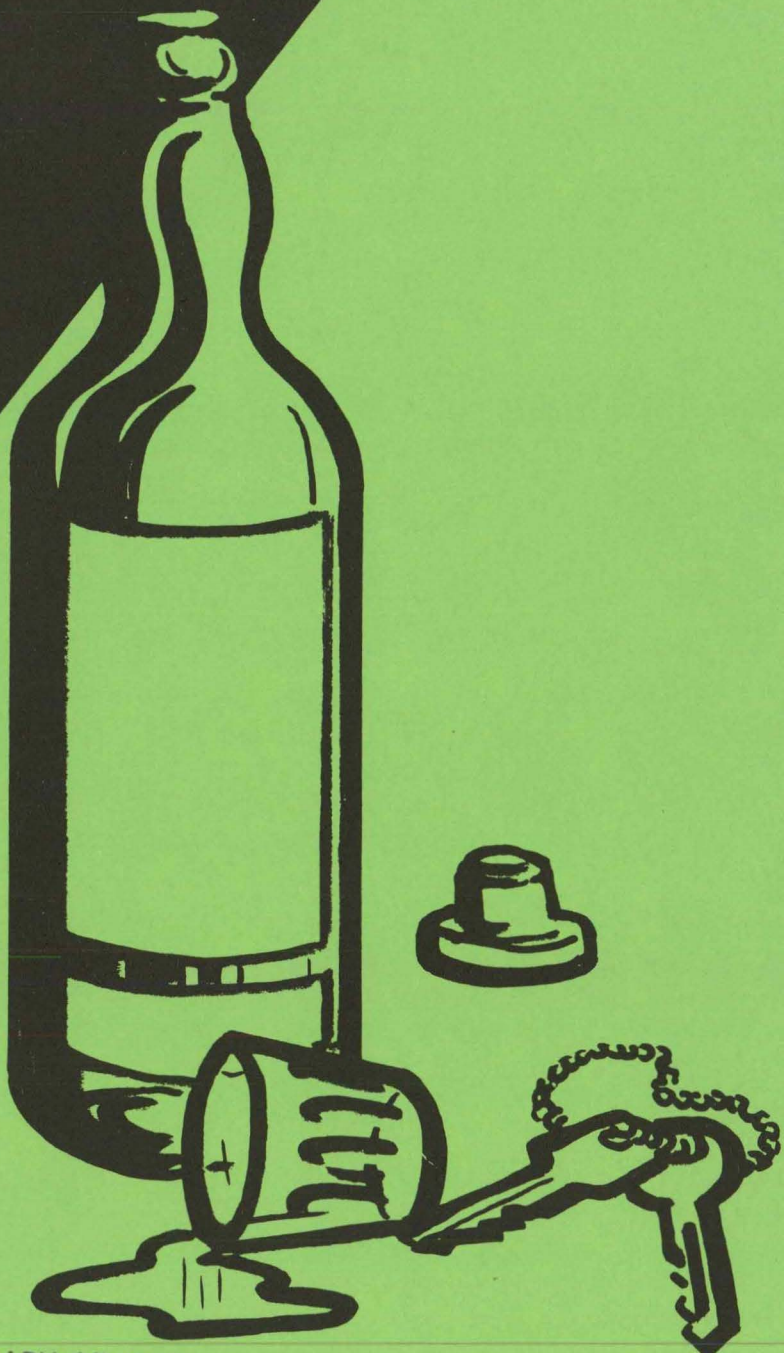
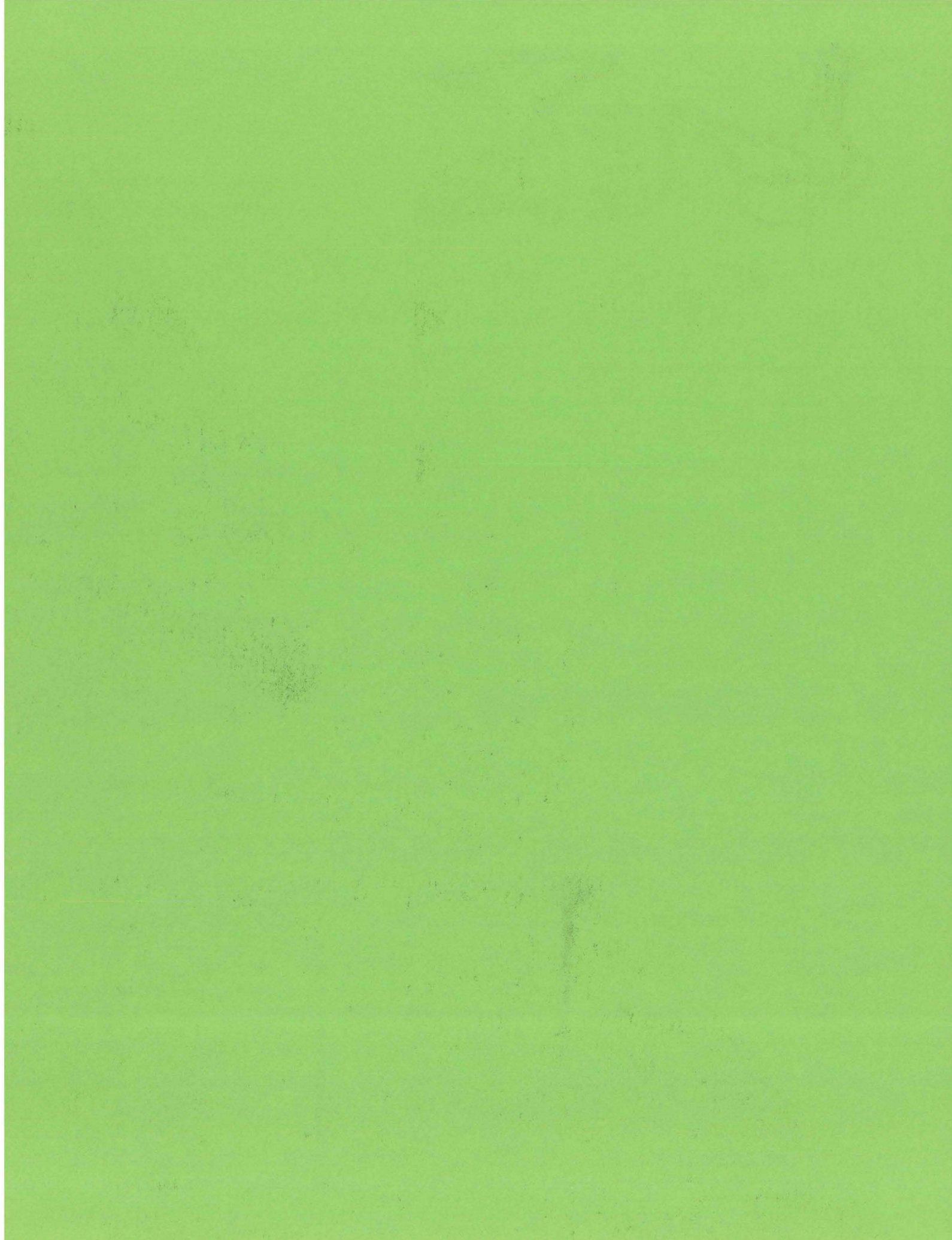


