

Door Lock and Door Retention Components

A Canadian Perspective

September 3, 2002

Issue

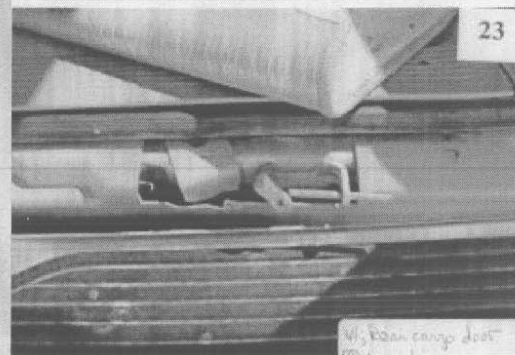
- Testing procedure of door lock and door retention components are not sufficiently defined (especially sliding side door of minivan)

Goal

- To define a consistent testing procedure of door lock and door retention components for sliding side door on minivan
- Further door latch strength improvements

Field Cases

Rear cargo door failure one occupant was ejected



2000 Cadillac Escalade (CHI2 1515)



Transport
Canada

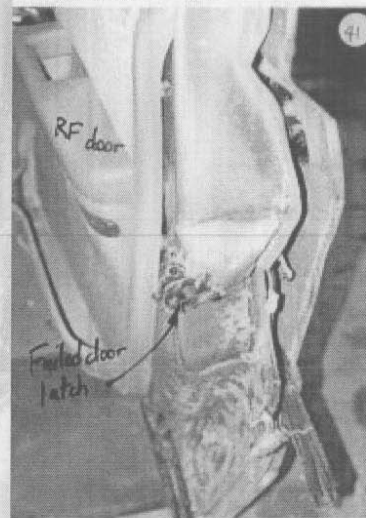
Transports
Canada

Field Cases

Sliding side door separation and Rear cargo door failure
three occupants were ejected



2000 Chevrolet Venture
(LTVS 1296)



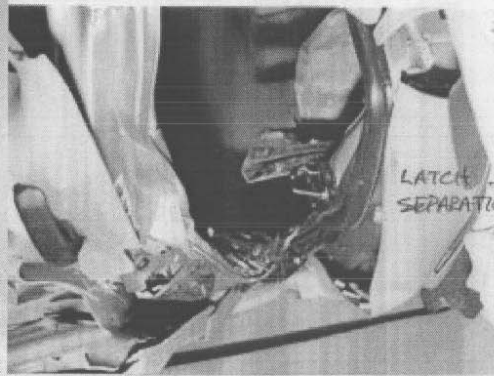


Transport
Canada

Transports
Canada

Field Cases

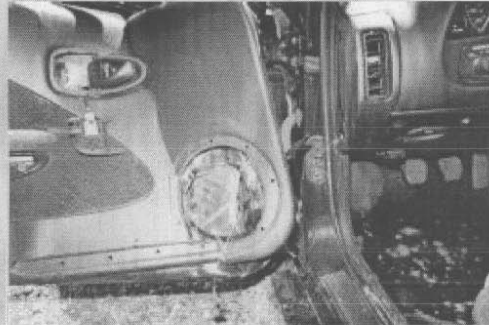
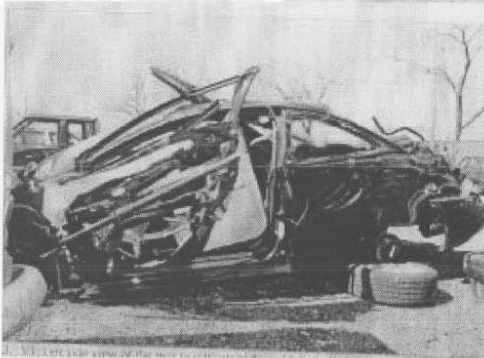
Seat anchorage failure followed by side door latch separation, one occupant partially ejected



2001 Pontiac Montana (SID4-1606)

Field Cases

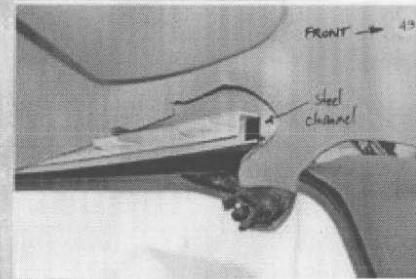
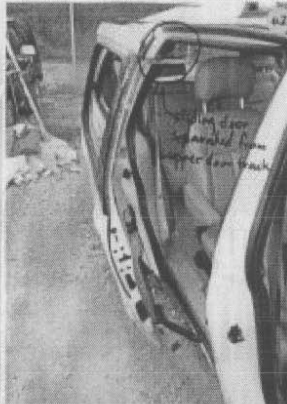
Driver side door failure, one occupant was ejected



