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August 4, 1996 BUSINESS

Door latch deal not as open, shut as thought

By Richard Willing
Chrysler Corp. continues to insist the rear door latches on its popular 1984-95 minivans are safe.

It is replacing them, the company says, to allay doubts raised by misleading reports in newspapers and on television.

But research done by the National Highway Traffic Safety Administration and contained in NHTSA files paints a different picture.

The latches, NHTSA determined, were significantly weaker than competitors' latches, more likely to open during a side-impact crash and to result in the ejection of rear-seat passengers who have mostly been children.

In November 1994, an NHTSA engineering analysis concluded that the "latch failure is a safety defect that involves children."

Four months later, Chrysler agreed to the replacement campaign, and NHTSA agreed not to enter a defect finding or to recall the vehicles.

"A deal was cut that allows a replacement campaign to proceed at a snail's pace," says safety consultant Ralph Hoar, Chrysler's chief critic in the matter.

"It was cut from a rigged deck Chrysler provided."

Comments? Criticism? Story ideas? Talk to us.
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EA94-005 CHRYSLER MINIVAN LIFTGATE LATCH FAILURE

INVESTIGATION REVIEW

COPY OF MATERIALS
SHOWN TO CHRYSLER OFFICIALS;
NOVEMBER 17, 1994

EA94-005 CHRYSLER MINIVAN LIFTGATE LATCH FAILURE

DOOR LATCH SPECIFICATIONS

- **FMVSS No. 206 (SIDE DOORS) REQUIRES: (1) PRIMARY AND SECONDARY LATCH POSITIONS (2) NON-SEPARATION UNDER TRANSVERSE LOAD OF 2000 LBS. ON PRIMARY AND 1000 LBS. ON SECONDARY (3) NON-SEPARATION UNDER LONGITUDINAL LOAD OF 2500 LBS. ON PRIMARY AND 1000 LBS. ON SECONDARY. NO REQUIREMENT FOR LIFTGATE LATCH.**

- **CHRYSLER SPECIFICATION FOR REAR HATCH: (1) ONLY ONE LATCH POSITION (2) TRANSVERSE DIRECTION- 750 LBS. (3) NO REQUIREMENTS FOR THE LONGITUDINAL DIRECTION.**

- **FORD AEROSTAR AND GM APV SPECIFICATIONS: (1) PRIMARY AND SECONDARY LATCH POSITIONS (2) NON-SEPARATION UNDER LOADS THAT EQUAL OR EXCEED STANDARD 206 REQUIREMENTS FOR BOTH THE LATERAL AND LONGITUDINAL DIRECTIONS. THE FORD LATCH IS ENCLOSED IN A METAL CASE, AND THE APV INCORPORATES TWO LATCHES ONE ON EACH SIDE OF THE LIFTGATE.**

- **MOST OTHER PEER MINIVANS AS WELL AS STATION WAGONS INCORPORATE PRIMARY AND SECONDARY LATCH POSITIONS.**

EA94-005 CHRYSLER MINIVAN LIFTGATE LATCH FAILURE

TESTING (STATIC)

- **ODI STATIC TESTING OF CHRYSLER AND PEER MINIVANS (FMVSS 206)**
  - **CHRYSLER MINIVANS, FORD AEROSTAR, CHEVROLET LUMINA APV, TOYOTA PREVIA MITSUBISHI EXPO, VOLKSWAGEN EURO VAN, MAZDA MPV, NISSAN QUEST, AND MERCURY VILLAGER WERE ALL TESTED AGAINST FMVSS No. 206.**
  - **PRE 1989 CHRYSLER MINIVANS HAVE NO LONGITUDINAL RETENTION CAPABILITY (NO UPSET HEAD ON STRIKER).**
  - **ONLY CHRYSLER MINIVAN LATCHES HAD FAILURE LOADS BELOW THE FMVSS 206 REQUIREMENT FOR THE TRANSVERSE DIRECTION (A MEAN OF 1300 LBS., 700 LBS BELOW THE 206 REQUIREMENT). THE MODIFIED LATCH FOR 1995 MODELS PASSED THE REQUIREMENT IN THE TRANSVERSE DIRECTION (2202 LBS).**
  - **MAZDA MPV LATCHES HAD FAILURE LOADS BELOW THE FMVSS 206 REQUIREMENT FOR THE LONGITUDINAL DIRECTION (A MEAN OF 1885 LBS., 615 LBS. BELOW THE 206 REQUIREMENT). TOYOTA PREVIA MARGINALLY FAILED AT 2437 LBS.**

EA94-005 CHRYSLER MINIVAN LIFTGATE LATCH FAILURE

TESTING (STATIC)

