Appendix B
ACCIDENT REPORTING INFORMATION

PURPOSE OF ACCIDENT DATA

As indicated in the "Rules Governing the Monthly Reports of Railroad Accidents'"

> "The purpose of reporting to the Federal Railroad Administration accidents and injuries to persons arising from the operation of a railroad is to carry out the intent of Congress as expressed in the Accidents Reports Act, as amended, namely, the disclosure of hazards arising in the provision of common carrier transportation by railroad. "

The reporting required by the FRA can be divided into two periods; reporting prior to 1975, and reporting after January 1, 1975. Changes to reporting procedures were sufficiently large that comparisons of 1975 and later accident /incident stat istics with statistics generated under prior reporting rules are not entirely appropriate for reasons discussed in this appendix,

Description of FRA Reporting Requirements

All Class I and Class II railroads, both line-haul and switching and freight and passenger are required to file monthly reports of accidents involved in all aspects of railroad operations. One of the concerns among various railroad union representatives is the need to have employees participate in the completion of accident reports—particularly with respect to train accidents. With respect to the data reported, the threshold basis for reporting and the organization of the FRA data base changed effective January 1, 1975, so that data comparisons and trend analysis including 1975 data are not comparable to the period 1966-74.

1966=74 Reporting Requirements

Before January 1, 1975, accident reporting thresholds were:

- The death of a person at the time the accident occurs or within 24 hours thereafter;
- An injury to an employee sufficient to incapacitate him from performing his normal duties for more than one day in the aggregate during the 10-day period immediately following the accident (a fatality occurring after 24 hours is reported as an injury and subsequent fatality);
- An injury to a non-employee sufficient to incapacitate him from performing his vocation for more than one day; and
- Damage to railroad track, equipment, or roadbed exceeding *$750* and which also results in a reportable personal casualty, resulting from a collision, derailment, or other train accident.

Under pre-1975 rules reportable accidents were divided into three types:[2]

- Train accidents—which include collisions, derailments, and other train accidents resulting from the operation of trains, locomotives, or cars where damage to equipment, track, or roadbed was in excess of $750, whether or not a reportable death or injur, occurred.

Department of Transportation, Federal Railroad Administration, "Rules Governing the Monthly Reports of Railroad Accidents, " 1968 Revision, Apr. 1, 1967.

[2] Federal Railroad Administration, "Accident Bulletin, Summary and Analysis of Accidents on Railroads in the United States, " No. 143, Appendix.

- Train service accidents—arising from the operation or movement of trains, locomotives, or cars that result in reportable injuries or death, but not in damage to equipment, track, or roadbed of more than $750 (a train service accident with over $750 property damage would be counted as a train accident).
- Nontrain accidents—not directly attributable to the operation or movement of a train, locomotive, or cars, but resulting in reportable casualties.

The pre-1975 Accident Report Form, Form T, is shown as figure B-1. In addition to the filing of monthly accident reports as per Form T, railroads were required to submit a supplement to each Form T for each reportable train, train-service, nontrain injury or death, and highway grade-crossing accident. A verification report (Form V) was to be forwarded to FRA authorities even though no reportable (train, train-service, or nontrain) accident occurred during the month. The responsible reporting officer of each railroad used this form to attest to the number of reportable accidents which occurred during the month, as well as the number of locomotive and motor car miles run during the month.

Under the pre-1975 FRA reporting system, certain accidents/incidents were not to be reported. In addition to not reporting accidents below the thresholds previously mentioned, accidents on or near railroad property that were not attributable to normal operations of a railroad were not to be reported. Additionally, casualties arising from "horseplay" or suicides were not considered reportable.

1975 Reporting Requirements

Beginning January 1, 1975, the Federal Railroad Administration changed accident threshold reporting requirements to be:

- All damage to railroad equipment, track, track structures and roadbed of $1,750 or more is to be reported (reflecting an effort to offset the effects of inflation and the number of "unimportant" accidents reported). This was changed to *$2,300* in 1977 and will be revised every 2 years;
- Every injury to a non-employee, arising from the operation of the railroad, requiring medical treatment or if death results;
- All injuries to railroad employees are to be reportable if they require medical treatment or result in loss of one or more work days, loss of consciousness or transfer to another job or the injury results in a death; and
- Any illness of a railroad employee diagnosed by a physician as arising from the employee's occupation is to be reported.

