —    | 25   |
| —    | 26   |
| —    | 27   |
| —    | 28   |
| —    | 29   |
| —    | 30   |

Vehicle Factors

NHTSA Vehicle Condition  
And Maintenance Report

If (1) then 1

Mechanical Malfunction  
Inspection

Record of Inspection

Registration Record

Sheet Metal Crush  
Diagram/Sketch

Inches, Coded

Measurements Taken

Telescoping Unit

EA Steering Wheel

A (Column to Rear)

EA Steering Column

VIN Included

VDI Included

VM/M Code Included

Photographs (number)

(B&W) Prints

(Color) Slides

TOTAL-  
and

Site/Location Photos

Vehicle Exterior Photos

Vehicle Interior Photos

Autopsy/Medical Photos

Total Number Photos

(99 Unknown)  
(98) over 97

HIT LAB NUMBER Washtenaw Co. Mi. Only

58 59 60 61 62 63 64

End of Card 91

| Code | Col. |
|------|------|
| —    | 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   |



Duplicate Col. 1-9 from Preceding 9 2  
10 11

33

Code Col.

**CASE VEHICLE MALFUNCTION**

From CPIR page 2

- (1) yes
- (2) no
- (0) unknown

Number\* of Previous Moving Violations

29

Number\* of Previous Collisions

30

Number\* of Previous License Suspensions

31

\* Use (8) for "More than 7."  
Use (9) for unknown.

|   | Code | Col.  |
|---|------|-------|
| (01) Brake System                                 | ---  | 12    |
| (02) Exhaust System                               | ---  | 13    |
| (03) Steering System                              | ---  | 14    |
| (04) Suspension System                            | ---  | 15    |
| (05) Tires  | ---  | 16    |
| (06) Electrical System                            | ---  | 17    |
| (07) Throttle System                              | ---  | 18    |
| (08) Driver Controls                              | ---  | 19    |
| (09) Power Train                                  | ---  | 20    |
| (10) Fuel System                                  | ---  | 21    |
| (11) Visibility Items                             | ---  | 22    |
| (12) Other: _____                                 | ---  | 23    |
| (13) Applicable, but unknown                      | ---  | 24    |
| Primary Item Noted Above<br>(01 to 13) from above | ---  | 25,26 |
| (00) None   | ---  |       |
| (99) Unknown                                      | ---  |       |
| Had Routine Maintenance been Performed            | ---  | 27    |

**CASE VEHICLE DRIVER'S TRIP PLAN**

Origin

- (1) Home
- (2) Work
- (3) Shopping
- (4) Recreation
- (5) Friend/Relatives
- (6) Cocktail Lounge/  
Bar/Wet Party
- (7) Church
- (8) School
- (9) Other
- (0) Unknown

32

Destination

Code as above

33

Route Familiarity (1,2,0)

34

Area Familiarity (1,2,0)

35

Route Usage

- (1) Daily
- (2) Weekly (1-4 times)
- (3) Monthly (1-3 times)
- (4) Quarterly (1-2 times)
- (5) Annually (1-3 times)
- (6) Less than annually
- (7) Never
- (0) Unknown

36

**CASE VEHICLE DRIVER'S RECORD**

**Driver Education**

- (1) None
- (2) High school
- (3) Commercial
- (4) (Informal) Use Code (1)
- (5) Military
- (6) Professional
- (8) Other: \_\_\_\_\_
- (9) Yes, Unknown source
- (0) Unknown

28

TIME (2400 hour clock) of:  
(99 99 Unknown)

Departure

37

From CPIR page 1

Impact

41

Expected

Arrival

44

|   | Code | Col    | PHYSIOLOGICAL FACTORS<br>(Case Driver)   | Code | Co.            |
|---|------|--------|--|------|----------------|
| <p><b>PSYCHOLOGICAL FACTORS</b><br/>(Case Driver)</p> <p><u>Stress That Day</u></p> <p>(1) Argument with Relations or Friends.<br/>                     (2) Argument with Boss or Co-worker<br/>                     (3) Loss of Friend or Relative<br/>                     (4) Financial Difficulty<br/>                     (5) School Problems/ Work Problems<br/>                     (6) Legal/Police Problems<br/>                     (7) Social Agency/Consulor Problems<br/>                     (8) Other _____<br/>                     (9) None<br/>                     (0) Unknown</p>   |      |        | <p><u>Permanent Physicological Conditions</u></p> <p>(1) Infirmities (Arthritis, Senility, etc.)<br/>                     (2) Diabetes<br/>                     (3) Brain (Epilepsy, Stroke)<br/>                     (4) Cardio-Vascular (Heart failure, Angina, Infection)<br/>                     (5) Vision/Hearing Restricted<br/>                     (6) Respiratory Condition<br/>                     (7) Paralegic, amputee<br/>                     (8) Other: _____<br/>                     (9) None<br/>                     (0) Unknown</p>  |      |                |
| <p><u>Marital State</u></p> <p>(1) Single<br/>                     (2) Married<br/>                     (3) Common Law<br/>                     (4) Separated<br/>                     (5) Divorced<br/>                     (6) Widowed<br/>                     (0) Unknown</p>   |      | 44     | <p><u>Transient Physiological Condition</u><br/>                     (Choose no more than two)<br/>                     See CPIR page 4</p> <p>(00) Unknown<br/>                     (02) None<br/>                     (03) Blackouts<br/>                     (04) Dozing<br/>                     (05) Fatigue<br/>                     (06) Drunk<br/>                     (07) Drinking Involved<br/>                     (08) Drug or Medication (See Pa S5)<br/>                     (09) Flu, Headcold, etc.<br/>                     (10) Fractured Member<br/>                     (11) Menstrual Period<br/>                     (12) Pregnancy<br/>                     (13) Hangover<br/>                     (14) Not wearing corrective lenses<br/>                     (99) Other: _____</p> |      | 53             |
| <p><u>Occupation(1970 Census Users Guide)</u><br/>                     See Reference Manual</p> <p>(10) White Collar<br/>                     (11) Professional, Technical<br/>                     (12) Manager, Administrator (except Farm)<br/>                     (13) Sales workers<br/>                     (14) Clerical, kindred<br/>                     (20) Blue Collar<br/>                     (21) Craftsmen, kindred<br/>                     (22) Operatives, except transport<br/>                     (23) Transport equipment operatives(drivers)<br/>                     (24) Laborers, except farm<br/>                     (30) Farm Workers<br/>                     (31) Farmers, Farm managers<br/>                     (32) Farm laborers, Farm foreman<br/>                     (40) Service Workers<br/>                     (41) Service workers, except below<br/>                     (42) Private household workers<br/>                     (50) Housewife<br/>                     (60) Student<br/>                     (70) Military<br/>                     (80) Retired<br/>                     (90) Unemployed(over a month)<br/>                     (00) Unreported, Unknown</p> |      | 50     | <p><u>Non-Impact Medical Condition</u> <small>All Case Occupants Not Just Driver</small></p> <p>(0) None<br/>                     (1) Yes - Time and Type Unknown<br/>                     (2) Pre-Crash Fatal (Clinical Death at Wheel)<br/>                     (3) Pre-Crash Non-Fatal (Prior Injury, Stroke)<br/>                     (4) Pre-Crash Unknown Type<br/>                     (5) Post-Crash Fatal (Drowning)<br/>                     (6) Post-Crash Non-Fatal<br/>                     (7) Post-Crash Unknown Type<br/>                     (8) Other: _____<br/>                     (9) Unknown</p>  |      | 54, 55, 56, 57 |
| <p>ote: If several jobs, use major time<br/>                     If temp. unemployed, use last job</p>  |      | 51, 52 |  |      | 58             |


| Code | Col            |
|------|----------------|
| —    | 5 <sup>4</sup> |

Pharmacological Agents Noted  
(noted, but not necessarily causal)

- (1) Yes, Unknown or Other: \_\_\_\_\_
- (2) None noted, No BA test, (000) Below
- (3) Stimulants, Prescriptive/Narcotics  
(Amphetamines, cocaine, bennies)
- (4) Stimulants, Over-the-Counter  
(Caffeine, 'no doz')
- (5) Depressants, Prescriptive/Narcotics  
(Barbiturates, opiates, tranquilizers)
- (6) Depressants, Over-the-Counter  
(Alcohol, sleeping compounds)
- (7) Antihistamines
- (8) Hallucinogens  
(LSD, DMT, mescaline, psilocybin)
- (9) Marijuana
- (0) Unknown

CRASH FACTORS

Initial Clock Direction of Rollover  
(Case vehicle, horizontal clock)

- (12) - - Over Front End
- (09) -  (03) - Over Right
- Over Left (06) - - Over Back End
- (00) No Rollover
- (98) Rollover, Direction Unknown
- (99) Unknown if Rollover

Blood Alcohol Level (MG %)


- (999) Unknown, No Results
- (000) No Drinking, or "—Results"

POST CRASH FACTORS

Case Vehicle, Final Location

- (1) In Traffic Way
- (2) On Shoulder
- (3) Off-Road, Median
- (4) Off-Road, Side
- (5) In Water Way
- (9) Other: \_\_\_\_\_
- (0) Unknown

Case Vehicle, Final Attitude  
0'Clock Position

- (12) ——— Upright
  - (09)  (03) On Side
  - (06) ——— Inverted
  - (00) On End
  - (99) Unknown
- 0'Clock=

Post Accident Factors:

- Fire Control used, if fire (1,2,0) — 69
- Extrication used (1,2,0) — 69
- Ambulance Service used (1,2,0) — 70
- Towing Service used (1,2,0) — 71

Duplicate col 1-9 from preceeding 2 3  
36 10 11

**ACCIDENT VIEWPOINT**

Location of First Harmful Event

General Locality

- (1) Freeway (Limit Access)
- (2) Urban
- (3) Urban-Rural (House near road)
- (4) Rural (Fields)
- (9) Unknown

Particular Location

- (01) 1-Lane, Not Intersection
- (02) 2-Lane, Not Intersection
- (03) 3-Lane, Not Intersection
- (04) More than 3-Lane
- (05) Off Road
- (06) Intersection
- (07) Expressway
- (08) Interchange, Main Lanes
- (09) Interchange, Other Lanes (Ramps)
- (10) Bridges, Tunnels, Viaducts
- (11) Parking Lots
- (12) Driveways
- (99) Unknown

| Code | Col.  |
|------|-------|
| —    | 12    |
| —    | 13,14 |

Report Numbers of Vehicles Ranked in-Order of Responsibility for Causing Collisions

NOTE → All 0's for No Vehicle  
All 8's for Non-Case Vehicle  
All 9's for Unknown  
Fill in all Responses

Most Responsible Vehicle

15 16 17 18 19 20 21 22  
Second Most Responsible Vehicle

23 24 25 26 27 28 29 30  
Third Most Responsible Vehicle

31 32 33 34 35 36 37 38

Responsibility of Case Vehicle

- (1) Most Responsible
- (2) Second Most Responsible
- (3) Third Most Responsible
- ... Etc.
- (9) Missing Data

|   |    |
|---|----|
| — | 39 |
|---|----|

Total Energy Available

Total Energy for first collision. See Energy Table. Use 9999 for unknown.

— — • — — (\*10<sup>5</sup>)  
4c 41 42 43 (9998) for over 9997

PRE-CRASH MOVEMENT OF MOST RESPONSIBLE VEHICLE

Pre-Crash Basic Movement

- (1) Straight Ahead
- (2) Turning, Curve Following
- (3) U Turn
- (4) Reverse, Backing
- (5) Lane Changing
- (6) Parked, Stopped
- (7) Entering, Leaving Driveway (use 4 if backing)
- (8) Starting to Move
- (9) Unknown

Character of Movement

- (00) Straight Ahead
- (01) Straight Ahead, Road turned to left
- (02) Straight Ahead, Road turned to Right
- (03) Off RHS of Road
- (04) Off RHS of Lane
- (05) Off RHS, and back again
- (06) Veered Right
- (07) Turned Hard Right
- (08) Off LHS of Road
- (09) Off LHS of Lane
- (10) Off LHS, and back again
- (11) Veered Left
- (12) Turned Hard Left
- (13) Vehicle Stopped
- (14) Other
- (99) Unknown

| Code | Col.  |
|------|-------|
| —    | 44    |
| —    | 45 46 |
| —    | 47    |

Primary Factor Responsible For Accident

- (1) Driver Omission or Unaware Error
- (2) Driver Commission or Aware Error
- (3) Vehicle Defect
- (4) Trafficway Defect
- (5) Ambience
- (9) Unknown

**Most Responsible Vehicle:  
Primary Error**

(Pick first and second most significant)

- (00) No Error
- (01) Under Estimation
- (02) Falling Asleep, Blackout, Death-at-Wheel
- (03) Diverted Attention
- (04) Inexperienced Driving or Erratic Driving
- (05) Drunken Driving, Drinking Involved, or Narcotics or Medication
- (06) Right of Way
- (07) Turning Error
- (08) Signalling Error
- (09) Speeding
- (10) Overtaking
- (11) Following too Closely
- (12) Signs, Signals Disobeyed
- (13) Wrong Way into oncoming traffic
- (14) Lack of Lights
- (15) Lack of Brakes
- (16) Other: \_\_\_\_\_
- (17) Avoidance maneuver
- (18) Over correction maneuver
- (99) Unknown

Code Col.

|     |       |
|-----|-------|
|     |       |
| --- | 48 49 |
| --- | 50 51 |
| 9   | 52    |
| 9   | 53    |

**Avoidance Maneuvers**

- (0) None
- (1) Braking
- (2) Steering
- (3) Braking and Steering
- (4) Acceleration
- (5) Acceleration and Steering
- (6) Brake Release (7) Deceleration (e.g. engine braking)
- (9) Unknown (8) Other

**Most Responsible Vehicle**

**Second Most Responsible Vehicle**

**Vehicle Combination**

(e.g. 5,6 - Bus, Motorcycle)

- (0) No other Vehicles
- (1) Large Car (> 3800 lbs)
- (2) Medium Car (2800-3800 lbs)
- (3) Small Car (< 2800 lbs)
- (4) Truck (Includes Vans & Pickups)
- (5) Bus
- (6) Motorcycle
- (7) Utility or Jeep
- (8) Other: \_\_\_\_\_
- (9) Unknown

**Most Responsible Vehicle**

**Second Most Responsible Vehicle**

| Code | Co. |
|------|-----|
|      |     |
| ---  | 54  |
| ---  | 55  |
| ---  |     |
| ---  | 56  |
| ---  | 57  |

**Movement of Second Most Responsible Vehicle**

- (0) No Second Vehicle
- (1) Straight Ahead
- (2) Left Turning
- (3) Right Turning
- (4) Stopped
- (5) Other: \_\_\_\_\_
- (9) Unknown

**Hazardous Road Conditions**

(Rank by Significance)  
Cause Only

- (0) None
- (1) Surface Under Water
- (2) Surface Slippery (oil, ice, water, etc.)
- (3) Shoulders Slippery
- (4) Weather Obstructions (snow, fog, etc.)
- (5) Light (sun, headlight, etc.)
- (6) Obstacle on Road (e.g. car)
- (7) Road Construction, Repair or Disrepair
- (8) Other: \_\_\_\_\_
- (9) Unknown

|     |    |
|-----|----|
|     |    |
| --- | 58 |
| --- |    |
| --- | 59 |
| --- | 60 |

Revision 3

Report Number

Card Type

2 3 4 5 6 7 8 9 10 11

Comments:

HSRI ANALYSIS

Not to be filled in  
by field investigator

Case Vehicle

MPH at Impact  
(999 Unknown)

12 13 14

Primary Damage Index  
(99-0000-0 Unknown)

15 16 17 18 19 20 21

Secondary Damage Index

22 23 24 25 26 27 28

Sheet Metal Crush

(98 if over 97 inches)  
(99 if unknown)

Front (Inches)

Rear

Left Side

Right Side

Roof

Other

| Code | Col.   |
|------|--------|
| ---  | 29, 30 |
| ---  | 31, 32 |
| ---  | 33, 34 |
| ---  | 35, 36 |
| ---  | 37, 38 |
| ---  | 39, 40 |

Other Vehicle

MPH at Impact  
(888 for N/A)

41 42 43

Damage Index Unknown, No damage,  
(99-0000-0) No Other Vehicle

44 45 46 47 48 49 50

$\frac{7}{1} \frac{2}{2} - \frac{4}{4} - - - - - \frac{9}{9}$

DAMAGE ANALYSIS,  
CASE VEHICLE

CONCURRENT DAMAGE,  
OTHER VEHICLE

Primary Deformation

CDC (VDI) Card  $\frac{4}{10} \frac{5}{5}$   
[PERCENT CRUSH]

$\frac{12}{12} - \frac{14}{26} - - - - - \frac{18}{18}$   
[  $\frac{14}{26}$  % ]

$\frac{17}{17} - - - - -$   
[  $\frac{26}{26}$  % ]

INCHES CRUSH  
(Match 1st CDC Letter)

$\frac{32}{32}$

$\frac{52}{52}$

CONFIGURATION

$\frac{34}{34}$

CRASH EVENT NUMBER

$\frac{35}{35}$

SPEED AT IMPACT,  
WITH ERROR

$\frac{36}{36} - - - - - \frac{37}{37}$   
+

$\frac{41}{41} - - - - - \frac{44}{44}$   
+

[BARRIER EQUIVALENT  
SPEED]

[  $\frac{46}{46}$  ]

[  $\frac{48}{48}$  ]

Secondary Deformation

CDC (VDI)  
[PERCENT CRUSH]

$\frac{50}{50} - - - - -$   
[  $\frac{64}{64}$  % ]

$\frac{57}{57} - - - - -$   
[  $\frac{66}{66}$  % ]

INCHES CRUSH  
(Match 1st CDC Letter)

$\frac{68}{68}$

$\frac{70}{70}$

CONFIGURATION Card  $\frac{46}{10}$

$\frac{12}{12}$

CRASH EVENT NUMBER

$\frac{13}{13}$

SPEED AT IMPACT,  
WITH ERROR

$\frac{14}{14} - - - - - \frac{17}{17}$   
+

$\frac{19}{19} - - - - - \frac{22}{22}$   
+

[BARRIER EQUIVALENT  
SPEED]

[  $\frac{24}{24}$  ]

[  $\frac{26}{26}$  ]

Tertiary Deformation

CDC (VDI)

$\frac{28}{28} - \frac{30}{30} - - - - - \frac{34}{34}$

- Notes:
1. Bracketed Information is Optional; Blank=Unknown
  2. 99-0000-0 - Unknown or No CDC
  3. For Speeds, 9's - Unknown Speeds, 8's - N/A; No Other Vehicle
  4. For Inches Crush, 9's - Unknown, 0's - No Crush or N/A--No Other Vehicle

2/12/74

SEQUENCE OF CRASH EVENTS

Code 5 pairs in sequence

40

|          | <u>Crash Event</u> | <u>Vehicle or Object Contacted</u> |
|----------|--------------------|------------------------------------|
| Event #1 | <u>35</u> —        | <u>37</u> —                        |
| Event #2 | <u>39</u> —        | — —                                |
| Event #3 | <u>43</u> —        | — —                                |
| Event #4 | <u>47</u> —        | — —                                |
| Event #5 | <u>51</u> —        | — —                                |

All Crash Events and involved Objects/Vehicles are coded beginning with the first damage or injury producing event. Then code each case vehicle event chronologically until the vehicle stops. Both series of Event and Vehicle/Object codes are pairs. No Event, No Object = (99), (99).

SIDE DOOR GUARD BEAM

Beam Present (2) No Beam in Doors  
 (3) No Doors → SKIP REST OF PAGE 55

- YES:  
 (4) Front Door Only  
 (5) Front and Rear  
 (0) Unknown

|   |  | <u>Left</u> | <u>Right</u>        |
|---|--|-------------|---------------------|
| <u>Front or Rear Door Direct Damage</u> | (2) NO Direct Damage → SKIP REST OF PAGE |             |                     |
|   | (3) N/A, No Door                         |             |                     |
| YES:                                    | (1) CDC Unknown                          |             |                     |
|   | (4) Primary CDC                          | Front       | <u>56</u> <u>57</u> |
|   | (5) Secondary CDC                        |             |                     |
|   | (6) Tertiary CDC                         |             |                     |
|   | (9) Other or Minor                       | Rear        | <u>58</u> <u>59</u> |
| (0) Unknown                             |  |             |                     |

| <u>Maximum Inches Crush (Doors)</u> |  | <u>Front</u> | <u>Right</u>        |
|-------------------------------------|--|--------------|---------------------|
| (00) = No Crush or No Door          |  | <u>60</u>    | <u>62</u>           |
|                                     |  | Rear         | <u>64</u> <u>66</u> |

| <u>Beam Involvement</u>     |                        |                    |                     |
|-----------------------------|------------------------|--------------------|---------------------|
| (2) No Involvement          |                        |                    |                     |
| (3) N/A, No Door or No Beam |                        |                    |                     |
| YES:                        | (1) Extent Unknown     |                    |                     |
|                             | (4) Beam Contact Only  |                    |                     |
| DAMAGED (Bent or Dent)      | (5) No Separation      | Front              | <u>68</u> <u>69</u> |
|                             | (6) Unknown Separation |                    |                     |
|                             | DAMAGED and SEPARATED  | (7) Extent Unknown | Rear                |
| (8) Partial Separation      |                        |                    |                     |
| (9) Complete Separation     |                        |                    |                     |
| (0) Unknown                 |                        |                    |                     |



Vehicle to Vehicle

- (1) Both Moving
- (2) Case Vehicle Stopped
- (3) Other Vehicle Stopped

- (0) Direction Unknown
- (1) Same Direction: Struck Other Vehicle
- (2) Same Direction: Struck By Other Vehicle
- (3) Same Direction: Other, Unknown
- (4) Opposite Direction
- (7) Angled (>15°): Struck Other Vehicle
- (8) Angled (>15°): Struck By Other Vehicle
- (9) Angled (>15°): Other, Unknown

Vehicle to Object

On-Roadway Object Collision  
(4) Struck \*:

Off-Roadway Object Collision  
(5) Struck \*:

\*=specific object struck,  
to be coded in the adjacent  
Object Contacted columns)

- (0) And Other or Unknown
- (1) And Deflected (or Rebounded)
- (2) And Went Over \*
- (3) And Crashed Through \*
- (4) And Stopped
- (5) And Rotated Around \*
- (6) And Was Impaled By \*
- (7) And Remained on Top of \*
- (8) From Behind

(7) Ran-Off/Re-Enter Roadway

- (0) Other or Unknown Action
- (1) Off Left Side, No Median
- (2) Off Left Side, Into Median
- (3) Off Right Side
- (4) Off, Other or Unknown
- (5) Re-Enter, Same Direction
- (6) Re-Enter, Opposing Direction
- (7) Re-Enter, Other or Unknown
- (8) Crossed Median Into Opposing Lanes
- (9) Crossed Centerline Into Opposing Lanes

(8) Miscellaneous Events

Case Vehicle:

Towed Vehicle or Part:

Vehicle:

- (0) Other, Unknown\*
- (1) Overturns (>90°)\*
- (2) Projected Into Air & then strikes object\*
- (3) Went Up/Down Embankment
- (4) Entered Body of Water
- (5) Spins, Skids, Swerves Out-of-Control
- (6) Struck by Falling, Protruding or Thrown-Up Object\*
- (7) Occupant Incurs Injury Before/Without Vehicle Crash
- (8) Breaks Loose or Jackknifes Without Damage to Vehicle
- (9) Contacts Itself or Part, Doing Self-Induced Damage

(9) Concluding Event:

- (0) Other, Unknown
- (1) Coasted to Rest
- (3) Stopped Abruptly
- (4) Braked/Skidded/Spun to Rest, on Wheels
- (5) Skidded/Spun to Rest, Not on Wheels
- (7) Under-Control, Pulled-Over
- (8) Under-Control, Continued On

(00) Unknown                      (99) No Event

\*\*This is to be used only on the Damage Analysis Supplement.

01-39 Autos and Trucks  
 40-69 Other Vehicles  
 70-76 Pedestrians and On-Roadway Objects  
 80-97 Off-Roadway Objects  
 98 Other:  
 99 No Object  
 00 Unknown

Vehicles

01 Intermediate (GM A Body)  
 02 Standard/Full Size (B Body)  
 03 Luxury (C Body) or Limousine (D Body)  
 04 Mini Specialty (Mustang II)  
 05 Personal Luxury (E Body)  
 06 Specialty Pony (F Body)  
 07 Grand Prix (A-SP Body)  
 08 Compact (X Body & Y Body)  
 09 Sub-compact/Mini-Imported (VW)  
 10 Super Sport (Corvette)  
 17 Pickup-Car (Ranchero)  
 18 Sub-compact/Mini-USA (H Body)  
 19 European Sports Cars (MG)  
 20 Unknown Automobile Body

| <u>Size</u>  | <u>Standard Specialty Sports</u> |    |    |
|--------------|----------------------------------|----|----|
| Mini         | 09,13                            | 04 | 19 |
| Compact      | 08                               | 06 | 10 |
| Intermediate | 01,17                            | 07 | -- |
| Standard     | 02                               | 05 | -- |
| Luxury/Limo  | 03                               | -- | -- |

Multipurpose Passenger Vehicle

14 Utility (Jeep, Bronco)  
 15 Carryall/Panel Truck  
 16 Pickup Truck w. Canopy/Shell Cover  
 17 Pickup Car w. Canopy/Shell cover  
 21 Motor Home  
 22 Pickup Truck with Slide-in Camper  
 23 Pickup-Car w. Slide-in Camper  
 31 Chassis-Mounted Camper

Truck

11 Small Van (Econoline)  
 12 Pickup  
 13 Unknown Light Truck (<1½ Ton)  
 15 Carryall/Panel Truck  
 16 Pickup-Camper (Canopy, Shell)  
 22 Slide-in Camper  
 30 Unknown Truck Type  
 31 Chassis-Mounted Camper  
 33 Delivery Van (Walk-in)  
 34 Straight Truck  
 35 Truck-Tractor  
 36 Chassis-Cab  
 37 Unknown Heavy Truck (>1½ Ton)  
 38 Tractor + Semi-Trailer (Semi)  
 39 Truck (or Semi) + Full Trailer(s)

Bus

40 Unknown Bus Type  
 41 School Bus  
 42 Inter City (between)  
 43 Intra City (within)  
 44 Streetcar (on tracks)

Motorcycles

50 Unknown Motorcycle Type  
 51 1-75cc  
 52 76-125cc  
 53 126-250cc  
 54 251-500cc  
 55 501-750cc  
 56 751+cc  
 57 3-wheels (or with Sidecar)

Special Purpose Vehicles

60 Unknown/Other Special Vehicle  
 61 Snowmobile  
 62 ATV, All Terrain Vehicles  
 63 Amphibious Vehicle  
 64 Farm Vehicles  
 65 Construction Vehicles  
 66 Trailer-Private (camper)  
 67 Trailer-Commercial (cargo)  
 68 Train (Cars)  
 69 Locomotive, Switcher

Objects

70 Pedestrian  
 71 Bicyclist, Other Pedalcycle  
 72 Pedestrian Conveyance  
 (e.g. Person Riding Animal, Cart, etc.)  
 73 Large Animal  
 74 Fallen Objects such as Objects Dislodged from Other  
 Vehicles, Fallen Trees, Rocks, etc.  
 75 Traffic Cones, Barrels, Construction Barriers  
 76 Construction or Emergency Equipment  
 77 Sign Posts, Utility Pole, Tree  
 78 Ditch  
 79 Embankment, Snowbank  
 80 Ground (Rollover Only)  
 81 Curb (Damage Producing Impacts Only)  
 82 Culvert  
 83 Fence  
 84 Hydrants, Short Posts, Stumps  
 85 Small Posts/Trees, Rural Mail Boxes, Delineators,  
 Mile Markers  
 86 Building  
 87 Pier, Pillar (e.g. Bridge Support)  
 88 Abutment, Retaining Wall  
 89 Bridge Rail  
 90 Guard Rail, Leading Section  
 91 Guard Rail, Middle or Unknown Section  
 92 Guard Rail, Trailing Section  
 93 Guard Posts (Timber, Metal, Concrete)  
 94 Cable, Fence Barrier  
 95 Concrete Barrier (Median)  
 96 Impact Attenuator  
 97 Breakaway Fixtures

## SECTION 3

EDITING PROCEDURE  
AND  
INTERPRETATIONS OF QUESTIONS

## SECTION 3.1 EDITING PROCEDURE

This section describes the objectives to be accomplished in editing a case, outlines the approach and steps involved in processing cases, and finally details some of the general editing rules applied to all questions.

