Consumers Union
Nonprofit Publisher of Consumer Reports

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Comments of Consumers Union of US
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Federal Motor Vehicle Safety Standards;
Electronic Stability Control Systems

Executive Summary

While Consumers Union welcomes this proposal to make ESC standard on all vehicles by 2012 and lauds it as a critical step in protecting consumers from the dangers of vehicle rollover, we do have several recommendations which would strengthen the final rule. Namely:

- Based on our tests of 179 vehicles with ESC, we know that not all systems are created equal. We recommend that NHTSA write the standard to be modeled after the systems that we have found to be the best performers, specifically those that are very evident and intrusive during "at the limit" testing, but not so intrusive during everyday driving.

- CU recommends that NHTSA require uniformity in what the electronic stability control systems are called so consumers know what to ask for and how to

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identify accurately a stability control system (see attachment for the confusing array of different names used by manufacturer), and that salespeople be better trained to educate consumers about the value of this system.

- CU also hopes that NHTSA will not suspend its dynamic rollover testing program which we believe provides an important check on ESC and has other related benefits

Introduction

Consumers Union (CU), publisher of *Consumer Reports* (CR), welcomes the opportunity to submit comments to the National Highway Traffic Safety Administration (NHTSA) on the agency's notice of proposed rulemaking (NPRM) on Electronic Stability Control Systems (ESC) and commends NHTSA for this proposal. CU has been a leading voice in testing and advocacy for vehicle safety since CU's founding in 1936 and for improved vehicle stability for more than 2 decades. In a sense, we view this NPRM as a culmination of our efforts, and those of many others, in working to ensure that manufacturers employ the latest and best possible technology to increase vehicle safety and reduce the chance of vehicle rollover. This proposal goes a long way toward achieving that goal by requiring virtually 100% installation of ESC systems by Model Year (MY) 2012.

The benefits of ESC in keeping a vehicle in control and on its intended path were evident to Consumers Union early on when we put the first ESC-equipped vehicles through CU's series of emergency-handling tests in 1998. At the time, we said that "its [stability control] is a major safety advance with great life-saving potential. We think, like side bags, it should be available in more cars." Since 2001, *Consumer Reports* has been urging automakers and the government to make ESC standard equipment on all sport utility vehicles (SUVs) (See attached March 2001 Consumer Reports article on the Toyota Landcruiser that helped inform this decision), and we began shortly thereafter calling for ESC on all vehicles.

ESC can save lives in many types of vehicle crashes, but has the greatest impact in preventing rollovers. Rollover accidents, while representing only 4% of all crashes, are particularly deadly events. Rollover crashes are responsible for a disproportionate number of fatalities and serious injuries (over 10,000 of the 33,000 fatalities of vehicle occupants in 2004) NHTSA estimates that as many as 10,300 lives could be saved and up to 252,000 injuries prevented annually if all vehicles on the road were equipped with ESC systems. The Insurance Institute for Highway Safety's (IIHS) research shows that ESC could reduce fatal crashes by 43%, and that as many as 10,000 of the 34,000 yearly occupant deaths could be avoided if all vehicles had ESC. These benefits are particularly significant for SUVs, where the NHTSA figures indicate that 67% of all single-vehicle crashes could be prevented.

Consumer's Union's History of Testing Vehicle Stability

Both NHTSA's history of promised rulemaking, as well as CU's efforts to persuade the agency to either set a vehicle stability standard or test and rate vehicle stability and share the information with consumers, goes back several decades. In 1973, NHTSA announced its intention to consider a stability standard "that would specify minimum performance requirements for the resistance of vehicles to roll over in simulations of extreme driving conditions encountered in attempting to avoid accidents." Unfortunately, NHTSA never set such a standard, despite considering the rollover issue on and off for the next 31 years.

