Report No.
4642921-018

CHILD RESTRAINT SYSTEM COMPONENT TESTS FMVSS 213

Model No:
Combi Babyride

SGS North America Inc.
Consumer and Retail
291 Fairfield Avenue
Fairfield, NJ 07004

DRAFT

October 6, 2020

DRAFT REPORT

213-SGS-20-018

PREPARED FOR

U.S. DEPARTMENT OF TRANSPORTATION
NATIONAL HIGHWAY TRAFFIC SAFETY ADMINISTRATION
ENFORCEMENT
OFFICE OF VEHICLE SAFETY COMPLIANCE
1200 NEW JERSEY AVE, SE (ROOM W45-304)
WASHINGTON, D.C. 20590

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Report No.: 4642921-018

Prepared by: SGS North America Inc.

Approved by: 
Frank Savino

Date: October 6, 2020

Report Accepted by:

Contract Technical Manager, O.V.S.C.
Office of Vehicle Safety Compliance

Accepted By:
Natasha Iwegbu

Acceptance Date:

DRAFT

1. Report No. 213-SGS-20-018	2. Govt. Accession No.	3. Recipient's Catalog No.
4. Title and Sub-Title CHILD RESTRAINT SYSTEM, COMPONENT PARTS, Model No.: Combi Babyride		5. Report Date: October 6, 2020
6. Performing Organization Code SGS-213-20-018		7. Author: Frank Savino, Project Manager
8. Performing Organization Report No. SGS-DOT-213-20-018		9. Performing Organization Name and Address: SGS North America Inc. 291 Fairfield Avenue Fairfield, NJ 07004
10. Work Unit No.		11. Order Number DTNH22-17-D-00079
12. Sponsoring Agency Name and Address: U.S. DEPARTMENT OF TRANSPORTATION NATIONAL HIGHWAY TRAFFIC SAFETY ADMINISTRATION ENFORCEMENT OFFICE OF VEHICLE SAFETY COMPLIANCE 1200 NEW JERSEY AVE, SE (ROOM W45-304) WASHINGTON, D.C. 20590		13. Type of report and Period Covered DRAFT TEST REPORT July 16 – August 14, 2020
14. Sponsoring Agency Code: NVS-220		15.

16. Abstract

THIS REPORT PRESENTS THE RESULTS OF TESTS PERFORMED IN ACCORDANCE WITH FEDERAL MOTOR VEHICLE SAFETY STANDARD NO. 213 ON CHILD RESTRAINT SYSTEM COMPONENT PARTS.

MODEL NUMBER: Combi Babyride

The initial strength of the adjuster webbing is below the minimum value specified in FMVSS 213

17. Key Words FMVSS No. 213 Child Restraint System Safety Engineering	18. Distribution Statement Copies of this report are available from: National Highway Traffic Safety Administration Technical Information Services, Room 5111 (NPO-411) 1200 New Jersey Avenue, SE (Room E12-100) Washington, DC 20590 email: tis@nhtsa.dot.gov Telephone No. 202-493-2833		
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SECTION 1

PURPOSE AND TEST PROCEDURES

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PURPOSE AND TEST PROCEDURES

Purpose: The purpose of this report was to determine if the production child restraint components parts supplied by the National Highway Traffic Safety Administration met the requirements of Federal Motor Vehicle Safety Standard Number 213 - "Child Restraint System".

Test Procedures: The "SGS North America Inc. Laboratories Test Procedure for FMVSS No. 213" dated July 2012 submitted and approved by the office of Vehicle Safety Compliance National Highway Traffic Safety Administration contains the specific procedures used to conduct this test. This procedure shall not be interpreted to be in conflict with any portion of FMVSS No. 213 and amendments in effect as noted in the applicable order.

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SECTION 2

INSPECTION DATA AND TEST DATA

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INSPECTION AND TEST DATA
FMVSS NO. 213 - CHILD RESTRAINT SYSTEMS

Report No.: 4642921-018

Child Restraint System Identification

Manufacturer:

Name: Combi USA Inc.

Address: PO Box 91346
Allentown, PA 18109-9969

Model: Babyride

Technicians: Charles Kehaya, John Roycraft

Project Manager: Frank Savino

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WEBBING PERFORMANCE TESTS (a213-5.4.1)

Report No.: 4642921-018

Test Date: August 3, 2020

Laboratory Ambient Conditions During Testing

Temperature: 73 ° F

Relative Humidity: 50 %

Webbing Usage on Restraint: Harness

Test	Compliance Requirement	Test Result	Pass/Fail
Non-Degraded Webbing (FMVSS 209, S5.1 (b))	New webbing breaking strength, 15,000 N (webbing used to secure CRS to vehicle) or 11,000 N (webbing used to secure child within CRS)	1. 14,000 2. 14,091 3. 14,691 Median: 14,091	Pass
Resistance to Abrasion (FMVSS 209, S4.2(d) & S5.1(d)) Abrasion Cycles Performed 2500 (2500 Required)	Median breaking strength, Newtons (75% of median baseline strength)	1. 12,206 2. 12,052 3. 11,777 Median: 12,052 Strength Retained: 85.5%	Pass
Resistance to Buckle Abrasion (FMVSS 209, S5.3(c)) Abrasion cycles Performed 2500 (2500 Required)	Median breaking strength, Newtons (75% of median baseline strength)	1. N/A 2. N/A 3. N/A Median: N/A	N/A

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WEBBING PERFORMANCE TESTS (a213-5.4.1) (Continued)

Report No.: 4642921-018

Test Date: August 3, 2020

Test	Compliance Requirement	Test Result	Pass/Fail
Resistance to Light (FMVSS 209, S4.2 (e) & S5.1(e)) Exposure Time 100 Hr. (100 Hours Required)	Median breaking strength, Newtons (60% of median baseline strength)	1. 13,817 2. 13,368 3. 13,798 Median: 13,798 Strength Retained: 97.9%	Pass
	Color Retention >/= No. 2 on the Geometric Gray Scale	1. 5 2. 5 3. 5	Pass
Resistance to Micro-Organisms (FMVSS 209, S4.2 (f), S5.1 (f))	Median breaking strength, Newtons (85% of median baseline strength)	1. N/A 2. N/A 3. N/A Median: N/A	N/A
Width Requirement (FMVSS 213, S5.4.1.3)	Width >/= 38 mm) If webbing contacts the test dummy torso	1. 38.0 2. 38.0 3. 38.0	Pass

Remarks:

Technicians: John Roycraft

Project Manager: Frank Savino

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WEBBING PERFORMANCE TESTS (a213-5.4.1)

Report No.: 4642921-018

Test Date: August 4, 2020

Laboratory Ambient Conditions During Testing

Temperature: 73 ° F

Relative Humidity: 50 %

Webbing Usage on Restraint: Adjuster

Test	Compliance Requirement	Test Result	Pass/Fail
Non-Degraded Webbing (FMVSS 209, S5.1 (b))	New webbing breaking strength, 15,000 N (webbing used to secure CRS to vehicle) or 11,000 N (webbing used to secure child within CRS)	1. 10,136 2. 9,622 3. 9,871 Median: 9,871	**Fail**
Resistance to Abrasion (FMVSS 209, S4.2(d) & S5.1(d)) Abrasion Cycles Performed 2500 (2500 Required)	Median breaking strength, Newtons (75% of median baseline strength)	1. * 2. * 3. * Median: * Strength Retained: *	N/A
Resistance to Buckle Abrasion (FMVSS 209, S5.3(c)) Abrasion cycles Performed 2500 (2500 Required)	Median breaking strength, Newtons (75% of median baseline strength)	1. N/A 2. N/A 3. N/A Median: N/A	N/A

*the webbing was too short to abrade

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WEBBING PERFORMANCE TESTS (a213-5.4.1) (Continued)

Report No.: 4642921-018

Test Date: August 4, 2020

Test	Compliance Requirement	Test Result	Pass/Fail
Resistance to Light (FMVSS 209, S4.2 (e) & S5.1(e)) Exposure Time 100 Hr. (100 Hours Required)	Median breaking strength, Newtons (60% of median baseline strength)	1. 9,613 2. 9,752 3. 9,843 Median: 9,752 Strength Retained: 98.8%	Pass
	Color Retention >/= No. 2 on the Geometric Gray Scale	1. 5 2. 5 3. 5	Pass
Resistance to Micro-Organisms (FMVSS 209, S4.2 (f), S5.1 (f))	Median breaking strength, Newtons (85% of median baseline strength)	1. N/A 2. N/A 3. N/A Median: N/A	N/A
Width Requirement (FMVSS 213, S5.4.1.3)	Width >/= 38 mm) If webbing contacts the test dummy torso	1. 26.0 2. 26.0 3. 26.0	N/A

Remarks:

Technicians: John Roycraft

Project Manager: Frank Savino

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WEBBING PERFORMANCE TESTS (a213-5.4.1)

Report No.: 4642921-018

Test Date: August 4, 2020

Laboratory Ambient Conditions During Testing

Temperature: 73 ° F

Relative Humidity: 50 %

Webbing Usage on Restraint: Latch

Test	Compliance Requirement	Test Result	Pass/Fail
Non-Degraded Webbing (FMVSS 209, S5.1 (b))	New webbing breaking strength, 15,000 N (webbing used to secure CRS to vehicle) or 11,000 N (webbing used to secure child within CRS)	1. 18,556 2. 18,801 3. 18,227 Median: 18,556	Pass
Resistance to Abrasion (FMVSS 209, S4.2(d) & S5.1(d)) Abrasion Cycles Performed 2500 (2500 Required)	Median breaking strength, Newtons (75% of median baseline strength)	1. 15,248 2. 15,595 3. 14,660 Median: 15,248 Strength Retained: 82.2%	Pass
Resistance to Buckle Abrasion (FMVSS 209, S5.3(c)) Abrasion cycles Performed 2500 (2500 Required)	Median breaking strength, Newtons (75% of median baseline strength)	1. N/A 2. N/A 3. N/A Median: N/A	N/A

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WEBBING PERFORMANCE TESTS (a213-5.4.1) (Continued)

Report No.: 4642921-018

Test Date: August 4, 2020

Test	Compliance Requirement	Test Result	Pass/Fail
Resistance to Light (FMVSS 209, S4.2 (e) & S5.1(e)) Exposure Time 100 Hr. (100 Hours Required)	Median breaking strength, Newtons (60% of median baseline strength)	1. 18,102 2. 18,271 3. 18,088 Median: 18,102 Strength Retained: 97.6%	Pass
	Color Retention >/= No. 2 on the Geometric Gray Scale	1. 5 2. 5 3. 5	Pass
Resistance to Micro-Organisms (FMVSS 209, S4.2 (f), S5.1 (f))	Median breaking strength, Newtons (85% of median baseline strength)	1. N/A 2. N/A 3. N/A Median: N/A	N/A
Width Requirement (FMVSS 213, S5.4.1.3)	Width >/= 38 mm) If webbing contacts the test dummy torso	1. 39.0 2. 39.0 3. 39.0	N/A

Remarks:

Technicians: John Roycraft

Project Manager: Frank Savino

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BELT BUCKLE AND ADJUSTMENT HARDWARE PERFORMANCE TESTS (S213-S5.4.2/S209-S4.3)

Report No.: 4642921-018

Test Date: August 14, 2020 **Item Code:** Combi Babyride

Laboratory Ambient Conditions During Testing

Temperature: 73 °F

Relative Humidity: 50 %

Test	Compliance Requirement	Test Result	Pass/Fail
Corrosion Resistance (FMVSS 209), (S4.3.(a) (2)) Exposure Time 24 Hours (24 Hours Required) Drying Time 1 Hour (1 Hour Required)	No Corrosion (NC)	1. NC 2. NC 3. NC	Pass Pass Pass
Push Buttons S213; S5.4.3.5 (c)	Area ≥ 0.6 sq. in.)	0.85	Pass
	Dimensions	0.90 x 1.00	N/A
Lever Release	Cylinder Insertion	N/A	N/A
Other	Two-finger Access	N/A	N/A

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BELT BUCKLE AND ADJUSTMENT HARDWARE
PERFORMANCE TESTS (S213-S5.4.2/S209-S4.3) (Continued)

Report No.: 4642921-018

Test	Compliance Requirement	Test Result	Pass/Fail
Buckle Latch (FMVSS 209 S4.3(g)) Follows ***Corrosion Resistance*** Cycles 200 (200 Required)	No Functional Deterioration (NFD)	1. NFD 2. NFD 3. NFD	1. Pass 2. Pass 3. Pass

Buckle Latch (FMVSS 209 S4.3(g)) ***Corrosion Resistance*** metal to metal buckles Note: Cycle Button; Perform manual latching and unlatching prior to partial engagement test. Measurements truncated to one decimal place.	Partial Engagement Separation Force <5 lb.	Test Result As Received (Results in Pounds)		Test Result After ***Corrosion Resistance***	
		Front	Reverse	Front	Reverse
		Sample 1 1) P 2) P 3) P	Sample 1 1) N/A 2) N/A 3) N/A	Sample 1 1) P 2) P 3) P	Sample 1 1) N/A 2) N/A 3) N/A
		Sample 2 1) P 2) P 3) P	Sample 2 1) N/A 2) N/A 3) N/A	Sample 2 1) P 2) P 3) P	Sample 2 1) N/A 2) N/A 3) N/A
		Sample 3 1) P 2) P 3) P	Sample 3 1) N/A 2) N/A 3) N/A	Sample 3 1) P 2) P 3) P	Sample 3 1) N/A 2) N/A 3) N/A

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Remarks: P = Pass
N/A = Not Applicable

Technicians: Charles Kehaya
Project Manager: Frank Savino

BELT BUCKLE AND ADJUSTMENT HARDWARE PERFORMANCE TESTS (S213-S5.4.2/S209-S4.3)

Report No.: 4642921-018

Test Date: August 14, 2020 **Item Code:** Combi Babyride

Laboratory Ambient Conditions During Testing

Temperature: 73 °F

Relative Humidity: 50 %

Test	Compliance Requirement	Test Result	Pass/Fail
Temperature Resistance (FMVSS 209), (S4.3.(b)) Exposure Time 24 Hours (24 Hours Required) Drying Time 1 Hour (1 Hour Required)	No Functional Deterioration (NFD)	1. NFD 2. NFD 3. NFD	Pass Pass Pass
Push Buttons S213; S5.4.3.5 (c)	Area ≥ 0.6 sq. in.)	0.85	Pass
	Dimensions	0.90 x 1.00	N/A
Lever Release	Cylinder Insertion	N/A	N/A
Other	Two-finger Access	N/A	N/A

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BELT BUCKLE AND ADJUSTMENT HARDWARE
PERFORMANCE TESTS (S213-S5.4.2/S209-S4.3) (Continued)

Report No.: 4642921-018

Test	Compliance Requirement	Test Result	Pass/Fail
Buckle Latch (FMVSS 209 S4.3(g)) Follows ***Temperature Resistance*** Cycles 200 (200 Required))	No Functional Deterioration (NFD)	1. NFD 2. NFD 3. NFD	1. Pass 2. Pass 3. Pass

Buckle Latch (FMVSS 209 S4.3(g)) ***Temperature Resistance***	Partial Engagement Separation Force	Test Result As Received (Results in Pounds)		Test Result After ***Temperature Resistance***	
		Front	Reverse	Front	Reverse
metal to metal buckles Note: Cycle Button; Perform manual latching and unlatching prior to partial engagement test. Measurements truncated to one decimal place.	<5 lb.	Sample 1 1) P 2) P 3) P	Sample 1 1) N/A 2) N/A 3) N/A	Sample 1 1) P 2) P 3) P	Sample 1 1) N/A 2) N/A 3) N/A
		Sample 2 1) P 2) P 3) P	Sample 2 1) N/A 2) N/A 3) N/A	Sample 2 1) P 2) P 3) P	Sample 2 1) N/A 2) N/A 3) N/A
		Sample 3 1) P 2) P 3) P	Sample 3 1) N/A 2) N/A 3) N/A	Sample 3 1) P 2) P 3) P	Sample 3 1) N/A 2) N/A 3) N/A

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Remarks: P = Pass
N/A = Not Applicable

Technicians: Charles Kehaya
Project Manager: Frank Savino

APPENDIX A

EQUIPMENT LIST AND CALIBRATION

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SGS NORTH AMERICA INC.
TEST EQUIPMENT

NO.	ITEM	MANUFACTURER	MODEL	SERIAL NO.	CAL. PERIOD	DATE OF LAST CAL.	ACCURACY	REMARKS
			WEBBING TESTING					
1	Steel Ruler	Products Engineering	262-000	481610452	1 Year	7/20	+/-0.01 inch	Webbing Width
2	Hex-Bar Abrader	U.S. Testing	---	---	1Year*	8/20	---	*Timer-Counter Assembly and Weights
3	Weatherometer	Atlas Electric Co.	CXW	CB-12295	1 Year*	7/20	+/-1%	*Temp. and Voltage Meters
4	Weatherometer	Atlas Electric Co.	CXW	CB-1214	1 Year*	7/20	+/-1%	*Temp. and Voltage Meters
5	Weatherometer	Atlas Electric Co.	XW-WT	W0-3009	1 Year*	7/20	+/-1%	*Temp. and Voltage Meters
6	Color Change - Gray Scale	AATCC	---	---	---	---	---	Visual Comparison
7	Universal Testing Machine	Instron	1115	4742	1 Year	1/20	+/-1%	Webbing Strength
8	Universal Testing Machine	Instron	TTC	4344	1 Year	6/20	+/-1%	Webbing Strength
9	2" Split Drum Grips	U.S. Testing Co.	---	---	---	---	---	Instron Fixture

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SGS NORTH AMERICA INC.
TEST EQUIPMENT

NO.	ITEM	MANUFACTURER	MODEL	SERIAL NO.	CAL. PERIOD	DATE OF LAST CAL.	ACCURACY	REMARKS
			BUCKLE TESTING					
10	Salt Spray Chamber	Singleton Corp.	SCCH22	SCCH22-21947	---	---	---	Checked daily in accordance with ASTM B-117
11	Temperature Recorder	Honeywell	DR4300	14W47C4000 000849615	1 Year	7/20	+/- 5°F	Monitor Salt Spray Temperature
12	Temperature Humidity Chamber	Blue-M	FR-386PBX	AA278	1Year	1/20	+/-2°C +/-5% R.H	Temperature-Humidity Exposure
13	Temperature Humidity Chamber	Blue-M	LR-386B-MP1	L3-122	1 Year	4/20	+/-2°C +/-5% R.H	Temperature-Humidity Exposure
14	Temperature Chamber	Despatch	52392 V29	037-15	1 Year	4/20	+/-2°C +/-5% R.H	Temperature Exposure
15	Pushbutton Latch Fixture	U.S. Testing	---	---	1 Year*	7/20	---	Force checked prior to use. *Timer Counter
			STANDARD LABORATORY CONDITIONING					
16	Temperature / Humidity Recorder	Dickson	TH800	07150222	1Year	10/19	+/-2°F +/-5% R.H.	Monitor Room Conditioning

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APPENDIX B

INTERPRETATION AND/OR DEVIATIONS FROM FMVSS NO. 213

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NO INTERPRETATIONS OR DEVIATIONS FROM FMVSS NO. 213

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APPENDIX C

PHOTOGRAPHS

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LISTS OF PHOTOGRAPHS

The following section identifies photographed testing equipment.

The following section identifies photographs of the seat.

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C-3

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Temperature/Humidity Chamber

C-4

Temperature Chamber

C-5

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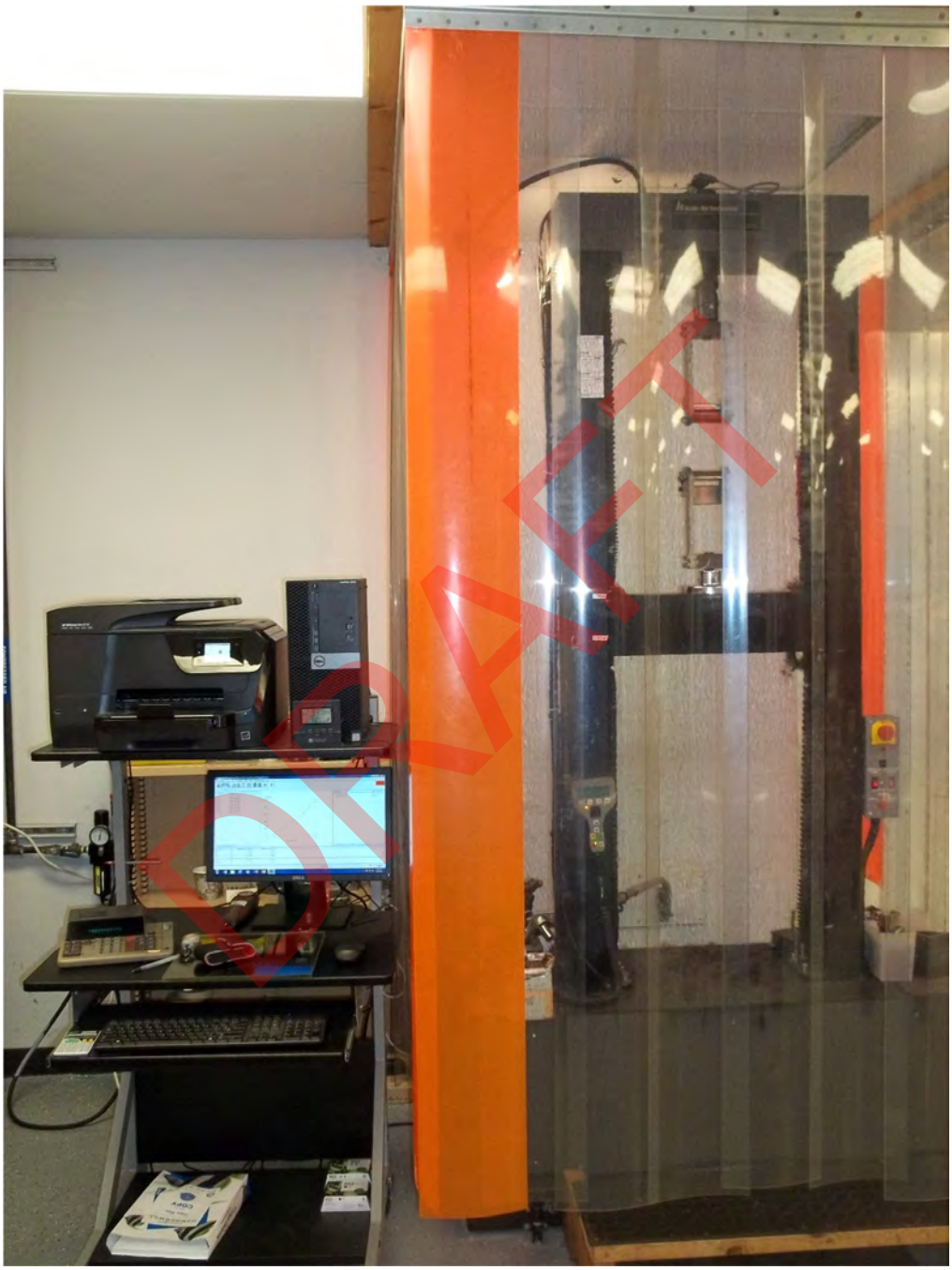
Button Cycling Apparatus

C-6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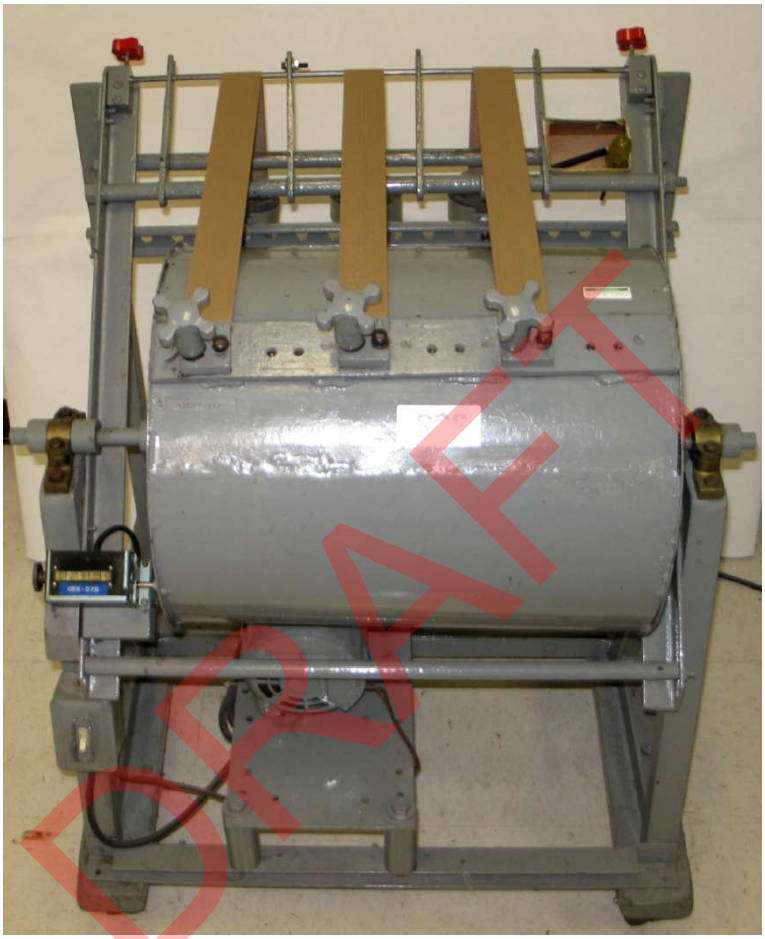
Instron Universal Testing Machine

C-7

DRAFT

Weatherometer

C-8



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Hex Bar Abrasion Apparatus

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C-10

DRAFT

C-10 closeup

DRAFT

C-11

C-12

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C-13

C-14

FOR YOUR CHILD'S CONTINUED SAFETY

Please take a few moments to promptly fill out and return the attached card.

Although child restraint systems undergo testing and evaluation, it is possible that a child restraint could be recalled.
In case of recall, we can reach you only if we have your name and address, so please send in the card to be on our recall list.

Please fill this card out and mail it NOW or register online at http://registration.combiusa.com/product while you are still thinking about it.

It's already addressed and we've paid the postage.

VG1010A

Tear off and mail this part.

Consumer: Using capital letters, just fill in your name and address (Use #2 pencil or black ink).

Please print - Your First Name:

Please print - Your Last Name:

Your Street Address:

City:

State: Zip Code:

E-mail Address (Optional):

CHILD RESTRAINT REGISTRATION CARD

Model Name	Name Nombre: BABYRIDE Made in Romania
Model Number	Model Number Numero de modelo: 379099
Manufactured In (YYYY/MM/DD)	Manufactured In Fabricado en: 2019 AUGUST 06 (Year Ano Month Mes Day Dia)
Serial Number	Imported by Importado por: COMBI USA, CHARLOTTE NC 28273

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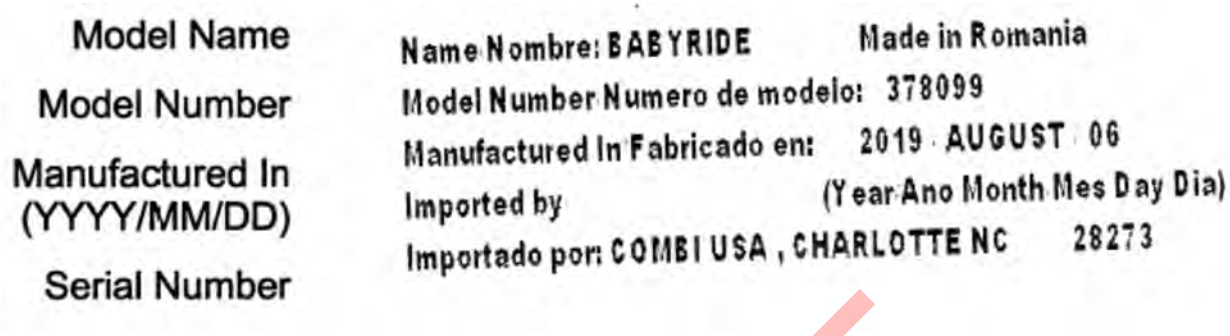
C-14 (closeup)



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CLIENT: David E Campbell & Associates (DECA Inc.)
3215 Greenwich Rd.
Wadsworth, Ohio 44281

Test Report No: 4737580AL-1R-21	**Date:** March 15, 2021 **Revised Date:** March 16, 2021

This report supersedes all previous documents bearing the reference 4737580AL-21

SAMPLE DESCRIPTION: Three (3) pieces of webbing were submitted and identified by the client as BabyRide adjuster

DATE OF RECEIPT: February 17, 2021

TESTING PERIOD: March 10-11, 2021

AUTHORIZATION: Service request form dated February 16, 2021

TEST REQUESTED: The submitted specimens were tested for the following properties in accordance with the procedures outlined in Para. S5.4.1.2 of Federal Motor Vehicle Safety Standard No. 213*:

1) Original breaking strength (specimen #3)
2) Resistance to hex bar abrasion (specimens #1 & #2)

*49CFR571.213; October 1, 2019 edition

TEST RESULTS: Continued on the following pages

TESTED BY:

N. Kitov, Testing Engineer
Automotive

SIGNED FOR AND ON BEHALF OF SGS NORTH AMERICA INC.

Frank Savino, Lab Manager
Automotive & Hardgoods

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CLIENT: David E Campbell & Associates (DECA Inc.)

TEST RESULTS

Specimen	Original Strength, N	Strength after Hex Bar Abrasion, N
1	--	8227
2	--	7867
3	9278	--

Requirements:
Original: 11,000 N minimum
Abraded: 75% retention of original strength

****
End of Report

GENERAL CONDITIONS OF SERVICE

1. General

(a) Unless otherwise agreed in writing or except where they are at variance with (i) the regulations governing services performed on behalf of governments, government bodies or any other public entity or (ii) the mandatory provisions of local law, all offers or services and all resulting contractual relationship(s) between any of the affiliated companies of SGS North America Inc. or any of their agents (each a "Company") and Client (the "Contractual Relationship(s)") shall be governed by these general conditions of service (hereinafter the "General Conditions").

(b) The Company may perform services for persons or entities (private, public or governmental) issuing instructions (hereinafter, the "Client").

(c) Unless the Company receives prior written instructions to the contrary from Client, no other party is entitled to give instructions, particularly on the scope of the services or the delivery of reports or certificates resulting therefrom (the "Reports of Findings"). Client hereby irrevocably authorises the Company to deliver Reports of Findings to a third party where so instructed by Client or, at its discretion, where it implicitly follows from circumstances, trade custom, usage or practice.

2. Provision of Services

(a) The Company will provide services using reasonable care and skill and in accordance with Client's specific instructions as confirmed by the Company or, in the absence of such instructions:

(1) the terms of any standard order form or standard specification sheet of the Company; and/or

(2) any relevant trade custom, usage or practice; and/or

(3) such methods as the Company shall consider appropriate on technical, operational and/or financial grounds.

(b) Information stated in Reports of Findings is derived from the results of inspection or testing procedures carried out in accordance with the instructions of Client, and/or our assessment of such results on the basis of any technical standards, trade custom or practice, or other circumstances which should in our professional opinion be taken into account.

(c) Reports of Findings issued further to the testing of samples contain the Company's opinion on those samples only and do not express any opinion upon the lot from which the samples were drawn.

(d) Should Client request that the Company witness any third party intervention, Client agrees that the Company's sole responsibility is to be present at the time of the third party's intervention and to forward the results, or confirm the occurrence, of the intervention. Client agrees that the Company is not responsible for the condition or calibration of apparatus, instruments and measuring devices used, the analysis methods applied, the qualifications, actions or omissions of third party personnel or the analysis results.

(e) Reports of Findings issued by the Company will reflect the facts as recorded by it at the time of its intervention only and within the limits of the instructions received or, in the absence of such instructions, within the limits of the alternative parameters applied as provided for in clause 2(a). The Company is under no obligation to refer to, or report upon, any facts or circumstances which are outside the specific instructions received or alternative parameters applied.

(f) The Company may delegate the performance of all or part of the services to an agent or subcontractor and Client authorises Company to disclose all information necessary for such performance to the agent or subcontractor.

(g) Should Company receive documents reflecting engagements contracted between Client and third parties or third party documents, such as copies of sale contracts, letters of credit, bills of lading, etc., they are considered to be for information only, and do not extend or restrict the scope of the services or the obligations accepted by the Company.

(h) Client acknowledges that the Company, by providing the services, neither takes the place of Client or any third party, nor releases them from any of their obligations, nor otherwise assumes, abridges, abrogates or undertakes to discharge any duty of Client to any third party or that of any third party to Client.

(i) All samples shall be retained for a maximum of 3 months or such other shorter time period as the nature of the sample permits and then returned to Client or otherwise disposed of at the Company's discretion after which time Company shall cease to have any responsibility for such samples. Storage of samples for more than 3 months shall incur a storage charge payable by Client. Client will be billed a handling and freight fee if samples are returned. Special disposal charges will be billed to Client if incurred.

3. Obligations of Client

The Client will:

(a) ensure that sufficient information, instructions and documents are given in due time (and, in any event not later than 48 hours prior to the desired intervention) to enable the required services to be performed;

(b) procure all necessary access for the Company's representatives to the premises where the services are to be performed and take all necessary steps to eliminate or remedy any obstacles to, or interruptions in, the performance of the services;

(c) supply, if required, any special equipment and personnel necessary for the performance of the services;

(d) ensure that all necessary measures are taken for safety and security of working conditions, sites and installations during the performance of services and will not rely, in this respect, on the Company's advice whether required or not;

(e) inform Company in advance of any known hazards or dangers, actual or potential, associated with any order or samples or testing including, for example, presence or risk of radiation, toxic or noxious or explosive elements or materials, environmental pollution or poisons;

(f) fully exercise all its rights and discharge all its liabilities under any relevant sales or other contract with a third party and at law.

4. Fees and Payment

(a) Fees not established between the Company and Client at the time the order is placed or a contract is negotiated shall be at the Company's standard rates (which are subject to change) and all applicable taxes shall be payable by Client.

(b) Unless a shorter period is established in the invoice, Client will promptly pay not later than 30 days from the relevant invoice date or within such other period as may be established by the Company in the invoice (the "Due Date") all fees due to the Company failing which interest will become due at a rate of 1.5% per month (or such other rate as may be established in the invoice) from the Due Date up to and including the date payment is actually received.

(c) Client shall not be entitled to retain or defer payment of any sums due to the Company on account of any dispute, counter claim or set off which it may allege against the Company.

(d) Company may elect to bring action for the collection of unpaid fees in any court having competent jurisdiction.

(e) Client shall pay all of the Company's collection costs, including attorney's fees and related costs.

(f) In the event any unforeseen problems or expenses arise in the course of carrying out the services the Company shall endeavour to inform Client and shall be entitled to charge additional fees to cover extra time and cost necessarily incurred to complete the services.

(g) If the Company is unable to perform all or part of the services for any cause whatsoever outside the Company's control including failure by Client to comply with any of its obligations provided for in clause 3 above the Company shall nevertheless be entitled to payment of:

(1) the amount of all non-refundable expenses incurred by the Company; and

(2) a proportion of the agreed fee equal to the proportion of the services actually carried out.

5. Suspension or Termination of Services

The Company shall be entitled to immediately and without liability either suspend or terminate provision of the services in the event of:

(a) failure by the Client to comply with any of its obligations hereunder and such failure is not remedied within 10 days that notice of such failure has been notified to Client; or

(b) any suspension of payment, arrangement with creditors, bankruptcy, insolvency, receivership or cessation of business by Client.

6. Liability and Indemnification

(a) Limitation of Liability:

(1) The Company is neither an insurer nor a guarantor and disclaims all liability in such capacity. Clients seeking a guarantee against loss or damage should obtain appropriate insurance.

(2) Reports of Findings are issued on the basis of information, documents and/or samples provided by, or on behalf of, Client and solely for the benefit of Client who is responsible for acting as it sees fit on the basis of such Reports of Findings. Neither the Company nor any of its officers, employees, agents or subcontractors shall be liable to Client nor any third party for any actions taken or not taken on the basis of such Reports of Findings nor for any incorrect results arising from unclear, erroneous, incomplete, misleading or false information provided to the Company.

(3) The Company shall not be liable for any delayed, partial or total non-performance of the services arising directly or indirectly from any event outside the Company's control including failure by Client to comply with any of its obligations hereunder.

(4) The liability of the Company in respect of any claim for loss, damage or expense of any nature and howsoever arising shall in no circumstances exceed a total aggregate sum equal to 10 times the amount of the fee paid in respect of the specific service which gives rise to such claim or US$20,000 (or its equivalent in local currency), whichever is the lesser.

(5) The Company shall have no liability for any indirect or consequential loss including without limitation loss of profits, loss of business, loss of opportunity, loss of goodwill and cost of product recall. It shall further have no liability for any loss, damage or expense arising from the claims of any third party (including, without limitation, product liability claims) that may be incurred by the Client.

(6) In the event of any claim, Client must give written notice to the Company within 30 days of discovery of the facts alleged to justify such claim and, in any case, the Company shall be discharged from all liability for all claims for loss, damage or expense unless suit is brought within one year from:

(i) the date of performance by the Company of the service which gives rise to the claim; or

(ii) the date when the service should have been completed in the event of any alleged non-performance.

(b) Indemnification: Client shall guarantee, hold harmless and indemnify the Company and its officers, employees, agents or subcontractors against all claims (actual or threatened) by any third party for loss, damage or expense of whatsoever nature including all legal expenses and related costs and howsoever arising relating to the performance, purported performance or non-performance, of any services.

7. Miscellaneous

(a) If any one or more provisions of these General Conditions are found to be illegal or unenforceable in any respect, the validity, legality and enforceability of the remaining provisions shall not in any way be affected or impaired thereby.

(b) During the course of providing the services and for a period of one year thereafter Client shall not directly or indirectly entice, encourage or make any offer to Company's employees to leave their employment with the Company.

(c) Use of the Company's corporate name or registered marks for advertising purposes is not permitted without the Company's prior written authorisation.

8. Governing Law, Jurisdiction and Dispute Resolution

Unless specifically agreed otherwise, all disputes arising out or in connection with Contractual Relationship(s) hereunder shall be governed by the substantive laws of the State of New Jersey exclusive of any rules with respect to conflicts of laws and be finally settled under the Rules of Arbitration of the International Chamber of Commerce by one or more arbitrators appointed in accordance with the said rules. The arbitration shall take place in Hackensack, New Jersey and be conducted in the English language.

March 15, 2012

UMTRI

Results

AG2101

Nominal = 30 mph / 20 g
Actual[P] = 47.8 km/h (29.7 mph) (81.3%)

Pressures: 107.2/1092
Plateau Avg.= -21.5 G; Peak = -24.8 G

Dummy: CRABI 12 Month Old (10 kg)
Buck: FMVSS213

Buck Weight: 1852

Baby Ride secured by lap belt
top slots, handle mid

Sled Summary

Sled Pulse Duration = 71.8 ms	Efficiency = Vout / Vin = 21.5 / 26.4 = 81.3%
Sled Plateau Average Level = -21.5 G	Sled Delta V = 47.8 kph (29.7 mph)
Sled Decel Peak = -24.8 G	Stopping Dist. (est) = .491 m

Head Acceleration

X	-1.0 g @ 199 ms	**36.3 g @ 95 ms**
Y	**-4.2 g @ 89 ms**	1.6 g @ 152 ms
Z	**-33.7 g @ 72 ms**	14.0 g @ 116 ms
Resultant	**Peak: 36.5 g @ 95 ms**	
H.I.C. (UN) = 285.3		From 46.3 to 106.3 ms
H.I.C. (36) = 213.5		From 62.0 to 98.0 ms
H.I.C. (15) = 105.2		From 61.3 to 76.3 ms

Chest Acceleration

X	-2.4 g @ 300 ms	**37.6 g @ 74 ms**
Y	**-4.1 g @ 79 ms**	1.6 g @ 56 ms
Z	**-26.6 g @ 74 ms**	11.4 g @ 115 ms
Resultant	**Peak: 46.1 g @ 74 ms**	
3.0 ms Clipped Peak = 43.6G		From: 71.9 to 74.9 ms
Total time over 60 G was 0.0 ms		

Vehicle Belt Loads

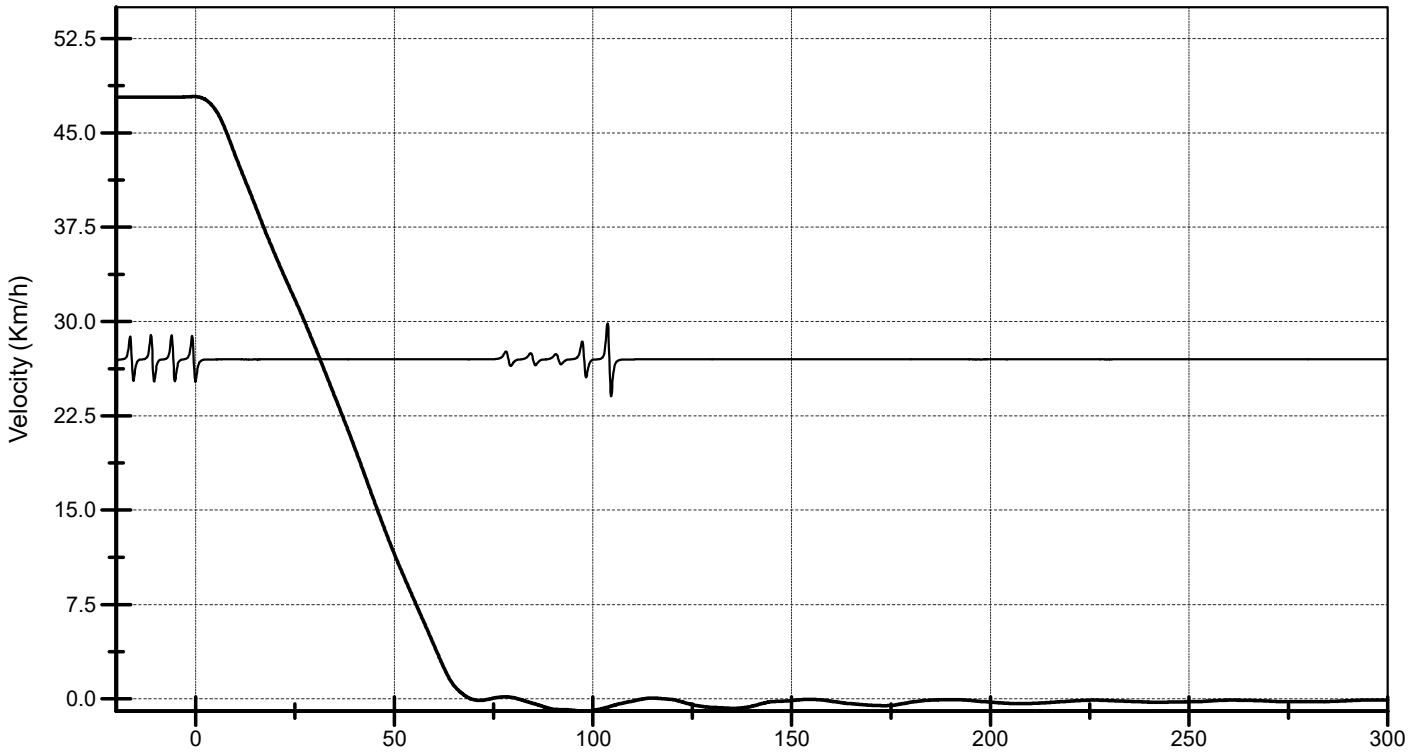
Left Lap Belt Load	-38.1 N (-8.6 lb) @ 268 ms	**2014.9 N (453.0 lb) @ 69 ms**
Right Lap Belt Load	-60.9 N (-13.7 lb) @ 299 ms	**2191.1 N (492.6 lb) @ 77 ms**

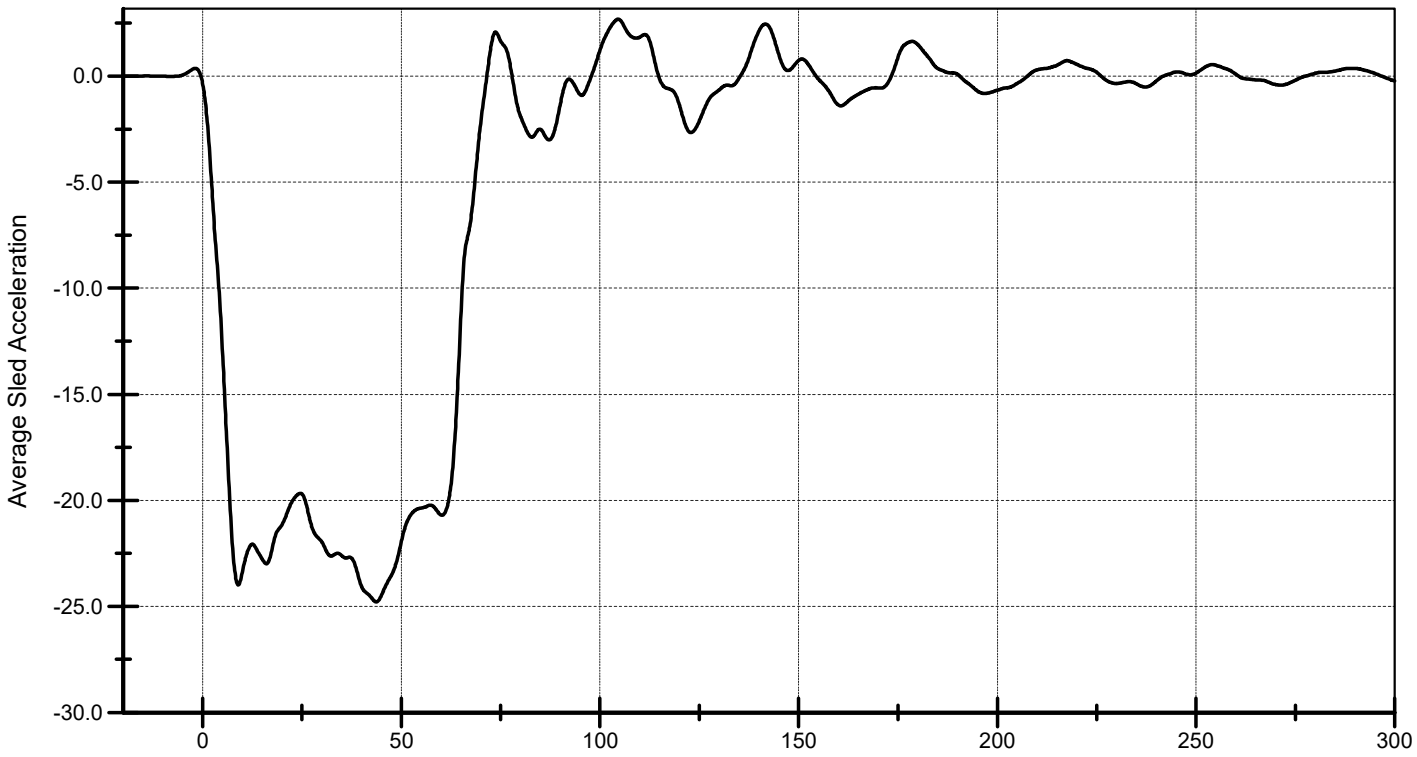
Center Pull Strap Load

Center Pull Strap Load	-9.2 N (-2.1 lb) @ 17 ms	**302.9 N (68.1 lb) @ 54 ms**

Sled Summary

AG2101





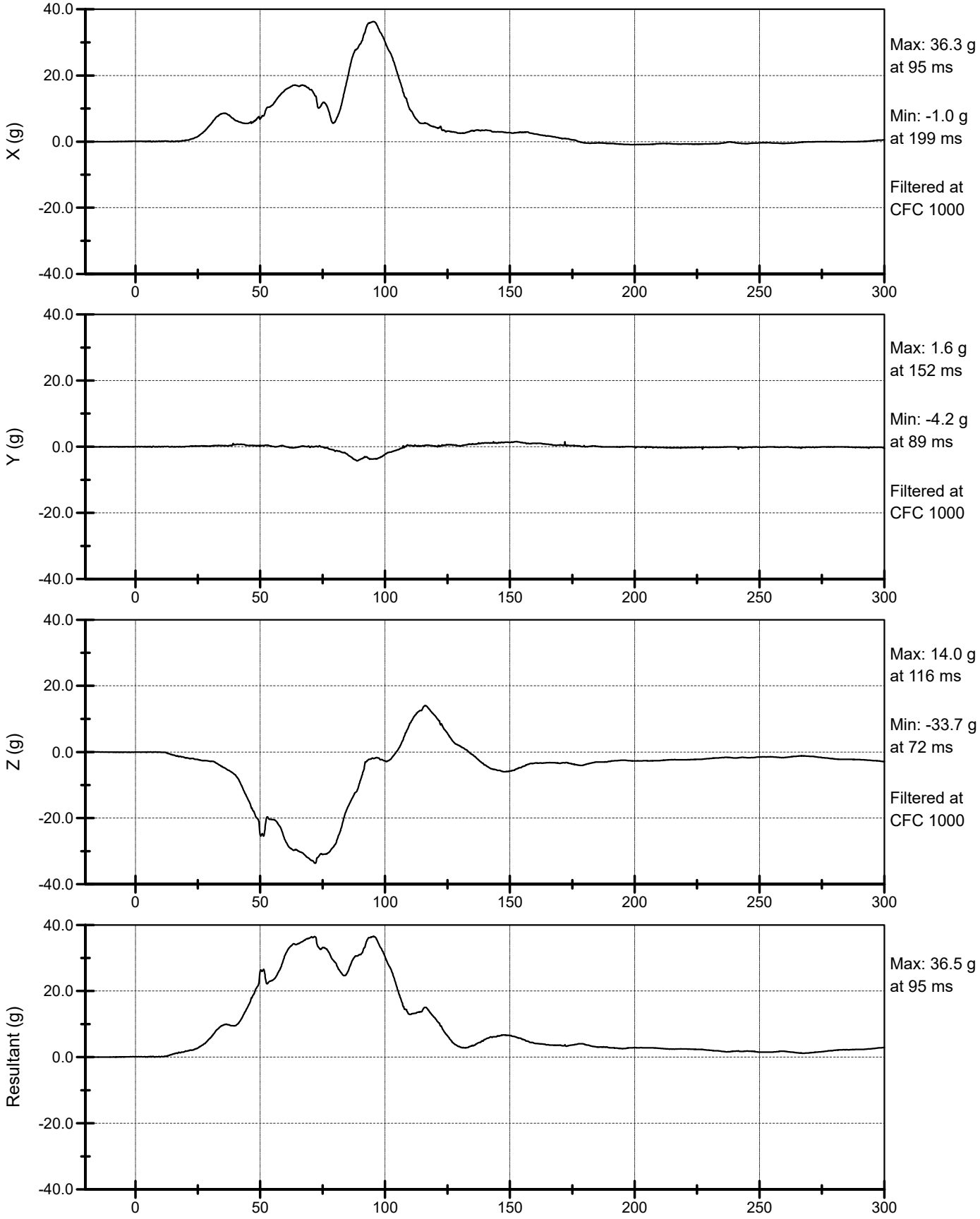
Sled Decel Peak = -24.8 G
Sled Plateau Average Level = -21.5 G
Sled Pulse Duration = 71.8 ms

Stopping Dist. (est) = .491 m
Sled Delta V = 47.8 kph (29.7 mph)
Efficiency = Vout / Vin = 21.5 / 26.4 = 81.3%