## EDITING OBJECTIVES

While most of the reasons for editing cases are self-evident, it is still instructive to outline the objectives of consistency, correctness, and completeness.

1. Consistency: If a question is not consistently interpreted, none of the responses will be of any use in later analysis. It is better to be consistently "wrong" than "right" part of the time and "wrong" the remainder.

1.1 Case Consistency: The computer processed forms should be consistent with the remainder of the case documentation including photographs and other case supporting evidence. Once edited, the data to be keypunched should adequately represent the applicable case documentation.

1.2 Internal Consistency: The data forms should be self-consistent themselves. Many responses are partially dependent upon the answers to other questions. For example, it would be incorrect to have damage to the rear door of a two door car. Internal consistency is obviously critical to the analyst. In comparing one variable with another, he is depending on them being consistently coded. Although many of the inconsistencies have been resolved, it is still possible to find them.

2. Correctness: It is far better to edit ten cases correctly than let one hundred pass through with errors. One must always question something that is not understood. One should not guess, one should find out. While it may seem difficult to establish the most accurate answer, a best answer can be determined and applied to future cases. If, as frequently happens, an even better answer is determined in the future, then that will be applied.

3. Completeness: An attempt should be made to fill in all responses. It is always irritating to query a

potentially useful variable in a data file, only to find it empty, i.e., filled with unknown codes. While some questions exist for which responses can rarely be determined by the post-investigation editor, many of questions left blank by investigators can be filled, based upon the case documentation and photographs.

#### EDITING PROCEDURE

As new case reports arrive, they are logged, edited, second edited, keypunched, checked by an PDP 11/45 pre-build program and merged into the computer accident data bank. The data in computer storage is then reviewed and corrections performed. The following discussion outlines these steps in more detail.

#### LOGGING

All new cases are logged-in upon arrival. MDAI reports received in camera copy form are inventoried with the cover letter enclosed and any discrepancies are documented. The Traffic Unit Compendium (TUC) file, a computer based log of all reports is then updated.

Only passenger cars and light trucks are processed as CPIR case vehicles. This includes utility (jeep-type) vehicles, small vans, pickup trucks, pickups with shell or slide-in campers, panel trucks, and carryalls as CPIR type vehicles. Heavy trucks, buses, motorcycles, pedestrians, bicyclists, and other vehicles are included in the TUC file and then returned.

Once logged-in, a xerox copy of the case summary, CPIR form(s), Vehicle Condition and Maintenance Report, and other form(s) are produced for the camera copy cases. The editors then make corrections and additions on the xerox copy rather than the original copy. A complete copy of each case is stored in the hardcopy filing cabinets.

#### CASE EDITING

There are several approaches to editing a case. Each editor, in time, develops his own procedure. The method described here typifies a common approach.

##### 1. Case Review & Supplement (pp. 31-38)

To edit a case, one starts by filling in the CPIR Supplement. Some of the information for the first page of the Supplement can be found on the title page of the case report (team case number, date submitted).

The accident summary is read to provide information for filling in the rest of the first page of the Supplement and to give the editor an overall view of the accident. The critical events review (who did what to whom and how) is a very important

step because this is the information that can be used as a "triggering device" in trying to find inconsistencies, mistakes, and various other slips. If any information is noticed that differs from what was read in the summary, a look into the main body of text to try and find evidence to resolve the inconsistency may be necessary.

The next step is to scan the narrative and read all interviews and "psychological reviews". This is done mainly because these are the most interesting segments of the reports. It also reveals such things as the occupant's Trip Plan, Driver Education, etc., which are answered on pages 33 and 34 of the CPIR Form. While doing this, any photo prints included with the case can be counted.

The editor should peruse the appendices to find out what kind of documented supporting evidence is presented with the case. From this, and from counting the slides, page 32 of the CPIR Form will be filled out. It is also advisable to page through the CPIR at this point to determine what measurements were made by the investigating team. That finishes pages 31, 32 and partially pages 33 and 34 of the CPIR Form. Incidentally, malfunctions on page 33 can be filled in at the same time as the measurements on page 32 are looked up. In fact, it may be helpful to fill in the items in the sequence that they appear in the CPIR, i.e., check for malfunctions first, then determine who estimated the speeds, check VIN, CDC, VM/M, followed by inches of crush, crush sketch, etc.

If any personal data has been forgotten or not seen, it may be looked up now, finishing pages 33 and 34. If alcohol was involved, it is usually very prominently reported.

The information for pages 36 and 37 is readily available from either the CPIR or the case summary. One should usually check all weights, VINs, models, repair costs, etc., for all case vehicles and other vehicles when determining the Total Energy Available.

## 2. CPIR Form

The editing of the CPIR form is started by checking the report number, date of collision, and state code. Pages 1 and 2 can be checked under "Identification, Ambience, and Highway" in the case summary. Page 3 comes out of Pre-Crash, Crash and Post-Crash in case summary and from the accident schematic. One should make sure all speeds on page 4 look reasonable in relation to damage. Pages 5 and 6 (other vehicle and case vehicle) are filled in from the case summary, reference notebook and Redbook (reference 6). A check of the Vehicle Make/Model code and Body Style should always be carried out. On page 7, the Crush and Sheet Metal Damage should match the first letter of the editor's CICs.

On page 10, the tire data should be checked to see if it

appears reasonable, e.g., wear, mileage, profile and carcass type. From here on (pages 11 through 22) all measurements and the damage should be made to appear reasonable. Unless something appears absurd, the editor will generally go along with the investigator; although he may watch for contradictions between narrative and CPIR and/or pictures. One should make sure pillars and doors match Body Style. Passenger compartment data (pages 23-26) can be checked against Interior Damage and Occupant Kinematics.

In Occupant Injury Section (pages 27-39), contact areas for injuries should be checked against other appropriate areas in CPIR for occupant contact. Also the text should be checked against CPIR for correct injury responses. The number of occupant sections should match the Number of Occupants noted on the Case Vehicle page (7.3.45-46).

### 3. Damage Analysis Supplement

This one sheet form should be filled out if not already provided by the field team. This is a good time to review the entire set of data from the vehicle damage point of view, i.e., is the evidence (from slides, drawings, measurements) in agreement with the data to be keypunched?

### 4. Occupant Supplement

This one sheet form should be filled out if not already provided by the field team. The Occupant Supplement includes the Occupant Injury Classification (OIC) details (described in Section 4) and should be checked or coded at the same time the CPIR Occupant pages are edited.

### 5. Review

Before the case is submitted for second editing, the entire case should be reviewed as a whole. One determines whether the coded forms adequately represent the unique features of this accident. If there is more than one CPIR form, the forms should be made mutually consistent.

## SECOND EDITING

The procedure for second editing concerns itself with four separate yet interrelated tasks; namely, an overview check of the entire accident sequence, a consistency check for internal form discrepancies, a spot check of outstanding items that are unique to the case, and a list of editing comments concerning the changes made to the form.

One begins with a review of the case by first looking over the case introduction. This usually describes the vehicles involved, the type of accident configuration, greatest severity

of injuries received, and any other additional characteristics of the accident, such as drinking involved or fire during crash phase. The slides and accident sketch are reviewed while the case summary is read. The case summary consists of a brief synopsis of the entire case and includes a description of: Ambience; Highway conditions; Vehicles involved; Occupants and the injuries; pre-crash, crash, and post-crash accident details; and Causes and Recommendations by program matrix cells.

After fully understanding the case, the editor begins by checking the CDCs on the supplements to see if they appropriately describe the damage to the vehicles involved. The editor then goes through each page of the supplement noting items retained from reviewing the summary, being particularly sure that the responses, in the supplement concerning the description of vehicles movement and causation factors are properly answered (pages 35-37). He then turns to the occupant section to make certain that the number of occupant sections and Occupant Supplements matches the number of vehicle occupants. Then within the occupant section, he checks whether the overall severity of injuries represents a number equal to or greater than individual region AIS numbers.

After completing the CPIR, the comments page is attached to the case; the xeroxed CPIR and Supplements are compiled separately for keypunching.

#### PDP 11/45 PRE-BUILD PROGRAM

The pre-build program on the HSRI PDP 11/45 reads the keypunched and key-verified data, checks for over one hundred different invalid/wild codes and internal data inconsistencies, formats the data for file building and merging with the existing data file, and automatically prepares a case summary for HSRI cases investigated for the MVMA.

The program prints out the "alleged" error and its location (case-card-column). Any out of the ordinary coding (e.g., Seat Belts Equipped = "no") is flagged as a potential error even though the code value itself is acceptable. Thus, not all the items printed out are necessarily errors, requiring corrections.

Hardcopy cases in question are pulled from the files for review. Any corrections made are noted on the hardcopy before refileing. Then either the case is repunched and resubmitted, or a correction sheet is filled out for later application to the newly updated master tape file.

#### DATA FILE CORRECTIONS

The processing of an accident report is never quite finished. Any item in the CPIR computer files is always subject to changes or corrections. The editors review marginals (one way frequency distributions) of each variable for invalid/wild codes and unusual frequency distributions. Both HSRI data analysts and other data bank users also discover potential problems and

alert the editors. As before, hardcopy cases are reviewed and data file corrections are made. In each instance, an effort is made to determine the cause of the error (e.g., undocumented change in conventions, poor handwriting) in order to avoid further instances of the same problem.



## GENERAL RULES

These editing rules apply generally to each case.

1. Avoid "Unknown" codes and "Other:" codes. Their use adds little or no information to the data file. The "Unknown" must still be used (rather than leaving a blank) if a reasonable response cannot be developed from case documentation.

Try to avoid "Other:" codes by selecting another appropriate response category or suggest that a new category be added to the list of valid responses.

2. Use only numerics (numbers) except as noted below. Do not permit any card punch columns to be filled in with letters or special characters such as "+->%". Use only the digits 0 through 9. Do not use dashes for "unknown".

3. Only the following questions should be answered with alphabetic characters.

|                 |                           |
|-----------------|---------------------------|
| 1.1.2-3         | Team Letters*             |
| 6.2.12-24       | Other Vehicle VIN         |
| 7.2.58-71       | Other Vehicle CDC*        |
| 7.3.12-24       | Case Vehicle VIN          |
| 7.3.47-53       | Case Vehicle CDC*         |
| 20.7.46-47      | Windshield Code           |
| 31.90.24-34     | Team Case Number          |
| 31.90.35        | Editor Letter             |
| 31.90.67-74     | Other Vehicle CPIR Number |
| 30D.81-95.14-36 | OIC Letters               |

\* This alphabetic field also appears in other locations.

4. Be cautious in assessing collision damage from vehicle photographs not taken on-scene. Post-crash damage often occurs during occupant extrication, vehicle towing or junk yard storage. Doors are ripped open, pillars are cut, fenders and bumpers are distressed, fuel tanks are punctured, windows are broken, original seat positions are changed, tires are switched, accessories are removed and so forth.

5. Whenever a component is separated (e.g. C-pillar), then the previous question should be coded as damaged "yes" (1) on pages 11 through 15.

6. If inconsistencies between the narrative of the case and its CPIR(s) arise, then choose the best documented choice. This is usually the one found in the narrative version of the case. However, some teams prepare case summaries from the CPIR so then it may be better to leave the CPIR unaltered.

## RECENT CHANGES

The following changes represent the major revisions and additions to this year's Editing Manual. See the interpretations for each question for a complete explanation of the change.

## CPIR

|            |                                     |
|------------|-------------------------------------|
| 4.4.48     | Other Collision Type                |
| 4.4.50-57  | Objects Contacted                   |
| 7.3.25-29  | Make Model Code                     |
| 7.3.41     | Body Style                          |
| 11.4.54-56 | Steering Column Flexible Coupling   |
| 11.4.57-66 | Engine Compartment Telescoping Unit |
| 12.5.16-31 | Left Pillars                        |
| 23.8.40-43 | Adjuster Damage                     |

## OCCUPANT SUPPLEMENT

|                 |  |
|-----------------|--|
| 30C.80.15-16    | Posture                                    |
| 30C.80.28       | Restraint System Malfunction or Separation |
| 30C.80.29       | Investigator Judgement of Restraint System |
| 30D.80.32       | BMS Contributory to Severity               |
| 30D.80.34       | Overall Police Injury Severity             |
| 30D.81-95.14-21 | Contact Areas                              |
| 30D.81-95.22-36 | Primary and Associated OIC's               |

## DAMAGE ANALYSIS SUPPLEMENT

|             |                          |
|-------------|--------------------------|
| 40.46.35-54 | Sequence of Crash Events |
|-------------|--------------------------|

## CPIR SUPPLEMENT

|             |                            |
|-------------|----------------------------|
| 36.93.13-14 | Particular Location        |
| 37.93.52    | Degree of Driver Attention |
| 37.93.53    | Driver Complexity          |
| 37.93.54-55 | Avoidance Manuevers        |

## NEW AIR BAG CODES

The following eight CPIR questions have code values to record AIR Bag/ACRS equipped cars. The new code values are tagged with an "\*".

## A. Case Vehicle Variables

## 1. High Performance or Air Bag Equipped (7.03.44)

Not Air Bag Equipped and High Performance:

(1) Yes

(2) No

(0) Unknown

Air Bag Equipped (any engine):

(4) Any Deployments\*

(5) No Deployments\*

(6) Deployment Unknown\*

(9) Both High Performance and Air Bag Equipped Unknown\*

## 2. Steering Wheel Pad or Air Bag (17.07.14)

## Steering Wheel Pad:

- (1) No Air Bag in Steering Wheel: Equipped with Pad
- (2) No Air Bag in Steering Wheel: No Wheel Pad
- (0) No Air Bag in Steering Wheel: Wheel Pad Unknown

## Steering Wheel Air Bag:

- (4) Deployment\*
- (5) Equipped - No Deployment\*
- (6) Deployment Unknown\*
- (9) Both Pad and Air Bag Unknown\*

NOTE: The next question "Steering Wheel Pad Deformed" refers only to the Pad and not to an Air Bag; if the car has no Pad use code (3).

## 3. Instrument Panel Other or Air Bag (21.07.74)

## No Air Bag in Instrument Panel and Other Damage:

- (1) Yes
- (2) No
- (3) Not Applicable
- (0) Unknown

## Instrument Panel Air Bag:

- (4) Deployment\*
- (5) Equipped - No Deployment\*
- (6) Deployment Unknown\*
- (9) Both Other Damage and Air Bag Equipped Unknown\*

## B. Occupant Variables

## 1. Upper Torso Belt and/or Air Bag Equipped (28:11:31)

- (1) No Air Bag and: Upper Belt Equipped
- (2) No Air Bag and: Upper Belt Not Equipped
- (3) No Air Bag and: Upper Belt Unknown if Equipped
- (4) Air Bag Equipped and: Upper Belt Equipped\*
- (5) Air Bag Equipped and: Upper Belt Not Equipped\*
- (6) Air Bag Equipped and: Upper Belt Unknown if Equipped\*
- (9) Both Upper Torso or Air Bag Equipped Unknown\*

## 2. Upper Torso Belt and/or Air Bag Used (28:11:32)

- (1) No Air Bag Deployment and: Upper Belt Worn
- (2) No Air Bag Deployment and: Upper Belt Not Worn
- (3) No Air Bag Deployment and: No Upper Belt Equipped\*
- (0) No Air Bag Deployment and: Unknown if Worn
- (4) Air Bag Deployment and: Upper Belt Worn\*
- (5) Air Bag Deployment and: Upper Belt Not Worn\*
- (6) Air Bag Deployment and: No Upper Belt Equipped\*
- (7) Air Bag Deployment and: Upper Belt Unknown if Worn\*
- (9) Both Upper Torso Worn or Air Bag Deployed Unknown\*

## 3. Type System Used (28:11:37)

- (3) Not Applicable, No Torso Restraint Used
- (4) 3-point
- (5) 4-point
- (6) Other (Not 2-point)
- (7) Air Bag Deployed and No Belts Used\*
- (8) Air Bag Deployed and Any Belts Used\*
- (9) Air Bag Deployed and Unknown Belt Use\*
- (0) Unknown

## 4. Areas of Possible Contact (30.12-26.14-21) and (30D.81-95.14-21)

"Air Cushion Skin (Air Bag)" (87) is already in the list of Occupant Contact Codes.

5. Restraint System Malfunction or Separation (30C.80.28)  
A new code has been added (8) "In Passive System".  
This should be used to record air bag malfunctions.

## SECTION 3.2

## INTERPRETATION OF CPIR QUESTIONS

This section documents how the editor should interpret each individual question and the extent to which the responses should be technically edited. Questions not to be edited are left to the discretion of the field investigator. The number following each paragraph heading is a cross-reference number to that question in the CPIR form by page number, card number and column number.

## REPORT NUMBER (1.1.2-9)

This Report Number is one of two types: consecutive ascending, or consecutive ascending within a year. An example of the first type would be a case prepared by the University of New Mexico, whose cases are usually numbered UNM 95, for instance. This will be entered as NM-00095. An example of the second type would be a report prepared by the Cornell Aeronautical Laboratory, whose numbers begin with the year because their case numbers start over from 1 each year. A typical number would be CAL 71 57b. It would be entered in the computer in the form CB-71057.

Column 9 is the case vehicle serial number. This number is used when there is more than one case vehicle per accident, i.e., there is more than one CPIR form per accident. One vehicle is assigned the number (1), another will be assigned the number (2), a third the number (3), and so on, depending on the number of case vehicles to be processed.

An attempt should be made to use the investigators' vehicle number designation, usually the striking vehicle becomes vehicle 1 and the struck vehicle becomes vehicle 2. Numbers should not be skipped for CPIR forms not to be processed, i.e., all forms to be computer processed should be numbered consecutively 1,2,3,.... This applies even when the vehicles involved might be reported in different cases or by different teams, e.g. VS-72004-1 and VS-72005-2.

Column 9 is left blank for single case vehicle accidents, i.e., for accidents in which only one of the vehicles qualifies for computer entry, (e.g., car-motorcycle, truck-car) or cases with only one CPIR supplied.

## DATE OF COLLISION (1.1.12-17)

The Date of Collision is the responsibility of the investigator. It should be checked with the case documentation, e.g., if it is strange, such as a year of the future entered, then a crosscheck with the narrative can be carried out and any necessary adjustments made. If the date is partially unknown, 9's should be entered for the unknown part only, i.e., if only the month and year of the accident are given, the month (05 for

"May" etc.) then (99), and then the year (72 for 1972) should be entered. Zeros are not a valid unknown code for this item. If the date is not readily found, look through the police report or other documentation. The cases from the Maryland Medical Legal Foundation often have the day of the accident missing. It may be found on a special page at the end of the case.

#### STATE CODE (1.1.18-19)

The state location code is taken from the Federal Information Processing Standards Publication (5-1) and is found under State Codes in the Reference Information Section. Canadian provinces are also given their own "state" codes.

#### AREA/LOCALITY (1.1.20-21)

The area and locality of the accident are given by the investigator and since most teams do not include population densities for the accident site, the investigators decision should be accepted. In cases where an expressway is the accident site, the locality surrounding the expressway should be taken into consideration when coding Area and Locality.

#### ENVIRONMENTAL CONDITIONS page 1,2

#### LIMITED ACCESS HIGHWAY (1.1.22)

The Limited Access Highway item is determined by the investigator. The editor should check the photographs, narrative or accident diagram for agreement.

#### ROAD TOTAL TRAFFIC LANES (1.1.23)

This question refers to the road that the case vehicle is traveling on. A two-lane two-way street is not differentiated from a two-lane one-way street. If the collision happens at an intersection, choose the roadway that most closely describes his location at the time of the first impact; thus, if the case vehicle was traveling on a north-south roadway and had completed a left hand turn onto an east-west roadway but is still in the intersection when the collision occurs, the vehicle should be considered traveling the east-west roadway. In the same light if he had not yet completed the turn, he should be considered traveling the north-south roadway. "Completed the turn" means having the sides of the car parallel with the sides of the new roadway.

Neither parking lanes nor bicycle lanes are considered as part of the road width unless they have been designated as a turning lane at an intersection. Not all painted medians are considered as medians for the purpose of determining whether a roadway is divided or not. They are only considered medians if they exceed one car length in width, i.e., they are more than approximately 16 feet wide. Botts Dots also do not constitute a median for the purposes of this question. However, any other

physical barriers such as islands, rumble strips, etc., constitute medians if they parallel the traffic way.

Again, this question is directed toward the case vehicle. If a two case vehicle accident that occurred at an intersection is being edited, then the response to this item may change from one CPIR to the other. It is useful to refer to the accident photographs and diagrams or the environmental data to check this question. The "Other" code (7) specifically includes access ramps and railroad tracks.

#### OTHER ROAD TOTAL TRAFFIC LANES (1.1.24)

This question is similar to the previous question. The same type of information is entered here except that it applies to the intersecting roadway in accidents that happen at intersections. The code value (9) is used when the collision did not occur at an intersection.

#### TYPE OF ROAD SURFACE (1.1.25)

Again, this question is left to the investigator unless scene photographs do not substantiate the investigators claim. Bituminous concrete is another word for "asphalt" (1).

#### ROAD ALIGNMENT, VERTICAL PLANE (1.1.26)

This again applies to the case vehicle. It is the duty of the investigators to enter the correct response. However, crosschecks with the narrative description may be made. MDAI cases may give the grade, if it exceeds 2%, it is considered a slope. The alignment at the point of first impact should be coded.

#### ROAD ALIGNMENT, HORIZONTAL PLANE (1.1.27)

Although answers to this question are provided by the investigating team, it can be crosschecked with the accident diagram. Here, too, the alignment should be coded at the point of first impact.

#### SURFACE COVERING (1.1.28-29)

To attempt to change the answer to this query is dangerous because to determine that a pavement was "damp" (02) rather than "wet" (03) is extremely difficult to do. This type of decision is left up to the investigator. However, gross discrepancies, such as a "dry" (01) pavement when heavy precipitation was noted, should be corrected.

#### PRECIPITATION (1.1.30)

The type of information called for by this question must be supplied by the investigating team, but the editor may change their response if discrepancies exist or gross irrationalities are created by certain response, e.g., "rain" (2) at

temperatures of -15 degrees F.

#### RATE OF PRECIPITATION (1.1.31)

If the previous item had a response other than (1) "none", then a rate of precipitation must be entered here, i.e., responses (4) "light", this includes mist, (5) "moderate", (6) "heavy", or (0) "unknown". If the response to the previous question was (1) "none", then this question must be answered (3) "not applicable".

Again, the difference between "light", "moderate", and "heavy" precipitation must be decided by the investigators.

#### SURFACE SLIPPERY (1.1.32)

No standards have been set that state when a surface is "slippery". Therefore, it is the investigators prerogative to answer this question. However, the editor may change this if it is inconsistent with the case documentation.

#### SPEED LIMIT (2.1.33)

Speed Limit refers to the legal speed limit for the traffic way the case vehicle is traveling. It also applies to posted advisory speeds on curves and ramps, and to unposted "prima facie" limits.

#### ROAD DEFECTS (2.1.34)

A "yes" answer should be given to this question only if the road defect was causative or involved in the accident in some way, i.e., defective street lights are not considered a road defect if the collision occurred during the day. The most common type is the pot hole that causes someone to go out of control. Design deficiencies are not road defects, e.g., a pole too close to the road is not a defect.

#### TEMPERATURE (2.1.35)

This must be reported by the investigator so the editor must, also, accept what is reported, unless the response is highly suspect, e.g., summer temperatures of (1) "below zero".

#### CROSSWIND (2.1.36)

This question is specific to the case vehicle. It is usually answered (2) "light". Tail or head winds do not count as crosswinds. Determining whether the crosswind was light or strong may present a problem. If crosswind speeds are given, then those of 0-5 mph velocities are considered "calm" or "none" (1), those of 6-14 mph are considered light (2), and those of 15 mph or over are considered "strong" (3).

#### TIME OF DAY (2.1.37)



This should be crosschecked with Time of Collision from page (1), of the CPIR.

#### VISIBILITY LIMITATION/OBSTRUCTION (2.1.38-39)

If you believe that the factor was definitely or probably involved in causing the accident or increasing the severity, and that the factor definitely or probably existed, then it should be coded.

As of 9/1/72, these items are applied to the accident as a whole, i.e., if one vehicle, even if it isn't a case vehicle, has a dirty windshield (5) "windshield condition" is marked on any CPIR's for that collision. Similarly, if a building blocked the view for one vehicle, then (2) "building" must be entered under Visibility Obstruction for all CPIR's in the accident. (2) "cloudy-dark" is a low, heavy cloud cover making the sky totally overcast, and should not be marked just because the accident occurred at night.

There are two new codes for Visibility Limitation: (8) "rain" and (9) "snow". These are to be used where either the rain or snow is heavy enough to cause a visibility problem. If these two new codes are used, a crosscheck with the Precipitation and Rate of Precipitation on the previous page, should be done.

There are also two new codes for Visibility Obstruction: (8) "vehicle in transport" and (9) "parked vehicle". "Vehicle in transport" means any motor vehicle in a traffic way whether it is moving or not. A non-moving vehicle in a legal parking area with driver and with the engine running is a "parked vehicle" for the purpose of this item. A bus at a bus stop is in transport.

#### MECHANICAL MALFUNCTION

##### POSSIBLE MECHANICAL MALFUNCTION (2.1.40-41)

A malfunction, in connection with this question, means mechanical dysfunction of an item on the case vehicle. The malfunction of that item(s) must somehow be involved in the accident. Code a malfunction only if it possibly played a causal or severity increasing role in the accident. This question does not ask for alleged malfunctions nor does it ask for investigated malfunctions. Low tire pressure is not a malfunction in most accidents; where as tire blow-outs are a malfunction.

If an allegation is made that there was a malfunction, e.g., "the throttle stuck", and the investigators did not find a malfunction, then a zero (0) should be entered in column 40 and "yes" (1) in column 41 but throttle controls should not be checked nor should a response other than zero (0) be entered in column 40. If you suspect accident involvement code the

malfunction.

#### COLLISION CONFIGURATION

##### VEHICLE TO OBJECT (4.1.42)

Vehicle to Object is coded "yes" (1) only when the object contacted produces damage to the vehicle or injury to an occupant. Pedestrians are objects; other vehicles are not. In the case of a rollover (90 degrees or more) with only ground (04) contact, this is coded "no" (2). If during the rollover other objects are hit, including embankments (09) this is coded "yes" (1).

##### ROLLOVER (4.1.43)

Rollover is defined as any vehicle rotation of 90 degrees or more, about any true horizontal axis. A car on its side is coded "yes" (1). Rollover can occur at any time in the collision sequence and is coded independently of other configuration questions.