The new reporting forms for rail equipment accident/incidents, railroad injury and illness summary, and highway grade crossing accident/incident report are shown in figures B-2 through B-4 respectively.

Effects of Changes in the Accident Reporting System

The changes in the threshold reporting outlined above had a significant impact on the number of accidents/incidents reported by the railroads. Some of the changes appear to be subtle, but further explain why numbers of accidents/incidents before and after January 1975, are not comparable:

Train Accidents

- The "old" rules applied the $750 threshold to equipment, track, or roadbed, excluding the cost of clearing wrecks. The "new" rules applied the $1,750 threshold to on-track equipment, signals, track, track structures, and roadbed, excluding the cost of clearing wrecks, but including labor and all other costs to repair or replace in kind. This alteration of included items compromises the use of an inflation index to compare "old" and "new" accident statistics reported as exceeding a dollar threshold;
- Though major cause categories have not been changed, specific cause codes have

Figure B-1.—Accident Report Form

= A R TM EN T O F T RAN SPOR TATION
t .>ERAL RAIL ROAD ADMINISTRATION
BURE AU O F RAIL RO A DS A F E TY

MONTHLY REPORT OF RAILROAD ACCIDENT
(See *instructions* on *reverse* aide,)

FDRM APPROVED
BUDGET BUREAU HO 06 R4008

FORM T

SHEET No.

1. REPORTING CARRIER	2. CARRIER'S FILE NO.	3. FOR THE MONTH OF ----------, 19-----
4. IF "JOINT OPERATION" OR CROSSING COLLISION NAME ROADS INVOLVED.	5. IF "JOINT OPERATION" NAME ROAD WHOSE SUPERINTENDENT IS IN CHARGE OF TRACK.	
6. KIND OF ACCIDENT ☐ TRAIN ☐ TRAIN-SERVICE ☐ NONTRAIN	7. FRA CLASS & SUB CLASS (§ 225.22, 225.23, 225.24)	
8. NEAREST STATION AND NAME OF STATE WHERE ACCIDENT OCCURRED	9. DATE OF ACCIDENT	10. TIME (Use standard) -------- --A.M. ------- -P.M.

11. VISIBILITY AND WEATHER (CHECK APPROPRIATE BOXES)

DAYLIGHT	FOGGY
DARK	RAINING
CLEAR	SNOWING
CLOUDY	SLEETING

12. DAMAGE IN DOLIARS *(Train accidents only)*

NAME OF ROAD	EQUIPMENT	TRACK	TOTAL
	$	$	$
TOTAL			

13. CAUSE *(Briefly)*

14. KIND OF TRACK	15. METHOD OF OPERATION AND SIGNALLING			16. KIND OF EQUIPMENT
MAIN	MANUAL BLOCK	AUTO. BLOCK SIG.	AUTO. TRAIN STOP	LOCOMOTIVE
BRANCH	CONT MANUAL	INTERLOCKING	AUTO. TRAIN CONT.	FREIGHT TRAIN CAR
YARD	TRAIN ORDER	CENT. TRAF. CONT	CAB SIGNAL	PASS. TRAIN CAR

17. KIND OF TRAIN	18. MOTIVE POWER	19. NO. OF CARS	20. TIMETABLE DIRECTION	21. SPEED
P TF LF Y W O	D E RMC O		N S E W	MPH MPH
☐ ☐ ☐ ☐ ☐ ☐	☐ ☐ ☐ ☐			

FOR F.R. A USE ONLY

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45
46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	F.R.A. use only									

22. DETAILS OF CASUALTIES TO PERSONS

Class of Person (a) (§ 225.50)	Age in case of employee (b)	F.R.A. use only 29 30 31 32 33	Killed or nature and extant of injuries (c) [§ 225.14(a), 225.47(a), 225.47(c)]	F.R.A. use only 34 35 36	Days disability A=Actual P=Probable (d) [§ 225.47(b)]

