
Viewpoint

Why the United States lags in auto safety and lessons it can import

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Abstract The United States has slipped in recent decades from its role of leadership in combating road crash injuries. The early promise of the country's approach to vehicle safety regulation, adopted by law in 1966, has suffered because of decades of regulatory inertia caused by antiregulatory government policies, industry obstructionism, and failure to set meaningful goals. Meanwhile, other industrial nations have vastly outpaced the United States in reducing crash deaths and injuries. The Obama administration is thus challenged to learn from other nations' successes while reestablishing the US presence as a vigorous proponent of effective crash injury reduction strategies. It can best accomplish this by crafting approaches and objectives that reduce motor vehicle use, reduce harmful disparities within the US vehicle population, and reduce motor vehicle travel speeds.

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Introduction

US efforts to substantially reduce fatalities and severe injuries from motor vehicle crashes have long been hamstrung by regulatory indifference to that mission. Since the 1980 Reagan administration decision to do away with the Research Safety Vehicle program,¹ the federal government has shown little interest in adopting and pursuing initiatives to reduce fatal and severe injury on the highways. Owing to the Bush Administration's unrestrained 'free market' ideology (which also contributed to severe dislocations in the US and the world's economies) the 1966 federal program to anticipate, identify, and minimize motor-vehicle hazards has too often fallen short of the mark, thus perpetuating a state of regulatory timidity.

In contrast, programs to control road injuries in many developed countries have been markedly effective.

Recent developments in the United States, chief among them the government's handling of a 'sudden unintended acceleration' defect in tens of millions of Toyota vehicles, suggest that the Obama administration is aware of the seriousness of the country's highway crash injury problem and intends to toughen the regulatory process in the spirit of the 1966 legislation. The stated mission of that foundational public-health law was to address aggressively what then-President Lyndon Johnson termed, in a message to Congress, 'the gruesome reality' of vast human harm on the nation's highways.²

The law directs the government, through the Department of Transportation's National Highway Traffic Safety Administration (NHTSA), to set vehicle safety-performance standards, force recall and correction of defective vehicles, and undertake research to advance vehicle hazard reduction. But Congress has never given the agency adequate budget or the statutory wherewithal to hold its own against industry pressures to weaken its regulatory impact. And neither NHTSA nor Congress has articulated clear, quantitative goals and policies for achieving road injury reduction.

Thus the Obama government inherits an auto-safety regulatory apparatus that is severely disabled. Invigorating it sufficiently to achieve and maintain important reductions in US highway crash injuries will be difficult to accomplish.

US Failures

Auto crash injury control in the United States has not been successful, whether measured in terms of the continuing death toll or against accomplishments in other comparably developed nations. Until very recently, road deaths in the United States exceeded 40 000 in every year but 1992. Deaths fell substantially in 2008 and 2009, but solely as a result of the economic downturn that began in late 2007.³ Bad times mean less driving and therefore less exposure to highway crashes. Unemployment takes people off the roads. Limiting non-essential driving does the same – teens get less use of the family car, families pare down from two cars to one, people think twice before setting out on long non-essential road trips, alcohol abusers

do their drinking at home. High gas prices – high at least by US standards – have added further to downward pressure on driving.

If and when the economy rights itself, the US road death toll can be expected to reach at least 40 000 a year as driving increases and exposure to injury increases with it. As the human damage grows, so will its economic cost. Motor vehicle crashes cost the US economy nearly US\$300 billion a year. More than half of this comprises direct costs stemming from deaths and injuries, and includes a large addition to health-care expenditures. Non-direct costs exceed \$3.5 million per fatality, mostly from lost years of life and lost productivity. Costs associated with the most severe, disabling non-fatal crash injuries – such as brain damage, paraplegia, quadriplegia, and loss of limbs, which fall heaviest on children and young adults – average upwards of \$2.5 million per injury.⁴ (President Obama has made control of health-care expenditures a top priority; substantial reductions in such expenditures would accrue from real progress in reducing motor vehicle crash trauma in America.)