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ALCOHOL-RELATED FATAL CRASH STUDY: IOWA, 1977



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ACKNOWLEDGEMENT

“Prepared by the Governor’s Highway Safety Office/Office for Planning and Programming, in cooperation with the U.S. Department of Transportation, National Highway Traffic Safety Administration, and Federal Highway Administration.

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

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SUMMARY

1. Out of a total of 561 fatal traffic crashes in 1977, 221 were alcohol related. These crashes claimed 263 lives or 41.1% of the total traffic fatalities.
2. In 1977, 16 pedestrians were killed as a result of alcohol involvement. Ten fatal crashes involved 10 drinking pedestrians and six fatal crashes involved drinking drivers that killed six pedestrians. The average BAC of pedestrians killed was 0.210, while the overall BAC ranged from .100 to 0.275.
3. In 1977, 67.0% of the alcohol-related fatal crashes were single motor vehicle crashes. The average BAC level of drivers involved in single crashes was slightly higher than the BACs of drivers in multiple vehicle crashes.
4. Of the 230 drinking drivers/pedestrians, 145 or 63.0% had blood tests. The average BAC of drivers tested was 0.176, and 86.2% of the drivers had a BAC of 0.100 percent or more. Data also showed that 63.5% had a BAC of 0.150 or more which might be symptomatic of the problem driver.
5. Approximately 49% of the drinking drivers involved in fatal traffic crashes were 24 years of age or younger. This proportion exceeds the already large proportion of young drivers involved in fatal crashes (40.4%).
6. An analysis of drinking drivers involved in fatal crashes showed that more crashes occurred during the early morning hours (12:00 - 2:59 a.m.) for both the younger and older drivers.
7. The results of the analysis indicated that both the younger and older drivers were involved in considerably more fatal crashes during the weekends.
8. The study also revealed that younger drivers had lower levels of alcohol in their blood but higher involvement in fatal crashes. This strongly suggests that younger drivers were more vulnerable to traffic crashes when alcohol was involved.
9. The months of March, May, July, and August chalked up the highest proportion of alcohol-related fatal crashes in 1977. These months accounted for 43.4% of the total alcohol-related fatal crashes.
10. Driving left of center and speeding accounted for 47% of the violations in multi-vehicle fatal crashes. Approximately 70% of the violations in single vehicle crashes were speeding and failure to have control of the vehicle.
11. In 1977, 46 counties exceeded the state average of alcohol-related fatal crashes (39.4%). These counties accounted for 57.9% of the total alcohol-related fatal crashes in the state.
12. About 49% of the alcohol-related crashes occurred on U.S./state highways, 30.8% on county roads, and 17.2% on city streets. Only 2.3% occurred on interstates.
13. The number of alcohol-related fatal crashes from 1970 through 1977 was fairly stable but the percentage of alcohol-related crashes was increasing.

ALCOHOL-RELATED FATAL CRASH STUDY: IOWA, 1977

1.0 Objectives

This report is a continuing yearly study of alcohol-related fatal traffic crashes in the state of Iowa.

The primary objective is to ascertain and evaluate the number and proportion of statewide alcohol-related fatal crashes. The secondary objectives are to present information on the characteristics of alcohol-related fatal crashes as well as to examine the extent of drinking pedestrian involvement.

In this study, the types of roads where alcohol-related crashes occurred and those counties where the involvement was higher were identified so that effective countermeasures programs may be planned and implemented.

2.0 Sources of Data

Data were collected from the investigated fatal crash file. A fatal crash was alcohol-related if the investigating officer reported that the driver or pedestrian had been drinking. The degree of drinking was classified under the categories referred to in Table 1 and was possibly verified by a blood test.

3.0 Number of Alcohol-Related Fatal Crashes and Fatalities: Iowa, 1977

In 1977, 221 or 39.4% of the 561 fatal traffic crashes in the state were alcohol related. These alcohol-related crashes claimed 263 lives and represented 41.1% of the total killed on Iowa's roads. Table 1 shows the number of drinking drivers according to degree of drinking.

TABLE 1 DISTRIBUTION OF ALCOHOL-RELATED FATAL CRASHES BY DEGREE OF DRINKING: IOWA, 1977						
Degree of Drinking	Fatal Crashes			Fatalities		
	#	% of Subgroup	% of Total	#	% of Subgroup	% of Total
Driver Ability Impaired	125	56.6	22.4	151	57.4	23.6
Driver Ability Not Impaired	32	14.5	5.7	36	13.7	5.6
Pedestrian Drinking	9	4.1	1.6	10	3.8	1.6
Drinking Driver, Ability Not Stated	55	24.9	9.8	66	25.1	10.4
Subtotal	221	100.0%¹	39.4%	263	100.0%	41.1%
Total Not Drinking or Unknown	340	—	60.6%	377	—	58.9%
Grand Total	561	—	100.0%	640	—	100.0%

¹Percentages do not add up to 100.0% due to rounding.

4.0 Drinking Pedestrians

In 1977, 16 pedestrians were fatally injured as a result of alcohol involvement. This comprised 30.2% of the total pedestrians killed in 1977. Ten of these fatalities were drinking pedestrians and the other six pedestrians were killed by drinking drivers.

Table 2 shows the pedestrian fatalities attributable to alcohol consumption. Blood tests indicated that the average BAC (blood alcohol concentration) of pedestrians killed was 0.210. The BAC ranged from 0.100 to 0.275, and half of all drinking pedestrians were at least 45 years old.

TABLE 2
ALCOHOL-RELATED PEDESTRIAN FATALITIES:
IOWA, 1977

Fatality Group	Category	#	%
Pedestrian Fatalities	Related to Drinking Pedestrians	10	3.9
	Related to Nondrinking Pedestrians	6	2.3
Driver & Passenger Fatalities	Related to Drinking Drivers	247	93.9
Total		263	100.0%¹

¹Percentages do not add up to 100.0% due to rounding.

