

STATUS REPORT

INSURANCE INSTITUTE
FOR HIGHWAY SAFETY

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SPEEDING

**METHODS TO DETER VIOLATORS STIR
CONTROVERSY, BUT OFFICIALS NEED
NOT CAVE IN TO THE OPPOSITION**

Exceeding posted speed limits is ubiquitous on U.S. roads, in large part because motorists correctly perceive there's little chance of a penalty.

Getting a ticket, let alone becoming involved in a crash or getting injured,

isn't likely to happen to any speeder on any given trip. This doesn't mean there's no cost. The steep societal costs include the loss of an estimated 13,000 lives each year in speed-related crashes on U.S. roads. To slow motorists down, especially the fastest ones who pose the greatest risk (see facing page), there has to be enough speed limit enforcement to foster the perception that a penalty is likely.

This is where speed cameras come in. They can operate around the clock in multiple locations to identify virtually every motorist going a set amount above the speed limit. Because most drivers don't know where the cameras are located, the effect can be to reduce speeds across road systems. Research confirms that this saves lives.

OFFICIALS IN VICTORIA AND BRITAIN HAVEN'T ALLOWED OPPONENTS TO DERAIL THEIR CAMERA PROGRAMS. IN FACT, THE PROGRAMS HAVE BEEN EXPANDED. AND THE MAJORITY OF DRIVERS SUPPORT THIS POLICY.

Yet speed law enforcement of any kind elicits opposition going back to the old speed "traps," which didn't seem to have much to do with safety but were set up to fund local police departments with fines paid by out-of-town motorists. In more recent years, enforcement based on radar has proved unpopular enough to spawn an entire industry of radar detector manufacturers.

Cameras evoke more controversy including whether the person who gets the ticket is the actual speeder. The broader issue is Big Brotherism. U.S. courts have specifically upheld camera use, but opponents still claim they unconstitutionally invade privacy.

Objections like these aren't confined to the United States. They've been raised wherever cameras have been deployed including Great Britain and Victoria, Australia, where speed cameras have been in use for many

years. The backlash in Great Britain, for example, has included destruction of the cameras themselves.

Differences between these experiences and what's happening in U.S. jurisdictions is that officials elsewhere aren't caving in. They're operating their camera programs — and expanding them — despite the opposition. Officials in 75 countries rely on speed cameras extensively (see *Status Report*, May 4, 2002; on the web at www.iihs.org). In some cases the cameras are gener-

ating more than half of all speeding tickets. In contrast, speed cameras are being operated in only a handful of U.S. communities.

"What we can learn from officials in Australia and Great Britain, in particular, isn't how to make speed cameras popular with everyone. They aren't going to attract universal approval anywhere. But in Victoria and Britain the minority of people who oppose cameras aren't being allowed to dictate policy when it comes to public safety. The message we can take from this is to go ahead and deploy speed cameras," says Susan Ferguson, Institute senior vice president for research. "Don't wait for the vocal opponents to change their minds or go away. They won't. So address the camera opponents without scaling back speed enforcement or, worse, shying away from using cameras to begin with."

Victoria and Great Britain examples: Speed cameras have been used in Victoria, Australia, since 1985 and in Great Britain since 1991. By 2000 there were about 4,500 camera sites on British roads and similar or even more extensive deployment in Victoria by 2001-02.

But the deployments differ. Cameras are in wide operation across Victoria's road system, for example, but they're confined in Great Britain to where speeding is believed to be a problem.

What these approaches have in common is success. The proportion of motorists exceeding speed limits has declined by as much as 66 percent on Victoria's road system and by 32 percent in Britain since camera programs began. Crash reductions of 6 to 35 percent have been found at sites in Victoria, while in Britain deaths and injuries in crash-



es have been reduced by 40 percent. British researchers report that benefits of speed cameras exceed costs by 4 to 1.

Still both camera programs have elicited controversy, often heated, and the opposition has persisted even as the safety benefits of cameras have accumulated.

In Victoria controversy intensified as the number of cameras was increased during 2001-02. Complaints arose about ticketing people at locations where motorists perceived that speeding wasn't hazardous. Another complaint involved whether camera equipment was reliable enough to ensure that the vehicles identified by the cameras actually were *(continues on p.5)*

SPEEDERS ARE RISKY IN WAYS BESIDES EXCEEDING POSTED LIMITS

Most motorists speed occasionally, straying a few miles per hour over the posted limit. Then there are the more serious violators, who substantially exceed speed limits and maintain speeds that are way out of sync with nearby motorists.