In 1988, following the testing CU conducted on the 1988 Suzuki Samurai (visit **www.ConsumerReports.org/suzukilawsuit** for more information), the organization submitted a petition to NHTSA urging the adoption of a minimum stability standard to protect against unreasonable risk of rollover in all vehicles. The agency said at the time that the petition was "consistent with the Agency's steps to address the rollover problem." But NHTSA backed away from setting such a standard. In fact, in 1994 NHTSA halted rulemaking on a universal minimum-stability standard, concluding that a standard applicable to all vehicles would require the redesign of nearly all SUVs, vans

and pick-up trucks -- at an unacceptably high cost.

In 1996, when CU tested a 1996 Isuzu Trooper, a 1995 Trooper, and its "twin" vehicle, the 1996 Acura SLX, all three SUVs tipped up severely on two wheels during the CU emergency avoidance maneuver. We reported these CU's test results to readers of *Consumer Reports*, and stated that, in our expert judgment, the vehicle deserved a rating of "Not Acceptable."

Also in 1996, in conjunction with our testing on the Trooper, Consumers Union once again petitioned NHTSA, this time asking for the development of a consumer information program that would produce meaningful, comparative data on the rollover characteristics of different makes and models of SUVs and be made available to consumers. NHTSA granted CU's petition for a consumer information program, calling CU a "welcome partner" in the quest for improved rollover safety.

Unfortunately, NHTSA took little further action, except to adopt a static stability factor rating system, which CU believed to be insufficient in evaluating stability. Then, in 2000, a series of fatalities resulted from tires failures at high speed – primarily involving Firestone tires mounted on Ford SUVs, propelled the agency into the news. After a series of high profile hearings before Congressional committees at which the NHTSA administrator, head of Ford Motor Company, Consumers Union, Public Citizen and others testified. Congress took swift legislative action, passing the Transportation Recall Enhancement, Accountability, and Documentation (TREAD) Act in the fall of 2000. The legislation delegated new rulemaking authority to the National Highway Traffic Safety Administration (NHTSA) and mandated that the agency, among other rulemaking responsibilities, develop a dynamic test for a rollover consumer information rating program, which NHTSA had resisted doing previously.

After the enactment of TREAD, NHTSA began using a "fishhook" maneuver to evaluate vehicle rollover resistance. The results of the fishhook test were combined with Static Stability Factor, to arrive at rollover consumer information ratings, which are currently available to consumers on NHTSA's website, www.nhtsa.dot.gov, and published in

Consumer Reports magazine as well as at ConsumerReportsOnline.org. We had also asked in our comments for NHTSA to institute a handling test that would deter auto manufacturers from compromising their vehicle designs to pass the fishhook test by fitting the vehicle with low lateral grip tires. NHTSA has yet to institute such handling tests, to the detriment of consumer safety, in our view.

Finally, in 2005, Congress passed SAFETEA LU, (The Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users of 2005). Section 10301 of the new law called upon NHTSA to "establish performance criteria to reduce the occurrence of rollovers consistent with stability enhancing technologies" and to "issue a proposed rule by October 13, 2006 and a final rule by April 1, 2009."

Rollover Resistance Standard Long Needed, But Never Required By NHTSA

While CU has asked for and certainly supported a consumer information program, Consumers Union has also urged NHTSA to develop a standard for rollover resistance. A standard would ensure that no vehicle could be sold that did not meet a minimum performance standard for rollover resistance.

There is public support for a rollover resistance standard. According to a Louis Harris poll commissioned by Advocates for Highway and Auto Safety several years ago, 85 percent of Americans support a federal minimum standard for rollover prevention.

While full implementation of ESC will act to reduce many of the rollover hazards drivers face, the rule is not slated to go into full effect until for MY 2012. (CU believes that timeline is too long and that is discussed in more detail below) . Many vehicles on the road, new and old, would have provided consumers with a far greater margin of safety had they been subject to a minimum rollover resistance standard. What we have today, instead, is a consumer information program that involves testing vehicles and publishing comparative vehicle rollover resistance ratings, which provides valuable information that unfortunately is not as user-friendly as it ought to be.