##### RAN OFF THE ROADWAY (4.1.44)

Ran Off the Roadway means that the first impact must occur outside the boundaries of the roadway. If a curb is contacted with damage or an associated injury occurring before the vehicle leaves the roadway this question is coded "no" (2). If negligible damage is done by the curb then "yes" (1) should be coded. Thus, a two vehicle collision where the case vehicle subsequently runs off the road and hits a tree is not a Ran off the Roadway collision.

##### VEHICLE TO VEHICLE (4.1.45)

The response chosen should be indicative of the first injury or damage producing collision between the case vehicle and any other vehicle, this is irrespective of any other contact with objects or a rollover.

The list of configurations are described as follows. "Yes, configuration unknown" (1) means that a vehicle to vehicle collision took place but the way they collided is indiscernible. "No configuration" (2) indicates that the case vehicle was not involved in any vehicle to vehicle contact of damage or injury producing proportion. "Head-on" (3) means that the two vehicles (one of which is the case vehicle) contacted front end to front end. The only exception is a sideswipe of either one of the two sides with an initial frontal contact to both vehicles, this is more appropriately coded as a "sideswipe" (5). "Intersection 'L' type" (4) is coded when the front or rear of one vehicle contacts either side of the other vehicle primarily at one end of that side, thus little or no direct contact to the middle or opposite end of that side. "Sideswipe" (5) refers to a collision where either end or either side of one of the vehicles involved

is contacted in a sweeping manner that superficially damages a wide area of that side or end first contacted. "Rear impact" means that the two vehicles (one of which is the case vehicle) contact each other front end to rear end. This is irrespective of the direction either of the vehicles is traveling as in the "head-on" (3) configuration. A sideswipe condition, coded "sideswipe" (5) take precedent over "rear impact" (6). "Other" (7) configuration refers to any unorthodox collision where at least one of the vehicles involved does not have all wheels on the driving surface at first contact with the other vehicle (e.g. vehicle partially rolls over and hits another vehicle, or a vehicle falls off a bridge and lands on top of another vehicle), or the vehicles collide side to side and the direction of force is not a sweeping-type motion (e.g. two vehicles traveling in opposite directions both skid and contact side to side instead of head-on). It does not include multi-vehicle accidents, or pedestrian accidents. "Intersection T-type" means the front of one vehicle contacted the middle portion of either side of the other vehicle with subsequently little or no damage to either end of that contacted side. If the Case Vehicle CDC is 12-FDEW-2 and the Other Vehicle CDC is 09-LPEW-3 the first letters indicate this to be an intersection type collision; the second letter of the Other Vehicle CDC indicates it to be a T-Type (8). "Intersection type" collisions do not have to occur in intersections. A "T type" (8) is into the passenger compartment. An "L type" (4) is into the forward or rear sides of the vehicle.

When the case vehicle contacts more than one other vehicle, the configuration that represents the first damage or injury producing contact should be coded. In this type of collision, the primary CDCs do not have to conform to the collision configuration.

#### VEHICLE TO STOPPED/MOVING VEHICLE (4.1.46-47)

Vehicle to Stopped Vehicle and Vehicle to Moving Vehicle are not mutually exclusive when the case vehicle contacts more than one other vehicle or one other vehicle twice. However, if two vehicles are involved and only one impact occurs, then only one of these two code choices can be coded as "yes" (1). Here too, only damage or injury producing contacts are considered.

#### OTHER (4.1.48)

Other does not include pedestrian accidents; they are recorded under Vehicle to Object. This does include jackknife-type accidents for trailers, fire only accidents, and some malfunction of vehicle accidents where displacement of a vehicle part causes damage or injury (e.g., muffler of car breaking and doing undercarriage damage). Five new codes have been added for particular types of "Other" configurations; the code most applicable to the accident should be chosen and details given in the margin. If the accident is not vehicle to vehicle, vehicle to object, or rollover it should be coded (5) "Non-collision type", e.g., for injury accidents without vehicle damage. If two

vehicles are involved in the accident but do not contact each other directly use code (6) "Vehicle-part to vehicle." This would be used in cases where part of one vehicle (e.g., disengaging tire or camper) strikes another vehicle. In this instance the number of vehicles involved in the accident would be two (2), but the vehicle to vehicle collision configuration (4.1.45) would be coded "no" (2), and the Other Vehicle page would be blank and other vehicle speeds coded (888). However, this other vehicle should be considered in answering the questions on the CPIR Supplement, e.g., responsibility, avoidance maneuvers etc. Note that if the part is at rest it is considered an object, and the accident type is vehicle to object. Code (7) "Vehicle to other vehicle's trailer" should be used if one of the vehicles strikes or is struck by another vehicle's attached or unattached, moving or stationary trailer. Note: this should only be used for private trailers, not the trailer section of articulated trucks (semis). The number of vehicles involved is determined by considering the trailer as part of the vehicle it is or was attached to, e.g., if the trailer of vehicle #1 strikes vehicle #2 only two (2) vehicles are involved. Similarly, for the collision configuration, consider the attached trailer as an extension of the towing vehicle, e.g., if vehicle #2 is stopped and struck in the rear of its trailer use code (6) "Rear-impact". When coding vehicle #1 the Other Vehicle page and other vehicle speeds should describe the trailer. When coding vehicle #2 (the vehicle with the trailer) the Other Vehicle page should describe vehicle #1, since a vehicle's own attached trailer cannot be the Other Vehicle. Code (8) should be used for "self-induced" damage. Only one vehicle is involved and all information about the other vehicle is not applicable. This differs from (5) "non-collision" in that it involves a collision between the vehicle and part of itself, e.g., trailer, load, camper. If the self-induced damage results from an earlier collision with another vehicle or object this question should be coded (2) "no" other collision type. Code (9) is used for those rare circumstances where two or more vehicles are damaged in an accident without direct contact between either of the vehicles proper or their parts. This code "vehicle to object to vehicle" is used when one vehicle sets into motion an object not initially part of itself and this object then damages another vehicle, e.g., a car knocks down a pole which lands on the following vehicle. The number of vehicles involved would be two but there would be no vehicle to vehicle contact and the Other Vehicle page should be left blank.

#### VEHICLES INVOLVED (4.1.49)

This question includes all the vehicles contacted in the accident regardless of whether or not the case vehicle contacted them. Non contact vehicles that "caused the accident", e.g., involved as visual obstructions, should not be counted as a vehicle involved.

#### OBJECTS CONTACTED (4.1.50-57)

Objects Contacted should be coded in the order of contact

during the collision and should include only damage or injury producing contacts. If the case vehicle contacts another vehicle more than once, then the other vehicle should be coded more than once. Curbs should not be included unless they produce damage or an injury. In cases where curb contacts are significant to warrant a CDC code then use "other" (99) and write in "curb" for the contact code. In a case where more than 4 objects are contacted, only the most significant ones should be included. "Other" should not be used for more than one object. The "other" code should not be used unless none of the existing codes adequately describe the object in question. Objects Contacted includes only those objects contacted by the case vehicle. Hard packed snowbanks along the edge of the roadway should be coded as "embankments" (09). The addition of new code values for trucks (22-26) and additional objects (40, 50-55) should be noted. All unused responses should be filled with "none" (02). Code (3) "ground" should only be used if the case vehicle rolls over or if it strikes the ground after having been airborne. Two new codes have been added. Use (28) for "bus"; code (17) is now used only for "train". Use (29) if the vehicle contacts its own or another vehicle's "trailer" (except the trailer of a tractor-trailer truck).

#### DRIVER IMPAIRMENT/VIOLATION

##### CASE VEHICLE DRIVER'S ABILITY TO DRIVE IMPAIRED BY (4.1.58-61)

"Drinking involved" (03) includes unknown amounts and amounts insufficient to be considered drunk by local legal standards but enough to be considered a possible accident causal factor. Insignificant quantities, such as glass of wine with dinner three hours before the accident, should not be included. The "drunk" (04) category is defined by local legal standards. "Medication" (11) includes both prescription and over the counter items. The code "narcotics" (12) includes illegal drugs such as marijuana which is technically not a narcotic. Things such as inattention are often mentioned in the narrative and not coded here; they should be.

If you believe that the factor was definitely or probably involved in causing the accident or increasing the severity and that the factor definitely or probably existed it should be coded.

##### TRAFFIC VIOLATION/LEGAL ACTION (4.1.62-63)

Violations should be coded when a violation occurs even if a ticket is not issued. Legal Action is coded only if a citation is issued or litigation is pending. A "yes" (1) should be entered in Traffic Violation if a violation was indicated on a police report and a "no" (2) under Legal Action if there was a violation but no legal action. A non-moving violation which has no relevance to the collision should not be coded as a violation. The editor should not determine that a violation occurred, but should code violations as documented by the

investigator or police report.

#### TYPE OF LOSS (4.1.64-65)

Personal Injury is coded "yes" (1) if anyone sustains any injury; this includes fatal injuries too. Property Damage includes damage to any involved vehicle and is usually coded "yes" (1). (Pedestrian accidents sometimes have no property damage occurring). Note: as of 4/74 the Property Damage question is being used as the CPIR update number and this question can therefore always be coded (0).

#### VEHICLE SPEEDS page 5

#### VEHICLE SPEEDS (5.1.66-77)

Speeds should be coded (999) if they are unknown. Other Vehicle Speeds should be coded (888) if it is a single vehicle accident. Ranges of speeds can not be coded, so the median of the reported range should be entered. Speed at Impact is the speed of the first impact, even if only minor damage occurred.

#### OTHER VEHICLE page 6

Only one Other Vehicle page may be computer processed, even if several Other Vehicle pages have been completed by the investigator. The other vehicle causing the most damage to the case vehicle should be chosen. In multiple vehicle collisions all Other Vehicle pages must be completed. (some MDAI teams leave the page blank when they complete a CPIR form for each vehicle).

Since the Case Vehicle page (card 3) contains all of the responses found on the Other Vehicle page, (card 2) only the Case Vehicle responses will be discussed.

#### CASE VEHICLE page 7

#### VEHICLE IDENTIFICATION NUMBER (7.3.12-24)

The VIN is the model and serial number of the vehicle. It usually contains model identifying numbers and letters within the first few digits of the VIN. In most cases, one can obtain make, body style, model year, assembly plant and in some cases (all but American made GM cars) engine type. GM, Chrysler Corporation and AMC have 13 characters with the exception of Cadillac which had only 10 characters before 1971. Ford Motor Company vehicles have 11 characters in the VIN. The serial number portion of the VIN should be filled in with 9's until it is the proper length. If no VIN has been provided, leave the entire field blank.

With the information gained from the VIN, one can check the

Number of Cylinders, Body Style, and Model Year coded elsewhere on the page. Check the VIN Summary in Section 5 for an outline of VIN formats and contents. If an inconsistency is discovered, a crosscheck with the narrative resolves the differences. More detailed VIN information can be found in the "Motor Vehicle Identification Manual (reference 7) and references 3 thru 6.

#### MAKE/MODEL CODE (7.3.25-29)

This code is used to identify the make (country, corporation, division) and model of the vehicle. See the Make/Model Codes portion of the Reference Information Section 5.

Whenever any part of the Make/Model Code is unknown, it should be denoted by zeros not nines. Since some of the cases that are edited include only a CPIR form, short narrative, and police report, explicit data as to the make and model of the other vehicle may not be known. The police report may include the car name and type such as, Chevrolet coach. This means that the make/model code would be (113) for the first three digits, (USA, GM, Chevrolet) but the body type is unknown (coach is not specific enough) thus, a (20) would be inserted as the last two digits. The five digit code for this example is (11320). Certain light trucks are considered as CPIR type vehicles, i.e., can be the reported case vehicle. Small vans and van type ambulances are model (11); station wagon type ambulances and hearses are model (03). Utility (jeep-type) vehicles, e.g., Bronco, Blazer are coded (14). Panel trucks and Carryalls, e.g., Suburban, Travelall are coded (15). Pickup trucks are either (12), (16), or (22) depending on whether they are plain, with a canopy camper or a slide-in camper. Pickup-cars, e.g., Ranchero are considered cars. Other trucks and vehicle types e.g., motor homes, pickups with chassis mounted campers, large trucks, buses, motorcycles, and special purpose vehicles, cannot be CPIR case vehicles, but have model codes because they can be the "Other Vehicle". Note that a vehicle's model code is the same as that used on the DAS form code list for it being an object contacted. Vehicles with a small van type front but are pickup cargo box are coded (11).

The model code, DF, (04) now is used for Mini Specialty (e.g., Mustang II). Code (03) now includes both luxury cars and limosines. A new code (44) has been added for "streetcar" a bus that runs on tracks. The manufacturer, ABC, for Harley Davidson is (155). The code for Norton, an English motorcycle manufacturer is (489). Note that VW small vans are coded as (66111).

#### MODEL YEAR (7.3.30-31)

This question is self explanatory, but it should be mentioned that the "unknown" code is (99) not (00). This sometimes becomes confusing since the unknown codes for the questions immediately surrounding model year are zeros. The year should coincide with the year indicated by the VIN. If not, and the narrative/photos also differ from the VIN year, the entire

VIN should be deleted.

#### SHIPPING WEIGHT OF VEHICLE, LBS. (3.3.32-35)

The Shipping Weight is defined as the weight of the vehicle as built to production parts list, plus engine oil, coolant to capacity and 3 gallons of gasoline, less optional equipment. (see MVMA Supplements, references 2-5). If the investigator has added weight to account for optional equipment, do not make changes. The shipping weight can be found in the Red Book (reference 6) for most cars and trucks. The unknown code is (0000). For weights of over 10,000 lbs., (9999) should be entered.

#### ODOMETER READING (7.3.36-40)

Mileage is taken from the vehicle at the time of collision. Here, too, the "unknown" is (00000) and "over 100,000 miles" is (99999). Sometimes a close look at a 35mm slide of the instrument panel will reveal the odometer reading. If the odometer was disconnected or broken before the collision, the reading should not be entered and the damage should be noted next to the CPIR question.

#### BODY STYLE (7.3.41)

The vehicle portion of the narrative, VIN, photographs and slides, are all used to determine Body Style. Some of the difficulties found in determining the difference between hardtops and sedans have been eliminated by definition: any type of upper B-pillar, however thin, is entered as a coupe or sedan, whereas a hardtop has no physical upper B-pillar whatsoever. Note that some cars called "hardtops" or "pillared hardtops" are by this definition coded as sedans or coupes. This then categorizes Plymouth Dusters, Dodge Demons, and Lincoln Continentals as "Coupes". Cars like Pinto, Gremlin, and Vega are entered as "2-door sedans" (2). The hatchback is always considered a tailgate, not a door. Due to the placement of the upper second pillar and the lack of rear windows, most Corvettes, and 70-72 Firebirds and Camaros, are considered "coupes" (2), with no upper C-pillars. A note should be made that pick-up cars (e.g., Ranchero, El Camino) are classified under "station wagons" (5).

Hard shell or removable hardtops are entered as "convertibles" (6). Cars with sun roofs (any top that has a pillared structure, side rails, and a portion of the roof which can provide an opening into the passenger compartment), are classified as "sedans" (2,4). Cars with soft or removable hard shell tops and a roll bar are considered as convertibles with upper B-pillars, e.g., Porsche Targa. A convertible top can be removed by hand without tools, i.e., optional or removeable solid roof sections, if bolted on at the factory, are coded as standard roofs, not convertibles. They are hardtops if there is no B pillar. "Pillars" can be made of fiberglass; if broken or separated code as usual. If the pillar is part of the roof do



not code the pillar. Usually removeable hardtops are like many cars' "sunroof," the pillars remain on the car at all times and should be coded if damaged.

Only passenger cars (those with model codes of (01)-(10) and (17)-(20) should be given codes of (0)-(6). Other types of vehicles' body style can be determined from their model codes.

Unknown vehicles (00) are coded (0). Small vans (11) are the only vehicles that should be coded (7). Utility vehicles (14), regardless of their pillar configuration should be coded "Other".

#### BODY STRUCTURE (7.3.42)

The Body Structure Charts in the Reference Section (5) gives the type of structure of most US and imported cars.

It should also be noted that body mounts exist on both "integral-stub" and "body and frame" structures. Most pickups and small vans are coded (1) "Body and Frame". GM's new line of small cars (e.g., Apollo, Omega) are (3) "Integral-Stub Frame". Body Mount Separation comes up later in the CPIR form and should be encoded consistently with the answer provided in Body Structure.

#### NUMBER OF CYLINDERS (7.3.43)

This question is answered by the investigator upon examination of the car. The answer should be checked with the information provided in the VIN or Red Book to see if the entry is correct. For rotary engines, "single rotor" (1) and "double rotor" (2) should be coded appropriately for the new engines.

#### HIGH PERFORMANCE OF AIR BAG EQUIPPED (7.3.44)

This question is a problem since no mutually agreeable criteria has been established. In the past, if the horsepower of the engine and the weight of the car were known, a 10.5 weight to horsepower ratio was used as the dividing line for high performance. Usually the investigator's decision is accepted. Do not accept High Performance based solely on the car's "fast" image or fancy facade.

For cars not equipped with air bags use the same code values. For cars with air bags choose between codes: (4) "Any Deployments", (5) "No Deployments", (6) "Deployments Unknown", and (9) "Both High Performance and Air Bag Equipped Unknown".

#### NUMBER OF OCCUPANTS (7.3.45-46)

This refers to the total number of persons being transported by the case vehicle at the time of the accident, and

must match the number of occupant sections included in the CPIR. It includes as occupants, people in the rear of pickup trucks. A driver standing beside his unoccupied case vehicle is coded as (00) occupants:

For unoccupied case vehicles all questions in the CPIR about occupant contact should be coded (3) "Not Applicable", and on the CPIR supplement questions about the occupants or driver should be coded as "not applicable," (32.91.19-23) or "unknown," (33-35.92.28-31, 49-62), not "none".

#### VEHICLE LOADING (7.3.47)

For passenger cars "full rated load" is with all designated seated positions filled plus 200 lbs cargo. For pickup trucks, panel trucks, sports vans, etc., the GVW is used. Since the three categories in this question are quite general, the investigators' decision is usually accepted.

#### EQUIPMENT OPTIONS (7.3.48-52)

Equipment Options includes Transmission Type, Steering Type, Brakes, Brake Type, and Brake Anti-Lock Device (does not include anti-slip differential, positraction). Although the questions are answered by the investigator, Section 5 has information about Brake Anti-Lock Devices and Brake Types useful in checking responses.

#### TOP POSITION AT TIME OF COLLISION (7.3.53)

Convertibles, sun roofs, and removable hardshell tops are the only cars that don't receive a "not applicable" (3) for this question. It should be noted that hard shell means solid metal or fiberglass roof whereas soft top means cloth type roof. Three new codes, (6), (7), and (8), have been added.

#### CASE VEHICLE REPAIR OR REPLACEMENT COST (7.3.54-57)

One can find vehicle cost for "totaled" vehicles under 'retail value' in the Red Book (reference 6), or any other valid source of vehicle cost. Teams should make an effort to obtain repair costs if the car has not been totaled. Note that the "unknown" code is (9999). Damage over \$10,000 is coded (9998).

#### CASE VEHICLE DAMAGE INDEX (7.3.58-71)

The CDC (Collision Deformation Classification, formerly called VDI Vehicle Damage Index) consists of seven characters, three numbers and four letters. Each character describes specific deformation detail concerning the direction, location, size of the area, and extent, which combined together form a descriptive composite of the vehicle damage. It is an indicator of direct damage (contact deformation) only, and should not represent indirect (induced) type damage.

The first two columns of the CDC are concerned with the

direction of principal force at impact. The principal force is that force which caused the crush and sheet metal displacement on the damaged vehicle. The direction of the principal force is determined by the resultant of forces acting on the vehicle at the point of application. The direction of the principal force is designated by reference to hour sectors on a conventional clock face positioned over the point of application, in the horizontal plane. The accident configuration, the speeds and weights of the vehicles involved should be taken into consideration if known. Thus, a "twelve o'clock" principal force indicates a direct frontal collision, and a "six o'clock" principal force indicates a direct rear end collision. The entry of (00) is used for all non-horizontal impacts, which includes all rollover VDI's. The entry (99) indicates an "unknown" clock direction or "not applicable" clock. In the case where there is no secondary CDC (99-0000-0) is entered.

Column 3 represents the general location of damage and point of contact. It broadly defines which projected area of the vehicle containing the deformation. Angle impacts at 45 degrees to the front or rear corner may be difficult to classify. These impacts should be classified as "F" or "B" if the deformation area at the front or rear of the vehicle exceeds the deformation area at the side; "L" (or "R") should be used if the deformation area at the side is larger. Similar consideration should be given to top versus side deformation in rollover; if the deformation area on the top is greater than on the side, use "T". If the side deformation is greater, use "L" (or "R"). If the damage falls into the "E" or "S" category in column 6, the side or end with the major area damage may not coincide with the general direction of force that caused that damage. In these cases, the letter in column 3 should indicate that general direction, relative to the vehicle, of the force that caused the damage (see definitions and examples below).

In determining whether undercarriage is the appropriate response for describing the general area, the following explanation and examples should be noted. Cases where the bumper has been contacted and rolled back and up, and then severe undercarriage damage along the length of the vehicle occurs, an "F" should be entered in column 3, with the extent number in Column 7 explaining how far back the undercarriage was damaged. For example, if a post or tree is contacted by the lower edge of the bumper and then the post or tree bends, and the car continues over it causing undercarriage damage, a single CDC describing one continuous impact is the appropriate entry, (in this case an "F" in column 3 and an "L" in column 5 would be entered). In some cases, though, where two distinct types of damage occur as a result of the contact with a single object (e.g., car impacts a stop sign leaving an impression in the front grill area before bending and continuing under the car causing undercarriage damage), it is permissible to represent the damage with two CDCs

The next column, number 4, designates the specific horizontal location of damage. Variations in vehicles require

that some special definitions be given as guidelines for the classification code "P", as follows:

A. Passenger cars - from the windshield to the rear of the rear-most seat.

B. Station wagons - from the windshield to the rear of the second seat.

C. Vans - from the front-seat back-rest to the center of the rear wheel.

D. Pickups - from the windshield to the rear of the cab.

"F" and "B" are side deformation areas forward and rearward of "P", respectively. Column 4 has meaning only in connection with Column 3; i.e., it is a suffix of Column 3 rather than being independent of it. The classifications "R", "C" and "L" should not be used for vehicles with top or undercarriage deformation ("T" or "U" in Column 3). Only "F, P, B, Y, Z", and "D" are allowable. Y and Z are interpreted as F+P and P+B respectively for top or undercarriage damage.

Overlapping damage areas are covered by the letters "Y" and "Z". A narrow deformation ("N" in the sixth column) area may be coded in conjunction with a "Y" or "Z" in cases where the damage falls on a borderline between two specific horizontal regions.

Column number 5 is used to classify the vertical aspect of the damage. In frontal impacts, the contact damage to the bumper can aid in determining the distinction between "E, M", and "L": "E" - Full height of bumper and sheet metal above had contact damage; "M" - Bumper essentially over-ridden by other object; "L" - Lower portion of bumper had contact damage.

In undercarriage damage, the "X" in Column 5 is used because the Column 3 "U" already defines the vertical location of damage.

On unitized bodies with no frame, the division between "M" and "L" for side impacts is taken to be along the door sill line.

Column 6 defines the general type of damage distribution through the following letter guidelines:

"A" - Damage resulting from underriding an overhanging structure, or being overridden by an overhanging structure (such as rear end of a truck or loading dock).

"S" - Damage resulting from contacting an object with a corner of the vehicle, then sideswiping a portion of the vehicle or pure sideswipe.

Examples:

1. FRES - Contacting front, then sideswiping side, without involving suspension system (usually

less than or equal to 4").

2. RFES - Contacting right side at front, then sideswiping front without contacting frame (usually less than or equal to 4", but can take bumper off).

3. RYES - Pure sideswipe.

"E" - Damage resulting from contacting an object with a corner of the vehicle that involves approximately 5" - 16".

Examples:

1. FREE - Contacting front right, forward of or involving the suspension area but not the frame.

2. RFEE - Contacting right side at front and involving frame horn area.

"O" - Any damage resulting from rollover only.

"N" - Damage which is narrow, but does not fall into the "S" or "E" classifications. This damage can be less than or equal to 16" wide horizontally, or less than or equal to 6" wide vertically, or a rectangular area which is less than or equal to the perimeter of a 16" square.

"W" - Any damage not falling into one of the above categories, and is considered a wide area of damage.

The final column, 7, is a numeric code used to describe the extent of the damage. Extent zones are applied to front, rear, side, top or undercarriage deformation and should be selected so that they are compatible with the principal damage selection in column three.

In order to achieve uniformity, the deformation extent guide has been established in relation to specific points on the vehicle.

If the passenger compartment is involved in "Top" damage, then the extent number should reflect the extent of damage to the passenger compartment. This is true even if the hood or deck lid are involved.

If the distance from the rear-most point of the vehicle to the top of the rear window is greater than the distance from the top of the rear window to the front door latch pillar (start of Zone 9) then use the "passenger car" deformation rear extent zone guide for classifying rear deformation. Other vehicles are classified using the rear extent guide for station wagons and vans.

THE EXTENT NUMBER SHOULD NOT BE USED AS A TOOL FOR DETERMINING THE COLLISION SEVERITY OR ENERGY REQUIRED TO DUPLICATE THE DAMAGE. FOR VEHICLES OF THE SAME BASIC TYPE, IT

DOES SERVE AS A TOOL FOR GATHERING TOGETHER VEHICLES WHICH HAVE SIMILAR DAMAGE CHARACTERISTICS.

The "unknown" code for the total CDC is (99-0000-0). This code is also used to indicate no damage or no secondary CDC. It is also used as the CDC for the other vehicle in single vehicle accidents.

When there is more than one CDC for the case vehicle, the investigator and editor should agree on a primary and secondary CDC. There are three major considerations that act as a guideline for choosing a primary CDC. They are listed below in order of importance:

1. The impact that caused the greatest intrusion into the passenger compartment.
2. The impact that appears to have done the most damage to the exterior of the vehicle.
3. The impact that caused the most severe injuries.

If contact is made with an energy absorbing bumper and no damage results (i.e. The bumper compresses and returns to its original position) then no CDC is recorded. There may be evidence of contact such as skuff marks or cuts in the rubber on the bumper, and there may even be occupant contact or injury, but if there is no deformation of the bumper no CDC is needed. If the contact did cause permanent compression or damage then a CDC is required. If only the bumper was damaged use an extent code of 1.

#### EXTERIOR DAMAGE page 8

#### SHEET METAL DAMAGE (8.4.12-17)

As noted in the CPIR form, this damage represents direct (contact) damage only and should correspond one for one, area of damage with the first letter of the CDCs. In cases where more than two CDCs exist, the first letter of those subsequent CDCs should also be represented as a positive response in the correct car region. Thus, if there are two CDCs, 10-FLEW-2 and 04-RPAN-1, then both Front and Right Side should receive positive responses.

#### SHEET METAL CRUSH (8.4.18-29)

The crush should always correspond one to one with the Sheet Metal Damage. The measurement of this crush should be made from the original outside contour of the vehicle. When these responses are left blank, the inches of crush should be determined from the damage diagram. The difference in overhang between the damaged and undamaged vehicles for front and rear collisions along with wheel base shortening can be used to determine the number of inches of crush. Another guideline for figuring out the inches of crush is that usually the speed at which the vehicle was impacted corresponds to the inches of direct crush, i.e., 5 mph at impact corresponds closely to 5

inches front crush. (Note, this relationship is not as accurate for side collisions). Roof damage is restricted to downward crushing, and includes trunk lid and hood damage. The code value (99) is used for crush of "unknown" amount. Vehicle regions not sustaining direct damage should be filled with (00).

