



COMMONWEALTH OF KENTUCKY
DEPARTMENT OF TRANSPORTATION

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November 15, 1973

H.3.46

MEMORANDUM TO: J. R. Harbison
State Highway Engineer
Chairman, Research Committee

SUBJECT: Research Report No. 378; "Traffic Accident Reporting in Kentucky,"
KYP-72-46; HPR-1(9), Part III

The report attached covers a study of accident data usage and documents, in an advocative way, the need for Uniform Accident Reporting legislation and channelization of accident data.

Respectfully submitted,

A handwritten signature in cursive script, reading "Jas. H. Havens".

Jas. H. Havens
Director of Research

JHH:dw
Attachment
cc's: Research Committee

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16. Abstract This study reviews the organizational structure and processing procedures used in accident surveillance. Consideration was given to the techniques that various state governmental agencies use in their analysis of accident reports and statistics. It was concluded that Kentucky should enact uniform accident reporting legislation. A standard form should be prescribed for use by law enforcement agencies in complying with the reporting requirement. The creation of an Accident Records Unit to receive, process, and statistically analyze the reports is recommended.					
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Research Report
378

TRAFFIC ACCIDENT REPORTING IN KENTUCKY
KYP-72-46, HPR-1-(9), Part III

by

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Division of Research
Bureau of Highways
DEPARTMENT OF TRANSPORTATION
Commonwealth of Kentucky

The contents of this report reflect the views of the author who is responsible for the facts and the accuracy of the data presented herein. The contents do not necessarily reflect the official views or policies of the Bureau of Highways.

This report does not constitute a standard, specification, or regulation.

November 1973

INFORMATION AND BACKGROUND

Traffic deaths and injuries are rising even though accident rates, in terms of miles traveled, have subsided. Congress enacted the Highway Safety Act of 1966 and charged each state to establish and maintain a highway safety program. The purpose of this program is to decrease accident frequency and especially to reduce accidents which result in death and severe injuries.

The U.S. Secretary of Commerce was initially given the authority for implementing the Highway Safety Act of 1966. Shortly thereafter, Congress enacted legislation creating the Department of Transportation. Responsibility for the highway safety program was then shifted to the Secretary of Transportation. In order to administer the program, the National Highway Safety Agency was established; this agency is now called the National Highway Traffic Safety Administration. Each state's program must be approved by the Secretary of Transportation and must conform with uniform standards. Eighteen safety standards (1) currently in effect are related to:

1. motor vehicle inspection,
2. motor vehicle registration,
3. motorcycle safety,
4. driver education,
5. driver licensing,
6. traffic codes and laws,
7. traffic courts,
8. alcohol in relation to highway safety,
9. identification and surveillance of accident locations,
10. traffic records,
11. emergency medical services,
12. highway design, construction, and maintenance,
13. traffic control devices,
14. pedestrian safety,
15. police traffic services,
16. accident cleanup,
17. pupil transportation safety, and
18. accident investigation and reporting.

The 1966 Act defined the role of states in implementing the safety program. The Governor is responsible for its administration, and the state is to authorize political subdivisions to conduct their own highway safety programs. These programs must be approved by the Governor and comply with the standards. Federal aid funds have been linked to the standards by **Policy and Procedure Memorandum 21-16 (PPM 21-16)**, which directs that a program of safety projects be carried out in addition to highway construction.

Identification of factors contributing to accidents is imperative. Manufacturers of vehicles are regulated by safety standards which are continually updated to incorporate the latest proven safety features into vehicle design. States have taken steps to upgrade vehicle safety by enacting vehicle inspection laws. Improved vehicle safety may not significantly reduce frequency of accidents because of driver errors and roadway defects. However, the death rate and severity of injuries might be affected measurably. It may be debated whether the driver or the roadway is the principal cause of accidents. Even though a driver may cause an accident, some highway features may increase its severity. Selective police enforcement at high accident locations tends to encourage drivers to behave cautiously. Driver problems may be improved through education and periodic reexamination, but these may not exert as much influence as increased enforcement. If increased severity can be attributed to roadway features, then it is imperative to correct hazardous locations and improve highway design.

Success of a highway safety program depends upon the identification and analysis of problem locations. Analysis is accomplished by professional judgement, and accurate analysis must include an analysis of accident histories. Accident statistics and histories are of value only when the reporting is comprehensive and complete. When identification procedures are applied on a statewide basis, the capability should exist to analyze accident histories for large numbers of locations. The task can be accomplished most efficiently by utilizing a computerized accident records system.

The study reported herein issued from the highway safety program and addresses the need for uniform reporting and processing of accident records. Both the Divisions of Traffic and Planning have responsibilities in that area, and the Division of Research frequently analyzes accident records to discover causes and relationships. In the past, each division has handled records separately, with some duplication of efforts. If accident data were handled by a single agency, greater efficiency might result.

Extensive discussions were held with representatives from both the Divisions of Traffic and Planning concerning records maintenance techniques and accident data needs. There was also consultation with the Division of State Police, Department of Public Safety. Close contact was maintained with the Joint Committee for Uniform Accident Reporting (JCUAR). This ad hoc committee designed a uniform accident report form and advocates enabling legislation. Letters of inquiry were sent to other states to gain information concerning accident reporting.

PRESENT REPORTING PROCEDURES

Kentucky does not require uniform reporting from police jurisdictions investigating accidents. Uniform reporting refers to the procedure of reporting all traffic accidents to a central agency for processing on a statewide basis. Motorist involved in accidents wherein total property damage is \$200 or more must submit written reports to the Department of Public Safety (2). Similarly, fatal accidents investigated by a police officer must be reported to the Department of Public Safety. Those reports and ones completed by the Kentucky State Police are processed centrally by the Department of Public Safety. Many urban, non-fatal accidents may be reported (by local police agencies) and processed only on the local level. Motorists' reports may be biased when compared to police reports. Consequently, motorists' reports are of little value to an engineer except to indicate that an accident occurred. Some have even suggested that motorists' reports be eliminated and that police investigate all accidents regardless of damage (3). Lack of complete accident reporting handicaps the highway safety effort.

Local authorities may pinpoint trouble spots in their areas because local accident reports are readily available to them. The statewide highway improvement program, however, suffers because urban area reports are not readily available to the state planning agency. Therefore, it would be helpful if all accident reports were forwarded to a central processing agency.

The Department of Public Safety is responsible for central processing of accident reports submitted by motorists, State Police, and local police (fatal accidents only). The preceding 10-year trend for accidents is shown in Figure 1. Projected accident estimates for 1975 and 1980 are 112,000 and 138,000 respectively. Figure 2 compares total accidents and police-investigated accidents for the same 10-year period. Total number of accidents was determined from the number of motorists' reports filed each year; police-investigated accidents included State Police reported accidents and fatal reports only. Police-investigated accidents are those that are now centrally processed. If all police accident reports were centrally filed, the work load of central processing would nearly triple.