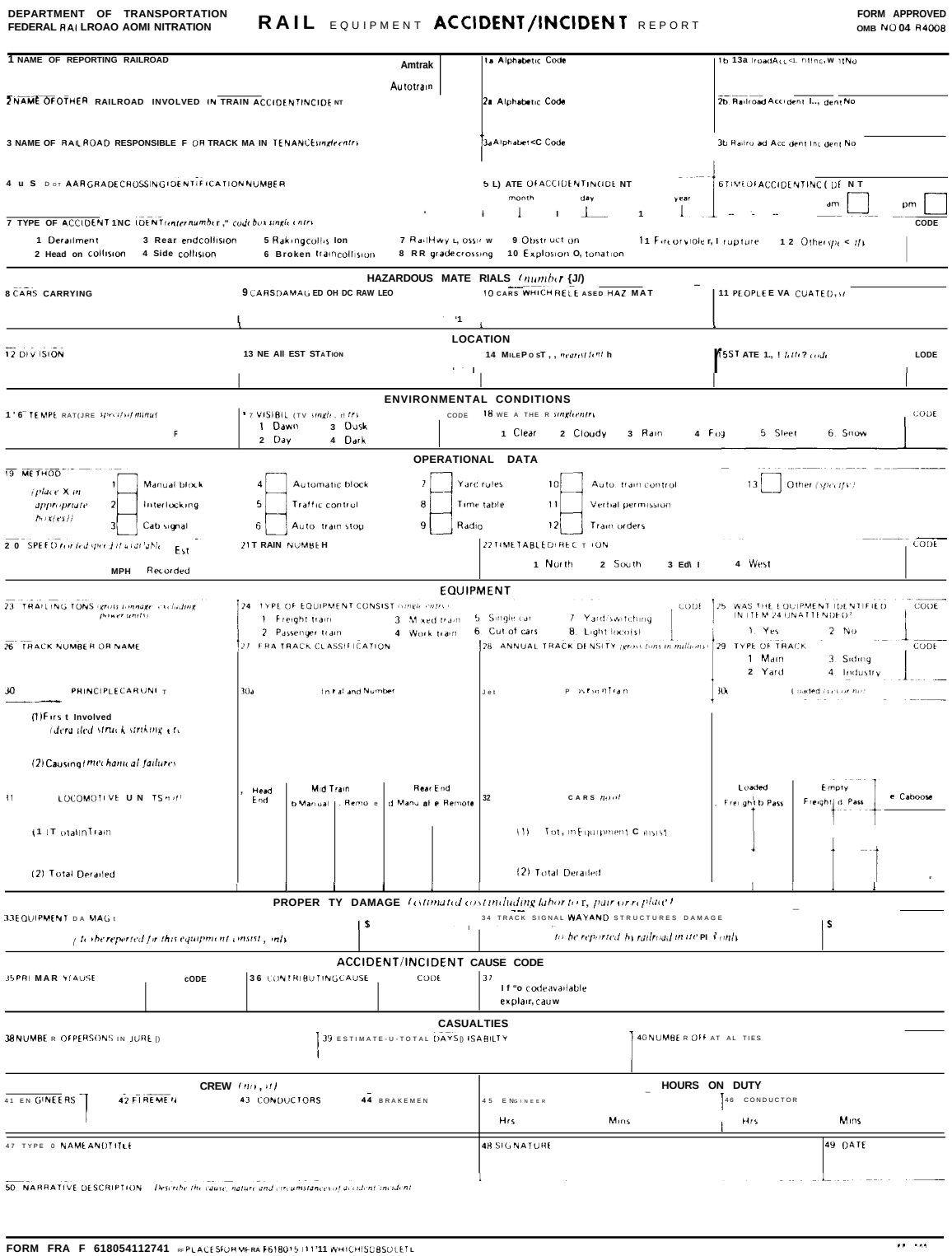
23. FULL DETAIN OF CAUSE, NATURE, AND CIRCUMSTANCES OF ACCIDENT (See 7. Back of Form)

CONTINUE ON REVERSE SIDE OF SHEET IF NECESSARY

SIGNATURE	TITLE

Form FRA F 6180-15 (REPLACES FRA FORM T

Figure B-2



DEPARTMENT OF TRANSPORTATION
FEDERAL RAILROAD ADMINISTRATION

RAIL EQUIPMENT ACCIDENT/INCIDENT REPORT

FORM APPROVED
OMB NO 04-R4008

1 NAME OF REPORTING RAILROAD — Amtrak / Autotrain — 1a Alphabetic Code — 1b 13a Railroad Accident/Incident Report No

2 NAME OF OTHER RAILROAD INVOLVED IN TRAIN ACCIDENT/INCIDENT — 2a Alphabetic Code — 2b Railroad Accident/Incident No

3 NAME OF RAILROAD RESPONSIBLE FOR TRACK MAINTENANCE (single entry) — 3a Alphabetic Code — 3b Railroad Accident/Incident No