#### WHEELS AND TIRES page 10

##### WHEELS ORIGINAL EQUIPMENT TYPE (10.4.30-32)

This question is left almost totally to the investigator's judgement. Wheel Damage is sometimes changed to be consistent with the contents of the narrative and the slides. Damaged rims should be looked for, if the car struck the curb. Tire damage is not to be included. "Mag" wheels never come as original equipment on USA manufactured vehicles. Do not confuse with fake hub cap versions.

##### TIRES (10.4.33-40)

Responses concerning Tread Wear, Tread Type and Carcass Type are entered by the investigator, and are usually accepted except where personal experience dictates otherwise. Tire profile can be checked if the tire size model numbers have been included in the CPIR. Tires with numbers containing 50, 60, or 70 are "wide oval" (5) and 78's are indicative of "regular" (4). For example, E70-14 are wide oval and G78-15 are regular profile tires. Tires with three digit model numbers (e.g., 6.85-14) cannot be used to determine profile.

#### FRONT EXTERIOR page 11

##### HOOD LATCHES (11.4.41-43)

Latch damage is taken on the word of the investigator. This question asks if the hood latch is inoperable, and does not include sheet metal deformation that prevents opening the hood. The latch cannot be both jammed and released. If there are two latches and the first releases but the safety catch jams, code the latches as jammed but not released. Hoods also include front trunk covers, as on the VW, but for the vans which do not have hoods all questions about hoods should be coded (3) "not applicable".

##### HOOD HINGES (11.4.44-47)

If the rear edge of the hood elevates and contacts the windshield, the hood hinges should be coded as Damaged "yes" (1). Separated now includes new codes for "partial separation" (4) and "complete separation" (5). If there is no damage, there can be no separation and both are coded as "no" (2).

##### HOOD REMAINED ON VEHICLE (11.4.48)

If the hood latch(es) release and both hinges separate but the hood remains in place due to sheet metal deformation, the hood is considered as having remained on the vehicle. In all other cases if the hinges have completely separated, the latches released and the hood completely separated from the vehicle during the collision, then the hood did not remain on the vehicle.

#### REAR EDGE OF HOOD (11.4.49-51)

If the rear edge of the hood moves above its normal pre-crash position, it is considered elevated. If the rear edge of the hood hits any part of the windshield at any time during the collision, even if it pulls away again, Contacted Windshield should be coded "yes" (1). This contact may not necessarily be damage producing. If the hood tears or causes a break in the laminate of the windshield, the hood is considered to have penetrated the windshield. This does not necessarily mean the hood has entered the passenger compartment.

#### OPTIONAL HOOD (11.3.52)

Any non-standard structural change in the hood is considered an Optional Hood. Optional Hood can be a factory or non-factory installed model. Things such as functional or non-functional hood scoops may qualify as optional hood depending on whether they are standard equipment or not. Painted racing stripes and blacked-out hoods do not qualify as optional hoods.

#### ENGINE OR TRANSMISSION MOUNT SEPARATION (11.4.53)

This includes any or all mounts and includes complete, or partial separation and cracking. The entry made by the investigator is usually accepted, unless a discrepancy between the CPIR and the narrative exists. New codes (4) and (5) can be used for "partial" and "complete" separation.

#### STEERING COLUMN FLEXIBLE COUPLING (11.4.54-56)

If there is no Steering Column Flexible Coupling (a flexible rubberized coupling, not a pot joint), then the Separated and Other questions become "not applicable" (3). If there is a Flexible Coupling, the investigators entries are usually accepted. New codes have been added to the Equipped question: (1) "Type Unknown", (6) "Rag", (7) "Pot", (8) "Universal", and (9) "Other". The Other Damage question asks only about other damage to the coupling itself. Separated should be coded as either "complete" (5) or "partial" (4) separation.

#### ENGINE COMPARTMENT TELESCOPING UNIT (11.4.57-60)

The entry provided by the investigator for the damaged unit is usually accepted, but a check to insure proper coding of type and original length should be made. See Section 5, Telescoping Unit. This is especially true in the case where the hood is jammed and the investigator had difficulty in determining the



type or presence of a telescoping unit.

When there is "no unit" installed, columns 58-60 should be coded with (888), if the type is "unknown" (999) should be used. If the difference in length is known, it should be rounded off and recorded in tenths of an inch. If there is a double U-joint or flexible cable serving the function of a Telescoping Unit it should be coded (8) "Double U-Joint" and the length change should be coded (888) since a length change for this type of device is not applicable. All cars equipped with Ford Mini Column Steering Column Energy Absorbing devices should be coded (8), (888).

FIRE page 12

FIRE (12.5.12-14)

The first question on fire is taken from the accident viewpoint. If a fire has started in either vehicle, Fire should be coded. There are three new codes denoting the time the fire started; (4) "pre-crash", (5) "at-crash", and (6) "post-crash". If there is a fire but the starting time is unknown, use "yes - time unknown" (1).

The Extent of Fire and Fire Origin questions apply to the case vehicle only, thus, fires that do damage to another vehicle but not the case vehicle are coded as "not applicable" (3). The distinction between a major and minor fire is subjective, however the following guidelines prevail: major fires will probably require fire department services. Minor fires may burn themselves out or are easily extinguished.

The Fire Origin question is self-explanatory. In cases where the fire begins in the other vehicle and not in the case vehicle, the "other:" (8) category is filled with "other vehicle" and coded as (8).

It should also be noted that any damage due to fire is not coded as impact damage throughout the CPIR form. For example, if a fire starts in the passenger compartment and burns the seat cushion, Seat Cushion Damage is coded "no" (2) on CPIR page 23.

LEFT EXTERIOR pages 12, 13

LEFT PILLARS NOT DAMAGED (12.5.15)

If the left pillars were not damaged or separated or left roofside rail was not damaged or buckled, a (1) should be placed in column 15. The entire remainder of CPIR page 12 should be completely filled in.

LEFT PILLARS (12.5.16-31)

There are new codes; (4) and (5) designating "partial" and "complete" separation and (1) being "separation type unknown".

If the pillar is not damaged, then there can be no separation and the proper coding is (2) "no" for Damaged and (2) "no" for Separated. If the pillar is damaged and not separated, the correct coding is Damaged "yes" (1), Separated "no" (2). If there is no pillar, both Damaged and Separated are coded "not applicable" (3). Many newer cars may not have actual lower C pillars, but damage or separation of the lower C pillar area should be coded.

In deciding which codes are appropriate responses to each of the pillar questions, consideration must be given to the Body Style of the case vehicle (CPIR page 7, column 41). Two door hardtops have lower A, B, and C and upper A and C pillars only. Two and four door sedans have both upper and lower A, B and C pillars. Small compacts with hatchbacks such as the Vega, Gremlin, and Pinto are coded as above but are considered to have tailgates and not trunk lids. More of this is detailed in the section about trunks and tailgates. Sedan type cars are not coded as having lower D pillars. Lower D-pillars are only present on station wagons, vans, and pickup trucks. Some sedans with four pillars (e.g. VW Dasher) may have two C pillars. If one is damaged and the other is not code the worst damage to either C pillar.

Station wagons have both upper and lower A, B, C, and D pillars. In the case of small two-door wagons with only three sets of pillars, code A, B, and D pillars. An excellent example of this is the Vega wagon. When in doubt as to whether a car is a hatchback sedan or small wagon, a good rule of thumb is: If the rear most pillar is at an angle such that it looks like the C-pillar of a sedan, then it should be coded as a hatchback; whereas, if the last pillar is close to a vertical angle, then code it as a station wagon. Vega wagons have A, B, D pillars, Pinto wagons have A, B, C, and D pillars. Gremlins have A, B, and C pillars.

Convertibles, soft or hard shell, are the most difficult vehicles to discern pillar arrangements for. In general, soft top convertibles have lower A, B, and C pillars and upper A pillars only. If there is a roll bar installed, it is coded as an upper B pillar while the B pillar that is part of the main body structure, i.e., the door jamb, is coded as the lower B pillar. It should be noted that cars with sunroofs are not considered convertibles.

Editing cars with removable hardtops is tricky, because their pillar arrangement depends upon the particular car. Some removable tops take out just the top and side rails leaving the backlight header and rear pillars intact. In this case, upper pillars are coded. The Porsche 911 is an example of this. Installed hard shell tops are coded as having only upper A-pillars and siderails, with the upper B and C-pillars being "not applicable" (3).

Vans have upper and lower A, B, C, and D-pillars. Pickup trucks have upper and lower A and B pillars as well as lower D

pillars because of their tailgate. Do not consider the sides of camper units as upper C or D pillars. Jeeps and some other vehicles must be coded the way they are built. Kaiser Jeeps (American Motors) have a "bathtub" design and have no pillars rearward of the A pillars, unless there is a tailgate which gives it lower D pillars. If the jeep has a fold down windshield in the down position, there are no upper A pillars. If it has a roll bar, then a C or B-pillar is considered present depending on its placement.

Fiberglass pillars (e.g., the upper B on some Blazers) should be coded if they are original equipment. Utility vehicles have their last pillar coded as an upper and lower D.

#### LEFT ROOF SIDE RAIL (12.5.32-33)

The roof side rails can be either damaged or buckled. Buckled is a hard word to define in this context. The difference between damaged and buckled is the same as that between dented and bent, if the roof rail is buckled then it must also be damaged and coded as Damaged "yes" (1), Buckled "yes" (1). Convertibles with the top in place have side rails. The same goes for removable hardtops. Cars with sun roofs always have roof side rails regardless of their top position.

#### LEFT BODY MOUNT SEPARATION (13.5.34)

Integral-stub frame cars do have body mounts. (For type of Body Structure, see page 7 of the CPIR). Unitized cars do not have body mounts and are coded as "not applicable" (3). Partial separation of the body mount is coded "no" (2).

#### LEFT DOOR HINGES/LATCHES NOT DAMAGED (13.5.35)

If door hinges and latches were not damaged and doors did not jam or open during collision, and continuity of the side structure was maintained, a (1) should be placed in column 35. The entire remainder of CPIR page 13 should always be completed.

#### DOOR LATCHES (13.5.36-39)

Door Latches can be damaged without being released and vice versa. Released means totally released from the catch. If there is no door, the question is "not applicable" (3). The side door of a van is considered as a rear door and has a latch.

Code (1) "Released, yes" if the latching pillar rotates causing the striker post to disconnect from the latch without any apparent damage to either. Code (2) "no release" if the latch holds but the surrounding metal tears away.

#### DOOR HINGES (13.5.40-43)

Door Hinges are coded the same as Hood Hinges, including (4) for "partial" and (5) for "complete" separation. If the

hinges have Separated, they are Damaged.

#### CONTINUITY OF SIDE STRUCTURE MAINTAINED (13.5.44)

This question should be looked at from an occupant ejection standpoint. If there is damage, such that all or part of the occupant could make contact with an exterior object to cause injury, the continuity is not maintained. This could be due to pillar separation; the door opening or external object intrusion through the side panel. It does not include open or damaged windows. Complete separation of passenger compartment pillars means the continuity is not maintained.

#### DOORS OPENED DURING COLLISION (13.5.45-46)

If the door opens at any time during the collision, it is coded "yes" (1). This is true even if the door becomes jammed later in the collision sequence.

#### DOORS JAMMED CLOSED (13.5.47-48)

If the door cannot be moved except with the use of tools or only with great difficulty, then the door is jammed closed. While rare, it is possible to have a door opened "yes" (1) and later jammed closed "yes" (1).

REAR EXTERIOR pages 13, 14

#### FUEL TANK AND LINES (13.5.49-55)

These questions are mainly the province of the field investigator. It is next to impossible for the editor to determine the fuel level or tank damage unless there are specific photos. However, if there is complete disengagement of the fuel tank, there must, out of necessity, be fuel leakage present. Fuel tank neck deformation is included as Tank Deformation equal "yes" (1). If there are no leaks, then questions on location of leaks should be coded with "not applicable" (3). Leaks from non original equipment fuel tanks or lines should be coded with the source noted in the margin.

#### TRAILER HITCH INSTALLED (13.5.56)

There are several new codes here:

- (3) Temporary Bumper
- (4) Bumper
- (5) Frame
- (6) Load Distributing
- (7) Ring and Pintle
- (8) Fifth wheel
- (9) Other:

The "temporary bumper" type (3) is a clamp on unit as featured at many trailer rental companies. It can be installed

or removed in a few minutes. The "bumper" type (4) is a ball fixed directly to a bumper as on the back of some pickup trucks. The "frame" type (5) is permanently attached (welded, bolted) to the bumper and frame. (see Trailer Hitches in Section 5 for drawings.)

The "load distributing" type (6) has a load distribution mechanism such as sway bars. They can frequently be identified by the square part sticking out below the bumper. The "ring and pintle" type (7) has a horizontal ring that drops over an upright pivotal member. A "fifth wheel hitch" (8) is like that used on tractor semi-trailer combinations. "Other" types (9) include anything else, such as clevis and pin.

#### TRAILER BEING TOWED (13.5.57)

If there is no hitch on the vehicle, this question should be coded not applicable (3).

Here as in Type of Hitch, there are several new codes:

- (4) Camper
- (5) Mobile Homes
- (6) Boat/Snowmobile, etc.
- (7) Rental/Cargo Trailer
- (8) Car
- (9) Other

#### TAILGATE PERFORMANCE (14.5.58-70)

This section is filled in for station wagons and vans with rear doors, pickups and any car with a hatchback. A hatchback is a rear deck lid that opens up into the passenger compartment.

The questions on latches and hinges for tailgates are coded identically to those for doors on CPIR page 13. GM "Clamshell" tailgate tracks are considered as hinges and can be damaged and separated. But there are no latches, so Columns 58 and 59 are "not applicable" (3). Code Column 60 "yes" (1) if the tailgate jams. The tailgate may be jammed in any position; jammed being defined as any time tools or excessive force is needed to move the gate. Also if the vehicle is equipped with a two way (sometimes termed dual-action) tailgate, three sets of hinges should be coded. "Equipped with two-way tailgate" (Column 69) should be coded (6) for a GM "Clamshell" type tailgate. "Partial" and "complete" Separation codes (4, 5) should be used when needed. If there is no Electric Tailgate Window, code that question as "not applicable" (3).

#### TRUNK LID PERFORMANCE (14.6.12-18)

The trunk lid is the lid in the back of the car that opens into a trunk or engine compartment such as in a VW. The VW van has both a trunk lid and a tailgate. These questions are coded the same as those in Tailgate Performance on the same page.

## LUGGAGE ARFA/CARGO AREA (14.6.19-21)

The luggage area is defined as a partitioned area where luggage is carried. It can be either the front and/or the rear of the vehicle. If it is in the front, then the "firewall" is part of the Trunk-Passenger Compartment Partition. The rear of a station wagon is considered part of the passenger compartment. If a vehicle has two luggage areas such as the VW squareback, and if either one is damaged, Damaged should be coded "yes" (1). Station wagons with partitioned cargo wells have "partitioned luggage areas". Most often there is no luggage area in station wagons except for the rear "well". The rear box of a pickup is considered a Cargo Area. There is no partial separation coded for the spare tire. Hatchbacks generally do not have luggage areas and columns 19 and 21 should be coded (3) "not applicable".

## BACKLIGHT HEADER (14.6.22)

If the header is buckled, it must be damaged, thus, both questions should be coded "yes" (1). Soft top convertibles don't have backlight headers, however, removable hardtops may, depending on design. If there is no header, "not applicable" (3) should be used.

## RIGHT EXTERIOR page 15

Right Exterior, CPIR page 15, is coded the same way as Left Exterior, pages 12 and 13.

## WINDSHIELD HEADER (15.6.42)

This question is coded the same way as Backlight Header (14.6.22). All vehicles have windshield headers except Jeeps with the windshield folded down.

## STEERING WHEEL pages 16, 17

## STEERING WHEEL TYPE (16.6.58-59)

The Steering Wheel Type is presently used for GM cars only, (see Section 5 under Steering Wheel Types). All others should be coded unknown (99).

## STEERING WHEEL RIM/SPOKES/RING/SHRCUD (16.6.60-66)

Damage to the steering wheel is left to the investigators discretion and crosschecked with the photographs. Occupant contact includes both probable contact and non-injury producing contacts. Since the driver is generally holding the steering wheel rim, contact should not be coded if the driver braces against the wheel, unless hand injury results. Contact should always be coded if the driver strikes the wheel.

## STEERING WHEEL ENERGY ABSORBING DEVICE (16.6.67-76)

There are very few cars equipped with this device. If the vehicle is not equipped with a steering wheel EA device then column 67 should be (2) and columns 68-76 should be filled with 8's for "not applicable". Column 67 should always be filled in. (See Steering Wheel EA Device in Section 5).

## STEERING WHEEL POSITION (17.7.12)

This question is left to investigators discretion. Fill with (00) if "unknown".

## STEERING FEATURES (17.7.14-21)

The Pad, Tilt, Telescoping and Swing-Away Features are left to the investigator, unless they look unreasonable, such as a Falcon with a Swing-Away Feature. Very few cars have true Load Distributing Steering Wheel Pads (see Section 5).

For cars not equipped with a steering wheel air bag (17.7.14) use the same code values. For cars with air bags choose between codes (4) "Deployment", (5) "Equipped - No Deployment", (6) "Deployment Unknown", and (9) "Both Pad and Air Bag Unknown".

## COLUMN MOVEMENT (17.7.22-25)

The "A" dimension should be coded as "unknown" (999) if the backlight header is buckled, the steering column is broken loose, or the vehicle has no backlight header. Otherwise, the investigators measurements are assumed to be accurate. There is a tolerance of 1" on measurements. Direction of Motion (column 25) is sometimes erroneously coded (0) for no movement. Check to be sure that the proper code is used here.

## STEERING COLUMN ENERGY ABSORBING DEVICE (19.7.26-29)

There are several new codes for the question. The Ford "mini-column" is an (8) and the Chrysler 74 "slotted jacket and mandrel" is a (9). "Other" types of devices, such as the Dodge Colt "collapsible tube" are coded (6). If the vehicle is not equipped with an E.A. Device (7), the compressed length is "not applicable" (888).

The editor cannot check the compressed length but a check of the type and original length should be made in Section 5.

## SHEAR CAPSULE SEPARATION (19.7.30-31)

The amount of shear capsule separation cannot be determined by the editor, however, if there is no shear capsule such as in the Ford "mini column", this question is coded "not applicable" (888). If the amount of separation is "unknown", the coding becomes (999). There are no shear capsules unless there is a Column EA Device.

## COLUMN VERTICAL ROTATIONS (19.7.33-34)

As in the previous two questions, the measurement to the damaged dimension is left to the investigator. The original angle can be checked in the Reference Information, Section 5. This code is a two digit non-decimal code and can be either plus or minus. However, the plus or minus is not coded. The new code "rotated - unknown amount" (98) should be used when applicable.

## PASSENGER COMPARTMENT - GENERAL INFORMATION page 20

## PASSENGER COMPARTMENT REDUCED IN SIZE (20.7.35)

The passenger compartment is considered as reduced in size when the internal boundary of passenger compartment moved inward due to either direct or indirect damage.

## EXTERNAL OBJECT INTRUSION (20.7.36)

There is External Object Intrusion when the internal boundary of the passenger compartment is moved inward due to direct damage, i.e., an external object went inside the original internal boundary line. (This object might be part of the car, e.g. The hood or engine.) This question includes, but is not limited to, penetration.

Note: The boundary does not necessarily have to be broken. (If the compartment is opened up the Continuity of Side Structure (13.5.44) is not maintained.)

## INTERNAL LOOSE OBJECT (20.7.37)

All Internal Loose Objects are coded even if not involved. They could have caused injury. Seat cushions and back rests can become internal loose objects if they do not remain in position as part of the seat.

## VERTICAL ROTATION OF INSTRUMENT PANEL (20.7.38)

This is rotation in a vertical plane about a horizontal axis due to any type of causative factor. Buckling in the center of the panel is not included.

## FIREWALL/FLOORPAN DEFORMATION (20.7.39)

The firewall is the partition between the engine and passenger compartment. The Firewall and Floor Pan Deformation question are self-explanatory and generally left up to the investigator. Floorpan includes the toe board. In cars where the firewall and cowl are not the same (e.g. VW and some vans) code damage to the firewall. Floor pan inward deformation always means passenger compartment size reduction.

## WINDSHIELD (20.7.41-45)



If the windshield is broken it must be cracked. If it is neither cracked nor broken code these questions (2,2) not (2,3). If the windshield is not contacted by the occupant or is neither cracked nor broken code "cracked or broken by occupant contact" as "not applicable" (3). Bond Separation refers to the windshield completely or partially "popping out" from its mount.

#### WINDSHIELD CODE (20.7.46-47)

Illustrations of windshield codes are found in the Reference Information, Section 5 under Windshield Codes. The most important distinguishing feature is the DOT model code number. The partial windshield codes for "float unknown type" and "PPG-float" etc., are only applicable for GM windshield glazing marks. They are used when the model number cannot be identified. There are two codes - (YK) and (YL) for "unknown" Carlite and Chrysler model numbers respectively. If nothing is known about the windshield or if the glazing monogram is not identifiable, then (YY) is used for "unknown".

#### PASSENGER COMPARTMENT, FRONT INTERIOR pages 21, 22

If there are no occupants (as in a parked car) fill in the questions about damage, but code "not applicable" (3) for all questions about occupant contact.

#### INSTRUMENT PANEL (21.7.48-75)

Although it is up to the investigators to provide the editors with the proper information, there are some things that might help the editor perform any necessary crosschecking with the narrative or slides. If any listed item is not a part of the original equipment of the car, then "not applicable" (3) should be entered for all applicable responses for that item. If the Equipped column is present, that should be answered as "no" (2) and the other applicable columns "not applicable" (3). For example, there is no ashtray in the car, damaged becomes "not applicable" (3) and occupant contact becomes "not applicable" (3). If there is no parking brake release or bracket, then the response for the equipped column should be "no" (2) and for damaged and occupant contact "not applicable" (3).

The Glove Compartment Area question refers to the area not to the glove compartment itself. Therefore, if there is no glove compartment, that does not mean that that question could necessarily be marked with "not applicable" (3). Note that both the "glove compartment area" and "midpanel" are independent questions. Both can be coded (1) "yes" from one occupant contact. The parking brake question also refers to parking brakes mounted between or next to seats.

The Other category is marked with "not applicable" (3) if there are no other items. Other items include non-original add-on items such as CB radios, tape players, and tachometers (unless they are factory installed).

For cars not equipped with an instrument panel air bag (21.7.74) use the same code values. For cars with air bags choose between codes (4) "Deployment", (5) "Equipped - No Deployment", (6) "Deployment Unknown", and (9) "Both Other Damage and Air Bag Equipped Unknown".

#### OTHER FRONT INTERIOR ITEMS (22.8.12-34)

The Console (columns 26-28) refers to anything on the floor or hump between the front two seats on which an occupant could receive any injury. The tunnel or rubber boot on a floor mounted manual transmission selector lever, are not included as consoles. Engine Covers (e.g., in small vans) are considered as consoles if they are located between the front seats. If they are located forward so that there is no floor space between the engine cover and the instrument panel, then they should be coded under "Other" in columns 74-75.

#### PASSENGER COMPARTMENT; SEATS/WINDOWS pages 23, 24

#### TYPE OF FRONT SEAT (23.8.35-36)

The seat type codes presently used are inadequate. However, they do come close to describing most basic seat types. Therefore, seat types should be coded according to their basic style. For instance, the center divided front seat available in some Mercury models with center armrests for both sides is basically a type (5), a split bench seat. It might be noted that the availability of a center armrest is not a factor in coding a specific seat type. A new code exists for "drivers seat only" (3) for use instead of "bucket seats" (9) for single seat vehicles. Some Pickup trucks have bench seats with folding backs to provide access behind the seat.

#### DELUXE SEAT ACCESSORIES (23.8.37)

Deluxe Accessories include any accessories on the back of the front seat, such as ash trays, map pockets, etc. There is a new code (4) for Reclining Seatbacks which takes precedence over (1) Deluxe Accessories.

#### TYPE OF SEAT ADJUSTERS/ADJUSTMENT (23.8.38-39)

In the case of divided seats, the seat adjuster questions apply to the driver's side only. Two-way seats move forward and back. Four-way seats move forward, back, up, and down. Six-way seats can move forward, back, up and down, and can also be rotated about a horizontal axis. On the Type Of Seat Adjustment question (23.8.39) use the new code (8) for a GM "Swivel" seat.

#### ADJUSTER DAMAGE/SEAT SEPARATION (23.8.40-43)

Location of separation should be coded "not applicable" (3) if neither types of Damage to Adjuster include "separated" (6). Conversely, if "separated" (6) is included as a type of damage,

then (3) for Location of Separation should not be used.

If the seat adjuster has "released", e.g., the seat freely moves back and forth on the track, the Type of Damage should be coded "deformed" (5). "Chucking" (4) can result in the seat having free play over a short distance. "Separation" (6) means total disengagement, e.g., the seat has free vertical movement. A new code (8) "swivel broken or released" has been added to the type of damage question to describe damage to a swivel seat. The Locations of Separation of "floor" (4), "adjuster" (5) and "seat" (6) are self-explanatory. If the type of adjuster damage is unknown but it is known that no separation occurred, then code columns 41-43 (0,0,3).

#### POSITION OF SEAT (23.8.44-45)

Position of Adjustable Seat should still be coded for rigid seats. For instance, if the driver's seat is adjustable and the passenger's seat is not, the position of the passenger's seat can still be determined by comparing it to the driver's seat. "Not applicable" (3) is used only when no seat is present.

#### DAMAGE TO FRONT SEAT (23.8.46-48)

The question Contacted by Rear Occupant is coded "not applicable" (3) if there are no rear seat occupants. The front seat damage questions are left to the discretion of the investigator but may be checked against the slides.

#### HEAD RESTRAINTS (23.8.51-56)

In the Head Restraint section, columns 52, 53, and 56 are "not applicable" (3) for integral head restraints. If the head restraints are removed prior to the collision, then the rest of this section is "not applicable" (3).

#### FRONT SEAT BACK LOCKS (24.8.57-60)

The Front Seat Back Locks section should be "not applicable" (3) if the seat backs are non-folding. A consistency check should be made between this question and Front Folding Seats to insure correct responses. Seatback locks became standard on GM cars in 1967 and on other cars in 1968.

#### SEAT BACK ROTATION (24.8.61-64)

This measurement should always be taken; it is not restricted to rear impacts. A new code has been added to seat back rotation. It is "angle changed unknown amount" (98). This should be used when there is obviously rotation and original dimensions are not available, as in the case of a vehicle with numerous position reclining seatbacks and no way of determining the original position. It should not be used in place of a measurement when original dimensions can be obtained. (see Seat Back Angles, Reference Information, Section 5.)

## TYPE OF REAR SEAT (24.8.65)

This question refers to folding seat backs on rear seats, as in station wagons. Some pickups have second seats; these usually fold down.

## REAR SEAT DAMAGE/ARM RESTS (24.9.12-15)

These questions are left to the investigator's discretion and should be checked with slides and narrative for consistency.

## REAR SEAT BACK LOCKS (24.9.16-22)

Equipped should be coded (3), "not applicable" if the rear seat is non-folding (24.8.65). Some vehicles have a lock on only one side of the seat. If the seat is equipped with locks but is in the folded down unlocked position at the time of the accident code columns 16-19 as (1,3,1,3).

