

Streak ends

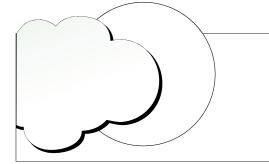
Loss sinks Tigers' bid for perfect first week

Sports, 1D

Lakes rise

Higher water level is good news for Metro boaters

Metro, 1B



Partly cloudy
High, 48; Low, 32

Rouge tours

Visitors are in for a treat at factory starting May 3

Entertainment, 1G

Power lifter

Breast cancer survivor holds world record at 73

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The Detroit News AND Free Press

Metro ..

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A B C D E F G

Sunday, April 11, 2004

STANLEY CUP PLAYOFFS

Daniel Mears / The Detroit News
Wings goalie Manny Legace stops a shot in the first period.

The Red Wings beat the Predators, 2-1, in Game 2.

Red Wings bounce Predators

Detroit is up 2-0 in series, but must take control today in Game 3 at Nashville.

DETROIT

In the playoffs, every team needs a good, timely kick now and then. The Red Wings got theirs Saturday, and now the Predators are kicking themselves.

That's how it works, when it's working. The Wings certainly weren't dominant, but they grabbed a 2-1 victory and a commanding series lead — two games to none — because they were persistently patient. Oh, and a tad fortunate.

Nashville goalie Tomas Vokoun knocked the winning goal into his own net with just 2:45 remaining, accidentally kicking the puck behind him. A long shot by Detroit's Mathieu Schneider glanced off Vokoun's shoulder, hit the boards and careened to the front of the net, where it bounced off Vokoun's left skate.



Big break

Wings take control with third-period power play. **Page 1D**

The Joe Louis Arena crowd roared. The Predators slumped. And a playoff hockey axiom surfaced again — sometimes, the smallest plays make the biggest difference.

Hey, if you're going to make a long run, as the Wings claim they're ready to do, you've got to score an occasional goal like that, and win an occasional sloppy game like this.

Please see WOJO, Page 1A

More Marines join fight in Iraq

By Lourdes Navarro

Associated Press

FALLUJAH, Iraq — Hundreds of reinforcements joined fellow Marines besieging Fallujah on Saturday, and the U.S. military said it would move to take the city if cease-fire talks fail. Fighting raged through the center of the country, killing 40 Iraqis and an American airman.

Militants threatened to kill and mutilate American hostage Thomas Hamill, a civilian they captured Friday during a convoy ambush in the area — the

Critical time

Urban uprising may result in military quagmire. **Page 4A**

latest in a series of kidnappings in Iraq. They demanded troops withdraw from Fallujah.

Gunfire crackled in the city, even as Iraqi government negotiators met with Fallujah leaders to persuade them to hand over militants who killed and mutilated four Americans here March 31.

Please see IRAQ, Page 1A

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March 1 to \$3 by April 1, said Ed Jesse, a dairy economist with the University of Wisconsin.

DANGER OVERHEAD: CRUSHED ROOFS

Thousands killed, hurt as auto roofs collapse



"If they don't think the roof matters, let them live a full day as a quad and see what it entails," says Penny Shipler, with son Keenan. Shipler was paralyzed in a 1997 rollover.



Penny Shipler was riding in this Chevrolet Blazer.

Dan McCord

■ STANDARDS: BIG 3 BLOCK TOUGHER ROLLOVER TESTS

■ RISK: ROOF CRUSH MORE COMMON IN TRUCKS, SUVS

By Bill Vlasic
and Jeff Plungis
The Detroit News
Part 1 of 3

Penny Shipler remembers the Chevrolet Blazer rolling over and over, then the sound of the roof crashing down over her head.

When it finally stopped, she tried to move. "I was thinking get out, I had to get out," she said. "I thought I was getting out."

But the Nebraska woman was paralyzed, her spinal cord crushed on impact with the metal roof that caved in around her.

It's the hidden risk in any rollover accident, whether the roof stays intact or collapses with catastrophic results.

Each year, an estimated 7,000 people are killed or severely injured in rollovers in which the roof crushed, according to federal statistics.

Yet Detroit's Big Three automakers, armed with political muscle and reams of research, have fought costly upgrades to a 33-year-old roof-strength standard, even while their own European operations build and test stronger roofs.

General Motors Corp. and Ford Motor Co. essentially drafted the regulation as it stands.

In 1971, the automakers led an industrywide effort to convince federal officials to adopt a minimum standard for roof strength — but only after their vehicle fleets failed the government's first proposed test, according to internal corporate documents examined by The Detroit News.

The industry wanted "something that will allow our vehicles to pass," Peter Bertelson, who headed Ford's crash-test programs in the late 1960s, told The News.

Critics say the industry-backed test, Federal Motor Vehicle Safety Standard 216, is too weak to save lives, particularly as rollover-prone SUVs and pickups proliferate.