Institute researchers measured speeds at 13 locations on northern Virginia roads, identifying vehicles going at least 15 mph faster than posted limits and at least 5 mph faster than 3 of 4 surrounding vehicles. These parameters helped to ensure that the identified motorists weren't inadvertent or occasional speeders.

Researchers found 5 percent of drivers exceeding the limits by 15 mph or more. Three percent also were going faster than nearby cars. These proportions aren't large, but they translate into millions of problem speeders on U.S. roads every day.

Analysis of photos of motorists in the group of problem speeders, snapped as they went by photoradar units, plus information obtained from authorities revealed



characteristics of these drivers. They were more likely to be men younger than 30 and to drive newer vehicles and SUVs, compared with motorists who stayed within 5 mph of posted speed limits. As a group, the problem speeders averaged 60 percent more crashes per year and had twice as many violations on their records. About half had gotten at least one previous speeding ticket, and 20 percent had gotten 2 or more. They also were more likely to have other moving violations on their records.

"This is why it's important to slow down the fastest drivers. They're high-risk in a number of ways," says Allan Williams, lead author of the study.

For a copy of "Characteristics of excessive speeders" by A.F. Williams et al., write: Publications, Insurance Institute for Highway Safety, 1005 North Glebe Road, Arlington VA 22201, or email publications@iihs.org.

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Insurance losses under some coverages, but not others, go down when ESC is added

Adding electronic stability control (ESC) to cars and SUVs significantly lowers insurance losses for crash damage to insured people's own vehicles. But ESC has a negligible effect on insurance losses for damage to other people's vehicles in multiple-vehicle collisions and on claim frequencies under personal injury protection coverage.

These are the main findings of a special study by the Highway Loss Data Institute (HLDI), which is closely affiliated with the Insurance Institute for Highway Safety. An Institute study previously revealed that ESC substantially reduces fatal single-vehicle crashes (see *Status Report*, Jan. 3, 2005; on the web at www.iihs.org). The HLDI study as well as the Institute's earlier report, are based on essentially the same set of passenger vehicles before and after the addition of ESC, which is designed to help drivers maintain control during high-speed maneuvers or on slippery roads.

Collision losses go down: HLDI researchers compared insurance losses under several coverages before and after ESC. The biggest effect was on collision coverage losses, which reflect both the frequency of claims and the costs. Collision coverage losses were 30 percent lower for SUV models with ESC than for previous models of the same SUVs before the technology was added. Losses went down 16 percent for luxury cars and 13 percent for sports cars (most cars with ESC are in these two groups).

The main benefit was to lower the average amount of insurance payments per claim by substantially reducing the most expensive claims. For example, 4.9 percent of claims for damage to the SUVs in the study were for \$20,000 or more before ESC was added. After ESC the proportion of big claims went down to 3.4 percent. Similar reductions in collision claims exceeding \$20,000 occurred for luxury and sports cars.

Other kinds of losses weren't lowered: Property damage liability insurance covers damage to other people's vehicles (not the insured party's vehicle). Losses under this coverage decreased slightly for luxury cars and SUVs after ESC was added but not for sports cars. Losses under personal injury protection coverage followed a similar pattern, going down for SUVs and luxury cars but not for sports cars.

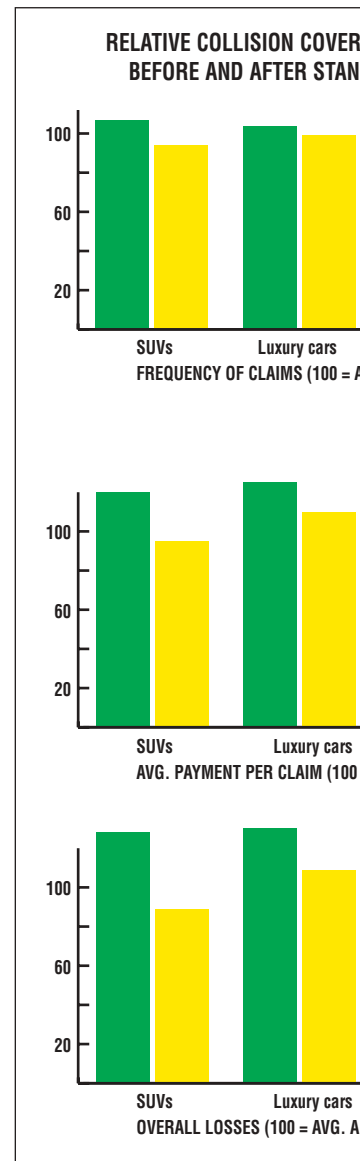
Insurance losses versus fatality reductions: The Institute study that was published last January found that adding ESC reduces single-vehicle fatal crashes by about 56 percent. The fatality risk in collisions involving two or more vehicles is a much lesser 17 percent.

