



CRASH

In Virginia, private insurers test vehicles for safety. Isn't that the government's job?

BY DOUG CAMPBELL

Even without the painful screams, the sound of screeching tires and busting glass is sickening. On Tuesday, July 24, a compact, pointed sled cruising at 31.1 mph hit a 2007 Ford Explorer carrying two BioSIDs, or “small-stature female side-impact” dummies. The impact, centered just between the driver-side doors, threw the vehicle back 10 feet, shattered the windshield, and violently whipped the seat-belted dummies about the passenger cabin.

For a moment afterward, it was dead silent. Then the lights went up. A polo-shirted man stepped up to the crash scene and quickly began sweeping away the tiny shards of glass. A team of at least 12 engineers descended, pushing computers on wheeled trays. Now it was time to learn the extent of the dummies' injuries.

The venue for this staged accident was the Insurance Institute for Highway Safety's (IIHS) Vehicle Research Center in Ruckersville, Va., just outside of Charlottesville. The VRC, for short, conducts about 70 of these side-impact crashes each year. Each is attended by representatives of the crashed vehicle's manufacturing company, in this case Ford. After all the data are processed, the IIHS will issue a report card of sorts, grading the Explorer on how effectively it protected the dummies. The very best models earn a “Top Safety Pick” designation, a Good Housekeeping Seal of Approval for the automobile industry. Companies often use IIHS-produced video footage of the most successful crashes in their TV commercials.

A “poor” rating, on the other hand, can translate to slumping sales and costly redesigns. This was the case with the Pontiac Transport, a minivan whose poor safety designation in 1997 prompted an overhaul that resulted in the newly dubbed Uplander, which garnered a good rating from the IIHS in 2005. It goes to show the sometimes powerful influence IIHS ratings can have. “There is no question that our ability to do these crash tests and show the differences among vehicles and their different amounts of protection is forcing the automakers to change their designs,” says Adrian Lund, IIHS president.

In the institute's early days, rear-end tests were the staple. A slim minority of vehicles back then were gathering “good” safety ratings. Today, the institute rarely bothers with rear-end tests because the clear majority of vehicles are performing so well on that standard. Instead, it relies on spot checks and data provided by the automakers themselves.

An important thing to understand about the IIHS is that it was created by and still funded by insurance companies. It is a nonprofit, private-sector organization performing functions that one might otherwise assume would be done by the government. It does so perhaps in part because of the goodwill it generates with improving vehicle safety. But it is also true that the insurers who fund the institute see returns on their investments in other ways.

With safer vehicles, claims are reduced. Minimizing losses is obviously useful to insurance firms, in so much as it reduces potential payouts from claims. Even more useful are the data gleaned from IIHS crash tests. With information about the expected severity of injuries — to both vehicle and human bodies — insurers can fine-tune premiums to maximize profits. It is an instance of private-sector initiative in performing a role — improving automobile safety — ordinarily assigned to government.

“We're bullish enough on the outcome of what the institute has done and the data that comes out that it's well worth the investment,” says Dave Skove, an executive with Progressive Insurance who served as IIHS chairman in 2005. Like many insurers, Progressive has a target underwriting profit margin, in its case 4 percent. “We're interested in the margin. So if cars tend to be safer and we can help that, then great.” By extension, it is often in the interest of automobile companies to reveal information about the safety of their products, as positive reviews can have a positive impact on sales. For this reason, automakers are quite cooperative with IIHS' efforts.

Early Days

The Insurance Institute for Highway Safety was born in 1959. Some of the nation's biggest insurers — Allstate, State Farm, and Nationwide among them — initially put their money into research on driver-education programs. After a time, the research produced some surprising findings: Driver-education programs *don't* help reduce crashes among teens, because they tend to help youths get licensed at younger ages. So IIHS leaders decided to take a new approach, turning away from the focus on drivers themselves toward the cars they drive. They recruited William Haddon, the former head of what is now the National Highway and Traffic Safety Administration, to study the safety features of automobiles.

The government first started consumer car crash tests in the late 1970s. Until that time, automakers disputed the notion that “safety sells.” But with the crash data, consumers for the first time could compare vehicle ratings based on objective data. Increasingly, safety features became standard-issue selling points.