Now the National Highway Traffic Safety Administration, under

The Detroit News EXCLUSIVE REPORT

TODAY: A Detroit News examination found that automakers have fought to preserve a 33-year-old federal safety standard for roof strength despite critics who say the law is inadequate at saving lives.

MONDAY: Clyde "Ray" Noyes was killed when a split-second traffic maneuver led to a rollover accident. His death is an example of how even seat-belted motorists can die when their vehicle roof crushes around them.

TUESDAY: Federal regulators plan to propose stiffer roof standards later this year, setting up a battle in Washington among automakers, safety advocates and political officials.

pressure from safety advocates and Congress, says it's finally time to fix rule 216 and plans to propose a tougher standard later this year.

The stakes for automakers are enormous. Changes in roof structures could add cost and weight to millions of vehicles.

"It's been known for quite some time that this is a standard that needs updating," NHTSA Chief Dr. Jeffrey Runge told The News.

His opinion is hardly shared by members of the Big Three.

"There is no correlation between roof strength and the likelihood of injury in a rollover crash," said Robert Lange, GM's executive director for vehicle structure and safety integration.

That position seems incomprehensible to Shipler, a quadriplegic since her accident seven years ago.

"If they don't think the roof matters, let them live a full day as a quad and see what it entails," said Shipler, 36, who won an \$8.6 million lawsuit against GM last year.

Please see ROOF, Page 8A

Book, film deepen faith, hope of many

Metro churches work to preserve interest past Easter Sunday.

By Kimberly Hayes Taylor
The Detroit News

Muriel Lowe of Shelby Township had gone to church nearly every Sunday, but when she read "The Purpose Driven Life" by Rick Warren, she discovered she never knew God.

She's one of thousands in Metro Detroit attending Easter services today whose faith has deepened after reading the huge-

ly successful book and seeing the box office hit "The Passion of the Christ." These media phenomena have led people back to church, closer to God and yearning to strengthen their relationship with Jesus Christ.

Churches have taken this unusual opportunity to discuss popular religion-themed books and movies during services, Bible studies and home groups. Then after new people begin coming in, churches work to keep them.

Please see EASTER, Page 1A



Clarence Tabb Jr. / The Detroit News

Charmaine Marshall of Southfield, with daughter Kaylia, pray at Saturday morning services at Seventh-day Adventist Church.

Milk costs to rise 50 cents a gallon

By Frederic J. Frommer
Associated Press

WASHINGTON — Consumers soon can expect to pay 50 cents more for a gallon of milk, due to a combination of smaller herds, higher feed and beef prices, less growth hormone on the market and the emergence of mad cow disease.

Milk prices reached a 25-year low last year but are rebounding to record highs in 2004, helped by a reduction in supply. Retail milk prices already have risen by 15 cents a gallon, from a nationwide average of \$2.85 on

March 1 to \$3 by April 1, said Ed Jesse, a dairy economist with the University of Wisconsin.

"It's almost a perfect storm of factors, any one of which wouldn't have much of an impact, but together have kept a heavy lid on production," said Chris Galen, a spokesman for the National Milk Producers Federation. "The bottom line is that milk production has not been keeping up with demand."

Galen said that the 8.9 million dairy cows in the United States are the fewest in five years.

The Detroit News EXCLUSIVE REPORT

DANGER OVERHEAD: CRUSHED ROOFS

ROOF

Continued from Page 1A

Juries in Texas, California and Nebraska have repeatedly rejected Big Three-backed studies that deny a link between crushed roofs and injuries.

With huge judgments coming in, including a \$225 million verdict against Ford in a roof crush case, safety groups have stepped up their campaign for a new roof-strength standard.

"We think the auto manufacturers' basic claim is not true," said Gerald Donaldson, director of the consumer group Advocates for Highway and Auto Safety. "Roof strength is absolutely critical."

NHTSA is looking hard at recent crash data to establish a direct relationship between collapsing roofs and catastrophic injuries.

In filings with NHTSA, GM, Ford and DaimlerChrysler contend there is no need for new standards.

But it is an industry divided, with the Big Three's own European operations — Opel, Saab, Volvo, Mercedes-Benz — performing rollover tests that far exceed the 216 standard.

NHTSA publishes safety ratings based on frontal- and side-impact crash tests, but consumers don't know how their vehicle's roof will react to a rollover — until it happens.

And it can occur in an instant, such as when Patrick Parker hit a deer and rolled his Ford F-250 pickup in northern Texas, and ended up a quadriplegic.

"People have been telling NHTSA that 216 is inadequate for years, and they have done nothing," said Dena Parker, Patrick's wife. "How many more people have to die or end up like Patrick?"

NHTSA backs down

The consequences of crushed roofs were clear to federal regulators as early as 1969.

"Approximately 1,400 motor vehicle occupants were killed in that year by impact with roof structure in rollover accidents," the National Highway Safety Bureau, NHTSA's predecessor, said in 1971.