UMTRI

Head Acceleration

AG2101



H.I.C. (15) = 105.2
From: 61.3 to 76.3 ms

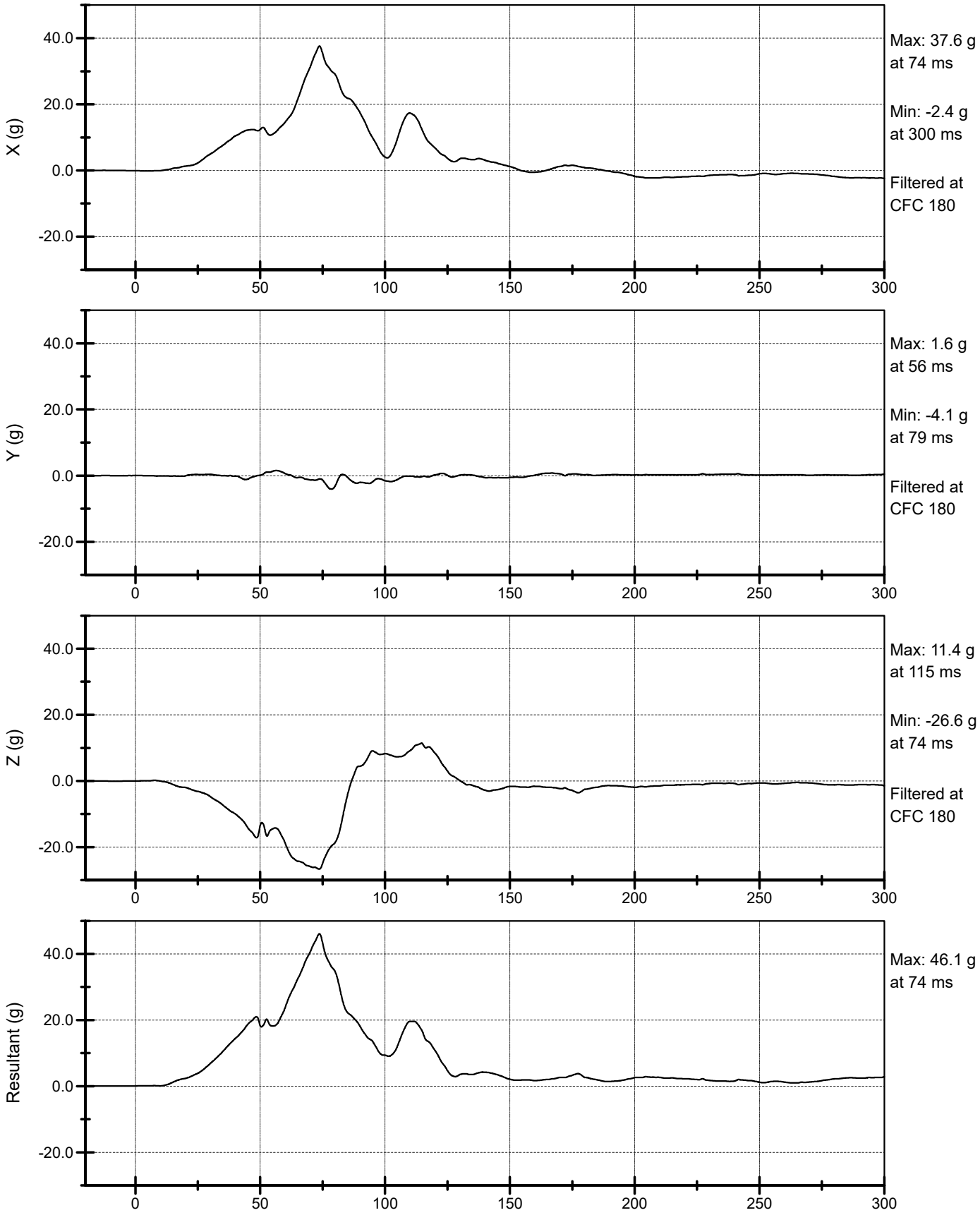
H.I.C. (36) = 213.5
From: 62.0 to 98.0 ms

H.I.C. (UN) = 285.3
From: 46.3 to 106.3 ms

UMTRI

Chest Acceleration

AG2101



Total time over 60 G was 0.0 ms

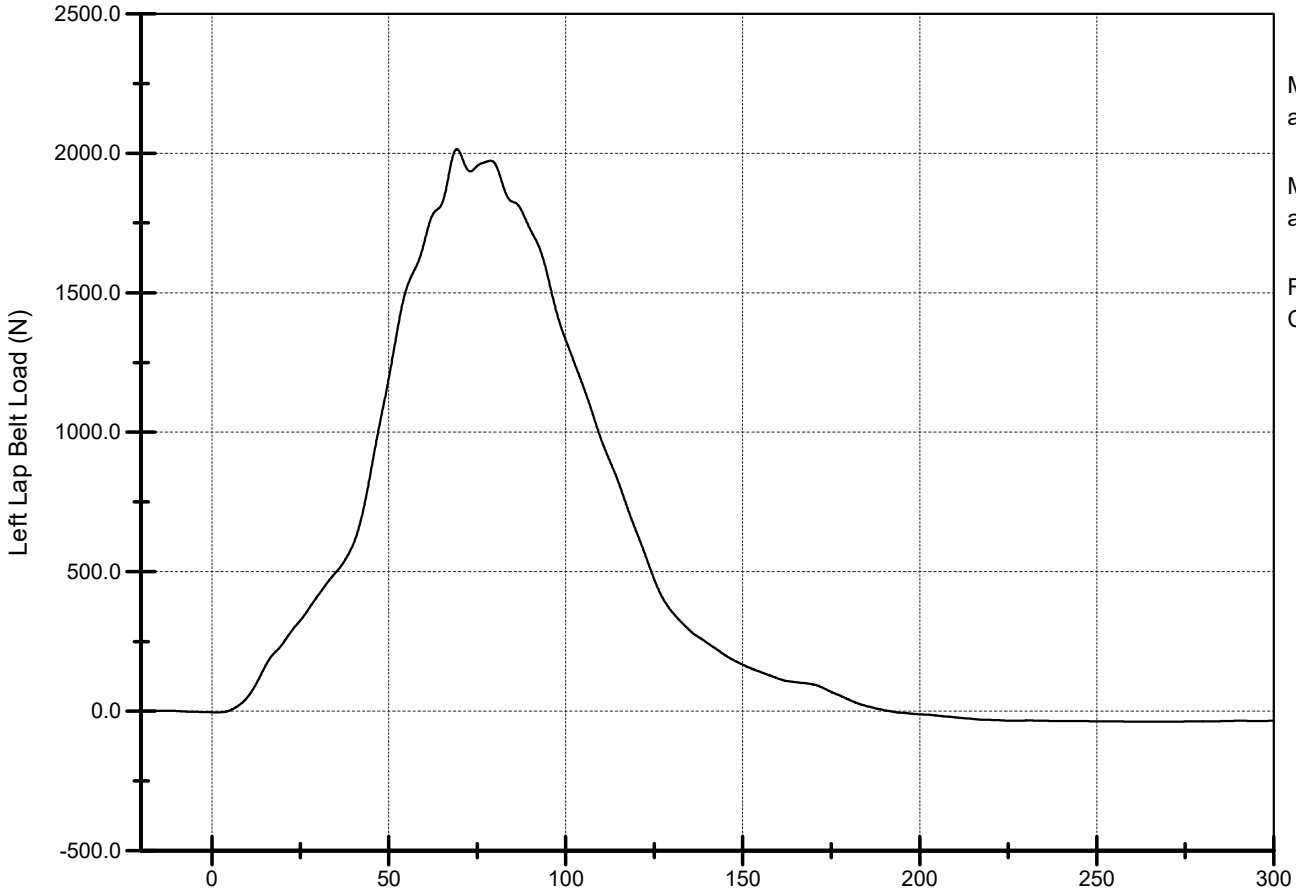
3.0 ms Clipped Peak = 43.6G

From: 71.9 to 74.9 ms

UMTRI

Vehicle Belt Loads

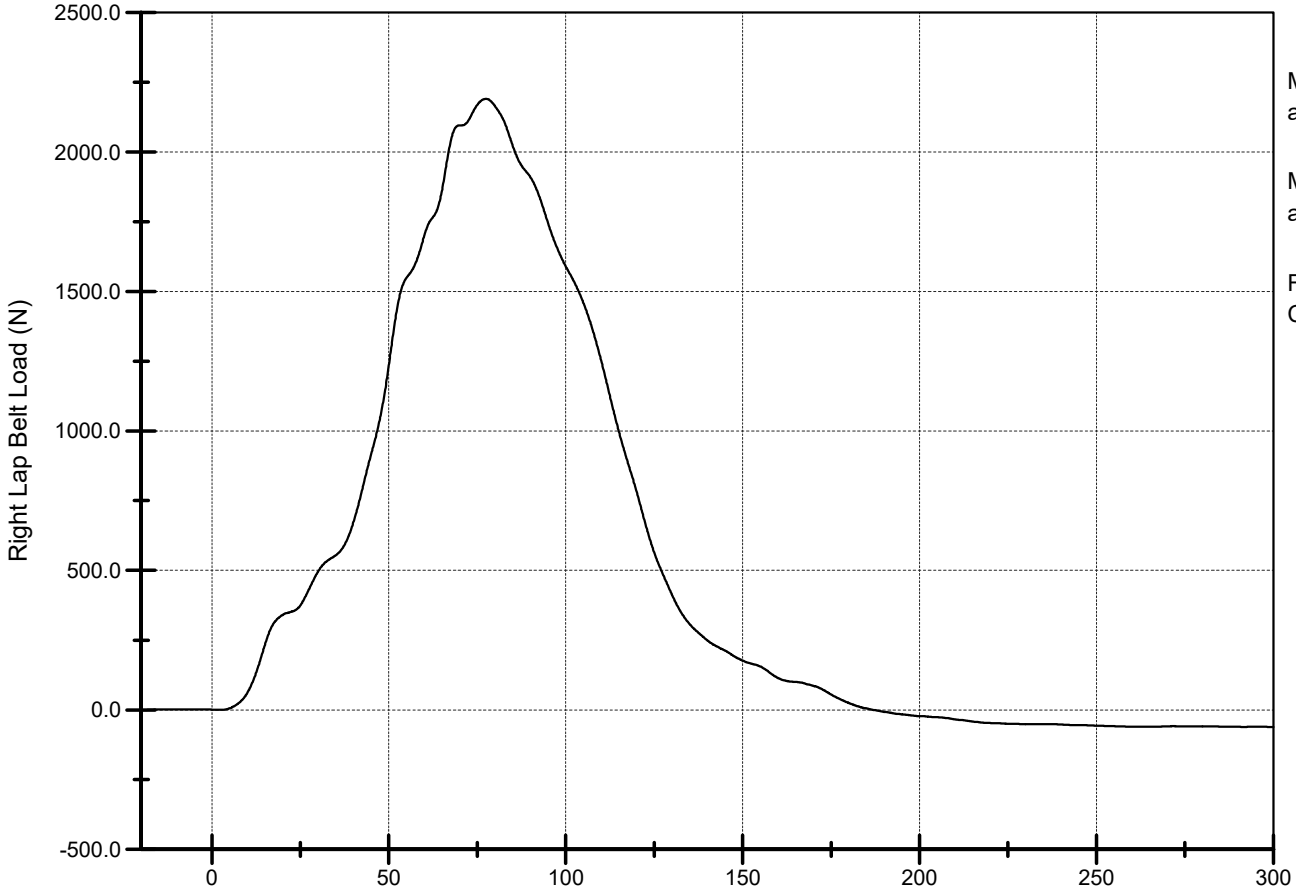
AG2101



Max: 2014.9 N
at 69 ms

Min: -38.1 N
at 268 ms

Filtered at
CFC 60



Max: 2191.1 N
at 77 ms

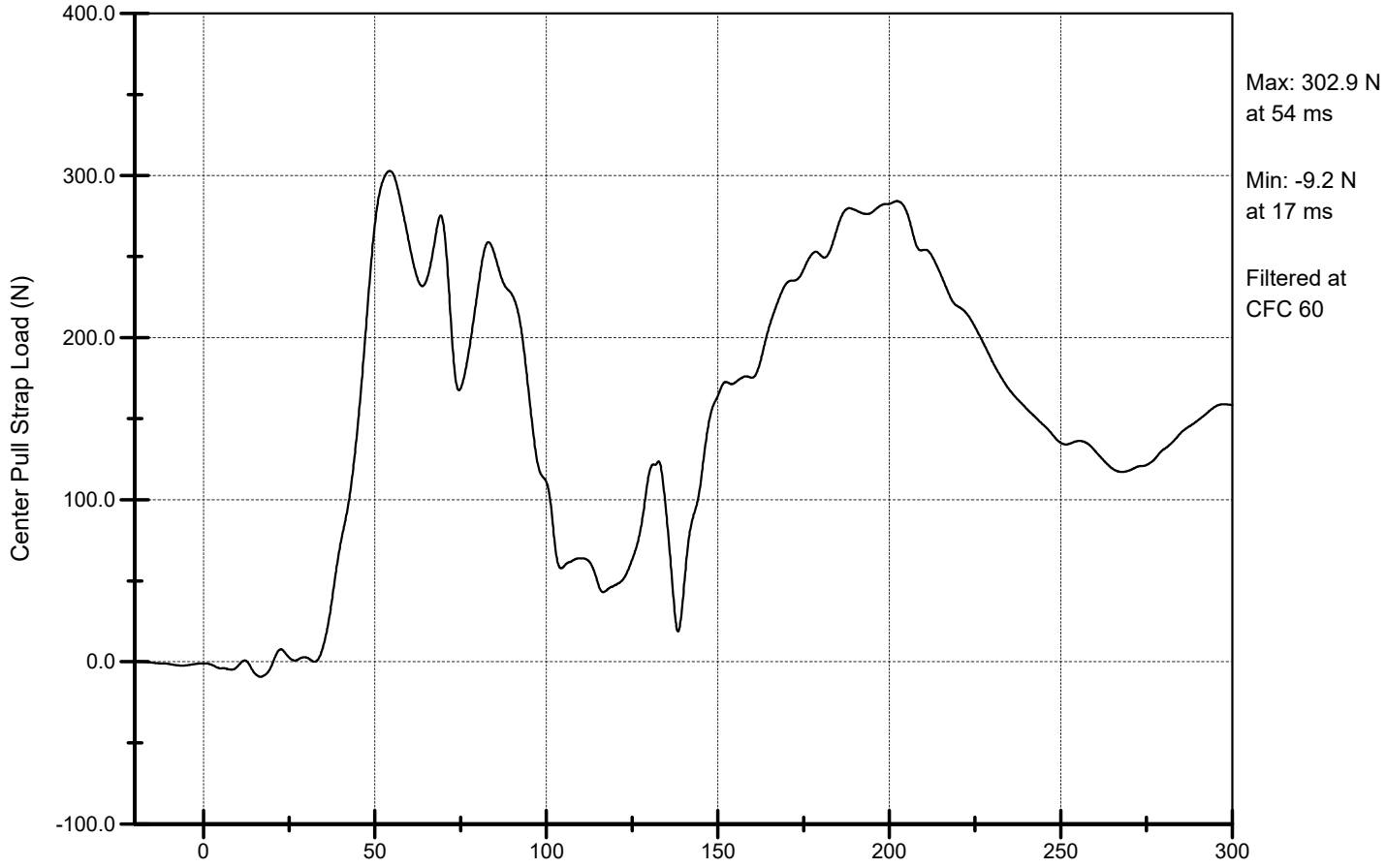
Min: -60.9 N
at 299 ms

Filtered at
CFC 60

UMTRI

Center Pull Strap Load

AG2101



REMMERT SPA
dal 1874

Declaration of conformity / Dichiarazione di conformità

Certificate of conformity / Certificat de conformitè

Date / Data	1/13/16	Plot / Trama	1 wire Polyester 1100 dtex / 1 filo Poliestere 1100 dtex
Certificate No. / Certificato N°	16 Rem 070/16	Contribution / Apporto	2 wires Polyester 334 dtex / 2 fili Poliestere 334 dtex
PES025/1000/USA	Supply wire system/ Sistema filo d'apporto	System "V" / Sistema "V"	System "V" / Sistema "V"
Skirt 2+2 / Saia 2+2	Color / Colore	ANTRACITE	ANTRACITE
128 wires Polyester 1100 dtex / 128 fili Poliestere 1100 dtex	Number of band / Numero di bande	5	9

Theoretical values / Valori Teorici	Technical Specification / Specifica Tecnica	Results / Risultati				
24,0mm - 26,	Width in mm. at 975 daN / Larghezza in mm. a 975 daN	25.4	25.4	25.3	25.5	25.5
80+/-2	Listings per dm. / Inserzioni per dm.	80				
19,5 gr - 21,5 gr	Weight gr/mt / Peso gr/mt	21.1	21.1	21.1	21.1	21.1
7% - 9%	Extension % to 275 daN / Allungamento % a 275 daN	8.50	8.50	8.50	8.50	8.50
Minimum 600 daN/ Minimo 600 daN	DaN breaking load / Carico di rottura daN	960	960	970	960	970
0,8 - 1,0	Thickness in mm / Spessore in mm	0.94	0.94	0.94	0.94	0.94

4 - 5	Dry rubbing/ Sfregamento a secco	5
4 - 5	Wet rubbing / Sfregamento a umido	5
4	Solidity in light / Solidità alla luce	4
Non-flammable / Non infiammabile	Flammability / Infiammabilità	NO
Non-toxic / Non tossico	Toxicity / Tossicità	NO

Stamp and signature / Timbro e firma	Remmert Spa / Remmert Spa	Quantity Sent / Quantità inviata	27,000
Shipping No. / Spedizione N°	12/04/2016	Lot No. / Lotto N°	16 Rem 070/T
DDT N°	1964	Date of Dispatch / Data di Invio	4/12/16

REMMERT SPA²A
dal 1874

Declaration of conformity / Dichiarazione di conformità

Certificate of conformity / Certificat de conformitè

Date / Data	2/17/2016	Plot / Trama	1 wire Polyester 1100 dtex / 1 filo Poliestere 1100 dtex					
Certificate No. / Certificato N°	16 Rem 034/T	Contribution / Apporto	2 wires Polyester 334 dtex / 2 fili Poliestere 334 dtex					
PES025/1000/USA	Supply wire system/ Sistema filo d'apporto	System "V" / Sistema "V"	System "V" / Sistema "V"					
Skirt 2+2 / Saia 2+2	Color / Colore	ANTRACITE	ANTRACITE					
128 wires Polyester 1100 dtex / 128 fili Poliestere 1100 dtex	Number of band / Numero di bande	5	9					
Theoretical values / Valori Teorici	Technical Specification / Specifica Tecnica		Results / Risultati					
24,0mm - 26,	Width in mm. at 975 daN / Larghezza in mm. a 975 daN		25.4	25.5	25.5	25,5	25,6	
80+/-2	Listings per dm. / Inserzioni per dm.		80					
19,5 gr - 21,5 gr	Weight gr/mt / Peso gr/mt		21.2	21.2	21.2	21.2	21.2	
7% - 9%	Extension % to 275 daN / Allungamento % a 275 daN		8.0	8.00	8.00	8.00	8.00	
Minimum 600 daN/ Minimo 600 daN	DaN breaking load / Carico di rottura daN		990	980	990	980	970	
0,8 - 1,0	Thickness in mm / Spessore in mm		0.96	0.96	0.96	0.96	0.96	
4 - 5	Dry rubbing/ Sfregamento a secco		5					
4 - 5	Wet rubbing / Sfregamento a umido		5					
4	Solidity in light / Solidità alla luce		4					
Non-flammable / Non infiammabile	Flammability / Infiammabilità		NO					
Non-toxic / Non tossico	Toxicity / Tossicità		NO					
Stamp and signature / Timbro e firma	Remmert Spa / Remmert Spa	Quantity Sent / Quantità inviata	19.800					
Shipping No. / Spedizione N°	16/02/17/T	Lot No. / Lotto N°	16 Rem 034/T					
DDT N°	898	Date of Dispatch / Data di Invio	18/02/2016					

REMMERT SPA²A
dal 1874

Declaration of conformity / Dichiarazione di conformità

Certificate of conformity / Certificat de conformitè

Date / Data	8/03/2016	Plot / Trama	1 wire Polyester 1100 dtex / 1 filo Poliestere 1100 dtex					
Certificate No. / Certificato N°	16 Rem 172/T	Contribution / Apporto	2 wires Polyester 334 dtex / 2 fili Poliestere 334 dtex					
PES025/1000/USA	Supply wire system/ Sistema filo d'apporto	System "V" / Sistema "V"	System "V" / Sistema "V"					
Skirt 2+2 / Saia 2+2	Color / Colore	ANTRACITE	ANTRACITE					
128 wires Polyester 1100 dtex / 128 fili Poliestere 1100 dtex	Number of band / Numero di bande	5	9					
Theoretical values / Valori Teorici	Technical Specification / Specifica Tecnica		Results / Risultati					
24,0mm - 26,	Width in mm. at 975 daN / Larghezza in mm. a 975 daN		25.4	25.4	25.3	25,5	25,5	
80+/-2	Listings per dm. / Inserzioni per dm.		80					
19,5 gr - 21,5 gr	Weight gr/mt / Peso gr/mt		21.1	21.1	21.1	21.1	21.1	
7% - 9%	Extension % to 275 daN / Allungamento % a 275 daN		8.50	8.50	8.50	8.50	8.50	
Minimum 600 daN/ Minimo 600 daN	DaN breaking load / Carico di rottura daN		960	960	970	960	970	
0,8 - 1,0	Thickness in mm / Spessore in mm		0.94	0.94	0.94	0.94	0.94	
4 - 5	Dry rubbing/ Sfregamento a secco		5					
4 - 5	Wet rubbing / Sfregamento a umido		5					
4	Solidity in light / Solidità alla luce		4					
Non-flammable / Non infiammabile	Flammability / Infiammabilità		NO					
Non-toxic / Non tossico	Toxicity / Tossicità		NO					
Stamp and signature / Timbro e firma	Remmert Spa / Remmert Spa	Quantity Sent / Quantità inviata	19.800					
Shipping No. / Spedizione N°	16/08/03/T	Lot No. / Lotto N°	16 Rem 172/T					
DDT N°	4178	Date of Dispatch / Data di Invio	8/4/16					

REMMERT SPA
dal 1874

Declaration of conformity / Dichiarazione di conformità

Certificate of conformity / Certificat de conformitè

Date / Data	10/20/16	Plot / Trama	1 wire Polyester 1100 dtex / 1 filo Poliestere 1100 dtex					
Certificate No. / Certificato N°	16 Rem 218/T	Contribution / Apporto	2 wires Polyester 334 dtex / 2 fili Poliestere 334 dtex					
PES025/1000/USA	Supply wire system/ Sistema filo d'apporto	System "V" / Sistema "V"	System "V" / Sistema "V"					
Skirt 2+2 / Saia 2+2	Color / Colore	ANTRACITE	ANTRACITE					
128 wires Polyester 1100 dtex / 128 fili Poliestere 1100 dtex	Number of band / Numero di bande	5	9					
Theoretical values / Valori Teorici	Technical Specification / Specifica Tecnica		Results / Risultati					
24,0mm - 26,	Width in mm. at 975 daN / Larghezza in mm. a 975 daN		25.4	25.4	25.3	25.6	25.6	
80+/-2	Listings per dm. / Inserzioni per dm.		80					
19,5 gr - 21,5 gr	Weight gr/mt / Peso gr/mt		21.1	21.1	21.1	21.1	21.1	
7% - 9%	Extension % to 275 daN / Allungamento % a 275 daN		8.50	8.50	8.50	8.50	8.50	
Minimum 600 daN/ Minimo 600 daN	DaN breaking load / Carico di rottura daN		970	960	970	970	970	
0,8 - 1,0	Thickness in mm / Spessore in mm		0.94	0.94	0.94	0.94	0.94	
4 - 5	Dry rubbing/ Sfregamento a secco		5					
4 - 5	Wet rubbing / Sfregamento a umido		5					
4	Solidity in light / Solidità alla luce		4					
Non-flammable / Non infiammabile	Flammability / Infiammabilità		NO					
Non-toxic / Non tossico	Toxicity / Tossicità		NO					
Stamp and signature / Timbro e firma	Remmert Spa / Remmert Spa	Quantity Sent / Quantità inviata	27,000					
Shipping No. / Spedizione N°	16/10/20/T	Lot No. / Lotto N°	16 Rem 218/T					
DDT N°	5323	Date of Dispatch / Data di Invio	10/20/16					

REMMERT SPA
dal 1874

Declaration of conformity / Dichiarazione di conformità

Certificate of conformity / Certificat de conformitè

Date / Data	2/27/17	Plot / Trama	1 wire Polyester 1100 dtex / 1 filo Poliestere 1100 dtex
Certificate No. / Certificato N°	17 Rem 41/T	Contribution / Apporto	2 wires Polyester 334 dtex / 2 fili Poliestere 334 dtex
PES025/1000/USA	Supply wire system/ Sistema filo d'apporto	System "V" / Sistema "V"	System "V" / Sistema "V"
Skirt 2+2 / Saia 2+2	Color / Colore	ANTRACITE	ANTRACITE
128 wires Polyester 1100 dtex / 128 fili Poliestere 1100 dtex	Number of band / Numero di bande	5	9

Theoretical values / Valori Teorici	Technical Specification / Specifica Tecnica	Results / Risultati				
24,0mm - 26,	Width in mm. at 975 daN / Larghezza in mm. a 975 daN	25.4	25.4	25.3	25.6	25.6
80+/-2	Listings per dm. / Inserzioni per dm.	80				
19,5 gr - 21,5 gr	Weight gr/mt / Peso gr/mt	21.1	21.1	21.1	21.1	21.1
7% - 9%	Extension % to 275 daN / Allungamento % a 275 daN	8.50	8.50	8.50	8.50	8.50
Minimum 600 daN/ Minimo 600 daN	DaN breaking load / Carico di rottura daN	970	960	970	970	970
0,8 - 1,0	Thickness in mm / Spessore in mm	0.94	0.94	0.94	0.94	0.94

4 - 5	Dry rubbing/ Sfregamento a secco	5
4 - 5	Wet rubbing / Sfregamento a umido	5
4	Solidity in light / Solidità alla luce	4
Non-flammable / Non infiammabile	Flammability / Infiammabilità	NO
Non-toxic / Non tossico	Toxicity / Tossicità	NO

Stamp and signature / Timbro e firma	Remmert SpaRemmert Spa / Remmert Spa	Quantity Sent / Quantità inviata	27,000
Shipping No. / Spedizione N°	17/02/27/T	Lot No. / Lotto N°	17 Rem 41/T
DDT N°	954	Date of Dispatch / Data di Invio	2/27/17

REMMERT SPA
dal 1874

Declaration of conformity / Dichiarazione di conformità

Certificate of conformity / Certificat de conformitè

Date / Data	6/19/17	Plot / Trama	1 wire Polyester 1100 dtex / 1 filo Poliestere 1100 dtex
Certificate No. / Certificato N°	17 Rem 110/T	Contribution / Apporto	2 wires Polyester 334 dtex / 2 fili Poliestere 334 dtex
PES025/1000/USA	Supply wire system/ Sistema filo d'apporto	System "V" / Sistema "V"	System "V" / Sistema "V"
Skirt 2+2 / Saia 2+2	Color / Colore	ANTRACITE	ANTRACITE
128 wires Polyester 1100 dtex / 128 fili Poliestere 1100 dtex	Number of band / Numero di bande	5	9

Theoretical values / Valori Teorici	Technical Specification / Specifica Tecnica	Results / Risultati				
24,0mm - 26,	Width in mm. at 975 daN / Larghezza in mm. a 975 daN	25.4	25.4	25.3	25.6	25.6
80+/-2	Listings per dm. / Inserzioni per dm.	80				
19,5 gr - 21,5 gr	Weight gr/mt / Peso gr/mt	21.1	21.1	21.1	21.1	21.1
7% - 9%	Extension % to 275 daN / Allungamento % a 275 daN	8.50	8.50	8.50	8.50	8.50
Minimum 600 daN/ Minimo 600 daN	DaN breaking load / Carico di rottura daN	970	960	970	970	970
0,8 - 1,0	Thickness in mm / Spessore in mm	0.94	0.94	0.94	0.94	0.94

4 - 5	Dry rubbing/ Sfregamento a secco	5
4 - 5	Wet rubbing / Sfregamento a umido	5
4	Solidity in light / Solidità alla luce	4
Non-flammable / Non infiammabile	Flammability / Infiammabilità	NO
Non-toxic / Non tossico	Toxicity / Tossicità	NO

Stamp and signature / Timbro e firma	Remmert Spa / Remmert Spa	Quantity Sent / Quantità inviata	27,000
Shipping No. / Spedizione N°	17/06/110/T	Lot No. / Lotto N°	17 Rem 110/T
DDT N°	3050	Date of Dispatch / Data di Invio	9/19/17

REMMERT SPA²A
dal 1874

Declaration of conformity / Dichiarazione di conformità

Certificate of conformity / Certificat de conformitè

Date / Data	8/2/2017	Plot / Trama	1 wire Polyester 1100 dtex / 1 filo Poliestere 1100 dtex					
Certificate No. / Certificato N°	17 Rem 162/T	Contribution / Apporto	2 wires Polyester 334 dtex / 2 fili Poliestere 334 dtex					
PES025/1000/USA	Supply wire system/ Sistema filo d'apporto	System "V" / Sistema "V"	System "V" / Sistema "V"					
Skirt 2+2 / Saia 2+2	Color / Colore	ANTRACITE	ANTRACITE					
128 wires Polyester 1100 dtex / 128 fili Poliestere 1100 dtex	Number of band / Numero di bande	5	9					
Theoretical values / Valori Teorici	Technical Specification / Specifica Tecnica		Results / Risultati					
24,0mm - 26,	Width in mm. at 975 daN / Larghezza in mm. a 975 daN		25.4	25.4	25.3	25.6	25.6	
80+/-2	Listings per dm. / Inserzioni per dm.		80					
19,5 gr - 21,5 gr	Weight gr/mt / Peso gr/mt		21.1	21.1	21.1	21.1	21.1	
7% - 9%	Extension % to 275 daN / Allungamento % a 275 daN		8.50	8.50	8.50	8.50	8.50	
Minimum 600 daN/ Minimo 600 daN	DaN breaking load / Carico di rottura daN		970	960	970	970	970	
0,8 - 1,0	Thickness in mm / Spessore in mm		0.94	0.94	0.94	0.94	0.94	
4 - 5	Dry rubbing/ Sfregamento a secco		5					
4 - 5	Wet rubbing / Sfregamento a umido		5					
4	Solidity in light / Solidità alla luce		4					
Non-flammable / Non infiammabile	Flammability / Infiammabilità		NO					
Non-toxic / Non tossico	Toxicity / Tossicità		NO					
Stamp and signature / Timbro e firma	Remmert Spa / Remmert Spa	Quantity Sent / Quantità inviata	27,000					
Shipping No. / Spedizione N°	17/08/02/T	Lot No. / Lotto N°	19 Rem 107/T					
DDT N°	3867	Date of Dispatch / Data di Invio	8/2/17					

REMMERT SPA²A
dal 1874

Declaration of conformity / Dichiarazione di conformità

Certificate of conformity / Certificat de conformitè

Date / Data	6/10/18	Plot / Trama	1 wire Polyester 1100 dtex / 1 filo Poliestere 1100 dtex					
Certificate No. / Certificato N°	19 Rem 107/T	Contribution / Apporto	2 wires Polyester 334 dtex / 2 fili Poliestere 334 dtex					
PES025/1000/USA	Supply wire system/ Sistema filo d'apporto	System "V" / Sistema "V"	System "V" / Sistema "V"					
Skirt 2+2 / Saia 2+2	Color / Colore	ANTRACITE	ANTRACITE					
128 wires Polyester 1100 dtex / 128 fili Poliestere 1100 dtex	Number of band / Numero di bande	5	9					
Theoretical values / Valori Teorici	Technical Specification / Specifica Tecnica		Results / Risultati					
24,0mm - 26,	Width in mm. at 975 daN / Larghezza in mm. a 975 daN		25.4	25.4	25.3	25.6	25.6	
80+/-2	Listings per dm. / Inserzioni per dm.		80					
19,5 gr - 21,5 gr	Weight gr/mt / Peso gr/mt		21.1	21.1	21.1	21.1	21.1	
7% - 9%	Extension % to 275 daN / Allungamento % a 275 daN		8.50	8.50	8.50	8.50	8.50	
Minimum 600 daN/ Minimo 600 daN	DaN breaking load / Carico di rottura daN		970	960	970	970	970	
0,8 - 1,0	Thickness in mm / Spessore in mm		0.94	0.94	0.94	0.94	0.94	
4 - 5	Dry rubbing/ Sfregamento a secco		5					
4 - 5	Wet rubbing / Sfregamento a umido		5					
4	Solidity in light / Solidità alla luce		4					
Non-flammable / Non infiammabile	Flammability / Infiammabilità		NO					
Non-toxic / Non tossico	Toxicity / Tossicità		NO					
Stamp and signature / Timbro e firma	Remmert Spa / Remmert Spa	Quantity Sent / Quantità inviata	27,000					
Shipping No. / Spedizione N°	10/06/19/T	Lot No. / Lotto N°	19 Rem 107/T					
DDT N°	2946	Date of Dispatch / Data di Invio	6/10/19					

REMMERT SPAA
dal 1874

Declaration of conformity / Dichiarazione di conformità

Certificate of conformity / Certificat de conformitè

Date / Data	7/12/18	Plot / Trama	1 wire Polyester 1100 dtex / 1 filo Poliestere 1100 dtex
Certificate No. / Certificato N°	18 Rem 146/T	Contribution / Apporto	2 wires Polyester 334 dtex / 2 fili Poliestere 334 dtex
PES025/1000/USA	Supply wire system / Sistema filo d'apporto	System "V" / Sistema "V"	System "V" / Sistema "V"
Skirt 2+2 / Saia 2+2	Color / Colore	ANTRACITE	ANTRACITE
128 wires Polyester 1100 dtex / 128 fili Poliestere 1100 dtex	Number of band / Numero di bande	5	9

Theoretical values / Valori Teorici	Technical Specification / Specifica Tecnica	Results / Risultati				
24,0mm - 26,	Width in mm. at 975 daN / Larghezza in mm. a 975 daN	25.4	25.4	25.3	25.6	25.6
80+/-2	Listings per dm. / Inserzioni per dm.	80				
19,5 gr - 21,5 gr	Weight gr/mt / Peso gr/mt	21.1	21.1	21.1	21.1	21.1
7% - 9%	Extension % to 275 daN / Allungamento % a 275 daN	8.50	8.50	8.50	8.50	8.50
Minimum 600 daN/ Minimo 600 daN	DaN breaking load / Carico di rottura daN	970	960	970	970	970
0,8 - 1,0	Thickness in mm / Spessore in mm	0.94	0.94	0.94	0.94	0.94

4 - 5	Dry rubbing/ Sfregamento a secco	5
4 - 5	Wet rubbing / Sfregamento a umido	5
4	Solidity in light / Solidità alla luce	4
Non-flammable / Non infiammabile	Flammability / Infiammabilità	NO
Non-toxic / Non tossico	Toxicity / Tossicità	NO

Stamp and signature / Timbro e firma	Remmert Spa / Remmert Spa	Quantity Sent / Quantità inviata	27,000
Shipping No. / Spedizione N°	18/07/12/T	Lot No. / Lotto N°	18 Rem 146/T
DDT N°	3615	Date of Dispatch / Data di Invio	7/12/18

REMMERT SPAA
dal 1874

Declaration of conformity / Dichiarazione di conformità

Certificate of conformity / Certificat de conformitè

Date / Data	9/12/19	Plot / Trama	1 wire Polyester 1100 dtex / 1 filo Poliestere 1100 dtex					
Certificate No. / Certificato N°	19 Rem 165/T	Contribution / Apporto	2 wires Polyester 334 dtex / 2 fili Poliestere 334 dtex					
PES025/1000/USA	Supply wire system/ Sistema filo d'apporto	System "V" / Sistema "V"	System "V" / Sistema "V"					
Skirt 2+2 / Saia 2+2	Color / Colore	ANTRACITE	ANTRACITE					
128 wires Polyester 1100 dtex / 128 fili Poliestere 1100 dtex	Number of band / Numero di bande	5	9					
Theoretical values / Valori Teorici	Technical Specification / Specifica Tecnica		Results / Risultati					
24,0mm - 26,	Width in mm. at 975 daN / Larghezza in mm. a 975 daN		25.4	25.4	25.3	25.6	25.6	
80+/-2	Listings per dm. / Inserzioni per dm.		80					
19,5 gr - 21,5 gr	Weight gr/mt / Peso gr/mt		21.1	21.1	21.1	21.1	21.1	
7% - 9%	Extension % to 275 daN / Allungamento % a 275 daN		8.50	8.50	8.50	8.50	8.50	
Minimum 600 daN/ Minimo 600 daN	DaN breaking load / Carico di rottura daN		970	960	970	970	970	
0,8 - 1,0	Thickness in mm / Spessore in mm		0.94	0.94	0.94	0.94	0.94	
4 - 5	Dry rubbing/ Sfregamento a secco		5					
4 - 5	Wet rubbing / Sfregamento a umido		5					
4	Solidity in light / Solidità alla luce		4					
Non-flammable / Non infiammabile	Flammability / Infiammabilità		NO					
Non-toxic / Non tossico	Toxicity / Tossicità		NO					
Stamp and signature / Timbro e firma	Remmert Spa / Remmert Spa	Quantity Sent / Quantità inviata	27,000					
Shipping No. / Spedizione N°	12/09/19/T	Lot No. / Lotto N°	19 Rem 165/T					
DDT N°	4354	Date of Dispatch / Data di Invio	9/12/19					

REPORT NUMBER: 213-MGA-18-012

SAFETY COMPLIANCE TESTING FOR FMVSS 213
CHILD RESTRAINT SYSTEMS

Combi USA, Inc.
BabyRide, Model 378099

PREPARED BY:
MGA Research Corporation
5000 Warren Road
Burlington, WI 53105

Report Date: January 18, 2018

FINAL REPORT

PREPARED FOR:
U. S. DEPARTMENT OF TRANSPORTATION
National Highway Traffic Safety Administration
Enforcement
Office of Vehicle Safety Compliance
Mail Code: NVS-220, W43-481
1200 New Jersey Avenue, SE
Washington, DC 20590

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Prepared By: Corey Barlet

Approved By: Jay Bullington

Approval Date: January 8, 2018

FINAL REPORT ACCEPTANCE BY OVSC:

Accepted By: ZACHARY R FRASER Digitally signed by ZACHARY R FRASER Date: 2019.05.22 12:11:09 -04'00'

Acceptance Date: _____

Technical Report Documentation Page

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4. Title and Subtitle Final Report of FMVSS 213 Compliance Testing of Combi USA, Inc. BabyRide, Model 378099		*5. Report Date* January 18, 2018 *6. Performing Organization Code* MGA Research Corporation
7. Author(s) Corey Barlet, Project Engineer		*8. Performing Organization Report No.* 213-MGA-18-012
9. Performing Organization Name and Address MGA Research Corporation 5000 Warren Road Burlington, WI 53105		*10. Work Unit No.* *11. Contract or Grant No.* DTNH22-12-D-00274
12. Sponsoring Agency Name and Address U. S. DEPARTMENT OF TRANSPORTATION National Highway Traffic Safety Administration Enforcement Office of Vehicle Safety Compliance Mail Code: NVS-220, W43-481 1200 New Jersey Avenue, SE Washington, DC 20590		*13. Type of Report and Period Covered* Final Test Report January 12 to 18, 2018 *14. Sponsoring Agency Code* NVS-220
15. Supplementary Notes		
16. Abstract Compliance tests were conducted on the Combi USA, Inc., BabyRide, Model 378099 child restraint systems in accordance with the specifications of the Office of Vehicle Safety Compliance Test Procedure No. TP-213-10. Test failures identified were as follows: S5.5.2(m) Labeling S5.6.1.7 Printed Instructions for Proper Use S5.8.2(c) Electronic Registration Form		
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Form DOT F1700.7 (8-72)

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SECTION 1
PURPOSE AND TEST PROCEDURE

PURPOSE

The tests performed are part of the safety compliance program for the National Highway Traffic Safety Administration (NHTSA) by MGA Research Corporation under Contract No. DTNH22-12-D-00274. The purpose of the testing is to determine whether production child restraint systems meet the minimum inspection and dynamic test requirements of TP-213-10, “Child Restraint Systems”.

TEST PROCEDURE

The MGA Research Corporation Test Procedure for FMVSS 213, submitted and approved by the Office of Vehicle Safety Compliance, National Highway Traffic Safety Administration, contains the specific procedures used to conduct this test. This procedure shall not be interpreted to be in conflict with any portion of FMVSS 213 and amendments in effect as noted in the applicable contract.

SECTION 2
INTRODUCTION AND SUMMARY

This report presents all of the FMVSS 213 compliance inspection and test data obtained on the Combi USA, Inc. BabyRide, Model 378099, child restraint system. The restraint was dynamically tested in the following configurations:

- Newborn Infant, rear facing, other configuration, latch anchor, tether free, and reclined
- 12 month old, CRABI, rear facing, other configuration, lap belt, tether free, and reclined

Inversion testing was performed in both the forward Y-axis rotation and in the lateral X-axis rotation for the following configurations:

- 12 month old, CRABI, rear facing, other configuration, lap belt, tether free, and reclined

The inspection and/or testing of the Combi USA, Inc., BabyRide, Model 378099 child restraint failed to meet the following requirement(s) of FMVSS No. 213 when tested in accordance with TP-213-10 in the configurations and conditions documented in this report:

S5.5.2(m) Labeling

One of the following statements, inserting an address and a U.S. telephone number. If a manufacturer opts to provide a Web site on the registration card as permitted in Figure 9a of this section, the manufacturer must include the statement in part (ii): "Child restraints could be recalled for safety reasons. You must register this restraint to be reached in a recall. Send your name, address, e-mail address if available [preceding four words are optional], and the restraint's model number and manufacturing date to (insert address) or call (insert a U.S. telephone number) or register online at (insert Web site for electronic registration form). For recall information, call the U.S. Government's Vehicle Safety Hotline at 1-888-327-4236 (TTY: 1-800-424-9153), or go to http://www.NHTSA.gov."

S5.6 Printed Instructions for Proper Use

Any labels or written instructions provided in addition to those required by this section shall not obscure or confuse the meaning of the required information or be otherwise misleading to the consumer. Any labels or written instructions other than in the English language shall be an accurate translation of English labels or written instructions. Unless written in all capitals, the information required by S5.6.1 through S5.6.3 shall be stated in sentence capitalization.

S5.8.2(c) Electronic Registration Form

The electronic registration form shall be accessed directly by the web address that the manufacturer printed on the attached registration form. The form must appear on screen when the consumer has inputted the web address provided by the manufacturer, without any further keystrokes on the keyboard or clicks of the mouse.

Restraint system inspection, dynamic sled testing, and inversion testing were performed by MGA Research Corporation in Burlington, Wisconsin. Compliance test data sheets for all tests are found in Section 5 of this report.

SECTION 3
CHILD RESTRAINT SYSTEM IDENTIFICATION

Report No. 213-MGA-18-012

Manufacturer:	Combi USA, Inc.
Place of Manufacture per S5.5.2(d):	Romania
Model No.	378099
Group No.	1

1	Item Code	012-M378099-01-NINRNLFR
	Date of Manufacture	2017-08-21
	Sled Test No.	W18027F
2	Item Code	012-M378099-02-12CRN2FR
	Date of Manufacture	2017-08-21
	Sled Test No.	W18027R

SECTION 4

DYNAMIC TEST RESULTS DATA SUMMARY

Child Restraint System - Combi USA, Inc. / BabyRide / 378099										
Item Code	Sled Test No.	Dummy and CRS Test Mode*	Lower Anchors Used? Y/N	Tether Used? Y/N	HIC (1000 max)	Chest g clip (60 g max)	Head Excursion (720 mm max - or 813 mm max w/o tether)	Knee Excursion (915 mm max)	Seat Back Angle (70 deg max)	Pass/ Fail
012-M378099-01-NINRNLFR	W18027F	NIN (RF) (R)	Y	N	N/A	N/A	N/A	N/A	50	Pass
012-M378099-02-12CRN2FR	W18027R	12 mo (RF) (R)	N	N	252	41	N/A	N/A	56	Pass

*Test Mode:

RF- Rear facing
FF- Forward facing
SF- Side facing
U- Upright
R- Reclined
B- Backed Booster
N- No Back Booster
F- Flat

SECTION 5
DATA

LABELING

(FMVSS 213, S5.3, S5.5)

Report No.:	213-MGA-18-012
Test Date:	1/16/2018

Model No.:	378099

Requirement	Pass/Fail
The labels on the subject child restraint system were inspected and compared to the requirements of FMVSS No. 213 S5.3.1(b) and S5.5, as applicable.	Fail (1)(2)

The following failures were identified:

(1) S5.5.2(m) A registration website is provided on the registration card. The statement from S5.5.2(m)(ii) is required. The statement from S5.5.2(m)(i) is printed.

Remarks:

(2) S5.5.2(e) The phrase “Federal Motor Vehicle Safety Standards” is incorrectly capitalized in the required statement.

Photographs of the labels are included in Section 9.

Recorded by: Corey Barlet Date: 1/16/2018

PRINTED INSTRUCTIONS FOR PROPER USE

(FMVSS 213, S5.6)

Report No.:	213-MGA-18-012
Test Date:	1/16/2018

Model No.:	378099

Requirement	Pass/Fail
The printed instructions accompanying the subject child restraint system were inspected and compared to the requirements of FMVSS No. 213 S5.6, as applicable.	Fail (1)(2)

The following failures were identified:

(1) S5.6 The web address (http://www.Combi-intl.com/car_reg.html) printed in the statement required by S5.6.1.7(ii) is different from that printed on the labeling and attached registration form (http://registration.combiusa.com/product) and does not lead to the electronic registration form. This information could mislead a consumer and not allow them to find the electronic registration form.

Remarks:

(2) S5.6.1.7(ii) The phrase "(car seats)" is inserted after "child restraints", the phrase "Fill out the registration card attached to car seat and mail today or" is inserted before "send your name", the phrase "Toll Free" is inserted after "or call", and the phrase "or Fax 1-704-697-1695 or log onto www.CombiUSA.com" is inserted before “For recall information” in the required statement.

Recorded by: Corey Barlet Date: 1/16/2018

REGISTRATION FORM

(FMVSS 213, S5.8)

Report No.:	213-MGA-18-012
Test Date:	1/16/2018

Model No.:	378099

Requirement	Pass/Fail
The printed registration form accompanying the subject child restraint system and the electronic registration form were inspected and compared to the requirements of FMVSS No. 213 S5.8.	Fail (1)(2)(3)

The following failures were identified:

(1) S5.8.2(c) Product type must be selected from a drop down box to access the electronic registration form.

Remarks:

(2) S5.8.1(b)(2) The word “still” is inserted before “thinking about it”, the phrase “The card is” is replaced with “It’s”, and the phrase “Using capital letters” is inserted before and the phrase “(Use #2 pencil or black ink)” is inserted after “just fill in your name and address” on the attached registration form.
(3) S5.8.2(b) An additional statement appears after the statements required by S5.8.2(a) that explains how personal information will be used and that the consumer need not send in the attached registration card after completing the electronic form.

Recorded by: Corey Barlet Date: 1/16/2018

MAXIMUM CHILD WEIGHT FOR LOWER ANCHOR USE

(S213, S5.5.2(l)(3))

Report No.:	213-MGA-18-012
Test Date:	1/16/2018

Model No.:	378099

For child restraints manufactured on or after February 27, 2015:

Installation Mode	A Max Child Weight is Required for this Installation Mode (Y or N)	Installation Diagram Shown (Y or N)	Max Child Weight Indicated on Installation Diagram (lb)
Rear Facing	N	N/A	N/A
Forward Facing	N/A	N/A	N/A

CRS Weight (lb)	Child Weight (CW) Calculation (lb)	Rounded CW Limit permitted under S5.5.2(l)(3)(i)
7.1	Rear Facing 60-CRS Weight = 52.9	55
	Forward Facing 65-CRS Weight = N/A	N/A

Calculated CW	Rounded CW
15 < CW ≤ 20	20
20 < CW ≤ 25	25
25 < CW ≤ 30	30
30 < CW ≤ 35	35
35 < CW ≤ 40	40
40 < CW ≤ 45	45
45 < CW ≤ 50	50
50 < CW ≤ 55	55
55 < CW ≤ 60	60

Section	Requirement	Pass/Fail
S5.5.2(l)(3)(i)	A maximum child weight is required on an installation diagram when the CRS+child weight is greater than 65 lb for CRS that are used with the internal harness and installed with lower anchors. The maximum weight on the label conforms to the limits established in S5.5.2(l)(3)(i)	N/A
S5.5.2(l)(3)(ii)	For CRS that can be used both forward and rear-facing, either: (1) separate diagrams are provided and labeled; or (2) only one diagram is applicable, provided, and labeled; or (3) two diagrams are applicable and the diagram shown contains the lesser of the permitted weights	N/A

Remarks:

None

Recorded by: Corey Barlet

Date: 1/16/2018

ATTACHMENT TO ANCHORAGE SYSTEM

(S213, S5.9)

Report No.:	213-MGA-18-012
Test Date:	1/16/2018

Model No.:	378099

Section	Requirement	Pass/Fail
S5.9(a)	This add-on child restraint system (excluding car beds, harnesses, and belt-positioning seats) has a permanently attached anchorage system having components that enable the restraint to be securely fastened to the lower anchorages.	Pass
	The anchorage system has components which can only be removed with a tool, such as a screwdriver.	Pass
	Note: If this is a rear-facing child restraint system with a detachable base, then only the base is required to have the components.	N/A
S5.9(b)	This child restraint system has components for attaching the system to a tether anchorage, and those components include a tether hook that conforms to the configuration and geometry specified in Figure 22.	N/A
S5.9(c)	This child restraint system has adjustable components for attaching the system to a tether anchorage or to lower anchors to allow the restraint to be tightened to the vehicle.	Pass
S5.9(d)	If the anchorage system on this child restraint system has components, other than hooks, that enable the restraint to be securely fastened to the lower anchorages, it provides either an indication when each attachment to the lower anchorage becomes fully latched or attached, or provides a visual indication that all attachments to the lower anchorages are fully latched or attached.	N/A
	Visual indications are detectable under normal daylight lighting conditions.	N/A

Remarks:

None

Recorded by: Corey Barlet

Date: 1/16/2018

INSTALLATION

(S213-S5.3)

Report No.:	213-MGA-18-012
Test Date:	1/16/2018

Model No.:	378099

Section	Requirement						Pass/Fail
S5.3.1	Add-on child restraints meet either (a) or (b) as appropriate						Pass
S5.3.1(a)	Except for components designed to attach a child restraint anchorage system, this add-on child restraint does not have any means designed for attaching the system to a vehicle seat cushion or vehicle seat back and any component (except belts) that is designed to be inserted between the vehicle seat cushion and vehicle seat back.						Pass
S5.3.1(b)	Harnesses manufactured for use on school bus seats must meet S5.3.1(a) unless labeled appropriately. Refer to the labeling data sheet for the specific requirements.						N/A
S5.3.2	This child restraint system is capable of being installed as required by Table S5.3.2 of FMVSS No. 213. Shaded sections indicate installation means required by standard.						
		Lap Belt	*Lap Belt & Tether (if needed)*	*Lower Anchors*	*Lap & Shoulder Belt*	*Seat back Mount*	
	Harnesses per S5.3.1(b)(1)-(3) and Fig. 12						N/A
	Other Harnesses						N/A
	Car Beds						N/A
	Rear-Facing Restraints	X		X	X		Pass
	Belt Positioning Seats						N/A
	Other						N/A
S5.3.3	If a car bed, this child restraint system is designed to be installed laterally.						N/A

Remarks:

None

Recorded by: Corey Barlet

Date: 1/16/2018

MINIMUM HEAD SUPPORT SURFACE

(FMVSS 213, S5.2.1)

Report No.:	213-MGA-18-012
Test Date:	1/16/2018

Model No.:	378099

Section	Requirement	
S5.2.1.2	The child restraint system is exempt from S5.2.1.1 if it is a forward facing restraint and the target points on either side of the dummy's head (using the largest test dummy specified in S7, excluding the 6-year-old) is below the top of the test seat.	
S5.2.1.1.(a)	**Maximum Recommended Child Weight**	**Minimum Seat Back Height Required**
	≤ 18 kg (39.7 lb)	500 mm (19.7 in)
	> 18 kg (39.7 lb)	560 mm (22.0 in)
S5.2.1.1(b)	**Side Wing Depth**	**Minimum Back Support Width**
	< 102 mm (4.0 in)	203 mm (8.0 in)
	≥ 102 mm (4.0 in)	152 mm (6.0 in)

The child restraint system is **exempt** from S5.2.1.1 NO

Back Support Height

Manufacturer's Recommended Maximum Child Weight kg (lb)	Measured Height mm (in)	Pass/Fail
22 (10)	500 (19.7)	Pass

Back Support Width

Measured Side Wing Depth mm (in)	Measured Width mm (in)	Pass/Fail
110 (4.3)	185 (7.3)	Pass

Remarks:

None

Recorded by: Corey Barlet Date: 1/16/2018

TORSO IMPACT PROTECTION

(FMVSS 213, S5.2.2)

Report No.:	213-MGA-18-012
Test Date:	1/16/2018

Model No.:	378099

Section	Surface Requirement	Contour Requirement	Other Requirement
S5.2.2.1(a)	Back Support Surface	flat or concave	Continuous surface area of ≥ 85 in²
S5.2.2.1(b)	Side Support Surface	flat or concave	Continuous surface area of ≥ 24 in² for restraints having a recommended child weight ≥ 20 lb
		flat or concave	Continuous surface area of ≥ 48 in² for restraints having a recommended child weight < 20 lb
S5.2.2.1(c)	Horizontal Cross Sections of Surfaces Restraining Torso Forward Movement	flat or concave	
	Vertical Longitudinal Cross Sections of Surfaces Restraining Torso Forward Movement	flat or convex	Radius of curvature ≥ 2 in
S5.2.2.2	Fixed or movable surface forward of dummy		Must be used to restrain dummy and allow compliance with injury & excursion criteria

Support Surface- Results

Surface	Contour	Measured Area	Pass/Fail
Back Support Surface	Flat	≥ 85 in²	Pass
Side Support Surface	Flat	≥ 24 in²	Pass

Surfaces Restraining Torso Forward Movement- Results

	Contour	Radius of Curvature	Pass/Fail
Horizontal Cross Section	N/A	N/A	Pass
Vertical Cross Section	N/A	N/A	Pass

Fixed or Movable Surfaces Forward of Dummy- Results

Yes/No	Pass/Fail
No	Pass

Remarks:

None

Recorded by: Corey Barlet

Date: 1/16/2018

PROTRUSION LIMITATION

(FMVSS 213, S5.2.4)

Report No.:	213-MGA-18-012
Test Date:	1/16/2018

Model No.:	378099

S5.2.4. Any portion of a rigid structural component within or underlying a contactable surface is subject to the protrusion limitations described below.