4 U S DOT AAR GRADE CROSSING IDENTIFICATION NUMBER — 5 DATE OF ACCIDENT/INCIDENT (month / day / year) — 6 TIME OF ACCIDENT/INCIDENT (am / pm) — CODE

7 TYPE OF ACCIDENT/INCIDENT (enter number, "code box single entry)
1 Derailment; 2 Head on collision; 3 Rear end collision; 4 Side collision; 5 Raking collision; 6 Broken train collision; 7 Rail/Highway crossing; 8 RR grade crossing; 9 Obstruction; 10 Explosion/Fire; 11 Fire/violent rupture; 12 Other (specify)

HAZARDOUS MATERIALS (number (J/)

8 CARS CARRYING — 9 CARS DAMAGED/DERAILED — 10 CARS WHICH RELEASED HAZ MAT — 11 PEOPLE EVACUATED/ST

LOCATION

12 DIVISION — 13 NEAREST STATION — 14 MILEPOST, nearest tenth — 15 STATE (Alpha code) — CODE

ENVIRONMENTAL CONDITIONS

16 TEMPERATURE (specify minus) F — 17 VISIBILITY (single entry): 1 Dawn, 2 Day, 3 Dusk, 4 Dark — CODE — 18 WEATHER (single entry): 1 Clear, 2 Cloudy, 3 Rain, 4 Fog, 5 Sleet, 6 Snow — CODE

OPERATIONAL DATA

19 METHOD (place X in appropriate box(es)):
1 Manual block; 2 Interlocking; 3 Cab signal; 4 Automatic block; 5 Traffic control; 6 Auto train stop; 7 Yard rules; 8 Time table; 9 Radio; 10 Auto train control; 11 Verbal permission; 12 Train orders; 13 Other (specify)

20 SPEED (nearest speed if available) MPH — Est / Recorded — 21 TRAIN NUMBER — 22 TIME TABLE DIRECTION: 1 North, 2 South, 3 East, 4 West — CODE

EQUIPMENT

23 TRAILING TONS (gross tonnage excluding power units) — 24 TYPE OF EQUIPMENT CONSIST (single entry): 1 Freight train, 2 Passenger train, 3 Mixed train, 4 Work train, 5 Single car, 6 Cut of cars, 7 Yard/switching, 8 Light locos(s) — CODE — 25 WAS THE EQUIPMENT IDENTIFIED IN ITEM 24 UNATTENDED? 1 Yes, 2 No — CODE

26 TRACK NUMBER OR NAME — 27 FRA TRACK CLASSIFICATION — 28 ANNUAL TRACK DENSITY (gross tons in millions) — 29 TYPE OF TRACK: 1 Main, 2 Yard, 3 Siding, 4 Industry — CODE

30 PRINCIPLE CAR/UNIT — 30a Initial and Number — Det — Position in Train — 30b (Loaded/Empty)

(1) First Involved (derailed struck striking etc.)

(2) Causing (mechanical failures)

31 LOCOMOTIVE UNITS (total) — Head End — Mid Train: a Manual, b Remote — Rear End: c Manual, d Remote

(1) Total in Train

(2) Total Derailed

32 CARS (total) — (1) Total in Equipment Consist — (2) Total Derailed — Loaded: a Freight, b Pass — Empty: c Freight, d Pass — e Caboose

PROPERTY DAMAGE (estimated cost including labor to repair or replace)

33 EQUIPMENT DAMAGE (to be reported for this equipment consist, only) — $

34 TRACK SIGNAL AND STRUCTURES DAMAGE (to be reported by railroad incurring only) — $

ACCIDENT/INCIDENT CAUSE CODE

35 PRIMARY CAUSE — CODE — 36 CONTRIBUTING CAUSE — CODE — 37 If "o code available explain, cauw

CASUALTIES

38 NUMBER OF PERSONS INJURED — 39 ESTIMATED TOTAL DAYS DISABILITY — 40 NUMBER OF FATALITIES

CREW (no., st)

41 ENGINEERS — 42 FIREMEN — 43 CONDUCTORS — 44 BRAKEMEN

HOURS ON DUTY

45 ENGINEER: Hrs / Mins — 46 CONDUCTOR: Hrs / Mins

47 TYPE NAME AND TITLE — 48 SIGNATURE — 49 DATE

50 NARRATIVE DESCRIPTION (Describe the cause, nature and circumstances of accident/incident)

FORM FRA F 618054112741 PREVIOUS EDITIONS OF FRA F 6180.54 (11-77) WHICH IS OBSOLETE

Figure B-3

DEPARTMENT OF TRANSPORTATION
FEDERAL RAILROAD ADMINISTRATION

RAILROAD INJURY AND ILLNESS SUMMARY

FORM APPROVED
OMB NO. 04 R4009
SHEET 1 OF _____

1. NAME OF REPORTING RAILROAD	2. ALPHABETIC CODE	3. REPORT MONTH	4. STATE ALPHABETIC CODE	5. COUNTY

6.