Engineers in Detroit grappled with their own analyses of rollover accident data. An internal study by Ford's Automotive Safety Research Office — dated July 8, 1968 — reached "some very basic" conclusions.

"People are injured by roof collapse," the Ford study said. "The total number of nationwide deaths and injuries cannot be estimated but it is a significant number."

With the government considering its first roof-strength standard, GM and Ford conducted their own tests — rolling cars over on ramps, dropping them upside down, loading pressure on the A-pillars that frame the windshield.

A series of inverted drop tests at Ford produced startling results, said Bertelson, the former manager of Ford's Impact Dynamics Department.

"We dropped 40 or 42 different cars on their roofs in 1968," said Bertelson, now retired and living in Arizona. "The engineers who worked for me were just shocked. The roof strength was terrible."

At the urging of GM and Ford, federal regulators proposed a static test that applied specific pressure to both A-pillars. But on Jan. 8, 1971, five of six GM vehicles failed the test, according to documents on file in the Shipler case.

Two months later, Ford's Working Safety Committee reported that "current 1971-72 vehicles will not meet the requirements of the notice."

Ford put a price tag on passing the government's initial test. "All car lines, as currently programmed, would require new A-pillars at a cost of \$9 to \$15 per car," Ford's Safety and Emissions Programs Group said in a document dated March 22, 1971.

GM, Ford and Chrysler protested the two-pillar test. Ford questioned whether crushed roofs even posed a danger — a direct contradiction of its own 1968 study.

"The data do not implicate top intrusion as an automotive safety problem," Ford said in its April 5, 1971, comments to the agency.

NHTSA relented, reducing the load angles of the pressure test and limiting it to just one side of the vehicle.

But the agency did not back down from its original premise.

"For non-ejected front seat occupants in rollover accidents," NHTSA said, "serious injuries



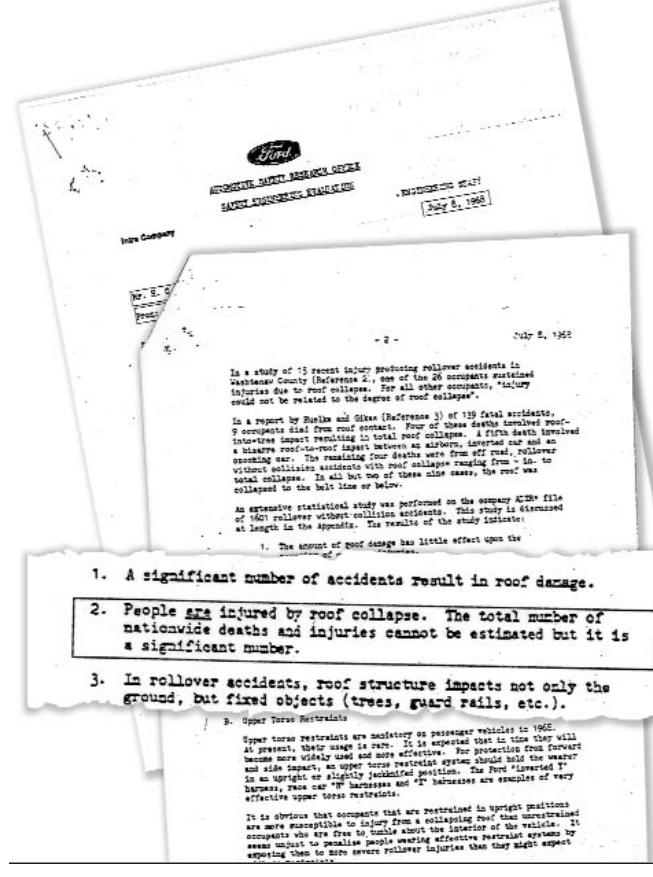
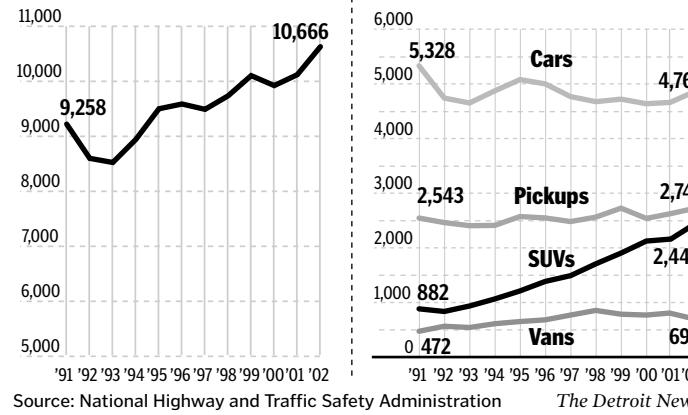
Photos by Brandy Baker / The Detroit News

Penny Shipler waits for a city bus to take her to the bank, a journey that takes her six hours. Shipler and her son get by on about \$800 a month in Social Security and disability checks as GM appeals an \$18.6 million award she won.