"If ESC is so effective in reducing fatal crashes, why isn't there a greater effect on insurance losses? The answer involves the kinds of

crashes in which ESC is designed to work," says Institute chief operating officer Adrian Lund.

Collision insurance reimburses policyholders for damage to the insured person's own vehicle in any kind of crash, single- or multiple-vehicle, while property damage liability covers damage to other people's vehicles in crashes involving more than one vehicle. The biggest effect of ESC is on single-vehicle crashes at higher speeds, "so we would expect to find some reduction in collision but not in property damage liability losses, and this is exactly what the HLDI researchers found," Lund says.

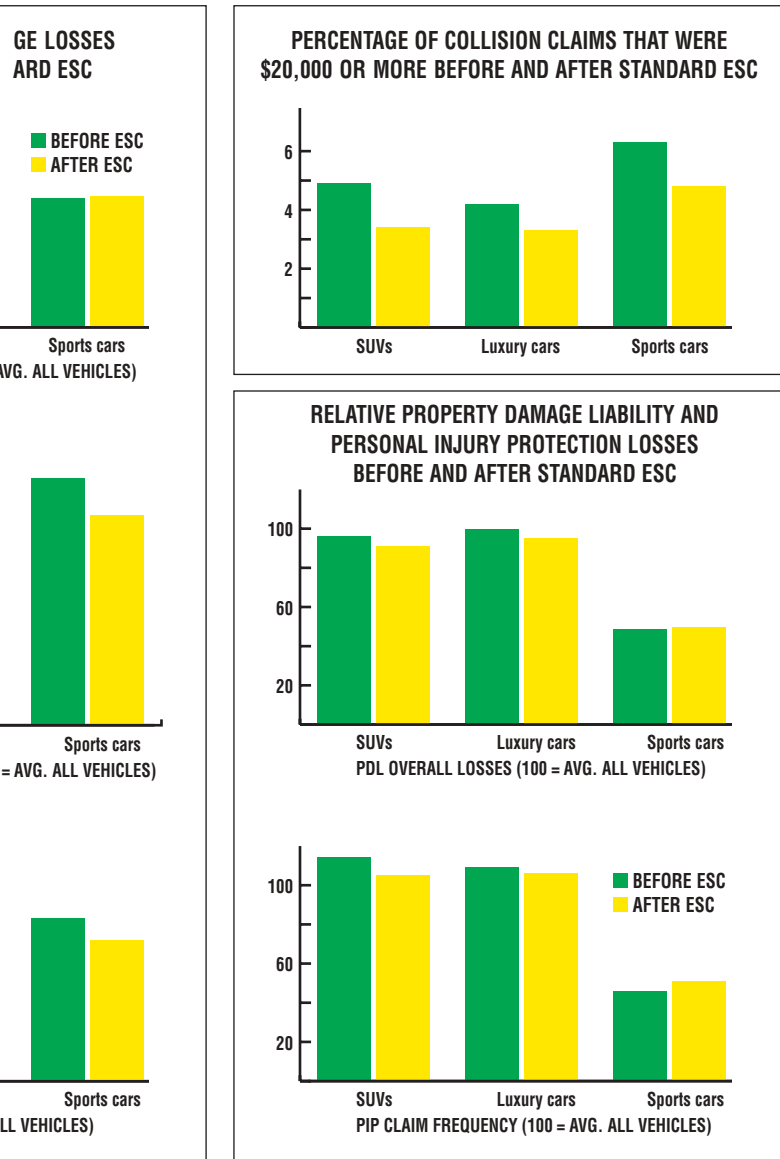
AN INSTITUTE STUDY, HIGHLIGHTED IN AN EARLIER STATUS REPORT, FOUND A 56 PERCENT REDUCTION IN FATAL SINGLE-VEHICLE CRASHES AFTER ESC WAS INTRODUCED. THE EFFECT OF ESC ON INSURANCE LOSSES ISN'T AS DRAMATIC.



