

Insurance Institute for Highway Safety Crashworthiness Evaluation

Crash Test Report 2002 Acura RL (CEF0224)

Vehicle identification number: JH4KA96542C015470
Body style: Large 4-door sedan
Engine/transmission: Longitudinal 3.5-liter V6, 4-speed automatic, front-wheel drive

Standard crashworthiness features:

- Driver and right front passenger front airbags (passenger airbag is dual-stage with variable inflator output depending on crash severity)
- Driver and right front passenger front airbags also have separate deployment thresholds for belted and unbelted occupants
- Driver and right front passenger seat-mounted side airbags (designed to protect thorax, with sensors for automatic cutoff depending on height and position of right front passenger)
- Dual-locking shoulder belts (all seating positions)
- Shoulder belt upper anchorage height adjusters (front seating positions only)
- Seat belt crash tensioners (pyrotechnic, front seating positions only)
- Seat belt force-limiting mechanisms (front seating positions only)
- Rear center lap/shoulder belt
- Right front and all rear shoulder belt retractors are convertible from emergency to automatic locking for ease of child restraint use

Other standard safety features:

- 4-wheel antilock brakes

Vehicle specifications (provided by manufacturer):

Wheelbase:	291 cm
Overall length:	500 cm
Overall width:	182 cm
Curb weight:	1,768 kg

Vehicle specifications (measured):

Front bumper to firewall:	127 cm
Curb weight:	1,742 kg
Test weight:	1,849 kg (57% front, 43% rear)
Overall width:	182 cm

Nominal test parameters:

40.0 mi/h (64.4 km/h), 40% overlap, deformable barrier face with slotted bumper

Crash test date:

November 15, 2002

Figure 1
Pre-crash and Post-crash Side Views — 2002 Acura RL



Summary

A 2002 Acura RL was crash tested on November 15, 2002 into a fixed deformable barrier at 39.9 mi/h (64.3 km/h) and a 40 percent overlap on the driver side. A Hybrid III 50th percentile male dummy was positioned in the driver seat with the lap/shoulder belt fastened.

Measures of intrusion taken after the crash indicated the lower instrument panel in front of the dummy moved rearward 5-6 cm. Resultant intrusion in the driver footwell measured 13 cm at the footrest and 15-24 cm at other places on the toepan. All four doors remained closed during the crash. The door handle mechanism on the driver door malfunctioned; thus tools were required to release the door latch and open the door after the crash. The left rear door required additional effort but no tools to open. The right front and right rear doors opened with ease.

The driver dummy was restrained by a three-point lap/shoulder belt and an airbag. During the crash, the belt crash tensioner activated and retracted 2 cm of shoulder belt webbing. A net amount of 5 cm of webbing (or a total of 7 cm including the tensioner-retracted length) spooled off the retractor, including about 2 cm from the force-limiting mechanism. The airbag contacted the dummy's face during deployment. After loading the airbag, the dummy's head rebounded against the left B-pillar. After the crash, the upper end of the steering column had moved upward 9 cm and rearward 4 cm.

The maximum resultant head acceleration from the B-pillar contact was 136 g. The maximum right upper tibia A-P moment was -167 Nm, significantly contributing to the right upper tibia index of 0.86.

Test Conditions

This vehicle had been tested previously in the Institute's Low-Speed Crash Test Program and subjected to front and rear impacts at 5 mi/h (8 km/h) into a full-width flat barrier. All structural damage on the front was repaired prior to this test (see Appendix, Low-Speed Crash Test Damage Repair Estimate).

This test was conducted according to the procedures specified in the IIHS Offset Barrier Crash Test Protocol (Version IX). The Hybrid III dummy positioned in the driver seat was equipped with instrumented lower legs that included feet modified to include two accelerometers and to have a 45 degree dorsiflexion range with soft stops at all extremes of foot-ankle motion. All dummy seating parameters were set according to the procedures specified for Federal Motor Vehicle Safety Standard 208 compliance testing (49 *CFR* Part 571.208 § 11). The dummy's left foot was placed on the footrest.

Seat back, shoulder belt upper anchorage, steering column, and foot pedal adjustments (where applicable) were set according to the manufacturer's specifications for government crash testing. Other adjustments were set according to the procedure specified for Federal Motor Vehicle Safety Standard 208 compliance testing (49 *CFR* Part 571.208 § 7 and 8). After final positioning of the dummy, measurements from various parts of the dummy to a number of vehicle interior

points were made. These measurements and the seat back, shoulder belt upper anchorage, steering column, and foot pedal adjustments are described in the Appendix, Dummy Clearance Measurements.

Vehicle acceleration measurements were made by a triaxial arrangement of accelerometers mounted on the vehicle's longitudinal centerline and 69 cm behind its center of gravity (193 cm behind the front axle). The vehicle speed recorded just prior to impact was 39.9 mi/h (64.3 km/h), and the actual overlap was 40 percent.

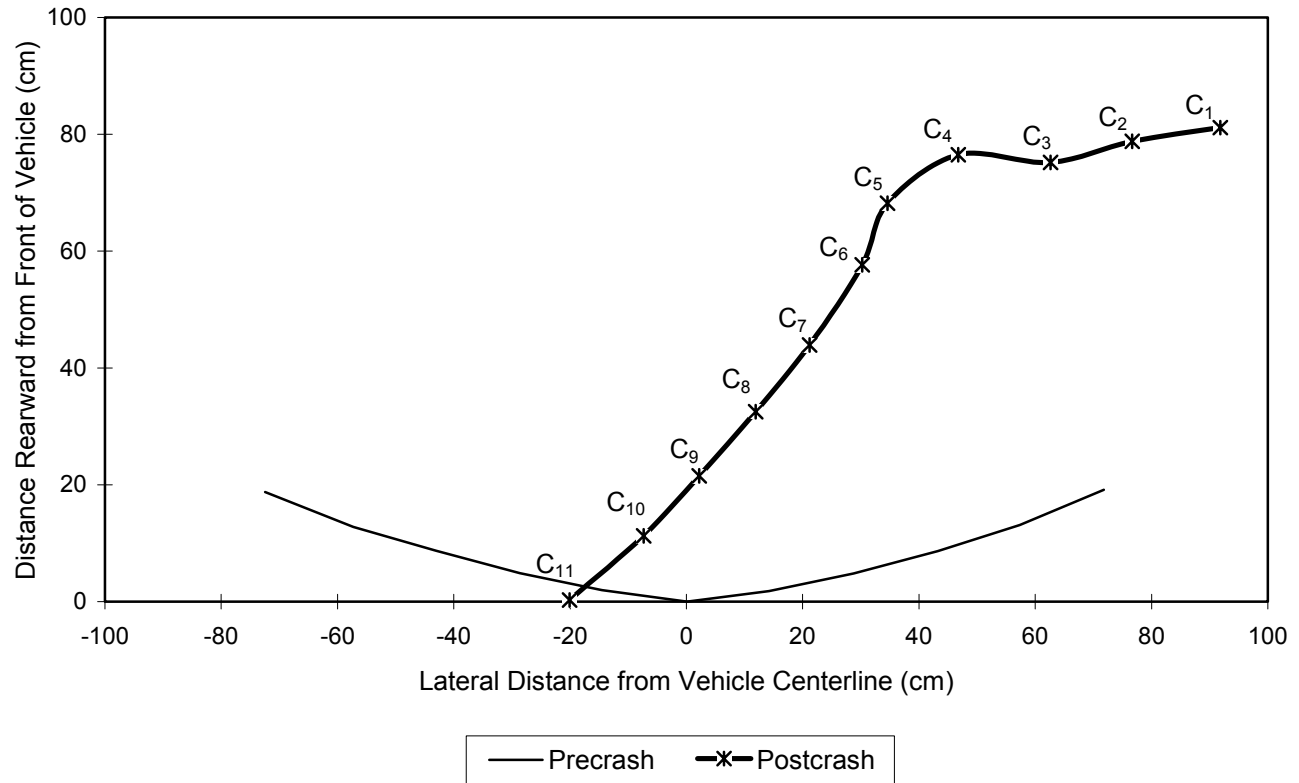
Structural Performance

All four doors remained closed during the crash. The driver door aperture shortened 5 cm, as measured at the lower edge of the window. The driver door buckled outward somewhat, and the door handle mechanism detached from the latch; thus tools were required to release the door latch and open the door after the crash. The left rear door required additional effort but no tools to open. The right front and right rear doors opened with ease.

No fuel system leaks were observed after the crash.

Figure 2 illustrates the precrash and postcrash contour measures of the front bumper cover profile and the resulting permanent crush.

Figure 2
Front Bumper Cover Crush Contour — 2002 Acura RL



	C ₁	C ₂	C ₃	C ₄	C ₅	C ₆	C ₇	C ₈	C ₉	C ₁₀	C ₁₁
Postcrash Contour (cm)	81	79	75	77	68	58	44	33	22	11	0
Precrash Contour (cm)	19	13	9	5	2	0	2	5	9	13	19
Resulting Crush (cm)	62	66	66	72	66	58	42	28	13	-2	-19

The length of the reference line was 144 cm precrash and 112 cm postcrash.

Various measures of intrusion were made after the crash. These residual measures of intrusion typically are less than the maximum deformation that occurs during the crash. The coordinate reference system for these measures is described in the IIHS Offset Barrier Crash Test Protocol (Version IX). The measures of deformation shown in Table 1 have been adjusted to better reflect the displacement of the various target locations relative to the driver, based on the locations of the four driver seat-attachment bolts. The average displacement of the seat-attachment bolts relative to the reference system also is shown in Table 1.

Table 1 Residual Measurements of Intrusion Relative to Driver Seat — 2002 Acura RL				
Selected Locations*	Longitudinal	Lateral	Vertical	Resultant
Steering column (cm)	−4	0	9	10
Left lower instrument panel (cm)	−5	1	4	6
Right lower instrument panel (cm)	−6	1	5	8
Brake pedal (cm)	−12	−2	5	13
Left toepan (cm)	−14	−1	7	15
Center toepan (cm)	−22	1	9	24
Right toepan (cm)	−16	2	8	17
Footrest (cm)	−12	−2	6	13
Average displacement of the four seat-attachment bolts relative to reference system (cm)	−4	1	−3	n/a

* All measurements taken on driver side. From the driver's position, positive is forward, left, and up.

Restraint System Performance

Airbags

Driver: The uninflated driver airbag is approximately 61 cm in diameter, and the excursion of its center when inflated is limited by two tethers. The airbag is vented by two holes located at positions corresponding to 11 and 1 o'clock on the forward-facing surface of the airbag. Analysis of the high-speed film taken from camera position D indicated the airbag deployed at 64 ms into the crash and appeared to be fully inflated at 80 ms. The seat-mounted side airbag did not deploy during the crash.

Passenger: The top-mounted passenger airbag deployed vertically and is untethered. The cylinder-shaped airbag is vented by two holes located at the lateral ends. Analysis of the high-speed film taken from camera position B indicated the passenger airbag deployed at 34 ms into the crash. The airbag did not contribute to windshield damage during deployment. The seat-mounted side airbag did not deploy during the crash.

Seat Belts

The front seat belt inboard lower anchorage points are attached to and move with the seats. The front outboard lower anchorage points are bolted to the sills at the base of the B-pillars. During the crash, 2 cm of the driver's seat belt webbing was pulled by the belt crash tensioner into the retractor through the D-ring, as determined by film analysis of the movement of a tape strip on the belt webbing near the dummy's shoulder. A net amount of 5 cm of webbing (or a total of 7 cm including the tensioner-retracted length) was pulled from the retractor through the D-ring, as measured by a pull-string mounted between the retractor housing and the webbing beyond the retractor. Postcrash investigation of the force-limiting torsion bar within the retractor spool indicated it was twisted about 40 degrees from its precrash orientation. This measure, combined with the estimated diameter of the retractor spool and stowed webbing (51 mm), suggested the force limiter contributed about 2 cm of webbing to the total amount pulled through the D-ring.

Seat

Postcrash examination of the driver seat rails indicated no discernible movement of the seat in its tracks during the crash. Deformation of the floor and the seat tracks' rear mounting brackets caused the seat to tip outboard so that the seat back contacted the B-pillar.

Steering Column

The upper end of the steering column moved upward 9 cm and rearward 4 cm relative to the driver seat.

Dummy Kinematics

Head, Neck, and Torso

Analysis of the high-speed film taken from camera position D indicated the driver airbag contacted the dummy's face during deployment (68 ms) and remained in contact with the face until it was fully inflated at 80 ms. Paint transferred from the dummy's face indicated the nose loaded the airbag 7 cm above and 4 cm to the left of its center. The head began to rebound at 108 ms when the back of the head moved slightly outboard. The head then moved rearward until the back of the head contacted the leading edge of the B-pillar at 250 ms, according to the head acceleration data. A second rebound contact between the head and the B-pillar and shoulder belt upper anchorage occurred at 458 ms, after the end of data collection. Table 2 provides the timing of these events.

Table 2
Restraint System Performance and Dummy Kinematics —
2002 Acura RL

Event	Time (ms)
Deployment of passenger front airbag	34
Deployment of driver front airbag	64
Airbag contacts face during deployment	68
Airbag fully inflated	80
Rear of head contacts B-pillar on rebound	250

Figure 3
Dummy and Vehicle Interior, Postcrash — 2002 Acura RL

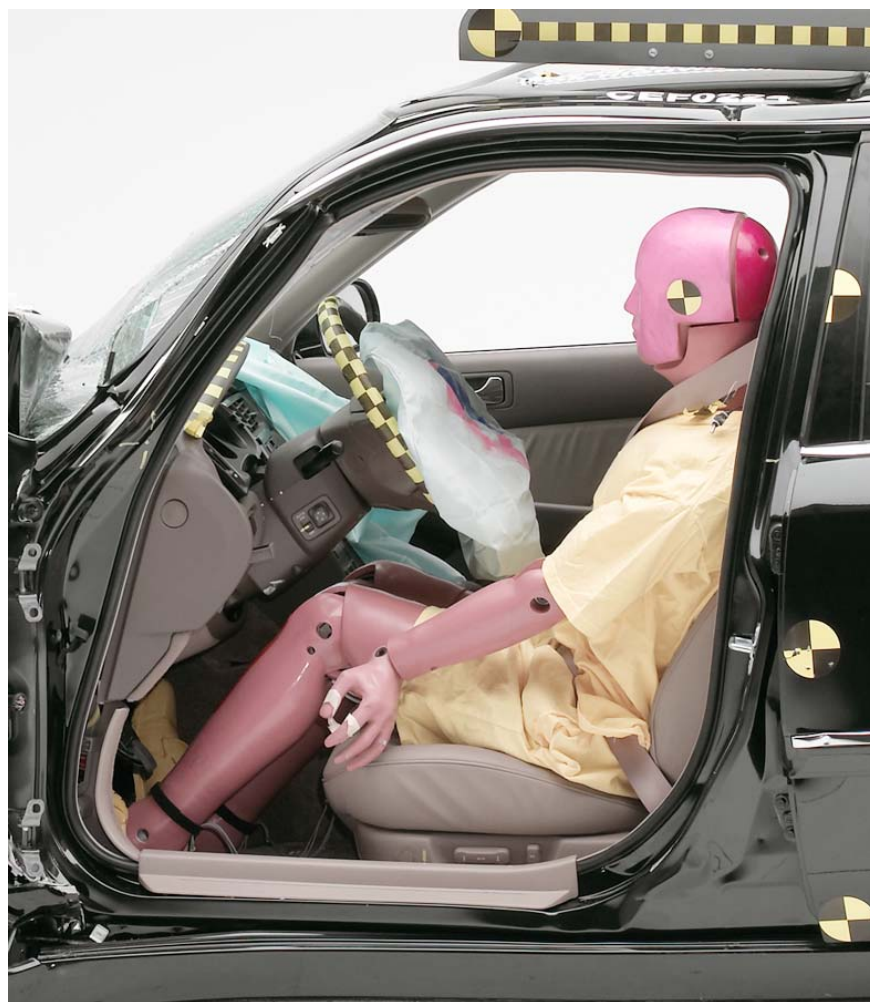


Figure 4
Dummy Left Knee/Shin Contacts, Postcrash — 2002 Acura RL



Figure 5
Dummy Right Knee/Shin Contacts, Postcrash — 2002 Acura RL

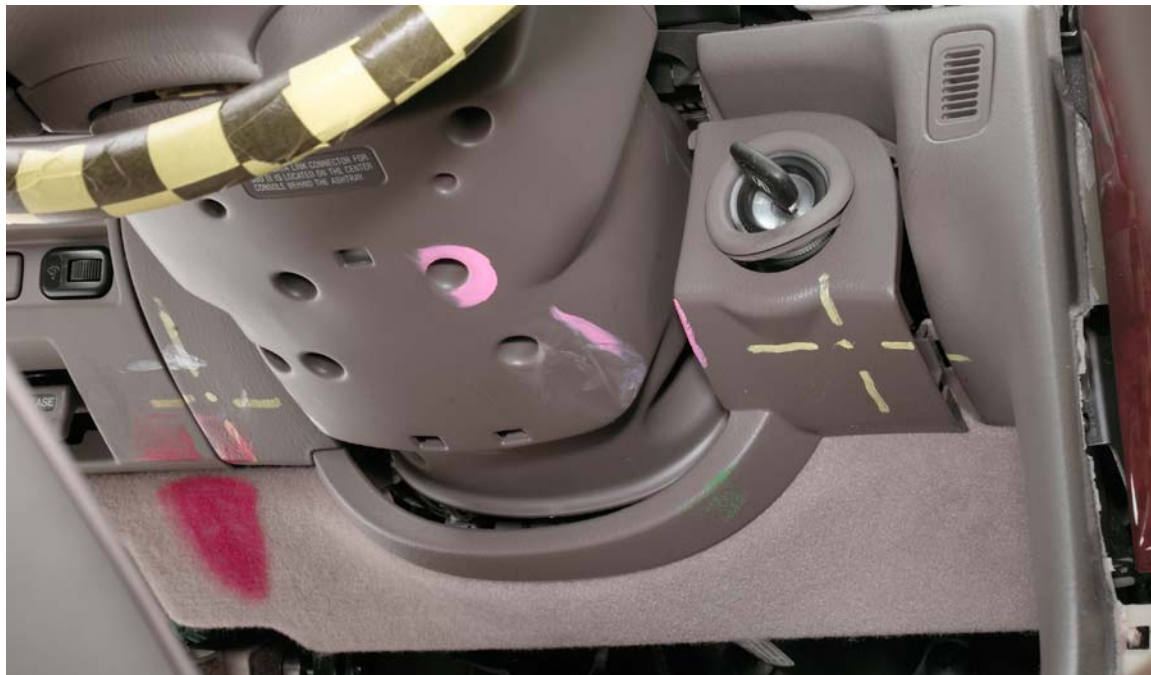


Figure 6
Dummy Feet Positions, Postcrash — 2002 Acura RL



Dummy Injury Measures

Head

The maximum vector resultant head accelerations were recorded when the dummy's head contacted the B-pillar the first time, and the HICs were calculated during an interval that corresponds with the dummy's head excursion into the airbag. Table 3 provides a summary of the maximum head injury measurements recorded during the crash.