Rollover death rate

Rollover deaths are rising as more SUVs are hitting the road. The number of rollover deaths involving SUVs has increased 178 percent since 1991. More than 7,000 deaths and serious injuries occur each year in rollovers in which the roofs collapse.

Total rollover fatalities by year



A July 1968 Ford Safety Engineering Department memo states "people are injured by roof collapse," and there are "a significant number" of deaths and injuries nationwide.

Volvo's XC90 sport utility vehicle.

Human impact

Rule 216 has been under study by NHTSA since the early 1990s, but the path to a new roof-strength standard has taken a tortuous route.

While roof-strength has been on NHTSA's agenda for years, the agency has focused on other priorities such as air bags, child safety seats, and frontal- and side-impact standards.

An official public comment period on 216 has dragged on for 28 months, yielding thousands of pages of documents submitted from both sides of the issue.

NHTSA Chief Runge pledges to propose a new standard this year, but could be hamstrung by a battle in Congress over tying new safety rules to sweeping federal highway legislation.

"There's some distrust there because NHTSA has waited so long to upgrade 216," said Sean Kane, whose consulting firm, Strategic Safety, works with plaintiffs' lawyers. "But it's an industry problem, and it's getting worse."

Bertelson, who has testified in several lawsuits, looks back on Ford's early roof-strength tests and questions why a federal safety standard written in the 1970s is still on the books.

"It's long overdue," he said. "This has been on my conscience for 30 years."

A mother's struggle

And in a tiny tract house on the outskirts of Lincoln, Neb., Penny Shipler wonders what her life would be like today if not for the accident that ravaged her spinal cord on the night of Sept. 11, 1997.

A single mother who waited at a local restaurant, Shipler accepted a ride home from work that night from a friend, Kenneth Long, in his 1996 Chevy S-10 Blazer.

Just before midnight, Long lost control of the SUV on a deserted stretch of highway.

The vehicle rolled at least four times, according to court testimony. The roof on the driver's side suffered marginal damage, and Long walked away from the wreck.

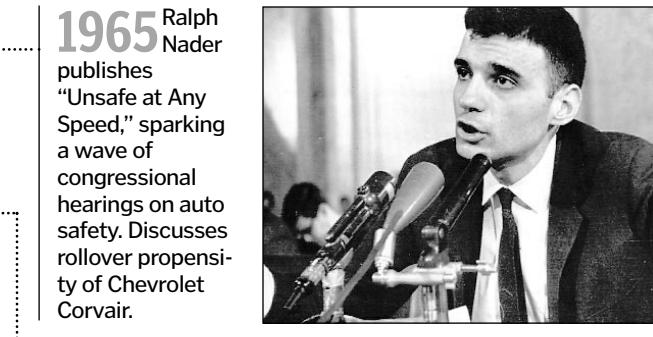
But the roof crushed down 8 inches on the passenger side. When police arrived at the scene, Shipler was hanging upside down, paralyzed from the neck down, her lap-and-shoulder belt still buckled.

"Their point right now is to worry about the cost of what it's going to take to change the vehicle," she said. "Well, look at the cost of what happens after the vehicle crashes."

You can reach Bill Vlasic at (313) 222-2082 or bvlasic@detnews.com.

History of roof design

Key events in the development of federal safety regulations covering light vehicle roof design:



1965 Ralph Nader publishes "Unsafe at Any Speed," sparking a wave of congressional hearings on auto safety. Discusses rollover propensity of Chevrolet Corvair.

1966 President Lyndon Johnson signs legislation that mandates, for the first time, safety features on every car sold in the United States.

1970 National Highway Safety Bureau finalizes regulations for occupant protection that include a 30-mph dolly test to determine how well occupants are protected during a rollover.

1971 Jan. 6 — NHTS proposes roof intrusion protection standard that involves testing both corners of roof. Jan. 11 — GM begins testing vehicles under NHTS's proposed protocol. Almost all vehicles fail test. GM does not inform the government of test results.

April 5 — GM and Automobile Manufacturers Association advise safety bureau that testing both sides of a roof is unnecessary. GM recommends using a larger metal plate to apply force over a greater portion of the roof.

Dec. 8 — Newly created National Highway Traffic Safety Administration changes its roof-strength test to conform with auto industry suggestions, testing only one corner of roof using larger steel plate. NHTSA rejects auto industry assertion that there is no relationship between roof deformation and injuries.

1973 NHTSA begins work on new regulations to reduce rollover deaths.

March 22 — Center for Auto Safety petitions NHTSA to reconsider its roof-crush standard.

Sept. 1 — Roof Crush Resistance Standard, FMVSS 216, takes effect, covering passenger cars only.

