Insurance Institute for Highway Safety
Crashworthiness Evaluation

Crash Test Report
2000 Nissan Maxima (CF00015)

Vehicle identification number: JN1CA31A0YT214504
Body style: Midsize 4-door sedan
Engine/transmission: Transverse 3.0-liter, 4-speed automatic, front-wheel drive

Standard crashworthiness features:

Driver and right front passenger front airbags
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)
Center rear 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:

Four-wheel antilock brakes

Optional safety features:

Driver and right front passenger seat-mounted side airbags (designed to protect head and torso)

Vehicle specifications (provided by manufacturer):

Wheelbase:	275 cm
Overall length:	484 cm
Overall width:	178 cm
Curb weight:	1,445 kg

Vehicle specifications (measured):

Front bumper to firewall:	118 cm
Curb weight:	1,506 kg
Test weight:	1,624 kg (59% front, 41% rear)
Overall width:	178 cm

Nominal test parameters:

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

Crash test date:

April 26, 2000

Figure 1
Precrash and Postcrash Side Views — 2000 Nissan Maxima

Summary

A 2000 Nissan Maxima was crash tested on April 26, 2000 into a fixed deformable barrier at 39.6 mi/h (63.7 km/h) and a 41 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 6-8 cm. Resultant intrusion in the driver footwell measured 15 cm at the footrest and 21-26 cm at other places on the toepan. All doors remained closed during the crash. After the crash, the driver door and left rear door required additional effort but no tools to open, and 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 but did not retract any of the shoulder belt webbing. A total amount of 4 cm of webbing spooled off the retractor, including about 1 cm from the force-limiting mechanism. The airbag contacted the dummy's face during deployment. During rebound from the airbag, the dummy's head moved downward and outward somewhat and then moved upward and contacted the roof side rail and head restraint. The side airbag also deployed during the crash, but the dummy did not contact it. After the crash, the upper end of the steering column had moved upward 9 cm and rearward 8 cm.

The peak resultant head acceleration from the roof rail contact was 16 g. The maximum left lower tibia A-P moment was 263 Nm, significantly contributing to the left lower tibia index of 1.22. The maximum right lower tibia L-M moment was –218 Nm, significantly contributing to the right lower tibia index of 1.21. The maximum right upper tibia index was 0.87, and the maximum right tibia axial force was –7.1 kN.

Test Conditions

This vehicle had been tested previously in the Institute's Low-Speed Crash Test Program and subjected to an impact on the front corner of the passenger side at 5 mi/h (8 km/h) into a 30 degree angle barrier and a rear impact at 5 mi/h (8 km/h) into a 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 VII). 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, and steering column adjustments 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, and steering column 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 60 cm behind its center of gravity (174 cm behind the front axle). The vehicle speed recorded just prior to impact was 39.6 mi/h (63.7 km/h), and the actual overlap was 41 percent.

Structural Performance

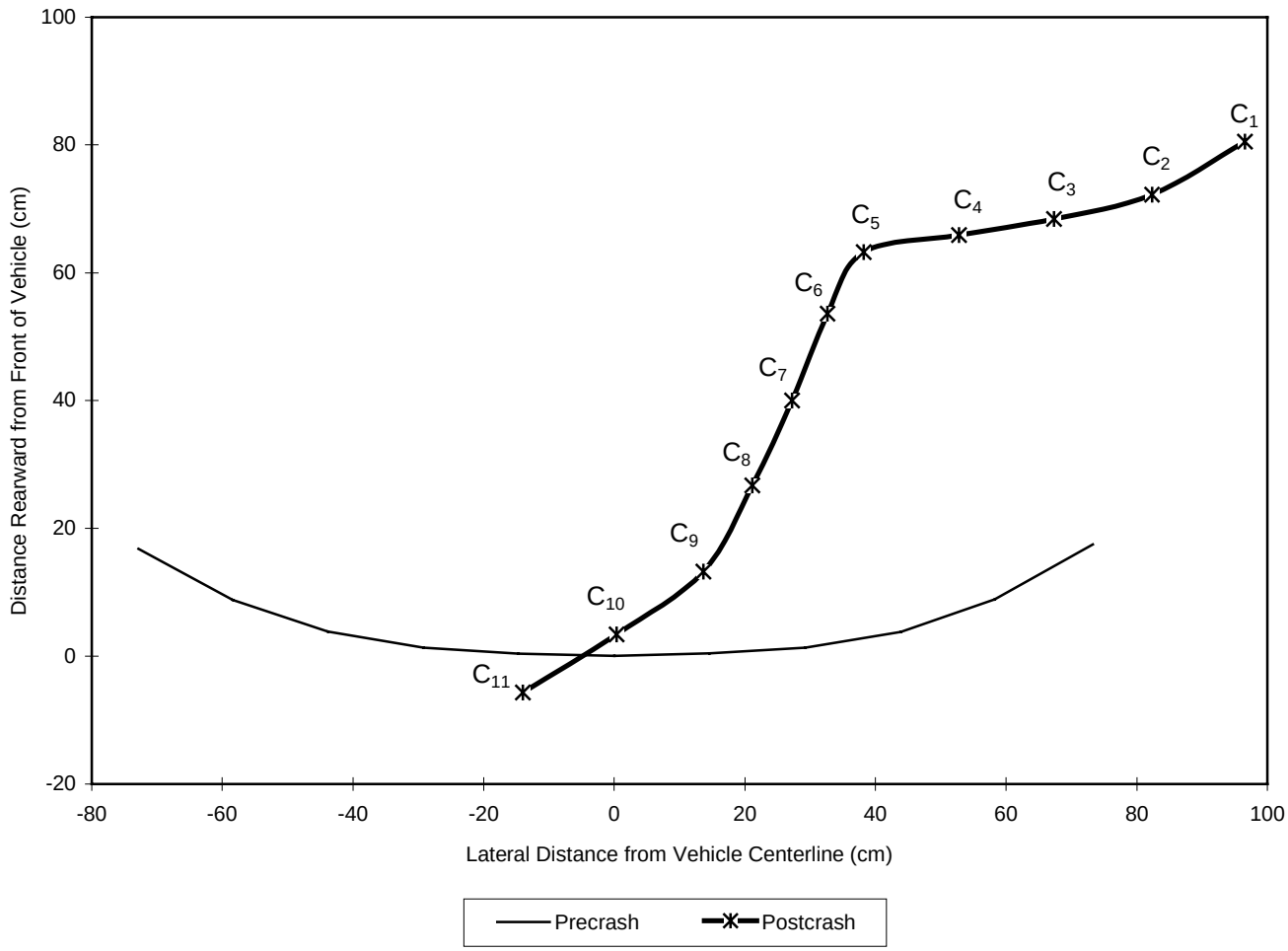
All doors remained closed during the crash. The driver door aperture shortened 9 cm, as measured at the lower edge of the window. After the crash, the driver door and left rear door required additional effort but no tools to open, and the right front and right rear doors opened with ease.

No fuel system leaks were observed after the crash. In addition, no fuel system leaks were observed when the vehicle was rotated onto its right side to allow postcrash photography.

Figure 2 shows the overhead view of the crash deformation. Figure 3 illustrates the precrash and postcrash contour measures of the front bumper cover profile and the resulting permanent crush. Figure 4 shows the precrash and postcrash views from below. Figure 5 illustrates the deformation of the side rails, door sills, and radiator and engine supports, which are visible in Figure 4.

Figure 2
Overhead View of Crash Deformation — 2000 Nissan Maxima

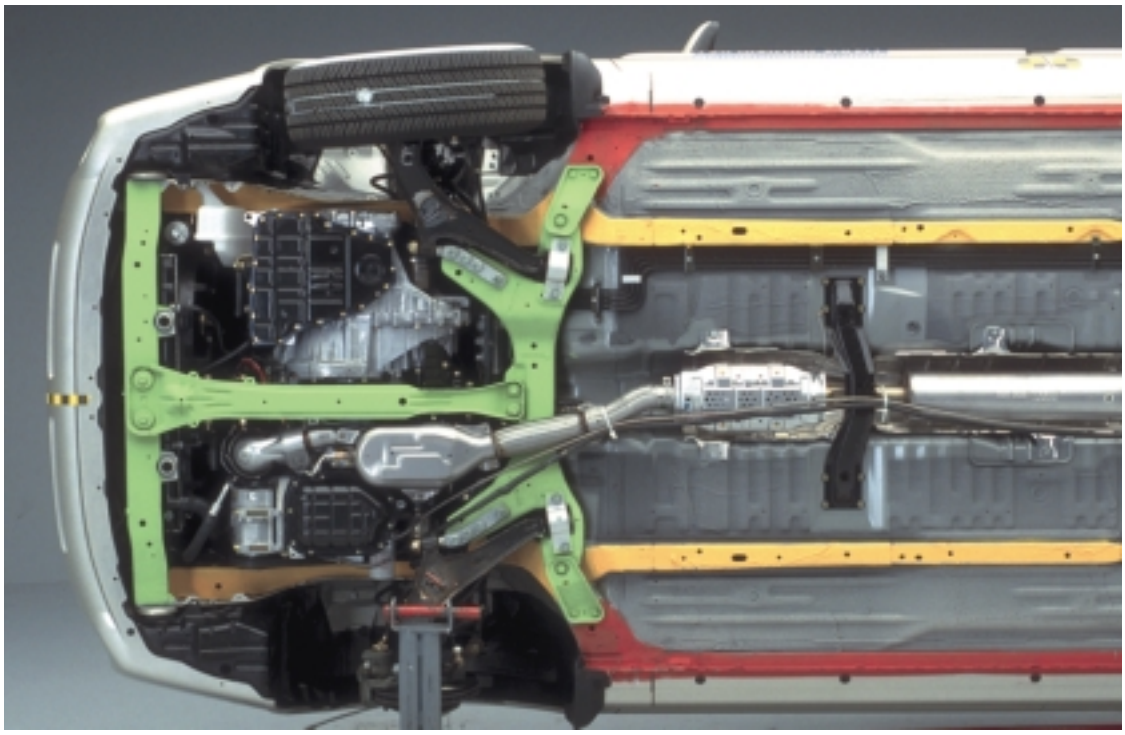
Figure 3
Front Bumper Cover Crush Contour — 2000 Nissan Maxima



	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)	80	72	68	66	63	54	40	27	13	3	–6
Precrash Contour (cm)	17	9	4	1	0	0	0	1	4	9	17
Resulting Crush (cm)	63	63	64	65	63	54	40	26	9	–6	–23

The length of the reference line was 146 cm precrash and 111 cm postcrash.

Figure 4
Precrash and Postcrash Views from Below — 2000 Nissan Maxima



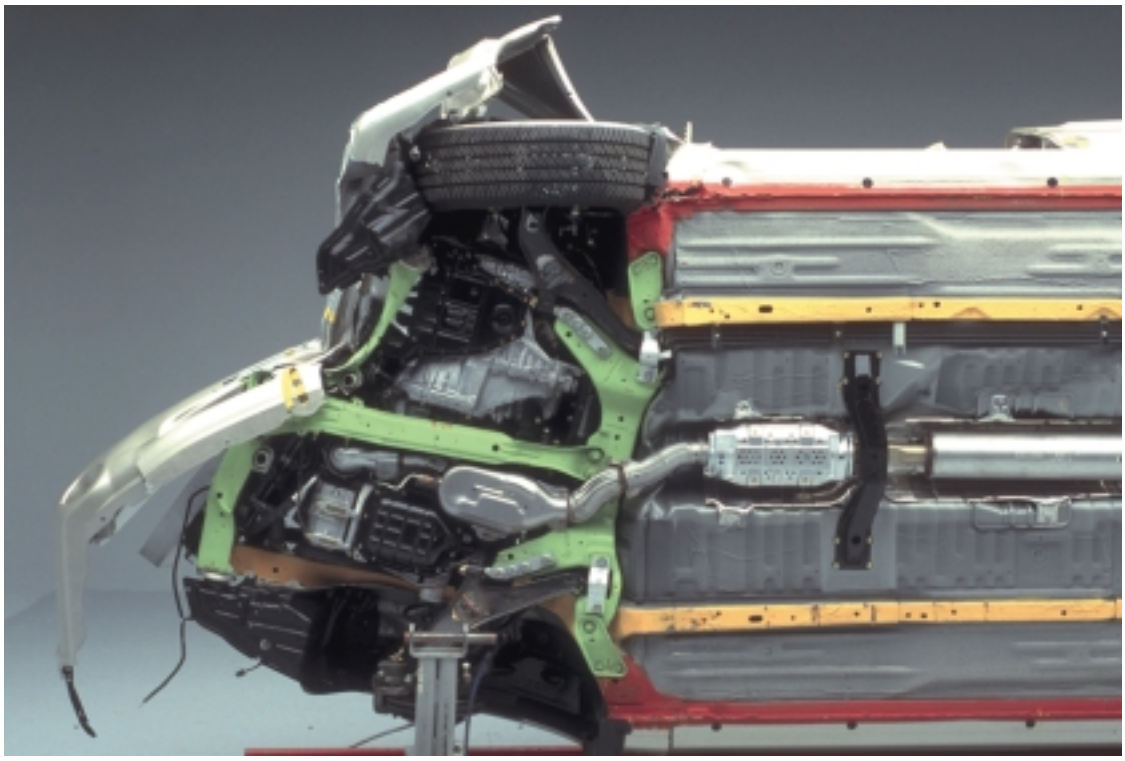
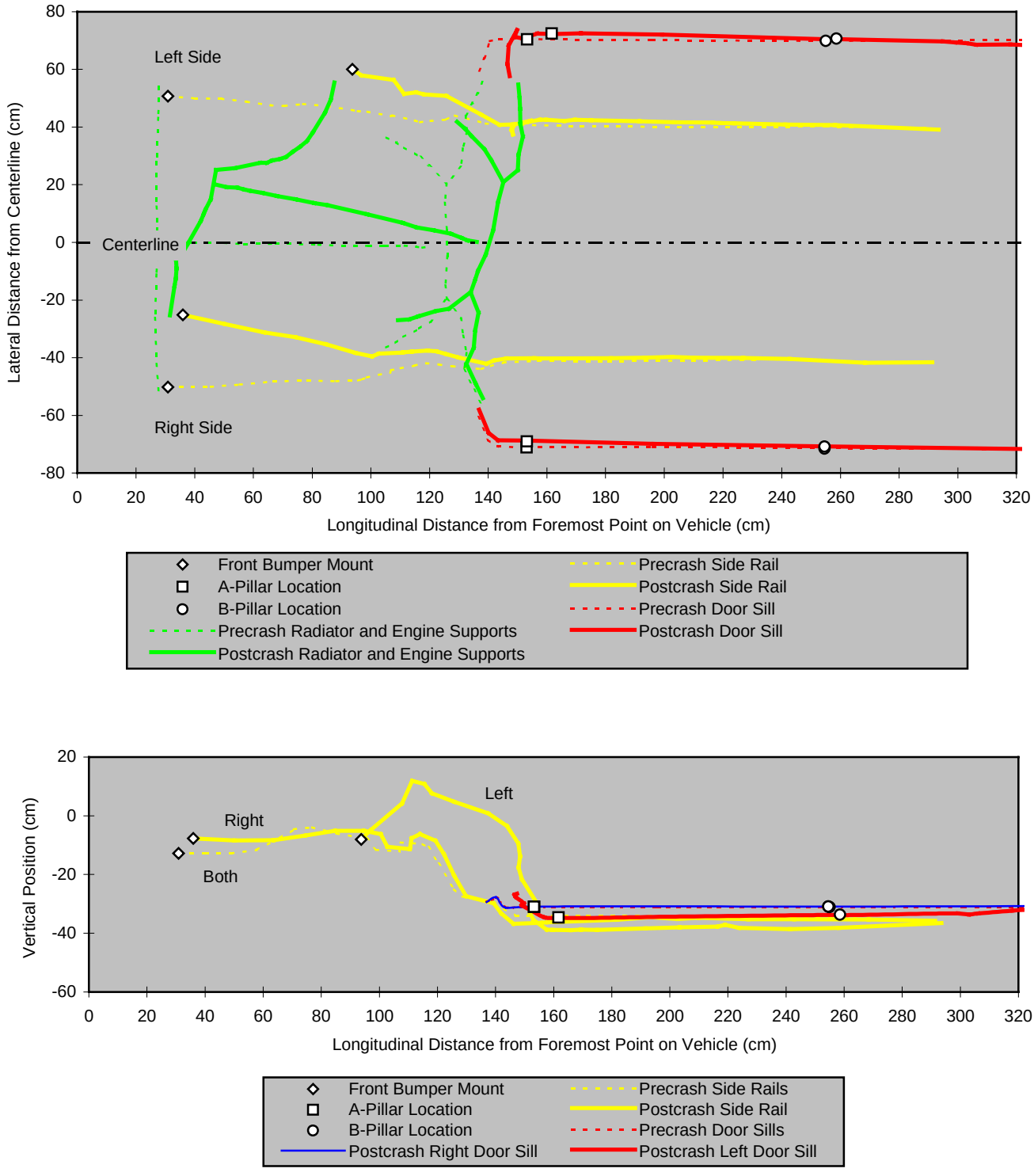


Figure 5
Structural Deformation, Views from Below and Side — 2000 Nissan Maxima



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 VII). 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 — 2000 Nissan Maxima

Selected Locations*	Longitudinal	Lateral	Vertical	Resultant
Steering column (cm)	–8	0	9	12
Left lower instrument panel (cm)	–8	0	0	8
Right lower instrument panel (cm)	–6	–1	–2	6
Brake pedal (cm)	–22	2	6	23
Left toepan (cm)	–25	–4	6	26
Center toepan (cm)	–24	–2	5	25
Right toepan (cm)	–21	–2	4	21
Footrest (cm)	–15	1	–3	15
Average displacement of the four seat-attachment bolts relative to reference system (cm)	–2	2	–2	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 10 and 2 o'clock on the forward-facing surface of the airbag. Analysis of the high-speed film taken from camera position E indicated the airbag deployed at 56 ms into the crash and appeared to be fully inflated at 78 ms. The seat-mounted side airbag deployed at about 92 ms and appeared to be fully inflated at about 112 ms. The uninflated side airbag is about 67 cm in vertical length and about 33 cm in maximum fore/aft width. The side airbag has no vent holes but is made of porous fabric.

Passenger: The top-mounted passenger airbag deployed at an angle and is untethered. The cylinder-shaped airbag is vented by two holes located at the lateral ends. The airbag did not

contribute to windshield damage during deployment. The seat-mounted side airbag did not deploy during the crash.