## BACKLIGHT/BACKLIGHT HEADER (24.9.23-26)

A zip-out window is a backlight and can be damaged and contacted, but cars with zip-out rear windows (e.g., soft shell convertibles) do not have backlight headers, therefore, Damaged and Contact should be coded "not applicable" (3). Added rollbars are not considered backlight headers, no matter where they are situated.

## WINDOWS CLOSED AT TIME OF COLLISION (24.9.27-33)

The glass area must be completely (100%) closed to be coded "yes" (1). Any degree of opening is coded "no" (2). Backlights, like other windows, are coded "yes" (1) if they are closed. If it cannot be determined whether a side window was operable, e.g., because of lack of electrical power, use (0) "Unknown". If the area is solid, i.e., no windows, then "not applicable" (3) is entered.

## PASSENGER COMPARTMENT: INTERIOR SIDES pages 25, 26

## LEFT SIDE INTERIOR (25.9.34-59)

These questions are left to the discretion of the investigator, but should be checked with the slides and narrative for consistency. If a vehicle is not equipped with any of the listed items, such as armrests, these blanks should be coded as "not applicable" (3). If there is a rear seat, there is a Rear Door Area. This should not be coded as "not applicable" (3) unless there is definitely no rear passenger area. Vans with at least one rear side door have Rear Door Areas on both sides. It should be noted that convertibles with the top on have roof rails, a head lining, and a roof structure. Occupant Contact should not be coded as "not applicable" (3) in the rear area when there are no rear seat occupants. The front seat occupants can be thrown into the rear of the vehicle and contact items in

the rear seat area. Other should be coded "not applicable" (3) unless some added item is listed there. Damage or contact to the interior B, C, and D pillars refers to the pillar area. If the occupant does not contact the glass but is contacted by flying glass fragments from the side window, code damaged (1) "yes" and the occupant contact (2) "no" in columns 40-41 and 48-49.

RIGHT SIDE INTERIOR (26.10.12-41)

See Left Side Interior.

## OCCUPANT INFORMATION: GENERAL page 28, 29

## OCCUPANT NUMBER (28.11.12-13)

Occupants should be numbered sequentially rather than according to seat position, beginning with (01). Occupant forms should be completed for all vehicle occupants.

## SEAT LOCATION/POSITION (28.11.14-15)

The Position On Seat should be coded according to position even if the occupant is not actually on a seat. For instance, an occupant sitting between bucket seats would be coded as "center" (6). An occupant whose legs or head are in a different position from the one he is sitting in should be coded according to the location of his buttocks. A new code has been added; "all" (9) for occupants lying across the seat.

## POSTURE (28.11.16)

This question is self-explanatory. The code "sitting on floor" (8) has been expanded to include "sitting or lying on floor", and also "sitting on object other than seat".

## AGE (28.11.17-20)

The occupants Age is coded in months or years, leaving the other response blank. Children over 23 months are coded in years.

## WEIGHT/HEIGHT (28.11.21-25)

A check for consistency between narrative and CPIR should be made. The occupant's Height should be recorded in inches, not feet.

## SEX (28.11.26)

The code for "pregnant woman" (7) has been deleted. Pregnancy should be coded under the "non-impact medical condition" question of the occupant supplement. Large animals are coded (6). There are no code values (1, 2, 3) for this question.

## RESTRAINT SYSTEM (28.11.27-34)

Lap Belt Equipped is answered "yes" (1) only if there is a restraint available for the seat position and the occupant is sitting on the seat or sitting in a child restraint. If he is in any other posture (e.g., lying) and not wearing a lap belt equipped is answered "no" (2). Lap belts completely below/behind seat cushions are also coded "no" (2).

Examples of lap belt not equipped include: rear center seats on some small cars (e.g., Vega), babies on laps, children standing on seat, anyone lying down, sitting on console or

across bucket seats.

Lap Belt Worn is coded "yes" (1) or "no" (2) when equipped for this position. Otherwise "not applicable" (3) is coded for usage when no belt was available. The Inertia Reel and Locking Retractor questions should never be coded as "not applicable" (3) unless the vehicle is not equipped with lap and/or shoulder restraints. If a lap belt is used to secure a child restraint to the seat code lap belt worn "yes" (1).

For cars equipped with air bags (7.3.44) (17.7.14) or (21.7.74) coded (4)-(9), choose between codes (4), (5), (6), and (9) for (28.11.31). These codes indicate that an Air Bag was equipped and whether the Upper Belt was also equipped. For (28.11.32) choose between codes (0), (1), (2), (3), (4), (5), (6), (7), and (9). These values indicate whether an Air Bag was deployed and whether the Upper Torso Belt was worn or not, see below.

1. Upper Torso Belt and/or Air Bag Equipped (28.11.31)
  - (1) No Air Bag and: Upper Belt Equipped
  - (2) No Air Bag and: Upper Belt Not Equipped
  - (3) No Air Bag and: Upper Belt Unknown if Equipped
  - (4) Air Bag Equipped and: Upper Belt Equipped\*
  - (5) Air Bag Equipped and: Upper Belt Not Equipped\*
  - (6) Air Bag Equipped and: Upper Belt Unknown if Equipped\*
  - (9) Both Upper Torso or Air Bag Equipped Unknown\*
2. Upper Torso Belt and/or Air Bag Used (28.11.32)
  - (1) No Air Bag Deployment and: Upper Belt Worn
  - (2) No Air Bag Deployment and: Upper Belt Not Worn
  - (3) No Air Bag Deployment and: No Upper Belt Equipped\*
  - (0) No Air Bag Deployment and: Unknown if Worn
  - (4) Air Bag Deployment and: Upper Belt Worn\*
  - (5) Air Bag Deployment and: Upper Belt Not Worn\*
  - (6) Air Bag Deployment and: No Upper Belt Equipped\*
  - (7) Air Bag Deployment and: Upper Belt Unknown if Worn\*
  - (9) Both Upper Torso Worn or Air Bag Deployed Unknown\*

#### RESTRAINT SYSTEM USAGE CODE (28.11.35-36)

Restraint Usage Code is coded "not used" (00) unless the restraints are worn by the occupant. The first digit refers to lap belt usage and the second digit refers to upper restraint usage. Either digit is coded (8) if the restraint used is of "unknown type". (See Restraint System: Usage Codes, Reference Information, Section 5.)

#### TYPE OF SYSTEM USED (28.11.37)

If the upper restraints are not used, then the Type of System Used is "not applicable" (3). Use of two-point systems, such as a lap belt, is coded "not applicable" (3).

For cars equipped with air bags (7.3.44) (17.7.14) or (21.7.74) coded (4)-(9), use the code values (7), (8), and (9).

The codes indicate whether the Air Bag was deployed and Belt usage, see below.

Type System Used (28.11.37)

- (3) Not Applicable, No Torso Restraint Used
- (4) 3-point
- (5) 4-point
- (6) Other (Not 2-point)
- (7) Air Bag Deployed and No Belts Used\*
- (8) Air Bag Deployed and Any Belts Used\*
- (9) Air Bag Deployed and Unknown Belt Use\*
- (0) Unknown

CHILD RESTRAINT CODE (28.11.38-39)

New codes are added to the Reference Information list as new types are documented in case reports. (See Restraint Systems: Child Restraints, Reference Information, Section 5.)

EJECTION (28.11.42-43)

These questions are answered by the investigator and should be checked with the case documentation for consistency. Note that there is a code (4) for partial ejection. Occupants who jump or are pushed from vehicles are ejected.

TREATMENT/MORTALITY (28.11.44)

The Treatment/Mortality Codes have been expanded, and completely changed. Thus each case must be recoded. The two fatal categories "dead at scene" and "dead on arrival at hospital" cannot always be determined by the time at which death was pronounced. If an occupant dies in the 5 hours before being found, transported, and pronounced dead at the hospital, they should be coded "dead at scene" (4). The case documentation of injuries should be carefully examined to determine the actual time period of death.

OVERALL SEVERITY OF INJURIES (28.11.45-46)

The Overall Severity of Injuries should reflect the injuries in the matrix. It should never be lower than the highest injury in column 22 of the matrix. It can, however, be higher. In the case of fatalities, the head and brain are one body region. If an occupant dies of something other than an injury, such as asphyxiation of gastric contents, then he is not fatally injured. The severity code should be as high as his worst injury other than asphyxiation, and the fatality is coded under the Treatment/Mortality section.

OCCUPANT INJURY DETAIL MATRIX (30.12-26.12-31)

The Matrix is a way of detailing the injuries of an occupant in a vehicle by body region, type of injury, and areas of contact that may have caused the injury. Horizontal rows correspond to Body Region, and each is represented by a IBM



card.

OCCUPANT NUMBER (30.12-26.12-13)

It is important to enter the occupant number (same as top of page 28) under the vertical column with that heading as it identifies the card. The occupant number must consist of two digits and is entered if that Body Region was injured, i.e., if there is no injury, then no occupant number should be entered.

| C<br>A<br>R<br>D<br>N<br>U<br>M<br>B<br>E<br>R | O<br>C<br>C<br>U<br>P<br>A<br>N<br>T<br>N<br>O. | B<br>O<br>D<br>Y<br>R<br>E<br>G<br>I<br>O<br>N | ★ ENTER CODE(S)<br>FOR AREA(S) OF<br>POSSIBLE CONTACT |       |       |       | ENTER SEVERITY CODES |               |               |            |           |            |          |            |      |            |
|--|---|--|---|-------|-------|-------|----------------------|---------------|---------------|------------|-----------|------------|----------|------------|------|------------|
|  |   |  | 14-15   | 16-17 | 18-19 | 20-21 | TOOTH<br>INJURY      | OPEN<br>WOUND | FRAC-<br>TURE | LACERATION | CONTUSION | OF<br>MIND | ABRASION | CONCUSSION | BURN | HEMORRHAGE |
| 1-9  | 10-11   | 12-13  | 14-15   | 16-17 | 18-19 | 20-21 | 22                   | 23            | 24            | 25         | 26        | 27         | 28       | 29         | 30   | 31         |
|  | 12  | INTERNAL<br>ORGANS                             |   |       |       |       |                      |               |               |            |           |            |          |            |      |            |
|  | 13  | BRAIN  |   |       |       |       |                      |               |               |            |           |            |          |            |      |            |
| D<br>U<br>P<br>L<br>I<br>C<br>A<br>T<br>E      | 14  | FACE   |   |       |       |       |                      |               |               |            |           |            |          |            |      |            |
|  | 15  | HEAD   |   |       |       |       |                      |               |               |            |           |            |          |            |      |            |
|  | 16  | NECK<br>(CERVICAL<br>REGION)                   |   |       |       |       |                      |               |               |            |           |            |          |            |      |            |
|  | 17  | SHOULDER<br>GIRDLE                             | 20  | 19    |       |       | 22                   |               | 1             |            | 1         |            |          |            |      |            |

Wrong —  
(no injuries)  
(one digit)

Right —

BODY REGION CONTACT AREAS (30.12-26.14-21)

On the surface, it may seem that the various body regions need not be explained, however, since there is some overlap between some of the regions, it may be helpful to list the body parts that are and some that are not included in each region.

| <u>Body Region</u> | <u>Included</u>   | <u>Not Included</u>        |
|--------------------|---|----------------------------|
| Internal Organs    | Heart<br>Lungs<br>Kidneys<br>Liver<br>Pancreas<br>Spleen<br>Ovaries<br>Aorta<br>Gall Bladder<br>Bladder | Testicles - Penis<br>Brain |
| Brain              | Brain<br>Meninges<br>Pituitary<br>Medulla Oblongata<br>Pons   | Spinal Cord<br>Eyes        |

|                           |   |  |
|---------------------------|---|--|
| Face                      | Optic Nerve<br>Nose<br>Chin<br>Jaw (mandible)<br>Forehead<br>Below Scalp Line<br>Eyes<br>Teeth<br>Tongue<br>Internal Mouth<br>External Mouth<br>Sinuses<br>Zygomatic Arch | Ears<br>Scalp (not Facial)   |
| Head                      | Cranium<br>Scalp<br>Ears  | Vertebra<br>Zygomatic Arch<br>Teeth<br>Forehead<br>Jaw<br>Nose<br>Mouth<br>Eyes<br>Brain |
| Neck (Cervical Region)    | Cervical Vertebra<br>Cervical Spinal Column<br>Larynx<br>Trachea<br>Esophagus   | Lower Chin   |
| Shoulder Girdle           | Clavicle<br>Scapula   | Spinal Column<br>First Rib   |
| Right Upper Limb          | Right Hand<br>Right Wrist<br>Right Arm<br>Right Forearm   |  |
| Left Upper Limb           | Left Hand<br>Left Wrist<br>Left Arm<br>Left Forearm   |  |
| Chest Upper Back (thorax) | First - Eleventh Rib<br>Thoracic Vertebra<br>Thoracic Spinal Cord<br><br>Thorax (without Content)<br>Sternum  | Lungs<br>Heart<br><br>Aorta<br>Pleura  |
| Lower Back Lumbar Region  |   |  |

|                  |   |   |
|------------------|---|---|
|                  | Lumbar Vertebra<br>Lumbar Spinal Cord<br>Lower Back<br>Regio Lumbalis | Kidneys   |
| Abdomen          | Peritoneum<br>Intestine<br>Diaphragm                                  | Kidneys<br>Liver<br>Spleen<br>Pancreas<br>Stomach |
| Pelvic Girdle    | Pelvis<br>Testicles - Penis<br>Sacrum                                 | Ovaries<br>Intestine                              |
| Right Lower Limb | Right Thigh<br>Right Calf<br>Right Foot<br>Right Ankle                |   |
| Left Lower Limb  | Left Thigh<br>Left Calf<br>Left Foot<br>Left Ankle                    |   |

The Body Region designated "whole body" is used when it becomes too difficult to single out the individual injuries. This category is most often used with burn victims or when the injured person has contusions and abrasions literally all over his body. The cut-off point for using the "whole body" region is around 50%. The "whole body" region should not be used as a summary for all injuries and contact areas, nor, should other body regions repeat what has been entered under "whole body".

| CARD NUMBER   | OCCUPANT NO.       | BODY REGION               | ★ ENTER CODE(S) FOR AREA(S) OF POSSIBLE CONTACT |       |       |       | ENTER SEVERITY CODES |                |          |            |           |                   |          |            |      |            |
|---|--------------------|---------------------------|---|-------|-------|-------|----------------------|----------------|----------|------------|-----------|-------------------|----------|------------|------|------------|
|   |                    |                           |   |       |       |       | TOPOGRAPHIC REGION   | GENERAL INJURY | FRACTURE | LACERATION | CONTUSION | COMPLAINT OF PAIN | ABRASION | CONCUSSION | BURN | HEMORRHAGE |
| 1-9   | 10-11              | 12-13                     | 14-15   | 16-17 | 18-19 | 20-21 | 22                   | 23             | 24       | 25         | 26        | 27                | 28       | 29         | 30   | 31         |
|   | 12                 | INTERNAL ORGANS           |   |       |       |       |                      |                |          |            |           |                   |          |            |      |            |
|   | 13                 | BRAIN                     |   |       |       |       |                      |                |          |            |           |                   |          |            |      |            |
|   | 14                 | FACE                      |   |       |       |       |                      |                |          |            |           |                   |          |            |      |            |
| D<br>U<br>P<br>L<br>I<br>C<br>A<br>T<br>E<br>D<br><br>F<br>R<br>O<br>M<br><br>P<br>R<br>E<br>C<br>E<br>D<br>I<br>N<br>G<br><br>C<br>A<br>R<br>D | 15                 | 01 HEAD                   | 10  |       |       |       | 1                    |                |          |            | 1         | 1                 |          |            |      |            |
|   | 16                 | 01 NECK (CERVICAL REGION) | 98  |       |       |       | 1                    |                |          |            | 1         |                   |          |            |      |            |
|   | 17                 | 01 SHOULDER GIRDLE        | 20  | 19    |       |       | 2                    | 2              |          | 1          |           | 1                 |          |            |      |            |
|   | 18                 |                           |   |       |       |       |                      |                |          |            |           |                   |          |            |      |            |
|   | 19                 |                           |   |       |       |       |                      |                |          |            |           |                   |          |            |      |            |
|   | 20                 |                           |   |       |       |       |                      |                |          |            |           |                   |          |            |      |            |
|   | 21                 |                           |   |       |       |       |                      |                |          |            |           |                   |          |            |      |            |
|   | 22                 |                           |   |       |       |       |                      |                |          |            |           |                   |          |            |      |            |
|   | 23                 |                           |   |       |       |       |                      |                |          |            |           |                   |          |            |      |            |
|   | 24                 | 01 RIGHT LOWER LIMB       | 07  |       |       |       |                      | 3              |          | 3          |           |                   |          |            |      |            |
| 25  |                    |                           |   |       |       |       |                      |                |          |            |           |                   |          |            |      |            |
| 26  | 01 LEFT LOWER LIMB |                           |   |       |       |       |                      |                |          |            |           |                   |          |            |      |            |
| 27  | 01 WHOLE BODY      | 07                        | 20  | 19    | 98    |       | 3                    |                | 3        | 1          | 1         | 1                 |          |            |      |            |

Wrong  
(this should not review all injuries)

AREA(S) OF POSSIBLE CONTACT (31.12-26.14-21)

For recent changes see the question Contact Areas (30D.81-95.12-13) in the OS Interpretations.

Contact Codes are entered in the four vertical columns just to the right of the Body Regions. Two digit codes are entered in the appropriate boxes to identify possible injury causing objects and areas. These codes are defined on page 30A of the CPIR and in Section 5 under Occupant Contact Areas. If only one contact code is noted, it should be placed in the first position, (Columns 14-15) If two contact codes are noted, then they should be placed in the first and second columns (the ones labeled 14-15 and 16-17). This is done for up to four contact codes. No more than four contact codes can be used.

| CARD NUMBER | OCCUPANT NO. | BODY REGION            | * ENTER CODE(S) FOR AREA(S) OF POSSIBLE CONTACT |       |       |       | ENTER SEVERITY CODES  |          |            |           |            |          |            |      |             |       |  |
|-------------|--------------|------------------------|---|-------|-------|-------|-----------------------|----------|------------|-----------|------------|----------|------------|------|-------------|-------|--|
|             |              |                        | 14:15   | 16:17 | 18:19 | 20:21 | TO BODY REGION INJURY | FRACTURE | LACERATION | CONTUSION | COMBUSTION | ABRASION | CONCUSSION | BURN | WEIGHBRIDGE | OTHER |  |
| 12          | 01           | INTERNAL ORGANS        |   |       | 07    | 20    | 2                     |          | 2          | 1         |            |          |            |      |             | 1     |  |
| 13          |              | BRAIN                  |   |       |       |       |                       |          |            |           |            |          |            |      |             |       |  |
| 14          |              | FACE                   |   |       |       |       |                       |          |            |           |            |          |            |      |             |       |  |
| 15          | 01           | HEAD                   | 07  | 20    |       |       | 2                     |          | 2          | 1         |            |          |            |      |             | 1     |  |
| 16          |              | NECK (CERVICAL REGION) |   |       |       |       |                       |          |            |           |            |          |            |      |             |       |  |

Wrong (in wrong columns) — points to columns 14-15 and 16-17 of row 12.

Right — points to columns 14-15 and 16-17 of row 15.

The types of injuries made by the various contact areas usually becomes fairly obvious after a few cases are edited, e.g., the "steering wheel" (65) is responsible for many injuries to the thorax, lungs, and heart; the "windshield header" and "sun visors" tend to be responsible for injuries to the head for front seat unbelted occupants, etc.

However, some of the contact codes should be explained in regards to types of injuries they produce. The "front seat cushion" (51) has produced contusions and abrasions to the back (lumbar) region and the sides (flank). They usually occur when the front seat occupants are unbelted at "third impact" or in rollover accidents. The "parcel tray" (53) is usually found as a contact area in leg injuries in new compacts. "Rear seat" (50) caused injuries that usually involve the rear occupants of the vehicle. "Internal Flying Glass" refers to broken glass, regardless of origin, acting as a projectile and striking the occupant. It is usually used when there are lacerations and/or abrasions without window contact, for example, a frontal collision (occupants, move forward) in which a side window shatters. Eye injuries are sometimes traceable to flying glass.

Codes for specific windows (12,22,23) should be used whenever the occupant strikes the fixed glass pane, even if it is shattered by the contact.

"Impact force" (98) has many names: hyper-extension, flexion-torsion, whiplash. It refers to a phenomenon in which forces transmitted during the collision cause a pain or injury because they pass through the body of an occupant although no definite contacts are made. "Impact force" (98) is usually associated with "complaint of pain" or "strain" injuries in the neck and/or lower back (lumbar region). Occasionally, it causes a headache.

In general the "other" category (38) should be avoided since occasionally the investigator will code "other" for something for which a contact code exists. Common examples of this include; the examples for "impact force" already mentioned; intruding objects such as bridge piers instead of "penetrating objects" (72); and "other" for passenger or occupant instead of "other occupants" (32).

The contact codes "hood" (35) and "outside surface of car" (37) refer only to the case vehicle. Surfaces of any other vehicle are coded as (70) - (77).

#### INJURY SEVERITY CODES (30.12-26.22-31)

The last portion of the matrix consists of the vertical columns under the general instruction "Enter Severity Codes". These columns represent types of injuries and entries are made under them in the horizontal row that corresponds to the body region in which the injury occurs. The single digit entry is based on the AIS rated severity as given on the inside of the back cover of the CPIR and under AIS in Section 5, Reference Information. There are, of course, no AIS (7, 8, or 9) code values used in the columns 22-31, however, (9) and (8) are used in place of "X" (99) and "Z" (98) respectively. All unused cells should be left blank, i.e., no dashes.

This is an example of a bruised lung and an incorrect way of showing a scraped elbow (right arm).



In the example above, card 12 shows a probable injury to one of the internal organs, the exact nature and extent of which is unknown. That is why there is only an entry in the Overall Injury To Body Region column. The example on card 13 shows that there is a suspected injury to the brain but the presence of the injury is not certain, therefore, the type of injury (laceration, contusion, hemorrhage, etc.) cannot be known. A skull fracture of unknown severity is shown on card 15. An entry is made in both the Overall Injury to Body Region and the Fracture column since it is known that the injury was a fracture.

The usual function of the Overall Injury to Body Region column is to repeat or summarize the most severe injuries in a particular body region. The entry in this vertical column corresponds to the injury with the highest AIS severity code for that body region. It should always be filled in if there is any injury in that region. The following is an example of correct entries for multiple types of injuries.

| C<br>A<br>R<br>D<br>N<br>U<br>M<br>B<br>E<br>R | O<br>C<br>C<br>U<br>P<br>A<br>N<br>T<br>N<br>O. | B<br>O<br>D<br>Y<br>R<br>E<br>G<br>I<br>O<br>N | ★ ENTER CODE(S) FOR AREA(S) OF POSSIBLE CONTACT |       |       |       |    |    |    |    | ENTER SEVERITY CODES |    |    |    |    |    |  |  |  |
|--|---|--|---|-------|-------|-------|----|----|----|----|----------------------|----|----|----|----|----|--|--|--|
|  |   |  | 14-15   | 16-17 | 18-19 | 20-21 | 22 | 23 | 24 | 25 | 26                   | 27 | 28 | 29 | 30 | 31 |  |  |  |
| 12   | 01  | INTERNAL<br>ORGANS                             | 07  | 20    |       |       |    |    |    | 2  |                      |    |    |    |    |    |  |  |  |
| 13   |   | BRAIN  |   |       |       |       |    |    |    | /  |                      |    |    |    |    |    |  |  |  |
| 14   |   | FACE   |   |       |       |       |    |    |    | /  |                      |    |    |    |    |    |  |  |  |

U P





On examination of the above examples, there were two major types of editing changes made. The first type concerns the following of editing (or format) conventions. These are the kind of "mistakes" discussed before and can be seen in the deletions of the entries in card 26 (Whole Body), and of the dashes, etc.

The second major type can be called the substantive changes. These changes concern the content of the matrix and can be again divided into two types of mistakes. The mistake of omission, the first type, involves the lack (omission) of data that may have been mentioned in the narrative or elsewhere in the case. An example of this would be the added contact code in card 18 (right upper limb). The mistake of ignorance, the second type, involves a lack of knowledge concerning reasonable data entries. An example of this would be the contusion to the chest that was given a severity code of "4" AIS, when a superficial contusion cannot be more severe than "3" AIS.

## SECTION 3.3

## THE OCCUPANT SUPPLEMENT (OS)

The Case Vehicle Occupant Supplement has been designed to record 17 additional data elements for each occupant as well as provide for the recording of injury causation using an expanded list of contact area codes and the Occupant Injury Classification coding system. The 17 occupant questions (card 80) expand upon several CPIR questions and provide for additional information on occupant alcohol involvement, restraint systems and medical data. Each of the items is described in more detail below. The remainder of the Occupant Supplement records up to 15 occupant injuries (cards 81-95) according to the procedure detailed in Section 4.

The following paragraphs describe the editing of each Occupant Supplement data element.

## CASE I.D. NUMBER (30C.80.2-9)

This should be the same as the report number (1.1.2-9).

## OCCUPANT NUMBER (30C.80.12-13)

This should be coded in conjunction with the occupant numbers coded in the CPIR form (28.11.12-13) Occupants must be numbered sequentially beginning with 01 (one). If there are no occupants in the case vehicle do not fill out an OS form; proper code values will be generated automatically by the computer.

## ROLE OF INDIVIDUAL (30C.80.14)

This question should be self explanatory. It should be noted that all passengers will be coded "Motor Vehicle Passenger" (2). For each vehicle only one "motor vehicle driver" (1) should be coded.

## POSTURE (30C.80.15-16)

This is an extended list from the CPIR form (28.11.16) with specific code choices. A consistency check should be made between both posture variables for each occupant. Two new codes have been added. Use (83) "Sitting on other object" when an occupant is sitting in the passenger compartment on an object other than a seat (or console), e.g., a crate or kitchen chair. Code (98) "Other" should be used for unusual postures such as a child sitting on the armrest of a door. Note that the CPIR posture question should be coded with the first digit of the OS posture question.

## NON-IMPACT MEDICAL CONDITIONS FOR EACH OCCUPANT (30C.80.17)

This is the same as question (34.92.58) in the CPIR except it is specific to each occupant.

If this question is coded other than (0) or (9) write in the margin what the condition was, e.g., epileptic attack, history of arthritis, etc.

#### OCCUPANT ALCOHOL INVOLVEMENT (30C.80.18-22)

These three questions are aimed at recording more specific information about the alcohol involvement of each occupant. In most cases the teams will document the results of any alcohol test. If an autopsy report is included for a fatal victim, tests are usually documented within the form. It should be noted that the Occupant Blood Alcohol Level for the driver should be the same as that in the CPIR form (35.92.60-62) for that vehicle.

#### SEAT BELT BUZZER/INTERLOCK QUESTIONS (30C.80.23-25)

Information can be found in Section 5 under Restraint System: Warning System. American cars have a non-cycled buzzer warning system installed after 1972. The model year 1974 cars have an ignition interlock system. Some model 1975 cars have interlocks; most do not, but all 1975 cars have (4) "non-cycled buzzers". Teams do not usually document this information unless some unusual occurrence involving the warning system occurs. If the question Seat Belt Buzzer/Interlock Equipped is answered "Not equipped" (2) then the following two responses concerning the operation of the buzzer or ignition interlock should be coded "Not applicable" (3). If a team does not mention the operational status of the equipped device use code (0) "unknown". If the system is "type unknown" (1), but equipped, then the two operation questions should be coded "unknown" (0).

Pickup trucks and utility vehicles do not have interlocks or seat belt buzzers so these three questions are coded (2), (3), (3).

