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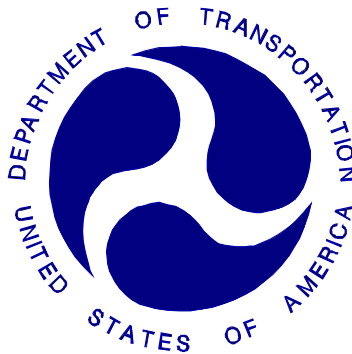
**NEW CAR ASSESSMENT PROGRAM (NCAP)
FRONTAL BARRIER IMPACT TEST**

HONDA MFG. OF ALABAMA, LLC.
2002 HONDA ODYSSEY
MPV

NHTSA NUMBER: M25305

VERIDIAN TEST NUMBER: 8642-NCAP-12

VERIDIAN ENGINEERING
TRANSPORTATION SCIENCES CENTER
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May 8, 2002

FINAL REPORT

PREPARED FOR:

U. S. DEPARTMENT OF TRANSPORTATION
National Highway Traffic Safety Administration
Safety Performance Standards
Office of Crashworthiness Standards
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16. Abstract A frontal load cell barrier test of a 2002 Honda Odyssey MPV was performed at Veridian Engineering crash test facility in Buffalo, New York, on May 8, 2002. The impact velocity was 56.49 kph and the temperature at the barrier face was 21.1 °C. The maximum post-test vehicle crush was 664 mm. The test vehicle was equipped with pretensioning/load limiting 3-point restraint systems, knee bolsters, and airbags at both the driver and right outboard passenger seating positions. With respect to FMVSS 208 "Occupant Crash Protection - Injury Criteria" both the driver and passenger appeared to comply with head, chest, and femur requirements.					
ATD Position	HIC	Clip (g's)	Chest Disp (mm)	Left Femur (N)	Right Femur (N)
Driver (150)	300.7	36.5	33.3	1907.1	3699.3
Passenger (245)	454.5	40.5	27.9	2414.2	3815.3
17. Key Words 56 kph Frontal Barrier Impact test New Car Assessment Program (NCAP)				18. Distribution Statement Copies of this report are available from: NHTSA Technical Reference Division National Highway Traffic Safety Admin. 400 Seventh St., SW, Room 5108 Washington, DC 20590	
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SECTION 1

PURPOSE AND SUMMARY OF TEST

1.1 PURPOSE

This 56.49 kph frontal barrier impact test is part of the Vehicle Barrier Impact Testing Program sponsored by the National Highway Traffic Safety Administration (NHTSA) under Contract No. DTNH22-01-D-32005. The purpose of this test was to obtain vehicle crashworthiness and occupant restraint system performance data for an impact speed in excess of the current 48.3 kph requirements.

The 56.49 kph frontal barrier impact test was conducted in accordance with the Office of Crashworthiness Standards Laboratory Indicant Test procedure.

1.2 TEST PROCEDURE

This 56.49 kph frontal barrier impact test was conducted in accordance with the Office of Crashworthiness Standards (OCS) New Car Assessment Program (NCAP) Laboratory Indicant Test Procedure, dated December 1999. Data was obtained indicant of FMVSS 208, "Occupant Crash Protection"; FMVSS 212, "Windshield Retention"; FMVSS 219, "Windshield Zone Intrusion (Partial)"; and FMVSS 301 "Fuel System Integrity" performance. Procedures for receiving, inspection testing and reporting of test results are described in the test procedures and are not repeated in this report.

One real-time camera and 16 high-speed cameras were used to document the frontal barrier impact event. Camera locations and other pertinent camera information can be found in this report.

Two Part 572E, 50th percentile male anthropomorphic test devices (ATDs), were placed in the driver and right-front passenger seating positions according to dummy placement instructions specified in the Laboratory Indicant Test Procedure.

Both ATDs were fully instrumented with nine accelerometer array head, chest and pelvis triaxial accelerometers, chest displacement potentiometers, upper neck transducers, right/left femur load cells, left and right knee sliders, and lower leg instrumentation. The driver (position 1) ATD (Serial No. 150) and the right-front passenger (position 2) ATD (Serial No.245) were calibrated previous to this test. Certification details, along with instrumentation calibration data, are found in Appendix C.

The vehicle, occupant, camera and measurement data are presented in Section 2. Appendix A contains the still photograph prints. The 137 channels of data were recorded on an on-board data acquisition system. Appendix B contains the vehicle, load cell barrier and dummy response data traces. Appendix C contains the dummy calibration data and Appendix D contains the transducer calibration dates.

1.3 SUMMARY OF FRONTAL BARRIER IMPACT TEST

A load cell barrier consisting of 36 load cells was impacted by a 2002 Honda Odyssey MPV at a velocity of 56.49 kph. The test was performed at Veridian Engineering on May 8, 2002. Pre- and post-test photographs of the vehicle and dummies can be found in Appendix A.

The occupant data is summarized below.

	HIC	Clip (g)	Chest Disp. (mm)	Left Femur (N)	Right Femur (N)	Belt Spool (mm)	Belt Stretch (mm/50 mm)
Driver ATD	300.7	36.5	33.3	1907.1	3699.3	*	*
Passenger ATD	454.5	40.5	27.9	2414.2	3815.3	*	*

* Instrument not used in test.

There was 100 percent windshield retention and no intrusion into the protected zone of the windshield during the event. There was no Stoddard solvent leakage after the event or during any phase of the static rollover.

The maximum vehicle static crush was 664 mm and both the driver and passenger side doors remained closed during the impact event and were operable after the impact.

The driver's visible contact points were as follows: Face to lower center of airbag, back of head to outboard half of head restraint, knees to knee bolster. The passenger's visible contact points were as follows: Face to center of airbag, back of head to outboard half of head restraint, left knee to left quarter of glove compartment door, right knee to right third of glove compartment door.

The 2002 Honda Odyssey MPV did not exceed the requirements of FMVSS 208, FMVSS 212, FMVSS 219, and FMVSS 301. Data pertaining to these standards are presented in the data sheets.

SECTION 2

GENERAL TEST AND VEHICLE PARAMETER DATA

DATA SHEET NO. 1 CRASH TEST SUMMARY

Vehicle NHTSA No.:	M25305	Test Mode:	56.3 kph Frontal Barrier
Test Date:	May 8, 2002	Time:	14:02
		Temperature:	21.1 °C
Vehicle Make/Model/Body Style:	2002 Honda Odyssey MPV		
Vehicle Test Weight:	2228.0	kg	
Vehicle/Barrier Impact Angle:	0	°	
Impact Velocity:	56.49	kph	
Maximum Static Crush:	664	mm	
Vehicle Rebound:	451	mm	
<u>DUMMIES:</u>		<u>DRIVER</u>	<u>PASSENGER</u>
Type:		572E	572E
Restraint System:		Seatbelt (pretensioning/load limiting), Airbag, Knee Bolster	Seatbelt (pretensioning/load limiting), Airbag, Knee Bolster
Number of Data Channels:	137		
Number of Cameras:	1	Real Time	
	16	High Speed	
<u>DOOR OPENING DATA:</u>	Door remained closed and latched; Door opened without tools - Left Front		
	Door remained closed and latched; Door opened without tools - Right Front		
Front Seat(s) Data:		<u>DRIVER</u>	<u>PASSENGER</u>
Seat Track Failure: (mm of shift)		0	0
Seat Back Failure:		None	None
<u>VISIBLE DUMMY CONTACT POINTS:</u>		<u>DRIVER</u>	<u>PASSENGER</u>
Head:		Face to lower center of airbag; Back of head to outboard half of head restraint	Face to center of airbag; Back of head to outboard half of head restraint
Abdomen:		None	None
Chest:		Airbag	Airbag
Knees:		Left knee to knee bolster left of the steering column; Right knee to knee bolster right of the steering column	Left knee to left quarter of the glove compartment door; Right knee to right third of glove compartment door

DATA SHEET NO. 2 GENERAL TEST AND VEHICLE PARAMETER DATA

TEST VEHICLE INFORMATION:

Year/Make/Model/Body Style: 2002 Honda Odyssey MPV

NHTSA No. : M25305 ; VIN: 5FNRL18622B015052 ; Color: Beige

Engine Data: 6 cylinders; - CID; 3.5 Liters; - cc

Placement: - Longitudinal or In-Line; X Transverse or Lateral

Transmission Data: - speeds; - Manual; X Automatic; X Overdrive

Final Drive: - Rear Wheel Drive; X Front Wheel Drive; - Four Wheel Drive

Major Options: X A/C; X Pwr.Strg.; X Pwr. Brakes

X Pwr. Windows; X Pwr. Door Locks; X Tilt Wheel

Safety Belt Features - Driver: X Pretensioner (shoulder); X Load Limiter; X Adj. Anchorage

Safety Belt Features - Passenger: X Pretensioner (shoulder); X Load Limiter; X Adj. Anchorage

Date Received: 4/29/02 ; Odometer Reading 19 km

Selling Dealer: Lia Honda

& Address: 4891 Transit Road, Williamsville, NY 1422

DATA FROM TIRE VEHICLE'S CERTIFICATION LABEL:

Vehicle Manufactured by: Honda Mfg. of Alabama, Llc.

Date of Manufacture 4/02

GVWR: 2570 kg; GAWR: 1285 kg FRONT; 1290 kg REAR

DATA FROM TIRE PLACARD:

Tire Pressure with Maximum Capacity Vehicle Load: 300 kpa FRONT

300 kpa REAR

Recommended Tire Size: P225/60R16

* Recommended Cold Tire Pressure: 250 kpa FRONT; 250 kpa REAR

Size of Tires on Test Vehicle: P225/60R16 ; Manufacturer: Michelin

Vehicle Capacity Data:

Type of Front Seats: - Bench; X Bucket; - Split Bench

Number of Occupants: 2 Front; 5 Rear; 7 Total

Vehicle Capacity Weight (VCW) = 575 kg

No. of Occupants x 68.04 kg = 476.3 kg

Rated Cargo/Luggage Weight (RCLW) = 98.7 kg

*Tire pressure used for test

DATA SHEET NO. 2 GENERAL TEST AND VEHICLE PARAMETER DATA (cont.)

WEIGHT OF TEST VEHICLE AS RECEIVED FROM DEALER (with maximum fluids)= UDW:

Right Front	=	<u>572.0</u>	kg	Right Rear	=	<u>409.0</u>	kg
Left Front	=	<u>560.0</u>	kg	Left Rear	=	<u>441.0</u>	kg
TOTAL FRONT	=	<u>1132.0</u>	kg	TOTAL REAR	=	<u>850.0</u>	kg
TOTAL DELIVERED WEIGHT	=	<u>1982.0</u>	kg				
% of Total Front of Vehicle Weight	=	<u>57.1%</u>		% of Total Rear Weight	=	<u>42.9%</u>	%

CALCULATION OF VEHICLE'S TARGET TEST WEIGHT:

Total Delivered Weight (UDW)	=	<u>1982.0</u>	kg
Rated Cargo/Luggage Weight (RCLW)	=	<u>98.7</u>	kg
Weight of 2 p.572 Dummies @ 76 each	=	<u>152</u>	kg
TARGET TEST WEIGHT	=	<u>2232.7</u>	kg

WEIGHT OF TEST VEHICLE WITH TWO DUMMIES AND 94.0 KG OF CARGO WEIGHT:

Right Front	=	<u>610.5</u>	kg	Right Rear	=	<u>488.0</u>	kg
Left Front	=	<u>614.5</u>	kg	Left Rear	=	<u>515.0</u>	kg
TOTAL FRONT	=	<u>1225.0</u>	kg	TOTAL REAR	=	<u>1003.0</u>	kg
TOTAL TEST WEIGHT	=	<u>2228.0</u>	kg				
% of Total Front Weight	=	<u>55.0%</u>	%	% of Total Rear Weight	=	<u>45.0%</u>	%
Weight of Ballast Secured in Vehicle Trunk Area	=	<u>0</u>	kg				
Vehicle Components Removed for Weight Reduction:		<u>Rear seat</u>					

VEHICLE ATTITUDE (all dimension in millimeters):

AS DELIVERED:	RF	<u>768</u>	LF	<u>764</u>	RR	<u>773</u>	LR	<u>761</u>
FULLY LOADED:	RF	<u>757</u>	LF	<u>755</u>	RR	<u>747</u>	LR	<u>736</u>
AS TESTED:	RF	<u>757</u>	LF	<u>755</u>	RR	<u>747</u>	LR	<u>740</u>
Vehicle's Wheel Base:		<u>2997</u>	mm					
Location of Vehicle's C.G.:		<u>1349</u>	mm rearward of front wheel center.					

FUEL SYSTEM DATA:

Fuel System Capacity From Owner's Manual	=	<u>75.7</u>	liters
Usable Capacity Figure Furnished by COTR	=	<u>75.7</u>	liters
Test Volume Range (92 to 94% of Usable Capacity)	=	<u>69.64</u>	to <u>71.16</u> liters
ACTUAL TEST VOLUME	=	<u>69.7</u>	liters (with entire fuel system filled)
Test Fluid Type:	<u>Stoddard Solution</u>	;	Spec. Grav. = <u>0.764</u>
	Kinematic Viscosity = <u>0.96</u>	centistokes;	Color = <u>Orange</u>
Type of Fuel Pump:	Electric- <u>X</u>	;	Mechanical- <u>-</u>
Does Electric Pump operate with ignition switch "ON" & engine "OFF"		Yes- <u>X</u>	No- <u>-</u>
<u>Details of Fuel System: The fuel tank is located on the vehicle underbody ahead of the rear axle; The fuel lines are routed along the left side of the vehicle underbody; The fuel filler is located on the left side of the bed forward of the rear axle.</u>			

DATA SHEET NO. 3 POST IMPACT DATA

TYPE OF TEST:

Type of Test: Frontal Barrier Impact Angle: 0°
Test Date: May 8, 2002 Time: 14:02 Temperature: 21.1 °C
Vehicle NHTSA No.: M25305
Required Impact Velocity Range: 55.5 to 57.1 kph

BARRIER IMPACT VELOCITY: (Speed traps within 5 feet of impact plane.)

Trap No. 1 = 56.49 kph; Trap No. 2 = 56.49 kph
Distance from vehicle to barrier: (1) entering trap = 813 mm
(2) exiting trap = 305 mm

VEHICLE STATIC CRUSH: (mm) (For frontal and rear impacts only.)

Vehicle Length:

Pre-Test	Left = <u>4993</u> ; C/L = <u>5105</u> ; Right = <u>4996</u>
Post-Test	Left = <u>4468</u> ; C/L = <u>4441</u> ; Right = <u>4424</u>
Crush	Left = <u>525</u> ; C/L = <u>664</u> ; Right = <u>572</u>
AVERAGE	= <u>587</u> mm

VEHICLE REBOUND: (From rigid barrier only.)

Distance from front of test vehicle to impact point:

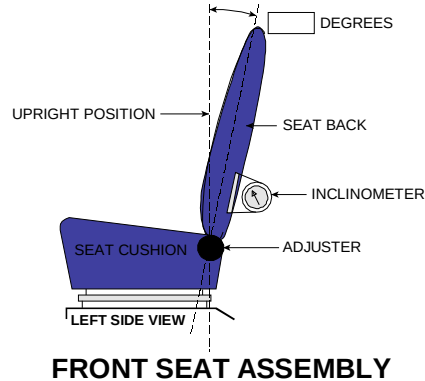
	Left = <u>430</u> ; C/L = <u>444</u> ; Right = <u>480</u>
AVERAGE	= <u>451</u> mm

DATA SHEET NO. 4 TEST VEHICLE INFORMATION

VEHICLE IDENTIFICATION:

Model Year : 2002 Vehicle Model: Honda Odyssey Body Style : MPV

1. Nominal Design Riding Position for adjustable driver and passenger seat backs. Please describe how to position the inclinometer to measure the seat back angle. Include description of the location of the adjustment latch detent, if applicable.



Seat back angle for driver's seat: 23 degrees

Measurement instructions: With the seat in its full down position and at the middle of its fore and aft travel, position the seat back so that the distance between the sunvisor outside bracket bolt and the outer hole for the head restraint is 714 mm.

Seat back angle for passenger's seat: 23 degrees

Measurement instructions: Where the most inclined position is defined as detent 0, recline the seat back to detent 5. With the seat in its proper fore and aft position and the seatback positioned the distance between sunvisor outside bracket bolt and the outer hole for the head restraint is 714 mm.

2. Seat Fore and Aft Positioning

Positioning of the driver's seat: With the seat in its lowest position, position the seat at the midpoint of its fore and aft travel. Total fore and aft travel is 240 mm.

Positioning of the passenger's seat: Where the forward-most position is defined as detent 0, place the seat in detent 12. There are a total of 25 detents.

3. Fuel Tank Capacity Data

3.1 A. "Usable Capacity" of the standard equipment fuel tank is 75.7 liters

B. "Usable Capacity" of the optional equipment fuel tank is - liters

C. "Usable Capacity" of the vehicle(s) used for certification testing to requirements of FMVSS 301 = 75.7 liters

3.2 Amount of Stoddard solvent added to vehicle(s) used for certification test(s) = 69.7 liters

3.3 Is vehicle equipped with electric fuel pump? Yes- X ; No- -

If YES, explain the vehicle operating conditions under which the fuel pump will pump fuel.

The fuel pump operates briefly and shuts off when the ignition is placed in the on position. The fuel pump runs continuously while the engine is running.

DATA SHEET NO. 4 TEST VEHICLE INFORMATION (cont.)

4. STEERING COLUMN ADJUSTMENTS:

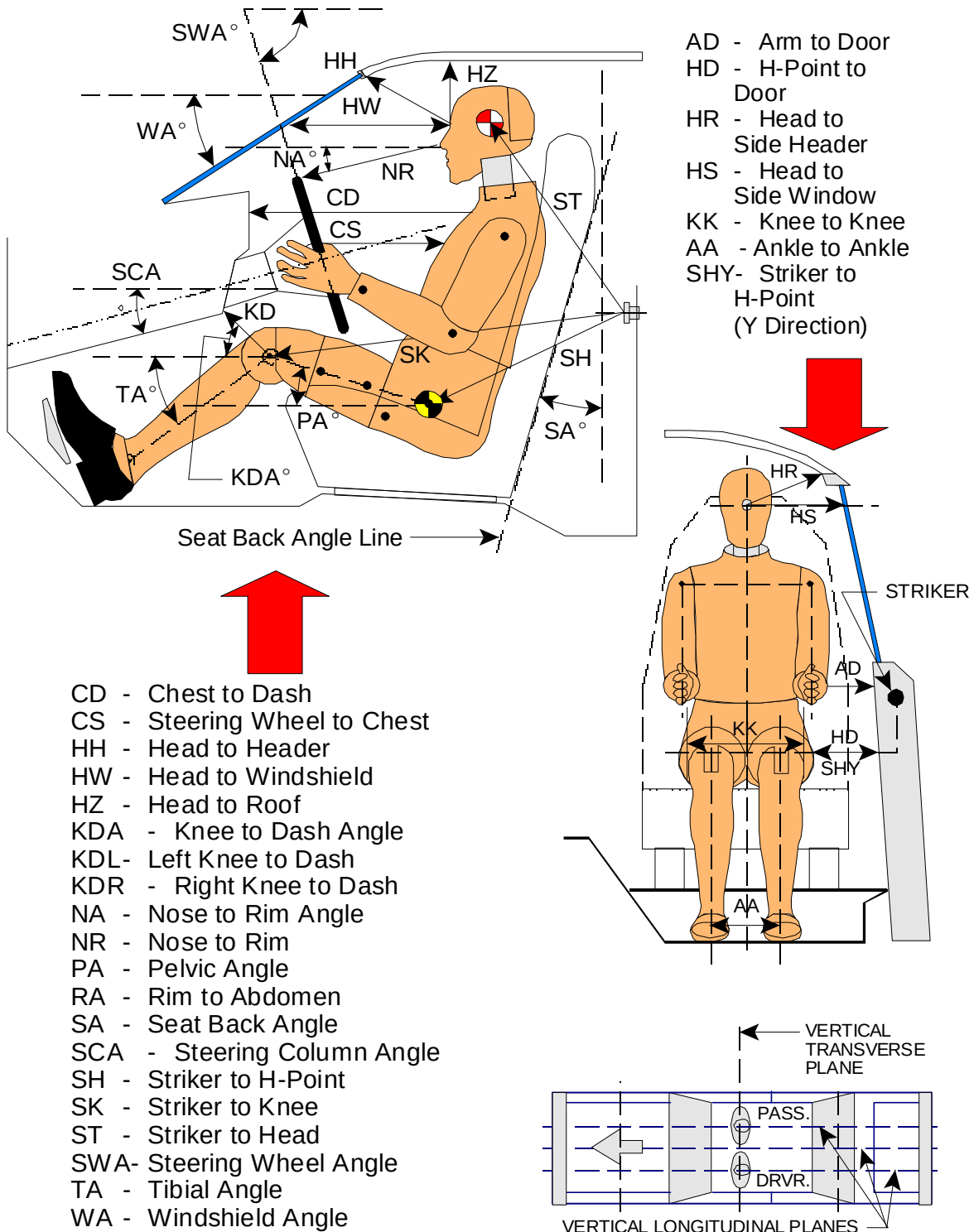
Steering wheel and column adjustments are made so that the steering wheel hub is at the geometric center of the locus it describes when it is moved through its full range of driving positions. If the tested vehicle has any of these adjustments, does your company use any specific procedures to determine the geometric center.

Operational Instructions: Place the steering column at the midpoint of its total travel.

5. SEAT BELT UPPER ANCHORAGE

Nominal design riding position: Place the adjustable seat belt anchorages in the highest position.

DATA SHEET NO. 5 FRONT SEAT DUMMY POSITIONING MEASUREMENTS IN VEHICLE
DUMMY MEASUREMENT FOR FRONT SEAT PASSENGERS



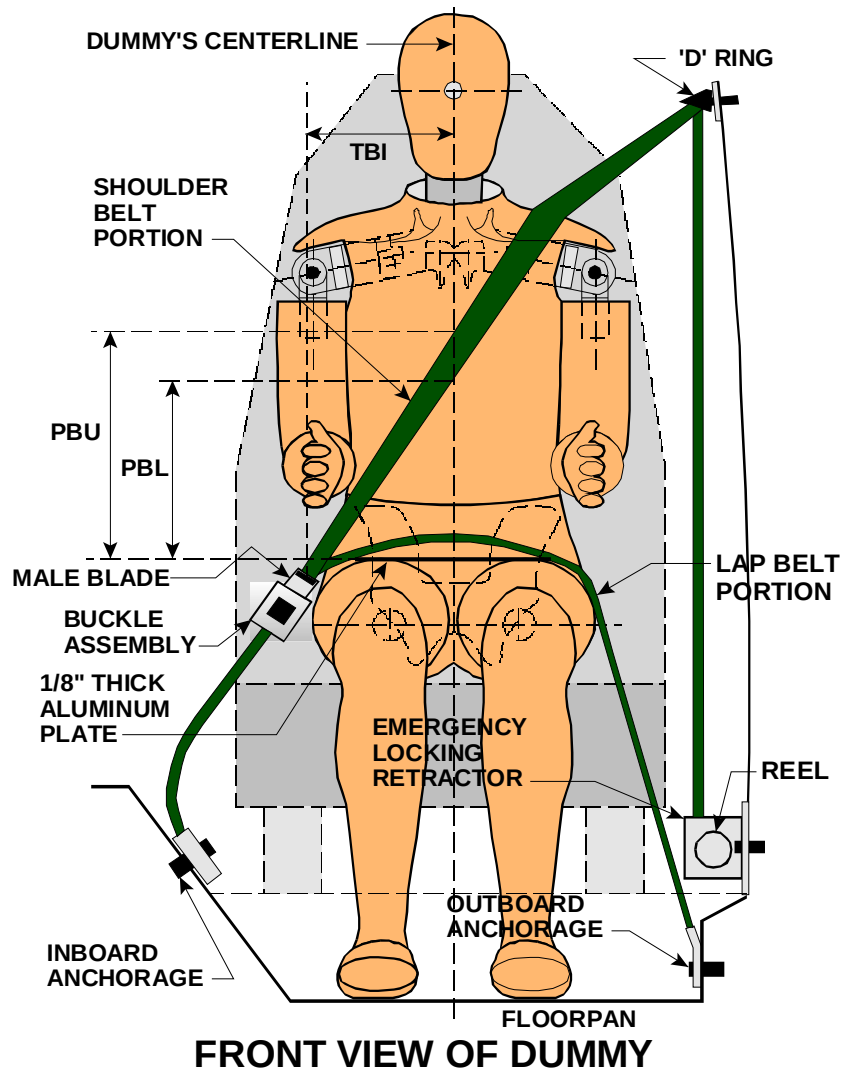
DATA SHEET NO. 5 FRONT SEAT DUMMY POSITIONING MEASUREMENTS IN VEHICLE (cont.)

	DRIVER (Serial #150)			PASS. (Serial #245)		
WA ^o	31 deg.			N/A		
SWA ^o	62 deg.			N/A		
SCA ^o	28 deg.			N/A		
SA ^o	23 deg.			23 deg.		
HZ	236			237		
HH	425			429		
HW	684			700		
HR	249			257		
NR	434	Angle	11 deg.	N/A		
CD	561			548		
CS	305			N/A		
RA	175			N/A		
KDL	113	Angle (KDA)	25 deg.	122		
KDR	128			117	Angle (KDA)	20 deg.
PA ^o	24.0 deg.			23.6 deg.		
TA ^o	49.0 deg.			50.4 deg.		
KK	385			315		
AA	325			195		
ST	576	Angle	11 deg.	575	Angle	12 deg.
SK	673	Angle	89 deg.	672	Angle	89 deg.
SH	285	Angle	107 deg.	288	Angle	107 deg.
SHY	268			264		
HS	360			360		
HD	160			155		
AD	121			40		

Dimensions in millimeters

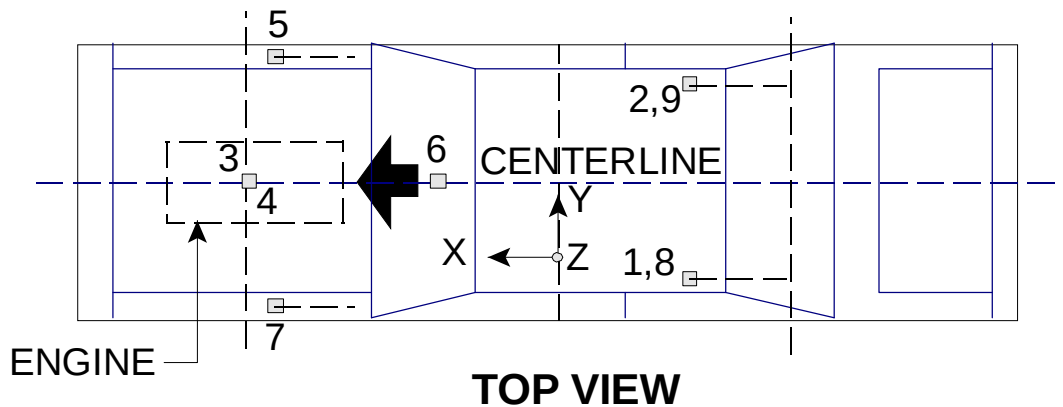
DATA SHEET NO. 6 SEAT BELT POSITIONING DATA

SEAT BELT POSITIONING DATA

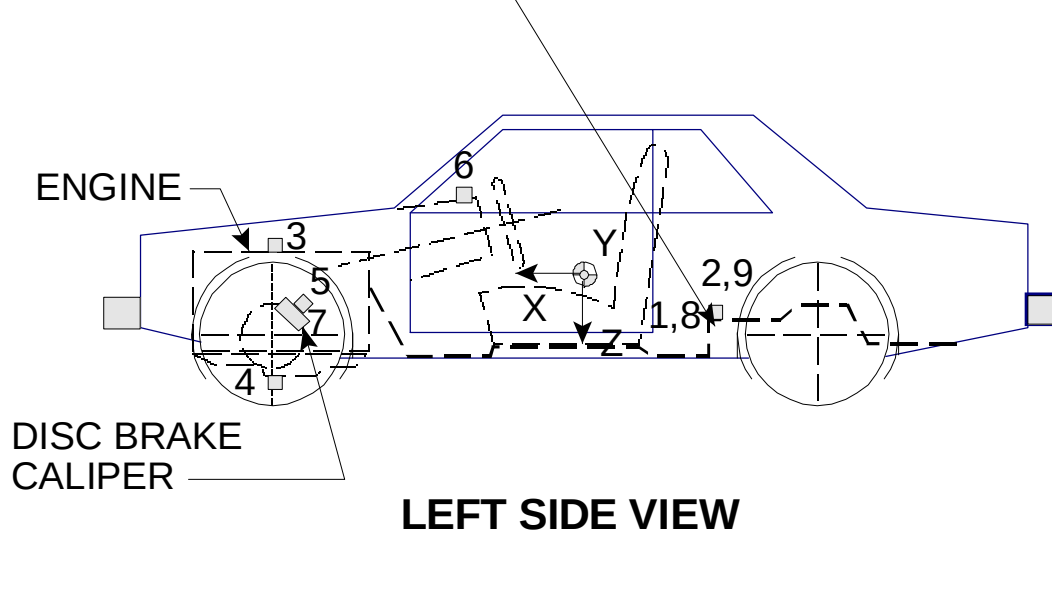


	DRIVER DUMMY (mm)	PASSENGER DUMMY (mm)
PBU -- Top surface of alum. plate to upper edge	366	366
PBL-- Top surface of alum. plate to belt lower edge	274	274
LAP BELT TENSION	10 N	10 N
SHOULDER BELT TENSION	Retractor	Retractor

VEHICLE ACCELEROMETER LOCATION AND DATA SUMMARY



REAR SEAT CUSHION
ASSY. FRONT ATTACHMENT
BRACKET SUPPORT



Note: Vehicle accelerometer location and data summary shown in DATA SHEET NO. 7

DATA SHEET NO. 7 VEHICLE ACCELEROMETER LOCATIONS AND DATA SUMMARY (cont.)

LOCATION		PRE-TEST LENGTH (mm)		
		X	Y	Z
1	Left Rear Seat Cross Member X	2353	-616	-381
2	Right Rear Seat Cross Member X	2327	608	-381
3	Top of Engine Block	4321	358	-779
4	Bottom of Engine	4080	187	-304
5	Disc Brake Caliper @ Right Side	4249	910	-370
6	Instrument Panel	3508	-83	-1078
7	Disc Brake Caliper @Left Side	4261	-914	-375
8	Left Rear Seat Cross Member Z	2353	-616	-381
9	Right Rear Seat Cross Member Z	2327	608	-381

LOCATION NUMBER	DESCRIPTION	MAXIMUM VALUE (g's)			
		Pos.	msec.	Neg.	msec.
1	Left Rear Seat Cross Member X	2.2	150.2	-34.7	67.2
2	Right Rear Seat Cross Member X	2.4	152.7	-35.2	65.4
3	Top of Engine Block	33.1	42.2	-181.8	29.0
4	Bottom of Engine	22.7	41.0	-124.1	30.7
5	Disc Brake Caliper @ Right Side	34.8	68.7	-81.9	54.8
6	Instrument Panel	†	-	†	-
7	Disc Brake Caliper @Left Side	54.2	70.7	-104.4	41.6
8	Left Rear Seat Cross Member Z	††	-	††	-
9	Right Rear Seat Cross Member Z	12.2	53.2	-11.8	73.1

† Transducer failed.

†† Wire cut at 8 ms.

DATA SHEET NO. 8 DUMMY INJURY CRITERIA VALUES

Vehicle Year/Make/Model/Body Style: 2002 Honda Odyssey MPV

NHTSA Test No.: M25305 Test Date: May 8, 2002

		MAXIMUM VALUE							
		Driver				Passenger			
DESCRIPTION	Unit	Pos	msec	Neg	msec	Pos	msec	Neg	msec
Head 9 Array X Arm Y	g	3.0	216.6	-9.8	87.7	5.2	79.8	-19.6	69.9
Head 9 Array X Arm Z	g	19.8	103.4	-9.8	128.3	34.4	85.2	-3.4	134.4
Head 9 Array Y Arm X	g	12.7	259.7	-41.0	83.8	7.1	291.5	-52.4	84.9
Head 9 Array Y Arm Z	g	14.2	106.3	-1.0	146.1	27.6	92.7	-1.3	38.2
Head 9 Array Z Arm X	g	15.4	259.7	-49.5	84.7	8.9	263.5	-59.6	89.2
Head 9 Array Z Arm Y	g	5.4	67.3	-14.9	92.0	4.3	75.2	-17.2	69.9
Head X	g	11.3	259.5	-43.2	79.9	6.5	299.2	-56.1	85.9
Head Y	g	4.2	23.9	-11.6	90.8	3.3	24.9	-10.4	89.9
Head Z	g	11.1	73.9	-2.2	22.4	31.5	85.8	-0.7	137.6
Head Resultant	g	44.3	79.9	-	-	64.9	85.9	-	-
Redundant Head X	g	11.7	258.8	-43.3	79.9	6.5	275.7	-55.6	85.6
Redundant Head Y	g	4.6	23.9	-12.0	89.9	3.1	24.9	-11.0	92.9
Redundant Head Z	g	11.1	73.6	-2.2	22.4	32.2	85.3	-0.8	137.6
Redundant Head Resultant	g	44.5	78.8	-	-	64.6	85.2	-	-
Upper Neck Fx	N	66.4	238.5	-498.7	108.1	124.2	273.7	-568.8	84.8
Upper Neck Fy	N	111.7	74.9	-158.0	100.4	123.1	69.5	-148.2	97.1
Upper Neck Fz	N	941.9	71.2	-24.0	129.9	1353.1	85.3	-49.9	20.6
Upper Neck F Resultant	N	956.3	71.2	-	-	1466.7	85.2	-	-
Upper Neck Mx	N-m	7.9	147.5	-21.6	80.1	15.3	86.3	-7.8	69.5
Upper Neck My	N-m	47.6	127.3	-27.4	103.3	23.8	128.8	-29.3	84.9
Upper Neck Mz	N-m	12.8	93.2	-7.8	143.5	10.6	77.9	-2.1	123.8
Upper Neck M Resultant	N-m	47.8	127.3	-	-	34.0	85.0	-	-
Chest X	g	3.6	257.5	-37.0	78.5	1.8	299.9	-40.4	79.6
Chest Y	g	8.0	97.1	-6.7	55.5	2.4	45.5	-6.1	86.6
Chest Z	g	4.3	46.4	-7.0	90.9	11.2	88.1	-10.6	78.1
Chest Resultant	g	37.3	78.4	-	-	41.4	79.1	-	-

DATA SHEET NO. 8 DUMMY INJURY CRITERIA VALUES (cont.)

Vehicle Year/Make/Model/Body Style: 2002 Honda Odyssey MPV

NHTSA Test No.: M25305 Test Date: May 8, 2002

		MAXIMUM VALUE							
		Driver				Passenger			
DESCRIPTION	Unit	Pos	msec	Neg	msec	Pos	msec	Neg	msec
Redundant Chest X	g	3.6	257.6	-36.9	78.6	1.6	144.9	-41.1	79.6
Redundant Chest Y	g	8.0	97.1	-6.7	55.6	2.8	45.7	-5.7	86.8
Redundant Chest Z	g	4.1	46.3	-7.2	91.0	10.9	87.6	-11.1	78.1
Redundant Chest Resultant	g	37.3	78.5	0.1	-50.0	42.2	78.6	0.0	-50.0
Chest Displacement	mm	0.0	10.0	-33.3	76.8	0.0	-2.4	-27.9	92.0
Pelvic X	g	4.2	207.1	-37.4	59.2	2.5	145.4	-38.3	63.6
Pelvic Y	g	10.2	79.6	-16.1	45.1	4.1	74.9	-6.4	96.8
Pelvic Z	g	3.6	202.5	-24.4	84.4	2.4	258.5	-24.9	81.8
Pelvic Resultant	g	42.0	54.0	0.1	-48.6	41.9	77.4	0.0	-49.8
Left Femur	N	380.3	32.9	-1907.1	57.9	243.5	103.5	-2414.2	84.5
Right Femur	N	391.2	35.4	-3699.3	51.4	127.1	23.2	-3815.3	65.9
Left Upper Tibia Mx	N-m	35.6	92.2	-0.9	150.7	3.2	36.5	-38.0	64.8
Left Upper Tibia My	N-m	33.4	153.0	-78.0	47.7	125.5	48.5	-60.5	70.9
Left Lower Tibia Fz	N	183.9	149.6	-1440.7	46.4	534.2	46.7	-1773.1	71.7
Left Lower Tibia Mx	N-m	11.8	59.4	-1.4	23.0	2.4	27.0	-20.8	49.0
Left Lower Tibia My	N-m	13.8	112.8	-30.9	61.9	104.4	73.5	-2.0	17.0
Right Upper Tibia Mx	N-m	12.5	92.9	-78.2	47.8	40.7	77.2	-20.6	90.7
Right Upper Tibia My	N-m	19.1	52.4	-127.1	68.4	120.4	64.0	-8.9	32.6
Right Lower Tibia Fz	N	83.1	136.6	-3878.8	46.1	68.5	141.8	-1449.1	48.0
Right Lower Tibia Mx	N-m	45.8	58.0	-29.8	79.8	29.0	52.8	-2.2	69.0
Right Lower Tibia My	N-m	99.5	76.9	-22.1	46.9	101.2	79.3	-3.6	36.5
Left Foot Aft Ax	g	15.1	209.1	-36.5	59.9	38.7	57.8	-128.9	42.4
Left Foot Aft Az	g	14.6	56.7	-13.9	42.5	29.6	70.7	-70.6	54.3
Left Foot Fore Az	g	†	-	†	-	129.2	43.7	-277.8	47.5
Right Foot Aft Ax	g	18.4	71.9	-111.2	46.2	12.6	81.8	-93.1	49.0
Right Foot Aft Az	g	20.8	74.9	-118.3	43.5	19.7	71.2	-50.6	48.8
Right Foot Fore Az	g	72.9	74.8	-231.8	43.5	71.9	71.3	-124.6	49.0
Lap Belt Load	N	-	-	-	-	-	-	-	-
Torso Belt	N	-	-	-	-	-	-	-	-

† Transducer failed.

DATA SHEET NO. 8 DUMMY INJURY CRITERIA VALUES (cont.)

Vehicle Year/Make/Model/Body Style: 2002 Honda Odyssey MPV

NHTSA Test No.: M25305 Test Date: May 8, 2002

HEAD INJURY CRITERIA (HIC)				
	HIC**	t ₁ (msec)	t ₂ (msec)	Average Acceleration t ₁ to t ₂
Position #1 - Driver	300.7	67.5	103.5	37.0
Position #2 - Passenger	454.5	66.2	102.2	43.7

** HIC is as defined in FMVSS 208. The maximum time interval from t₁ to t₂ is 36 milliseconds.

CLIP SUMMARY*				
	CLIP (g's)	t ₁ (msec)	t ₂ (msec)	CSI
Position #1 - Driver	36.5	88.5	91.5	356.6
Position #2 - Passenger	40.5	77.2	80.2	341.5

* The maximum chest resultant acceleration is defined as the maximum acceleration which exceeds 0.003 seconds in duration.