CURRENT PROCESSING PROCEDURES

KENTUCKY

Accident records are handled separately by each state agency. All are dependent on the Department of Public Safety for basic information. Agencies requiring

accident data are:

- A. Department of Transportation
 1. Bureau of Highways
 - a. Division of Traffic
 - b. Division of Planning
 - c. Division of Research
 2. Bureau of Vehicle Regulation
- B. Department of Public Safety, Division of State Police
- C. Department of Health.

Each uses the data differently and some are dependent upon others for additional information.

Figure 3 traces the accident record processing from completion of the report through use of information by each agency. When an accident occurs, usually a policeman is called to investigate. If the investigating officer is a state policeman, his report is reviewed at the local post and then transmitted to the Department of Public Safety and reviewed in Central Records. Fatal accident reports from the other police agencies and reports from the motorists are also received. Name cards are prepared and the reports are forwarded to the Bureau of Highways, Division of Planning, where milepost numbers and highway system codes are added. When returned to Public Safety, the reports are coded, keypunched, and microfilmed. Information from punched cards of police and motorists' reports are transferred to magnetic tapes. Summaries and reports are issued. Beginning in 1972, an annual report including accident summaries is published by Public Safety. A copy of the magnetic tape containing State Police and fatal accident reports is forwarded to the Department of Transportation.

In the Department of Transportation, the tape is used as a source for the creation of a 24-month, on-line file. Both the Bureau of Highways and Bureau of Vehicle Regulation are interested in this information. Presently, only the Bureau of Highways makes extensive use of the files. The Division of Traffic uses the on-line file to identify high accident locations in an attempt to determine hazardous locations. A monthly listing is obtained of high accident locations, defined as a 0.1-mile section of roadway where one fatality and(or) three accidents occurred in the preceding 12 months. Traffic Division central office and district engineers carefully screen all accident reports for these locations. If from this analysis it is believed that the site has some roadway deficiencies, then a field inspection is conducted. Field inspections are performed by a multidisciplinary team composed of traffic and maintenance engineers and police personnel. Afterwards, the team will formulate recommendations, which in many cases results in minor

highway improvement of the location. According to Agent (4), improvements of high accident locations can be credited with a 25-percent reduction in accidents; benefit-cost ratios are generally greater than 1.0.

The Division of Planning uses accident data to determine where and on what types of facilities accidents are occurring. The source of that information is the accident reports forwarded from the State Police. Table TA-1 is prepared for the Federal Highway Administration and a publication titled **Kentucky Fatal Accident Facts** is issued. Figure 4 is a copy of TA-1 for 1971. This report summarizes mileage, travel, and accidents according to highway system.

The Division of Research obtains a duplicate of the Department of Transportation accident tape. Accident information is used in conjunction with various research activities such as evaluation of high accident location improvement programs and establishing relationships between accidents and skid resistance of pavements (Standard 12). Accident records are considered indispensable.

The Department of Health requires information regarding location of traffic accidents to comply with Standard 11 for concentrating emergency medical services near dangerous locations. The Bureau of Vehicle Regulation require accident records for driver licensing purposes.

OTHER STATES

In some states, computerization of accident records is the responsibility of a single governmental agency. In others, various agencies are involved in accident report processing and computerization. Many states have completed traffic records systems, as defined by Standard 10, while others merely maintain accident files. Most agree that roadway inventory and traffic volumes are necessary inputs to accident records analysis. Illinois' accident records system is a good model. That system is outlined briefly in APPENDIX A.

Table 1 summarizes the status of other states with respect to uniform reporting. In 45 states, investigating officers are required to file reports of accidents with a central agency. Georgia does not require uniform reporting but does obtain reports on a voluntary basis. Maryland and Illinois receive uniform reports from all jurisdictions except their largest city. Kentucky and Mississippi do not have uniform reporting. It is apparent that 39 states utilize a uniform report form, while seven do not. Four states failed to respond.

SUGGESTED REPORTING PROCEDURES

In March 1973, the Joint Committee for Uniform Accident Reporting (JCUAR), composed of policemen

and engineers, was formed. JCUAR's purpose is to secure passage of legislation requiring investigating officers to file uniform reports with a central agency. The committee's first task was to devise a uniform traffic collision report form for use by all law enforcement agencies. The recommended form is shown in Figure 5. The form is currently being used on an experimental basis by the Lexington Metropolitan Police Department.

Uniform reporting of all traffic accidents would:

1. provide a larger data base for identifying accident causes and would cover a wider variety of driving conditions,
2. provide accident data from all areas of the state and, therefore, would assist in identification of high accident locations,
3. assist in evaluation of new and existing traffic control devices,
4. provide local governmental jurisdictions with periodic computer printouts and summaries of accident data and thereby assist in their highway safety efforts,
5. achieve compliance with federal accident reporting requirements, and
6. provide an atmosphere for more accurate reporting with appropriate training of police officers (the Traffic Institute at Eastern Kentucky University is suited for this task).

Problems might include:

1. The work load of central processing will increase because the number of police reports would nearly triple.
2. Local authorities may oppose uniform reporting fearing that more time will be required for completing and duplicating reports and sending them to central processing.
3. It will also require training of investigators. The Traffic Institute plans to provide such training whether or not uniform accident reporting legislation is adopted.

The agency designated to collect and process accident information, referred to here as the Accident Records Unit (ARU), would be responsible for meeting all needs of state government for accident statistics. Governmental agencies requiring ARU services might include:

1. Department of Public Safety, Division of State Police -- summary reports.
2. Department of Transportation, Bureau of Highways, Division of Planning -- Table TA-1 (FHWA), fatal accidents facts book, etc.
3. Department of Transportation, Bureau of Highways, Division of Traffic -- assist in the highway improvement program, listings of

high accident locations, programs for setting priorities for hazardous location improvements. Other listings such as accidents at railroad crossings, etc., might be useful.

4. Department of Transportation, Bureau of Highways, Division of Research -- aid in correlation of accidents with various highway design elements or parameters, etc.
5. Department of Transportation, Bureau of Vehicle Regulation, Division of Driver Licensing -- financial responsibility data (if a financial responsibility law is passed).
6. Department of Health -- accident concentration listings to aid in assignment of emergency medical services.

The ARU would also be responsible for providing political subdivisions with information on concentration of accidents, for example, listing of accidents per street, at intersections, etc., within their jurisdictions.

With uniform accident reporting and creation of ARU, accident reports may flow as shown in Figure 6. Officers' reports would be reviewed locally and then forwarded to the ARU for review. Motorists' reports would arrive by mail. The ARU would check milepost numbers or assign them if they are not on the report and add highway system codes. Reports would then be coded, keypunched, and microfilmed. Information would then be loaded into an on-line accident records file within a central computer facility from which information may be extracted for use by various agencies.

Careful consideration should be given to the method of referencing accident locations. In rural areas, the milepost scheme would be adequate. For urban areas, however, a referencing system must be selected and implemented. The milepost system could be extended into the urban areas by mileposting each street. Another approach would be to index streets and intersections in each urban area and record a measured distance from the intersection to the accident location. A third approach might involve establishment of an involved link node system for the entire state. It is recommended that the rural milepost scheme be continued and that an urban indexing technique be devised.

