

PET RESTRAINT SYSTEM

TEST RESULTS

Tests conducted for

Company of Animals

TEST NUMBERS: CA 2004-7

Testing date: November 13, 2020

LABORATORY TEST PROCEDURE for FMVSS 213 Child Restraint Systems

The Office of Vehicle Safety Compliance (OVSC) provides contractor laboratories with Laboratory Test Procedures as guidelines for obtaining compliance test data. The data are used to determine if a specific vehicle or item of motor vehicle equipment meets the minimum performance requirements of the subject Federal Motor Vehicle Safety Standard (FMVSS). The purpose of these OVSC Laboratory Test Procedures is to present a uniform testing and data recording format, and provide suggestions for the use of specific equipment and procedures

GENERAL REQUIREMENTS

The test procedures, methods, and associated equipment are based on the requirements of the following documents to the extent referenced herein. 49 CODE OF FEDERAL REGULATIONS (CFR) 571 FEDERAL MOTOR VEHICLE SAFETY STANDARDS (FMVSS)

- FMVSS 213 - Child Restraint Systems
- FMVSS 209 - Seat Belt Assemblies
- FMVSS 302 - Flammability of Interior Materials
- FMVSS 225 - Child Restraint Anchorage Systems

TEST METHODS

The tests were performed on an impact sled located at the UM Transportation Research Institute. The sled operates on a rebound principle, achieving a desired velocity change by reversing its direction during the impact event. The crash pulse is trapezoidal in shape and is similar to that of a small automobile. Sled velocity is monitored immediately before and after impact to compute the overall change in velocity. The FMVSS 213 corridor is shown as a shaded area on the sled deceleration plot when appropriate, and peak deceleration is reported.

The test data are digitized on-line and analyzed on a workstation. All test signals are filtered according to the requirements of SAE J-211, and signal output conforms to the SAE J-1733 sign convention. Photographic equipment includes high-speed (1000 frames per second) digital video cameras from both side and overhead or forward directions. The strobe flash corresponds to time-zero on the plots.

**PET RESTRAINT SYSTEM
TEST DATA SUMMARY**

Test Number: **CA 2006**
Test Date: November 13, 2020

SET-UP

Product Description:

Company of Animals Medium (M) pet harness used to restrain a
23 kg (50-lb) surrogate dog secured with the vehicle lap & shoulder belts
routed through the rear belt loop on the harness

Frontal impact
FMVSS 213 standard seat
48 km/h (30 mph), 20 g

RESULTS

Velocity	48.5 km/h	(30.1 mph)
Peak Acceleration	26.0 g	

Forward 'Muzzle' excursion	700 mm	(27.6 in)
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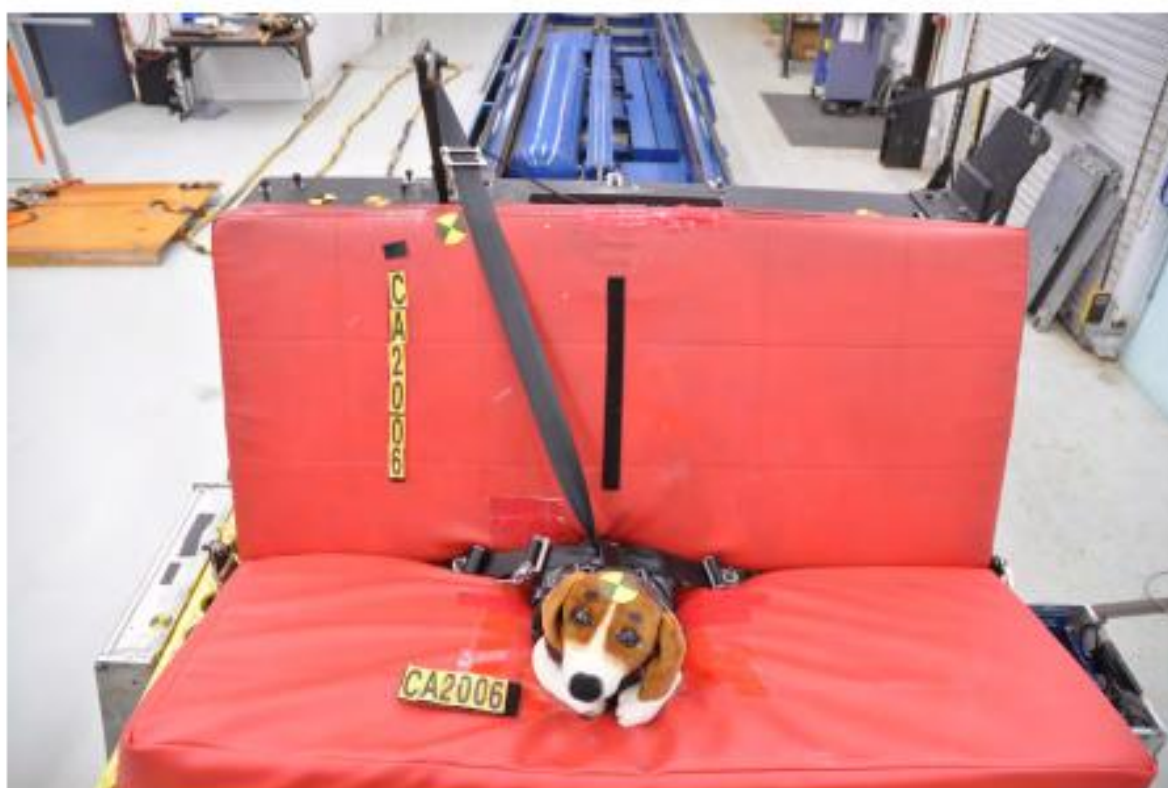
Lap belt load	5250 N	(1180 lbf)
Shoulder belt load	2970 N	(668 lbf)

Comments

The harness remained intact and limited the forward motion of the dog dummy. At the end of the test, the dog dummy was still on the test bench.

