

STATUS INSURANCE INSTITUTE FOR HIGHWAY SAFETY REPORT

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Drinking and driving is down among drivers younger than 21 but still high among 21-34 year-olds and growing among women

“What are we doing this weekend?”

It's an often heard question as Friday nears. Happy hours and other bashes are American weekend staples, and Friday and Saturday nights mean drivers are more likely to be alcohol impaired.

The emergence of activist groups and more effective DUI/DWI laws and enforcement efforts paid off in the early and mid-1980s as the United States saw a substantial decline in alcohol-impaired driving and fatal crashes involving alcohol. Other countries reported similar drops (see *Status Report*, Vol. 28, No. 13, Nov. 27, 1993 and Vol. 29, No. 3, Feb. 19, 1994.)

Has this trend continued?

A new nationwide survey of drivers who agreed to be interviewed and breath tested shows alcohol-impaired driving de-

creased in the last decade, but the decline in the number of drivers with high blood alcohol concentrations (BACs) was small.

The Institute and the National Highway Traffic Safety Administration (NHTSA) in 1996 conducted a roadside breath-test survey to gauge the amount of alcohol-impaired driving on weekend nights. NHTSA sponsored the first national roadside breath-test survey in 1973, and the Institute did a second survey in 1986. The two groups joined forces for the latest study to provide a 23-year picture of alcohol-impaired driving in the United States.

All surveys were conducted between 10 p.m. and 3 a.m. on Friday and Saturday nights — times when fatal crashes involving alcohol are most likely. With police assistance, researchers interviewed random

drivers passing survey sites. More than 6,000 drivers participated in 1996, about twice as many as in earlier surveys.

The 1996 survey, which began September 6 and ended November 9, found 83 percent of drivers had no measurable alcohol, a significant increase above the 74 percent rate in 1986 and the 64 percent rate in 1973. Impairment begins even at low BACs but increases rapidly after 0.05 percent. The proportion of drivers with high BACs hasn't changed much in 10 years. Overall, 7.7 percent of 1996 drivers had 0.05 BACs or higher, compared with 8.4 percent in 1986 and 13.7 percent in 1973.

All but two states — Massachusetts and South Carolina — have per se laws defining it a crime to drive with a BAC at or higher than a proscribed concentration,

usually 0.10 percent. Thirteen states have thresholds of 0.08. Forty states have adopted “zero tolerance” laws setting permissible BAC thresholds of 0.00 to 0.02 percent for young drivers.

Although 1986 to 1996 declines in high BAC groups aren’t statistically significant, 23-year trends generally reflect the decline in fatally injured drivers with high BACs. This group shrank considerably during the early ’80s but less so in the last decade.

“The lack of detectable change in driving at high BACs between 1986 and 1996 is disappointing,” says Robert B. Voas, the study’s principal investigator. “We have a long way to go in addressing this problem on U.S. roads. Despite progress made, alcohol-impaired driving still is a big problem.”

Young drivers’ drinking declines: Among motorists younger than 21, alcohol-impaired driving has continued to decline since 1973 when 4.1 percent of drivers ages 15-20 had BACs 0.10 or higher. In 1996, just 0.3 percent of this age group had high BACs, compared with 2.7 percent in 1986.

The decrease in the proportion of drivers younger than age 21 with BACs 0.10 or higher mirrors a steady decline in crash deaths involving high BACs. For example, 22 percent of fatally injured drivers ages 15-20 in 1995 had BACs 0.10 percent or higher — down from 47 percent in 1980.

“Efforts to reduce teenagers’ alcohol-impaired driving are working,” says Allan F. Williams, Institute senior vice president. “Minimum purchase age laws, crackdowns on outlet sales to underage persons, zero tolerance laws, and education and enforcement programs have made a difference.”

Adults remain problem group: The 1996 survey found no change in the last decade in the percent of drivers ages 21-34 with BACs higher than 0.05 or 0.10.

This age group in 1995 accounted for half of all driver fatalities involving high BACs and has shown only a modest decline in the proportion of fatalities with high BACs in the last two decades.