Table 3 Head Injury Measurements — 2002 Acura RL			
Measure	Published Tolerance Threshold	Result	Time (ms)
Vector resultant acceleration (g)	80	136	254
Vector resultant acceleration — 3 ms clip (g)	80	61	252-255
Head injury criterion (HIC)	1000	511	81-113
Head injury criterion — 15 ms interval (HIC-15)	700	356	90-105

Neck

Table 4 provides a summary of the maximum neck injury measurements recorded during the crash. None of the recorded neck force measures exceeded the magnitude-duration injury criteria (Figures A-13 to A-16).

Table 4 Neck Injury Measurements — 2002 Acura RL			
Measure	Published Tolerance Threshold	Result	Time (ms)
A-P shear force (kN)	±3.1	−0.6	254
Axial compression force (kN)	4.0	0.0	20
Axial tension force (kN)	3.3	1.8	90
N _{ij} tension-extension	1.00	0.27	81
N _{ij} tension-flexion	1.00	0.31	94
N _{ij} compression-extension	1.00	0.16	123
N _{ij} compression-flexion	1.00	0.05	281
Flexion bending moment (Nm)		15	281
Extension bending moment (Nm)		22	123

Chest

Table 5 provides a summary of the maximum chest injury measurements recorded during the crash.

Table 5 Chest Injury Measurements — 2002 Acura RL			
Measure	Published Tolerance Threshold	Result	Time (ms)
Vector resultant spine acceleration — 3 ms clip (g)	60	47	104-107
Rib compression (mm)	–50	–37	99
Viscous criteria (m/s)	1.0	0.2	84
Sternum deflection rate (m/s)	–8.2	–1.2	68

Legs and Feet

Left leg and foot: None of the injury measures exceeded published threshold values. A malfunctioning string potentiometer in the left knee meant that the maximum tibia-femur displacement could not be obtained.

Right leg and foot: The maximum right upper tibia A-P moment was –167 Nm at 73 ms, significantly contributing to the right upper tibia index of 0.86 at 73 ms.

Table 6 provides a summary of the maximum leg and foot injury measurements recorded during the crash.

Table 6
Leg and Foot Injury Measurements — 2002 Acura RL

Measure	Published Tolerance Threshold	Left		Right	
		Result	Time (ms)	Result	Time (ms)
Femur axial force (kN)	−9.1*	1.1	87	−1.4	83
Tibia-femur displacement (mm)	−15	no data	n/a	0	0
Upper Tibia					
L-M moment (Nm)	±225	−26	164	123	83
A-P moment (Nm)	±225	−93	78	−167	73
Vector resultant moment (Nm)	225	93	78	173	73
Index	1.00	0.43	78	0.86	73
Lower Tibia					
L-M moment (Nm)	±225**	34	84	36	84
A-P moment (Nm)	±225**	−38	78	55	88
Vector resultant moment (Nm)	225**	38	78	63	85
Axial force (kN)	−8.0**	1.1	93	3.2	73
Index	1.00	0.19	78	0.30	85
Foot					
A-P acceleration (g)	±150	−55	79	−38	63
I-S acceleration (g)	±150	−57	77	−78	71
Vector resultant acceleration (g)	150	74	78	79	71

* This critical value is for instantaneous loading. Femur loads are compared with magnitude-duration injury criteria in Figures A-24 and A-37.

** These published thresholds are for fractures of the tibia. Ankle and foot injuries have been associated with bending moments as low as 50-100 Nm, and heel fractures have been associated with axial forces as low as −6.0 kN.

References

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Appendix

Low-Speed Crash Test Damage Repair Estimate

Dummy Clearance Measurements

Graph Index — index to graphs of time plots of dummy and vehicle data

Manufacturer's window sticker

Low-Speed Crash Test Damage Repair Estimate

2002 Acura 3.5RL Large Four-Door Sedan: 5 mi/h Front into Barrier

Test Number: LF02028

VIN: JH4KA96542C015470

Mileage: 83

Features: Driver and passenger front airbags, driver and right front passenger side impact airbags, four-wheel antilock brakes, air conditioning, automatic transmission, traction control, heated power mirrors, keyless entry system, power door locks, power windows, power driver and passenger seats, heated back glass, power tilt and telescoping steering wheel, cruise control, front fog lamps, moonroof, two-stage paint.

Description	Part		Labor	
	Mfg. No	Price	Operation	Hours
Bumper cover, front			Repair*	2.0
Bumper cover, front			Refinish	0.5
Bumper absorber, front	71170SZ3010	\$48.10	Replace*	
Bumper reinforcement, front	71130SZ3010	240.57	Replace*	1.2
Fog lamp assemblies, front			Remove/reinstall	0.4
Fog lamps, front			Aim	0.3
Paint and materials		10.00		
Total Parts		\$298.67		
Total Labor		162.80		4.4
Grand Total		\$461.47		

* This item was repaired or replaced as indicated before the 40 mi/h frontal offset test.

Dummy Clearance Measurements

Test Number: CEF0224
Vehicle Make/Model: Acura RL
Vehicle Model Year: 2002
Seat Type: Electrically adjusted bucket seat (fore/aft, height, and seat back angle)

Manufacturer's Specifications

Seat Back Information: Reclined to produce a distance of 683 mm between mounting hole for head restraint outer post and mounting hole for sunvisor inner bracket

Upper Belt Anchorage: Set to topmost of 4 positions

Steering Column Adjustment: Set to midpoint of tilt and telescopic adjustment ranges

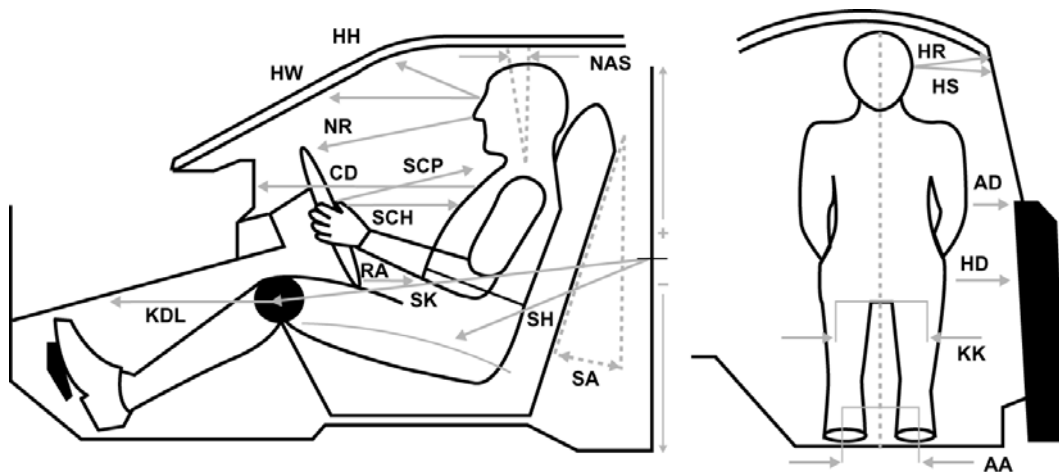
Foot Pedal Adjustment: Fixed

Location	Code	Measure	Location	Code	Measure
Head to header	HH	372	Neck angle, torso 90	NAT90	21.1°
Head to windshield	HW	559	Neck angle, seated	NAS	5.5°
Nose to rim	NR	433	Torso angle (NAT90 – NAS)	TA	15.6°
Chest to dash	CD	714	Striker to knee**	SK	575
Rim to abdomen	RA	216	Striker to knee angle**	SKA	-9.8°
Knee to dash, left	KDL	300	Striker to H-point, horizontal	SHH	188
Knee to dash, right	KDR	293	Striker to H-point, vertical	SHV	-187
Steering wheel to chest, horizontal	SCH	322	Ankle to ankle	AA	335
Steering wheel to chest, perpendicular	SCP	404	Knee to knee	KK	325
Steering wheel to chest, reference	SCR	396	Arm to door	AD	85
Hub to chest, minimum	HCM	266	H-point to door	HD	165
Pelvic angle	PA	24.6°	Head to A-pillar	HA	500
Seat back angle*	SA	10.0°	Head to roof	HR	177
			Head to side window	HS	218

All distance measurements are in millimeters (mm).

* Indicated value is from vertical, as measured on head restraint post

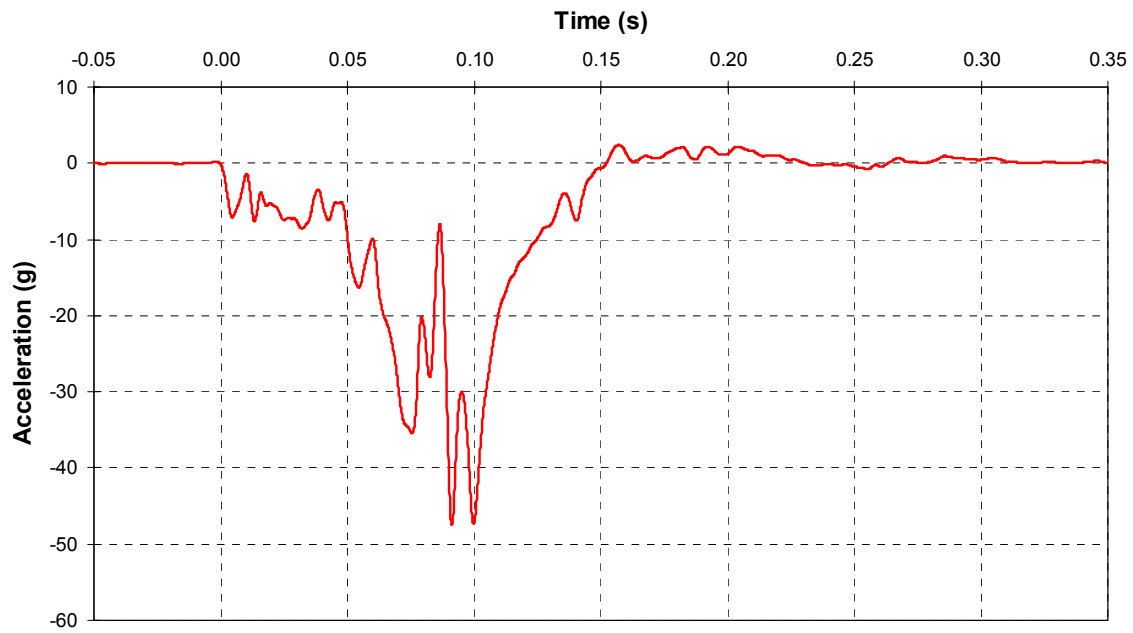
** These measurements were made in a vertical plane containing the striker and parallel to the driver door sill.



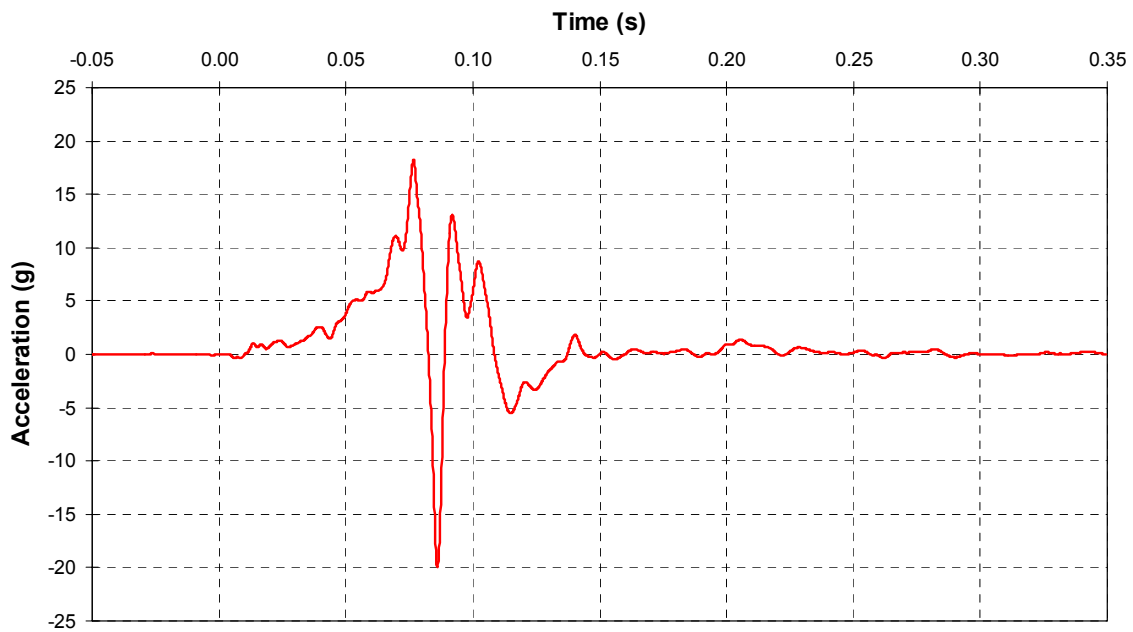
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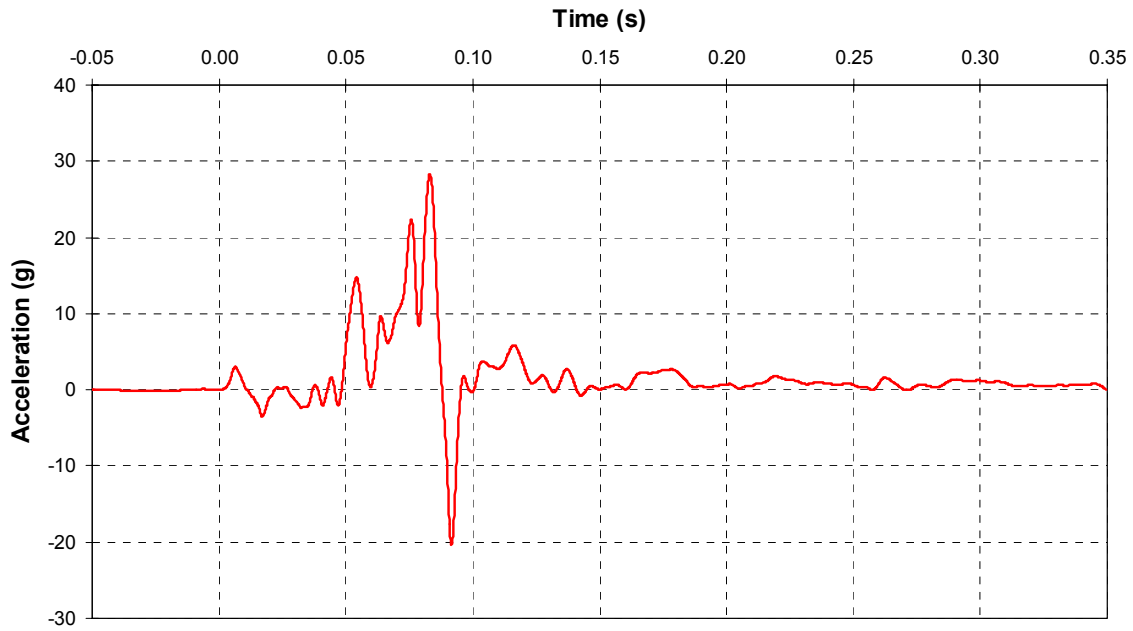
A- 1 CEF0224 2002 Acura RL Vehicle Longitudinal Acceleration



