

INSURANCE INSTITUTE FOR HIGHWAY SAFETY

NEWS RELEASE

November 14, 2000

NEW CRASH TEST RESULTS: BMW X5 PERFORMANCE IS EXCELLENT BUT LEAKS FROM ISUZU TROOPER'S FUEL SYSTEM PROMPT RECALLS

ARLINGTON, VA – Among midsize sport utility vehicles recently tested by the Insurance Institute for Highway Safety in frontal offset impacts at 40 mph, the best performer is the 2001 model BMW X5. In fact, this is the best midsize utility vehicle the Institute has tested. The worst performer in the new tests is the Isuzu Trooper, which is rated marginal. The other two newly tested vehicles, the 2001 Mitsubishi Montero and 2000 Nissan Xterra, are rated acceptable (see attached ratings).

With this latest round of crash tests, the Institute now has evaluated 14 current midsize utility vehicle designs. "The X5's performance was outstanding," Institute president Brian O'Neill says. "During the offset test its occupant compartment, or safety cage, sustained very little damage. Measured intrusion into the compartment was less than in any other vehicle we have tested. With such good structural performance, it isn't surprising that measures taken from the driver dummy indicate low likelihood of injury. This outstanding performance clearly justifies a 'best pick' rating for the X5."

Leak from Trooper fuel system in two crash tests: The Institute tested three Isuzu Troopers before assigning this vehicle a marginal rating overall. The multiple tests were conducted because of a major leak of fluid from the fuel system observed immediately after the first test. (Note: A less volatile fluid than gasoline is added to cars' fuel systems in crash tests to allow identification of leaks without the risk of fire.)

"We've conducted well over 100 frontal offset crash tests, and this is the first time we've seen a major fuel system leak," O'Neill points out. After the first Trooper test

— MORE —

(a 2000 model), Isuzu engineers identified a design problem that led to the leak and came up with a fix. The company then initiated a safety-related recall. The Institute tested a Trooper (2001 model) with the recall fix, but a second leak occurred. Isuzu came up with another fix and has initiated another recall. When the Institute tested a third Trooper, a 2001 model with both fixes, no fluid leaked from the fuel system.

“So this is a success story of sorts,” O’Neill says. “Fuel leaks are serious problems, but our tests identified these particular problems before many of the vehicles had been on the road for long. There’s no evidence of fires in real-world Trooper crashes. Isuzu moved quickly to fix the problems, and now Trooper owners need to pay attention to the recall notices and get their vehicles fixed. This is important because, although the Trooper’s performance in the offset test was only marginal, the risk to occupants in serious real-world crashes of this vehicle could be even worse if the fuel system problems aren’t fixed.”

Structural design is key to good offset crash test performance: The 40 mph frontal offset crash test is especially demanding of vehicle structure. Only the driver side of the front of a vehicle hits the barrier, so a relatively small area of the front-end structure must manage the crash energy. This means intrusion into the occupant compartment is more likely to occur than in a full-width test.

Compared with the X5’s excellent structural performance in the offset test, the Trooper’s occupant compartment didn’t hold up as well as it should have. There was considerable intrusion near the driver’s feet, and high crash forces were recorded on both of the driver dummy’s legs.

“Good structural design is the key to good performance in the offset test,” O’Neill explains. “If a car’s front-end structure absorbs and manages the crash energy so the occupant compartment remains largely intact, with little or no intrusion, then the dummy’s movement is likely to be controlled and injury

measures are likely to be low. This was the case with the BMW X5. In contrast, poor structural design means greater likelihood of poor control of the dummy and high injury measures.”

O’Neill adds that “the way to protect people in serious frontal crashes is to ensure the occupant compartment, or safety cage, remains intact. When this happens, the restraint system — the safety belts and airbags — can prevent significant injuries, even in very serious crashes.”

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 testing new passenger vehicles in 35 mph crash tests 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. Both tests are contributing to improvements in crashworthiness — in particular, improved crumple zones and safety cages.

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 3-page release on vehicle crashworthiness
2-page attachment: crashworthiness ratings
Video news release day, 11/14, 1:30-2 pm EST
(C) Telstar 6/Trans. 8; crash test footage & more**

Internet: www.highwaysafety.org

EVALUATIONS

Midsize utility vehicles 4-door models

OVERALL
EVALUATION

Frontal Offset Crash Test Performance

Structure/
Safety
Cage

Injury Measures

Head/
Neck Chest Leg/Foot
Left, Right

Restraints/
Dummy
Kinematics

Other Evaluations

Head
Restraint
Design

Bumper
Performance

NEWLY TESTED

best
pick

BMW X5

2001 models
test vehicle wt. = 4,665 lbs.