1981 Research Safety Vehicle complete. Government-funded experiment produced compact car that protected occupants in severe crashes, including rollovers. President Reagan slashes NHTSA's budget. Many auto safety rules are targeted as part of campaign to reduce regulatory burden on industry.

1988 Consumers Union publishes article on testing Samurai SUV titled, "WARNING: The Suzuki Rolls Over Too Easily," focusing public attention on rollover crashes.

1991 April 17 — NHTSA extends roof-crush requirements to pickups, minivans and SUVs weighing less than 6,000 pounds.

Dec. 18 — Congress passes Intermodal Surface Transportation Efficiency Act, mandating NHTSA write a new regulation to prevent rollover crashes.

1994 June 23 — NHTSA abandons effort to write new rollover resistance regulations, saying it is impossible to write a regulation that would reduce all types of rollover crashes. Agency says it instead will proceed with regulations to help prevent injuries in rollover crashes, including one to strengthen roofs.

1996 May 6 — NHTSA receives a petition to require "roll cages" in vehicles.

1997 Jan. 8 — NHTSA grants "roll cage" petition, begins to research roof strength and its role in rollover injuries.

2000 September — Firestone tire recall shines a light on rollover safety issue. During congressional hearings, NHTSA administrator Dr. Sue Bailey states agency needs to improve roof-crush safety standard.



2001 Oct. 22 — NHTSA asks public for comments on crushed roofs.

2002 Sept. 17 — NHTSA administrator Dr. Jeffrey Runge states roof failures contribute to serious or fatal injuries in 26 percent of rollover crashes.



2003 June 26 — Senate Commerce Committee approves bill that would require NHTSA to issue a new roof-crush regulation, along with new standards that would require improved seat structures and seat belts, side-impact head-protection air bags, and better roof padding.

2004 Senate passes bill that would require NHTSA to write a new roof-crush standard. NHTSA expected to issue tentative revised roof-strength regulation, to be finalized in 2006, for future models.

Sources: Detroit News research, Strategic Safety, Advocates for Highway and Auto Safety

About this series

This three-day series is the result of a three-month investigation by Detroit News reporters Bill Vlasic and Jeff Plungis working together with News photographer Brandy Baker.

Vlasic and Plungis reviewed thousands of pages of court records and government documents and interviewed crash victims, safety experts, attorneys and federal officials. Both Ford Motor Co. and DaimlerChrysler AG declined interview requests. General Motors Corp. agreed to an interview with one of its safety executives.

The News team reported the series in Detroit; Washington, D.C.; Los Angeles and Santa Barbara, Calif.; Lincoln, Neb.; and Corpus Christi and Childress, Texas.

Safety test ignores real-life conditions

Automakers argue decades-old test is fair and easy to repeat

By Jeff Plungis
and Bill Vlasic
The Detroit News

WASHINGTON — In an age of computer-aided design, high-tech crash tests and multimillion-dollar dummies, the test the federal government uses to assess roof strength is a relic of an earlier era.

The newly created National Highway Traffic Safety Administration finalized the rule, known as Federal Motor Vehicle Safety Standard 216, on Dec. 8, 1971. It took effect in 1973 and has not been changed significantly since.

In stark contrast to modern government tests that ensure a minimum level of protection in frontal- or side-impact collisions, the roof-strength test involves no crashes, no test dummies and no measurement of crash forces inside the vehicle's cabin.

"The (roof) test really does not reflect what happens in the real world," Dr. Ricardo Martinez, who headed the NHTSA from 1994-99, told The Detroit News. "It comes nowhere near the forces experienced in a real rollover crash."

Under rule 216, a 30-inch by 72-inch steel plate is pressed against one side of a vehicle roof with a force equal to 1.5 times the weight of the car or truck.

The plate is angled at 25 degrees on one axis and 5 degrees in another in an attempt to replicate a rollover crash angle. If the roof crushes less than 5 inches, the car or truck passes the test and can be sold in the United States.

In contrast to its reliance on a 33-year-old roof-strength test, NHTSA has aggressively tackled other auto safety issues. NHTSA has revised regulations that protect people in head-on collisions, producing standard driver-side and passenger air bags. The agency also came up with a tough side-impact collision test in the 1980s.

Despite growing concerns about rollovers, NHTSA only now is taking a serious look at roof strength. The agency hopes to finalize a new regulation by 2006.

Rating the test

Critics of 216 say the test fails in several ways to emulate real-world rollover accidents. They contend:

- The force in real-world rollovers easily exceeds the 1.5 strength-to-weight ratio used in the test.
- Accident data show the damage

in fatal crashes occurs at the steel A-pillars, which frame the front windshield. The government test spreads force across the whole side of the roof.

■ The test fails to simulate the likely additional damage done when the roof hits the ground for a second time, after the first impact has weakened the roof structure.

■ In real-world rollovers, side and back windows typically shatter and the windshield cracks, weakening the roof structure. NHTSA conducts the 216 test with the glass in place.