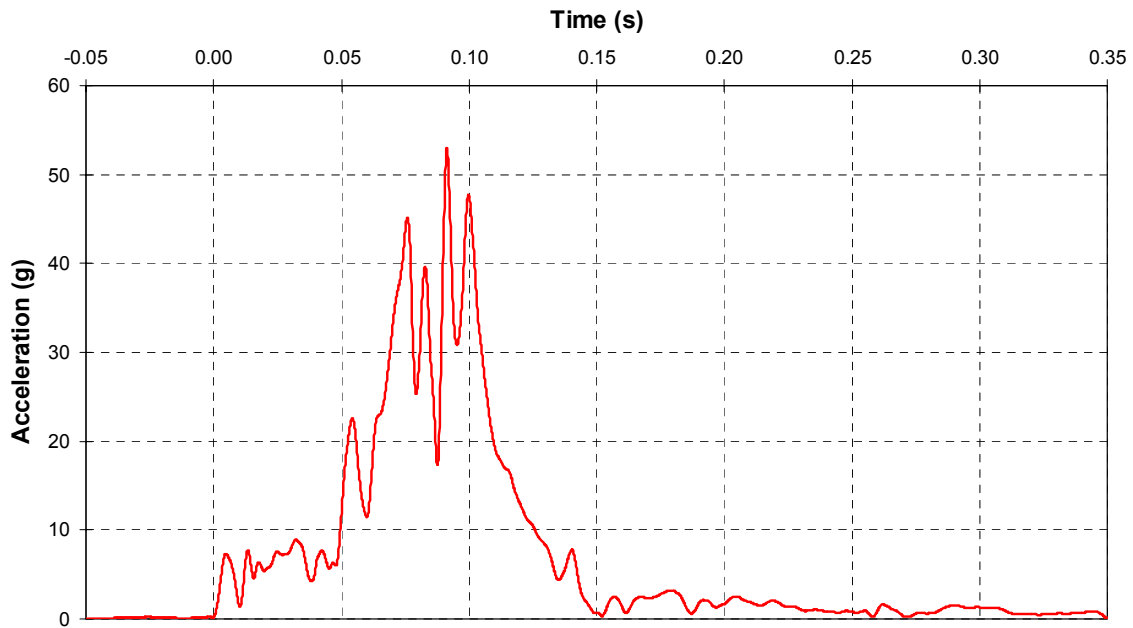
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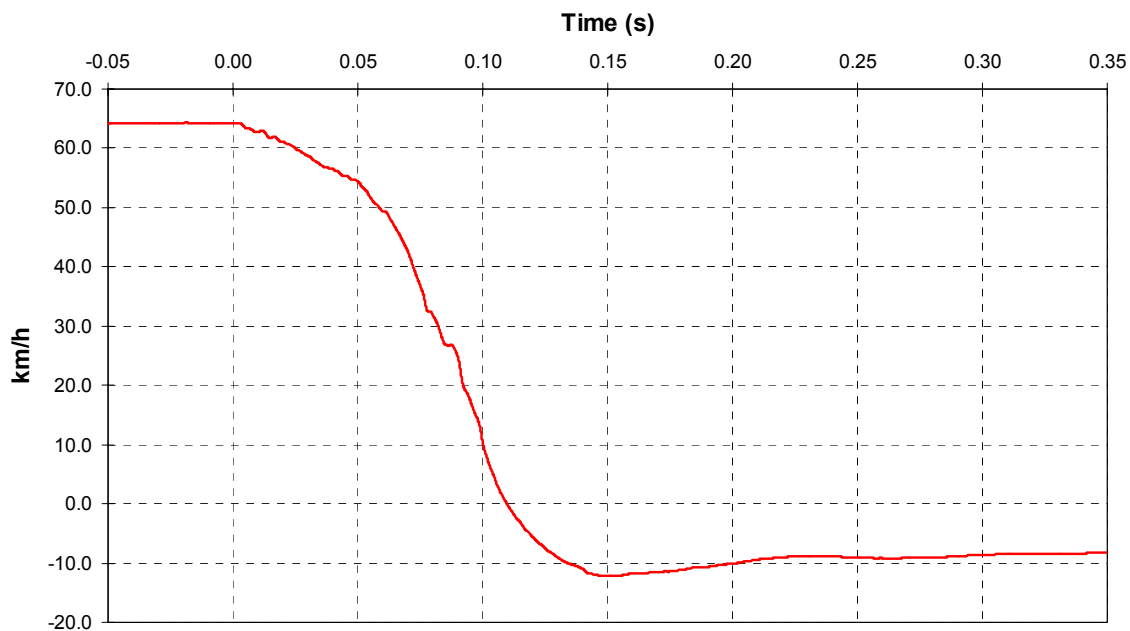
A- 3 CEF0224 2002 Acura RL Vehicle Vertical Acceleration



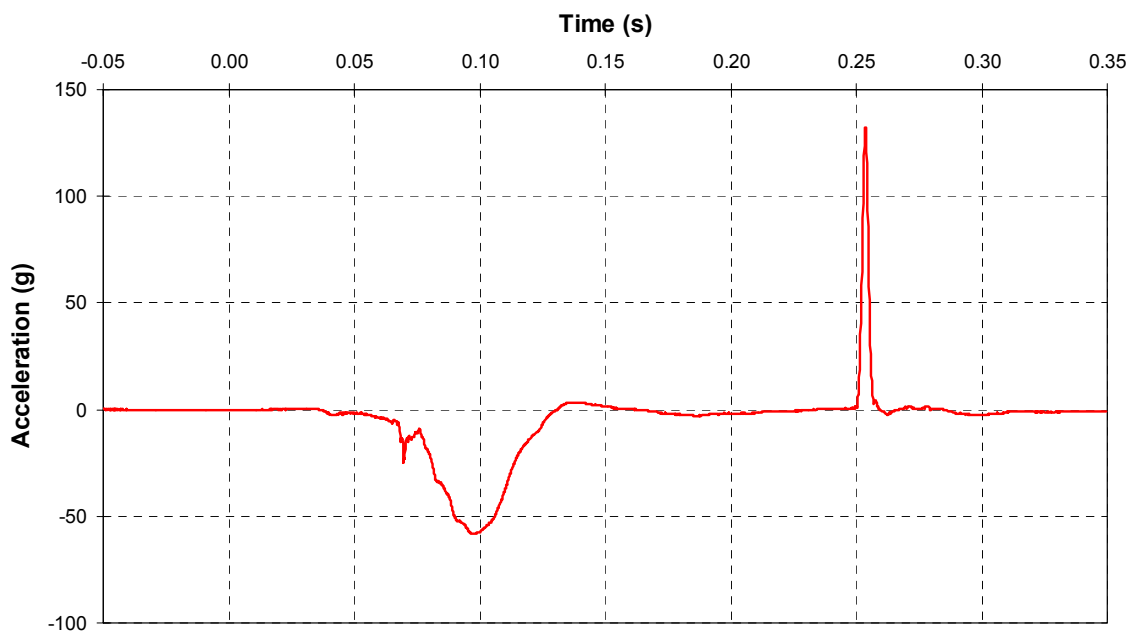
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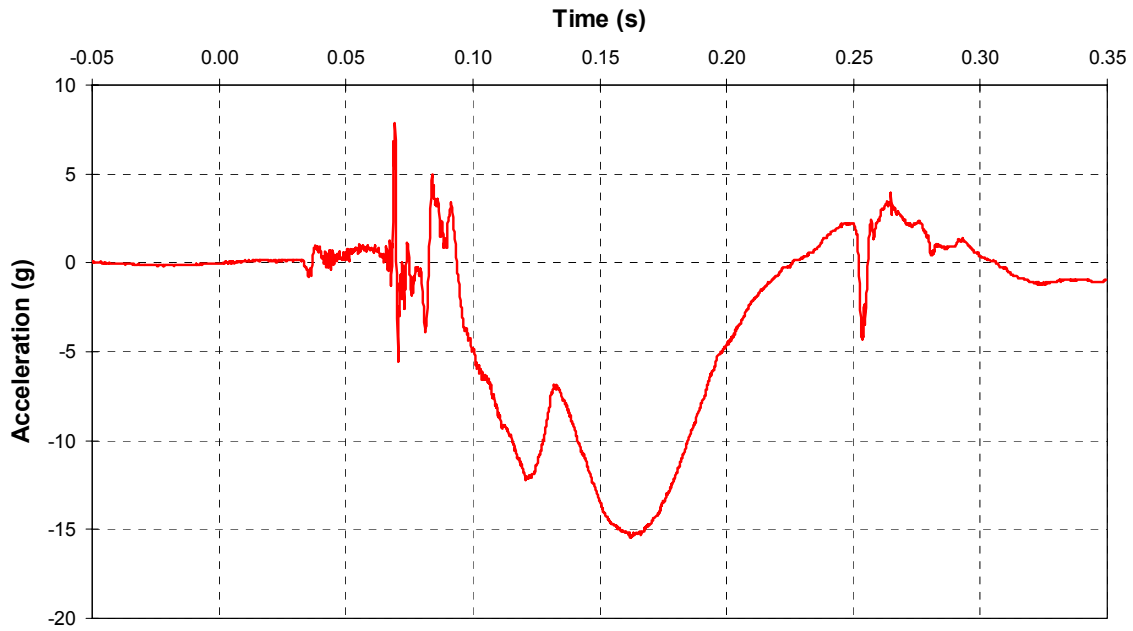
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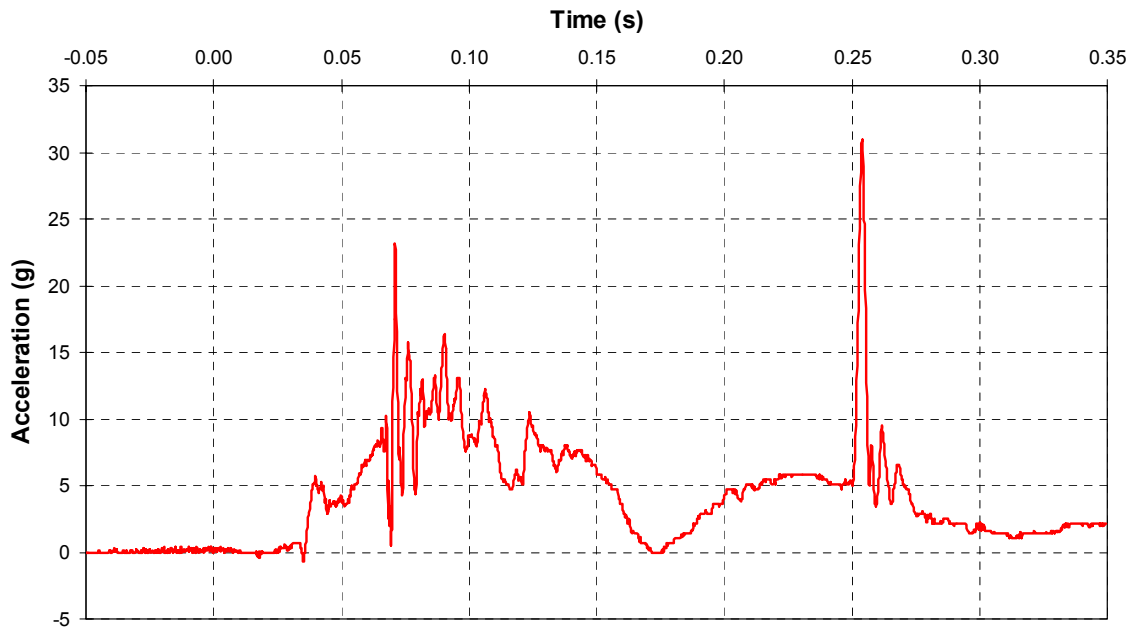
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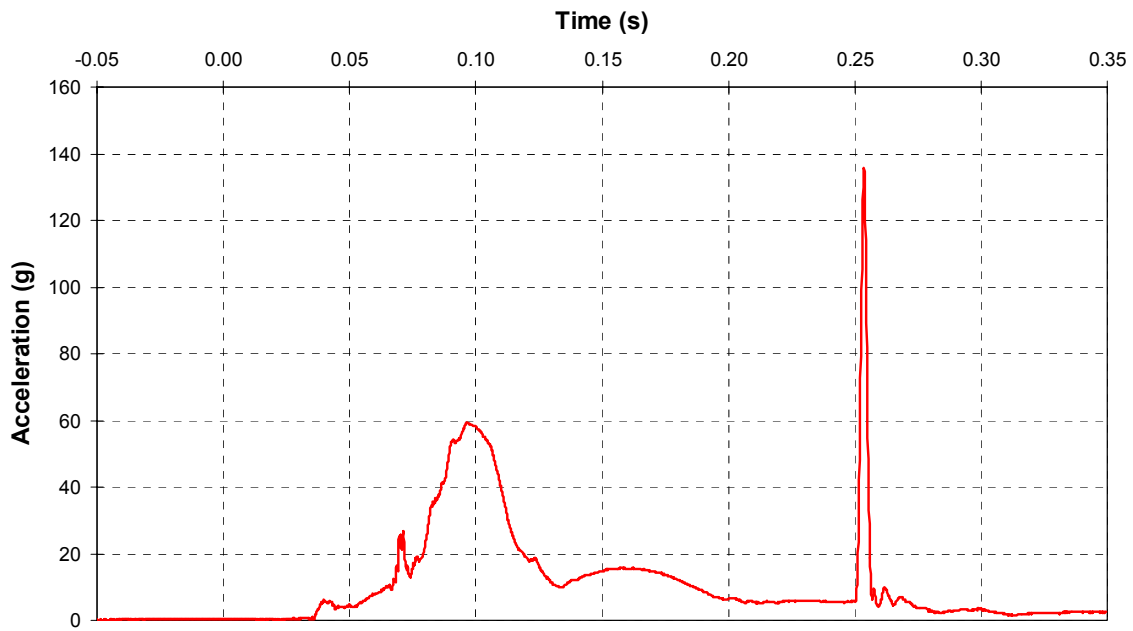
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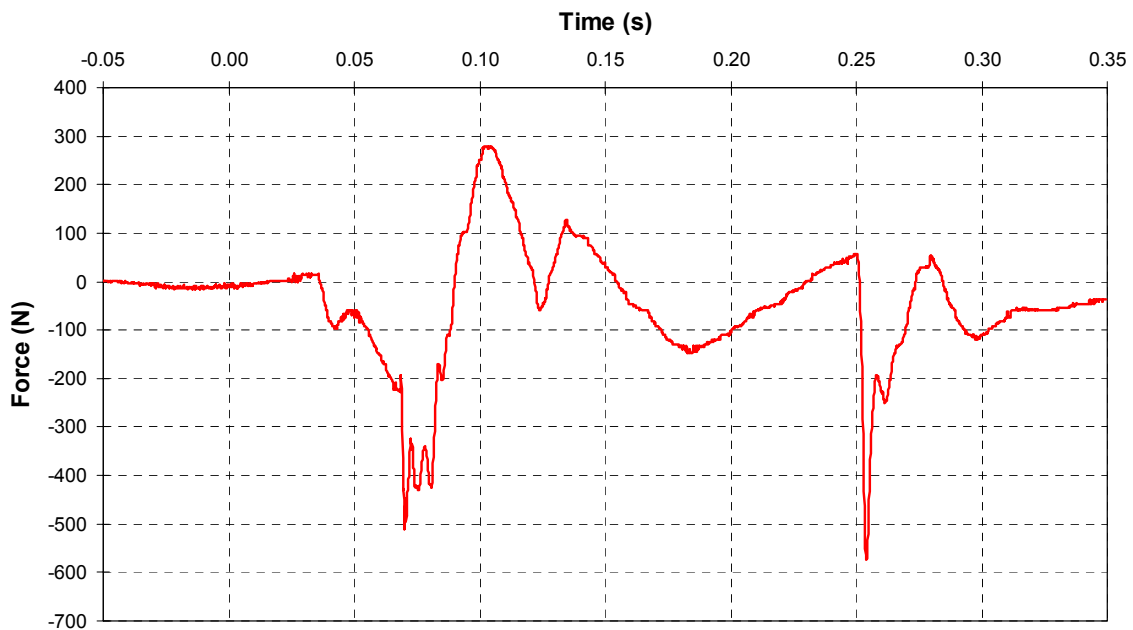
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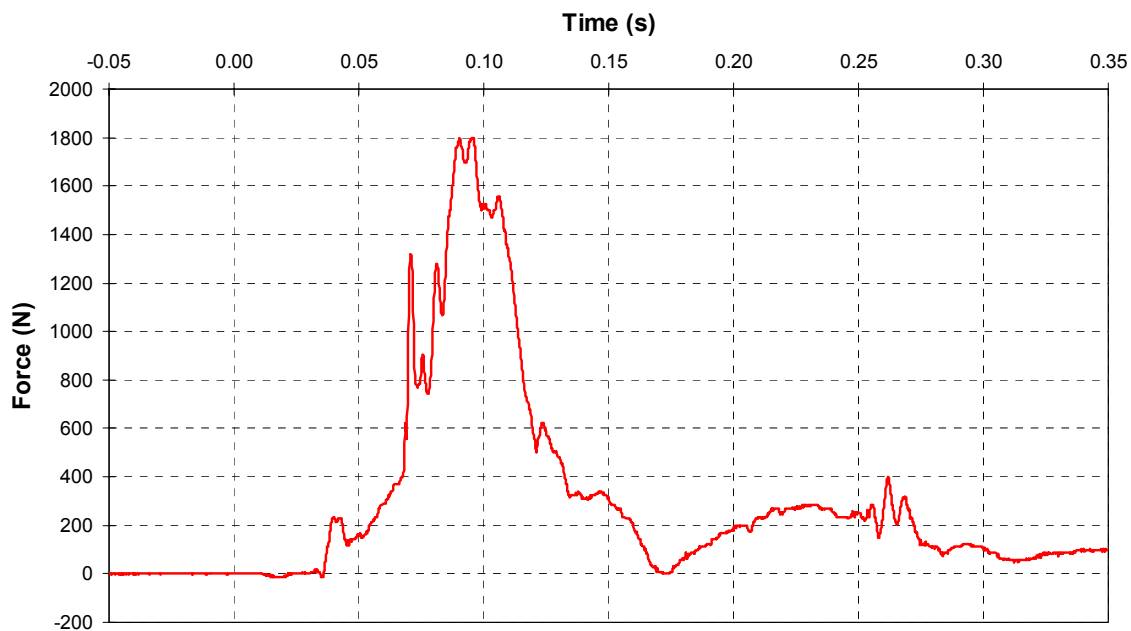
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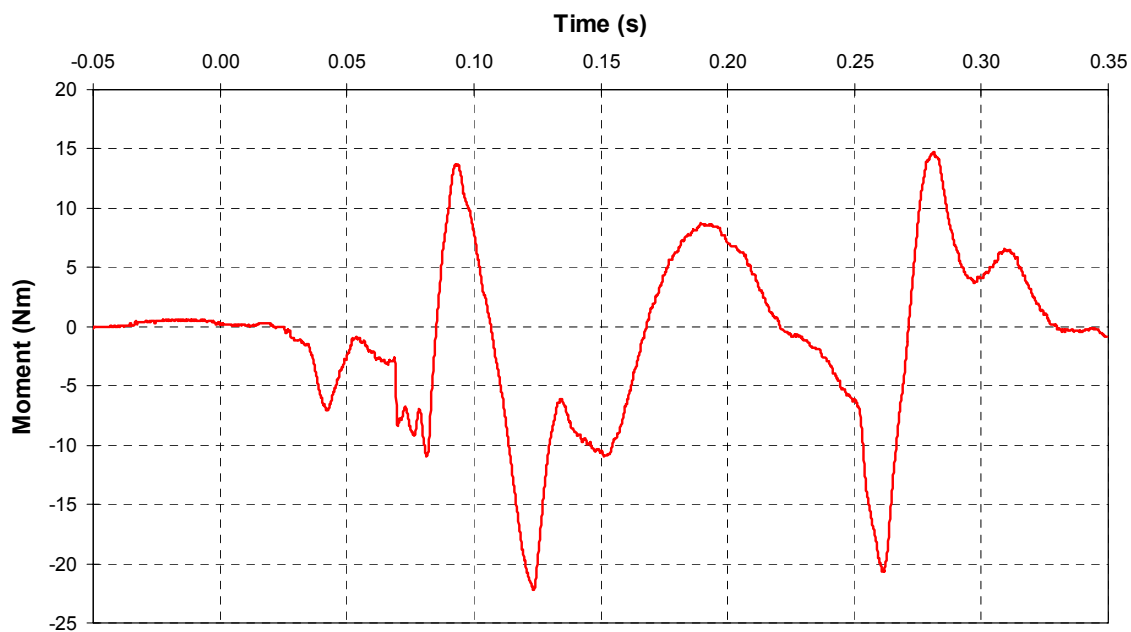
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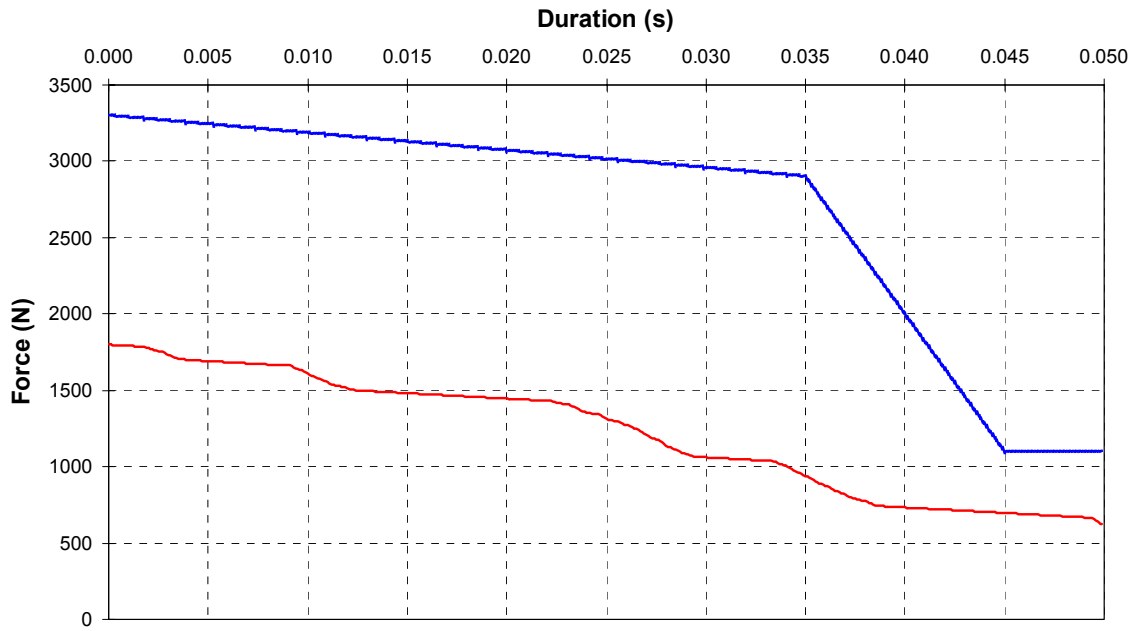
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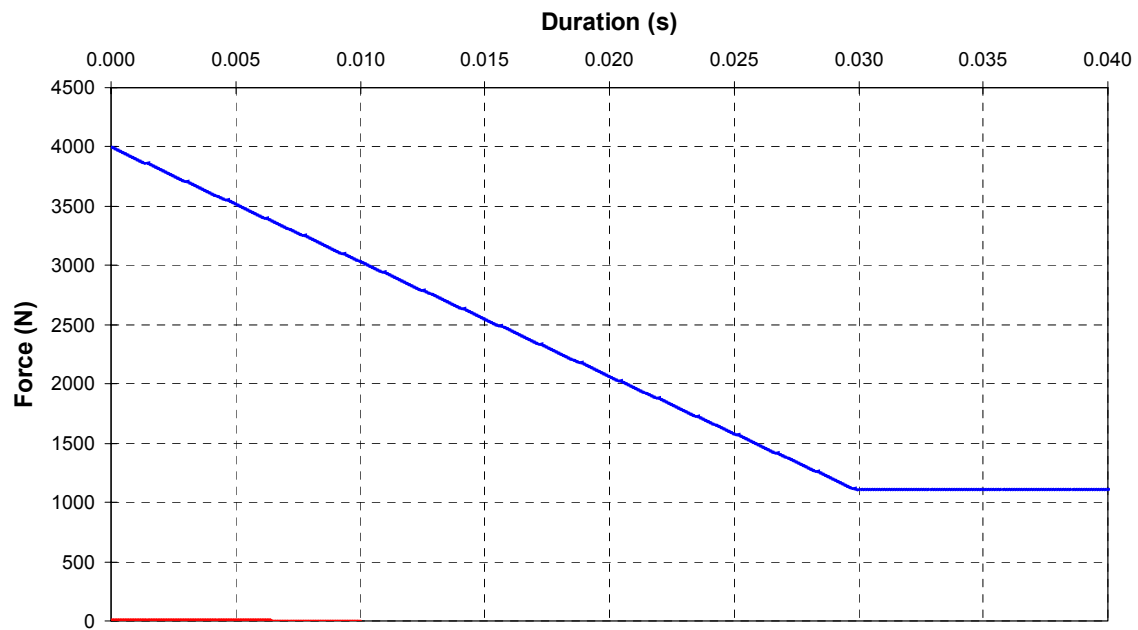
A- 12 CEF0224 2002 Acura RL Neck Occipital A-P Moment