Test	Compliance Requirement	Result	Pass/Fail
Height	≤ 3/8 in. (9.53 mm)	≤ 3/8 in. (9.53 mm)	Pass
Edge Radius	≥ 1/4 in. (6.35 mm)	≥ 1/4 in. (6.35 mm)	Fail

Remarks:

None

Recorded by: Corey Barlet

Date: 1/16/2018

DYNAMIC IMPACT TEST CONDITIONS - TEST 1

(FMVSS 213, S6.1)

Report No.:	213-MGA-18-012
Test Date:	1/16/2018

Sled Test No.	W18027F
Item Code	012-M378099-01-NINRNLFR

Pulse:

Test Configuration (I or II)	I
Nominal Velocity (km/h)	48 (+0/-3)

Laboratory Ambient Conditions During Testing:

Temperature (ºC)	21.4
Relative Humidity (%)	18

Dummy:

Dummy Description	CAMI Newborn (Part 572K)
Dummy Serial Number	003

Restraint Installation:

Installed Direction	Rear-Facing
Base Usage	Other Configuration
Attachment Method	Lap Belt
Tether Usage	No
Seat Back Position	Reclined
Shoulder Harness Position	Slot 1 of 4, Counted from the Bottom
Buckle Harness Position	Fixed
Carry Handle Position	Position B

Remarks:

Pre-test and post-test photographs are presented in Section 9.

Recorded by: Corey Barlet

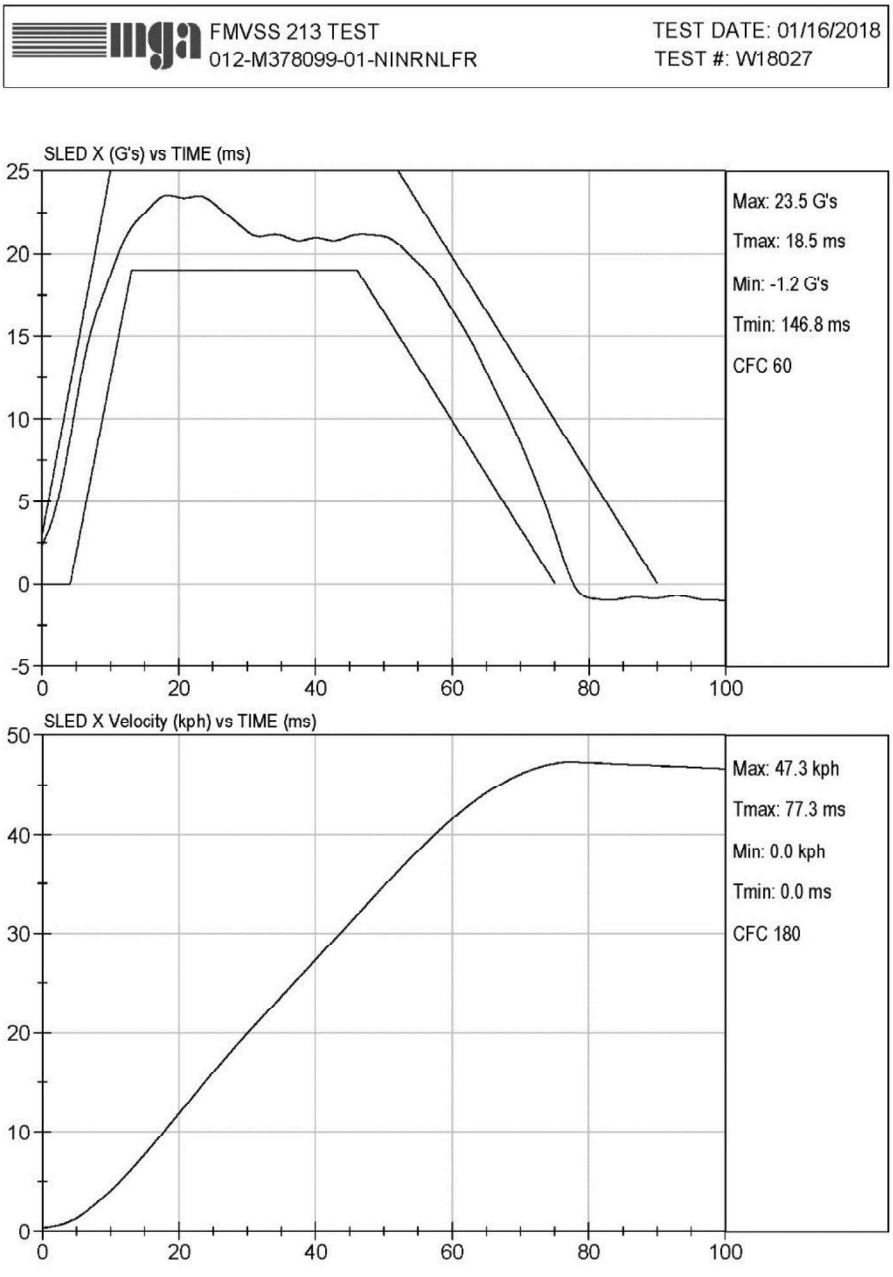
Date: 1/16/2018

DYNAMIC IMPACT SLED PULSE - TEST 1

(FMVSS 213, S6.1)

Report No.:	213-MGA-18-012
Test Date:	1/16/2018

Sled Test No.	W18027F
Item Code	012-M378099-01-NINRNLFR



BELT RESTRAINT - TEST 1

(FMVSS 213, S5.4.3)

Report No.:	213-MGA-18-012
Test Date:	1/16/2018

Sled Test No.	W18027F
Item Code	012-M378099-01-NINRNLFR

Section	Requirement	Pass/Fail
S5.4.3.1	**Snug Fit of Belts**. Belts that are part of the restraint and designed to restrain the child are adjustable to snugly fit any child of height and weight identified by the manufacturer in accordance with the manufacturer's installation instructions.	Pass

Section	Requirement	Yes/No	Pass/Fail
S5.4.3.2	**Direct Restraint**. Belts impose no loads on the child resulting from the mass of the system or the test seat.		Pass
	This restraint has one or more belts that contact the dummy for restraint.	No	If all are "yes," restraint fails S5.4.3.2.
	This restraint has a rigid structure behind the dummy.	Yes	
	The restraint could move relative to the belt.	No	

Section	Requirement	Pass/Fail
S5.4.3.3	**Seating Systems**. Except for harnesses and infant restraints for children up to 10 kg (22 lb), each restraint designed for a child in a seated position and having belts shall provide:	Pass
S5.4.3.3(a)	Upper torso restraint (either belts or a shield)	Pass
S5.4.3.3(b)	Lower torso restraint (either belts or a shield)	Pass
S5.4.3.3(c)	Crotch restraint (either a belt attached to the lap belt or a shield)	Pass

Section	Requirement	Pass/Fail
S5.4.3.4	**Harnesses**. Each harness shall:	N/A
S5.4.3.3(a)	Provide upper torso restraint	N/A
S5.4.3.3(b)	Provide lower torso restraint (lap and crotch restraint)	N/A
S5.4.3.3(c)	Prevent standing	N/A

Remarks:

None

Recorded by: Corey Barlet

Date: 1/16/2018

BUCKLE RELEASE - TEST 1

(FMVSS 213, S5.4.3.5, S6.2)

Report No.:	213-MGA-18-012
Test Date:	1/16/2018

Sled Test No.	W18027F
Item Code	012-M378099-01-NINRNLFR

Section	Requirement	Measurement	Pass/Fail
S5.4.3.5(a)	**Pre-Impact Release Force—** Releases under 40-62 N (9-14 lb)	L: 56 N (12.6 lb) R: 56 N (12.6 lb)	Pass
S5.4.3.5(b)	**Post-Impact Release Force*—** Releases ≤ 71 N (16 lb)	L: 59 N (13.3 lb) R: 59 N (13.3 lb)	Pass
S5.4.3.5(c)	**Minimum Surface Area of Buckle-** ≥ 0.6 in^2 (3.9 cm^2)	0.9 in^2 (6.1 cm^2)	Pass
S5.4.3.5(e)	**Buckle Integrity** Shall not release during testing	No Release	Pass

*Not applicable unless determined using the largest test dummy specified in S7 for use in testing the seat.

Remarks:

None

Recorded by: Corey Barlet

Date: 1/16/2018

SYSTEM INTEGRITY - TEST 1

(FMVSS 213, S5.1.1)

Report No.:	213-MGA-18-012
Test Date:	1/16/2018

Sled Test No.	W18027F
Item Code	012-M378099-01-NINRNLFR

S5.1.1 When dynamically tested, the child restraint system shall:

Section	Requirement	Pass/Fail
S5.1.1(a)	**Structural Integrity-** Exhibit no complete separation of any load bearing structural element	Pass
	Exhibit no partial separation exposing surfaces with a radius of less than ¼ in (9.53 mm)	Pass
	Exhibit no partial separation exposing surfaces with protrusions greater than 3/8 in (6.35 mm)	Pass
S5.1.1(b)(1)	**Adjustment Position-** Remain in the same adjustment position during the test that it was in immediately before the test	Pass
S5.1.1(b)(2)(ii)	**Exposed Openings-** Have no exposed opening larger than ¼ inch (9.53 mm) before the test become smaller during the testing as a result of the movement of the seating surface relative to the restraint system as a whole	Pass
S5.1.1(c)	**Seating Surface Angle-** Forward facing restraints do not allow the angle between the system's back support surface and seating surface to be less than 45 degrees at the completion of the test.	N/A

Remarks:

None

Recorded by: Corey Barlet

Date: 1/16/2018

DYNAMIC IMPACT TEST CONDITIONS - TEST 2

(FMVSS 213, S6.1)

Report No.:	213-MGA-18-012
Test Date:	1/16/2018

Sled Test No.	W18027R
Item Code	012-M378099-02-12CRN2FR

Pulse:

Test Configuration (I or II)	I
Nominal Velocity (km/h)	48 (+0/-3)

Laboratory Ambient Conditions During Testing:

Temperature (ºC)	21.4
Relative Humidity (%)	18

Dummy:

Dummy Description	CRABI 12-Month-Old (Part 572R)
Dummy Serial Number	083

Restraint Installation:

Installed Direction	Rear-Facing
Base Usage	Other Configuration
Attachment Method	Lap Belt
Tether Usage	No
Seat Back Position	Reclined
Shoulder Harness Position	Slot 4 of 4, Counted from the Bottom
Buckle Harness Position	Fixed
Carry Handle Position	Position B

Remarks:

Pre-test and post-test photographs are presented in Section 9.

None

Recorded by: Corey Barlet

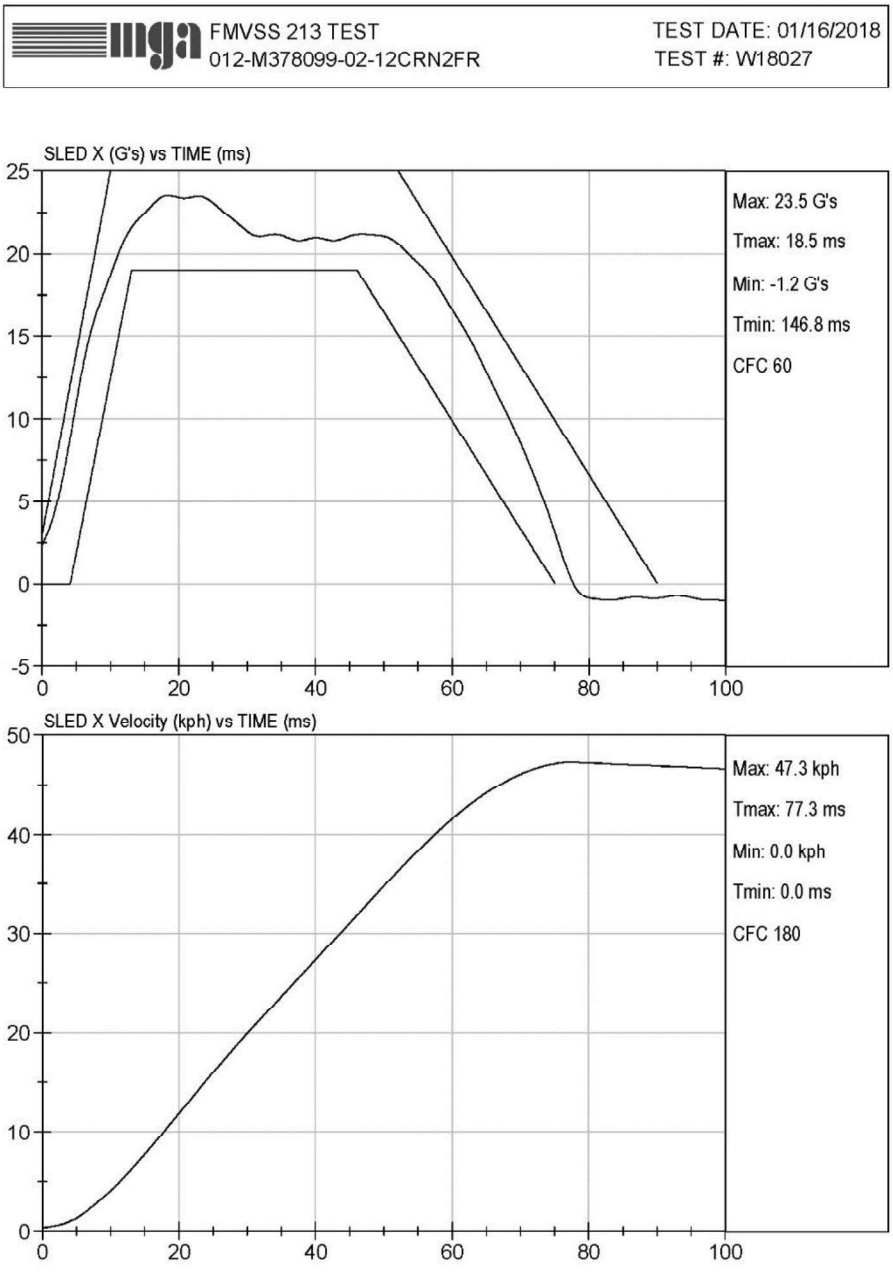
Date: 1/16/2018

DYNAMIC IMPACT SLED PULSE - TEST 2

(FMVSS 213, S6.1)

Report No.:	213-MGA-18-012
Test Date:	1/16/2018

Sled Test No.	W18027R
Item Code	012-M378099-02-12CRN2FR



BELT RESTRAINT - TEST 2

(FMVSS 213, S5.4.3)

Report No.:	213-MGA-18-012
Test Date:	1/16/2018

Sled Test No.	W18027R
Item Code	012-M378099-02-12CRN2FR

Section	Requirement	Pass/Fail
S5.4.3.1	**Snug Fit of Belts**. Belts that are part of the restraint and designed to restrain the child are adjustable to snugly fit any child of height and weight identified by the manufacturer in accordance with the manufacturer's installation instructions.	Pass

Section	Requirement	Yes/No	Pass/Fail
S5.4.3.2	**Direct Restraint**. Belts impose no loads on the child resulting from the mass of the system or the test seat.		Pass
	This restraint has one or more belts that contact the dummy for restraint.	No	If all are "yes," restraint fails S5.4.3.2.
	This restraint has a rigid structure behind the dummy.	Yes	
	The restraint could move relative to the belt.	No	

Section	Requirement	Pass/Fail
S5.4.3.3	**Seating Systems**. Except for harnesses and infant restraints for children up to 10 kg (22 lb), each restraint designed for a child in a seated position and having belts shall provide:	Pass
S5.4.3.3(a)	Upper torso restraint (either belts or a shield)	Pass
S5.4.3.3(b)	Lower torso restraint (either belts or a shield)	Pass
S5.4.3.3(c)	Crotch restraint (either a belt attached to the lap belt or a shield)	Pass

Section	Requirement	Pass/Fail
S5.4.3.4	**Harnesses**. Each harness shall:	N/A
S5.4.3.3(a)	Provide upper torso restraint	N/A
S5.4.3.3(b)	Provide lower torso restraint (lap and crotch restraint)	N/A
S5.4.3.3(c)	Prevent standing	N/A

Remarks:

None

Recorded by: Corey Barlet

Date: 1/16/2018

BUCKLE RELEASE - TEST 2

(FMVSS 213, S5.4.3.5, S6.2)

Report No.:	213-MGA-18-012
Test Date:	1/16/2018

Sled Test No.	W18027R
Item Code	012-M378099-02-12CRN2FR

Section	Requirement	Measurement	Pass/Fail
S5.4.3.5(a)	**Pre-Impact Release Force—** Releases under 40-62 N (9-14 lb)	L: 60 N (13.5 lb) R: 60 N (13.5 lb)	Pass
S5.4.3.5(b)	**Post-Impact Release Force*—** Releases ≤ 71 N (16 lb)	L: 60 N (13.5 lb) R: 60 N (13.5 lb)	Pass
S5.4.3.5(c)	**Minimum Surface Area of Buckle-** ≥ 0.6 in^2 (3.9 cm^2)	0.9 in^2 (6.1 cm^2)	Pass
S5.4.3.5(e)	**Buckle Integrity** Shall not release during testing	No Release	Pass

*Not applicable unless determined using the largest test dummy specified in S7 for use in testing the seat.

Remarks:

None

Recorded by: Corey Barlet

Date: 1/16/2018

SYSTEM INTEGRITY - TEST 2

(FMVSS 213, S5.1.1)

Report No.:	213-MGA-18-012
Test Date:	1/16/2018

Sled Test No.	W18027R
Item Code	012-M378099-02-12CRN2FR

S5.1.1 When dynamically tested, the child restraint system shall:

Section	Requirement	Pass/Fail
S5.1.1(a)	**Structural Integrity-** Exhibit no complete separation of any load bearing structural element	Pass
	Exhibit no partial separation exposing surfaces with a radius of less than ¼ in (9.53 mm)	Pass
	Exhibit no partial separation exposing surfaces with protrusions greater than 3/8 in (6.35 mm)	Pass
S5.1.1(b)(1)	**Adjustment Position-** Remain in the same adjustment position during the test that it was in immediately before the test	Pass
S5.1.1(b)(2)(ii)	**Exposed Openings-** Have no exposed opening larger than ¼ inch (9.53 mm) before the test become smaller during the testing as a result of the movement of the seating surface relative to the restraint system as a whole	Pass
S5.1.1(c)	**Seating Surface Angle-** Forward facing restraints do not allow the angle between the system's back support surface and seating surface to be less than 45 degrees at the completion of the test.	N/A

Remarks:

None

Recorded by: Corey Barlet

Date: 1/16/2018

INJURY CRITERIA - TEST 2

(FMVSS 213, S5.1.2)

Report No.:	213-MGA-18-012
Test Date:	1/16/2018

Sled Test No.	W18027R
Item Code	012-M378099-02-12CRN2FR

Section	Requirement
S5.1.2.1(a)	**Head Injury Criterion**- The maximum calculated head injury criterion for a 36 millisecond time interval (HIC36) shall not exceed 1,000. HIC is not calculated when using the 6-year-old weighted and 10-year-old test dummies.
S5.1.2.1(b)	**Chest Injury Criterion**- The chest acceleration shall not exceed 60g for intervals whose cumulative duration is more than 3 milliseconds.

Head Injury Criterion Results

Calculated HIC36	Pass/Fail
252	Pass

Chest Injury Criterion Results

Max acceleration lasting 3 ms (g)	Pass/Fail
41	Pass

Remarks:

None

Recorded by: Corey Barlet

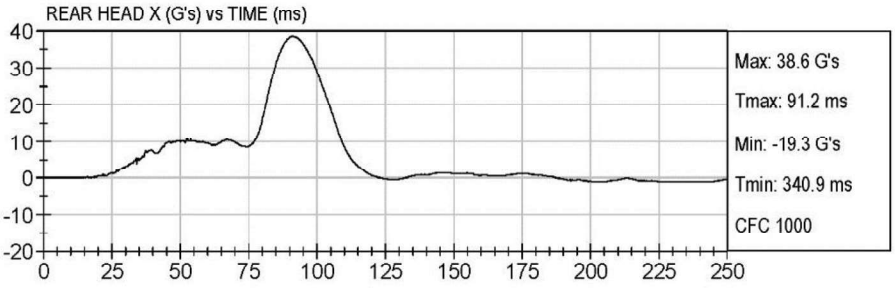
Date: 1/16/2018

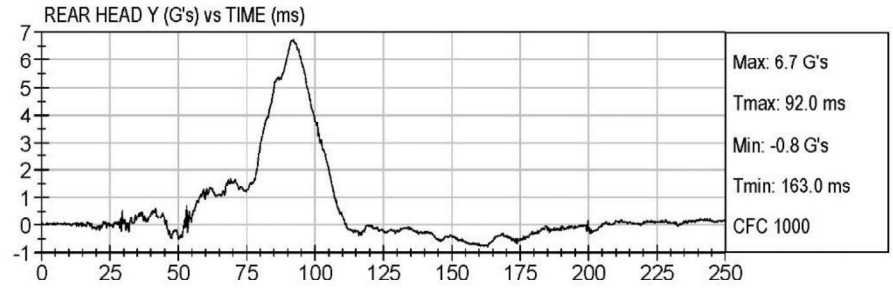
INJURY CRITERIA - HEAD ACCELERATION PLOTS - TEST 2

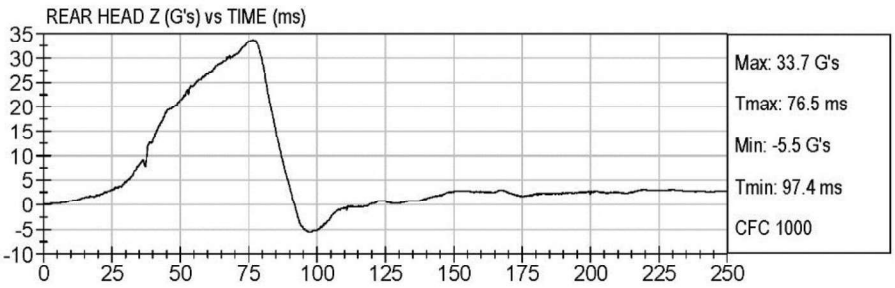
(FMVSS 213, S5.1.2)

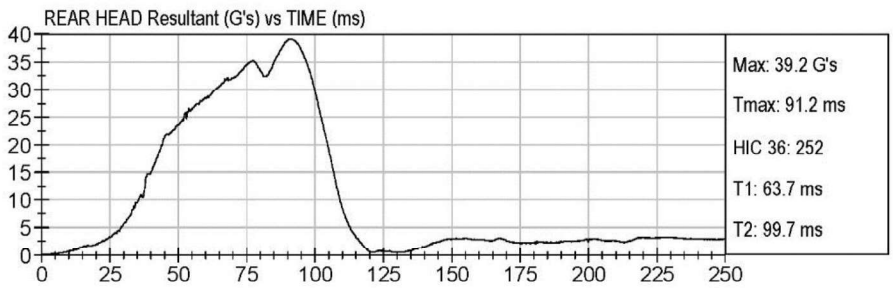
Report No.:	213-MGA-18-012
Test Date:	1/16/2018

Sled Test No.	W18027R
Item Code	012-M378099-02-12CRN2FR







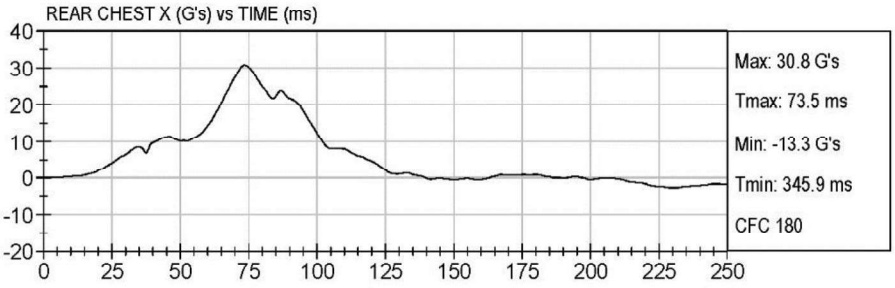


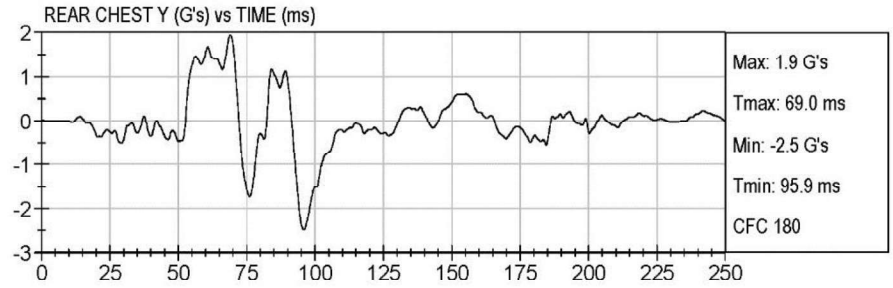
INJURY CRITERIA - CHEST ACCELERATION PLOTS - TEST 2

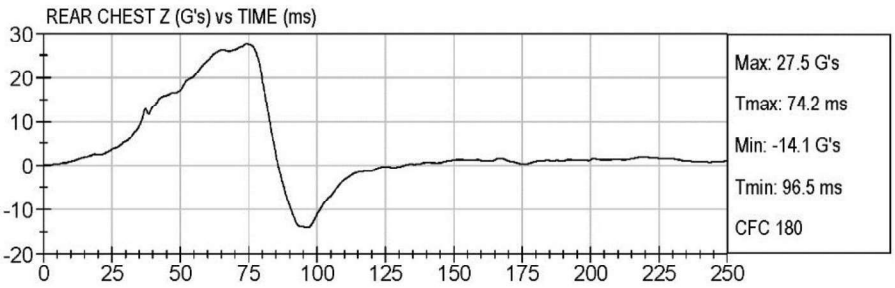
(FMVSS 213, S5.1.2)

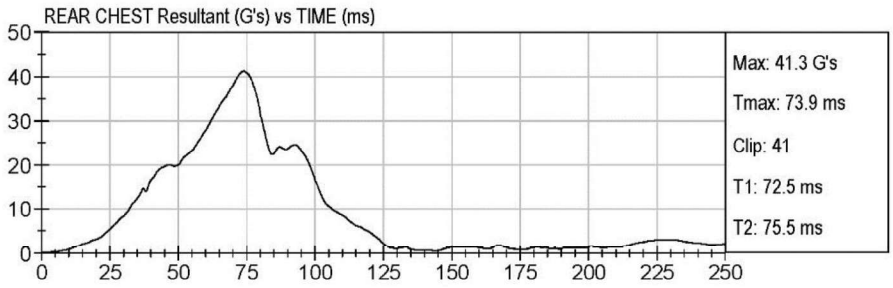
Report No.:	213-MGA-18-012
Test Date:	1/16/2018

Sled Test No.	W18027R
Item Code	012-M378099-02-12CRN2FR









OCCUPANT EXCURSION - TEST 2

(FMVSS 213, S5.1.3, S5.1.4, S5.2.1.1(c))

Report No.:	213-MGA-18-012
Test Date:	1/16/2018

Sled Test No.	W18027R
Item Code	012-M378099-02-12CRN2FR

FORWARD-FACING RESTRAINTS

Section	Requirement	Measurement	Pass/Fail
S5.1.3.1	***Torso retention***—CRS shall retain the torso within system		N/A
S5.1.3.1(a)(1)	***Head excursion***- ≤ 720 mm (28 in) with tether ≤ 813 mm (32 in) no tether	N/A	N/A
S5.1.3.1(a)(2)	***Knee target excursion***- ≤ 915 mm (36 in)	N/A	N/A
S5.2.1.1(c)	***Head-torso angle***- rearward change ≤ 45º	N/A	N/A

REAR-FACING RESTRAINTS

Section	Requirement	Measurement	Pass/Fail
S5.1.3.2	***Torso retention***—CRS shall retain the torso within system		Pass
S5.1.3.2	***Head target excursion***-Not beyond restraint's top and forward edge		Pass
S5.1.4	***Back support angle***- Angle between the back support surface and the vertical ≤ 70º	56º	Pass
S5.2.1.1(c)	***Head-torso angle***- rearward change ≤ 45º	≤ 45º	Pass

Remarks:

Excursion camera locations (distance forward of point Z) = 813 mm, camera speeds = 1,000 frames per second, and lens focal lengths = 15 mm.

Recorded by: Corey Barlet Date: 1/16/2018

AIRCRAFT PASSENGER SEAT INVERSION - TEST A

(FMVSS 213, S8.2, S8.2.5, S8.2.6)

Report No.:	213-MGA-18-012
Test Date:	1/12/2018

Test No.	A
Item Code	012-M378099-Inv01-12CRN2FR

Dummy:

Dummy Description	CRABI 12 Month Old (Part 572R)
Dummy Serial Number	082

Restraint Installation:

Installed Direction	Rear-Facing
Base Usage	Other Configuration
Attachment Method	Lap Belt
Tether Usage	No
Seat Back Position	Reclined
Shoulder Harness Position	Slot 4 of 4, Counted from the Bottom
Buckle Harness Position	Fixed

ROTATION ABOUT Y-AXIS (FORWARD)

Section	Requirement	Pass/Fail
S8.2.5	The test dummy shall be retained within the CRS	Pass
S8.2.5	The CRS shall be retained within the aircraft seat	Pass

ROTATION ABOUT X-AXIS (LATERAL)

Section	Requirement	Pass/Fail
S8.2.6	The test dummy shall be retained within the CRS	Pass
S8.2.6	The CRS shall be retained within the aircraft seat	Pass

Remarks:

None

Recorded by: Eric Dennis Date: 1/12/2018

SECTION 6

INTERPRETATION AND/OR DEVIATIONS FROM FMVSS 213

There were no deviations from FMVSS 213.

SECTION 7
TEST CONFIGURATION CODES

The following table explains the code used to describe the test configurations in this report. For example, the test configuration code 12CFNLFU indicates that the child restraint sled test was conducted using a 12-month old CRABI dummy, installed in the forward facing direction with no optional base, the latch system, no tether, and in the upright position.

Dummy Description	**NIN –** Newborn Infant, CAMI
	12C – 12 MO, CRABI
	3H3 – 3 YO, Hybrid III
	6H2 – 6YO Hybrid II
	6H3 – 6YO, Hybrid III
	6W3 – 6 YO, Weighted Hybrid III
	TH3 – 10 YO, Hybrid III
Installed Direction	**R –** Rear Facing
	F – Forward Facing
	S – Faces Sideways (Carbeds)
Base Usage	**B –** Optional Base Used with Infant CRS
	N – All Other Configurations
Attachment Method	**L –** LATCH
	2 – Lap Belt
	3 – Lap and Shoulder Belt
	M – Seat Back Mount
Tether Usage	**T –** Tether
	F – Tether Free
Seat Back Position	**U –** Upright
	R – Reclined
	B – Booster with Back
	N – Booster without Back
	F – Flat

SECTION 8
INSTRUMENTATION CALIBRATION

CERTIFICATION INSTRUMENTATION

Sled Accelerometers	S/N	Manufacturer	Model Number	Calibration Date	Due Date
Primary	1498668	Honeywell	JTF 060-F482-05	12/19/17	6/19/18
Redundant	1365905	Honeywell	JTF 060-F482-05	12/19/17	6/19/18

Temperature/Humidity Logger	S/N	Manufacturer	Model Number	Calibration Date	Due Date
Accuracy 0.5°F, 2% RH	14182020	Veriteq	SP-2000-20R	11/13/17	11/13/18

Force Gauge	S/N	Manufacturer	Model Number	Calibration Date	Due Date
100 lb, Accuracy ± 0.1 lb	310796	Wagner	FDIX 100	2/13/17	2/13/18

Scale	S/N	Manufacturer	Model Number	Calibration Date	Due Date
100 lb, Accuracy ± 0.1 lb	138979	Rice Lake	IQ Plus 355	11/29/17	6/29/18

Inclinometer	S/N	Manufacturer	Model Number	Calibration Date	Due Date
Accuracy ± 0.1°	456	Mitutoyo	Pro 360	11/25/17	5/25/18

Caliper	S/N	Manufacturer	Model Number	Calibration Date	Due Date
6 in, Accuracy ± .001in	07416506	Mitutoyo	CD-6”CSX	10/20/17	4/20/18

Tape Measurers	S/N	Manufacturer	Model Number	Calibration Date	Due Date
3.5 m/12 ft	734	Stanley	33-215	1/3/18	7/3/18
5 m/16 ft	754	Stanley	33-158	1/3/18	7/3/18

TEST DUMMY INSTRUMENTATION

SERIAL NUMBER 083

Sensor		S/N	Manufacturer	Model Number	Calibration Date	Due Date
Head Accelerometers	X	T12040	Endevco	7264C-2KTZ-360M17	12/20/17	6/20/18
	Y	T12041	Endevco	7264C-2KTZ-360M17	12/20/17	6/20/18
	Z	T12043	Endevco	7264C-2KTZ-360M17	12/20/17	6/20/18
Chest Accelerometers	X	T12064	Endevco	7264C-2KTZ-360M17	12/20/17	6/20/18
	Y	T12066	Endevco	7264C-2KTZ-360M17	12/20/17	6/20/18
	Z	T12068	Endevco	7264C-2KTZ-360M17	12/20/17	6/20/18

SECTION 9
PHOTOGRAPHS

SLED BUCK - STANDARD BENCH SEAT AND CONFIGURATION
Report No.: 213-MGA-18-012
Item Code: 012-M378099-01-NINRNLFR Item Code: 012-M378099-02-12CRN2FR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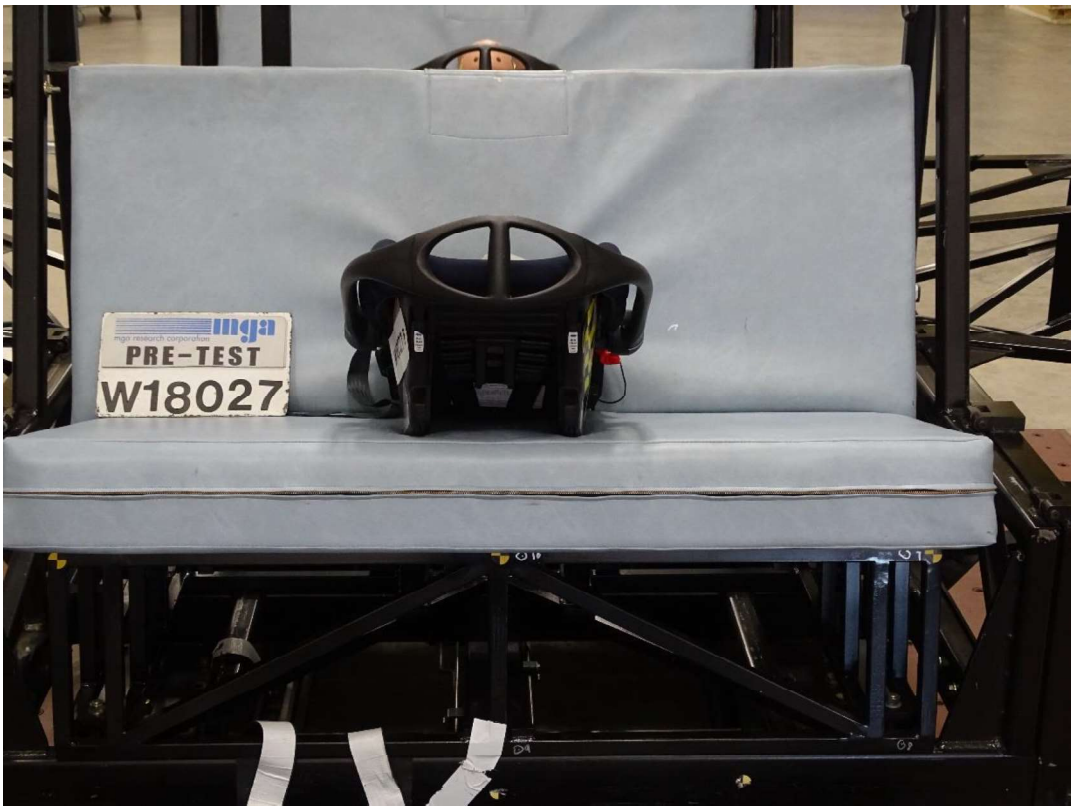
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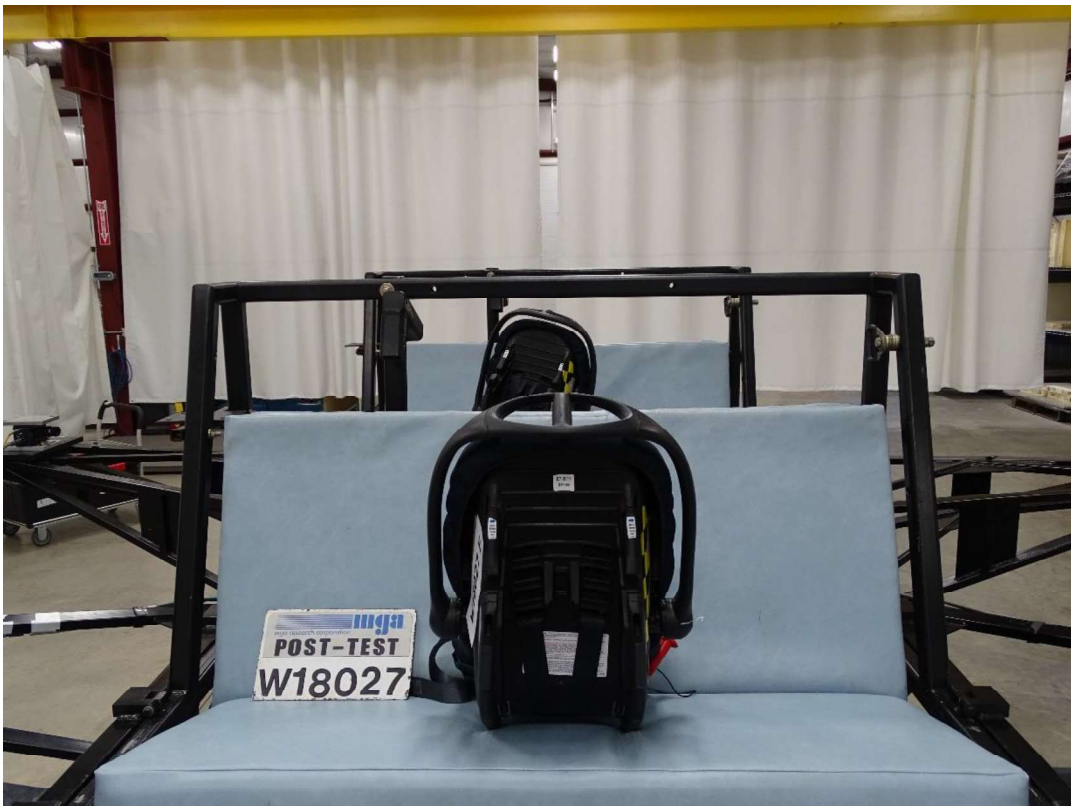
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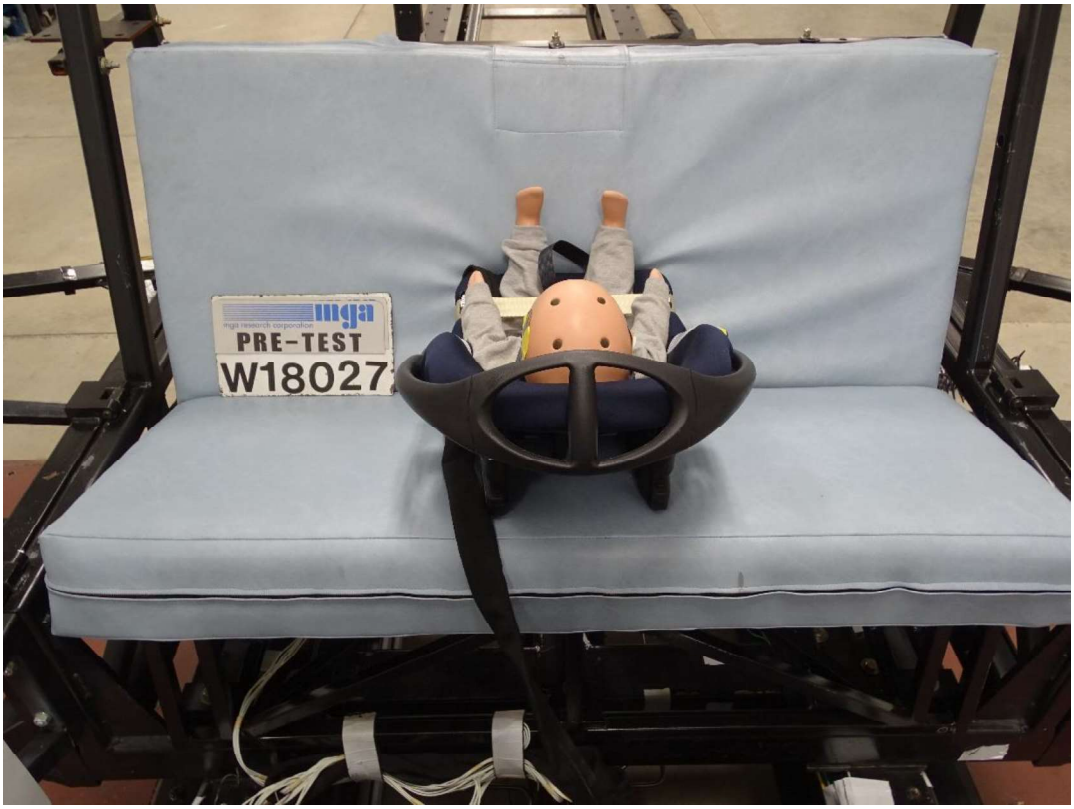
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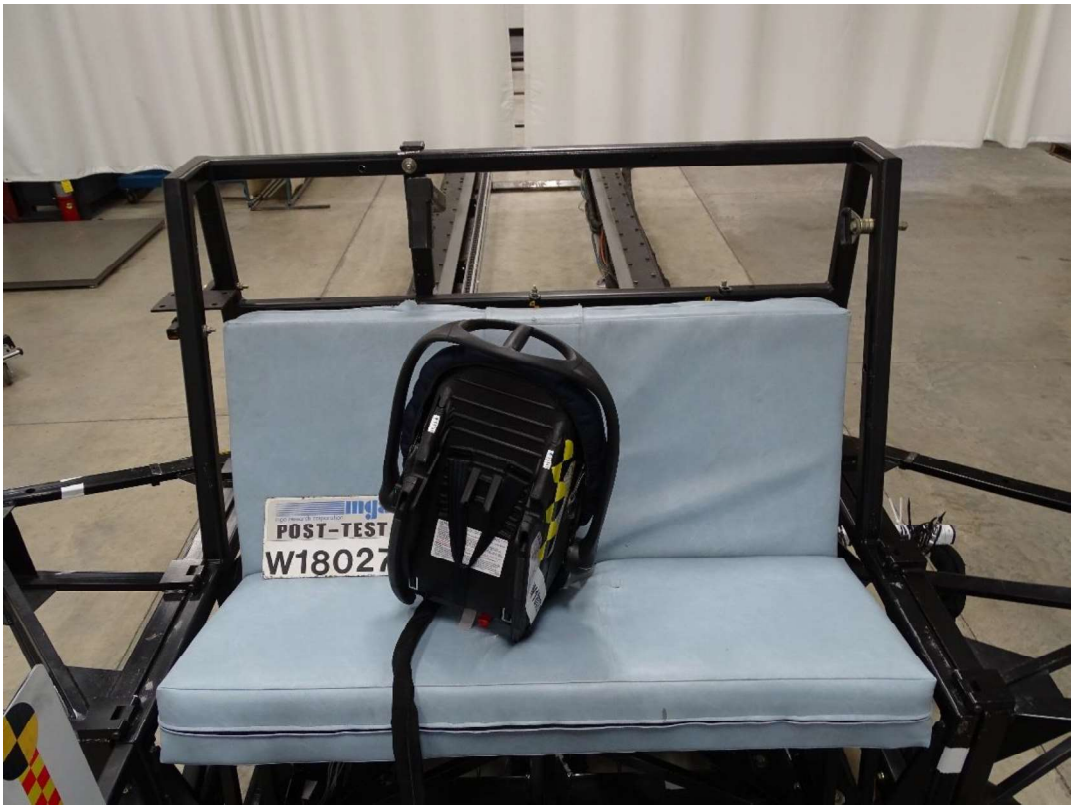
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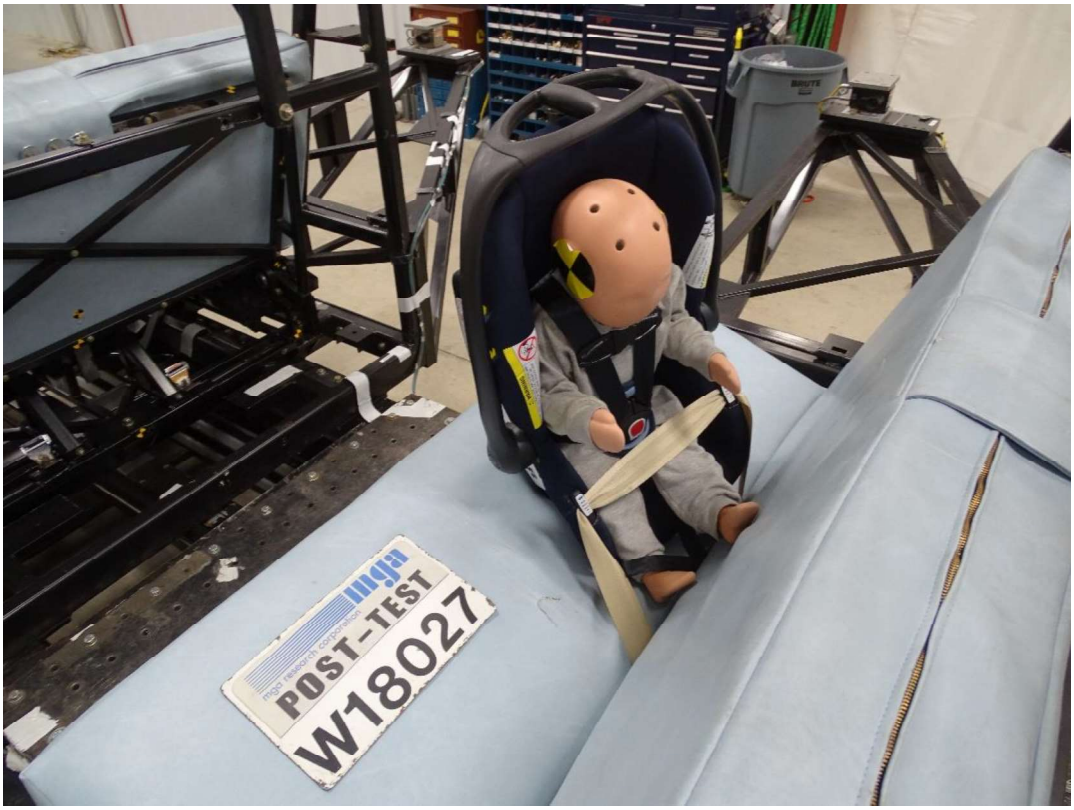
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POST-TEST
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POST-TEST
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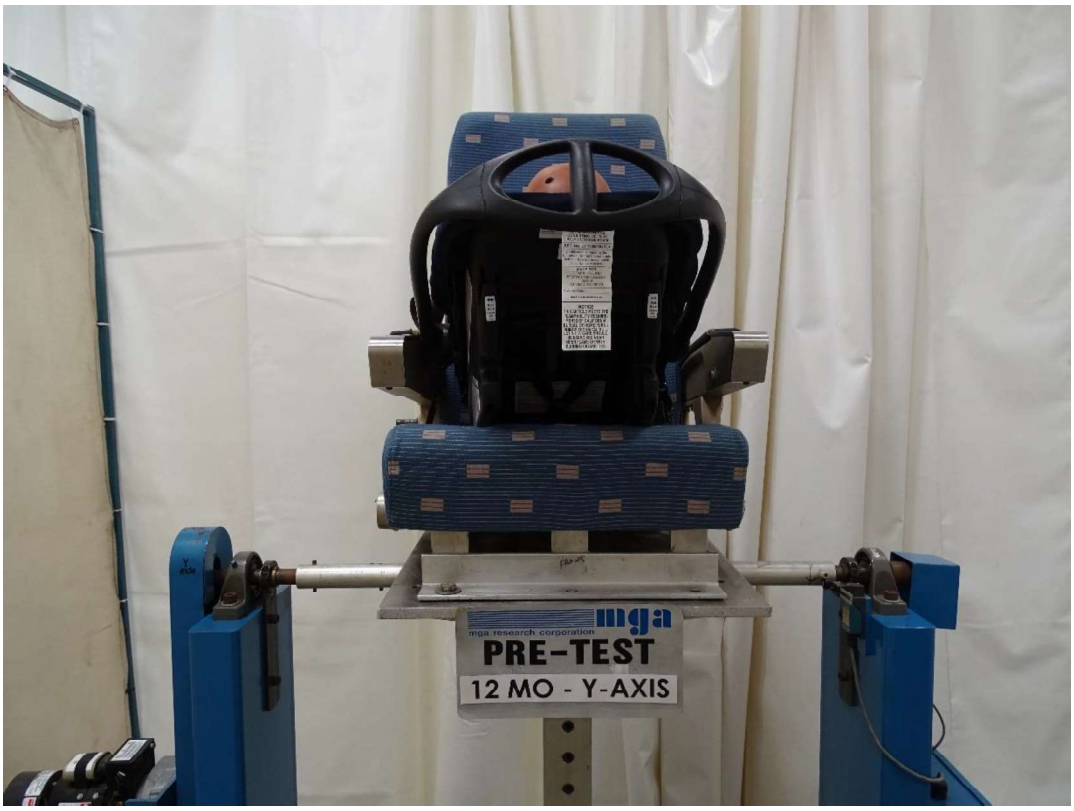
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PRE-TEST
12 MO - Y-AXIS


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12 MO - Y-AXIS


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POST-TEST
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PRE-TEST
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POST-TEST
12 MO - X-AXIS


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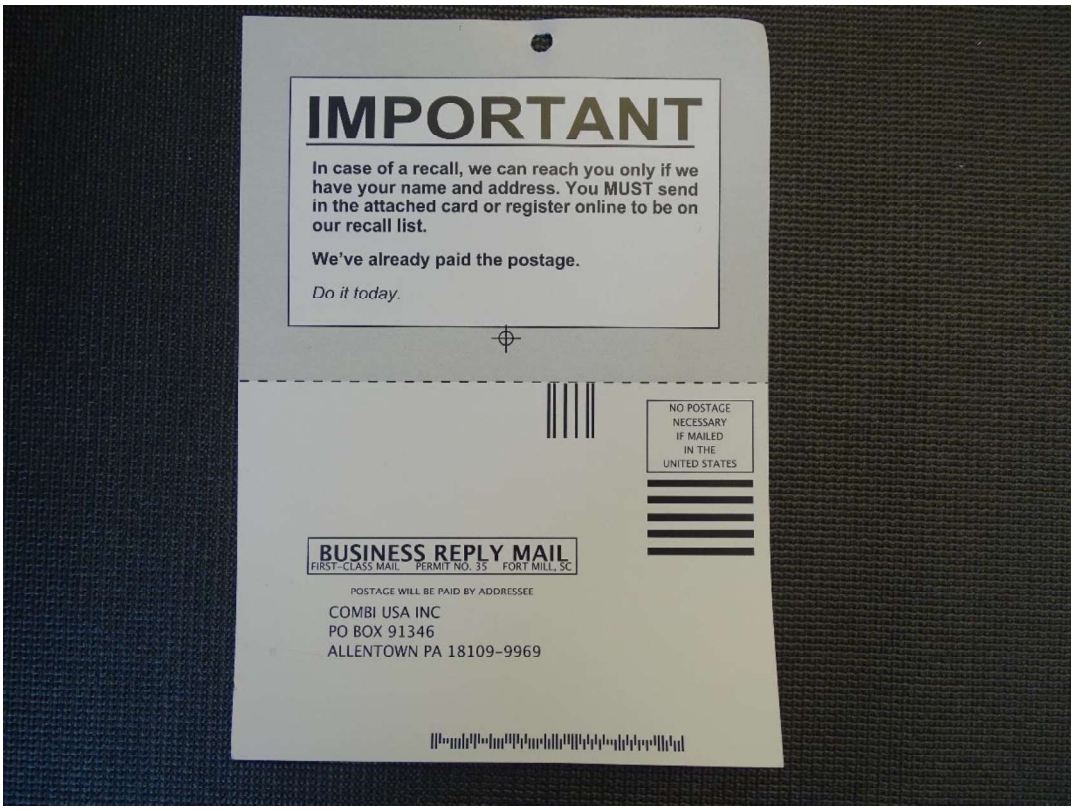
POST-TEST
12 MO - X-AXIS