Besides accident reports, other inputs will be required by the ARU. Detailed, computerized roadway inventories and traffic volume files will be necessary and will need continual updating. Hazardous location identification methods, such as the rate quality control procedure preferred by Jorgenson (5), require traffic volume input. The roadway inventory could ease reporting tasks of investigating officers. ARU could determine physical features of roadway and the accident report form could be simplified.

The ARU creation and maintenance should be overseen by an Advisory Committee. This committee should be composed of individuals who have direct interests in the use of accident data. Membership may consist of:

1. one representative from each of the Division of Planning, Division of Traffic, and Division of Research from the Department of Transportation, Bureau of Highways,
2. one representative of the Division of Driver Licensing from the Department of Transportation, Bureau of Vehicle Regulation,
3. one representative of the Kentucky State Police.
4. one representative of local governments to be appointed by the Governor,
5. one representative to be a law enforcement officer (local) appointed by the Commissioner of Public Safety, and
6. one representative of the Department of Health.

The committee should give strong consideration to the needs of the ARU, such as manpower requirements. Table 2 compares the manpower now used to estimated requirements of the ARU. It was difficult to make estimates of present personnel requirements because many of the individuals charged with these responsibilities perform other functions. It must also be noted that the ARU will be handling many more reports than are now processed. Figure 7 is a suggested organization chart for the ARU, and APPENDIX B describes each individual position.

RECOMMENDATIONS

From a survey of accident reporting in other states and consideration of advantages and disadvantages of uniform accident reporting, it is recommended that:

1. Kentucky adopt uniform accident reporting legislation to become effective January 1, 1975. A universal accident form should be utilized. The form should contain an accident number so that police and motorist reports could be matched. The police form should duplicate itself so that officers can detach a copy for the Accident Record Unit's use.
2. An Accident Records Unit, as described herein, be established.
3. An advisory committee be established to coordinate the creation and operation of the ARU.
4. The Department of Transportation provide the ARU with computerized traffic volumes and roadway inventories that will be compatible with the location scheme adopted for use with accident records.
5. Local governmental agencies receive data from ARU.

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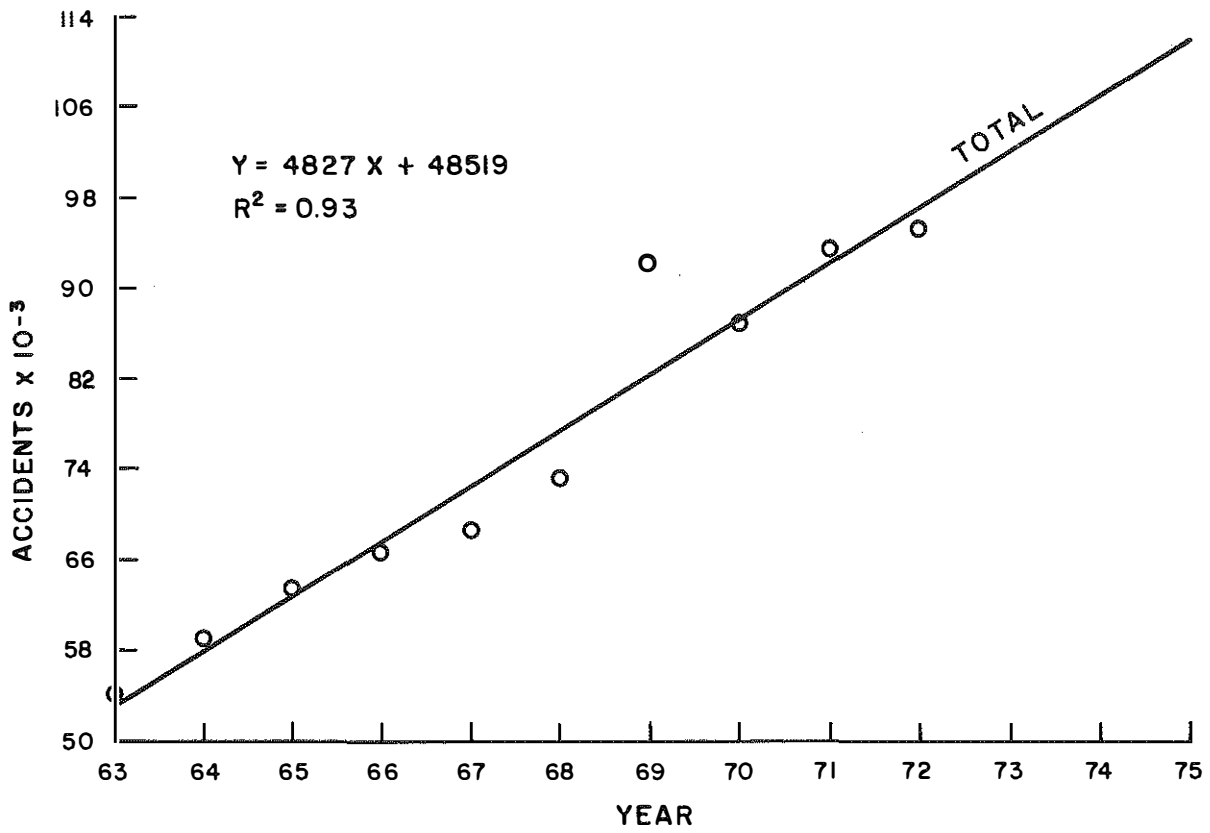


Figure 1. Accident Trend in Kentucky.

