

# Crash test dummies sacrifice lives for car safety

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A technology-packed, 180-pound (80 kg) crash test dummy sends a vast array of data from its sensors to show how he fared in the crash

Clad in a blue t-shirt and shorts, the average-size "man" is belted into a luxury Tesla Model S for a very short ride with a very abrupt end.

The collision sounded like an explosion and left the pristine electric car destroyed, glass and debris scattered around the sad remains.

The "man"—a technology-packed, 180-pound (80 kg) crash test dummy—was the victim of a single-car crash at 40 miles per hour (65 kilometers per hour) into a solid wall.

But the destruction is for the greater good. The dummy's sensors send a vast array of data to show how he fared.

They tell how hard and how fast his head and body hit the steering wheel; the extent to which airbags cushioned the blow; how well the seatbelt worked; and whether any other body parts suffered injuries.

The results are used by automakers to make safer vehicles, and the process has dramatically reduced the number of deaths in traffic accidents.

## **Traffic deaths rising**

But contemporary driving habits are challenging traditional efforts to keep the death rate on a downward trajectory.

In 2015, [traffic deaths](#) showed the biggest increase since 1966, and were up even more in the first half of 2016, climbing by over 10 percent, according to the National Highway Traffic Safety Administration.

Distracted driving, including texting or talking on a cell phone while driving, accounted for over 3,000 deaths in 2014, with over 400,000 injured, NHTSA said.

Automakers need to figure out how to avoid accidents resulting from things like driver inattention, said Joseph Noland, senior vice president of vehicle research at the Insurance Institute for Highway Safety.

Carmakers are adding features like electronic stability control, forward

collision warning and autonomous emergency braking.

"These technologies are coming very, very quickly, and our studies show that many of them are very effective," Noland told AFP.

But testing those new technologies is "really going to be a challenge for us," he said.

Of the new technology features, IIHS so far only tests the automatic emergency braking.

IIHS, which is funded by the insurance industry, and NHTSA, a federal agency, are the only organizations in the United States that conduct [crash tests](#).



Safety tests have allowed automakers to make safer vehicles and dramatically reduced the number of deaths, but contemporary driving habits are challenging

traditional efforts

With a budget of just over \$5 million for the 80 high-speed crashes it conducts each year, IIHS estimates its test programs have contributed to a dramatic decline in death rates: fatalities were cut by more than half between 1990 and 2012, to just 65 for every one million vehicles from 143.

## **Real-world crashes**

"We look at the types of crashes that are injuring and killing real people right now on the roads, and then we develop tests to replicate that."

The test that was used for the Tesla Model S, was a "small overlap" crash test first introduced in 2012 to simulate a crash into a pole or a tree. IIHS says many automakers have struggled with it.

The Tesla Model S did not receive the top rating of "good" in the initial test late last year, so the company requested a retest. Manufacturers have to earn good ratings in all five crash tests to be considered an IIHS Top Safety Pick.

In last year's test, the driver crashed into the steering wheel hard, because the seatbelt spooled out too far, IIHS said. Tesla made changes to the design for vehicles built after October in an effort to address the problems.

For the tests, IIHS technicians send the car down a 1,400-foot (430-meter) tunnel pulled by a cable, a system similar to a ski lift, and just before impact, it is released from its tether.

To the casual observer, the Tesla crash looked terrifying, but the IIHS analysis will not be available for a week or two, at which point it will be clear whether Tesla was able to address the flaw and get a coveted top rating.

Jack R. Nerad, vice president at car reviewer Kelley Blue Book, told AFP the safety ratings are key for automakers because consumers gravitate towards the safer vehicles.

"They have changed car design very, very significantly. From the second they first hit the computer screen, the ratings are very important."

## **Car graveyard**

Car enthusiasts would be driven to tears by the carnage on display at the IIHS testing center in rural central Virginia, two hours south of Washington, in the shadow of the Blue Ridge Mountains.

There are smashed cars, trucks and SUVs lined up throughout the building, including a classic 1959 Chevrolet Bel Air, which was smashed into a 2009 Chevrolet Malibu. Suffice to say the Bel Air is nice to look at but not safe to drive.

The institute works with other national testing organizations through the Global New Car Assessment Program to try to drive design changes worldwide.

The need for safety improvements in other countries was dramatically demonstrated when IIHS in October crashed a Mexican-made Nissan Tsuru—essentially the same as the 1992 US-made Nissan Sentra—into a 2016 Nissan Versa, a top safety pick.

The result for the Tsuru driver, with no airbags or modern structural

improvements, was devastating. Days before the test was to take place, Nissan announced it was suspending production of that model, one frequently used by Mexican taxi drivers.

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