

Research Report
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**FIRST-YEAR EFFECTS
OF THE ENERGY CRISIS ON
TRAFFIC IN KENTUCKY
(Rural Highways)**

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ABSTRACT

The Arab oil embargo in mid-October 1973 curtailed availability of gasoline. Fuel conservation measures resulted in reduced travel and decreased traffic speeds. On March 1, 1974, posted speed was set at 55 mph (88 km/h) on rural highways in Kentucky. Traffic volumes, speeds, and accidents for the rural highway during the period known as the "energy crisis" and its after effects were compared to the corresponding period a year earlier.

Traffic volumes began to decline in December 1973 and continued through September 1974. Total travel in the 12 months through November 1974 decreased by 2.3 percent; traffic increased by five percent in 1973. Accident rates during this period decreased by 13.5 percent; and the largest decreases were associated with the highways experiencing the greatest reductions in travel speed. The relationship between traffic speed and accident rate showed a great decrease in accident rate as traffic speeds decreased. Differences between wet-surface and dry-surface accident rates were especially significant and were more so for interstate than for two-lane highways. Improved wet-pavement skid resistance at the lower speeds obviously contributed to a reduction in accident rates. Continuation of the 55-mph (88 km/h) speed limit on all rural highways would seem advisable.

INTRODUCTION

The "energy crisis" became a reality to motorists during the latter months of 1973. Theretofore, the public ignored warnings of fossil fuel shortages. Events, however, demonstrated the seriousness of the problem. Gasoline availability became critical. Voluntary (later mandatory) adherence to lower speed limits reduced traffic speed. Traffic volumes decreased. The public's rush to purchase smaller cars exhausted inventories. Driving habits and lifestyles changed. Speculation concerning effects upon accident experience abounded in the press and in the professional community. Clearly significant and perhaps lasting changes in highway transportation were being shaped.

The gasoline shortage became critical soon after the Arab oil embargo began. The Arab oil-producing nations began withholding oil from the United States in mid-October 1973. The President delivered an important energy message to the nation November 7, 1973. He discussed the criticalness of the situation and requested voluntary energy conservation measures such as reducing travel and lowering travel speeds. Gasoline allocation to service stations was initiated. With December 1973 came "gasless Sundays". Most service stations were closed from 9 p.m. Saturday until Monday morning. The truckers' strike in February 1974 intensified the awareness of the gasoline shortage. On March 1, 1974, Kentucky's speed limits were reduced to 55 mph (88 km/h). The oil embargo ended in mid-March. Gasoline again became plentiful but at a much higher price.

This report presents data and analysis of traffic volumes, speeds, and accidents on rural highways in Kentucky as affected by the energy crisis.

PROCEDURE

Accident and traffic volume data were collected for each month between December 1971 and November 1974. The accident data were obtained from computer tapes containing all state police reported accidents for rural areas. Therefore, only rural accidents (including cities with less than 2500 population) were considered. Five of the more populous counties were excluded inasmuch as local police investigate most accidents within those counties.

The report deals with the total rural system as well as the various highway types comprising the total system. The highway system was divided into the following highway types:

- (1) two-lane,
- (2) three-lane,
- (3) four-lane, undivided,
- (4) four-lane, divided (no access control),

- (5) interstate, and
- (6) parkway (toll road).

Volume data for each month were obtained from the automatic traffic recording (ATR) stations located throughout the state. Volumes were converted into vehicle miles (kilometers) of travel for each type of highway. The total vehicle miles (kilometers) of travel for 1972 (1) was used as the base or reference. Data from the ATR stations were summarized by month. The percentage of the total traffic counted in 1972 was calculated for each month. The total vehicle miles (kilometers) of travel on a particular highway type from 1972 was then multiplied by the adjustment factor for each month to obtain the monthly volumes. These volumes were also adjusted for new highway openings. There were 29 ATR stations on two-lane highways but none on three-lane highways. The factors obtained for the two-lane highways were used for three-lane highways. There was only one usable ATR station for rural, four-lane highways. The factors obtained from this station were used for both four-lane divided and undivided highways. Five ATR stations were located on rural interstate highways. The monthly factors for parkways were obtained from monthly counts of total traffic on the toll road system made available by the Kentucky Toll Road Authority. Annual growth factors from 1971 to 1972, from 1972 to 1973, and from 1973 to 1974 were then calculated for each month and used to find the monthly traffic volumes in 1971, 1973, and 1974. Volumes from the ATR stations were used in the analysis of traffic volumes. Inasmuch as sections of new highways were added during the study period, vehicle miles (kilometers) of travel used for rate calculations reflect changing lengths of roads.

From the accident and volume data, monthly accident rates (accidents per 100 million vehicle miles) (accidents per 160 million vehicle kilometers) were calculated for each highway type.

Severity of the accidents was studied. The number of fatalities and injuries for each month were obtained.

Traffic speed data were obtained at two interstate locations, one four-lane highway location, and two two-lane highway sites before and after initiation of the 55-mph (88-km/h) speed limit. The average, median, and 85th percentile speeds and speed distributions were determined as well as the 10-mph (16-km/h) pace and the percentage of vehicles in the 10-mph (16-km/h) pace. The pace is the increment of speed including the greatest number of vehicles.

RESULTS

The findings presented here pertain to the total rural highway system (approximately 23,000 miles (37,000 kilometers) of roads) and its major components in Kentucky. Monthly data of 1 year were compared to the data of the corresponding month in the preceding year. This method best illustrated

changes occurring during otherwise comparable periods of time. Three-lane and four-lane undivided highways, however, will not be discussed here because of their limited mileage.

Traffic Volume

An evident effect of the energy crisis has been the reduction in traffic volume. Monthly volumes for the total rural system are compared in Figure 1. December 1973 was the first month in which volume dropped below the corresponding month of the previous year. In the past, volumes increased by about five percent annually as exhibited by the months preceding December 1973. The decrease in traffic volume beyond December 1973 continued through September 1974 -- reaching a maximum in March 1974. In October and November 1974, traffic volumes increased compared to the previous year. The effect of the energy crisis on traffic volumes appeared to have lessened. For a 12-month period (December 1973 through November 1974), the total vehicle miles (kilometers) driven decreased by 2.3 percent compared to the same period a year earlier. The decrease was surely significant in light of a five percent increase experienced theretofore.

Major events surrounding the energy crisis are also shown in Figure 1. The traffic volumes began dropping shortly after the start of the oil embargo in October 1973 and continued to drop until the end of the oil embargo in March 1974. Reduction in traffic volumes gradually lessened. By October and November 1974, volumes exceeded those of the same months of the previous year.

Trends in volume changes for the various highway types were similar (Figure 2). In all cases, December 1973 was the first month which showed a large decrease compared with the preceeding year. The maximum reductions occurred in February and March 1974. Interstate highways and parkways showed the largest reduction in volume. This would be expected because minimizing long distance travel by the public would be considered foremost. The increase in parkway volume in 1973 was partially due to the opening of a new parkway in December 1972. The volume on the parkway, however, was minimal compared to the whole highway system. Two-lane and four-lane divided (no access control) highways had a smaller decrease in volume due to the local traffic on these types of highways. The decrease in volumes for the 12-month period (December 1973 through November 1974) compared to the same period a year earlier are given in Table 1. There was a large reduction in interstate and parkway volumes compared with two-lane and four-lane divided (no access control) highways. Data in this table includes some new sections of highways opened during the study period.