LABELS

Item Code: 012-M378099-01-NINRNLFR



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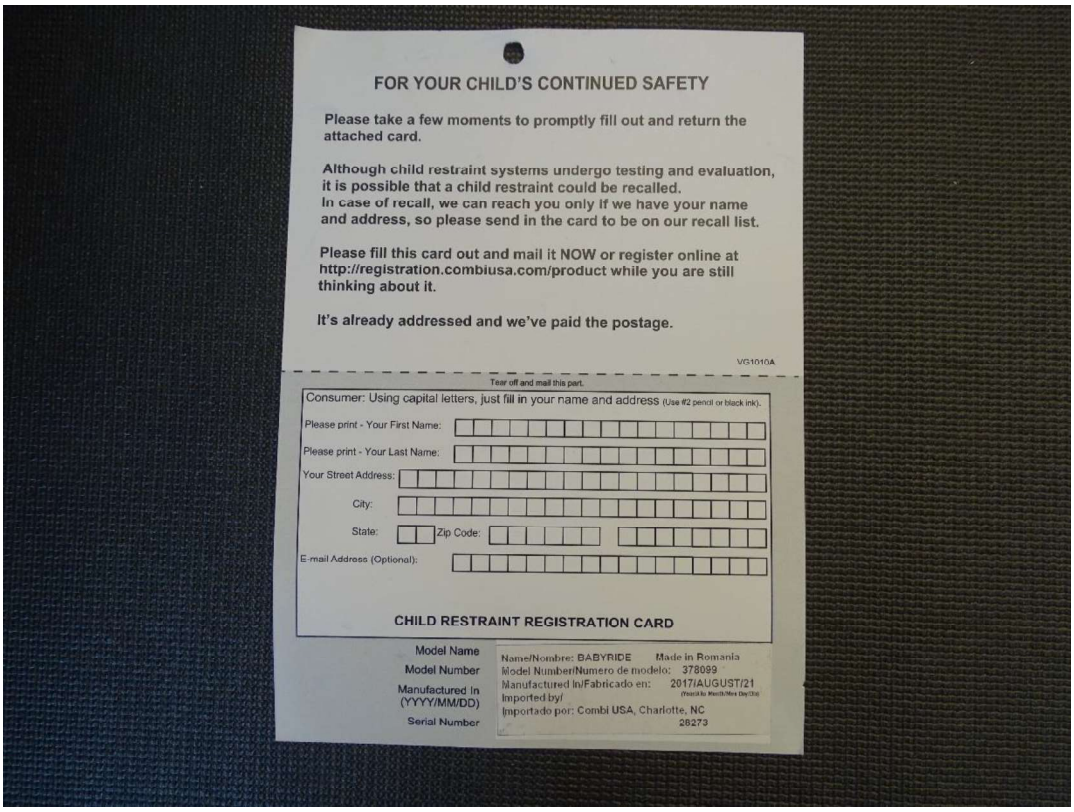

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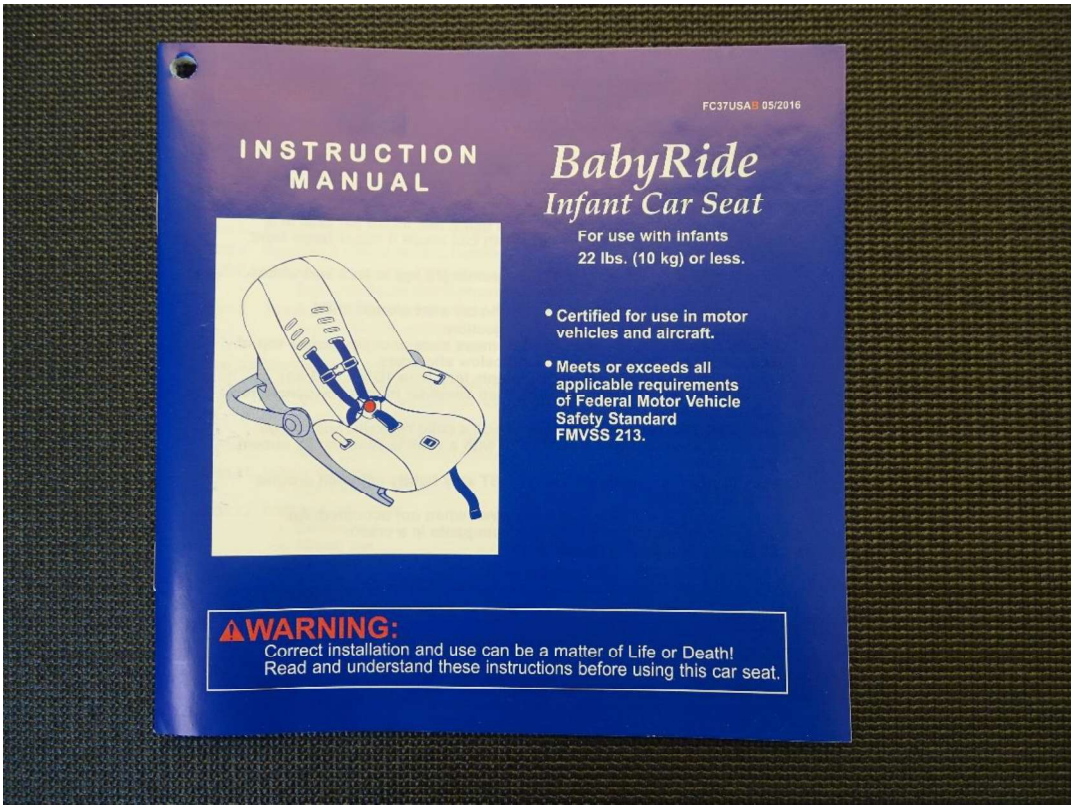

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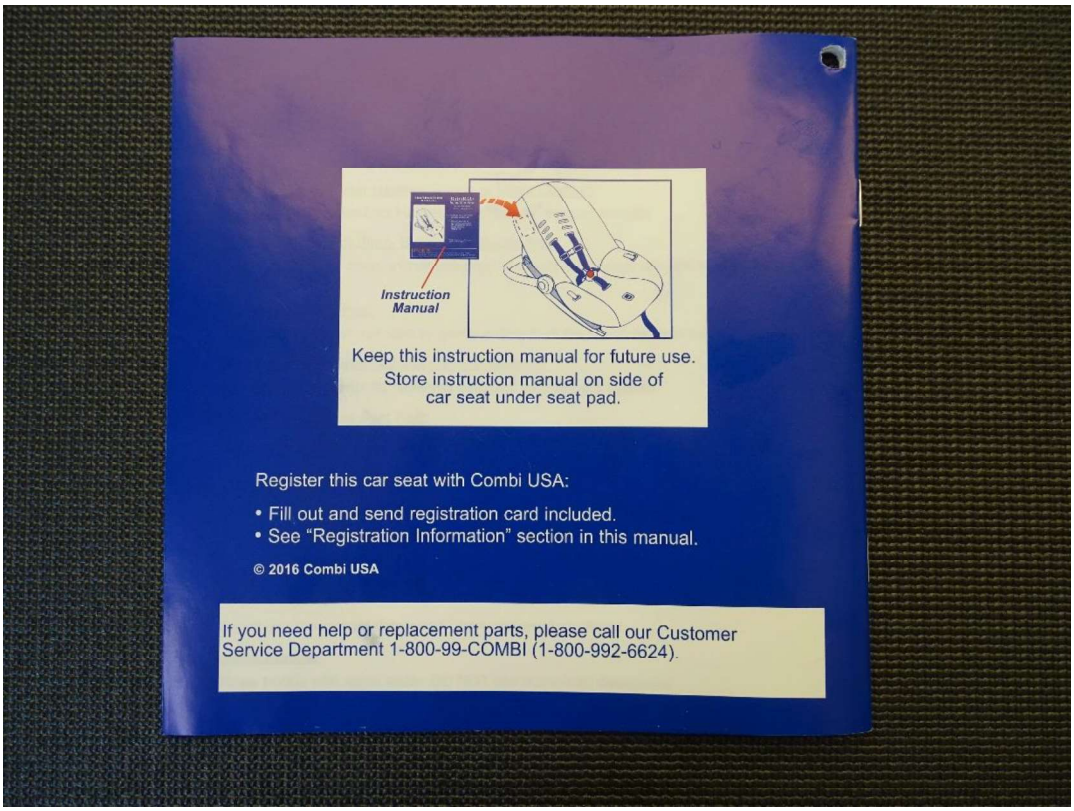

LABELS

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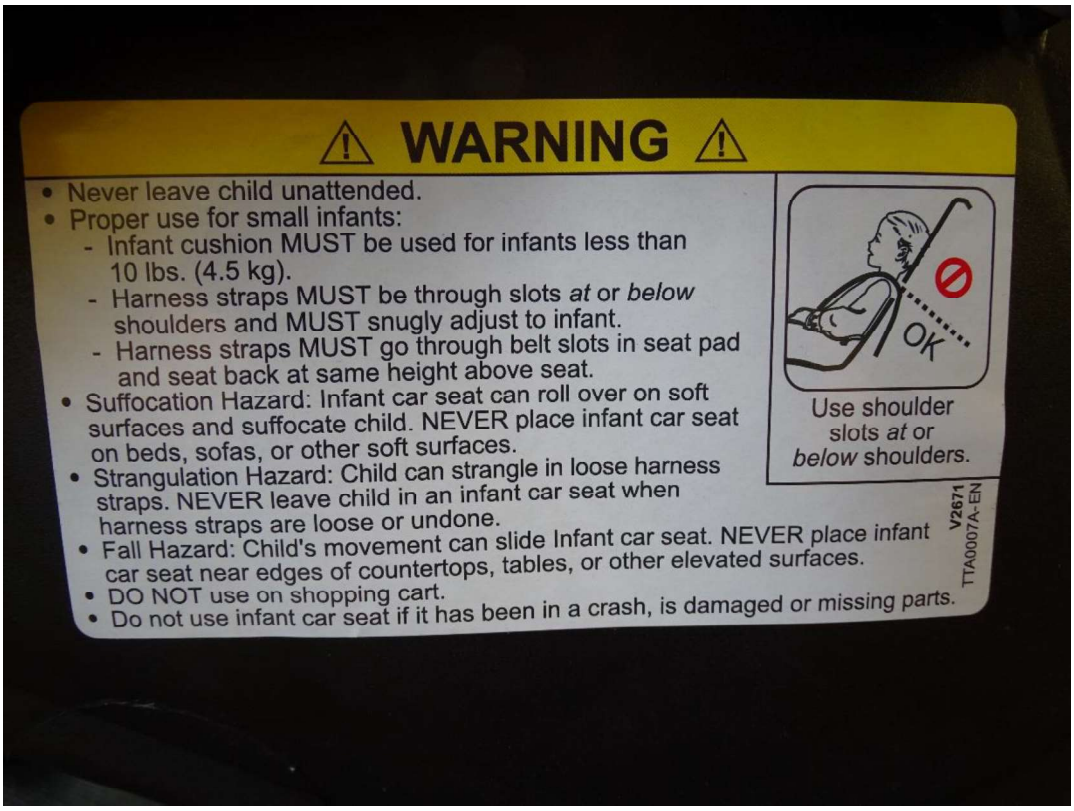

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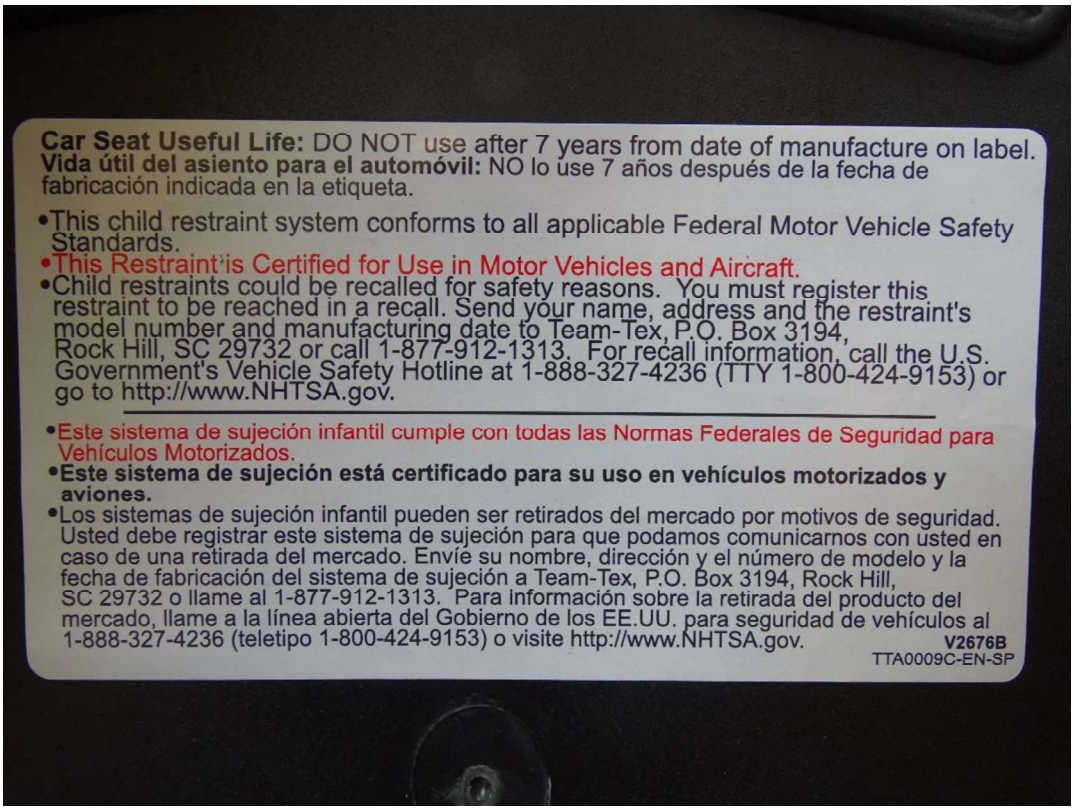
Item Code: 012-M378099-01-NINRNLFR



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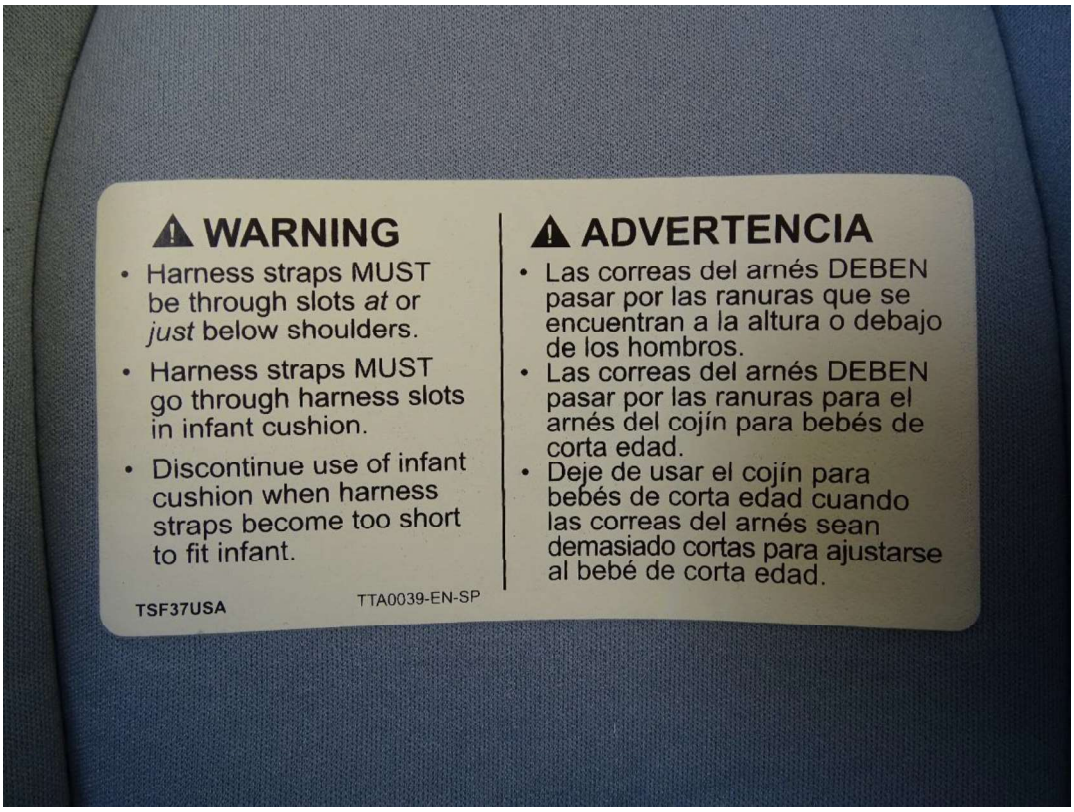

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Item Code: 012-M378099-02-12CRN2FR

LABELS

Item Code: 012-M378099-01-NINRNLFR

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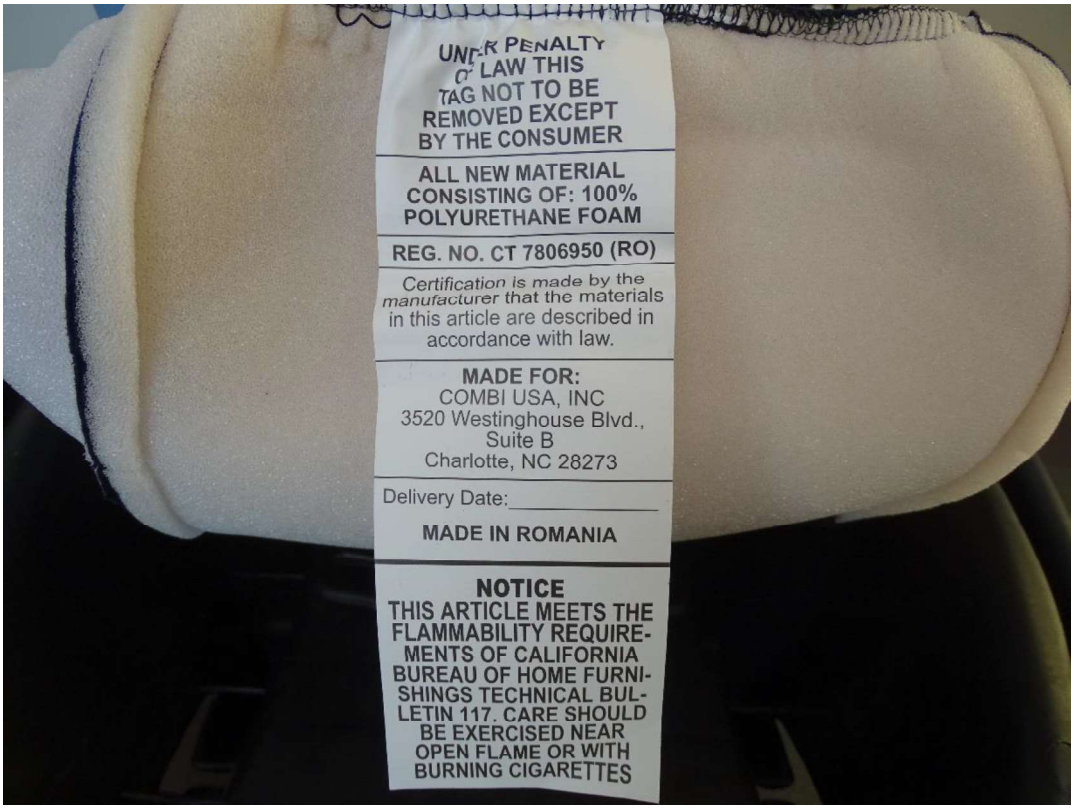

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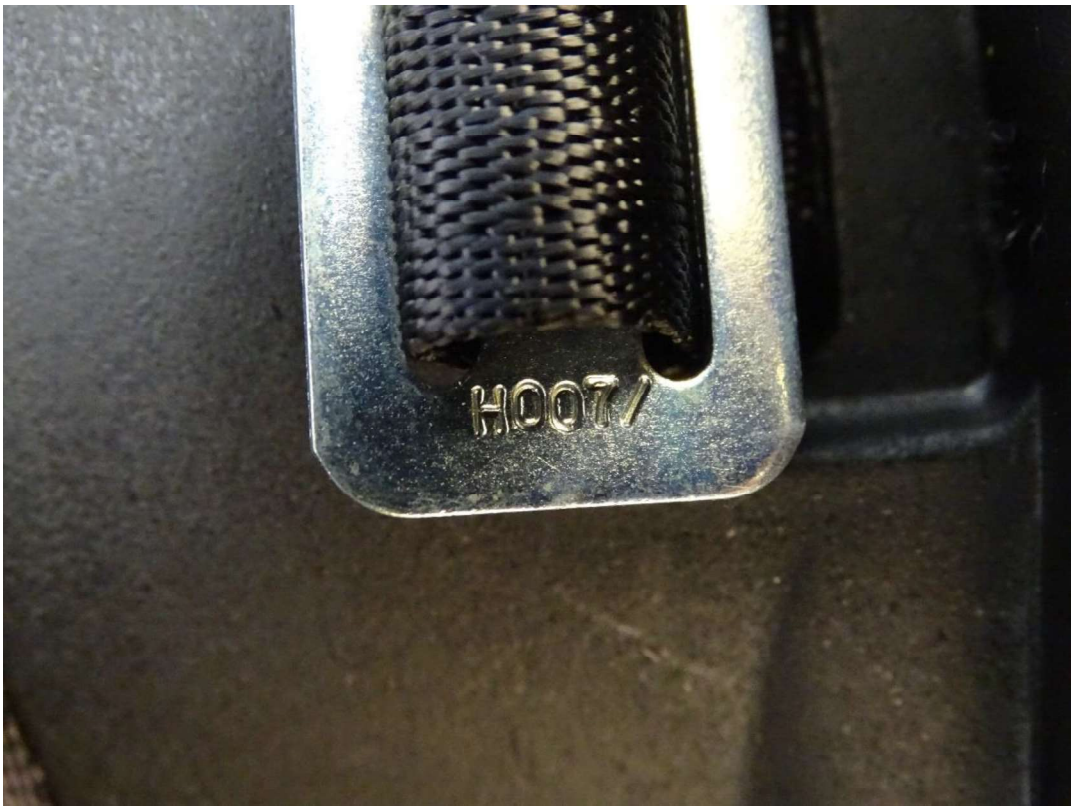
LABELS

Item Code: 012-M378099-01-NINRNLFR



Item Code: 012-M378099-02-12CRN2FR

LABELS

Item Code: 012-M378099-01-NINRNLFR

Item Code: 012-M378099-02-12CRN2FR

REPORT NUMBER: 213-19-MGA-011

SAFETY COMPLIANCE TESTING FOR FMVSS 213
CHILD RESTRAINT SYSTEMS

Combi USA, Inc.
BabyRide, Model 378099

PREPARED BY:
MGA Research Corporation
5000 Warren Road
Burlington, WI 53105

Report Date: February 20, 2019

FINAL REPORT

PREPARED FOR:
U. S. DEPARTMENT OF TRANSPORTATION
National Highway Traffic Safety Administration
Enforcement
Office of Vehicle Safety Compliance
Mail Code: NVS-220, W43-481
1200 New Jersey Avenue, SE
Washington, DC 20590

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Prepared By: Pam Delaney

Approved By: David Nguyen

Approval Date: April 12, 2019

FINAL REPORT ACCEPTANCE BY OVSC:

Accepted By: ZACHARY R FRASER Digitally signed by ZACHARY R FRASER Date: 2019.09.23 11:46:57 -04'00'

Acceptance Date: _____

Technical Report Documentation Page

1. Report No. 213-19-MGA-011	*2. Government Accession No.*	*3. Recipient's Catalog No.*
4. Title and Subtitle Final Report of FMVSS 213 Compliance Testing of Combi USA, Inc. BabyRide, Model 378099		*5. Report Date* February 20, 2019 *6. Performing Organization Code* MGA Research Corporation
7. Author(s) David Nguyen, Project Engineer		*8. Performing Organization Report No.* 213-19-MGA-011
9. Performing Organization Name and Address MGA Research Corporation 5000 Warren Road Burlington, WI 53105		*10. Work Unit No.* *11. Contract or Grant No.* DTNH22-17-D-00080
12. Sponsoring Agency Name and Address U. S. DEPARTMENT OF TRANSPORTATION National Highway Traffic Safety Administration Enforcement Office of Vehicle Safety Compliance Mail Code: NVS-220, W43-481 1200 New Jersey Avenue, SE Washington, DC 20590		*13. Type of Report and Period Covered* Final Test Report January 16 to February 17, 2019 *14. Sponsoring Agency Code* NVS-220
15. Supplementary Notes		
16. Abstract Compliance tests were conducted on the Combi USA, Inc., BabyRide, Model 378099 child restraint systems in accordance with the specifications of the Office of Vehicle Safety Compliance Test Procedure No. TP-213-10. Test failures identified were as follows: S5.5.2(m) Labeling S5.6 Printed Instructions for Proper Use S5.8.2(c) Electronic Registration Form		
17. Key Words Compliance Testing Safety Engineering FMVSS 213		*18. Distribution Statement* Copies of this report are available from: National Highway Traffic Safety Admin., Technology Info Services, (NPO-411) (Rm E12-100) 1200 New Jersey Avenue, SE Washington, D.C. 20590 e-mail: tis@nhtsa.dot.gov FAX: 202-493-2833
19. Security Classif. (of this report) Unclassified	*20. Security Classif. (of this page)* Unclassified	*21. No. of Pages* 71 / 22. Price

Form DOT F1700.7 (8-72)

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SECTION 1
PURPOSE AND TEST PROCEDURE

PURPOSE

The tests performed are part of the safety compliance program for the National Highway Traffic Safety Administration (NHTSA) by MGA Research Corporation under Contract No. DTNH22-17-D-00080. The purpose of the testing is to determine whether production child restraint systems meet the minimum inspection and dynamic test requirements of TP-213-10, “Child Restraint Systems”.

TEST PROCEDURE

The MGA Research Corporation Test Procedure for FMVSS 213, submitted and approved by the Office of Vehicle Safety Compliance, National Highway Traffic Safety Administration, contains the specific procedures used to conduct this test. This procedure shall not be interpreted to be in conflict with any portion of FMVSS 213 and amendments in effect as noted in the applicable contract.

SECTION 2
INTRODUCTION AND SUMMARY

This report presents all of the FMVSS 213 compliance inspection and test data obtained on the Combi USA, Inc. BabyRide, Model 378099, child restraint system. The restraint was dynamically tested in the following configurations:

- Newborn Infant, rear facing, other configuration, lower anchor, tether free, and reclined
- 12 month old, CRABI, rear facing, other configuration, lower anchor, tether free, and reclined

Inversion testing was performed in both the forward Y-axis rotation and in the lateral X-axis rotation for the following configurations:

- Newborn Infant, rear facing, other configuration, lap belt, tether free, and reclined
- 12 month old, CRABI, rear facing, other configuration, lap belt, tether free, and reclined

The inspection and/or testing of the Combi USA, Inc., BabyRide, Model 378099 child restraint failed to meet the following requirement(s) of FMVSS No. 213 when tested in accordance with TP-213-10 in the configurations and conditions documented in this report:

S5.5.2(m) Labeling

One of the following statements, inserting an address and a U.S. telephone number. If a manufacturer opts to provide a Web site on the registration card as permitted in Figure 9a of this section, the manufacturer must include the statement in part (ii): "Child restraints could be recalled for safety reasons. You must register this restraint to be reached in a recall. Send your name, address, e-mail address if available [preceding four words are optional], and the restraint's model number and manufacturing date to (insert address) or call (insert a U.S. telephone number) or register online at (insert Web site for electronic registration form). For recall information, call the U.S. Government's Vehicle Safety Hotline at 1-888-327-4236 (TTY: 1-800-424-9153), or go to http://www.NHTSA.gov."

S5.6 Printed Instructions for Proper Use

Any labels or written instructions provided in addition to those required by this section shall not obscure or confuse the meaning of the required information or be otherwise misleading to the consumer. Any labels or written instructions other than in the English language shall be an accurate translation of English labels or written instructions. Unless written in all capitals, the information required by S5.6.1 through S5.6.3 shall be stated in sentence capitalization.

S5.8.2(c) Electronic Registration Form

The electronic registration form shall be accessed directly by the web address that the manufacturer printed on the attached registration form. The form must appear on screen when the consumer has inputted the web address provided by the manufacturer, without any further keystrokes on the keyboard or clicks of the mouse.

Restraint system inspection, dynamic sled testing, and inversion testing were performed by MGA Research Corporation in Burlington, Wisconsin. Compliance test data sheets for all tests are found in Section 5 of this report.

SECTION 3

CHILD RESTRAINT SYSTEM IDENTIFICATION

Report No. 213-19-MGA-011

Manufacturer:	Combi USA, Inc.
Place of Manufacture per S5.5.2(d):	Romania
Model No.	378099
Group No.	1

1	Item Code	011-M378099-01-NINRNLFR
	Date of Manufacture	July 4, 2018
	Sled Test No.	W19020F
2	Item Code	011-M378099-02-12CRNLFR
	Date of Manufacture	July 4, 2018
	Sled Test No.	W19020R

SECTION 4

DYNAMIC TEST RESULTS DATA SUMMARY

Child Restraint System - Combi USA, Inc. / BabyRide / 378099										
Item Code	**Sled Test No.**	**Dummy and CRS Test Mode***	**Lower Anchors Used? Y/N**	**Tether Used? Y/N**	**HIC (1000 max)**	**Chest g clip (60 g max)**	**Head Excursion (720 mm max - or 813 mm max w/o tether)**	**Knee Excursion (915 mm max)**	**Seat Back Angle (70 deg max)**	**Pass/ Fail**
011-M378099-01-NINRNLFR	W19020F	NIN (RF) (R)	Y	N	N/A	N/A	N/A	N/A	49	Pass
011-M378099-02-12CRNLFR	W19020R	12 mo (RF) (R)	Y	N	243	40	N/A	N/A	56	Pass

*Test Mode:

- RF- Rear facing
- FF- Forward facing
- SF- Side facing
- U- Upright
- R- Reclined
- B- Backed Booster
- N- No Back Booster
- F- Flat

SECTION 5
DATA

LABELING

(FMVSS 213, S5.3, S5.5)

Report No.:	213-19-MGA-011
Test Date:	2/17/2019

Model No.:	378099

Requirement	Pass/Fail
The labels on the subject child restraint system were inspected and compared to the requirements of FMVSS No. 213 S5.3.1(b) and S5.5, as applicable.	Fail (1)

The following failures were identified:

(1) S5.5.2(m) A registration website is provided on the registration card. The statement from S5.5.2(m)(ii) is required. The statement from S5.5.2(m)(i) is printed.

Remarks:

(2) S5.5.2(e) The phrase “Federal Motor Vehicle Safety Standards” is incorrectly capitalized in the required statement.
(3) S5.5.2(k)(l) The words “this infant seat” are inserted in place of the word “it” before the phrase “in the vehicle” in the required statement.

Photographs of the labels are included in Section 9.

Recorded by: Corey Barlet Date: 2/17/2019

PRINTED INSTRUCTIONS FOR PROPER USE

(FMVSS 213, S5.6)

Report No.:	213-19-MGA-011
Test Date:	2/17/2019

Model No.:	378099

Requirement	Pass/Fail
The printed instructions accompanying the subject child restraint system were inspected and compared to the requirements of FMVSS No. 213 S5.6, as applicable.	Fail (1)

The following failures were identified:

(1) S5.6 The web address (http://www.Combi-intl.com/car_reg.html) printed in the statement required by S5.6.1.7(ii) is different from that printed on the labeling and attached registration form (http://registration.combiusa.com/product) and does not lead to the electronic registration form. This information could mislead a consumer and not allow them to find the electronic registration form.

Remarks:

(2) S5.6.1.7(ii) The phrase "(car seats)" is inserted after "child restraints", the phrase "Fill out the registration card attached to car seat and mail today or" is inserted before "send your name", the phrase "Toll Free" is inserted after "or call", and the phrase "or Fax 1-704-697-1695 or log onto www.CombiUSA.com" is inserted before “For recall information” in the required statement.

Recorded by: Corey Barlet Date: 2/17/2019

REGISTRATION FORM

(FMVSS 213, S5.8)

Report No.:	213-19-MGA-011
Test Date:	2/17/2019

Model No.:	378099

Requirement	Pass/Fail
The printed registration form accompanying the subject child restraint system and the electronic registration form were inspected and compared to the requirements of FMVSS No. 213 S5.8.	Fail (1)

The following failures were identified:

(1) S5.8.2(c) Product type must be selected from a drop down box to access the electronic registration form.

Remarks:

(2) S5.8.1(b)(2) The word “still” is inserted before “thinking about it”, the phrase “The card is” is replaced with “It’s”, and the phrase “Using capital letters” is inserted before and the phrase “(Use #2 pencil or black ink)” is inserted after “just fill in your name and address” on the attached registration form.
(3) S5.8.2(b) An additional statement appears after the statements required by S5.8.2(a) that explains how personal information will be used and that the consumer need not send in the attached registration card after completing the electronic form.

Recorded by: Corey Barlet Date: 2/17/2019

MAXIMUM CHILD WEIGHT FOR LOWER ANCHOR USE

(S213, S5.5.2(l)(3))

Report No.:	213-19-MGA-011
Test Date:	2/17/2019

Model No.:	378099

For child restraints manufactured on or after February 27, 2015:

Installation Mode	A Max Child Weight is Required for this Installation Mode (Y or N)	Installation Diagram Shown (Y or N)	Max Child Weight Indicated on Installation Diagram (lb)
Rear Facing	N	N	N/A
Forward Facing	N/A	N/A	N/A

CRS Weight (lb)	Child Weight (CW) Calculation (lb)	Rounded CW Limit permitted under S5.5.2(l)(3)(i)
7.8	Rear Facing 60-CRS Weight = 52.2	55
	Forward Facing 65-CRS Weight = N/A	N/A

Calculated CW	Rounded CW
15 < CW ≤ 20	20
20 < CW ≤ 25	25
25 < CW ≤ 30	30
30 < CW ≤ 35	35
35 < CW ≤ 40	40
40 < CW ≤ 45	45
45 < CW ≤ 50	50
50 < CW ≤ 55	55
55 < CW ≤ 60	60

Section	Requirement	Pass/Fail
S5.5.2(l)(3)(i)	A maximum child weight is required on an installation diagram when the CRS+child weight is greater than 65 lb for CRS that are used with the internal harness and installed with lower anchors. The maximum weight on the label conforms to the limits established in S5.5.2(l)(3)(i)	N/A
S5.5.2(l)(3)(ii)	For CRS that can be used both forward and rear-facing, either: (1) separate diagrams are provided and labeled; or (2) only one diagram is applicable, provided, and labeled; or (3) two diagrams are applicable and the diagram shown contains the lesser of the permitted weights	N/A

Remarks:

None.

Recorded by: Corey Barlet Date: 2/17/2019

ATTACHMENT TO ANCHORAGE SYSTEM

(S213, S5.9)

Report No.:	213-19-MGA-011
Test Date:	2/17/2019

Model No.:	378099

Section	Requirement	Pass/Fail
S5.9(a)	This add-on child restraint system (excluding car beds, harnesses, and belt-positioning seats) has a permanently attached anchorage system having components that enable the restraint to be securely fastened to the lower anchorages.	Pass
	The anchorage system has components which can only be removed with a tool, such as a screwdriver.	Pass
	Note: If this is a rear-facing child restraint system with a detachable base, then only the base is required to have the components.	N/A
S5.9(b)	This child restraint system has components for attaching the system to a tether anchorage, and those components include a tether hook that conforms to the configuration and geometry specified in Figure 22.	N/A
S5.9(c)	This child restraint system has adjustable components for attaching the system to a tether anchorage or to lower anchors to allow the restraint to be tightened to the vehicle.	Pass
S5.9(d)	If the anchorage system on this child restraint system has components, other than hooks, that enable the restraint to be securely fastened to the lower anchorages, it provides either an indication when each attachment to the lower anchorage becomes fully latched or attached, or provides a visual indication that all attachments to the lower anchorages are fully latched or attached.	N/A
	Visual indications are detectable under normal daylight lighting conditions.	N/A

Remarks:

None

Recorded by: Corey Barlet Date: 2/17/2019

INSTALLATION

(S213-S5.3)

Report No.:	213-19-MGA-011
Test Date:	2/17/2019

Model No.:	378099

Section	Requirement						Pass/Fail
S5.3.1	Add-on child restraints meet either (a) or (b) as appropriate						Pass
S5.3.1(a)	Except for components designed to attach a child restraint anchorage system, this add-on child restraint does not have any means designed for attaching the system to a vehicle seat cushion or vehicle seat back and any component (except belts) that is designed to be inserted between the vehicle seat cushion and vehicle seat back.						Pass
S5.3.1(b)	Harnesses manufactured for use on school bus seats must meet S5.3.1(a) unless labeled appropriately. Refer to the labeling data sheet for the specific requirements.						N/A
S5.3.2	This child restraint system is capable of being installed as required by Table S5.3.2 of FMVSS No. 213. Shaded sections indicate installation means required by standard.						
		Lap Belt	*Lap Belt & Tether (if needed)*	*Lower Anchors*	*Lap & Shoulder Belt*	*Seat back Mount*	
	Harnesses per S5.3.1(b)(1)-(3) and Fig. 12						N/A
	Other Harnesses						N/A
	Car Beds						N/A
	Rear-Facing Restraints	X		X	X		Pass
	Belt Positioning Seats						N/A
	Other						N/A
S5.3.3	If a car bed, this child restraint system is designed to be installed laterally.						N/A

Remarks:

None

Recorded by: Corey Barlet

Date: 2/17/2019

MINIMUM HEAD SUPPORT SURFACE

(FMVSS 213, S5.2.1)

Report No.:	213-19-MGA-011
Test Date:	2/17/2019

Model No.:	378099

Section	Requirement	
S5.2.1.2	The child restraint system is exempt from S5.2.1.1 if it is a forward facing restraint and the target points on either side of the dummy's head (using the largest test dummy specified in S7, excluding the 6-year-old) is below the top of the test seat.	
S5.2.1.1.(a)	**Maximum Recommended Child Weight**	**Minimum Seat Back Height Required**
	≤ 18 kg (39.7 lb)	500 mm (19.7 in)
	> 18 kg (39.7 lb)	560 mm (22.0 in)
S5.2.1.1(b)	**Side Wing Depth**	**Minimum Back Support Width**
	< 102 mm (4.0 in)	203 mm (8.0 in)
	≥ 102 mm (4.0 in)	152 mm (6.0 in)

The child restraint system is **exempt** from S5.2.1.1 NO

Back Support Height

Manufacturer's Recommended Maximum Child Weight kg (lb)	Measured Height mm (in)	Pass/Fail
10 (22)	550 (21.7)	Pass

Back Support Width

Measured Side Wing Depth mm (in)	Measured Width mm (in)	Pass/Fail
70 (2.8)	275 (10.8)	Pass

Remarks:

None

Recorded by: Corey Barlet Date: 2/17/2019

TORSO IMPACT PROTECTION

(FMVSS 213, S5.2.2)

Report No.:	213-19-MGA-011
Test Date:	2/17/2019

Model No.:	378099

Section	Surface Requirement	Contour Requirement	Other Requirement
S5.2.2.1(a)	Back Support Surface	flat or concave	Continuous surface area of ≥ 85 in²
S5.2.2.1(b)	Side Support Surface	flat or concave	Continuous surface area of ≥ 24 in² for restraints having a recommended child weight ≥ 20 lb
		flat or concave	Continuous surface area of ≥ 48 in² for restraints having a recommended child weight < 20 lb
S5.2.2.1(c)	Horizontal Cross Sections of Surfaces Restraining Torso Forward Movement	flat or concave	
	Vertical Longitudinal Cross Sections of Surfaces Restraining Torso Forward Movement	flat or convex	Radius of curvature ≥ 2 in
S5.2.2.2	Fixed or movable surface forward of dummy		Must be used to restrain dummy and allow compliance with injury & excursion criteria

Support Surface- Results

Surface	Contour	Measured Area	Pass/Fail
Back Support Surface	Flat	≥ 85 in²	Pass
Side Support Surface	Concave	≥ 24 in²	Pass

Surfaces Restraining Torso Forward Movement- Results

	Contour	Radius of Curvature	Pass/Fail
Horizontal Cross Section	N/A	N/A	Pass
Vertical Cross Section	N/A	N/A	Pass

Fixed or Movable Surfaces Forward of Dummy- Results

Yes/No	Pass/Fail
No	Pass

Remarks:

None

Recorded by: Corey Barlet

Date: 2/17/2019

PROTRUSION LIMITATION

(FMVSS 213, S5.2.4)

Report No.:	213-19-MGA-011
Test Date:	2/17/2019

Model No.:	378099

S5.2.4. Any portion of a rigid structural component within or underlying a contactable surface is subject to the protrusion limitations described below.

Test	Compliance Requirement	Result	Pass/Fail
Height	≤ 3/8 in. (9.53 mm)	≤ 3/8 in. (9.53 mm)	Pass
Edge Radius	≥ 1/4 in. (6.35 mm)	≥ 1/4 in. (6.35 mm)	Pass

Remarks:

Recorded by: Corey Barlet

Date: 2/17/2019

DYNAMIC IMPACT TEST CONDITIONS - TEST 1

(FMVSS 213, S6.1)

Report No.:	213-19-MGA-011
Test Date:	1/16/2019

Sled Test No.	W19020F
Item Code	011-M378099-01-NINRNLFR

Pulse:

Test Configuration (I or II)	I
Nominal Velocity (km/h)	48 (+0/-3)

Laboratory Ambient Conditions During Testing:

Temperature (ºC)	21.4
Relative Humidity (%)	22

Dummy:

Dummy Description	CAMI Newborn (Part 572K)
Dummy Serial Number	003

Restraint Installation:

Installed Direction	Rear-Facing
Base Usage	Other Configuration
Attachment Method	Lower Anchor
Tether Usage	No
Seat Back Position	Reclined
Shoulder Harness Position	Slot 1 of 4, Counted from the Bottom
Buckle Harness Position	Fixed
Positioning Pillow	Installed
Carry Handle Position	Position B

Remarks:

Pre-test and post-test photographs are presented in Section 9.

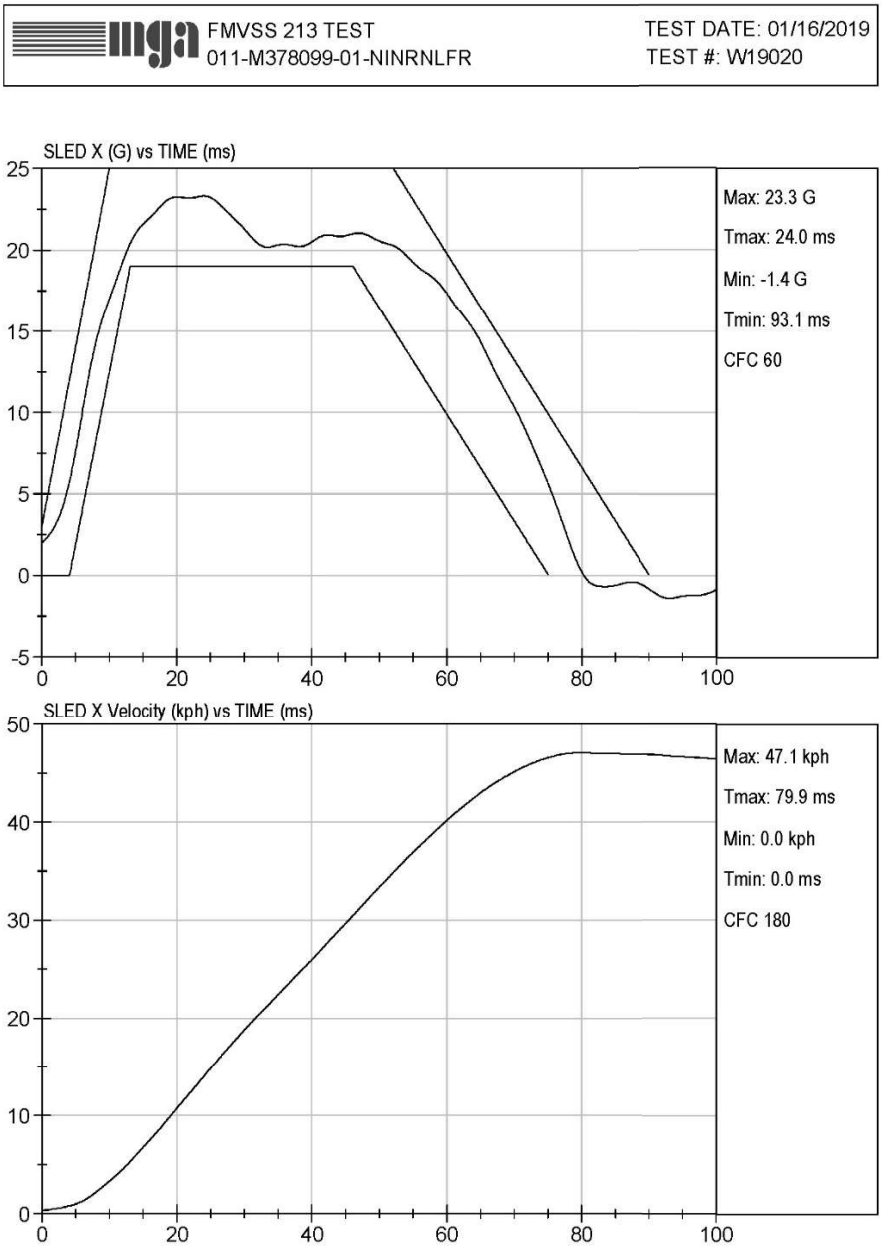
Recorded by: David Nguyen Date: 1/16/2019

DYNAMIC IMPACT SLED PULSE - TEST 1

(FMVSS 213, S6.1)

Report No.:	213-19-MGA-011
Test Date:	1/16/2019

Sled Test No.	W19020F
Item Code	011-M378099-01-NINRNLFR



BELT RESTRAINT - TEST 1

(FMVSS 213, S5.4.3)

Report No.:	213-19-MGA-011	Sled Test No.	W19020F
Test Date:	1/16/2019	Item Code	011-M378099-01-NINRNLFR

Section	Requirement	Pass/Fail
S5.4.3.1	**Snug Fit of Belts**. Belts that are part of the restraint and designed to restrain the child are adjustable to snugly fit any child of height and weight identified by the manufacturer in accordance with the manufacturer's installation instructions.	Pass

Section	Requirement	Yes/No	Pass/Fail
S5.4.3.2	**Direct Restraint**. Belts impose no loads on the child resulting from the mass of the system or the test seat.		Pass
	This restraint has one or more belts that contact the dummy for restraint.	No	If all are "yes," restraint fails S5.4.3.2.
	This restraint has a rigid structure behind the dummy.	Yes	
	The restraint could move relative to the belt.	No	

Section	Requirement	Pass/Fail
S5.4.3.3	**Seating Systems**. Except for harnesses and infant restraints for children up to 10 kg (22 lb), each restraint designed for a child in a seated position and having belts shall provide:	Pass
S5.4.3.3(a)	Upper torso restraint (either belts or a shield)	Pass
S5.4.3.3(b)	Lower torso restraint (either belts or a shield)	Pass
S5.4.3.3(c)	Crotch restraint (either a belt attached to the lap belt or a shield)	Pass

Section	Requirement	Pass/Fail
S5.4.3.4	**Harnesses**. Each harness shall:	N/A
S5.4.3.3(a)	Provide upper torso restraint	N/A
S5.4.3.3(b)	Provide lower torso restraint (lap and crotch restraint)	N/A
S5.4.3.3(c)	Prevent standing	N/A

Remarks:

None

Recorded by: David Nguyen Date: 1/16/2019

BUCKLE RELEASE - TEST 1

(FMVSS 213, S5.4.3.5, S6.2)

Report No.:	213-19-MGA-011
Test Date:	1/16/2019

Sled Test No.	W19020F
Item Code	011-M378099-01-NINRNLFR

Section	Requirement	Measurement	Pass/Fail
S5.4.3.5(a)	**Pre-Impact Release Force**— Releases under 40-62 N (9-14 lb)	L: 49 N (11.0 lb) R: 49 N (11.0 lb)	Pass
S5.4.3.5(b)	**Post-Impact Release Force***— Releases ≤ 71 N (16 lb)	L: 50 N (11.2 lb) R: 50 N (11.2 lb)	Pass
S5.4.3.5(c)	**Minimum Surface Area of Buckle-** ≥ 0.6 in^2 (3.9 cm^2)	0.9 in^2 (6.1 cm^2)	Pass
S5.4.3.5(e)	**Buckle Integrity** Shall not release during testing	No Release	Pass

*Not applicable unless determined using the largest test dummy specified in S7 for use in testing the seat.

Remarks:

None

Recorded by: David Nguyen

Date: 1/16/2019

SYSTEM INTEGRITY - TEST 1

(FMVSS 213, S5.1.1)

Report No.:	213-19-MGA-011	Sled Test No.	W19020F
Test Date:	1/16/2019	Item Code	011-M378099-01-NINRNLFR

S5.1.1 When dynamically tested, the child restraint system shall:

Section	Requirement	Pass/Fail
S5.1.1(a)	**Structural Integrity-** Exhibit no complete separation of any load bearing structural element	Pass
	Exhibit no partial separation exposing surfaces with a radius of less than ¼ in (9.53 mm)	Pass
	Exhibit no partial separation exposing surfaces with protrusions greater than 3/8 in (6.35 mm)	Pass
S5.1.1(b)(1)	**Adjustment Position-** Remain in the same adjustment position during the test that it was in immediately before the test	Pass
S5.1.1(b)(2)(ii)	**Exposed Openings-** Have no exposed opening larger than ¼ inch (9.53 mm) before the test become smaller during the testing as a result of the movement of the seating surface relative to the restraint system as a whole	Pass
S5.1.1(c)	**Seating Surface Angle-** Forward facing restraints do not allow the angle between the system's back support surface and seating surface to be less than 45 degrees at the completion of the test.	N/A

Remarks:

None

Recorded by: David Nguyen Date: 1/16/2019

OCCUPANT EXCURSION - TEST 1

(FMVSS 213, S5.1.3, S5.1.4, S5.2.1.1(c))

Report No.:	213-19-MGA-011	Sled Test No.	W19020F
Test Date:	1/16/2019	Item Code	011-M378099-01-NINRNLFR

FORWARD-FACING RESTRAINTS

Section	Requirement	Measurement	Pass/Fail
S5.1.3.1	***Torso retention***—CRS shall retain the torso within system		N/A
S5.1.3.1(a)(1)	***Head excursion***- ≤ 720 mm (28 in) with tether ≤ 813 mm (32 in) no tether	N/A	N/A
S5.1.3.1(a)(2)	***Knee target excursion***- ≤ 915 mm (36 in)	N/A	N/A
S5.2.1.1(c)	***Head-torso angle***- rearward change ≤ 45º	N/A	N/A

REAR-FACING RESTRAINTS

Section	Requirement	Measurement	Pass/Fail
S5.1.3.2	***Torso retention***—CRS shall retain the torso within system		Pass
S5.1.3.2	***Head target excursion***-Not beyond restraint's top and forward edge		Pass
S5.1.4	***Back support angle***- Angle between the back support surface and the vertical ≤ 70º	49	Pass
S5.2.1.1(c)	***Head-torso angle***- rearward change ≤ 45º	≤ 45º	Pass

Remarks:

Excursion camera locations (distance forward of point Z) = 813 mm, camera speeds = 1,000 frames per second, and lens focal lengths = 15 mm.

.

Recorded by: David Nguyen Date: 1/16/2019

DYNAMIC IMPACT TEST CONDITIONS - TEST 2

(FMVSS 213, S6.1)

Report No.:	213-19-MGA-011
Test Date:	1/16/2019

Sled Test No.	W19020R
Item Code	011-M378099-02-12CRNLFR

Pulse:

Test Configuration (I or II)	I
Nominal Velocity (km/h)	48 (+0/-3)

Laboratory Ambient Conditions During Testing:

Temperature (ºC)	21.4
Relative Humidity (%)	22

Dummy:

Dummy Description	CRABI 12 Month Old (Part 572R)
Dummy Serial Number	083

Restraint Installation:

Installed Direction	Rear-Facing
Base Usage	Other Configuration
Attachment Method	Lower Anchor
Tether Usage	No
Seat Back Position	Reclined
Shoulder Harness Position	Slot 4 of 4, Counted from the Bottom
Buckle Harness Position	Fixed
Positioning Pillow	Removed
Carry Handle Position	Position B

Remarks:

Pre-test and post-test photographs are presented in Section 9.