5.0 Fatal Crashes Involving Drinking Drivers by Type of Crash: Iowa, 1977

The number of alcohol-related fatal crashes by type of crash or number of vehicles involved is shown in Table 3. This table illustrates that 67.0% of the alcohol-related fatal crashes involved single vehicles. The table also shows an average BAC of 0.176 for the operators of those vehicles. As Table 3 indicates, the BAC level of drivers involved in single vehicle crashes was slightly higher than the BAC's of drivers in multiple vehicle crashes.

TABLE 3
ALCOHOL-RELATED FATAL CRASHES BY NUMBER OF VEHICLES INVOLVED:
IOWA, 1977

Type of Crash	Fatal Crashes				Fatalities		
	#	% of Total	% of Subgroup	Mean BAC	#	% of Total	% of Subgroup
Single Motor Vehicle	148	67.0%	100.0	.180	159	60.4%	100.0
Ran Off Road	3	1.4	2.0	.225	3	1.1	1.9
Collided with Fixed Object	61	27.6	41.2	.174	69	26.2	43.4
Collided with Drinking Ped.	9	4.1	6.1	.185	10	3.8	6.3
Collided with Non-Drinking Ped.	5	2.3	3.4	—	5	1.9	3.1
Collided with Bicyclist	—	—	—	—	—	—	—
Overturned	64	29.0	43.2	.178	66	25.1	41.5
Others	6	2.7	4.1	.304	6	2.3	3.8
Multiple Motor Vehicle	73	33.0%	100.0	.167	104	39.5%	100.0
Collided with Motor Vehicle in Traffic	70	31.6	95.9	.166	100	38.0	96.1
Train	3	1.4	4.1	.179	4	1.5	3.9
Total	221	100.0%	—	.175	263	100.0%	—

6.0 Number of Drinking Drivers Tested by Degree of Drinking: Iowa, 1977

In 1977, 230 drinking drivers/pedestrians were involved in fatal crashes. Of these, 145 or 63.0% had blood alcohol concentrations in the "ability impaired" category, and 86 or 66.2% of the total fatalities were tested for blood alcohol concentration. Table 4 shows the distribution of drinking drivers tested and not tested.

Drinking Drivers and Pedestrians	Total		Ability Impaired		Ability Not Impaired		Impairment Not Stated	
	#	%	#	%	#	%	#	%
Tested	145	63.0	86	66.2	11	28.2	48	78.7
Not Tested	85	37.0	44	33.8	28	71.8	13	21.3
Total	230	100.0%	130	100.0%	39	100.0%	61	100.0%

7.0 Number of Drinking Drivers Tested for Blood Alcohol Concentration: Iowa, 1977

The average blood alcohol concentration of those drivers tested was 0.176 (176 mg. per 100 ml. or 0.176 percent by weight).

Table 5 and Figure 1 show the frequency of drinking drivers/pedestrians by BAC level. Out of 145 tested, 125 or 86.2% had a BAC of 0.100 or more. A BAC of .100 and above is prima facie evidence of operating a motor vehicle while under the influence (OMVUI) in the state of Iowa. Data also show that 92 or 63.5% had a BAC of 0.150 or more which might be symptomatic of the problem driver.

BAC Level	# of Drinking Drivers	Relative Frequency
Below 0.050	5	3.4
.050-.099	15	10.3
.100-.149	33	22.8
.150-.199	43	30.0
.200-.249	27	18.6
.250-.299	14	9.6
.300-.349	5	3.4
.350-.399	2	1.4
.400+	1	0.7
Total	145¹	100.0¹

¹Percentages do not add up to 100.0% due to rounding.

8.0 Drinking Drivers Involved in Fatal Crashes by Age: Iowa, 1977

The age distribution of drinking drivers involved in fatal crashes in 1977 was studied to determine the role of age in alcohol-related fatal crashes. Of the total number of drinking drivers, as shown in Table 6, 49.2% were 24 years of age or younger. This proportion exceeds the already large proportion of young drivers involved in fatal crashes

which is 40.4%. When compared with the proportion of young drivers with a valid drivers license (24.0%), the aforementioned age group is even more overrepresented.

Figure 2 shows the mean BAC level of drinking drivers by age in relation to the state average of 0.176. The 25-54 years of age category had BACs above the state average.

TABLE 6
DRINKING DRIVERS AND ALL DRIVERS INVOLVED IN
FATAL MOTOR VEHICLE CRASHES BY AGE GROUP:
IOWA, 1977

Age	Drinking Drivers		All Drivers		Nondrinking Drivers		Number of Licensed Drivers (1976)	
	#	%	#	%	#	%	#	%
16 & Below	7	3.0	38	4.7	31	5.3	36,420	1.9%
17	5	2.2	33	4.1	28	4.8	51,494	2.6
18	23	10.0	52	6.4	29	5.0	52,515	2.7
19	16	7.0	42	5.2	26	4.5	57,378	2.9
20	13	5.7	37	4.6	24	4.1	54,632	2.8
21-24	49	21.3	125	15.4	76	13.1	218,423	11.1
25-34	43	18.7	174	21.4	131	22.6	440,636	22.5
35-44	30	13.0	100	12.3	70	12.0	286,508	14.6
45-54	22	9.6	78	9.6	56	9.6	277,037	14.1
55-64	5	2.2	47	5.8	42	5.2	247,790	12.6
65 & Up	12	5.2	76	9.4	64	11.0	236,317	12.1
Driver Unknown	5	2.1	9	1.1	4	0.7	—	—
Total	230	100.0%	811	100.0%	581	100.0%¹	1,959,150	100.0%¹

¹Percentages do not add up to 100.0% due to rounding.

9.0 Drinking Drivers Involved in Fatal Crashes by Age and by Day of Week: Iowa, 1977

Figure 3 compares the days of the week when drinking drivers were involved in fatal crashes. Evidently, both the younger and older drinking drivers were involved in considerably more fatal crashes during the weekends.

10.0 Drinking Drivers Involved in Fatal Crashes by Age and by Time of Day: Iowa, 1977

Table 7 and Figure 4 show the recent distribution of drinking drivers by time of day in two groups, 16-24 years of age and older. Figure 5 shows that both young and old drinking drivers were involved in more fatal crashes during the early evening hours extending into the early morning hours (6:00 p.m. - 2:59 a.m.). However, the younger driver was involved in significantly more fatal crashes during the early morning hours (12:00 - 2:59 a.m.).