■ The largest SUVs and trucks, those weighing 6,000 pounds or more, aren't subject to any roof strength regulations.

Critics say weak roofs are especially dangerous for popular SUVs and pickups, which experience fatal rollover crashes twice as frequently as cars and vans due to their top-heavy designs.

"Rollover is not a figment of anybody's imagination," said R. David Pittle, senior vice president for technical policy and advocacy at Consumers Union, which publishes Consumer Reports magazine. "It's a very real problem with these vehicles. It's surprising how that gets discounted."

Automakers say the government and safety advocates have failed to make a convincing argument, backed by a thorough analysis of real-world crashes, that stronger roofs would save lives. They contend the current test is fair and "repeatable."

A repeatable test results in the same kind of damage every time it is conducted, allowing engineers to measure whether subsequent design changes result in improvements. By law, NHTSA tests must be repeatable.

In formal comments filed with the government in December 2001, General Motors Corp., Ford Motor Co., and other auto companies argued that there is no other test more reflective of real-world forces that can be consistently repeated.

Some safety officials outside the United States have challenged the contention that 216 is the best available roof-strength test.

An official evaluation of safety standard 216 commissioned by the Australian government in 1995 concluded roof strength at the level set by the U.S. standard would

Roof strength tests

The federal government employs a static test, known as Safety Standard 216, to every car and truck under 6,000 pounds before it can be sold in the United States. Critics say the test doesn't come close to replicating what happens in a real-world rollover. The government has rejected two alternative dynamic tests because they are not "repeatable." But several manufacturers already use both alternatives to help develop rollover-worthy vehicles.

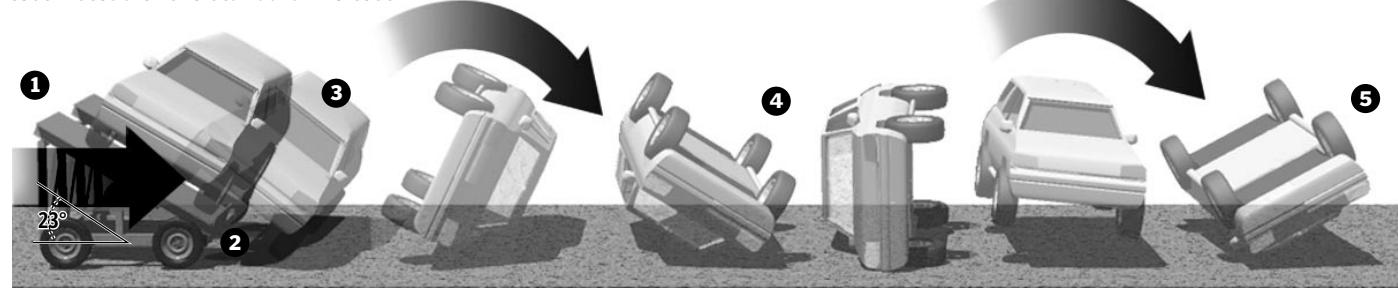
Standard 216 test

The federal government's current roof-crush resistance test.

1. A vehicle is secured on a rigid horizontal surface.
2. A flat, steel rectangular-shaped plate is placed on the vehicle's roof.
3. The plate is used to apply 1.5 times the unloaded weight of the vehicle onto the roof structure.
4. During the test, the plate is angled, positioned and shifted to simulate vehicle-to-ground contact on the roof.
5. The plate is positioned to fixed locations on the vehicle's roof, depending upon the slope of the vehicle's roof, to ensure that the plate stresses the roof over the front seat.
6. A vehicle complies if the roof prevents the test plate from intruding or moving downward more than 5 inches.

Dolly test

The test was developed as part of another federal safety standard, known as 208, designed to enhance and measure occupant protection. Automakers have the option of using the dolly test instead of the standard 216 test.



Sources: National Highway and Traffic Safety Administration, Society of Automotive Engineers

yield practically no benefit.

The study also found improved roof strength and better seat restraints would reduce rollover injuries.

More than three decades ago, before 216 was enacted, the government devised a tougher roof-strength test. On Jan. 6, 1971, NHTSA's predecessor, the National Highway Safety Bureau, proposed a test that would have used a 12-inch-square plate to apply force to a vehicle's A-pillars — first on one side then the other. The A-pillars, which frame the windshield, often bear the brunt of a rollover crash.

On Jan. 11 that year, GM began a testing program to determine how its vehicles would hold up under the government's proposal, according to company documents used as

exhibits in court cases. Of six models tested in January, only one could meet the government's proposed test. In April 1971, GM weighed in with public comments on the government's proposal. The company suggested a different roof test — one its vehicles could pass. A wider, longer steel plate was suggested. GM also recommended a flatter test angle. Both changes spread the force across the entire side of the vehicle instead of concentrating it at the A-pillar, making it easier to pass.