Seat Belts

This vehicle is equipped with dual-locking lap/shoulder belts with sliding latch plates at all seating positions and adjustable upper anchorage points at both front seating positions. The front belts also are equipped with pyrotechnic crash tensioners and mechanical force-limiting mechanisms. The front 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, the belt crash tensioner activated, but no webbing was pulled into the retractor through the D-ring, as measured by a pull-string mounted between the webbing and B-pillar trim just below and behind the D-ring. Additional postcrash inspection and disassembly of the crash tensioning mechanism verified that the pyrotechnic charge did ignite, but there was no movement of the rack/piston assembly on the pinion gear that retracts the webbing. A total amount of 4 cm of webbing was pulled from the retractor through the D-ring, as measured by a second 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 30 degrees from its precrash orientation. This measure, combined with the estimated diameter of the retractor spool and stowed webbing (44 mm), suggested the force limiter contributed about 1 cm of webbing to the total amount pulled though 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 under the driver seat caused the seat to pitch forward somewhat and to tip outboard into contact with the B-pillar.

Steering Column

The upper end of the steering column moved upward 9 cm and rearward 8 cm relative to the driver seat.

Dummy Kinematics

Head, Neck, and Torso

Analysis of the high-speed film taken from camera position E indicated the deploying airbag contacted the dummy's face at 64 ms into the crash. The face remained in contact with the airbag as it inflated; full inflation occurred by 78 ms. Paint transferred from the dummy's face indicated the nose loaded the airbag about 2 cm directly to the left of its center. On rebound from the airbag, the head initially moved downward and tilted somewhat to the left. Then as the head moved upward and rearward, the A-pillar trim (the top of which had come loose earlier in the crash) swung down into contact with the right rear top of the head at 182 ms (time determined from head acceleration measurements). The head continued upward and rearward until the top left part of the head contacted the roof side rail ahead of the B-pillar at 265 ms, according to head acceleration measurements. At about the same time, the rear of the head apparently contacted the

upper outboard part of the head restraint, but the deployed side airbag obscured the view of this contact. There was no contact between the dummy and the side airbag. Table 2 provides the timing of these events.

Table 2
Restraint System Performance and Dummy Kinematics — 2000 Nissan Maxima

Event	Time (ms)
Deployment of front airbag	56
Airbag contacts face during deployment	64
Airbag fully inflated	78
Face begins to load airbag	80
Deployment of driver side airbag	92
Side airbag fully inflated	112
A-pillar trim contacts head	182
Top left of head contacts roof rail	265

Figure 6
Dummy and Vehicle Interior, Postcrash — 2000 Nissan Maxima

Legs and Feet

Left leg and foot: Paint transferred from the dummy's left knee indicated the knee contacted the instrument panel to the left of the steering column, about 9 cm directly above the left instrument panel intrusion reference point. Paint transferred from the dummy's left shin indicated the shin contacted the knee bolster directly below the knee impact location. The left foot was found fully dorsiflexed but neither inverted nor everted, with the back of the heel resting on the floormat/carpeting on the floorpan and the sole of the forefoot just to the right of the footrest.

Right leg and foot: Paint transferred from the dummy's right knee indicated the knee primarily contacted the instrument panel to the right of the steering column, about 8 cm above and 4 cm to the left of the right instrument panel intrusion reference point. There also was a small amount of paint from the knee on the right side of the steering column trim and the column-mounted ignition switch (but not the ignition key). Paint transferred from the dummy's right shin indicated the shin contacted the knee bolster directly below the knee impact location on the instrument panel. The right foot was found fully dorsiflexed and somewhat inverted, with the sole of the forefoot and heel against the intruded toepan and apparently still on the accelerator pedal.

Dummy Injury Measures

Head

The maximum vector resultant head accelerations were recorded and the HICs were calculated during an interval that corresponds with the dummy's head excursion into the airbag. The peak resultant head acceleration from the left roof rail contact was 16 g at 277 ms. Table 3 provides a summary of the maximum head injury measurements recorded during the crash.

Table 3
Head Injury Measurements — 2000 Nissan Maxima

Measure	Published Tolerance Threshold	Result	Time (ms)
Vector resultant acceleration (g)	80	59	93
Vector resultant acceleration — 3 ms clip (g)	80	57	96-99
Head Injury Criterion (HIC)	1000	466	78-114
Head Injury Criterion — 15 ms interval (HIC-15)*	700	333	89-104

* Canadian Motor Vehicle Safety Regulations (Standard 208) allow the resultant head acceleration to exceed 80 g in airbag-equipped vehicles if HIC-15 is less than 700 (Transport Canada, 1998).

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 — 2000 Nissan Maxima

Measure	Published Tolerance Threshold	Result	Time (ms)
A-P shear force (kN)	±3.1	–0.5	71
Axial compression force (kN)	4.0	1.1	286
Axial tension force (kN)	3.3	2.0	98
Flexion bending moment (Nm)	310	32	177
Extension bending moment (Nm)	122	25	296

Chest

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

Table 5
Chest Injury Measurements — 2000 Nissan Maxima

Measure	Published Tolerance Threshold	Result	Time (ms)
Vector resultant spine acceleration — 3 ms clip (g)	60	42	97-100
Rib compression (mm)	–50	–33	100
Sternum deflection rate (m/s)	–8.2	–1.2	60

Legs and Feet

Left leg and foot: The maximum left lower tibia A-P moment was 263 Nm at 84 ms, significantly contributing to the left lower tibia index of 1.22 at 84 ms.

Right leg and foot: The maximum right lower tibia L-M moment was –218 Nm at 73 ms, significantly contributing to the right lower tibia index of 1.21 at 73 ms. The maximum right tibia axial force was –7.1 kN at 74 ms.

The right upper tibia A-P bending moment had a time signature similar to the tibia axial force (Figures A-40 and A-45). The ratio of the A-P bending moment to the axial force (approximately 0.045 m from 48 to 85 ms into the crash) is approximately the same as the distance (in meters) between a line through the knee and ankle joints and the upper load cell midline due to the bent shape of the dummy's tibia. Therefore, the upper tibia bending could have resulted from the foot force acting through the moment arm of the tibia bend rather than from transverse forces applied by contact with the knee bolster, and as a result, no upper tibia A-P or resultant moments are reported. The reported maximum right upper tibia index of 0.87 at 75 ms was calculated from only the upper tibia L-M moment and tibia axial force.

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

Table 6
Leg and Foot Injury Measurements — 2000 Nissan Maxima

Measure	Published Tolerance Threshold	Left		Right	
		Result	Time (ms)	Result	Time (ms)
Femur axial force (kN)	–9.1*	–4.8	94	–2.0	74
Tibia-femur displacement (mm)	–15	–11	96	–7	107
Upper Tibia					
L-M moment (Nm)	±225	–47	130	–154	75
A-P moment (Nm)	±225	123	94	**	n/a
Vector resultant moment (Nm)	225	127	97	**	n/a
Index	1.00	0.57	97	0.87	75
Lower Tibia					
L-M moment (Nm)	±225***	–50	83	–218	73
A-P moment (Nm)	±225***	263	84	151	80
Vector resultant moment (Nm)	225***	267	84	229	73
Axial force (kN)	–8.0***	–1.4	82	–7.1	74
Index	1.00	1.22	84	1.21	73
Foot					
A-P acceleration (g)	±150	–40	83	–98	70
I-S acceleration (g)	±150	–67	80	–76	67
Vector resultant acceleration (g)	150	71	80	121	69

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

** The upper tibia A-P bending could have resulted from the foot force acting through the moment arm of the tibia bend rather than from transverse forces applied by contact with the knee bolster; therefore the A-P and resultant moments are not indicated. The listed upper tibia index was calculated from only the upper tibia L-M moment and tibia axial force.

*** 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.

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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

2000 Nissan Maxima Midsize Four-Door Sedan: 5 mi/h Front into Angle Barrier

Test Number: LA00005
VIN: JN1CA31A0YT214504
Mileage: 20
Features: Driver and passenger front airbags, driver and front passenger side impact airbags, four-wheel antilock brakes, air conditioning, automatic transmission, heated power mirrors, keyless entry system, power door locks, power windows, power driver and passenger seats, heated back glass, tilt steering wheel, cruise control, front fog lamps, moonroof, two-stage paint.

	Part		Labor	
Description	**Mfg. No**	**Price**	**Operation**	**Hours**
Bumper reinforcement, front	620322Y900	$174.28	Replace*	3.4
Bumper cover, front			Repair	0.5
Bumper absorber, front			Repair	0.3
Bumper mounting bracket, left front			Repair*	0.3
Bumper mounting bracket, right front	622102Y900	27.66	Replace*	0.2
Headlamps			Aim	0.5
Frame sidemember end, right front			Repair*	1.0
Frame sidemember end, right front			Refinish	0.2
Paint and materials		3.60		
Total Parts		$205.54		
Total Labor		217.60		6.4
Grand Total		$423.14		

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

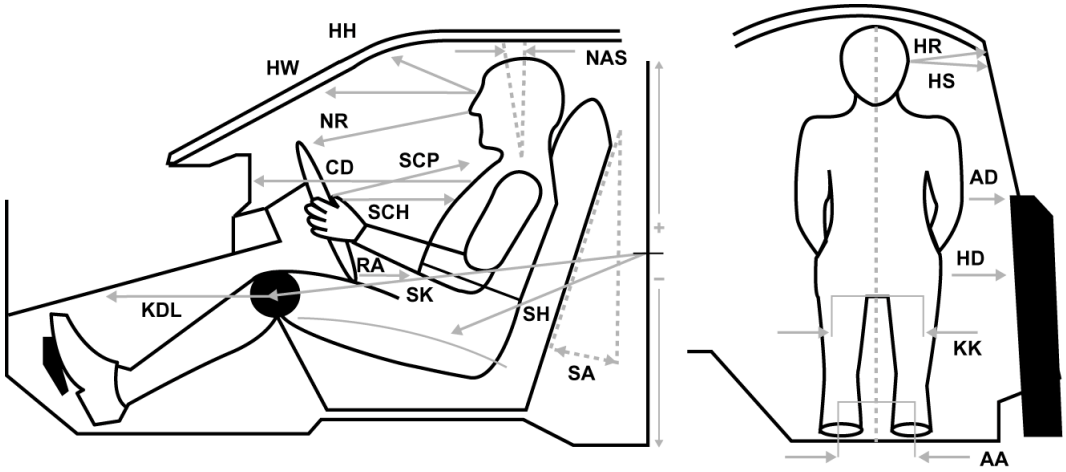
Dummy Clearance Measurements

Test Number: CF00015
Vehicle Make/Model: Nissan Maxima
Vehicle Model Year: 2000
Seat Type: Electrically adjusted bucket seat (fore/aft, height, and seat back angle)

Manufacturer's Specifications
Seat Back Information: Reclined to 10°, as measured on inboard rear frame of seat back
Upper Belt Anchorage: Set to topmost of 4 positions
Steering Column Adjustment: Set to midpoint of tilt adjustment range

Location	Code	Measure	Location	Code	Measure
Head to header	HH	300	Neck angle, torso 90	NAT90	21.3°
Head to windshield	HW	575	Neck angle, seated	NAS	4.3°
Nose to rim	NR	419	Torso angle (NAT90 – NAS)	TA	17°
Chest to dash	CD	610	Striker to knee*	SK	608
Rim to abdomen	RA	181	Striker to knee angle*	SKA	0.7°
Knee to dash, left	KDL	191	Striker to H-point, horizontal	SHH	226
Knee to dash, right	KDR	192	Striker to H-point, vertical	SHV	–119
Steering wheel to chest, horizontal	SCH	291	Ankle to ankle	AA	335
Steering wheel to chest, perpendicular	SCP	423	Knee to knee	KK	340
Steering wheel to chest, reference	SCR	390	Arm to door	AD	105
Hub to chest, minimum	HCM	240	H-point to door	HD	137
Pelvic angle	PA	24.9°	Head to A-pillar	HA	515
Seat back angle*	SA	10°	Head to roof	HR	195
			Head to side window	HS	245

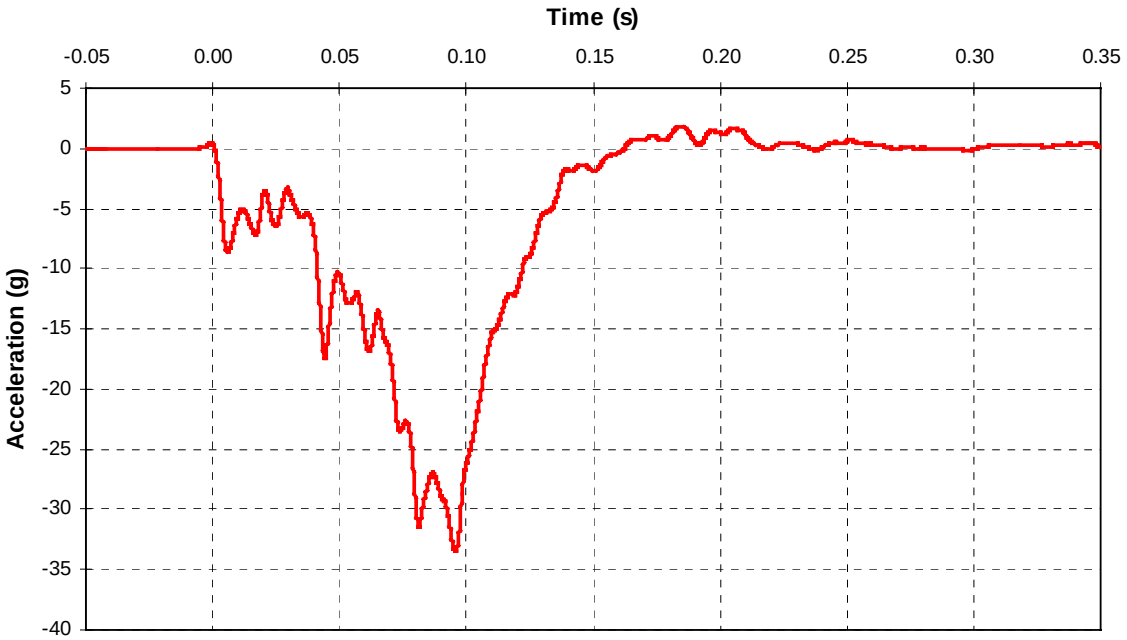
All distance measurements are in millimeters (mm).
* These measurements were made in a vertical plane containing the striker and parallel to the driver door sill.



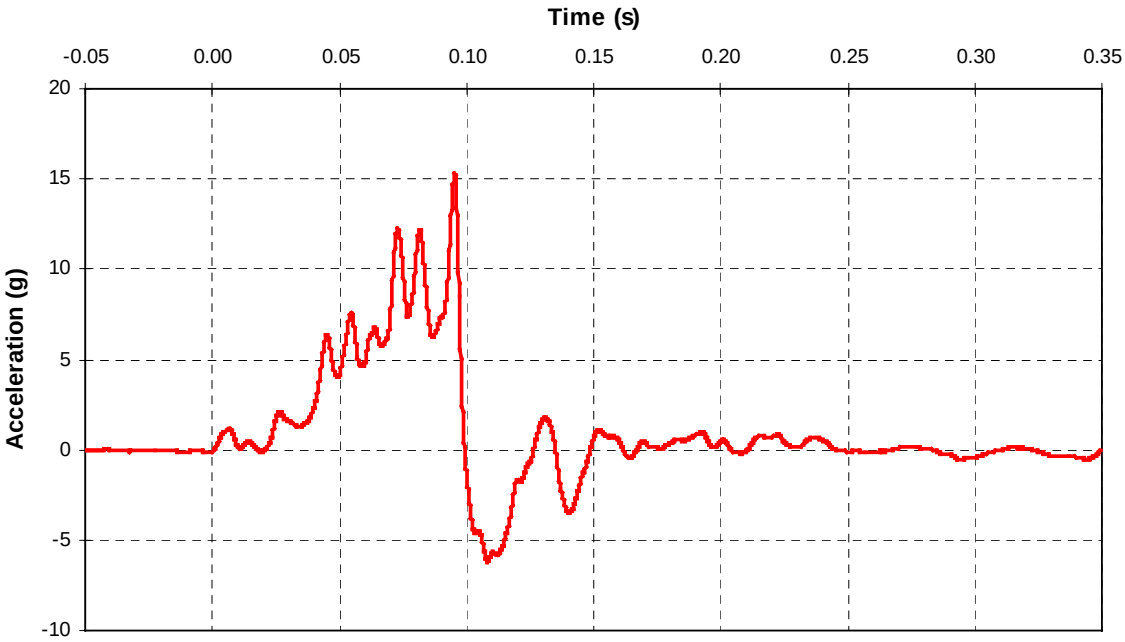
Graph Index

A-47 Right foot A-P acceleration
A-48 Right foot I-S acceleration

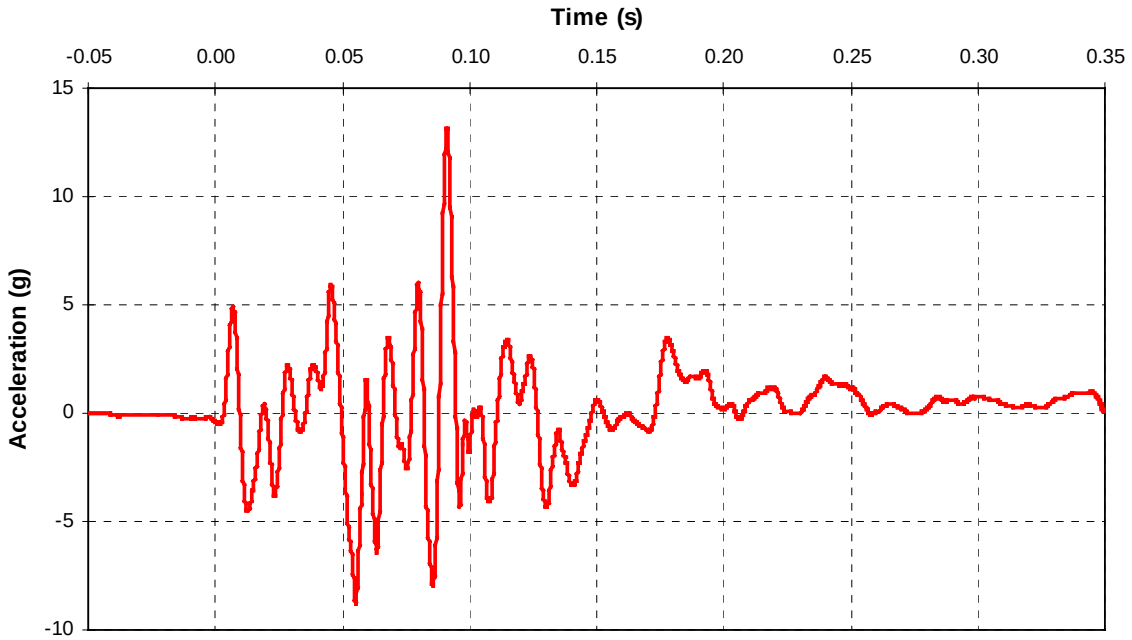
A- 1 CF00015 2000 Nissan Maxima Vehicle Longitudinal Acceleration



