

INSURANCE INSTITUTE FOR HIGHWAY SAFETY

NEWS RELEASE

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CRASH TEST RESULTS: TWO MIDSIZE UTILITY VEHICLES EARN “BEST PICK” RATINGS; TWO OTHER 1999 MODELS DON’T IMPROVE COMPARED WITH THEIR EARLIER VERSIONS

ARLINGTON, VA — The Mercedes M-Class and Lexus RX 300, both 1999 models, are the best midsize utility vehicles the Insurance Institute for Highway Safety has tested in 40 mph frontal offset impacts. In contrast, the Mitsubishi Montero Sport is rated poor. These three utility vehicles are among a group of six with new designs or substantial redesigns that recently were tested. Two of the other three — the Land Rover Discovery Series II and Dodge Durango — are rated acceptable. The Jeep Grand Cherokee is marginal (see attached ratings).

“There’s a huge difference between the best and worst performers,” Institute president Brian O’Neill points out. “The Mercedes’ structure held up very well in the offset test. The occupant compartment was preserved with little or no intrusion. But in the Montero



Mercedes M-Class rated good overall, a “best pick”



Mitsubishi Montero Sport rated poor

— MORE —

Sport there was major collapse of the occupant compartment. The instrument panel was pushed toward the dummy, reducing the space available for the safety belt and airbag to prevent life-threatening injuries. Plus footwell intrusion contributed to the likelihood of serious leg injuries." Another problem in the Montero Sport is that special lap belt stitching, designed to tear to improve performance in some crashes, lengthened too much for effective control of the dummy's movement during the offset crash. "The combination of a marginal structural performance, poor leg injury measures, and ineffective control of the dummy adds up to a poor overall performance," O'Neill says.

The results of this round of 40 mph offset crash tests of six vehicles, together with earlier results for nine other models with still-current designs, provide ratings for all popular midsize utility vehicles in the market today. Among the models tested earlier, only the Toyota 4Runner earned a good overall crashworthiness rating (see attached ratings for all midsize utility vehicles tested).

Some automakers doing more on offset crash protection

In many cases, manufacturers are factoring offset crash performance into their redesigns. "The two best performers are among the newest designs in the vehicle group we tested," O'Neill says, "and this likely had a lot to do with their good performances. As a result of our test program and similar programs conducted in other countries, vehicle designs are being improved to prevent occupant compartment intrusion and preserve space for people to survive crashes. If a vehicle's front end absorbs and manages crash energy and the occupant compartment remains largely intact, with little or no intrusion, then restrained occupants can walk away from serious crashes like our offset test. On the other hand, if the occupant compartment collapses and there's significant intrusion, then even restrained occupants are likely to be seriously injured. Unfortunately, too many models still allow too much intrusion into their compartments."

Side airbags and other restraint improvements

While side airbags aren't designed to protect people in frontal crashes, the inclusion of them as standard or optional equipment is a plus in four midsize utility

vehicles the Institute has tested – the M-Class, RX 300, Ford Explorer (and its twin model, the Mercury Mountaineer), and Nissan Pathfinder (and its twin, the Infiniti QX4). The side airbags in the Explorer/Mountaineer and Pathfinder/QX4 are designed to protect people's heads as well as their chests.

When the Institute evaluated the 1996 4Runner, its offset crash test performance was good, but it was rated only acceptable overall because of a less-than-good performance in the federal government's full-width crash test (see below for a description of this test). Restraint system changes in 1998 and 1999 4Runners improved performance in the government test, so this vehicle now is rated good overall.

Institute and government crash tests complement each other

The Institute's crashworthiness evaluations are based primarily on results from 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 risk measures from a Hybrid III dummy in the driver seat, and analysis of slow-motion film to assess how well the restraints 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 test, which involves 40 percent of a vehicle's front end hitting a deformable barrier at 40 mph, complements the federal test involving the full width of the front end hitting a rigid barrier. The government test is especially demanding of vehicle restraint systems but not so much so of vehicle structure. An offset test is more demanding of vehicle structure.