For years the institute relied on government data or performed crash tests on a limited basis. But the cavernous building in Ruckersville allowed IIHS researchers to conduct their own tests on a vast scale in a controlled environment. Besides side-impact tests, they perform (with decreasing frequency) rear-end and frontal crashes. The standard barrier that slams into tested vehicles aims to replicate the sort one often finds on the road in the early 21st century; namely, sport-utility vehicles or large trucks. While certainly not perfect stand-ins for real-world crashes, IIHS tests provide objective, easily comparative results that consumers and others can use in making purchasing decisions.

Today, IIHS announcements make headlines the world over. On Aug. 15, for example, came side-impact results for luxury sedans. Acura and Volvo were among the manufacturers claiming the coveted highest ratings, while BMW came out as the worst performer. A BMW spokesman explained to the Associated Press that test results can vary based on a number of factors: “This was one test on one day on one car.”

The side-impact test is IIHS’ biggest. The institute says that side-impact crashes are the most common type of fatal crash in the nation, killing about 9,000 people each year. With its \$14 million annual budget, IIHS can afford about 70 side-impact crashes a year. Its expenses include buying vehicles right off dealer lots. (Though auto firms might be quite happy to provide cars for free, IIHS seeks to ensure that the cars it tests are identical to the cars consumers actually buy.) At the VRC, teams of engineers must be paid, dummies built and refurbished (a fully

instrumented dummy costs about \$125,000), and the antiseptically clean building itself maintained.

Payoff

Insurers pay prorated amounts to keep IIHS running. Membership accounts for about 70 percent of the private passenger insurance market. The IIHS accomplishes a number of goals for insurance companies. Among them is positive PR from nonprofit efforts to reduce traffic fatalities. Another is the pecuniary benefit of all the data captured by the VRC as well as those collected by the institute’s sister organization, the Highway Loss Data Institute (HLDI). Vehicles with side airbags, better stability control, or less susceptibility to crushed bumpers may get discounts when premiums are considered.

The HLDI is a huge trove of valuable information for insurance companies. Basically, participating firms furnished their own loss information, which is then processed and mined by the HLDI, which in turn makes public much of its studies, such as loss rates by vehicle make and model. Insurance firms can use some of the same data to precisely price their premiums.

The weekly, sometimes twice-weekly, side-impact crash is a veritable spectator event. Usually on hand are representatives of various insurance agency claims departments. On the day of the Ford Explorer crash, a group of State Farm adjusters joined engineering students from the nearby University of Virginia. A viewing deck overlooks the crash spot, where a fresh-off-the-lot Explorer has been wheeled into place.

The crash aims to replicate one of the most common accidents: a relatively slow-moving vehicle gliding through an intersection getting hit on the side by a faster-moving car. In the hour before the test, engineers make sure all the sensors are working and the vehicle is properly prepped. The Explorer’s original fluids have been drained with something nonflammable. Its sides are strapped in tape. The

two small-stature female dummies — a driver and a passenger directly behind — have different colors of paint applied to different parts of their bodies. That way, it’s easier after the crash to see where their bodies came into contact with the vehicle. (Females aren’t always tested — the IIHS stable of dummies includes men, women, and children of various sizes. But females are used most often because their injuries tend to be the worst in side-impact crashes, the IIHS says.)

With four minutes to the crash, everybody clears the floor. The stage area is lit by 750,000 watts of light-bulbs. A bay door rises. Two football fields away, a sled sits. The countdown begins, and then the sled begins its short trip, being pulled along on a belt. It sounds like a small aircraft about to take off. It reaches 31.1 mph just before impact, but watching live it seems much faster. Then the crash.

Cameras of both the still and motion variety capture every angle. Images of the crash immediately begin to replay in a loop on TV monitors posted about the hall. The sled hit just where it was supposed to. The dummies are still in their seats, a bit slumped. Paint is visible on airbags where the dummy heads were slapped. Damage to the vehicle will be assessed later. (In a nutshell, it’s totaled.) But information about the extent of the dummies’ injuries is quickly forthcoming: The rear passenger came out virtually unscathed, with good protection for her head and neck, torso, and pelvis and legs. The driver was also in good shape overall, though the pelvis/leg measure earned a “marginal” rating because of the indication that “a fracture of the pelvis would be possible in a crash of this severity.”