G	G	G	G	G	G	G	G	M	A
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best
pick

MERCEDES M CLASS

1999-2001 models
test vehicle wt. = 4,445 lbs.

G	G	A	G	G	G	G	G	A	M
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best
pick

LEXUS RX 300

1999-2001 models
test vehicle wt. = 3,973 lbs.

G	A	G	G	G	G	G	G	A	P
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TOYOTA 4RUNNER

1998-2001 models
test vehicle wt. = 3,942 lbs.

G	A	G	G	G	A	G	G	M	P
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depends
on seat

NEWLY TESTED

MITSUBISHI MONTERO

2001 models
test vehicle wt. = 4,788 lbs.

A	G	A	G	M	G	M	M	A	P
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NEWLY TESTED

NISSAN XTERRA

2000-01 models
test vehicle wt. = 4,162 lbs.

A	G	A	G	G	M	M	M	A	P
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LAND ROVER DISCOVERY SERIES II

1999-2001 models
test vehicle wt. = 4,707 lbs.

A	A	G	G	P	A	A	A	M	P
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FORD EXPLORER

1995-2001 models
test vehicle wt. = 4,255 lbs.

A	A	A	G	G	G	P	P	P	P
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MERCURY MOUNTAINEER

1997-2001 models

A	A	G	G	P	G	M	M	P	P
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DODGE DURANGO

1998-2001 models
test vehicle wt. = 4,844 lbs.

A	A	G	G	P	G	M	M	P	P
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JEEP GRAND CHEROKEE

1999-2001 models
test vehicle wt. = 3,968 lbs.

M	M	G	G	M	A	M	M	P	P
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NISSAN PATHFINDER INFINITI QX4

1997-2001 models
test vehicle wt. = 4,191 lbs.

M	P	A	G	G	G	M	M	A	M
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depends
on seat

NEWLY TESTED

ISUZU TROOPER

2000-01 models
avg. test vehicle wt. = 4,398 lbs.

M	A	A	G	P	P	M	M	A	P
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ISUZU RODEO

HONDA PASSPORT

2000-01 models
test vehicle wt. = 4,010 lbs.

P	G	P	G	P	A	M	M	A	P
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CHEVROLET BLAZER/GMC JIMMY

1995-2001 models
test vehicle wt. = 4,103 lbs.

P	P	P	G	G	A	P	P	G	A
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depends
on seat

OLDSMOBILE BRAVADA

1996-2001 models

GMC ENVOY

1998-2001 models

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

Evaluations of earlier models are on the next page ►

EVALUATIONS

Midsize utility vehicles 4-door models Evaluations of earlier models	OVERALL EVALUATION	Frontal Offset Crash Test Performance						Head Restraint Design	Bumper Performance
		Structure/ Safety Cage	Injury Measures			Restraints/ Dummy Kinematics			
			Head/ Neck	Chest	Leg/Foot Left, Right				
TOYOTA 4RUNNER 1996-97 models test vehicle wt. = 3,942 lbs.	A	A	G	G	G	A	G	P	P
LAND ROVER DISCOVERY 1994-1998 models test vehicle wt. = 4,434 lbs.	A	A	A	G	G	A	G	M P depends on seat	P
MITSUBISHI MONTERO 1996-2000 models test vehicle wt. = 4,400 lbs.	A	A	A	G	G	G	M	G	P
JEEP GRAND CHEROKEE 1996-98 models test vehicle wt. = 3,805 lbs.	M	A	G	G	P	P	G	P	P
MITSUBISHI MONTERO SPORT 1997-2000 models test vehicle wt. = 4,156	P	M	G	G	P	P	P	M P depends on seat	P
ISUZU RODEO/ HONDA PASSPORT 1996-97 models test vehicle wt. = 4,158 lbs.	P	P	G	G	P	P	M	P	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.**

Go to www.highwaysafety.org: This table summarizes the crash-worthiness evaluations of midsize utility vehicles. The principal component of each vehicle's evaluation is its performance in a 40 mph frontal offset crash test. Details about each vehicle's test performance, including photos taken during and after the crash test, are available online at www.highwaysafety.org. Or call the Institute for copies.