Speed

Imposition of the 55-mph (88-km/h) speed limit placed a definite constraint on traffic speed. Even before then, conservation efforts by the highway user resulted in reduced travel speeds. Table 2 summarizes the average, median, and 85th percentile automobile and truck speeds and 10-mph (16-km/h) pace on

interstate highways. In June 1973, the median speed was 69.1 mph (111.2 km/h) for cars and 62.0 mph (99.8 km/h) for trucks. Some speed reduction occurred by November and again in February for all vehicles. In March 1974, after the speed limit was changed, median speeds reduced by 14.2 mph (22.9 km/h) for cars and 8.5 mph (13.7 km/h) for trucks compared with June 1973. There were slight increases in car and truck speeds since the initiation of the lower speed limit. A comparison of November 1974 speeds with March 1974 speeds shows that the median speed has increased by 1.0 mph (1.6 km/h) for cars and 1.9 mph (3.1 km/h) for trucks. However, the 85th percentile speed has remained around 60 mph (97 km/h) for both cars and trucks.

An important aspect of traffic speed is uniformity. An index to uniformity is the 10-mph (16-km/h) pace which indicates the 10-mph (16-km/h) speed range in which the greatest percentage of vehicles operate. Data in Table 3 show that the percentage of vehicles on interstate routes in the pace increased as traffic speed diminished. This increased percentage means that the average variance in speeds between vehicles has decreased. This may contribute to a reduction in accidents (2).

Average driving speeds and 10-mph (16-km/h) paces for four-lane divided (no access control) and two-lane highways are summarized in Table 3, which includes data for before and after the speed limit reduction. The changes in speeds on both types of highways were similar. Median automobile speeds decreased by about 4 mph (6 km/h), and median truck speeds decreased by about 2 mph (3 km/h). No significant change in percentages of vehicles in the pace was evident on the four-lane divided (no access control) highways. On two-lane roads, the percentage of vehicles in the pace increased.

Before the concern for gas conservation materialized (June 1973), 40 percent of the automobiles on the interstate roads traveled above the 70-mph (113-km/h) posted speed. Seventeen months later (November 1974), 58 percent exceeded the posted speed of 55 mph (88 km/h). These percentages drop to 16 percent (June 1973) and 18 percent (November 1974) when a 5-mph (8-km/h) tolerance above posted speed was considered. On two-lane roads, the previous 60-mph (97-km/h) posted speed (daytime) was exceeded by 19 percent of the automobiles; the percentage remained about the same after the speed limit was changed to 55 mph (88 km/h). On four-lane divided (no access control) highways, the earlier 60-mph (97-km/h) limit was exceeded by 28 percent of the automobiles. In August 1974, 35 percent of the automobiles exceeded the 55-mph (88-km/h) limit.

Before the reduction of posted speed from 70 mph (113 km/h) to 55 mph (88 km/h) on interstate roads, six percent of the trucks exceeded the speed limit and one percent exceeded 75 mph (121 km/h) (June 1973). After the reduction, 55 percent exceeded the speed limit and 12 percent surpassed 60 mph (97 km/h) (November 1974) -- these percentages after the speed reduction are similar to those for automobiles. On two-lane highways, the truck speed limit was raised from 50 mph (80 km/h) to

55 mph (88 km/h). The increased speed limit has reduced the 32 percent of trucks traveling above 50 mph (80 km/h) (before) to near zero at 55 mph (88 km/h).

Accidents

Similar to traffic volumes, December 1973 was the first month which exhibited decreased accidents compared to the year before. Except for January 1974, the number of accidents in the first months of 1974 was considerably less than for the corresponding months in 1973. During the months preceding December 1973, accidents had increased by an average of more than ten percent over the year before. The largest decrease in accidents occurred in March and April 1974. There were also decreases in volume during these months, and it should be noted that these low accident months followed the lowering of the speed limit on March 1, 1974. The number of accidents in the later months of 1974 remained below 1973 levels, but the reductions in numbers of accidents lessened.

All four major highway types experienced a decrease in accidents for almost every month in 1974. March and April 1974 showed the largest decreases. Interstate and four-lane divided (no access control) highways had the most dramatic drop in accidents. The number of accidents on parkways has fluctuated widely, but the largest decrease occurred in March 1974. The decrease in accidents continued through November 1974. On two-lane highways, the monthly percentage in the number of accidents first dropped below the previous year in December 1973. This decrease continued through November 1974 -- reaching a minimum of 76 percent in April. The decrease lessened in the later months of 1974. On four-lane divided (no access control) highways, the number of accidents remained below the previous year since August 1973, except for January and June of 1974.

Monthly accident rates on the total rural system first showed a significant decrease from the year before in March 1974, although there were indications of the accident rate lowering prior to then (Figure 3). In November and December 1973, the accident rate dipped slightly below the same periods in 1972. In January 1974, there was an increase, but the rate again decreased in February. After the speed limit reduction on March 1, 1974, the accident rate reduced sharply compared to the year before. The reduced accident rate has continued through November 1974 -- reaching a minimum during April. The accident rate for the period between December 1973 and November 1974 was 186 accidents per 100 million vehicles miles (160 million vehicle kilometers) but was 215 during the same period a year earlier. Between 1970 and 1972, the rate was 204 (1).

The monthly variation in accident rates for the various highway types is given in Figure 4. Except for two-lane highways, there was a large variation in the monthly accident rates. March 1974 showed the largest decrease in accident rates for all highway types. The reduction in accident rates was greater for interstate than for two-lane highways. This might be related to the fact that speeds decreased more

on interstate than on two-lane highways.

Pavement surface conditions (dry, wet, snow, or ice) should be considered whenever accident occurrences are compared. Weather conditions for the months of December 1973 through November 1974 were, therefore, compared to the corresponding month in the preceding year. Large differences were found for several months. An approximate doubling of the hours of snow and ice in January 1974 compared to January 1973 may partially account for the increased accident rates, especially on interstate highways. In April and July 1974, the hours of inclement weather decreased by about 50 percent compared to the same months a year earlier; this may have contributed to reduced accident rates for those months. There was also a 35-percent reduction in inclement weather in October 1974 and may explain the large accident rate decrease that month. In August and September 1974, hours of inclement weather more than doubled and corresponded to an increase in accidents. However, when the 12 month periods were compared, there was a difference of only four percent in incremental weather (1974 was slightly higher). Weather, therefore, should not have affected the total accident experience significantly.

Fatalities

The monthly variation in fatalities has fluctuated considerably. The number of fatalities has remained below the preceding year from December 1973 through November 1974. The total number of fatalities from December 1973 (when the energy crisis seemed to have an impact) through November 1974 were compared to the same time periods two years earlier. The number of fatalities dropped from 832 (1973) to 555 (1974), a reduction of 32 percent. At the same time, vehicle miles (kilometers) driven dropped by only 2.3 percent.

The average change in fatalities, using the average of the two previous years, was a 32-percent decrease for two-lane highways, a 76-percent decrease for parkways, a 14-percent increase for four-lane divided highways, and a 40-percent decrease for interstates.

A very wide fluctuation in fatality rate was also observed for the total rural system during the study period. As with fatalities, the fatality rate has remained below the rate of the preceding year (December 1973 through November 1974) except for two months. The lowest fatality rate occurred in December 1973. The fatality rate for the period December 1973 through November 1974 was 4.5 fatalities per 100 million vehicle miles (160 million vehicle kilometers); the rate was 6.6 fatalities per 100 million vehicle miles (160 million vehicle kilometers) for the same period a year earlier. The drop in fatality rate, therefore, was considerable (32 percent).

The fatality rate decreased on all major highway types except on four-lane divided (no access control) highways where the rate increased by 23 percent. The decreases in fatality rate were 81 percent on parkways, 34 percent on interstates, and 31 percent on two-lane highways. The largest decreases, therefore,

were on those highway types where the previous speed limit was 70 mph (113 km/h).