TABLE 7
DRINKING DRIVERS INVOLVED IN FATAL CRASHES BY AGE AND TIME:
IOWA, 1977

Time	24 & Younger		25 & Older		Driver Unknown	
	#	%	#	%	#	%
6:00-8:59 p.m.	14	12.4	24	21.4	1	20.0
9:00-11:59 p.m.	20	17.7	30	26.8	2	40.0
12:00-2:59 a.m.	45	39.8	27	24.1	2	40.0
3:00-5:59 a.m.	17	15.0	7	6.2	—	—
6:00-8:59 a.m.	3	2.7	—	—	—	—
9:00-11:59 a.m.	—	—	4	3.6	—	—
12:00-2:59 p.m.	6	5.3	8	7.1	—	—
3:00-5:59 p.m.	4	3.5	11	9.8	—	—
Unknown	4	3.5	1	0.9	—	—
Total	113	100.0%¹	112	100.0%¹	5	100.0%

¹Percentages do not add up to 100.0% due to rounding.

11.0 Relationship Between the Age of Drinking Drivers and the Mean Blood Alcohol Concentration in Fatal Crashes: Iowa, 1977

One interesting question was whether age and BAC have a distinct pattern of relationship. The number of drivers and the mean blood alcohol concentration are tabulated according to age groups in Table 8.

It is interesting to note that drinking drivers who were 24 years old and younger had lower BAC's than their older counterparts. Young drivers, therefore, increase their risk of crashing when they drive and drink. Learning both how to drive and how to drink at this young age might be a plausible reason for this increased risk.

TABLE 8
AGE OF DRINKING DRIVERS AND AVERAGE BAC:
IOWA, 1977

Age	Number	Average BAC	Standard Deviation
19 & Younger	35	0.157	.0632
20-24	43	0.157	.0548
25-34	23	0.197	.0707
35-44	18	0.197	.0707
45-54	13	0.220	.0949
55-64	3	0.170	.0447
65 & Up	10	0.177	.0775
All Ages	145	0.176	.0707

12.0 Alcohol-Related Fatal Crashes and Fatalities by Month: Iowa, 1977

The variation by month of the year in 1977 is shown in Table 9. The months of May, July, March and August (in that order) chalked up the highest proportion of alcohol-related fatal crashes in 1977. All were above the one year average of 39.5%

**TABLE 9
NUMBER AND PERCENTAGE OF ALCOHOL-RELATED FATAL CRASHES,
FATALITIES, AND DRINKING DRIVERS BY MONTH:
IOWA, 1977**

Month	Fatal Crashes					Fatalities		
	Drinking Drivers	Alcohol Related		All Fatal Traffic	% Alcohol Related	Alcohol Related	All Fatalities	% Alcohol Related
		#	%					
January	17	16	7.2	41	39.0	19	49	38.8
February	12	11	5.0	38	28.9	11	39	28.2
March	18	18	8.1	40	45.0	21	47	44.7
April	16	15	6.8	41	36.6	19	48	39.6
May	25	24	10.9	46	52.2	27	52	51.9
June	16	16	7.2	44	36.4	18	50	36.0
July	35	31	14.0	66	47.0	37	73	50.7
August	23	23	10.4	52	44.2	23	57	40.4
September	16	16	7.2	43	37.2	22	55	40.0
October	18	18	8.1	57	31.6	25	66	37.9
November	13	13	5.9	38	34.2	17	42	40.5
December	21	20	9.0	55	36.4	24	62	38.7
Total	230*	221	100.0%¹	561	39.4%	263	640	41.1%

*Includes 10 drinking pedestrians.

¹Percentages do not add up to 100.0% due to rounding.

13.0 Ranked Violations Committed by Drinking Drivers Involved in Fatal Crashes: Iowa, 1977

Violations frequently committed by drinking drivers were investigated and ranked by type of crash (multiple vehicle fatal crashes or single vehicle fatal crashes). This is reflected in Table 10 and Figure 5.

Driving left of center and speeding accounted for 47% of the violations in multi-vehicle fatal crashes.

Approximately seven out of 10 single vehicle crashes were caused by drinking drivers who were speeding and failed to have control of the vehicle.

14.0 Alcohol-Related Fatal Crashes by County: Iowa, 1977

Counties with their corresponding number and percentage of alcohol-related fatal crashes are shown in Table 11 and 12.

The following 23 counties had no alcohol-related fatal crashes in 1977:

Adair	Dallas	Sac
Adams	Davis	Shelby
Allamakee	Decatur	Taylor
Buena Vista	Fremont	Van Buren
Butler	Jefferson	Washington
Cass	Kossuth	Winneshiek
Cherokee	Madison	Worth
Clarke	O'Brien	

In 1977, 46 counties exceeded the state average of 39.4% alcohol-related fatal crashes. These counties accounted for 57.9% of the total alcohol-related fatal crashes in the state. The average proportion of alcohol-related fatal crashes in these counties was 60.7%. Table 12 reflects these data.

TABLE 10
VIOLATIONS COMMITTED BY DRINKING DRIVERS:
IOWA, 1977

Violations	Multiple Vehicle		Single Vehicle	
	#	%	#	%
Drove Left of Center	26	31.3	4	2.3
Speeding	13	15.7	43	24.9
Failure to Have Control	9	10.8	80	46.2
Failure to Yield	9	10.8	-	-
Ran Stop Sign	5	6.0	1	0.6
Ran Traffic Signal	1	1.2	-	-
Ran Railroad Signal	1	1.2	-	-
Reckless Driving	-	-	6	3.5
Wrong Way on One-Way Street	2	2.4	-	-
Improper Passing	3	3.6	1	0.6
Improper Turn	1	1.2	-	-
Pedestrian Violation	-	-	6	3.5
Violation by Other Driver	8	9.6	-	-
Other	1	1.2	13	7.5
Unknown	4	4.8	19	11.0
Total	83*	100.01%	173*	100.01%

*Adds up to more than the total number of crashes as some drivers committed more than one violation.

†Percentages do not add up to 100.0% due to rounding.