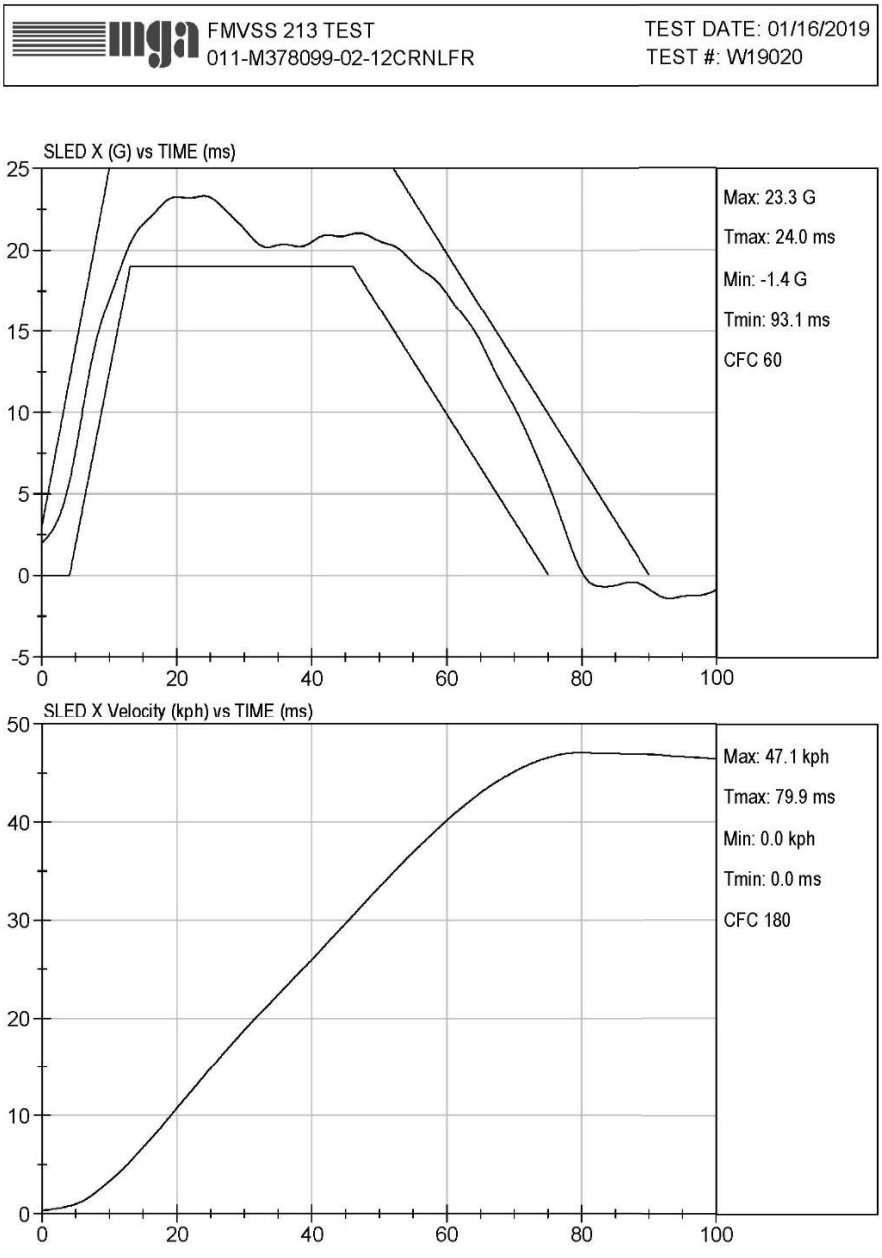
Recorded by: David Nguyen Date: 1/16/2019

DYNAMIC IMPACT SLED PULSE - TEST 2

(FMVSS 213, S6.1)

Report No.:	213-19-MGA-011
Test Date:	1/16/2019

Sled Test No.	W19020R
Item Code	011-M378099-02-12CRNLFR



BELT RESTRAINT - TEST 2

(FMVSS 213, S5.4.3)

Report No.:	213-19-MGA-011	Sled Test No.	W19020R
Test Date:	1/16/2019	Item Code	011-M378099-02-12CRNLFR

Section	Requirement	Pass/Fail
S5.4.3.1	**Snug Fit of Belts**. Belts that are part of the restraint and designed to restrain the child are adjustable to snugly fit any child of height and weight identified by the manufacturer in accordance with the manufacturer's installation instructions.	Pass

Section	Requirement	Yes/No	Pass/Fail
S5.4.3.2	**Direct Restraint**. Belts impose no loads on the child resulting from the mass of the system or the test seat.		Pass
	This restraint has one or more belts that contact the dummy for restraint.	No	If all are "yes," restraint fails S5.4.3.2.
	This restraint has a rigid structure behind the dummy.	Yes	
	The restraint could move relative to the belt.	No	

Section	Requirement	Pass/Fail
S5.4.3.3	**Seating Systems**. Except for harnesses and infant restraints for children up to 10 kg (22 lb), each restraint designed for a child in a seated position and having belts shall provide:	Pass
S5.4.3.3(a)	Upper torso restraint (either belts or a shield)	Pass
S5.4.3.3(b)	Lower torso restraint (either belts or a shield)	Pass
S5.4.3.3(c)	Crotch restraint (either a belt attached to the lap belt or a shield)	Pass

Section	Requirement	Pass/Fail
S5.4.3.4	**Harnesses**. Each harness shall:	N/A
S5.4.3.3(a)	Provide upper torso restraint	N/A
S5.4.3.3(b)	Provide lower torso restraint (lap and crotch restraint)	N/A
S5.4.3.3(c)	Prevent standing	N/A

Remarks:

None

Recorded by: David Nguyen Date: 1/16/2019

BUCKLE RELEASE - TEST 2

(FMVSS 213, S5.4.3.5, S6.2)

Report No.:	213-19-MGA-011	Sled Test No.	W19020R
Test Date:	1/16/2019	Item Code	011-M378099-02-12CRNLFR

Section	Requirement	Measurement	Pass/Fail
S5.4.3.5(a)	**Pre-Impact Release Force**— Releases under 40-62 N (9-14 lb)	L: 49 N (11.0 lb) R: 49 N (11.0 lb)	Pass
S5.4.3.5(b)	**Post-Impact Release Force***— Releases ≤ 71 N (16 lb)	L: 60 N (13.5 lb) R: 60 N (13.5 lb)	Pass
S5.4.3.5(c)	**Minimum Surface Area of Buckle-** ≥ 0.6 in^2 (3.9 cm^2)	0.9 in^2 (6.1 cm^2)	Pass
S5.4.3.5(e)	**Buckle Integrity** Shall not release during testing	No Release	Pass

*Not applicable unless determined using the largest test dummy specified in S7 for use in testing the seat.

Remarks:

None

Recorded by: David Nguyen Date: 1/16/2019

SYSTEM INTEGRITY - TEST 2

(FMVSS 213, S5.1.1)

Report No.:	213-19-MGA-011
Test Date:	1/16/2019

Sled Test No.	W19020R
Item Code	011-M378099-02-12CRNLFR

S5.1.1 When dynamically tested, the child restraint system shall:

Section	Requirement	Pass/Fail
S5.1.1(a)	**Structural Integrity-** Exhibit no complete separation of any load bearing structural element	Pass
	Exhibit no partial separation exposing surfaces with a radius of less than ¼ in (9.53 mm)	Pass
	Exhibit no partial separation exposing surfaces with protrusions greater than 3/8 in (6.35 mm)	Pass
S5.1.1(b)(1)	**Adjustment Position-** Remain in the same adjustment position during the test that it was in immediately before the test	Pass
S5.1.1(b)(2)(ii)	**Exposed Openings-** Have no exposed opening larger than ¼ inch (9.53 mm) before the test become smaller during the testing as a result of the movement of the seating surface relative to the restraint system as a whole	Pass
S5.1.1(c)	**Seating Surface Angle-** Forward facing restraints do not allow the angle between the system's back support surface and seating surface to be less than 45 degrees at the completion of the test.	N/A

Remarks:

None

Recorded by: David Nguyen Date: 1/16/2019

INJURY CRITERIA - TEST 2

(FMVSS 213, S5.1.2)

Report No.:	213-19-MGA-011
Test Date:	1/16/2019

Sled Test No.	W19020R
Item Code	011-M378099-02-12CRNLFR

Section	Requirement
S5.1.2.1(a)	**Head Injury Criterion**- The maximum calculated head injury criterion for a 36 millisecond time interval (HIC36) shall not exceed 1,000. HIC is not calculated when using the 6-year-old weighted and 10-year-old test dummies.
S5.1.2.1(b)	**Chest Injury Criterion**- The chest acceleration shall not exceed 60g for intervals whose cumulative duration is more than 3 milliseconds.

Head Injury Criterion Results

Calculated HIC36	Pass/Fail
243	Pass

Chest Injury Criterion Results

Max acceleration lasting 3 ms (g)	Pass/Fail
40	Pass

Remarks:

None

Recorded by: David Nguyen

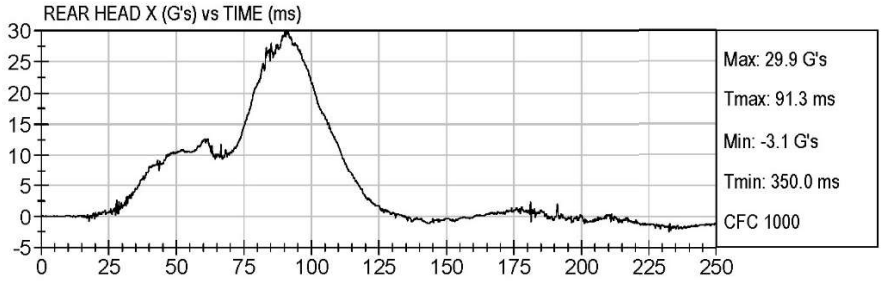
Date: 1/16/2019

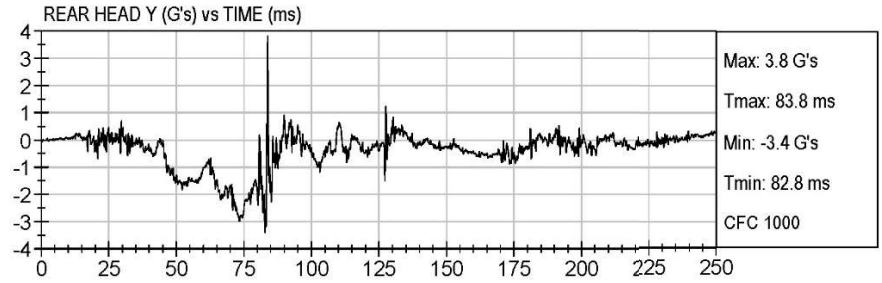
INJURY CRITERIA - HEAD ACCELERATION PLOTS - TEST 2

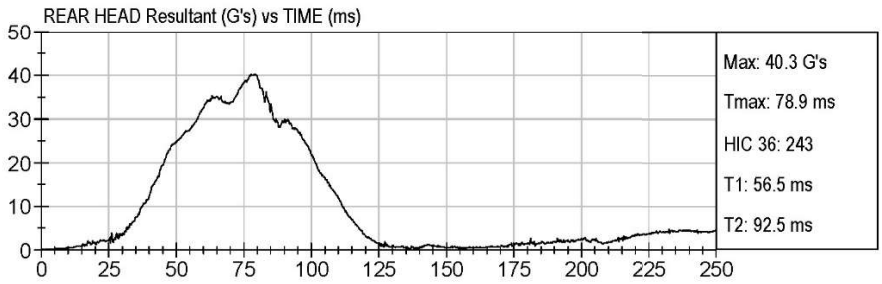
(FMVSS 213, S5.1.2)

Report No.:	213-19-MGA-011
Test Date:	1/16/2019

Sled Test No.	W19020R
Item Code	011-M378099-02-12CRNLFR





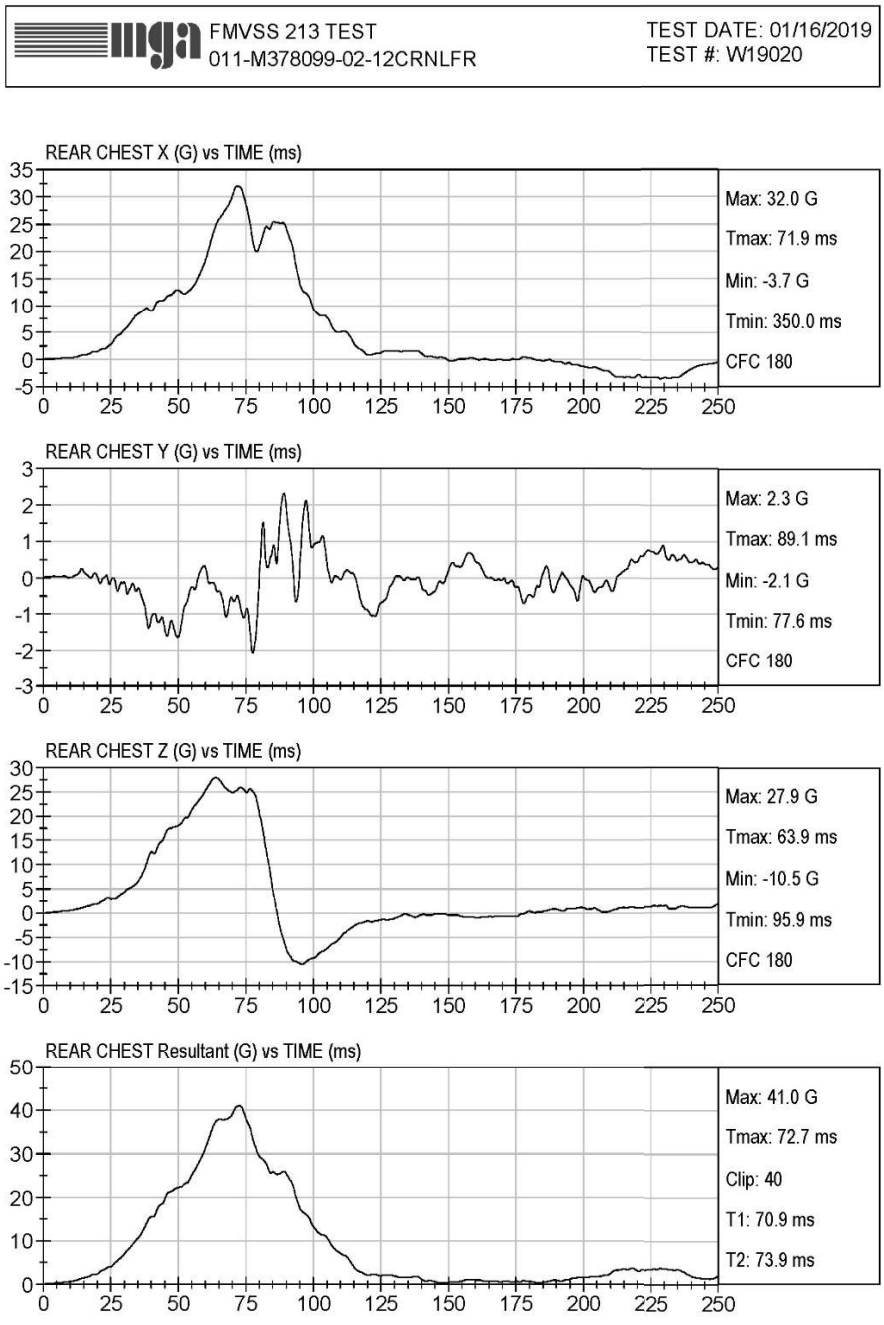


INJURY CRITERIA - CHEST ACCELERATION PLOTS - TEST 2

(FMVSS 213, S5.1.2)

Report No.:	213-19-MGA-011
Test Date:	1/16/2019

Sled Test No.	W19020R
Item Code	011-M378099-02-12CRNLFR



OCCUPANT EXCURSION - TEST 2

(FMVSS 213, S5.1.3, S5.1.4, S5.2.1.1(c))

Report No.:	213-19-MGA-011
Test Date:	1/16/2019

Sled Test No.	W19020R
Item Code	011-M378099-02-12CRNLFR

FORWARD-FACING RESTRAINTS

Section	Requirement	Measurement	Pass/Fail
S5.1.3.1	***Torso retention***—CRS shall retain the torso within system		N/A
S5.1.3.1(a)(1)	***Head excursion***- ≤ 720 mm (28 in) with tether ≤ 813 mm (32 in) no tether	N/A	N/A
S5.1.3.1(a)(2)	***Knee target excursion***- ≤ 915 mm (36 in)	N/A	N/A
S5.2.1.1(c)	***Head-torso angle***- rearward change ≤ 45º	N/A	N/A

REAR-FACING RESTRAINTS

Section	Requirement	Measurement	Pass/Fail
S5.1.3.2	***Torso retention***—CRS shall retain the torso within system		Pass
S5.1.3.2	***Head target excursion***-Not beyond restraint's top and forward edge		Pass
S5.1.4	***Back support angle***- Angle between the back support surface and the vertical ≤ 70º	56º	Pass
S5.2.1.1(c)	***Head-torso angle***- rearward change ≤ 45º	≤ 45º	Pass

Remarks:

Excursion camera locations (distance forward of point Z) = 813 mm, camera speeds = 1,000 frames per second, and lens focal lengths = 15 mm.

Recorded by: David Nguyen Date: 1/16/2019

AIRCRAFT PASSENGER SEAT INVERSION - TEST A

(FMVSS 213, S8.2, S8.2.5, S8.2.6)

Report No.:	213-19-MGA-011	Test No.	A
Test Date:	1/17/2019	Item Code	011-M378099-Inv01-NINRN2FR

Dummy:

Dummy Description	CAMI Newborn (Part 572K)
Dummy Serial Number	003

Restraint Installation:

Installed Direction	Rear-Facing
Base Usage	Other Configuration
Attachment Method	Lap Belt
Tether Usage	No
Seat Back Position	Reclined
Shoulder Harness Position	Slot 1 of 4, Counted from the Bottom
Buckle Harness Position	Fixed

ROTATION ABOUT Y-AXIS (FORWARD)

Section	Requirement	Pass/Fail
S8.2.5	The test dummy shall be retained within the CRS	Pass
S8.2.5	The CRS shall be retained within the aircraft seat	Pass

ROTATION ABOUT X-AXIS (LATERAL)

Section	Requirement	Pass/Fail
S8.2.6	The test dummy shall be retained within the CRS	Pass
S8.2.6	The CRS shall be retained within the aircraft seat	Pass

Remarks:

None

Recorded by: Eric Dennis Date: «InversionDate»9

AIRCRAFT PASSENGER SEAT INVERSION - TEST B

(FMVSS 213, S8.2, S8.2.5, S8.2.6)

Report No.:	213-19-MGA-011	Test No.	B
Test Date:	1/17/2019	Item Code	011-M378099-Inv02-12CRN2FR

Dummy:

Dummy Description	CRABI 12 Month Old (Part 572R)
Dummy Serial Number	083

Restraint Installation:

Installed Direction	Rear-Facing
Base Usage	Other Configuration
Attachment Method	Lap Belt
Tether Usage	No
Seat Back Position	Reclined
Shoulder Harness Position	Slot 4 of 4, Counted from the Bottom
Buckle Harness Position	Fixed

ROTATION ABOUT Y-AXIS (FORWARD)

Section	Requirement	Pass/Fail
S8.2.5	The test dummy shall be retained within the CRS	Pass
S8.2.5	The CRS shall be retained within the aircraft seat	Pass

ROTATION ABOUT X-AXIS (LATERAL)

Section	Requirement	Pass/Fail
S8.2.6	The test dummy shall be retained within the CRS	Pass
S8.2.6	The CRS shall be retained within the aircraft seat	Pass

Remarks:

None

Recorded by: Eric Dennis Date: «InversionDate»9

SECTION 6

INTERPRETATION AND/OR DEVIATIONS FROM FMVSS 213

There were no deviations from FMVSS 213.

SECTION 7
TEST CONFIGURATION CODES

The following table explains the code used to describe the test configurations in this report. For example, the test configuration code 12CFNLFU indicates that the child restraint sled test was conducted using a 12-month old CRABI dummy, installed in the forward facing direction with no optional base, the latch system, no tether, and in the upright position.

Dummy Description	**NIN** – Newborn Infant, CAMI
	12C – 12 MO, CRABI
	3H3 – 3 YO, Hybrid III
	6H2 – 6YO Hybrid II
	6H3 – 6YO, Hybrid III
	6W3 – 6 YO, Weighted Hybrid III
	TH3 – 10 YO, Hybrid III
Installed Direction	**R** – Rear Facing
	F – Forward Facing
	S – Faces Sideways (Carbeds)
Base Usage	**B** – Optional Base Used with Infant CRS
	N – All Other Configurations
Attachment Method	**L** – LATCH
	2 – Lap Belt
	3 – Lap and Shoulder Belt
	M – Seat Back Mount
Tether Usage	**T** – Tether
	F – Tether Free
Seat Back Position	**U** – Upright
	R – Reclined
	B – Booster with Back
	N – Booster without Back
	F – Flat

SECTION 8
INSTRUMENTATION CALIBRATION

CERTIFICATION INSTRUMENTATION

Sled Accelerometers	S/N	Manufacturer	Model Number	Calibration Date	Due Date
Primary	1498668	Honeywell	JTF 060-F482-05	12/20/18	6/20/19
Redundant	1365905	Honeywell	JTF 060-F482-05	12/20/18	6/20/19

Temperature/Humidity Logger	S/N	Manufacturer	Model Number	Calibration Date	Due Date
Accuracy 0.5°F, 2% RH	18352040	Vaisala	SP-2000-20R	9/1/18	8/31/19

Force Gauge	S/N	Manufacturer	Model Number	Calibration Date	Due Date
100 lb, Accuracy ± 0.1 lb	214144	Wagner	FDIX 100	2/19/18	2/19/19

Scale	S/N	Manufacturer	Model Number	Calibration Date	Due Date
100 lb, Accuracy ± 0.1 lb	CI068701410	CAS	CI-200-1B	12/3/18	6/3/19

Inclinometer	S/N	Manufacturer	Model Number	Calibration Date	Due Date
Accuracy ± 0.1°	13020271	Generic	Pro 360	10/12/18	4/12/19

Caliper	S/N	Manufacturer	Model Number	Calibration Date	Due Date
6 in, Accuracy ± .001in	05389443	Mitutoyo	500-171-20	10/15/18	4/15/19

Tape Measurers	S/N	Manufacturer	Model Number	Calibration Date	Due Date
3.5 m/12 ft	683	Stanley	Powerlock	8/22/18	2/22/19

DAS	S/N	Manufacturer	Model Number	Calibration Date	Due Date
Rack	DR0507	DTS	TDAS Pro	5/22/18	5/22/19
SIM	DM1671	DTS	TDAS Pro	5/21/18	5/21/19
SIM	DM1437	DTS	TDAS Pro	8/6/18	8/6/19

TEST DUMMY INSTRUMENTATION

SERIAL NUMBER 083

Sensor		S/N	Manufacturer	Model Number	Calibration Date	Due Date
Head Accelerometers	X	P79762	Endevco	7264C-2KTZ-2-360M17	11/20/18	5/20/19
	Y	P79764	Endevco	7264C-2KTZ-2-360M17	11/20/18	5/20/19
	Z	P96871	Endevco	7264C-2KTZ-360M17	11/20/18	5/20/19
Chest Accelerometers	X	T12064	Endevco	7264C-2KTZ-360M17	11/20/18	5/20/19
	Y	T12066	Endevco	7264C-2KTZ-360M17	11/20/18	5/20/19
	Z	T12068	Endevco	7264C-2KTZ-360M17	11/20/18	5/20/19

SECTION 9
PHOTOGRAPHS

SLED BUCK - STANDARD BENCH SEAT AND CONFIGURATION
Report No.: 213-19-MGA-011
Item Code: 011-M378099-01-NINRNLFR Item Code: 011-M378099-02-12CRNLFR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W19020F
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PRE-TEST
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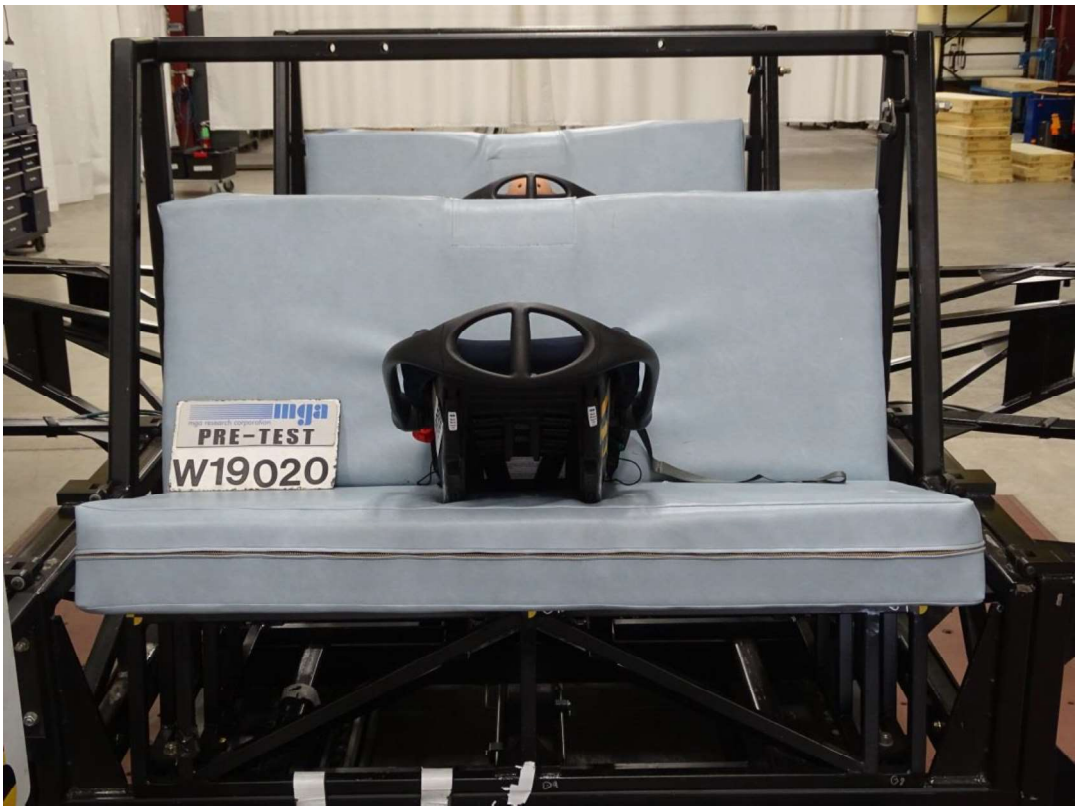
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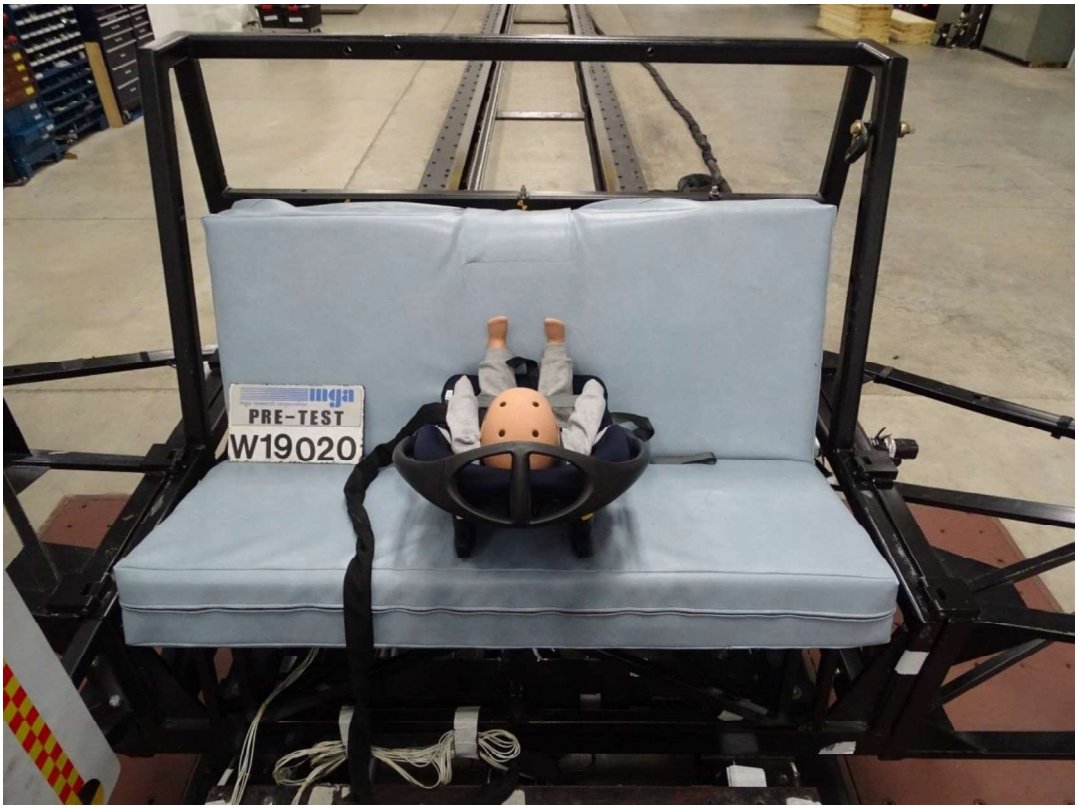
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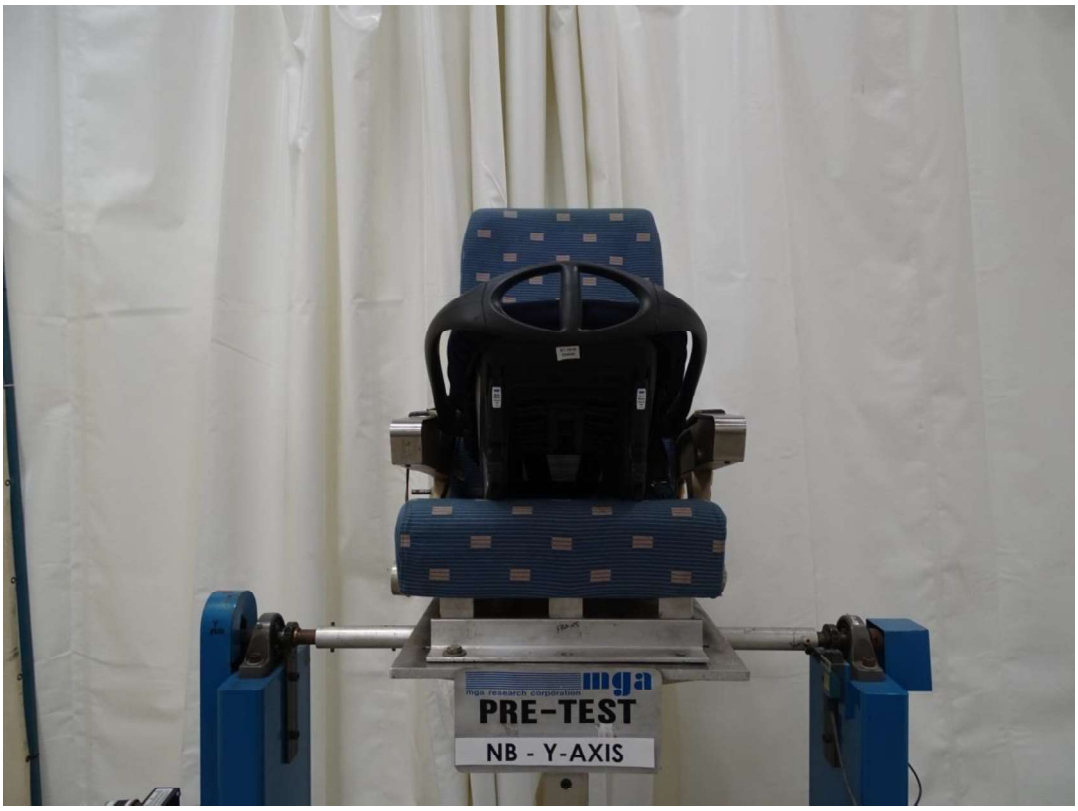
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NB - Y-AXIS


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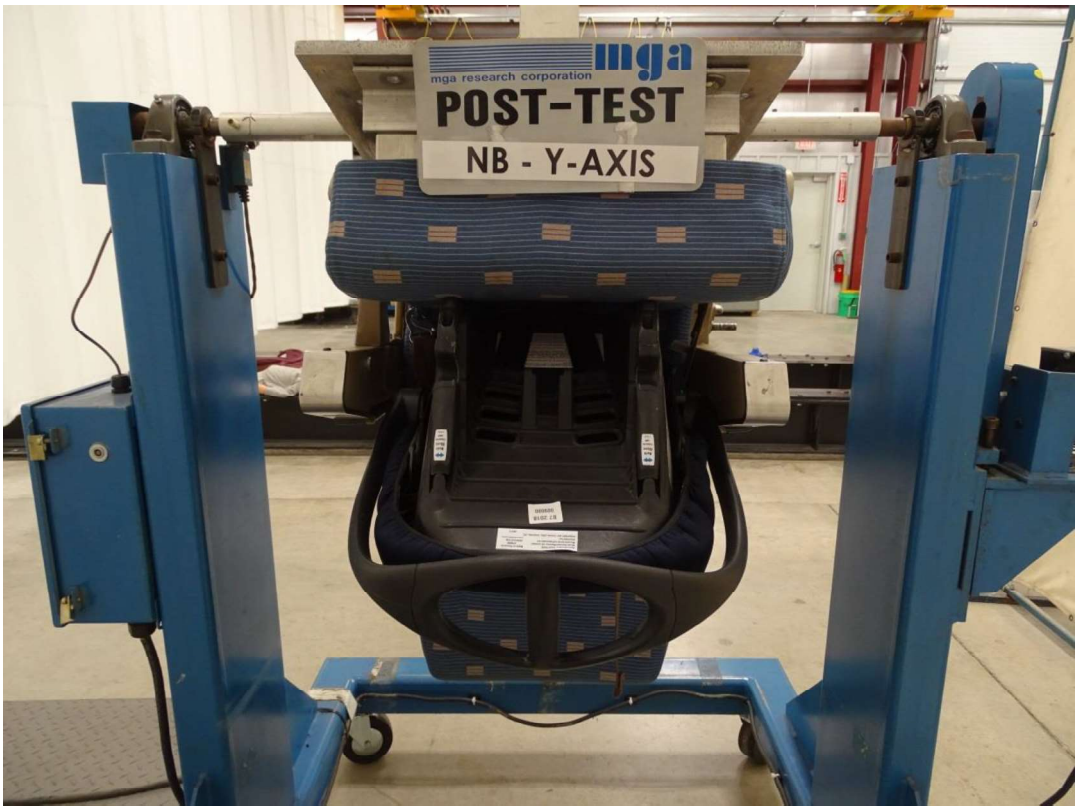
PRE-TEST
NB - Y-AXIS

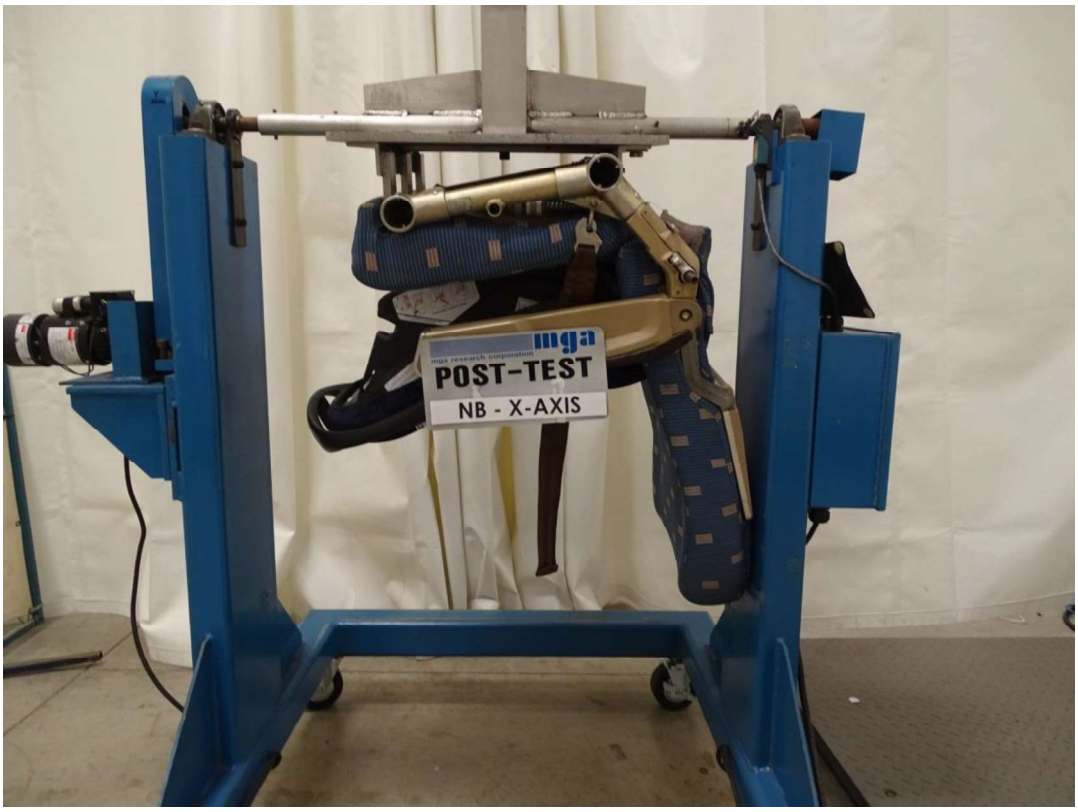

mga research corporation
POST-TEST
NB - Y-AXIS


mga
POST-TEST
NB - Y-AXIS


mga
mga research corporation
PRE-TEST
NB - X-AXIS


mga
PRE-TEST
NB - X-AXIS


mga
mga research corporation
POST-TEST
NB - X-AXIS


mga
mga research corporation
POST-TEST
NB - X-AXIS


mga
mga research corporation
PRE-TEST
12 MO - Y-AXIS


mga
mga research corporation
PRE-TEST
12 MO - Y-AXIS


mga research corporation
mga
POST-TEST
12 MO - Y-AXIS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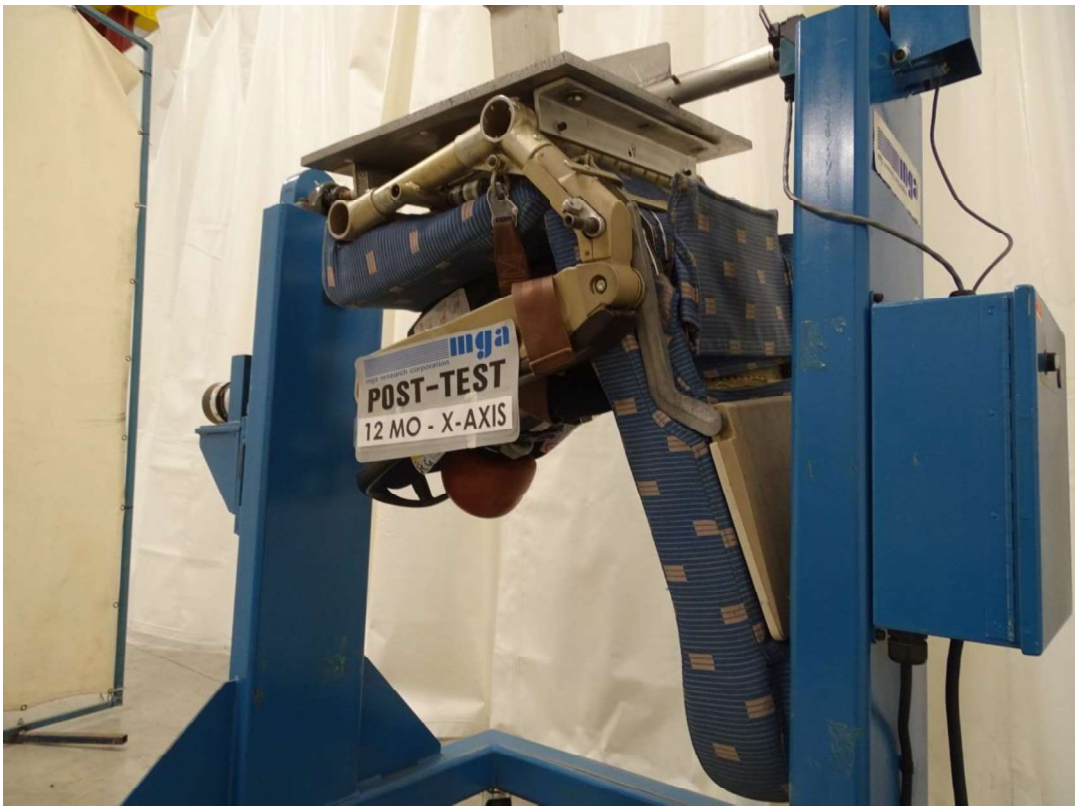
POST-TEST
12 MO - Y-AXIS


mga
mga research corporation
PRE-TEST
12 MO - X-AXIS

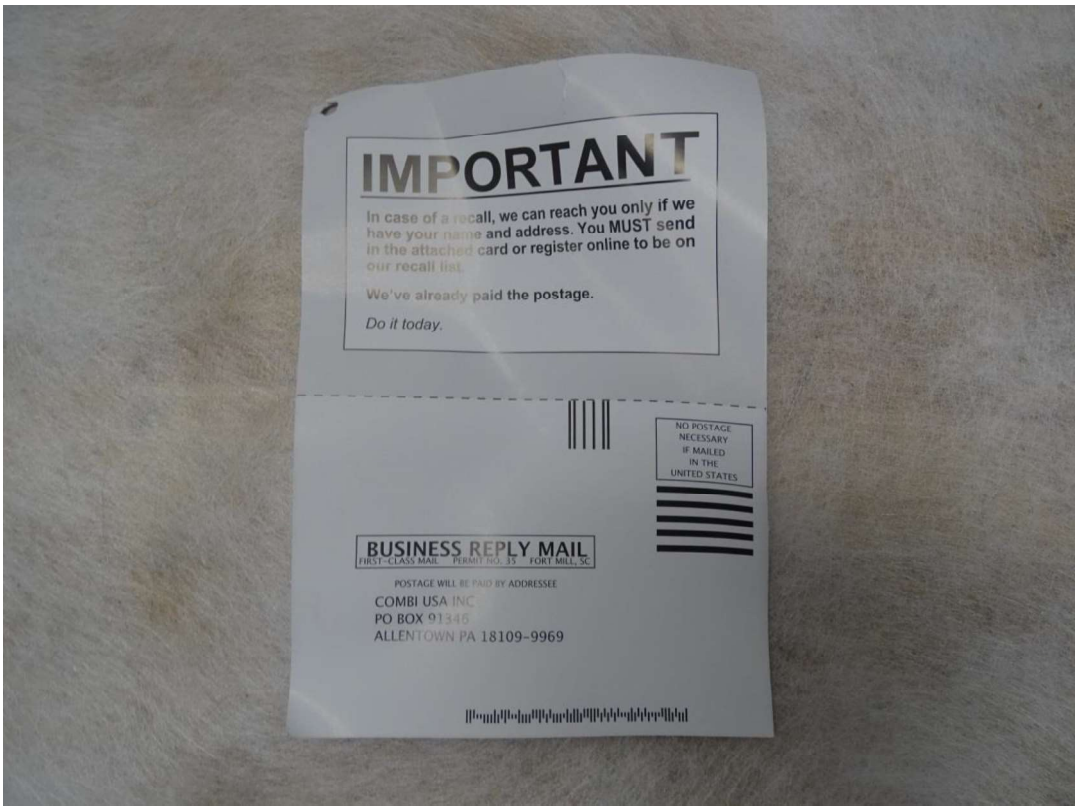

mga
mga research corporation
PRE-TEST
12 MO - X-AXIS


mga
POST-TEST
12 MO - X-AXIS


mga
POST-TEST
12 MO - X-AXIS

LABELS

Item Code: 011-M378099-01-NINRNLFR



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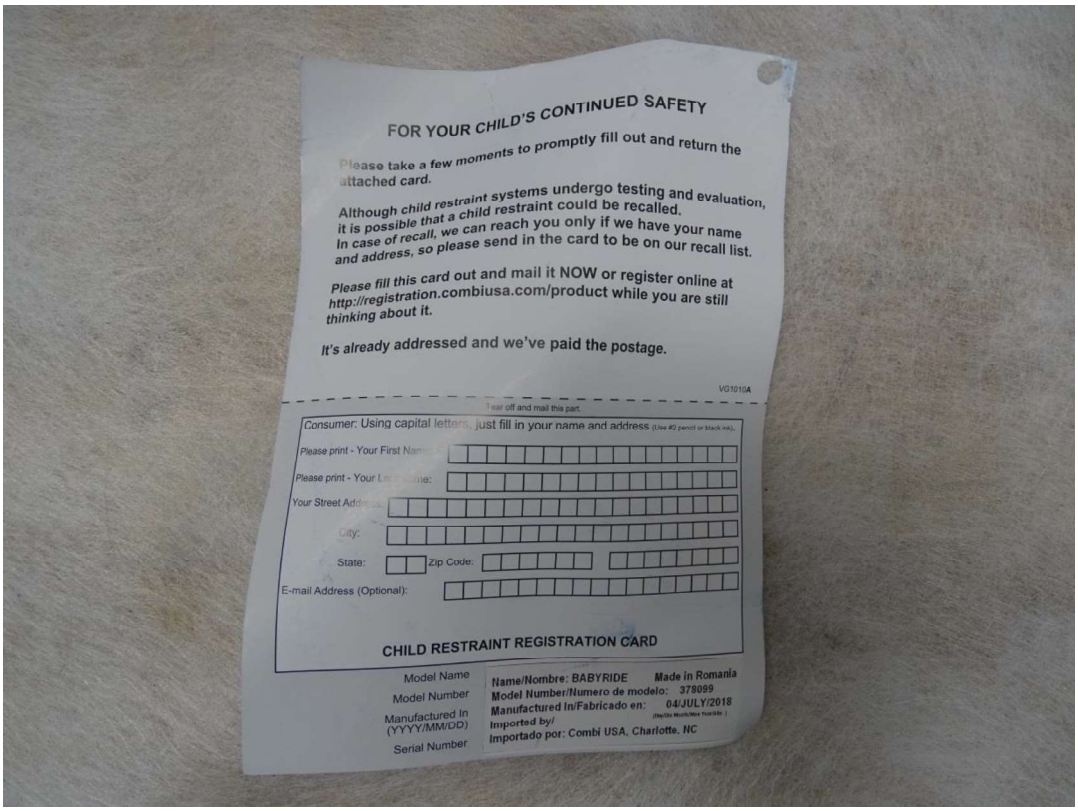

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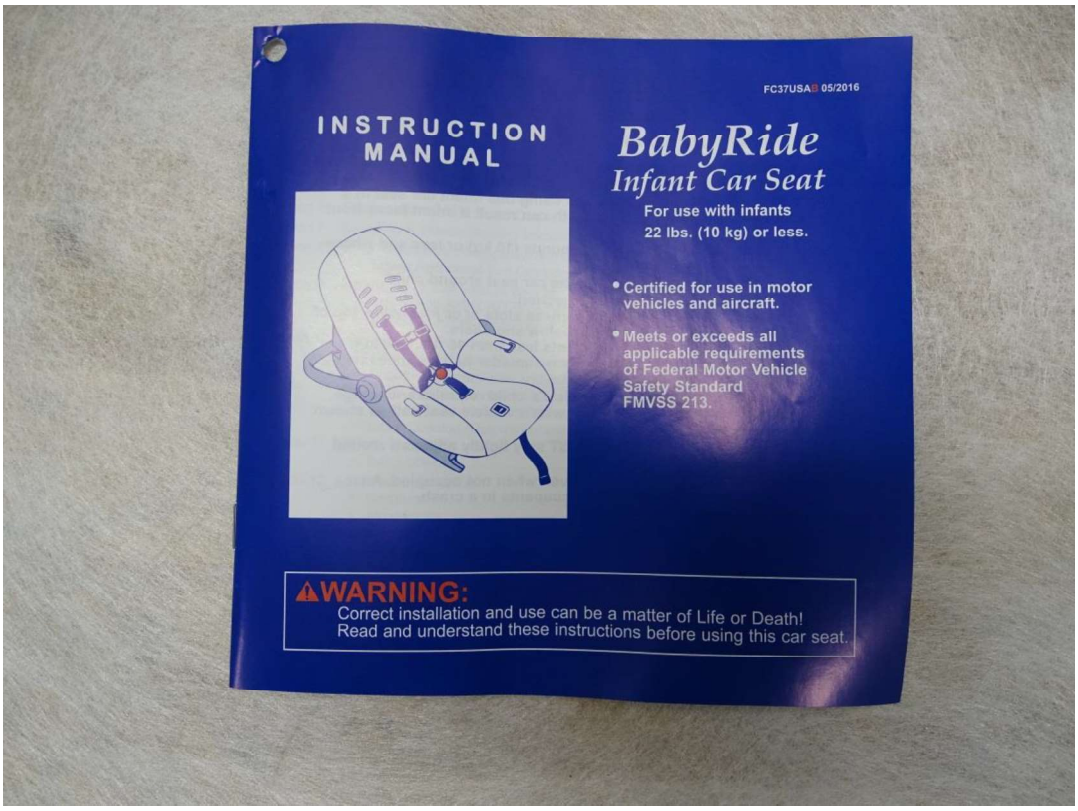

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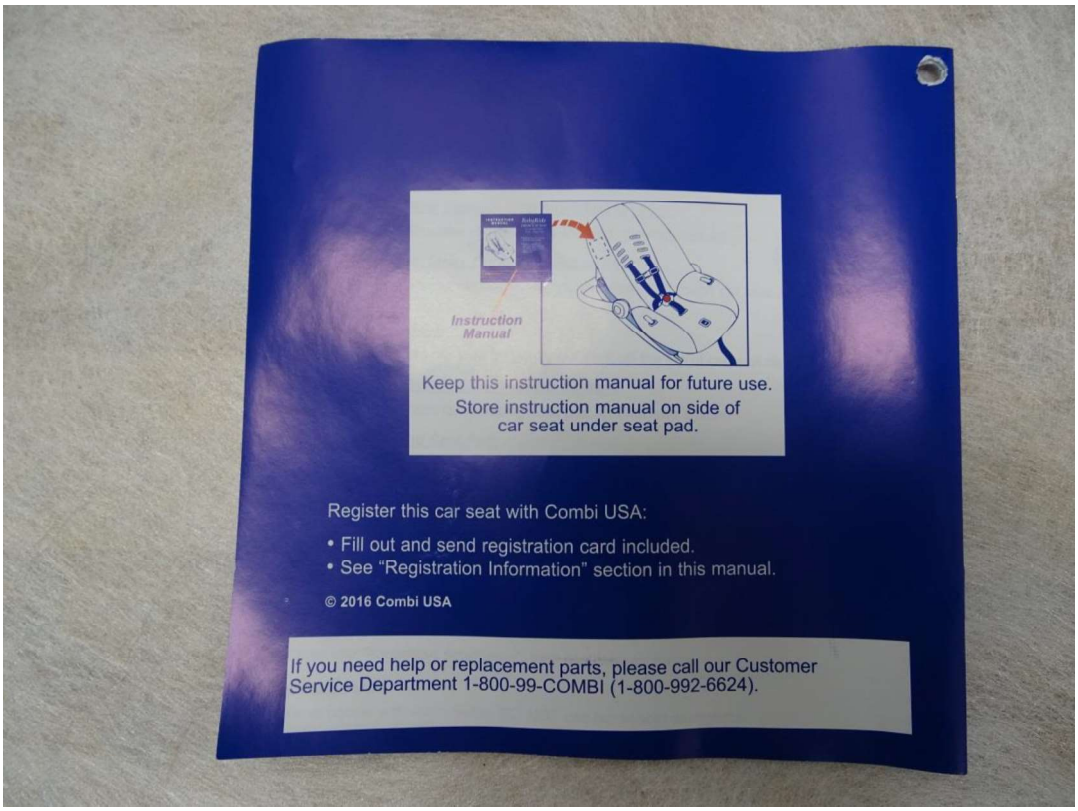

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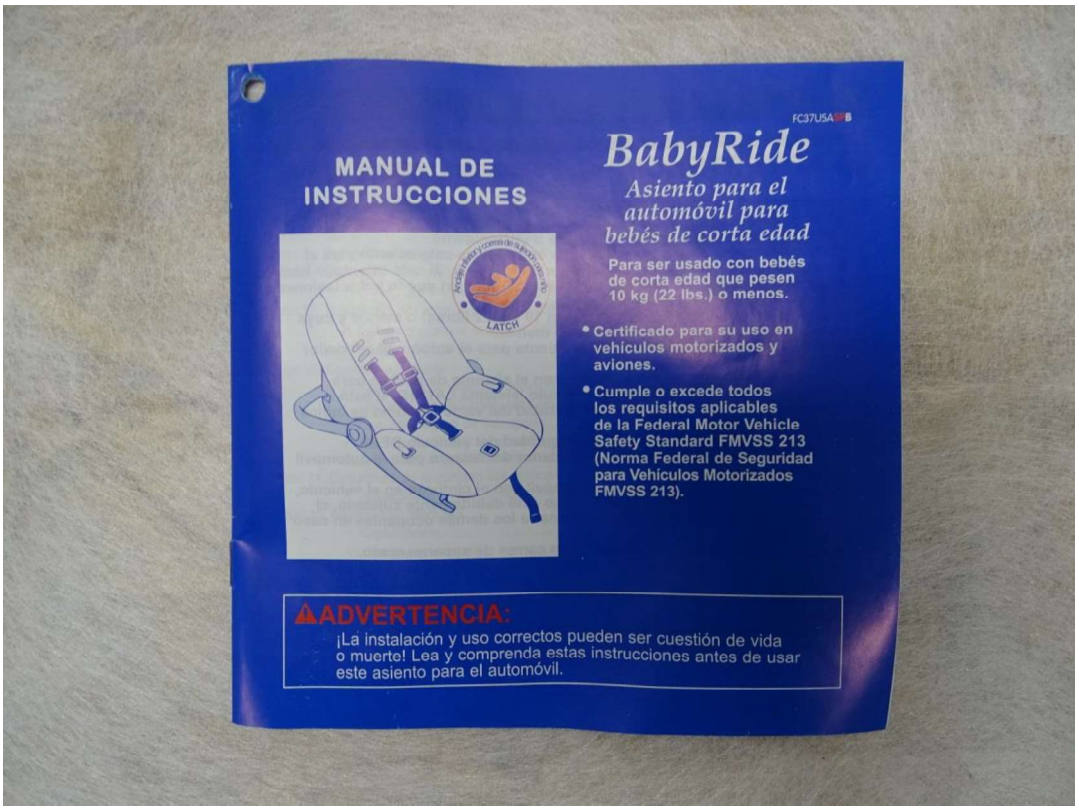