#### PASSIVE RESTRAINT SYSTEM EQUIPPED/ACTIVATED (30C.80.26-27)

These two questions for most vehicles will be answered "no" (2) for Equipped and "Not Applicable" (3) for Activated. In cases where airbags or other kinds of passive restraints have been installed, the teams will document that information in the vehicle portion of the narrative.

#### RESTRAINT SYSTEM MALFUNCTION OR SEPARATION (30C.80.28)

If no restraints are installed then "Not Applicable, No Restraints" (3) should be coded. If restraints are installed for that position and no malfunction occurs then "no" (2) is the appropriate response. A new code has been added (8) "passive system" for a malfunction in the air bag or other passive restraint system.

#### INVESTIGATOR JUDGEMENT OF RESTRAINT SYSTEM EFFECTIVENESS (30C.80.29)

A statement about the effectiveness will usually be found

in the Recommendations/Conclusions matrix.

If in the Injury Causation part of the Recommendations/Conclusions matrix the team indicates their opinion of the restraint's effectiveness this should be coded. For example, if there is a starred (positive) statement "Seat Belts were used" this should be coded as (1) "Reduced Injury Severity". If no opinion is given or an opinion of the sort "it is unclear whether the restraints were/would have been effective" use code (3) "no opinion". If a general statement is made which covers all occupants involved then each occupant would receive that response.

This question refers to the investigator's judgement of the potential for injury reduction, therefore it is possible for the question to be coded (2) even if the occupant was uninjured (AIS equals 0). Injury severity can be reduced within the same AIS level; e.g., if an occupant has several AIS level one injuries and seat belts would have eliminated all but one of them severity would have been reduced. Note also that this question is to be coded according to the investigators opinion of restraint effectiveness. Therefore purely factual statements, except those in the matrix, do not constitute an opinion.

Two new codes have been added: "Would have increased severity if worn" (7) is self-explanatory. "More restraints would have been better" (8) should be used when a team states that the occupant's usage of a seat belt reduced injury but that usage of a shoulder harness could have further reduced severity. Code (2) should be interpreted as "Could have reduced injury if worn" correctly to code the case of an occupant wearing a belt incorrectly, whose injuries would have been reduced if the belt was worn correctly. Note the "unknown" code (0) should not be used unless no information is available regarding belt usage and investigator's judgement. If belt usage is known but "no opinion" is given use code (3).

#### TREATMENT/MORTALITY (30D.80.30-31)

This is an expanded list of treatment/mortality codes from the CPIR form (29.11.44). The appropriate code should be chosen and checked with the CPIR question. Note: In general they are one greater than the corresponding CPIR code value.

This question is not restricted to treatment immediately post-crash, e.g., if an occupant goes to a doctor several days after the accident, use code (02) "Treated at Hospital/Clinic but not admitted."

#### EMS CONTRIBUTORY TO SEVERITY (30D.80.32)

If there is any question as to the competency of the E.M.S. involved, the teams will document this in the matrix cells or as part of the narrative under post-crash.

A new code "Exemplary Service" (4) should be used when the

team reports that the EMS crew went beyond their usual responsibility to help the occupant. This code would rarely be used.

#### AUTOPSY PERFORMED (30D.80.33)

If an autopsy report is not included but the team states that one was performed this constitutes a positive response "yes" (1). If the occupant was not killed, "not applicable" (3) should be coded.

#### OVERALL POLICE INJURY SEVERITY (30E.80.34)

This should be taken directly from the police report. If a coding system other than KABC is used, choose the code that best expresses the meaning of the original police code. If no police report is included "unknown" (9) should be coded. A new code "Injured" (5) has been added for police reports that describe the occupant as injured without using the KABC or another system to distinguish different levels of injury.

#### OCCUPANT INJURY CLASSIFICATION SYSTEM

##### OCCUPANT NUMBER (30D.81-95.12-13)

This should be the same as the CPIR occupant number. It should only be included on lines that record an injury.

##### CONTACT AREAS (30D.81-95.14-21)

These should be listed in likelihood order, e.g. according to how much confidence the investigator has in that contact area. If the unknown code of (00) is used it must be the last code listed.

Never use "no contact" (99) as a contact code. This is the code the computer inserts in place of blanks and by using it subsequent information may be lost. For injuries caused without "contact" use code (38) to indicate the injury source, e.g., for burns use (38) and write in the margin "fire". If an occupant strikes himself (e.g., in the eye) use code (38) and write in margin "occupant struck self" (Note that code (32) should be used for contacts with other occupants).

Engine covers (e.g., in small vans) should be coded as vertical consoles (86) if they are located forward of the area between the seats. If it is between the seats with some floor space between it and the dashboard then it is coded as a console (27).

A new code has been added for (49) "Armrest (on seat)".

See the question Area(s) of Possible Contact (31.12-26.14-21) in the CPIR Interpretations and the list under Occupant Contact Areas in Section 5 for more details.

## PRIMARY OIC AND ASSOCIATED OICS (30D.81-95.22-36)

If only one OIC is recorded on a line it must be the primary OIC.

A new code for System/Organ has been added: W=All Systems in Region. This should only be used with lesions of N, M, and B for severe crushing, amputation, and incineration (not superficial burns) types of injuries.

The AIS code of (9) should be used; for both "injury severity unknown" and "injury presence unknown". AIS codes (7) and (8) are not used with OIC.

If it is unknown whether an occupant was injured Code UUUU-9 as the only OIC, with a contact code of (00) if no occupant contacts are known. If there was no occupant injury leave the entire OIC table blank.

Remember that "0" is Whole Body, "W" is Wrist-Hand for Body Region. See Section 4 for more detailed information.





## SECTION 3.4

## SUPPLEMENT TO CPIR (pages 31-38)

The Supplement contains questions not coded in the CPIR primarily concerning administrative and collision precrash data.

## REPORT NUMBER (31.90.2-9)

The Report Number is the same number as that found in the CPIR, page 1.

## REPORTING DATA page 31

## DATE OF FIELD INVESTIGATION (31.90.12-17)

This date is usually found in the top right block on page 1 of the CPIR and indicates the time between the accident occurrence and vehicle investigation.

## DATE SUBMITTED/PUBLISHED (31.90.18-23)

This date is found on the title page of the case report.

## TEAM CASE NUMBER (31.90.24-34)

This response should represent the team's version of their case numbers. For example a USC case numbered SC-72014 would be entered USC 72 14. Use no dashes at all for any team. See Team Letters And Report Sequence Numbers in Section 5, Reference Information.

## HSRT CPIR EDITOR (31.90.35)

This indicates who has edited the case.

## NUMBER OF CASE VEHICLE CPIR'S (31.90.36)

This question refers to the number of case vehicle CPIR forms completed for computer processing.

## ORIGINAL VEHICLE REPORT FORM (31.90.37)

This indicates the original report form prepared by the team. Code ( ), for "no form".

## TOTAL # RECOMMENDATIONS/CONCLUSIONS-EACH MATRIX CELL (31.90.38-46)

The number to be coded in columns 38-46 is the number of negative plus positive statements. In each cell of the recommendations/conclusions matrix. If a cell has more than 8 statements listed, then the code "9 or more" (9) is used. Cells should be filled with zeroes for MVMA sponsored teams

## DOT-HS-NUMBER (31.90.47-56)

Columns 47-56 refer to the DOT-HS report number. This number is found on the top right of the cover page of the published MDAI reports, or in box number 1 of the standard government title page. A separate NHTSA list should be consulted for unpublished cases.

## PB NUMBER (31.90.57)

Columns 57-66 refer to the PB numbers found on the cover page of old published MDAI reports. The PB number is used to order copies of published MDAI cases from the National Technical Information Service. Leave this blank for all pre-1970 MDAI cases and all MVMA cases.

## OTHER VEHICLE CPIR REPORT NUMBER (31.90.67-74)

This number links all case vehicles in the same accidents to each other. If there are three case vehicles in the accident, link 1 to 2, 2 to 3, and 3 to 1. In single vehicle accidents, these columns are left blank.

Remember that cases (e.g., UM, HS, and AA) can be interlinked in one accident. Check the narrative and the bottom of the Other Vehicle page for this information.

## DATE EDITED (31.90.75-80)

This is the date of first editing.

## SUPPORTING DATA page 32

All of the following questions refer to the information included in the team report. All responses will be (0, 1, 2, 3).

## PSYCHOLOGICAL REVIEW (32.91.13)

This question refers to the inclusion of a detailed evaluation of the case vehicle driver's mental condition prior to the collision. It is generally included in the body of the case report and is never "not applicable" (3), except for vehicles with no driver.

## ANY PERSONAL INTERVIEWS (32.91.13)

This refers to any witness' (including driver's) account of the accident or interviews with friends or relatives of the drivers involved. Any indication that an interview did take place should be coded "yes" (1). The code "Not applicable" (3) should not be used.

## KATZ ADJUSTMENT SCALE (32.91.14)

This is a quantitative personality chart which is not usually found in case reports. However, they are consistently used by the Maryland team. Codes used are (1) or (2).

MICHIGAN ALCOHOLISM SCREENING TEST (UMAST) (32.91.15)

This test is used by some teams to determine if alcohol was involved in an accident. It is seldom included in reports.

DRIVER'S LICENSE RECORD (32.91.16)

In order for this question to receive a positive response, the team must include the Secretary of State issued driver license record or the investigating team's researched number of driver involved accidents.

MEDICAL EXAMINEES/AUTOPSY (32.91.17)

This refers to the medical examiners descriptive autopsy report on a case accident fatality. It can include pedestrians, passengers and drivers of all vehicles involved. If there are no fatalities, then it should be coded "not applicable" (3).

AFIP MEDICOLEGAL AUTOPSY (32.91.18)

This is the Air Force autopsy computer form (usually in green ink). It is usually included in conjunction with the Medical Examiners report. Again, if there are no fatalities, it should be coded "not applicable" (3).

TOXICOLOGICAL/ALCOHOL TEST (32.91.19)

For a positive response, any toxicological test (breathalyzer, blood serum, urine, etc.,) given on the case vehicle driver for determining alcohol consumption must be included. Percent of alcohol should be filled in on page 35.

INJURY CAUSATION ANALYSIS (32.91.20)

This refers to an extensive medical record on collision caused injuries of any occupant in the accident. It must include more than just a listing of injuries. If a listing includes injuries with related body contacts, then it should be considered an injury causation analysis (e.g., the injury lists in Cornell A cases). A Medical Examiners Autopsy report or AFIP Medicolegal Autopsy report constitutes an injury causation analysis. If the CPIR Occupant Injury Detail matrix or the Occupant Supplement is completed there is an injury causation analysis. If no injuries are involved in the case vehicle, "Not Applicable" (3) should be coded.

INJURY SUMMARY/DIAGRAM (32.91.21)

This is coded "yes" (1) if a listing of accident related injuries of case vehicle occupants is included; or the CPIR occupant injury diagram is completed. If no injuries are

involved in case vehicle, "not applicable" (3) should be coded.

#### X-RAYS (32.91.22)

This question should be coded "yes" (1) if x-rays were taken as noted through the case report, or were included as a note on the CPIR injury diagram for any case vehicle occupants. If x-rays were not taken, but bones were broken, then it should be coded "unknown" (2). The "not applicable" (3) code is not used for this question. If other information in the narrative indicates that x-rays were taken, e.g., precise description of fractures, code this question (1) "yes".

#### MEDICAL HISTORY (32.91.23)

In order for this to receive a positive response "yes" (1), the team must include background documentation or detailed medical information on the case vehicle driver, which explains his or her mental or physical limitations resulting in an accident or injury severity causation factor. A comment to the effect that there were "no abnormalities" in the individuals medical background does not constitute a positive response to this question.

#### MAP LOCATION (32.91.24)

A general area map, (e.g., city map, state map) with accident site indicated must be included to be coded "yes" (1). This map is more than just the collision diagram, it is a separate map with no vehicle configurations.

#### COLLISION DIAGRAM/SKETCH (32.91.25)

This refers to the accident vehicle collision diagram showing vehicle trajectories prior to and after contact with another vehicle or object.

#### SITE ACCIDENT HISTORY (32.91.26)

This question is coded "yes" (1) if a summary of the number and/or types of accidents occurring at the case's accident location is given within the body of the report. It is usually found in the summary under road condition.

#### NARRATIVE DESCRIPTION (32.91.27)

This is the investigating team's accident description, including prior vehicle movement, crash movements, and post crash events. Most case reports include some type of narrative description.

#### POLICE REPORT (32.91.28)

The report must include a county, city or state police accident report of the case accident to receive a positive response "yes" (1). The report may be a standardized form or a

separate police officer's report.

#### WHO ESTIMATED SPEEDS (32.91.29-30)

If the speeds of the case vehicle were estimated by anyone, that person is acknowledged with the appropriate response in this question. This includes persons estimating the speeds prior to impact and at impact. If more than one person has estimated the speeds, give credit to the one whose estimate was most valid according to the investigating team.

#### NHTSA VEHICLE CONDITION AND MAINTENANCE REPORT (32.91.31)

This refers to an enumerative post-crash inspection done on the case vehicle. It usually consists of a single page with the title "Vehicle Condition and Maintenance Report". Although the format has changed several times, the items included are similar and should be easily recognized.

#### MECHANICAL MALFUNCTION INSPECTION (32.91.32)

A malfunction inspection report is any document that describes or lists items on the case vehicle that have been checked by the investigating team. The report may or may not be due to an alleged malfunction, since many teams include a vehicle inspection as a normal part of their accident investigation. A NHTSA Vehicle Condition and Maintenance Report implies a Mechanical Malfunction Inspection. A detailed investigation of the vehicle system or component suspected of failure also constitutes a mechanical malfunction inspection.

#### INSPECTION RECORDS (32.91.33)

A state, city, or county required motor vehicle inspection form or acknowledgement of such an inspection must be included to warrant a "yes" (1) response. Usually this is indicated at the end of the NHTSA Vehicle Condition and Maintenance Report.

#### REGISTRATION RECORDS (32.91.34)

This refers to the specific document: State Motor Vehicle Registration record. These documents refer to the ownership of the vehicle. Usually, this is not included in the accident reports.

#### SHEET METAL CRUSH (32.91.35-36)

If the diagram/sketch (diagram on page 9 of the CPIR) is completed showing all damage resulting from the accident, then it is coded "yes" (1). Similarly, if the Inches Coded (vehicle crush dimensions on page 8 of CPIR) are filled in, then this too is coded "yes" (1).

#### TELESCOPING UNIT (32.91.37)

This is coded "yes" (1) only if the investigator has

measured the telescoping unit after the collision. If no telescoping unit was installed, then it should be coded "not applicable" (3).

EA STEERING WHEEL (32.91.38)

This is coded "yes" (1) only if the investigator has measured the energy absorbing device compression (CPIR page 16). This question only refers to 1970-1972 Plymouth Barracuda, Dodge Challenger, 1970-1972 Mercury Capri and some Ford Cortinas. All others are coded "not applicable" (3).

A (COLUMN TO REAR) (32.91.39)

This is coded "yes" (1) if the measurement from the steering wheel center to the top of rear window glass has been taken by the investigating team. This refers to the Column Movement question coded on page 17 of the CPIR. The code value "not applicable" should not be used here.

EA STEERING COLUMN (32.91.40)

This is coded "yes" (1) if the team has measured the length of the steering column energy absorbing device. This refers to the Steering Column Energy Absorbing Device on page 19 of the CPIR. If the vehicle is not equipped with this device, it should be coded "not applicable" (3).

VIN INCLUDED (32.91.41)

If the team filled in the VIN on page 7 of the CPIR (Case Vehicle page), then this is coded "yes" (1).

VDI INCLUDED (32.91.42)

This refers to the Case Vehicle Damage Index from page 7 of the CPIR. It receives a positive response "yes" (1) if the team has included the VDI/CDC in their CPIR or report.

VEHICLE MODEL/MAKE CODE INCLUDED (32.91.43)

This is coded "yes" (1) if the Make/Model Code was inserted by the investigating team on page 7 of the CPIR (Case Vehicle page).

B&W PRINTS (32.91.44-45)

This number should represent the total number of (black and white) prints included with the case report.

(COLOR) SLIDES (32.91.46-47)

This number should represent the total number of 35mm (color) slides included with the case report.

SITE/LOCATION PHOTOS (32.91.48-49)

The number of photographs that were taken of/at the scene of the accident should be coded. Photos of the accident diagram or maps are included.

VEHICLE EXTERIOR PHOTOS (32.91.50-51)

The number of photographs of the exterior of all vehicles involved, should be coded.

VEHICLE INTERIOR PHOTOGRAPHS (32.91.52-53)

The number of photographs of vehicle interiors which were included in the report should be coded.

AUTOPSY/MEDICAL PHOTOS (32.91.54-55)

The number of photographs pertaining to occupant injuries that were included in the case report should be coded. Photographs of injury diagrams are included.

TOTAL NUMBER OF PHOTOGRAPHS (32.91.56-57)

The sum of all photographs and slides included with the case report should be coded.

HIT LAB NUMBER (32.91.58-64)

The number code here refers to the Highway Safety Research Institute cross reference number to the Washtenaw County police report for that case.

VEHICLE MALFUNCTION page 33

CASE VEHICLE MALFUNCTION (33.92.12-24)

This question refers to items checked in the investigation of the possibility of mechanical malfunction on page 2 of the CPIR.

PRIMARY MALFUNCTION (33.92.25-26)

This number indicates the most causative item from the list of malfunctions checked in the preceding portion of the supplement. If there are no items checked, then it should be coded "none" (00).

HAD ROUTINE MAINTENANCE BEEN PERFORMED (33.92.27)

For the most part, this question is left to the discretion of the investigating team. A few guidelines to follow in discerning the proper response are: If the case vehicle has a NHTSA Vehicle Condition and Maintenance Report with a recent lubrication sticker (i.e., 8,000 miles prior to accident), then it is coded "yes" (1). New cars with less than 10,000 miles or only 10 months old prior to the accident are considered to have

had previous maintenance which is coded "yes" (1).

#### CASE VEHICLE DRIVER'S RECORD

##### DRIVER EDUCATION (33.92.28)

If the case vehicle driver took driver education, then the mode of instruction should be coded here. The case text under human factors should be checked for the information.

##### NUMBER MOVING VIOLATIONS/COLLISIONS/SUSPENSIONS (33.92.29-31)

The next three questions refer to the number of moving violations, collisions and suspensions received by the case vehicle driver. These should be taken from the case vehicle driver's record or possibly the case text. Interviews may be used as supplementary sources of information in answer to these questions, if the investigating team considers the source reliable.

##### ORIGIN/DESTINATION (33.92.32-33)

These two items refer to the places where the case vehicle driver began his trip and where he intended to go.

##### ROUTE FAMILIARITY (33.92.34)

The driver's familiarity with the road traveled is generally left up to the discretion of the investigating team. It is usually found in the narrative portion of the case report under driver pre-crash information.

##### AREA FAMILIARITY (33.92.35)

This question, too, is usually answered in the narrative report and is obtained in interviews with the driver. It should be coded as the team has reported it.

##### ROUTE USAGE (33.92.35)

The number of times the route was traveled prior to the accident is coded here.

##### TIME (33.92.37-48)

A 24-hour clock is used for all question concerned with time. Departure Time refers to the time at which the driver left his place of origin. The Time of Impact is found on page 1 of the CPIR form and entered here. The driver's Expected Time of Arrival refers to the time at which he was to reach his final destination. The teams usually include these times, if they are known, in the Occupant portion of the narrative. If a vague statement, such as, "an indefinite drive around town" is mentioned the proper coding is 9999. Midnight should be coded 00:00 not 24:00 as is usual for military time.



## PSYCHOLOGICAL FACTORS page 34

Only the Case Vehicle Driver is considered in the following five questions.

## STRESS THAT DAY (34.92.49)

This question is intended to indicate the type of mental stress which might have precipitated the accident. The problems listed are to be coded as actual problems not connective measures. Distractions just prior to collision are not included in this question. Only the case vehicle driver is considered here.

## MARITAL STATE (34.92.50)

This information has to be hunted for as it is not documented in any standard place. Most often, though, it is part of the pre-crash human section of the narrative.

## OCCUPATION (34.92.51-52)

The case driver's occupation should be classified according to the given list. (See Reference Manual: Occupation Classifications). Items (10,20,30,40) are general classifications. If the case vehicle driver is working at several jobs, the one in which he spends the most time should be coded.

## PHYSIOLOGICAL FACTORS page 34

## PERMANENT PHYSIOLOGICAL CONDITIONS (34.92.53)

This question is intended to indicate the type of permanent physiological condition that could limit the driver's physical ability to handle the case vehicle. A person wearing corrective lenses is not coded to have a vision restriction. If more than one permanent condition exists, the most contributory should be coded.

## TRANSIENT PHYSIOLOGICAL (34.92.54-57)

This question attempts to indicate some transitory physiological condition which might have contributed directly or indirectly to the driver's ability to maintain normal uninhibited control over his vehicle. Seizures are coded as "blackouts" (2).

## NON-IMPACT MEDICAL CONDITION (34.92.58)

This question refers to all case vehicle occupants not just the case vehicle driver. Any permanent physiological condition that may have been contributory, or increased the severity of

injuries should be picked up in this question. Also, physiological conditions can be coded here if the condition complicates accident caused injury, e.g., emphysema with a chest injury.

#### PHARMACOLOGICAL AGENTS NOTED (35.92.59)

The response to this question should indicate the type of drug that had been ingested prior to the collision by the case vehicle driver and noted in either the CPIR or case report. In cases where more than one drug was noted, choose the one that the investigating team felt was more causative to the accident. Any drug or medication should be coded as being noted; it does not necessarily have to be a causal factor in the accident. When alcohol and some other drug were both noted to be ingested, then priority of response goes to the other drug since alcohol use is recorded in the next question.

#### BLOOD ALCOHOL LEVEL (35.92.60-62)

If a blood alcohol test was administered to the case vehicle driver, the test results (MG%) should be coded. If a BA test was not given but drinking was suspected, it should be coded "unknown" (999). When no drinking was noted in the above question and none suspected, it should be coded "none" (000). The editor should never guess the BA level.

#### CRASH FACTORS page 35

##### INITIAL DIRECTION OF ROLLOVER (35.92.63-64)

When the case vehicle is involved in a rollover accident, then the direction of initial rollover is to be indicated. For example if the vehicle rolls over its left side code (09). Otherwise it is coded "no rollover" (00). This question is to be coded with respect to a clock in the horizontal plane. For example, an initial rollover on the right side of the case vehicle would be coded (03). Intermediate clock positions might also be appropriate.

#### POST-CRASH FACTORS CASE VEHICLE page 35

##### CASE VEHICLE, FINAL LOCATION (35.92.65)

This question refers to the final case vehicle rest position following an accident. If any portion of the vehicle remained in the roadway, then "on roadway" is coded (1). All other responses necessitate the vehicle being entirely within the particular boundary conditions.

##### CASE VEHICLE, FINAL ATTITUDE O'CLOCK POSITION (35.92.66-67)

The final vehicle attitude o'clock position should be coded with the point of reference being a clock in the vertical plane.

Thus, if the final rest position was on the roof, (36) would be coded. Intermediate o'clock positions can also apply.

#### POST-CRASH FACTORS, ACCIDENT page 35

With each of the following four question, "not applicable" (3) is never a choice.

##### FIRE CONTROL USED (35.92.68)

If a fire was a result of the accident and an attempt was made by any means to extinguish it, then "yes" (1) should be coded. Actions taken to prevent a fire (e.g., hosing roads) are not counted, (2).

##### EXTRICATION USED (35.92.69)

If any attempt with the use of tools is made to aid in gaining access to the occupants for removal from a vehicle, then "yes" (1) should be coded.

##### AMBULANCE SERVICE USED (35.92.70)

Any ambulance or rescue service which actually transports occupants to the hospital is coded "yes" (1). If such service is available but not used, it should be coded "no" (2).

##### TOWING SERVICE USED (35.92.71)

Any vehicle physically removed from the accident site by the use of a wrecker type truck, is coded "yes" (1).

#### LOCATION OF FIRST HARMFUL EVENT page 36

The following questions are answered from the accident point of view.

##### GENERAL LOCALITY (36.92.12)

Indicate the accident site general locality. The "Urban-Rural" (3) response is used to cover those "grey areas" that are not urban or rural. However, Urban-Rural is not to be construed as being a subset of either Urban or Rural. If the accident occurred on a limited access freeway use code (1) regardless of whether the freeway was in an urban or rural area.

##### PARTICULAR LOCATION (36.93.13-14)

This asks for the location of the first harmful event. Choose the most specific (highest number) code that accurately describes that location. Codes (01)-(04) include public and private one-way and two-way roads, whether divided or not. Code (04) is used for roads with 4 or more lanes. Code (05) "Off road" is only used in accidents when the vehicle(s) associated

with the first harmful event are completely off the roadway (all wheels) at the start of the accident. Code (06) includes all types of intersections between roadways (e.g. 4-way, T,Y), as well as intersections with private and public driveways and accesses. An intersection extends beyond the point where the roads actually cross or meet. A car is considered to still be in the intersection area until it has completed its turn, i.e., is moving parallel to the sides of the new roadway. Code (07) is used for limited access expressways, and code (08) and (09) for the main lanes and ramp lanes of limited access expressway interchanges (e.g., cloverleaves). If this question is coded (07), (08), or (09) the previous question, General Locality, should be coded "Freeway, Limited Access" (1). Code (10) refers to accidents that occur on Bridges, Tunnels, and Viaducts. For example, a car that strikes a bridge railing is coded (1), but a car that strikes a bridge abutment while on a 2-lane highway is coded (02). Codes (11) and (12) are used when the first harmful event occurs in a Parking Lot or Driveway respectively. Code (98) is used if the accident occurs at an "other" location. Code (00) is used for "Unknown". Codes (98) and (00) should not be used unless unavoidable.

#### RESPONSIBLE VEHICLE - FIRST/SECOND/THIRD (36.93.15-38)

These three items rank the vehicles involved in order of responsibility for causing the accident. The report numbers as recorded on page 31, should be coded.

#### RESPONSIBILITY OF CASE VEHICLE (36.93.39)

The responsibility of the case vehicle in the accident causation should be indicated.

#### TOTAL ENERGY AVAILABLE (36.93.40-43)

This question is intended to record the total energy of the two impacting vehicles having the greatest kinetic energy. Frequently, this is the energy of the first impact. Each vehicle energy is calculated by using the weights and impact speeds. The two values are then added for the Total Energy. Each case vehicle in the accident should have this question coded with the energy of the two impacting vehicles having the greatest kinetic energy. See Section 5: Energy Table. Note that the Energy Table has been completely recomputed for the 1973 Editing Manual. Rear-end configurations do not indicate that the energies be subtracted. All configurations are calculated in the same manner.

#### PRE-CRASH BASIC MOVEMENT (36.93.44)

This question focuses on the most responsible driver's/vehicle's movements immediately preceding the crash. It is the general movement rather than the specific action taken for the impending collision, which is coded.

#### CHARACTER OF MOVEMENT (36.93.45-46)

This is the specific movement just prior to the realization or the point of no return preceeding the collision. An "avoidance maneuver" should not be coded here unless it lead to the collision.

#### Example 1

A vehicle is on a straight roadway and enters a curve but continues straight, i.e., tangential to the curve. The vehicle then hits a tree on the side of the roadway. Before the vehicle runs off the road it is still going straight. Therefore, the Pre-Crash Basic movement is "straight" (1) and the character of movement is "straight ahead, road turned to left" (01).

#### Example 2

In this example, a vehicle is following the initial road curvature and then runs off the road. The Pre-Crash basic movement is "curve following" (2) and the character of the movement is "off the right hand side of the road" (03).