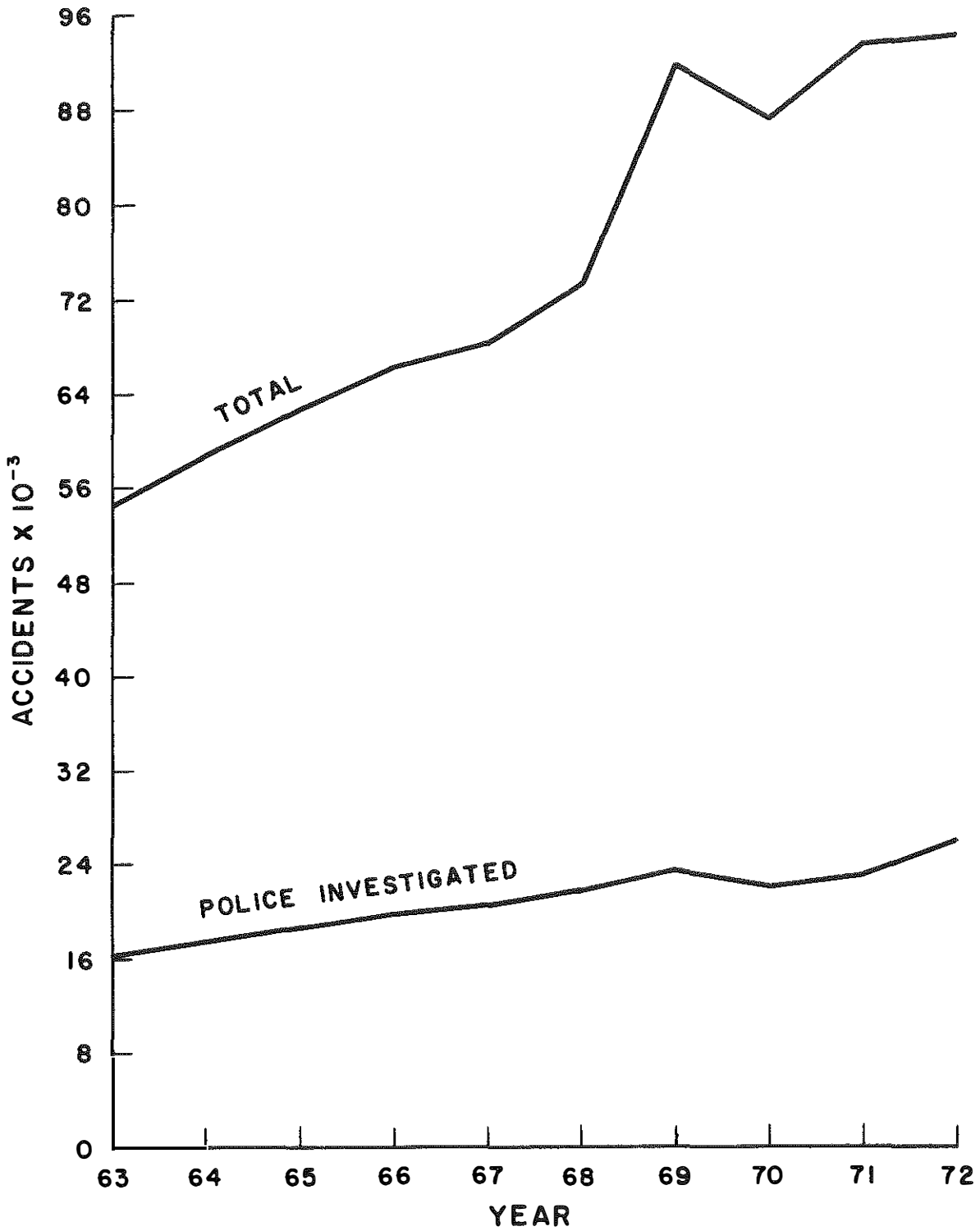


Figure 2. Total Accidents Compared to Investigated Accidents.

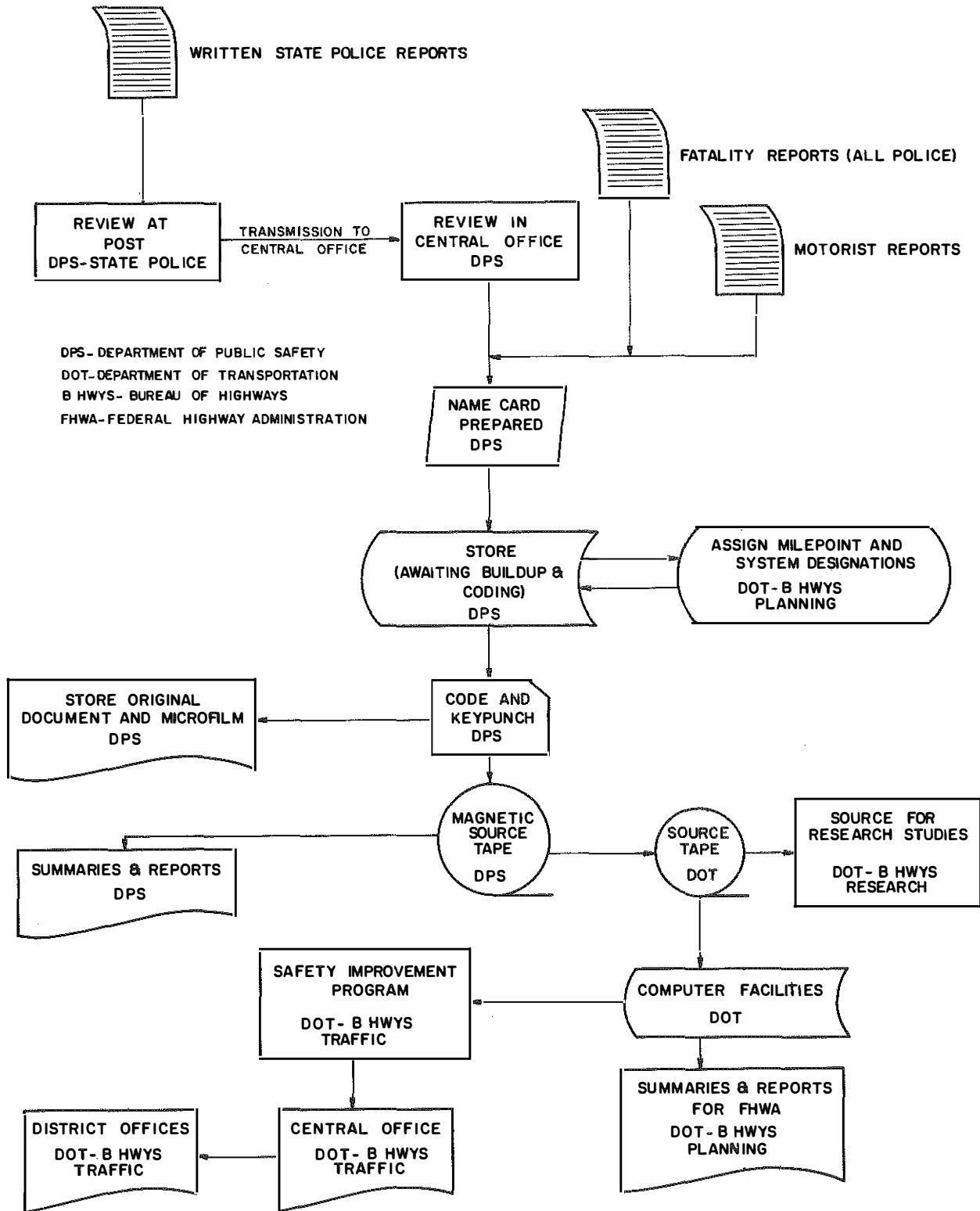


Figure 3. Current Flow of Accident Reports and Statistics.