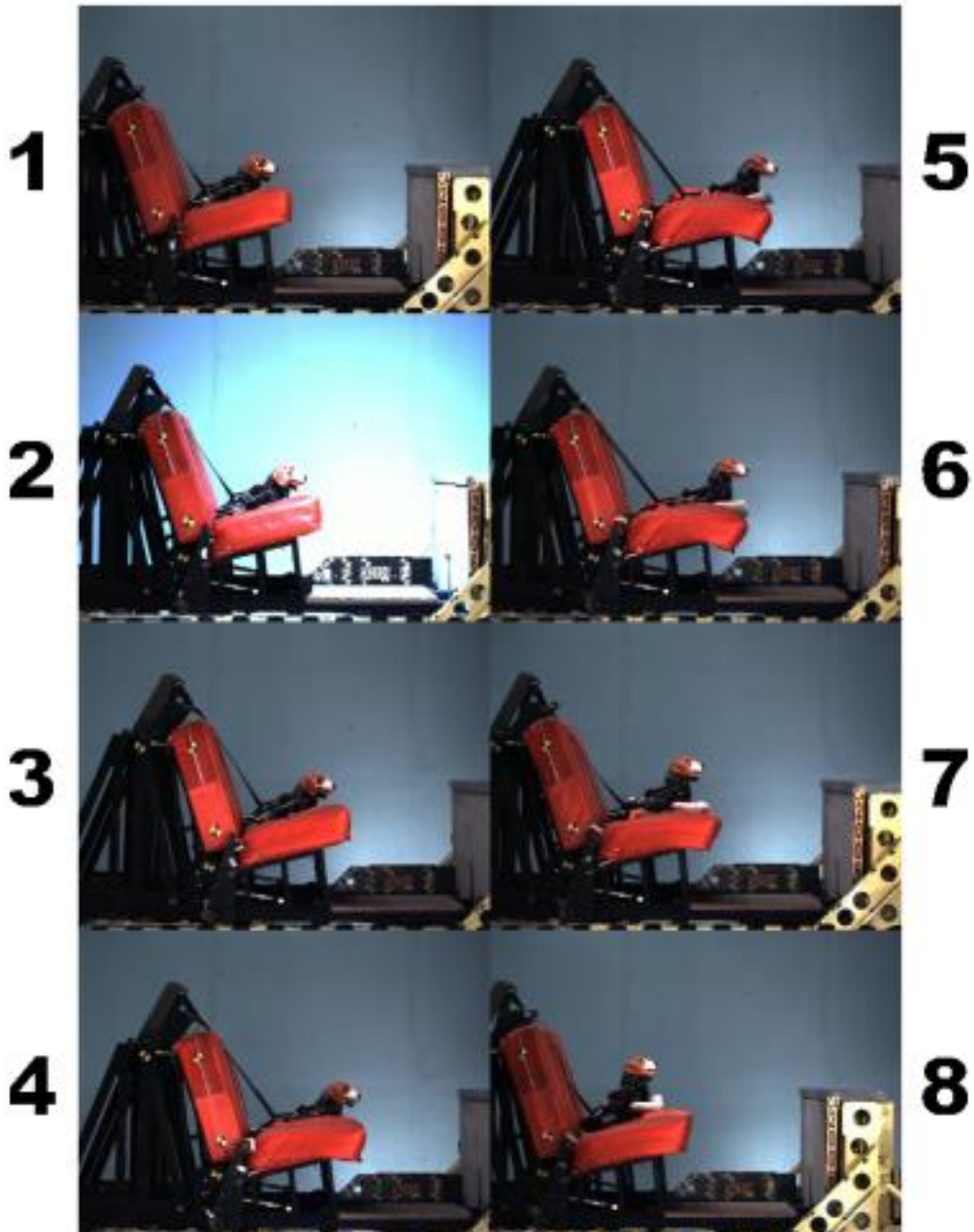


ca200603.JPG



ca200602.JPG

CA2006





ca2006A03.JPG



ca2006A02.JPG



ca2006A05.JPG



Results

CA2006

Nominal = 30 mph / 20 g
Actual[P] = 48.5 km/h (30.1 mph) (81.5%) Pressures: 112.2/1065
Plateau Avg. = -21.5 G; Peak = -26.0 G

Dummy: Dog Dummy (50 lb, 23 kg)
Buck: FMVSS 213 Standard Bench

Buck Weight: 1859

COA pet harness
secured with 3-point belt

Sled Summary

Sled Pulse Duration = 72.7 ms

Efficiency = $V_{out} / V_{in} = 21.8 / 26.7 = 81.5\%$

Sled Plateau Average Level = -21.5 G

Sled Delta V = 48.5 kph (30.1 mph)

Sled Decel Peak = -26.0 G

Stopping Dist. (est) = .507 m

Belt Loads

Lap Belt Load -12.8 N (-2.9 lb) @ 104 ms

5250.1 N (1180.3 lb) @ 63 ms

Shoulder Belt Load -5.3 N (-1.2 lb) @ 5 ms

2970.2 N (667.7 lb) @ 64 ms

11/11/2020