In the interim period between today and full implementation of this rulemaking, CU will

continue our current practice of considering any vehicle that tips up in NHTSA's fishhook maneuver test as falling below the minimum standard for rollover resistance. *Consumer Reports* – which currently tests over 80 vehicles each year - will not recommend any vehicle that tips up in NHTSA's fishhook test.

General Comments on the Proposed Rule for Electronic Stability Control Systems

Electronic Stability Control has the potential to prevent more deaths and injuries from motor-vehicle accidents than any safety feature since the safety belt. As good as that sounds, *Consumer Reports'* testing has shown that all ESC systems are not created equal. Some perform better than others.

ESC works through sensors that monitor the steering angle and yaw angle of the vehicle. If the ESC system senses that a vehicle is sliding out of control in a turn, it selectively applies the brake to the appropriate wheel to help keep the vehicle on its intended course.

All major automakers offer ESC on at least some of their models, marketed under a variety of names, such as AdvanceTrac or Vehicle Dynamic Control. As with most new safety technologies, manufacturers have tended to offer ESC first on their premium models, but it's becoming increasingly available on moderately priced vehicles. For 2007, the vast majority of SUVs have standard ESC; while worthwhile for all vehicles, ESC is of particular importance for SUVs because it can significantly reduce the chance of a rollover accident in these high-center-of-gravity vehicles.

Since 1998, CU has tested 179 vehicles with ESC. We have found that the best systems act decisively, yet don't kick in prematurely. Others can be slow to react, help only in certain situations, or interfere too often in normal driving. *Consumer Reports* has found that, over time, ESC programming has improved significantly on some vehicles.

The calibrations of the systems in the vehicles we have tested have run the gamut from being not very intrusive to being very intrusive. Based on our testing, CU believes that

for most vehicles the design and calibration of these systems should result in their being intrusive at the point where the vehicle may go out of control—at which point ESC should come in quickly and firmly to slow the vehicle down as much as possible and bring the vehicle back into line. For the more sporty vehicles, - this can be more progressive at the limit so as not to reduce driver enjoyment.

In the best-performing vehicles we have tested, the stability control system is very evident and intrusive during our “at the limit” track testing, but only intervened very occasionally when driving on the public roads. Therefore, we recommend that NHTSA write the standard to be modeled after the systems that we have found to be the best performers, namely those that are very evident and intrusive during “at the limit” testing but not so intrusive during everyday driving.

We also believe the calibration should be adjusted to match the type of vehicle for which it is being developed. A minivan should have a more intrusive system than a sports sedan, for example, so that they complement vehicle and driver characteristics.

CU has learned from our testing that stability control greatly reduces chances of vehicles getting into a situation where they may tip up. This increased stability, and the fact that it keeps the vehicle going forward with limited yaw angle, also allows the primary safety systems such as seat belts and airbags to do their job in the event that the vehicle strikes another object. However, we have also found that the presence of a stability control system is not a panacea to prevent poor-handling vehicles from tipping up in our testing. Indeed, we have seen two cases where it definitely improved the stability of the vehicles, but did not prevent tip ups in our tests.

Our auto test division purchases many vehicles each year for testing and we do so in the same way that every consumer buys a car – we go to the dealership and bargain for a vehicle with various included options. There are numerous acronyms and proprietary names for stability control systems, which can be very confusing for not only the average consumer but even for our auto test staff.

The average driver might well think that Volvo's "Stability Traction Control" (STC) is a stability control system: it is not. Instead, Volvo's STC is a traction control system and the consumer must opt for the "Dynamic Stability Traction Control" system (DSTC) to get stability control. CU recommends NHTSA require uniformity in how the auto makers describe what this rulemaking describes as "electronic stability control systems" so that consumers know what to ask for and how to identify these systems accurately. Together with SAE, CU recommends the nomenclature "ESC" - Electronic Stability Control.