#### Example 3

In this example, vehicle A (the case vehicle) is making a left hand turn while vehicle B is going straight, prior to impact. The pre-crash basic movement is "turning" (2). Even though the actual vehicle movement might not be a circular arc. The character of movement is "turned hard left" (12).

#### PRIMARY FACTOR RESPONSIBLE FOR ACCIDENT (36.93.47)

The response to this question should be determined through an evaluation of the narrative report and supplementary material, especially the matrix cells. Teams usually indicate the causal factor or factors they feel were most responsible for the accident. This should be used as a guideline for coding the appropriate response. In the case where either driver's omission, or commission is the most responsible accident factor, it may be difficult to discern which of the two is the more appropriate response. As a general rule, accidents in which the case vehicle driver had been drinking, was dozing or was inattentive are usually considered unaware type errors. On the other hand, accidents in which the case vehicle driver is knowingly creating a hazardous situation, such as speeding or passing through an intersection on an amber light changing to red are usually coded as aware errors.

#### PRIMARY ERROR (37.93.48-51)

The specific driver's actions relating to the primary factor responsible for the action is indicated here. The

narrative portion of the case report under conclusion, or the police report, usually attempts to answer this question. Both should be consulted in determining the most significant error. When more than one error is indicated, the most significant should be coded first. A consistency check should be made with CPIR page 4.

#### DEGREE OF DRIVER ATTENTION (37.93.52)

This question is highly subjective, and has been eliminated. It should always be coded (9).

#### DRIVING COMPLEXITY (37.93.53)

This question has been eliminated and should always be coded (9).

#### AVOIDANCE MANUEVERS (37.93.54-55)

Coded here are the driver actions in an attempt to avoid the impending collision. The most responsible and second most responsible vehicle actions should be coded. "Brake release" (6) refers to driver braking actions after sighting impending damage, then releasing the brakes. In this manner without braking. There is a new code (7) "Deceleration by engine braking or downshifting" to be used when the vehicle decelerates in this manner without braking. Code (8) has been added for "Other".

#### VEHICLE COMBINATION (37.93.56-57)

The two responses for this question are recorded to generally classify the types of vehicles involved in the collision. Note- Vans and pickups are coded as being Trucks (4) when answering this question. If the case is a single vehicle accident, the second response is coded "no other vehicle" (0).

#### MOVEMENT OF SECOND MOST RESPONSIBLE VEHICLE (37.93.58)

This question should be approached from a very general point of view, similar to Basic Pre-Crash Movement. The code value "other" (5) should be avoided if possible.

#### HAZARDOUS ROAD CONDITION (37.93.59-60)

Any hazardous conditions, which might have been contributory to the accident are coded here. Ambience, road surface conditions, obstacles and weather obstructions might all be significant, so a choice must be made which indicated the two most causative. If an accident site has been officially designated as a high risk location use code (3) "Other", and write this in the margin in addition to coding the particular nature of the hazardous condition.

## HSRI ANALYSIS, page 38

This page should not be filled in by the field investigation team. It represents the HSRI editor's estimation of the Collision Impact Speeds, CDCs and Sheet Metal Crush. This is in no way an attempt to second guess the investigators, but is an attempt to unbiasedly present the accident damage with some degree of consistency.





## SECTION 3.5

## THE DAMAGE ANALYSIS SUPPLEMENT (DAS)

The Case Vehicle Damage Analysis Supplement has been designed to give a more complete view of the damage incurred by the case vehicle. It consists of three parts: the Damage Analysis, the Sequence of Crash Events, and the Side Door Beam Information. The purpose is to collect new information about the damage to the case vehicle and restructure information already coded in the CPIR form into a format that will more specifically detail the manner in which the damage occurred. (The CPIR form does not relate speeds, objects contacted, or other vehicle CDC with the case vehicle CDC. Thus, although investigated, no record is stored of the circumstances in which the case vehicle CDC occurred.)

The Damage Analysis portion of the supplement represents a reorganization of damage information for the "case vehicle" and the associated "other vehicle" which allows for a direct comparison of concurrent damage between the two vehicles. The Collision Deformation Classification (CDC, formerly VDI Vehicle Deformation Index), Inches Crush, Configuration, Crash Event Number, and Impact Speed for the primary and secondary deformation of the "case vehicle" are recorded in one column and the corresponding CDC, Crush and Speed for the "other vehicle" are recorded in the adjacent column. Provision for a Tertiary Collision Deformation Classification for the case vehicle has also been included. For multiple vehicle collisions the "other vehicle" should be changed to be the one connected with each of the case vehicle impacts.

The Sequence of Event represents the second part of the supplement. It is a chronological ordering of vehicle maneuvers and crash events that best describe the collision, for the case vehicle beginning with the first injury or damage producing event. With each event there is an entry for the specific vehicle or object associated with that event. These events are numbered, enabling the specific deformations (and their associated Collision Deformation Classifications) to be related to the appropriate event in the collision sequence. This identifies the nature of the damage and circumstances producing that damage.

The third portion of the supplement is concerned with the side structure performance of the case vehicle. It will provide new information for analysis of direct damage to the side structure with and without door beams. It also includes information which relates the damage to the CDCs.

The following items define how the Damage Analysis Supplement should be completed.

REPORT NUMBER (39.45.2-9)

This is the Report Number on page one of the CPIR Form

(1.1.2-9). It should be appropriately coded for the correct case vehicle.

PRIMARY DEFORMATION - CASE VEHICLE/CONCURRENT DAMAGE OTHER VEHICLE (39.45.12-25)

The first entry here should be the same as the primary CDC for the case vehicle on page 38 of the CPIR. The concurrent damage should be the related CDC damage of the other vehicle involved. This is not necessarily the primary CDC of the other vehicle. In cases where there is no other vehicle involved (99-0000-0) should be entered in the Concurrent Damage, Other Vehicle.

PERCENT CRUSH (39.45.26-29)

This is optional and is left blank by the editor.

INCHES CRUSH (39.45.30-33)

This corresponds to the number of inches of direct deformation associated with the first letter of the primary CDC recorded. This will usually correspond to inches of crush recorded for the damaged area coded on page 38 of the CPIR form for the case vehicle.

CONFIGURATION (39.45.34)

This corresponds to the type of vehicle to vehicle combination that is associated with the primary CDC. The code values are identical to those on page 4 of the CPIR form, thus the same definitions apply. It should be noted that if no other vehicle was involved it should be coded "no" (2).

- (1) Yes, Configuration Unknown
- (2) No
- (3) Head on
- (4) Intersection Type L
- (5) Side-Swipe
- (6) Rear Impact
- (7) Other:
- (8) Intersection Type T
- (9) Unknown

Crash events involving no collision, self-induced damage, vehicle-part to vehicle, and vehicle to object to vehicle should be coded (2) "No" on this question. Crash events involving another vehicle's trailer should be coded considering the trailer as part of the other vehicle, e.g., if the car with trailer stops short and is struck in the rear of the trailer use code (6) "Rear Impact".

CRASH EVENT NUMBER (39.45.35)

This corresponds to the numerical value associated with the specific Crash Event 40.45.35-54, related to the primary CDC, i.e., was the prime CDC the first crash event? Zero (0) is used

for no event and "unknown" which event.

#### CASE VEHICLE AND OTHER VEHICLE SPEED AT IMPACT (39.45.36-45)

The recorded speeds should be those that are directly related to that impact which produced the unique deformation concurrent to both the case vehicle and other vehicle. The ( $\pm$ ) option is used when teams provide a range of speeds and not a definite impact speed. The speed should be expressed as the average of that range with the deviation from that average as a ( $\pm$ ) value. Where no other vehicle is involved then all 8's should be coded for the other vehicle impact speed.

#### BARRIER EQUIVALENT SPEED (39.45.46-47)

This is optional and should be left blank by the editors.

#### SECONDARY DEFORMATION (39.45.50-71 and 39.46.12-27)

These questions are the same as those for the PRIMARY DEFORMATION only in this case they are all related to the Secondary Deformation classification. The same "no other vehicle" codes also apply to this set of questions.

#### TERTIARY DEFORMATION (39.46.28-34)

A third CDC is entered here if it is applicable. If no tertiary CDC exist then (99-0000-0) is coded.

#### SEQUENCE OF CRASH EVENTS (40.46.35-54)

This listing of crash events and concurrent vehicle or object contacts should describe the accident for the case vehicle from the first injury or damage producing event to its final rest. The sequence should include all contacts, whether damage producing or not, and should attempt to describe the collision sequence as completely and accurately as possible. If more than five events occur eliminate the least important from the standpoint of damage and injury production. The list of crash events uses pairs of numbers to describe the accident event. The first number categorizes the event and the second specifies the vehicle or object contacted. In the following example: two cars are traveling in opposite directions on a two-way, two-lane highway and the case vehicle crosses the centerline and sideswipes an intermediate sized car, then runs off the right side of the roadway and hits a tree where it comes to rest; the first damage or injury producing event would be a vehicle to vehicle combination, "both vehicle moving" (1), and the character of movement would then be "opposite direction" (4). Thus, the first event would be coded (14). The associated contact would be an "intermediate sized vehicle" (01), and this would be coded in the Vehicle or Object Contacted column across from the related crash event. The next event, ran off the right side of the road, would be the combination of "ran off/reentered the roadway" (7) and "off right side" (3): coded (73) in the 2nd Event line of the Events column. Since there was no object or

vehicle contacted, "no object or vehicle" (99) is coded in the 2nd Event line in the Contact column. The next event would be the striking of the tree. This would be described by the combination of "off roadway vehicle: struck" (5) under the Vehicle to Object category and further characterized by "and stopped" (4); thus coded "54". The object involved was the "tree" (77), which would be entered in the 3rd Event line Contact column. To complete the five Event/Contact pair sequence, the remaining spaces should be coded with "no event" (99), and "no object or vehicle" (99). It should be noted that in describing the activities of the case vehicle, a Concluding Event (9\*) should be coded to end the sequence if the previous entry does not describe a terminating maneuver. In the previous example no concluding event was needed since the tree contact event description brought the case vehicle to rest. Also, "No object or vehicle" (99) is used in conjunction with any coded Event where no contacts occurred, (as was the case in the example for ran-off-the-right-side-of-the-roadway, 2nd Event.) The code for "ground" (80) should not be used unless the vehicle rolls over or strikes the ground after having been airborne. Note that the vehicle/object codes (01) - (69) are the same as the last two digits of that vehicle's make/model code.

The list of crash events has been changed since the 1974 manual; see Damage Analysis: Crash Events in Section 5. Codes (14)-(16), (24)-(26), and (34)-(36) have been collapsed into (14), (24), and (34) respectively since it was meaningless to distinguish striking versus struck vehicle when the vehicles were moving in opposite directions. Note that for codes (10)-(39) the word "direction" refers to direction of motion of the vehicle's center of gravity, not the direction which the front end is pointing. The meaning of code (7) has been expanded slightly from "Stops suddenly with injury but no collision" to "Injury occurs with no collision". Codes (88) and (89) have changed meaning. Use (88) "Towed vehicle or part breaks loose or jackknives without damage to vehicle" when the case vehicle does not undergo self-induced damage; use (89) "Vehicle contacts itself or part, doing self-induced damage" when the part failure, jackknife, or shift in load causes part of the vehicle to strike the case vehicle proper, doing damage. The incidence of "Vehicle or driver assaulted by other person", the former meaning for code (89), is low enough to be included under (80) "Other". Note: If the case vehicle is struck by a vehicle-part or trailer originally attached to some other vehicle or by an object set in motion by another vehicle use code (86) "Case vehicle struck by falling, protruding, or thrown-up object," and identify the object as well as possible using the choice of objects contacted, e.g., a runaway trailer would be (66) or (67) and most other objects would be (74) "Fallen objects such as objects dislodged from other vehicles, fallen trees, rocks, etc." If the object was a towed car or other vehicle that broke away use its particular model code.

Code (92) "Braked/Skidded/Spun to Rest" has been eliminated and divided into two new codes. Use (94) if the case vehicle "Braked/Skidded/Spun to Rest on its wheels" and (95) if it

"Braked/Skidded/Spun to Rest off its wheels" e.g., on its side or roof.

Note that the code values for several vehicles and objects have changed. Code (04) formerly used for "limousine" is now used for "mini specialty", e.g., Mustang II. Limousines are grouped with luxury sedans in code (03) "luxury sedan/limousine". A new code (44) "streetcar" has been added for bus-shaped vehicles that run on tracks. Electric buses not running on tracks which are powered by overhead electric wires should be coded (43) "Intra-city bus".

#### SIDE DOOR GUARD BEAM (40.46.55-71)

The door beam information has been divided into four parts: Beam Present, Front or Rear Door Direct Damage, Maximum Inches Crush (Doors) and Beam Involvement. The first, Beam Present, should be coded from information obtained from the revised Reference Information Section of the Editing Manual (Section 5) under Side Door Reinforcement Beam Availability. This gives a listing of make, model and year of side door beam installation. It should be noted that if the vehicle has no doors (jeep, dune buggy, etc.), that the rest of the responses should be left blank.

The second question, Front and Rear Door Direct Damage, is organized so that direct damage can be related to the deformation through the CDC involved (code values 1,4,5,6, and 9). If no direct damage occurs to any of the vehicle's doors then columns 56-59 should be coded (2) "No direct damage" and the rest of the page should be left blank. In the case of two door vehicles, the response for Rear:Left and Right, should be coded "N/A, No Door" (3). If direct damage has occurred to any of the doors, then Maximum Inches of Crush for all the doors should be numerically coded. This number may not be available in the narrative since the deepest penetration may not have occurred at the door areas, but on examination of the vehicle damage sketch (CPIR p.9), the penetration should be ascertainable. If the inches of crush cannot be obtained, then unknown (99) should be coded. The doors where no direct damage occurred should be coded "no crush or no door" (00).

The last question concerns the Beam Involvement only; thus if no beam was present "N/A, no door or no beam" (3) should be coded for the appropriate doors. If a beam was present the best description of its involvement should be coded.



## SECTION FOUR

APPLICATION OF THE  
OCCUPANT INJURY CLASSIFICATION (OIC)

## INTRODUCTION

The Occupant Injury Classification (OIC) is a scheme for classifying individual occupant injuries in a manner that permits correlation of injury sources (contact areas) and specific injuries. The OIC (Figure 1) follows an approach similar to the SAE J224a Collision Deformation Classification<sup>1</sup> (CDC, formerly VDI). Four letters are used to encode Body Region, Aspect, Lesion, and Body System/Organ, followed by a numeric Abbreviated Injury Scale (AIS) code.

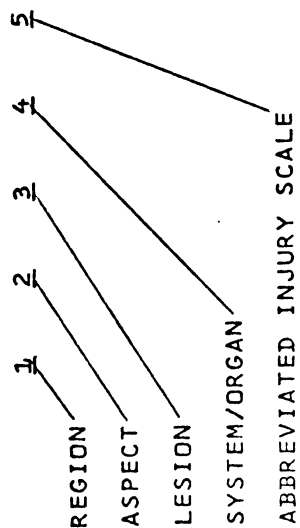
The injuries are coded from a causation point of view. Injuries are recorded for each unique point of injury-producing energy transfer. Provision is made for recording primary and associated OICs for each energy transfer. Provision is also made for encoding four occupant contact points in the vehicle or exterior areas in order of likelihood. This application of the Occupant Injury Classification then can be used to link specific injuries to their causes in an easy and flexible manner.

The concept of the Occupant Injury Classification scheme was first presented to the American Association for Automotive Medicine (AAAM) at the Sixteenth Conference in October, 1972.<sup>2</sup> Subsequently the OIC was presented to the NATO/CCMS Final Accident Investigation Project Workshop in June, 1973.<sup>3</sup> Responses from these presentations and the experiences of application by in depth accident investigation teams has permitted a more precise description of the Occupant Injury Classification procedure.

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<sup>1</sup> Collision Deformation Classification, SAE J224a, Recommended Practice, Society of Automotive Engineers, New York, 5 pages, 1972.

<sup>2</sup> Marsh, J.C., "Existing Traffic Accident Injury Causation Data Recording Methods and the Proposal of an Occupant Injury Classification Scheme," Proceedings of the Sixteenth Conference of the American Association for Automotive Engineers, New York, pp 44-61, October 19-21, 1972.

<sup>3</sup> Marsh, J.C., An Occupant Injury Classification Procedure Incorporating the Abbreviated Injury Scale, presented to the NATO Committee on the Challenges of Modern Society, Road Safety Pilot Study, Accident Investigation Final Workshop, Brussels, Belgium, June 28-29, 1973.



| <u>1</u> BODY REGION | <u>2</u> ASPECT  | <u>3</u> LESION | <u>4</u> SYSTEM/ORGAN   | <u>5</u> AIS |
|----------------------|------------------|-----------------|-------------------------|--------------|
| H HEAD-SKULL         | R RIGHT          | L LACERATION    | S SKELETAL              | 0 NONE       |
| F FACE               | L LEFT           | C CONTUSION     | V VERTEBRAE             | 1 MINOR      |
| N NECK               | B BILATERAL      | A ABRASIONS     | J JOINTS                | 2 MODERATE   |
| S SHOULDER           | C CENTRAL        | F FRACTURES     | D DIGESTIVE             | 3 SEVERE     |
| X UPPER EXTREMITIES  | A ANTERIOR/FRONT | P PAIN          | L LIVER                 | 4 SERIOUS    |
| A ARM (UPPER)        | P POSTERIOR/BACK | K CONCUSSION    | N NERVOUS SYSTEM        | 5 CRITICAL   |
| E ELBOW              | S SUPERIOR/UPPER | H HEMORRHAGE    | B BRAIN                 | 6 FATAL      |
| R FOREARM            | I INFERIOR/LOWER | V AVULSION      | C SPINAL CORD           | 9 UNKNOWN    |
| W WRIST-HAND         | W WHOLE REGION   | R RUPTURE       | E EYES, EARS            |              |
| C CHEST              | U UNKNOWN        | S SPRAINS       | CARDIOVASCULAR          |              |
| M ABDOMEN            |                  | D DISLOCATIONS  | A ARTERIES              |              |
| B BACK               |                  | N CRUSHING      | H HEART                 |              |
| P PELVIC-HIP         |                  | M AMPUTATION    | Q SPLEEN                |              |
| Y LOWER EXTREMITIES  |                  | B BURN          | G UROGENITAL            |              |
| T THIGH              |                  | X ASPHYXIA      | K KIDNEYS               |              |
| K KNEE               |                  | O OTHER         | R RESPIRATORY           |              |
| L LEG (LOWER)        |                  | U UNKNOWN       | P PULMONARY, LUNGS      |              |
| Q ANKLE-FOOT         |                  |                 | M MUSCLES               |              |
| O WHOLE BODY         |                  |                 | I INTEGUMENTARY         |              |
| U UNKNOWN            |                  |                 | W ALL SYSTEMS IN REGION |              |
|                      |                  |                 | U UNKNOWN               |              |



The procedure outlined herein is based upon the previously published OIC scheme but contains a more precise specification of its application. It should be used for reporting all collision injuries sustained after December 31, 1973. The presentation of this procedure is outlined below:

- (1) Rationale for OIC Scheme
- (2) Definition of OIC Facets
- (3) Overall OIC Application Procedure
- (4) Specific OIC Encoding Procedure by Body Region

#### RATIONALE FOR OCCUPANT INJURY CLASSIFICATION SCHEME

What components cause injury? This question is frequently asked, yet usually it is left unanswered. The most critical problem area in answering the question is in the adequate recording of injury causation data. The current Collision Performance and Injury Report<sup>1</sup> and the NATO Collision Analysis Report Form<sup>2</sup> have inadequate provisions for recording which area of contact caused a specific injury. In the course of processing and analyzing CPIR data two general observations were made:

- (a) Frequently, essential injury details were documented, yet we had no way to code this information in the data files.
- (b) Injury details that were coded (as described above) were cumbersome if not impossible to analyze using the computer storage format as defined.

As a specific example of loss of detail within one body region, note that no provision existed for relating specific injuries to specific contact areas, e.g., no record was kept of which facial injury is related to which contact area. These observations, as documented in the previous OIC publication, provided the background and impetus for the Occupant Injury Classification.

#### DEFINITION OF OCCUPANT INJURY CLASSIFICATION FACETS

The Occupant Injury Classification is a scheme for recording specific occupant injuries in much the same manner as the Collision Deformation Classification (CDC), SAE J224a records vehicle damage. It is not a classification of overall occupant injury, but a scheme for recording each individual injury an occupant sustains. A series of independently defined classification facets are combined as a sequence of letters to describe an injury in terms of Body Region, Aspect, Lesion/Diagnosis and Body System/Organ. As with the CDC (or VDI) a numerical severity code terminates the OIC. The four main

<sup>1</sup> Collision Performance and Injury Report, Long Form Revision Number 3, General Motors Corporation, Safety Research and Development Laboratory, General Motors Proving Ground, 1969.

<sup>2</sup> Collision Analysis Report Form, Pilot Study on Road Safety for the Committee on the Challenges of Modern Society, NATO. Published by the Department of Transportation, National Highway Traffic Safety Administration, December 1, 1971.

facets or dimensions of the OIC were developed directly from the GM-CPIR and NATO-CARF Occupant Injury Detail page. Instead of recording AIS codes in a large table, the OIC records the "position in the table" along several dimensions. It is analogous to the difference between storing a map of the U.S.A. with a few points plotted vs. simply storing the latitude and longitude of the few points. Figure 1 displays the proposed scheme using single letter codes.

In practice the accident investigator records one Occupant Injury Classification for each significant injury he decides to document. The areas of contact related to each OIC are also coded in order to record a complete picture of injury causation. A simple example preceeds a more detailed OIC discussion.

To demonstrate the OIC, three facial injuries are coded as follows:

1. Documented Injuries

- (a) Laceration of left eye from contact with windshield, AIS-2.
- (b) Multiple facial contusions from impact with upper instrument panel, AIS-1.
- (c) Minor lip laceration from teeth during upper instrument panel contact, AIS-1.

2. Occupant Injury Classification

| <u>Contact Areas</u>  | <u>Region: Aspect: Lesion: System/Organ</u>  | <u>AIS</u> |
|-----------------------|--|------------|
| (a) Windshield        | Face: Left: Laceration: Nervous System-Eye   | 2          |
| (b) Upper Panel       | Face: Whole Region: Contusion: Integumentary | 1          |
| (c) Other Upper Panel | Face: Inferior: Laceration: Digestive System | 1          |

3. Coded OICs

|     | <u>Contact Areas</u> | <u>OIC</u> |
|-----|----------------------|------------|
| (a) | 12                   | FLLE-2     |
| (b) | 54                   | PWCI-1     |
| (c) | 38,54                | FILD-1     |

Several observations can be made from this example. Distinct contact areas are recorded for each facial injury while the previous schemes did not relate contacts to injuries in the same body region. Secondly, the four letters provide more injury location detail than the previous coding scheme. The four letters also prove to be fairly simple to record, read and remember. A more detailed explanation of each facet of the OIC will help clarify its potential application. This will be followed by a procedure for recording the OIC and specific procedures for coding each body region.

BODY REGIONS - Body Regions (Figure 2) are defined as subsets of the body's surface. The regions are based on the NATO Collision Analysis Report Form with its extended list of thirty-two body regions. Many of these categories are organs, such as liver and spleen, and are not properly body regions. A separate facet or coding dimension is provided for Body System/Organ (discussed later) while the following Body Regions are similar to the NATO-CAFF. One significant difference occurs in the hip region. Only the pelvic bones, sacrum, coccyx, joint, posterior muscles and tissue covering these are included in the hip region (P). Internal organs in the pelvic structure are included in the abdomen region (M).

OIC Body Region Codes

H Head (Skull, Scalp, Ears)  
 F Face (Forehead, Nose, Eyes, Mouth)  
 N Neck (Cervical Spine, C1-C7)  
 S Shoulder (Clavicle, Scapula, Joint)  
 X Upper Extremities (Whole Arm)<sup>1</sup>  
 A Arm (Upper)  
 E Elbow  
 R Forearm  
 W Wrist-Hand  
 B Back (Thoraco-Lumbar Spine, T1-T12, L1-L5)  
 C Chest (Anterior and Posterior Ribs)  
 M Abdomen (Diaphragm and Below)  
 P Pelvis-Hip  
 Y Lower Extremities (Whole Leg)<sup>1</sup>  
 T Thigh (Femur)  
 K Knee  
 L Leg (Below Knee)  
 Q Ankle-Foot<sup>1</sup>  
 O Whole Body  
 U Unknown, Unclassifiable

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<sup>1</sup> Note: The letter (A) was previously used for "Ankle-Foot". "Ankle-Foot" is now coded as (Q). (X) and (Y) previously were "Extremities" and "Trunk" respectively. Extremities are now divided into Upper Extremities (X) and Lower Extremities (Y). Specific areas of the trunk (e.g. Chest, Abdomen, etc.) are now coded instead of Trunk.

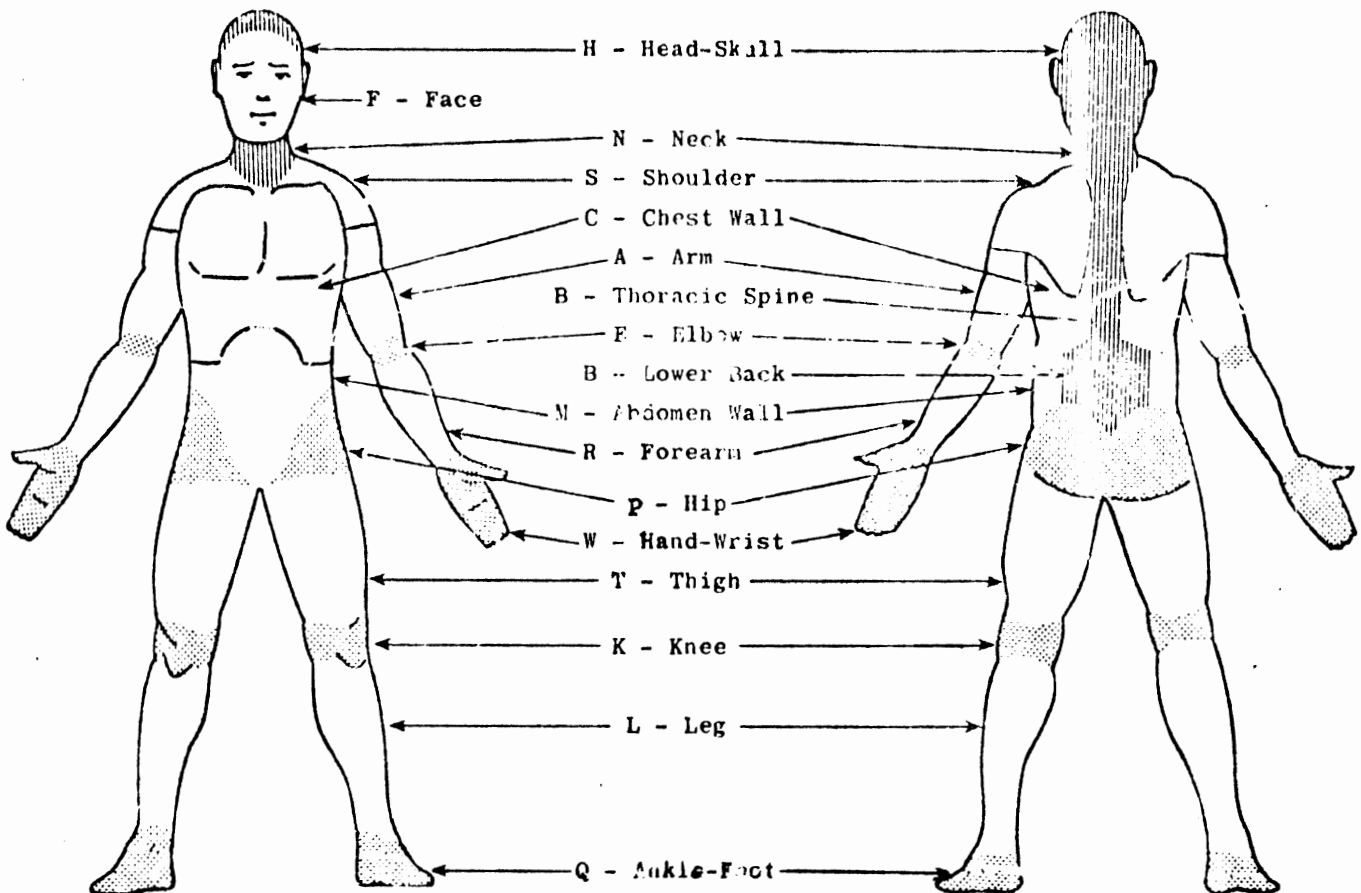


FIGURE 2. OIC BODY REGIONS

ASPECT - The Aspect codes provide a fairly specific means of locating an injury in a body region e.g., (NP); Neck Posterior. The coding of the arms and legs depends on the use of (R) and (L) for distinguishing which extremity region was injured. The code (B) for bilateral is used to describe an injury that is best characterized as happening to both sides of a body region. Examples include (CB) for bilateral rib fractures in the chest, and (KB) for contusions to both knees on the steering column. As discussed in the last section, only certain Aspect codes are permitted for each Body Region in order to ensure consistent coding.