DATA SHEET NO. 8 DUMMY INJURY CRITERIA VALUES (cont.)
REDUNDANT DATA

Vehicle Year/Make/Model/Body Style: 2002 Honda Odyssey MPV

NHTSA Test No.: M25305 Test Date: May 8, 2002

HEAD INJURY CRITERIA (HIC) REDUNDANT				
	HIC**	t ₁ (msec)	t ₂ (msec)	Average Acceleration t ₁ to t ₂
Position #1 - Driver	307.1	67.5	103.5	37.4
Position #2 - Passenger	434.5	66.2	102.2	42.9

** HIC is as defined in FMVSS 208. The maximum time interval from t₁ to t₂ is 36 milliseconds.

CLIP SUMMARY* REDUNDANT				
	CLIP (g's)	t ₁ (msec)	t ₂ (msec)	CSI
Position #1 - Driver	36.8	76.9	79.9	359.2
Position #2 - Passenger	41.6	84.7	87.7	358.1

* The maximum chest resultant acceleration is defined as the maximum acceleration which exceeds 0.003 seconds in duration.

DATA SHEET NO. 9 SEAT BELT PERFORMANCE ASSESSMENT TEST DATA

BELT LENGTH DATA:

	<u>Driver</u>	<u>Passenger</u>
Belt length from trim panel exit to bolt hole anchor point for continuous webbing systems.	<u>2038</u>	<u>2047</u>
Shoulder belt length as measured on Part 572 Dummy.	<u>888</u>	<u>894</u>
Lap belt length as measured on Part 572 Dummy.	<u>905</u>	<u>908</u>

SHOULDER BELT SPOOL-OFF DATA:

As determined by film analysis.	<u>†</u>	<u>†</u>
As determined mechanically.	<u>††</u>	<u>††</u>
As determined electronically.	<u>††</u>	<u>††</u>

BELT STRETCH DATA:

Measured electronically between shoulder belt load cell and the "D" ring.	<u>††</u>	<u>††</u>
Measured mechanically.	<u>0 mm/m</u>	<u>0 mm/m</u>

Dimensions in millimeters

† Onboard cameras were not installed in the rear compartment area. Vehicle contained child restraints and test dummies in the middle row seating positions (P3 and P4).

†† Instrumentation was not installed. Vehicle was equipped with seat belt pretensioners and data acquisition system was at capacity.

DATA SHEET NO.10 SUMMARY OF FMVSS 212 DATA

FMVSS NO. 212 - "WINDSHIELD MOUNTING" DATA

DETAILS OF WINDSHIELD MOUNTING SUCH AS RETENTION METHOD, TRIM TYPE, ETC.:

Windshield is bonded in place and covered with a 27 mm molding.

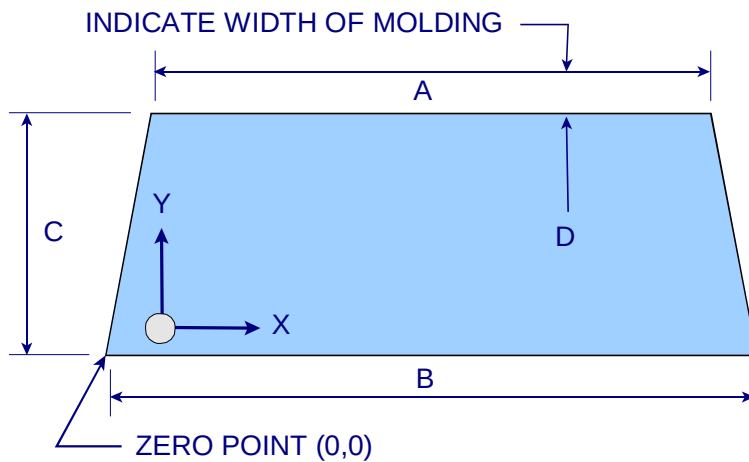
FMVSS 212 REQUIREMENTS:

The Post-Test periphery retention amount must be at least 75% of the Pre-Test periphery measurement for vehicles NOT equipped with automatic restraints, and 50% for each side of the windshield for vehicles equipped with automatic restraint systems for front occupants,

FMVSS 212 TEST DATA

	WINDSHIELD PERIPHERY		% OF RETENTION
	PRE-TEST (mm)	POST-TEST (mm)	
RIGHT SIDE	2405	2405	100.0%
LEFT SIDE	2405	2405	100.0%
TOTAL	4810	4810	100.0%

AREA OF RETENTION FAILURE: None



DIMENSIONS (mm)	
A	1280
B	1690
C	920
D	27

FRONT VIEW OF WINDSHIELD

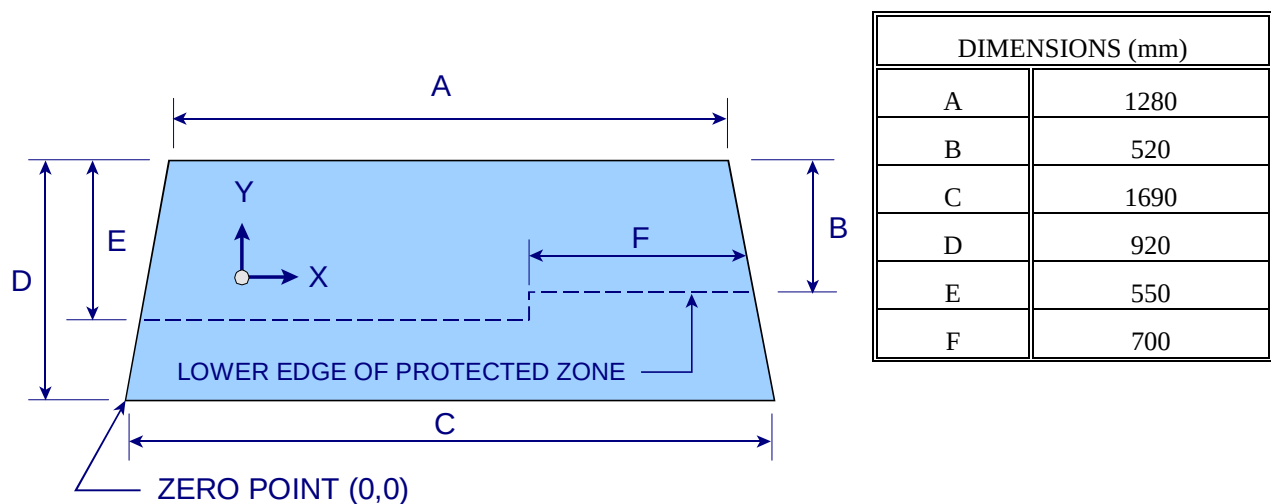
FAILURE DETAILS: None

DATA SHEET NO. 11 FMVSS NO. 219 (PARTIAL) - "WINDSHIELD ZONE INTRUSION" DATA

PROTECTED ZONE LOWER EDGE REQUIREMENT:

The lower edge of the protected zone is determined by placing a 165 mm diameter rigid sphere weighing 6.8 kg in a position such that it simultaneously contacts the inner surface of the windshield and the top surface of the instrument panel including padding. The locus of points is drawn on the inner surface of the windshield contacted by the sphere across the width of the instrument panel. From the outermost contactable points extend the locus line horizontally to the edges of the windshield, then draw a line on the inner surface of the windshield below and 13 mm distant from the locus line. The LOWER EDGE OF THE PROTECTED ZONE is the longitudinal projection of this line onto the outer surface of the windshield.

FMVSS 219 TEST DATA:



FRONT VIEW OF WINDSHIELD

DETAILS OF WINDSHIELD GLASS PENETRATION GREATER THAN 6 mm: None

(Show location of penetration on the above sketch)

COORDINATES		
	X	Y
1.	-	-
2.	-	-
3.	-	-
4.	-	-

DATA SHEET NO. 12 FMVSS NO. 301-75 "FUEL SYSTEM INTEGRITY" POST IMPACT TEST DATA

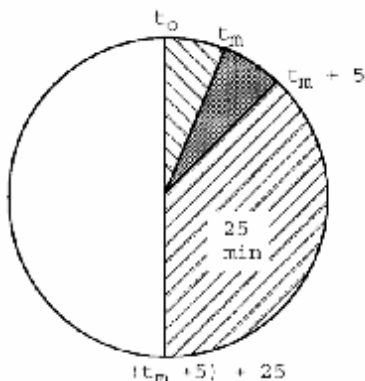
NHTSA TEST No.: M25305 TEST DATE: May 8, 2002
VEHICLE MAKE/MODEL: 2002 Honda Odyssey MPV

The test vehicle was filled from 92% to 94% of the manufacture's "usable" capacity. The electric fuel pump was operating if it will operate without engine operation. Two Part 572 anthropomorphic test devices were located at each of the front designated seating positions.

=====

TEST VEHICLE IMPACT TYPE: X Frontal (56 kph)
- Oblique (48 kph) with _____ deg. barrier face first
 contacting _____
- (driver/passenger) side
- Rear Moving Barrier (48 kph)
- Lateral Moving Barrier (32 kph)

FUEL SPILLAGE MEASUREMENT:



1. From impact until vehicle motion ceases
2. For 5 minute period after vehicle motion ceases
3. For next 25 minutes

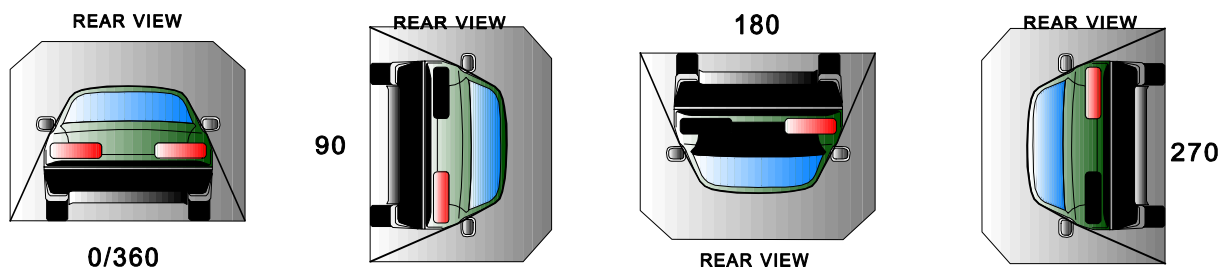
ACTUAL	MAX ALLOWED
0	28 g
0	141 g
0	28 g/min.

SOLVENT SPILLAGE DETAILS: None

DATA SHEET NO. 13 - ROLLOVER DATA

Vehicle: 2002 Honda Odyssey MPV

NHTSA No.: M25305



I. DETERMINATION OF SOLVENT COLLECTION TIME PERIOD:

Rollover Stage	Rotation Time (spec. 1 -3 min)				FMVSS 301 Hold Time		Total Time				Next Whole Minute Interval	
0° - 90°	1	minutes	11	seconds	5	minutes	6	minutes	11	seconds	7	minutes
90° - 180°	1	minutes	7	seconds	5	minutes	6	minutes	7	seconds	7	minutes
180°-270°	1	minutes	3	seconds	5	minutes	6	minutes	3	seconds	7	minutes
270°-360°	1	minutes	12	seconds	5	minutes	6	minutes	12	seconds	7	minutes

II. FMVSS 301 REQUIREMENTS: (Maximum allowable solvent spillage):

First 5 minutes from onset of rotation	6th min.	7th min.	8th min. (if required)
142 g	28 g	28 g	28 g

III. ACTUAL TEST VEHICLE SOLVENT SPILLAGE:

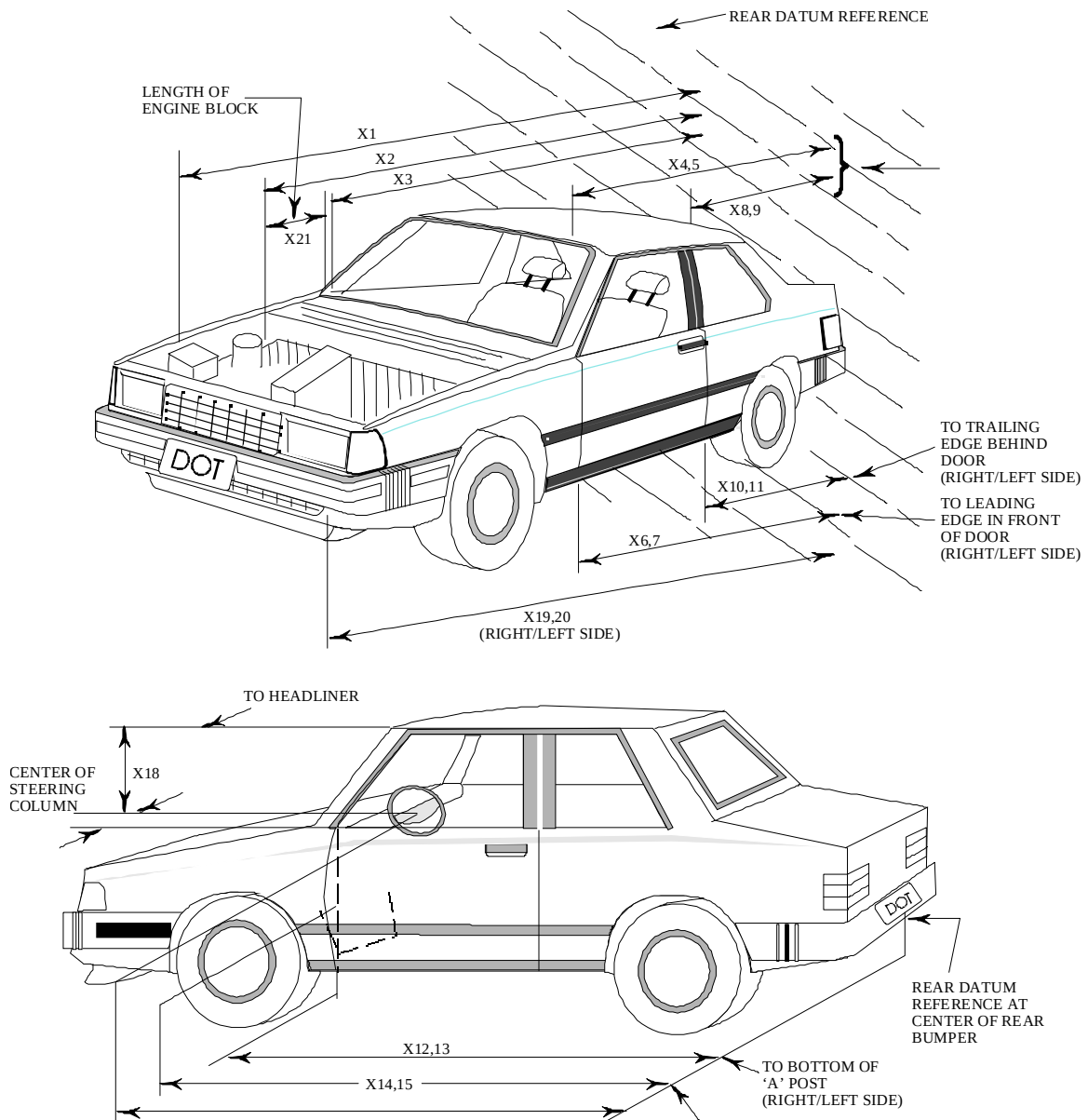
Rollover Stage	First 5 minutes from onset of rotation (g)	6th min. (g)	7th min. (g)	8th min. (if required) (g)
0° - 90°	0	0	0	N/A
90° - 180°	0	0	0	N/A
180°-270°	0	0	0	N/A
270°-360°	0	0	0	N/A

Note: Record spillage for whole minute intervals only as determined above.

IV. SOLVENT SPILLAGE LOCATION(S):

Rollover Stage	Spillage Location
0° - 90°	-
90° - 180°	-
180°-270°	-
270°-360°	-

DATA SHEET NO. 14 TEST VEHICLE MEASUREMENTS

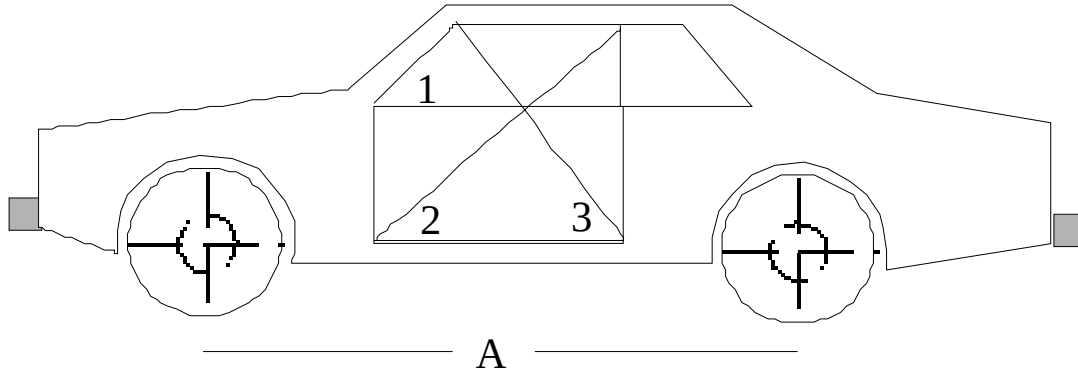


DATA SHEET NO.14 VEHICLE MEASUREMENTS (cont.)

No.		Pre-Test	Post-Test	Difference
X1	Total Length of Vehicle at Centerline	5105	4441	664
X2	Rear Surface of Vehicle to Front of Engine	4609	4263	346
X3	Rear Surface of Vehicle to Firewall	4157	4125	32
X4	Rear Surface of Vehicle to Upper Leading Edge of Right Door	3639	3662	-23
X5	Rear Surface of Vehicle to Upper Leading Edge of Left Door	3645	3641	4
X6	Rear Surface of Vehicle to Lower Leading Edge of Right Door	3611	3612	-1
X7	Rear Surface of Vehicle to Lower Leading Edge of Left Door	3620	3619	1
X8	Rear Surface of Vehicle to Upper Trailing Edge of Right Door	2555	2548	7
X9	Rear Surface of Vehicle to Upper Trailing Edge of Left Door	2560	2555	5
X10	Rear Surface of Vehicle to Lower Trailing Edge of Right Door	2571	2570	1
X11	Rear Surface of Vehicle to Lower Trailing Edge of Left Door	2578	2577	1
X12	Rear Surface of Vehicle to Bottom of "A" Post of Right Side	3796	3795	1
X13	Rear Surface of Vehicle to Bottom of "A" Post of Left Side	3803	3804	-1
X14	Rear Surface of Vehicle to Firewall, Right Side	4184	4143	41
X15	Rear Surface of Vehicle to Firewall, Left Side	4180	4137	43
X16	Rear Surface of Vehicle to Steering Column	3235	3240	-5
X17	Center of Steering Column to "A" Post	132	297	-165
X18	Center of Steering Column to Headliner	442	400	42
X19	Rear Surface of Vehicle to Right Side of Front Bumper	4996	4424	572
X20	Rear Surface of Vehicle to Left Side of Front Bumper	4993	4468	525
X21	Length of Engine Block	427	427	0
RD	Rear Surface of Vehicle to Right Side of Dash Panel	3379	3375	4
CD	Rear Surface of Vehicle to Center of Dash Panel	3485	3477	8
LD	Rear Surface of Vehicle to Left Side of Dash Panel	3369	3378	-9

All Dimensions in mm

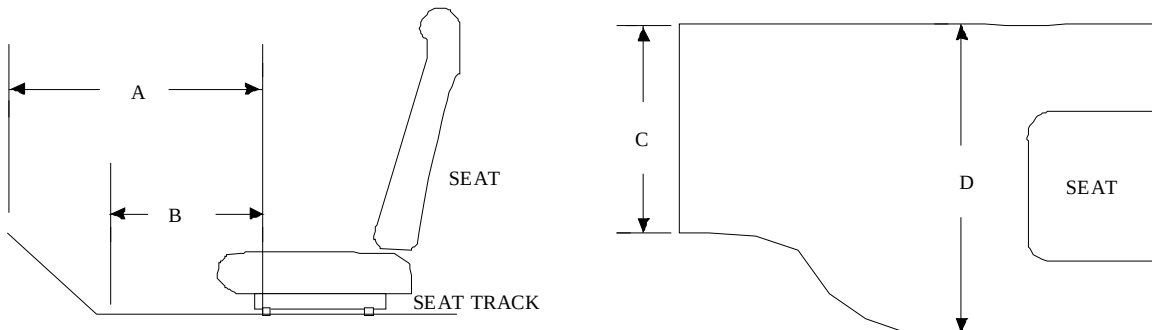
DATA SHEET NO.14 VEHICLE MEASUREMENTS (cont.)
 VEHICLE INTRUSION MEASUREMENTS
 DOOR OPENING WIDTH



UNITS (mm)	LEFT			RIGHT		
MEASUREMENT	1	2	3	1	2	3
BEFORE TEST	1007	1548	1223	1004	1574	1230
AFTER TEST	1005	1554	1224	1005	1571	1234
DIFFERENCE	2	-6	-1	-1	3	-4

UNITS (mm)	A = WHEELBASE LEFT	A = WHEELBASE RIGHT
BEFORE TEST	2997	2996
AFTER TEST	2872	2862
DIFFERENCE	125	134

DATA SHEET NO.14 VEHICLE MEASUREMENTS (cont.)
 VEHICLE INTRUSION MEASUREMENTS
 STATIC FOOTWELL DEFORMATION



DRIVER

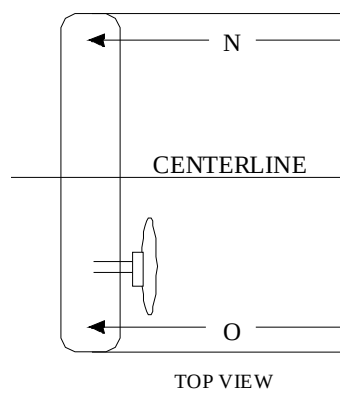
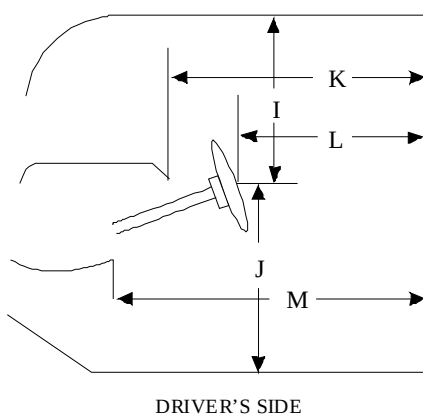
Measurement	Pre-Test	Post-Test	Difference
A	744	587	157
B	528	484	44
C	468	453	15
D	486	474	12

PASSENGER

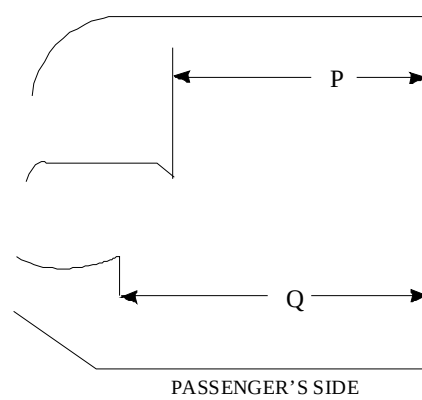
Measurement	Pre-Test	Post-Test	Difference
A	716	554	162
B	446	407	39
C	478	436	42
D	490	452	38

Units = mm

DATA SHEET NO.14 VEHICLE MEASUREMENTS (cont.)
 VEHICLE INTRUSION MEASUREMENTS
 STATIC PASSENGER COMPARTMENT INTRUSION



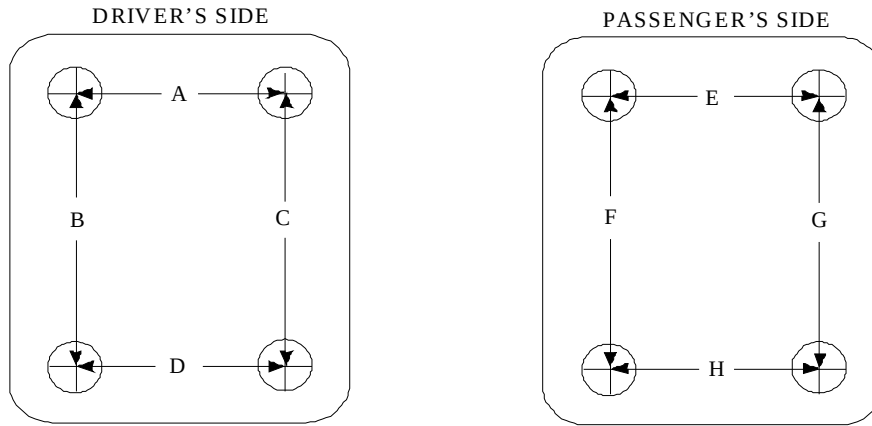
MEASUREMENTS
FROM C-PILLAR
BELT ANCHORAGE



Measurement	Pre-Test	Post-Test	Difference
I	442	400	42
J	716	778	-62
K	1847	1854	-7
L	1621	1626	-5
M	1900	1887	13
N	1771	1765	6
O	1755	1764	-9
P = K (PASS.)	2017	2011	6
Q = M (PASS.)	1856	1844	12

Units = mm

DATA SHEET NO.14 VEHICLE MEASUREMENTS (cont.)
FLOORBOARD DEFORMATION

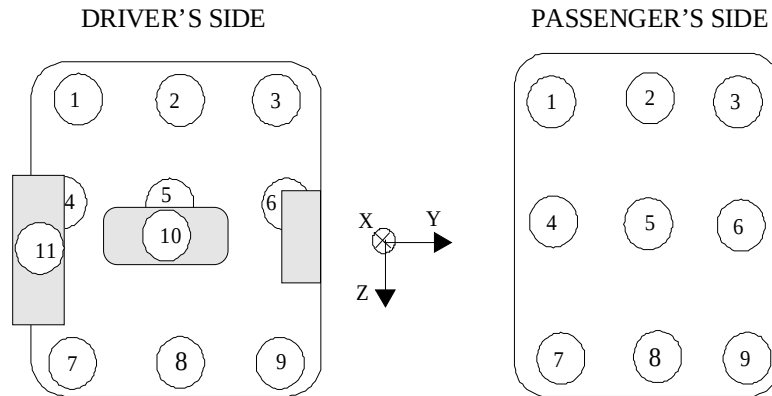


TOP VIEW THROUGH FLOOR PAN

Measurement	Pre-Test	Post-Test	Difference
A	468	453	15
B	449	444	5
C	410	324	86
D	486	474	12
E	478	436	42
F	414	405	9
G	374	340	34
H	490	452	38

Units = mm

DATA SHEET NO.14 VEHICLE MEASUREMENTS (cont.)
TOE-PAN INTRUSION



Driver Side Toe-pan Measurements

Toe-pan Location	X Deformation (mm)			Z Deformation (mm)		
	Pre-Test	Post-Test	Difference	Pre-Test	Post-Test	Difference
1	3821	3712	109	-549	-603	54
2	3910	3758	152	-593	-646	53
3	3880	3760	120	-567	-610	43
4	3712	3686	26	-428	-456	28
5	3813	3728	85	-448	-516	68
6	3813	3713	100	-462	-526	64
7	3548	3538	10	-405	-423	18
8	3694	3656	38	-395	-413	18
9	3690	3617	73	-401	-428	27
10	3692	3578	114	-551	-644	93
11	3760	3723	37	-527	-547	20

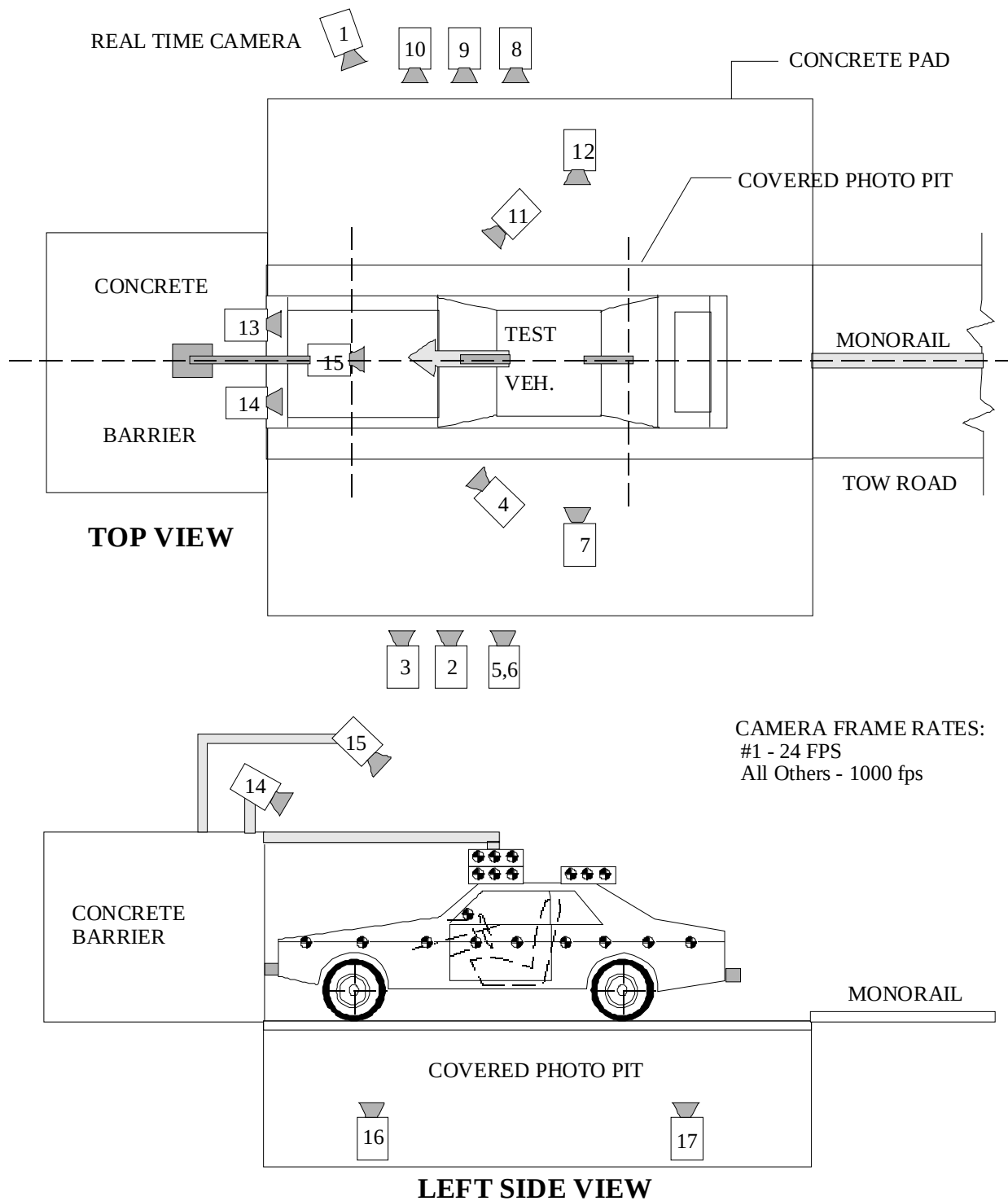
Passenger Side Toe-pan Measurements

Toe-pan Location	X Deformation (mm)			Z Deformation (mm)		
	Pre-Test	Post-Test	Difference	Pre-Test	Post-Test	Difference
1	3860	3603	257	-549	-628	79
2	3873	3706	167	-536	-615	79
3	3812	3720	92	-536	-587	51
4	3772	3662	110	-413	-481	68
5	3746	3673	73	-454	-482	28
6	3721	3675	46	-429	-453	24
7	3622	3568	54	-413	-408	-5
8	3604	3560	44	-409	-405	-4
9	3571	3550	21	-399	-409	10

Reference: SAE: X = Rear Bumper (Positive: forward); Z = Ground (Positive: down)

DATA SHEET NO.15 HIGH-SPEED CAMERA LOCATIONS

NOTE: Camera information shown in DATA SHEET NO. 15.



DATA SHEET NO.15 HIGH-SPEED CAMERA LOCATIONS (cont.)

NHTSA Test No.: M25305 Vehicle: 2002 Honda Odyssey MPV

CAMERA NO.	VIEW	CAMERA POSITIONS (mm)*			ANGLE (deg)**	FILM PLANE TO HEAD TARGET	LENS (mm)	SPEED (fps)
		X	Y	Z				
1	Real-Time Camera	-	-	-	-	-	-	24
2	Overall Left Side	7155	1655	1065	-1.5	6706	2.5	1010
3	Left Side View	8190	850	1195	-3.5	7741	25	1000
4	Driver and Interior View	7395	2655	2005	-8.5	-	25	1050
5	Steering Column (Bottom)	7865	1907	1170	-2.8	7416	25	1005
6	Steering Column (Top)	7865	1907	1790	-7.6	7416	25	1015
7	Left Side CRS View	3597	2815	2540	-24.0	-	13	500
8	Overall Right Side	7286	1995	2515	-1.8	7600	12.5	1010
9	Right Side View	8472	1165	1155	-2.3	8786	25	1010
10	Right Passenger View	8280	1653	1432	-2.7	8594	35	1000
11	Passenger and Interior View	7705	2827	1968	-7.5	-	25	1000
12	Right Side CRS View	3322	2920	2460	-23.5	-	13	505
13	Passenger Front View	620	-92	1987	-34.5	-	13	1010
14	Driver Front View	620	-92	1987	-33.1	-	13	1005
15	Windshield View	0	-530	3374	-50.0	-	13	1000
16	Pit View of Engine	0	615	-3048	90	-	13	1000
17	Pit View of Fuel Tank	0	2560	-3048	90	-	13	1005

*X = film plane to monorail centerline ** = referenced to horizontal plane

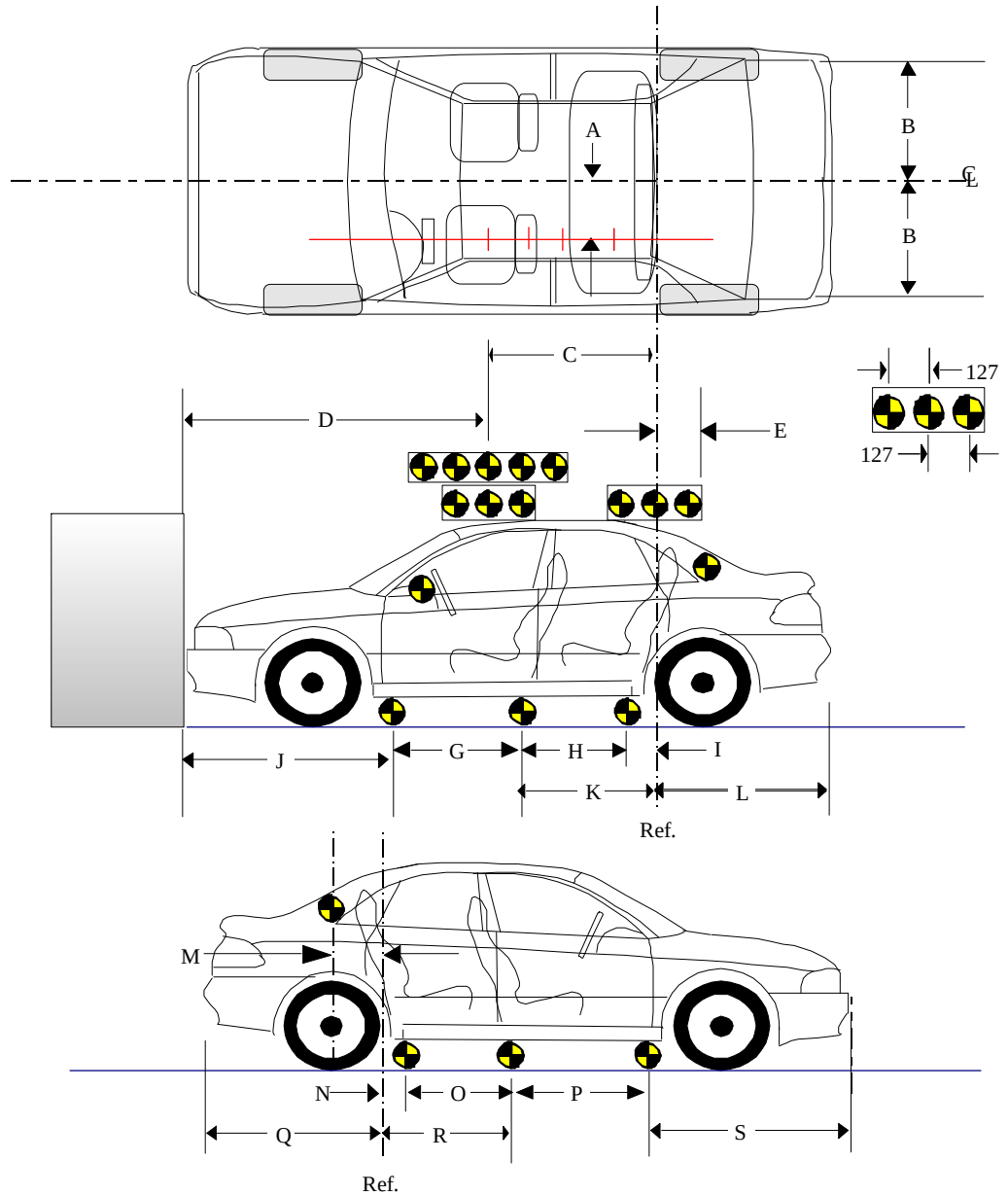
Y = film plane to impact location N.T. indicates No Timing

Z = film plane to ground

DATA SHEET NO. 16 VEHICLE REFERENCE PHOTO TARGET LOCATIONS

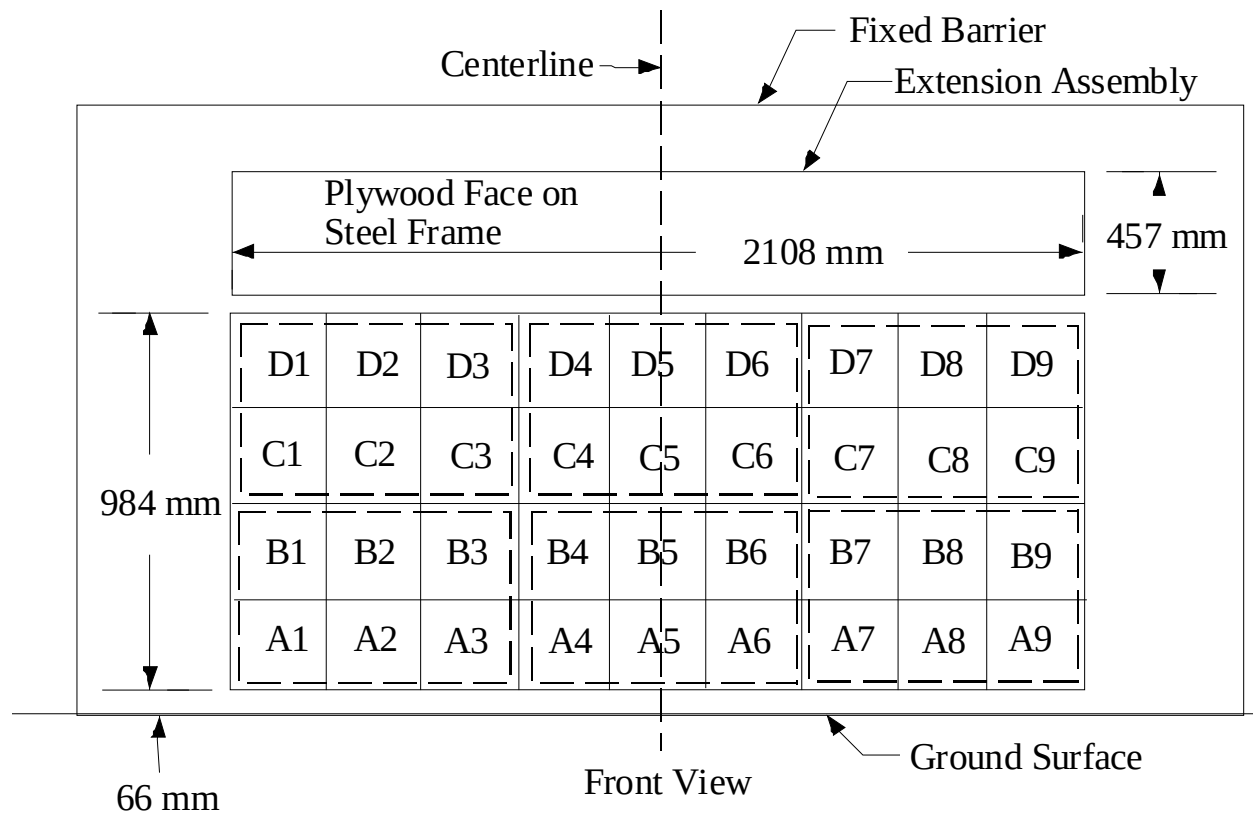
(Dimensions in millimeters)

A	390
B	763
C	1219
D	3700
E	1479
F	773
G	1013
H	1020
I	138
J	1466
K	1158
L	1467
M	1484
N	144
O	1015
P	1014
Q	1459
R	1159
S	1472



DATA SHEET NO. 17 LOAD CELL LOCATIONS ON FIXED BARRIER

36 Load Cells
 4 Rows
 9 Columns
 6 Groupings (6 cells/group)



6 GROUPS OF 6 LOAD CELLS EACH

Group 4 C1 thru D3	Group 5 C4 thru D6	Group 6 C7 thru D9
Group 1 A1 thru B3	Group 2 A4 thru B6	Group 3 A7 thru B9

The following data is presented in Appendix B:

- (1)Data from 36 individual load cells
- (2)Total or Sum of 36 individual load cells
- (3)Data from 6 Groupings shown above (6 cells/group)

DATA SHEET NO. 18 POST TEST AIR BAG DATA

NHTSA No.: M25305; Test Date: May 8, 2002; Technician: Lawrence Q. Valvo

Vehicle Model Year/Make/Model: 2002 Honda Odyssey MPV

A. No. of vent holes: 2 -Driver 2 -Passenger

B. Size of vent holes: (mm²) 1590 -Driver 2827 -Passenger

C. Total vent area: (mm²) 3180 -Driver 5654 -Passenger

D. Deflated air bag length and width dimensions or, if round, diameter. (mm)

Driver: 620 -Height; 620 -Width; 250 -Depth

Passenger: 800 -Height; 750 -Width; 320 -Depth

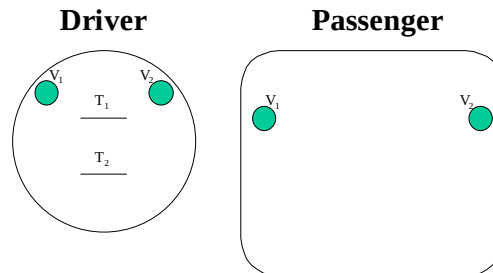
E. Is the air bag tethered?