1997 Saturn SC2 (ASF2-1915)

Field Cases

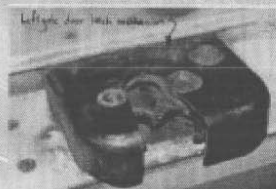
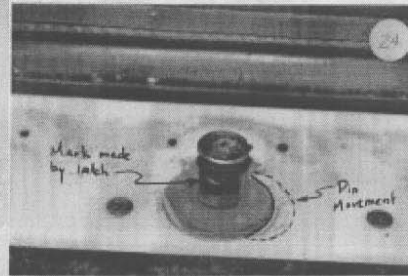
Sliding side door failure, two occupants were ejected



1999 Oldsmobile Silhouette (LTVS-1273)

Field Cases

Rear door failure



1992 Ford Aerostar XL (LTVS-1206)

Field Cases

Rear door failure, one occupant was ejected

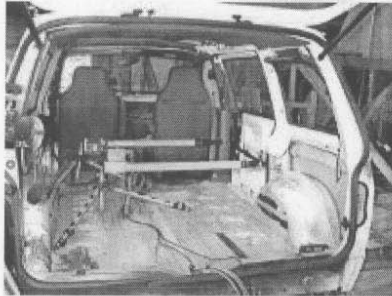


1993 Ford Aerostar XL (LTVS-1280)

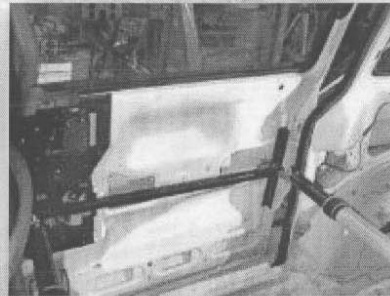
Sliding Side Doors

- Review of the Push Vs. Pull test procedure
- Final set of test , Pull only
- Pin Latch

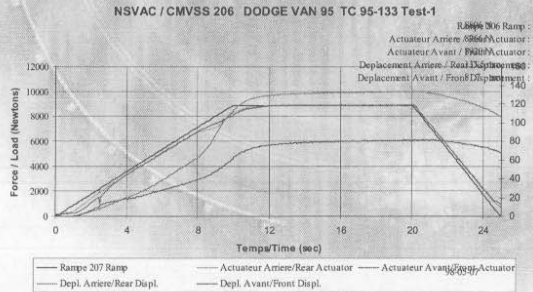
Pull Test



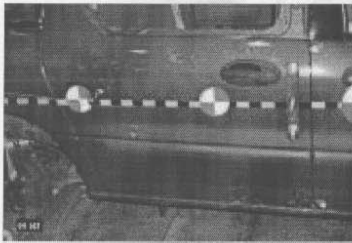
Inside view of the sliding door, pre-test



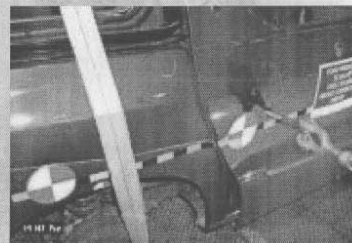
Inside view of the sliding door, post-test