“While progress has been made with most age groups, 21-34 year-olds continue to be hard to reach,” says Jim Fell, chief of

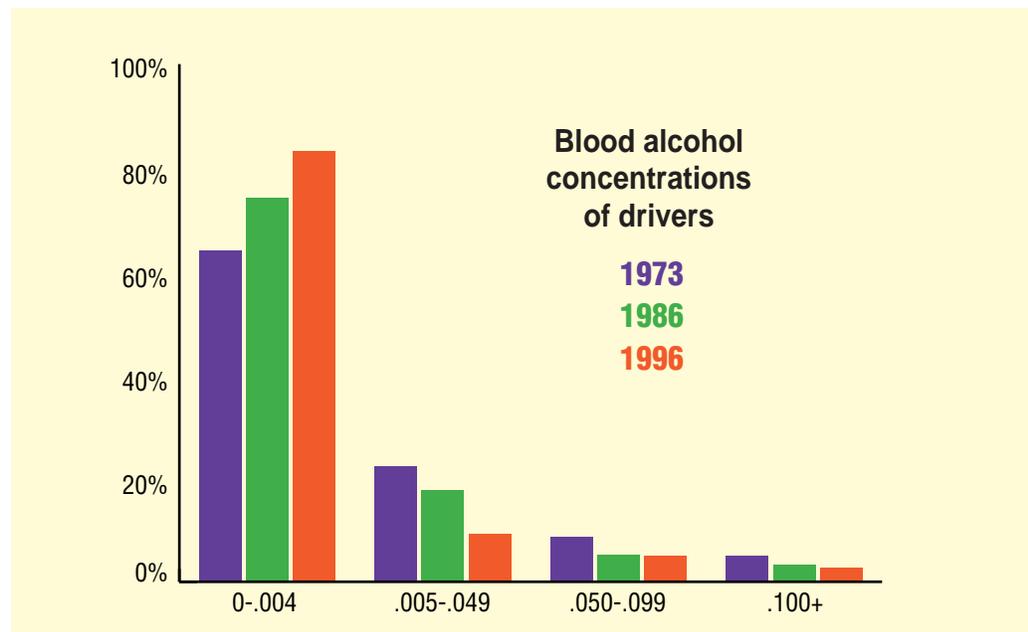
the research and evaluation division for traffic safety programs at NHTSA.

“We need to target this age group to discover what works to reduce their alcohol-impaired driving,” Fell says. “In fact, they are one of our target populations at NHTSA. We’re exploring strategic advertising, trying to find out what kind of information influences them. Another tack is what sort of enforcement efforts will get their response? Is it checkpoints? We’re also looking at new legislation because apparently laws enacted thus far haven’t changed this group’s behavior.”

More women driving: Researchers noted that more women are driving on weekend nights and are doing so alcohol impaired. The proportion of women surveyed rose to 31 percent in 1996 from 26 percent in 1986 and 18 percent in 1973.

In the 1996 survey, 5.8 percent of female drivers had 0.05 or higher BACs, compared with 3.9 percent in 1986. Men still are more likely to drive alcohol impaired, but the proportion of male drivers with 0.05 or higher BACs fell to 8.7 percent in 1996 from 9.9 percent in 1986.

Ethnic group trends: More Hispanic drivers were represented in 1996 than in previous surveys. The proportion of Hispanic drivers rose to 10.3 percent in 1996 from 4.4 percent in 1986 and 1.4 percent in 1973. The percentage of Hispanic drivers with BACs higher than 0.10 in 1996 was twice as high as the percentage in 1973 — 7.5 percent compared with 3.3 percent — and higher than the 4.4 percent found in 1986. In contrast, among whites and African-Americans, alcohol-impaired driving has declined.



		BAC ≥ 0.05			BAC ≥ 0.10		
		1973	1986	1996	1973	1986	1996
Age	15-20	10.9	4.6	2.8	4.1	2.7	0.3
	21-34	15.4	9.9	11.3	5.7	3.3	3.8
	35-44	15.9	9.4	6.9	5.8	4.7	3.7
	45+	12.1	6.8	5.2	4.1	1.8	1.7
Sex	Female	8.8	3.9	5.8	3.0	1.3	1.5
	Male	14.7	9.9	8.7	5.5	3.9	3.5
Ethnicity	Hispanic	22.0	13.0	14.9	3.3	4.4	7.5
	White	13.3	7.4	7.1	5.1	2.7	2.3
	Black	16.5	13.5	9.4	6.0	5.9	3.6
All		13.7	8.4	7.7	5.1	3.2	2.8

License suspension under ALS laws doesn't affect employment



Motorists whose licenses are revoked under state administrative license suspension (ALS) or revocation laws following arrest for alcohol-impaired driving still are able to hold jobs. This is the main finding of a new National Highway Traffic Safety Administration study.