Table TA-1 - Statewide mileage, travel, and non-fatal end fatal injury accidents, 1971

date

Highway system and related items	road mileage and travel					Fatal accidents				Non-fatal injury accidents		All non-fatal injuries from fatal and non-fatal accidents	
	Roads and streets in service		Usage			Accidents		Fatalities		Number	Per 10 ⁸ V-M	Number	Per 10 ⁸ V-M
			Annual vehicle-miles	Daily veh.-miles per mile	V.P.D.								
	Miles	Percent	Millions	Percent	V.P.D.	Number	Per 10 ⁸ V-M	Number	Per 10 ⁸ V-M	Number	Per 10 ⁸ V-M		
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	
01 Interstate, rural, final. (Toll)	516.72 (33.50)	0.75 (0.05)	2,729 (229)	12.69 (1.07)	14,470 (18,728)	56 (5)	2.05 (2.18)	62 (5)	2.27 (2.18)	872 (102)	32.0 (44.5)	1,538 (202)	56.4 (88.2)
02 Interstate, urban, final 1/ (Toll)	56.37 (5.70)	0.08 (0.01)	756 (61)	3.52 (0.28)	36,744 (29,320)	10 (1)	1.32 (1.64)	13 (3)	1.72 (4.92)	449 (31)	59.4 (50.8)	649 (54)	85.8 (88.5)
Subtotal final Interstate*	573.09	0.83	3,485	16.21	16,660	66	1.89	75	2.15	1,321	37.9	2,187	62.8
31 Traveled-way Interstate, rural	103.48	0.15	290	1.35	7,678	12	4.14	17	5.86	425	146.6	719	247.9
32 Traveled-way Interstate, urban 2/ (Full control of access) 2/	43.47 (16.24)	0.06 (0.02)	846 (368)	2.54 (1.71)	34,412 (62,082)	8 (5)	1.47 (1.36)	9 (6)	1.65 (1.63)	630 (310)	115.4 (84.2)	880 (420)	161.2 (114.1)
Subtotal traveled-way Interstate	146.95	0.21	836	3.89	15,586	20	2.39	26	3.11	1,055	126.2	1,599	191.3
Subtotal final and traveled IS rural	620.20	0.90	3,619	14.04	13,336	68	2.25	79	2.62	1,297	43.0	2,257	74.8
Subtotal final and traveled IS urban	99.84	0.14	1,302	6.06	35,728	18	1.38	22	1.69	1,079	82.9	1,529	117.4
Subtotal final and traveled IS	720.04	1.04	4,321	20.10	16,441	86	1.99	101	2.34	2,376	55.0	3,786	87.6
03 Other FAP, rural (Full control of access)	3,363.93 (21.99)	4.86 (0.03)	4,664 (40)	21.69 (0.19)	3,799 (4,984)	263 (3)	5.64 (7.50)	300 (4)	6.43 (10.00)	3,745 (25)	80.3 (62.5)	6,522 (47)	139.8 (117.5)
04 Other FAP, Urban (Full control of access)	368.92 (17.68)	0.54 (0.03)	1,848 (80)	8.60 (0.38)	13,724 (12,397)	60 (2)	3.25 (4.96)	71 (2)	3.84 (2.50)	3,214 (81)	173.9 (101.3)	4,854 (113)	262.7 (141.3)
Subtotal other FAP	3,732.85	5.39	6,512	30.29	4,779	323	4.96	371	5.70	6,959	106.9	11,376	174.7
Subtotal other FAP and traveled IS, rural	3,467.41	5.01	4,954	23.04	3,914	275	5.55	317	6.40	4,170	84.2	7,241	146.2
Subtotal other FAP and traveled IS, urban	412.39	0.60	2,394	11.14	15,905	68	2.84	80	3.34	3,844	160.6	5,734	239.5
Subtotal other FAP and traveled IS	3,879.80	5.61	7,348	34.18	3,189	343	4.67	397	5.40	8,014	109.1	12,975	176.6
Subtotal all FAP rural*	3,984.13	5.76	7,683	35.73	5,283	331	4.31	379	4.93	5,042	65.6	8,779	114.3
Subtotal all FAP urban*	468.76	0.68	3,150	14.66	18,411	78	2.48	93	2.95	4,293	136.3	6,383	202.6
Subtotal FAP*	4,452.89	6.44	10,833	50.39	6,665	409	3.78	472	4.36	9,335	86.2	15,162	140.0
05 FAS State, rural	13,104.04	18.94	3,993	18.57	835	261	6.54	314	7.86	3,608	90.4	5,828	146.0
06 FAS State, urban	286.93	0.41	617	2.87	5,891	18	2.92	20	3.24	924	149.8	1,346	218.2
Subtotal FAS State	13,390.97	19.35	4,610	21.44	943	279	6.05	334	7.23	4,532	98.3	7,174	155.6
07 FAS, local, rural	1,490.70	2.15	245	1.14	450	4	1.63	5	2.04	147	60.0	231	94.3
08 FAS, local, urban	38.76	0.06	78	0.36	5,513	1	1.28	1	1.28	100	128.2	141	180.8
Subtotal FAS local	1,529.46	2.21	323	1.50	579	5	1.55	6	1.86	247	76.5	372	115.2