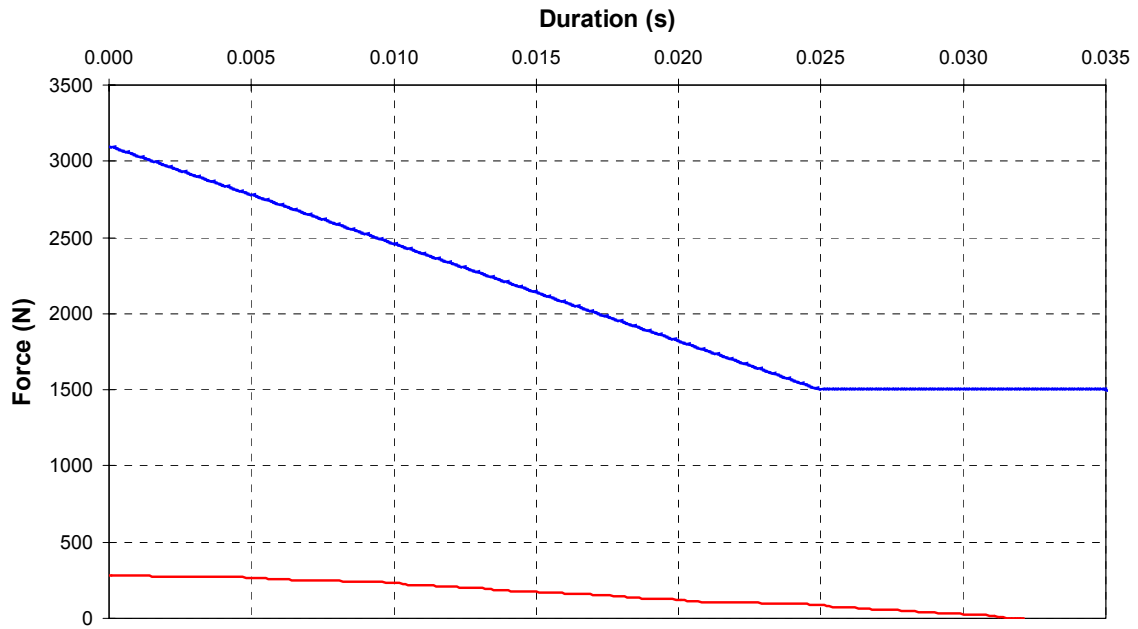
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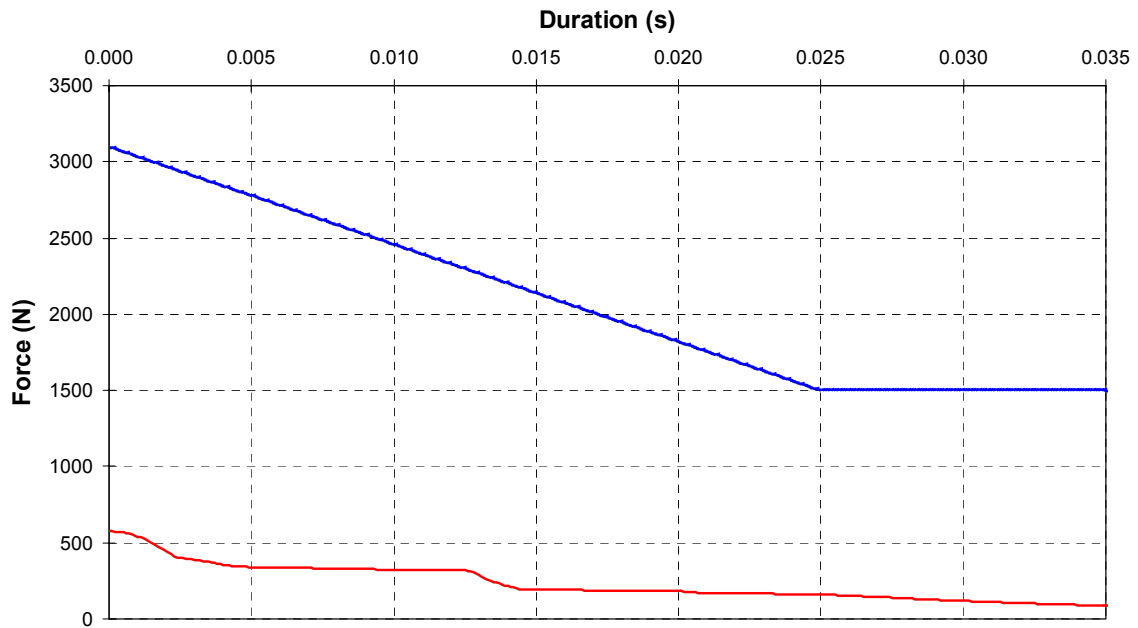
A- 14 CEF0224 2002 Acura RL Neck Compression Analysis



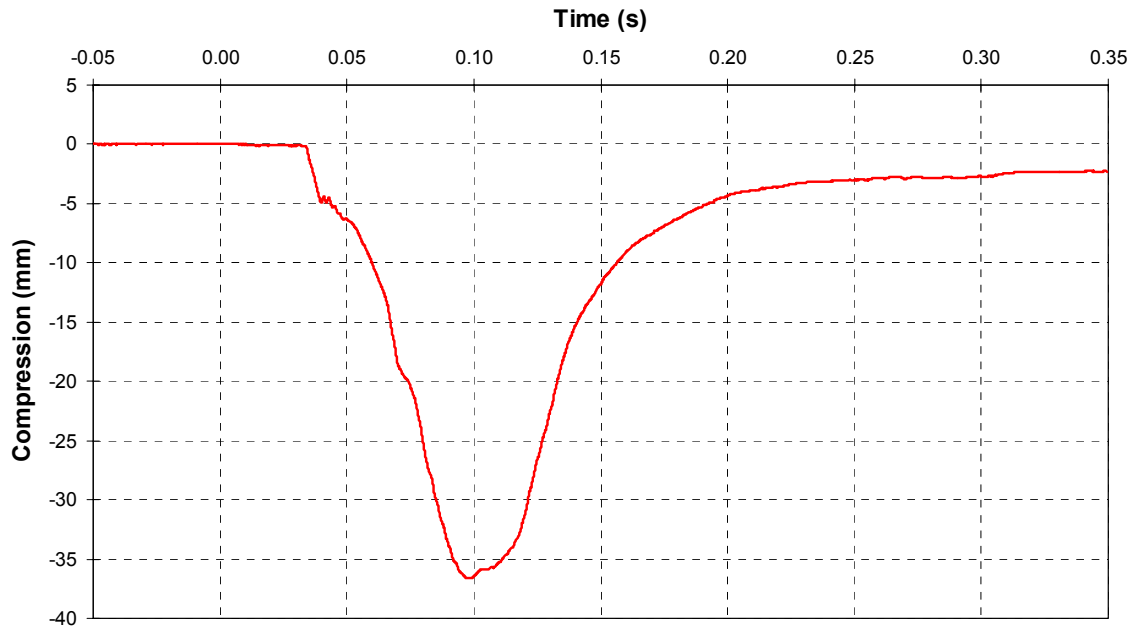
A- 15 CEF0224 2002 Acura RL Neck A-P Shear (Positive) Analysis



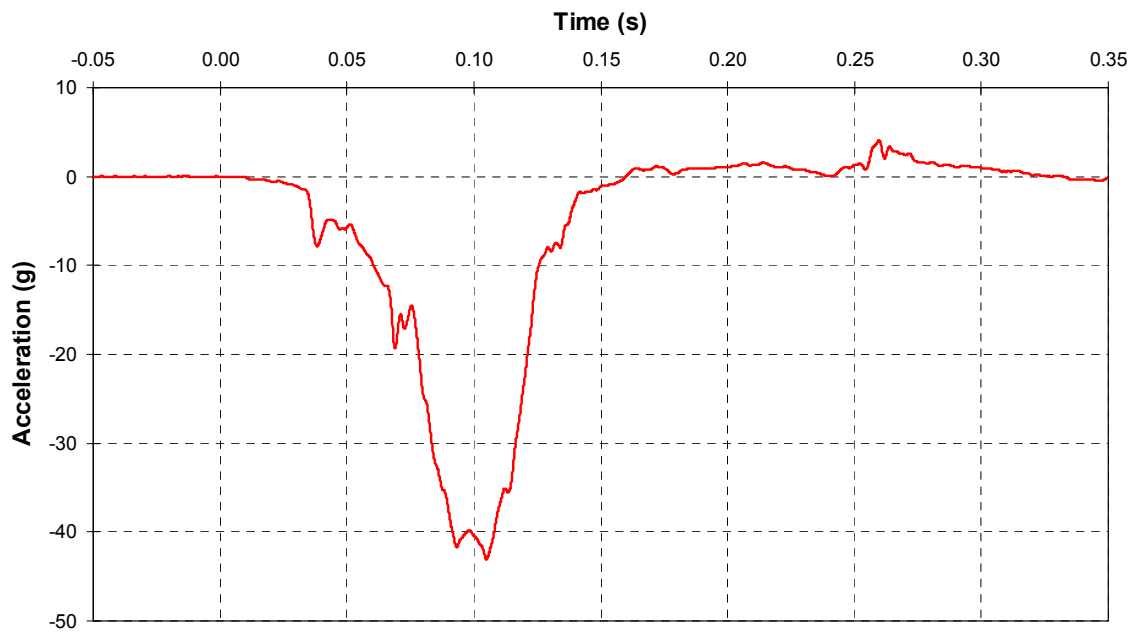
A- 16 CEF0224 2002 Acura RL Neck A-P Shear (Negative) Analysis



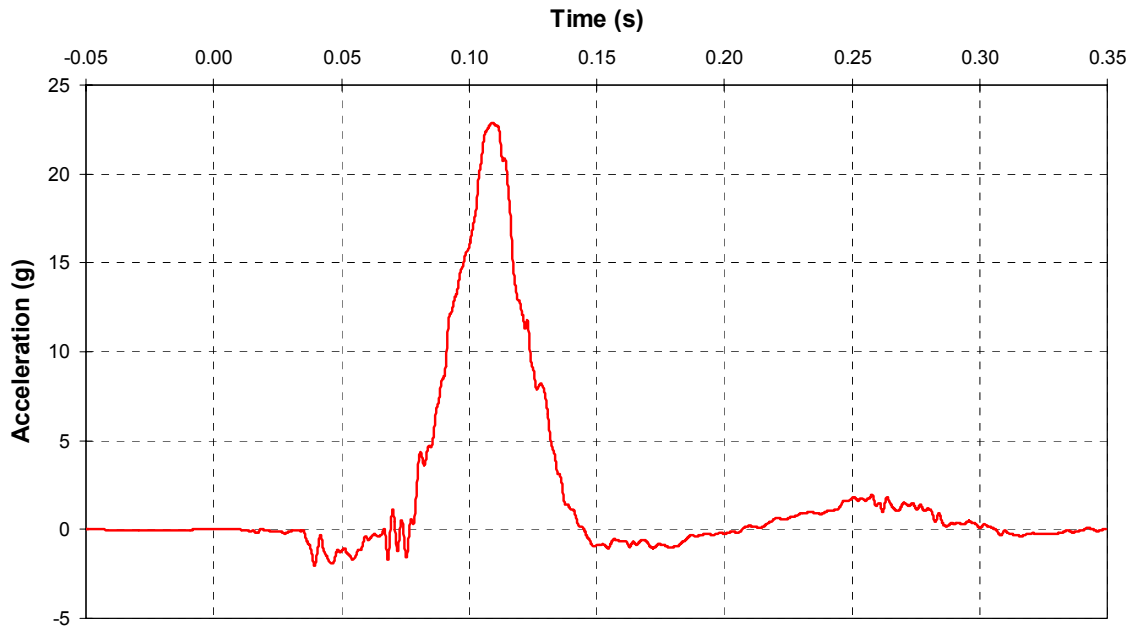
A- 17 CEF0224 2002 Acura RL Chest Compression



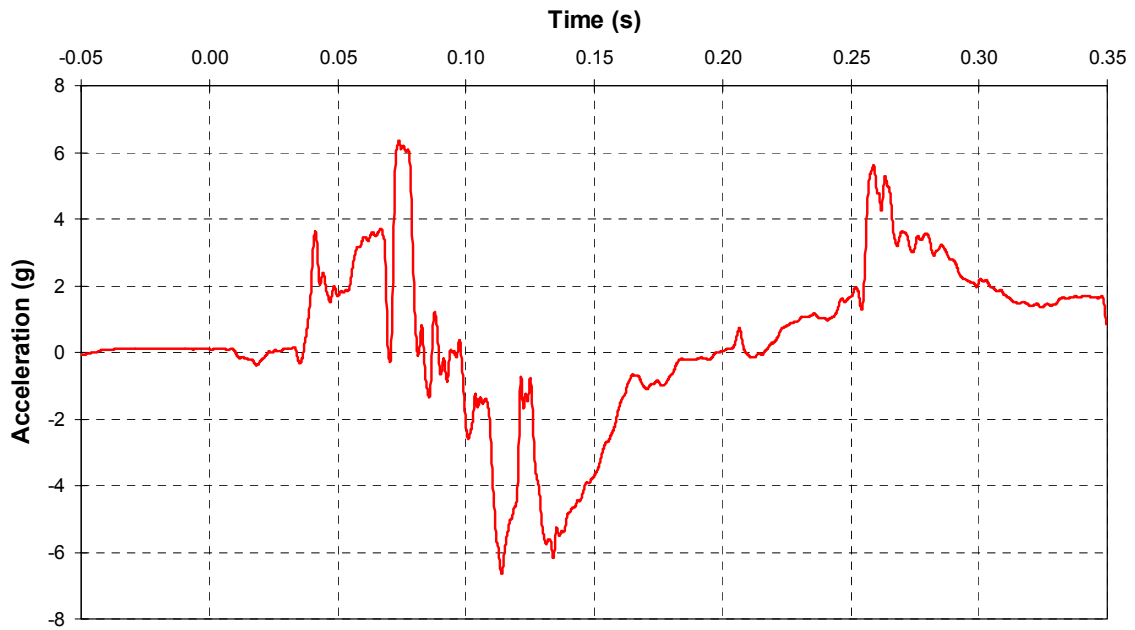
A- 18 CEF0224 2002 Acura RL Chest A-P Acceleration