The absence of an effect of ESC on injury claims "is more surprising," Lund adds. "We might expect that the reduction in collision claims for the most severe crashes, those involving more than \$20,000 in vehicle damage, might be accompanied by a commensurate reduction in injury claims. But these claims aren't being re-

duced. We don't know exactly why this is the case, but we do know that claims under personal injury protection coverage are dominated by relatively minor injuries such as whiplash that occur in two-vehicle crashes, not by the kinds of serious injuries that ESC can affect by reducing high-speed single-vehicle crashes."

The circumstances of such crashes are relatively rare. A driver has to be losing control at fairly high speed for ESC to activate. It wouldn't activate in anticipation of a fender-bender or other less serious crash, in which sprains and other frequent but comparatively minor injuries occur. So ESC shouldn't have a big influence on injury losses.



"While avoiding loss-of-control crashes apparently won't affect insurance costs across the board, the safety benefits of ESC are obvious," Lund points out. "There's a potential for this technology on all vehicles to save more than 7,000 lives each year by avoiding more than half of all fatal single-vehicle crashes."

(continued from p. 3) exceeding speed limits. This culminated in the 2003 indictment of a vendor who had supplied inaccurate equipment — but not before the use of speed cameras was suspended for a year or more at three sites.

The issues in Great Britain are similar. Is promoting safety a ruse? Is the real goal to raise revenue? Are speed limits set deliberately low to catch more violators and raise more revenue? Media coverage of these and other suspicions prompted the government to issue guidelines for camera deployment, including instructions to paint the cameras bright yellow to avoid complaints of unfairly being ambushed. But this hasn't quelled the opposition. In recent years activists claim to have vandalized or destroyed 600 cameras along British roads.

"It hasn't been easy," Ferguson notes. "Cameras aren't any more popular than any other kind of speed enforcement. But an important lesson is that officials in Victoria and Britain haven't allowed opponents to derail their camera programs. In fact, the programs have been expanded. And the majority of drivers support this policy."

Eighty percent of people surveyed in Victoria in 1991 said they favored using speed cameras, and this level of approval hasn't eroded. It's the same in Great Britain, where 75-80 percent of drivers have favored camera use for years, even as more cameras have been deployed and more tickets issued.

Support isn't as high in the United States, but it's sufficient to support camera programs. Fifty-four percent of people surveyed last year said they favor this approach to curbing speeders. In the District of Columbia, one of the few U.S. jurisdictions to use speed cameras, public support has remained steady at more than 50 percent of motorists despite negative press and even an editorial that dubbed the cameras "frightening" (see *Status Report*, Sept. 14, 2002; on the web at www.iihs.org).

Guidelines from the British program suggest it's important to choose camera locations carefully to retain public trust. When officials running a pilot program in Colorado didn't do this, there was backlash (see *Status Report*, March 11, 2000; on the web at www.iihs.org). It's equally important to spell out why the cameras are being used, tell motorists what the penalties are for violations, and avoid ticketing systems that appear geared to issuing the maximum number of citations.

Potential safety benefits: Measured vehicle speeds on Virginia roads with posted limits from 40 to 55 mph indicate that 20 percent of motorists are going 10 mph or more faster than the limits. On rural and urban interstates in Colorado, nearly 25 percent of vehicles were observed going 80 mph or faster (see *Status Report*, Nov. 22, 2003; on the web at www.iihs.org). The National Highway Traffic Safety Administration says speed is a factor in one-third of all fatal crashes.

"The travel speeds and the deaths could be substantially reduced if officials in U.S. communities catch up with their counterparts elsewhere and deploy speed cameras," Ferguson says.

For a copy of "Controversies and speed cameras: lessons learnt internationally" by A. Delaney et al., write: Publications, Insurance Institute for Highway Safety, 1005 North Glebe Road, Arlington VA 22201, or email publications@iihs.org.

More deaths follow weakening of Florida's motorcycle helmet law

The motorcyclist death rate in Florida has increased about 25 percent, from 31 to almost 39 fatalities per 1,000 crash involvements, since the state weakened its helmet use law in 2000. An estimated 117 deaths could have been prevented during 2001-02 if the law hadn't been changed.

These are the main findings of an Institute study that compared death rates in motorcycle crashes before the law change (1998-99) and after (2001-02). The findings are consistent with a recent federal study of the Florida law and with an earlier study of the effects of the law change conducted by University of Arkansas researchers (see *Status Report*, Aug. 1, 2004; on the web at www.iihs.org).

The law in Florida used to apply to all riders. The weakened law, which took effect in July 2000, exempts riders 21 and older who have at least \$10,000 of medical insurance coverage. Helmet use in Florida was observed at close to 100 percent before the law change but fell to only 53 percent afterward.