Once considered the world's leader in road safety progress, the United States has long since forfeited that claim. The United States trails well behind other comparable developed nations in controlling the occurrence of highway crash injuries. According to World Health Organization and International Transport Forum statistics, in recent years the US highway fatality rate has been at least double those of Germany, Italy, Israel, the United Kingdom, Sweden, Switzerland, and Japan.⁵ Among factors distinguishing those countries from the United States is their adoption of specific objectives for road death reduction – goals stated in quantitative terms and closely monitored for implementation and effectiveness. Sweden, historically a leader in auto safety initiatives, has declared an 'over-arching goal' for its 'Vision Zero' road safety program: 'to have no deaths or severe injuries as a result of traffic accidents'. For the short term, Sweden's goal is to reduce deaths by half and serious injuries by 25 per cent no later than 2020. In the United States, a similar goal would require cutting crash fatalities by nearly 20 000 within the next decade – impossible to accomplish under current circumstances.⁶

The United States lags behind comparable nations in many key areas.⁵ About one-third of US road deaths are alcohol-related, in contrast to the United Kingdom (17 per cent), Germany (12 per cent), Sweden (20 per cent), and Japan (8 per cent), all of which have

national drunk-driving laws. The United States lacks a national law, although all 50 American states have statutes setting illegal blood alcohol concentration levels for drivers. The levels are considerably more tolerant than in many countries – 0.08 g/dL versus 0.05 g/dL – and enforcement and perception of enforcement vary by area and time of day. Seat belt and motorcycle helmet use in the United States, also mandated by state rather than national laws, continues to be less than in comparable countries.

The powerful relationship between higher speeds, the incidence of crashes, and the severity of crash injuries has motivated vigorous, comprehensive ‘speed calming’ strategies in those countries as well, but not in the United States. According to a detailed study by Israeli researchers, as many as 20 000 deaths a year could be resulting from the US failure to adopt speed calming approaches that have substantially reduced speed-related crash injuries in the United Kingdom, Australia, France, and other countries.⁷ Because a 5 per cent increase in average traffic speed leads to a roughly 10 per cent increase in injurious crashes and a 20 per cent increase in fatal crashes, they conclude that their estimates are not unreasonable in light of US policies that have raised rather than lowered legal travel speeds on the nation’s highways in recent decades.⁸

No country has taken steps to regulate the designed-in speed capabilities of motor vehicles, that is, setting them at ceilings – not to exceed maximum posted speed limits on expressways by more than a narrow margin. Today, many vehicles’ maximum travel speeds exceed 100 mph. ‘New vehicle technologies assist automatic compliance with speed’, according to a comprehensive WHO review of the speed-control needs. These technologies include limitations of designed-in speed capabilities. ‘Their further development by the industry should be encouraged’, the review concludes.⁹

The Obama administration has made a start toward dealing aggressively with the US road injury problem. It acted on the widely publicized motor vehicle hazard issue that its predecessor ignored. The Toyota *sudden unintended acceleration* defect (SUA) causes a vehicle to race forward suddenly, rapidly gaining speed despite the driver’s best effort to slow it. Convincing reports of the phenomenon occurring in several Toyota models had been piling up at NHTSA for years before 2010, but the agency continued to accept the manufacturer’s assertion that, in general, the cause was not a vehicle

malfunction but ‘driver error’ – a catch-all explanation put forward when an auto company wants to avoid responsibility for a product’s inherently hazardous performance. NHTSA and Toyota continued to blame drivers for most SUA incidents even after documentation belatedly came to light of a 2000 recall by the company in the United Kingdom involving Lexus models whose misdesigned floor mats apparently caused accelerators to stick in the open position. Toyota had failed to advise NHTSA of the UK recall.

In service bulletins to its US dealers in 2007 and 2008, Toyota warned about the floor mat problem, but failed to notify owners of the defective cars or to issue a recall. NHTSA received the service bulletins but ignored them. It also ignored mounting evidence of the SUA phenomenon that was surfacing in lawsuits brought against Toyota by vehicle occupants injured in SUA crashes. Toyota was pursuing a strategy of settling the most damaging of these cases by paying plaintiffs in exchange for confidentiality agreements preventing publication of the settlements.