TABLE 11
ALCOHOL-RELATED FATAL CRASHES AND FATALITIES
BY COUNTY AND BY PERCENT:
IOWA, 1977

County	Total	Fatal Crashes			Fatalities	
		Alcohol Related	% Alcohol Related	Total	Alcohol Related	% Alcohol Related
Adair	2	—	—	2	—	—
Adams	1	—	—	1	—	—
Allamakee	2	—	—	2	—	—
Appanoose	1	1	100.0	1	1	100.0
Audubon	2	1	50.0	2	1	50.0
Benton	12	4	33.3	15	5	33.3
Black Hawk	20	6	30.0	22	6	27.3
Boone	3	1	33.3	3	1	33.3
Bremer	7	3	42.9	7	3	42.9
Buchanan	7	2	28.6	10	3	30.0
Buena Vista	3	—	—	3	—	—
Butler	2	—	—	2	—	—
Calhoun	6	3	50.0	7	4	57.1
Carroll	4	1	25.0	4	1	25.0
Cass	5	—	—	5	—	—
Cedar	7	3	42.9	7	3	42.9
Cerro Gordo	9	4	44.4	10	4	40.0
Cherokee	3	—	—	3	—	—

TABLE 11
ALCOHOL-RELATED FATAL CRASHES AND FATALITIES
BY COUNTY AND BY PERCENT:
IOWA, 1977

County	Total	Fatal Crashes		Total	Fatalities	
		Alcohol Related	% Alcohol Related		Alcohol Related	% Alcohol Related
Chickasaw	5	4	80.0	6	4	66.7
Clarke	—	—	—	—	—	—
Clay	1	1	100.0	1	1	100.0
Clayton	6	2	33.3	6	2	33.3
Clinton	9	3	33.3	10	3	30.0
Crawford	5	4	80.0	5	4	80.0
Dallas	4	—	—	5	—	—
Davis	1	—	—	2	—	—
Decatur	—	—	—	—	—	—
Delaware	2	1	50.0	2	1	50.0
Des Moines	10	6	60.0	12	6	50.0
Dickinson	3	2	66.7	3	2	66.7
Dubuque	14	8	57.1	17	11	64.7
Emmet	4	4	100.0	4	4	100.0
Fayette	5	5	100.0	7	7	100.0
Floyd	2	2	100.0	2	2	100.0
Franklin	1	1	100.0	1	1	100.0
Fremont	1	—	—	1	—	—
Greene	2	2	100.0	2	2	100.0
Grundy	4	2	50.0	4	2	50.0
Guthrie	1	1	100.0	1	1	100.0
Hamilton	3	2	66.7	3	2	66.7
Hancock	6	3	50.0	6	3	50.0
Hardin	7	2	28.6	7	2	28.6
Harrison	8	3	37.5	11	6	54.5
Henry	3	2	66.7	3	2	66.7
Howard	5	4	80.0	8	7	87.5
Humboldt	5	1	20.0	5	1	20.0
Ida	2	2	100.0	2	2	100.0
Iowa	4	1	25.0	4	1	25.0
Jackson	7	2	28.6	7	2	28.6
Jasper	10	4	40.0	17	8	47.0
Jefferson	5	—	—	6	—	—
Johnson	15	7	46.7	17	9	52.9
Jones	7	3	42.9	9	3	33.3
Keokuk	6	2	33.3	7	3	42.9
Kossuth	2	—	—	3	—	—
Lee	8	2	25.0	9	3	33.3
Linn	17	6	35.3	17	6	35.3
Louisa	2	1	50.0	3	2	66.7
Lucas	4	2	50.0	4	2	50.0
Lyon	4	1	25.0	4	1	25.0
Madison	4	—	—	4	—	—
Mahaska	6	2	33.3	6	2	33.3

TABLE 11
ALCOHOL-RELATED FATAL CRASHES AND FATALITIES
BY COUNTY AND BY PERCENT:
IOWA, 1977

County	Total	Fatal Crashes		Fatalities		
		Alcohol Related	% Alcohol Related	Total	Alcohol Related	% Alcohol Related
Marion	3	3	100.0	3	3	100.0
Marshall	8	4	50.0	8	4	50.0
Mills	4	3	75.0	4	3	75.0
Mitchell	5	2	40.0	7	4	57.1
Monona	5	1	20.0	6	2	33.3
Monroe	2	2	100.0	2	2	100.0
Montgomery	5	1	20.0	6	1	16.7
Muscatine	4	2	50.0	4	2	50.0
O'Brien	1	—	—	2	—	—
Osceola	3	1	33.3	3	1	33.3
Page	2	1	50.0	2	1	50.0
Palo Alto	6	4	66.7	10	6	60.0
Plymouth	8	4	50.0	9	4	44.4
Pocahontas	4	2	50.0	5	3	60.0
Polk	43	13	30.2	46	14	30.4
Pottawattamie	23	6	26.1	25	6	24.0
Poweshiek	5	2	33.3	6	2	33.3
Ringgold	2	1	50.0	2	1	50.0
Sac	4	—	—	7	—	—
Scott	16	6	37.5	17	7	41.2
Shelby	2	—	—	2	—	—
Sioux	6	2	33.3	9	5	55.6
Story	16	6	37.5	17	6	35.3
Tama	9	2	22.2	11	3	27.3
Taylor	1	—	—	2	—	—
Union	5	3	60.0	6	4	66.7
Van Buren	—	—	—	—	—	—
Wapello	7	5	71.4	9	7	77.8
Warren	3	2	66.7	3	2	66.7
Washington	3	—	—	3	—	—
Wayne	1	1	100.0	1	1	100.0
Webster	8	4	50.0	10	4	40.0
Winnebago	2	1	50.0	2	1	50.0
Winneshiek	1	—	—	1	—	—
Woodbury	21	7	33.3	25	11	44.0
Worth	1	—	—	1	—	—
Wright	4	1	25.0	4	1	25.0
Total	561	221	39.4%	640	263	41.1%

TABLE 12
COUNTIES RECORDING FATAL ALCOHOL INVOLVEMENT
ABOVE THE STATE AVERAGE OF 39.4%:
IOWA, 1977

County	Total Crashes	Alcohol-Related Crashes	Percent
Appanoose	1	1	100.0
Audubon	2	1	50.0
Bremer	7	3	42.9
Calhoun	6	3	50.0
Cedar	7	3	42.9
Cerro Gordo	9	4	44.4
Chickasaw	5	4	80.0
Clay	1	1	100.0
Crawford	5	4	80.0
Delaware	2	1	50.0
Des Moines	10	6	60.0
Dickinson	3	2	66.7
Dubuque	14	8	57.1
Emmet	4	4	100.0
Fayette	5	5	100.0
Floyd	2	2	100.0
Franklin	1	1	100.0
Greene	2	2	100.0
Grundy	4	2	50.0
Guthrie	1	1	100.0
Hamilton	3	2	66.7
Hancock	6	3	50.0
Henry	3	2	66.7
Howard	5	4	80.0
Ida	2	2	100.0
Johnson	15	7	46.7
Jones	7	3	42.9
Louisa	2	1	50.0
Lucas	4	2	50.0
Marion	3	3	100.0
Marshall	8	4	50.0
Mills	4	3	75.0
Mitchell	5	2	40.0
Monroe	2	2	100.0
Muscatine	4	2	50.0
Page	2	1	50.0
Palo Alto	6	4	50.0
Plymouth	8	4	50.0
Pocahontas	4	2	50.0
Ringgold	2	1	50.0
Union	5	3	60.0
Wapello	7	5	71.4
Warren	3	2	66.7
Wayne	1	1	100.0
Webster	8	4	50.0
Winnebago	2	1	50.0
Total	212	128	60.4%

15.0 Alcohol-Related Fatal Crashes by Location: Iowa, 1977

An analysis showed that 80% of the crashes occurred in the rural areas while only 20% occurred in the urban areas.