Administrative license suspension or revocation laws allow enforcement officers to immediately take away the license of drivers who either fail or refuse a chemical test for alcohol impairment. Forty states and the District of Columbia have these laws.

The highway safety administration study assessed the consequences of license revocation for both first-time and multiple offenders in California, Delaware, and Maryland. These results were compared with the experience of offenders in Pennsylvania, which doesn't have an administrative license suspension or revocation law. Researchers surveyed 579 first-time offenders and 233 multiple offenders enrolled in mandatory alcohol education schools and treatment programs.

Delaware has an automatic 90-day license suspension for first offenders. California has a 120-day license suspension period, but hardship licenses are available after 30 days. Maryland suspends licenses for 45 days but grants hardship licenses without any period of suspension. Repeat and multiple offenders get longer periods of suspension in all three states.

Ninety-four percent of offenders employed at the time of their arrest still were working one month after in all four states, and their income levels did not suffer. There was no difference in post-arrest employment rates in California, Delaware, and Maryland compared with Pennsylvania. The length of the license suspension period also had no effect on employment rates one month following arrest for alcohol-impaired driving.

Many offenders admitted they continued to drive after their license revocation, and most said the risk of being arrested for driving without a license was very low. About 43 percent of offenders found someone else to drive them to work, and 22 percent reported driving to work even after they had lost their license. Only 7 percent said it would be very likely they would be caught.

For a copy of "Effects of Administrative License Revocation on Employment" write: Office of Program Development & Evaluation, NHTSA, NTS-30, 400 Seventh Street, S.W., Washington, DC 20590. Or fax requests to 202/366-7096.

National Park Service has neglected to fix hazards on George Washington Parkway

Recent fatal crashes on the George Washington Memorial Parkway outside Washington, D.C., have refocused attention on the National Park Service's refusal to heed Virginia lawmakers' and federal highway officials' repeated requests over 30 years to eliminate the road's hazards.

Maintained by the Park Service, the road was constructed in the New Deal era before modern design guidelines were drafted. It was built for sightseeing but since the 1960s has served as a major artery for 56,000 commuters a day who typically drive 60 mph or more — 10 to 20 mph above posted speed limits.

The wooded four-lane parkway winds about 30 miles along the Potomac River from George Washington's Mount Vernon to the Cabin John Bridge near Great Falls. Several stretches boast views of Washington, D.C., and its landmarks.

Although scenic, the parkway is rife with hazards that wouldn't be tolerated on state-maintained roads, which must adhere to highway design standards.

Stone walls lacking energy-absorbing end treatments hug many sections of outer travel lanes. There are no median barriers to prevent drivers from crossing over into oncoming traffic. Cars easily can mount low curbs separating the road from tree-lined grass shoulders. Bridge abutments are dangerously close to the roadway.

Since 1989, there have been 21 fatal crashes and 1,012 injury crashes on the most heavily traveled section of the parkway from Alexandria to Interstate 495, U.S. Park Police records show.

Recognizing it shouldn't be caretaker of a commuter route, the Park Service two years ago offered the busiest section to Virginia. But lawmakers refused, saying it would be too expensive to maintain.

The parkway is on the National Register of Historic Places, a listing of sites,

buildings, structures, and objects deemed to have historic, architectural, or scenic significance. Because of this and funding constraints, the Park Service has been reluctant to upgrade the road with modern traffic devices such as guardrails and barriers that would boost its safety but could alter its aesthetic value.

“There's nothing scenic about dead people on the road,” says Richard Retting of the Institute. “Preservation has its place, but it should not take precedence over safety ...”

“There's nothing scenic about dead people on the road,” says Richard Retting, Institute senior transportation engineer. “Preservation has its place, but it should not take precedence over safety on a high-speed, heavily traveled road. The parkway was built to standards that fail to adequately protect motorists who drive the road today. It is an unforgiving road, and it needs to be made safer.”

According to parkway superintendent Audrey Calhoun, funding safety improvements on the George Washington Parkway isn't a priority with the National Park Service, which has less than \$100 million a year to maintain 8,000 miles of park road. “We just have to wait our turn,” she says.

Crash history: Since the road was built in the 1930s, small changes have been made — for example, bridge guardrails were added after fatal crashes in 1969 and 1970 — but there's never been a full-scale project to eliminate hazards. In fact, the Park Service didn't plan to make improvements until at least 2000, but recent fatal crashes delivered a grim wake-up call.