Subtotal FAS rural*	14,594.74	21.09	4,238	19.71	796	265	6.25	319	7.53	3,755	88.6	6,059	143.0
Subtotal FAS urban*	325.69	0.47	695	3.23	5,846	19	2.73	21	3.02	1,024	147.3	1,487	214.0
Subtotal FAS*	14,920.43	21.56	4,933	22.94	906	284	5.76	340	6.89	4,779	96.9	7,546	153.0
Subtotal FA, rural	18,578.87	26.85	11,921	55.44	1,758	596	5.00	698	5.86	8,797	73.8	14,838	124.5
Subtotal FA, urban	794.45	1.15	3,845	17.89	13,260	97	2.52	114	2.96	5,317	138.3	7,870	204.7
Subtotal FA*	19,373.32	28.00	15,766	73.33	2,230	693	4.40	812	5.15	14,114	89.5	22,708	144.0
09 Other State rural 3/ (Toll)	6,753.98 (429.33)	9.76 (0.62)	1,268 (427)	6.36 (1.99)	555 (2,725)	42 (10)	3.07 (2.36)	47 (11)	3.44 (2.58)	685 (134)	50.1 (31.4)	1,108 (212)	81.0 (69.6)
10 Other State Municipal 4/	341.07	0.49	808	3.76	6,490	18	2.23	19	2.35	1,026	127.0	1,501	185.8
Subtotal other State	7,095.05	10.25	2,176	10.12	840	60	2.76	66	3.03	1,711	78.6	2,609	119.9
Subtotal all State rural	23,842.15	34.46	13,044	60.66	1,499	634	4.86	740	5.67	9,335	71.6	15,715	120.5
Subtotal all State urban or Municipal	1,096.76	1.58	4,575	21.29	11,428	114	2.49	132	2.89	6,243	136.5	9,230	201.7
Subtotal all State	24,938.91	36.04	17,619	81.95	1,936	748	4.25	872	4.95	15,578	88.4	24,945	141.6
11 Local rural 2/	37,942.46	54.85	1,150	5.35	83	69	6.00	80	6.96	1,480	128.7	2,391	207.9
12 Local Municipal 5/	4,775.89	6.90	2,408	11.20	1,381	60	2.49	65	2.70	3,903	162.1	5,356	222.4
Subtotal local	42,718.35	61.75	3,558	16.55	228	129	3.63	145	4.08	5,383	151.3	7,747	217.7
Subtotal non-State rural	39,433.16	57.00	1,395	6.49	97	73	5.23	85	6.09	1,627	116.6	2,622	188.0
Subtotal non-State urban or Municipal	4,814.65	6.96	2,486	11.56	1,415	61	2.45	66	2.65	4,003	161.0	5,497	221.1
Subtotal non-State	44,247.81	63.96	3,881	18.05	240	134	3.45	151	3.89	5,630	145.1	8,119	209.2
Subtotal non-FA rural	44,696.44	64.61	2,518	11.71	134	111	4.41	127	5.04	2,165	86.0	3,499	139.0
Subtotal non-FA urban or municipal	5,116.96	7.39	3,216	14.96	1,722	78	2.43	84	2.61	4,929	153.3	6,857	213.2
Subtotal non-FA	49,813.40	72.00	5,734	26.67	315	189	3.30	211	3.68	7,094	123.7	10,356	180.6
Subtotal rural* (Full control of Access)*	63,275.31 (21.99)	91.46 (0.03)	14,439 (40)	67.15 (0.19)	625 (4,984)	707 (3)	4.90 (7.50)	825 (4)	5.71 (10.00)	10,962 (25)	75.9 (62.5)	18,337 (47)	127.0 (117.5)
Subtotal urban* (Full control of Access)*	5,911.41 (33.92)	8.54 (0.03)	7,061 (448)	32.85 (2.09)	3,273 (36,185)	175 (7)	2.48 (1.56)	198 (8)	2.80 (1.79)	10,246 (391)	145.1 (87.3)	14,727 (533)	208.6 (119.0)
Total (Full control of Access)*	69,186.72 (55.91)	100.00 (0.08)	21,500 (488)	100.00 (2.28)	851 (23,913)	882 (10)	4.10 (2.05)	1,023 (2)	4.76 (2.46)	21,208 (416)	98.6 (85.2)	33,064 (580)	153.8 (118.9)
Related data for 1971													
Vehicles registered, thousands			1,859										
Annual miles per vehicle			11,565	Per 100 million vehicle-miles	4.10			4.76		98.6		153.8	
Motor fuel, million gallons			1,619										
Gallons per vehicle			871	Per thousand vehicles	0.474			0.350		11.41		17.79	
Miles traveled per gallon			13.28										
Population, thousands			3,282										
Licensed drivers, thousand			1,626	Per thousand population	0.269			0.312		6.46		10.07	
Licensed drivers, percent population			49.54										
Persons per vehicle			1.77										
Licensed drivers per vehicle			0.87										
Annual travel per capita, miles			6,551	Per thousand licensed drivers	0.542			0.629		13.04		20.33	
Travel per licensed driver, miles			13,223										