The death rate per 1,000 crashes increased not just among adult riders but also among young riders who continue to be covered by the helmet law. Institute vice president and study co-author Anne McCartt says this finding isn't surprising because the law is virtually unenforceable.

"A police officer seldom can tell the age of a rider, so the law can't be enforced by age. And how would an officer know how much medical insurance a rider has unless the officer stops and asks the rider for proof?" McCartt says.

Researchers analyzed data on police-reported crashes from 1998 to 2002. The data were provided by the Florida Department of Highway Safety and Motor Vehicles. Death rates were analyzed before and after the law change. The year 2000 wasn't included because the law change went into effect midway through the year.



Motorcyclist deaths are on the rise across the United States. After declining from the early 1980s until 1997, these deaths began increasing. Almost 3,900 motorcyclists died during 2004, up 89 percent compared with 1997 and 7 percent higher than in 2003.

In recent years more fatally injured cyclists have been 40 or older. These riders accounted for 45 percent of all cyclists killed in 2003, up from 9 percent in 1982.

"What happened in Florida is the same thing we've seen in other states. When the helmet laws are weakened or repealed, the proportion of riders wearing helmets plummets and there's an increase in deaths," McCartt points out. "Some argue that freedom of choice trumps safety, and older riders should be allowed to choose whether or not to wear a helmet. But study after study has shown that this results in more deaths and serious injuries."

A recent evaluation of the Florida law change by the National Highway Traffic Safety Administration (NHTSA) found much the same effect as the Institute's study — an increasing number of cyclist deaths. NHTSA also reported on deaths per 10,000 motorcycle registrations, finding a 21 percent increase in this rate during the two years after the law was changed compared with the two years before.

The agency evaluated the effects of the law change on motorcyclist injuries as well as deaths. The main finding is a huge increase in hospital admissions of cyclists with injuries to the head, brain, and skull. Such injuries went up 82 percent during the 30 months immediately following the law change. The average cost per case of treating these injuries went up from from \$34,518 before the helmet law was weakened to nearly \$40,000 afterward.

"Less than one-quarter of the injured [motorcyclists] would be covered by the \$10,000 medical insurance requirement for those who chose not to use helmets," NHTSA reports.

Earlier NHTSA studies found a 21 percent increase in motorcyclist deaths in Arkansas and an even bigger increase in Texas after these two states weakened their helmet use laws to exempt older riders (see *Status Report*, Jan. 12, 2002; on the web at www.iihs.org). After Louisiana's helmet use law was weakened in 1999, the number of cyclist deaths doubled. This prompted state legislators to reinstate universal coverage last year. When states adopt such coverage for the first time or reinstate it, the results typically have been increasing helmet use and declining motorcyclist deaths.

Now a total of 20 states and the District of Columbia require all motorcycle riders to wear helmets. This compares with 47 states and D.C. in 1975.

For a copy of "Florida's weakened motorcycle helmet law: effects on death rates in motorcycle crashes" by S.Y. Kyrychenko and A.T. McCartt, write Publications, Insurance Institute for Highway Safety, 1005 North Glebe Road, Arlington, VA 22201, or email publications@iihs.org.

Child restraint ratings based on ease of use will continue but NHTSA won't rate crash performance

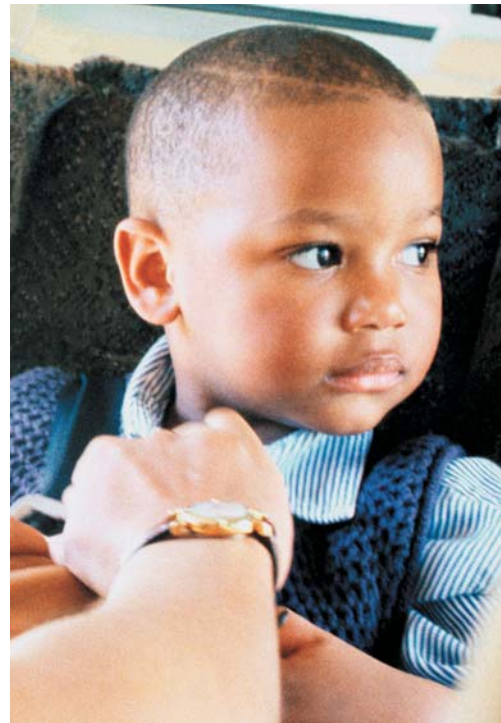
Responding to a mandate from Congress in 2000, the National Highway Traffic Safety Administration (NHTSA) is in the fourth year of rating child restraints based on comparative ease of use. The idea is to help parents find and use the most appropriate restraints. Seventy-four of the 92 restraints rated this year earned As, 13 got Bs, and the other 5 earned mixed scores of As and Bs.