CU's auto buyers also find that many dealership sales staff are also not fully aware of what a stability system does or if they should promote it to car buyers. CU automotive staff has had similar experiences trying to find and purchase vehicles with ABS brakes, and although ABS is now a commonly used term, the sales staff often do not stock vehicles with ABS, and so try to push consumers to buy vehicles without it.

CU believes that drivers are better off with some form of ESC on any car. For a good indicator of a vehicle's overall performance, we urge consumers to consult our ratings for ESC-equipped vehicles that performed well in our emergency-handling and avoidance maneuver tests at www.consumerreports.org.

Finally, we must stress that ESC is only one part of what contributes to safe handling. Factors such as suspension, center of gravity, brakes, weight distribution, and tires all have a dramatic effect on performance and make the need for ESC much greater for some vehicles than others. For SUVs, ESC brings important benefits, namely preventing a vehicle from getting into a situation that might lead to a rollover.

Recommendations

Several years ago, Consumers Union testified before Congress on auto safety and among the issues we addressed was electronic stability control. In preparation for that testimony, our staff developed the following five recommendations. They remain pertinent today:

1. ESC systems should be calibrated to come on quickly and firmly after the system senses any slide condition.
2. Stability control systems should be standard on all vehicles, especially SUVs.
3. The brake lights should illuminate when stability control is activating to warn motorists behind the vehicle of a slippery surface and a slowing vehicle.
4. The industry should implement common terminology for stability control systems so that consumers can compare vehicle choices without confusion.
5. The industry and auto dealers should provide their sales staffs with better training and information about the benefits of ABS and stability control systems so they can better and more accurately advise the consumer.

Specific Concerns about NHTSA's Electronic Stability Control Systems Proposal

NHTSA's Did Not Consult CU or Any Other Independent Group Prior To Issuance of NRPM

This proposal for electronic stability control is replete with references to 2004 and 2005 "presentations" given to NHTSA engineers and other officials by the auto industry trade association, the Alliance of Automobile Manufacturers –- and NHTSA has clearly relied heavily on these tests, presentations and data in developing this NPRM. CU finds this worrying because the Alliance represents the industry position only. It would have been beneficial and wise, we believe, for the government's auto safety agency to seek out other perspectives, including consumer perspectives, in developing this proposed rule.

Moreover, we know that the vehicles the Alliance receives and tests are specially prepared and may not truly represent what the consumer buys. Moreover, with 179 ESC equipped vehicles tested, CU may well have evaluated many more different vehicles with ESC than the Alliance. We have written about our testing extensively in *Consumer Reports* and testified about our findings before Congress alongside the NHTSA administrator.

Yet, CU was never asked for input into the drafting of this proposal, despite our reputation among consumers for providing unbiased evaluations of vehicles each year and CU's policy of accepting no advertising or funding from industry.

We are equally concerned and disappointed that no other independent organization was even asked for comments or considerations prior to the release of this NPRM.

Date for full implementation should be moved ahead two years

CU believes that the date of 2012 for 100% implementation of the NPRM is too long – a 100% implementation date of 2010 is more appropriate. Both GM and Ford have said they will make ESC standard in all their products by MY 2010, and we believe Toyota, Honda, Nissan and others will beat even a 2010 date. Many of the smaller cars sold in Europe, such as the Ford Focus, come with ESC, whereas the same model sold in the United States does not. That is easily addressed, and American consumers will be safer as a result. Indeed, we hasten to point out that ESC was available on the Focus in 2000, 2001 and 2002 but is no longer offered on that vehicle.

We believe a 2010 target date would bring this important safety feature to the whole market quicker and feel it is feasible for the auto manufacturers to comply. In fact, many automakers have already said they will make ESC standard by this date. We would also like to see the phase-in period be more vehicle-type specific, first requiring ESC on all SUVs, followed by small cars. Small cars are more often driven by young, less experienced drivers who would benefit greatly from stability control. Lastly, ESC could be made standard on the family and upscale sedans that are usually driven by older, more experienced drivers.