Injuries

There was a pronounced change in the number of injuries since December 1973. In the months preceding December 1973, the number of injuries increased on an average of more than ten percent from the previous year. In April 1974, the injuries reached a minimum of only 66 percent compared to April 1973. The reduction in injuries lessened in the later months of 1974.

All highway types had a reduced number of injuries in 1974; the greatest decreases occurred in March, April, and May. Interstates and parkways had the largest decrease -- a 40-percent reduction for the 12-month period. The number of injuries on two-lane highways first dropped below the previous year in December 1973 and has remained below the previous year through November 1974. For four-lane divided (no access control) highways, the number of injuries has fluctuated widely.

The change in the injury rate for the total rural system (Figure 5) since the beginning of the energy crisis was very similar to the change in the number of injuries. With the exception of January 1974, every month since November 1973 has been below the corresponding month in the preceding year. The large drop in the injury rate occurred in March 1974 and has continued through November 1974, although the reductions lessened.

The variation in injury rates by highway type is given in Figure 6. For interstate, parkway, and four-lane divided (no access control) highways, injury rates have fluctuated above and below the rates for the previous year since the first months of 1973, but the injury rate did decrease in 1974. The injury rate on two-lane highways first dropped below the previous year in December 1973 and reduced to 70 percent in April and May 1974.

Surface Conditions

Accident rates have been recognized as being higher on wet pavements than on dry pavements. Furthermore, research has shown that accident rates tend to increase as wet skid resistance diminishes (3). Table 4 shows accident rates for dry, wet, and snow or ice surface conditions for two periods of time (1973 and 1974). Accident rates were calculated from adjusted vehicle miles (kilometers) of travel under each surface condition using precipitation data for the Lexington area. The assumption was made that Lexington weather data applied statewide and that traffic volumes did not differ between dry, wet, and ice or snow surface conditions. The latter assumption in particular is not entirely true. Some reduction in travel probably occurs in wet weather, and travel would certainly diminish during snow or ice conditions. The accident rates in contrast to those cited in Table 4, therefore, would be lower for dry surfaces, somewhat higher for wet surfaces, and substantially higher for ice or snow surfaces.

Under dry conditions, the greatest accident rate decrease occurred on interstates (27.8 percent) and parkways (20.4 percent). As shown earlier, the speed decreases were much larger on these highway

types. It is important to note the very substantial decrease in wet-weather accident rates on interstates (55.4 percent) and parkways (41.7 percent). The reductions were far in excess of the corresponding decreases during dry conditions. Obviously, improved skid resistance at the lower travel speeds provided an added margin of safety and, therefore, contributed to a reduction in accidents. A similar decrease was found for four-lane divided (no access control) highways -- 27.2 percent when wet and 18.7 percent when dry.

The wet-weather accident decrease (10.4 percent) on two-lane highways was somewhat similar to dry-surface conditions (11.8 percent). It must be pointed out, however, that even a modest error in the precipitation data used in one of the periods could substantially influence the results.

During snow- or ice-surface conditions, decreases in accident rates are evident on all highways as a result of lower posted speeds. The decreases were below those shown for dry and wet conditions for interstates and parkways and above those for two-lane and four-lane divided (no access control) highways. No data were available to compare travel speeds under these conditions. It may be reasonable to assume, however, that traffic normally responds to severely hazardous driving conditions and reduces speeds accordingly. Changes in posted speeds, therefore, may not affect driving speeds to the same extent as during favorable weather. Again, assumed applicability of weather data may introduce errors.

DISCUSSION

It was shown that fatalities, accidents, and injuries, as well as fatality rates, accident rates, and injury rates decreased since the beginning of the energy crisis. The question remains whether these decreases resulted from changes in traffic volumes, speeds, etc. or as a result of any combination of contributing factors. As shown in Figure 7, the decrease in volume, which began in December 1973, corresponds to a reduced accident rate; but volume reductions lessened in April and May while the accident rate reached its lowest percentage in April. The dramatic decrease in accident rate occurred in March 1974 while the reduction in volume remained the same. Also, traffic volumes in October and November 1974 increased above those of the previous year while the accident rate remained lower. The large accident rate decrease, therefore, corresponded with the lowering of the speed limit to 55 mph (88 km/h) on March 1, 1974. Total travel during the 12-month period decreased by 2.3 percent while the accident rate decreased by 13.5 percent compared to the same period a year earlier.

The relationship between traffic speed and accident rate for interstate highways is shown in Figure 8 and for two-lane highways in Figure 9. Very limited (but precious) data points were available in preparing the plots. The data points, of course, are subject to errors due to uncertainties as to traffic speeds and volumes associated with various weather conditions. The plots do, however, bring to attention a

disproportionate increase in accident rates as speed increases. The differences between wet-surface and dry-surface accident rates are especially significant and more so for interstate highways (previously posted speed -- 70 mph (113 km/h)) than for two-lane highways (previously daytime posted speed -- 60 mph (97 km/h)). Improved wet-pavement skid resistance at the lower speeds obviously contributed to a reduction in accident rates. Reduced speed, therefore, has a greater effect upon accident rates during wet-surface than during dry-surface conditions.

A summary of accident experience for various highways is presented in Table 5. Fatality and injury rates decreased more than accident rates. The most dramatic impact, of course, must be the 277 lives saved between December 1973 and November 1974 when compared to the same period a year earlier. Whereas traffic volume and other contributing factors may account for some of the decrease in accident rates since the beginning of the energy crisis, lower travel speeds certainly stand out as the single most important reason why accident, fatality, and injury rates have decreased.

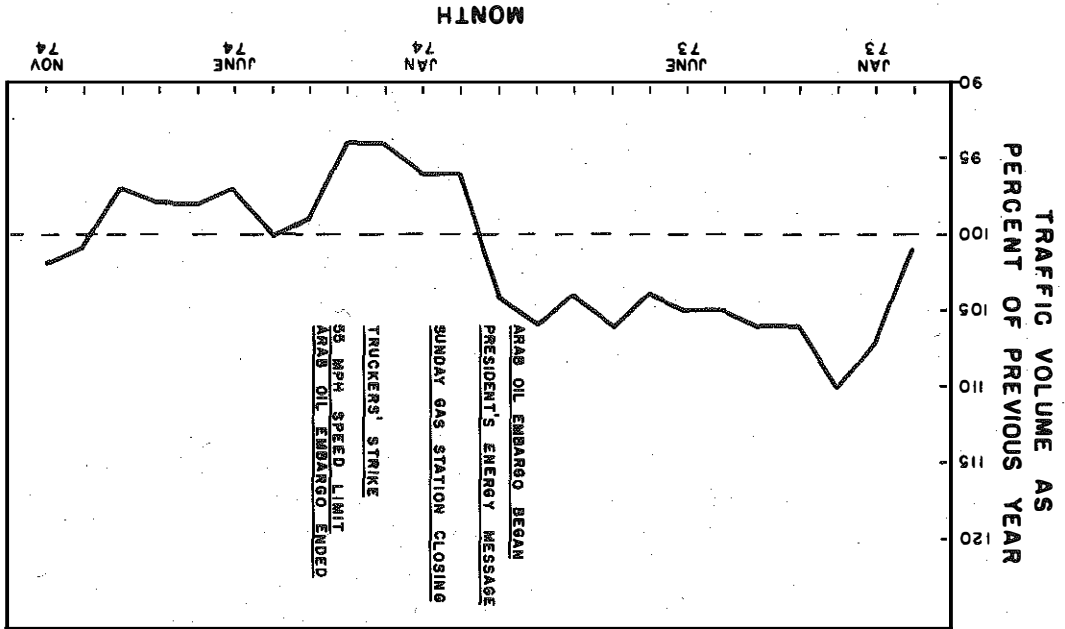
CONCLUSION

Decreases in accident rates associated with reducing the speed limit to 55 mph (88 km/h) (from previous 70 mph (113 km/h) on interstates and parkways and 60 mph (97 km/h) on two-lane roads) have been dramatic. To safeguard the public from undue hazards associated with higher-speed driving, continuation of maximum speed limit at 55 mph (88 km/h) on all rural highways seems advisable.