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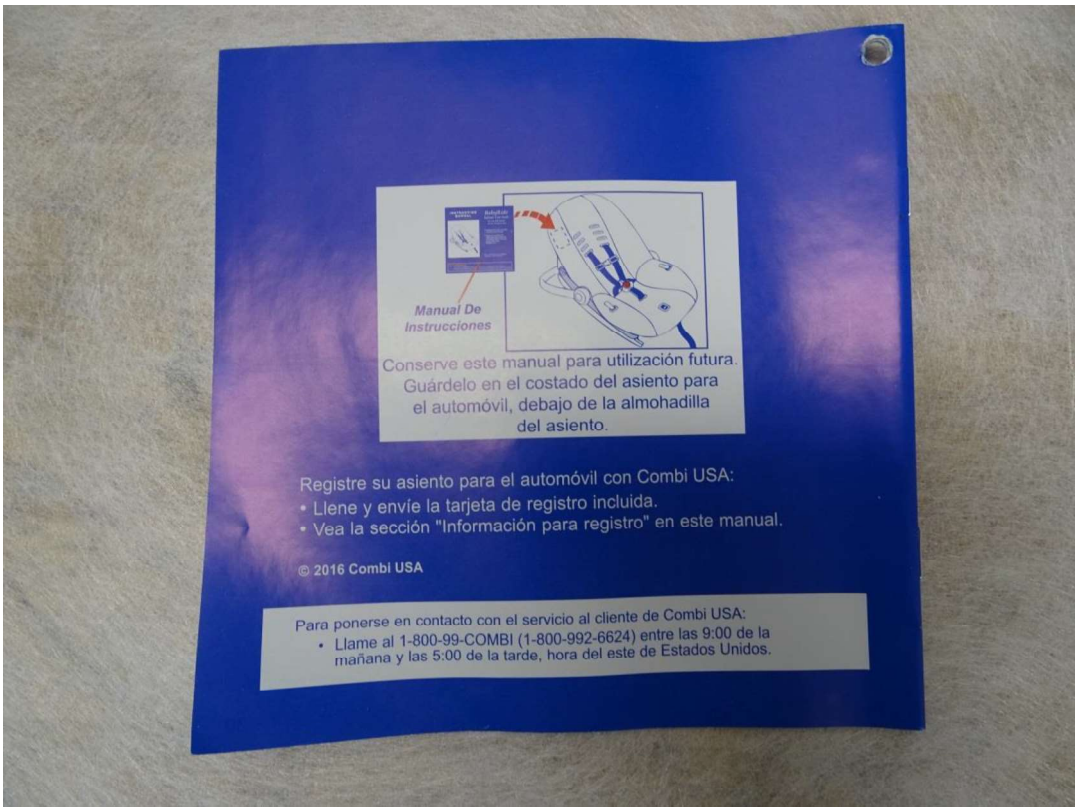

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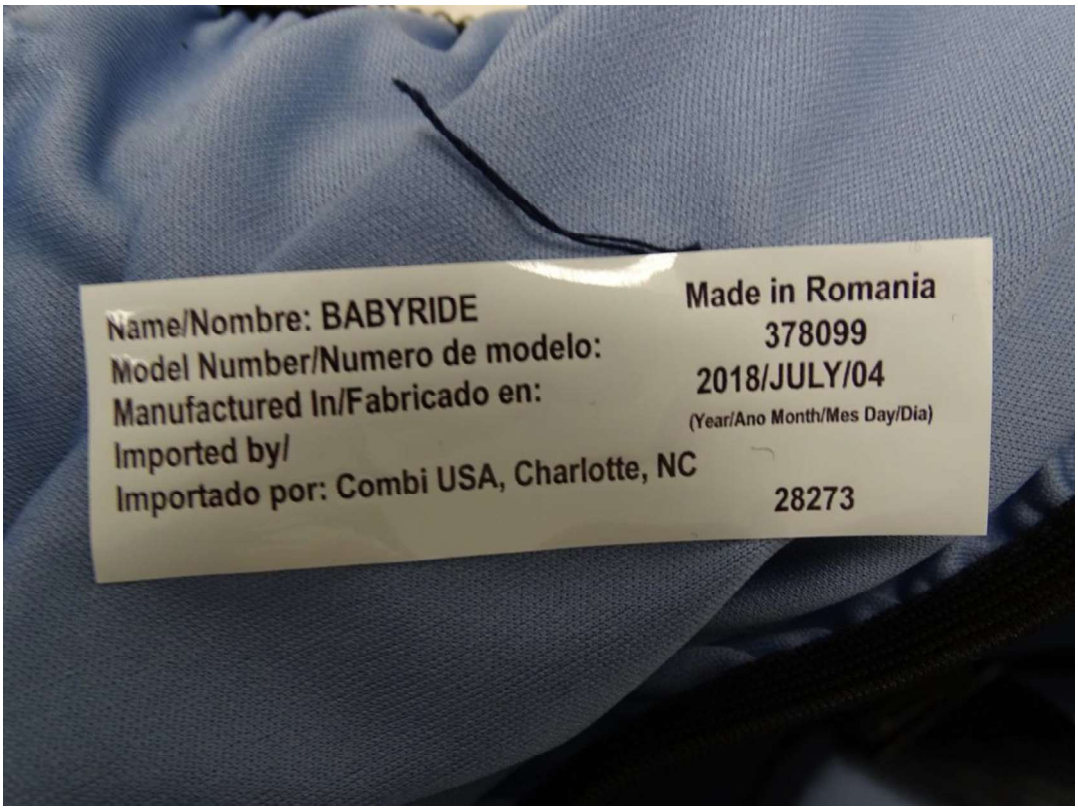

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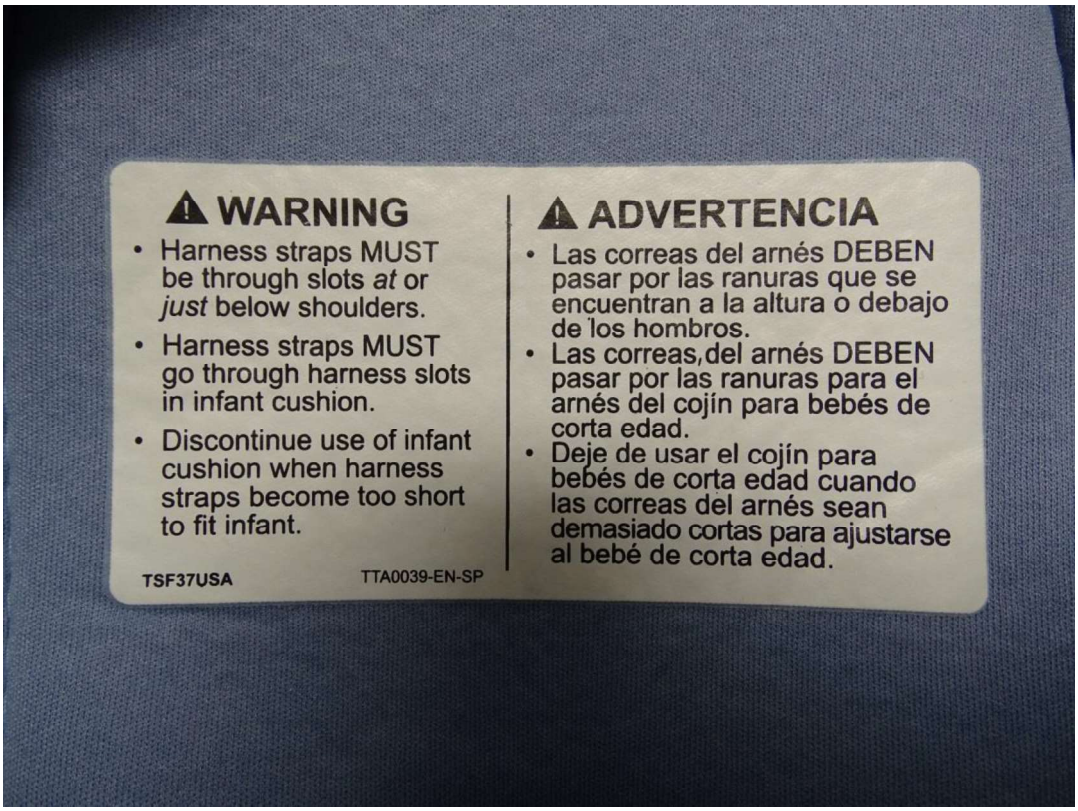

LABELS

Item Code: 011-M378099-01-NINRNLFR

Item Code: 011-M378099-02-12CRNLFR

Item Code: 011-M378099-01-NINRNLFR

Item Code: 011-M378099-02-12CRNLFR

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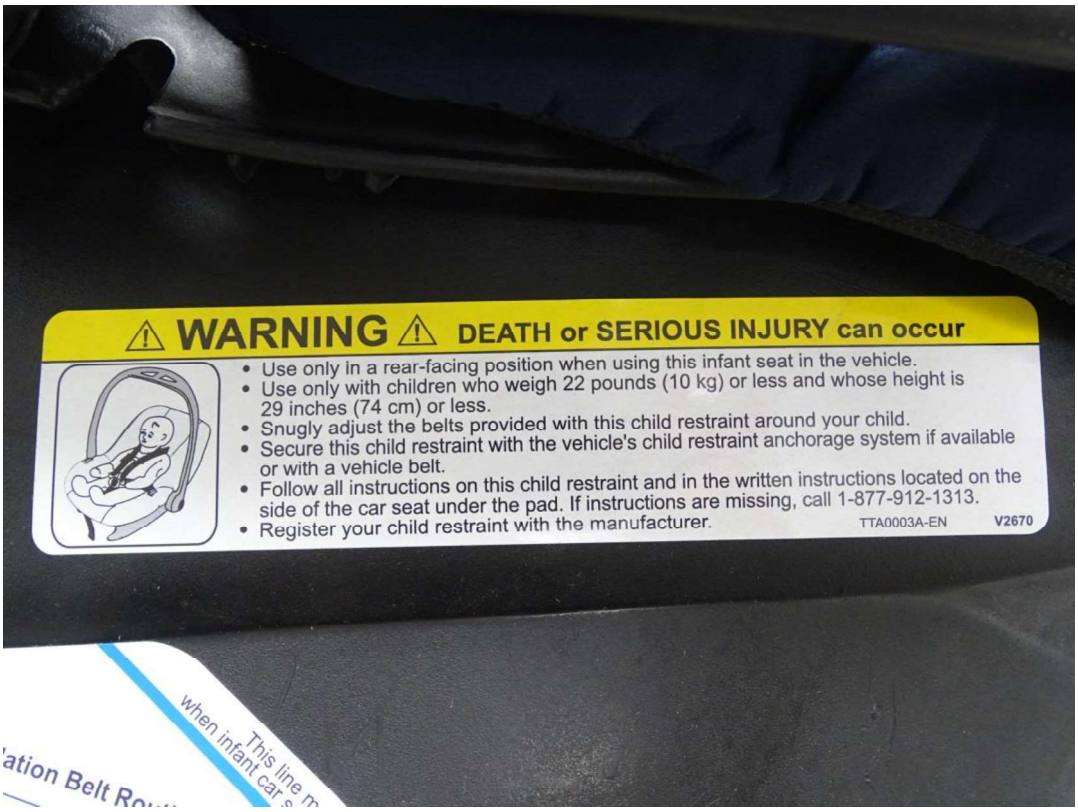


CHILD RESTRAINT SYSTEM

TEST RESULTS

Tests conducted for

TEAM TEX

Purchase order: verbal Doron Tal

TEST NUMBERS: TT 1601 – 06

Testing date: June 17, 2016

Child Passenger Protection Research Program
University of Michigan Transportation Research Institute
2901 Baxter Road, Ann Arbor MI 48109

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.

DATA LIMITATIONS AND USE

Results of these tests are advisory in nature and do not constitute endorsement of a product nor certification of its compliance with a government regulation. These data may be used as technical support for self certification by the restraint system manufacturer, and copies of one or more test reports may be provided to interested individuals at that sponsor's discretion. At no time, however, shall the name of the University of Michigan or the University of Michigan Transportation Research Institute be used in any advertising material or public media release in connection with the restraint system tested.

CHILD RESTRAINT SYSTEMS
SUMMARY OF TEST RESULTS

Test Numbers: TT 1601 - 06
Test Date: June 17, 2016

Test TT 16	Team Tex BabyRide infant seat Rearward facing, FMVSS 213 buck, Riley low birth weight (Preemie) dummy	Initial Back Angle	Max Back Angle	HIC (36)	Chest Peak <3ms
01*	Shell only, lap belt, bottom slots, handle middle, infant insert used, 45° target setup angle	45°	43°	n/a	n/a
06*	Shell only, LATCH, bottom slots, handle middle, infant insert used, 45° target setup angle	45°	41°	n/a	n/a
Test TT 16	Team Tex BabyRide infant seat Rearward facing, FMVSS 213 buck, Newborn infant dummy	Initial Back Angle	Max Back Angle	HIC (36)	Chest Peak <3ms
02	Shell only, lap belt, bottom slots, handle middle, infant insert used, 45° target setup angle	44°	50°	n/a	n/a
05	Shell only, LATCH, bottom slots, handle middle, infant insert used, 45° target setup angle	44°	48°	n/a	n/a
Test TT 16	Team Tex BabyRide infant seat Rearward facing, FMVSS 213 buck, 12-month CRABI dummy	Initial Back Angle	Max Back Angle	HIC (36)	Chest Peak <3ms
03	Shell only, lap belt, top slots, handle middle, no infant insert, 45° target setup angle	46°	58°	160	34
04	Shell only, LATCH, top slots, handle middle, no infant insert, 45° target setup angle	45°	58°	208	39

* Note: The back support angle with respect to vertical did not increase during the test. Also, the harness was tightened the maximum allowable amount by pulling the stitching near the shoulder straps loop through the A-Lock at the bottom of the seat (per sponsor instruction).

n/a = not available

CHILD RESTRAINT SYSTEM
TEST DATA SUMMARY

Test Number: **TT1601**
Test Date: June 17, 2016

Model: BabyRide infant seat shell only

Manufacturing status: prototype

SET-UP

Riley low birth weight dummy (2.2 kg)	Frontal impact
Rearward facing	FMVSS 213 buck
Center seat position	Fixed seatback
Lap belt	48 km/h (30 mph), 24 g
Bottom slots	
Handle middle	
Infant insert used	
Seatback angle set to ~45˚	

RESULTS

Velocity	**48.5 km/h** (30.1 mph)
Peak Acceleration	**25.1 g**
Back Angle with Respect to Vertical	
Initial	45˚
Maximum	**43˚**
Dummy Retention	
Head target	**yes**
Torso	**yes**

Comments

The child restraint flexed inward at the belt path during the test and did not rotate backward from the initial position. The harness was tightened the maximum allowable amount by pulling the stitching near the shoulder straps loop through the A-Lock at the bottom of the seat (per sponsor instruction).

UMTRI	Results	TT1601

Nominal = 30 mph/20G
Actual[P] = 48.5 km/h (30.1 mph) (83.9%)

Pressures: 108/890
Plateau Avg.= -20.7 G; Peak = -25.1 G

Dummy: Riley Low Birth Weight (5 lb - 2.2 kg)
Buck: FMVSS 213, brace, extensions

Buck Weight: 1843

Team Tex BabyRide shell only, bottom slots, handle middle
Lap belt through belt slots

Sled Summary

Sled Pulse Duration = 75.4 ms
Sled Plateau Average Level = -20.7 G
Sled Decel Peak = -25.1 G

Efficiency = Vout / Vin = 22.1 / 26.4 = 83.9%
Sled Delta V = 48.5 kph (30.1 mph)
Stopping Dist. (est) = .531 m

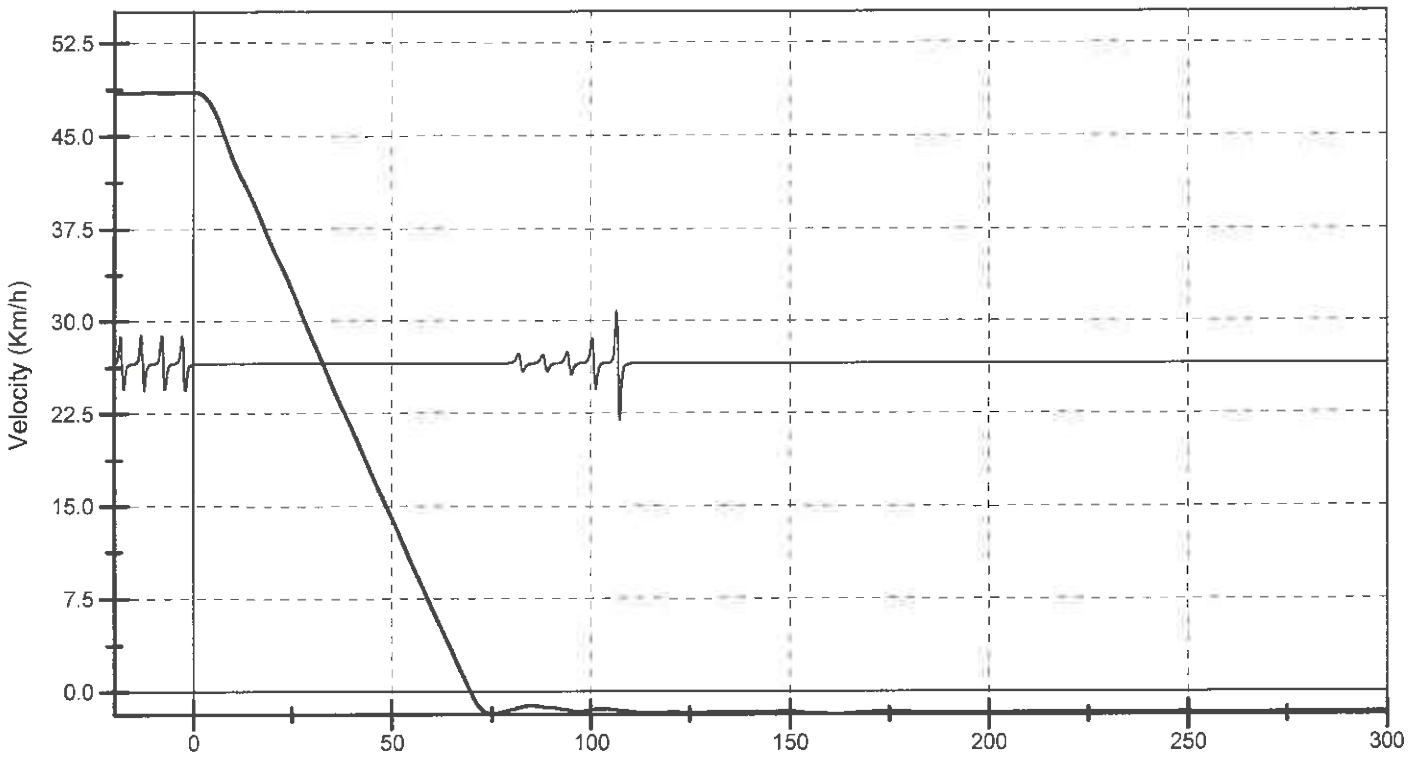
Belt Loads

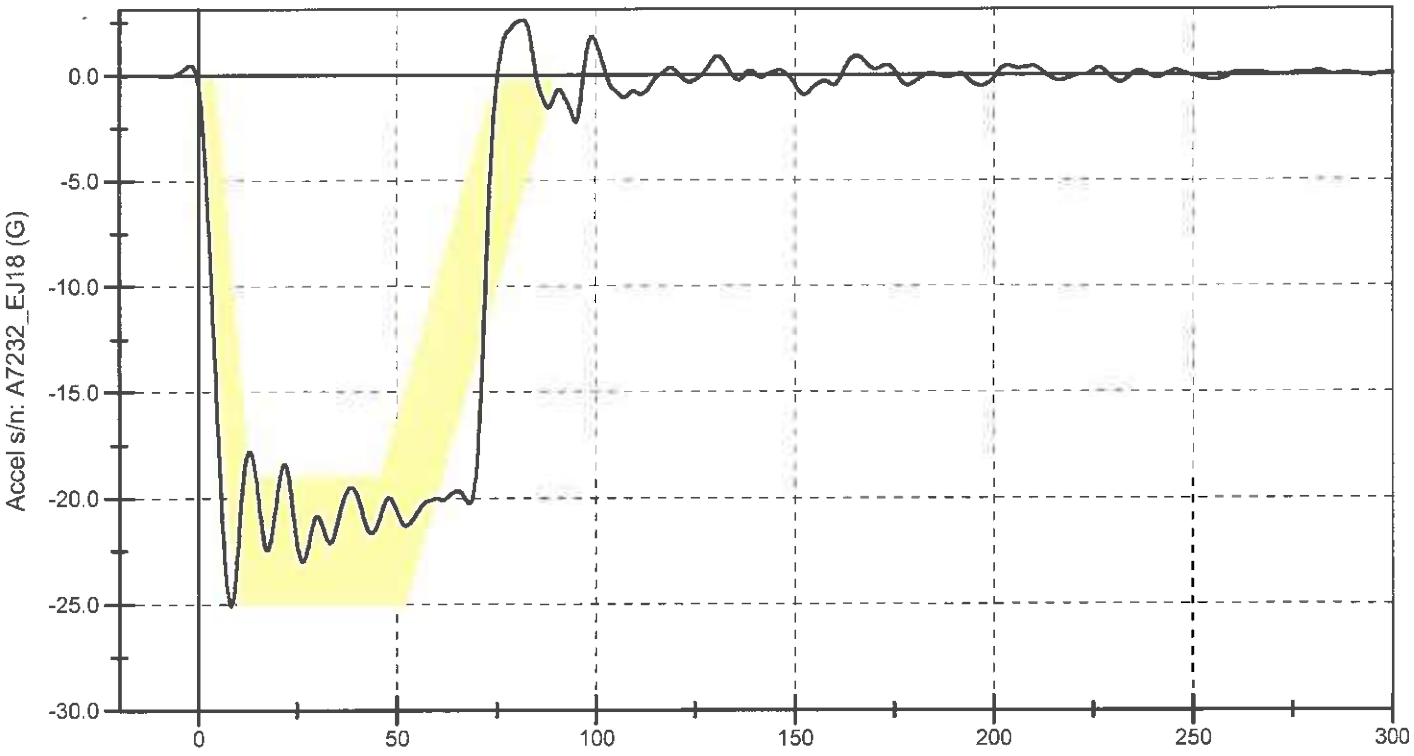
Left Lap Belt Load	-55.6 N (-12.5 lb) @ 142 ms	**678.1 N (152.4 lb) @ 53 ms**
Right Lap Belt Load	-78.6 N (-17.7 lb) @ 141 ms	**877.2 N (197.2 lb) @ 57 ms**

UMTRI

Sled Summary

TT1601





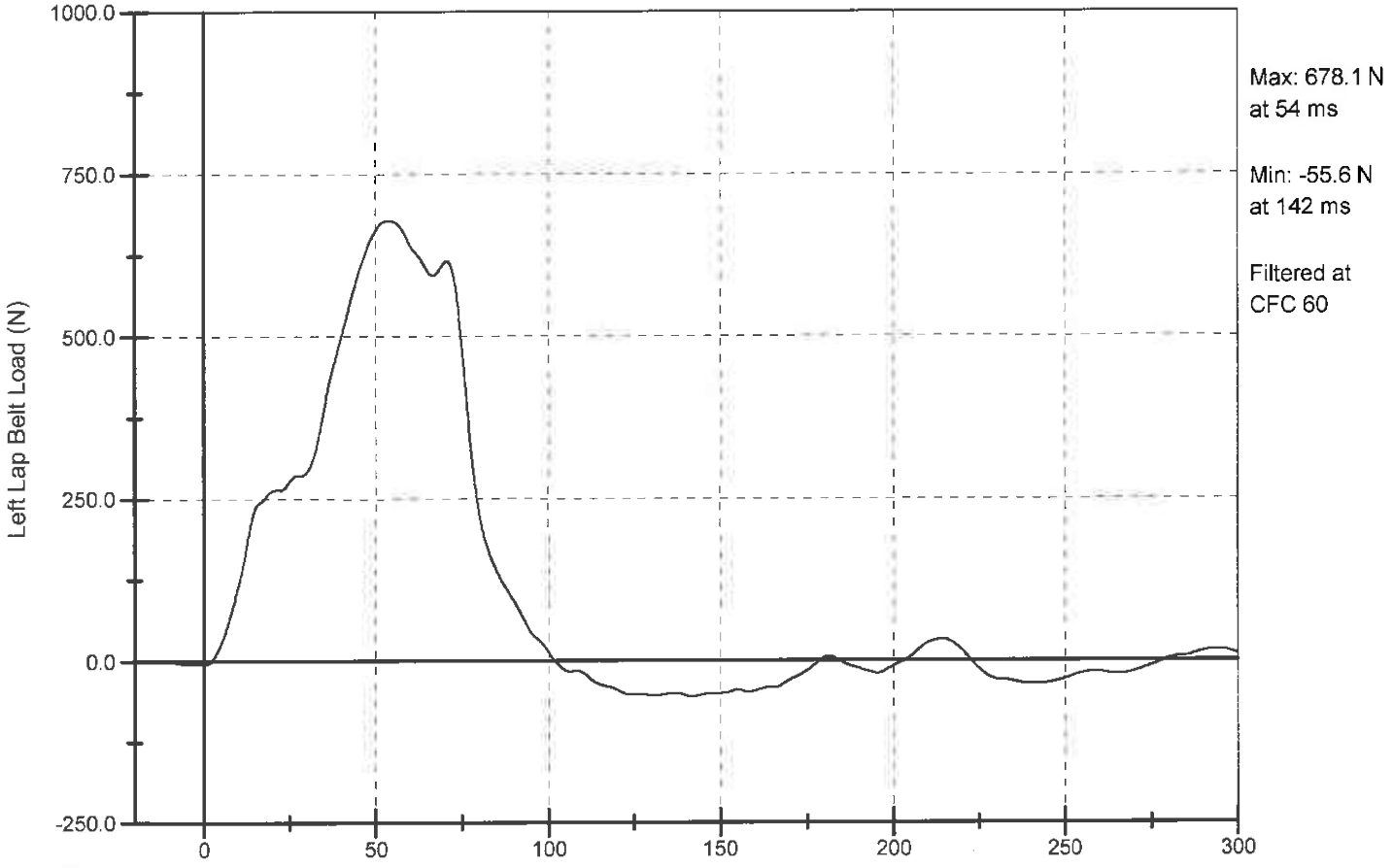
Sled Decel Peak = -25.1 G
Sled Plateau Average Level = -20.7 G
Sled Pulse Duration = 75.4 ms

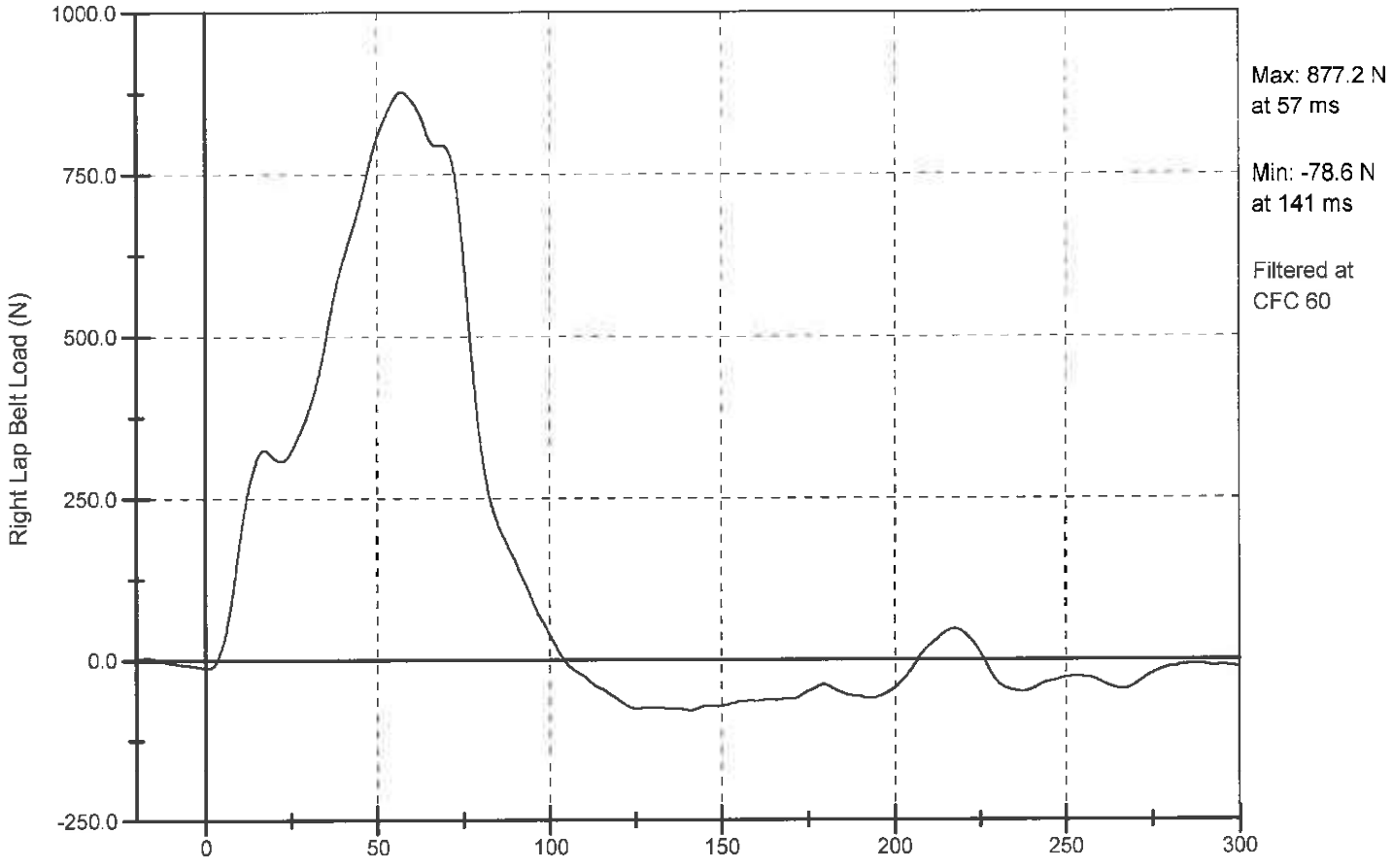
Stopping Dist. (est) = .531 m
Sled Delta V = 48.5 kph (30.1 mph)
Efficiency = Vout / Vin = 22.1 / 26.4 = 83.9%

UMTRI

Belt Loads

TT1601





(initial)

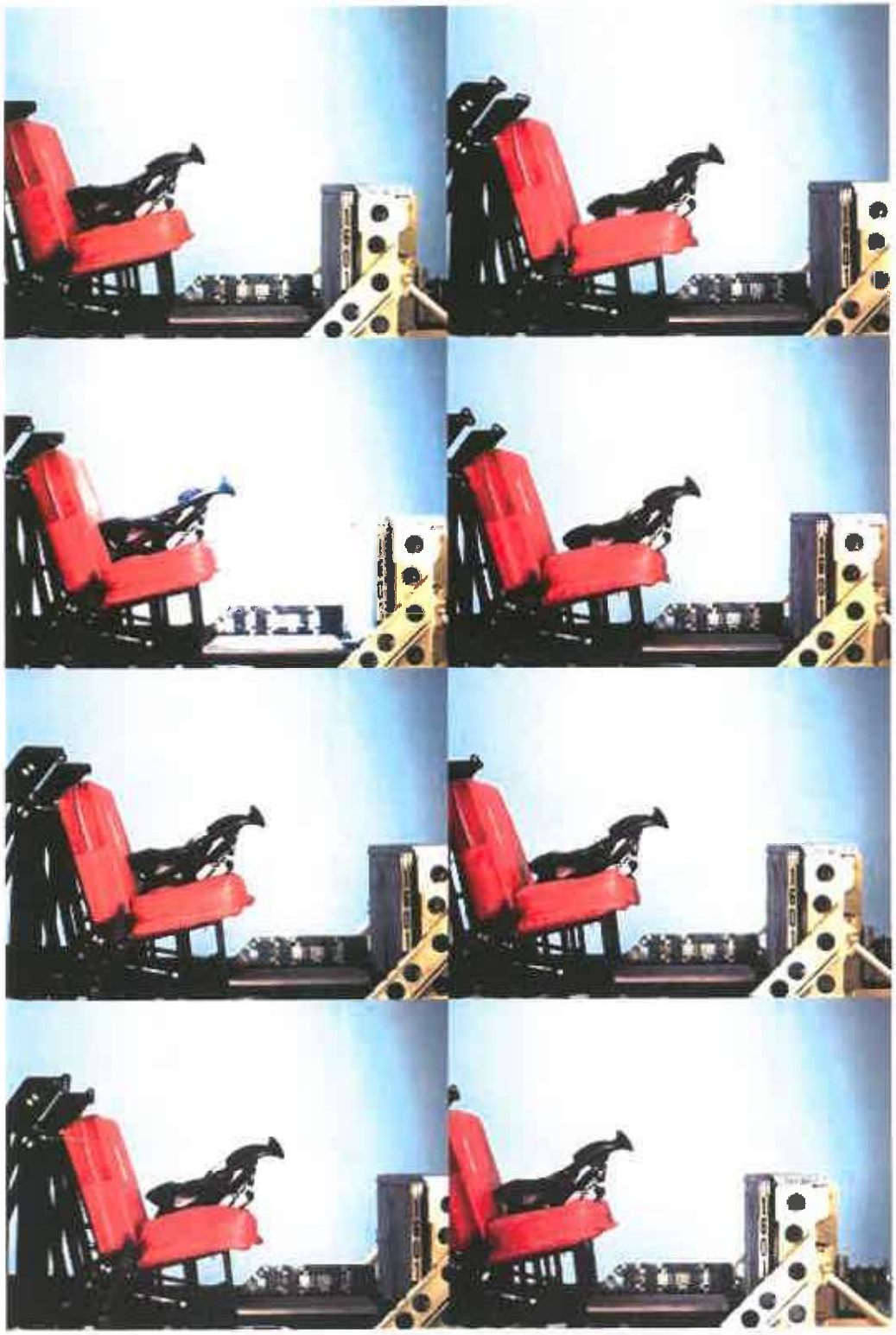
45 Degrees


('max')
42 Degrees

tt1601rs.JPG

tt1601oh.JPG

TT1601



TT1601

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tt1601Ars.JPG

tt1601Aoh.JPG

CHILD RESTRAINT SYSTEM
TEST DATA SUMMARY

Test Number: **TT1602**
Test Date: June 17, 2016

Model: BabyRide infant seat shell only

Manufacturing status: prototype

SET-UP

Part 572: K Newborn dummy (3.4 kg)	Frontal impact
Rearward facing	FMVSS 213 buck
Center seat position	Fixed seatback
Lap belt	48 km/h (30 mph), 24 g
Bottom slots	
Handle middle	
Infant insert used	
Seatback angle set to ~45˚	

RESULTS

Velocity	**48.8 km/h**	(30.3 mph)
Peak Acceleration	**24.9 g**	
Back Angle with Respect to Vertical		
Initial	44˚	
Maximum	**50˚**	
Dummy Retention		
Head target	**yes**	
Torso	**yes**	

Comments

The child restraint flexed inward at the belt path during the test.

UMTRI	Results	TT1602

Nominal = 30 mph/20G
Actual[P] = 48.8 km/h (30.3 mph) (83.7%)

Pressures: 108/890
Plateau Avg.= -20.8 G; Peak = -24.9 G

Dummy: Newborn (7 lb - 3.1 kg)
Buck: FMVSS 213, brace, extensions

Buck Weight: 1845

Team Tex BabyRide shell only, bottom slots, handle middle
Lap belt through belt slots

Sled Summary

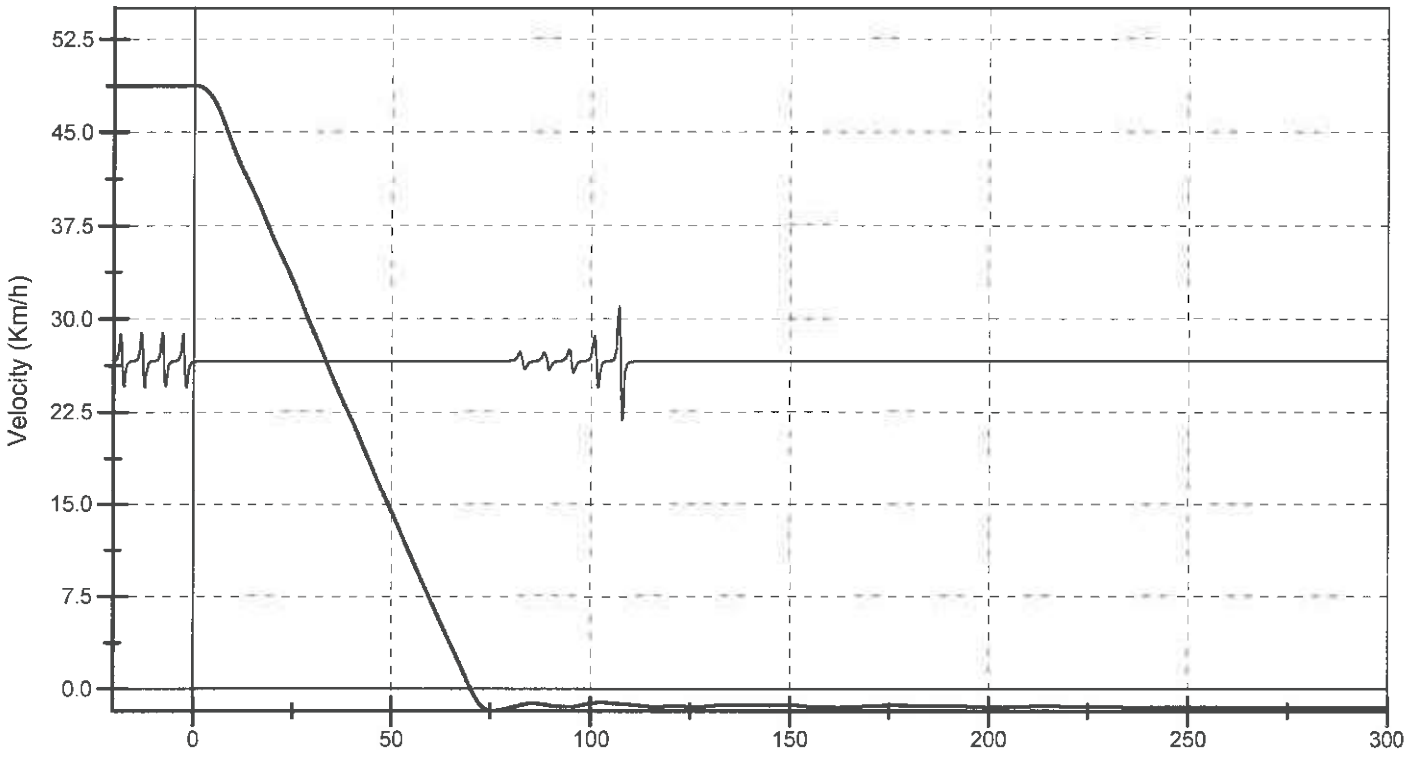
Sled Pulse Duration = 75.9 ms
Sled Plateau Average Level = -20.8 G
Sled Decel Peak = -24.9 G

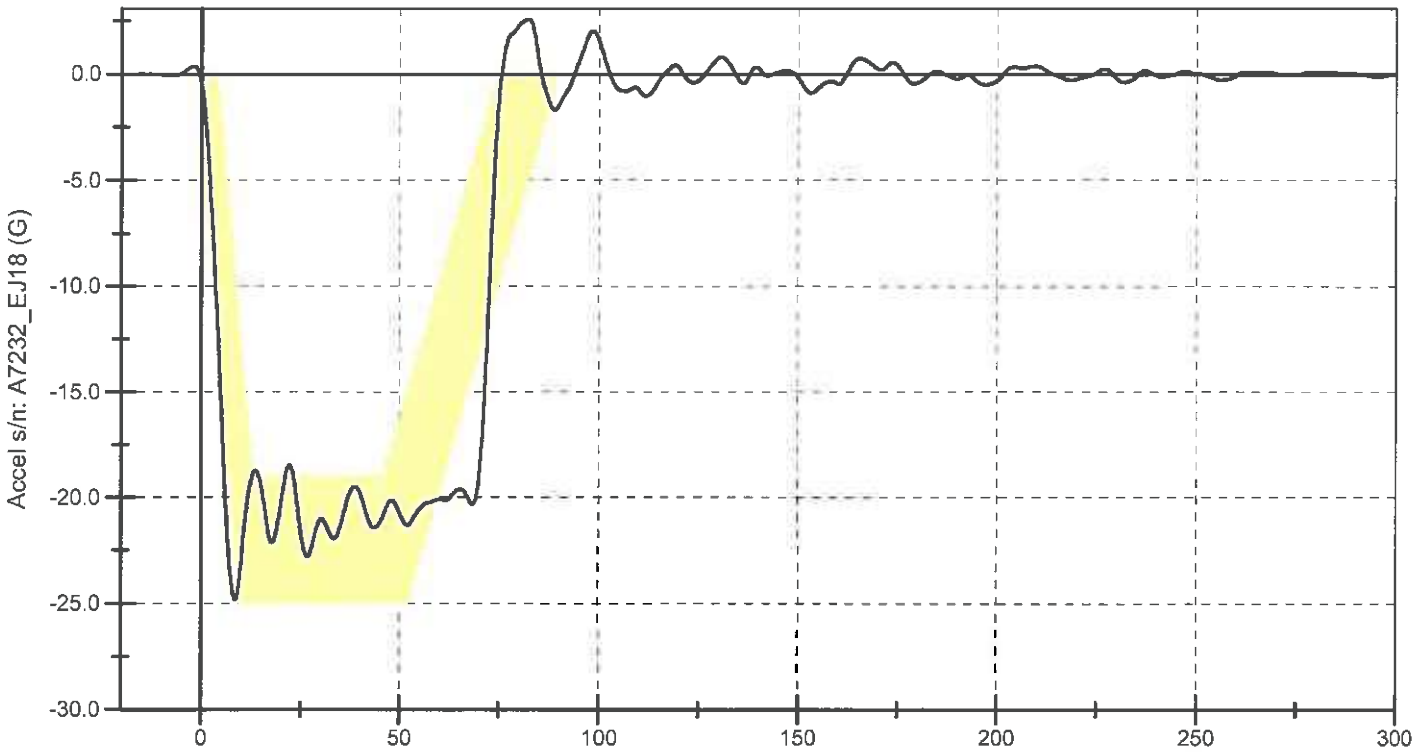
Efficiency = Vout / Vin = 22.2 / 26.5 = 83.7%
Sled Delta V = 48.8 kph (30.3 mph)
Stopping Dist. (est) = .535 m

Belt Loads

Left Lap Belt Load	-68.0 N (-15.3 lb) @ 300 ms	**962.7 N (216.4 lb) @ 62 ms**
Right Lap Belt Load	-76.5 N (-17.2 lb) @ 166 ms	**1208.5 N (271.7 lb) @ 61 ms**

UMTRI Sled Summary TT1602





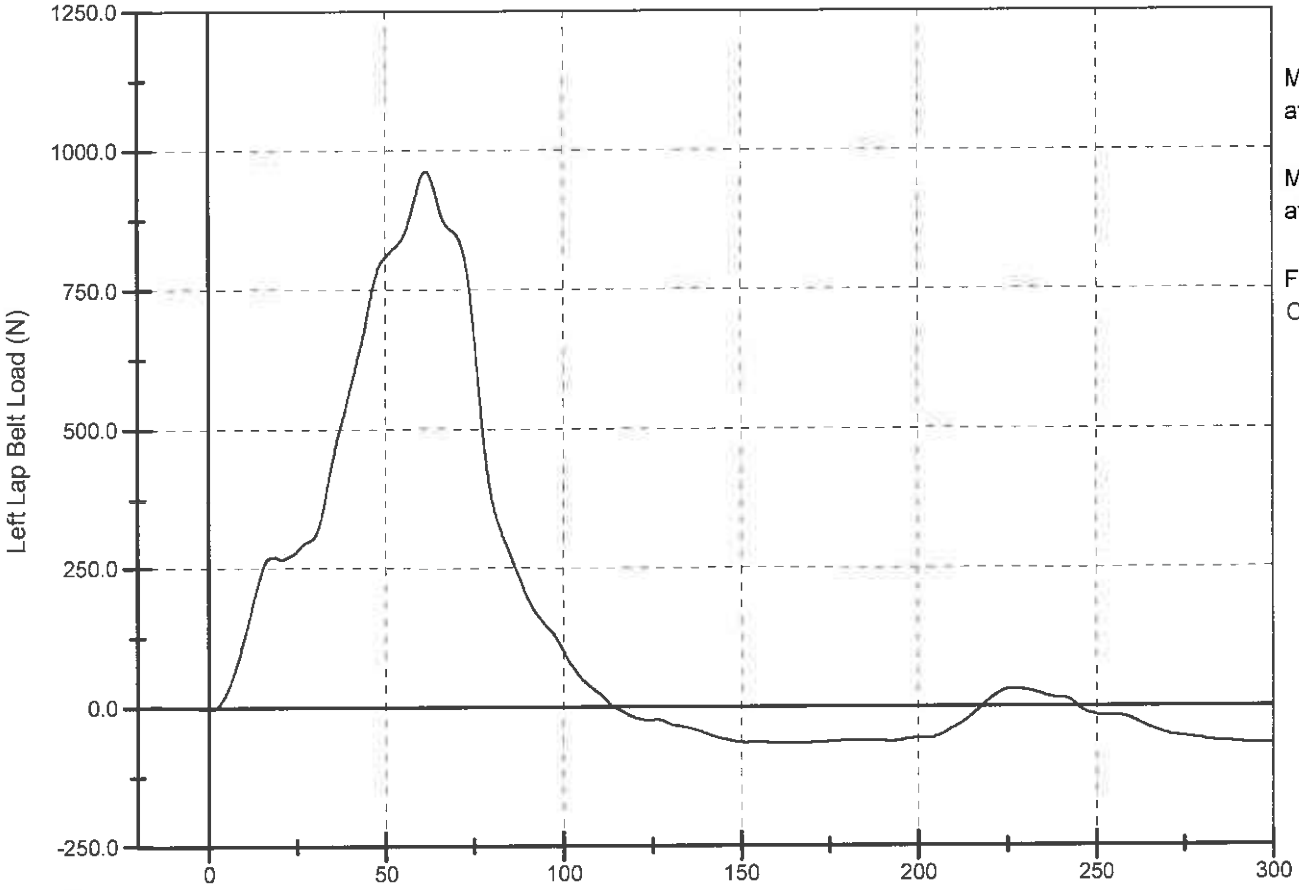
Sled Decel Peak = -24.9 G
Sled Plateau Average Level = -20.8 G
Sled Pulse Duration = 75.9 ms

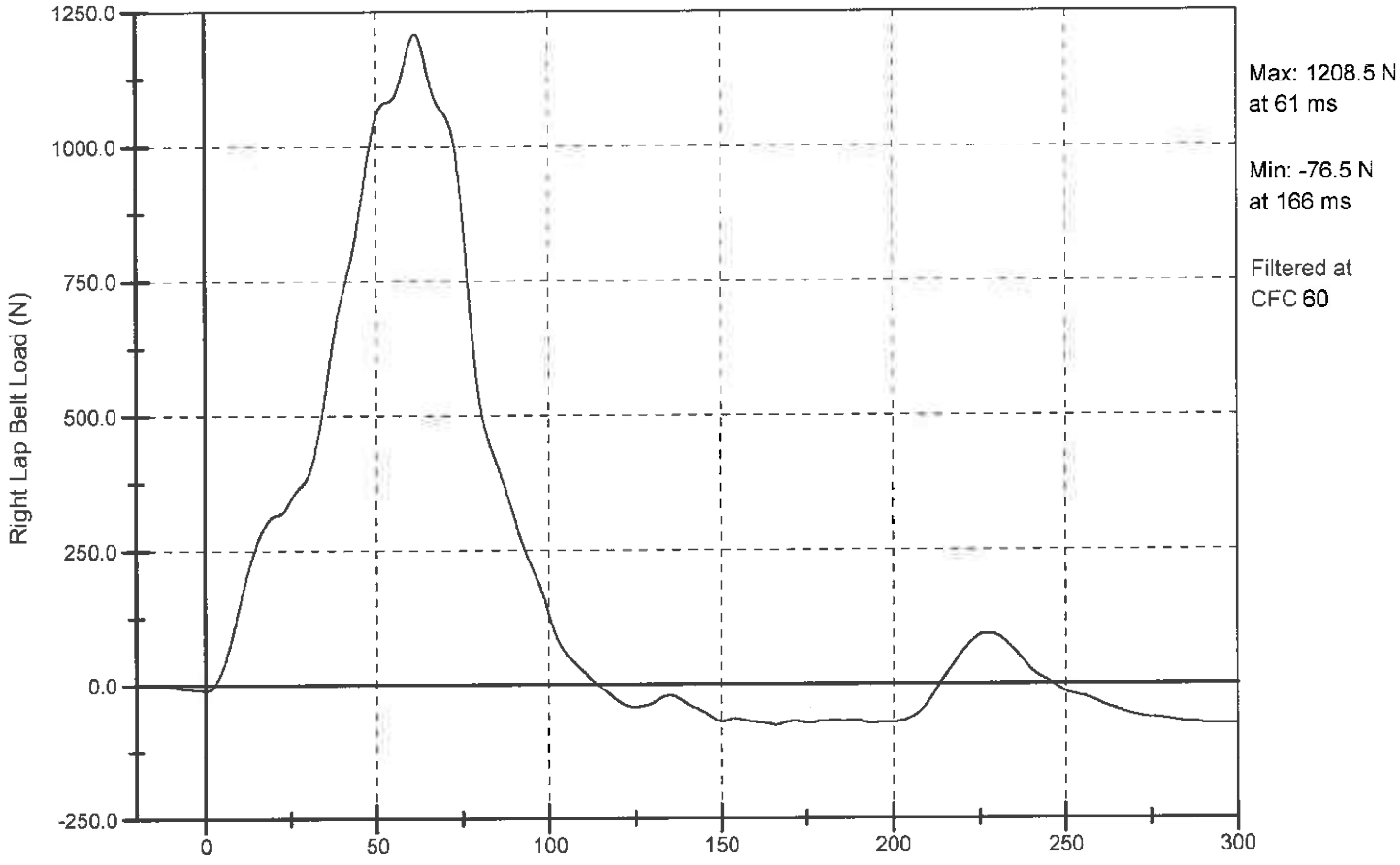
Stopping Dist. (est) = .535 m
Sled Delta V = 48.8 kph (30.3 mph)
Efficiency = Vout / Vin = 22.2 / 26.5 = 83.7%

UMTRI

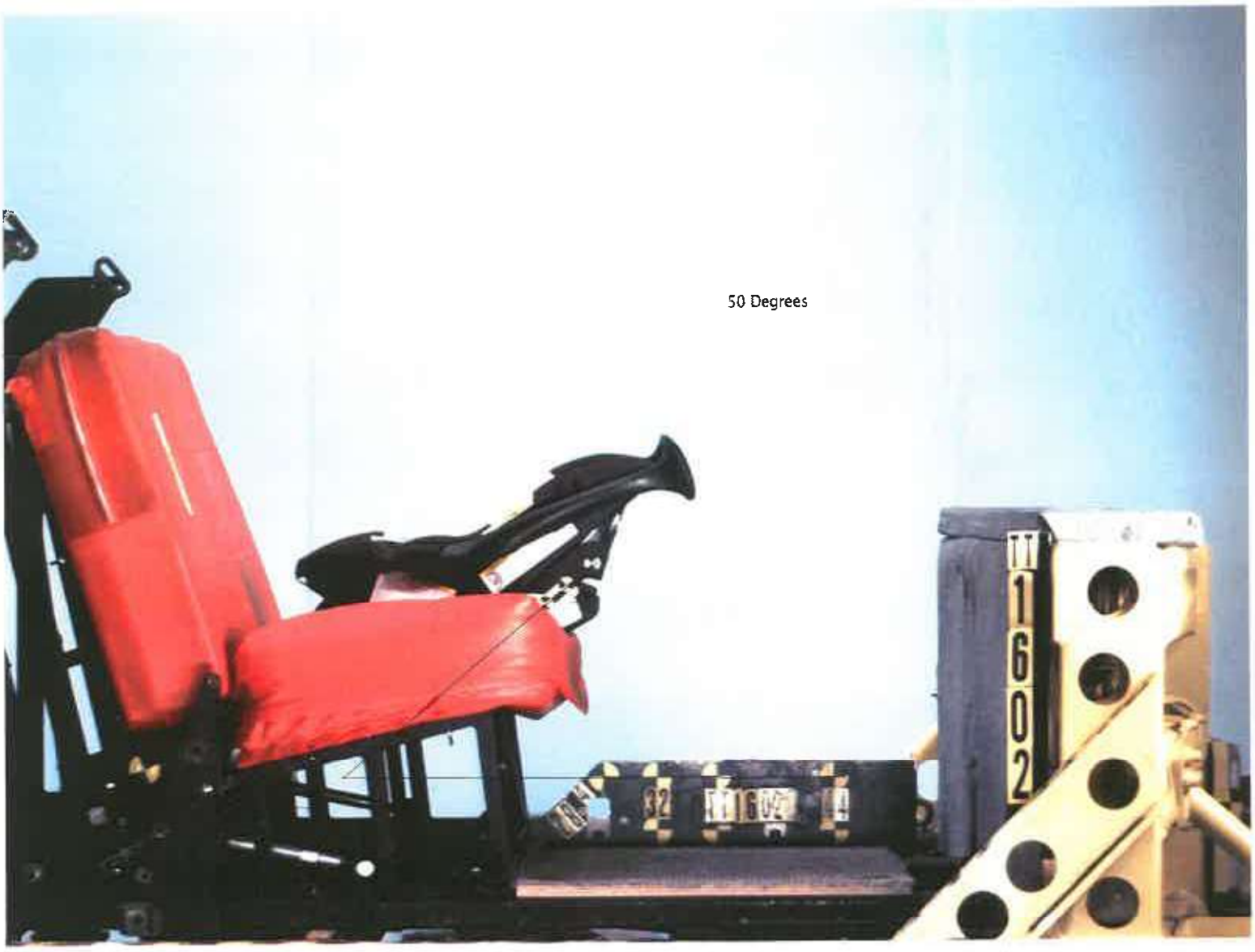
Belt Loads

TT1602





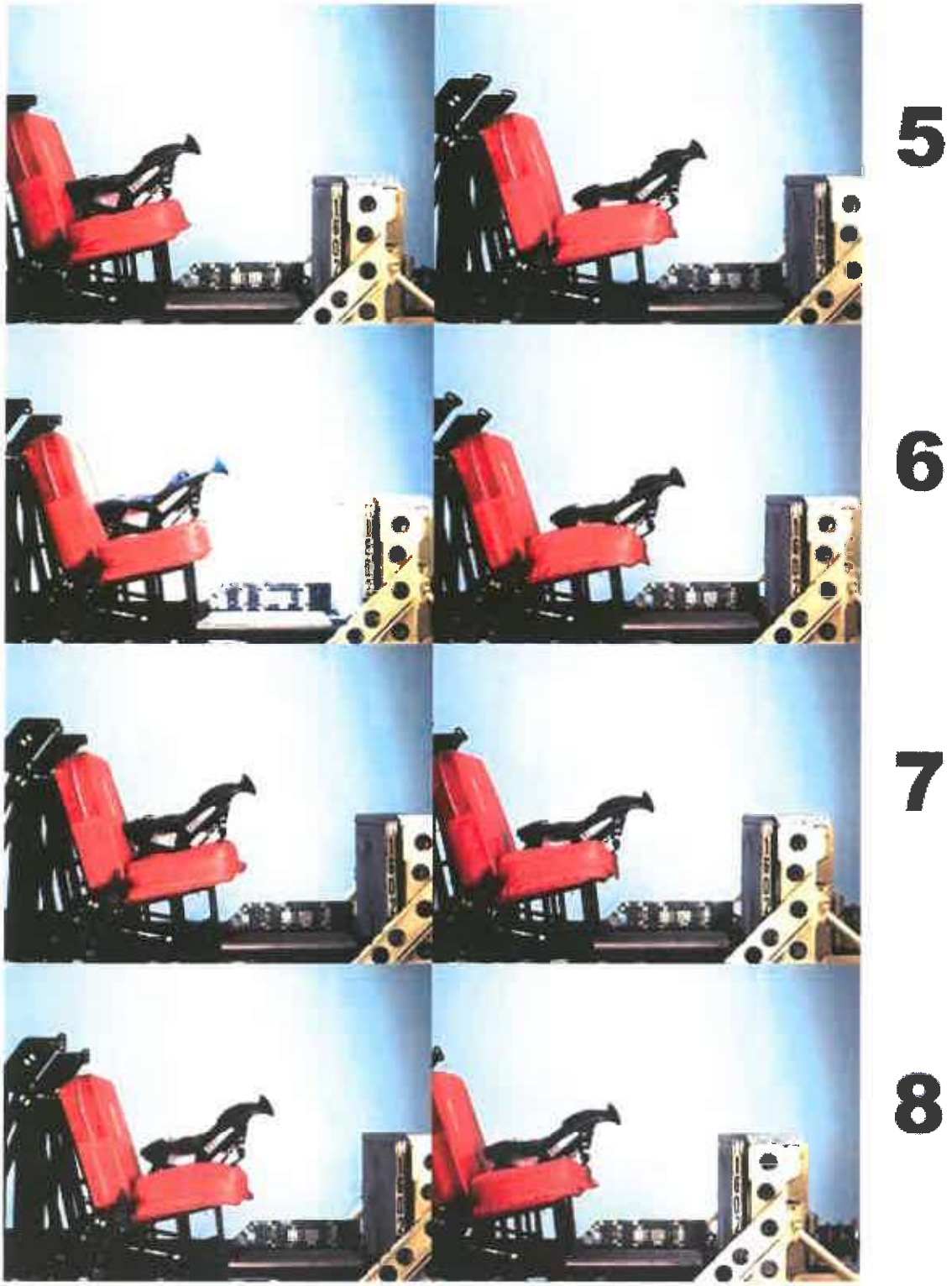

Initial Angle = 44 Degrees
1602


50 Degrees

tt1602rs.JPG

tt1602oh.JPG

TT1602



TT1602

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tt1602Ars.JPG

tt1602Aoh.JPG

CHILD RESTRAINT SYSTEM
TEST DATA SUMMARY

Test Number: **TT1603**
Test Date: June 17, 2016

Model: BabyRide infant seat shell only

Manufacturing status: prototype

SET-UP

Part 572: R 12-month CRABI (10 kg)	Frontal impact
Rearward facing	FMVSS 213 buck
Center seat position	Fixed seatback
Lap belt	48 km/h (30 mph), 24 g
Top slots	
Handle middle	
No infant insert used	
Seatback angle set to ~45˚	

RESULTS

Velocity	**48.6 km/h** (30.2 mph)
Peak Acceleration	**25.5 g**
Back Angle	
Initial	46˚
Maximum	**58˚**
Dummy Retention	
Head target	**yes**
Torso	**yes**
Head Peak Resultant	32.7 g
Head Injury Criterion	220
Head Injury Criterion (36 ms)	**160**
Chest Peak Resultant	34.5 g
Duration over 60 g	0.0 ms
Clipped Chest Resultant	**34.2 g**

Comments

The child restraint flexed inward at the belt path during the test. Also, the child restraint and dummy came to rest leaning against the sled bench seatback due to rebound motion.