I, _____ being first duly sworn, do say upon my oath that
(Name of affiant)

I am _____ of the railroad aforesaid and as such officer of the said railroad it is my duty
(Title of Office held by affiant)

to have supervision over the record of reportable accident/incidents arising from the operation of the said railroad, and that I have caused to be compiled from the said record and to be carefully examined the annexed report of such accident/incidents occurring during the month named at the head of this sheet; and that the said report is true and complete to the best of my knowledge and belief.

Subscribed and sworn to before me, a notary public in and for the State and County aforesaid, this _____ day of _____, 19__.

(Use an impression seal) [L.S.] _____ _____
(Notary Public) (Signature of affiant)

7. MILES RUN DURING MONTH

a. LOCOMOTIVE TRAIN MILES	b. MOTOR TRAIN MILES	c. YARD SWITCHING MILES	d. TOTAL

8.

a. EMPLOYEE MAN HOURS WORKED	b. PASSENGER TRAIN MILES OPERATED	c. NUMBER OF PASSENGERS TRANSPORTED

9. **CASUALTIES** (If additional space is required, use continuation sheet, Form FRA F 6180-55a.)

a. ACCIDENT/ INCIDENT NUMBER	b. TYPE PERSON OR JOB CODE	c. INJURY OR ILLNESS CODE	d. OCCURRENCE CODE	e. AGE	f. NUMBER OF DAYS AWAY FROM WORK	g. NUMBER OF DAYS OF RESTRICTED ACTIVITY	h. CASES WITHOUT LOST WORK DAYS	i. STATE ALPHABETIC CODE

FORM F RA F 6180-55 (12-74) REPLACES FORM F RA F 61130-12 WHICH IS OBSOLETE

GPO 880-963

Figure B-4

DEPARTMENT OF TRANSPORTATION
FEDERAL RAILROAD ADMINISTRATION

RAIL-HIGHWAY GRADE CROSSING ACCIDENT/INCIDENT REPORT

FORM APPROVED
OMB NO 04 R4033

1 NAME OF REPORTING RAILROAD — Amtrak / Autotrain	1a Alphabetic Coda	1b Railroad Accident Incident No
2 NAME OF OTHER RAILROAD INVOLVED IN TRAIN ACCIDENT/INCIDENT	2a Alphbetic Code	2b Railroad Accident/Incident No
3 NAME OF RAILROAD RESPONSIBLE FOR TRACK MAINTENANCE *(single entry)*	3a Alphabetic Cad.	3b Railroad Accident/Incident No.
4 U S DOT AAR GRADE CROSSING IDENTIFICATION NUMBER	5 DATE OF ACCIDENT/INCIDENT month / day / year	6 TIME OF ACCIDENT/INCIDENT am ☐ pm ☐

LOCATION

7 NEAREST RAILROAD STATION	8 COUNTY	9 STATE *(two letter code)* COOS
10 CITY *(if in a city)*	11 HIGHWAY NAME OR NUMBER *(if private crossing so state)*	

ACCIDENT/INCIDENT SITUATION

HIGHWAY USER INVOLVED

12 TYPE — CODE
1 Auto; 2 Truck; 3 Truck Trailer; 4 Bus; 5 School Bus; 6 Motorcycle; 7 Pedestrian; 8 Other *(specify)*

13 SPEED *(estimated mph at impact)*

14 DIRECTION *(geographical)* — CODE
1 North; 2 South; 3 East; 4 west

15 POSITION — CODE
1 Stalled on crossing; 2 Stopped on crossing; 3 Moving over crossing

RAILROAD EQUIPMENT INVOLVED

16 EQUIPMENT — CODE
1 Tram *(units pulling)*; 2 Tram *(units pushing)*; 3 Tram *(standing)*; 4 Car(s) *(moving)*; 5 Car(s) *(standing)*; 6 Light loco(s) *(moving)*; 7 Light loco(s) *(standing)*; 8 Other *(specify)*