- STATIC TESTING (MODIFIED LATERAL FMVSS 206)
  - GOAL WAS TO DUPLICATE THE FORK BOLT-DETENT LEVER BYPASS FAILURE SEEN IN THE FIELD
  - LATCH WAS TESTED AT ANGLES BETWEEN +90 AND -90 DEGREES.
  - THE 1991-1993 CHRYSLER MINIVAN WAS THE WORST PERFORMER IN ALL BUT THE -90 DEGREES DIRECTION AMONG ALL THE LATCHES TESTED. THIS DIRECTION IS SIMILAR TO A RIGHT-SIDE IMPACT TO THE VEHICLE.
  - THE DAMAGE PATTERN SEEN IN THE REAL WORLD WAS DUPLICATED IN +90 DEGREES DIRECTION. THE FORK BOLT AND DETENT LEVER BYPASSED EACH OTHER AND THE RESTRICTOR SLIPPED BEFORE ANY SIGNIFICANT BENDING HAD OCCURRED.
  - CHRYSLER'S TEST RESULTS COINCIDE WITH ODI'S TEST RESULTS.

EA94-005 CHRYSLER MINIVAN LIFTGATE LATCH FAILURE

TESTING (DYNAMIC, LEFT REAR QUARTER PANEL, MOVING DEFORMABLE BARRIER, MDB)

TEST NO.	MODEL	IMPACT SPEED	IMPACT DIRECTION	IMPACTING OBJECT	HATCH OPENED	EJECTION	REAR SEAT
1	'87 CARAVAN	33.6 MPH	26.4 DEG. FORWARD	3600 lb MDB	YES	2 DUMMIES	BENT
2	'91 CARAVAN	30.2 MPH	26.4 DEG. FORWARD	3600 lb MDB	NO	NO EJECTIONS	BENT
3	'91 CARAVAN	31.1 MPH	15 DEG. REARWARD	3600 lb MDB	YES	1 DUMMY	BENT
4	'91 AEROSTAR	31.1 MPH	15 DEG. REARWARD	3600 lb MDB	NO	NO EJECTIONS	OK
5	'91 MAZDA MPV	31.2 MPH	15 DEG. REARWARD	3600 lb MDB	NO	NO EJECTIONS	OK
6	'95 LATCH	31.1 MPH	15 DEG. REARWARD	3600 lb MDB	NO	NO EJECTIONS	BENT

EA94-005 CHRYSLER MINIVAN LIFTGATE LATCH FAILURE

CONCLUSIONS

- ANNECTODAL CASES
  - AT LOW AND MODERATE IMPACT SPEEDS, LIFTGATE OPENS AND OCCUPANTS ARE EJECTED.
  - LIFTGATE LATCHES EXHIBIT A COMMON FAILURE MODE (FORK BOLT-DETENT LEVER BYPASS).

- FARS DATA
  - CHRYSLER EJECTION RATE FOR KNOWN EJECTION PATHS IS TWICE THAT OF ALL OTHER MINIVANS.
  - 75% OF EJECTIONS ARE CODED UNDER UNKNOWN EJECTION PATHS. ANALYSIS OF THESE UNKNOWN CASES INDICATES THAT MANY MAY BE LIFTGATE FATAL EJECTIONS.

- NASS DATA
  - LIFTGATES OPEN DURING LOW AND MODERATE IMPACT SEVERITY.
  - LIFTGATE LATCH FAILURE ACCOUNTS FOR THE MAJORITY OF THE FAILURE MODES IN CHRYSLER MINIVANS.
  - CRASH SEVERITY IS LESS ON CHRYSLER VEHICLES.

EA94-005 CHRYSLER MINIVAN LIFTGATE LATCH FAILURE

CONCLUSIONS (CONT.)

- **STATIC COMPONENT TESTS**
  - **CHRYSLER'S DESIGN CRITERIA FOR THE LIFTGATE LATCH ARE LOWER THAN PEER AND FMVSS 206 STANDARDS**
  - **ONLY CHRYSLER MINIVAN LATCHES FAILED THE FMVSS 206 REQUIREMENT IN THE TRANSVERSE DIRECTION.**

- **DYNAMIC TESTS**
  - **AT A MODERATE SPEED IMPACT (30 MPH), CHRYSLER MINIVANS RESULT IN LIFTGATE LATCH FAILURE AND OCCUPANT EJECTIONS.**
  - **UNDER THE SAME TEST CONDITIONS, PEER VEHICLES' LIFTGATES REMAIMED CLOSED.**

- **LATCH DESIGN**
  - **CHRYSLER HAS BEEN MODIFYING THE LATCH/STIKER MECHANISM SINCE JANUARY OF 1988.**
  - **THE LATEST MODIFICATION IMPROVES THE STRENGTH OF THE LATCH BY 50% AND IS CURRENTLY BEING USED IS 1995 MODEL YEAR VEHICLES. IT COULD ALSO BE USED IN 1991 THROUGH 1994 MODEL YEAR VEHICLES.**
  - **THE INCREASED STRENGTH IN THE 1995 LATCH WAS DEMONSTRATED IN BOTH COMPONENT AND CRASH TESTS.**

- **THE LATCH FAILURE IS A SAFETY DEFECT THAT INVOLVES CHILDREN.**