The fatal crash of a Lexus in San Diego in August 2009 put a harsh national spotlight on the Toyota SUA issue. The driver was an off-duty policeman. He and his family had just picked up the car at a dealership. As the car sped out of control on a major freeway, one of the occupants called 911 on his cell phone to seek help. As the car accelerated to more than 100 miles per hour he described the driver’s frantic efforts to control it. The car ran off the road and crashed, killing all four occupants. When released shortly thereafter, the recording of the 911 call was seen as a convincing rebuttal to Toyota’s ‘driver error’ causation claims for SUA incidents.

Earlier in the year, the White House had appointed a former Congressman, Ray LaHood, to be Transportation Secretary. LaHood, who has repeatedly pledged to make transport safety his top priority, showed an early interest in auto safety by scheduling a series of public meetings to focus attention on the crash-causation role of driver distraction associated with cell phones and other in-vehicle communications technologies, and to develop policies and regulations to reduce or eliminate driver distraction sources. His interest followed revelations that the Bush administration had withheld from the public a 2003 report finding strong relationships between cell phone use by drivers and crash occurrences and urging government intervention to impose countermeasures. At the

conclusion of the ‘driver distraction’ meetings, LaHood made a commitment to follow up with a series of regulatory and policy countermeasures.

Faced with the Toyota SUA issue, LaHood adopted a proactive stance. According to subsequent government reports, media coverage, and Toyota statements, he and his staff at the NHTSA leaned hard on the company to carry out SUA-related recalls – so hard, in fact, that at one point the company closed down manufacture and sale of some new models because parts were lacking to repair the defect. LaHood sent an emissary to Japan to jawbone Toyota’s top staff into going forward with recalls of SUA vehicles and to threaten a lawsuit if delay continued. He imposed a \$16.4 million fine – modest by any measure but the most that could be levied under present laws – against Toyota for covering up the defect and dragging its feet on the recall. (In an implicit admission of the cover-up, the company accepted the fine without objection.)

Over the ensuing months, House and Senate committees held hearings on the Toyota SUA defect. Members were strongly critical of the company’s failure to take prompt recall action and generally favorable toward the aggressive role assumed by LaHood’s department. Nearly 100 deaths reportedly have been caused by the defect. Hundreds of product-liability and class action lawsuits have been filed in US courts, seeking some \$10 billion in damages.

Recalls worldwide by Toyota now cover tens of millions of vehicles. Yet as of this writing, the cause of the SUA phenomenon is still unclear. Toyota has variously blamed it on improper floor mat designs and a ‘sticky pedal’ defect, while denying that it involves electronic glitches. But some of its recalled cars have continued to experience SUA after correction of those floor mat and pedal problems. A growing body of independent experts believes the real culprit is a malfunction within the vehicles’ electronic control system. The ‘drive by wire’ technology used in today’s automobiles is, they say, fraught with complexity that can lead to on-road failures, such as SUA. Anticipating and detecting such failure is difficult without electro-engineering expertise and testing procedures that NHTSA’s staff does not now possess and cannot afford to acquire.

In the past, auto safety messes that drew Congressional attention – most recently, the furor in the early 2000s over rollovers of Ford Explorer SUVs equipped with defective Firestone tires – resulted in

minimal remedial legislation and no meaningful increases in the agency's budget. In their aftermath, DOT and NHTSA went back to 'business as usual' in their lethargic approach to auto hazard issues. If the Obama administration is to avoid that kind of dismal post-script to the Toyota SUA mess, it must move even more aggressively in the direction charted by LaHood.

Fines: NHTSA must persuade Congress to let it impose realistically large fines on misbehaving manufacturers and to bring criminal charges against top executives. (Less than a year before the Toyota civil fine of \$16.4 million was levied, a drug company, Pfizer, paid \$2.3 billion in US government fines, including \$1.3 billion in criminal fines, for creating a health hazard by its unlawful marketing of off-label use of its drugs.)