17 POSITION OF CAR/UNIT IN TRAIN — CODE

18 CIRCUMSTANCE — CODE
1 Train struck highway user; 2 Train struck by highway user

19 — CODE
Was the highway user and for rail equipment revolved m the impact transporting hazardous materials? 1 Highway user; 2 Rail equipment; 3 Both; 4 Neither

ENVIRONMENT

20 TEMPERATURE *(specify if minus)* °F	21 VISIBILITY *(single entry)* — CODE 1 Dawn; 2 Day; 3 Dusk; 4 Dark	22 WEATHER *(single entry)* — CODE 1 Clear; 2 Cloudy; 3 Rain; 4 Fog; 5 Sleet; 6 Snow

TRAIN AND TRACK

23 TYPE OF TRAIN — CODE 1. Freight; 2 Passenger; 3 Mixed; 4 Work; 5 Yard/Switching; 6 Light Locomotive(s)		24 TRACK TYPE USED BY TRAIN INVOLVED — CODE 1 Main; 2 Yard; 3 Siding; 4 Industry
25 TRACK NUMBER OR NAME	26 FRA TRACK CLASSIFICATION	27 NUMBER OF LOCOMOTIVE UNITS
28 NUMBER OF CARS	29 TRAIN SPEED *(recorded speed if available)* Est / MPH Recorded	30 TIME TABLE DIRECTION — CODE 1 North; 2 South; 3 East; 4 West

CROSSING WARNING

31 TYPE *(place X in appropriate box(es))*
1 ☐ Gates; 2 ☐ Cantilever FLS; 3 ☐ Standard FLS; 4 ☐ Wig Wags; 5 ☐ Hwy. Traffic Signals; 6 ☐ Audible; 7 ☐ Crossbucks; 8 ☐ Stop Signs; 9 ☐ Watchman; 10 ☐ Flagged by crew; 11 ☐ Other *(specify)*; 12 ☐ None

32 SIGNALED CROSSING WARNING — CODE
Was the signaled crossing warning identified m item 31 operating?
1. Yes 2. No

33 LOCATION OF WARNING — CODE
1 Both sides; 2 Side of vehicle approach; 3 Opposite side of vehicle approach

34 CROSSING WARNING INTERCONNECTED WITH HIGHWAY SIGNALS — CODE
1 Yes; 2 No; 3 Unknown

35 CROSSING ILLUMINATE BY STREET LIGHTS OR SPECIAL LIGHTS — CODE
1 Yes; 2 No; 3 Unknown

MOTORIST ACTION

36 MOTORIST PASSED STANDING HIGHWAY VEHICLE — CODE
1 Yes; 2 No; 3 Unknown

37 MOTORIST DROVE BEHIND OR IN FRONT OF TRAIN AND STRUCK OR WAS STRUCK BY SECOND TRAIN — CODE
1 Yes; 2 No; 3 Unknown

38 MOTORIST — CODE
1 Drove around or thru the gate; 2 Stopped and then proceeded; 3 Did not stop; 4 Other *(specify)*; 5 Unknown

39 VIEW OF TRACK OBSCURED BY *(primary obstruction)* — CODE
1 Permanent structure; 2 Standing railroad equipment; 3 Passing train; 4 Topography; 5 Vegetation; 6 Highway vehicles; 7 Other *(specify)*; 8 Not obstructed

HIGHWAY VEHICLE PROPERTY DAMAGE/CASUALTIES

40 HIGHWAY VEHICLE PROPERTY DAMAGE *(est dollar damage)*	41 DRIVER WAS — CODE 1 Killed; 2 Injured; 3 Uninjured	42 WAS DRIVER IN THE VEHICLE ? — CODE 1 Yes; 2 No
43 TOTAL NUMBER OF OCCUPANTS KILLED	44 TOTAL NUMBER OF OCCUPANTS INJURED	45 TOTAL NUMBER OF OCCUPANTS *(include driver)*

46 — CODE
IS A RAIL EQUIPMENT ACCIDENT/INCIDENT REPORT BEING FILED? 1. Yes 2. No

47 TYPED NAME AND TITLE	48 SIGNATURE	49 DATE

FORM FRA F 6180-57 (12-74) REPLACES FORM FRA F 6180-13 (10-67) WHICH IS OBSOLETE

GPO 880 562

been completely revised, making comparisons difficult; and

- Where the FRA formerly assigned cause codes from written accident descriptions, railroads are now assigning the most appropriate code from a predefine list.