UMTRI	Results	TT1603

Nominal = 30 mph/20G — Pressures: 109/890
Actual[P] = 48.6 km/h (30.2 mph) (83.0%) — Plateau Avg.= -20.9 G; Peak = -25.5 G

Dummy: CRABI 12 Month Old (10 kg) — Buck Weight: 1860
Buck: FMVSS 213, brace, extensions

Team Tex BabyRide shell only, top slots, handle middle
Lap belt through belt slots, no infant insert

Sled Summary

Sled Pulse Duration = 76.0 ms
Sled Plateau Average Level = -20.9 G
Sled Decel Peak = -25.5 G
Efficiency = Vout / Vin = 22.0 / 26.5 = 83.0%
Sled Delta V = 48.6 kph (30.2 mph)
Stopping Dist. (est) = .537 m

Head Acceleration

X	-1.0 g @ 240 ms	**27.2 g @ 96 ms**
Y	**-2.7 g @ 93 ms**	1.4 g @ 125 ms
Z	-9.5 g @ 122 ms	**30.2 g @ 77 ms**
Resultant	**Peak: 32.7 g @ 69 ms**	
H.I.C. (UN) = 220.0		From 43.0 to 108.6 ms
H.I.C. (36) = 159.8		From 60.5 to 96.5 ms
H.I.C. (15) = 86.5		From 65.0 to 80.0 ms
3.0 ms Clipped Peak = 32.3G		From: 68.6 to 73.2 ms
Total time over 80 G was 0.0 ms		

Chest Acceleration

X	-1.4 g @ 178 ms	**26.1 g @ 79 ms**
Y	**-2.0 g @ 98 ms**	1.3 g @ 47 ms
Z	-8.6 g @ 122 ms	**23.9 g @ 68 ms**
Resultant	**Peak: 34.5 g @ 78 ms**	
3.0 ms Clipped Peak = 34.2G		From: 76.4 to 79.4 ms
Total time over 60 G was 0.0 ms		

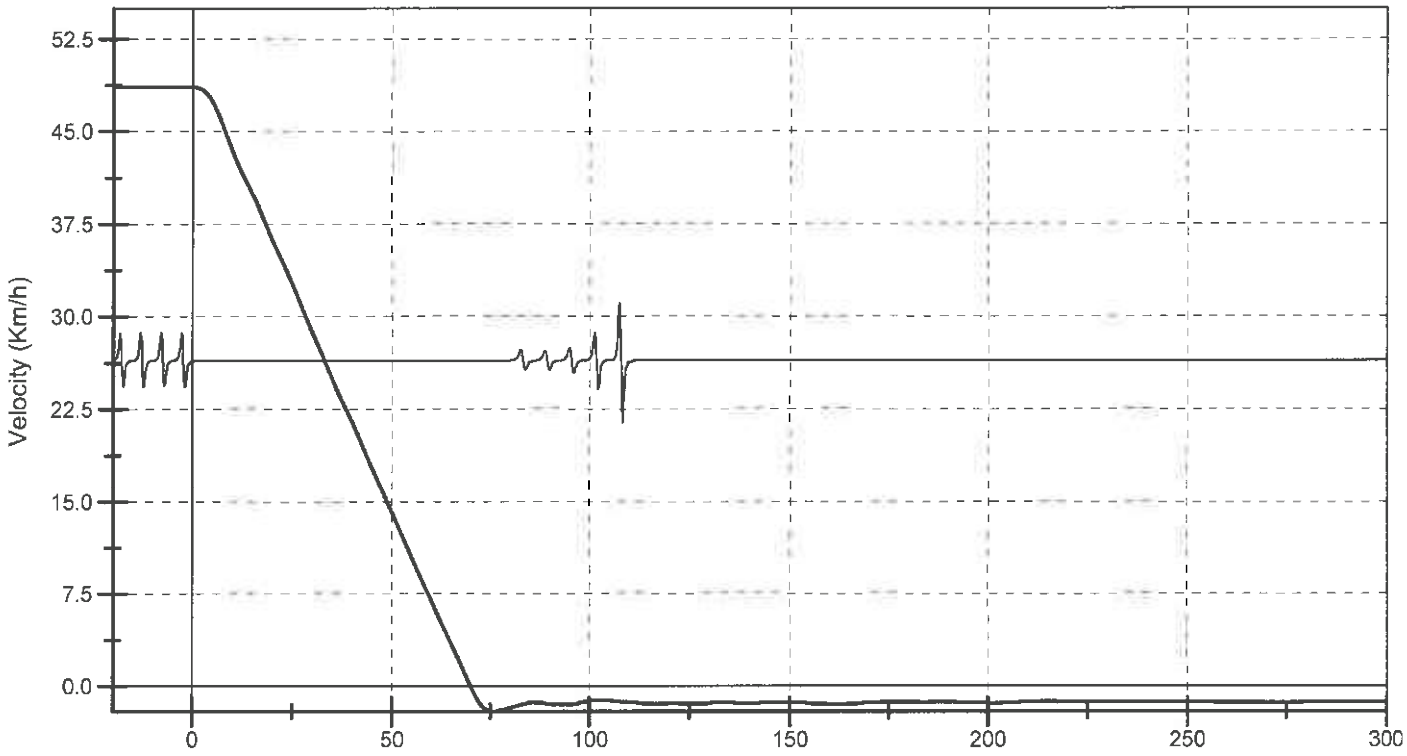
Belt Loads

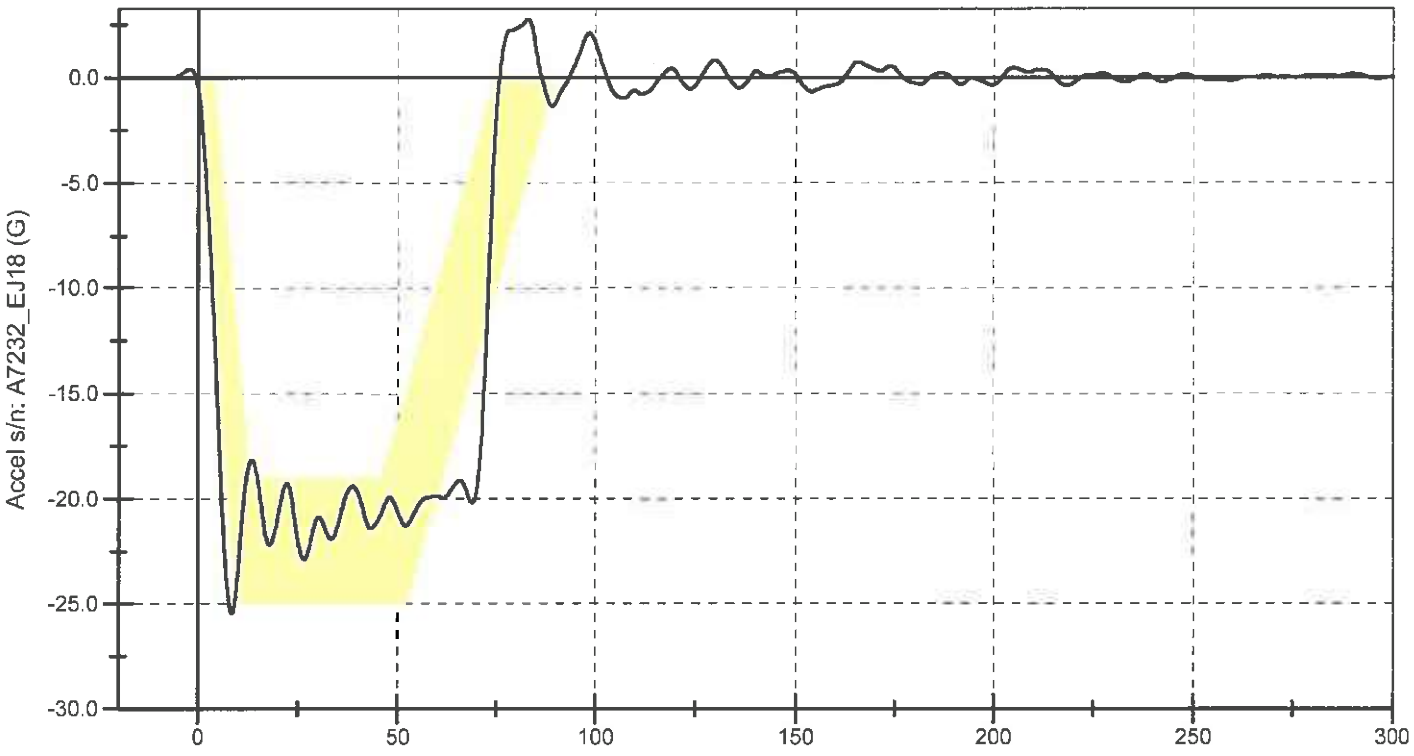
Left Lap Belt Load	-80.4 N (-18.1 lb) @ 258 ms	**1874.8 N (421.5 lb) @ 73 ms**
Right Lap Belt Load	-87.7 N (-19.7 lb) @ 261 ms	**2192.4 N (492.9 lb) @ 74 ms**

UMTRI

Sled Summary

TT1603





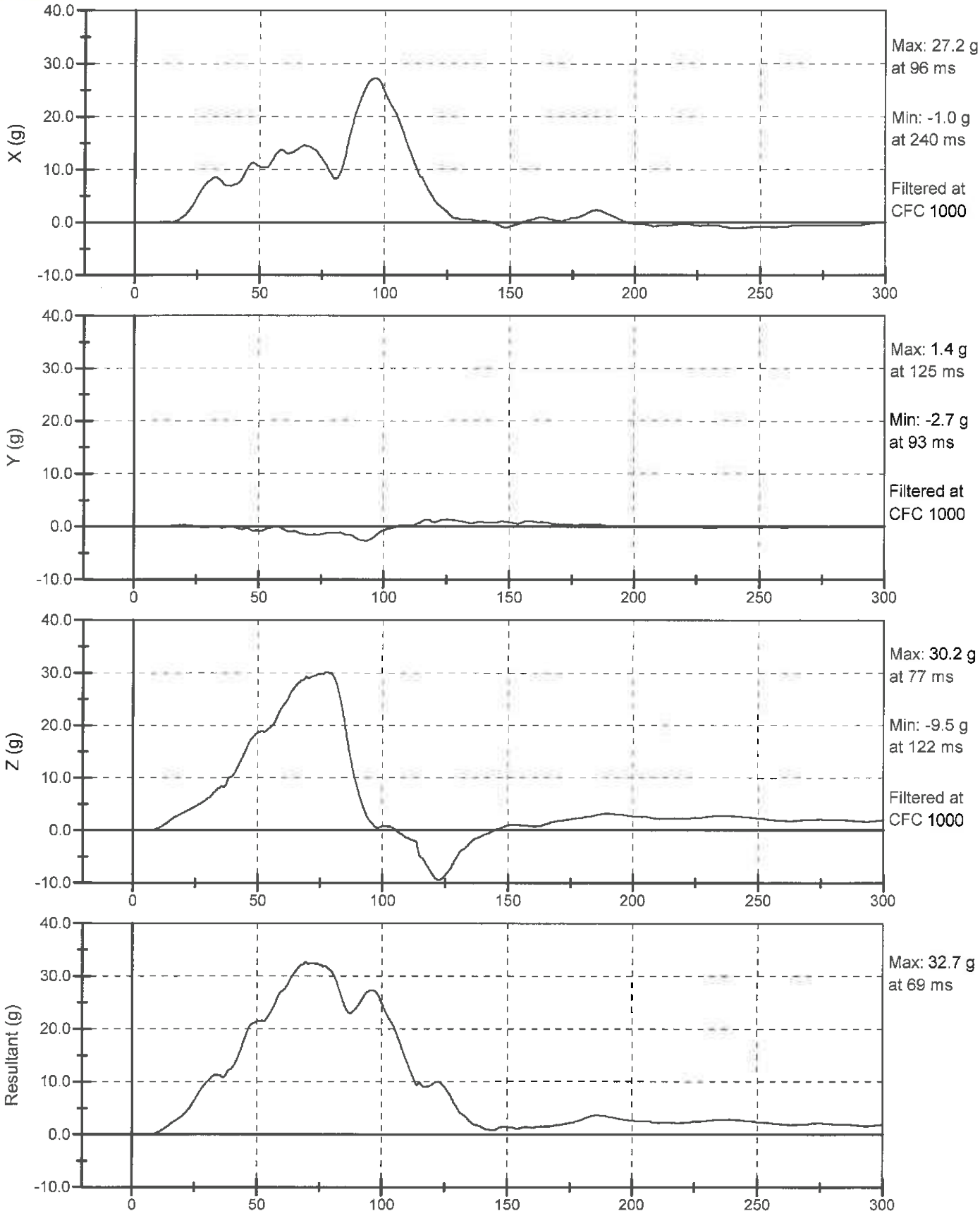
Sled Decel Peak = -25.5 G
Sled Plateau Average Level = -20.9 G
Sled Pulse Duration = 76.0 ms

Stopping Dist. (est) = .537 m
Sled Delta V = 48.6 kph (30.2 mph)
Efficiency = Vout / Vin = 22.0 / 26.5 = 83.0%

UMTRI

Head Acceleration

TT1603



H.I.C. (15) = 86.5 From: 65.0 to 80.0 ms

H.I.C. (36) = 159.8 From: 60.5 to 96.5 ms

H.I.C. (UN) = 220.0 From: 43.0 to 108.6 ms

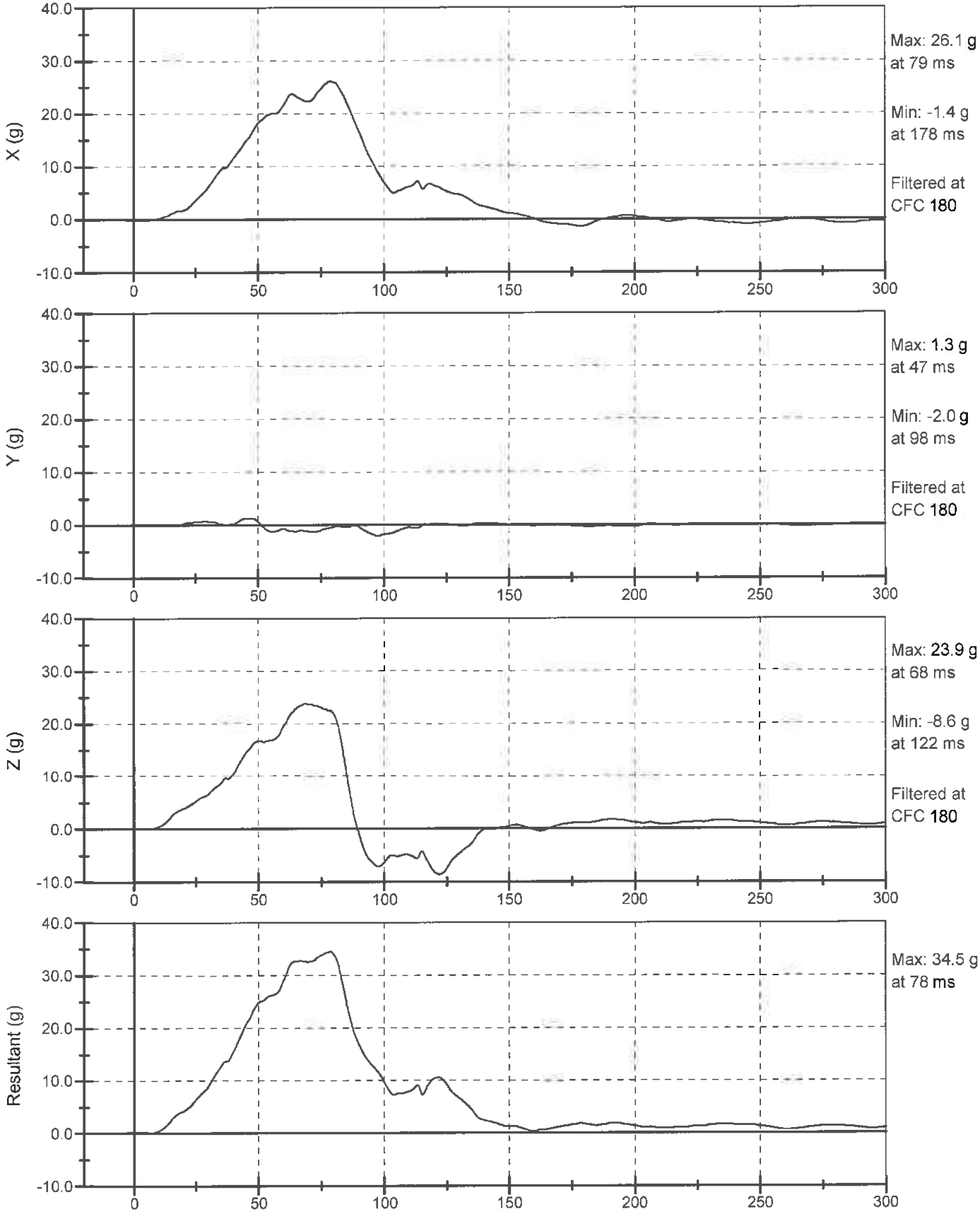
Total time over 80 G was 0.0 ms

3.0 ms Clipped Peak = 32.3G From: 68.6 to 73.2 ms

UMTRI

Chest Acceleration

TT1603



Total time over 60 G was 0.0 ms

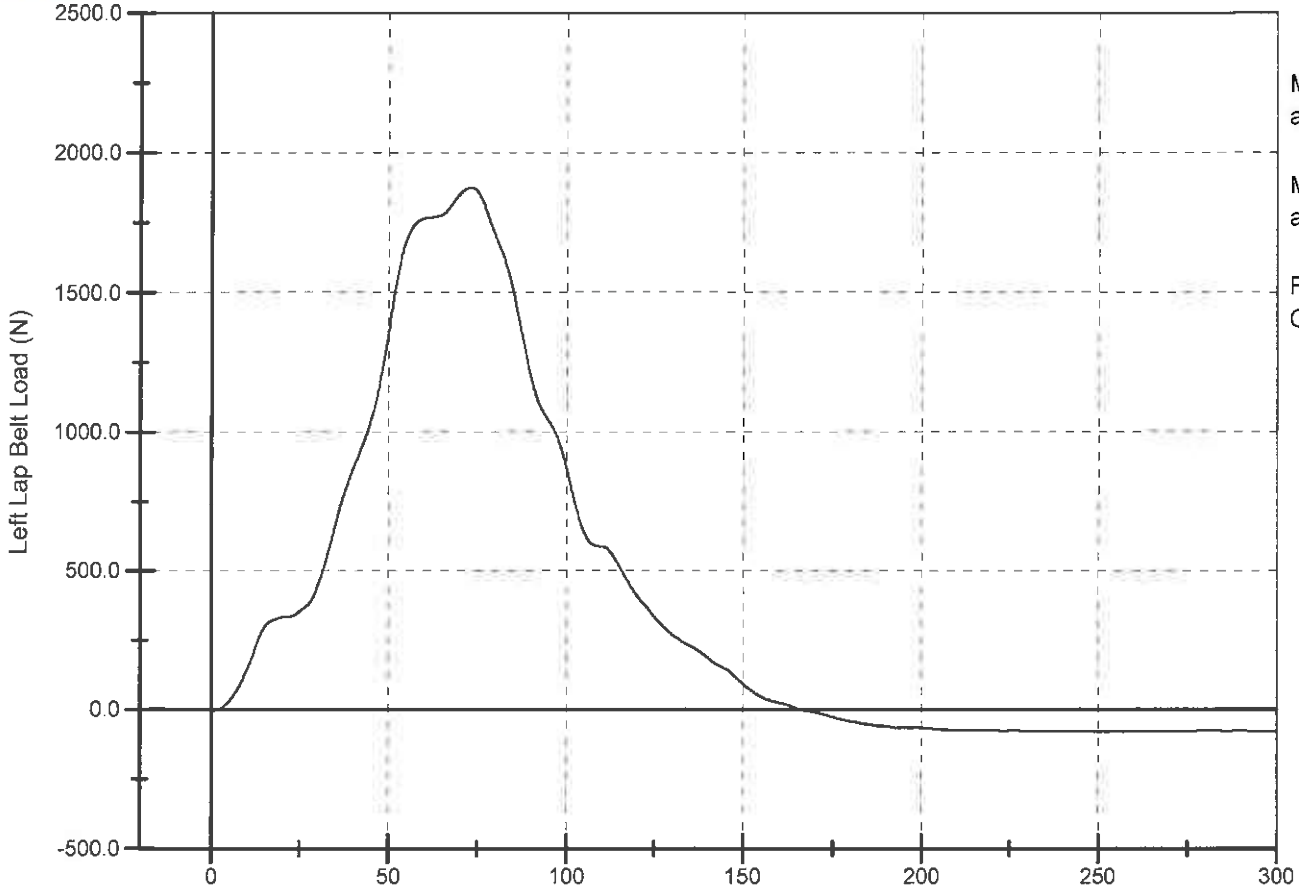
3.0 ms Clipped Peak = 34.2G

From: 76.4 to 79.4 ms

UMTRI

Belt Loads

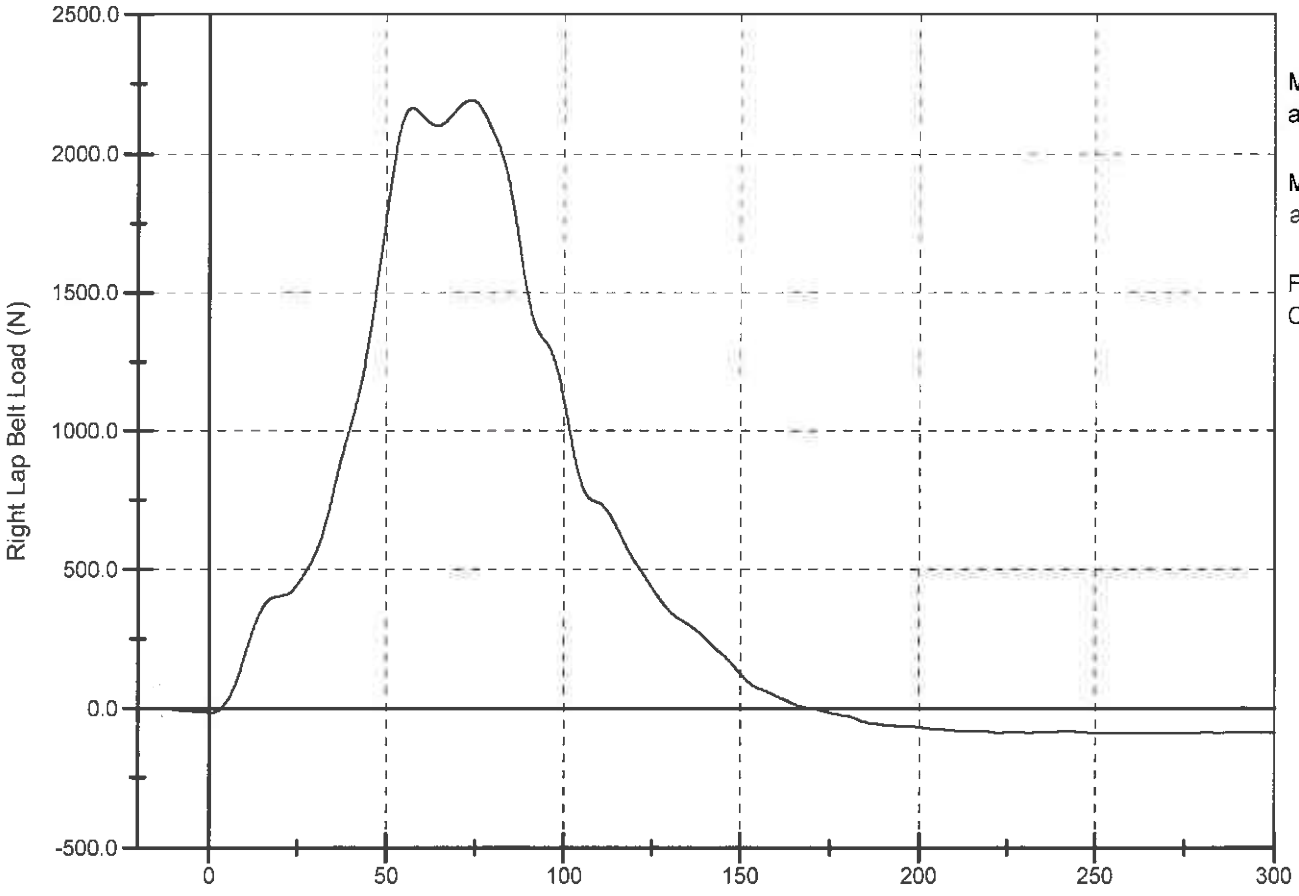
TT1603



Max: 1874.8 N
at 73 ms

Min: -80.4 N
at 258 ms

Filtered at
CFC 60



Max: 2192.4 N
at 74 ms

Min: -87.7 N
at 261 ms

Filtered at
CFC 60

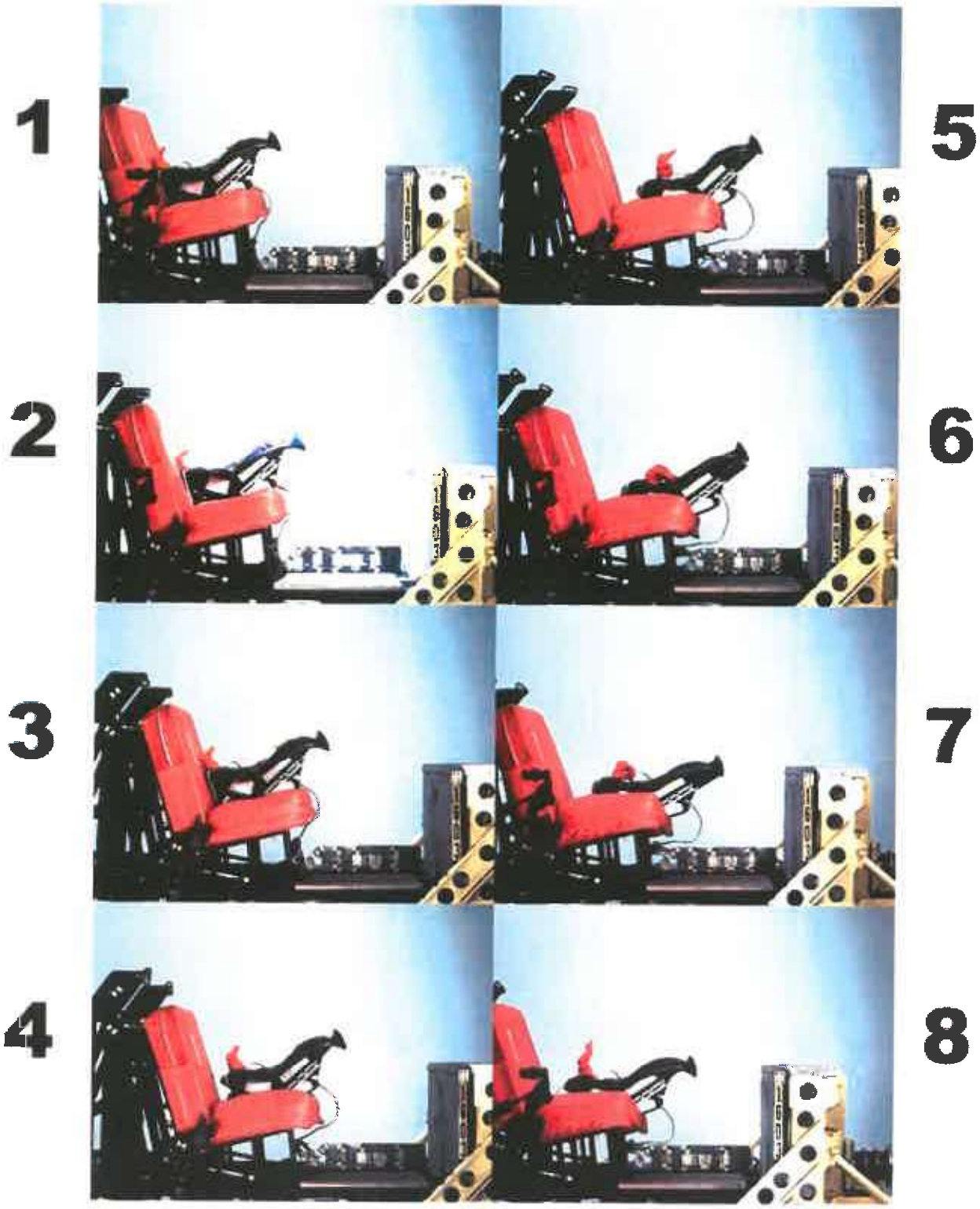
46 Degrees


Max Angle = 58 Degrees

tt1603rs.JPG

tt1603oh.JPG

TT1603



TT1603

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tt1603Ars.JPG

tt1603Aoh.JPG

CHILD RESTRAINT SYSTEM
TEST DATA SUMMARY

Test Number: **TT1604**
Test Date: June 17, 2016

Model: BabyRide infant seat shell only

Manufacturing status: prototype

SET-UP

Part 572: R 12-month CRABI (10 kg)	Frontal impact
Rearward facing	FMVSS 213 buck
Center seat position	Fixed seatback
LATCH lower anchors	48 km/h (30 mph), 24 g
Top slots	
Handle middle	
No infant insert used	
Seatback angle set to ~45˚	

RESULTS

Velocity	**48.6 km/h** (30.2 mph)
Peak Acceleration	**25.5 g**
Back Angle	
Initial	45˚
Maximum	**58˚**
Dummy Retention	
Head target	**yes**
Torso	**yes**
Head Peak Resultant	38.8 g
Head Injury Criterion	234
Head Injury Criterion (36 ms)	**208**
Chest Peak Resultant	39.4 g
Duration over 60 g	0.0 ms
Clipped Chest Resultant	**39.1 g**

Comments

The child restraint flexed inward at the belt path during the test.

UMTRI	Results	TT1604

Nominal = 30 mph/20G
Actual[P] = 48.6 km/h (30.2 mph) (83.0%)

Pressures: 109/890
Plateau Avg.= -20.6 G; Peak = -25.5 G

Dummy: CRABI 12 Month Old (10 kg)
Buck: FMVSS 213, brace, extensions

Buck Weight: 1860

Team Tex BabyRide shell only, top slots, handle middle
LATCH strap through belt slots, no infant insert

Sled Summary

Sled Pulse Duration = 76.3 ms
Sled Plateau Average Level = -20.6 G
Sled Decel Peak = -25.5 G

Efficiency = Vout / Vin = 22.0 / 26.5 = 83.0%
Sled Delta V = 48.6 kph (30.2 mph)
Stopping Dist. (est) = .536 m

Head Acceleration

X	-2.2 g @ 146 ms	**20.0 g @ 93 ms**
Y	-.5 g @ 64 ms	**3.3 g @ 99 ms**
Z	-7.3 g @ 129 ms	**36.6 g @ 70 ms**
Resultant	**Peak: 38.8 g @ 70 ms**	
H.I.C. (UN) = 233.9		From 42.6 to 104.0 ms
H.I.C. (36) = 208.2		From 51.2 to 87.2 ms
H.I.C. (15) = 124.9		From 63.3 to 78.3 ms
3.0 ms Clipped Peak = 38.5G		From: 69.2 to 72.2 ms
Total time over 80 G was 0.0 ms		

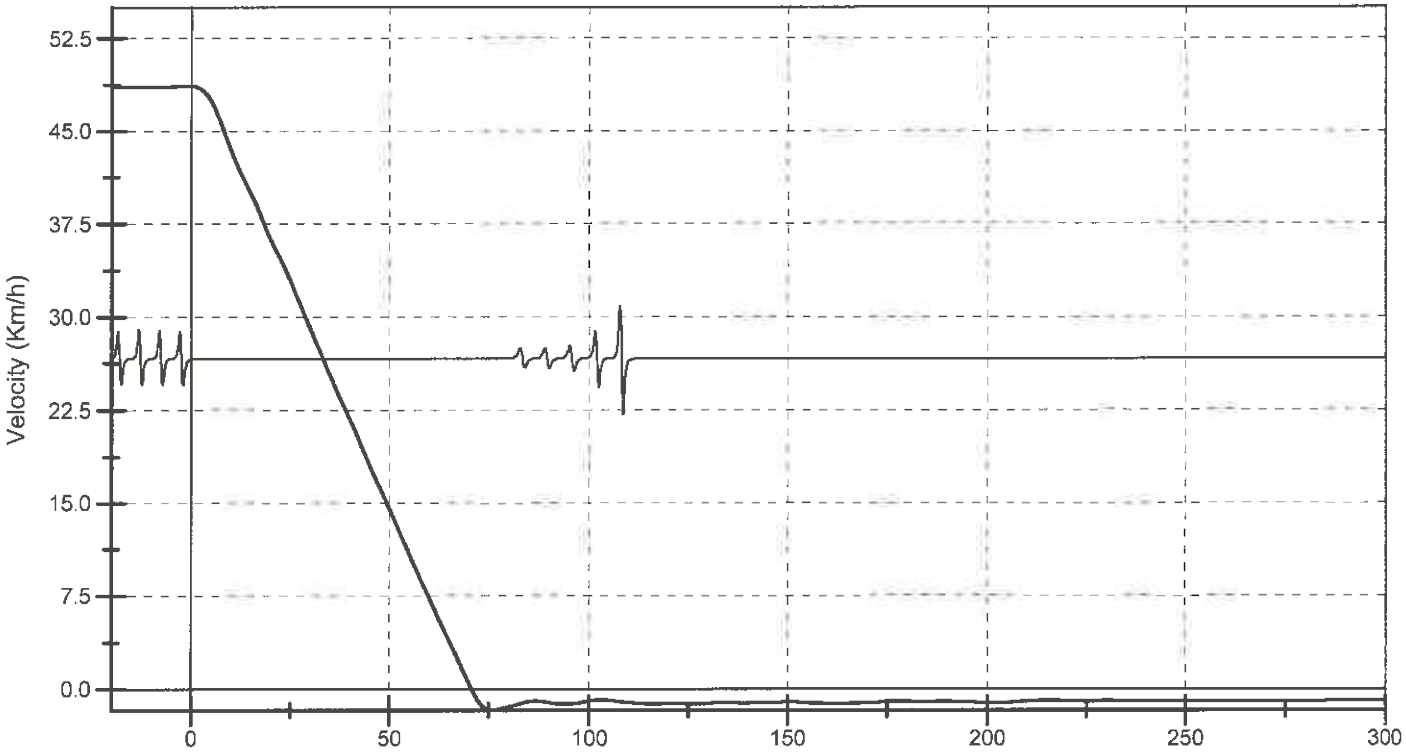
Chest Acceleration

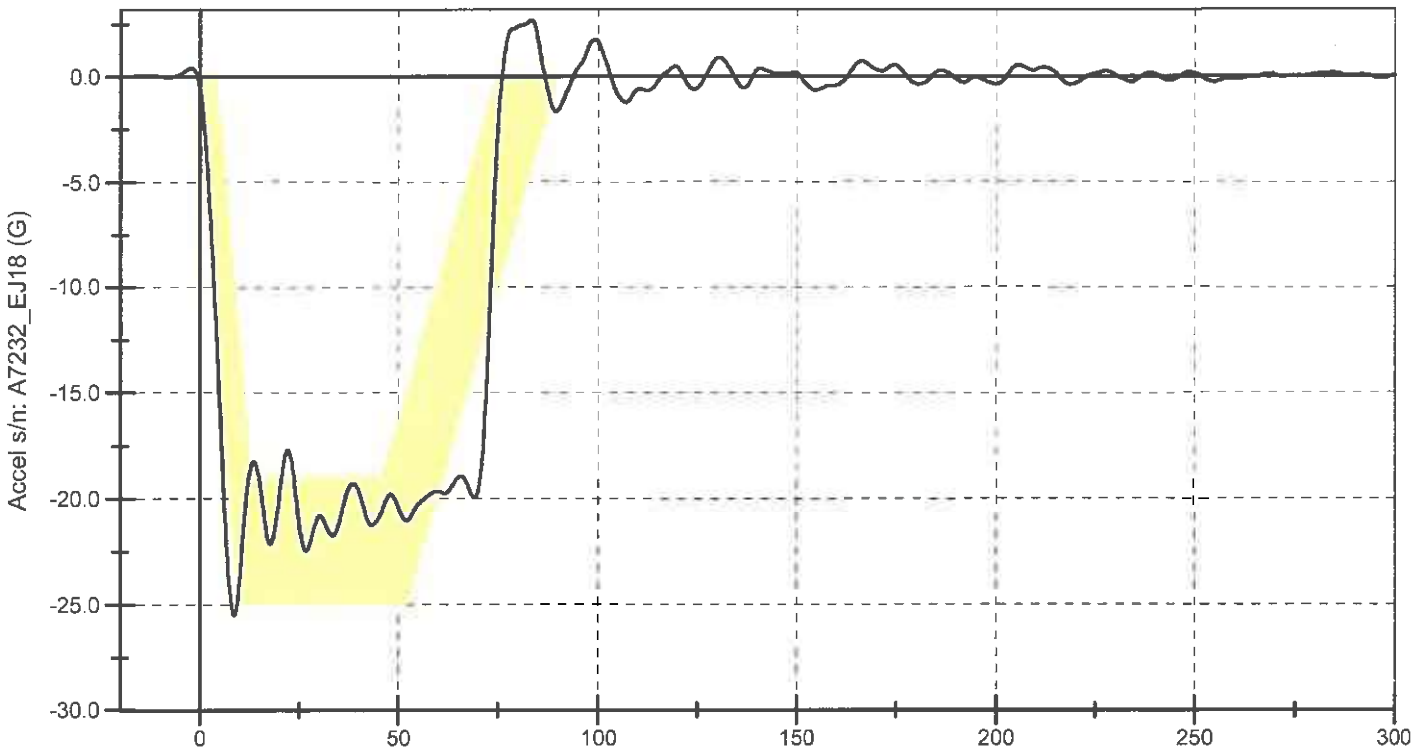
X	-1.6 g @ 217 ms	**29.5 g @ 68 ms**
Y	**-3.0 g @ 66 ms**	1.7 g @ 82 ms
Z	-8.4 g @ 99 ms	**26.2 g @ 67 ms**
Resultant	**Peak: 39.4 g @ 67 ms**	
3.0 ms Clipped Peak = 39.1G		From: 66.0 to 69.0 ms
Total time over 60 G was 0.0 ms		

LATCH Belt Loads

Left Lap Belt Load	-48.7 N (-10.9 lb) @ 268 ms	**1816.8 N (408.4 lb) @ 60 ms**
Right Lap Belt Load	-78.9 N (-17.7 lb) @ 289 ms	**2172.5 N (488.4 lb) @ 57 ms**

UMTRI Sled Summary TT1604





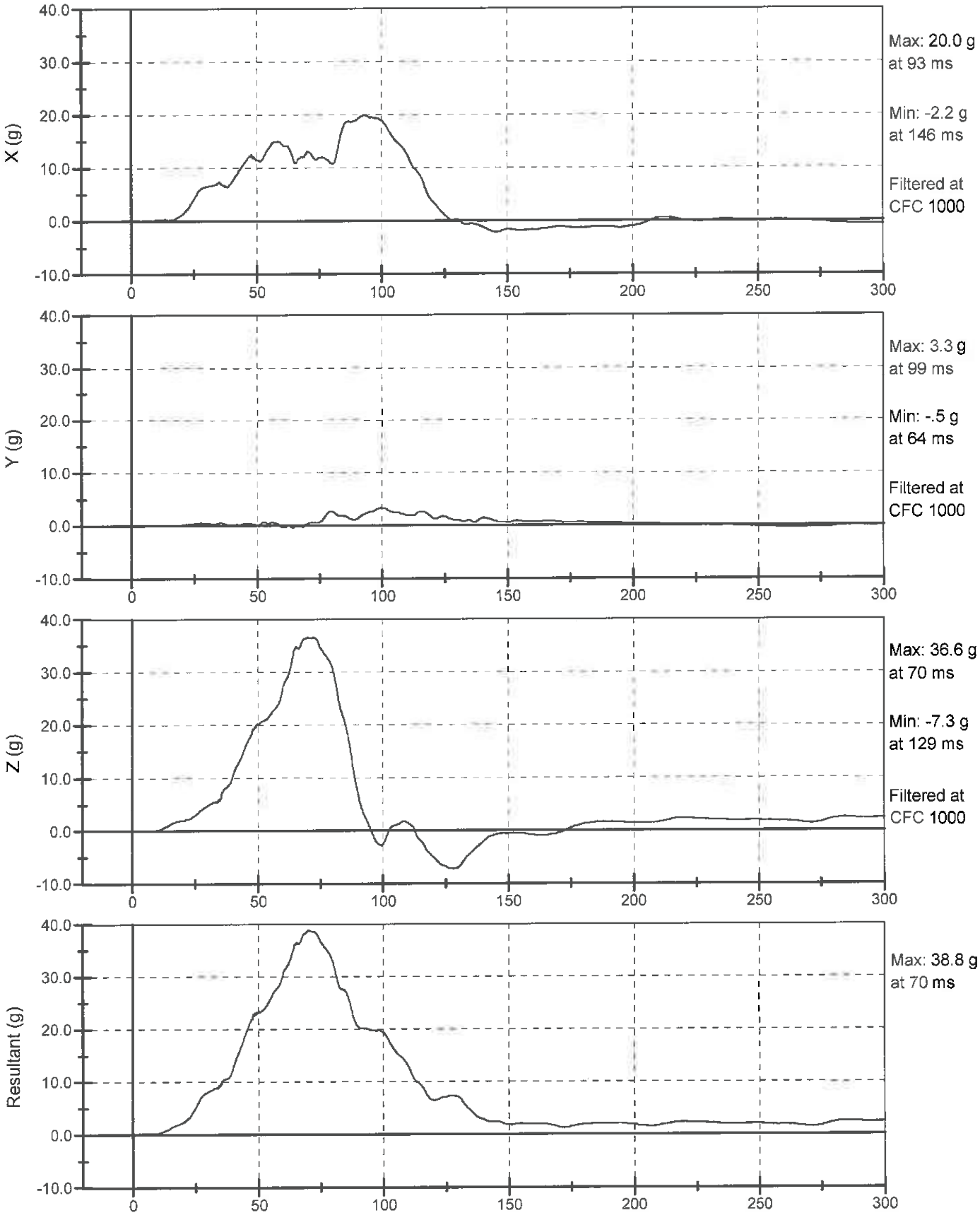
Sled Decel Peak = -25.5 G
Sled Plateau Average Level = -20.6 G
Sled Pulse Duration = 76.3 ms

Stopping Dist. (est) = .536 m
Sled Delta V = 48.6 kph (30.2 mph)
Efficiency = Vout / Vin = 22.0 / 26.5 = 83.0%