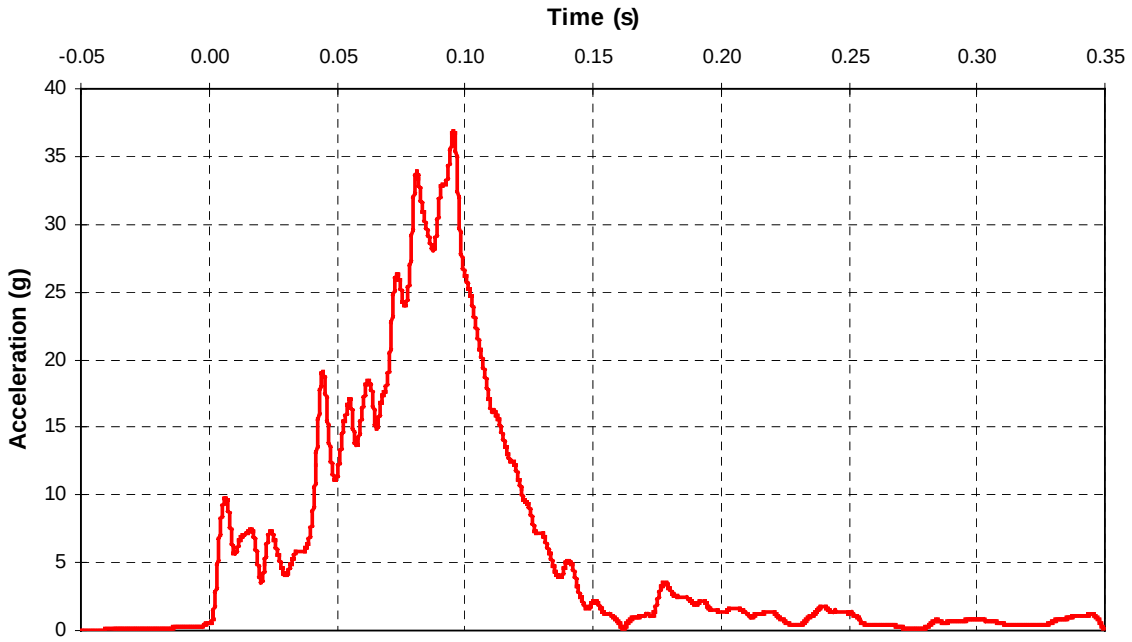
A- 2 CF00015 2000 Nissan Maxima Vehicle Lateral Acceleration



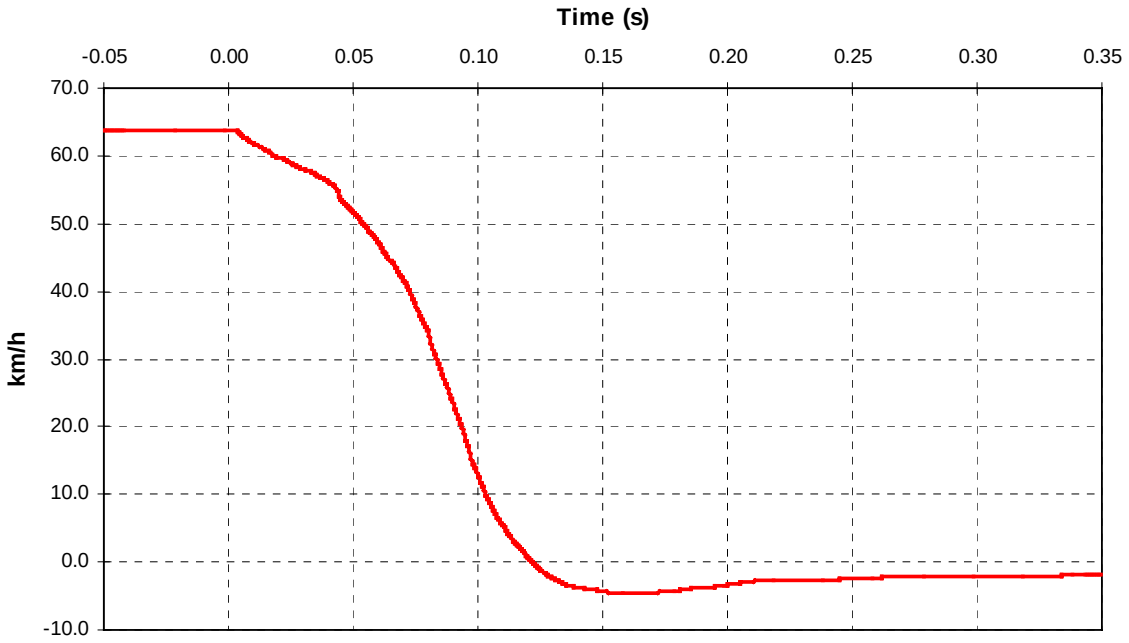
A- 3 CF00015 2000 Nissan Maxima Vehicle Vertical Acceleration



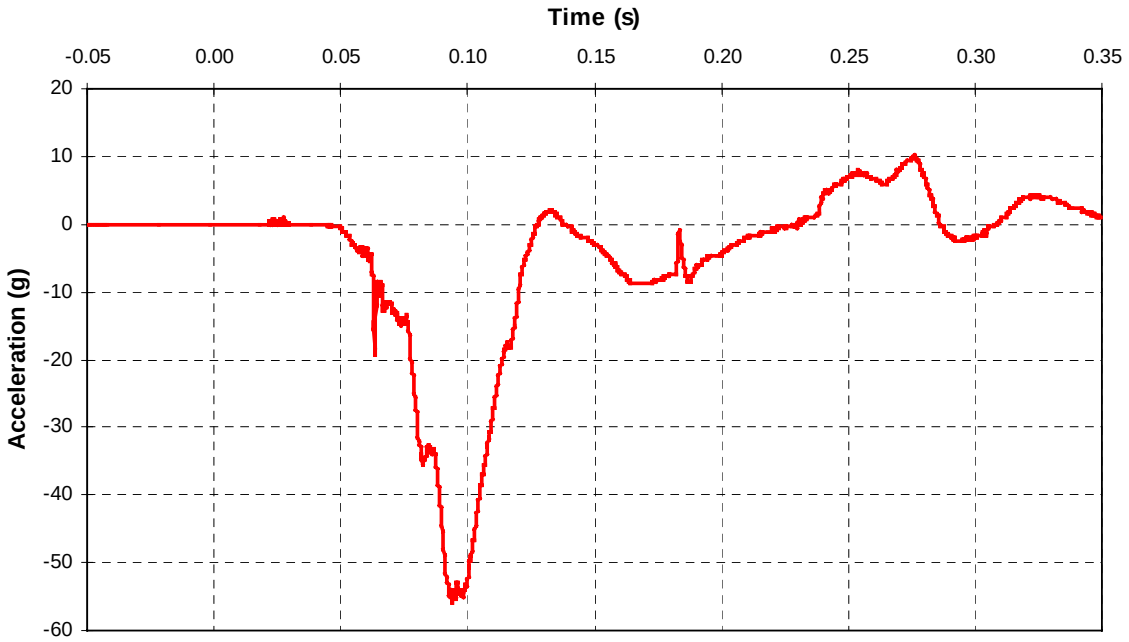
A- 4 CF00015 2000 Nissan Maxima Vehicle Vector Resultant Acceleration



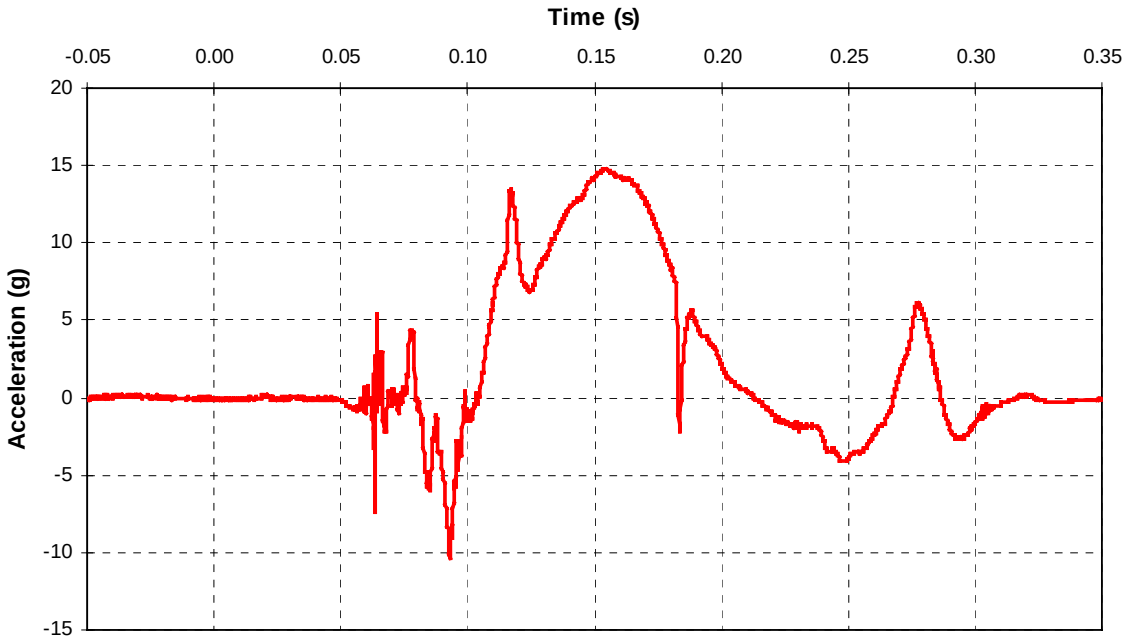
A- 5 CF00015 2000 Nissan Maxima Integration of Vehicle Longitudinal Acceleration



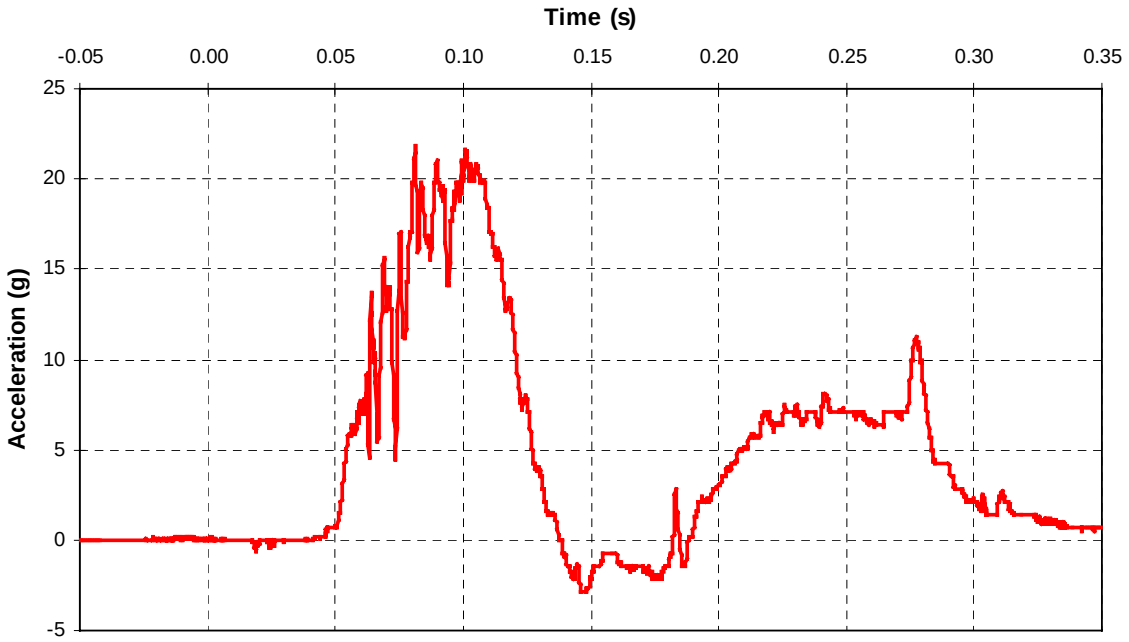
A- 6 CF00015 2000 Nissan Maxima Head A-P Acceleration



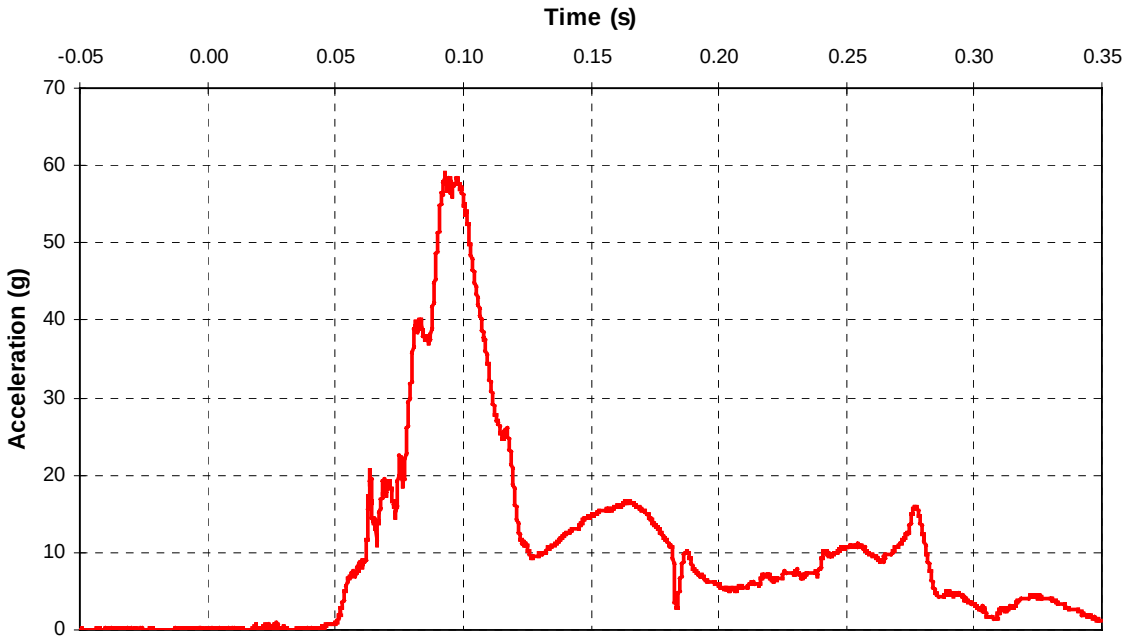
A- 7 CF00015 2000 Nissan Maxima Head L-M Acceleration



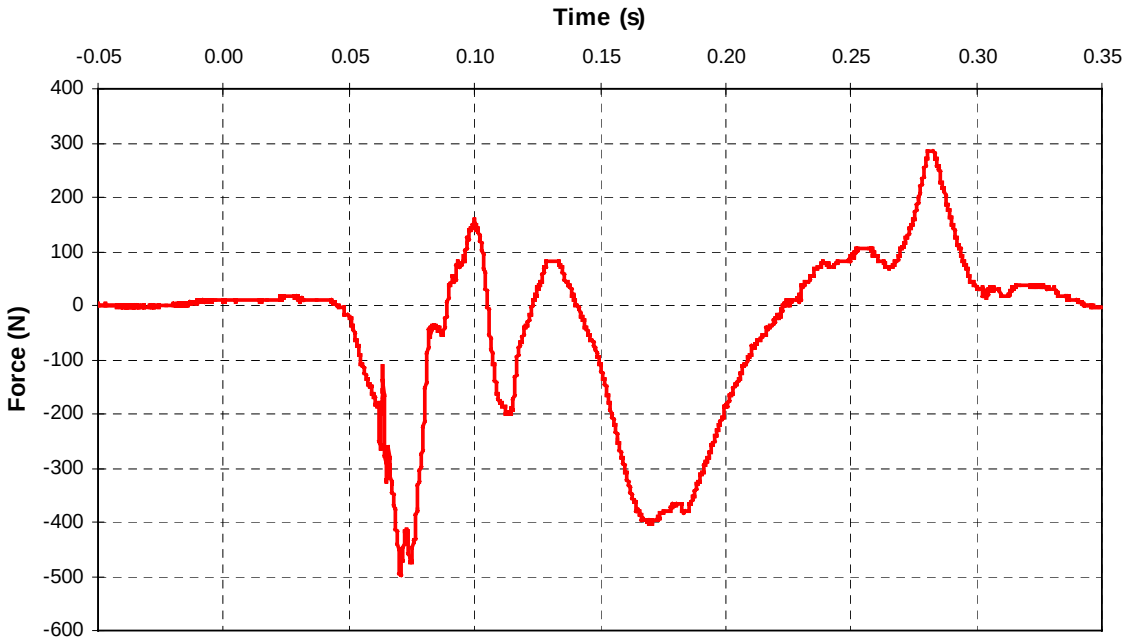
A- 8 CF00015 2000 Nissan Maxima Head I-S Acceleration



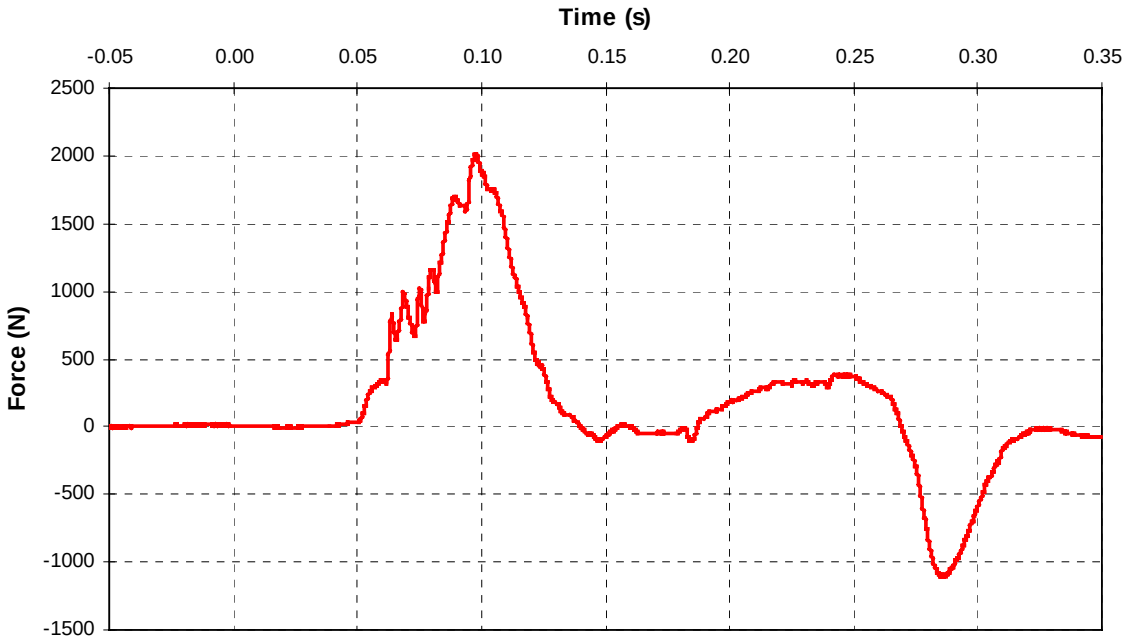
A- 9 CF00015 2000 Nissan Maxima Head Vector Resultant Acceleration