1/ Includes 3.40 mi. on I-65 in Status Group 2
 2/ Includes 12.02 mi. on I-264 in Status Group 2
 3/ Federal Aid Urban-14.71 mi.-44 million vehicle mi.
 4/ Urban Type II-45.35 mi.-123 million vehicle miles
 5/ Federal Aid Urban-25.04 mi.-151 million vehicle mi
 6/ Urban Type II-47.92 mi.-220 million vehicle miles
 7/ Federal Aid Urban-8.70 mi.-19 million vehicle mi.
 8/ Urban Type II-47.12 mi.-95 million vehicle miles
 9/ Federal Aid Urban-32.55 mi.-163 million vehicle mi
 10/ Urban Type II-157.21 mi.-506 million vehicle miles

Figure 4. Example of FHWA TA-1 Summary Report.

COMMONWEALTH OF KENTUCKY

UNIFORM POLICE TRAFFIC COLLISION REPORT

N.C.I.C. NO. _____

PAGE ____ OF ____

DATE OF COLLISION		DAY	COUNTY	TIME (USE 2400) HRS.	OFFICE USE	<input type="checkbox"/> REAR END <input type="checkbox"/> TURNING FROM OPPOSING LANE <input type="checkbox"/> RIGHT ANGLE		<input type="checkbox"/> TURNING FROM WRONG LANE <input type="checkbox"/> OTHER	
MO.	DAY	YR.							
SECTOR/BEAT		<input type="checkbox"/> RESIDENTIAL BUSINESS <input type="checkbox"/> INDUSTRIAL SCHOOL <input type="checkbox"/> PARK RURAL							
MILES <input type="checkbox"/> N <input type="checkbox"/> S <input type="checkbox"/> E <input type="checkbox"/> W <input type="checkbox"/> IN		OF							
NAME & NO. OF STREET OR HIGHWAY		INTERSECTING WITH STREET OR ROAD							
NON INTERSECTION BETWEEN DISTANCE AND DIRECTION FROM REFERENCE CROSS STREET OR MILEPOST		STREET AND STREET		NO.		SEVERITY			
				M.P.		<input type="checkbox"/> NO. KILLED <input type="checkbox"/> NO. INJURED <input type="checkbox"/> PROPERTY DAMAGE <input type="checkbox"/> 1 2 VEHICLE <input type="checkbox"/> DISABLING DAMAGE <input type="checkbox"/> FUNCTIONAL DAMAGE <input type="checkbox"/> OTHER DAMAGE <input type="checkbox"/> NO DAMAGE			
MOTOR VEHICLE VS:		<input type="checkbox"/> MOTOR VEHICLE IN TRAFFIC <input type="checkbox"/> PEDESTRIAN <input type="checkbox"/> RAILROAD TRAIN <input type="checkbox"/> OTHER OBJECT							
TOTAL NO. OF VEHICLES		<input type="checkbox"/> PARKED VEHICLE <input type="checkbox"/> BICYCLIST <input type="checkbox"/> FIXED OBJECT <input type="checkbox"/> ANIMAL		<input type="checkbox"/> RAN OFF ROAD <input type="checkbox"/> OVERTURNED IN RD.		<input type="checkbox"/> NON-COLLISION <input type="checkbox"/> OTHER			
OBJECT STRUCK (NAME OF OBJECT STRUCK AND OWNER'S NAME)				LOCATION OF OBJECT STRUCK					
				<input type="checkbox"/> OFF ROAD <input type="checkbox"/> IN ROAD					
DRIVER'S NAME - LAST FIRST MIDDLE		DRIVER'S NAME - LAST FIRST MIDDLE							
PRESENT STREET ADDRESS		PRESENT STREET ADDRESS							
CITY STATE ZIP CODE PHONE NO.		CITY STATE ZIP CODE PHONE NO.							
OPERATOR'S NO. / S.S. NO. STATE SEX DATE OF BIRTH AGE		OPERATOR'S NO. / S.S. NO. STATE SEX DATE OF BIRTH AGE							
OCCUPATION BUSINESS ADDRESS PHONE		OCCUPATION BUSINESS ADDRESS PHONE							
CODES (3) INJURY CLASS (4) SEAT BELTS (5) EJECTION		CODES (3) INJURY CLASS (4) SEAT BELTS (5) EJECTION							
NATURE OF INJURIES		NATURE OF INJURIES							
REMOVED FROM SCENE BY: TO		REMOVED FROM SCENE BY: TO							
VEH. YEAR MAKE MODEL STYLE		VEH. YEAR MAKE MODEL STYLE							
VEH. COLOR LIC. PLATE NO. STATE / YR. TRAILER PLATE NO. STATE / YR.		VEH. COLOR LIC. PLATE NO. STATE / YR. TRAILER PLATE NO. STATE / YR.							
TOWED BY TAKEN TO		TOWED BY TAKEN TO							
REGISTERED OWNER - LAST FIRST MIDDLE		REGISTERED OWNER - LAST FIRST MIDDLE							
ADDRESS OF OWNER		ADDRESS OF OWNER							
NAME AND ADDRESS OF INSURANCE CO. OR AGENT		NAME AND ADDRESS OF INSURANCE CO. OR AGENT							
CHARGE CITATION NO. ENFORCEMENT ACTION		CHARGE CITATION NO.							
NAME, ADDRESS & INJURIES OF PERSONS INVOLVED									
NAME		DOB		SEX AGE STATUS		IN VEH. NO.		SEAT POS. INJ. CLASS SEAT BELT EJECT	
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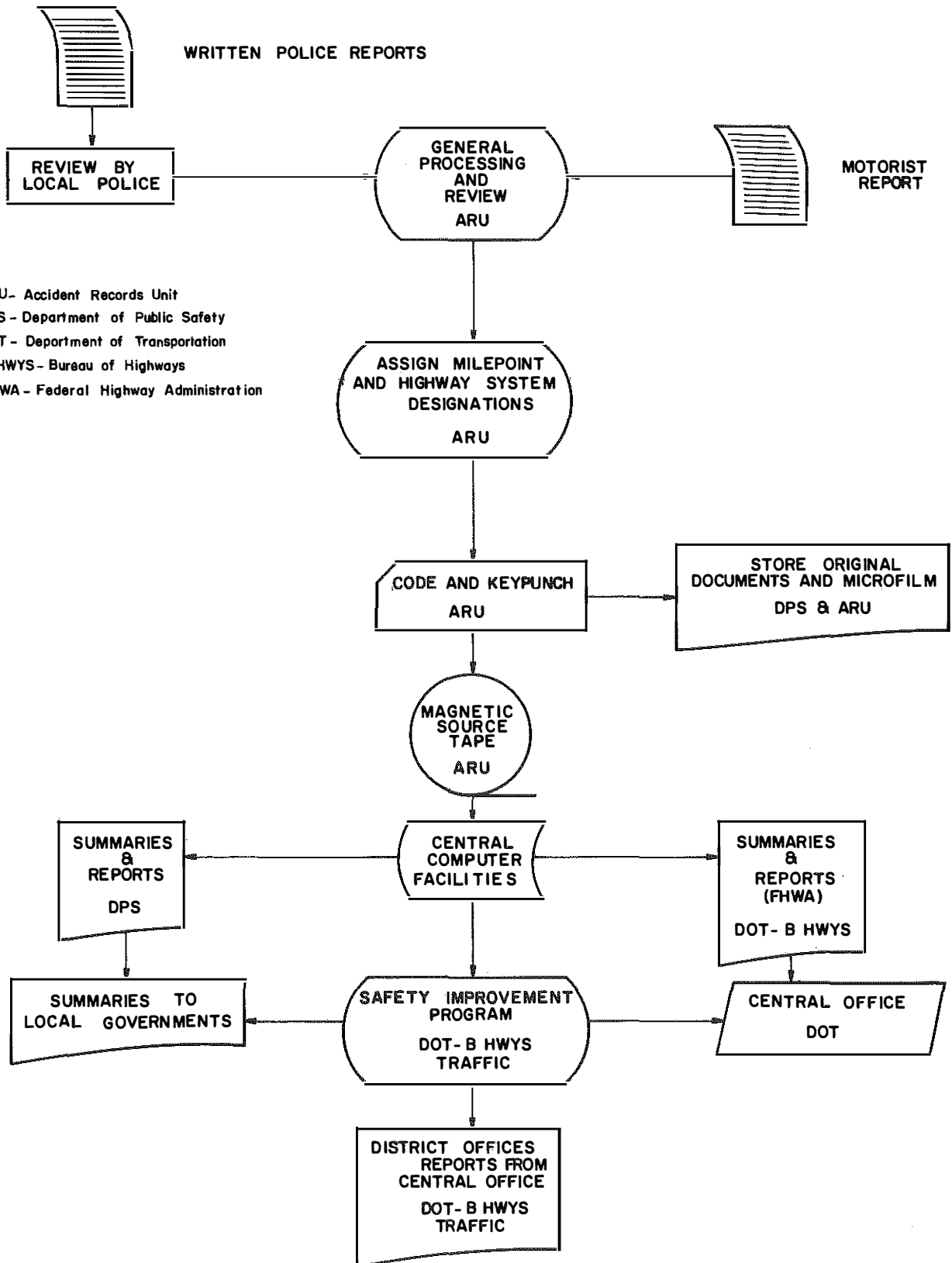


Figure 6. Proposed Flow of Accident Reports and Statistics (with Uniform Accident Reporting).