An April 1996 crash killed three people when two drivers dueling at high speed lost control of their cars and crossed the median, killing the drivers of two other cars traveling in the opposite direction. The wreck closed the parkway for seven and a half hours as crews worked to free bodies from crushed cars and clear wreckage strewn over 75 yards.

A head-on collision in February killed two more people. A northbound car jumped a narrow grassy median and slammed into a southbound vehicle, which sideswiped a passenger van. Just four days later, a 55-year-old man died when his utility vehicle ran off the road and struck a tree.

After the second fatal head-on collision, two Virginia congressmen called a Capitol Hill meeting with Park Service representatives, the Federal Highway Administration, and U.S. Park Police.

“Clearly, this loss of life and the injuries are unacceptable,” said Rep. Frank R. Wolf. “We can no longer wait to implement safety improvements on the parkway and need to act immediately. Lives are at stake. ...” Wolf chairs the House Appropriations Subcommittee on Transportation, which funds highway projects.

The Park Service agreed to install temporary barriers separating north and southbound traffic wherever the median is narrower than 15 feet. Officials say they will replace those barriers with permanent stone-faced concrete ones that will better fit the parkway's character.

Unheeded warnings: “The tragedy is many of these latest deaths could have been prevented if the Park Service hadn't ignored repeated calls to fix the road,” says Brian O'Neill, Institute president. “The Park Service shouldn't be in the road maintenance business because it's been woefully oblivious of problems easily corrected.”



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Wreckage of a four-car, head-on crash that killed three people lies scattered on the George Washington Memorial Parkway. The road lacks median barriers and has other hazards such as unprotected bridge ends (right) and trees and bridge abutments too near the roadway (below).

Newspaper articles and federal reports dating to 1962 tell of the parkway's problems. After complaints from local government officials, the Park Service in 1962 promised to replace flimsy aluminum guardrails with steel rails but never did.

As a result, in December 1970 a station wagon crashed through a bridge guardrail and plunged 97 feet into a ravine. Three people died and three were seriously injured. This prompted the National Transportation Safety Board in 1971 to recommend the Park Service install steel bridge guardrails and correct other hazards. The board noted the Federal Highway Administration in 1967 made a similar recommendation that the Park Service chose not to heed. Steel guardrails eventually were installed on parkway bridges.

The chief of the National Capital Parks Safety Division in 1975 recommended the Park Service "eliminate or make changes" to the parkway and other roads. But there was no money for the work.

Two years later, the National Transportation Safety Board asked the Park Service to get rid of roadside hazards. It told the Park Service to "implement a program to improve existing and future roadside barriers." The board particularly was concerned about jagged stone barrier walls that could snag cars.

The Federal Highway Administration in 1978 performed a crash analysis to determine causes of nine fatalities (cont'd on p.6)



(cont'd from p.5) between 1972 and 1977. It identified 10 danger zones and advised the Park Service to immediately correct hazards and make long-term improvements. The report concluded the parkway was "substandard in design from both operational and safety perspectives."

Nearly 20 years later these hazards still exist, Retting notes. He calls the parkway a "case study in bad road design."

Speed enforcement: U.S. Park Police in February said they would better enforce parkway speed limits. But one of the challenges they have is that there are very few road shoulders to pull over speeders and none that are paved.