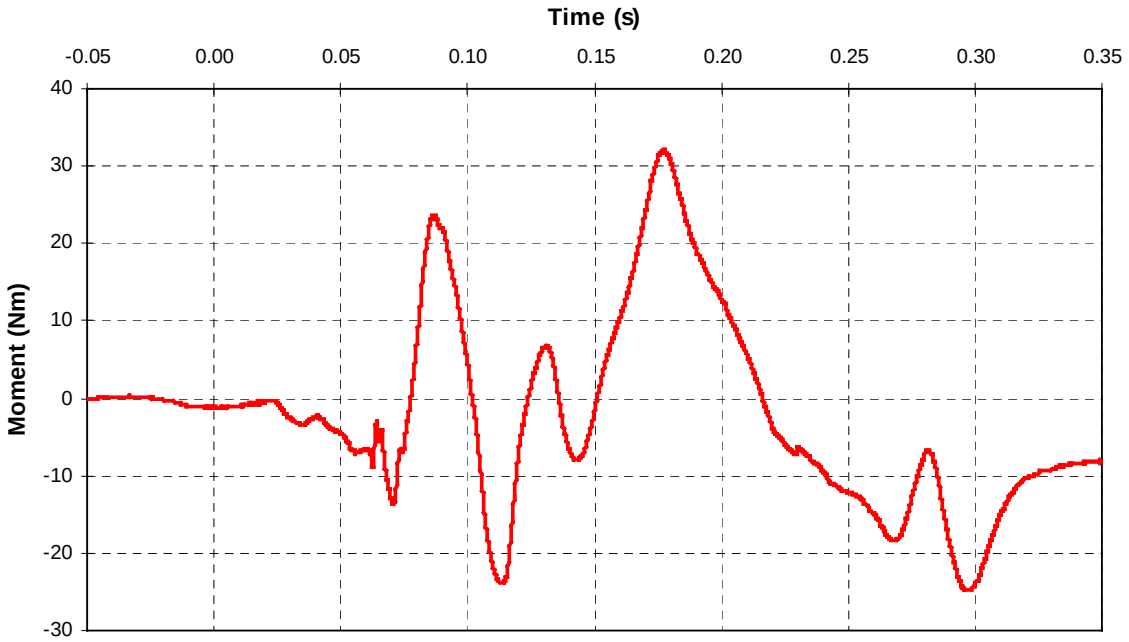
A- 10 CF00015 2000 Nissan Maxima Neck A-P Shear Force



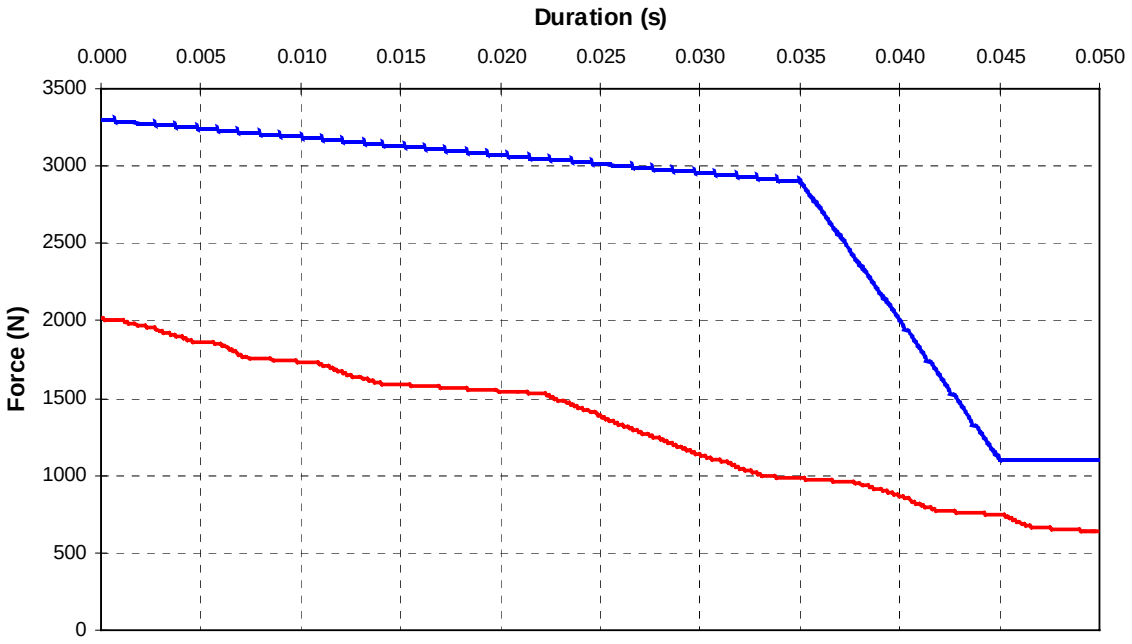
A- 11 CF00015 2000 Nissan Maxima Neck Axial Force



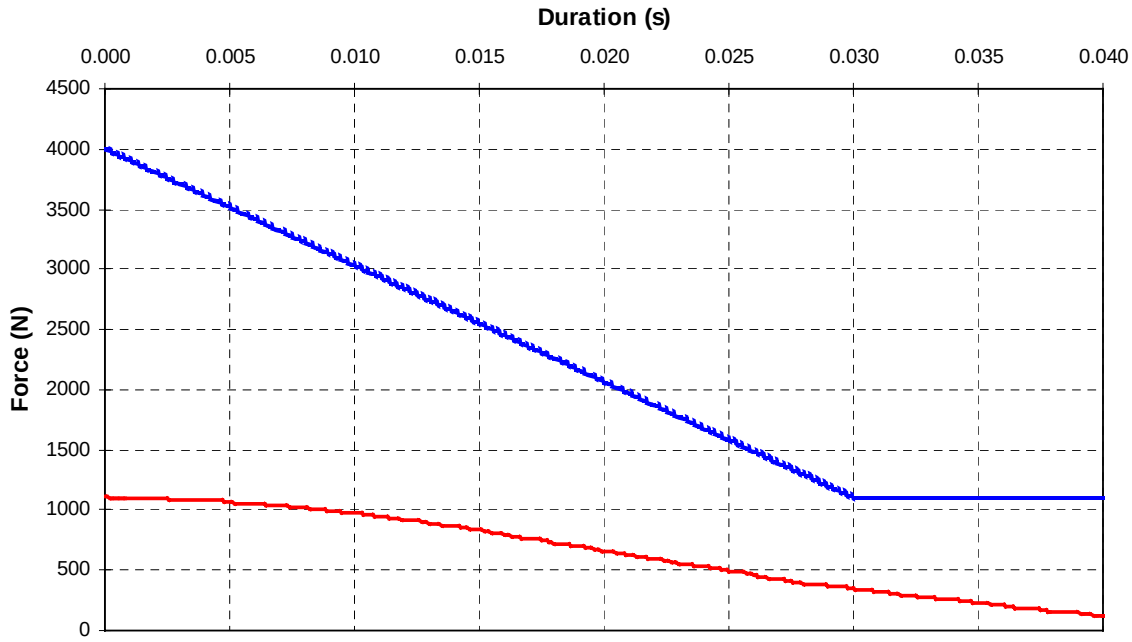
A- 12 CF00015 2000 Nissan Maxima Neck Occipital A-P Moment



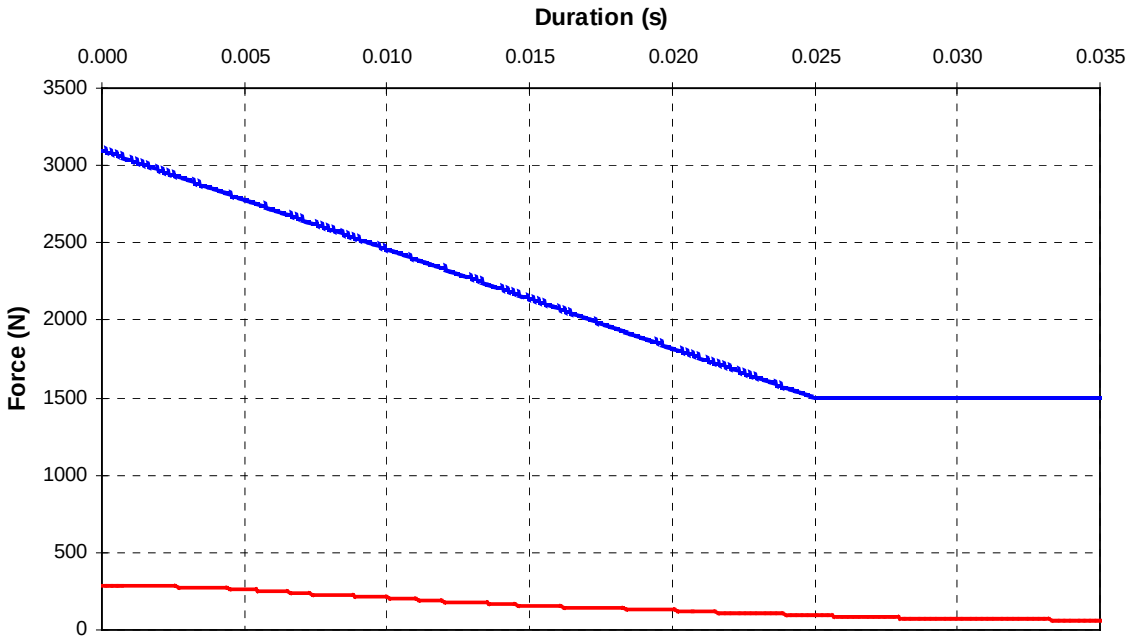
A- 13 CF00015 2000 Nissan Maxima Neck Tension Analysis



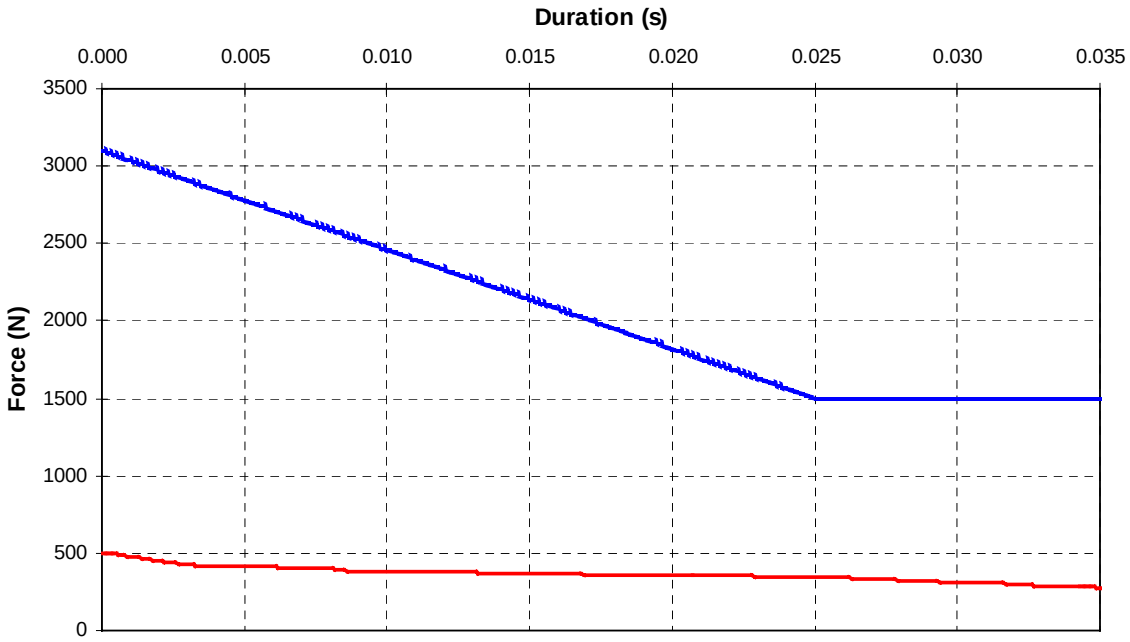
A- 14 CF00015 2000 Nissan Maxima Neck Compression Analysis



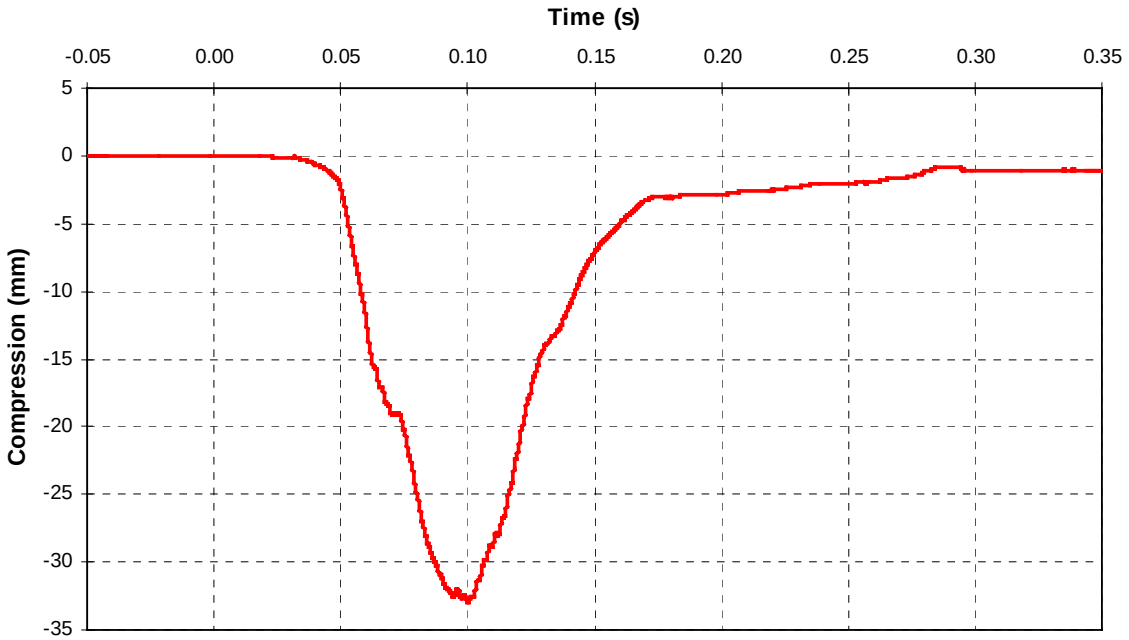
A- 15 CF00015 2000 Nissan Maxima Neck A-P Shear (Positive) Analysis



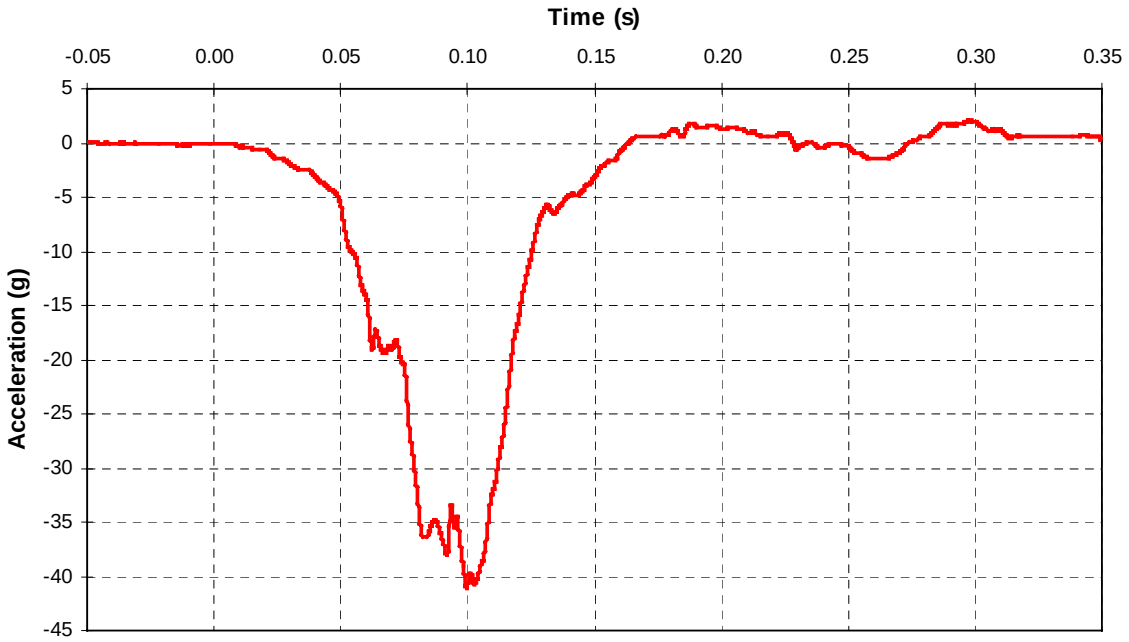
A- 16 CF00015 2000 Nissan Maxima Neck A-P Shear (Negative) Analysis



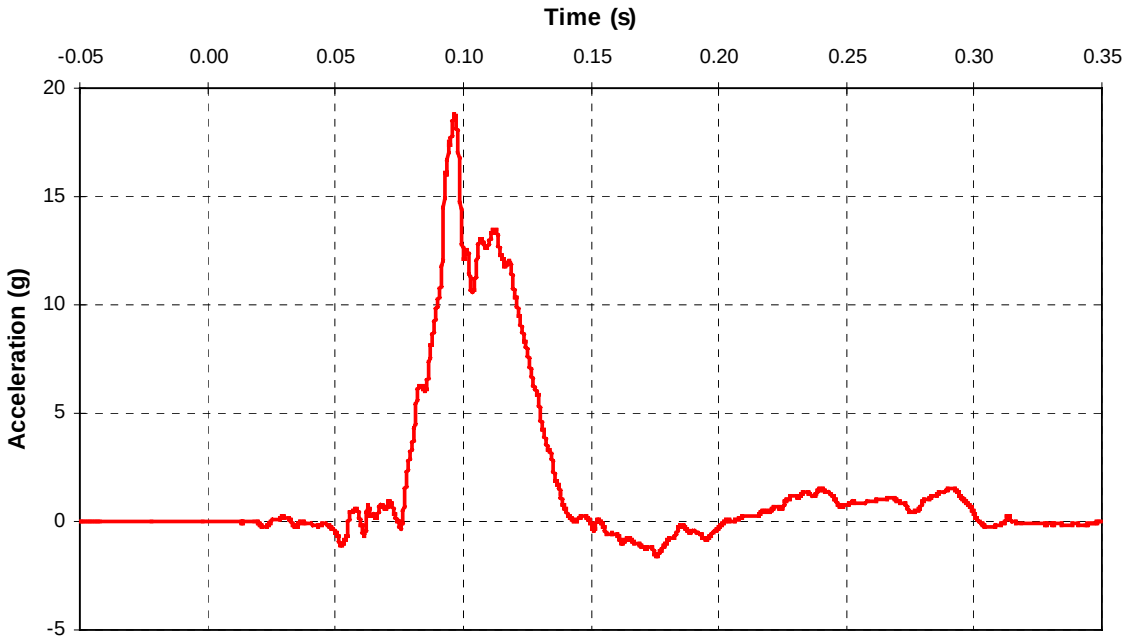
A- 17 CF00015 2000 Nissan Maxima Chest Compression