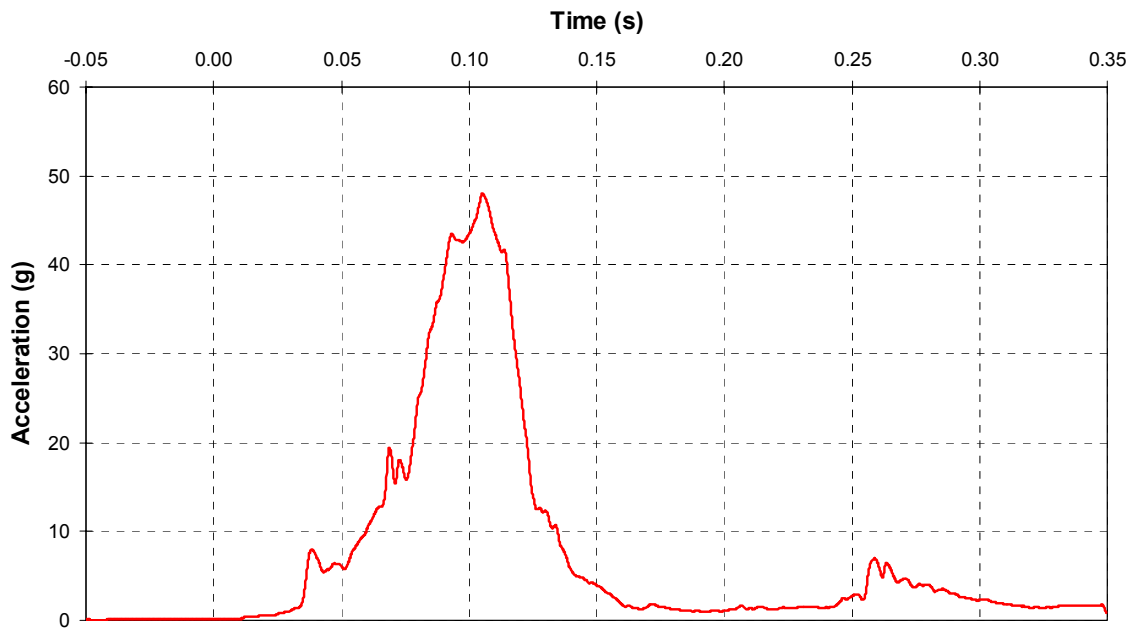
A- 19 CEF0224 2002 Acura RL Chest L-M Acceleration



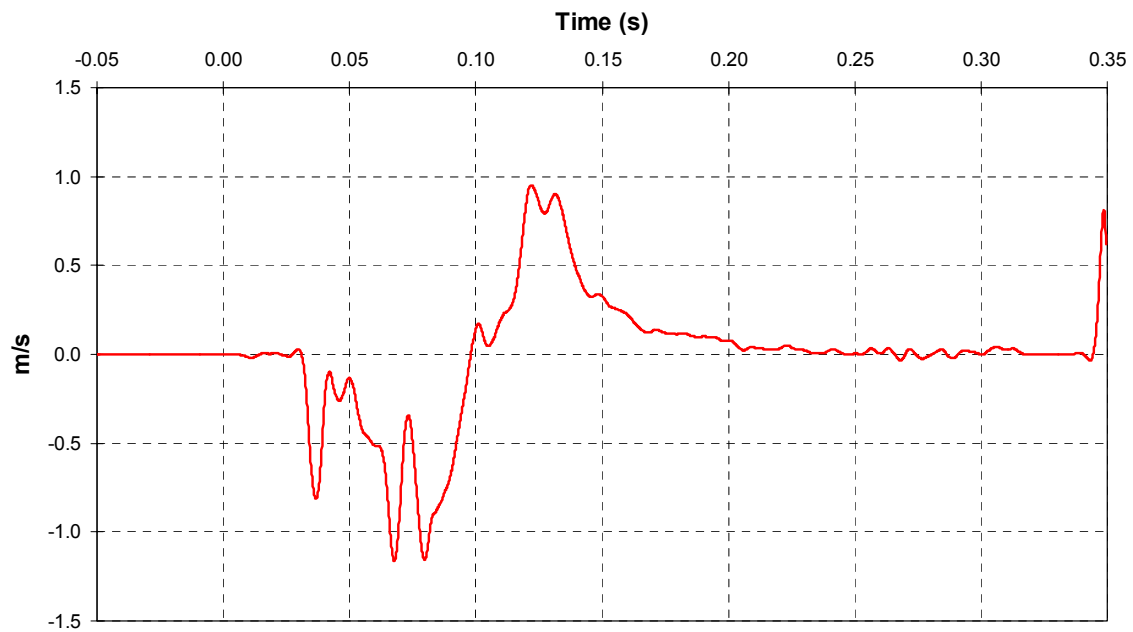
A- 20 CEF0224 2002 Acura RL Chest I-S Acceleration



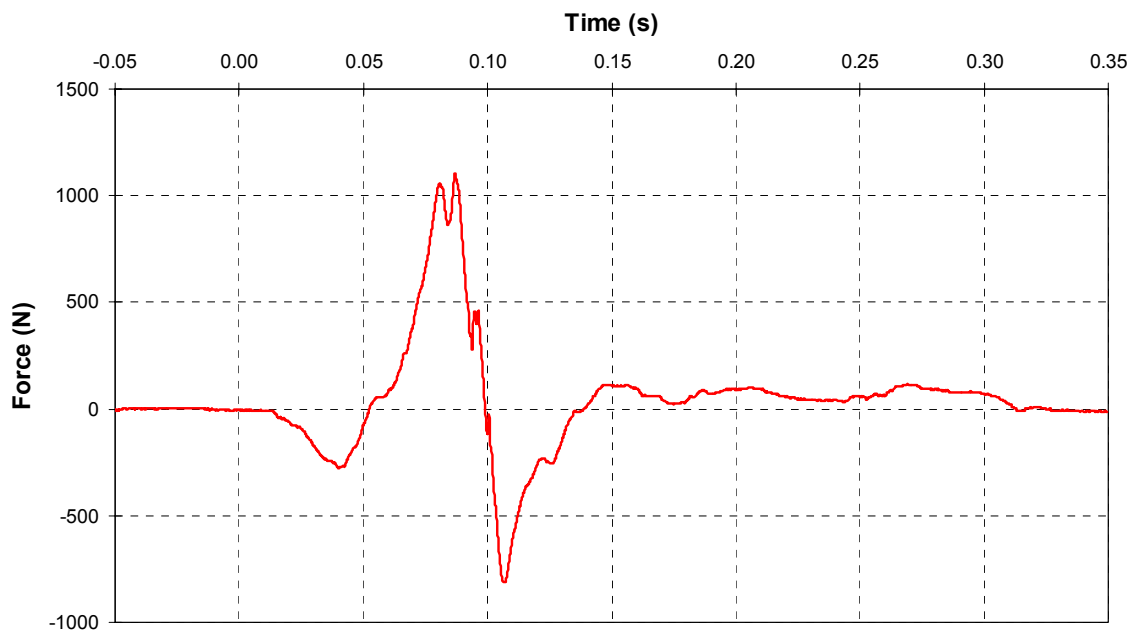
A- 21 CEF0224 2002 Acura RL Chest Vector Resultant Acceleration



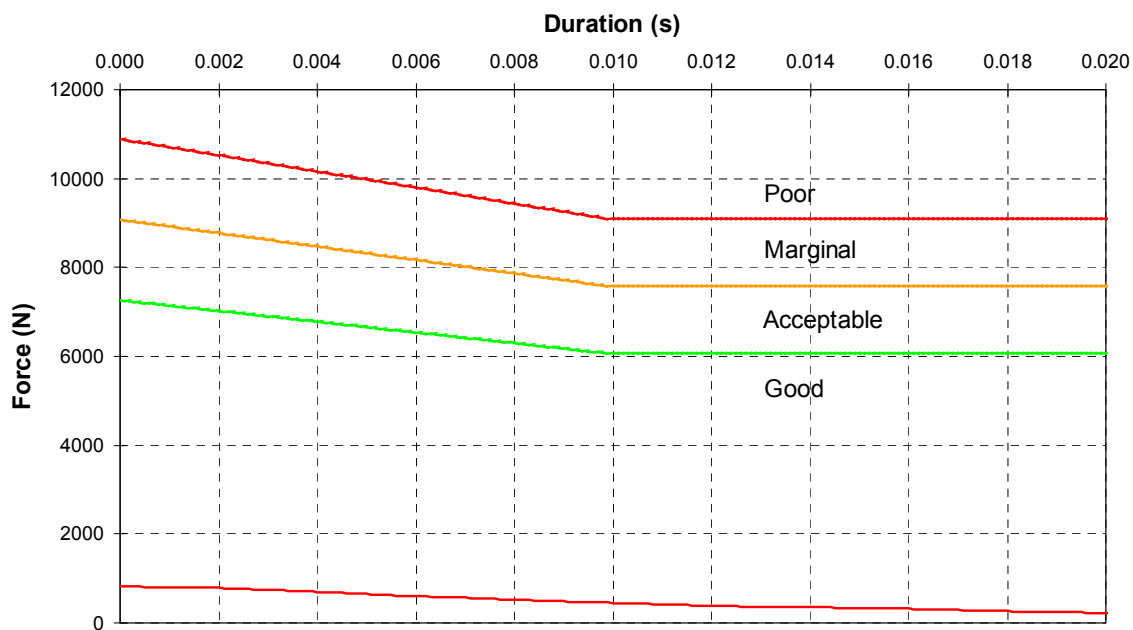
A- 22 CEF0224 2002 Acura RL Sternum Deflection Rate



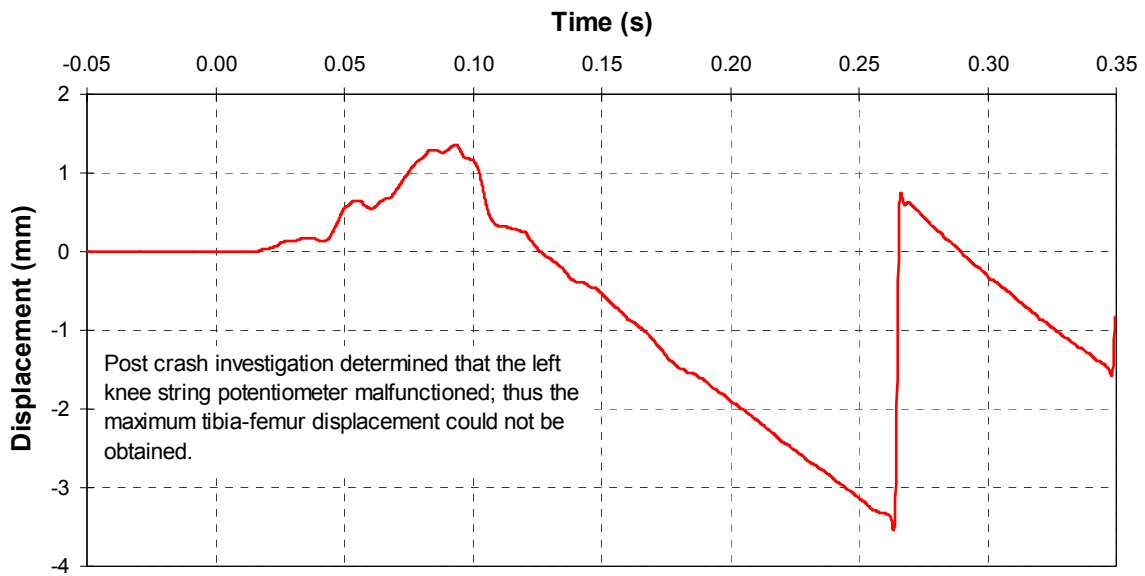
A- 23 CEF0224 2002 Acura RL Left Femur Axial Force



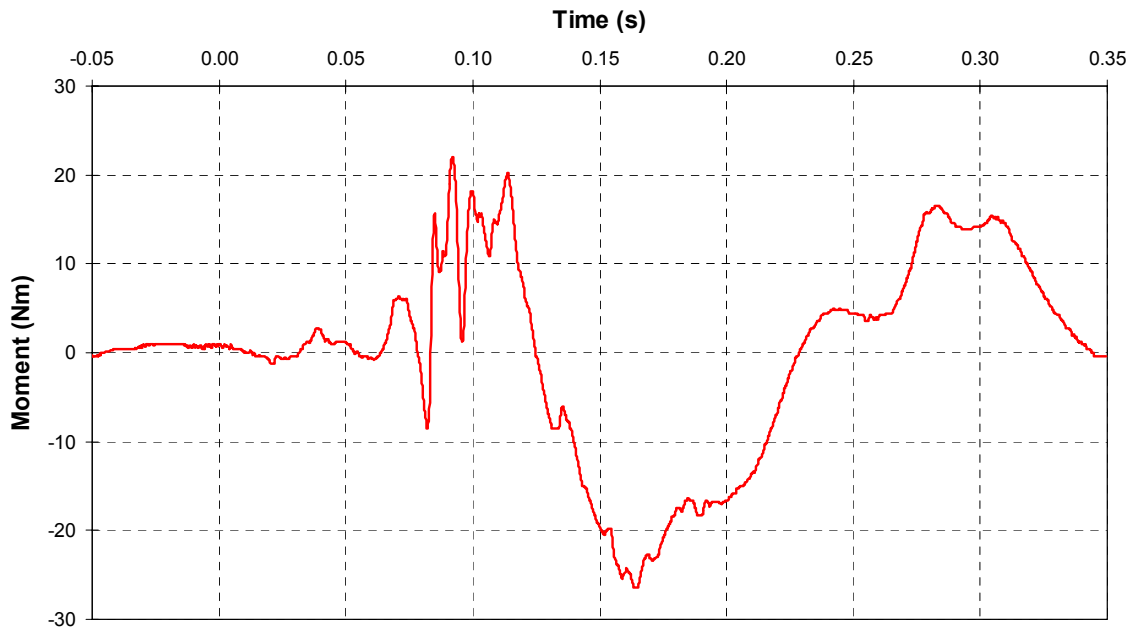
A- 24 CEF0224 2002 Acura RL Left Femur Axial Force Analysis



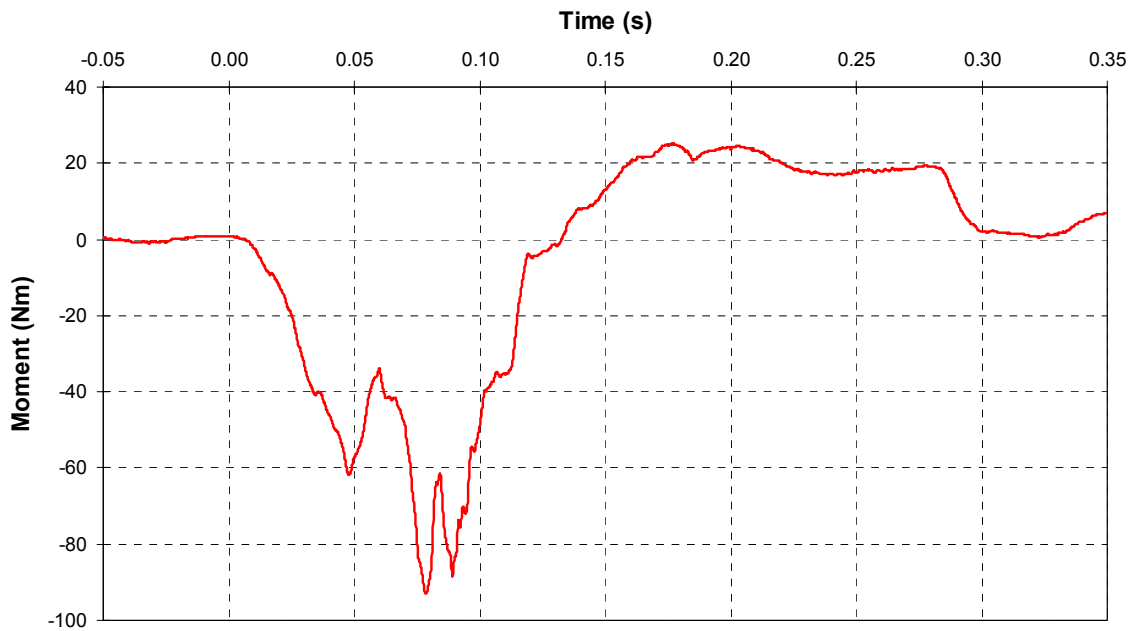
A- 25 CEF0224 2002 Acura RL Left Tibia-Femur Displacement