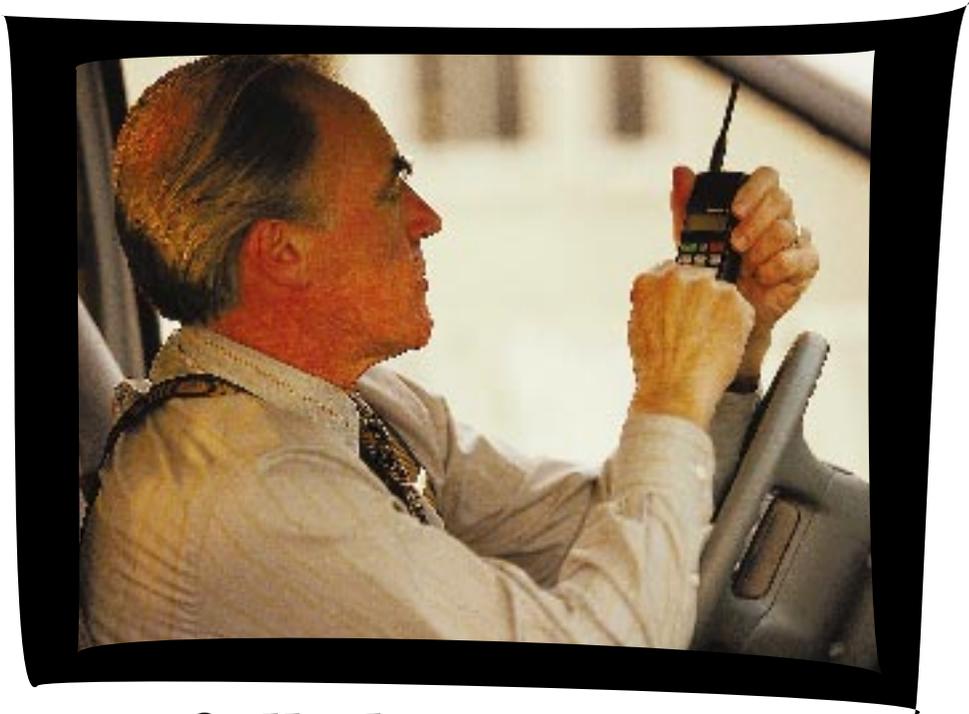
"Photo radar makes perfect sense here," Retting says. Using these camera-equipped radar units would enable police to more adequately enforce speed limits and encourage drivers to slow down. It also is safer and less costly than traditional enforcement, he notes (see story, p.7.)

Major Robert Hines, Park Police spokesman, argues, "The road is safe if people go the speed limit and drive according to the rules of the road. Problems exist not for the design or engineering fault of the National Park Service but because people don't obey the law."

Park Superintendent Calhoun agrees. "People need to stop speeding. That's key to all the problems. A few speeding drivers put all other drivers at risk. That's why we're going to put median barriers in. But they won't stop accidents from happening."

Park officials "are burying their heads in the sand," O'Neill says. "Even the most intensive enforcement won't stop all speeders. The purpose of safety barriers is to reduce crash severity, not prevent crashes. In terms of potential consequences, running into a median barrier is quite a different event than crossing over and hitting another vehicle head on.

"Many of these crash victims weren't speeding or driving recklessly. The Park Service must recognize it is responsible for providing a reasonable degree of protection for all parkway users. The design of this road just isn't acceptable."



Cell phone use may raise collision risk

Cellular telephones may be a convenient tool for drivers, but a new study indicates they may quadruple crash risk when they're in use.

Published in the *New England Journal of Medicine*, the study looked at 699 Canadian drivers who had cellular telephones and were involved in motor vehicle crashes resulting in substantial property damage but no personal injury.

University of Toronto researchers Donald A. Redelmeier and Robert J. Tibshirani compared each driver's phone use immediately preceding the collision to the same time periods on several days before the crash day. Phone billing records were used to analyze call patterns. Overall, 170 drivers had used a cellular phone within 10 minutes before their crashes.

Redelmeier and Tibshirani found the risk of collision when using a cellular telephone was four times higher than the risk when a cellular phone wasn't being used. After accounting for such driver characteristics as age and driving experience, the relative crash risk still was elevated.

The researchers caution the study "data do not indicate the drivers were at fault in the collisions; it may be that cellular telephones merely decrease a driver's ability to avoid a collision caused by someone else."

An unexpected finding is that the use of hands-free cellular telephones appeared to make no difference in crash risk compared with drivers who used hand-held phones. One possible reason is that "motor vehicle collisions result from a driver's limitations with regard to attention rather than dexterity," study authors explain.

Elisa R. Braver of the Institute points out, "This finding is inconclusive because only 148 study participants had hands-free cellular telephones."

Sales of cell phones in 1995 in the United States exceeded the country's birth rate, study authors note.

"Association Between Cellular-Telephone Calls and Motor Vehicle Collisions" by Donald A. Redelmeier and Robert J. Tibshirani appeared in the *New England Journal of Medicine*, 336:453-502 (1997).

Speed Issues

Norway finds speed cameras help reduce injury crashes

Speed cameras have reduced injury crashes by 20 percent on sections of rural roads in Norway where the cameras are in place, a new study from Norway's Institute of Transport Economics indicates.