The types of roadway were also investigated, the results of which are shown in the following table:

ROAD CLASS	MONTH												TOTAL	
	J	F	M	A	M	J	J	A	S	O	N	D	#	%
Interstate	—	1	1	—	1	—	—	—	—	1	—	1	5	2.3
Primary	6	4	7	8	9	7	20	8	8	11	6	13	107	48.4
County	4	2	5	6	10	7	8	9	4	5	5	3	68	30.8
City Streets	6	4	5	1	3	2	3	5	4	1	2	3	39	17.6
Others	—	—	—	—	1	—	—	1	—	—	—	—	2	0.9
Total	16	11	18	15	24	16	31	23	16	18	13	20	221	100.0%

The preceding table shows that 48.4% of the alcohol-related crashes occurred on U.S./state highways, 30.8% on county roads, and 17.6% on city streets. Only 2.3% occurred on interstates. This information is of importance to enforcement officers.

16.0 Comparison of 1977 Alcohol-Related Fatal Crashes with Past Years: Iowa

Table 13 shows the different proportions of alcohol-related fatal crashes in 1970 through 1977.

Year	Fatal Crashes				Fatalities	
	Alcohol Related	Total	% Alcohol Related	Alcohol Related	Total	% Alcohol Related
1970	222	751	29.6	270	912	29.6
1971	233	680	34.3	293	828	35.4
1972	210	721	29.1	252	874	28.8
1973	217	682	31.8	263	813	32.3
1974	187	583	32.0	227	685	33.1
1975	221	578	38.2	256	674	38.0
1976	242	663	36.5	293	785	37.3
1977	221	561	39.4	263	640	41.1
1970-1974	1069	3417	31.3%	1305	4112	31.7%
1975-1977	684	1801	38.0%	812	2098	38.7%

The above table indicates that the proportion of alcohol-related fatal crashes in the last three years significantly increased (38.7%) when compared to 1970-1974 (31.7%).

17.0 Discussion

The study shows that in 1977, 221 out of 561 fatal crashes, or 39.4% were alcohol related and claimed 263 lives. Data from 1970 through 1977 showed that the proportion of alcohol-related fatal crashes in the last three years was increasing (38.0% average) compared to 1970-1974 (31.3% average).

Alcohol Safety Action Programs began in 1975. The presence of these programs in the metropolitan areas was characterized by an increased level of reporting during the first year followed by a gradual decline in subsequent years. However, an analysis indicated that the percent of alcohol-related fatal crashes occurring in the rural areas was increasing. In 1977, 80% of the alcohol-related fatal crashes occurred in the rural areas.

Blood alcohol tests were conducted on 145 drivers, or 63.0% of the total number of drinking drivers tested. This is about the same percentage of drinking drivers tested in 1976. Approximately 49.2% of drinking drivers in fatal crashes were young (24 years or under). This proportion is overrepresented when compared with the proportionate number of licensed drivers in this age group which is 24.0%. The proportion is higher than the total of young drivers involved in fatal crashes (40.0%). Hence, inexperienced drivers were significant in alcohol-related crashes. The data indicate that younger drivers (19 years or under) had lower BACs than their older counterparts, but were much more likely to be involved in crashes when they drank. This finding is similar to that in 1976.

An analysis of data showed that alcohol-related fatal crashes primarily occurred on primary highways (49%) and on the county roads (31%).