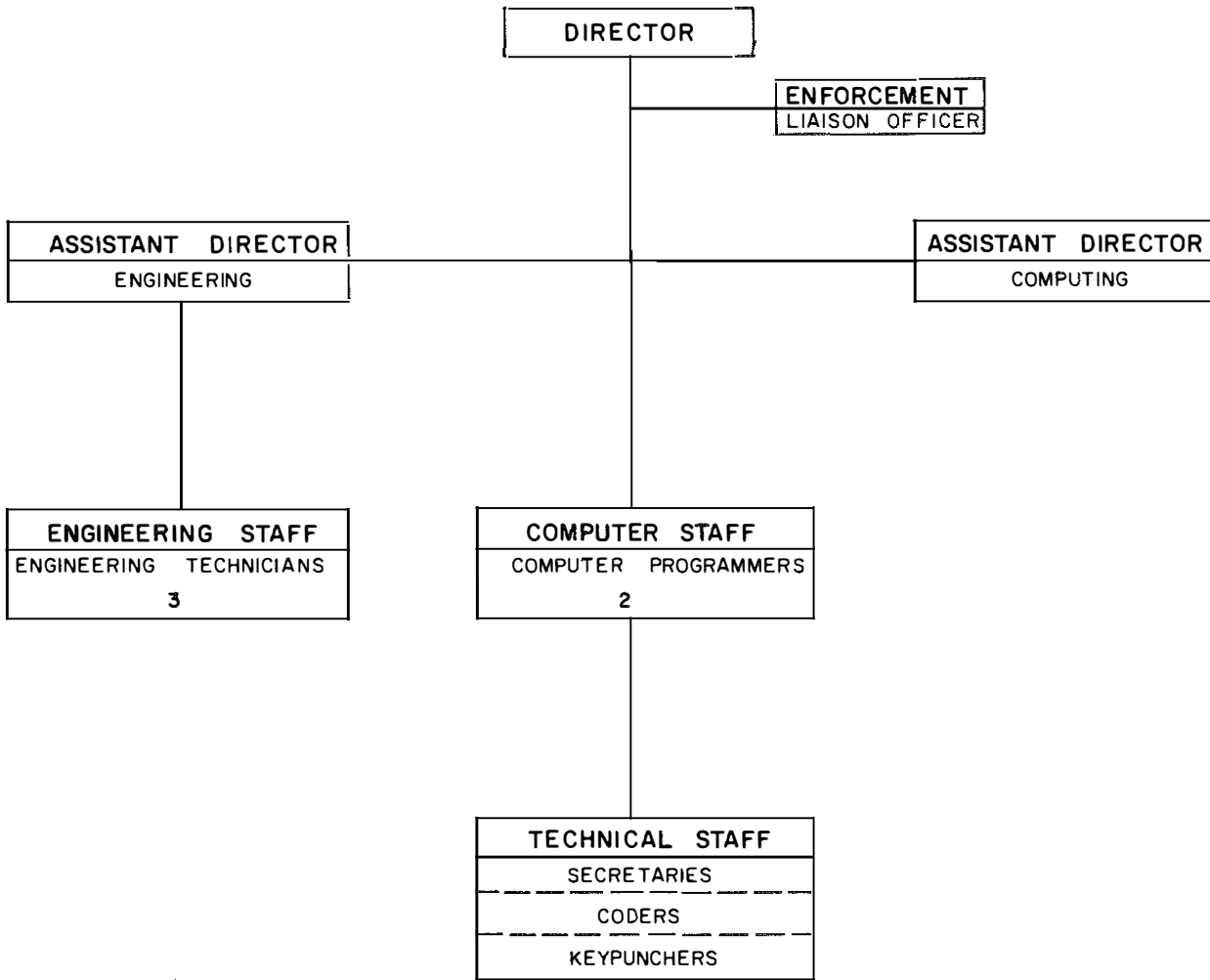


Figure 7. Accident Records Unit Organization Chart.

TABLE 1
SUMMARY OF REPORTING IN OTHER STATES

STATE	UNIFORM POLICE REPORTING LEGISLATION	UNIVERSAL FORM USED	FILING TIME	REMARKS
Alaska	Yes	Yes	10 days	
Alabama	Yes	Yes	24 hours	
Arizona	Yes	Yes	10 days	
Arkansas	Yes	Yes	10 days	
California	Yes	Yes		
Colorado	Yes	Yes	5 days	
Connecticut	Yes	Yes	5 days	
Delaware	Yes	Yes		
Florida	Yes	Yes	10 days	
Georgia	No	No		Uniform reporting on a voluntary basis
Hawaii	Yes	Yes	10 days	Honolulu Form used throughout
Idaho	Yes	No	10 days	One jurisdiction does not use form
Illinois	No	No	10 days	Uniform reporting except for Chicago
Indiana	Yes	Yes	10 days	
Iowa	Yes	Yes	10 days	
Kansas	Yes	Yes	5 days	
Kentucky	No	No		
Louisiana	Yes	?	6 days	
Maine	Yes	Yes	48 hours	
Maryland	No	No		Uniform reporting except for Baltimore
Massachusetts	Yes	Yes	15 days	
Michigan	Yes	Yes	10 days	
Minnesota	Yes	Yes		
Mississippi	No	No		
Missouri	Yes	Yes		
Montana	Yes	Yes	10 days	
Nebraska	Yes	?	10 days	
Nevada	Yes	Yes	10 days	
New Hampshire	Yes	Yes	10 days	
New Jersey	Yes	Yes	10 days	
New York	Yes	Yes		
New Mexico	Yes	Yes	10 days	
North Carolina	Yes	Yes	24 hours	
North Dakota	Yes	?	10 days	
Ohio	Yes	Yes	5 days	
Oklahoma	Yes	Yes	Forthwith	
Oregon	Yes	Yes	10 days	
Pennsylvania	Yes	Yes		
Rhode Island	Yes	?	None	
South Carolina	Yes	Yes	24 hours	
South Dakota	Yes	Yes	12 hours	
Tennessee	Yes	Yes	10 days	
Texas	Yes	Yes	10 days	
Utah	Yes	Yes	10 days	
Vermont	Yes	Yes		
Virginia	Yes	Yes	10 days	
Washington	Yes	Yes	10 days	
West Virginia	Yes	Yes	10 days	
Wyoming	Yes	No	10 days	All reports not on same form
Wisconsin	Yes	Yes	10 days	

TABLE 2
ACCIDENT RECORDS PERSONNEL

PRESENT		WITH ARU	
State Police		Director	1
Computer Operator	1	Assistants	2
Data Verifiers	5	Police Liaisons	1
Keypunchers	1	Engineers	3
Coders	9	Computer Programmers	2
		Coders & Keypunchers	15
DOT Bureau of Highways		Secretaries	3
Division of Traffic		Engineer Technicians	3
Engineers	2		
Computer Consultant	1		
Technicians	2		
Division of Planning			
Engineer	1		
Technicians	3		
TOTAL	25		30

APPENDIX A

THE ILLINOIS METHOD

The state of Illinois requires uniform accident reporting from all law enforcement jurisdictions with the exception of Chicago. Report forms used have matching numbers; the police report corresponds to the motorist's report. Responsibility for receiving and processing reports has been vested in the Department of Transportation. Their accident records system was established over a period of 11 months. The system has an on-line file which contains data spanning 6 months and a permanent tape storage (off-line). Illinois is in the process of converting to a milepost reference system for both rural and urban highways. The time lapse involved from the time of an accident to the completion of the permanent record is 53-60 days.

When a law enforcement officer investigates an accident, he files a report and requests the driver to complete a report bearing matching accident numbers. Both types of reports are forwarded to the Department of Transportation. As police and motorist's reports are received by the responsible unit, a skeleton file is created containing form number, name, and accident number. The reports are then placed into a paper file where motorists' and police reports are matched. After this matching, statistical data are taken from the reports and added to the skeleton file to create the accident records file.

The final function of the unit is statistical analysis of the data. Summaries are prepared and detailed accident listings are sent to municipalities. The unit also provides output summaries and listings required by all levels of state government, including the Secretary of State (driver licensing responsibility), law enforcement officials, and the Department of Transportation.

APPENDIX B

ARU PERSONNEL

Manpower required by the ARU includes:

1. Director -- He will coordinate all work carried out by the unit. He should be a competent computer programmer with a working knowledge of both engineering and police needs of accident statistics. He should be an equally competent statistician.
2. Two Assistant Directors -- Both should have a working knowledge of programming. One should be an engineer and be responsible for engineering needs within the unit. He should be in close contact with the three divisions of the Bureau of Highways that use accident records and be aware of any innovations in the engineering application of accident statistics. He should be considered the chief engineer of the Engineering Staff.
The second Assistant Director should be a competent computer programmer and be in charge of technical aspects of the computerization functions of the unit. His job title could be Chief Programmer.
3. Enforcement Liaison Officer -- He should be a policeman who would coordinate all police functions of the unit and maintain close contact with the Kentucky State Police.
4. Engineering Staff -- The staff should consist of two assistant or associate engineers to aid the chief engineer in his coordination of the engineering functions of the unit. Also under their direction should be three engineering technicians who would be unitized for assigning milepoint numbers and highway system codes to accident records.
5. Computer Staff -- The staff should consist of two competent computer programmers responsible to the Chief Programmer.
6. Technical Staff -- The size of this staff should be more closely examined by the advisory committee to meet secretarial, coding, and keypunching needs.