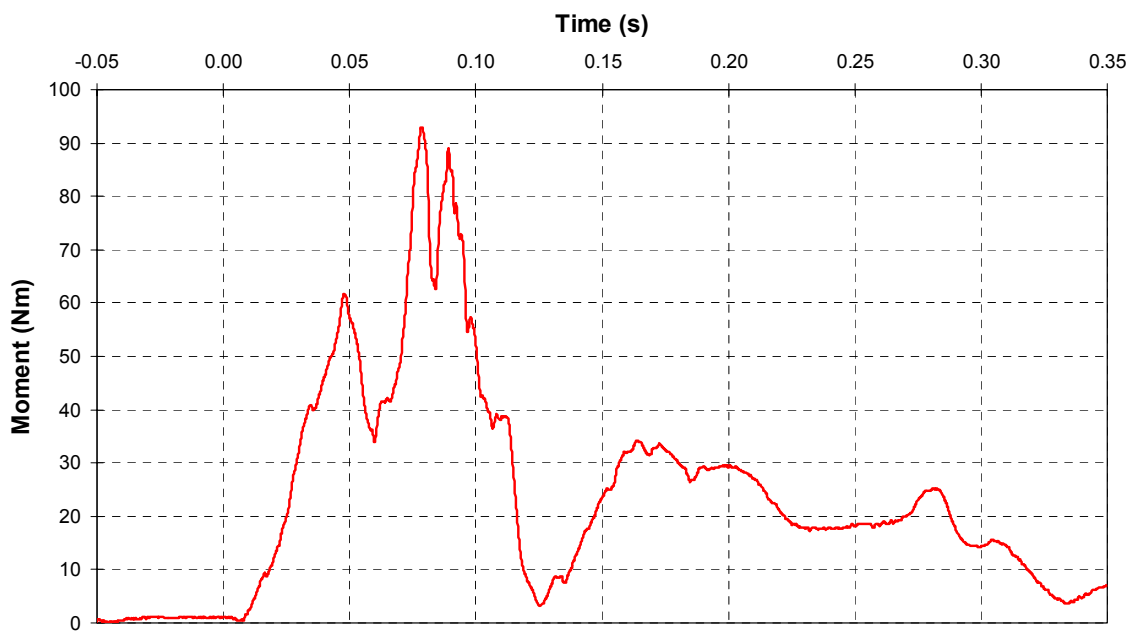
A- 26 CEF0224 2002 Acura RL Left Upper Tibia L-M Moment



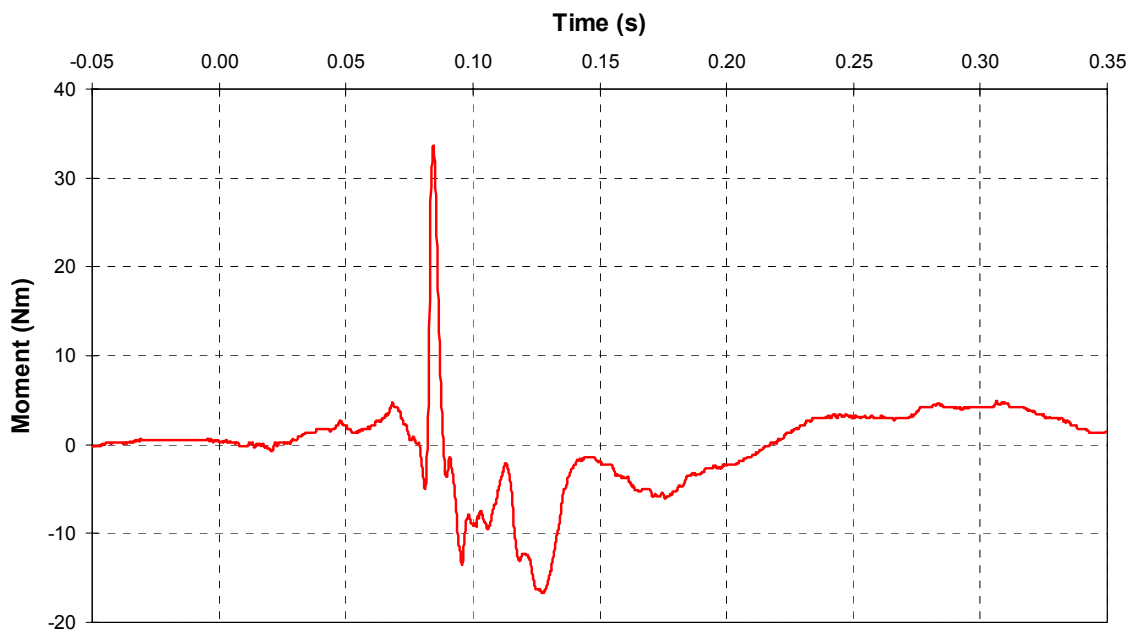
A- 27 CEF0224 2002 Acura RL Left Upper Tibia A-P Moment



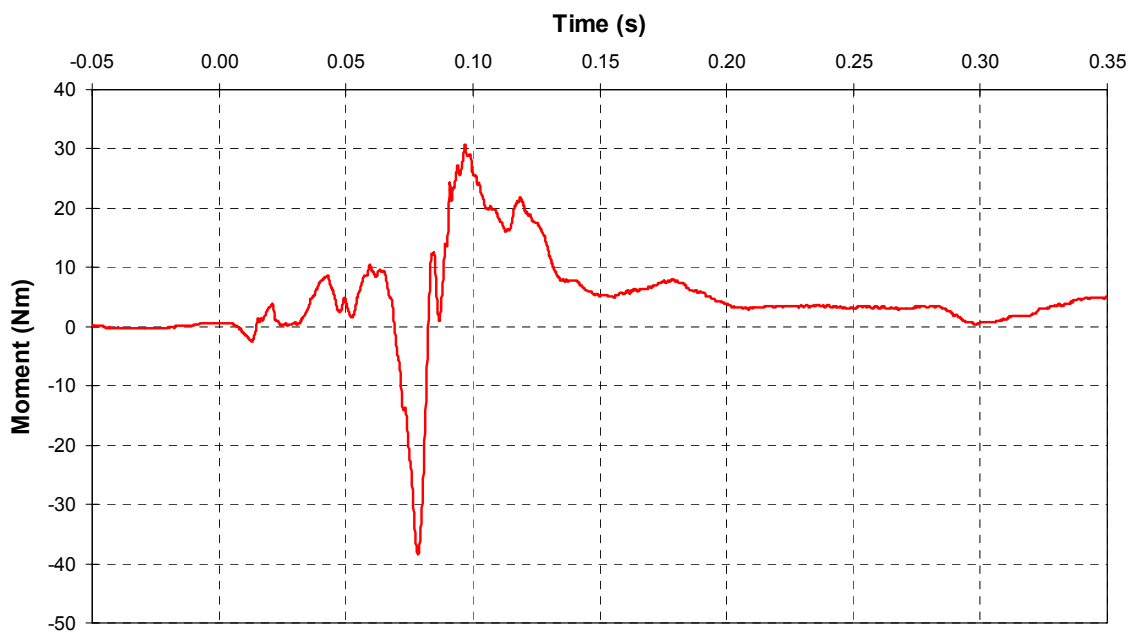
A- 28 CEF0224 2002 Acura RL Left Upper Tibia Vector Resultant Moment



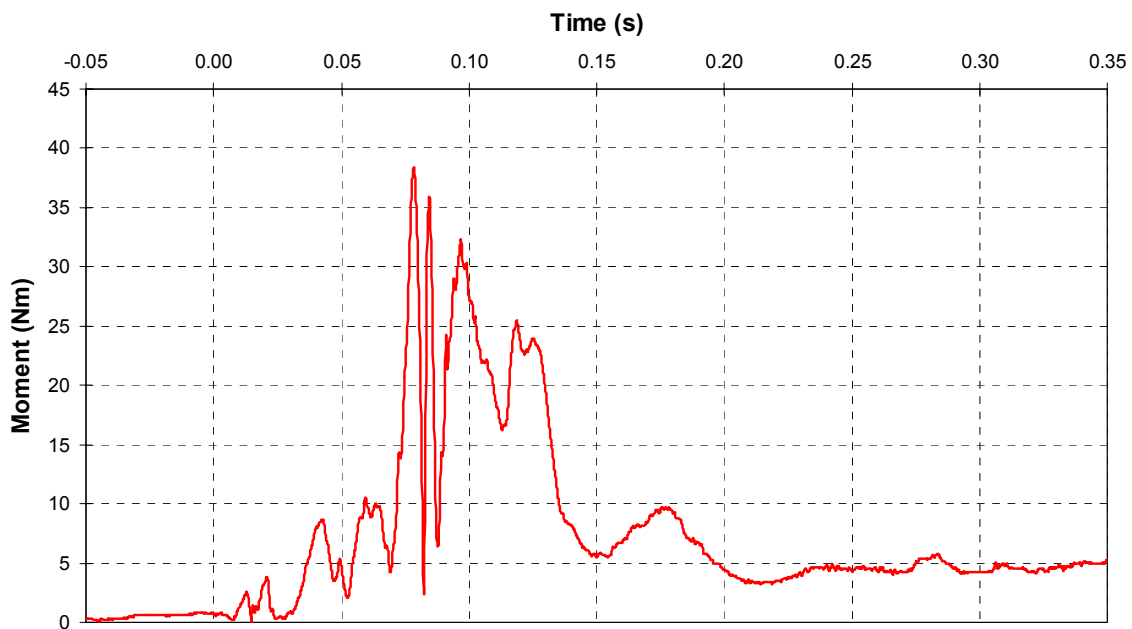
A- 29 CEF0224 2002 Acura RL Left Lower Tibia L-M Moment



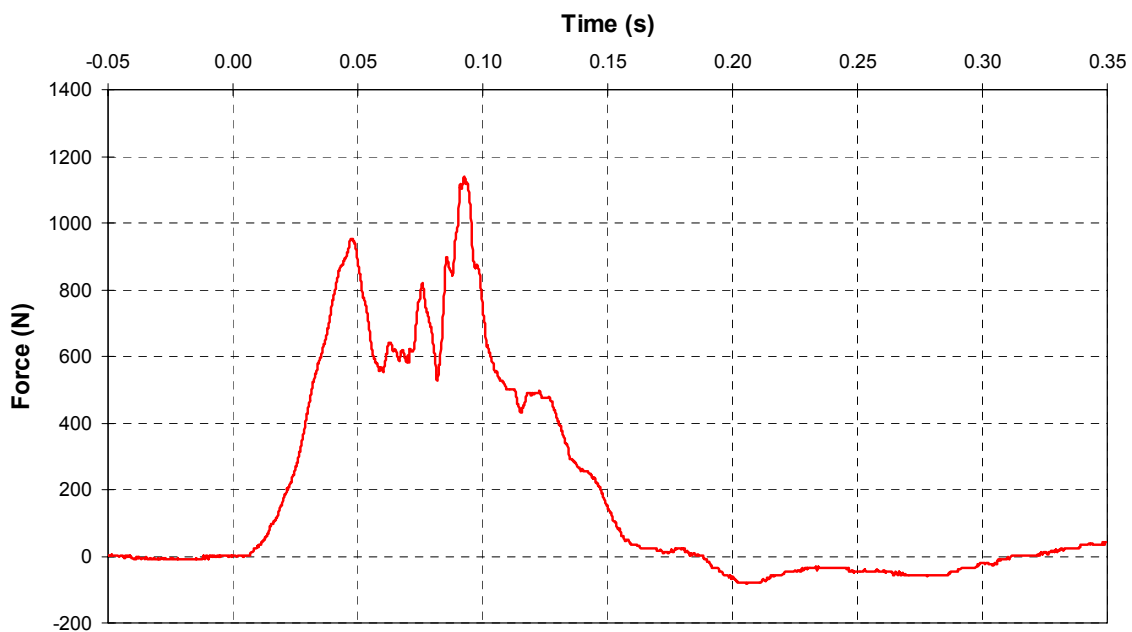
A- 30 CEF0224 2002 Acura RL Left Lower Tibia A-P Moment



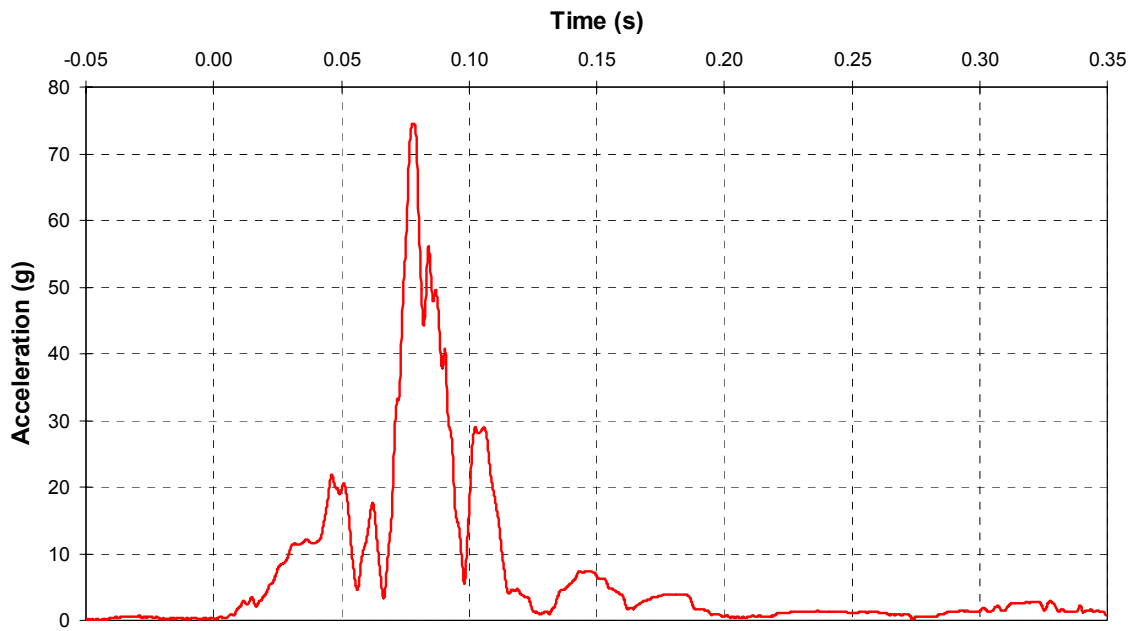
A- 31 CEF0224 2002 Acura RL Left Lower Tibia Vector Resultant Moment



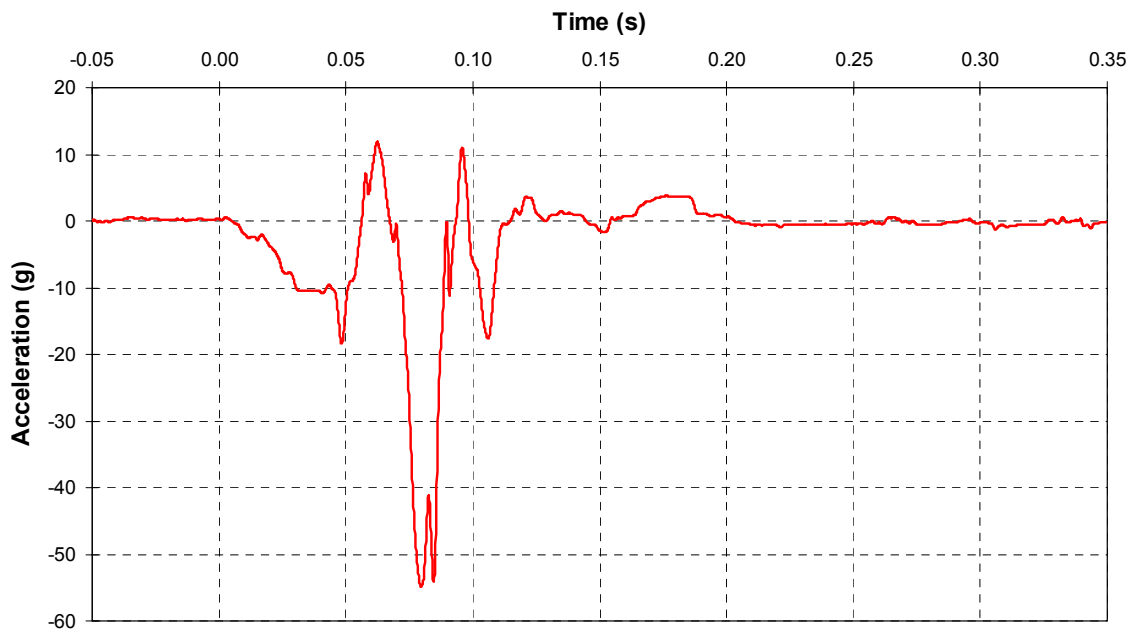
A- 32 CEF0224 2002 Acura RL Left Lower Tibia Axial Force



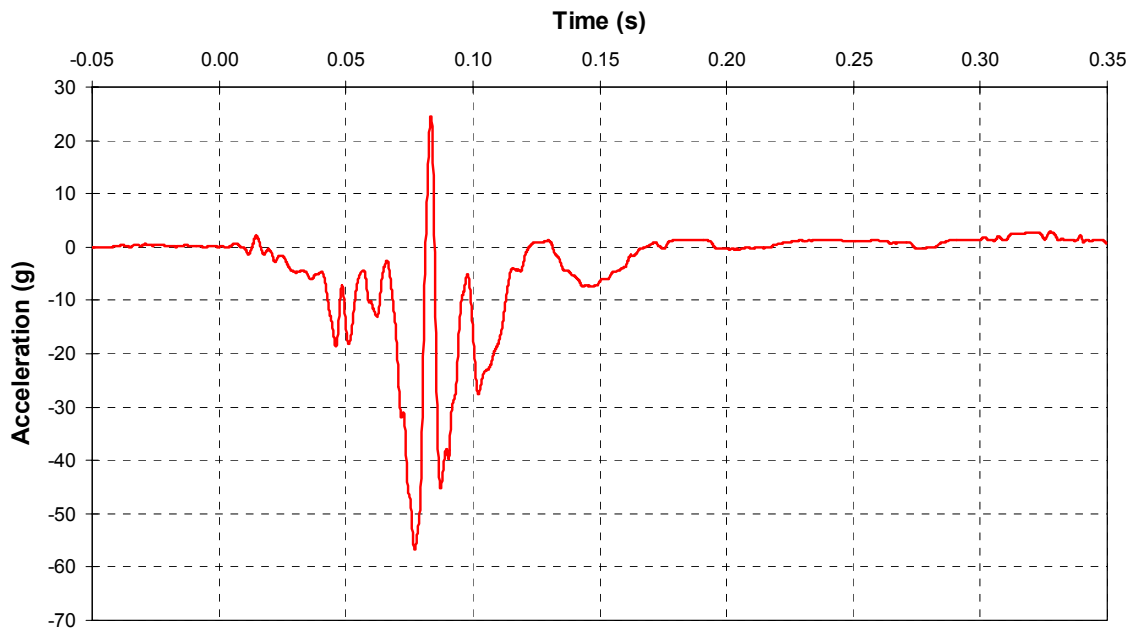
A- 33 CEF0224 2002 Acura RL Left Foot Vector Resultant Acceleration