Pull Test

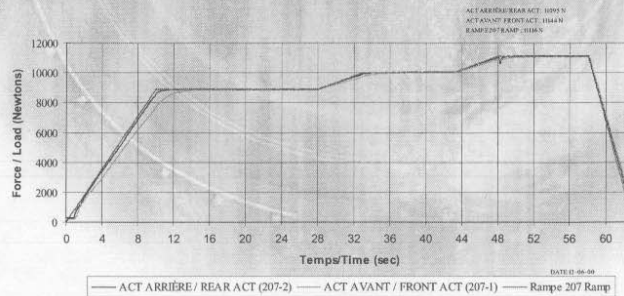


Outside view of the sliding door, pre-test

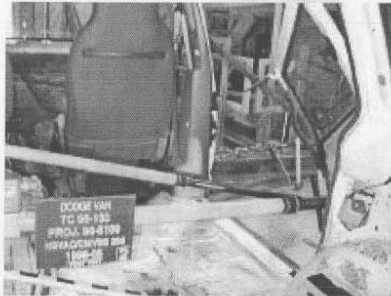


Outside view of the sliding door, post-test

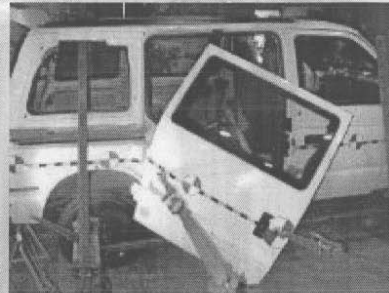
NSVAC / CMVSS 206(Tension) FORD WINDSTAR 1999 TC 99-147



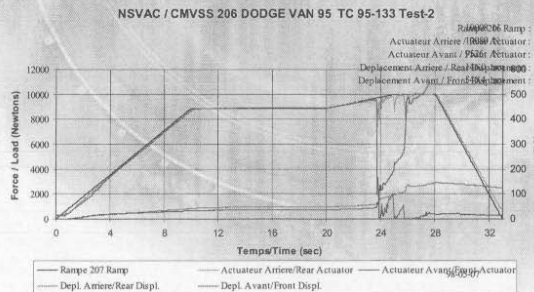
Pull Test



Inside view of the sliding door after maximum load test



Outside view of the sliding door after maximum load test



Pull Test

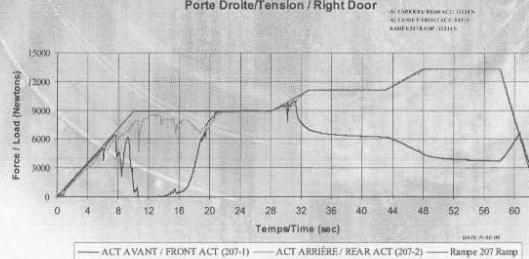


Outside view of the sliding door, pre-test

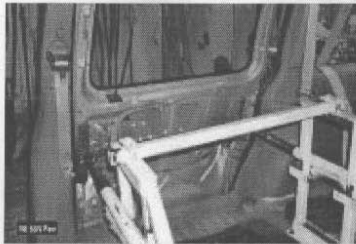


Outside view of the sliding door, post-test

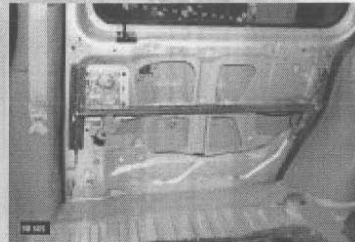
NSVAC / CMVSS 206 HONDA ODYSSEY 1999 TC 99-146
 Porte Droite/Tension / Right Door