Notification: Congress must replace NHTSA's weak defect notification provisions, which give manufacturers wide latitude to hide safety hazards and avoid recalls, with tough proactive measures that require the agency to monitor indicators such as consumer complaints, manufacturer service bulletins, product lawsuits, and recalls in foreign markets. It must publicize evidence of defects that are discovered in the monitoring process, and move fast in mandating appropriate recalls.

Resources: Congress must give NHTSA the resources – expertise and funds – to identify the hazardous 'unintended consequences' of modern vehicle technology, such as the 'drive by wire' systems that may have caused the Toyota SUA defect, and to act appropriately to counter them before they proliferate.

NHTSA itself can also be doing more to reduce crash injuries under its present authority. Maybe it is moving in that direction under the Obama administration. In mid-2009, it issued an improved roof crush standard that had been delayed for years by the Bush administration. Opposed by many auto companies, the new standard more than doubles the forces that a passenger car roof must withstand in a rollover crash. It will reduce roof-crush injuries in rollovers of unstable vehicles, such as large SUVs, and some vans and pickup trucks. Although it falls short of a standard sought by safety advocates because it lacks a dynamic rollover test, it is an important improvement on the industry-dictated regulation that preceded it.¹⁰

Tougher handling of specific vehicle defect recalls and a more vigorous promulgation of standards requiring advanced vehicle safety features are essential short-term countermeasures, but long-range

reductions in road deaths in the US demand approaches, such as 'speed calming,' aimed at controlling the entire vehicle population.

Minimizing vehicle incompatibility is another approach. Vehicles of disparate size, weight, mass, shape, and crash-resistance characteristics share the roadways, and the more pronounced their differences, the more harm their occupants are exposed to in collisions. In the United States, a recent voluntary effort by car companies and an insurance safety group made some progress in developing guidelines to reduce incompatibility. It left much undone, however, when it disbanded last year. The head of the insurance group, which in the past has criticized auto companies for their laggardly approach to safety, blamed NHTSA's lack of interest for the consortium's failure to accomplish more. 'It's unfortunate because the automakers did some important work, and NHTSA's hands-off approach could discourage them from convening such groups in the future', he said.¹¹

More than other countries, United States could reap benefits by reducing hazardous disparities within the vehicle population. Dangerous differences were enhanced by the marketing effort, initiated in America by auto companies in the 1980s and pursued for more than two decades, to sell heavy, unstable SUVs and pickup trucks – a menace both to their own occupants because of their rollover propensities, and to occupants of vehicles they crashed into because of their aggressive mass. (In yet another symptom of regulatory failure, NHTSA took no steps to curtail the manufacture and sale of these lethal vehicles. An estimated 10 000 deaths per year have been associated with rollovers in the United States, principally of SUVs, pickups, and vans.)

In a recent paper, a leading injury epidemiologist analyzed the impact of vehicle disparities on road deaths and injuries and suggested how the passenger car population might be reshaped to reduce human harm and, as a desirable side effect, reduce fuel consumption. Fatalities for 1999–2000 models would have been halved, and fuel use would have been reduced by 16 per cent, if all vehicle weights had been comparable to the weights of lower-size vehicles and all vehicles had crashworthiness features and stability characteristics comparable to those rated highest in those categories. '... more than half the deaths involving passenger cars, vans, and SUVs could have been prevented' by such vehicle modifications, he concluded.¹²

Guideposts for bringing about important reductions in US road crash injuries point to the urgent need for policies and programs

that will set quantified goals, reshape the vehicle population, put a cap on needlessly high road speeds, and reduce exposure to injury by reducing vehicle use. Some of these guideposts are in place in other countries, with resulting reductions in road injuries. In the spirit of its espoused commitment to protecting the nation's health, the Obama administration should adopt policies, set goals, and implement similar programs for road injury reduction. It should be willing to break new ground with innovative strategies that restrain automotive industry excesses, such as the marketing of dangerous SUVs, when they create widespread hazards to highway users.

About the Author

Benjamin Kelley is an expert on motor vehicle hazards, who in retirement, continues to consult on these issues (www.producthazardconsulting.com).

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