Driver: X -Yes; - -No; If yes, record length of tether- 260

Passenger: - -Yes; X -No; If yes, record length of tether- -

Sketch the air bag showing the location of the vent holes, how the bag is tethered, and where the bag is tethered. Also describe how the tethers are attached to the bag and the steering wheel.

(Note: Not to scale; V_n = Vent hole_n, T_n = Tether_n).



F. Record part numbers and manufacturer name of the air bag and gas generator.

Driver: Air bag: HONDA; 0007455; 210302

Generator: JBAN252472%; HQN4HN015; M/D-0402; 77800-S5A-A813-M1; 7917L

Passenger: Air bag: HONDA; 0009035; 140302L1

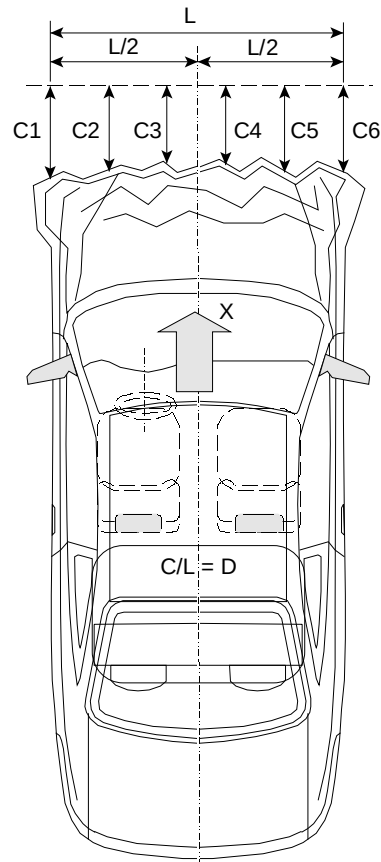
Generator: PVN54W448; M/D-0302; 9437L; 77850-SOX-A110-M1

DATA SHEET NO. 19 ACCIDENT INVESTIGATION DIVISION DATA
FOR FRONTAL BARRIER IMPACT

Vehicle Make/Model/Body Style: Honda Odyssey MPV
 NHTSA Test No.: M25305 VIN: 5FNRL18622B015052
 Model Year: 2002 Build Date: 4/02 Test Date: May 8, 2002
 Vehicle Size Category: MPV Test Weight: 2228.0 kg
 Vehicle Wheelbase: 2997 mm; Front Overhang: 985 mm; Overall Width: 1920 mm
 Collision Deformation Classification (CDC) Code: 12FDEW4

Crush Depth Dimensions

	PRE (mm)	POST (mm)	DIFF (mm)
C1 =	4836	4456	380
C2 =	4986	4461	525
C3 =	5074	4471	603
C4 =	5079	4453	626
C5 =	4992	4421	571
C6 =	4857	4425	432



Midpoint of Damage: D = Vehicle Centerline (Longitudinal)

Length of Damaged Region: L1= 1652 mm
 L2= 826 mm
 L5= 330 mm

APPENDIX A
PHOTOGRAPHS

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Figure A-1: LOAD CELL LOCATIONS.



Figure A-2: PRE-TEST FRONT VIEW



Figure A-3: POST-TEST FRONT VIEW.



Figure A-4: PRE-TEST LEFT SIDE VIEW



Figure A-5: POST-TEST LEFT SIDE VIEW



Figure A-6: PRE-TEST RIGHT SIDE VIEW



Figure A-7: POST-TEST RIGHT SIDE VIEW



Figure A-8: PRE-TEST RIGHT FRONT THREE-QUARTER VIEW



Figure A-9: POST-TEST RIGHT FRONT THREE-QUARTER VIEW



Figure A-10: PRE-TEST LEFT REAR THREE-QUARTER VIEW



Figure A-11: POST-TEST LEFT REAR THREE-QUARTER VIEW



Figure A-12: PRE-TEST WINDSHIELD VIEW



Figure A-13: POST-TEST WINDSHIELD VIEW



Figure A-14: PRE-TEST ENGINE COMPARTMENT VIEW



Figure A-15: FUEL CAP VIEW



Figure A-16: PRE-TEST FRONT UNDERBODY VIEW

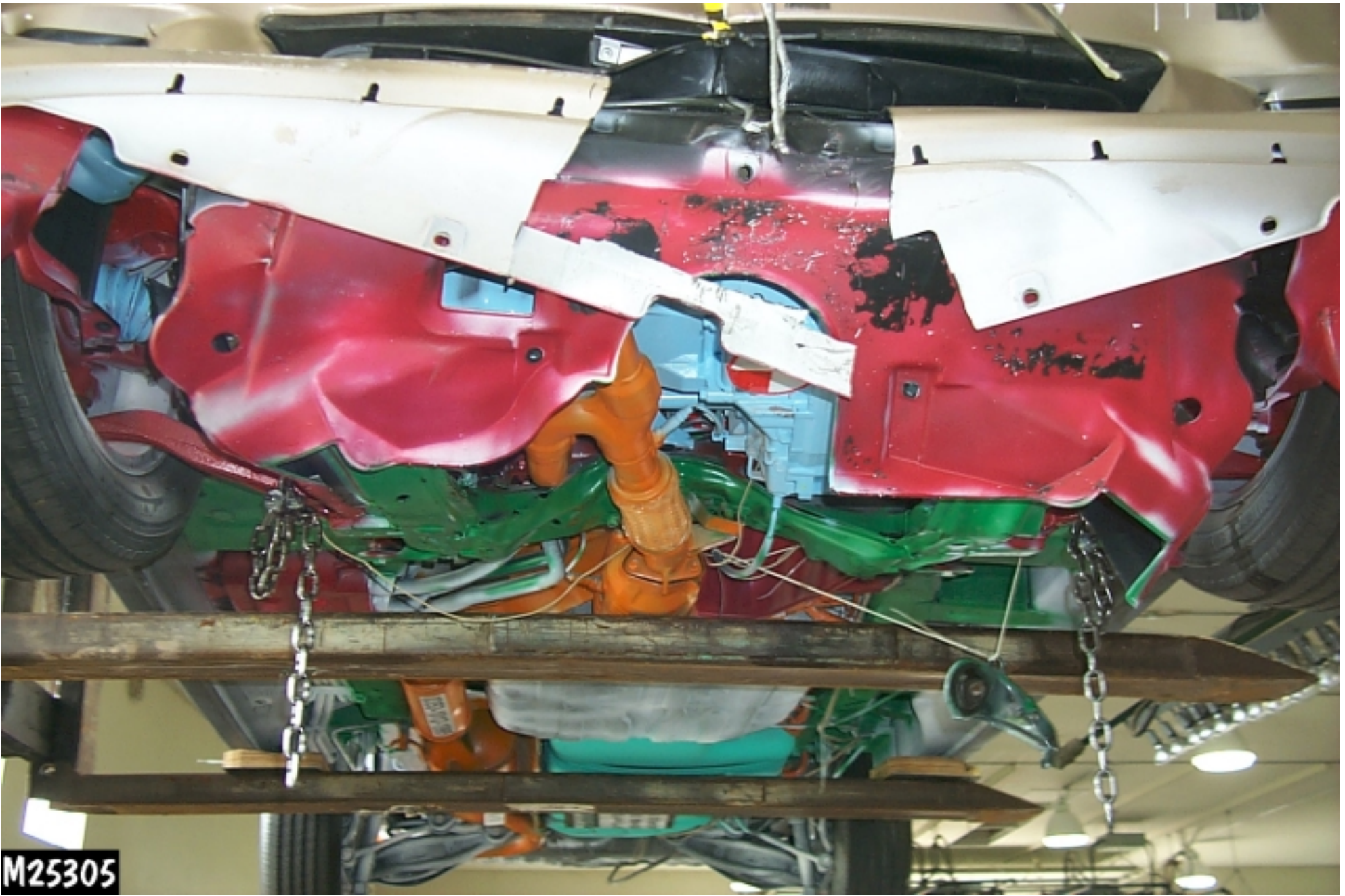


Figure A-17: POST-TEST FRONT UNDERBODY VIEW



Figure A-18: PRE-TEST FRONT SIDE UNDERBODY VIEW



Figure A-19: POST-TEST FRONT SIDE UNDERBODY VIEW



Figure A-20: PRE-TEST REAR UNDERBODY VIEW



Figure A-21: POST-TEST REAR UNDERBODY VIEW



Figure A-22: PRE-TEST DRIVER POSITION VIEW



Figure A-23: POST-TEST DRIVER POSITION VIEW



Figure A-24: PRE-TEST PASSENGER POSITION VIEW



Figure A-25: POST-TEST PASSENGER POSITION VIEW



Figure A-26: PRE-TEST DRIVER AND INTERIOR VIEW



Figure A-27: POST-TEST DRIVER AND INTERIOR VIEW



Figure A-28: PRE-TEST PASSENGER AND INTERIOR VIEW



Figure A-29: POST-TEST PASSENGER AND INTERIOR VIEW



Figure A-30: PRE-TEST DRIVER HEAD LOCATION



Figure A-31: POST-TEST DRIVER HEAD LOCATION



Figure A-32: PRE-TEST PASSENGER HEAD LOCATION



Figure A-33: POST-TEST PASSENGER HEAD LOCATION



Figure A-34: PRE-TEST DRIVER FLOOR PAN VIEW



Figure A-35: POST-TEST DRIVER FLOOR PAN VIEW



Figure A-36: PRE-TEST PASSENGER FLOOR PAN VIEW



Figure A-37: POST-TEST PASSENGER FLOOR PAN VIEW



Figure A-38: ROLLOVER VIEW



Figure A-39: IMPACT VIEW

PROD. BY HONDA MFG. OF ALABAMA, LLC 4/'02
GVWR 5665LBS GAWR F 2833LBS R 2845LBS
GVWR 2570KG GAWR F 1285KG R 1290KG
THIS VEHICLE CONFORMS TO ALL APPLICABLE
FEDERAL MOTOR VEHICLE SAFETY
AND THEFT PREVENTION STANDARDS IN EFFECT
ON THE DATE OF MANUFACTURE SHOWN ABOVE:
V.I.N.: 5FNRL18622B015052 TYPE: MPV



SCJ 2 A3 - YR520M - Q - B

M25305

Figure A-40: CERTIFICATION LABEL



Figure A-41: TIRE PLACARD

APPENDIX B

DUMMY, VEHICLE AND LOAD CELL BARRIER RESPONSE DATA

**Hybrid III Dummy Sign Conventions
Load Cells and Special Transducers**

Transducer	SAE Sign Convention (positive unless noted)
Upper Neck Load Cell	Fx Head rearward Fy Head left Fz Neck in tension Mx Left ear to left shoulder My Chin to chest (flexion) Mz Chin to left shoulder (look left)
Chest Displacement Potentiometer	Compression is negative
Pelvic Load Cell (Lower Lumbar)	Fx Chest rearward Fy Chest left Fz Spine in tension
Femur Load Cell	Compression is negative
Upper Tibia Load Cell (right and left leg)	Mx Support tibia at ends, load left side center My Support tibia at ends, load front (shin) center
Lower Tibia Load Cell (right and left leg)	Fz Tibia in tension Mx Support tibia at ends, load left side center My Support tibia at ends, load front (shin) center

DATA CHANNEL FILTER CLASS SUMMARY

NHTSA TEST NO. M25305

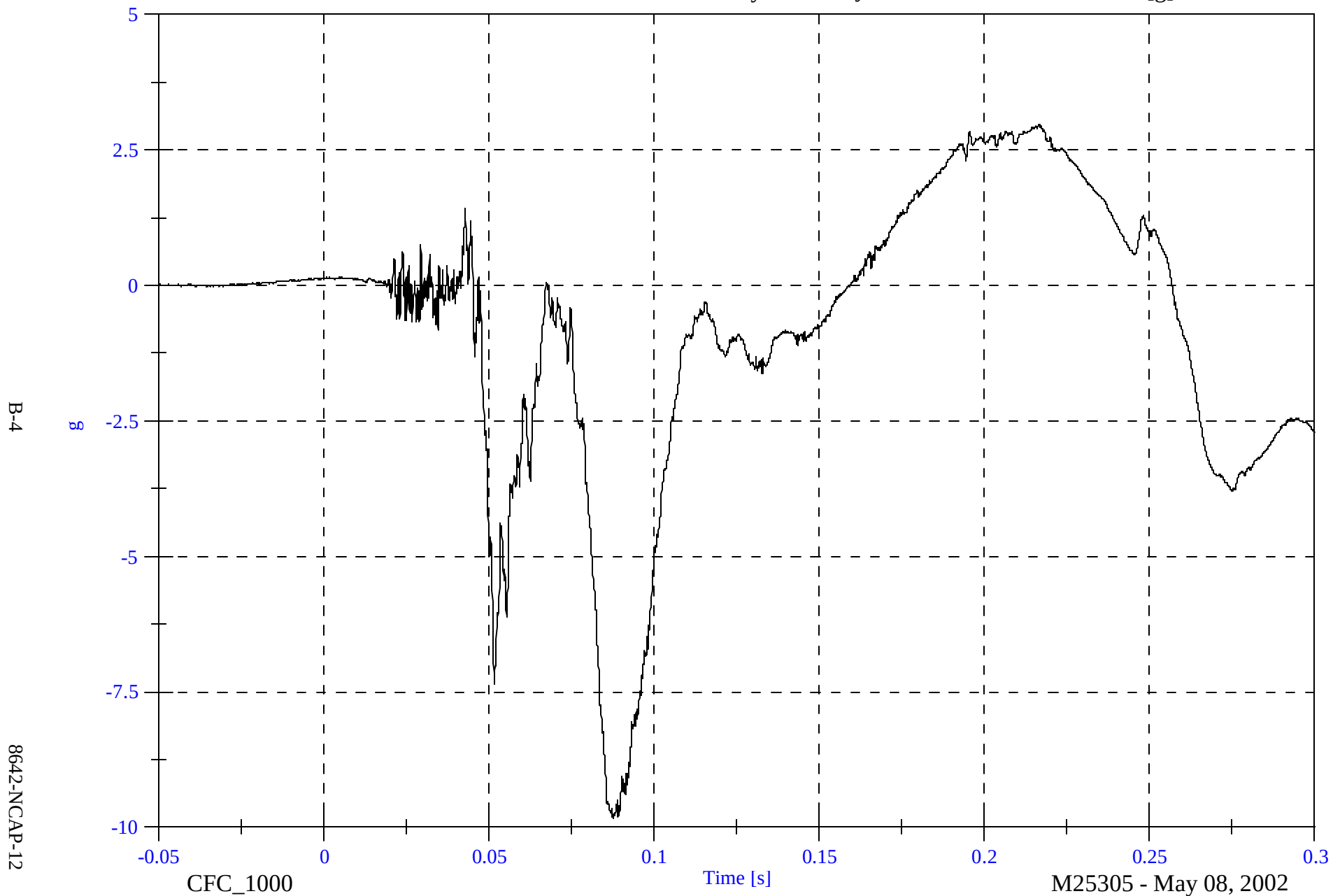
DATA TYPE	SAE FILTER CLASS (Hz)
Dummy Head Accelerations	1000
Dummy Chest Accelerations	180
Dummy Chest Displacements	600
Dummy Femur Forces	600
Dummy Belt Loads	60
Dummy Belt Displacements	180
Dummy Neck Forces	1000
Dummy Neck Moments	600
Vehicle Accelerations	60
Vehicle Velocity Integrations	180
Vehicle Displacement Integrations	180
Load Cell Barrier Forces	60

NCAP Test 12 - 2002 Honda Odyssey

P1 Head 9 Array X Arm Ay

Max: 3.0 [g] at 0.217 [s]

Min: -9.8 [g] at 0.088 [s]



NCAP Test 12 - 2002 Honda Odyssey

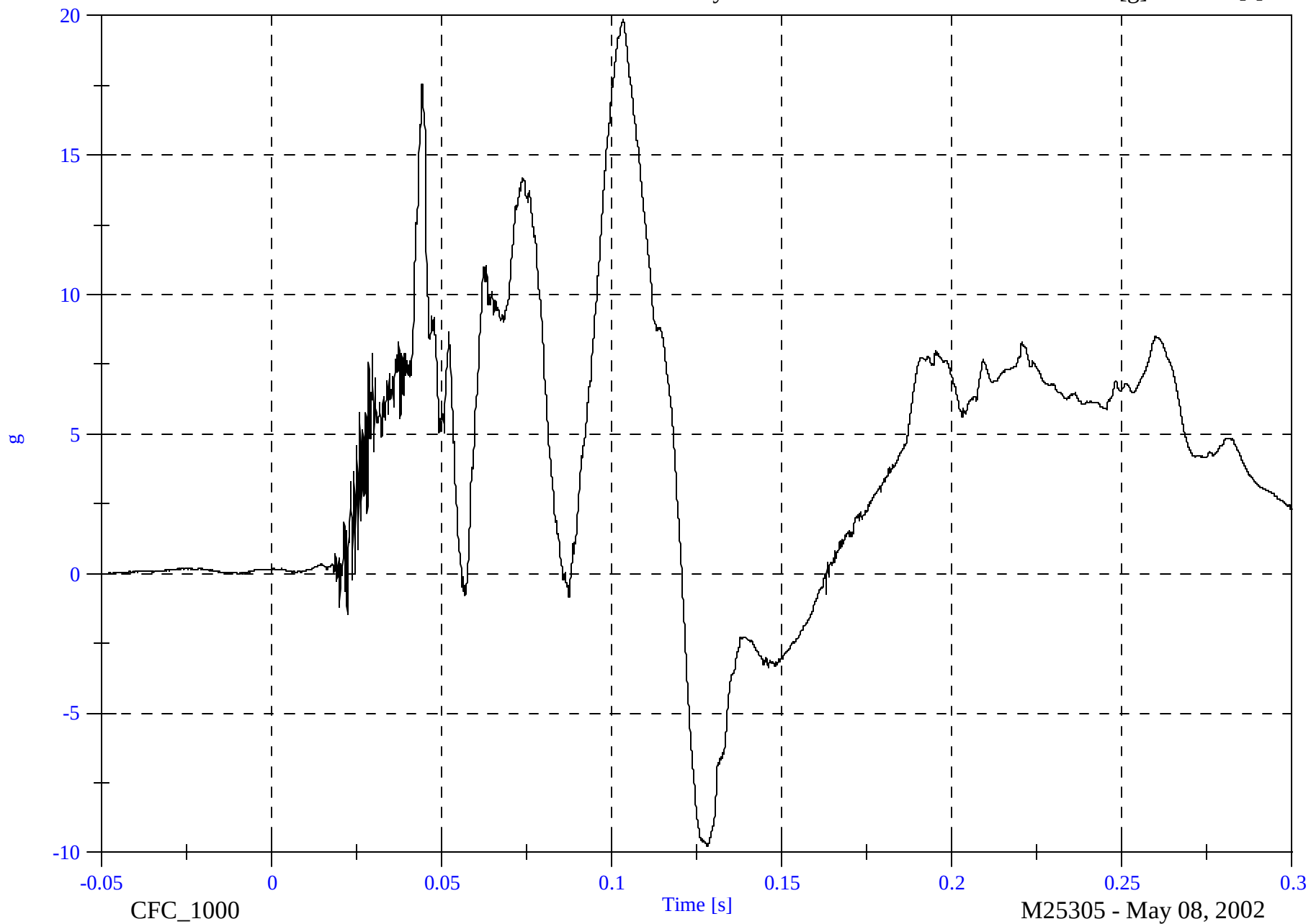
P1 Head 9 Array X Arm Az

Max: 19.8 [g] at 0.103 [s]

Min: -9.8 [g] at 0.128 [s]

B-5

8642-NCAP-12



NCAP Test 12 - 2002 Honda Odyssey

P1 Head 9 Array Y Arm Ax

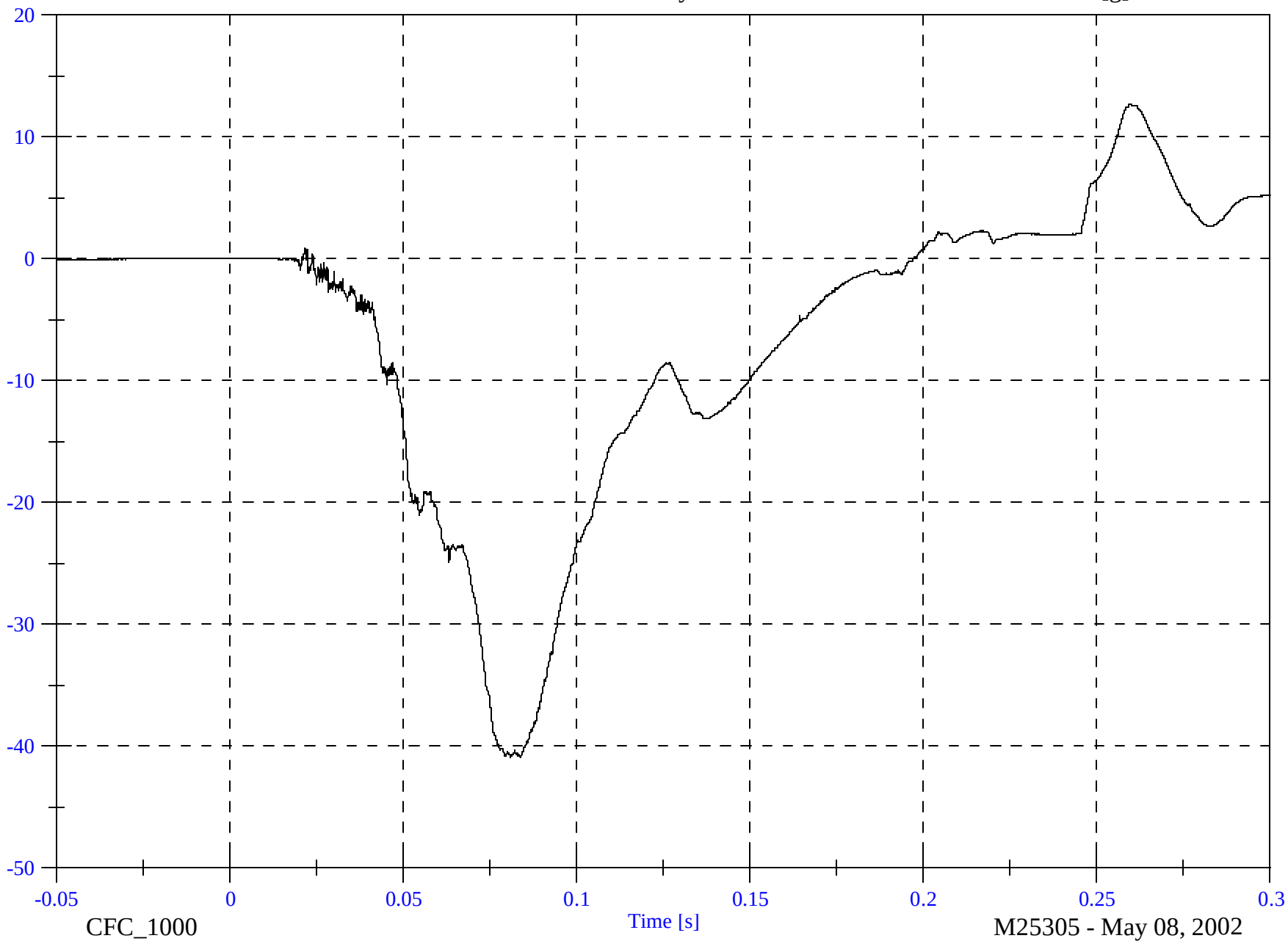
Max: 12.7 [g] at 0.260 [s]

Min: -41.0 [g] at 0.084 [s]

B-6

8642-NCAP-12

g

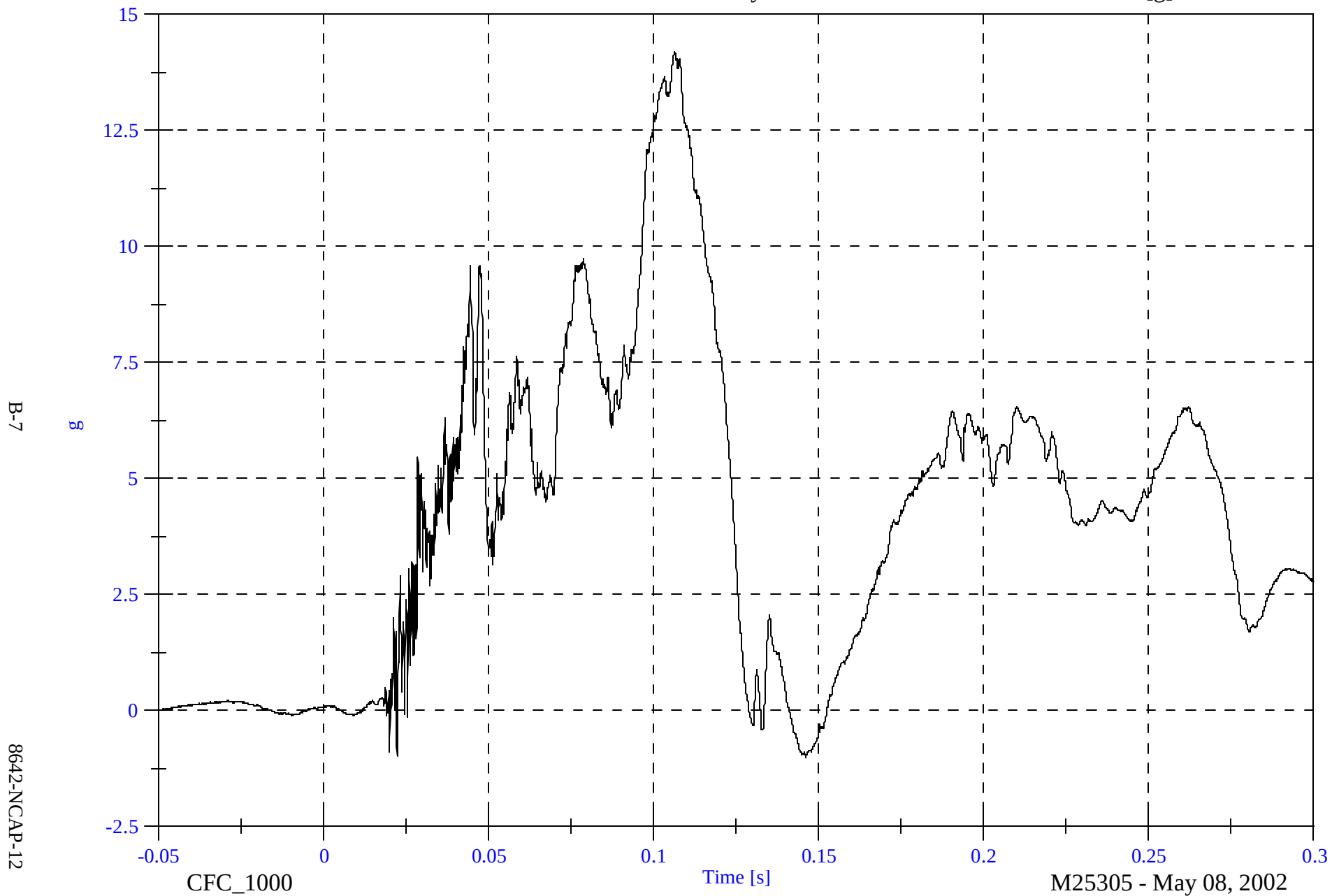


NCAP Test 12 - 2002 Honda Odyssey

P1 Head 9 Array Y Arm Az

Max: 14.2 [g] at 0.106 [s]

Min: -1.0 [g] at 0.146 [s]



NCAP Test 12 - 2002 Honda Odyssey

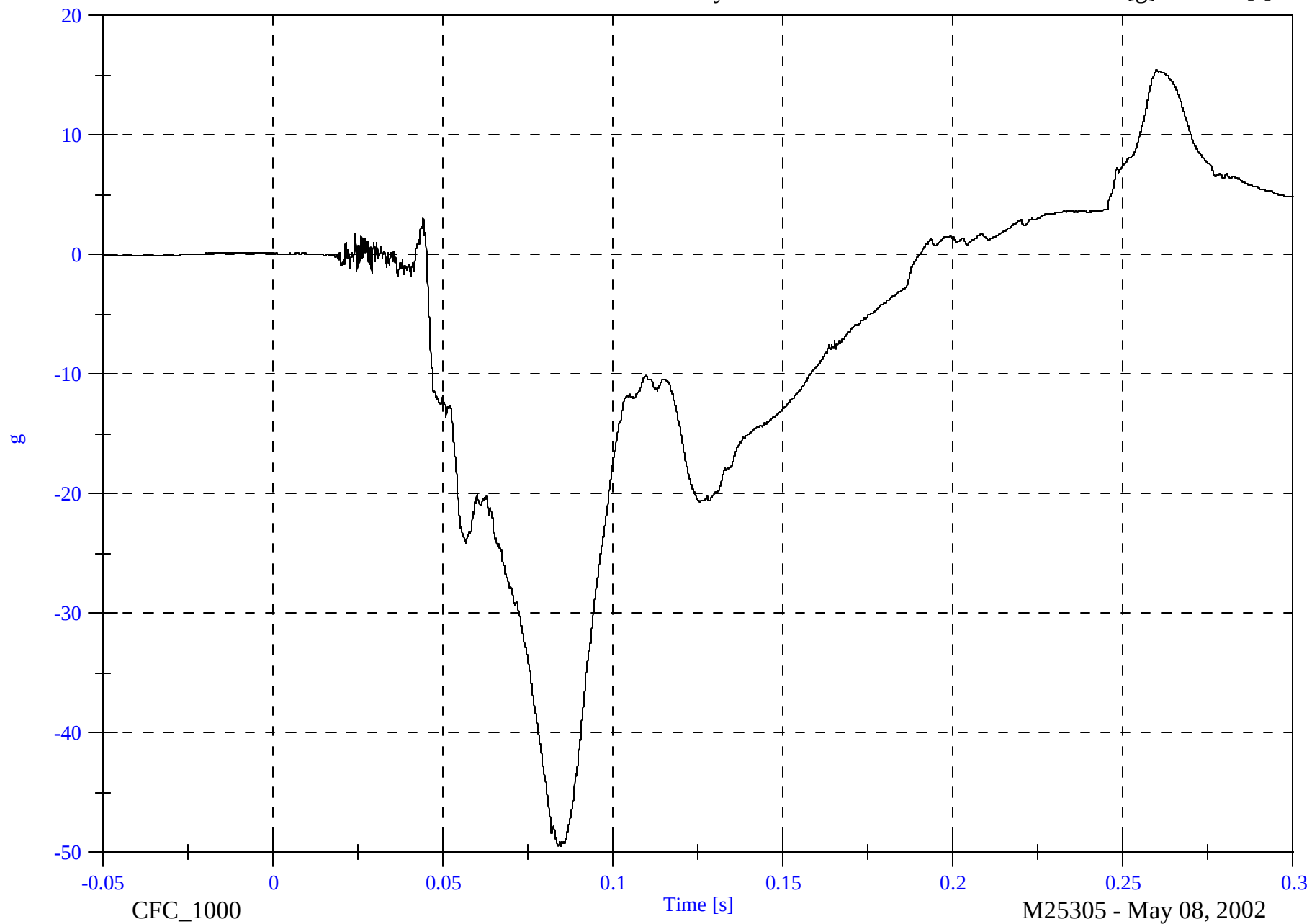
P1 Head 9 Array Z Arm Ax

Max: 15.4 [g] at 0.260 [s]

Min: -49.5 [g] at 0.085 [s]

B-8

8642-NCAP-12

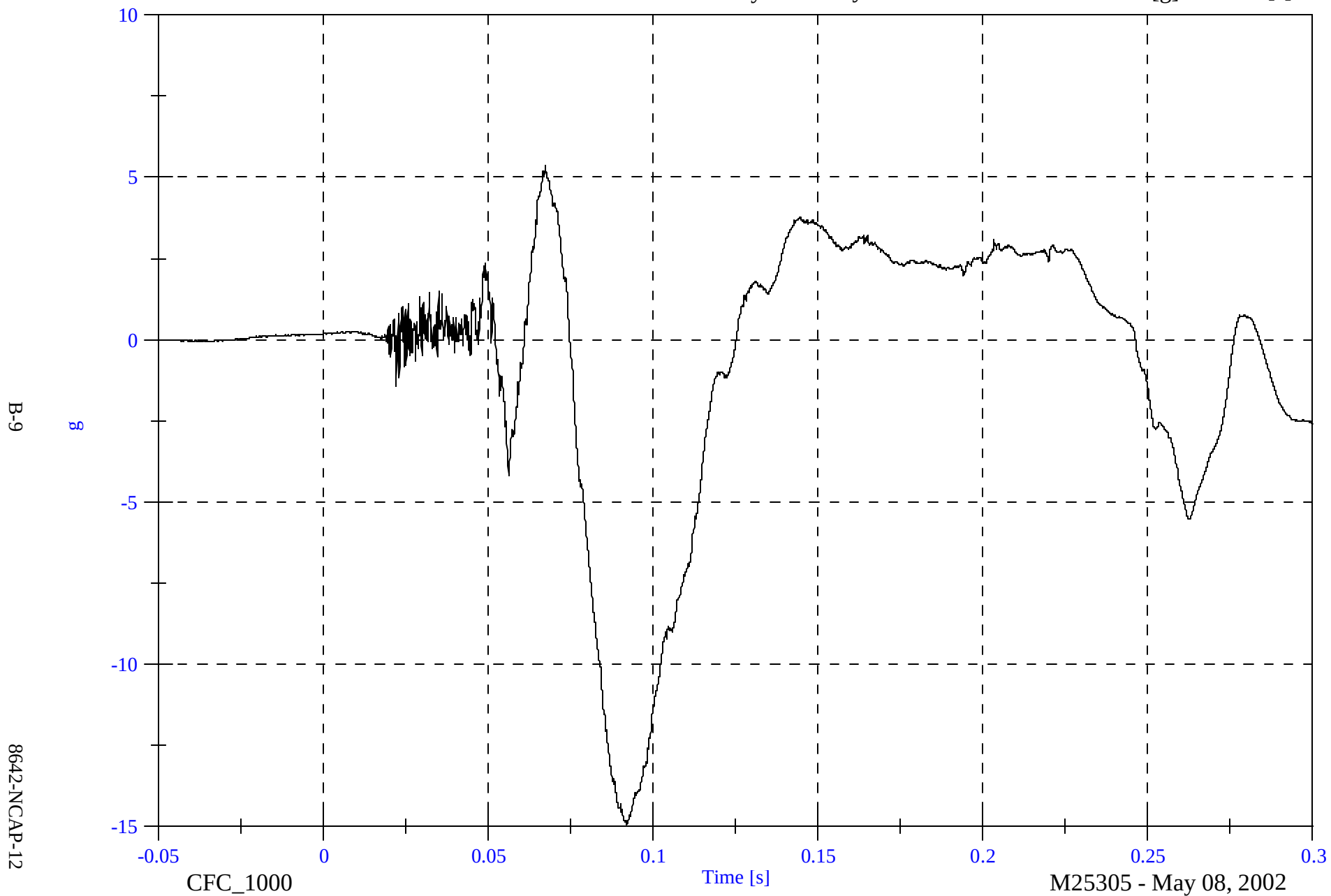


NCAP Test 12 - 2002 Honda Odyssey

P1 Head 9 Array Z Arm Ay

Max: 5.4 [g] at 0.067 [s]

Min: -14.9 [g] at 0.092 [s]