Figure 1
FREQUENCY OF DRINKING DRIVERS INVOLVED IN FATAL CRASHES
BY BAC LEVEL

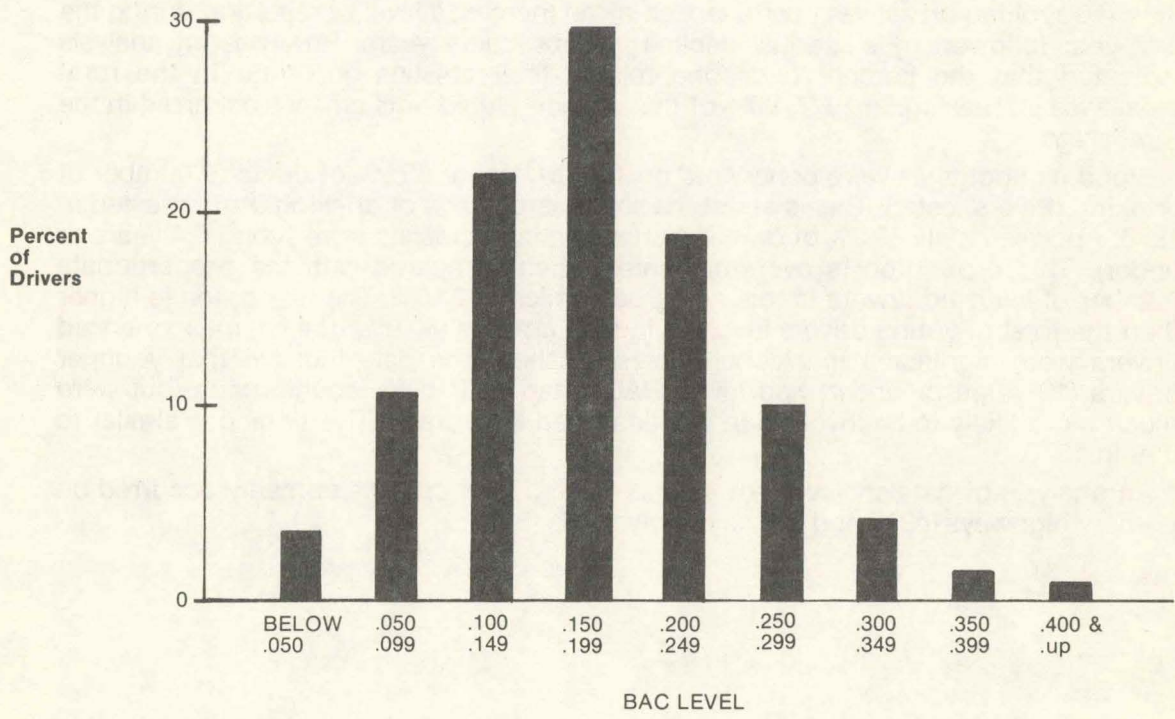


Figure 2
AVERAGE BAC LEVEL OF DRINKING DRIVERS INVOLVED IN FATAL
CRASHES BY AGE GROUP: IOWA, 1977

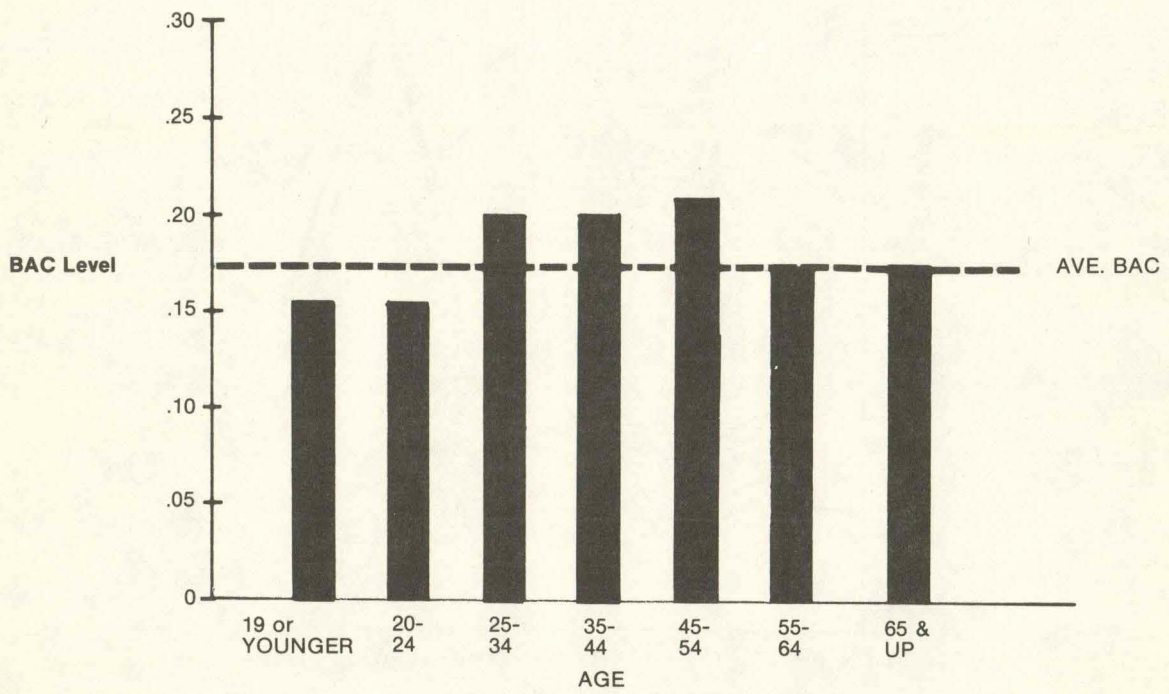


Figure 3
DRINKING DRIVERS INVOLVED IN FATAL CRASHES BY DAY OF WEEK:
IOWA, 1977