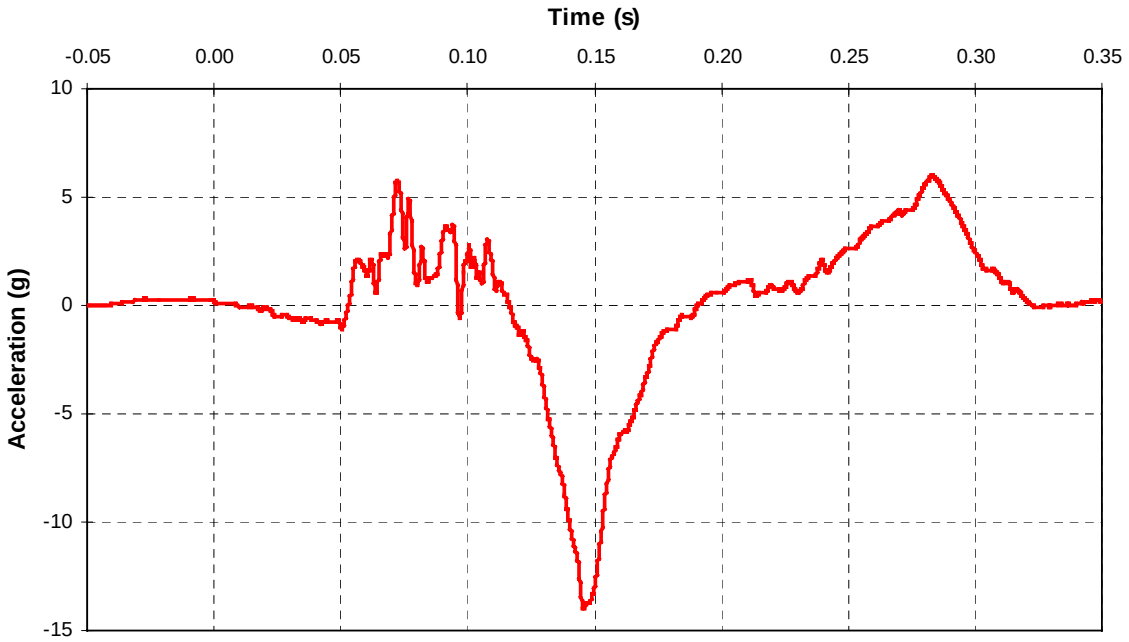
A- 18 CF00015 2000 Nissan Maxima Chest A-P Acceleration



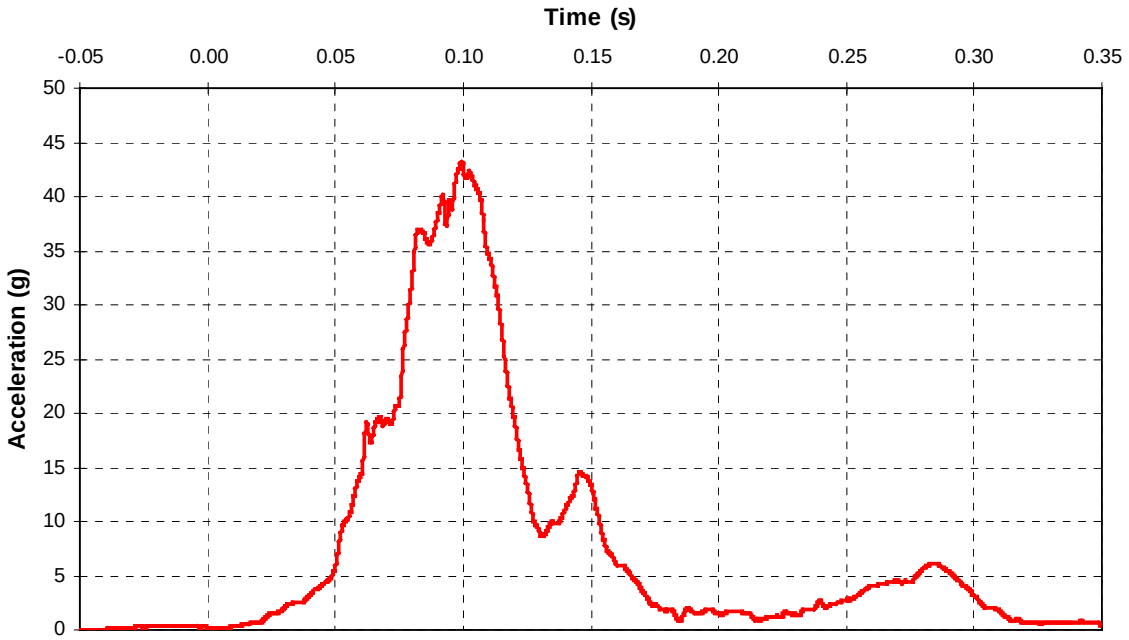
A- 19 CF00015 2000 Nissan Maxima Chest L-M Acceleration



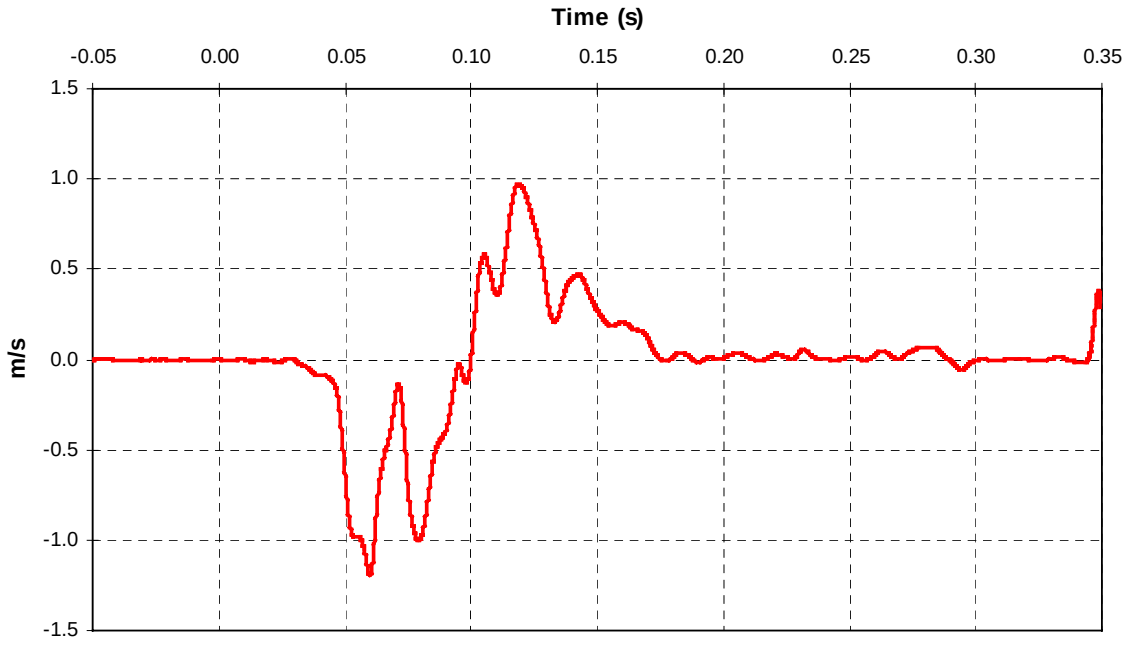
A- 20 CF00015 2000 Nissan Maxima Chest I-S Acceleration



A- 21 CF00015 2000 Nissan Maxima Chest Vector Resultant Acceleration

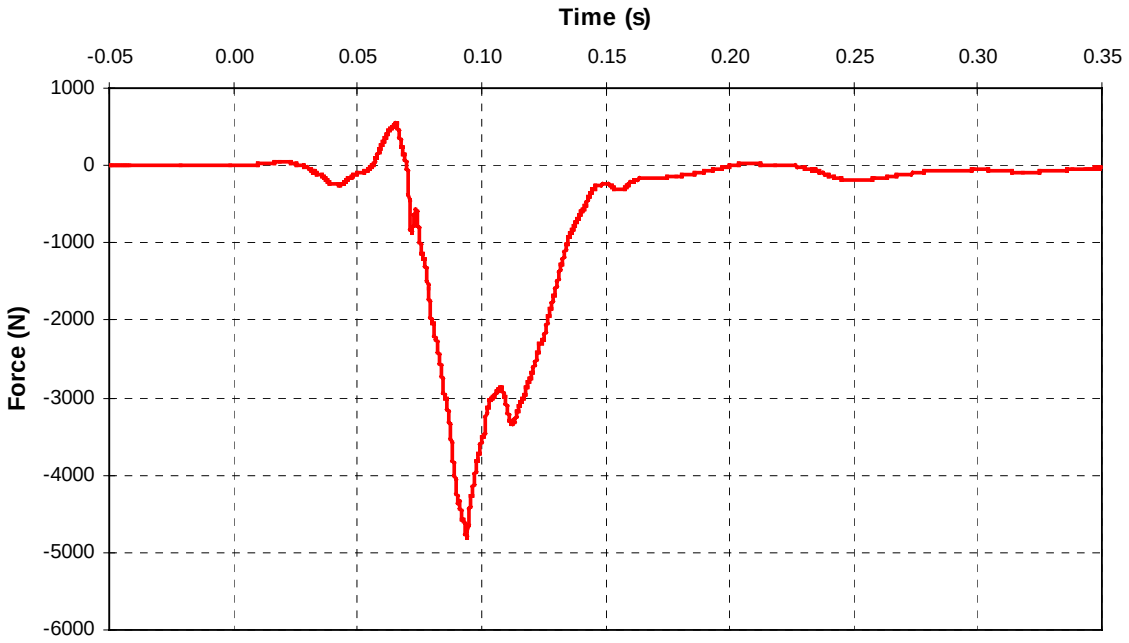


A- 22 CF00015 2000 Nissan Maxima Sternum Deflection Rate

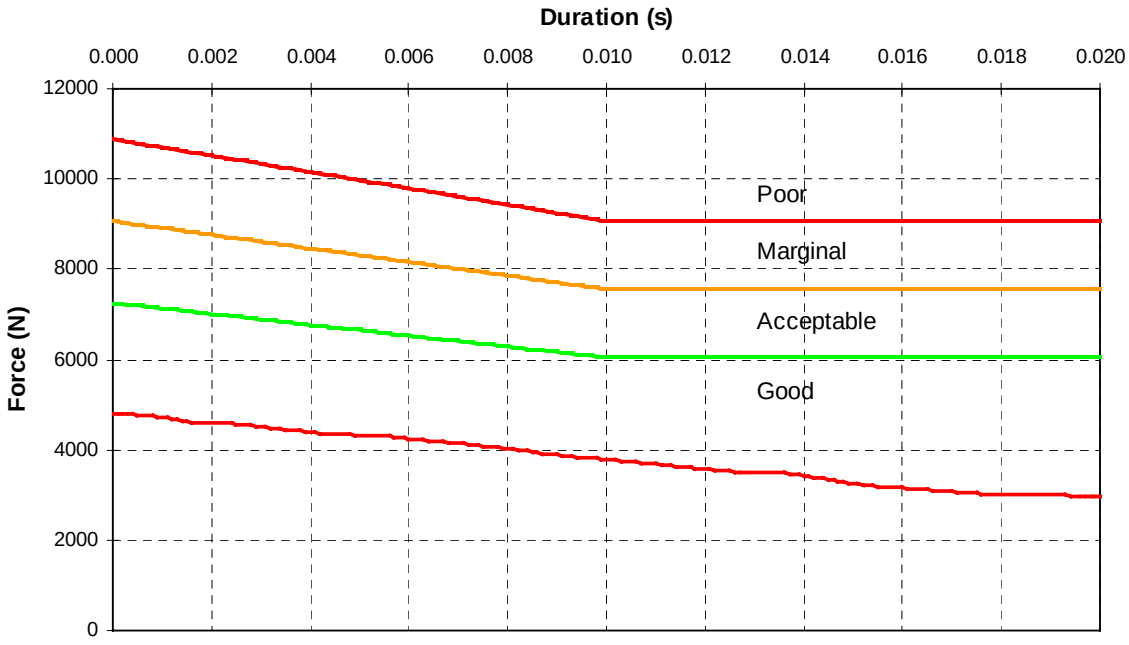


Sternum deflection rate is calculated from the sternum deflection filtered to CFC 60

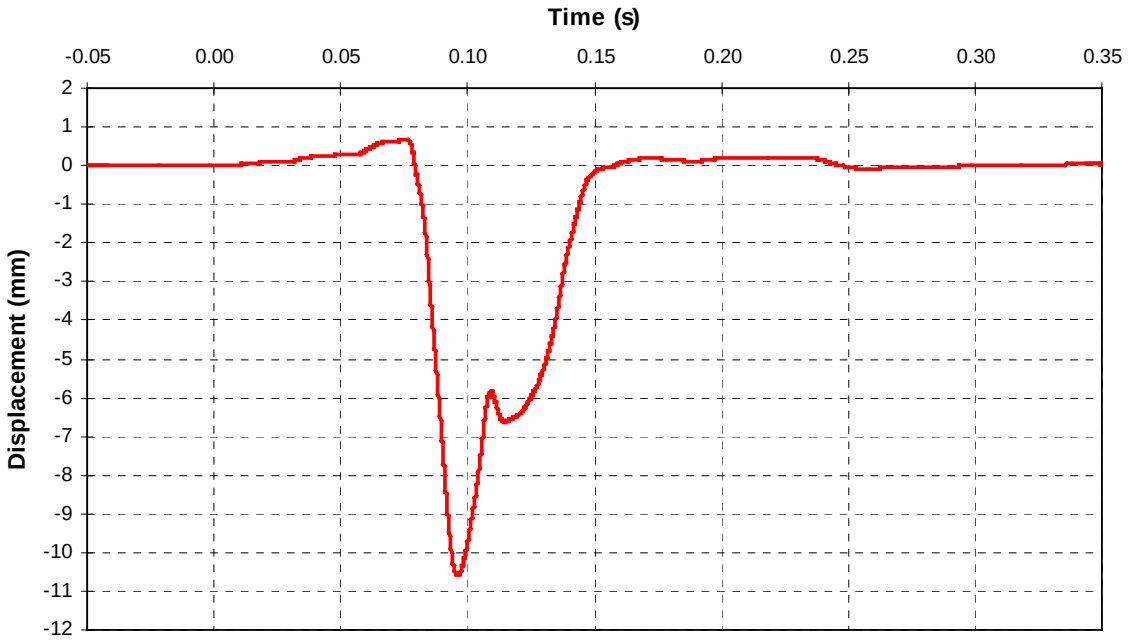
A- 23 CF00015 2000 Nissan Maxima Left Femur Axial Force



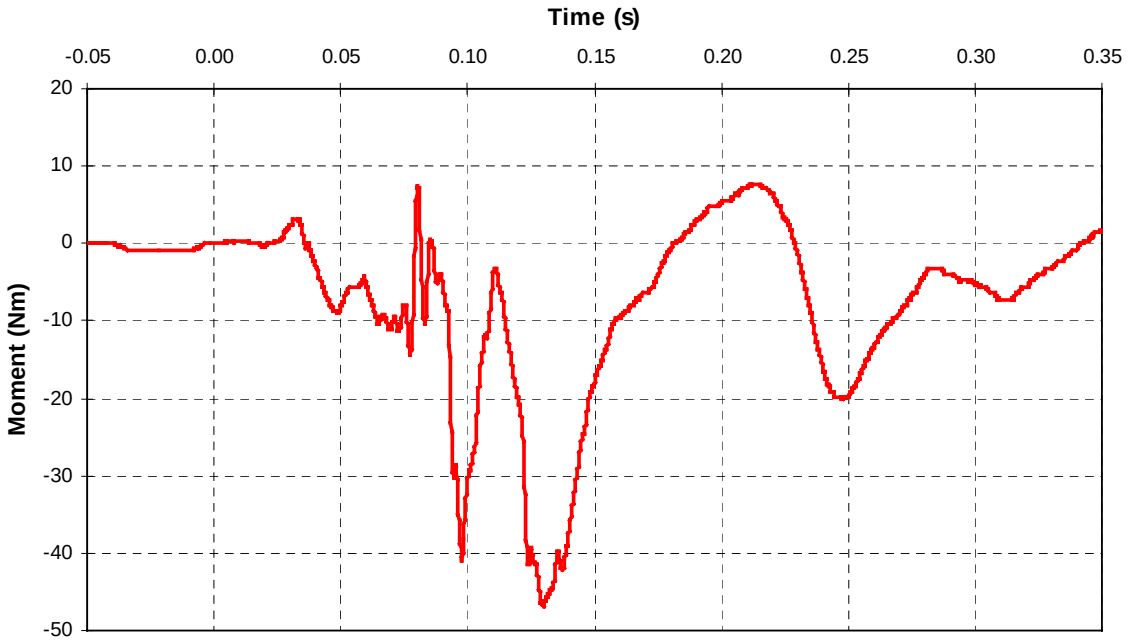
A- 24 CF00015 2000 Nissan Maxima Left Femur Axial Force Analysis