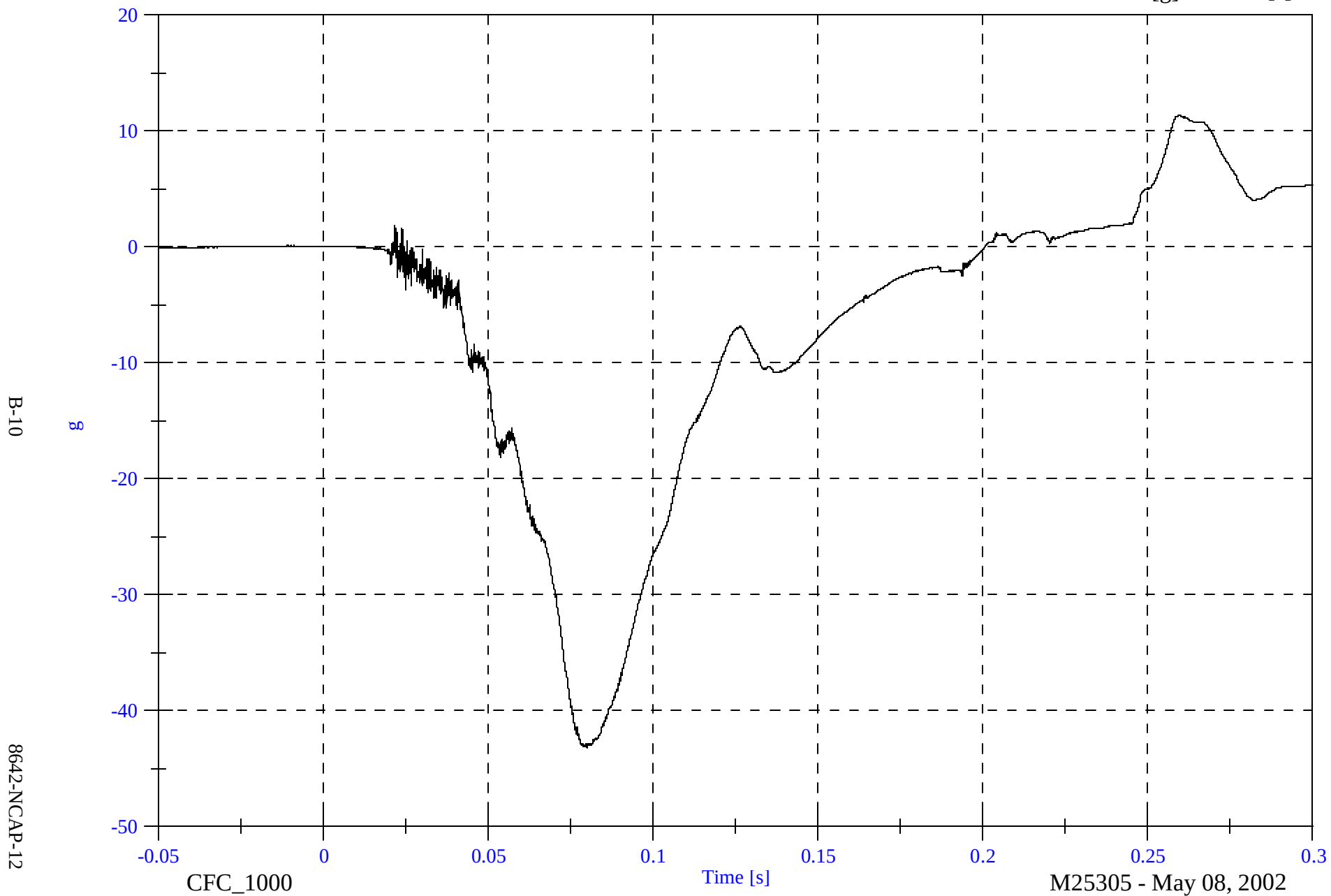


NCAP Test 12 - 2002 Honda Odyssey

P1 Head CG x

Max: 11.3 [g] at 0.260 [s]

Min: -43.2 [g] at 0.080 [s]



NCAP Test 12 - 2002 Honda Odyssey

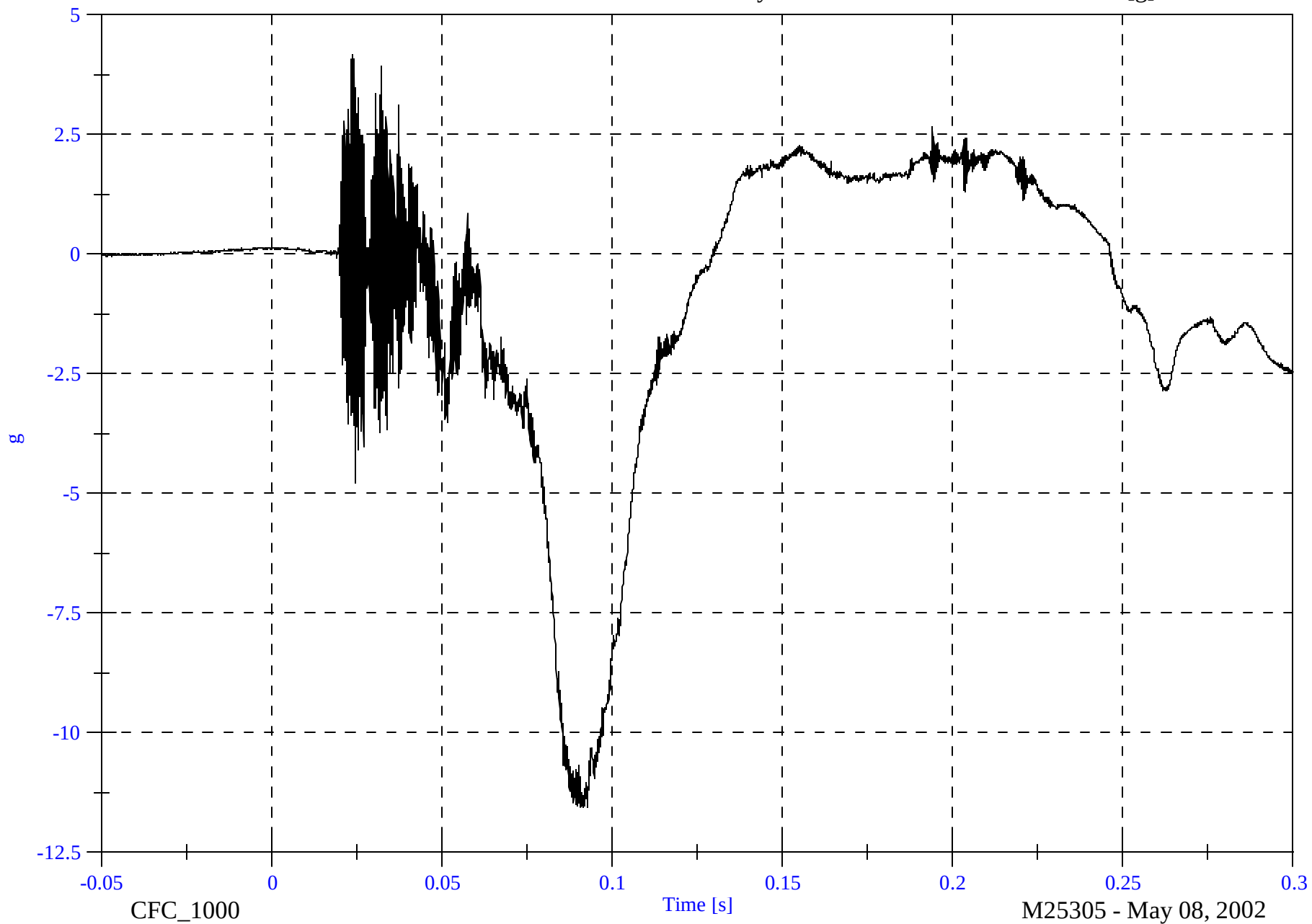
P1 Head CG y

Max: 4.2 [g] at 0.024 [s]

Min: -11.6 [g] at 0.091 [s]

B-11

8642-NCAP-12

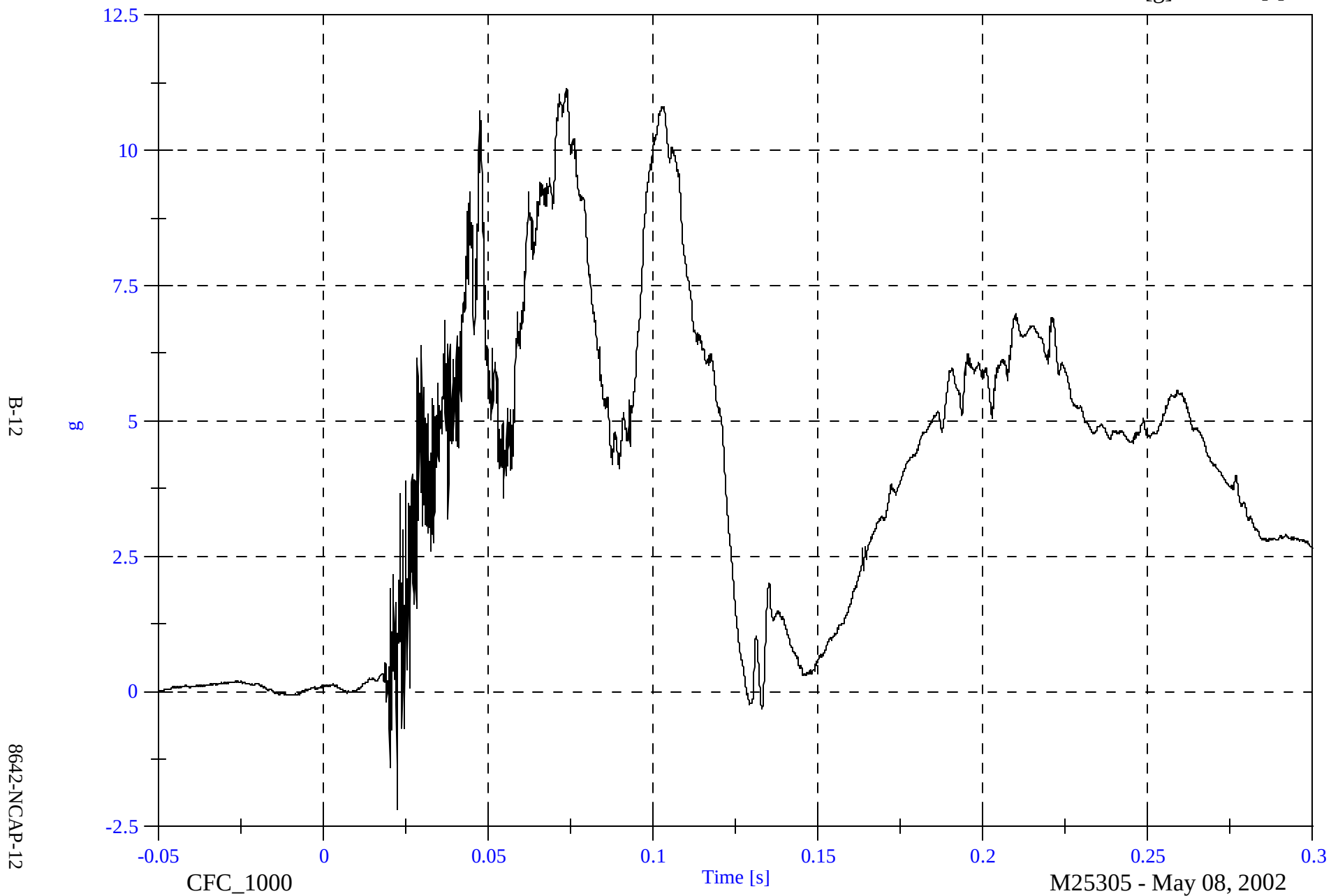


NCAP Test 12 - 2002 Honda Odyssey

Max: 11.1 [g] at 0.074 [s]

Min: -2.2 [g] at 0.022 [s]

P1 Head CG z



NCAP Test 12 - 2002 Honda Odyssey

P1 Head CG Resultant

Max: 44.3 [g] at 0.080 [s]

Min: 0.1 [g] at -0.049 [s]



B-13

8642-NCAP-12

NCAP Test 12 - 2002 Honda Odyssey

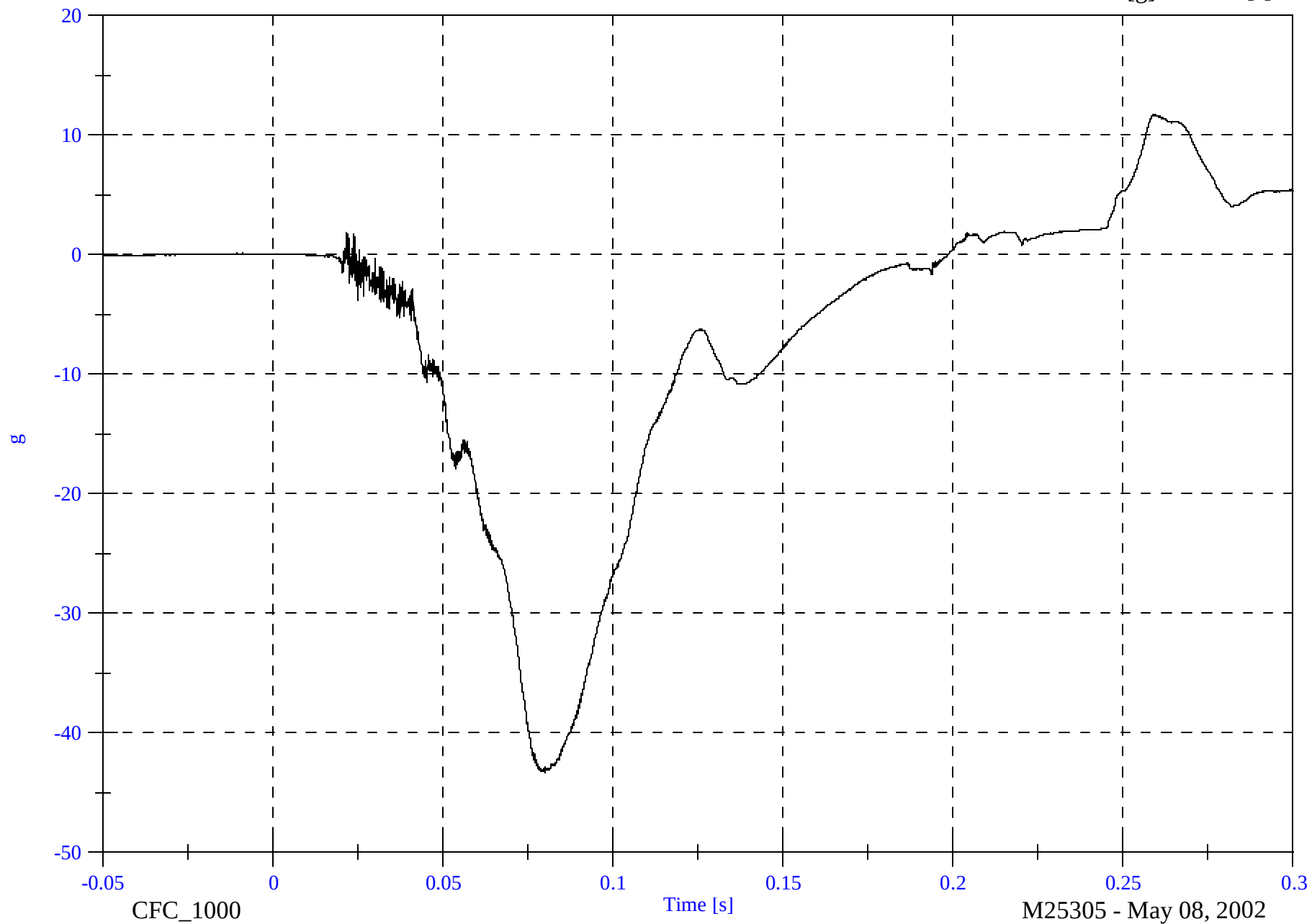
P1 Head CG Red x

Max: 11.7 [g] at 0.259 [s]

Min: -43.3 [g] at 0.080 [s]

B-14

8642-NCAP-12

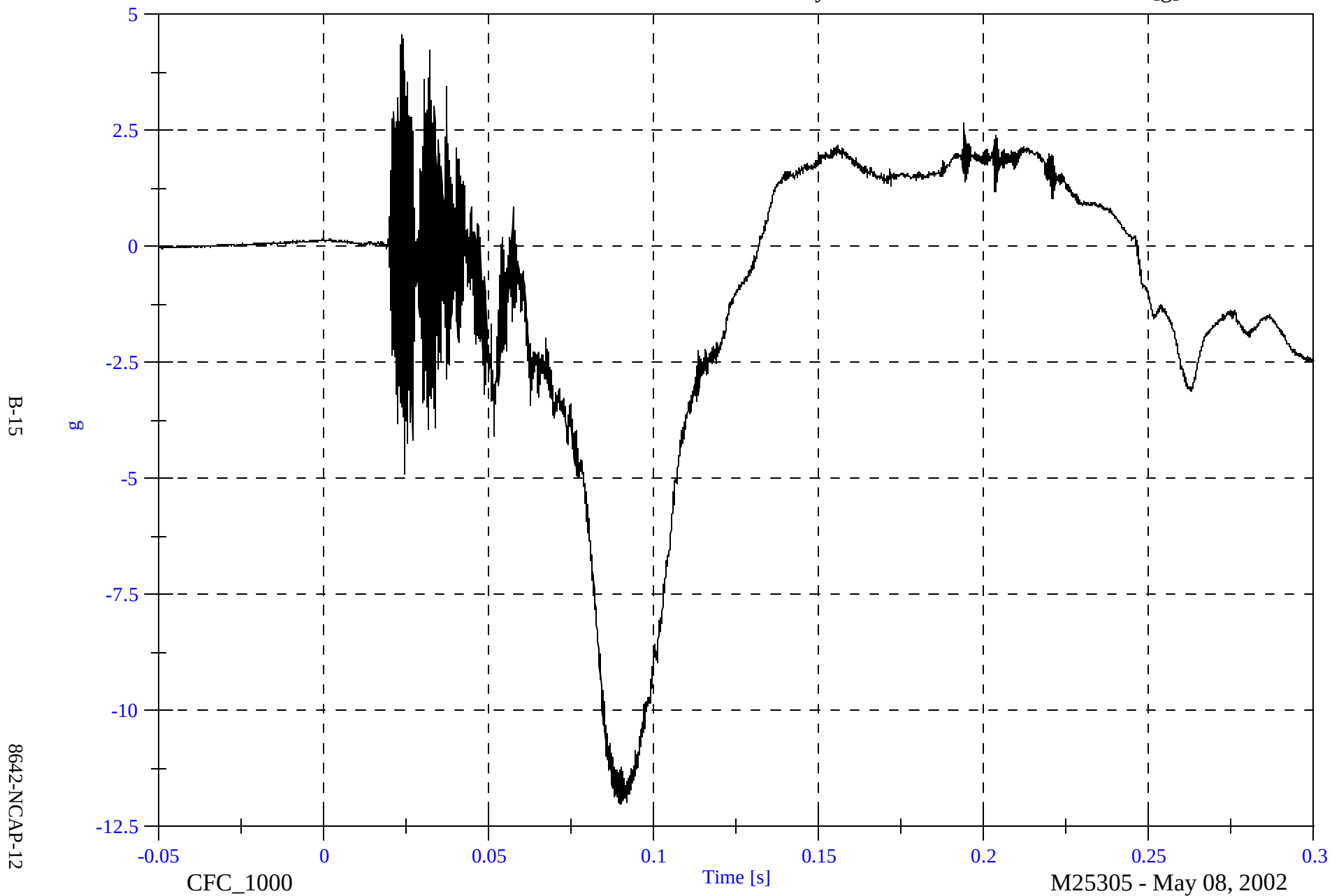


NCAP Test 12 - 2002 Honda Odyssey

P1 Head CG Red y

Max: 4.6 [g] at 0.024 [s]

Min: -12.0 [g] at 0.090 [s]



NCAP Test 12 - 2002 Honda Odyssey

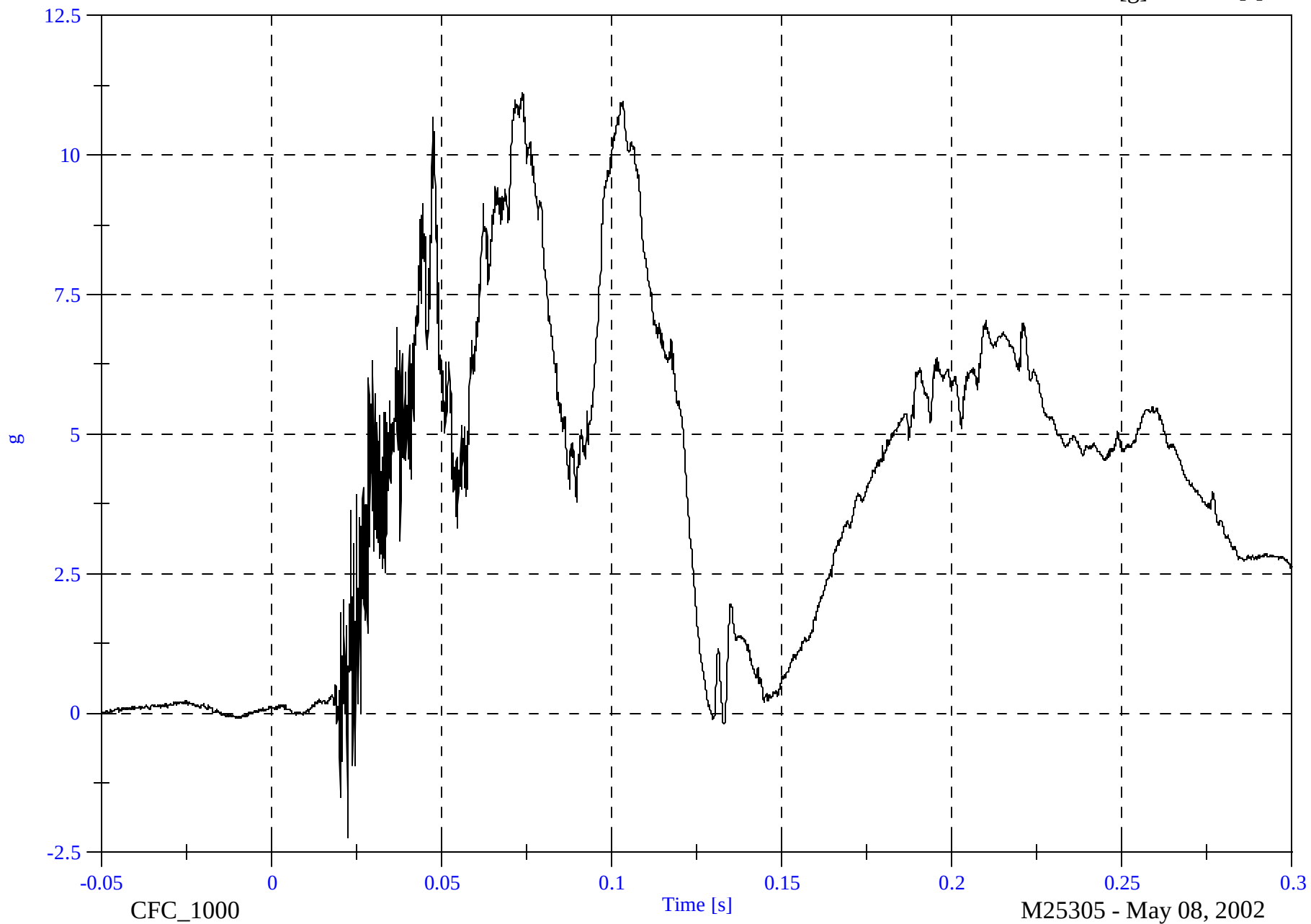
P1 Head CG Red z

Max: 11.1 [g] at 0.074 [s]

Min: -2.2 [g] at 0.022 [s]

B-16

8642-NCAP-12

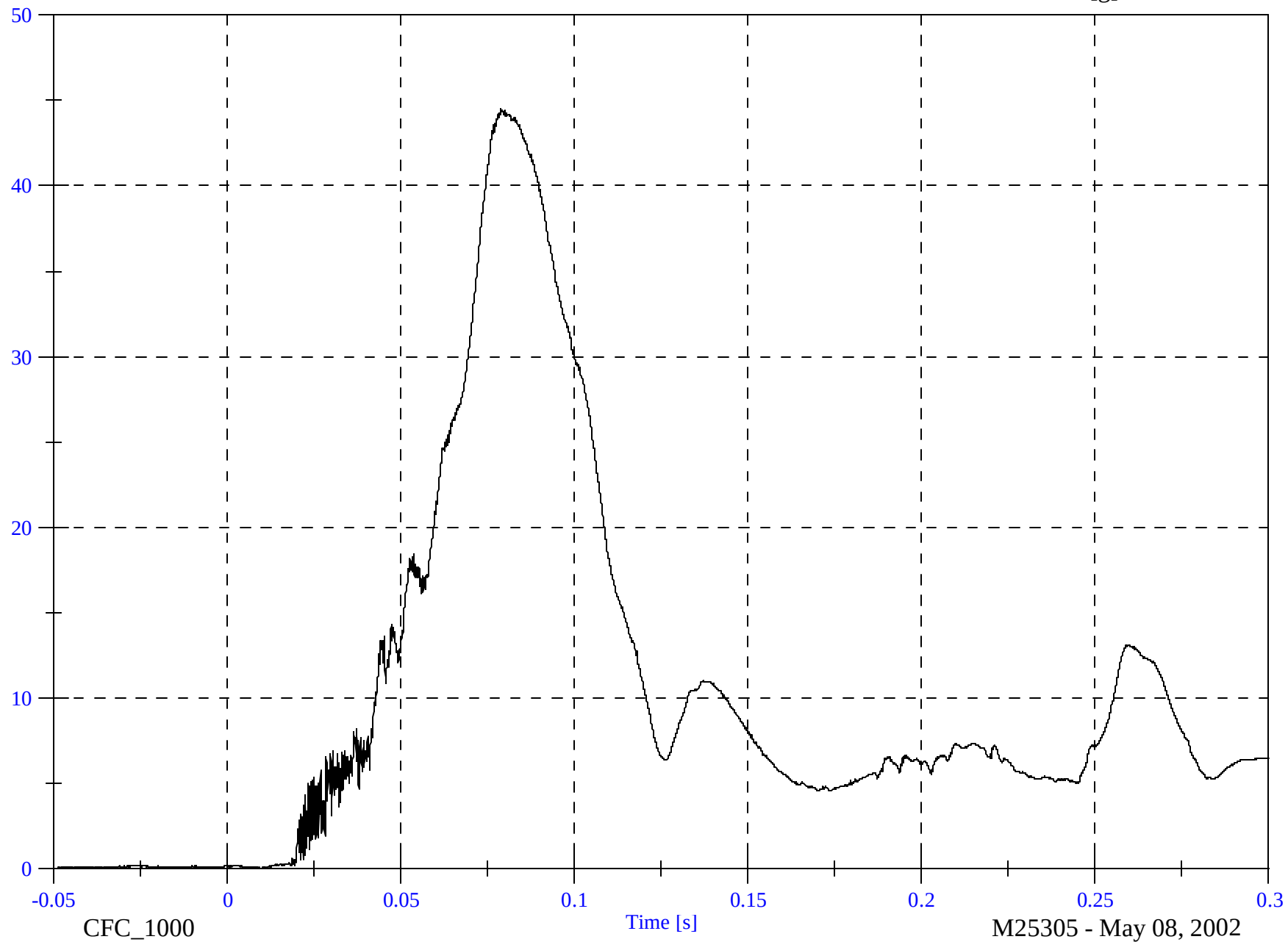


NCAP Test 12 - 2002 Honda Odyssey

P1 Head CG Red Resultant

Max: 44.5 [g] at 0.079 [s]

Min: 0.0 [g] at -0.049 [s]



B-17

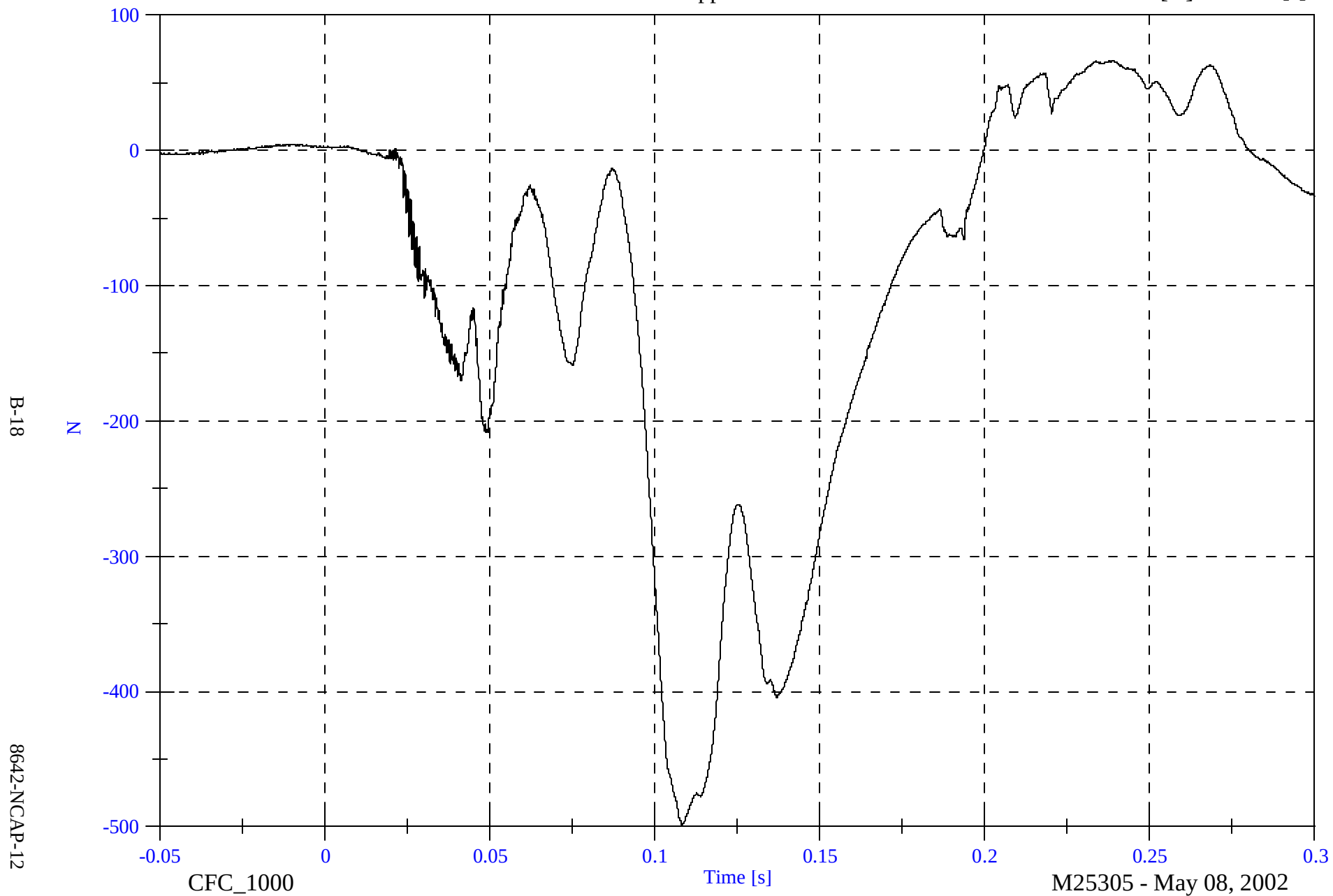
8642-NCAP-12

NCAP Test 12 - 2002 Honda Odyssey

P1 Upper Neck Fx

Max: 66.4 [N] at 0.238 [s]

Min: -498.7 [N] at 0.108 [s]

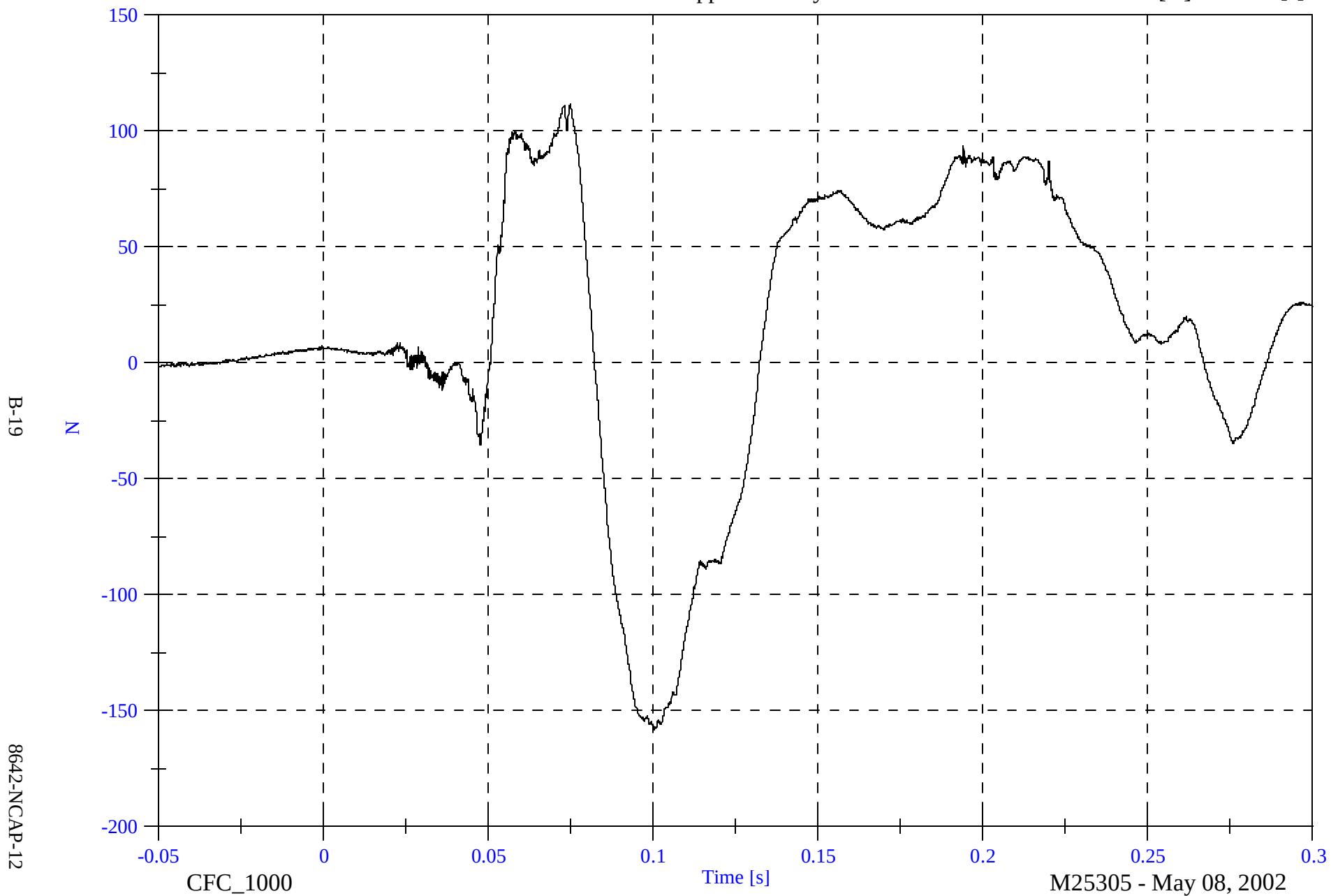


NCAP Test 12 - 2002 Honda Odyssey

P1 Upper Neck Fy

Max: 111.7 [N] at 0.075 [s]

Min: -158.0 [N] at 0.100 [s]



NCAP Test 12 - 2002 Honda Odyssey

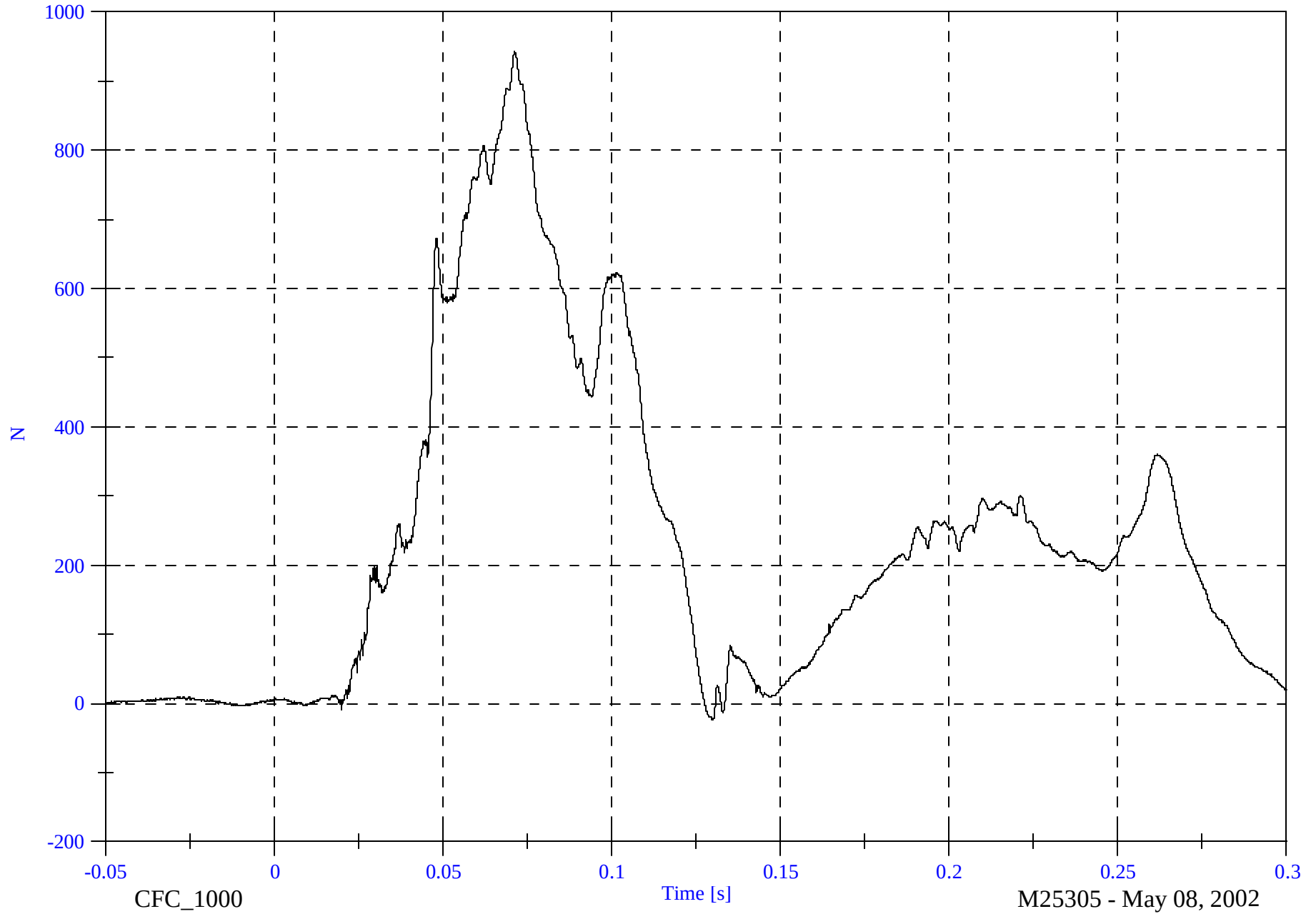
P1 Upper Neck Fz

Max: 941.9 [N] at 0.071 [s]

Min: -24.0 [N] at 0.130 [s]