Steering Response Time Not Aggressive Enough

CU believes the steering response that is geared by the 1.07 seconds (minimum of 6 feet of the center line) of the first steering turn is not aggressive enough and may allow manufacturers to fit low grip tires and slow steering to improve performance in the

certification test. Manufacturers are always looking to reduce costs. This may allow them to develop a cheaper, less sophisticated system which may pass all the requirements but not be as effective in saving lives. CU would welcome the opportunity to review the video footage of all the testing considered for this NPRM (particularly the Sine and Dwell test) to assess if the 1.07 seconds (6 feet movement) does produce the instability that causes a spin out.

Only Oversteer is Addressed by the NPRM, Not Understeer

The NPRM dynamic test only assesses the ESC's ability to cure an oversteer situation and does not assess any ability to reduce understeer. CU would be interested in knowing what percentage of fatalities are caused by understeer versus oversteer. While oversteer is a much more dangerous situation than understeer, CU still believes that understeer is worth addressing. We have tested more and more vehicles that can prevent the driver from steering the vehicle when the system activates, including include: The Jeep Compass, Jeep Wrangler, Audi Q7, older calibrations of Volvo XC90 and Ford Explorer, and others. We recognize that a vehicle driving straight may be less likely to roll over, but we think the systems should be calibrated to still allow drivers to steer clear of an accident.

We also recommend that NHTSA look at the possible increased likelihood of a tip-up with an overly aggressive system on SUVs. We encourage NHTSA, therefore, to continue its Rollover Rating dynamic test in the future and reject any pressure to abandon this critical testing simply because vehicles are equipped with ESC. As indicated above, we have concerns about the 1.07 second criteria as check test for low lateral adhesion tires and slow steering response vehicles.

CU Supports Illumination of Brake Lights When ESC is In Operation

Our engineers have tested several vehicles that illuminate the brake lights when ESC is in operation and feel this is an excellent addition to the ESC activation. This brake light illumination warns the trailing vehicle that the vehicle in front is slowing, while also providing warning that the surface ahead is slippery. We feel this can only add to the

safety benefits ESC will provide to all road users. If this requires a change to braking (FMVSS 105) or lighting standards (FMVSS 108), we urge NHTSA to undertake to make those changes.

CU Supports Visual or Audible Warnings to Drivers When ESC is Operative

We understand that NHTSA has data on visual and audible warnings to drivers that ESC has been activated, suggesting these warnings provide little or no safety benefit. Although this research appears to be well conducted, we disagree with its conclusions. Our own testing resulted in our engineers finding that these warnings were helpful and alerted them earlier in their driving to the possibility of slippery conditions before an emergency situation may occur, causing them to slow down in anticipation of a hazard. This is a safety benefit our engineers experienced firsthand, and we ask that NHTSA either include this requirement in the rulemaking or at least conduct more research before it is excluded from the rulemaking.

We also recommend that the visual warning should be in the instrument cluster where it will be more prominent, and not in the center stack with the radio and HVAC system controls.

Disabling ESC

We recognize that it is important for drivers to be able to disable ESC during those rare occasions when they are trying to get out of snow or mud or a scenario where ESC might hinder their forward movement. However, we are concerned that once ESC has been disabled, the proposal doesn't call for the technology to be operative again unless the ignition is turned off and then turned on again. We are concerned that people may well forget to go through this step, and therefore will resume driving without ESC operating. We recommend instead that NHTSA require that once it has been disabled, ESC come into operation again after the vehicle has reached 25 mph. This will provide drivers with the protection they need from the ESC if they forget to turn the ignition off and on again after disabling ESC.

For some sporty models, a separate mode could be provided, perhaps activated with a switch, which could permit the system to be turned off completely for race track use.

