Highway Death Toll Tops 40,000 in 1994 for the Second Straight Year

Every day last year, an average of 99 fatal motor vehicle crashes occurred on U.S. roads. The daily death toll averaged 111. No weeks went by without highway deaths. In fact, a minimum of 58 motor vehicle deaths occurred every day in 1994.

The 1994 toll: 40,676. These deaths occurred one by one, or at most a few at a time, throughout the year. Public concern therefore wasn’t riveted on them as it would have been if, for example, a plane had gone down each day of last year, taking 111 lives in each crash.

Motor vehicle crashes and crash deaths are part of our daily lives, and 1994 wasn’t much better — or worse — in this respect than the year before. Crash deaths increased 1 percent last year, compared with the 40,115 fatalities that occurred during 1993.

Who? How? When? In what kinds of crashes did the 40,676 people die? Statistics are in from the federal files, so we can answer these and other questions.

Occupant deaths increased in almost every kind of vehicle in 1994, compared with the previous year. The increases were small, but more people died last year
in cars and other passenger vehicles as well as in tractor-trailers and other large trucks, compared with 1993. The categories in which deaths decreased were motorcyclists, bicyclists, and pedestrians — and the declines in these categories were about as small as the increases in the other categories.

**Deaths Up in Pickups, Utility Vehicles:** Year-to-year comparisons are interesting, but they don't highlight trends as well as comparisons over longer periods of time. Motor vehicle deaths have followed a generally declining pattern since they peaked at about 51,000 during the late 1970s. But deaths in pickup trucks and utility vehicles increased a whopping 78 percent between 1975 and 1994. This dramatic change reflects the increased popularity of these vehicles — they accounted for only about 18 percent of passenger vehicle sales in 1975 but, by 1993, the proportion had doubled to 36 percent.

Occumant death rates have declined since the 1970s in every vehicle type. In some categories, the declines have been substantial. The occupant death rate per million registered small utility vehicles one to three years old, for example, declined 67 percent between 1978 and 1994. The death rate in the smallest cars, on the other hand, declined 32 percent.

88 Out of 100 Deaths in Passenger Vehicle/Truck Crashes Aren't in Trucks: A total of 5,013 people died in 1994 crashes involving large trucks, most of them tractor-trailers. However, when tractor-trailers and other large trucks fatally collide with smaller vehicles on the road, it isn't usually the people in the trucks who are killed. Ninety-eight out of every 100 people killed in two-vehicle crashes involving a passenger vehicle and a large truck in 1994 were occupants of the passenger vehicles. Approximately the same percentage has held since the federal government began keeping national records in 1975.

**Motorcyclists' Death Rates Much Higher than in Cars:** Ten times as many people died in passenger car crashes last year as died in motorcycle crashes. However, the rate of deaths on motorcycles is more than three times as high as in cars — 560 per million registered vehicles in 1994 compared with 170 lor cars. The deaths in motorcycle crashes largely involve young males. Forty-six percent of all motorcyclist deaths are 16-29-year-old males. Only about 10 percent of all motorcyclist deaths involve females.

**Bicyclist Deaths Concentrated in a Handful of States:** Bicyclist deaths peak at ages 12-14. Yet deaths of older bicyclists are on the increase. Twenty years ago, only one out of every three bicyclist deaths involved people 16 years and older. But in more recent years the proportion has doubled to two out of three. Six states account for about half of all bicyclist deaths in the United States: California, Florida, Louisiana, New York, North Carolina, and Texas.

**More State-by-State Comparisons:** The national motor vehicle death rate last year was 16 per 100,000 people. But the rate was much higher in Mississippi and Wyoming (30 per 100,000) and much lower in Rhode Island (6 per 100,000) and Massachusetts (7 per 100,000).

Nationwide, most people who die in crashes do so in cars. But this wasn't the case last year in 13 jurisdictions — Alaska, Arizona, the District of Columbia, Hawaii, Idaho, Montana, Nevada, New Mexico, Oregon, Rhode Island, South Dakota, Texas, and Wyoming — where car occupants accounted for fewer than half of all deaths. Proportions of deaths in crashes involving a single vehicle also vary widely among the states. Nationally, 45 percent of pas-
senger vehicle occupant deaths occur in single-vehicle crashes. This percentage ranges from a high of 72 in Wyoming to a low of 34 percent in Michigan.