B-20

8642-NCAP-12



NCAP Test 12 - 2002 Honda Odyssey

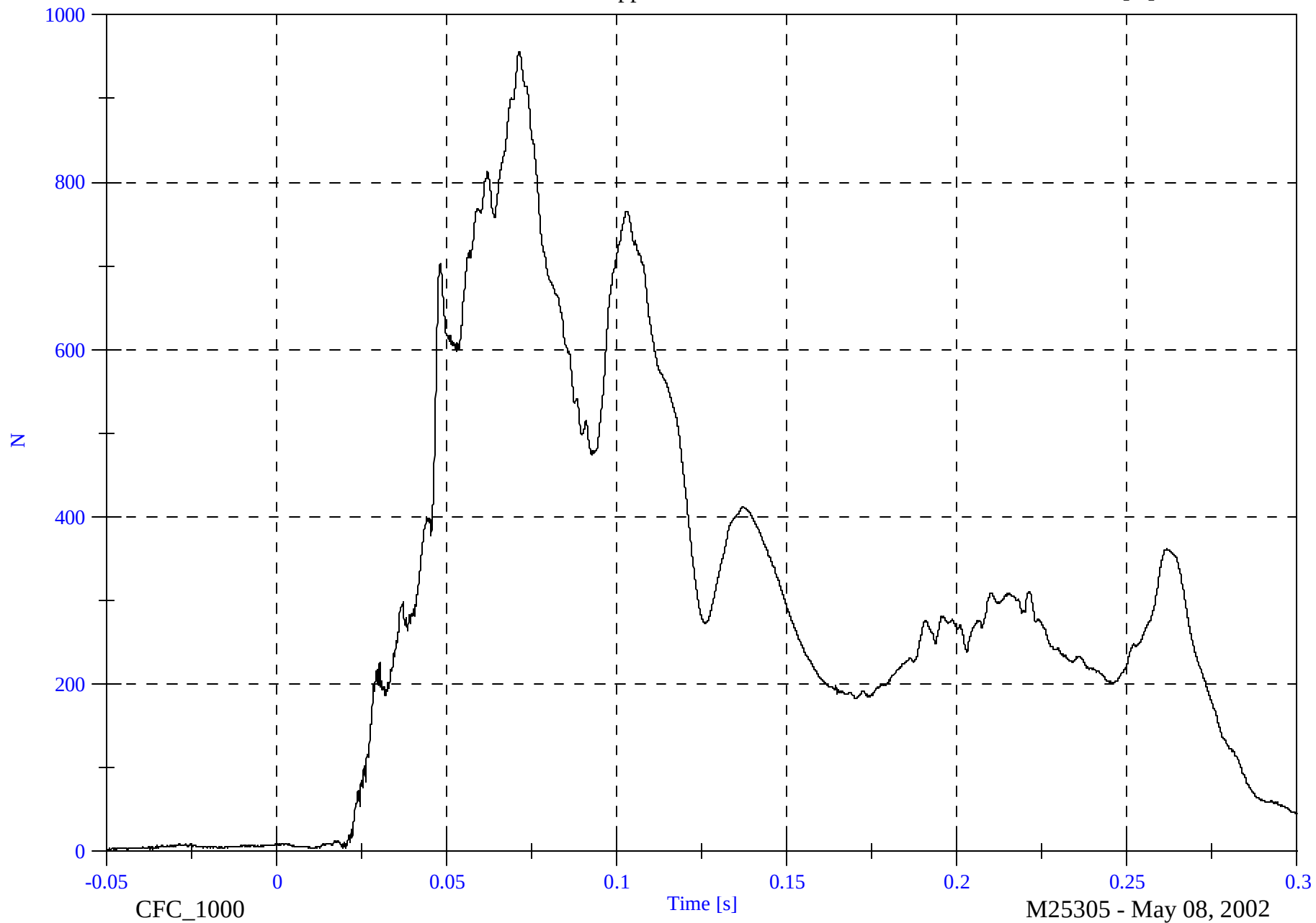
P1 Upper Neck F Resultant

Max: 956.3 [N] at 0.071 [s]

Min: 2.2 [N] at -0.049 [s]

B-21

8642-NCAP-12



NCAP Test 12 - 2002 Honda Odyssey

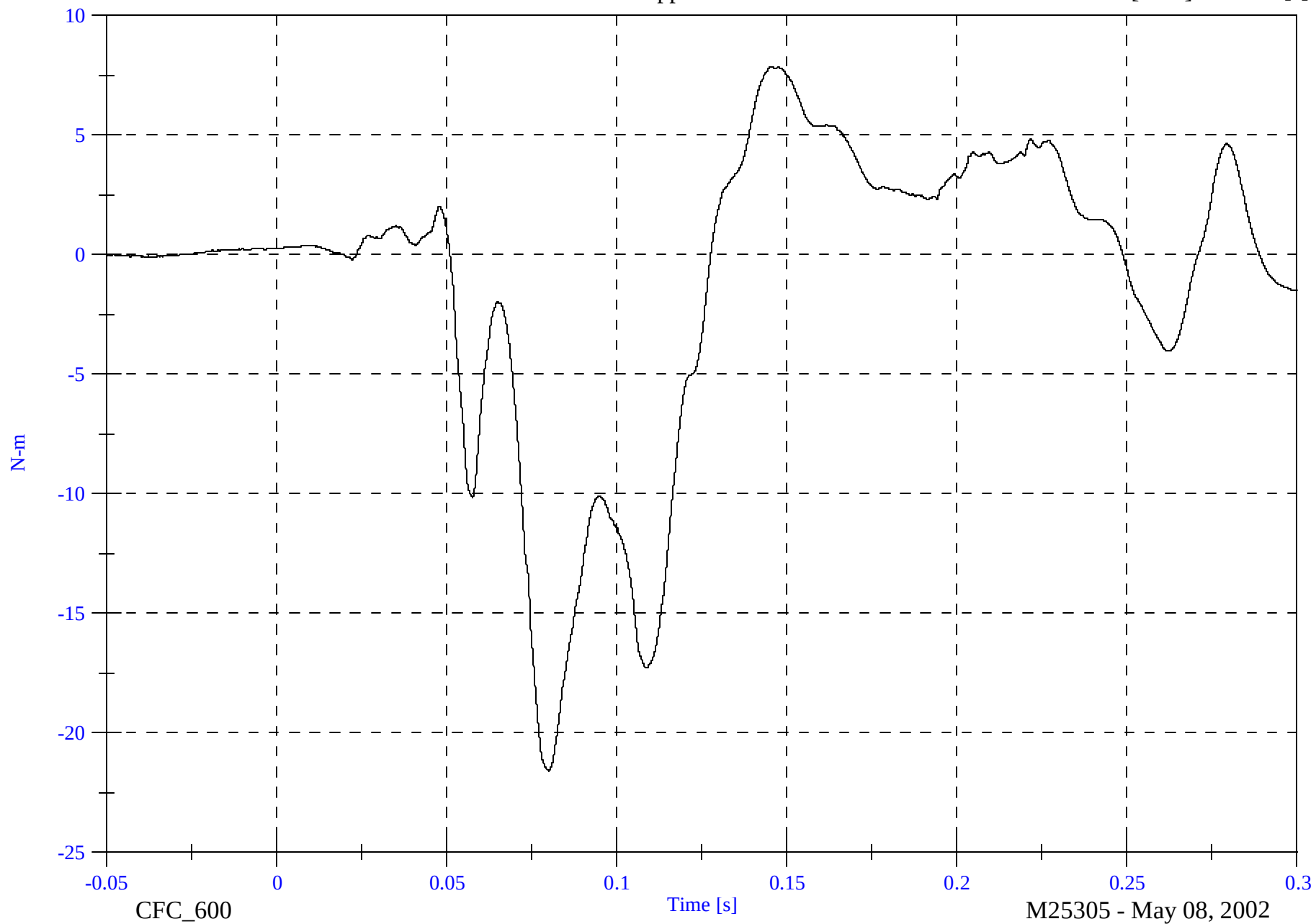
P1 Upper Neck Mx

Max: 7.9 [N-m] at 0.148 [s]

Min: -21.6 [N-m] at 0.080 [s]

B-22

8642-NCAP-12

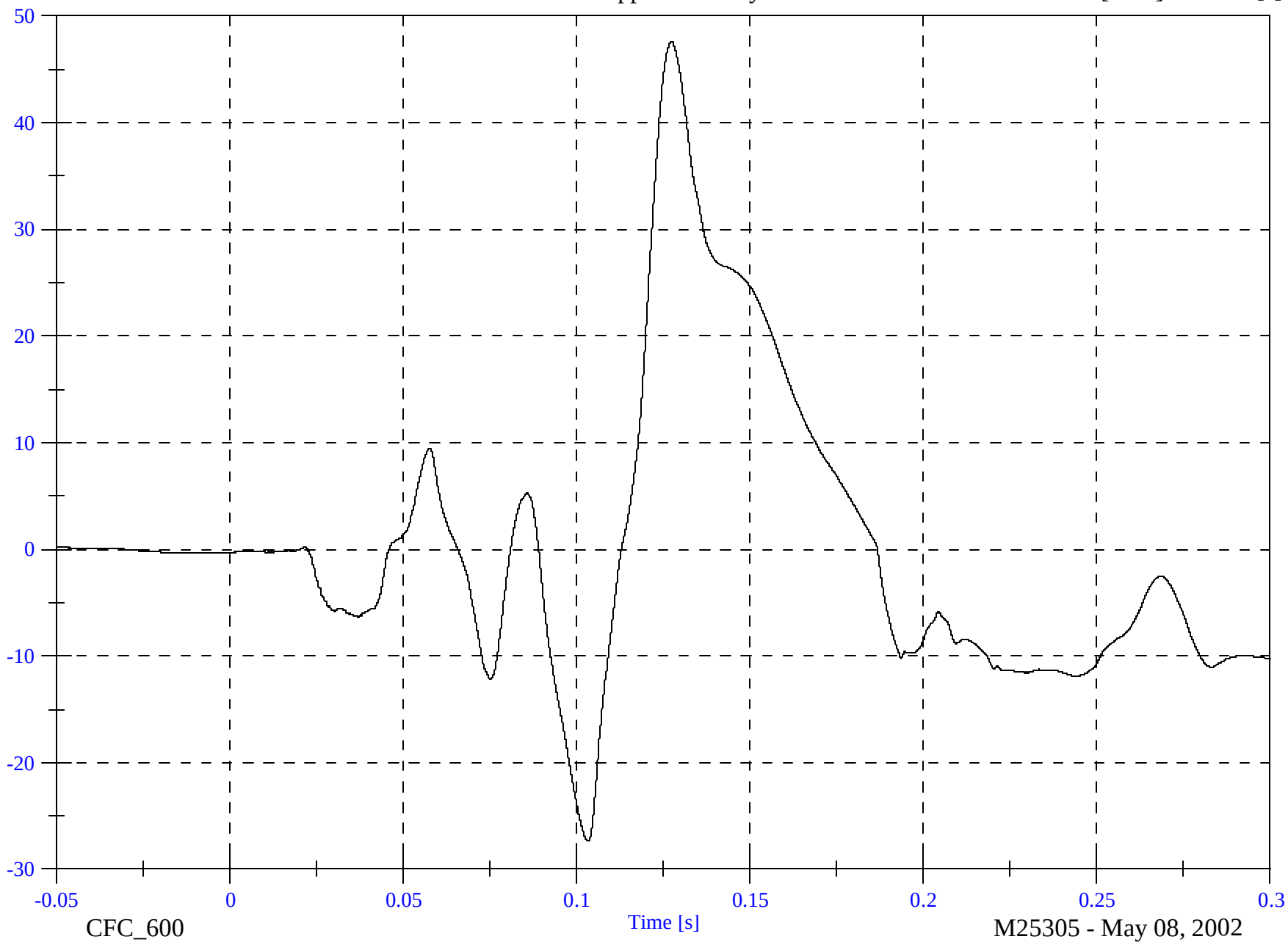


NCAP Test 12 - 2002 Honda Odyssey

P1 Upper Neck My

Max: 47.6 [N-m] at 0.127 [s]

Min: -27.4 [N-m] at 0.103 [s]



B-23

8642-NCAP-12

CFC_600

M25305 - May 08, 2002

NCAP Test 12 - 2002 Honda Odyssey

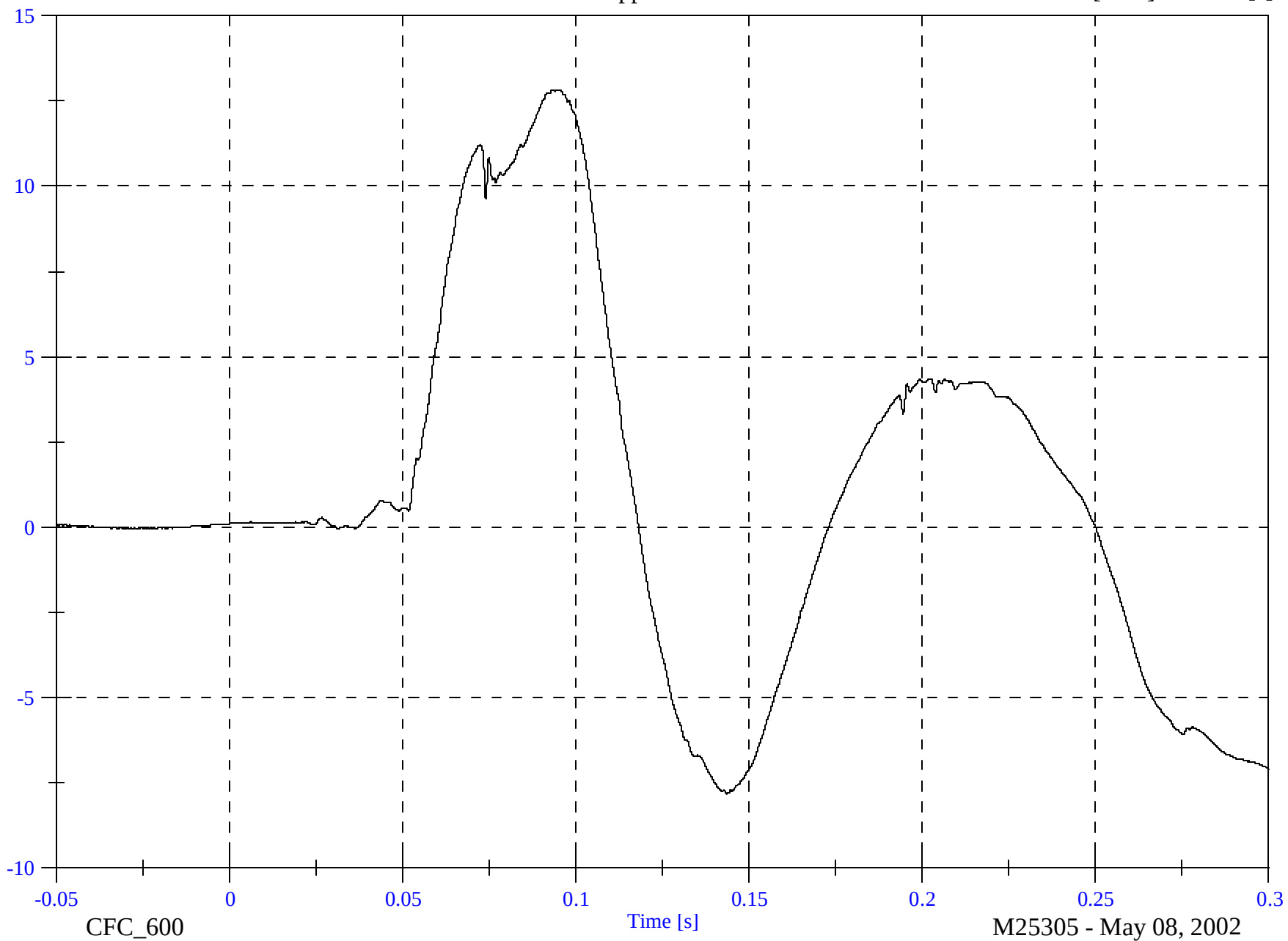
Max: 12.8 [N-m] at 0.093 [s]

Min: -7.8 [N-m] at 0.143 [s]

P1 Upper Neck Mz

B-24

8642-NCAP-12

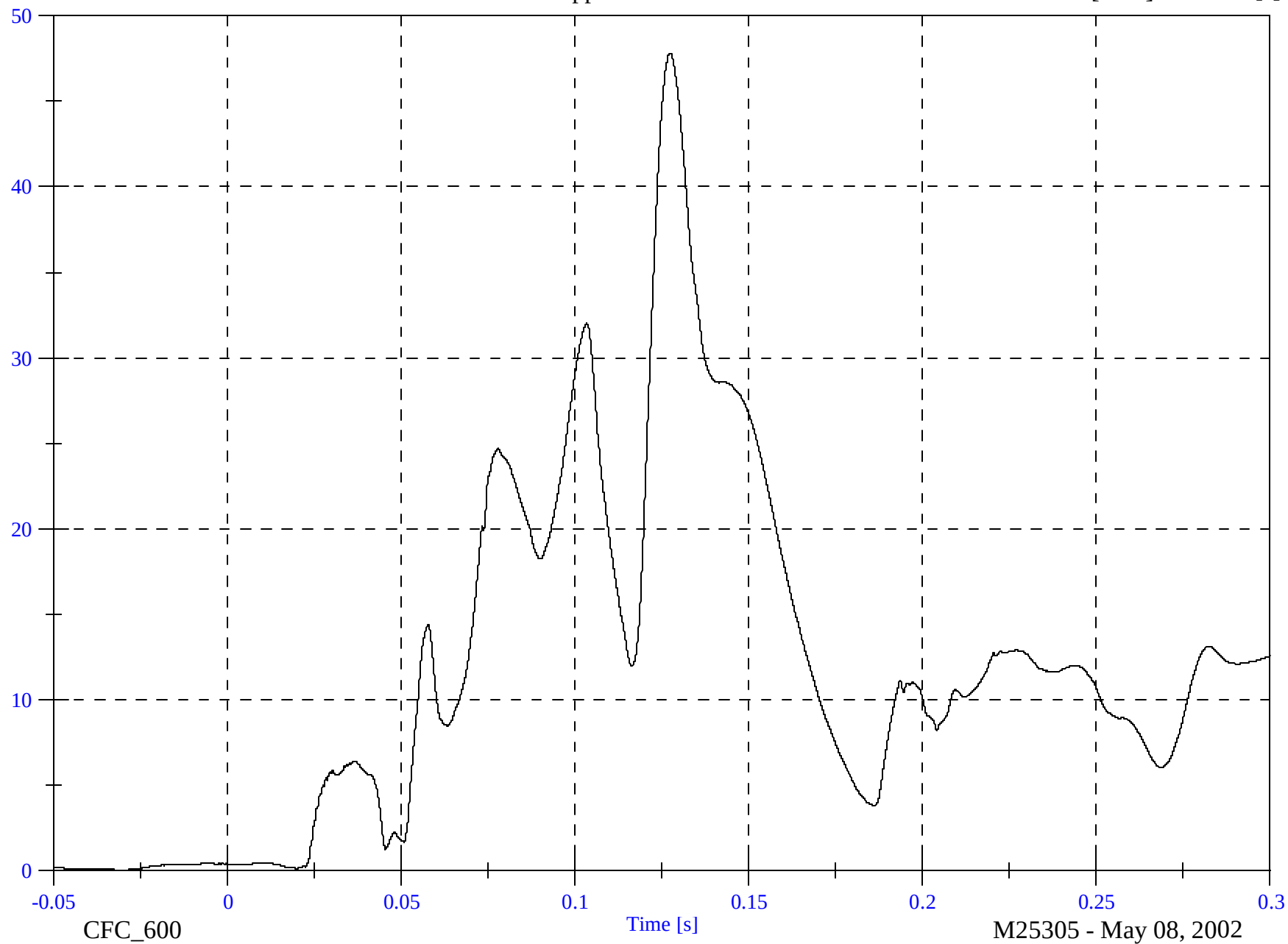


NCAP Test 12 - 2002 Honda Odyssey

P1 Upper Neck M Resultant

Max: 47.8 [N-m] at 0.127 [s]

Min: 0.0 [N-m] at -0.030 [s]



B-25

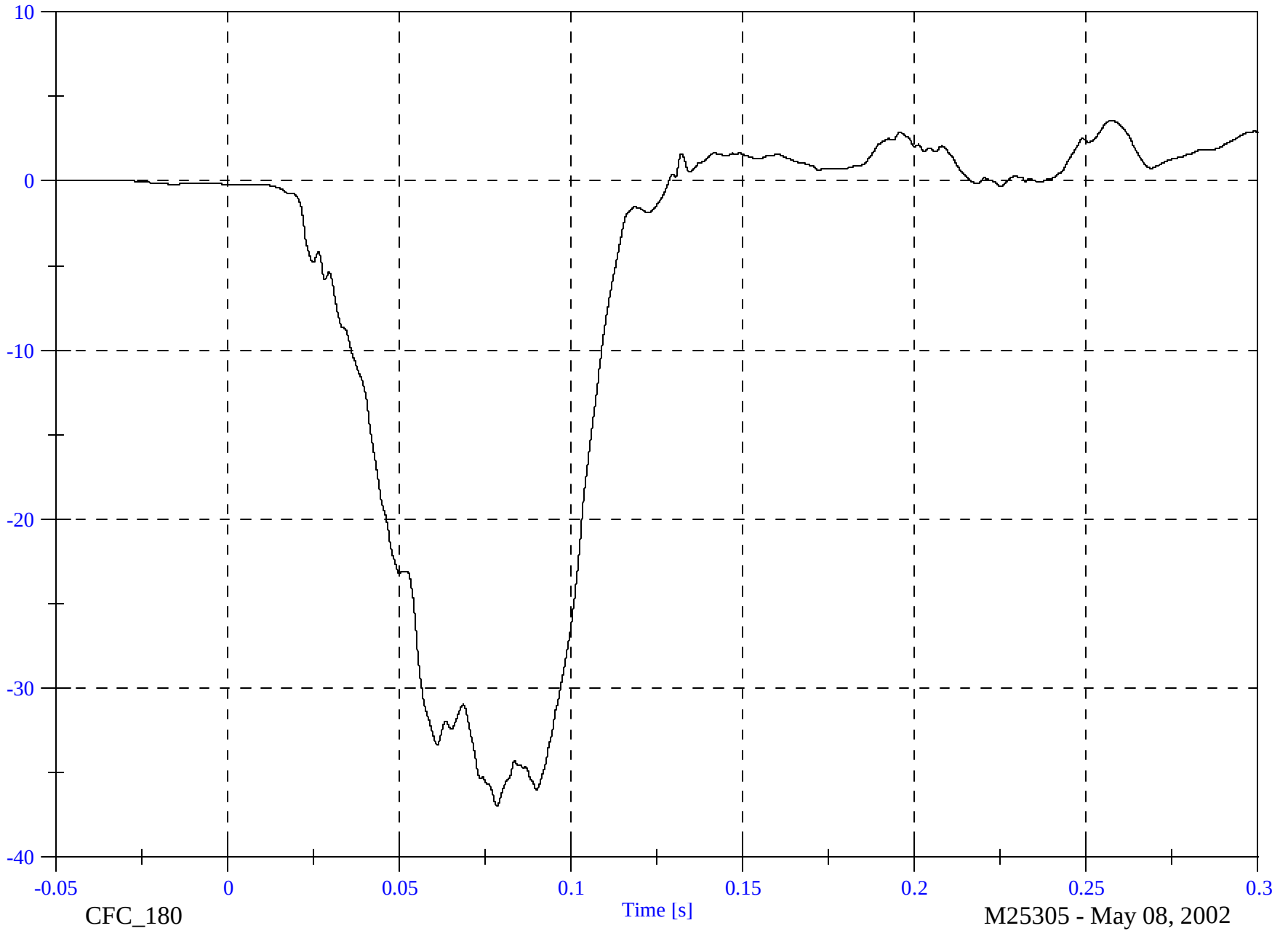
8642-NCAP-12

NCAP Test 12 - 2002 Honda Odyssey

P1 Chest x

Max: 3.6 [g] at 0.258 [s]

Min: -37.0 [g] at 0.078 [s]



B-26

8642-NCAP-12

NCAP Test 12 - 2002 Honda Odyssey

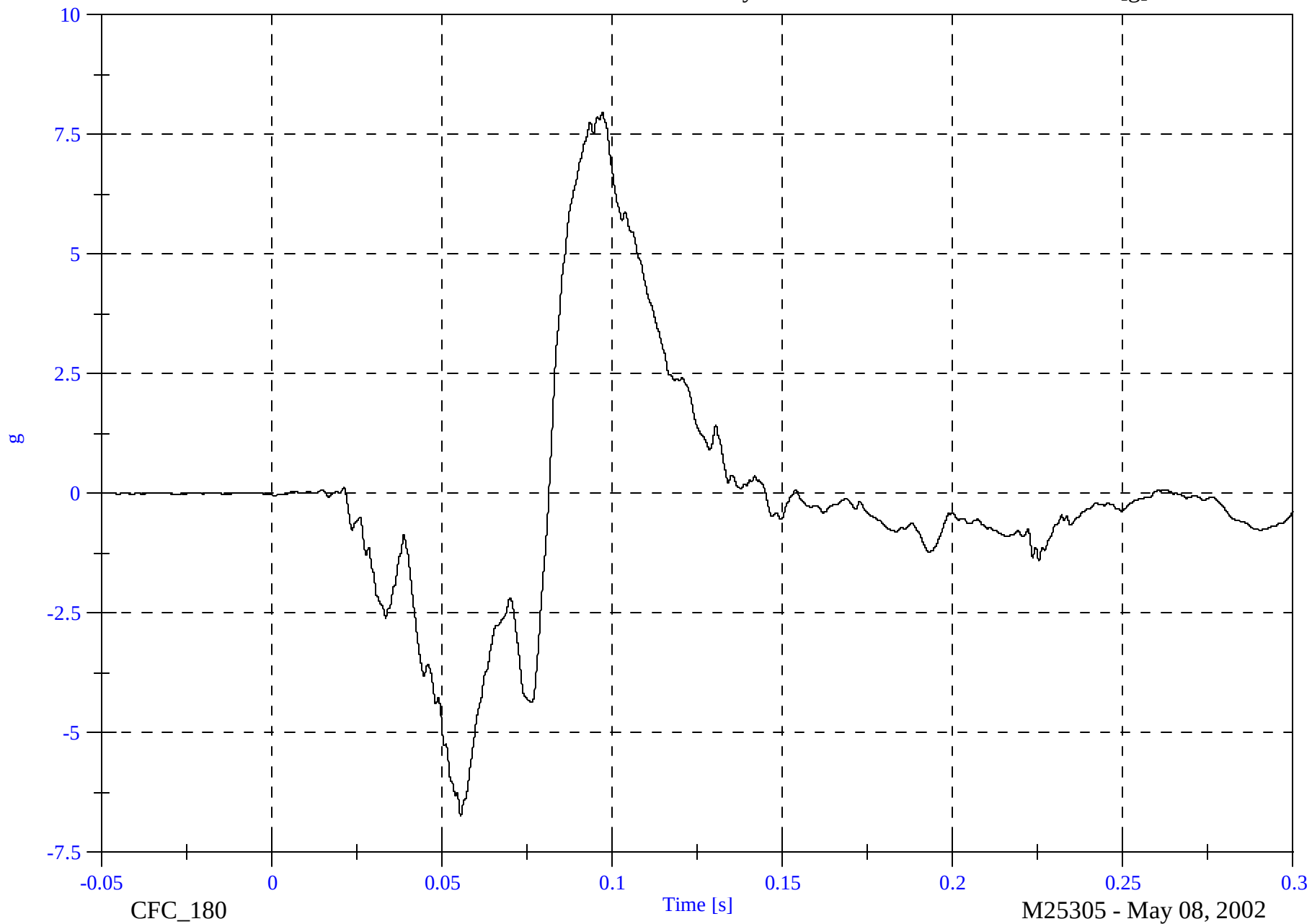
P1 Chest y

Max: 8.0 [g] at 0.097 [s]

Min: -6.7 [g] at 0.055 [s]

B-27

8642-NCAP-12



NCAP Test 12 - 2002 Honda Odyssey

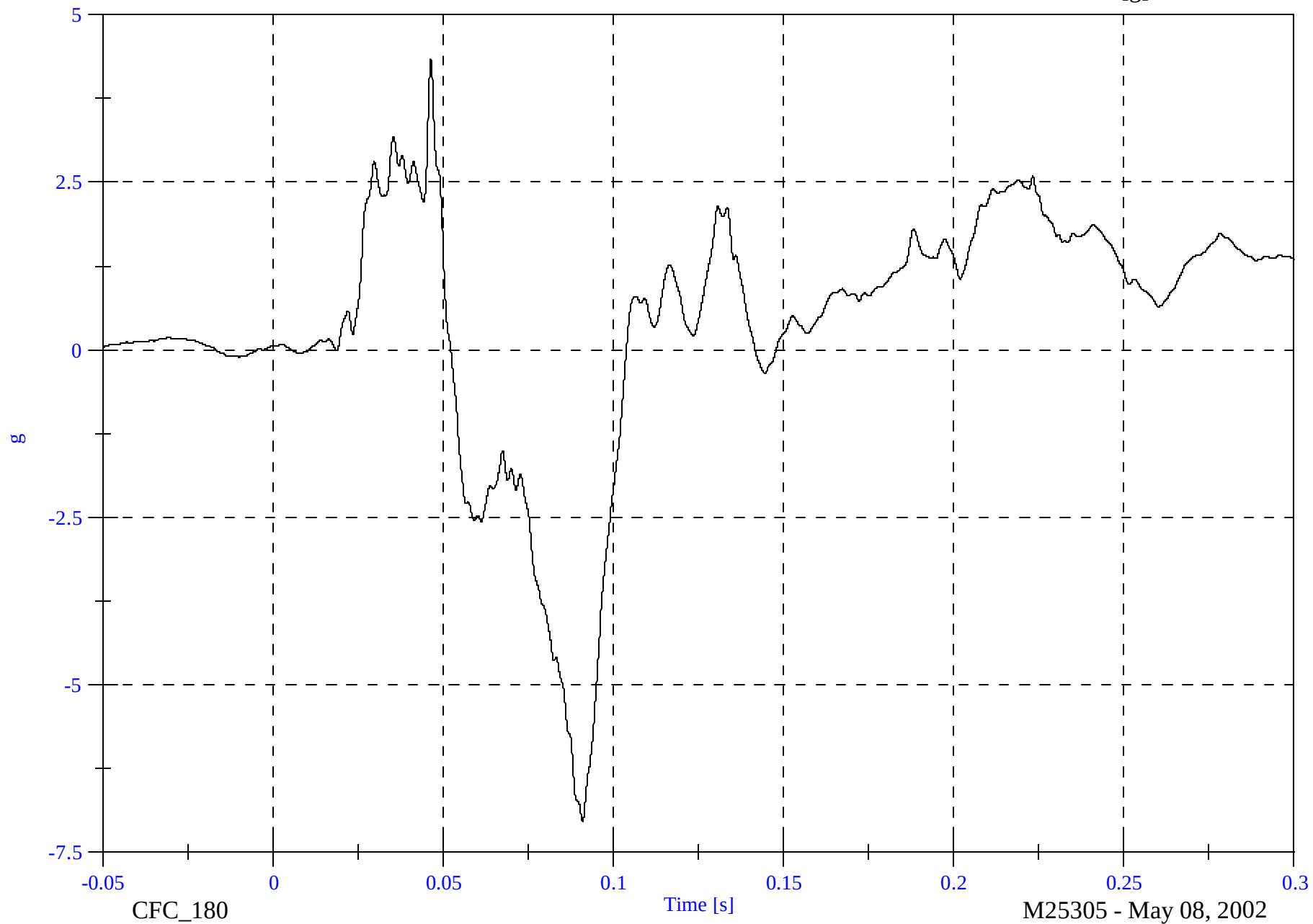
P1 Chest z

Max: 4.3 [g] at 0.046 [s]

Min: -7.0 [g] at 0.091 [s]

B-28

8642-NCAP-12



CFC_180

Time [s]

M25305 - May 08, 2002

NCAP Test 12 - 2002 Honda Odyssey

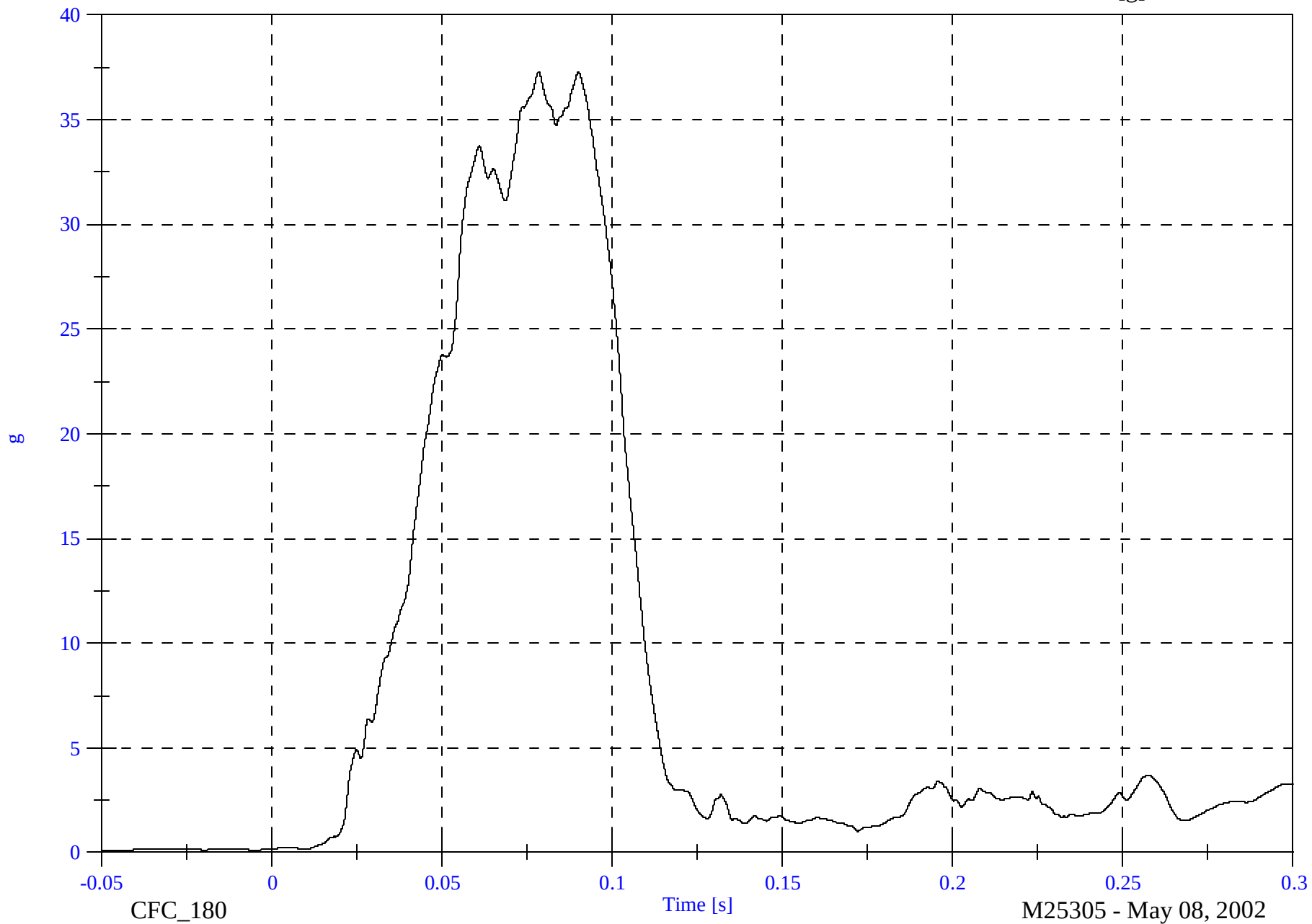
P1 Chest Resultant

Max: 37.3 [g] at 0.078 [s]

Min: 0.1 [g] at -0.049 [s]

B-29

8642-NCAP-12



NCAP Test 12 - 2002 Honda Odyssey

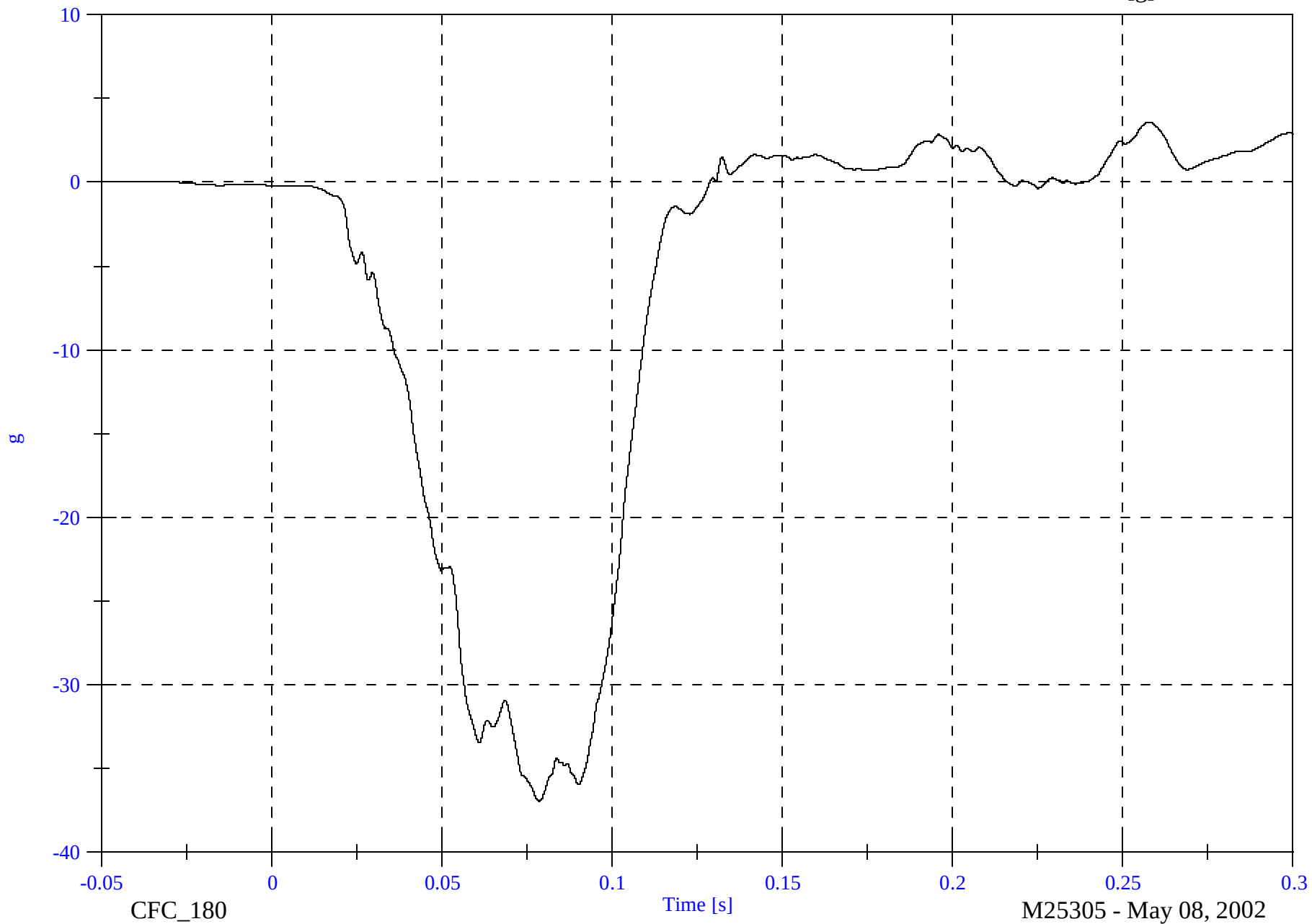
P1 Chest Red x

Max: 3.6 [g] at 0.258 [s]

Min: -36.9 [g] at 0.079 [s]