Conclusion

We welcome this rulemaking and the adoption of electronic stability control, a truly groundbreaking safety technology, as standard equipment on all vehicles. It is a universal truth in the field of product safety that improving the product design and reducing the hazard – when the safety innovation is economically and technologically feasible - will save far more lives than attempting to change consumer behavior. The hazards from loss of vehicle control and rollover are no exception: reducing death and serious injury from loss of vehicle control and rollover will be best achieved by using readily available technology – in this case electronic stability control devices – rather than warning the consumer to alter his or her behavior to accommodate a dangerous design. Labels don't help much when you are confronted by a sudden emergency.

For years the auto industry has been trying to convince the public that if only drivers were more *careful* their SUVs perhaps wouldn't roll over so readily. We hope those days are a thing of the past and we welcome this NPRM. Though we have concerns about some aspects of the proposal, which we have discussed herein, we nevertheless embrace the rule to require ESC on all vehicles as one that is guaranteed to prevent countless injuries and save many lives.

November 17, 2006

Respectfully submitted,

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Attachments

Attachment 1

Different names for stability control by manufacturer

Manufacturer	Stability Control Name
Acura	Vehicle Stability Assist (VSA)
Audi	Electronic Stability Program (ESP)
BMW	Dynamic Stability Control (DSC)
Buick	StabiliTrak
Cadillac	StabiliTrak
Chevrolet	Active Handling (cars); StabiliTrak (SUVs)
Chrysler	Electronic Stability Program (ESP)
Dodge	Electronic Stability Program (ESP)
Ford	AdvanceTrac
GMC	StabiliTrak
Honda	Vehicle Stability Assist (VSA)
Hummer	StabiliTrak
Hyundai	Electronic Stability Program (ESP)
Infiniti	Vehicle Dynamic Control (VDC)
Jaguar	Dynamic Stability Control (DSC)
Jeep	Electronic Stability Program (ESP)
Kia	Electronic Stability Program (ESP)
Land Rover	Dynamic Stability Control (DSC)
Lexus	Vehicle Stability Control (VSC)
Lincoln	AdvanceTrac
Mazda	Dynamic Stability Control (DSC)
Mercedes-Benz	Electronic Stability Program (ESP)
Mercury	AdvanceTrac
Mini	Dynamic Stability Control (DSC)
Mitsubishi	Mitsubishi Active Skid and Traction Control System (M-ASTC)
Nissan	Vehicle Dynamic Control (VDC)
Pontiac	StabiliTrak
Porsche	Porsche Stability Management (PSM)
Saab	Electronic Stability Program (ESP)
Saturn	StabiliTrak
Scion	Vehicle Stability Control (VSC)
Subaru	Vehicle Dynamics Control (VDC)
Suzuki	Electronic Stability Program (ESP)
Toyota	Vehicle Stability Control (VSC)
Volkswagen	Electronic Stability Program (ESP)
Volvo	Dynamic Stability Traction Control (DSTC)

Attachment 2

Consumer Reports Article

Automobiles

A safer Toyota Land Cruiser

In recent years, the *Toyota Land Cruiser* has been reliable, comfortable, and quiet, scoring highly in most of our tests. But we couldn't recommend this large SUV because of its poor performance in our emergency-avoidance test, which simulates the vehicle's ability to steer around an obstacle in the road. Our test vehicle tended to spin out too easily in that test.

A safety feature that is now standard on most *Toyota* SUVs changes the picture. We can now add the *Toyota Land Cruiser* to our "recommended" list.

The feature that has made a significant difference in the *Land Cruiser* is its "Vehicle Skid Control" system, a sophisticated electronic technology that helps keep vehicles on course during emergency maneuvers or on slippery roads by selectively applying the brakes in short bursts to one or more wheels, and by reducing engine power.

Our 2001 model *Land Cruiser*, roughly $55,000, was still clumsy and somewhat difficult to maneuver through the cone-lined course, as is common with large SUVs. But now it performs somewhat better than the previously tested model and proved secure enough to earn a score of fair for this test, up from poor.

We commend Toyota for outfitting virtually its entire line of SUVs (with the exception of the *RAV4*) with a Vehicle Skid Control system as standard equipment. Toyota, BMW, and Mercedes are the first automakers to do this.