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3. Rizenbergs, R. L., Burchett, J. L., and Napier, C. T., *Accidents on Rural Interstate and Parkway Roads and Their Relationship to Pavement Friction*, Division of Research, Kentucky Department of Transportation, October 1973.

Figure 1. Comparison of Monthly Volumes to Corresponding Month in Preceding Year (Total Rural Highway System).



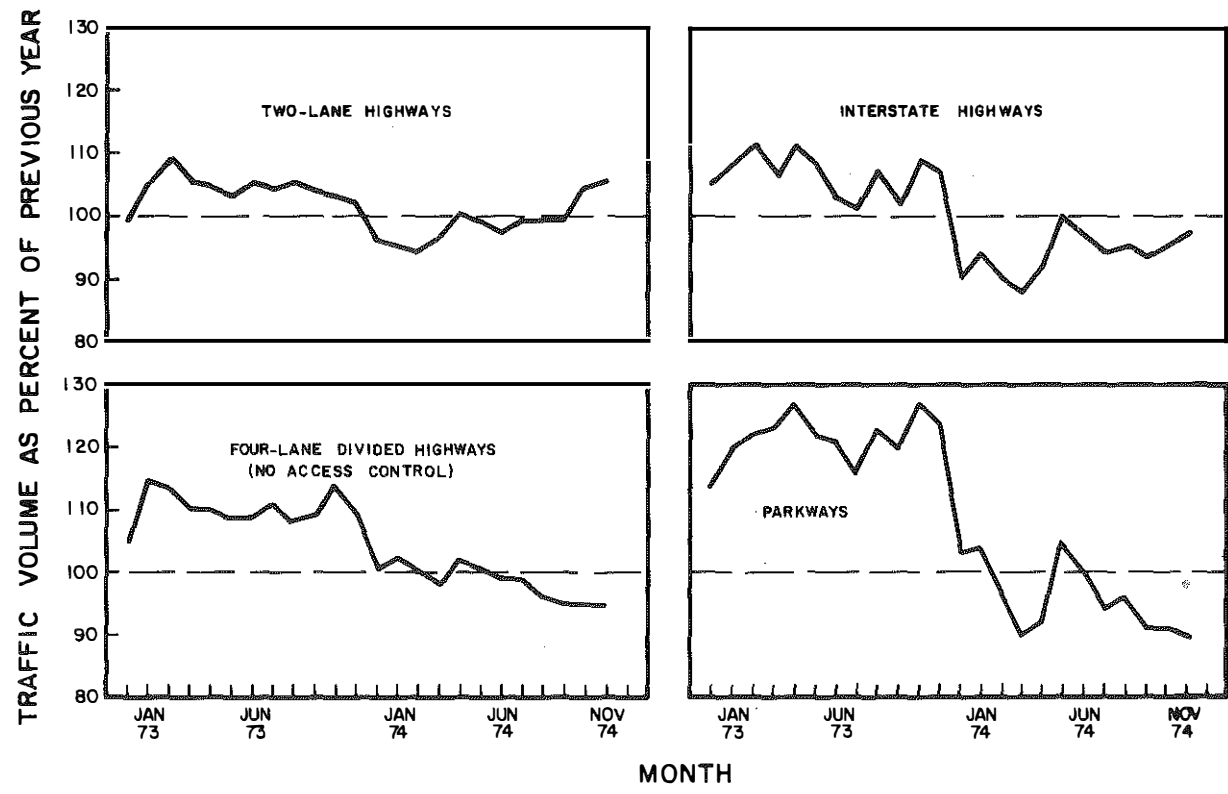
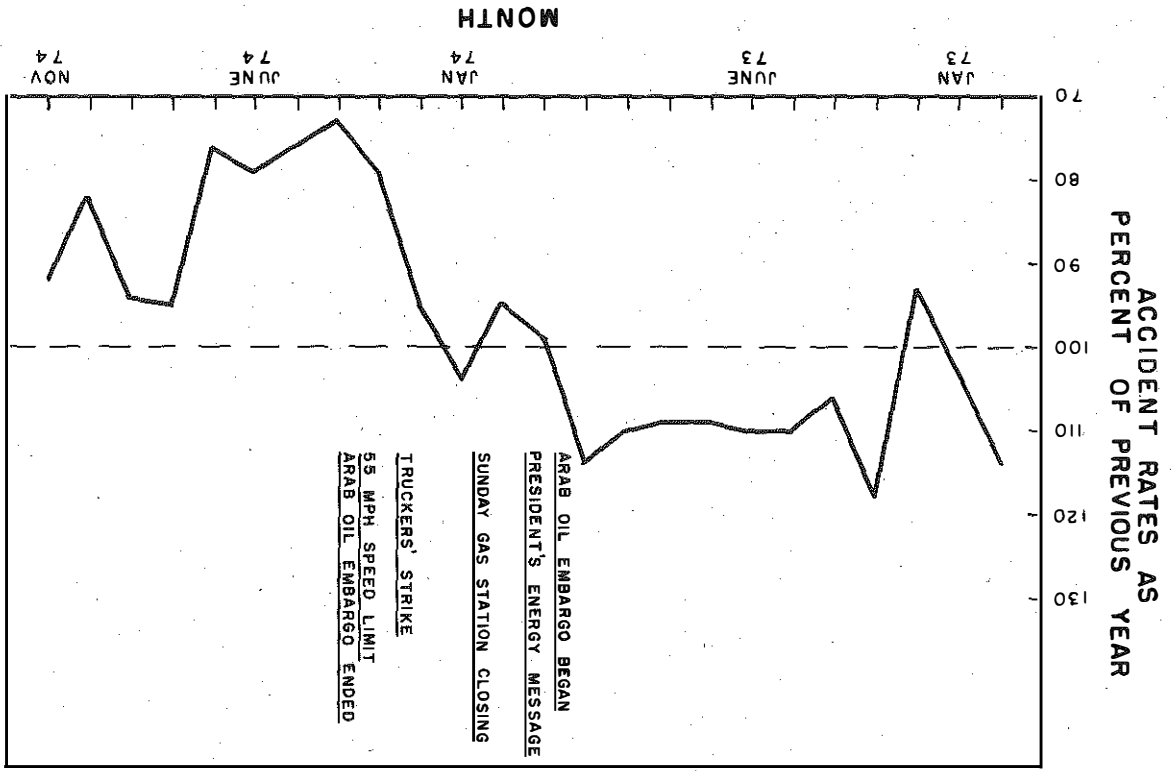


Figure 2. Comparison of Monthly Volumes to Corresponding Month in Preceding Year (Various Highway Types).

Figure 3. Comparison of Monthly Accident Rates to Corresponding Month in Preceding Year (Total Rural Highway System).