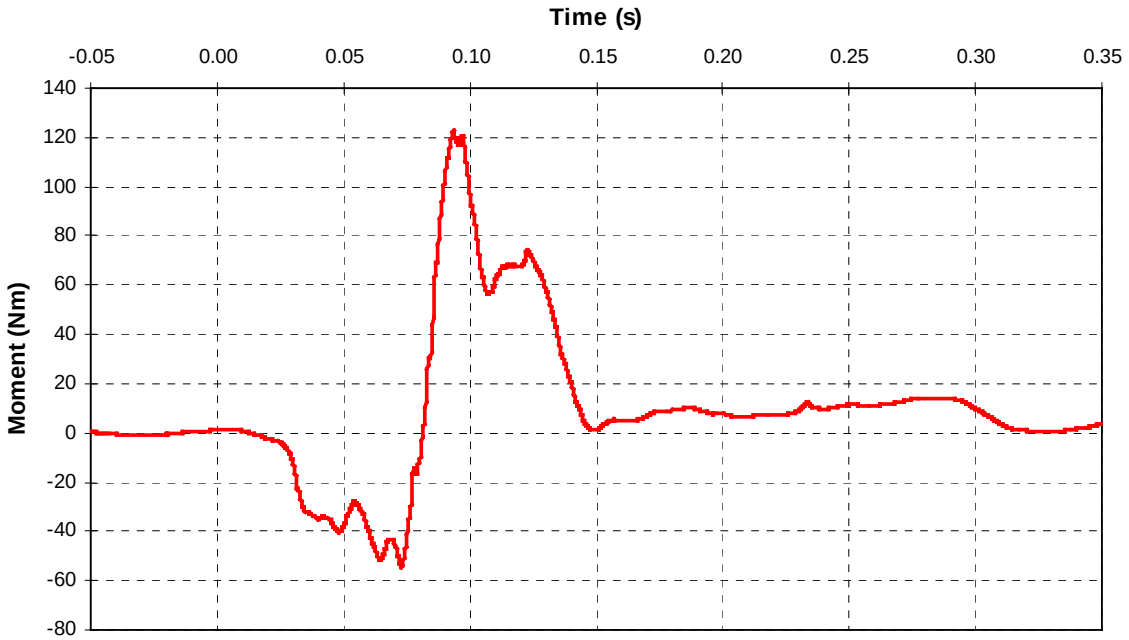
A- 25 CF00015 2000 Nissan Maxima Left Tibia-Femur Displacement



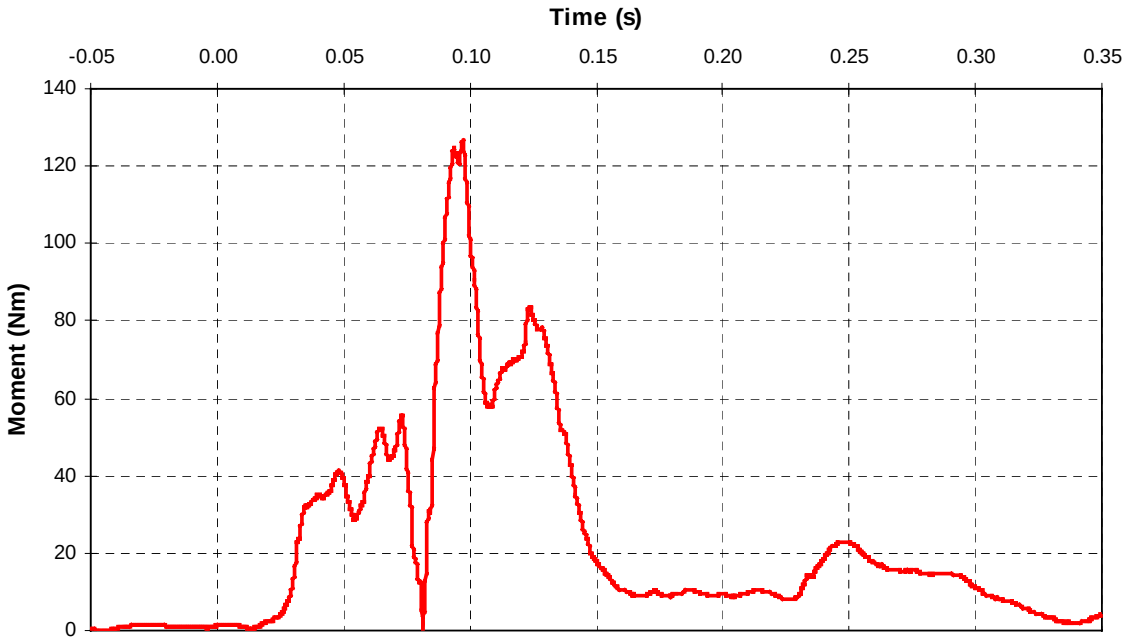
A- 26 CF00015 2000 Nissan Maxima Left Upper Tibia L-M Moment



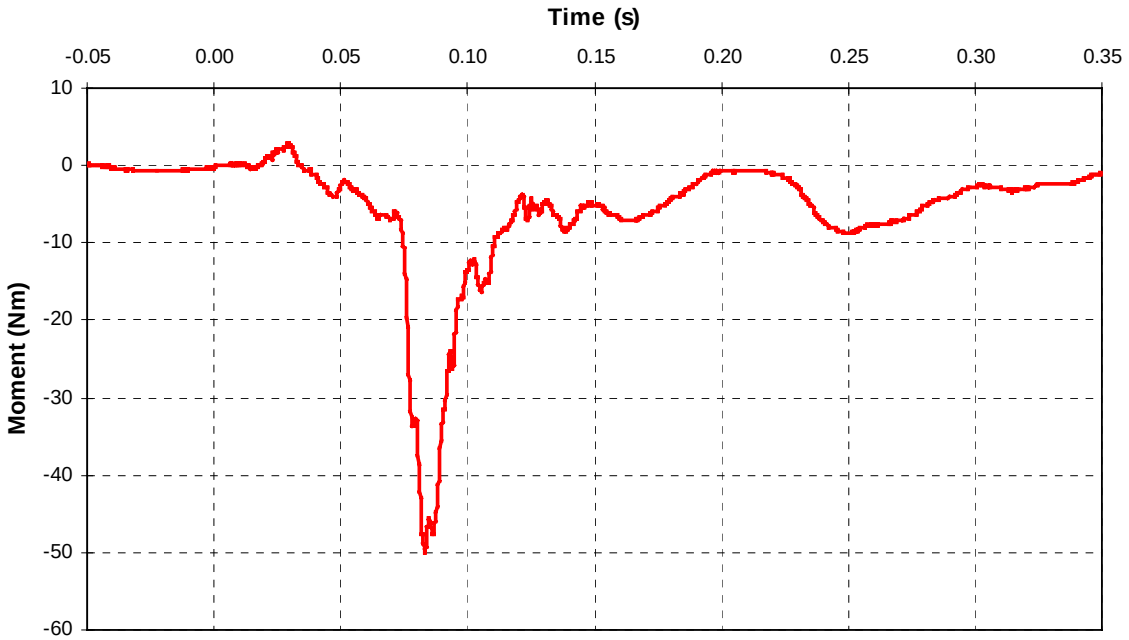
A- 27 CF00015 2000 Nissan Maxima Left Upper Tibia A-P Moment



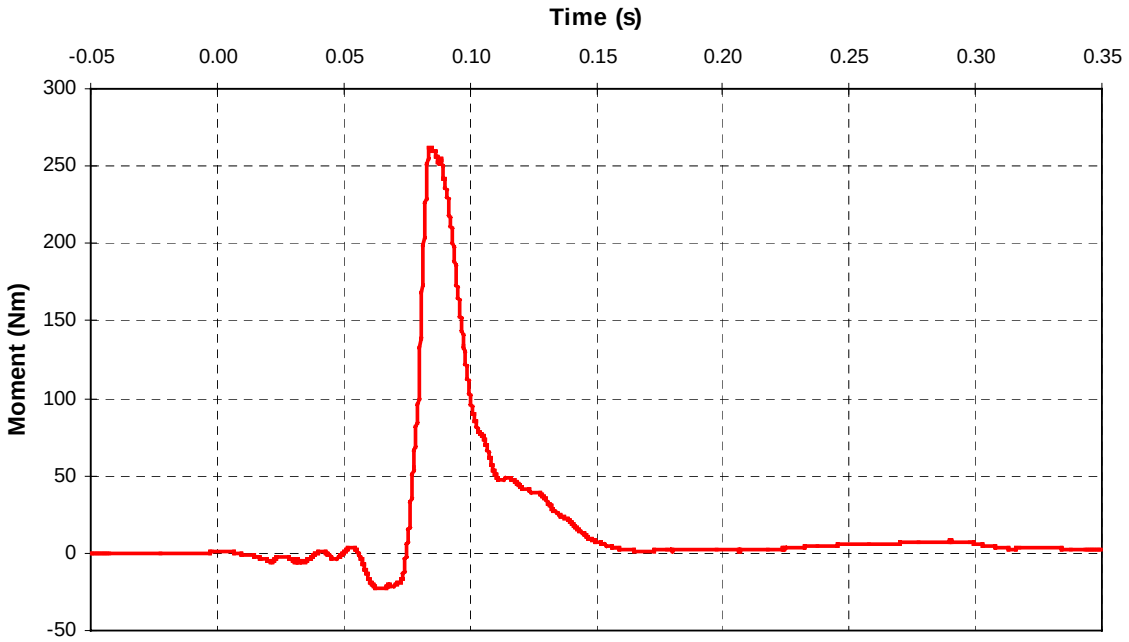
A- 28 CF00015 2000 Nissan Maxima Left Upper Tibia Vector Resultant Moment



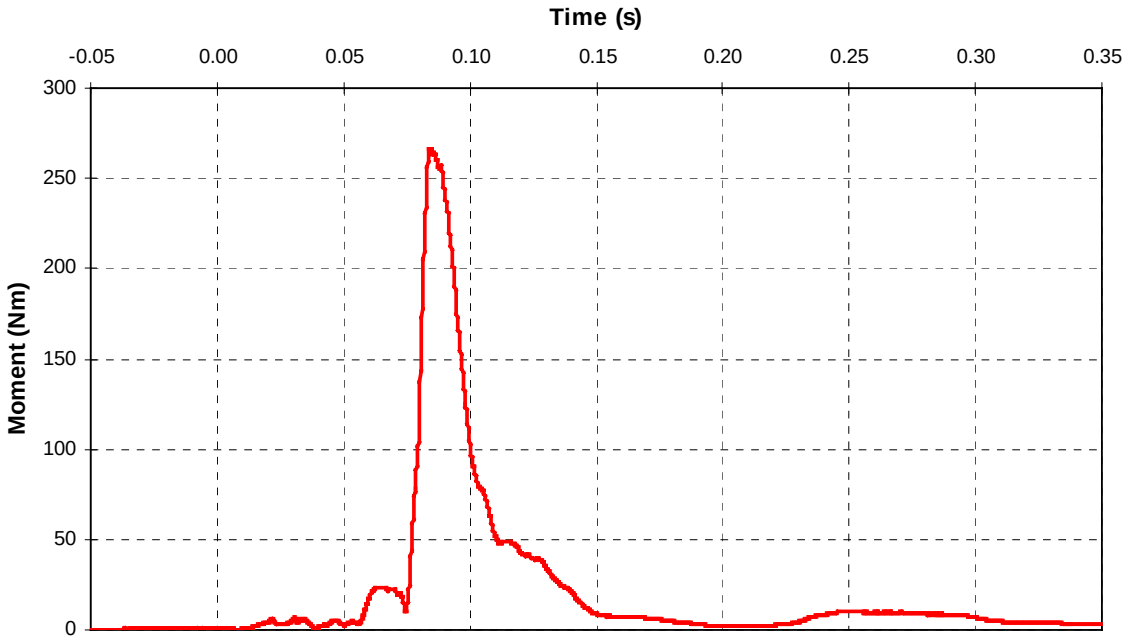
A- 29 CF00015 2000 Nissan Maxima Left Lower Tibia L-M Moment



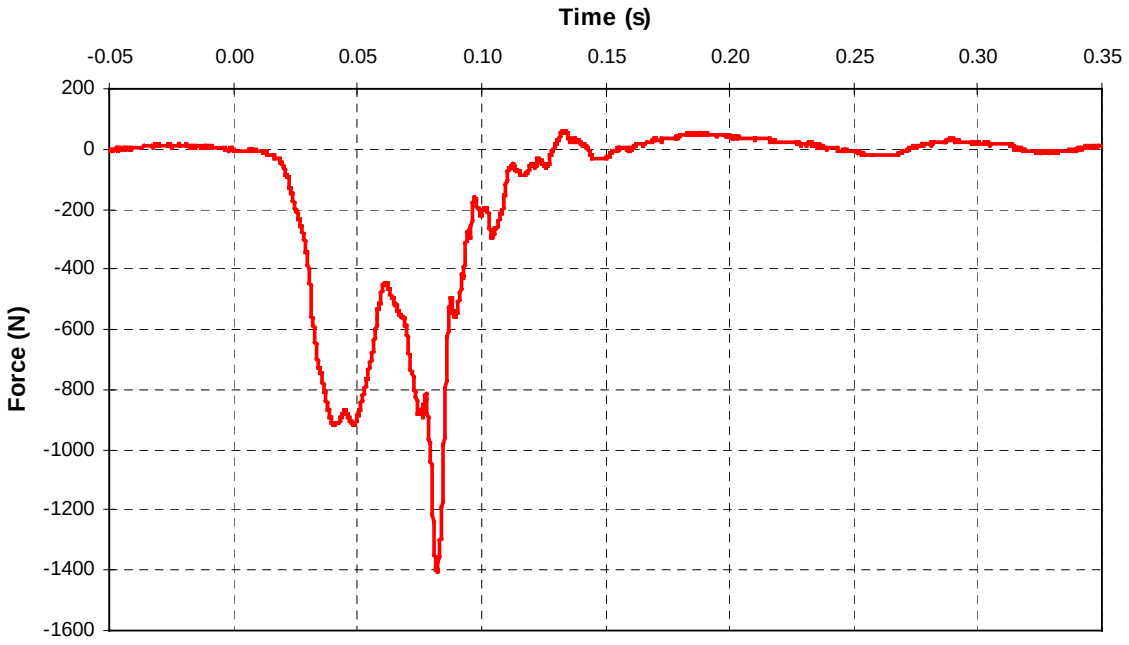
A- 30 CF00015 2000 Nissan Maxima Left Lower Tibia A-P Moment



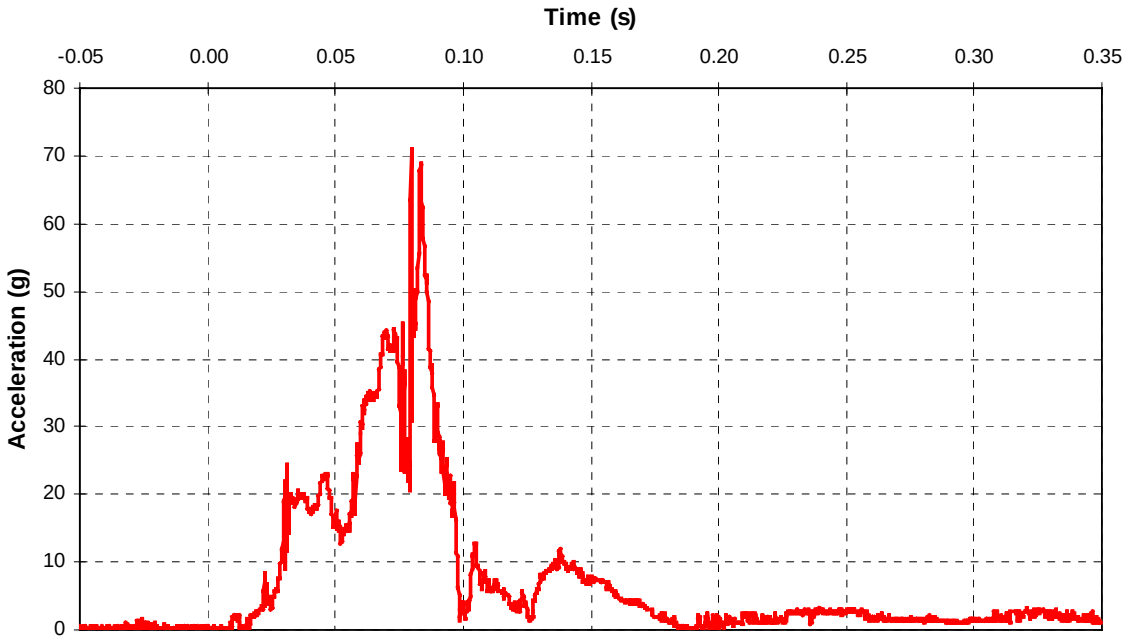
A- 31 CF00015 2000 Nissan Maxima Left Lower Tibia Vector Resultant Moment



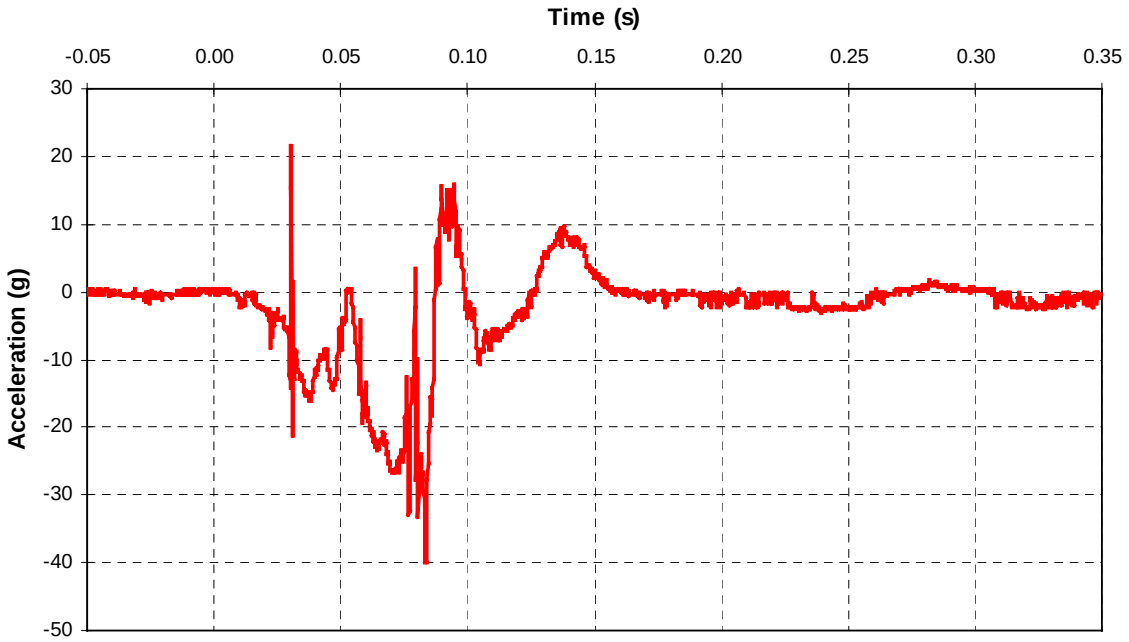
A- 32 CF00015 2000 Nissan Maxima Left Lower Tibia Axial Force