B-30

8642-NCAP-12



NCAP Test 12 - 2002 Honda Odyssey

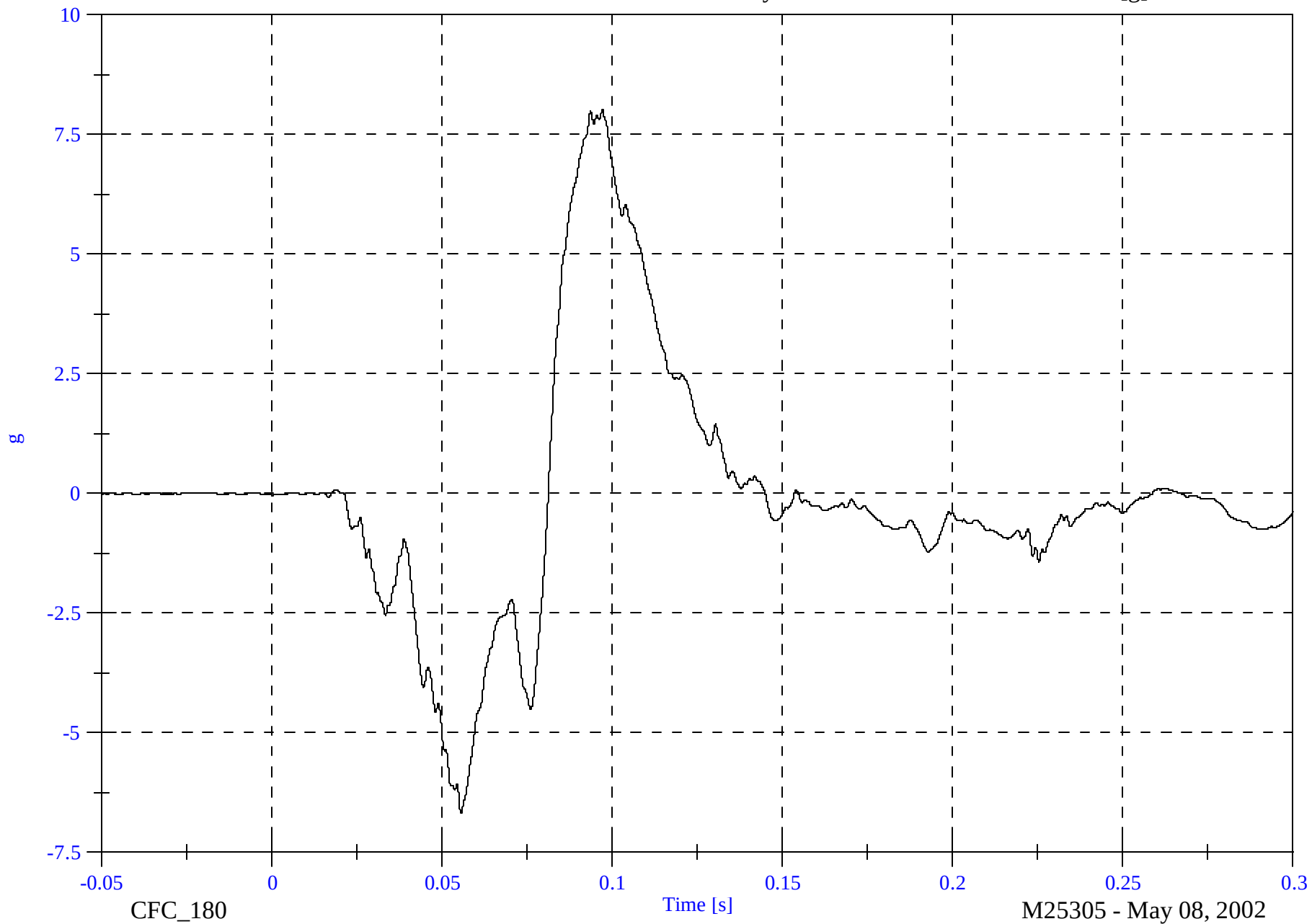
P1 Chest Red y

Max: 8.0 [g] at 0.097 [s]

Min: -6.7 [g] at 0.056 [s]

B-31

8642-NCAP-12

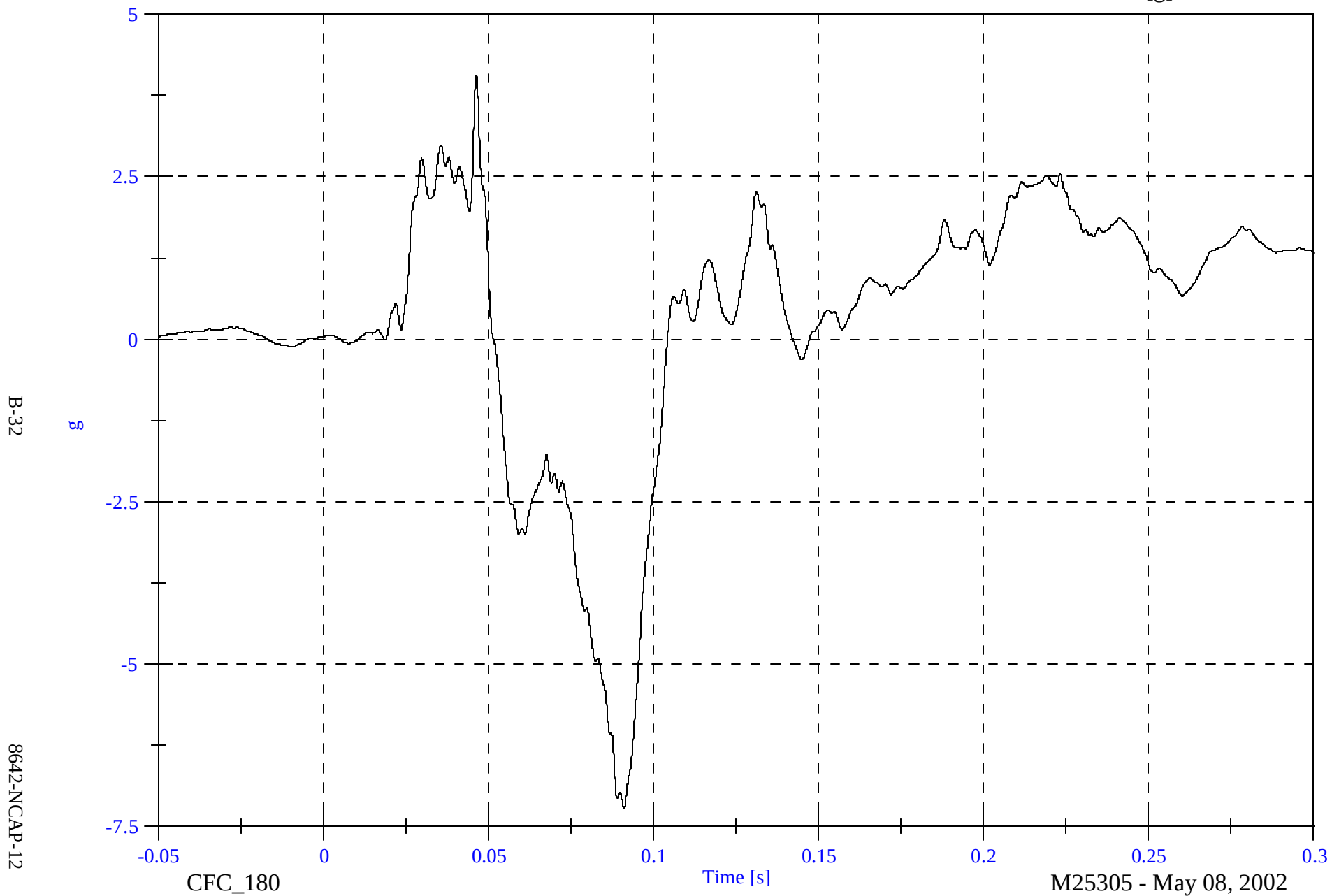


NCAP Test 12 - 2002 Honda Odyssey

P1 Chest Red z

Max: 4.1 [g] at 0.046 [s]

Min: -7.2 [g] at 0.091 [s]



NCAP Test 12 - 2002 Honda Odyssey

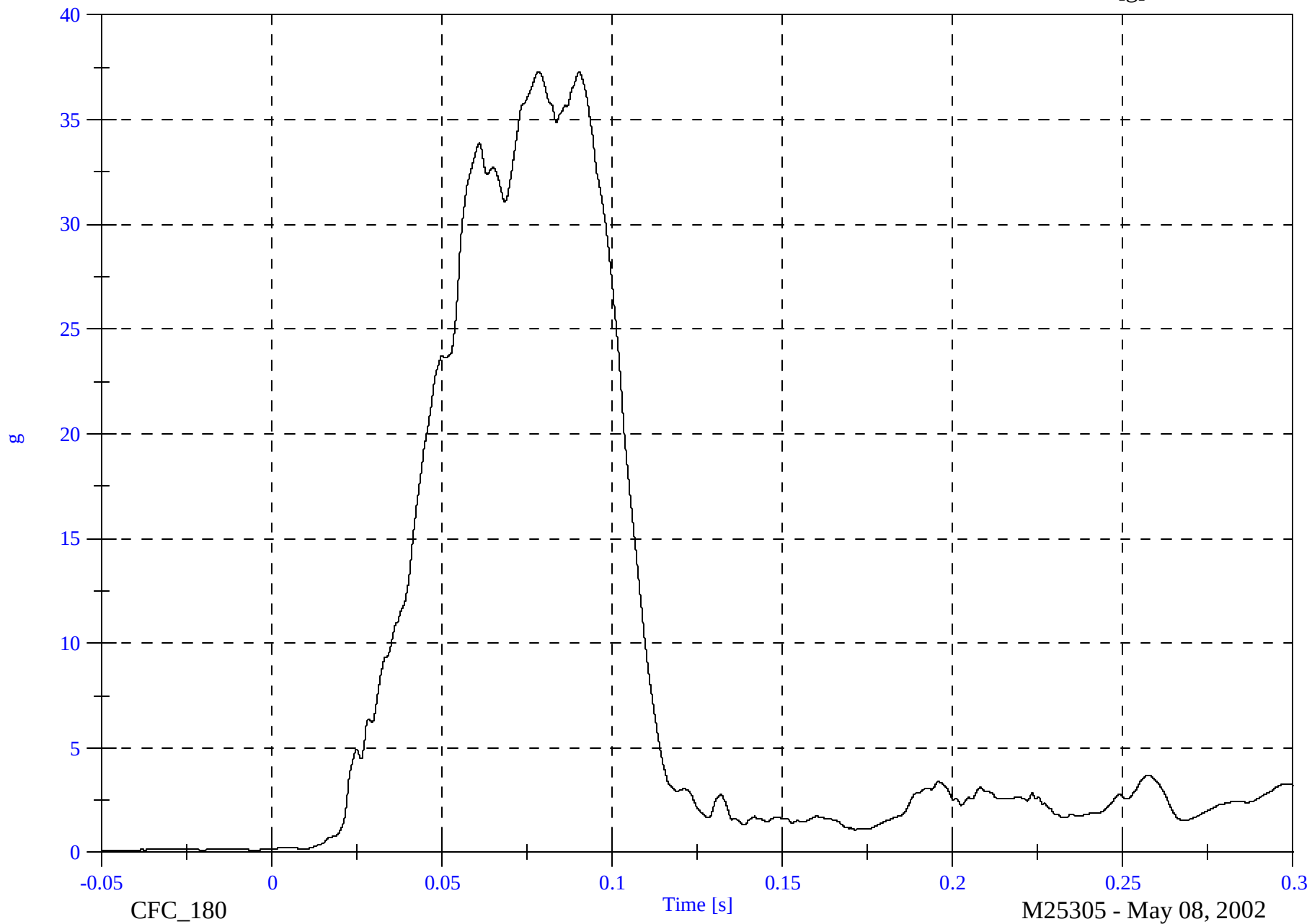
P1 Chest Red Resultant

Max: 37.3 [g] at 0.079 [s]

Min: 0.1 [g] at -0.050 [s]

B-33

8642-NCAP-12



NCAP Test 12 - 2002 Honda Odyssey

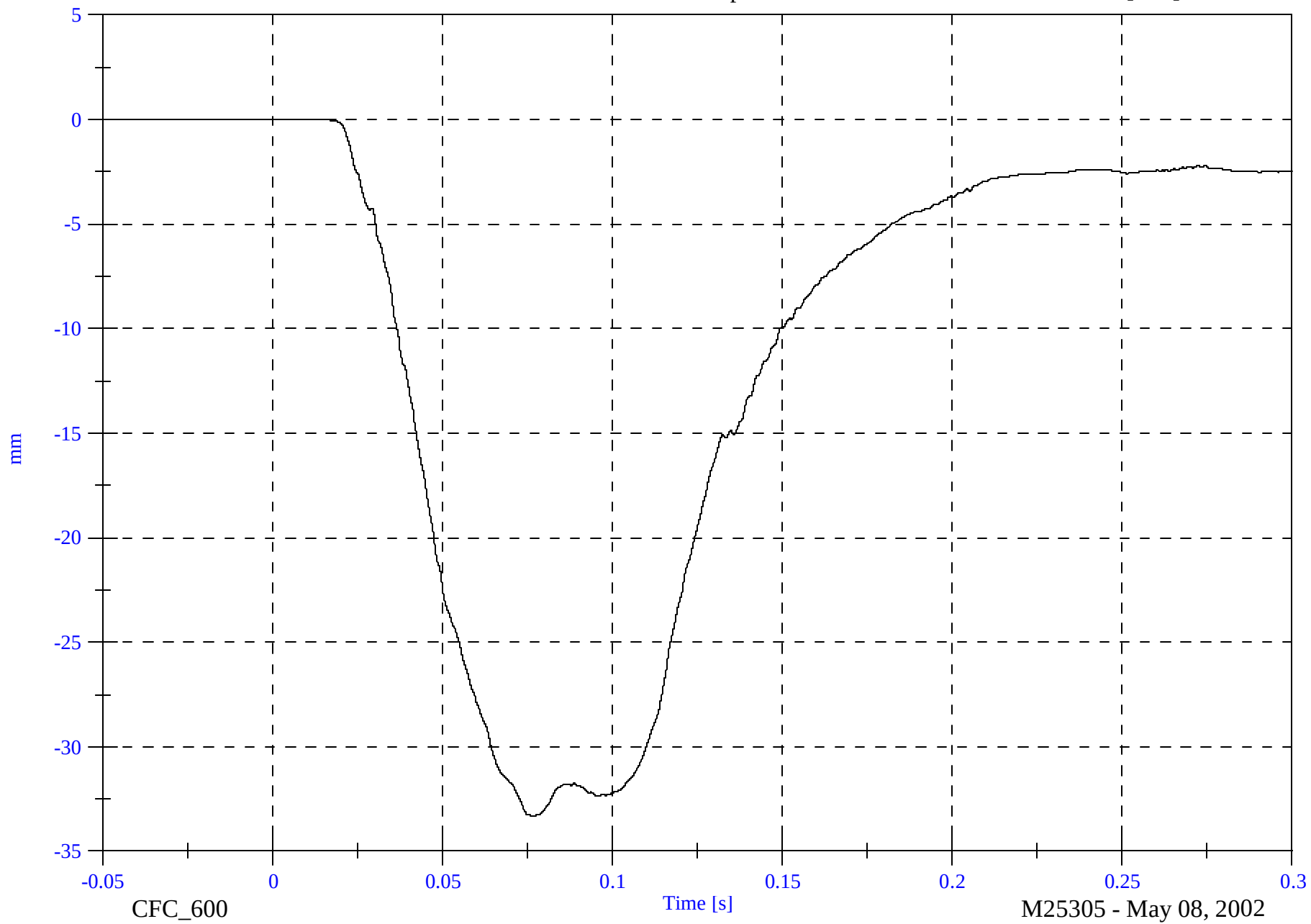
P1 Chest Compression

Max: 0.0 [mm] at 0.010 [s]

Min: -33.3 [mm] at 0.077 [s]

B-34

8642-NCAP-12

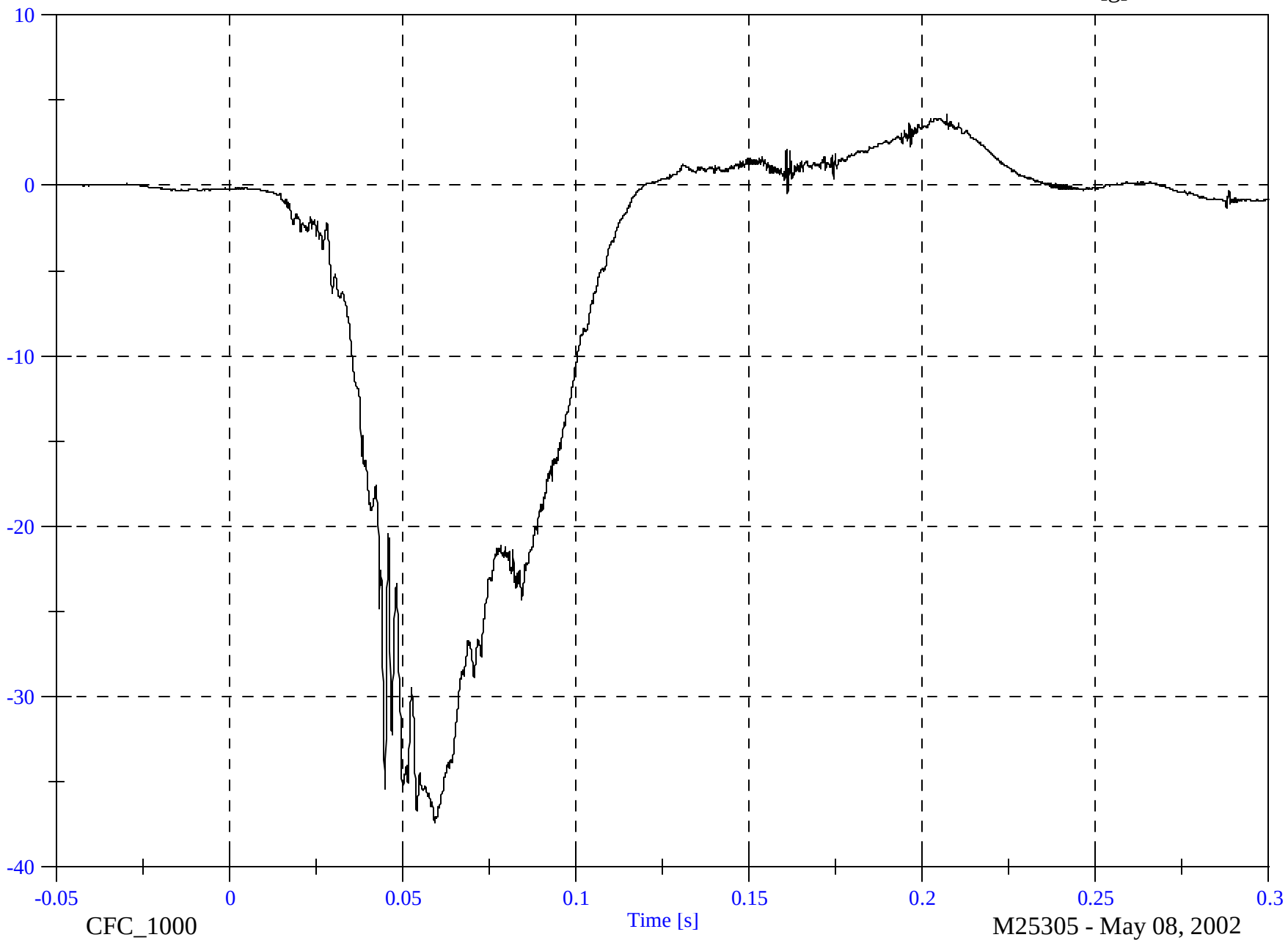


NCAP Test 12 - 2002 Honda Odyssey

P1 Pelvic x

Max: 4.2 [g] at 0.207 [s]

Min: -37.4 [g] at 0.059 [s]



B-35

8642-NCAP-12

NCAP Test 12 - 2002 Honda Odyssey

P1 Pelvic y

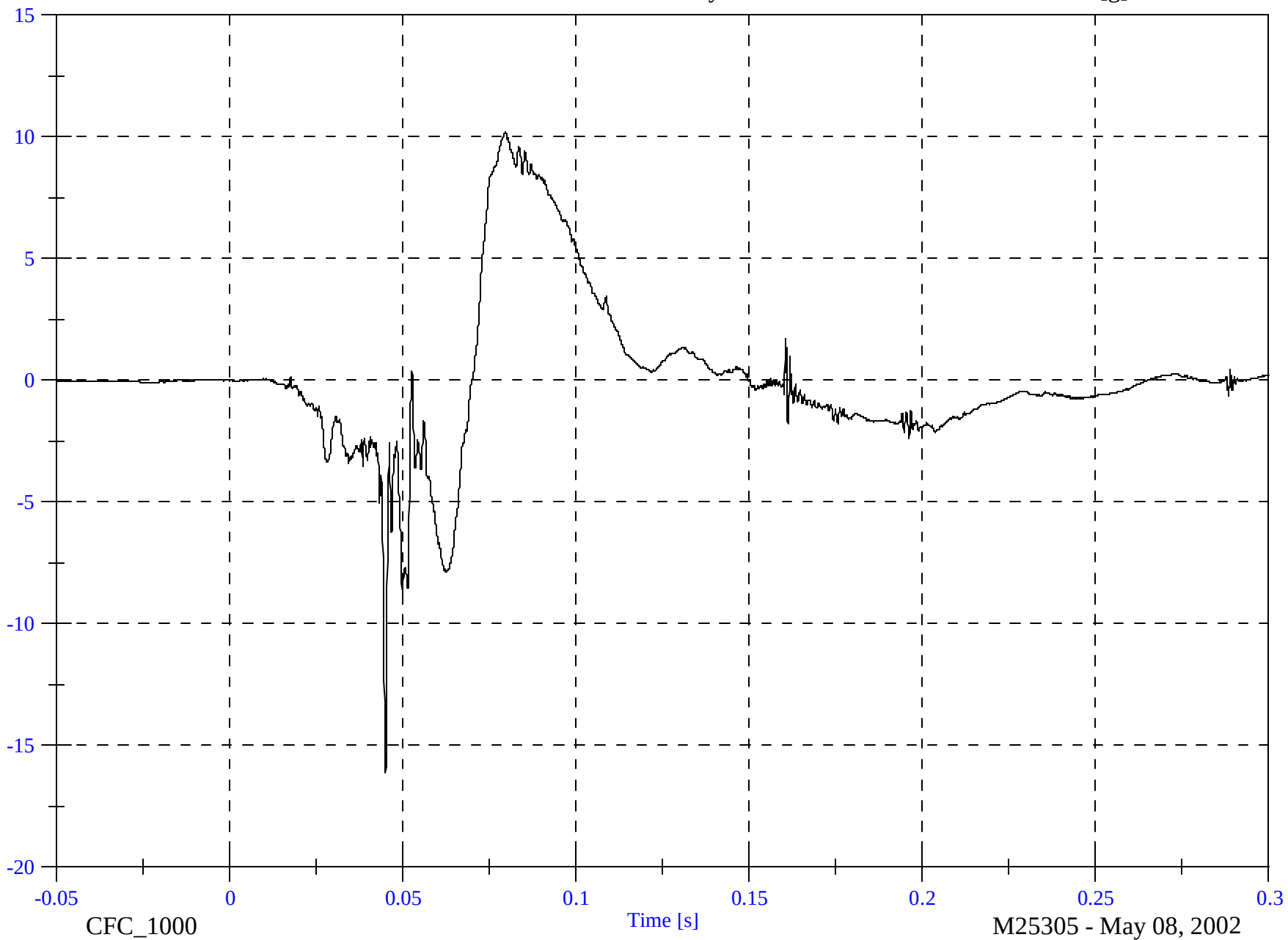
Max: 10.2 [g] at 0.080 [s]

Min: -16.1 [g] at 0.045 [s]

B-36

8642-NCAP-12

g

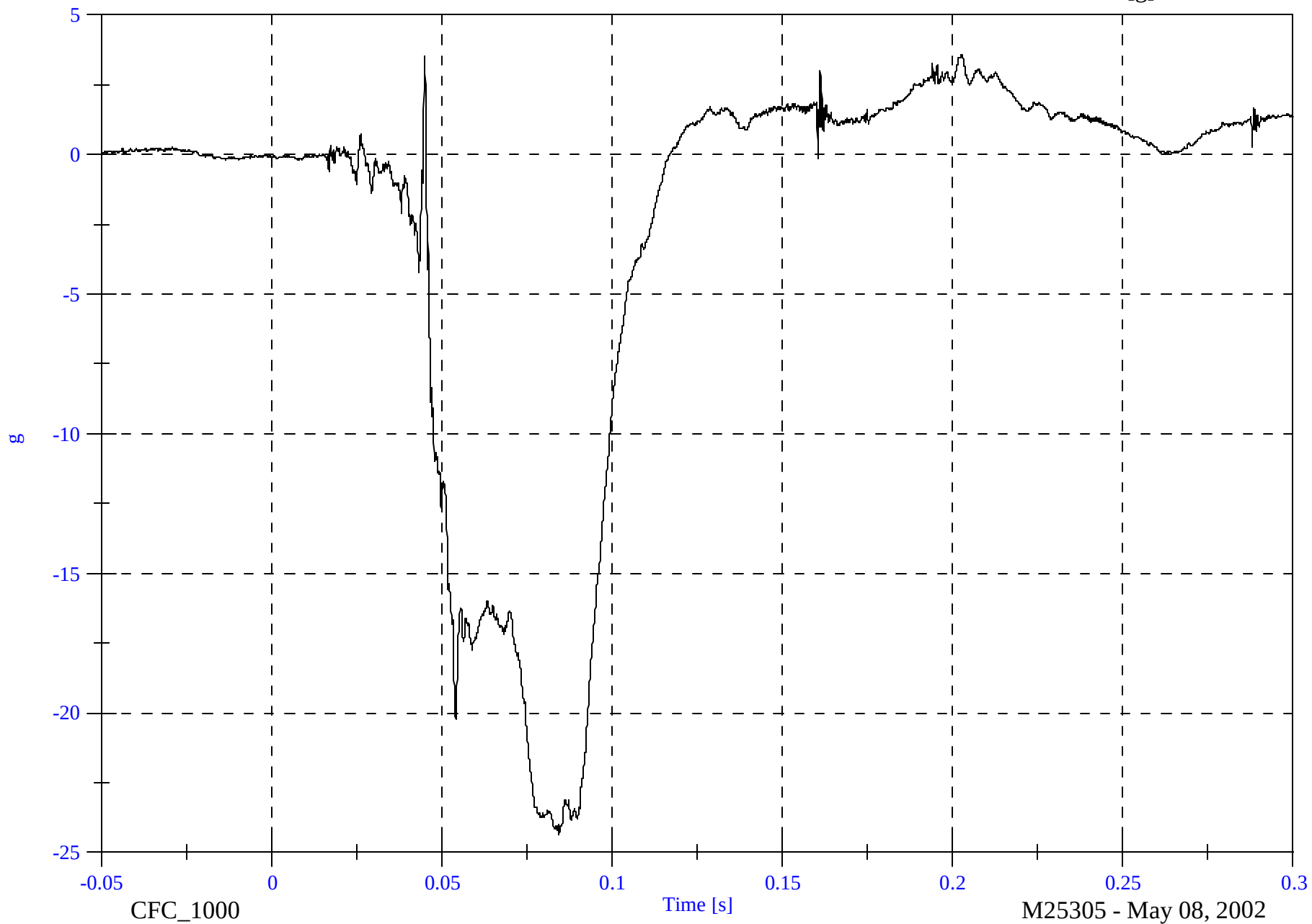


NCAP Test 12 - 2002 Honda Odyssey

P1 Pelvic z

Max: 3.6 [g] at 0.203 [s]

Min: -24.4 [g] at 0.084 [s]



B-37

8642-NCAP-12

CFC_1000

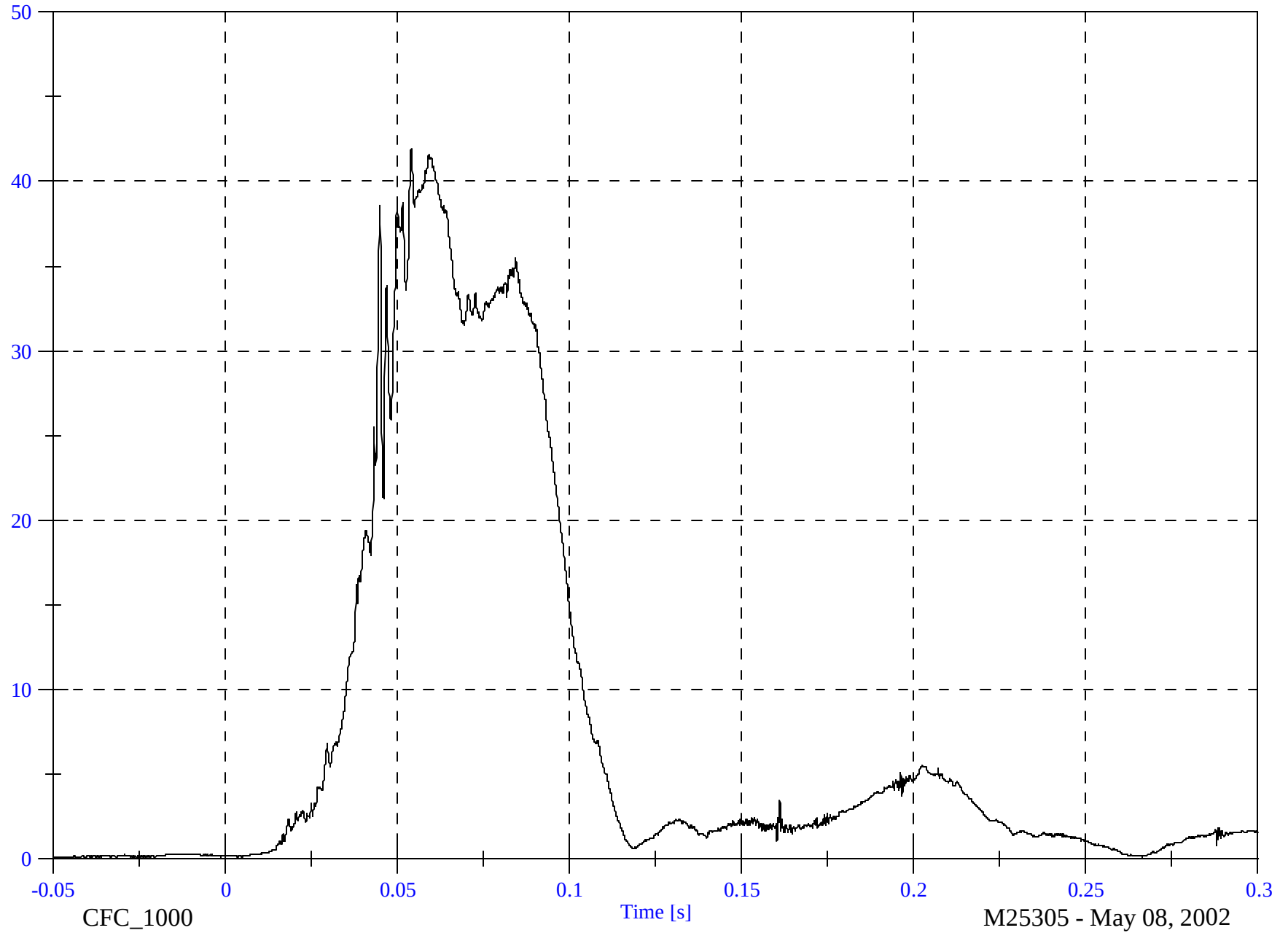
M25305 - May 08, 2002

NCAP Test 12 - 2002 Honda Odyssey

P1 Pelvic Resultant

Max: 42.0 [g] at 0.054 [s]

Min: 0.1 [g] at -0.049 [s]



B-38

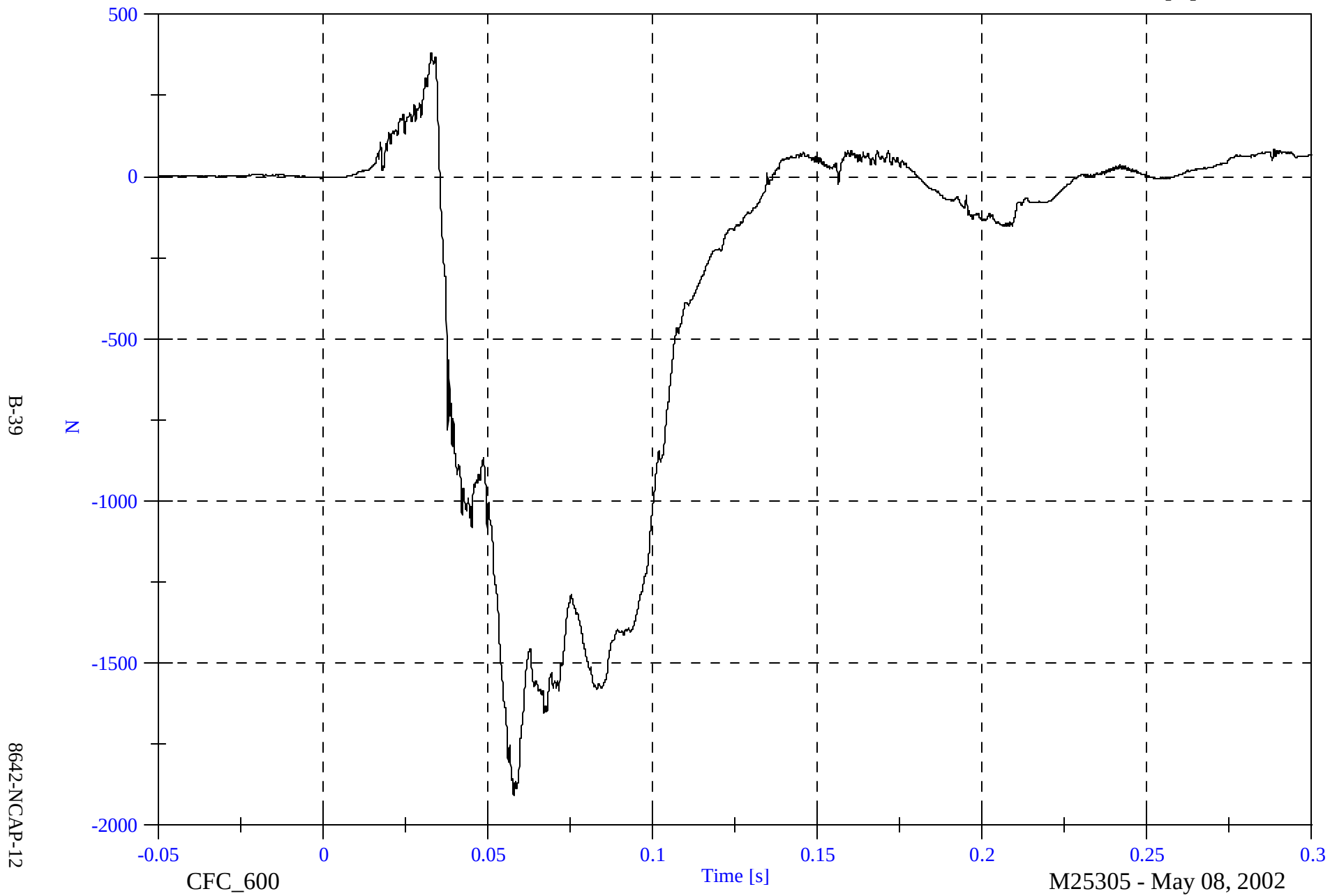
8642-NCAP-12

NCAP Test 12 - 2002 Honda Odyssey

P1 Left Femur

Max: 380.3 [N] at 0.033 [s]

Min: -1907.1 [N] at 0.058 [s]

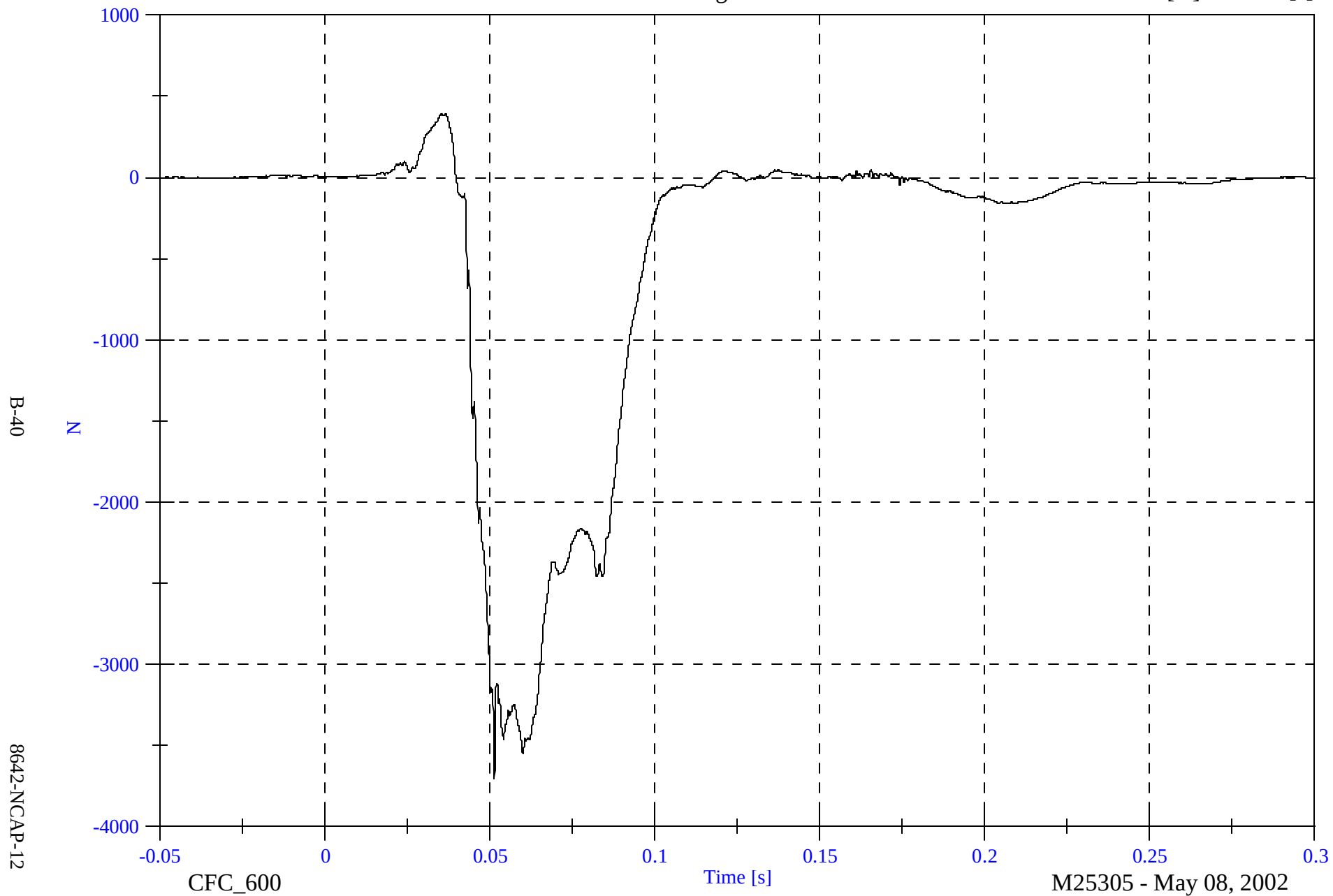


NCAP Test 12 - 2002 Honda Odyssey

P1 Right Femur

Max: 391.2 [N] at 0.035 [s]

Min: -3699.3 [N] at 0.051 [s]



NCAP Test 12 - 2002 Honda Odyssey

Max: 35.6 [N-m] at 0.092 [s]

P1 Left Upper Tibia Mx

Min: -0.9 [N-m] at 0.151 [s]