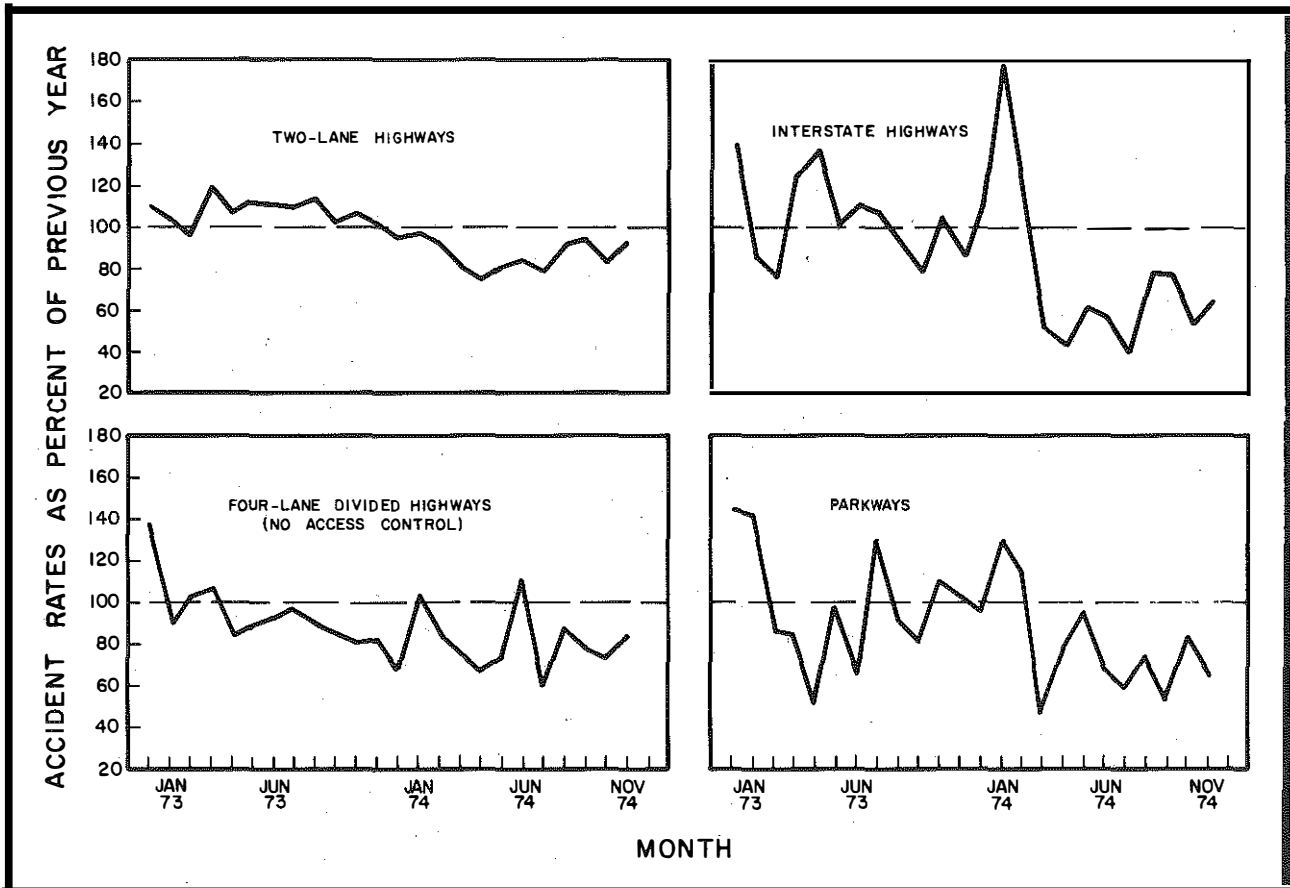


Figure 4. Comparison of Monthly Accident Rates to Corresponding Month in Preceding Year (Various Highway Types).

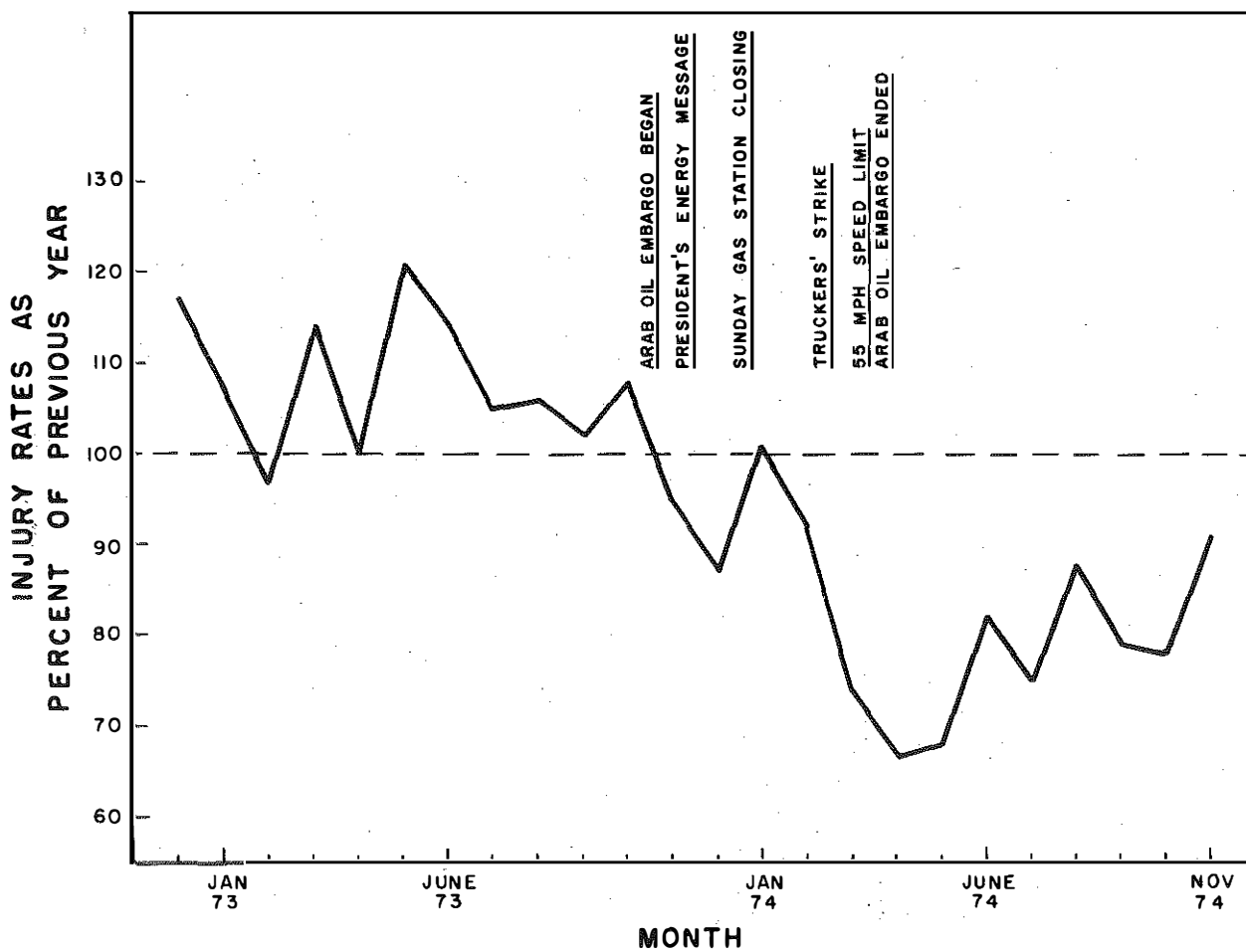


Figure 5. Comparison of Monthly Injury Rates to Corresponding Month in Preceding Year (Total Rural Highway System).