Deaths a Problem Among Men Much More than Women: Overall motor vehicle deaths are much higher among males than females. About two out of three deaths are males. The split is about the same when it comes to passenger vehicle occupant deaths — males outnumber females about two to one — but the split is wider among people traveling on two wheels. Eighty-six percent of all bicyclist deaths and 90 percent of motorcyclist deaths in 1994 were males.

Youngest Drivers Are Biggest Problem on the Road: The youngest and oldest drivers get a lot of attention because they’re overrepresented among those who die in crashes. Motor vehicle death rates top 40 per 100,000 people only among males 16-24 years old and 80-plus. At all ages, the rates among females are lower, and they top 20 per 100,000 only among 16-19 year-olds and women 80-84 years old.

But this is where the comparisons end. The differences are more pronounced: About one out of every three deaths of 16-19 year-olds from all causes occur from motor vehicle crash injuries. In contrast, only about 1 percent of all deaths among people 65 and older are from crashes. A big part of the motor vehicle death problem among the elderly is pedestrian deaths. This isn’t true among teenagers, who die overwhelmingly as drivers and passengers in cars, pickups, and utility vehicles.

Elderly people also die from crashes because they’re fragile — that is, they die from injuries from which healthy teenagers would recover. When driver involvement in fatal crashes is considered, it’s clear that teenagers are by far the biggest problem.

Twenty percent of all passengers of all ages who die in crashes do so when a teen is driving. Two out of every three teenage passenger deaths occur when another teen is at the wheel.

Walking Versus Driving: Pedestrian deaths have decreased every year since 1987, and they’ve been decreasing fairly steadily for decades. Pedestrian death rates also have decreased in every age group but most notably among the oldest people. In 1975, the pedestrian death rate among people 65 years and older was 7.7 per 100,000 people, but last year it had declined by about half, to 3.8 per 100,000. Still, the pedestrian death rate is highest among the elderly.

Alcohol is a big factor in adult pedestrian crash deaths. Thirty-seven percent of all pedestrians 16 years and older killed in crashes during 1994 had blood alcohol concentrations (BACs) of 0.10 percent or more. This proportion rose to half of all pedestrians killed in nighttime crashes, when alcohol is most likely to be a factor.
Alcohol-Impaired Driving: Alcohol is a serious problem not only among pedestrians older than 16 but also among passenger vehicle drivers and motorcyclists. About a third of people in these groups who are killed in crashes have very high BACs. The exception is tractor-trailer drivers — only 5 percent killed in crashes have very high BACs.

Alcohol involvement in fatal crashes is on the decrease. It's declining in crashes involving all types of vehicles and in crashes involving drivers of all ages. The percentage of fatally injured passenger vehicle drivers ages 16-20 with BACs at or above 0.10 percent has been cut in half during the past 15 years — from 53 in 1980 to only 26 percent last year.

These are important highway safety improvements. However, about a third of all driver deaths in all kinds of crashes on U.S. roads still involve people with BACs at or above 0.10 percent.

The most likely kind of fatal passenger vehicle crash to involve a driver with a high BAC occurs at night, and it involves one vehicle only. Out of all the fatal single-vehicle crashes that occurred in passenger vehicles at night last year, 66 percent of the drivers who were killed had BACs of 0.10 percent or more.

Roadside Hazards: Forty percent of car occupant deaths occur in single-vehicle crashes, and many of these involve hitting an object along the roadside. The problem is greatest on rural roads other than interstates, and trees are the objects most commonly struck.

Deaths in roadside hazard crashes decreased from a peak of 15,232 in 1980 to 11,231 last year. Throughout this time, deaths in such crashes have accounted for a steady 28-30 percent of all motor vehicle deaths. Also holding steady is the pattern of such crashes. Virtually all of them involve one vehicle, about a third involve that vehicle rolling over, and about a third involve occupant ejection.

About the Fact Sheets: This information is from the Institute's 1995 edition of Fatality Facts, an annual series of 12 fact sheets that summarize data from the federal Fatal Accident Reporting System. Included in Fatality Facts are more than 100 tables showing trends in deaths and death rates since 1975 as well as detailed analyses of 1994 deaths by driver age and sex; time, day, and month of crashes; alcohol involvement; and other factors.