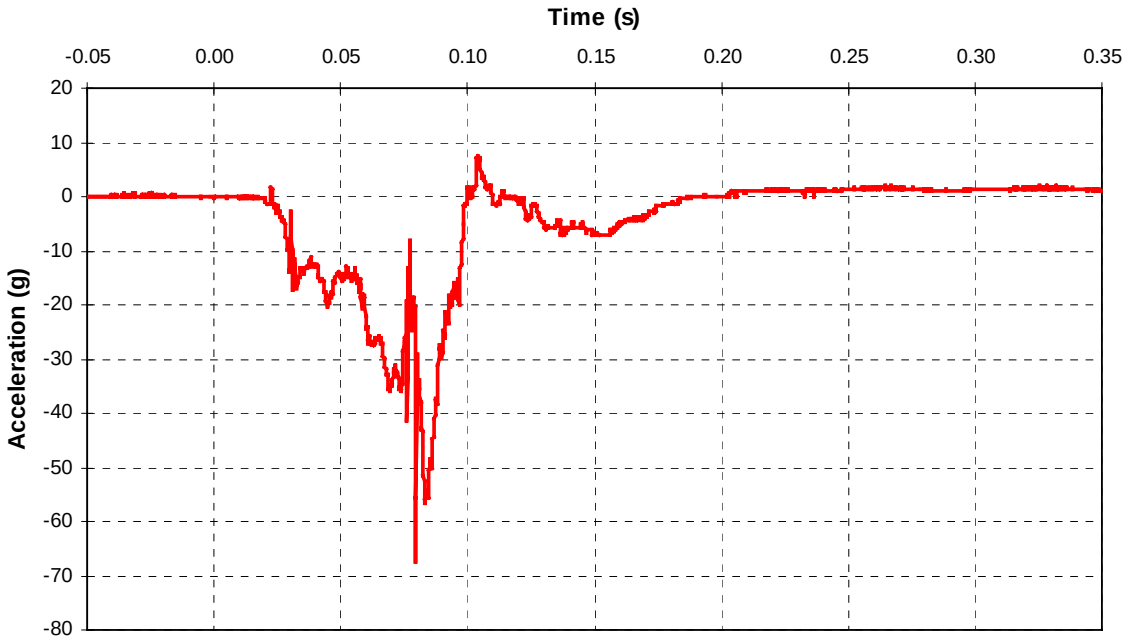
A- 33 CF00015 2000 Nissan Maxima Left Foot Vector Resultant Acceleration



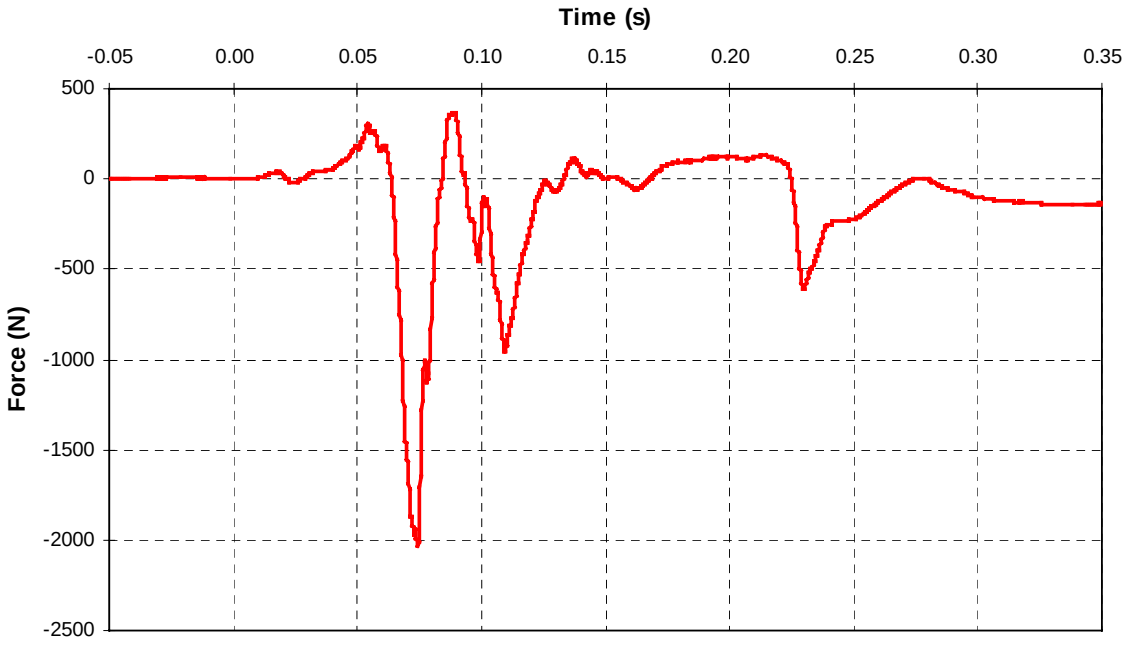
A- 34 CF00015 2000 Nissan Maxima Left Foot A-P Acceleration



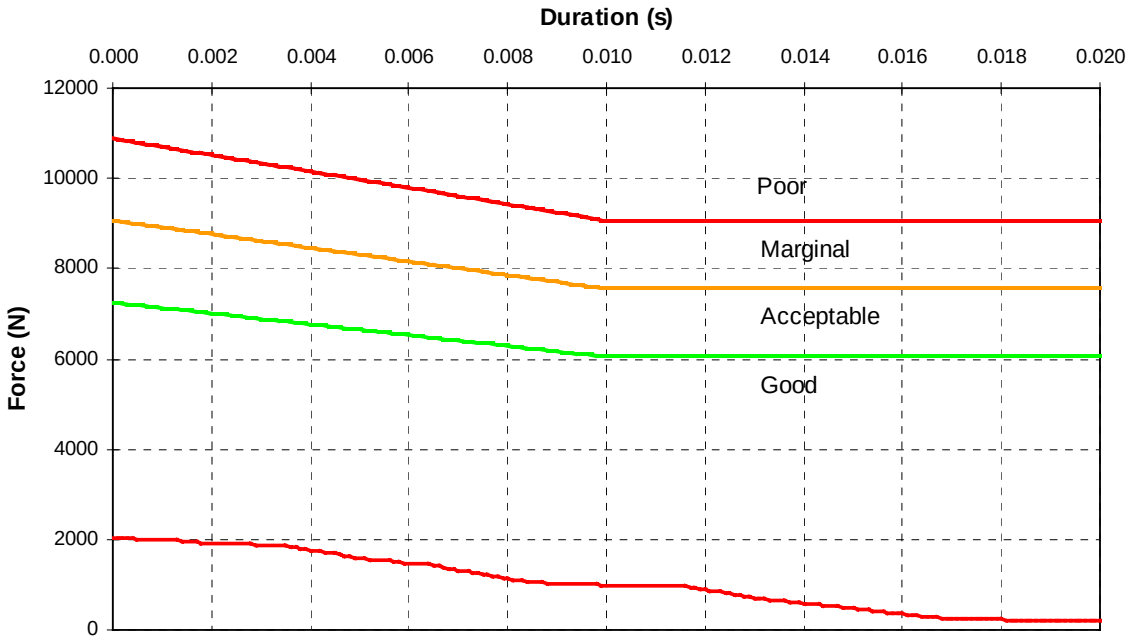
A- 35 CF00015 2000 Nissan Maxima Left Foot I-S Acceleration



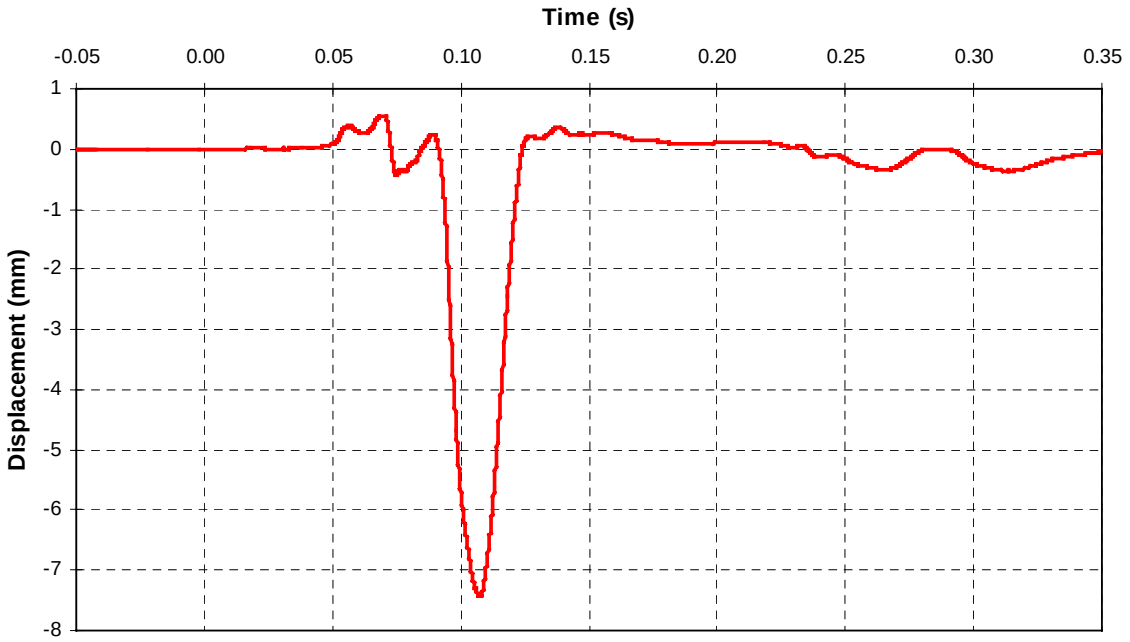
A- 36 CF00015 2000 Nissan Maxima Right Femur Axial Force



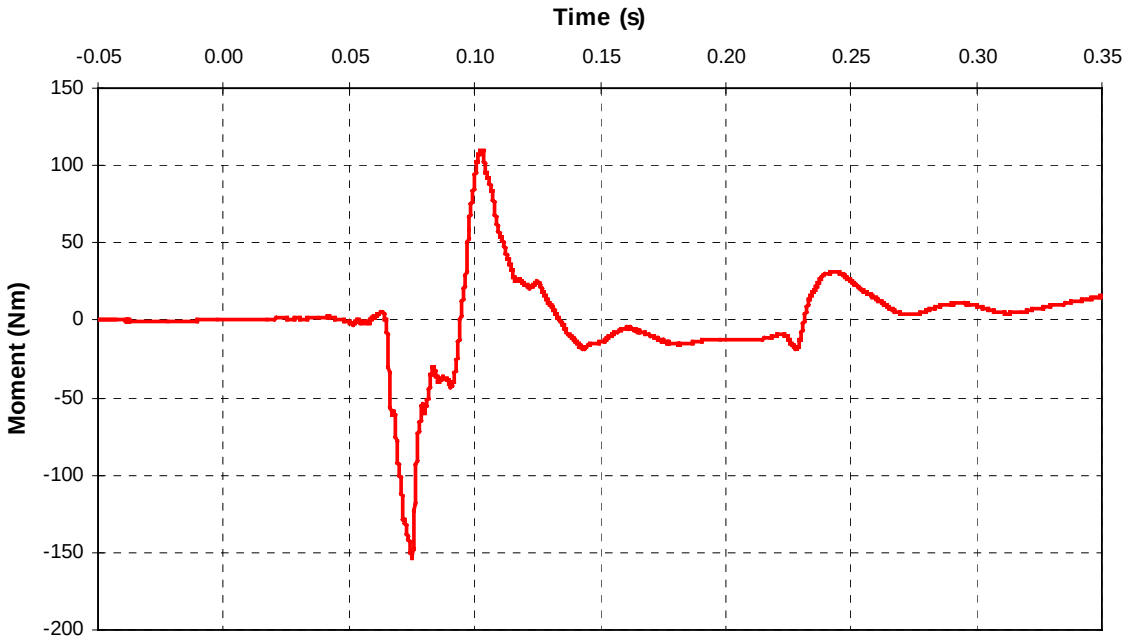
A- 37 CF00015 2000 Nissan Maxima Right Femur Axial Force Analysis



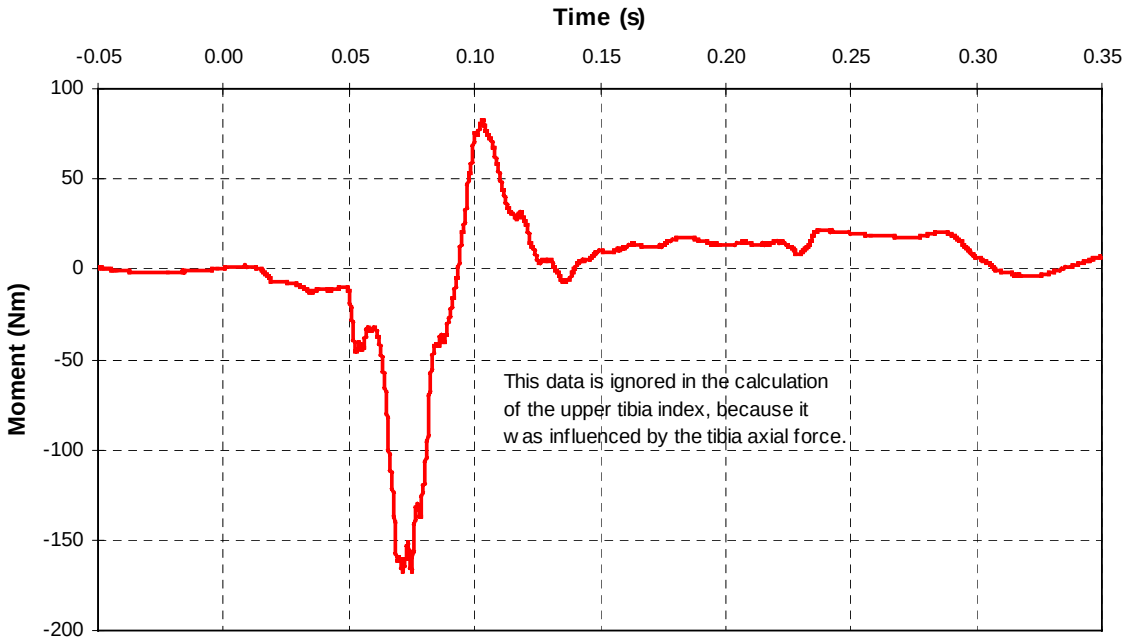
A- 38 CF00015 2000 Nissan Maxima Right Tibia-Femur Displacement



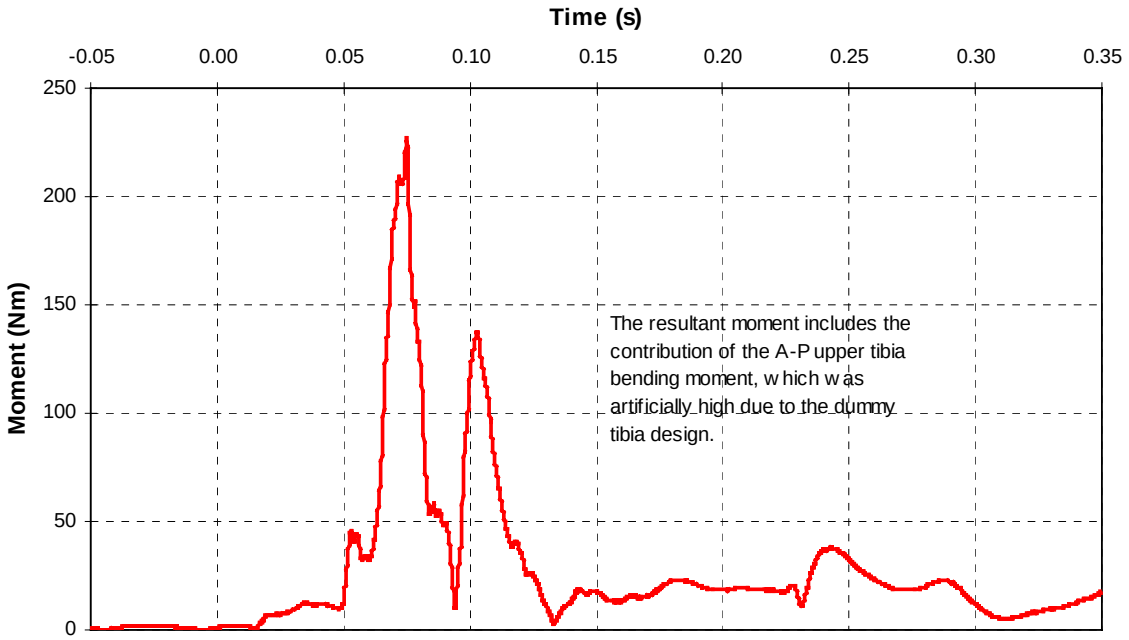
A- 39 CF00015 2000 Nissan Maxima Right Upper Tibia L-M Moment



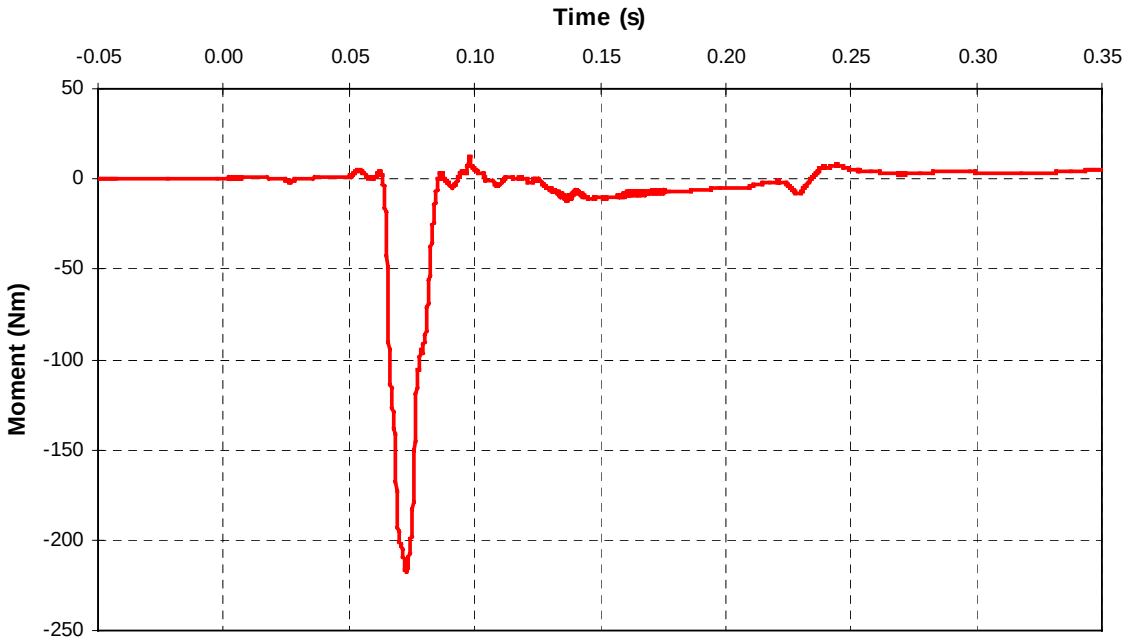
A- 40 CF00015 2000 Nissan Maxima Right Upper Tibia A-P Moment