B-41

8642-NCAP-12

NCAP Test 12 - 2002 Honda Odyssey

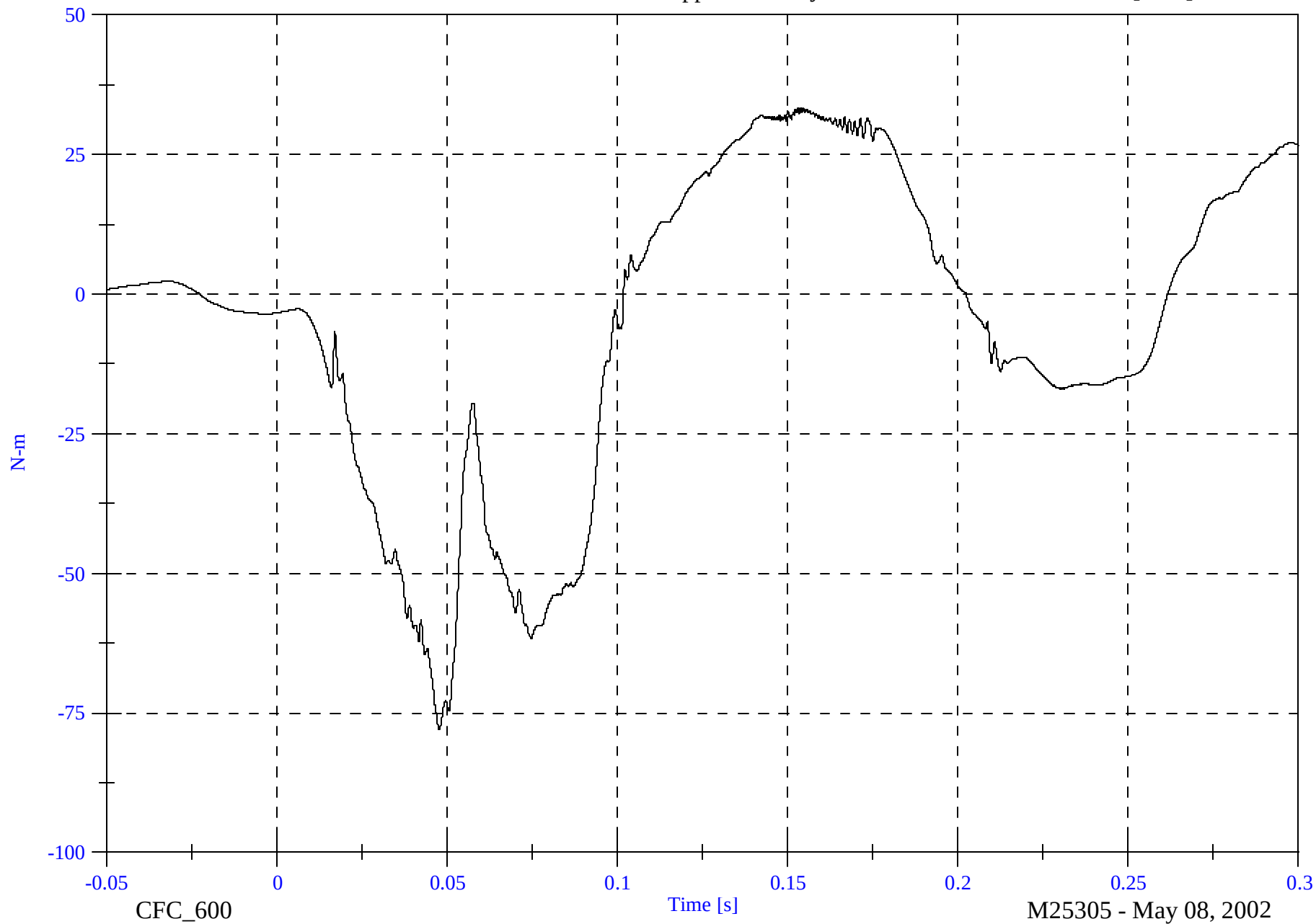
P1 Left Upper Tibia My

Max: 33.4 [N-m] at 0.153 [s]

Min: -78.0 [N-m] at 0.048 [s]

B-42

8642-NCAP-12

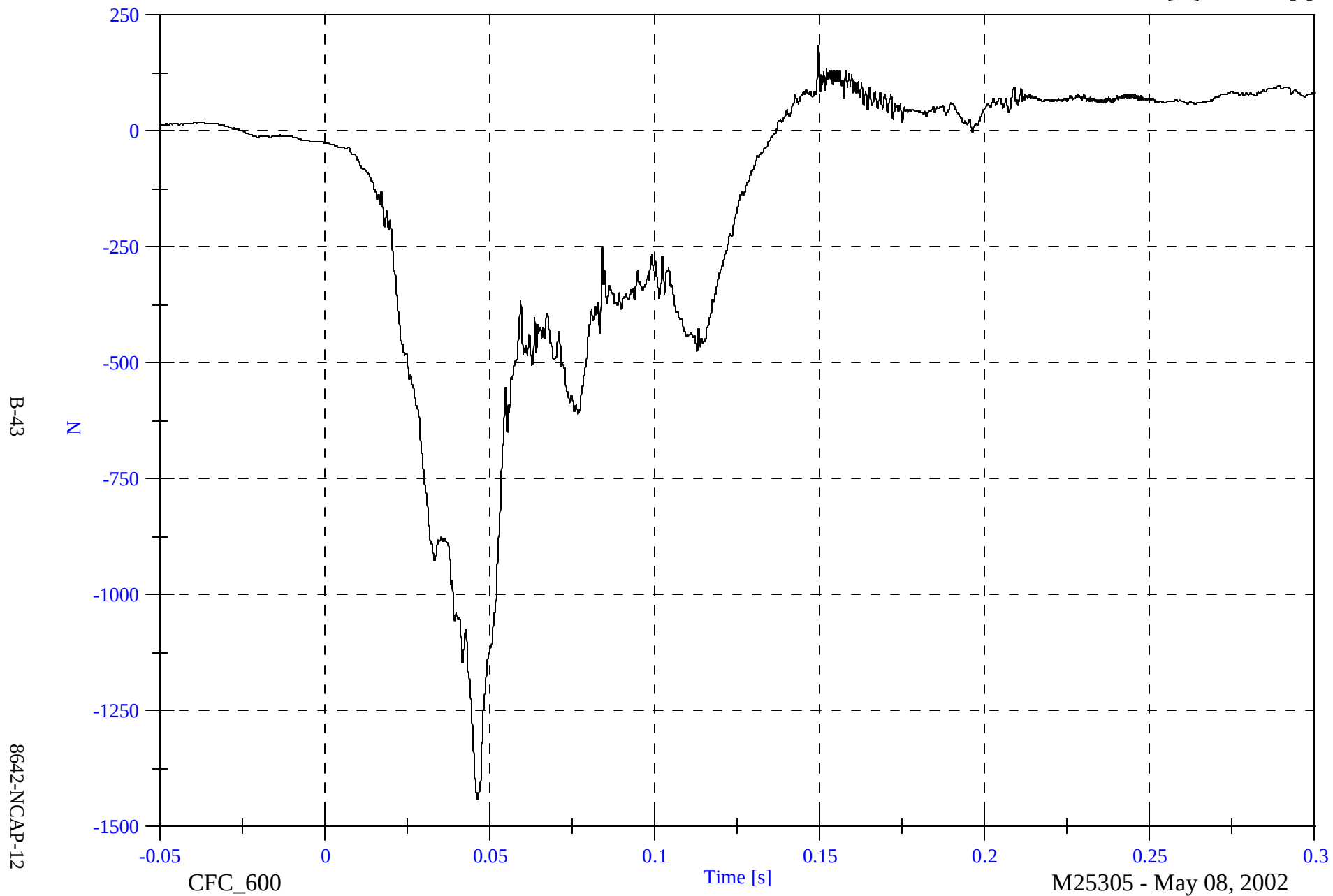


NCAP Test 12 - 2002 Honda Odyssey

P1 Left Lower Tibia Fz

Max: 183.9 [N] at 0.150 [s]

Min: -1440.7 [N] at 0.046 [s]

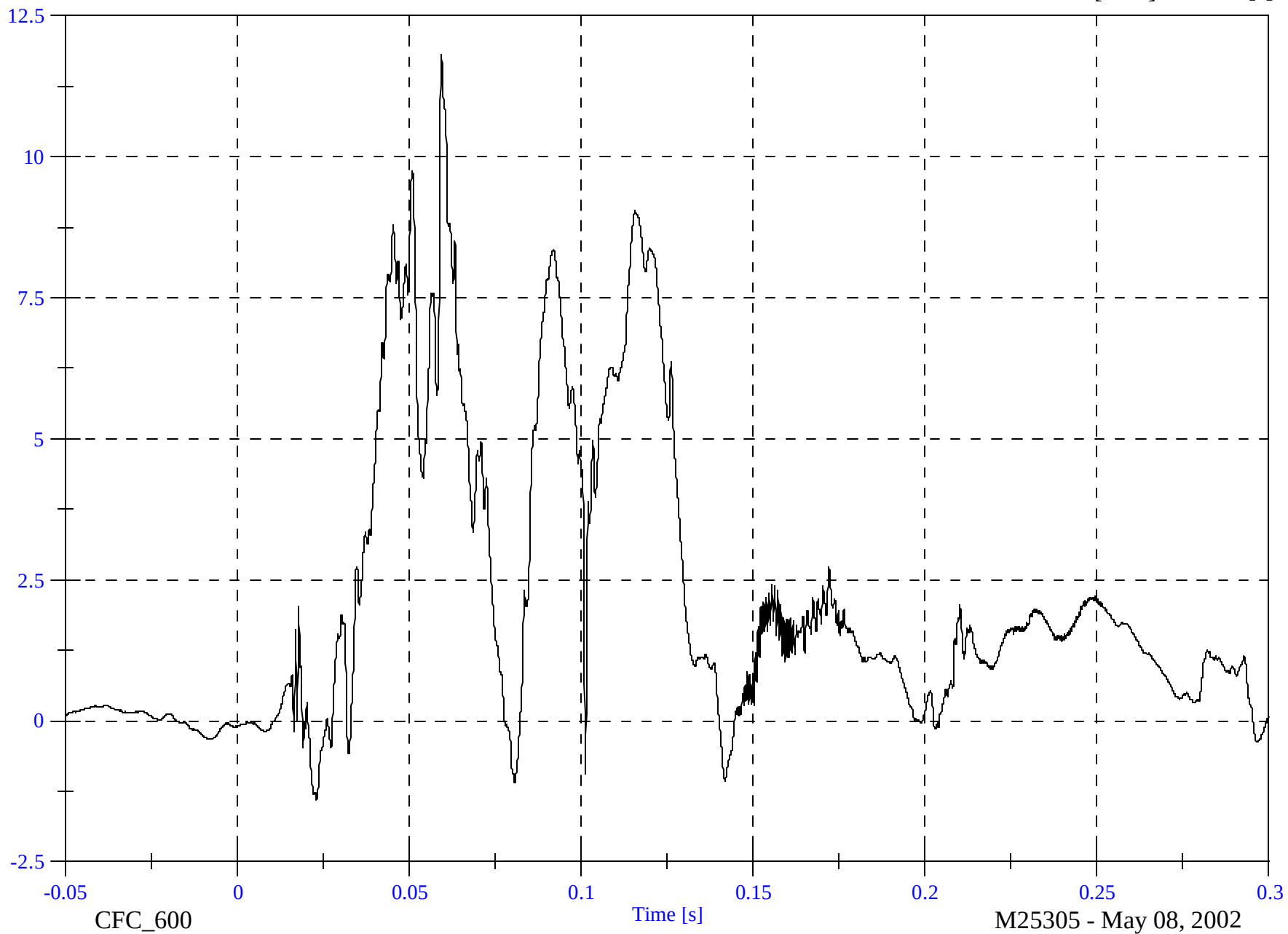


NCAP Test 12 - 2002 Honda Odyssey

P1 Left Lower Tibia Mx

Max: 11.8 [N-m] at 0.059 [s]

Min: -1.4 [N-m] at 0.023 [s]



B-44

8642-NCAP-12

NCAP Test 12 - 2002 Honda Odyssey

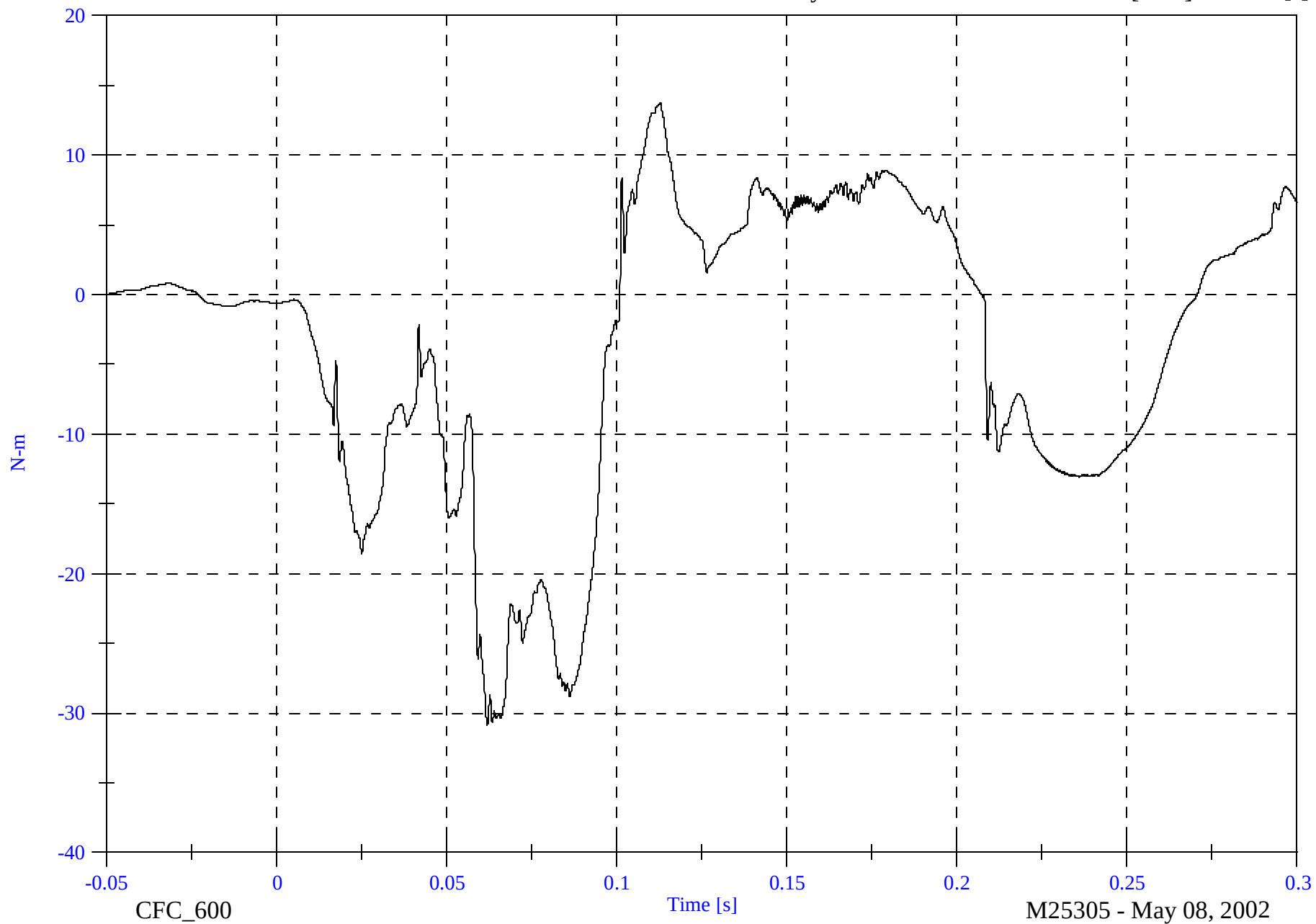
P1 Left Lower Tibia My

Max: 13.8 [N-m] at 0.113 [s]

Min: -30.9 [N-m] at 0.062 [s]

B-45

8642-NCAP-12

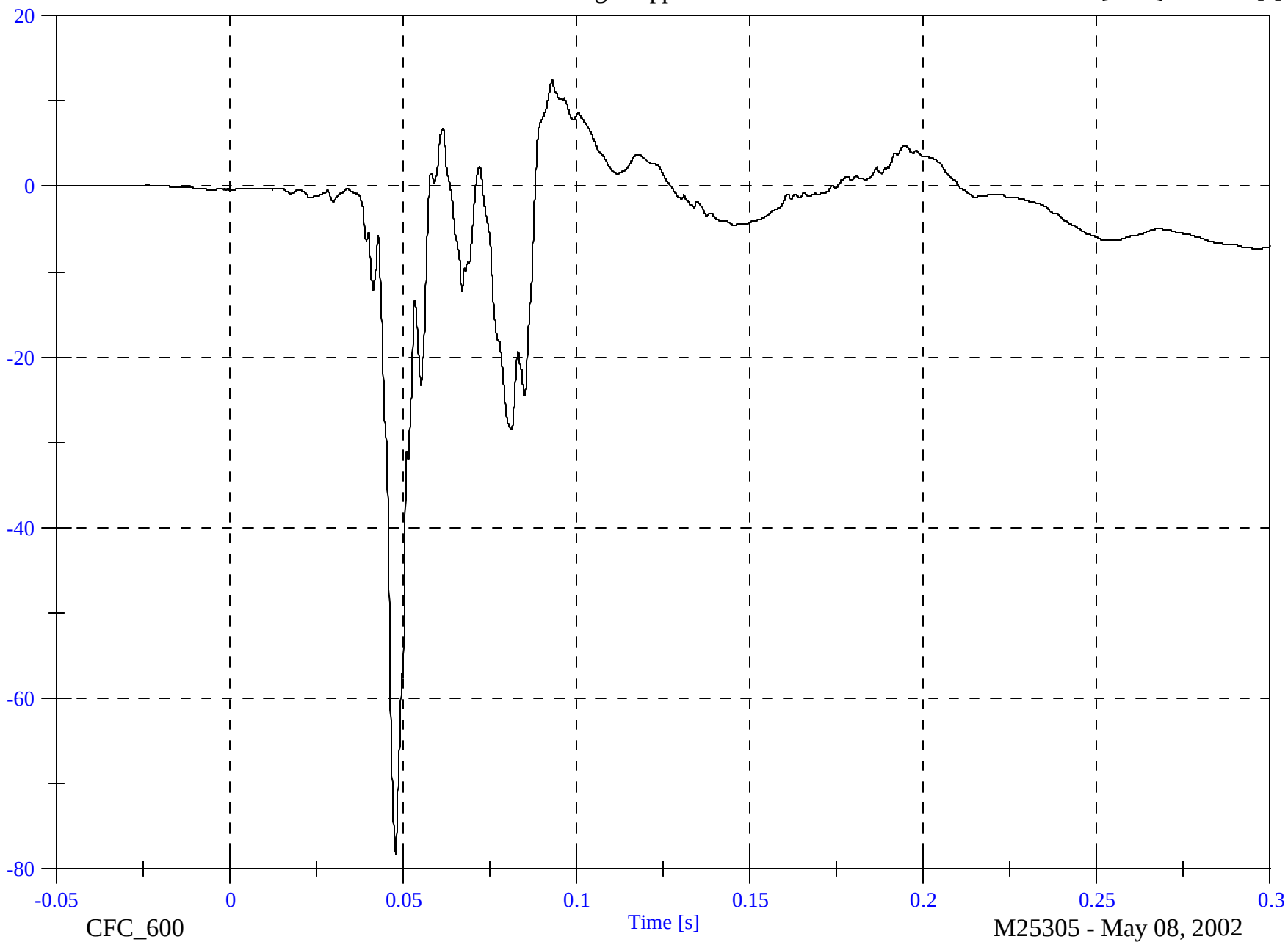


NCAP Test 12 - 2002 Honda Odyssey

P1 Right Upper Tibia Mx

Max: 12.5 [N-m] at 0.093 [s]

Min: -78.2 [N-m] at 0.048 [s]



B-46

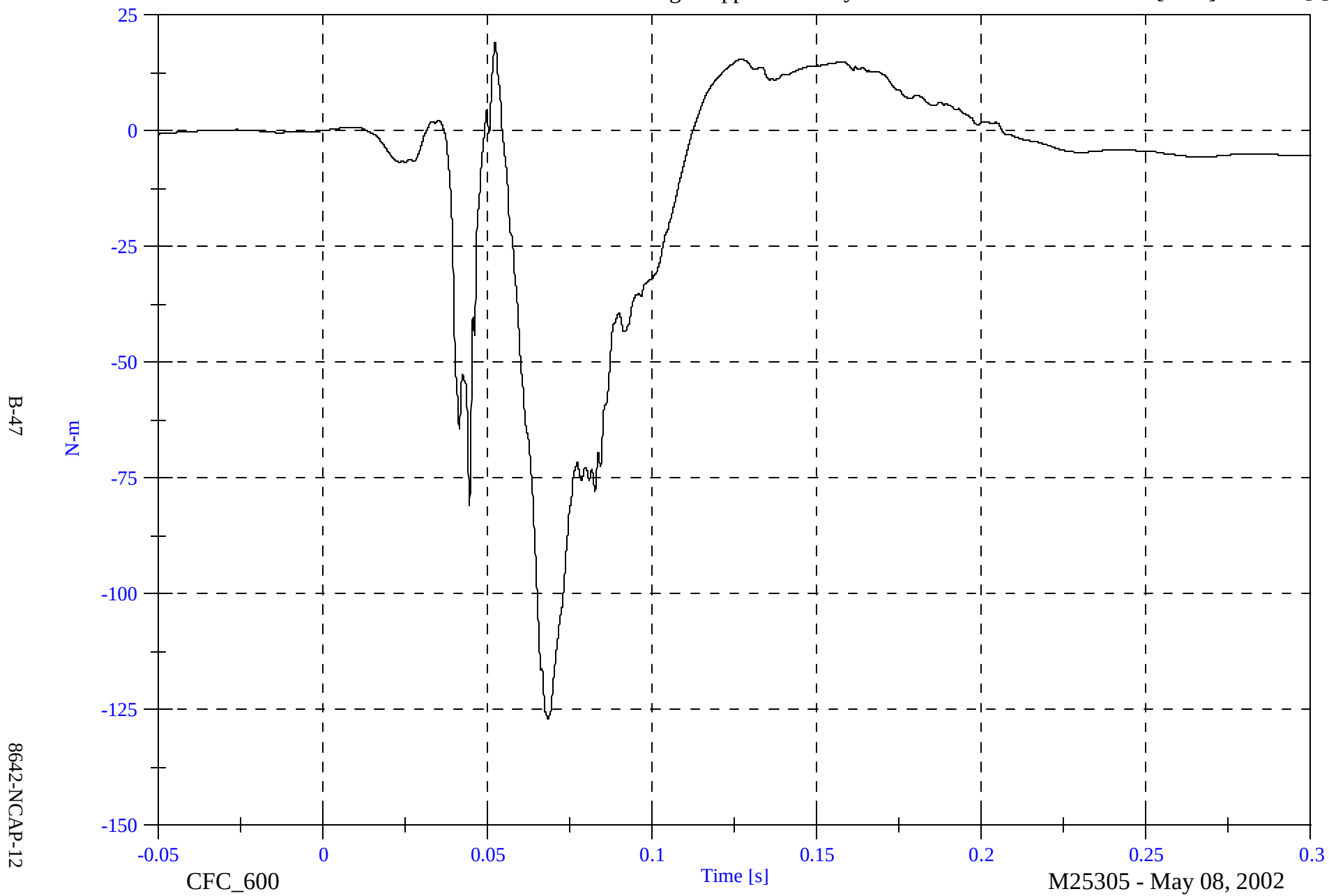
8642-NCAP-12

NCAP Test 12 - 2002 Honda Odyssey

P1 Right Upper Tibia My

Max: 19.1 [N-m] at 0.052 [s]

Min: -127.1 [N-m] at 0.068 [s]

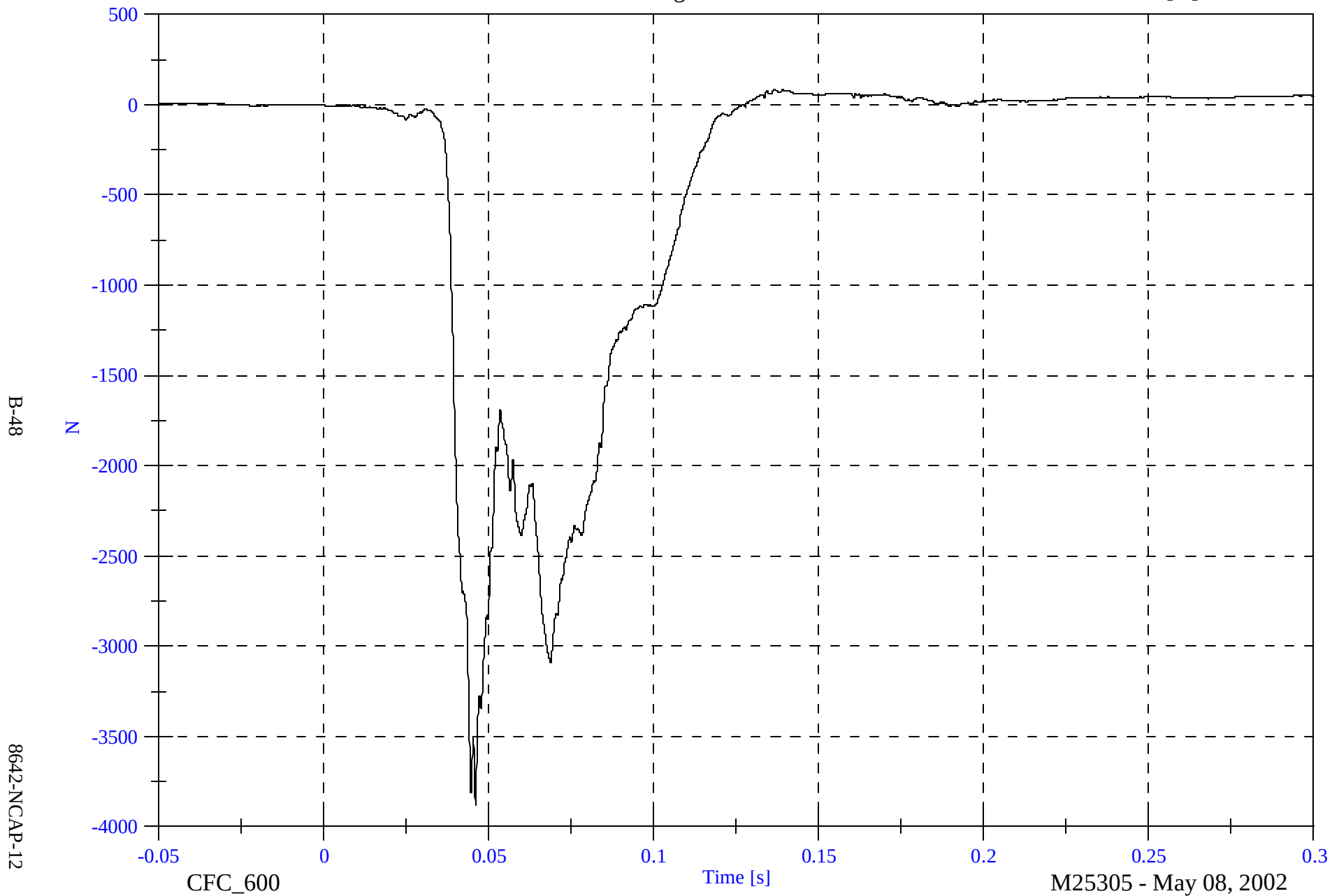


NCAP Test 12 - 2002 Honda Odyssey

P1 Right Lower Tibia Fz

Max: 83.1 [N] at 0.137 [s]

Min: -3878.8 [N] at 0.046 [s]

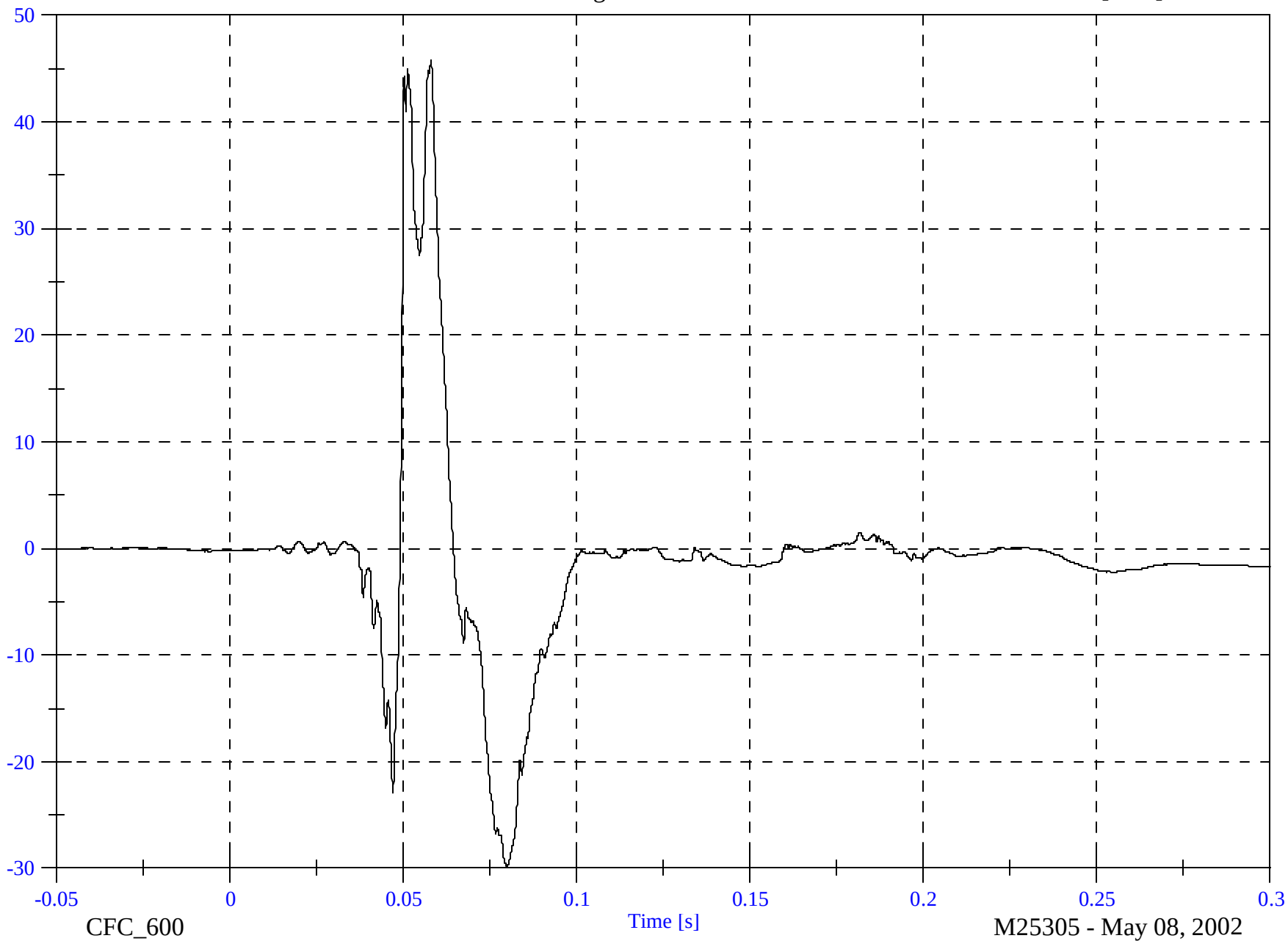


NCAP Test 12 - 2002 Honda Odyssey

P1 Right Lower Tibia Mx

Max: 45.8 [N-m] at 0.058 [s]

Min: -29.8 [N-m] at 0.080 [s]



B-49

8642-NCAP-12

CFC_600

Time [s]

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NCAP Test 12 - 2002 Honda Odyssey

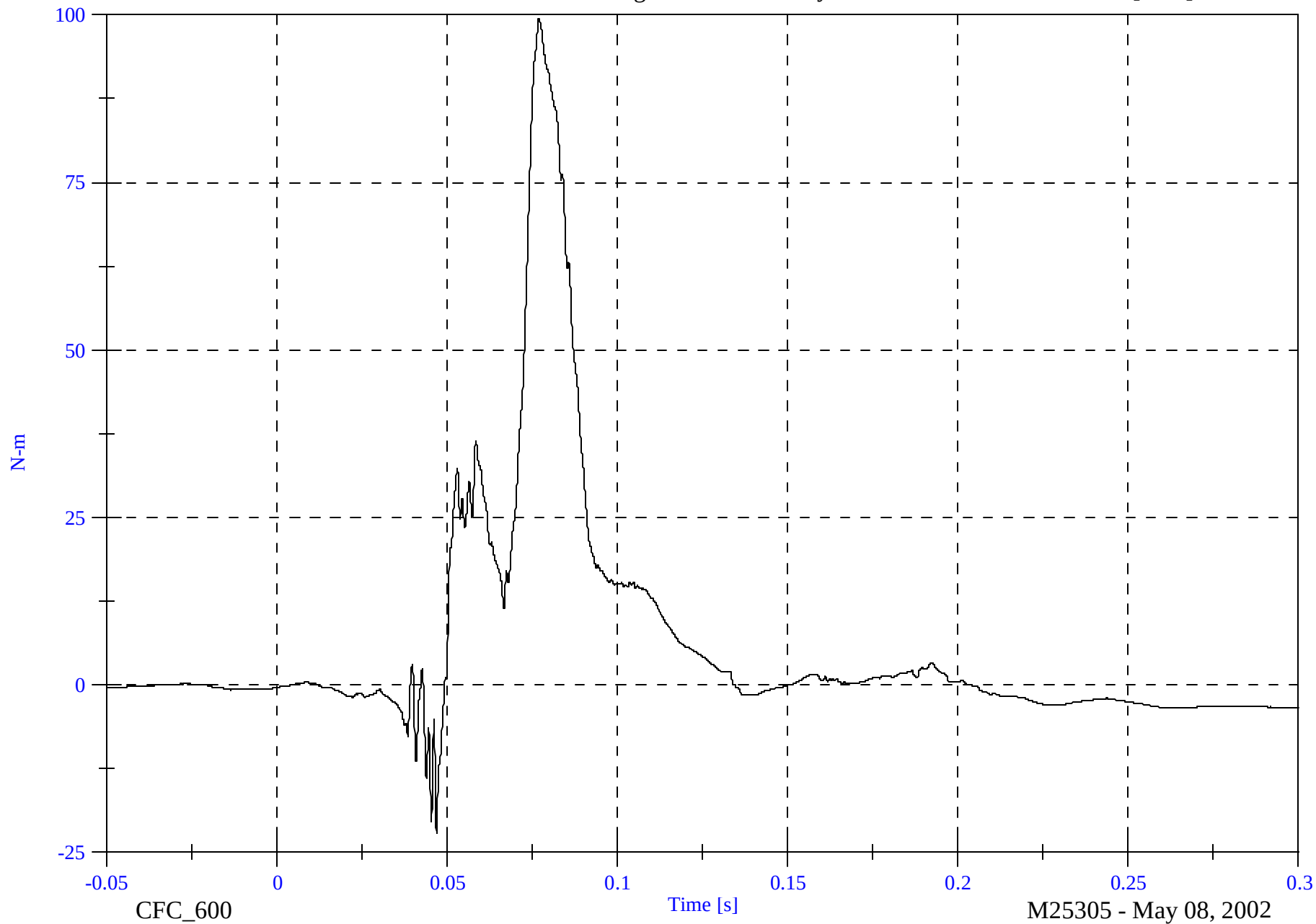
P1 Right Lower Tibia My

Max: 99.5 [N-m] at 0.077 [s]

Min: -22.1 [N-m] at 0.047 [s]

B-50

8642-NCAP-12

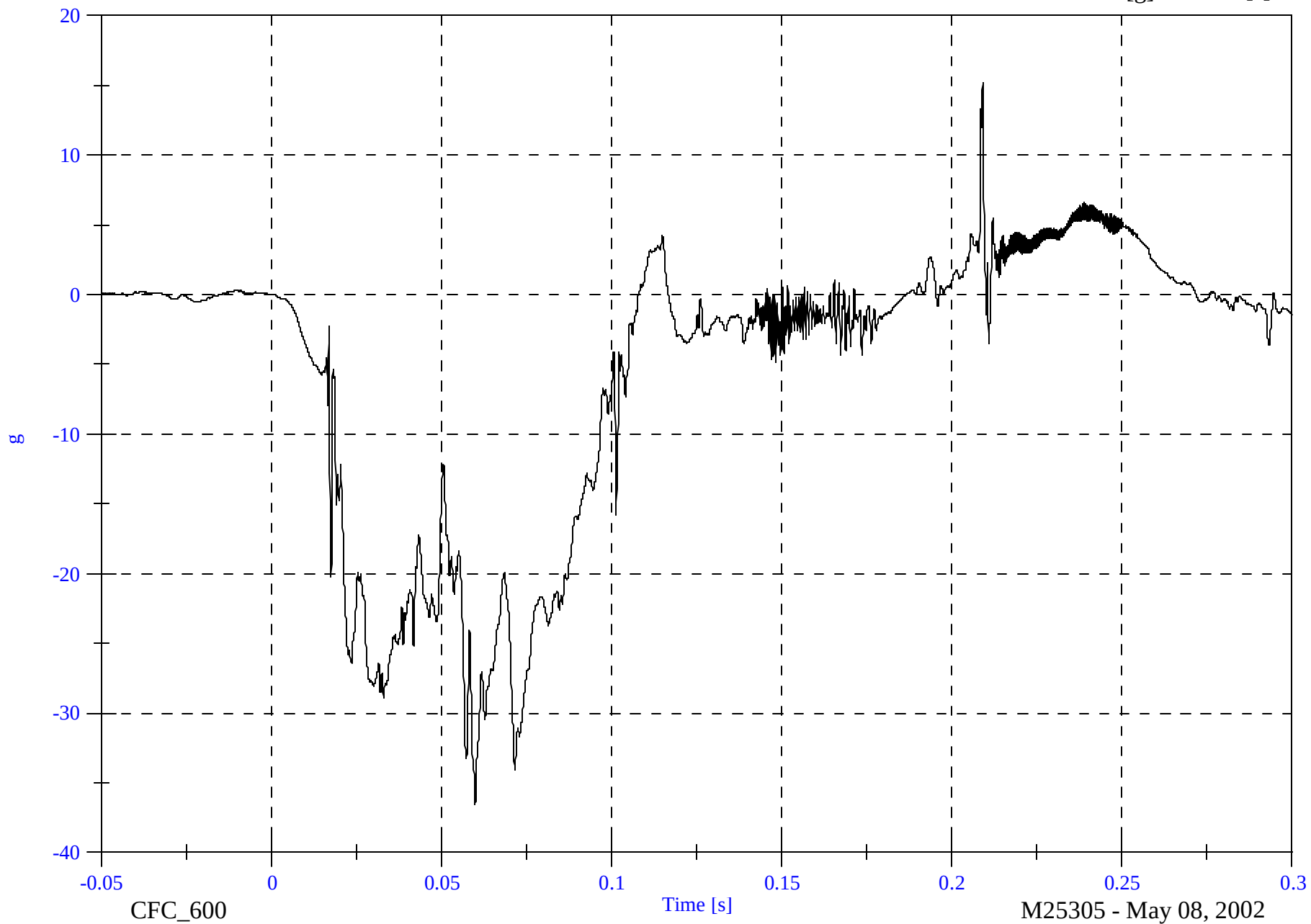


NCAP Test 12 - 2002 Honda Odyssey

P1 Left Foot Aft x

Max: 15.1 [g] at 0.209 [s]

Min: -36.5 [g] at 0.060 [s]