Personnel Casualties

- The new reporting requirements reduce the number of days off duty from "more than one" to "one or more, " and include casualties where medical treatment is required, even if less than one day of work is lost; and
- The introduction of occupational illness is new, and along with the changes above, make comparisons questionable.

Train Service/Nontrain Accidents

- Under the new reporting system, casualties are no longer classified into Train Service and Nontrain accidents;
- Train Service accidents and Nontrain accidents have been redefined and renamed Train Service incidents and Nontrain incidents;
- Personnel casualties are identifiable only as involving or not involving a moving train or piece of equipment; and
- There has been an addition of "occurrence" codes to replace the former cause codes.

These changes make the separation between train service and nontrain accidents questionable as well as in some cases impossible. Additionally, problems with understanding the new reporting system have led to questions about the accuracy of the number of casualties connected with moving trains or equipment since reporting personnel may not have been (or are) sufficiently familiar with the new reporting system to suffix the occurrence code with a "T" if the accident involved moving equipment. However, as of November 1, **1977,** in the code listing, each occurrence code has now been suffixed with the "T" and has been specifically explained to alleviate the potential for future errors.

Other Changes in 1975

The reporting system instituted in **1975** provides for the reporting of information not previously required. Such information includes the following: type of track; car initial and number: number of cars derailed; number of engineers, firemen, conductors and brakemen; number of cars carrying hazardous materials; number of cars which released hazardous material; number of people evacuated; FRA track classification; and annual track density.

Comparison of Pre-1975 and Post-1975 Accident Reporting Systems

Several changes to the reporting requirements and definitions regarding accidents have previously been identified. Although the intent of these changes has seemingly been to improve the data system, problems still exist which have resulted in noncomparability among data and difficulty in analyzing the data. These are identified below:

- To reduce the delay in filling out the accident reports, the reported damage to track and equipment is still an estimate.
- Prior to 197'5, FRA clerical employees assigned accident cause codes to accidents based on narrative descriptions provided by the railroads. The procedure now requires the railroad to provide the cause code, but as previously stated, some railroad union representatives feel that the employees should be involved in filling out the accident report.
- Although some of the cause codes were eliminated and thus reduced, there is still a substantial portion coded in the accident cause code "other" category. This inhibits the successful analysis of accident data to determine causes.
- Due to the change in cause codes, the data are not compatible before and after 1975 and makes analysis of trends especially for train service and nontrain accidents impractical.

- The changes in reporting rules for the 1975 data had the effect of drastically increasing the number of reportable injuries. This occurred because the reporting threshold for injuries measured in days disabled was increased from "more than one day" to "one or more days" as well as other rule changes regarding the reporting of injuries and fatalities. Furthermore, the inclusion of occupation illness increases the number of reportable accidents.

Although changes were again made to the reporting system in January 1977, problems still exist with attempting to identify certain accident causes. Specifically there has been concern over some of the cause codes in the human error category of train accidents (formerly "Negligence of Employees"). These still do not specifically identify the reason for the accident.

USE OF THE FRA DATA BASE AND RELATED PROBLEMS

Within the Federal Railroad Administration, the Office of Standards and Procedures, Reports and Analysis Division has the responsibility for data base maintenance, Accident/Incident Bulletin publication, and data processing of monthly inspector reports. Sources of data for performing these responsibilities include only monthly accident reports filed by railroads and field inspector reports.

FRA Problems With Use of the Data Base

Although the Office of Standards and Procedures publishes the Railroad Accident Bulletins and other summary listings of accidents, they are not providing an analysis of the accident data. Although the sorting and tabulations of accidents, that are published, aid in identifying some of the problem areas, more in-depth analyses are necessary to assist in determinirtg accident causes and potential problems.

In the area of data reliability, there have been reported difficulties in the transition from the accident reporting system prior to 1975 to the new reporting system. Reporting carriers have occasionally made coding errors or left blank fields while adjusting to the new system. Attempts have been made to reduce these problems by additional inspections of the accident records to increase the accuracy of the data.