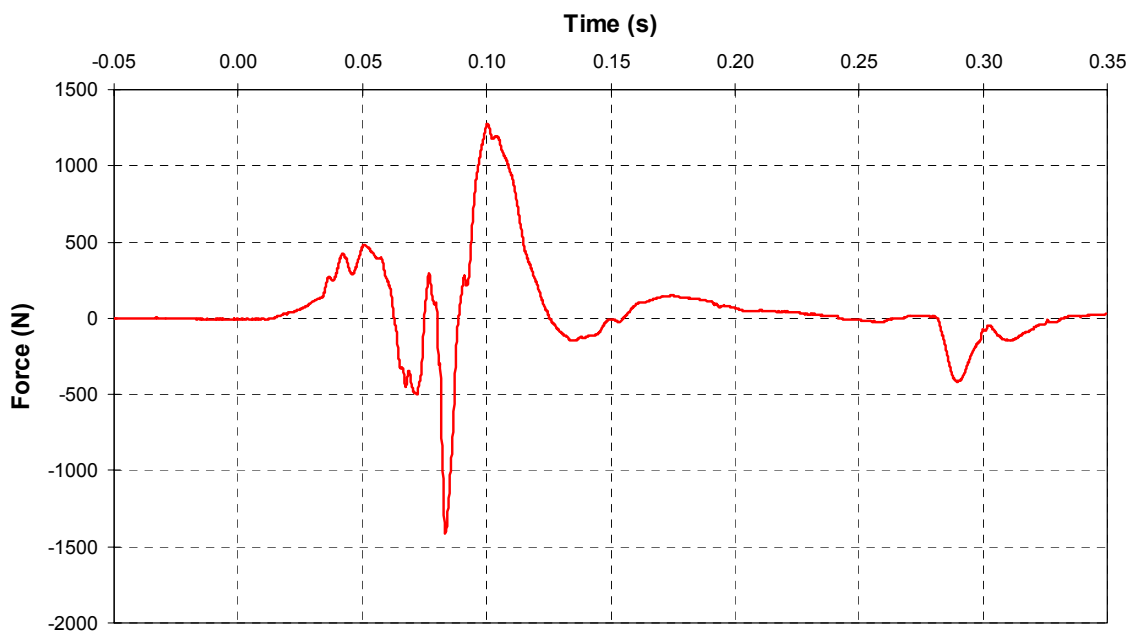
A- 34 CEF0224 2002 Acura RL Left Foot A-P Acceleration



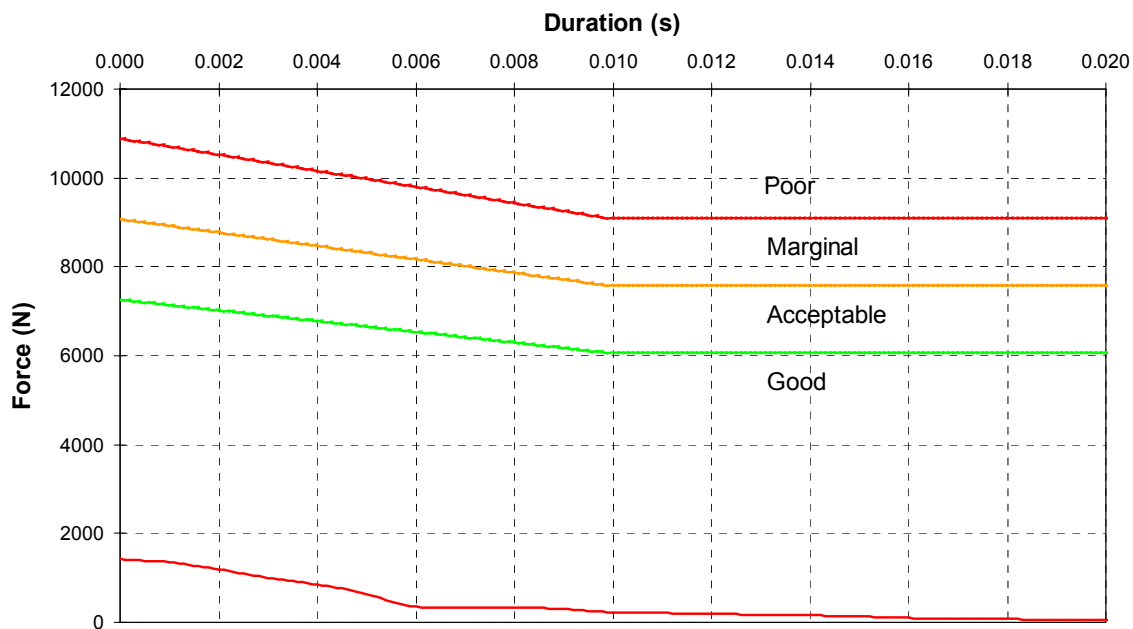
A- 35 CEF0224 2002 Acura RL Left Foot I-S Acceleration



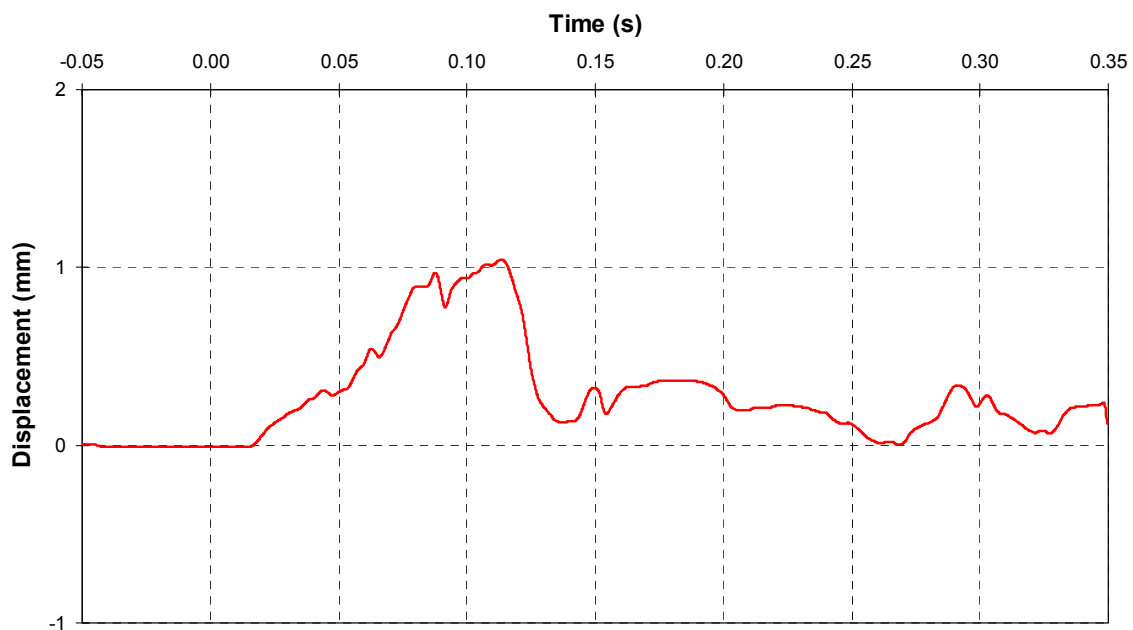
A- 36 CEF0224 2002 Acura RL Right Femur Axial Force



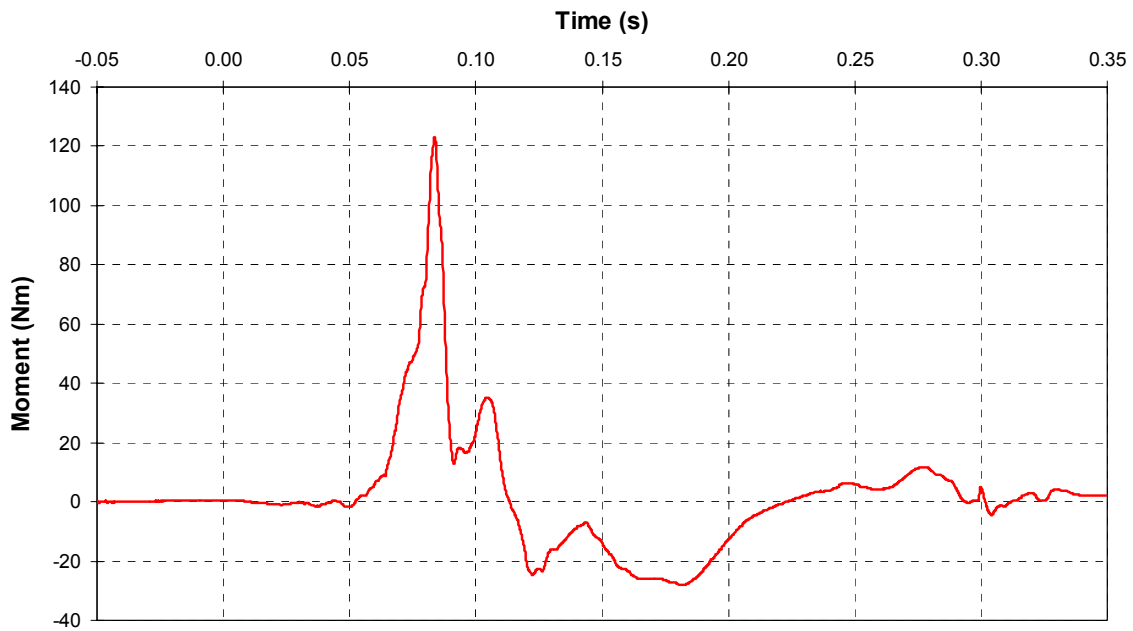
A- 37 CEF0224 2002 Acura RL Right Femur Axial Force Analysis



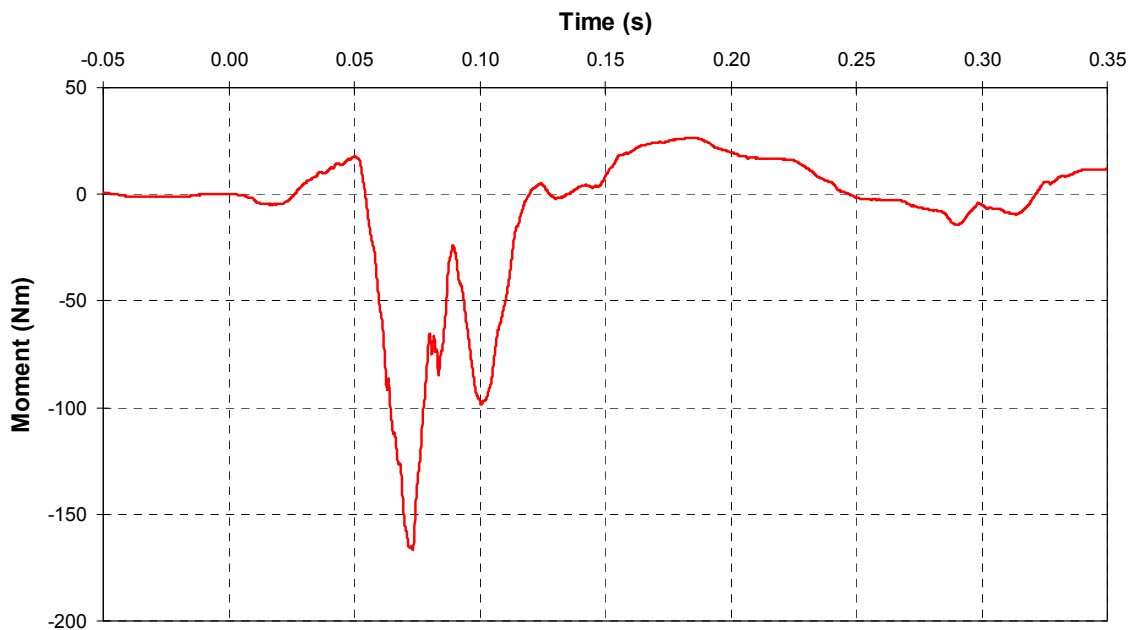
A- 38 CEF0224 2002 Acura RL Right Tibia-Femur Displacement



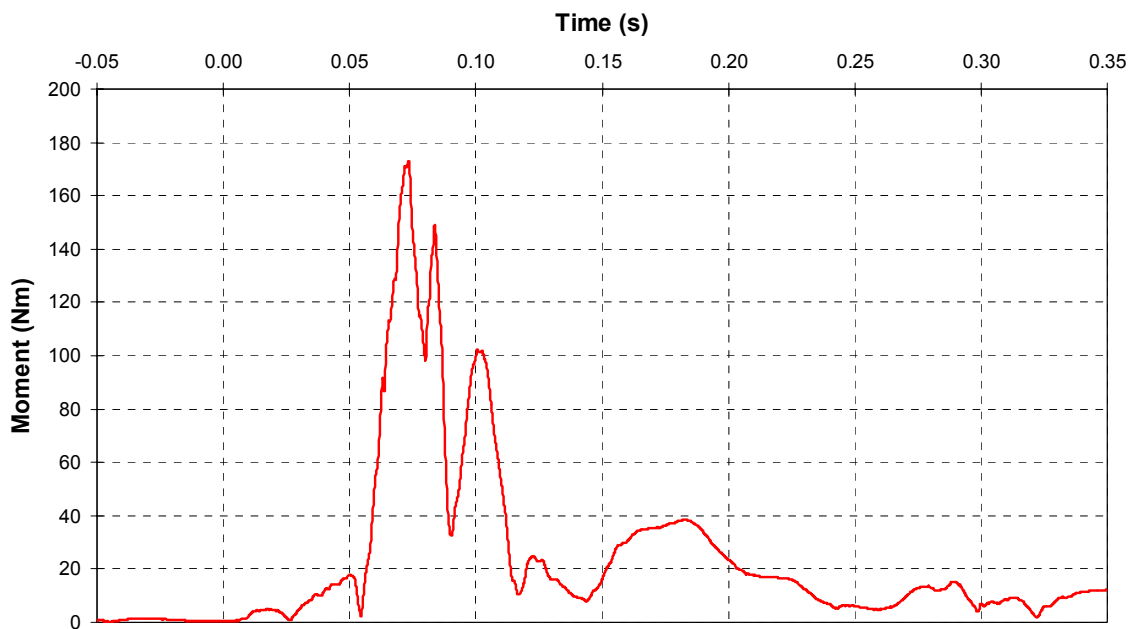
A- 39 CEF0224 2002 Acura RL Right Upper Tibia L-M Moment



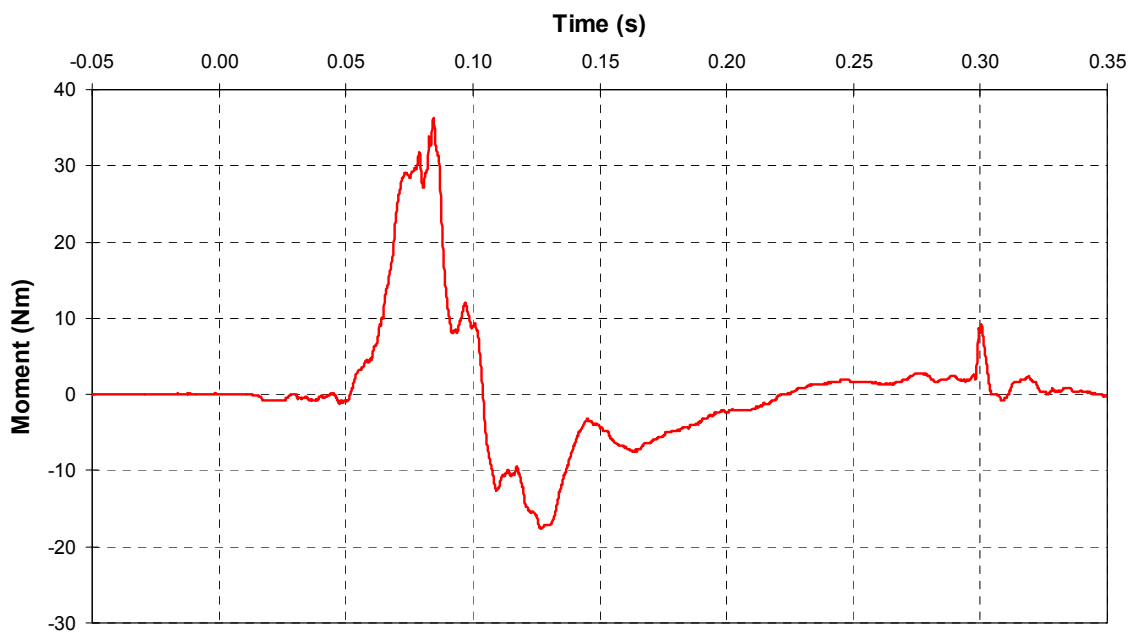
A- 40 CEF0224 2002 Acura RL Right Upper Tibia A-P Moment



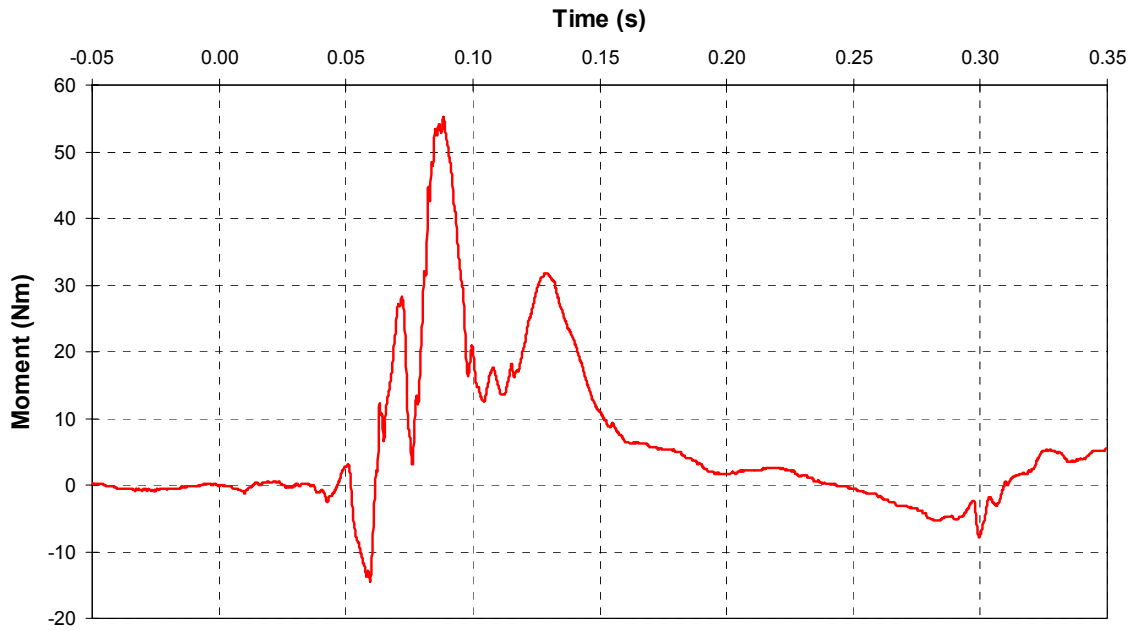
A- 41 CEF0224 2002 Acura RL Right Upper Tibia Vector Resultant Moment