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 lists crashworthiness ratings.
Video news release Wed. July 7, 1-1:30 pm EDT;
(C) Galaxy 6/Trans. 9; crash test footage & more
Internet: www.highwaysafety.org**

Evaluations

		OVERALL EVALUATION	Frontal Offset Crash Test Performance								Head Restraint Design	Bumper Performance
			Structure/Safety Cage	Restraints & Dummy Kinematics	Injury Measures				Head Restraint Design	Bumper Performance		
					Head/Neck	Chest	Leg/Foot, Left	Leg/Foot, Right				
X	MERCEDES M-CLASS 1999 models; test vehicle wt.=4,445 lbs.	G	G	G	A	G	G	G	A	M		
X	LEXUS RX 300 1999 models; test vehicle wt.=3,973 lbs.	G	A	G	G	G	G	G	A	P		
	TOYOTA 4RUNNER 1998-99 models; test vehicle wt.=3,942 lbs.	G	A	G	G	G	G	A	M P <small>depends on seat</small>	P		
	MITSUBISHI MONTERO 1996-99 models; test vehicle wt.=4,400 lbs.	A	A	M	A	G	G	G	G	P		
X	LAND ROVER DISCOVERY SERIES II 1999 models; test vehicle wt.=4,707 lbs.	A	A	A	G	G	P	A	M	P		
	FORD EXPLORER MERCURY MOUNTAINEER 1995-99 models; test vehicle wt.=4,255 lbs.	A	A	P	A	G	G	G	P	P		
X	DODGE DURANGO 1998-99 models; test vehicle wt.=4,844 lbs.	A	A	M	G	G	P	G	P	P		
X	JEEP GRAND CHEROKEE 1999 models; test vehicle wt.=3,968 lbs.	M	M	M	G	G	M	A	P	P		
	NISSAN PATHFINDER/INFINITI QX4 1997-99 models; test vehicle wt.=4,191 lbs.	M	P	M	A	G	G	G	A M <small>depends on seat</small>	P		
X	MITSUBISHI MONTERO SPORT 1997-99 models; test vehicle wt.=4,156 lbs.	P	M	P	G	G	P	P	M P <small>depends on seat</small>	P		
	CHEVROLET BLAZER/GMC JIMMY OLDSMOBILE BRAVADA 1995-99 models; test vehicle wt.=4,103 lbs.	P	P	P	P	G	G	A	G P <small>depends on model/seat</small>	P		

See next page for evaluations of earlier designs of five midsize utility vehicles.

X: recent test

Caution: The kinetic energy a vehicle must absorb in a crash test increases with vehicle weight, so offset tests are more demanding of heavier vehicles. But occupants of heavier vehicles in real-world, two-vehicle crashes typically fare better than people in lighter vehicles (in many single-vehicle crashes, weight offers no safety advantage). This is why **crash test results shouldn't be compared among vehicles with large weight differences**. The weight range (about 1,000 pounds) of the utility vehicles listed above is greater than in most other groups of vehicles the Institute has tested. However, since the weight benefit in two-vehicle crashes is only slight for vehicles weighing more than 4,000 pounds, and because a greater proportion of midsize utility vehicle occupant deaths (compared with car occupant deaths) occur in single-vehicle crashes in which vehicle weight often offers no advantage, the crash test results for these vehicles can be compared.

Go to www.highwaysafety.org: This publication summarizes the crashworthiness 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 photographs taken during and after the test, are available online @ www.highwaysafety.org. Or call the Institute for copies.

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

**INSURANCE INSTITUTE
FOR HIGHWAY SAFETY**

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Midsize Utility Vehicles

Crashworthiness evaluations of earlier designs:

	OVERALL EVALUATION	Frontal Offset Crash Test Performance							
		Struc- ture/Safe- ty Cage	Restraints & Dummy Kinematics	Injury Measures				Head Restraint Design	Bumper Performance
				Head/ Neck	Chest	Leg/ Foot, Left	Leg/ Foot, Right		
TOYOTA 4RUNNER 1996-97 models; test vehicle wt.=3,942 lbs.	A	A	G	G	G	G	A	P	P
LAND ROVER DISCOVERY 1994-98 models; test vehicle wt.=4,434 lbs.	A	A	G	A	G	G	A	M P <small>depends on seat</small>	P
JEEP GRAND CHEROKEE 1996-98 models; test vehicle wt.=3,805 lbs.	M	A	G	G	G	P	P	P	P
ISUZU RODEO/HONDA PASSPORT 1996-97 models; test vehicle wt.=4,158 lbs. Note: redesigned for the 1998 model year, but the new model hasn't been tested because engineering changes intended to improve frontal crash protection will be made later this year.	P	P	M	G	G	P	P	P	P