GM also said it was pointless to test both sides of the roof, because the roof structure was the same on either side. This discounts the fact a vehicle's first contact with the ground during a rollover often shatters windows and weakens roof integrity, making the second or trailing impact more dangerous.

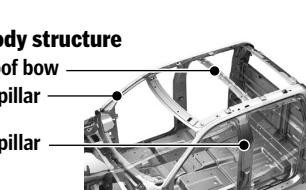
At the same time, the auto industry's main lobbying group in 1971, the Automobile Manufacturers Association, was challenging the government's assertion that stronger roofs would save lives in rollover crashes.

Weaker test approved

In December 1971, the government adopted the less stringent test proposed by GM and the AMA — the rule 216 that still applies today.

Internal company documents that have surfaced in recent lawsuits, however, show that automakers' public statement in 1971 didn't always match internal discussions.

In an April 1966 meeting of its



Body structure
Roof bow
A-pillar
B-pillar

general technical committee, GM engineers outlined safety goals for the 1969 model year. One goal was to protect an occupant during a 70-mph rollover. The rollover would be simulated by a 45-degree, 5% foot drop test.

The auto companies did not share information about their internal goals or testing programs with the government.

While NHTSA agreed to the weaker 216 roof-strength test, it said the test would be used temporarily while it ironed out problems with a test that would better simulate real-world rollovers.

NHTSA eventually hoped to employ a dolly test, which consists of loading a vehicle on a slanted cart, accelerating it to 30 mph, and then bringing it to a sudden

stop to trip the vehicle into a rollover.

From 1971 until today, automakers have had the option of conducting the dolly test instead of safety standard 216 to meet government requirements. But no automakers use the option. Both automakers and safety advocates say the dolly test is difficult to repeat. NHTSA conducted research on improvements off and on during the 1970s and 1990s, but it could never devise a test that was also repeatable.

In Europe, some manufacturers use dolly tests as part of their internal efforts to improve safety. Volvo and Mercedes-Benz both use dolly tests and another dynamic test, known as a drop test, in addition to the government's 216 roof-crush test. Toyota, Volkswagen and BMW also conduct dolly tests, according to company safety brochures.

Detroit's automakers conduct the tests only in connection with litigation.

Steve Forrest is senior engineer with Safety Analysis and Forensic Engineering, an independent research firm in Goleta, Calif. Forrest is often hired by lawyers of crash victims to estimate the roof strength of specific vehicles. He was trained at General Motors Institute in Flint.

Forrest uses a drop test, developed by the Society of Automotive Engineers in 1967. A vehicle is suspended upside-down with steel cables at a specified angle. The cables are released, and the vehicle crashes onto its roof.

Forrest said he can replicate the damage done to a roof by standard 216 with a 3-inch drop. To replicate the damage done in real-world crashes, he usually has to drop the vehicles from between 12 inches and 18 inches.

In one test, a medium-size SUV suspended from 18 inches suffered 14 inches of roof crush. An identical model, strengthened with structural foam and steel rods, crushes less than 3 inches. Forrest estimates the materials would cost an automaker as little as \$20 per unit in mass production.

The test results, Forrest says, show rule 216 is dangerously inadequate. "It's like trying to predict occupant protection in a 30 mph crash by doing a 5-mph bumper test," he said, "without any crash-test dummies."

You can reach Jeff Plungis at (202) 906-8204 or jplungis@detnews.com.

Ex-GM executive turns courtroom crusader

Expert witness, lawyer use automaker's data to win \$26M test case.

By Jeff Plungis
and Bill Vlasic
The Detroit News

LOS ANGELES — At a time when most people would be contemplating retirement, Don Friedman launched a new career: convincing the world that General Motors Corp. was misleading the public about the dangers of collapsing roofs in rollover crashes.

In the 15 years since, the 76-year-old Californian has become a powerful adversary to Detroit's automakers in a series of trials that have cost the companies tens of millions of dollars.

In lawsuit after lawsuit, the former GM executive has been the plaintiff's star expert witness, detailing his contention that weak roofs injure people in crashes.

Key witness

Friedman began working as an expert witness in court cases in 1986 when government auto safety research funding dried up.

His passion about roof strength goes beyond the courtroom. Since the National Highway Traffic Safety Administration asked the public for comments on roof strength in November 2001, Friedman has filed 12 separate submissions.

In March, Friedman, Public Citizen President Joan Claybrook and Clarence Ditlow, executive director of the Center for Auto Safety, met with NHTSA administrator Dr. Jeffrey Runge and senior agency staff to present data on roof-crush injuries to the NHTSA.