Norway has used speed cameras, also called photo radar, since 1988 to enforce speed limits. Housed in boxes mounted on poles alongside roadways, speed cameras use a low-powered doppler radar sensor to detect speeding vehicles and trigger a motor-driven camera and flash unit to photograph vehicles traveling faster than a set speed. The speed typically is slightly above the posted limit — 90 kilometers per hour, for example, if the speed limit is 80 kilometers.

The Institute of Transport Economics study analyzes 64 sections of roadway where speed cameras have been used since at least the end of 1995. The roads

are all rural and 2-lane, and the sections studied are 1-2 kilometers long. Controlling for other factors, the study concludes that speed cameras prevented about 62 injury crashes per year on all 64 road sections combined.

The study does not assess speed cameras' effect on vehicle travel speeds because data on speeds before the cameras were installed were not available.

There are 150 speed camera boxes located throughout Norway, but only up to 36 of them at any one time actually house cameras, according to study author Rune Elvik of the Institute of Transport Economics. Signs warn drivers about speed camera locations but don't indicate which ones are active.

Cameras photograph vehicles from the front, and pictures clearly show vehicle license plate numbers and drivers' faces.

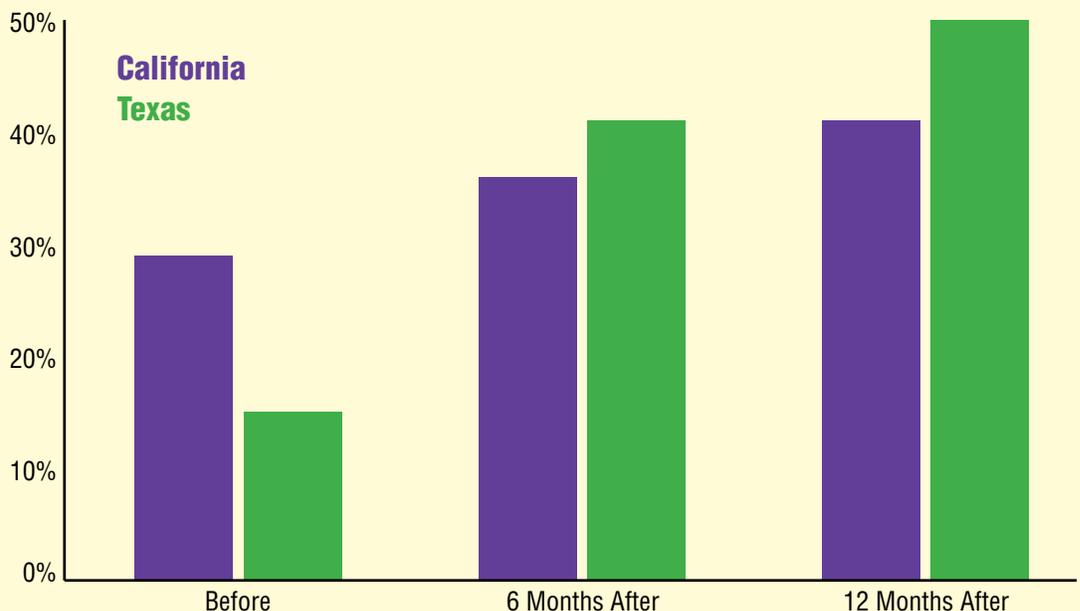
Tickets are mailed to vehicle owners. If they deny they were driving, they must identify the drivers to police so the actual culprits can be ticketed.

Results of this study mirror previous study findings showing positive benefits of speed cameras in Norway and other countries (see *Status Report*, Vol. 30, No. 5, June 3, 1995.)

Speed cameras also are used in Australia, Austria, Canada, Germany, Greece, Italy, the Netherlands, South Africa, Spain, Switzerland, Taiwan, and on a limited basis in the United States.

For a copy of "The Effects on Accidents of Automatic Speed Enforcement in Norway" by Rune Elvik, write: Institute of Transport Economics, P.O. Box 6110 Etterstad N-0602, Oslo, Norway.

Percent of Vehicles Traveling at Speeds Above 70 MPH
California and Texas: Before and After Speed Limit Changes



California and Texas are among states that raised speed limits after Congress repealed the national maximum speed limit in 1995. California raised car speed limits to 65 mph from 55 mph. Texas raised car speed limits to 70 mph from 55 mph. The new limits in both states took effect in December 1995. The Institute measured urban freeway speeds in these states 3, 6, and 12 months after the speed limit changes.

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