

INSURANCE INSTITUTE FOR HIGHWAY SAFETY

NEWS RELEASE

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NEW CRASH TEST RESULTS: RATINGS OF FOUR LARGE PICKUPS RANGE FROM GOOD FOR TOYOTA TUNDRA TO POOR FOR FORD F-150, DODGE RAM

ARLINGTON, VA — Among four large pickup trucks, all 2001 models, the best performer in a 40 mph frontal offset crash test was the Toyota Tundra, which is rated good. By far the worst performer was the Ford F-150, which is rated poor. The Chevrolet Silverado/GMC Sierra is rated marginal, and the Dodge Ram is poor (see attached ratings). The crash tests were conducted by the Insurance Institute for Highway Safety.

Little intrusion into the Tundra; dummy's movement was controlled: The Toyota Tundra's structure performed well in the offset test. "There was very little intrusion into the occupant compartment, very little deformation. As a result, the dummy's movement was well controlled, and the injury measures all were low except for some moderately high forces recorded on the dummy's right leg," Institute president Brian O'Neill says.

Ford F-150 is worst: In contrast, the F-150 "exhibited major collapse of the occupant compartment in the offset test," O'Neill points out. "As a result of this collapse, the dummy's movement wasn't well controlled. High injury measures were recorded on the dummy's head and neck. The airbag deployed late in the crash, and this also contributed to the high injury measures."

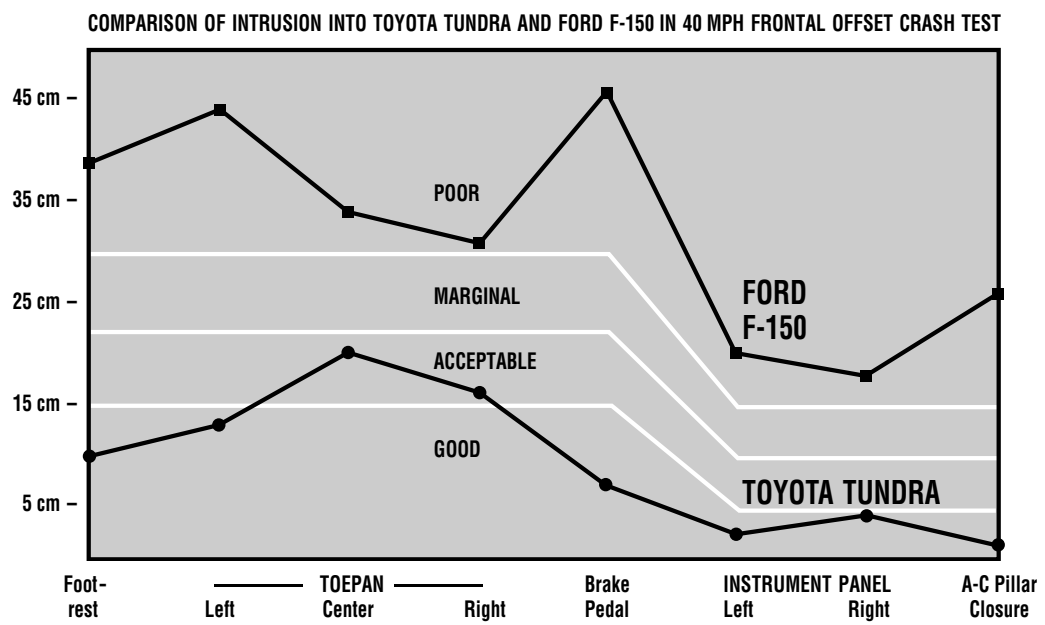
The appearance of the F-150 compared with the Tundra after the offset test provides a dramatic contrast (see photos, p.3), showing the very different performances of these vehicles' structures. The F-150's occupant compartment was destroyed, while the Tundra's doors still functioned.