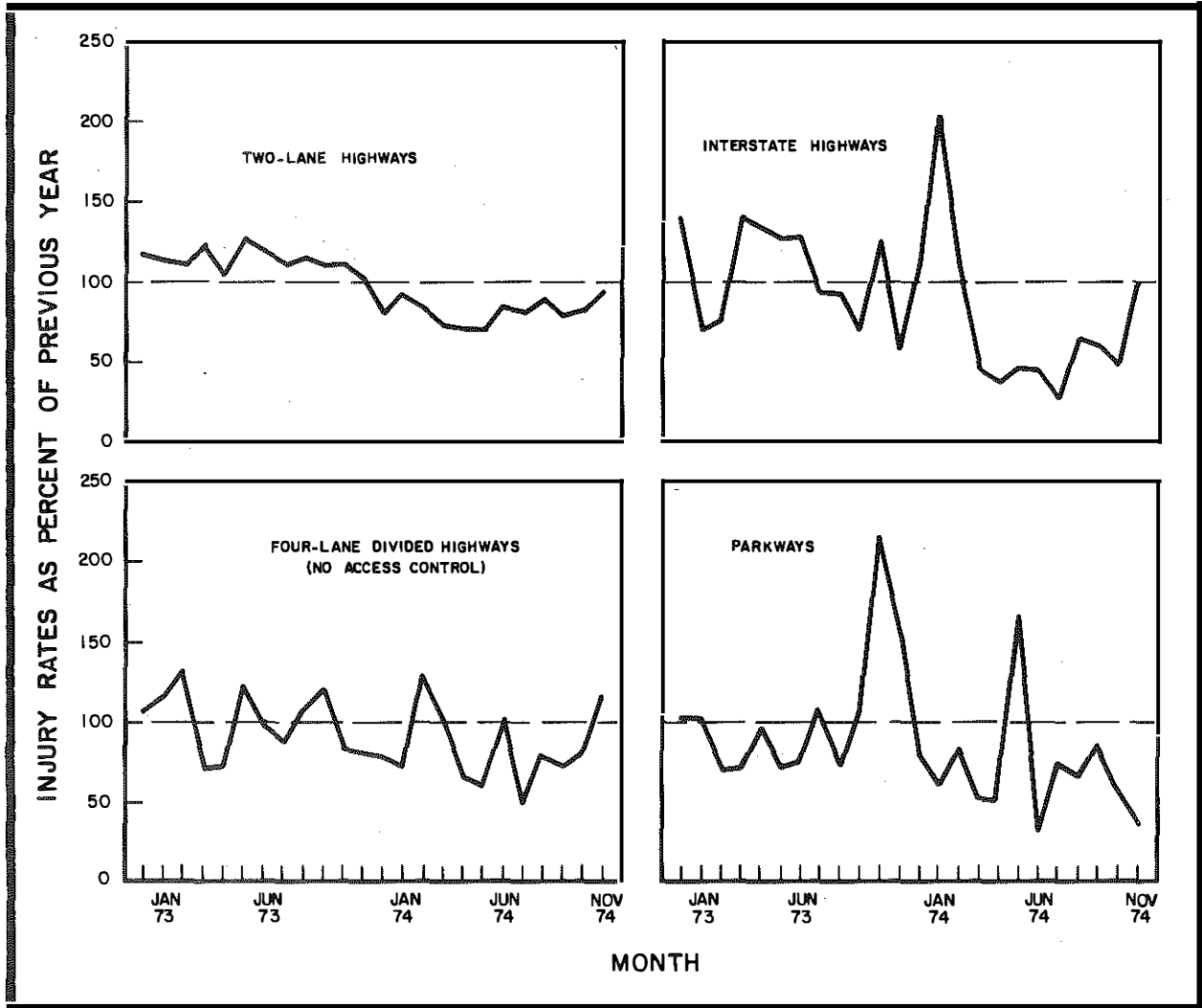


Figure 6. Comparison of Monthly Injury Rates to Corresponding Month in Preceding Year (Various Highway Types).

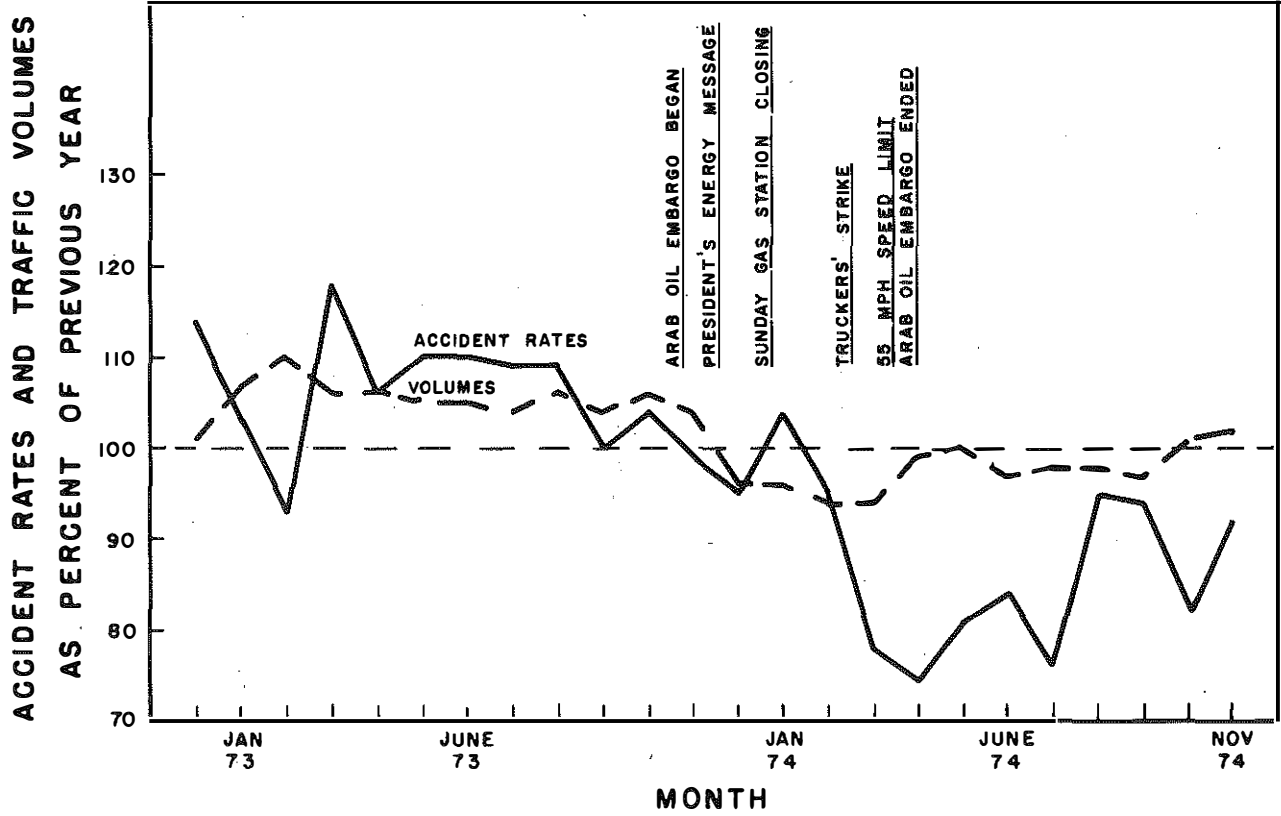


Figure 7. Comparison of Monthly Accident Rates and Volumes to Corresponding Month in Preceding Year (Total Rural Highway System).