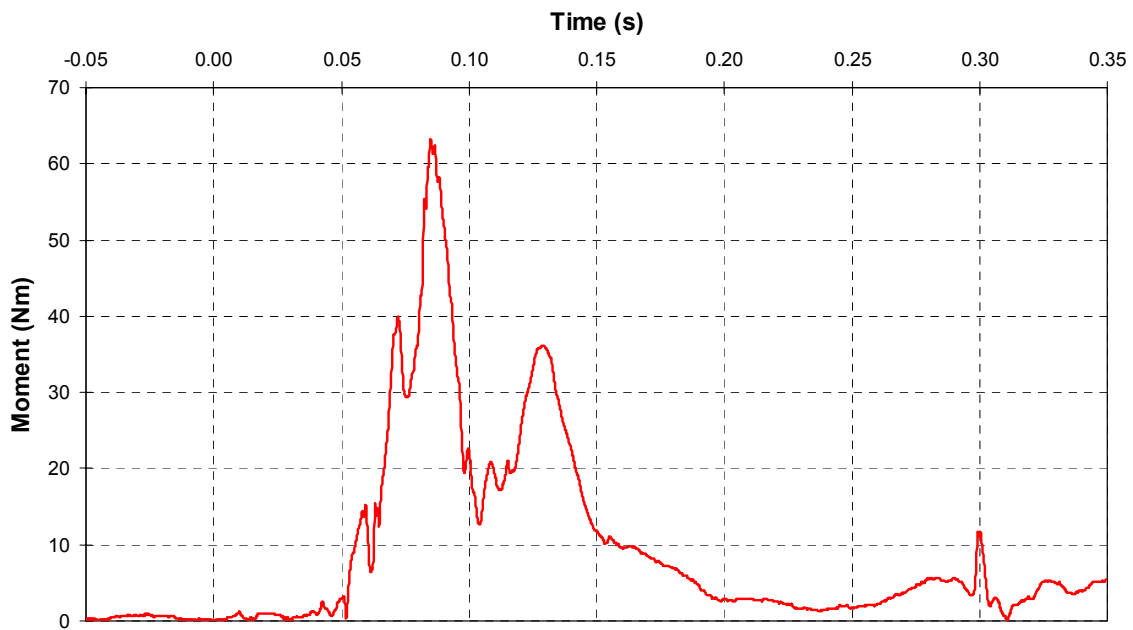
A- 42 CEF0224 2002 Acura RL Right Lower Tibia L-M Moment



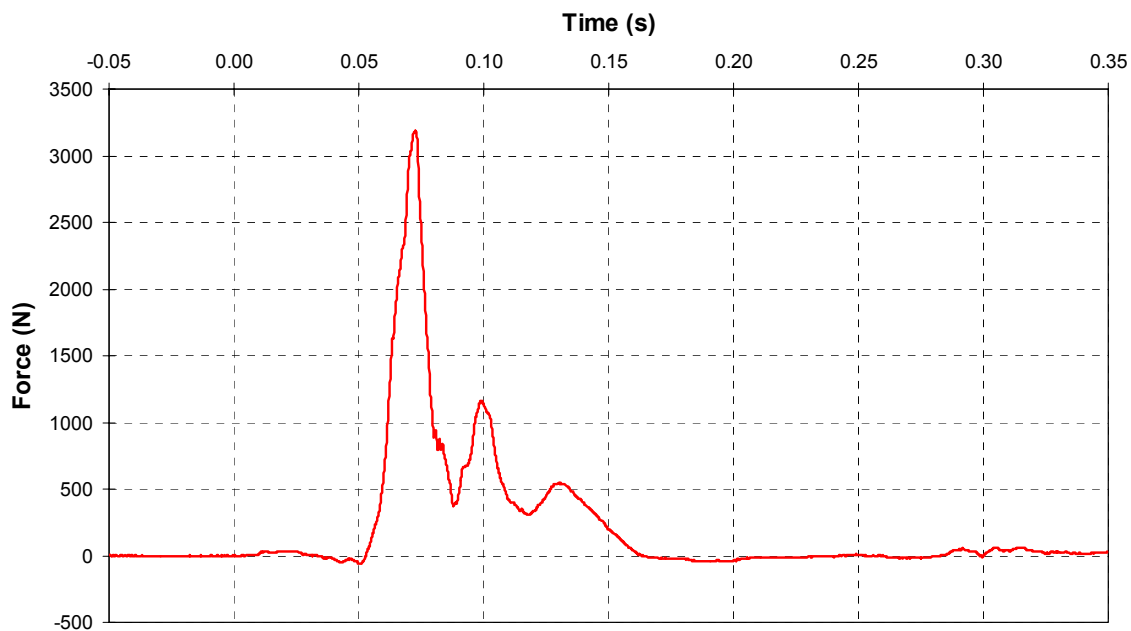
A- 43 CEF0224 2002 Acura RL Right Lower Tibia A-P Moment



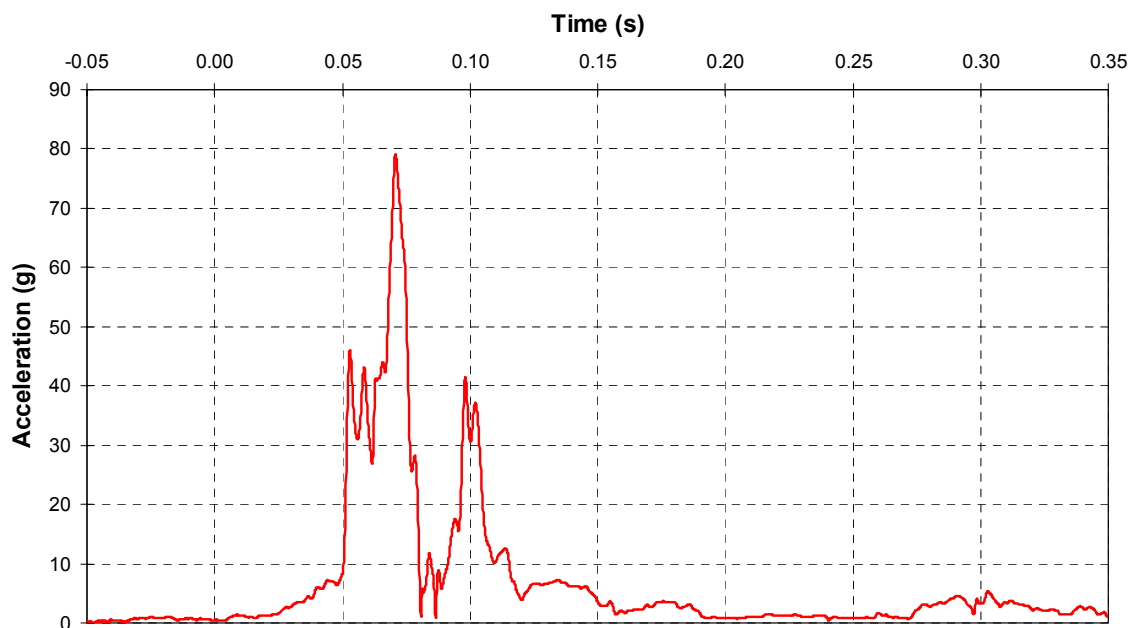
A- 44 CEF0224 2002 Acura RL Right Lower Tibia Vector Resultant Moment



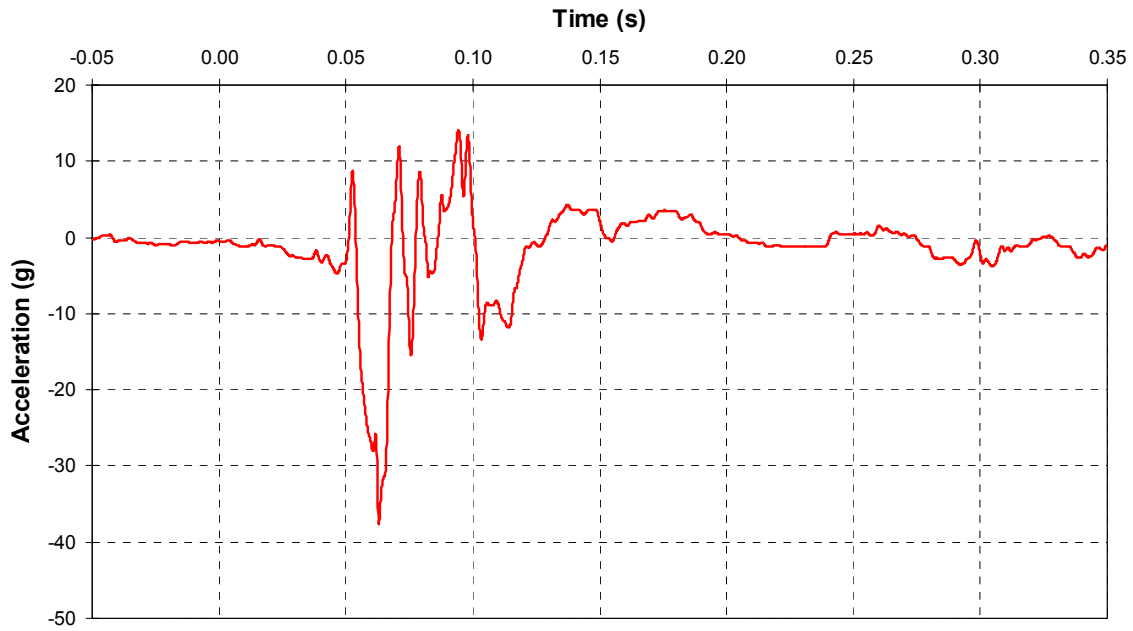
A- 45 CEF0224 2002 Acura RL Right Lower Tibia Axial Force



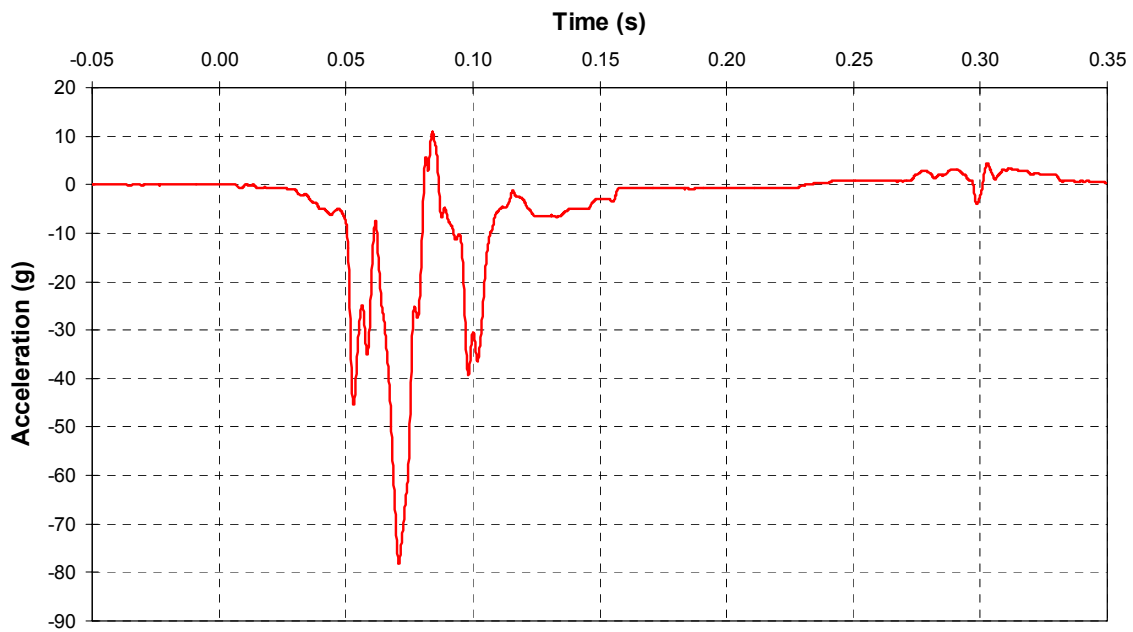
A- 46 CEF0224 2002 Acura RL Right Foot Vector Resultant Acceleration



A- 47 CEF0224 2002 Acura RL Right Foot A-P Acceleration



A- 48 CEF0224 2002 Acura RL Right Foot I-S Acceleration





ACURA

2002 3.5RL 4DR

VEHICLE NUMBER: **JH4KA96542C015470**

ENGINE NUMBER: **C35A1-7015896** EXT: **VERMONT GREEN P.**

CONTROL NUMBER: **241694**

INT: **PARCHMENT**

STANDARD EQUIPMENT AT NO EXTRA COST

* TECHNICAL FEATURES *

- 3.5-Liter SOHC 24-Valve V6 Engine
- 4-Speed Automatic Transmission With Grade Logic Control
- 4-Wheel Disc Brakes
- Double Wishbone Suspension
- Front and Rear Stabilizer Bars
- Speed-Sensing Power Assisted Rack and Pinion Steering
- EPA & CARB Low Emissions Vehicle Certified (LEV)
- 105K Miles - No Scheduled Tune-ups (Under Normal Conditions)

* SAFETY FEATURES *

- Driver's and Front Passenger's Airbags (SRS)
- Driver's and Front Passenger's Side Airbags
- Vehicle Stability Assist (VSA)
- Anti-Lock Braking System (ABS)
- Traction Control System (TCS)
- Front Seat Belt Pre-Tensioners
- Front and Rear Crumple Zones
- Side Impact Door Beams
- Theft Deterrent Immobilizer and Anti-Theft Systems
- Remote Keyless Entry System
- Bumpers Conform to Fed. Performance Standard When Tested at 5 MPH.

* INTERIOR FEATURES *

- OnStar 1year Safe & Sound Services
- Leather-Trimmed Seating Surfaces
- Wood-Trimmed Center Console
- Automatic Climate Control System With Micron Air Filter
- Acura/BOSE AM/FM/Cassette Stereo w/ CD Changer & Anti-Theft Feature
- Steering Wheel Audio Controls
- Driver's 8-Way Power Seat
- Heated Front Seats
- Passenger's 4-Way Power Seat
- Driver's Seat/Steering Wheel/Door Mirrors Memory System
- Electronic Tilt and Telescopic Steering Column System (ETS)
- HomeLink System
- Auto Day/Night Rearview Mirror
- Floor Mats

* EXTERIOR FEATURES *

- Power Moonroof With Tilt Feature
- 7.0"x16.0" Machined-Finish Alloy Wheels
- 225/55 R16 Michelin MXM4 Tires
- Xenon High Intensity Discharge(HID) Headlights w/ Auto On/Off Feature
- Fog Lights

Manufacturer's Suggested Retail Price

\$43,150.00

Full Tank of Fuel

No Charge

MSRP Includes:

- 4-Year/50K Mile Limited Vehicle Warranty
- 5-Year/Unlimited Mile Outer Body Rust-through Warranty
- Lifetime Seat Belt Warranty
- Acura Total Luxury Care (TLC)
- 24hr Roadside Assistance
- Concierge Service

Destination and Handling

500.00

TOTAL VEHICLE PRICE*
(includes Pre-Delivery Service)

\$43,650.00

PARTS CONTENT INFORMATION FOR VEHICLES IN THIS CARLINE

U.S./Canadian Parts Content: **10%**
Major Sources of Foreign Parts Content:

JAPAN 90%

NOTE: Parts content does not include final assembly, distribution or other non-parts costs.

FOR THIS VEHICLE
Final Assembly Point:

SAYAMA, SAITAMA, JAPAN

Country of Origin: Engine: **JAPAN**
Transmission: **JAPAN**

This label has been affixed to this motor vehicle by American Honda Motor Co., Inc. in U.S.A. pursuant to PUBLIC LAW 85-506 which prohibits the removal or alteration of this label prior to delivery to the ultimate purchaser.

Gasoline, license and title fees, state and local taxes and dealer installed options and accessories are not included in the manufacturer's suggested retail price. Manufacturer's suggested retail price includes manufacturer's recommended pre-delivery service.

Pursuant to California State Vehicle Code Section 24011.3, "This vehicle is equipped with bumpers that can withstand an impact of 2.5 miles per hour with no damage to the vehicle's body and safety systems, although the bumper and related components may sustain damage. The bumper system on this vehicle conforms to the current federal bumper standard of 2.5 miles per hour."

Compare this vehicle to others in the **FREE FUEL ECONOMY GUIDE** available at the dealer.

CITY MPG

18

HIGHWAY MPG

24



ACTUAL MILEAGE will vary with options, driving conditions, driving habits and vehicles condition. Results reported to EPA indicate that the majority of vehicles with these estimates will achieve between

15 AND 21 mpg in the city and between
20 AND 28 mpg on the highway

2002 3.5RL
3.5 LITER 6-CYL ENGINE
4-SPD AUTOMATIC TRANSMISSION
MULTI-PORT FUEL INJECTION
FEEDBACK FUEL SYSTEM

Estimated Annual Fuel Cost
\$1238

FOR COMPARISON SHOPPING, all vehicles classified as **MIDSIZE** have been issued mileage ratings ranging from

11 to 26 mpg city and
16 to 33 mpg highway

WWW.FUELECONOMY.GOV

DEALER 251489



PORT OF ENTRY

PORTLAND

ORIG. DLR. 251489

CROWN ACURA
8704 W. BROAD ST.
RICHMOND VA 23294

DELIVERY POINT

BALTIMORE

REF.NO 12301

SHIP #

B62-772736

HN CODE AL-0050

ROW/SPACE

TRANSPORTATION METHOD L20 PETERSBUR

EMISSION 50 STATE



VIN: JH4KA96542C015470