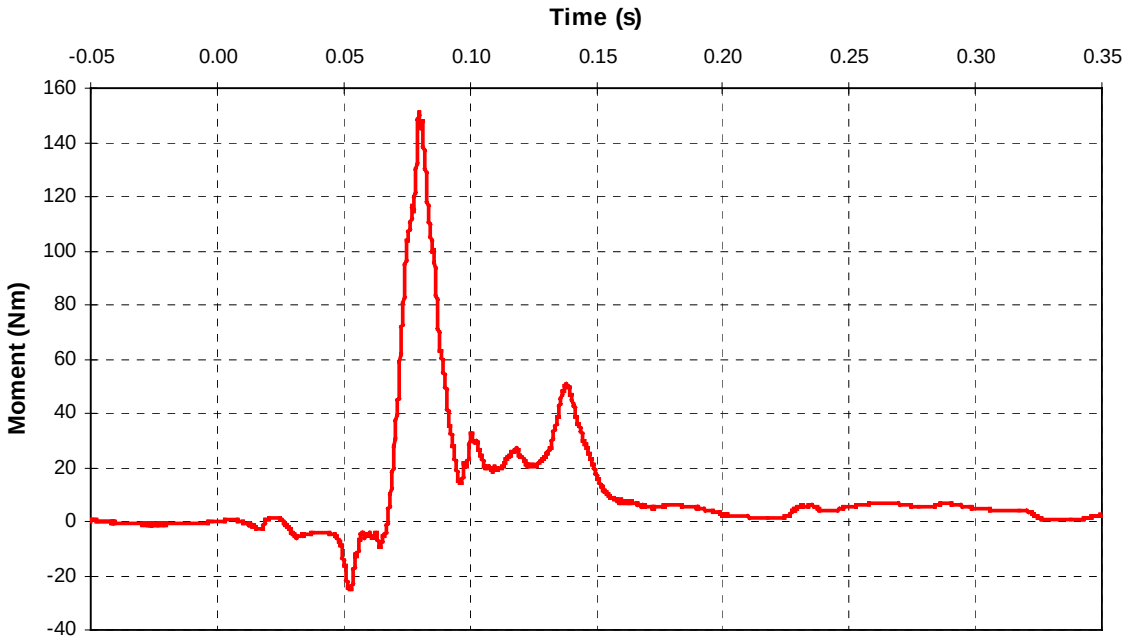
A- 41 CF00015 2000 Nissan Maxima Right Upper Tibia Vector Resultant Moment



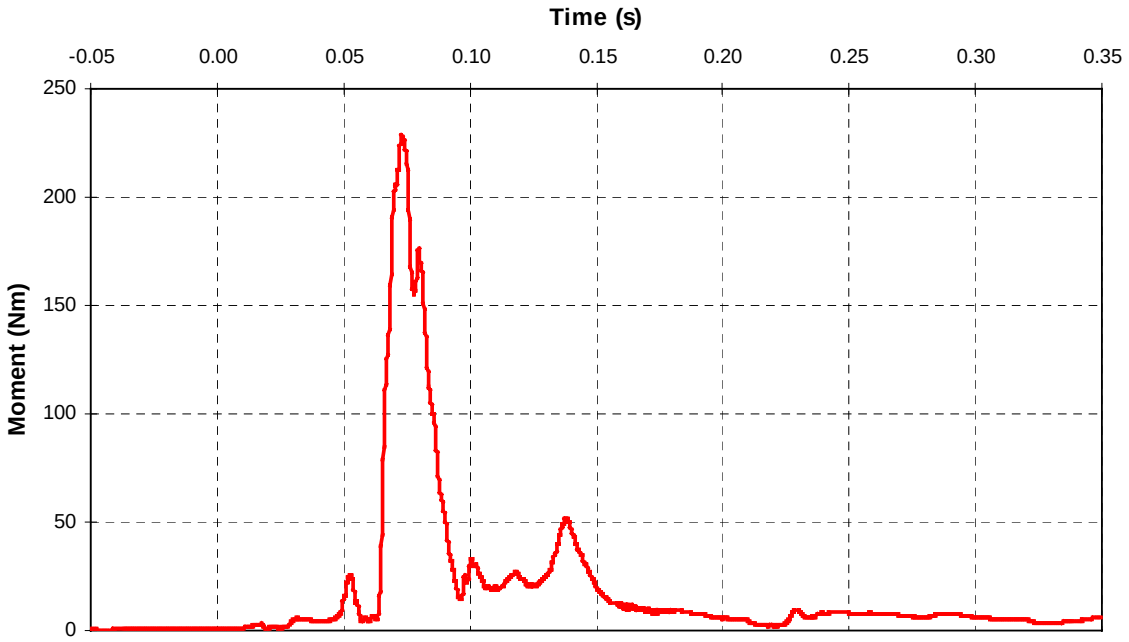
A- 42 CF00015 2000 Nissan Maxima Right Lower Tibia L-M Moment



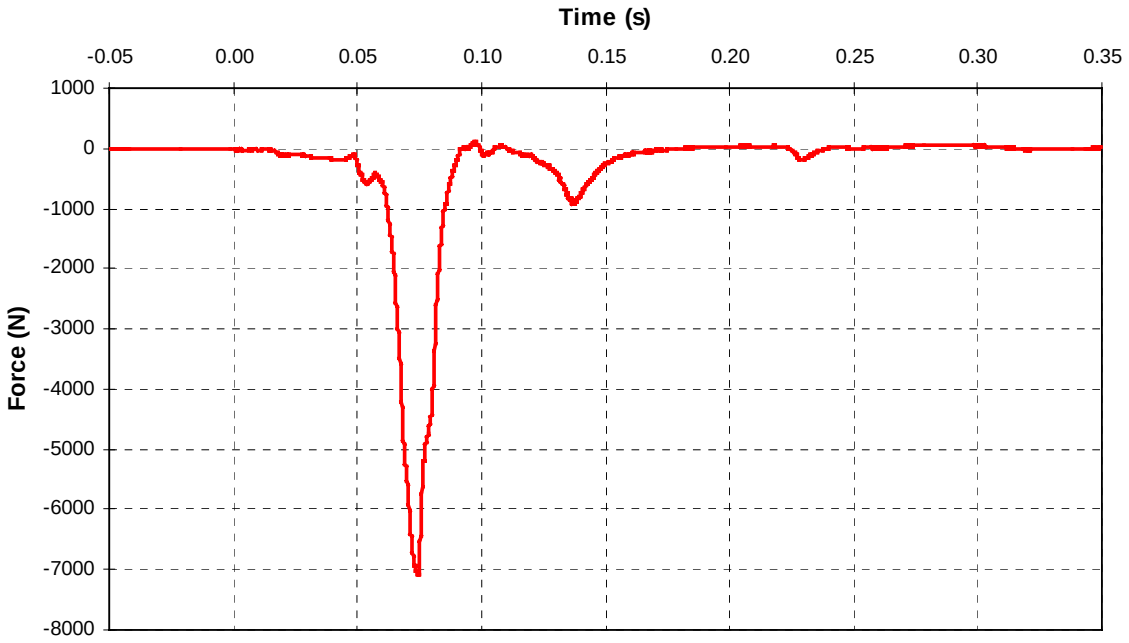
A- 43 CF00015 2000 Nissan Maxima Right Lower Tibia A-P Moment



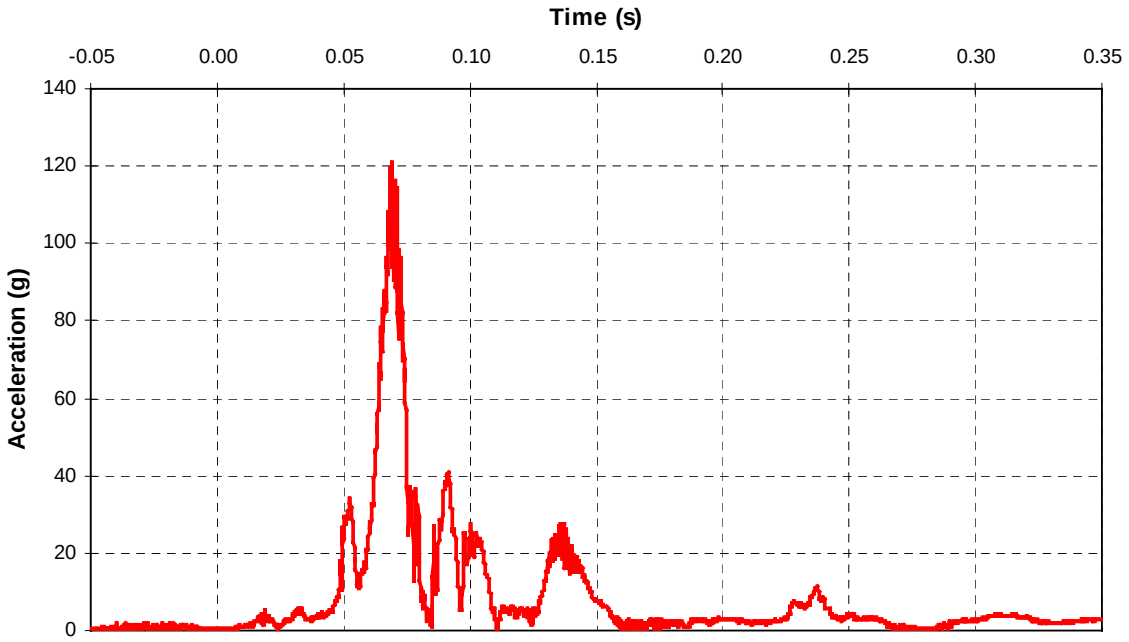
A- 44 CF00015 2000 Nissan Maxima Right Lower Tibia Vector Resultant Moment



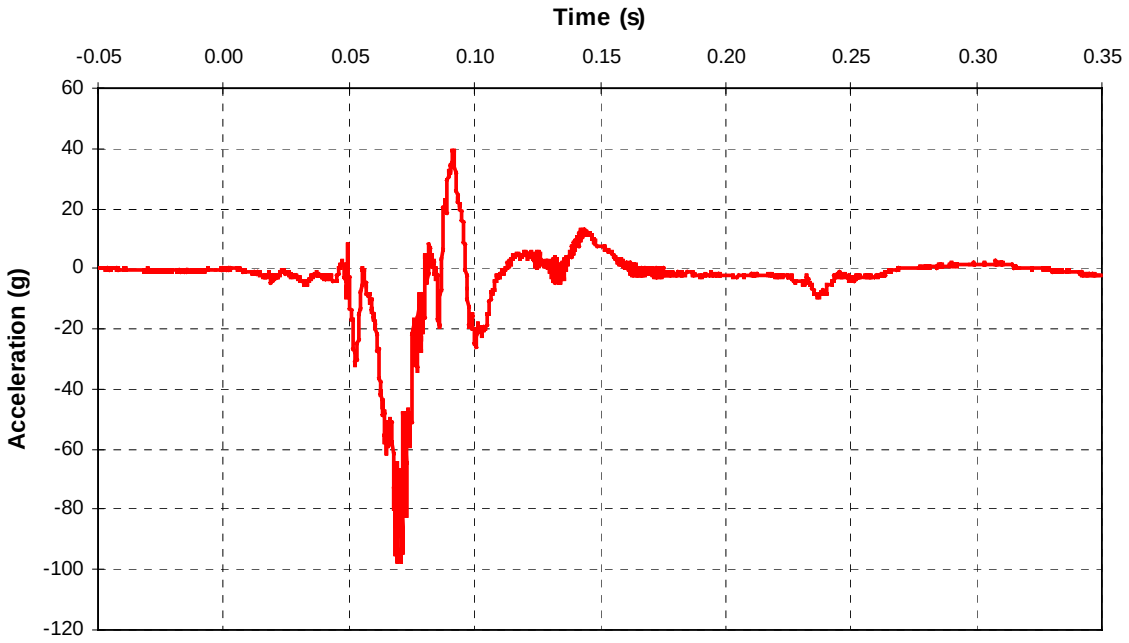
A- 45 CF00015 2000 Nissan Maxima Right Lower Tibia Axial Force



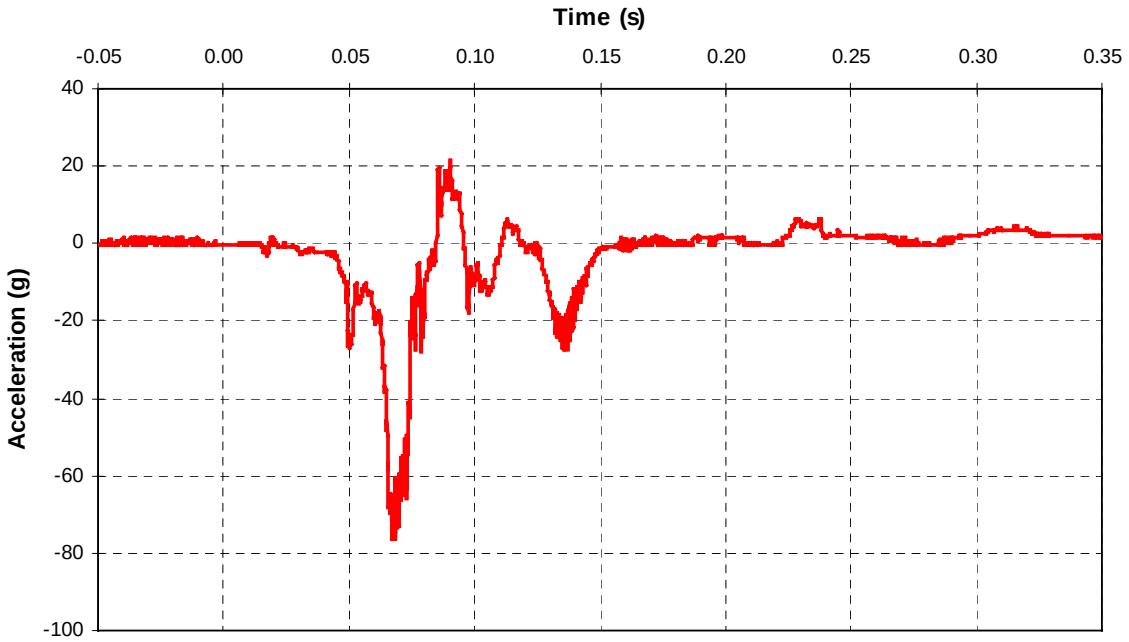
A- 46 CF00015 2000 Nissan Maxima Right Foot Vector Resultant Acceleration



A- 47 CF00015 2000 Nissan Maxima Right Foot A-P Acceleration



A- 48 CF00015 2000 Nissan Maxima Right Foot I-S Acceleration



MAXIMA GLE 4-DOOR

AUTOMATIC TRANSMISSION
Color: EV0 SUNLIT SAND

2000 Maxima
Nissan's Flagship

Standard Equipment Included at No Extra Charge

MECHANICAL & PERFORMANCE
222HP 3.0 Liter DOHC 24-Valve V6 Engine
Sequential Multi-Point Fuel Injection System
Nissan Direct Ignition System (NDIS)
Front-Wheel Drive
Power Rack-and-Pinion Steering
4-Wheel Power-Assisted Disc Brakes
Anti-Lock Brakes (ABS)
Rear Multi-Link Beam Suspension
Front and Rear Stabilizer Bars

EXTERIOR
Flush-Mounted Halogen Headlights
215/55R16 All-Season Steel-Belted Radial Tires
16" Alloy Wheels
Chrome Tailpipe Finisher
Halogen Fog Lights

COMFORT & CONVENIENCE
Leather Seating Surfaces
8-Way Power Driver's Seat
4-Way Power Front Passenger's Seat
Integrated HOMELINK Transceiver
Wood-tone Trim
CFC-Free Air Conditioning
Automatic Temperature Control
Cruise Control
Power Windows/Door Locks
Bose AM/FM/Cassette/CD Audio System w/7 Speakers
Vehicle Security System
Remote Keyless Entry System
Dual Power Remote-Controlled Outside Mirrors
60/40 Split Rear Seat
Dual Illuminated Visor Vanity Mirrors
Tilt Steering Column
Tachometer
Digital Quartz Clock
Electric Rear Window Defroster
Side Window Demisters

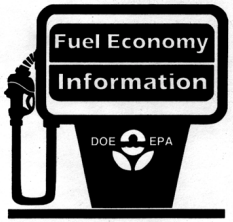
COMFORT & CONVENIENCE
Remote Trunk, Fuel-Filler Door, and Hood Releases
Dual Front & Rear Cupholders
Overhead Map Light
Variable Intermittent Windshield Wipers
Battery Saver Feature
LCD Odometer w/ Dual Trip Meters
Auto On/Off Headlamps
Adjustable Center Armrest
Sunglass Holder
Cargo Net

SAFETY
Dual Air Bags
Ignition Immobilizer (NVIS)
3-point Front Seat Belts
3-point Rear Outboard Seat Belts
3-Point Rear Center Seat Belt
Steel Side-Door Guard Beams
Energy-Absorbing Tilt Steering Column
Child Safety Rear Door Locks

Manufacturer's Suggested Retail Base Price	26,249.00
Options Included by Manufacturer	
MERIDIAN EDITION™	539.00
*Heated Front Seats	
*Heated Outside Mirrors	
*Low Washer Fluid Light	
*Side Air Bags	
*Trunk Lid Trim	
POWER SLIDING GLASS SUNROOF	899.00
FLOOR MATS	79.00
SPLASH GUARDS	89.00
TRACTION CONTROL SYSTEM (TCS)	299.00
CALIF/NLEV RESTRICTED EMISSION EQUIP	
Destination Charges	520.00
Total*	**28,674.00**

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

CITY MPG
20



HIGHWAY MPG
28

Actual Mileage will vary with options, driving conditions, driving habits and vehicle's conditions. Results reported to EPA indicate that the majority of vehicles with these estimates will achieve between

17 and 23 mpg in the city and between

23 and 33 mpg on the highway.

2000 NISSAN MAXIMA
181 CUBIC INCH ENGINE,
6 CYLINDERS,
FUEL INJECTION,
FEEDBACK FUEL SYSTEM,
4-SPEED AUTOMATIC TRANSMISSION,
CATALYTIC CONVERTER,
CALIF/NLEV RESTRICTED EMISSION EQUI

Estimated Annual Fuel Cost:
$783

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all vehicles classified as

MIDSIZE
CARS

have been issued mileage ratings ranging from 15 to 26 mpg city and 21 to 32 mpg hwy.

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CHARLOTTESVILLE VA 22906

Transport Method: TRUCK
Final Assembly Point: NEWPORT NEWS

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2000 MAXIMA GLE 4-DOOR
VIN: JN1CA31A0YT214504

08610-214504 EV0 0141

2280 36 0141 A 87 102586 1955 123099 - 7037