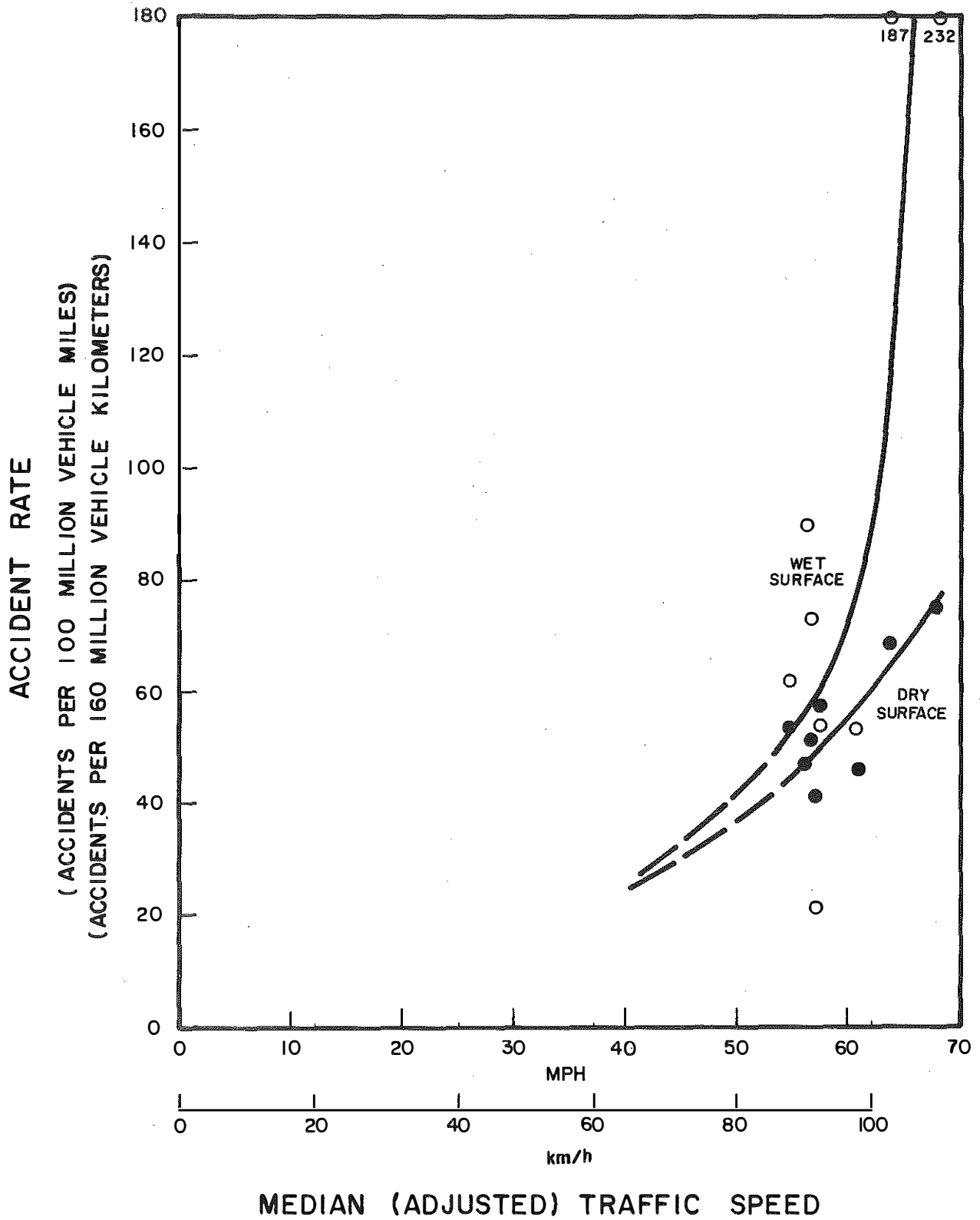


Figure 8. Relationship between Median Traffic Speed (Adjusted between Automobiles and Trucks) and Accident Rate (Interstate Highways).

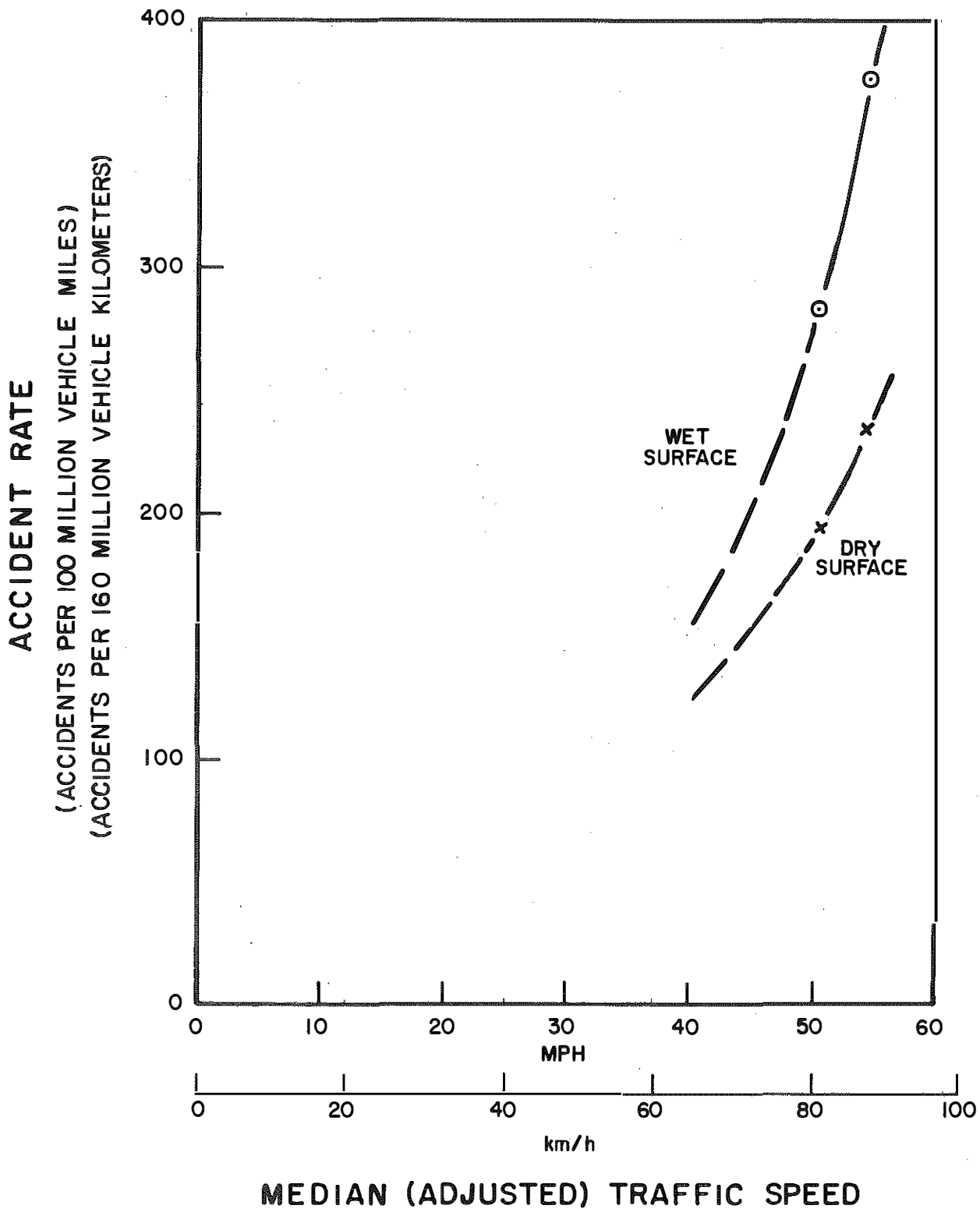


Figure 9. Relationship between Median Traffic Speed (Adjusted between Automobiles and Trucks) and Accident Rate (Two-Lane Highways).