— MORE —

The contrast also is apparent in measurements of occupant compartment intrusion into the two vehicles. To quantify performance, Institute engineers take 8 measurements of intrusion around the driver. They also measure steering column movement. Low measurements indicate that a vehicle's crumple zone and safety cage are well designed. All 10 measurements are dramatically better in the Tundra compared with the F-150:

**MEASUREMENTS OF OCCUPANT COMPARTMENT INTRUSION AND STEERING COLUMN MOVEMENT (cm),
 40 MPH FRONTAL OFFSET CRASH TEST**

	Footwell Intrusion ToePan				Brake Pedal Intrusion	Instrument Panel Intrusion		A-C Pillar Closure	Steering Column Movement	
	Footrest	Left	Center	Right		Left	Right		Upward	Rearward
2001 Toyota Tundra	10	13	20	16	7	2	4	1	7	1
2001 Ford F-150	39	44	34	31	46	20	18	26	29	11





TOYOTA TUNDRA: The space around the driver dummy was maintained well during the frontal offset crash test at 40 mph.



FORD F-150: The driver seat pitched forward while the instrument panel and steering column moved back. This severely compromised the driver space.

"A key aspect of protecting people in crashes is keeping the space around occupants intact. Then the safety belts and airbags can prevent significant injuries, even in very serious crashes. This is what happened in the Tundra but not in the F-150," O'Neill says.

Performance of Chevrolet Silverado: This large pickup is rated marginal. Injury measures were good, but there was substantial occupant compartment intrusion, and dummy movement wasn't controlled during the offset test.

Performance of Dodge Ram: This large pickup is rated poor. There was significant intrusion into the occupant compartment and poor control of dummy movement during the offset crash test. As in the F-150, the airbag deployed late, which contributed to high head and neck injury measures.

Institute and government crash tests complement each other: The Institute's crashworthiness evaluations are based primarily on results of the frontal offset crash test at 40 mph. Each vehicle's overall evaluation is based on three aspects of performance — measurements of occupant compartment intrusion, injury measures from a Hybrid III dummy positioned in the driver seat, and analysis of slow-motion film to assess how well the restraint system controlled dummy movement during the test.

The federal government has been crash testing new passenger vehicles in 35 mph impacts since 1978. This New Car Assessment Program has been a major contributor to crashworthiness improvements — in particular, improved restraint systems — in new passenger vehicles. The Institute's offset tests, conducted since 1995, involve 40 percent of a vehicle's front end hitting a deformable barrier at 40 mph. This test complements the federal test involving the full width of the front end hitting a rigid barrier. Full-width tests are especially demanding of restraints but less demanding of structure, while the reverse is true in offsets.

The same 40 mph offset crash test is used to evaluate new cars by the European Union in cooperation with motor clubs and by an Australian consortium of state governments and motor clubs.

**End 4-page release on vehicle crashworthiness
1-page attachment: crashworthiness ratings
Video news release Mon., 6/4, 1:00-1:30 pm EST
(C)Telstar 6/Trans. 8; crash test footage & more**

Internet: www.highwaysafety.org

Evaluations

Large pickup trucks	OVERALL EVALUATION	Frontal Offset Crash Test Performance						Other Evaluations	
		Structure/ Safety Cage	Injury Measures				Restraints/ Dummy Kinematics	Head Restraint Design	Bumper Performance
			Head/ Neck	Chest	Leg/Foot Left, Right				
TOYOTA TUNDRA 2000-01 models test vehicle wt. = 4,363 lbs.	G	G	G	G	G	M	G	P	
CHEVROLET SILVERADO 1500 GMC SIERRA 1500 1999-2001 models test vehicle wt. = 4,709 lbs.	M	P	G	G	G	G	P	M	P
DODGE RAM 1500 1998-2001 models test vehicle wt. = 4,930 lbs.	P	M	P	G	P	A	P	P	P
FORD F-150 1997-2001 models test vehicle wt. = 4,475 lbs.	P	P	P	G	A	M	P	M P depends on seat	P

G GOOD **A** ACCEPTABLE **M** MARGINAL **P** POOR

Caution: The kinetic energy a vehicle must absorb in a crash test increases with vehicle weight, so barrier tests are more demanding of heavier vehicles. But people in heavier vehicles in real-world, 2-vehicle crashes typically fare better than people in lighter vehicles (in many single-vehicle crashes, weight offers no safety advantage). This is why **test results shouldn't be compared among vehicles with large weight differences.**