The Transportation Recall Enhancement, Accountability, and Documentation Act of 2000 also directed NHTSA to explore ratings based on comparative restraint performance in dynamic tests. However, the agency has decided not to pursue such ratings.

"This decision makes sense," says Susan Ferguson, Institute senior vice president for research, pointing to numerous studies indicating that when child restraints are used correctly they do a good job. "In real-world crashes, child restraints seem to be doing a good job. The problem is that children don't always ride in the restraints. Hopefully, NHTSA's ease-of-use ratings are helping parents choose restraints they'll actually put their children in." To access these ratings go to www.nhtsa.dot.gov/CPS/CSSRating/Index.cfm.

Looking into the idea of dynamic testing, NHTSA conducted two pilot programs, one of which involved 30 mph sled tests to compare how well child restraints protect kids. The other program expanded frontal New Car Assessment Program (NCAP) crash tests by putting child restraints in the back seats to compare how well the vehicles being tested would protect children who are properly restrained.

The sled tests didn't reveal any significant differences, NHTSA says. Every restraint would earn a high performance rating. Another problem with ratings based on dynamic performance is the relatively short shelf life of child restraints. New models replace old ones every six to eight months. With such quick rotation, it's unlikely that consumers would get the safety performance ratings in time to help decide which restraint to purchase.



As NHTSA scraps sled testing for consumer information, officials say they'll continue to look at data from frontal NCAP tests of vehicles with properly restrained dummies representing 1-year-old, 6-year-old, and 10-year-old children positioned in back seats. NHTSA officials say they'll decide later whether these data could provide consumers with any useful comparisons about how well vehicles protect children in restraints.

"The agency's message is that all of these restraints work. The issue is how easy or difficult it is for parents and other adults to install and use the seats correctly," Ferguson says (see *Status Report*, June 11, 2003; on the web at www.iihs.org). The latest NHTSA surveys indicate a recent decline in the proportion of children riding in infant or child seats. The largest drop occurred among children 4 to 7 years old. Seventy-three percent of children this age were riding restrained in 2004, down from 83 percent in 2002.

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HADDON FELLOWSHIP IN INJURY PREVENTION at the Johns Hopkins Bloomberg School of Public Health, now in its 20th year, is accepting applications from doctoral candidates for fall 2006. For more information or to apply, contact Susan P. Baker (sbaker@jhsph.edu). The fellowship was endowed with contributions from the Institute's member insurers to honor William Haddon, Jr., M.D., president of the Institute from 1969 to 1985.

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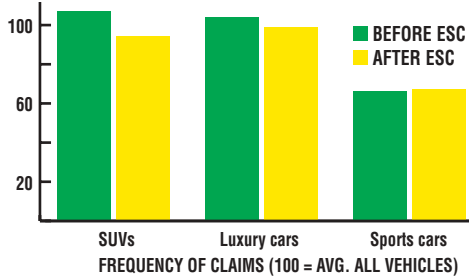
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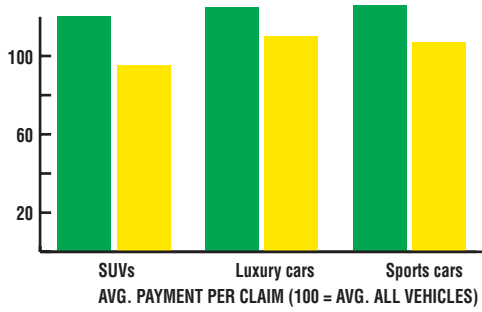
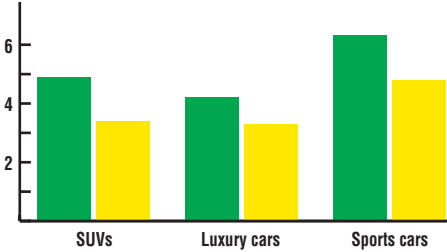
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RELATIVE COLLISION COVERAGE LOSSES BEFORE AND AFTER STANDARD ESC



PERCENTAGE OF COLLISION CLAIMS THAT WERE \$20,000 OR MORE BEFORE AND AFTER STANDARD ESC



RELATIVE PROPERTY DAMAGE LIABILITY AND PERSONAL INJURY PROTECTION LOSSES BEFORE AND AFTER STANDARD ESC