Four more fact sheets summarize state laws that address highway safety issues — DUl/DWI laws, safety belt/child restraint laws, motorcycle helmet laws, and laws with special provisions for young drivers.
European Union Moves Toward New Safety Standards With Dynamic Tests

After years of lagging behind the United States on vehicle crashworthiness standards, the European Union is moving to begin frontal and side crash testing of new vehicles using instrumented dummies.

The legislation unanimously passed by the European Parliament in July establishes more stringent testing than was originally suggested by the European Commission, which proposed standards requiring two stages of frontal crash tests. The first would have involved angle-barrier tests, and frontal offset testing would have been phased in later. But Parliament decided to go right to offsets. The legislation is pending before the Council of Ministers, and approval is expected by year's end.

Parliament decided to adopt the offset standard because experts believe angle-barrier tests are "deficient and superfluous," says Jeanne Breen, executive director of the European Transport Safety Council.

"There's no evidence it would help improve the protection potential of the vehicle, whereas the other one [an offset test] was quite clear," says David Ward, consultant to the International Automobile Federation, a consortium of European auto clubs.

Under the regulations, frontal offsets will be run at 35 mph into a deformable barrier with a 40 percent offset. In the side impact test, a deformable barrier will hit the driver’s side of a vehicle at a right angle at 31 mph. Instrumented dummies will be used in both kinds of test.

The European requirements will apply to car designs introduced after October 1, 1998. Older designs will have to meet the standard by 2003. Tests will be run by facilities approved by the government.

Full-Front Versus Offset: The 30 mph full-width rigid barrier test required for compliance with frontal crashworthiness standards in the United States involves the whole front of a car hitting a barrier. This means high occupant compartment deceleration and a good test of how restraints handle it. In offset tests, which the Europeans have chosen, the configuration is different. Only one side of a car's front end hits the barrier, so a smaller part of the car's structure must manage the crash energy. This means more crush then if crash forces were distributed across the entire front end. The decelerations are lower in offsets, but the occupant compartment is more likely to be deformed.

Dummy head and chest injury measurements are typically higher in full-width tests than in offsets. In contrast, the greater occupant compartment intrusion that's likely in offsets produces a different kind of injury risk. Ideally, frontal crashworthiness would be assessed in both of these crash configurations.

The offset test being adopted in Europe is similar to those the Institute conducted earlier this year on 14 midsize cars at 40 mph. In fact, copies of the Institute's report on this program were distributed to European Parliament members, and results were cited in the explanatory memorandum accompanying the legislation.

Side Impact Tests: The dynamic side impact compliance test for cars sold in U.S. markets uses a deformable barrier, as will the European test. In the United States, the standard is intended to simulate a collision in which both vehicles are moving, the struck one at 15 mph and the striking one at 30 mph. The actual test involves a barrier with its wheels "crabbed" hitting the side of a car at 33.5 mph. In the European test, the barrier moves perpendicular to a stopped vehicle, hitting at 31 mph.

Other differences involve crash dummies and injury criteria. The U.S. side impact compliance test uses SID, or side impact dummy. The Europeans will use EuroSID, which can measure additional injury criteria compared with SID.

"The tests the Europeans are adopting, both frontal and side, don't necessarily assure better occupant protection than those required in this country," Institute Senior Vice President Adrian Lund explains, pointing to the need for both full frontal and offset tests. "But the additional injury criteria that go with the European side impact standard may prove beneficial in the long run."
Require Electronic Onboard Recorders, Institute
And Five Other Groups Tell the Government — Again

There's a way to reduce the widespread hours-of-service abuses that contribute to fatigue-related truck crashes: Install electronic onboard recording devices. The Institute and five other safety groups petitioned the Federal Highway Administration (FHWA) last week to require such equipment in commercial vehicles it regulates.

This isn't the first time the Institute has made such a request. The first time was in 1986, and when FHWA denied its petition the Institute submitted a 1987 request for reconsideration. (See Status Report, Vol. 22, No. 3, March 14, 1987.) Subsequent petitions on the same subject were submitted in 1988 and 1989.

The National Transportation Safety Board also has issued repeated recommendations for FHWA to require such recorders. Onboard computers record vehicle travel time and speed, providing more accurate records of how long commercial drivers spend on the road, compared with the standard logbooks that FHWA now requires drivers to keep. These written logs are often falsified to hide the fact that drivers have been on the road longer than federal rules allow. In fact, truck drivers often refer to their logs as "comic books" or "joke books."