Other Users of the Data Base

Through the regional offices, or possibly even independently, States could tap into the system to upgrade their own programs and provide for better planning and measuring performance. Lack of current, timely, relevant data is a handicap to improving State program effectiveness.

Although the railroad's own data base is not constrained by FRA requirements, few roads have developed information retrieval capabilities similar to that being developed by the FRA. Railroad access to a more current data base could be a useful adjunct to their own safety programs and convert an otherwise less meaningful administrative report into a more meaningful data bank for analysis. It could be particularly useful for roads to help identify what other roads are doing in an effort to strengthen their own programs.

Within the FRA Office of Research and Development, these statistics are used to guide research priorities and to delineate categories for more detailed analysis. The same has been done by the Research and Test Department of AAR and the Railroad Research Board.

OTHER DATA BASES AND THEIR APPLICATION

Other sources of accident/incident data investigated in this study included the Association of American Railroads, the Federal Highway Administration, the National Transportation Safety Board, Occupational Safety and Health Administration and the individual railroads. These are addressed below:

Association of American Railroads

The AAR relies almost exclusively on accident reports filed with the FRA– specifically the machine data base which is keypunched from these accident reports— for use in its safety related analyses. In its own studies, the AAR has concluded that the FRA data base is the best source of industry data available. Beginning in **1975,** the AAR has collected train accident data from member railroads. Copies of FRA accident reports are mailed to the AAR and selected data are analyzed. These data and analyses provide information on accident trends to support safety, mechanical, and operational research programs.

The most recent comprehensive analysis of the FRA data base has been performed by the AAR. Two reports entitled, *Analysis of Nine Years* of *Railroad Accident Data 1966-1974* by A.E. Shulman and C.E. Taylor, and *Analysis of Nine Years of Railroad Personnel Casualty Data 1966-2974* by A.E. Shulman provide detailed analysis of accident incident trends in areas of railroad equipment and personnel. As was previously indicated, both of these publications supplied excellent background and analysis of railroad accident and casualty data for this study.

National Transportation Safety Board

Under the Independent Safety Board Act of 1974 (P.L. **93-633),** NTSB investigates and collects data on all railroad accidents that fall into any of the following categories:

there is a fatality;

- damages are in excess of **$500,000; and**
- **a** passenger train is involved.

NTSB has established certain basic criteria on investigations in response to the law and has established certain definitions to interpret the law:

- extensive damage **($500.000** or more)
- passenger accident (accident of passenger train over $10,000 in damage)
- NTSB damage may encompass damage to equipment, tracks, lading, and third party damage (environment)

Two types of investigations are conducted by the NTSB:

- Field—a thorough investigation of an accident culminating in a report.
- Major—usually an investigation of a "catastrophic" accident which may have resulted in a large number of deaths, injuries, or extensive property damage. Such investigations may involve public hearings or depositions and result in a major report with recommendations.

Although NTSB has no enforcement authority, it makes recommendations to the FRA and the railroad industry/manufacturers. With regard to number of investigations, NTSB averages about 12 to 15 major accidents annually and **400 to 500** field investigations.

Federal Highway Administration

The Federal Highway Administration (FHWA) does not collect railroad related accident data. Highway grade-crossing accident data are compiled by the FRA.

Individual Railroads

The data collected by the individual railroads are typically used in identifying target areas for track and equipment inspection and/or main-

tenance activities. The AAR indicates that many railroads also use their accident data to monitor employee casualty trends and evaluate the effectiveness of their safety programs.

Occupational Safety and Health Ad= ministration

OSHA does not collect data on employee injuries/illnesses from internal reports. However, OSHA has an agreement with the Bureau of Labor Statistics to collect statistics on employee injuries and illness from employer annual reports.

States

Most States do collect accident data from the railroads operating in their jurisdictions. The level of detail and the type of statistics gathered varies among the States. In general terms, these data are not significantly different from FRA data since, in most instances, the railroads are required to submit accident reports to the authorized State agency. However, each State's reporting criteria may sometimes be different from those of the FRA.

In most cases, States find little use for current FRA data because of the time lag involved in receiving current accident data and also the fact that they already collect the most relevant (regarding State's priorities) accident/incident statistics.

Accident/incident data are generally used by the States for identifying areas where inspection activities should be increased or decreased. The data are also used in the development of capital improvement programs and in determining areas where more legislative action may be required.

Due to limited resources in most State budgets, these data are not used or other data collected for the purpose of research. However, some States do analyze accident reports to determine trends of any type.