OIC Aspect Codes

R Right  
 L Left  
 B Bilateral  
 C Central  
 A Anterior/Ventral/Front  
 P Posterior/Dorsal/Back  
 S Superior/Cranial/Upper  
 I Inferior/Caudal/Lower  
 W Whole Region  
 U Unknown, Unclassifiable

The aspect code is the second letter of the OIC. It is a refinement of the first letter, i.e., a suffix to the body region. Therefore, it has meaning only in relationship to the body region to which it is applied. It cannot be used independent of the first letter for coding or analysis. Note that while the combination of Body Region and Aspect codes do not precisely pinpoint injury location they do provide - in compact form - considerably more resolution than the earlier formats.

DIAGNOSIS OF LESION - The diagnosis of injury or lesion categories are basically the ones provided for in the expanded CARF injury detail page. The one significant addition is "asphyxia". While fairly rare, no provision exists currently for encoding this information when it occurs.

OIC Lesion Codes

L Laceration (Open Wound, Penetration, Perforation, Incision, Cutting)  
 C Contusion (Bruise, Hematoma, Ecchymosis)  
 A Abrasion (Superficial, Scratch, Blister, Excoriation)  
 F Fracture  
 P Pain  
 K Concussion  
 H Hemorrhage  
 V Avulsion (Tearing away from, Extrusion)  
 R Rupture (Herniation)  
 S Sprain (to Vertebra, Joint, or Ligament)  
 D Dislocation  
 N Crushing (Pulpefaction, Flailed Chest/Limb)  
 M Amputation (Transection of Limb, Decapitation)  
 B Burn  
 X Asphyxia (Suffocation, Anoxia, Obstruction)  
 O Other (e.g. Strained Muscle, Pneumothorax)  
 U Unknown

This facet is primarily intended to code diagnostic information concerning pathological changes and not the signs and symptoms. Pain is the one exception, as it is useful for encoding those painful but vague abnormalities that are not specifically diagnosed.

Pathological changes due to impact take precedence over the consequences of the lesions. Two exceptions exist: asphyxia and hemorrhage, because of their potential for critical or fatal consequences. Through either mechanism a minor laceration, for instance, could result in fatal consequences. Hemorrhage should be used conservatively, i.e., when the consequences of the subsequent hemorrhage are significantly more severe than the original injury. This situation occurs most frequently as a consequence of internal organ trauma. The encoding of specific injuries that may be troublesome are discussed by Body Region in the final section.

BODY SYSTEMS/ORGANS - The fourth and final letter of the Occupant Injury Classification is the specific Body System or Organ affected. Rather than list all the organs, the categories were based upon the major body systems. The combination of body system and body region categories work together to define specific tissue areas. For example, FILD-1, the Face, Inferior, and Digestive system combine to infer "Mouth". Similarly CRFS-2 (Chest Right Fracture Skeletal) indicates a simple rib fracture on the right side.

OIC System/Organ

S Skeletal, Bones  
 V Vertebrae  
 J Joints, Articulations, Ligaments  
 D Digestive  
 L Liver  
 N Nervous System  
 B Brain  
 C Spinal Cord  
 E Eyes, Ears  
 Cardiovascular (Use A, H or Q)  
 A Arteries, Veins  
 H Heart  
 Q Spleen  
 U Urogenital  
 K Kidneys  
 R Respiratory  
 P Pulmonary, Lungs  
 M Muscles  
 I Integumentary (e.g. Skin, Hair)  
 W All Systems in Region  
 U Unknown, Unclassified

The specific organs of greatest interest are indicated in the NATC-CARF occupant injury detail page: lungs, heart, liver, spleen and kidneys. These along with the vertebrae, joints, spinal cord, arteries, veins, eyes and ears have been provided with specific codes. The W for all systems in region is used with amputation, massive crushing and incineration injuries.

ABBREVIATED INJURY SCALE - The Occupant Injury Classification is terminated with the Abbreviated Injury Scale (AIS)<sup>1</sup> severity code in the same manner that the vehicle Collision Deformation Classification ends with a numeric extent code. The AIS has received wide acceptance and application. It provides a scaling of tissue damage that is consistent with the intent of the OIC. The AIS is not used here to encode overall occupant injury severity. Because specific injuries to one particular body region are being coded, only severity codes 0 through 6 apply with the addition of 9 for unknown severity. This is the same correlation used for encoding the CPIR and CARF injury detail pages.

Abbreviated Injury Scale

- 0 No Injury
- 1 Minor
- 2 Moderate
- 3 Severe (Not Life-Threatening)
- 4 Serious (Life-Threatening, Survival Probable)
- 5 Critical (Survival Uncertain, Fatal after 24 Hrs.)
- 6 Fatal (within 24 Hours)
- 9 Severity Unknown

OVERALL OIC APPLICATION PROCEDURE

The format for recording injuries is displayed in Figure 3. For each injury, 4 contact areas can be recorded (col. 14-21) in likelihood order beginning with the most probable contact area. Use the expanded list of nearly 90 contact area codes (See Section 5: Occupant Contact Areas). For each traumatic vehicle contact sustained by the occupant, 3 OICs can be recorded. The first OIC (col. 22-26) is for primary trauma and the other OICs (col. 27-36) is for optional associated traumas (defined later). Only those lines (cards) with encoded data are keypunched. Each occupant is coded on a separate form so that the injury card numbers (col. 10-11) start over for each new occupant number (col. 12-13). The computer will then format this information into one logical record per injury so analysis can be conducted on an injury-by-injury basis.

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<sup>1</sup> "Rating the Severity of Tissue Damage, I. The Abbreviated Scale", Committee on Medical Aspects of Automotive Safety, Journal American Medical Association, Volume 215, Number 2, pp. 277-280. January 11, 1971.





With a proper coding format, the OIC facilitates the description of many specific types of tissue damage and permits the recording of injury causation or injury sources on an injury-by-injury basis. The critical problem, then, is defining what an "injury" is. What level of detail should be recorded? An operational definition of an "injury" is needed to provide boundaries of the level of detail to be encoded. This is accomplished by default in the CPIR and CARF forms; an injury is defined as one box in the occupant injury detail table. For example, only one laceration per body region is permitted.

On the OIC coding form an injury is considered as all the significant pathological changes to a body region caused by an occupant contact with the vehicle or other object. Each line of the form operationally defines a single injury. Up to 3 OICs may be used on one line. The OICs describe the injury location, nature, and extent. Up to four contact codes can describe the injury's source. In order to link injuries with injury sources (contact areas), traumas to a body region due to distinct contacts are always coded as separate injuries i.e., on separate lines. A driver sustaining two facial lacerations, one from the steering wheel and one from the windshield, would have two OICs, on two lines of the form, each with its associated contact code.

One injury is usually located in a single body region. Thus all OIC's on one line usually have the same body region code. But an injury could overlap into two or more body regions having different codes. For example, a passenger striking the right A pillar might dislocate his shoulder and bruise his upper arm. The injury would consist of two OICs (SRDJ-3 and ARCI-1) on the same line. When multiple lesions (e.g., lacerations, contusions, burns) occur to the extremities the X and Y codes permit a more concise injury description.

If two distinct lesions from one contact have the same body region and aspect codes they should be considered as one injury and coded on the same line. If, on occasion, one body region sustains more than three OICs or pathological changes from one contact with a contact area, code only the most significant OICs, i.e., those with AIS greater than 1. If there are still more than three OICs with AIS greater than one, split the OICs by common or adjacent aspect codes onto two lines. This procedure permits one to use the body region and aspect codes in combination in order to more specifically define the distinct regions of the body injured.

The recording of several traumas in a single body area that resulted from one contact presents some problems. Is the rib fracture and pneumothorax caused by steering column contact one injury or two injuries? From an injury causation point of view only unique points of injury producing energy transfer should be recorded, but this approach might limit the recording of some significant traumatic conditions resulting from the dissipation of energy.

Campbell's Traumatic Tissue Damage Record<sup>1</sup> is in part "based upon the recognition that as the energy passes through various layers or structures it may leave some evidence of its effect in the tissue. Damage may therefore be described and assessed for all of the major tissues through which the force passes at whatever level they occur". To keep the number of details to be coded to a manageable level, he further suggests "that only the damage at greatest depth in the body needed to be described in any one particular injury".

This conceptualization of injury is the approach suggested for recording trauma with one exception- the injury classifier is permitted three OICs for each force application or contact point (Figure 3). Three uses of the primary and associated OICs have been defined.

1. TWO LESIONS FROM ONE CONTACT - When there are several distinct lesions in one location resulting from contact with one vehicle area, three OICs can be recorded. The first OIC would be the diagnosis of damage at the deepest level or the most important deepest structure. The other OICs can be used to describe other associated traumatic conditions. Using the earlier example, if the fractured rib punctured the pleural cavity the pneumothorax would receive the primary OIC and the rib fracture an associated OIC. Because contusions and abrasions frequently occur together (i.e., in one area of a body region from one vehicle contact area), they are most conveniently recorded on one line with contusions as the first OIC and abrasions as the second OIC.

2. INDIRECT OR INDUCED INJURY - The concept of "induced injury"<sup>2</sup> indirect injury is revealed by the following example: A passenger strikes his forehead on the windshield and sustains a bump on the head. Obviously, the bump on the head is related to the window. But, in addition, the passenger has a pain in the neck. Though no specific car component was struck, this would be an injury induced from windshield impact. It is analogous to induced damage to a car in areas not in the impact area. In the instance of a dislocated hip which resulted when the knee struck the instrument panel, instrument panel would be coded as the injury producing contact. Or, when the knee and foot are jammed against the instrument panel and floor, respectively, during impact, and a fractured tibia occurs from resulting flexion, both the floor and the instrument panel would be coded as injury-producing contacts for the fracture.

While one could consider all injury except skin injury to be "induced from transmitted forces", the interpretation made in the OIC is that indirect injuries are injuries to one body

<sup>1</sup> E.O.F. Campbell, "Traumatic Tissue Damage Record". Traffic Injury Research Foundation, Ottawa (Canada), no date.

<sup>2</sup> Private correspondence from Professor Donald F. Huelke, University of Michigan, Medical School, to Mr. Wilton D. Nelson, Safety Research and Development, General Motors Proving Ground, June 16, 1972.

region caused by a blow or contact in some other body region. In other words, indirect injuries occur when traumatic energy is transmitted through one body region to another body region. The vehicle area(s) directly struck by the other body region should be coded as the contact area(s) for the indirect injury. Indirect or induced injuries are coded as associated OICs.

3. CONSEQUENCES - The critical and fatal consequences of primary trauma can be coded as associated injuries. Asphyxia (X) and hemorrhage (H) are the most common significant consequences. If, due to face trauma, blood flow blocks off air flow, the resulting asphyxia would be coded (FIXR-6) as an associated trauma. A minor three inch wrist laceration (WRLI-1) could result in a fatality because of the associated hemorrhage of the lacerated ulna or radial artery (WRHA-6). Exterior hemorrhaging should not be coded unless it is of significant consequence. Internal hemorrhaging (e.g. subdural hematoma (HLHB-6), thoracic hemorrhage (CWAH-6), or hemoperitonum (MWHH-6)) may have frequent application at the critical and fatal injury severity levels. Code both the primary (WRLI-1) and the associated consequence (WRHA-6) on one line of the coding form.

#### SPECIFIC OIC ENCODING BY BODY REGION

While the valid combinations of OIC letters and injury severity codes are generally self-defined, the chart in Figure 4 displays most of the valid combinations. The chart provides assistance in data recording and will be used by the computer to aid in editing recorded OICs.

In order to ensure consistent coding of aspect codes, specific limitations have been placed upon their application in each Body Region, as explained below for each Region. Suggestions on coding injuries unique to each Body Region have also been included. The purpose of this section is to provide sufficient documentation so that everyone can classify the same injuries the same way. Questions and suggestions are encouraged.

FIGURE 4A. VALID BODY REGION: ASPECT CODE COMBINATIONS

| BODY REGION |                   | ASPECTS       | ASPECT CODES                |
|-------------|-------------------|---------------|-----------------------------|
| H           | HEAD              | R,L,B,P,S,I,W | R RIGHT<br>L LEFT           |
| F           | FACE              | R,L,B,C,S,I,W | B BILATERAL                 |
| N           | NECK              | R,L,B,A,P,W   | C CENTRAL                   |
| S           | SHOULDER          | R,L,B         | A ANTERIOR<br>P POSTERIOR   |
| X,A,E,R,W   | UPPER EXTREMITIES | R,L,B         | S SUPERIOR<br>I INFERIOR    |
| Y,T,K,L,Q   | LOWER EXTREMITIES | R,L,B         | W WHOLE REGION<br>U UNKNOWN |
| C           | CHEST             | R,L,B,C,W     |                             |
| M           | ABDOMEN           | R,L,B,C,S,I,W |                             |
| B           | BACK              | S,C,I,W       |                             |
| P           | PELVIC-HIP        | R,L,A,P,W     |                             |
| O           | WHOLE BODY        | R,L,A,P,S,I,W |                             |

FIGURE 4B. VALID SYSTEM/ORGAN: LESION: ASPECT: REGION COMBINATIONS

| SYSTEM/ORGAN:              | LESION:                 | ASPECT: | BODY REGION*                                |
|----------------------------|-------------------------|---------|---|
| S SKELETAL                 | C,F                     | *       | ALL, EXCEPT M                               |
| (S) TEETH                  | F,V,D                   | I       | F   |
| V VERTEBRAE                | C,F,S,D,O               | *       | N,B,P                                       |
| J JOINTS                   | F,S,D,O<br>F,S,D        | *       | F,P<br>S,W,E,Q,K                            |
| (J) LIGAMENTS              | L,C,S                   |         | S,W,E,Q,K                                   |
| D DIGESTIVE                | L,C,V,A,R,B,O           | *       | F,N,M,C                                     |
| L LIVER                    | L,C,A,F,V,H,R,B,O       | R,S     | M   |
| N NERVOUS SYSTEM           | L,C,V,B,O               | *       | ALL, EXCEPT H                               |
| B BRAIN                    | L,C,K,H,V,R,B,O         | *       | H   |
| C SPINAL CORD              | L,C,P,H,V,R,B,O         | *       | H,N,B,P                                     |
| E EARS                     | L,C,A,H,V,R,D,B,O       | R,L,B   | H   |
| EYES                       | L,C,A,H,V,R,B,O         | R,L,B   | F   |
| CARDIOVASCULAR             |                         |         |   |
| A ARTERIES,<br>VEINS       | L,H,V,R,B,O             | *       | ALL, EXCEPT H                               |
| H HEART                    | L,C,H,R,B,O             | C       | C   |
| Q SPLEEN                   | L,C,F,H,R,B,O           | L       | M   |
| G UROGENITAL               | L,C,A,H,V,B,O           | I       | M   |
| K KIDNEYS                  | L,C,A,F,V,B,O           | R,L,B   | M   |
| (G) BLADDER                | L,C,A,R,B,O             | I       | M   |
| R RESPIRATORY              |                         |         |   |
| (R) NOSE                   | L,C,A,F,H,V,B,X,O       | C       | F   |
| (R) TRACHEA                | L,C,A,F,V,D,B,X,O       | A       | N   |
| (R) WINDPIPE               | L,C,F,R,B,X,O           | C       | C   |
| P LUNGS                    | L,C,F,H,V,R,B,O         | R,L,B   | C   |
| M MUSCLES                  | L,C,P,V,R,B,O           | *       | ANY REGION                                  |
| I SKIN                     | L,C,A,B,O               | *       | ANY REGION                                  |
| W ALL SYSTEMS<br>IN REGION | M,N,B,O<br>N,B,O<br>B,O | *       | N,S,X,A,E,R,W,Y,T,K,L,Q<br>H,N,C,M<br>F,B,P |

U - UNKNOWN IS VALID IN ANY POSITION IN ANY COMBINATION.

\* - SEE FIGURE 4A FOR VALID ASPECT CODES IN EACH BODY REGION.

## H - HEAD, SKULL

## Valid Aspect Codes:

- R,L Right, left - ears
- B Bilateral
- S Superior - top of head
- I Inferior - base of skull
- P Posterior - back of head
- W Whole Region

## Specific Injuries:

1. Extrusion of the brain is listed under "avulsion" (V).
2. A hematoma is listed under "contusion" (C) if it is found in the superficial layers (i.e. scalp) and as a "hemorrhage" (H) if it is found underneath the skull in the subdural or subarachnoid spaces.
3. Unconsciousness is coded as "concussion" (K), and the severity indicates the length of unconsciousness.
4. Head pain due to a blow is coded HLKB-1.<sup>1</sup>
5. Tension headaches resulting from the accident are not coded as injuries.
6. Basilar skull fractures are code HIFS; this should be the primary use of the Inferior (I) aspect code.
7. Skull fractures cannot have an AIS code above 4; only brain injuries can be greater than or equal to 5.

## F - FACE

## Valid Aspect Codes:

- R,L Right, left - eyes
- B Bilateral - e.g. both cheekbones
- C Central - area around and including nose
- S Superior - forehead
- I Inferior - mouth, chin, lower jaw
- W Whole Region

## Specific Injuries:

1. Fractured and avulsed teeth are coded under the skeletal system; the severity is always 1. Examples:  
 FIFS - broken teeth  
 FIVS - avulsed teeth, loosened teeth

Fractured teeth (including dentures) are distinguished from a broken jaw by the severity code. Example:

- FIFS-1 - broken teeth
- FIFS-2 - broken jaw

-----  
<sup>1</sup> Arbitrary R, I aspect codes are used throughout these examples.

2. A contusion of the nose can be coded FCCR-1.
3. Nosebleeds are not coded unless they are the primary injury to the nose, when they are coded FCHR-1. Note that this is the only hemorrhage with an AIS code of below 3.

#### N - NECK, CERVICAL SPINE

##### Valid Aspect Codes:

- R,L Right, Left
- B Bilateral
- A Anterior - front, trachea, esophagus
- P Posterior - back, cervical spine
- W Whole Region

##### Specific Injuries:

1. Asphyxiation of gastric contents is an associated injury and should be coded as such - NAXR-6.
2. Bilateral is a valid aspect code for both sides of the neck, such as NBPM-1 for bilateral neck pain in the muscles.
3. Fracture of the larynx is coded NAFR-2, and may be associated with asphyxiation or hemorrhage.

#### S - SHOULDER

##### Valid Aspect Codes:

- R,L Right, Left
- B Bilateral

##### Specific Injuries:

1. Fractures of the clavicles, scapula, and ball and socket joint of the humerus and bones of the scapula are included in the (S) Region.

#### X - UPPER EXTREMITY

- A - UPPER ARM
- E - ELBOW
- R - FOREARM
- W - WRIST, HAND

##### Valid Aspect Codes:

- R,L Right, Left
- B Bilateral

Note: Bilateral rather than Whole Region is used when the injury is common to both extremity regions.

##### Specific Injuries:

1. Multiple fractures of extremities are indicated by increasing the severity not by repetitive coding.  
Example is:  

|                    |        |          |
|--------------------|--------|----------|
| Fx of radius L arm | RIFS-2 |          |
|                    |        | > RLFS-3 |
| Fx of ulna L arm   | RIFS-2 |          |
2. Pain in arms after bracing during the accident is coded as XBPM-1 and the contact code is "impact" (98).
3. An elbow bone contusion is coded as ERCS-1. Contusions to bones, such as the elbow, are coded under the skeletal system.
4. Hemoarthrosis (collection of blood in the synovial space) is coded as a hematoma, under contusion, severity code 2 or 3.
5. If a ligament is lacerated it is coded under the nearest joint. Torn ligaments are coded as sprained joints.

## C - CHEST

## Valid Aspect Codes:

- R,L Right, Left
- B Bilateral
- C Center - external front and mediastinum, esophagus
- W Whole Region

## Specific injuries:

1. The heart is considered in the "center" (C) of the chest. Example of a lacerated heart - CCLH-6.
2. A hemithorax is coded as to the source of blood. Possible sources are arteries-veins, or pulmonary-lungs. Hemorrhage of the arteries or veins is coded CRHA-3. Pulmonary hemorrhage is coded as CRHP-5.
3. The lesion code for pneumothorax is "other" (O). Examples of coding would be CLOP-3 or CBOP-4. This is a primary injury when a rib or other object tears the pleura. Otherwise it is a consequence and an associated injury.
4. Contusion of the rib is coded as CRCS-1.
5. A lacerated lung is coded CRLP. This may result in atelectasis or collapse of the lungs. It is an associated injury - CROP-3.
6. A crushed chest with no other details is coded CWNS-6.
7. Heart attack (cardiac arrest) as a result of impact is coded CCOH-6.

## M - ABDOMEN

## Valid Aspect Codes:

- R Right - whole liver or right lobe only
- L Left - spleen
- B Bilateral
- C Central - use only for umbilical area
- S Superior - left lobe of liver, diaphragm, stomach
- I Inferior - bladder
- W Whole Region

## Specific Injuries:

1. Peritoneum is not coded as a separate tissue. Hemoperitoneum is coded under the digestive system, as the peritoneum covers the organs of the digestive system.
2. If the stated injury is "fatal abdominal injuries", the organ system, lesion, and aspect code would be unclassified. Example is - MUUU-6.
3. Seat belt bruises are coded in the abdominal region and can be coded MICI-1, MBCI-1, or MWCI-1 according to which best fits the description given.
4. A ruptured diaphragm is coded MSRR-3.
5. Spontaneous abortion (miscarriage) is coded MIOG-4.
6. Retroperitoneal hemorrhage is coded using the same aspect codes used in coding other abdominal injuries. No distinction is made between the front and back of the abdomen. The source is arteries-veins, unless it is hemorrhage from a specified organ.
7. Intestines are located in the R, L, C, or I aspects of the abdomen.
8. The liver includes the gall bladder and the kidneys include the adrenal glands.

## B - BACK

## Valid Aspect Codes:

- C Central - overlap of thoracic and lumbar vertebrae
- S Superior - thoracic vertebrae 1-12
- I Inferior - lumbar vertebrae 1-5
- W Whole Region

## P - PELVIC - HIP

## Valid Aspect Codes:

- R,L Right and Left - pelvic joint
- A Anterior - superior and inferior pubic rami
- P Posterior - skin, posterior muscles, sacrum, coccyx
- W Whole Region



## Specific Injuries:

1. In the case of a broken femur at the acetabulum due to striking a knee on the window handle with no resulting knee injury add contusion of the knee, KLCI-1, as the primary injury and code the broken hip as an associated injury induced from window handle contact.

## Y - LOWER EXTREMITY

T - THIGH  
 K - KNEE  
 L - LOWER LEG  
 Q - ANKLE-FOOT

## Valid Aspect Codes:

R,L Right, Left  
 B Bilateral

Note: The use of Bilateral implies that a common injury occurred to the same region on both extremities. For example, if both knees were contused on the instrument panel, KBCI could be used to indicate the bilateral injury.

## Specific Injuries:

1. A contusion of the shin (lower leg) is coded LRCS-1. Contusions to such bony areas may be coded under the skeletal system.
2. Multiple fractures are indicated by increasing severity, not repetitive coding. Example is:
 

|  |                 |
|--|-----------------|
| fx. of tibia                           | LRFS-2          |
| Right Leg fx. of fibula (proximal end) | LRFS-2 > LRFS-4 |
| fx. of fibula (distal end)             | LRFS-2          |

## O - WHOLE BODY

## Valid Aspect Codes

R,L Right, Left  
 A Anterior - front  
 P Posterior - back  
 S Superior  
 I Inferior  
 W Whole Region

## Specific Injuries:

1. The broader regions have been provided to aid the description of an injury occurrence that involves more than one region, such as a burn.

## U - UNKNOWN REGION

## Specific Injuries:

1. Minor injuries with no specific details should be coded UUUU-1 as the one primary injury on the OIC coding form.
2. If the occupant was injured but no details are known, or if it is unknown whether the occupant was injured, code UUUU-9 as the only OIC.

## OTHER SPECIFIC INJURIES

1. "Road burns" are coded as abrasions, e.g., XRAI-1.
2. Ruptured muscles are coded as TLRM-3. Rupture of minor muscles is AIS severity 2; rupture of major muscles is AIS severity 3.

## REFERENCES

- <sup>1</sup>Collision Performance and Injury Report (CPIR), Long Form Revision Number 3, General Motors Corporation, Safety Research and Development Laboratory, General Motors Proving Ground, 1969.
- <sup>2</sup>Vehicle Data and Code Supplement, General Motors Corporation, Safety Research and Development Laboratories; and Automobile Manufacturers Association, Inc., 1971.
- <sup>3</sup>Vehicle Data and Code Supplement, General Motors Corporation, Safety Research and Development Laboratories; and Automobile Manufacturers Association, Inc., 1972.
- <sup>4</sup>Vehicle Data and Code Supplement, General Motors Corporation, Safety Research and Development Laboratories; and Motor Vehicle Manufacturers Association, Inc., 1973.
- <sup>5</sup>1974 Model Year Passenger Car and Truck Accident Investigators Manual, Motor Vehicle Manufacturers Association of the United States, Inc., 1974.
- <sup>6</sup>Red Book, National Market Reports, Inc., Chicago, Illinois. Canadian: National Automotive Publishers, Ltd., Toronto, Ontario, Published eight (8) times yearly.
- <sup>7</sup>Motor Vehicle Identification Manual, by the National Automobile Theft Bureau, Palmer Publications Company, Downers Grove, Ill., published yearly.
- <sup>8</sup>1975 Model Year Passenger Car and Truck Accident Investigators Manual, Motor Vehicle Manufacturers Association of the United States, Inc., 1975.

Your comments, criticisms, and suggestions on how to improve this manual would be appreciated. Please mail this reply sheet to your team sponsor (NHTSA, MVMA, or Canadian Ministry of Transport), or to Joe Marsh, Highway Safety Research Institute, Huron Parkway and Baxter Road, Ann Arbor, MI 48105.

Possible topics for comment are:

Clarity    Accuracy    Completeness    Organization    Figures    Examples  
Legibility    Reference Information Section (Additions)