GM has called Friedman's arguments "junk science." It strongly disputed Friedman's contention that head and neck injuries



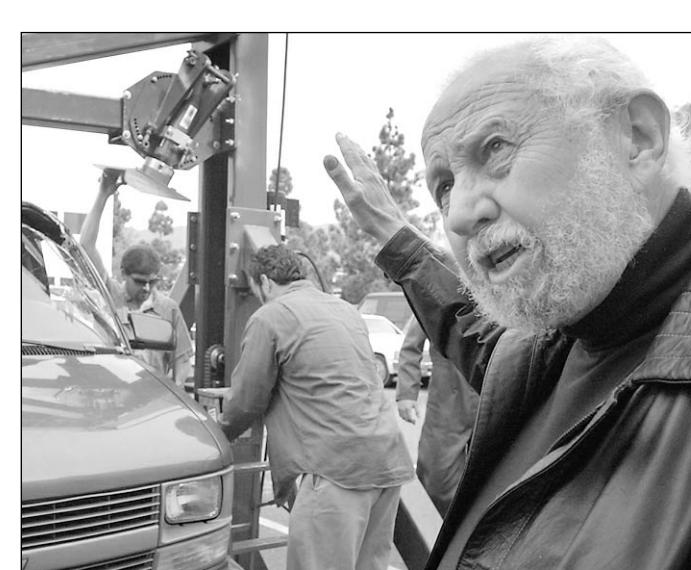
Photos by Brandy Baker / The Detroit News

Robbie Lambert gives his daughter, Kamea, a ride in their Rolling Hills, Calif., home. Lambert became a quadriplegic after a rollover accident in his Chevy Blazer.

can result from the velocity of metal intruding into the passenger cabin as a weak roof buckles.

"It is obvious to even first-year college physics students that 'Friedman's Physics' are absolutely wrong," wrote Robert Lange, GM's executive director of structure and safety integration in August 2002 comments to the NHTSA.

GM also challenged Friedman in court during the trial of Penny Shipler, a Nebraska woman paralyzed in a rollover accident, for discussing information on the wit-



Former GM executive Don Friedman, who was the star expert witness in both Robbie Lambert's trials, contends GM's internal data contradict its published studies.

bert's seat. He awoke a quadriplegic.

lawyer, and researcher Paula Lawlor.

Friedman's attorney argued the Blazer's roof was weak and defective. GM said the vehicle met federal safety standards, and Lambert broke his neck through the force of his body falling into the roof.

A jury sided with Lambert in 1996, saying GM's roof design was 50 percent responsible for his injuries. GM won an appeal, forcing a new trial. A second jury deemed GM 60 percent at fault in 2001, awarding Lambert \$15 million out of \$257 million.

"I thought it was like a tank," Lambert said of the Blazer he was driving. "I found out otherwise."

Friedman, whose firm charges \$400 per hour, was a witness in both Lambert trials.

Powerful team

The Lambert trial marked the first teaming of Friedman with two other important players in the world of roof-crush litigation — Michael Piuze, a Los Angeles trial

lawyer, and researcher Paula Lawlor.

Piuzé has won four roof-crush verdicts against Detroit automakers, utilizing Friedman and Lawlor's research.

"They came up with some new stuff that made the second Lambert trial not even remotely close to the first one," he said. "It became a test case for the way roof-crush cases will be conducted."

Piuzé contends the research showed GM was saying one thing in internal memos and another to the public and federal regulators.

For example, GM documents show that the company considered a strong roof a basic safety element in the 1950s and 1960s, but engineers had a hard time making roofs strong enough to meet their goals.

When the government proposed the first roof-strength regulation in 1971, GM found in internal tests that its vehicles were failing the proposed standard. Instead of redesigning its vehicles, Piuzé said,

Key verdicts

Here are some major jury awards in lawsuits involving crushed vehicle roofs since 1990. Most roof-crush lawsuits are settled out of court. In some cases, the companies were only held partially responsible for the award.

Case	Date	Award
Buccolo v. GM	1990	\$10.3M
Hughes v. GM	1994	\$11.9M
Lambert v. GM*	1996	\$15.0M
Hess v. Ford	1998	\$12.5M
Romo v. Ford**	1999	\$23.7M
Styles v. GM	2001	\$5.2M
Lambert v. GM	2001	\$25.7M
Harris v. Ford	2002	\$8.1M
Shipler v. GM	2003	\$18.6M
Benavides v. Ford***	2003	\$225M

*GM appeal upheld in 1998; new trial ordered.

**Jury ordered \$290 million in punitive damages, reduced by U.S. Supreme Court.

***Parties settled out of court for undisclosed sum while on appeal.

GM came up with a test its cars could pass. That test later was adopted by the government and is still in use today.

For Robbie Lambert, life has become a little easier. GM appealed the second verdict, but all appeals were exhausted last year. He is richer, and has moved with his wife, Tarrah, and baby daughter, Kamea, out of a mobile home and into a multimillion-dollar house in Los Angeles.

Lambert will never hold his daughter, but Kamea often climbs on his feet at the bottom of his wheelchair and gives his legs a hug. Sometimes, she climbs on the chair to go for a