Aftermath

The results were not exactly surprising to Ford, a company that has earned more Top Safety Pick designations in the past year than any other automaker. Ford spokesman Dan Jarvis points out that the company’s own tests include

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necessary since it is they and not the poor who save and invest in the innovation-embodied capital formation that lifts the living standards of all. Moreover, high incomes provide both incentive and reward for the entrepreneurs who propel growth. No one need fear that an unequal distribution will condemn them to poverty. The Italian economist Vilfredo Pareto's notion of the "circulation of the elites" assures that. The ceaseless rise and fall of entrepreneurs into and out of the top income bracket means that it will be occupied over time by different people, many of them drawn from the ranks of the poor. The poor replace the rich and the rich the poor in never-ending sequence.

In assuming a high degree of mobility across income groups, Schumpeter may have overlooked an education barrier. He failed to acknowledge that a superior education, increasingly a prerequisite to entrepreneurship and wealth in today's high-tech world, is more affordable by the rich, enabling them and their offspring to stay on top.

Monopolistic firms and monopolistic profits hardly worried Schumpeter. He thought that monopolies, unless protected by government, are short-lived, inherently self-destructing, and require no antitrust legislation. Their high profits attract the very rivals and producers of substitute products that undercut them. For the same reason, he regarded antitrust laws aimed at breaking up large, nonmonopolistic firms as ill-advised. Not only are big firms often more efficient than small ones, but their research and development departments house teams of specialists functioning collectively — and routinely — as an entrepreneur who creates innovations that drive growth. Indeed, the very existence of R&D departments indicates that big firms realize they must continually innovate to stay alive.

Schumpeter's politically unpopular opinions continued into the wartime years of the 1940s. He distrusted Roosevelt, suspecting him of trying to establish a dictatorship. And he had mixed emotions about the Axis nations, Germany and Japan. He despised their military establishments, leaders, and advisors. But he admired the people and cultures of the two countries and feared that the United States would impose punitive reprisals at war's end. Most of all, he saw the United States' wartime ally, the Soviet Union, as its chief long-term foe, and thought

that it would need Germany and Japan to serve as buffers against the communist nation. These views found little sympathy among Schumpeter's friends and associates in the ultrapatriotic environment of the early 1940s, a circumstance that caused him much unhappiness.

Schumpeter Today

The new improves upon and kills off the old. True enough. But what's new and what's old may lie in the eye of the beholder. Today's cutting-edge theorist and mathematical modeler may regard Schumpeter's analysis as older than old, a pre-Keynesian, pre-monetarist, pre-new classical/rational expectations relic. Accordingly, Schumpeter's name is stricken from required reading lists in many top graduate economic programs where theory is king. To businessmen, journalists, and historians seeking not abstract theory but rather practical understanding of global capitalism, however, his work is as fresh and insightful as the day he penned it. Journalists speak of a renaissance of Schumpeterian economics and of a reversal of his relative ranking with Keynes. Although McCraw does not say so, Schumpeter undoubtedly would be pleased, but hardly surprised, by the revival of his work. It fits his description of the zigzag path of doctrinal history in which sound economic ideas get lost or forgotten only to be rediscovered and restored to their proper place.

A Complaint

A great book deserves a great index, or at the very least an adequate one. McCraw's book has neither. Lacking comprehensiveness and precision, the index creates problems for readers searching for particular items in the text. It is inexcusable that the index fails to cover the 188 pages of endnotes containing valuable scholarly information and constituting a fourth of the book. One can fault the publisher, not the author, for this oversight. Luckily, it does little to mar McCraw's outstanding text. Elizabeth Schumpeter wrote that her husband "loved to read biographies." It's a sure bet that he would have enjoyed this one. **RF**

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component-level examinations as well as simulations with dummies and sometimes cadavers (the latter led by universities). "It's a lot more complex when we're doing the testing," Jarvis says. "We have to design for 1,001 different scenarios and we have to design so that occupants have the best level of protection in every one of those scenarios." With regards to the possible injuries to the pelvis of Ford Explorer passengers, Jarvis says that even with multiple crash tests in

consistent settings, there will be variation. Also, injuries suffered by dummies don't always translate to injuries suffered by real people.

That said, Jarvis says Ford sees value in IIHS testing, as well as that conducted by governments around the world. "All of the public domain testing has upped the ante and increased the debate in the level of design and safety testing," he says. "We certainly learn things from them." **RF**