Two-thirds of 1,249 drivers surveyed by the Institute in 1991 said they'd driven more than was recorded in their logbooks during the past year. Nineteen percent admitted falling asleep at the wheel one or more times during the preceding month. (See Status Report, Vol. 27, No. 2, Feb. 8, 1992.) Though hours-of-service violations are common, only about 7 percent of drivers inspected through the federal Motor Carrier Safety Assistance Program are put out of service because of them. This is the finding of a 1991 General Accounting Office study.

A number of studies have shown that the risk of truck crashes rises significantly as driving hours increase. For example, a 1989 Institute study found that truckers who had driven more than eight hours had about a two-fold increase in crash risk.

"Using electronic onboard recording devices to monitor truckers' hours behind the wheel makes sense," says Institute President Brian O'Neill. "Research clearly shows that many truckers drive in violation of hours-of-service rules. Onboard recorders currently offer the best way to help stop truckers from driving illegally, and FHWA should move immediately to require them."

Onboard recorders could not only reduce crashes by dissuading tired drivers from getting behind the wheel but also achieve economic benefits. Motor carriers could reap substantial savings in fuel costs as drivers reduce both speeds and prolonged periods of idling as a result of being monitored. Electronic recorders also help monitor vehicle maintenance needs.

Joining with the Institute in its latest petition to require onboard recorders are these five organizations: Advocates for Highway and Auto Safety, Families Against Speeding Trucks, National Association of Governors' Highway Safety Representatives, Parents Against Tired Truckers, and Public Citizen.
Dynamic Side Impact Rule to Cover Passenger Vehicles Besides Cars

Light trucks, vans, and sport utility vehicles will have to meet the same dynamic side impact protection standard as cars, beginning with 1999 models, the National Highway Traffic Safety Administration (NHTSA) has announced. This means passenger vehicles other than cars will meet virtually the same safety standards as cars.

Since the 1994 model year, light trucks, vans, and sport utility vehicles have had to meet a side impact requirement with static testing. Now they'll have to meet crash test requirements with instrumented side impact dummies — requirements that currently are being phased in for cars. At least 25 percent of 1995 cars from each automaker must meet the dynamic requirements — 100 percent of cars by the 1997 model year.

The new requirement for passenger vehicles other than cars isn't scheduled for phase in. All 1999 models will be covered because, NHTSA Administrator Ricardo Martinez notes, these vehicles are "the station wagons of the 1990s," and buyers expect "passenger car substitutes to have the same safety features."

In response to an Institute petition, the National Highway Traffic Safety Administration (NHTSA) has proposed requiring reflective markings on truck tractors to improve nighttime visibility. The markings are important when a tractor isn't pulling a trailer.

NHTSA initially required only trailers made after December 1993 to have reflective markings. (See Status Report, Vol. 29, No. 5, May 7, 1994.) The Institute supported the action but urged the agency to extend conspicuity requirements to tractors because, compared with other trucks, tractors that aren't pulling trailers are overinvolved in rear impacts, especially at night. The Institute also asked NHTSA to cover single-unit trucks, but they aren't included in the agency's notice of proposed rulemaking.

"It is obvious that truck tractors are less conspicuous at night from the rear than other motor vehicles," NHTSA stated in its notice of proposed rulemaking. Unlike trailers, tractors don't have to have rear side marker lamps, rear clearance lamps, or rear identification lamps. Tail lamps usually serve as the only rear marking lamps, and these are mounted closer together on tractors than they are on other motor vehicles.

Adding retroreflective sheeting or reflex reflectors to indicate tractor height and width would be an inexpensive way to increase conspicuity. Installing such markings should cost $14-17 per vehicle, according to NHTSA.

The agency predicts that when all tractors have the reflective markings, 276 collisions could be prevented per year, and 829 collisions could be mitigated. Four to 8 fewer deaths and 107-8 fewer injuries would occur. Annual savings would be $5 million in property damage costs alone.

Comments on the proposal are due September 11.
In This Issue

Fatality facts show a slight increase in 1994 motor vehicle deaths compared with 1993 ........................................ p.1

European Union moves ahead on frontal and side impact standards with dynamic testing................................. p.5

Put onboard recorders in trucks, Institute and others tell FHWA again .......... p.6

Truck conspicuity rule would cover tractors under NHTSA plan ............. p.7

Dynamic side impact requirements for cars are extended to other kinds of passenger vehicles ................................ p.7