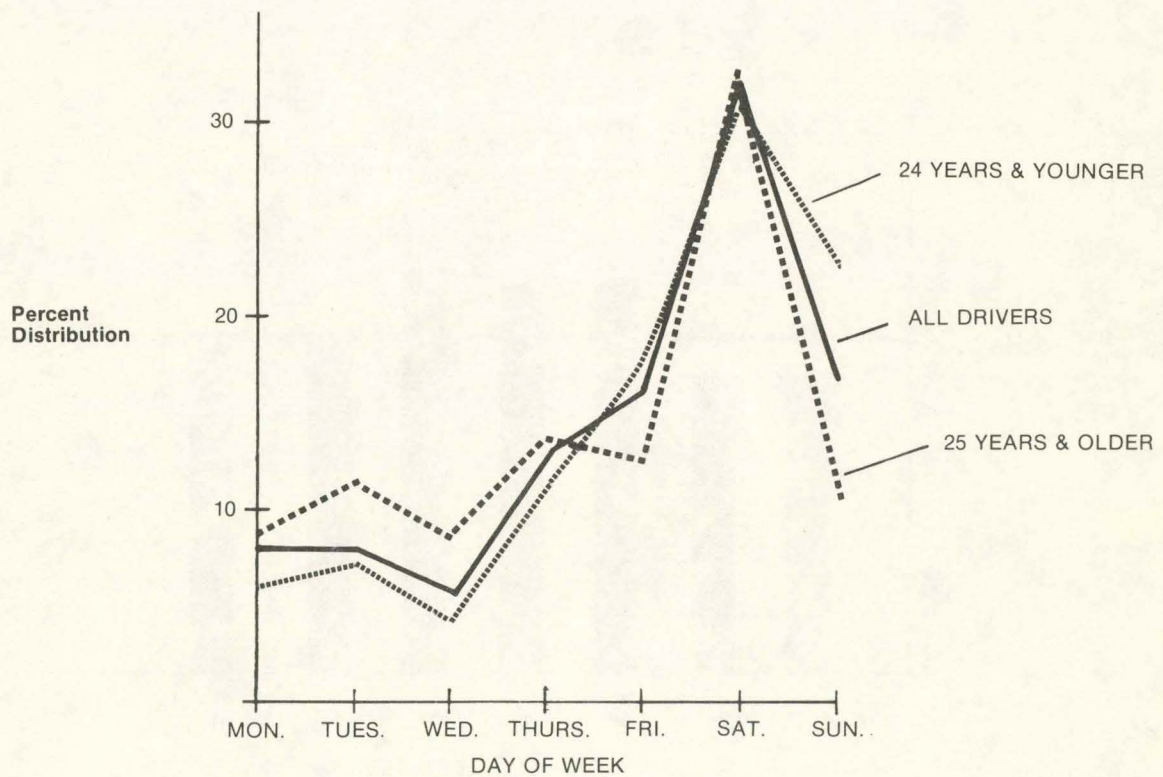


Figure 4
DRINKING DRIVERS INVOLVED IN FATAL CRASHES
BY TIME OF DAY AND BY AGE GROUP: IOWA, 1977

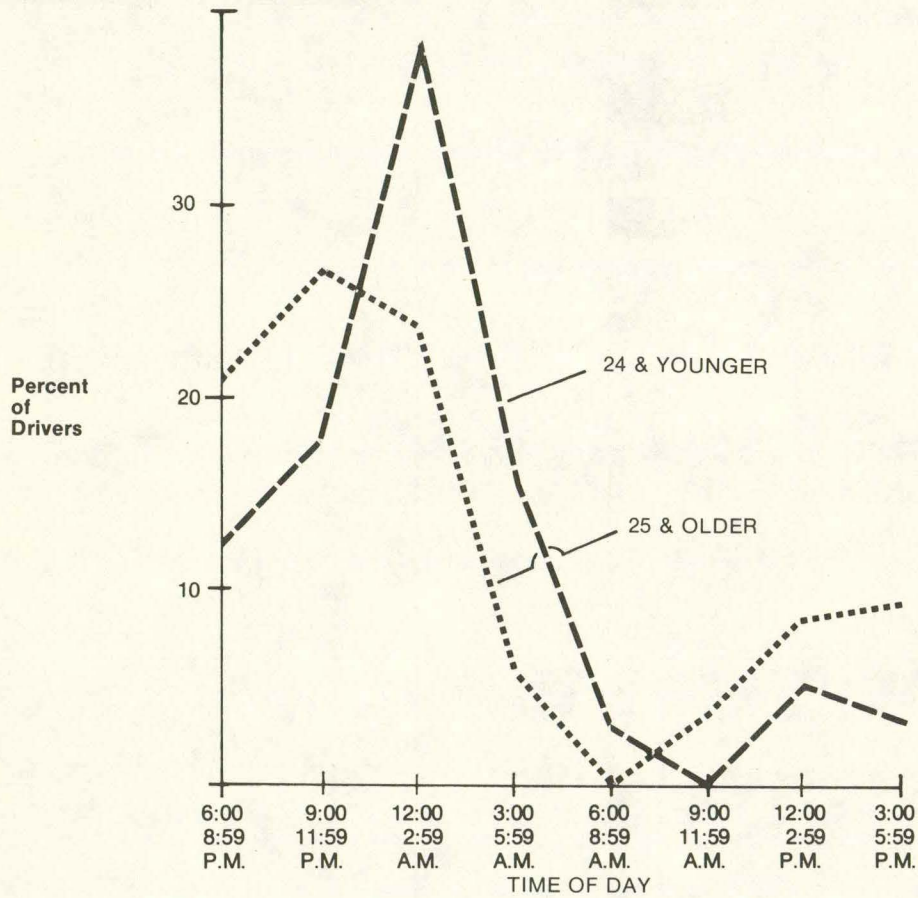
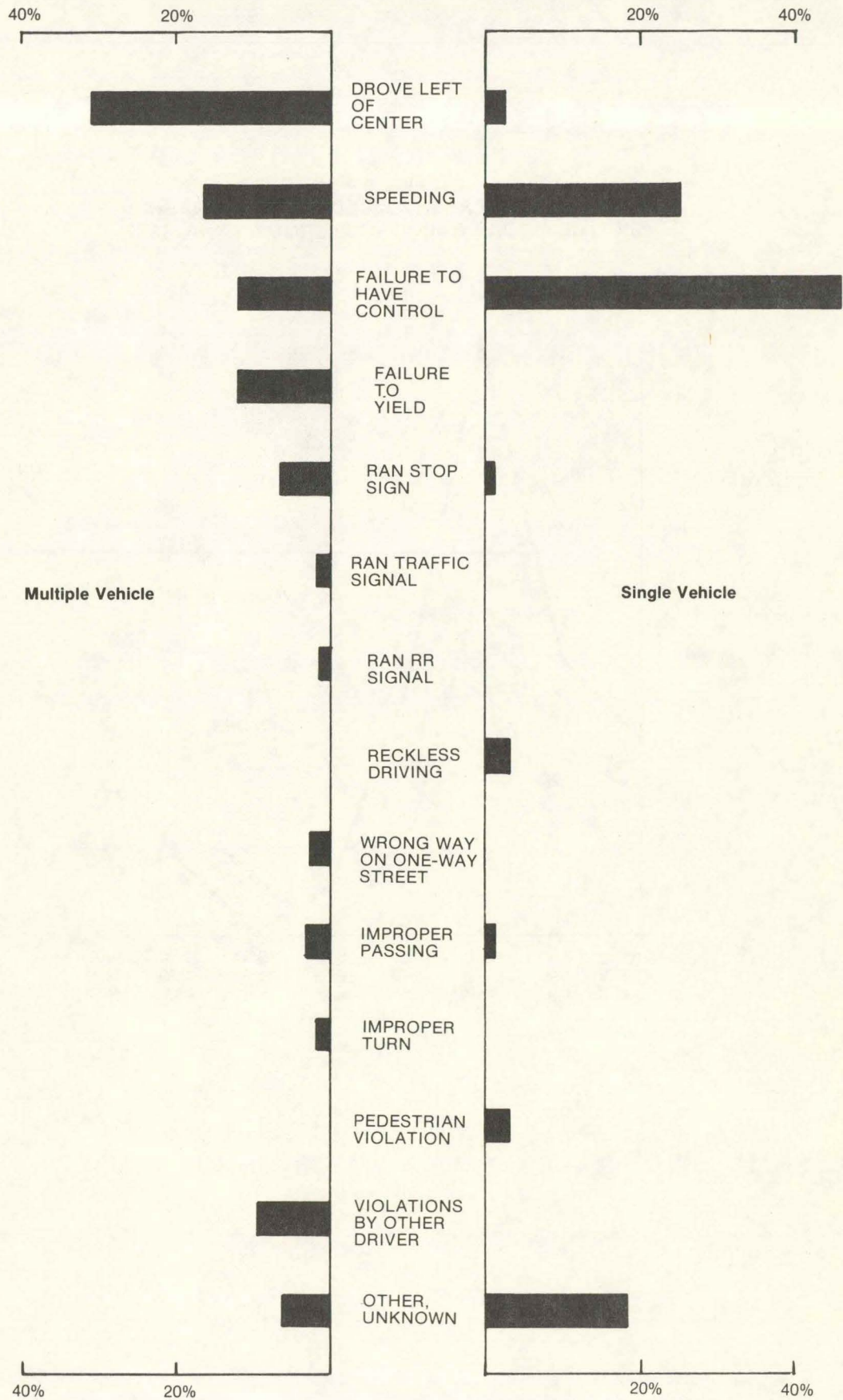


Figure 5
VIOLATIONS COMMITTED BY DRINKING DRIVERS
BY NUMBER OF VEHICLES INVOLVED: IOWA, 1977



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