Push Test

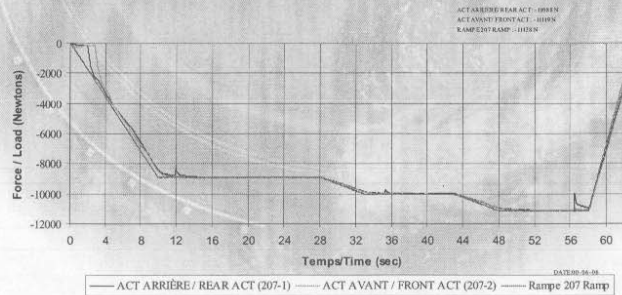


Inside view of the sliding door post-test



Inside view of the sliding door pre-test

NSVAC / CMVSS 206 FORD WINDSTAR 1998 TC98-505



Push Test

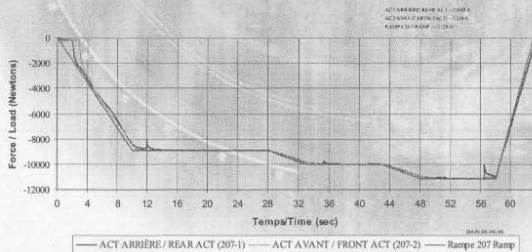


Outside view of the sliding door pre-test

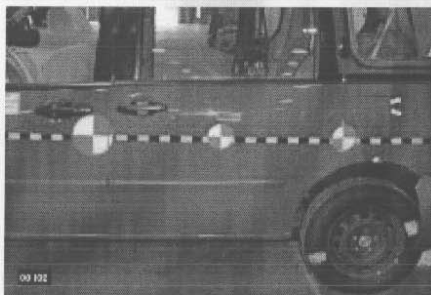


Outside view of the sliding door post-test

NSVAC / CMVSS 206 FORD WINDSTAR 1998 TC98-505



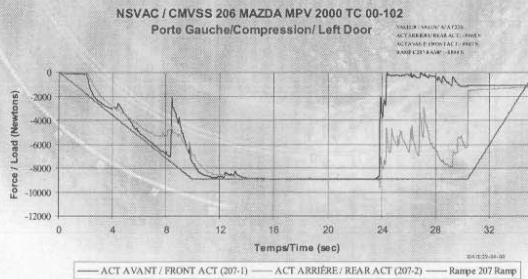
Push Test



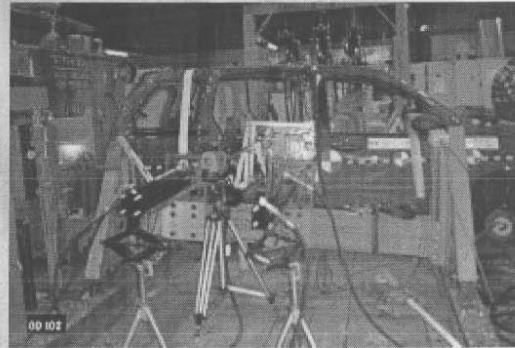
Outside view of the sliding door pre-test



Outside view of the sliding door post-test



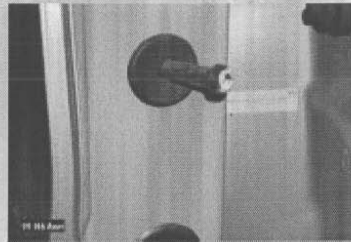
Push Test



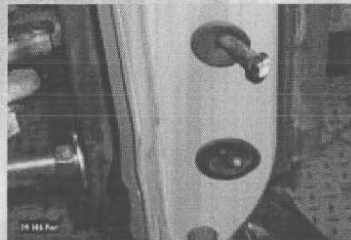
View of the test vehicle on the vehicle test structure



B Pillar Striker



Pre-test



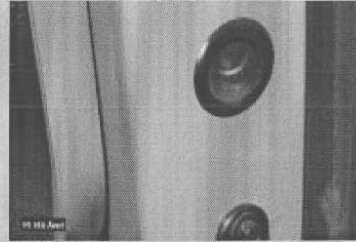
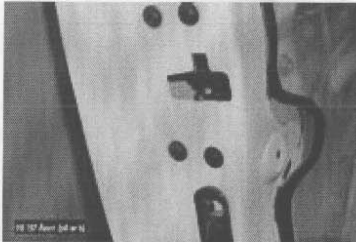
Post-test



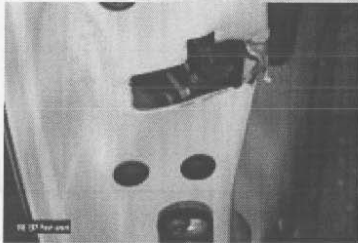
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B Pillar door latch

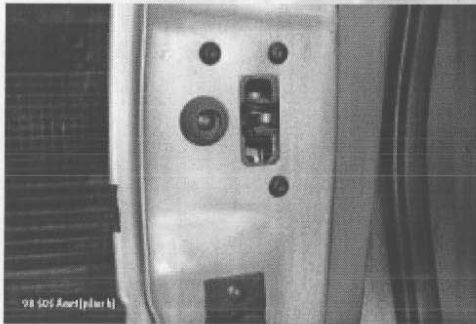


Pre-test

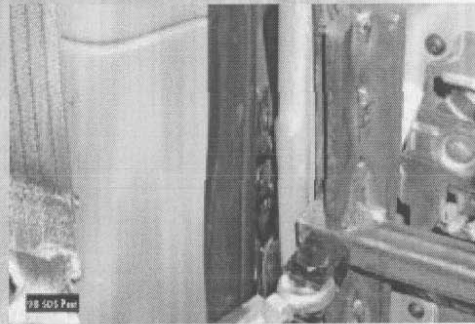


Post-test

B Pillar door latch



Pre-test



Post-test



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Canada

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In Conclusion ...

- Rear minivan and SUV hatch doors continue to fail in field
- Sliding side doors with pin type latches do not provide structural integrity