UMTRI

Head Acceleration

TT1604



H.I.C. (15) = 124.9 From: 63.4 to 78.4 ms

H.I.C. (36) = 208.2 From: 51.3 to 87.3 ms

H.I.C. (UN) = 233.9 From: 42.7 to 104.1 ms

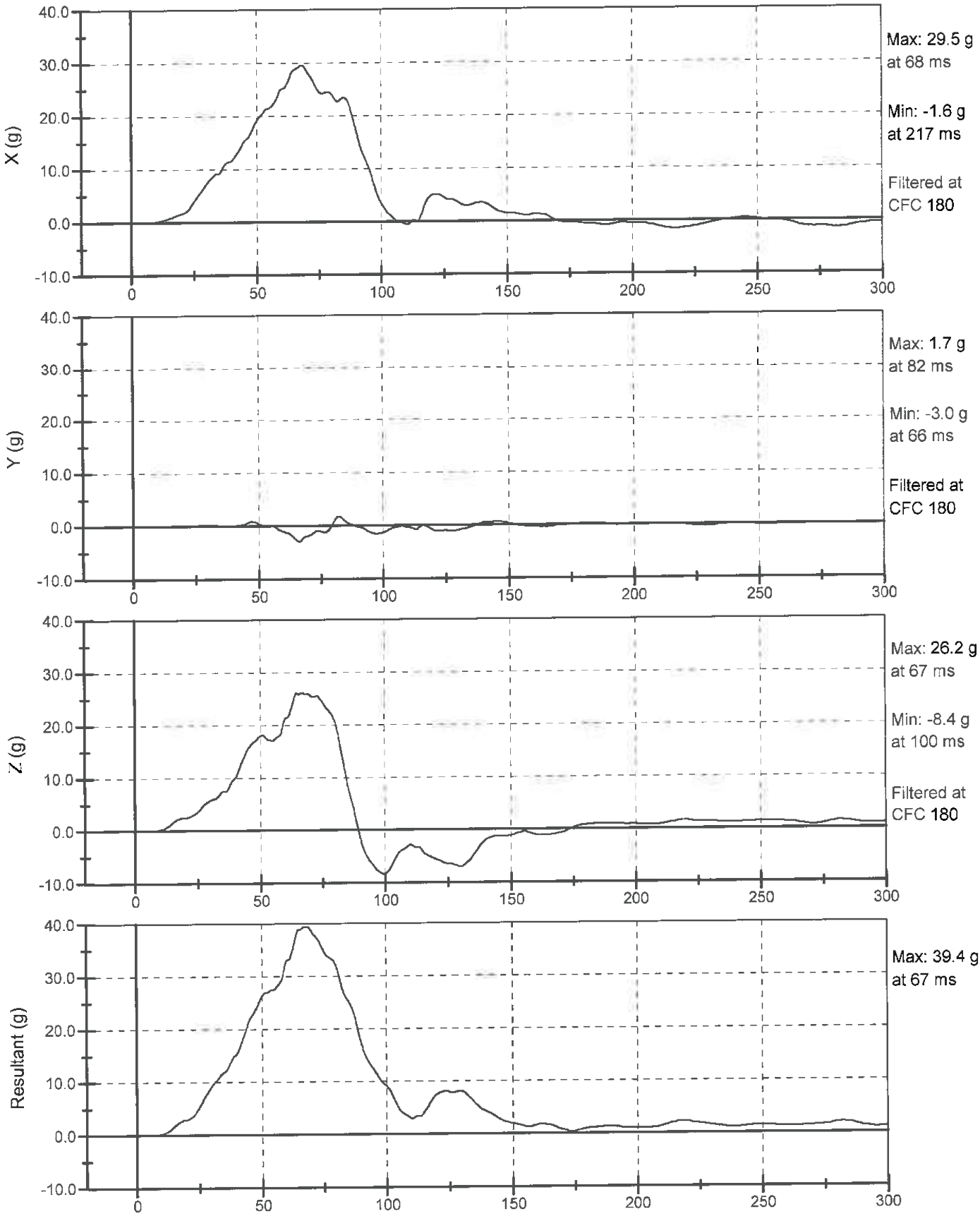
Total time over 80 G was 0.0 ms

3.0 ms Clipped Peak = 38.5G From: 69.3 to 72.3 ms

UMTRI

Chest Acceleration

TT1604



Total time over 60 G was 0.0 ms

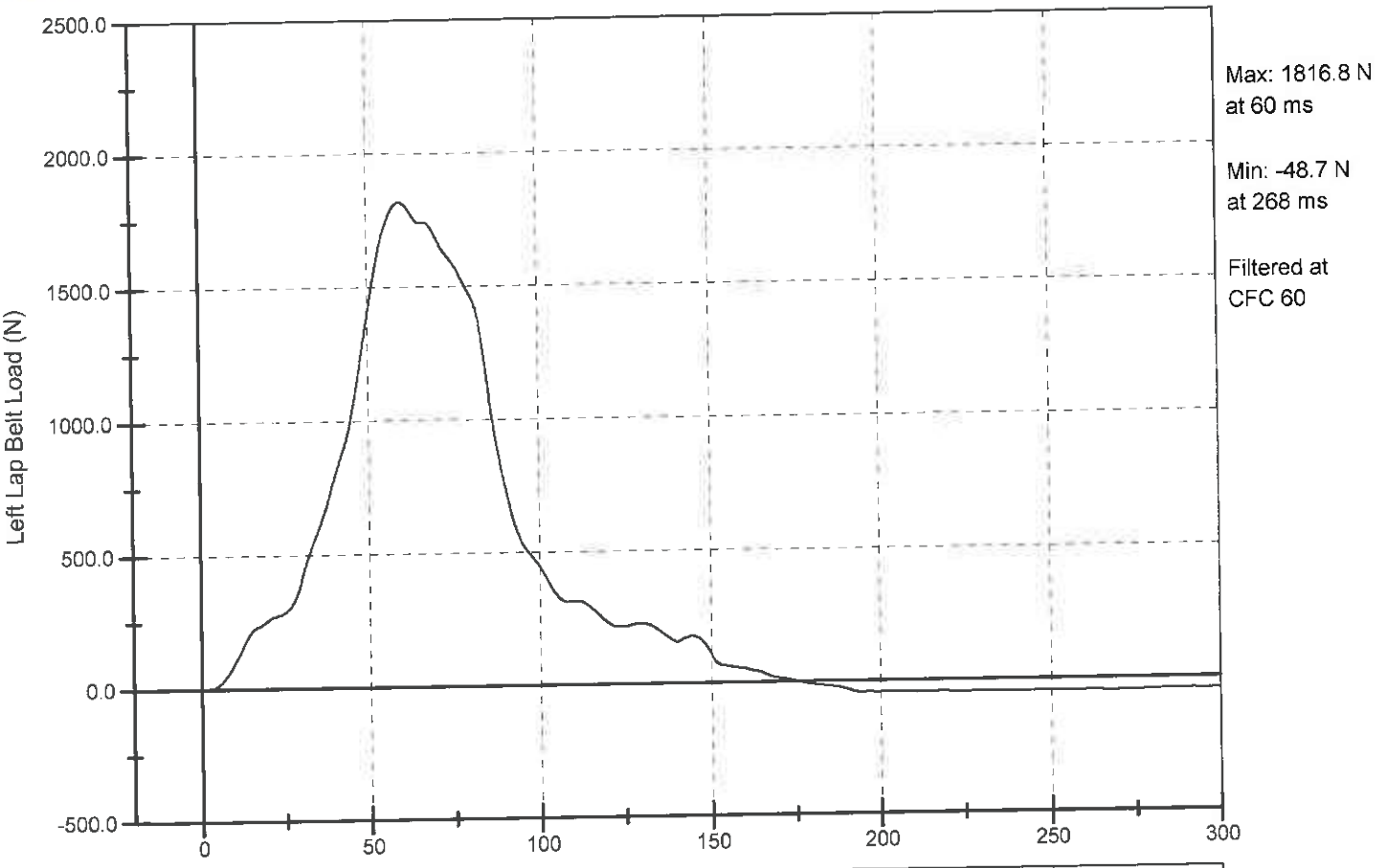
3.0 ms Clipped Peak = 39.1G

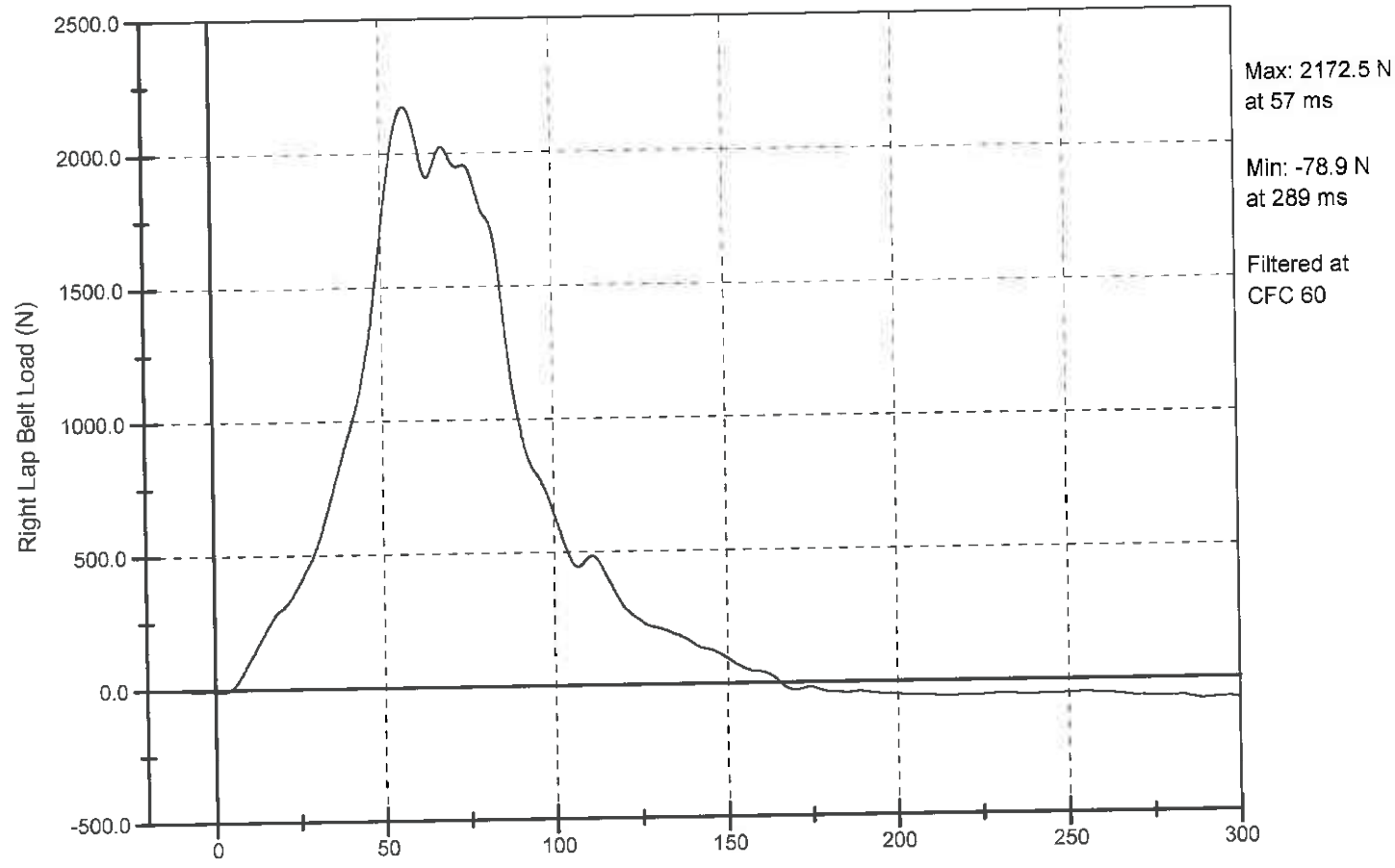
From: 66.1 to 69.1 ms

UMTRI

LATCH Belt Loads

TT1604





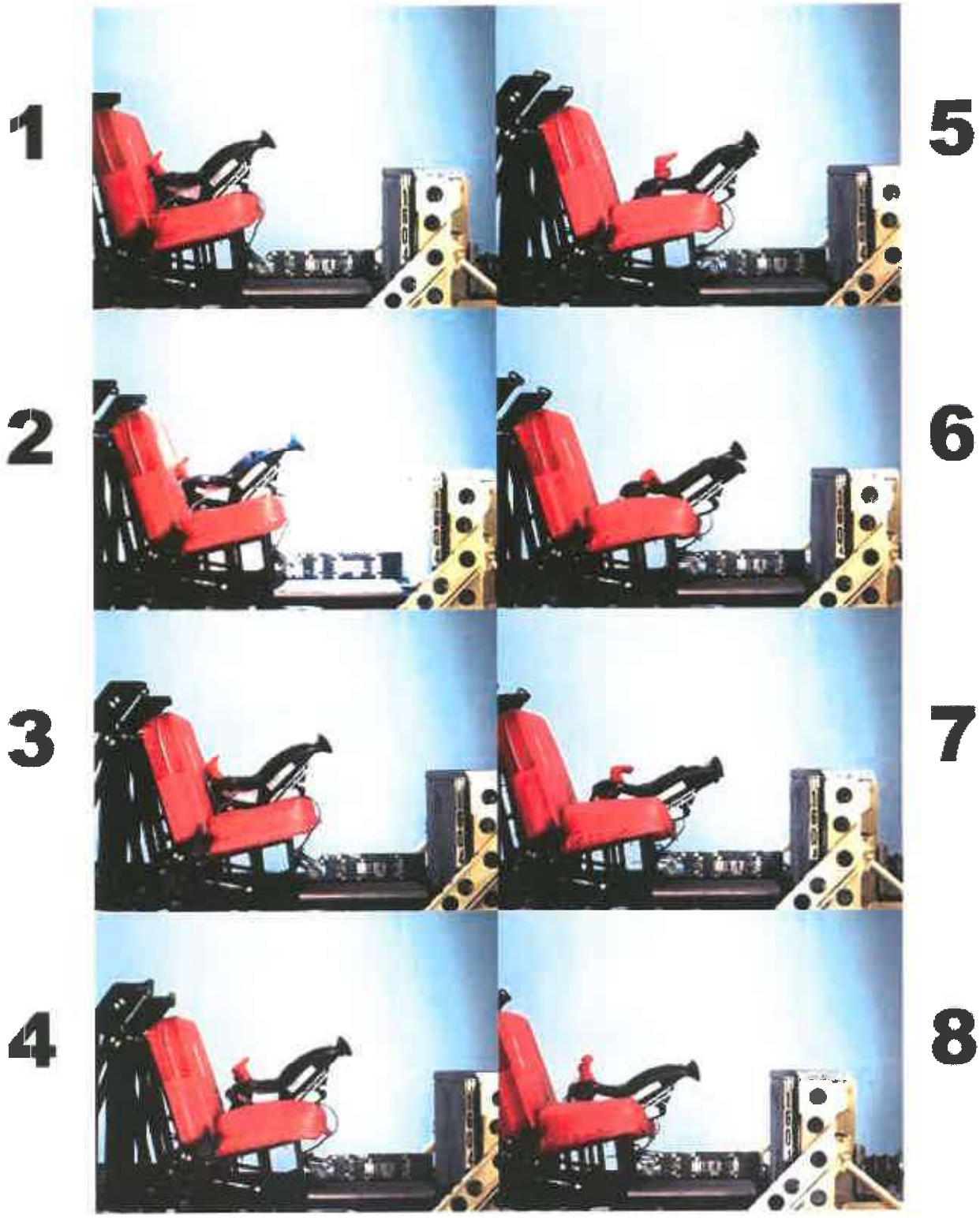
Initial = 45 Degrees


Max Angle = 58 Degrees

tt1604rs.JPG

tt1604oh.JPG

TT1604



TT1604

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tt1604Ars.JPG

tt1604Aoh.JPG

CHILD RESTRAINT SYSTEM
TEST DATA SUMMARY

Test Number: **TT1605**
Test Date: June 17, 2016

Model: BabyRide infant seat shell only

Manufacturing status: prototype

SET-UP

Part 572: K Newborn dummy (3.4 kg)	Frontal impact
Rearward facing	FMVSS 213 buck
Center seat position	Fixed seatback
LATCH lower anchors	48 km/h (30 mph), 24 g
Bottom slots	
Handle middle	
Infant insert used	
Seatback angle set to ~45˚	

RESULTS

Velocity	**48.6 km/h**	(30.2 mph)
Peak Acceleration	**24.6 g**	
Back Angle with Respect to Vertical		
Initial	44˚	
Maximum	**48˚**	
Dummy Retention		
Head target	**yes**	
Torso	**yes**	

Comments

The child restraint flexed inward at the belt path during the test.

UMTRI	Results	TT1605

Nominal = 30 mph/20G
Actual[P] = 48.6 km/h (30.2 mph) (84.2%)

Pressures: 108/890
Plateau Avg.= -20.6 G; Peak = -24.6 G

Dummy: Newborn (7 lb - 3.1 kg)
Buck: FMVSS 213, brace, extensions

Buck Weight: 1845

Team Tex BabyRide shell only, bottom slots, handle middle
LATCH strap through belt slots, infant insert used

Sled Summary

Sled Pulse Duration = 76.2 ms
Sled Plateau Average Level = -20.6 G
Sled Decel Peak = -24.6 G

Efficiency = Vout / Vin = 22.2 / 26.4 = 84.2%
Sled Delta V = 48.6 kph (30.2 mph)
Stopping Dist. (est) = .535 m

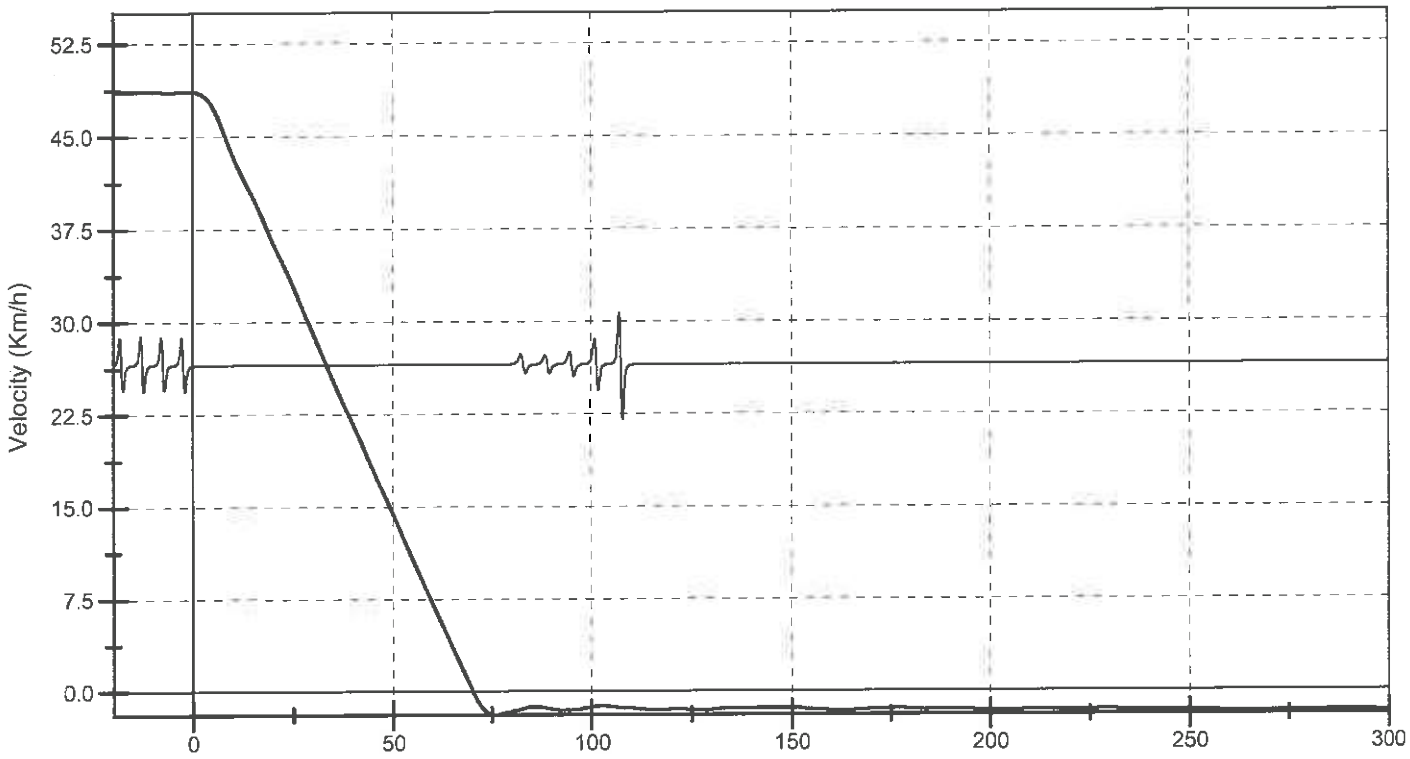
Belt Loads

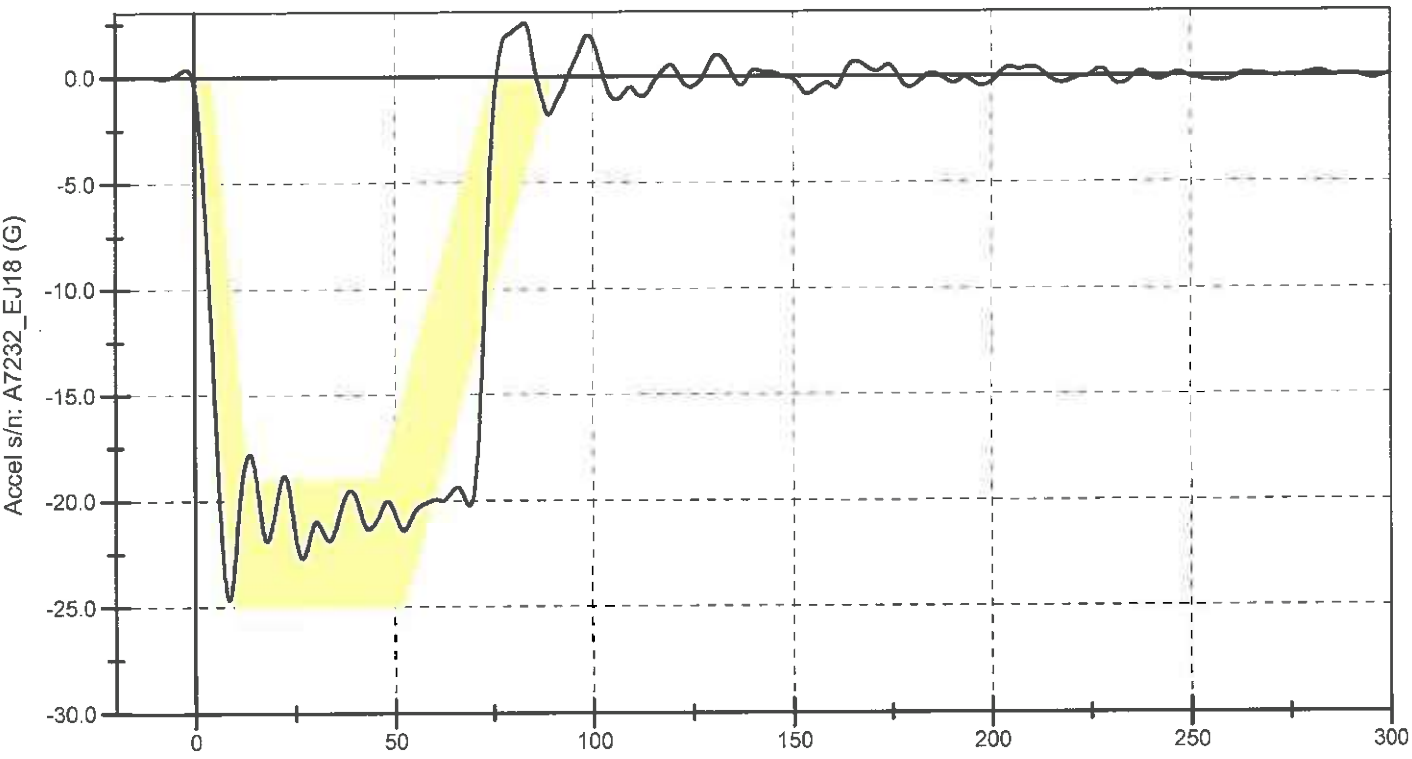
Left Lap Belt Load	-57.6 N (-12.9 lb) @ 298 ms	**898.4 N (202.0 lb) @ 66 ms**
Right Lap Belt Load	-65.3 N (-14.7 lb) @ 150 ms	**1132.5 N (254.6 lb) @ 68 ms**

UMTRI

Sled Summary

TT1605





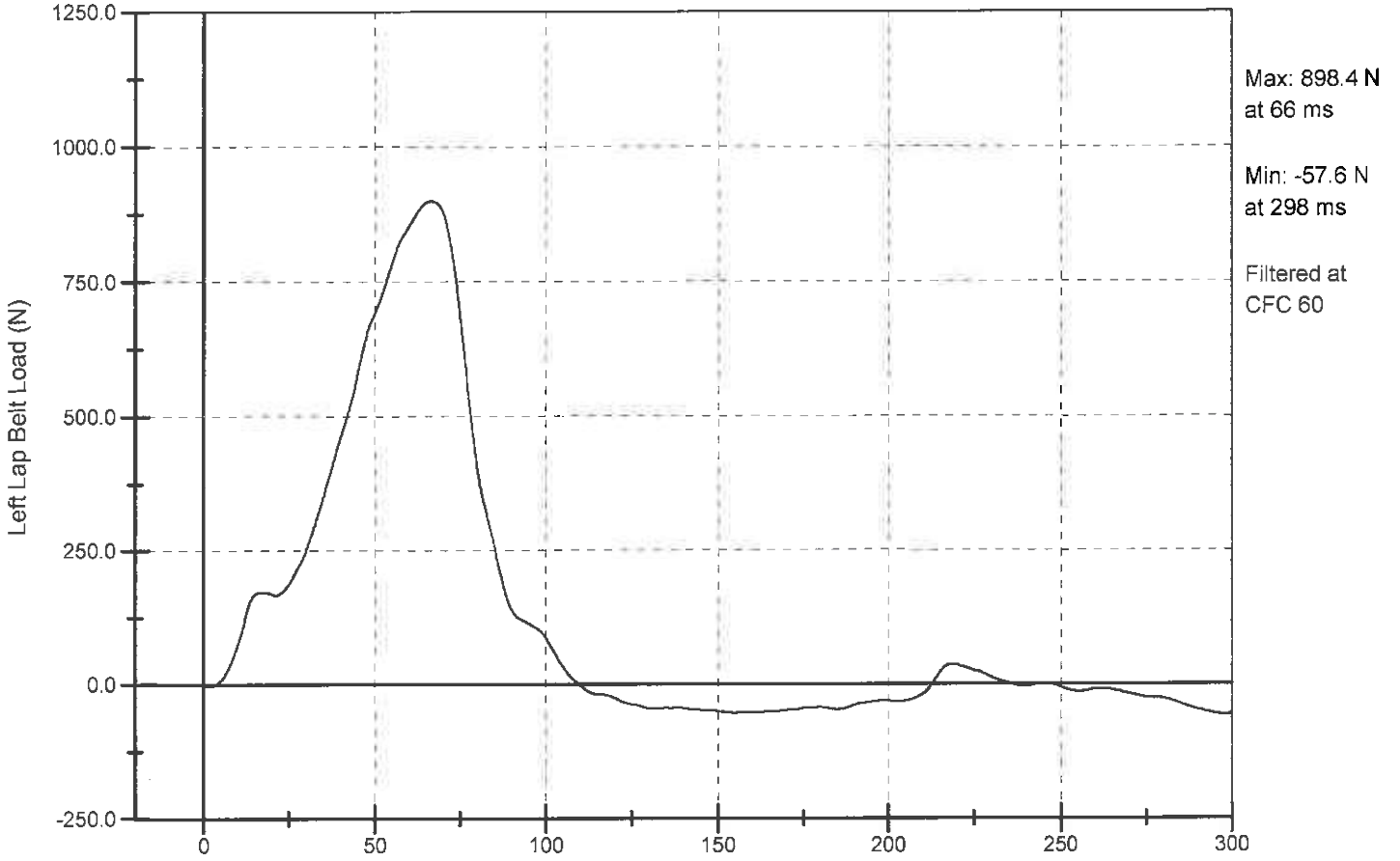
Sled Decel Peak = -24.6 G
Sled Plateau Average Level = -20.6 G
Sled Pulse Duration = 76.2 ms

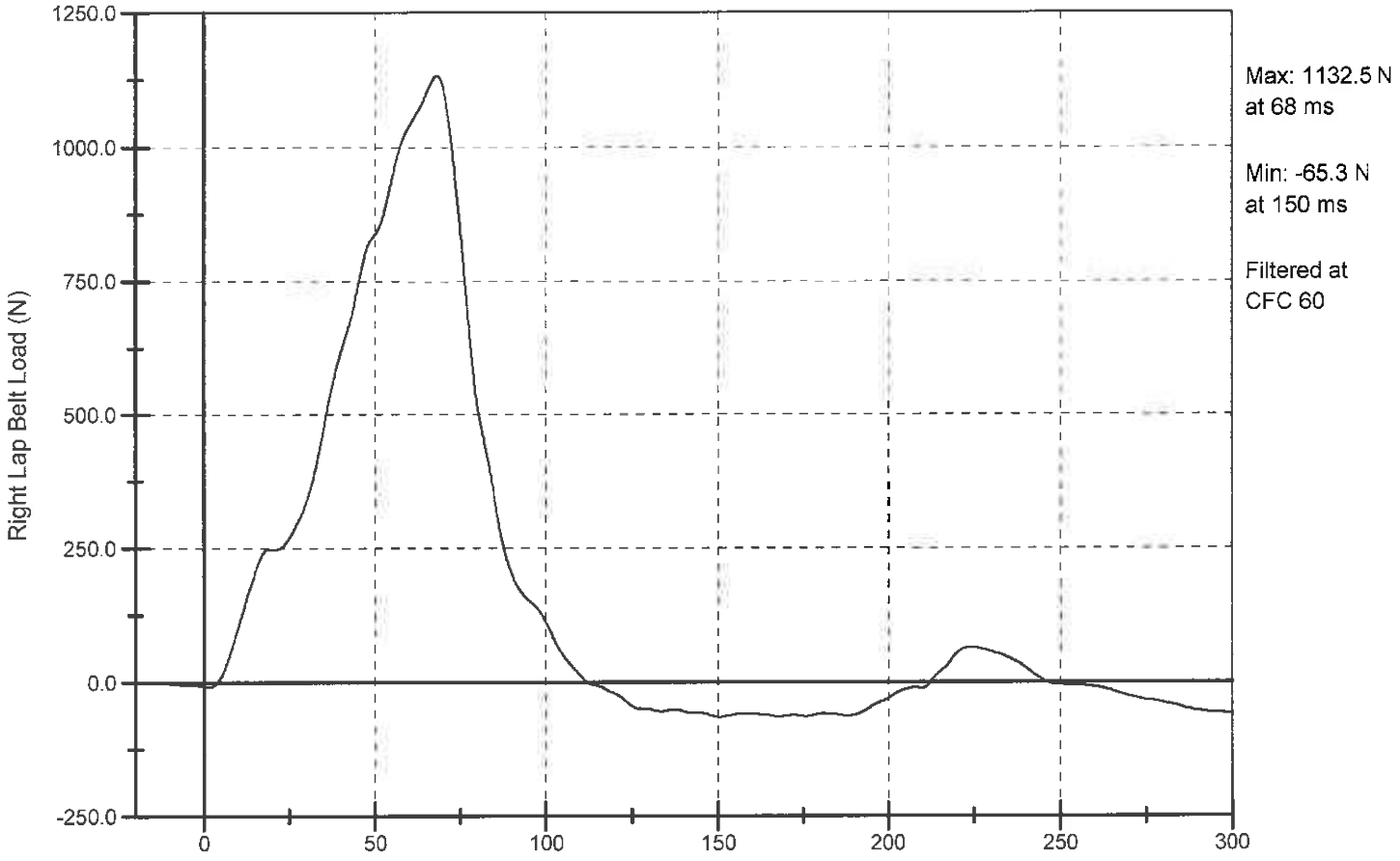
Stopping Dist. (est) = .535 m
Sled Delta V = 48.6 kph (30.2 mph)
Efficiency = Vout / Vin = 22.2 / 26.4 = 84.2%

UMTRI

Belt Loads

TT1605





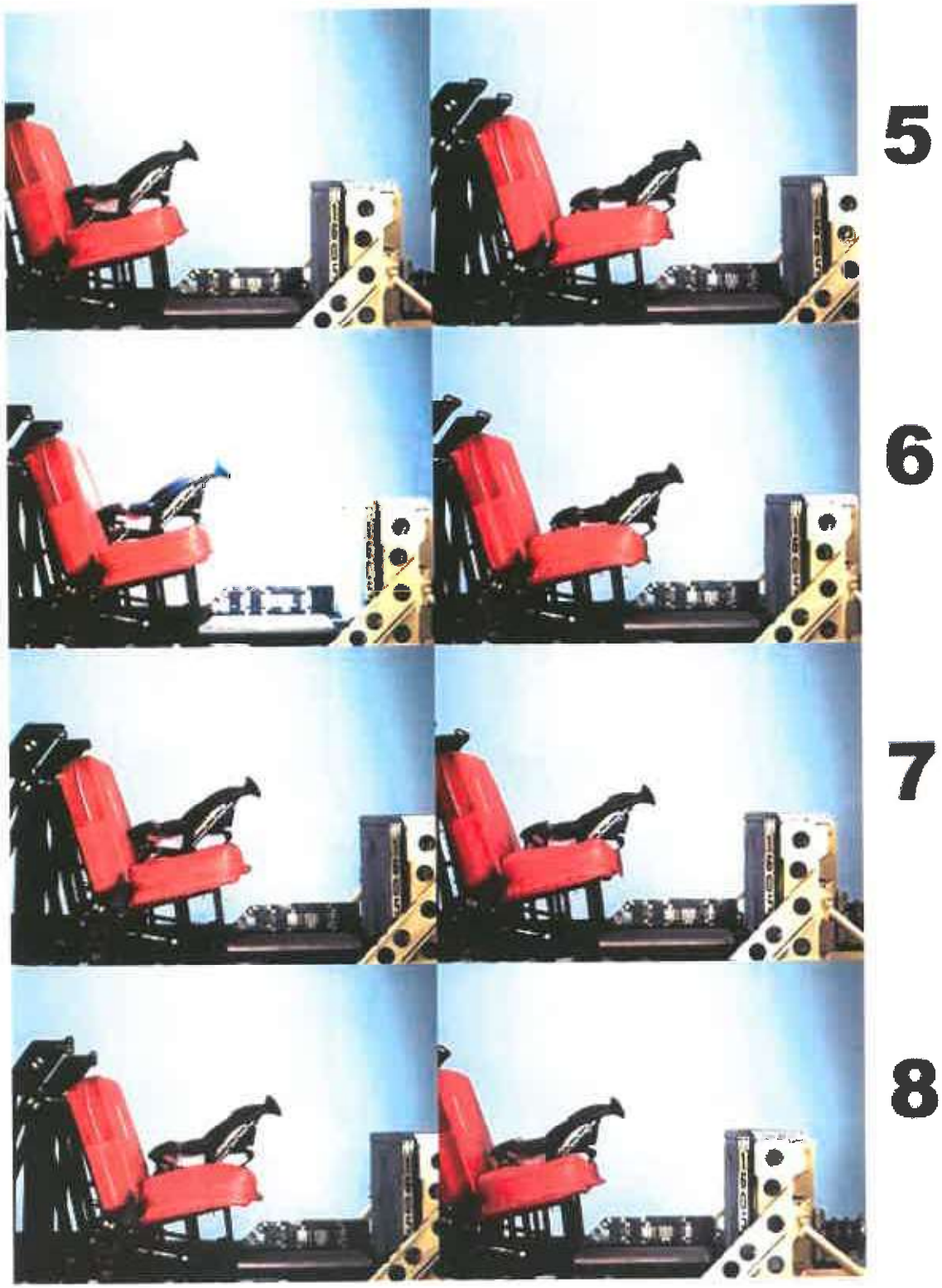
Initial Angle = 44 Degrees


Max Angle = 48 degrees

tt1605rs.JPG

tt1605oh.JPG

TT1605



TT1605

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tt1605Ars.JPG

tt1605Aoh.JPG

CHILD RESTRAINT SYSTEM
TEST DATA SUMMARY

Test Number: **TT1606**
Test Date: June 17, 2016

Model: BabyRide infant seat shell only

Manufacturing status: prototype

SET-UP

Riley low birth weight dummy (2.2 kg)	Frontal impact
Rearward facing	FMVSS 213 buck
Center seat position	Fixed seatback
LATCH lower anchors	48 km/h (30 mph), 24 g
Bottom slots	
Handle middle	
Infant insert used	
Seatback angle set to ~45˚	

RESULTS

Velocity	**48.8 km/h** (30.3 mph)
Peak Acceleration	**25.5 g**
Back Angle with Respect to Vertical	
Initial	45˚
Maximum	**41˚**
Dummy Retention	
Head target	**yes**
Torso	**yes**

Comments

The child restraint flexed inward at the belt path during the test and did not rotate backward from the initial position. The harness was tightened the maximum allowable amount by pulling the stitching near the shoulder straps loop through the A-Lock at the bottom of the seat (per sponsor instruction).

UMTRI	Results	TT1606

Nominal = 30 mph/20G
Actual[P] = 48.8 km/h (30.3 mph) (84.9%)

Pressures: 108/890
Plateau Avg.= -20.6 G; Peak = -25.5 G

Dummy: Riley Low Birth Weight (5 lb - 2.2 kg)
Buck: FMVSS 213, brace, extensions

Buck Weight: 1843

Team Tex BabyRide shell only, bottom slots, handle middle
LATCH through belt slots

Sled Summary

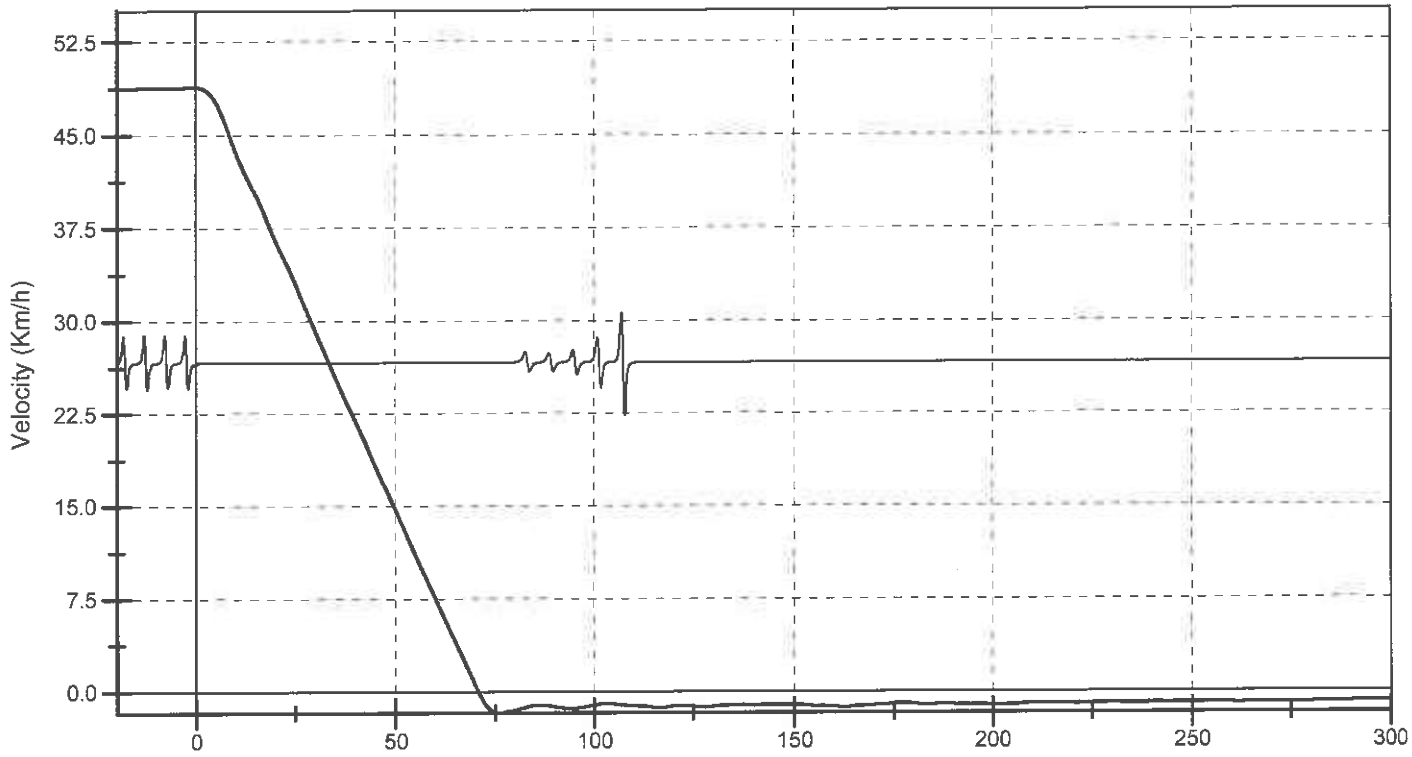
Sled Pulse Duration = 76.4 ms
Sled Plateau Average Level = -20.6 G
Sled Decel Peak = -25.5 G

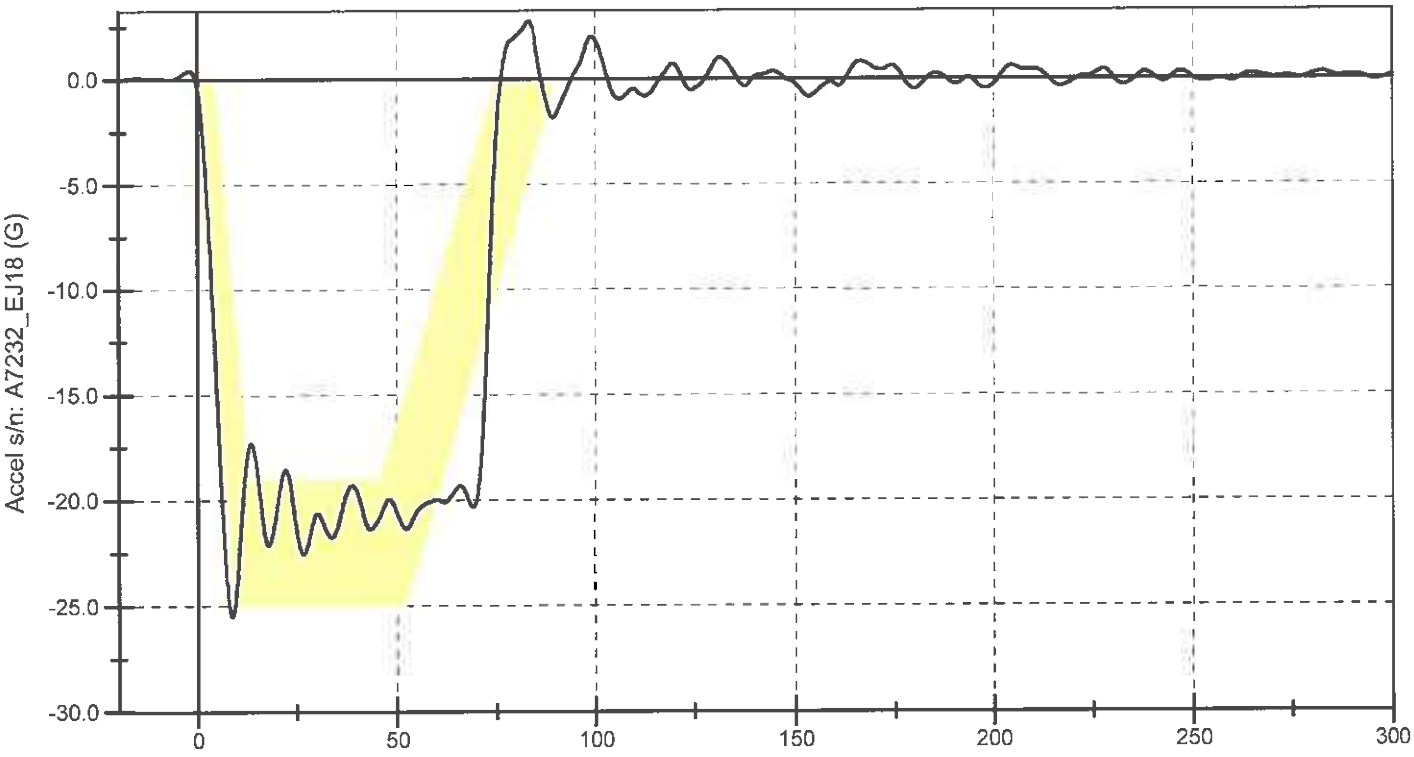
Efficiency = Vout / Vin = 22.4 / 26.4 = 84.9%
Sled Delta V = 48.8 kph (30.3 mph)
Stopping Dist. (est) = .537 m

Belt Loads

Left Lap Belt Load	-70.6 N (-15.9 lb) @ 130 ms	**542.2 N (121.9 lb) @ 55 ms**
Right Lap Belt Load	-88.1 N (-19.8 lb) @ 138 ms	**712.8 N (160.2 lb) @ 57 ms**

UMTRI Sled Summary TT1606





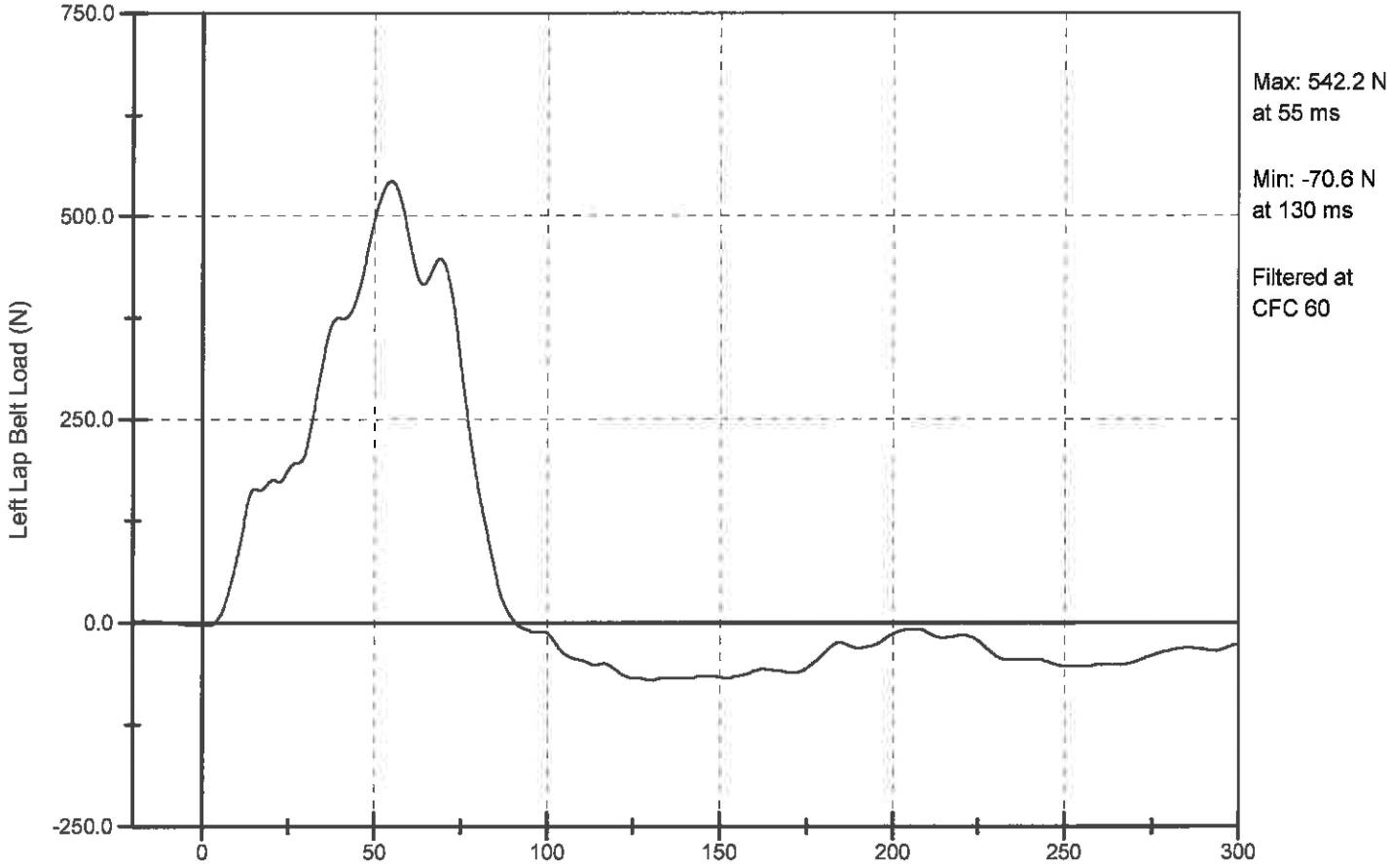
Sled Decel Peak = -25.5 G
Sled Plateau Average Level = -20.6 G
Sled Pulse Duration = 76.4 ms

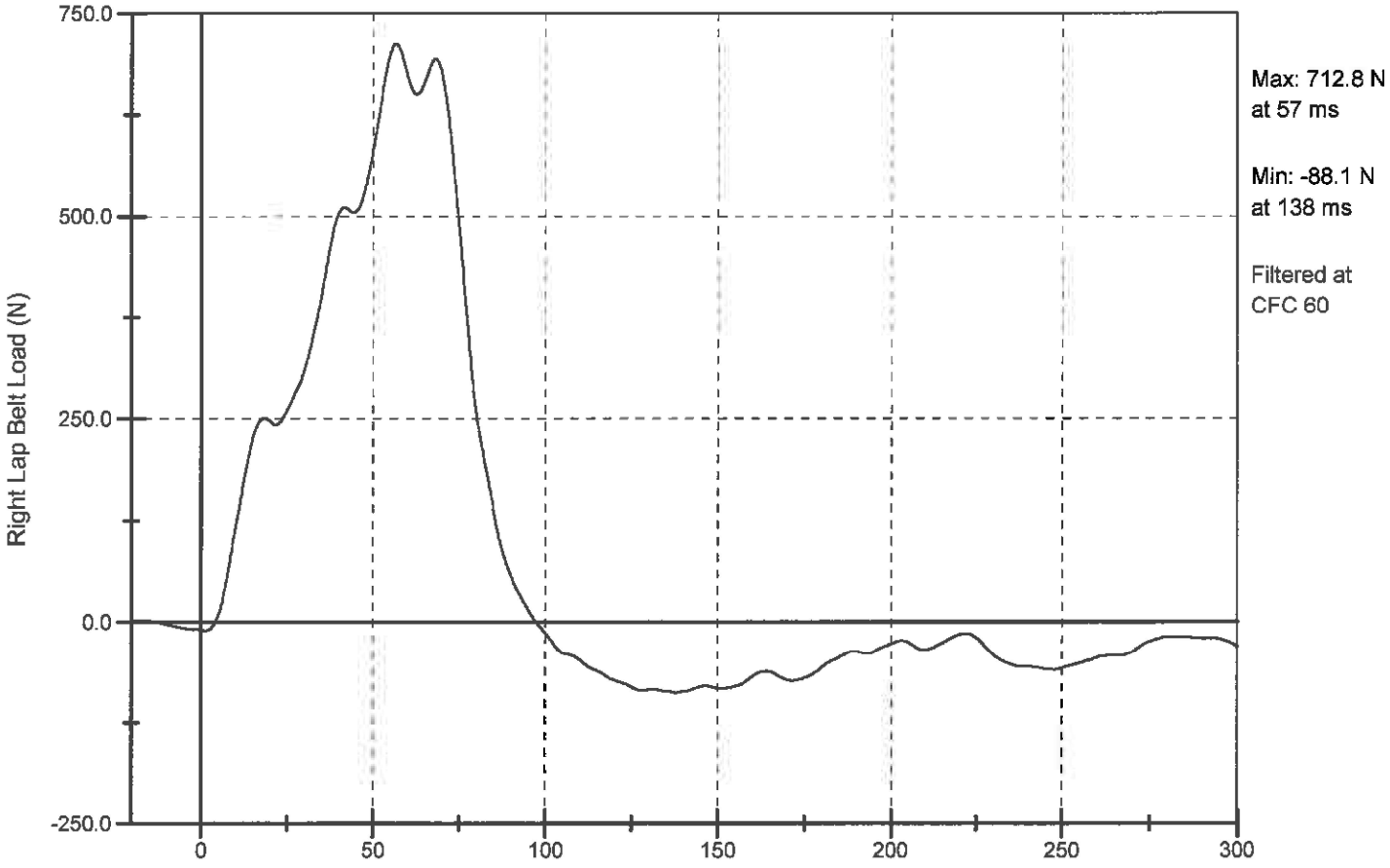
Stopping Dist. (est) = .537 m
Sled Delta V = 48.8 kph (30.3 mph)
Efficiency = Vout / Vin = 22.4 / 26.4 = 84.9%

UMTRI

Belt Loads

TT1606





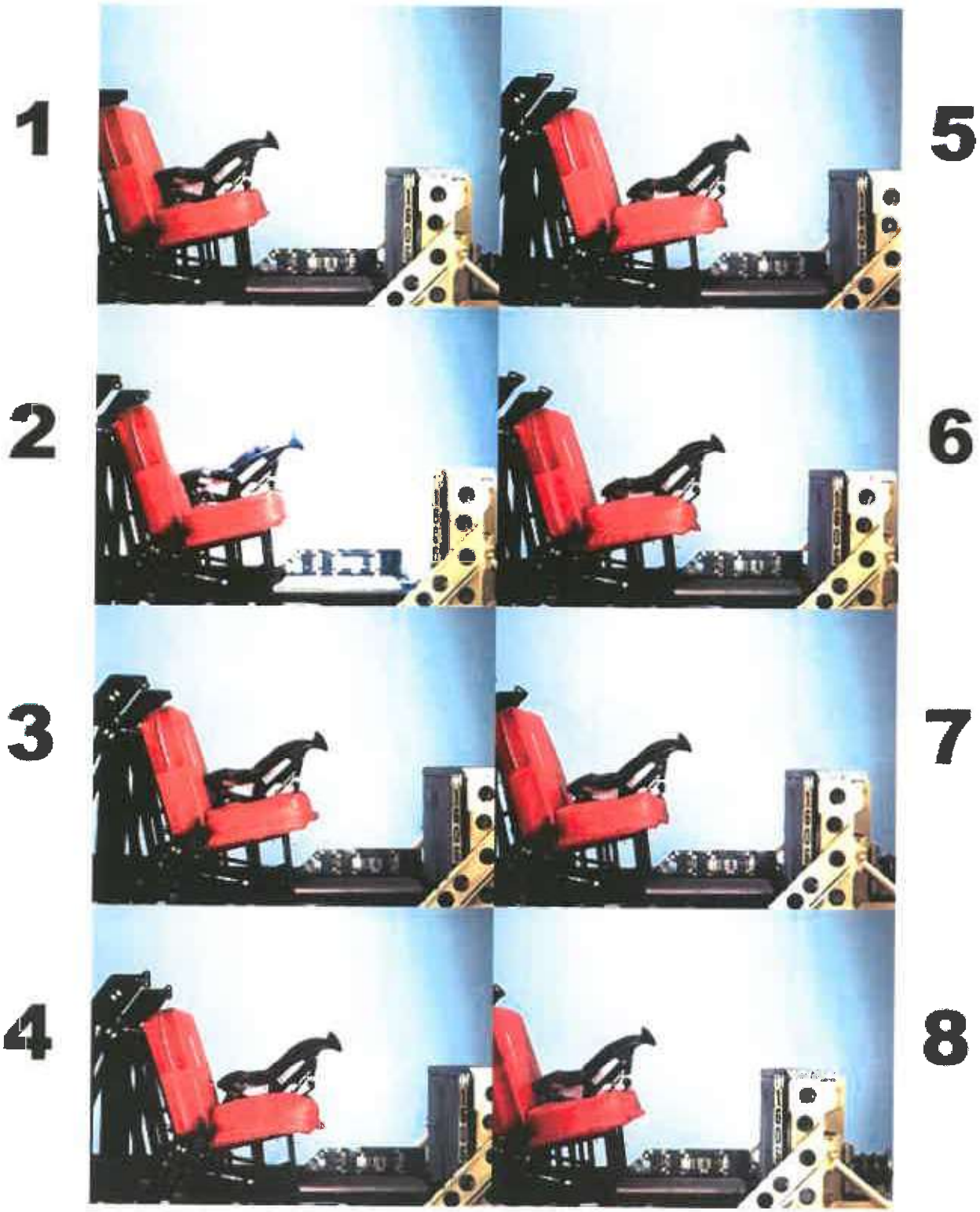
Initial Angle = 45 degrees


Max Angle = 41 Degrees

tt1606rs.JPG

tt1606oh.JPG

TT1606



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