**TABLE 1. SUMMARY OF VOLUME DATA
FOR VARIOUS HIGHWAY TYPES**

TYPE OF HIGHWAY	PERIOD ^a	VOLUME (MVM) ^b	VOLUME DECREASE (percent)
Two-Lane	1973	8979	1.3
	1974	8864	
Four-Lane Divided (No Access Control)	1973	659.9	1.6
	1974	649.4	
Interstate	1973	2267	6.0
	1974	2131	
Parkway	1973	579.0	4.1
	1974	555.0	
Four-Lane Undivided	1973	113.6	3.5
	1974	109.6	
Three-Lane	1973	52.1	0.8
	1974	51.6	
Total System	1973	12650	2.3
	1974	12361	

^a1973 - Dec 1972 through Nov 1973
1974 - Dec 1973 through Nov 1974

^bMillion vehicle miles (1.61 million vehicle kilometers)

TABLE 2. DRIVING SPEEDS AND 10-MPH (16-KM/H) PACE FOR INTERSTATE HIGHWAYS

MONTH	SPEEDS						10-MPH (16-KM/H) PACE			
	AVERAGE		MEDIAN		85th PERCENTILE		RANGE			
	(mph)	(km/h)	(mph)	(km/h)	(mph)	(km/h)	(percent)	(mph)	(km/h)	
AUTOMOBILES										
Jun	1973	68.4	110.1	69.1	111.2	75.4	121.3	50	64-73	103 - 117
Nov	1973	64.3	103.4	64.4	103.6	69.5	111.8	64	61-70	98 - 113
Feb	1974	62.5	100.6	61.3	98.6	67.4	108.4	64	57-66	92 - 106
Mar	1974	55.9	90.0	54.9	88.4	59.1	95.1	79	51-60	82 - 97
May	1974	59.0	95.0	57.8	93.0	62.8	101.1	74	55-64	89 - 103
Jul	1974	58.8	94.6	57.2	92.1	61.8	99.5	82	53-62	85 - 100
Sep	1974	58.1	93.5	56.9	91.6	61.8	99.5	75	53-62	85 - 100
Nov	1974	56.9	91.6	55.9	90.0	60.3	97.0	72	51-60	82 - 97
TRUCKS										
Jun	1973	62.6	100.7	62.0	99.8	67.6	108.8	68	59-68	95 - 109
Nov	1973	60.7	97.7	60.7	97.7	65.2	104.9	70	51-66	92 - 106
Feb	1974	59.9	96.4	58.8	94.6	64.3	103.5	66	55-64	89 - 103
Mar	1974	53.8	86.6	53.5	86.1	51.1	82.2	76	49-58	79 - 93
May	1974	57.4	92.4	56.2	90.4	60.3	97.0	79	53-62	85 - 100
Jul	1974	59.1	95.1	57.5	92.5	62.6	100.7	79	53-62	85 - 100
Sep	1974	54.2	87.2	53.7	86.4	57.7	92.9	74	49-58	79 - 93
Nov	1974	56.3	90.6	55.4	89.1	59.1	95.1	82	51-60	82 - 97

TABLE 3. DRIVING SPEEDS AND 10-MPH (16-KM/H) PACE FOR TWO-LANE AND FOUR-LANE DIVIDED (NO ACCESS CONTROL) HIGHWAYS

TYPE OF HIGHWAY	DATE	SPEEDS						10-MPH (16-KM/H) PACE			
		AVERAGE		MEDIAN		85th PERCENTILE		RANGE	(percent)	(mph)	(km/h)
		(mph)	(km/h)	(mph)	(km/h)	(mph)	(km/h)				
Two-Lane		AUTOMOBILES									
	1972	56.0	90.1	54.9	88.4	60.2	96.9	61	53-62	85 - 100	
	Aug 1974	52.0	83.7	50.3	80.9	56.4	90.8	70	45-54	79 - 93	
		TRUCKS									
	1972	47.7	76.8	47.3	76.1	53.4	85.9	55	41-50	66 - 80	
	Aug 1974	46.2	74.4	46.0	74.0	51.3	82.6	63	43-52	69 - 84	
Four-Lane Divided (No Access Control)		AUTOMOBILES									
	1972	57.2	92.1	56.5	90.9	61.6	99.1	66	53-62	85 - 100	
	Aug 1974	53.7	86.4	52.9	85.1	58.3	93.8	65	49-58	72 - 87	
		TRUCKS									
	1972	53.2	85.6	53.0	85.3	57.3	92.2	69	47-56	76 - 90	
	Aug 1974	50.9	81.9	50.1	80.6	55.9	90.0	62	47-56	76 - 90	

TABLE 4. SUMMARY OF ACCIDENT DATA FOR VARIOUS PAVEMENT SURFACE CONDITIONS

TYPE OF HIGHWAY	PERIOD ^a	ALL ACCIDENTS			DRY-SURFACE ACCIDENTS			WET-SURFACE ACCIDENTS			SNOW OR ICE ACCIDENTS		
		NUMBER ^b	RATE ^c	RATE DECREASE (percent)	NUMBER	RATE ^c	RATE DECREASE (percent)	NUMBER	RATE ^c	RATE DECREASE (percent)	NUMBER	RATE ^c	RATE DECREASE (percent)
Two-Lane	1973	23,197	258		17,138	229		5,468	414		591	313	
	1974	20,106	227	12.0	14,805	202	11.8	4,370	371	10.4	931	250	20.1
Four-Lane Divided (No Access Control)	1973	1,051	159		736	134		271	279		44	317	
	1974	809	125	21.4	585	109	18.7	175	203	27.2	49	179	43.5
Interstate	1973	2,082	92		1,361	72		554	166		167	348	
	1974	1,390	65	29.3	908	52	27.8	211	74	55.4	271	301	13.5
Parkway	1973	373	64		260	54		82	96		31	254	
	1974	288	52	18.8	196	43	20.4	41	56	41.7	51	219	13.8
Total System (for above types)	1973	26,703	214		19,495	185		6,375	343		833	318	
	1974	22,593	185	13.6	16,494	164	11.4	4,797	296	13.7	1,302	254	20.1

^a1973 - Dec 1972 through Nov 1973
 1974 - Dec 1973 through Nov 1974

^bDoes not include accidents where surface condition was not stated

^cAccidents per 100 million vehicle miles (161 million vehicle kilometers)

TABLE 5. SUMMARY OF ACCIDENT DATA FOR VARIOUS HIGHWAY TYPES

TYPE OF HIGHWAY	PERIOD ^a	ACCIDENTS			FATALITIES			INJURIES			SEVERITY INDEX
		NUMBER	RATE ^b	RATE DECREASE (percent)	NUMBER	RATE ^b	RATE DECREASE (percent)	NUMBER	RATE ^b	RATE DECREASE (percent)	
Two-Lane	1973	23,276	259		715	8.0		15,132	169		2.78
	1974	20,209	228	12.0	486	5.5	31.2	12,256	138	18.3	2.66
Four-Lane Divided (No Access Control)	1973	1,054	160		17	2.6		650	98		2.50
	1974	815	126	21.2	21	3.2	23.1 ^d	506	78	20.4	2.51
Interstate	1973	2,078	92		65	2.9		1,456	64		2.64
	1974	1,395	65	29.3	41	1.9	34.5	865	41	35.9	2.65
Parkway	1973	369	64		21	3.6		268	46		3.21
	1974	288	52	18.8	4	0.7	80.6	167	30	34.8	2.70
Total System ^c	1973	27,183	215		832	6.6		17,768	140		2.77
	1974	23,043	186	13.5	555	4.5	31.8	14,016	113	19.3	2.65

^a1973 - Dec 1972 through Nov 1973
1974 - Dec 1973 through Nov 1974

^bAccidents per 100 million vehicle miles (161 million vehicle kilometers)

^cAlso includes three-lane and four-lane undivided (no access control) highways

^dIncrease