B-51

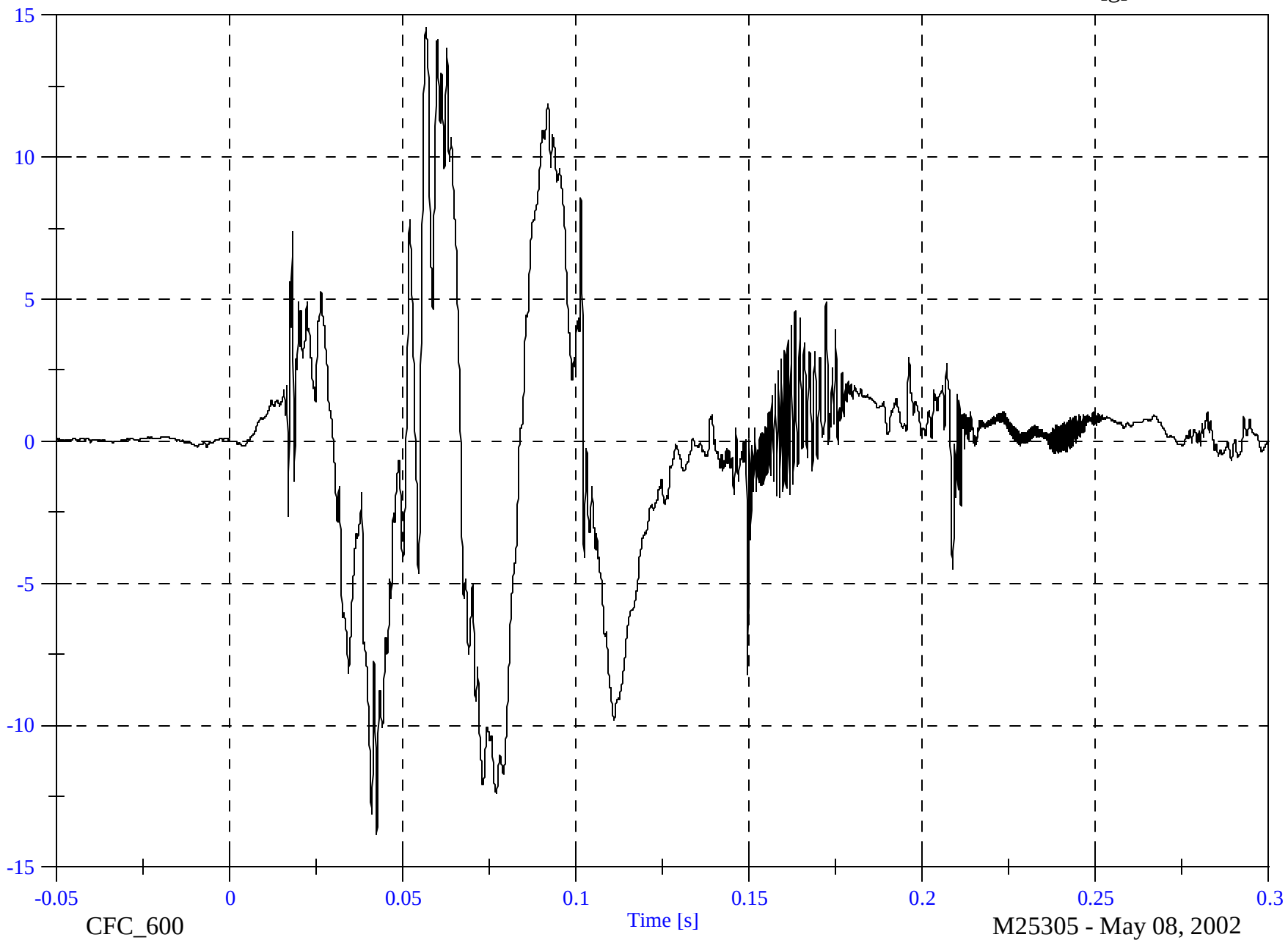
8642-NCAP-12

NCAP Test 12 - 2002 Honda Odyssey

P1 Left Foot Aft z

Max: 14.6 [g] at 0.057 [s]

Min: -13.9 [g] at 0.043 [s]



B-52

8642-NCAP-12

NCAP Test 12 - 2002 Honda Odyssey

Max: 42.4 [g] at 0.099 [s]

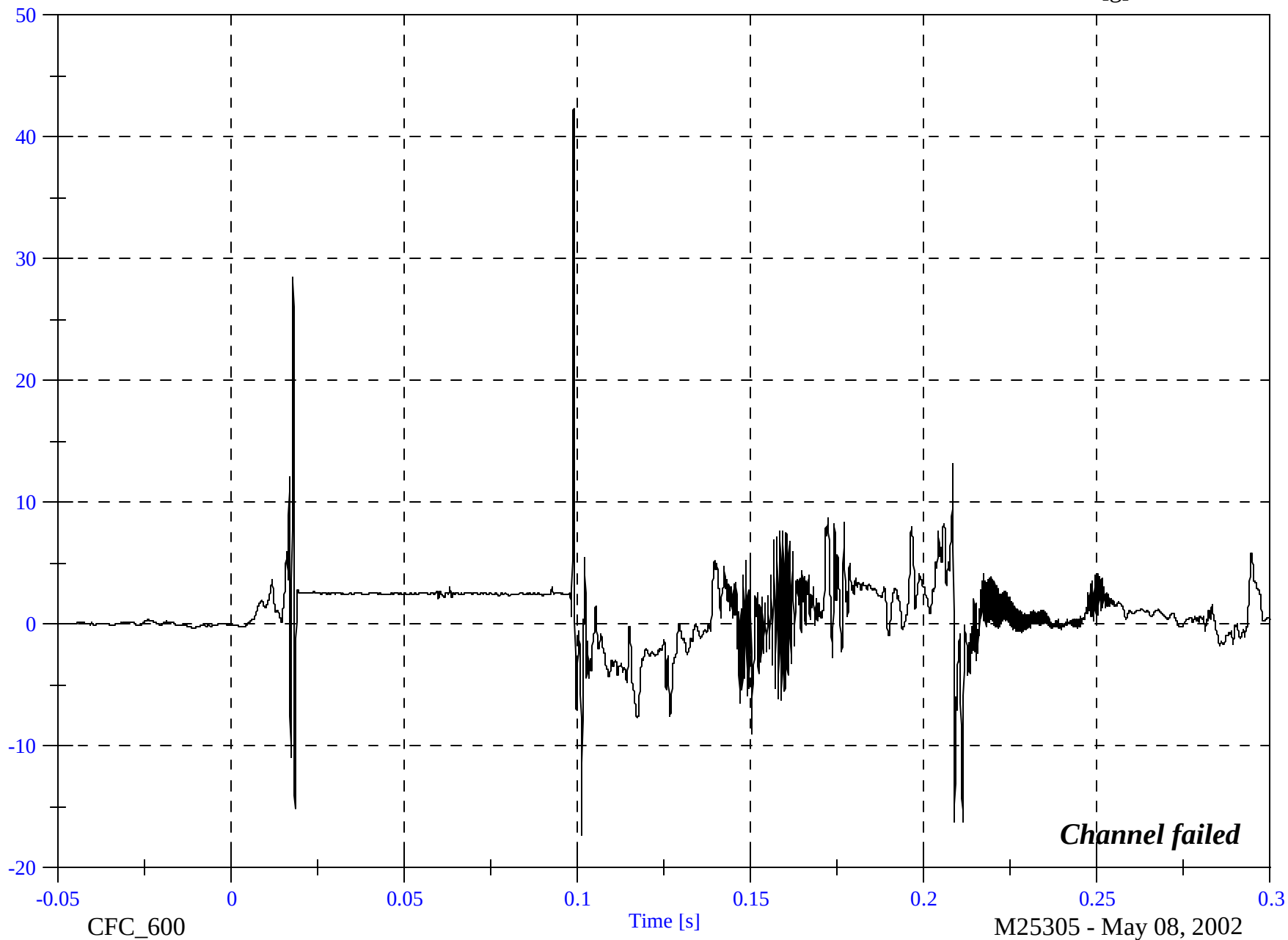
Min: -17.3 [g] at 0.101 [s]

P1 Left Foot Fore z

B-53

g

8642-NCAP-12



CFC_600

Time [s]

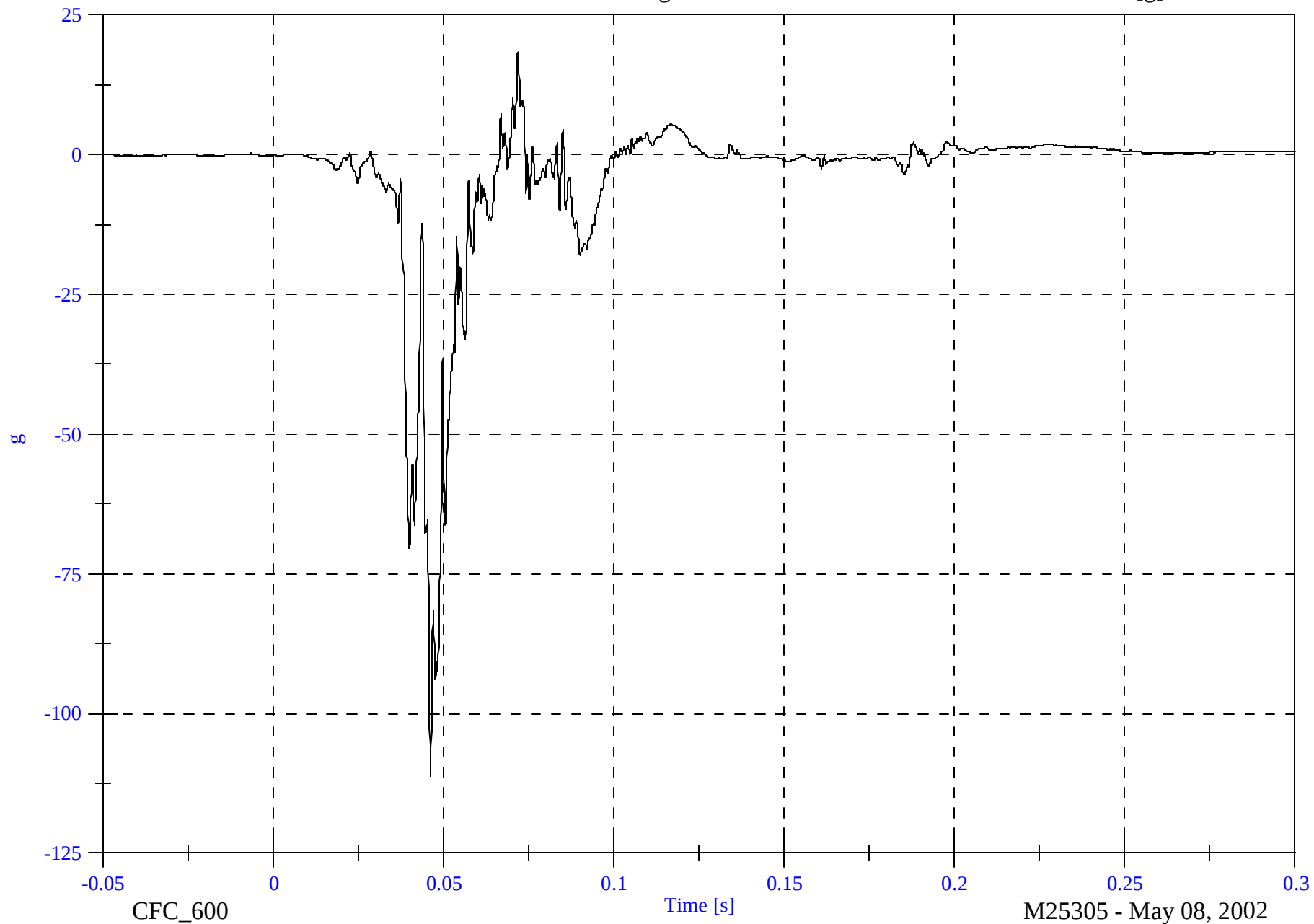
M25305 - May 08, 2002

NCAP Test 12 - 2002 Honda Odyssey

Max: 18.4 [g] at 0.072 [s]

Min: -111.2 [g] at 0.046 [s]

P1 Right Foot Aft x



B-54

8642-NCAP-12

CFC_600

Time [s]

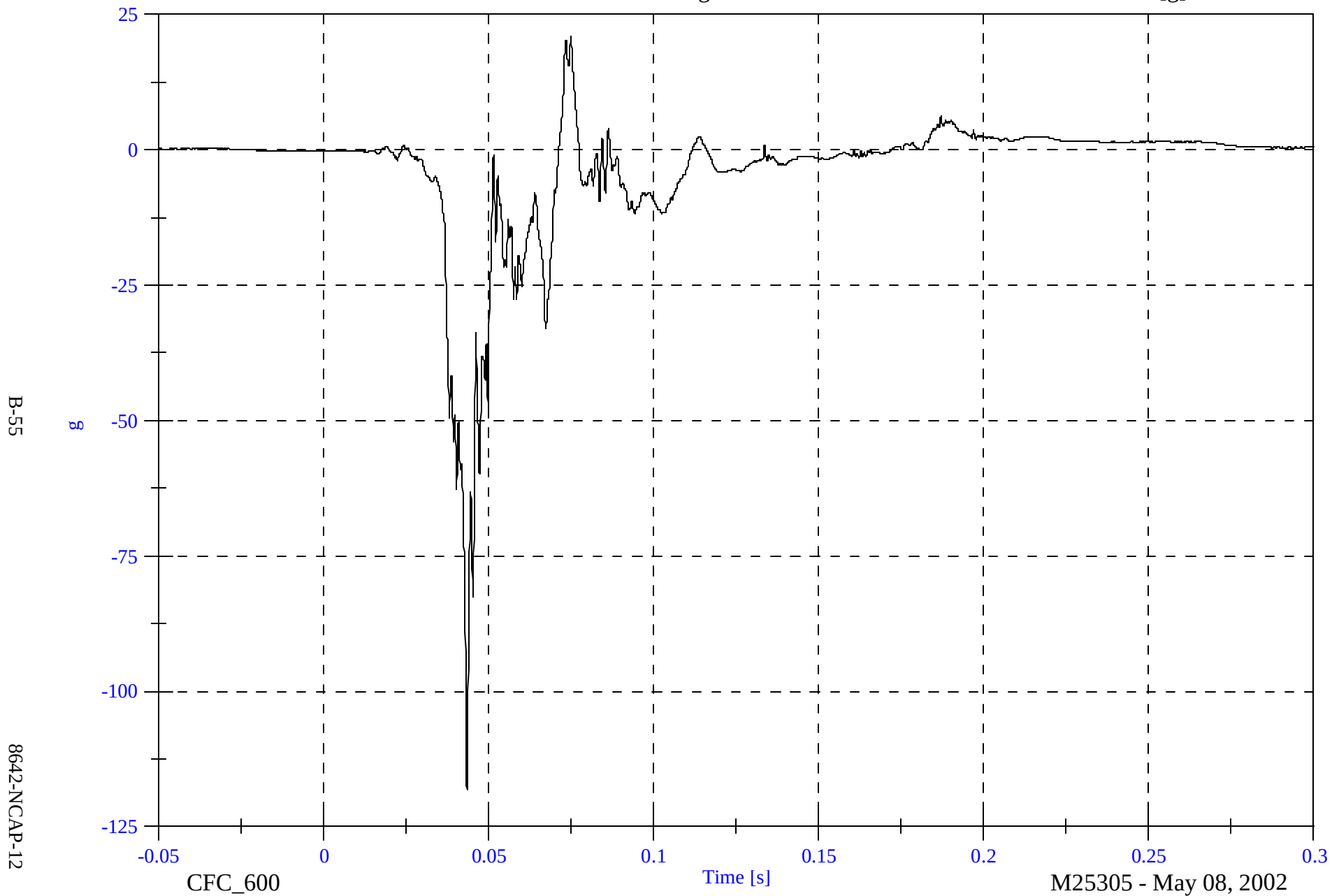
M25305 - May 08, 2002

NCAP Test 12 - 2002 Honda Odyssey

Max: 20.8 [g] at 0.075 [s]

Min: -118.3 [g] at 0.043 [s]

P1 Right Foot Aft z



NCAP Test 12 - 2002 Honda Odyssey

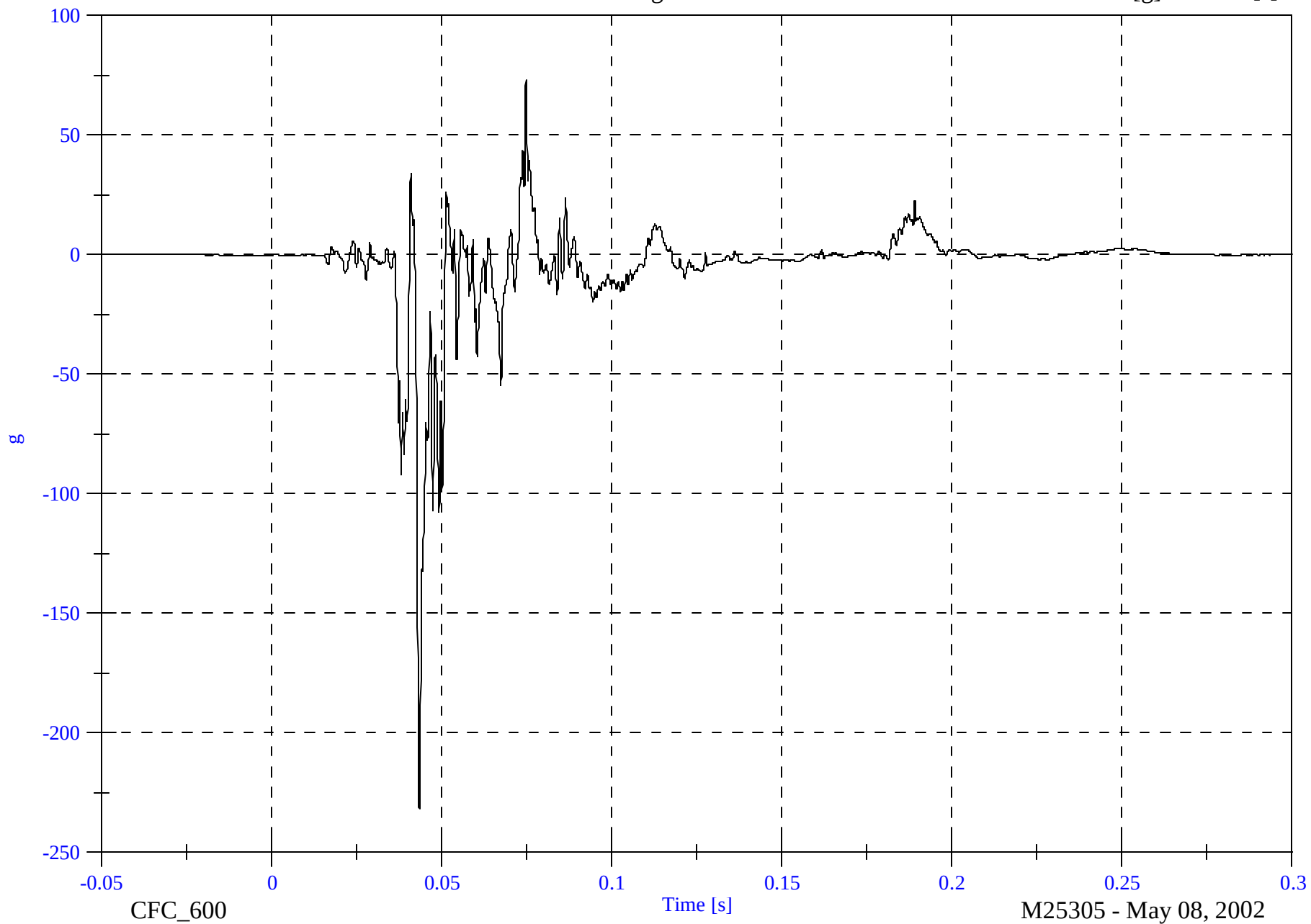
P1 Right Foot Fore z

Max: 72.9 [g] at 0.075 [s]

Min: -231.8 [g] at 0.043 [s]

B-56

8642-NCAP-12

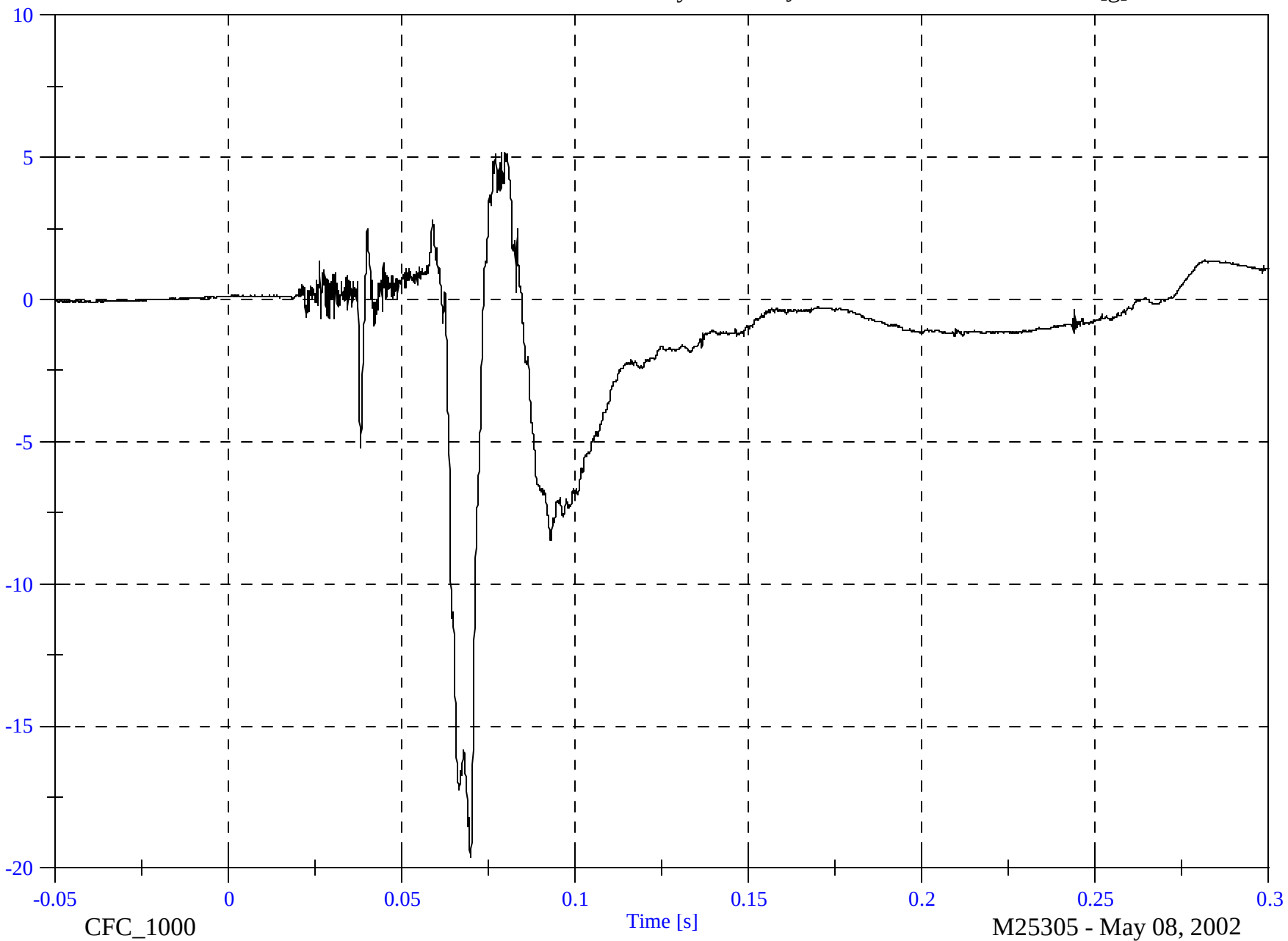


NCAP Test 12 - 2002 Honda Odyssey

P2 Head 9 Array X Arm Ay

Max: 5.2 [g] at 0.080 [s]

Min: -19.6 [g] at 0.070 [s]



B-57

8642-NCAP-12

CFC_1000

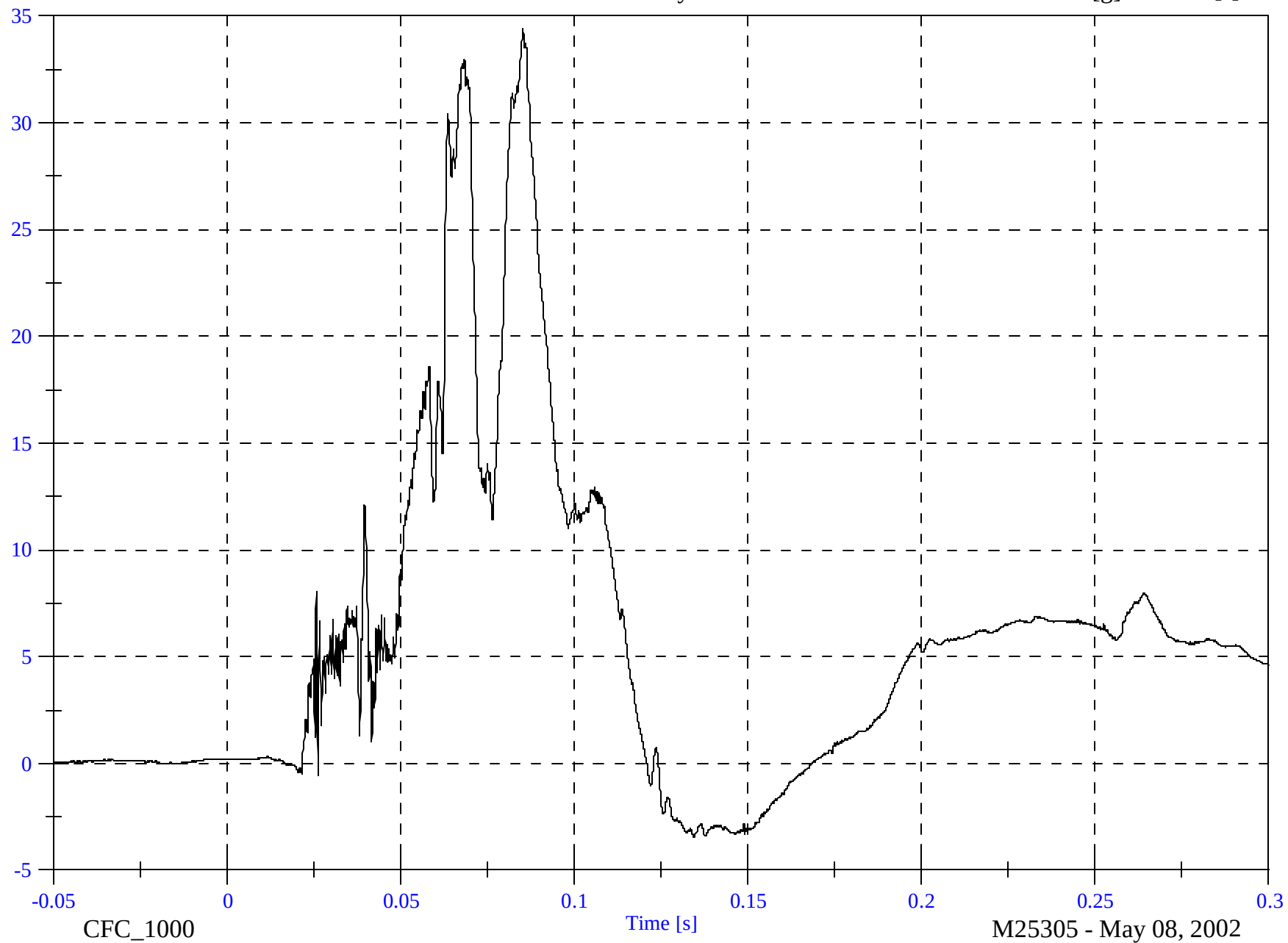
M25305 - May 08, 2002

NCAP Test 12 - 2002 Honda Odyssey

P2 Head 9 Array X Arm Az

Max: 34.4 [g] at 0.085 [s]

Min: -3.4 [g] at 0.134 [s]



B-58

8642-NCAP-12

CFC_1000

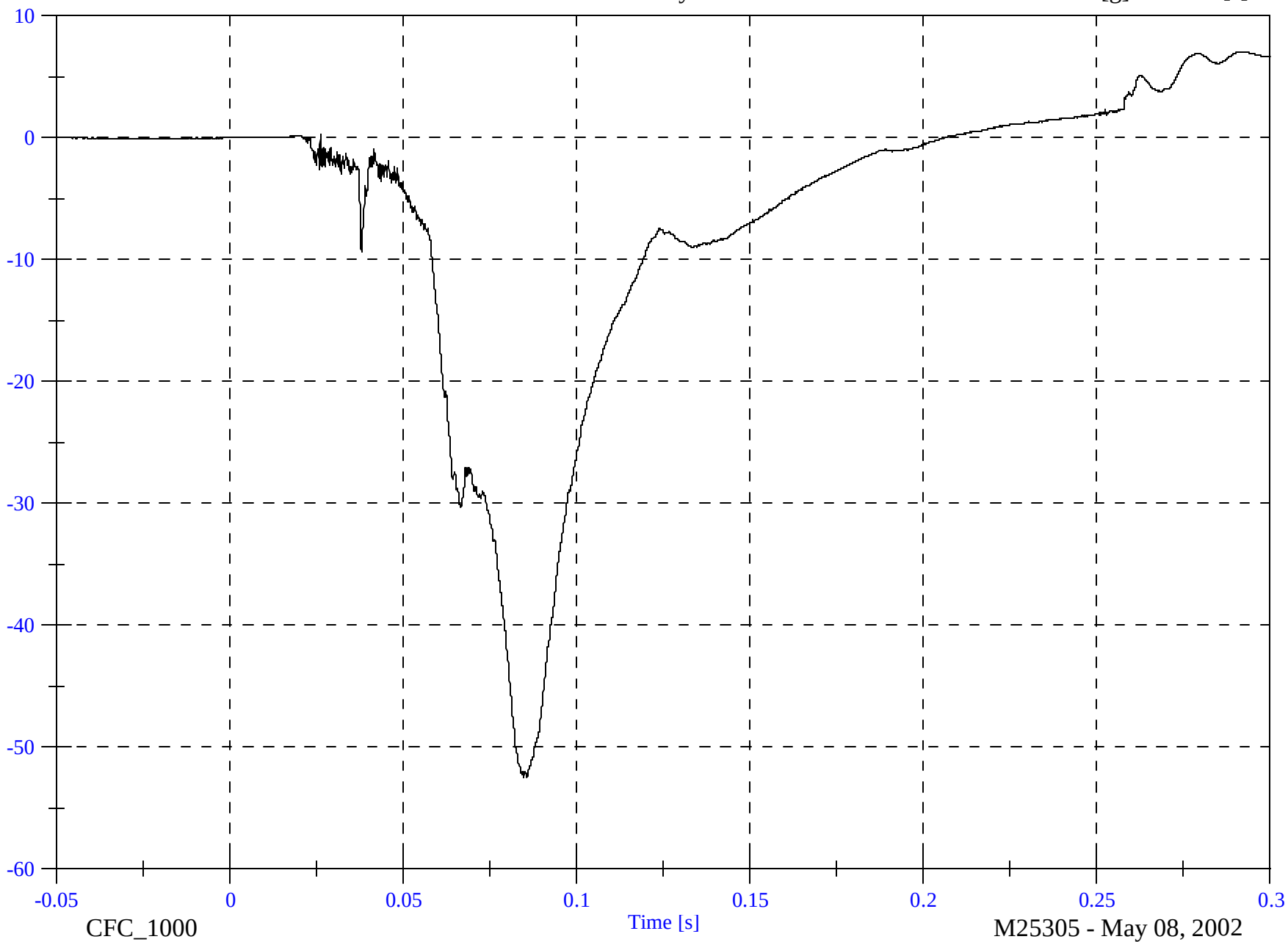
M25305 - May 08, 2002

NCAP Test 12 - 2002 Honda Odyssey

P2 Head 9 Array Y Arm Ax

Max: 7.1 [g] at 0.292 [s]

Min: -52.4 [g] at 0.085 [s]



B-59

8642-NCAP-12

NCAP Test 12 - 2002 Honda Odyssey

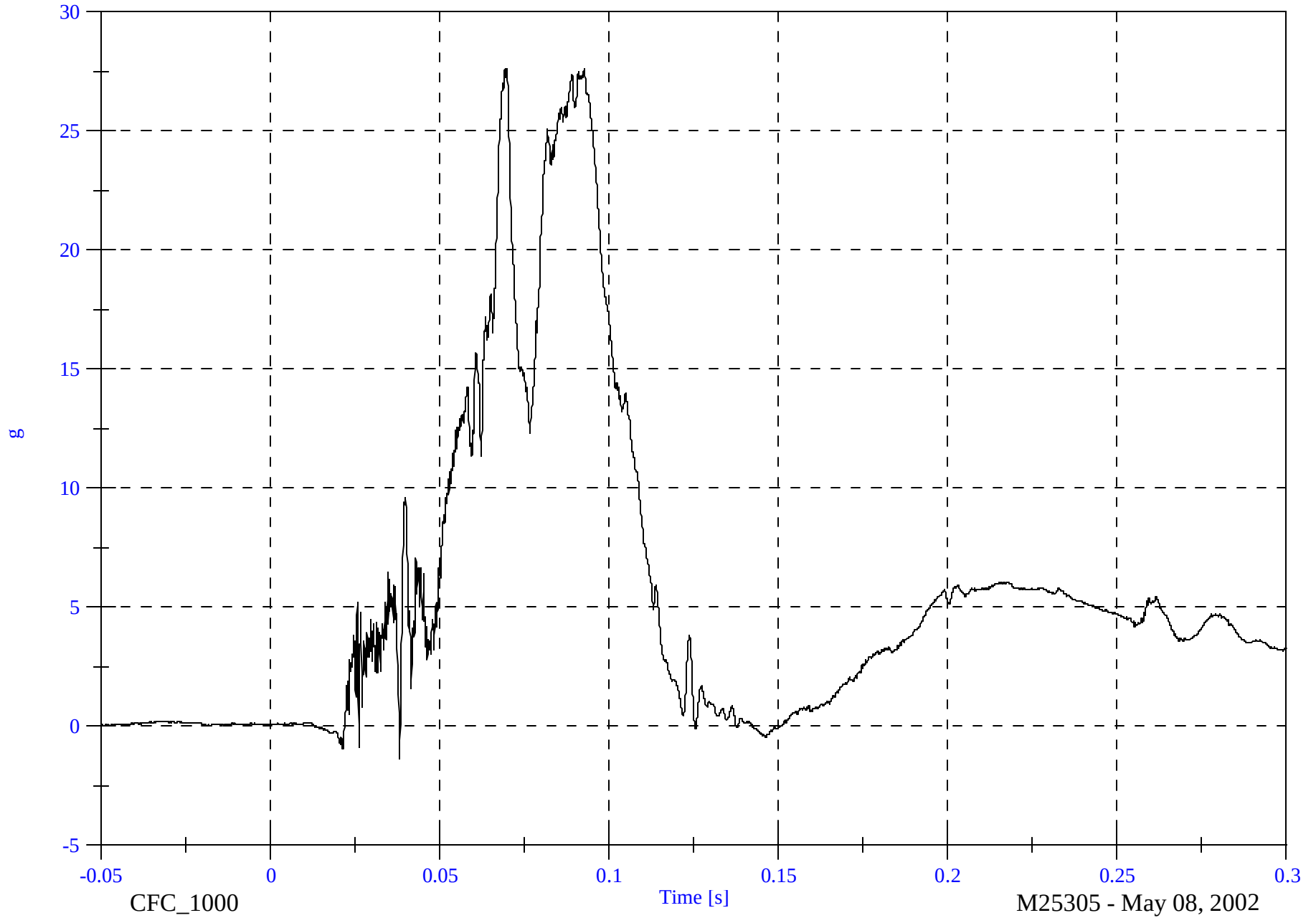
P2 Head 9 Array Y Arm Az

Max: 27.6 [g] at 0.093 [s]

Min: -1.3 [g] at 0.038 [s]

B-60

8642-NCAP-12



NCAP Test 12 - 2002 Honda Odyssey

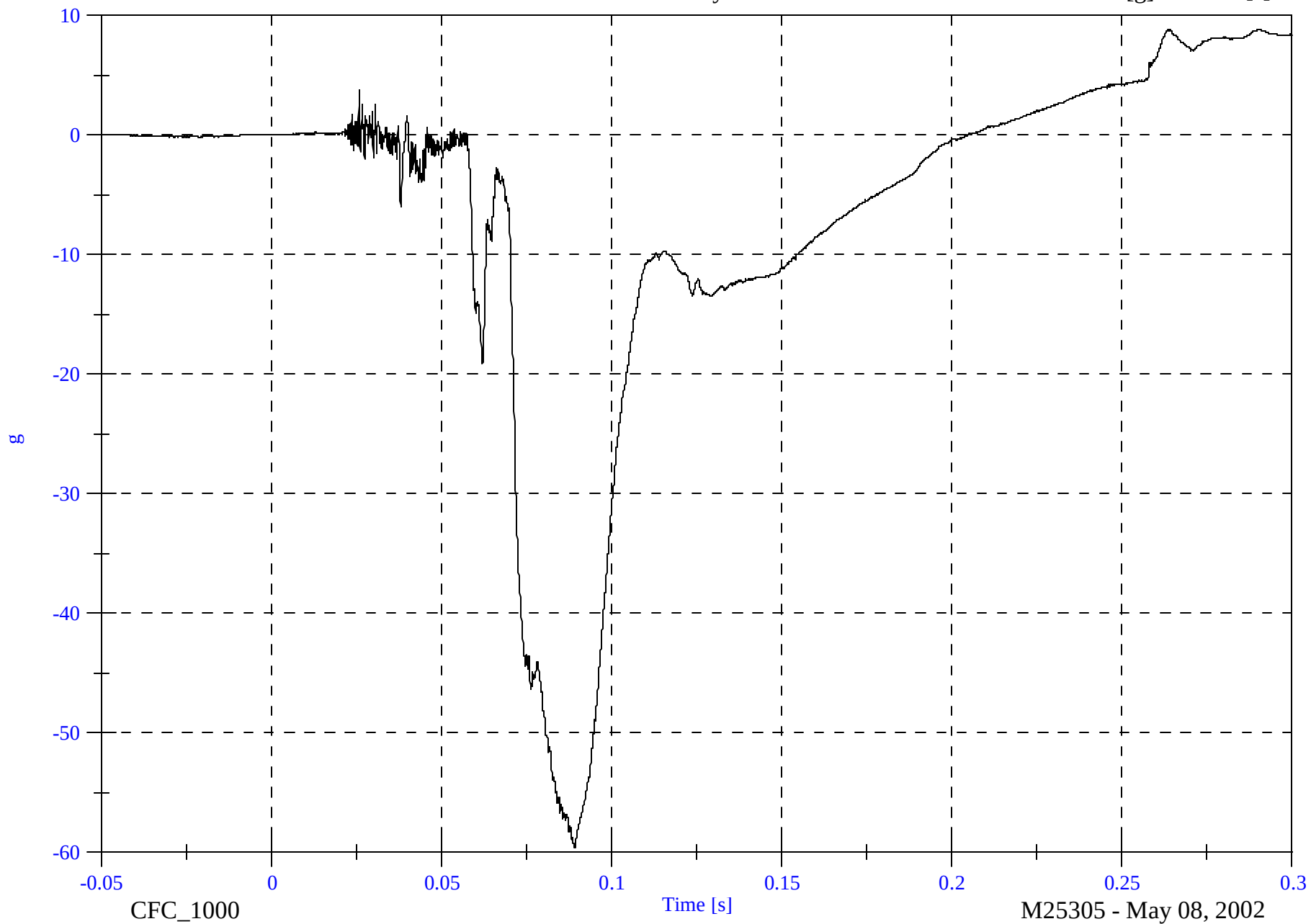
P2 Head 9 Array Z Arm Ax

Max: 8.9 [g] at 0.264 [s]

Min: -59.6 [g] at 0.089 [s]

B-61

8642-NCAP-12



NCAP Test 12 - 2002 Honda Odyssey

P2 Head 9 Array Z Arm Ay

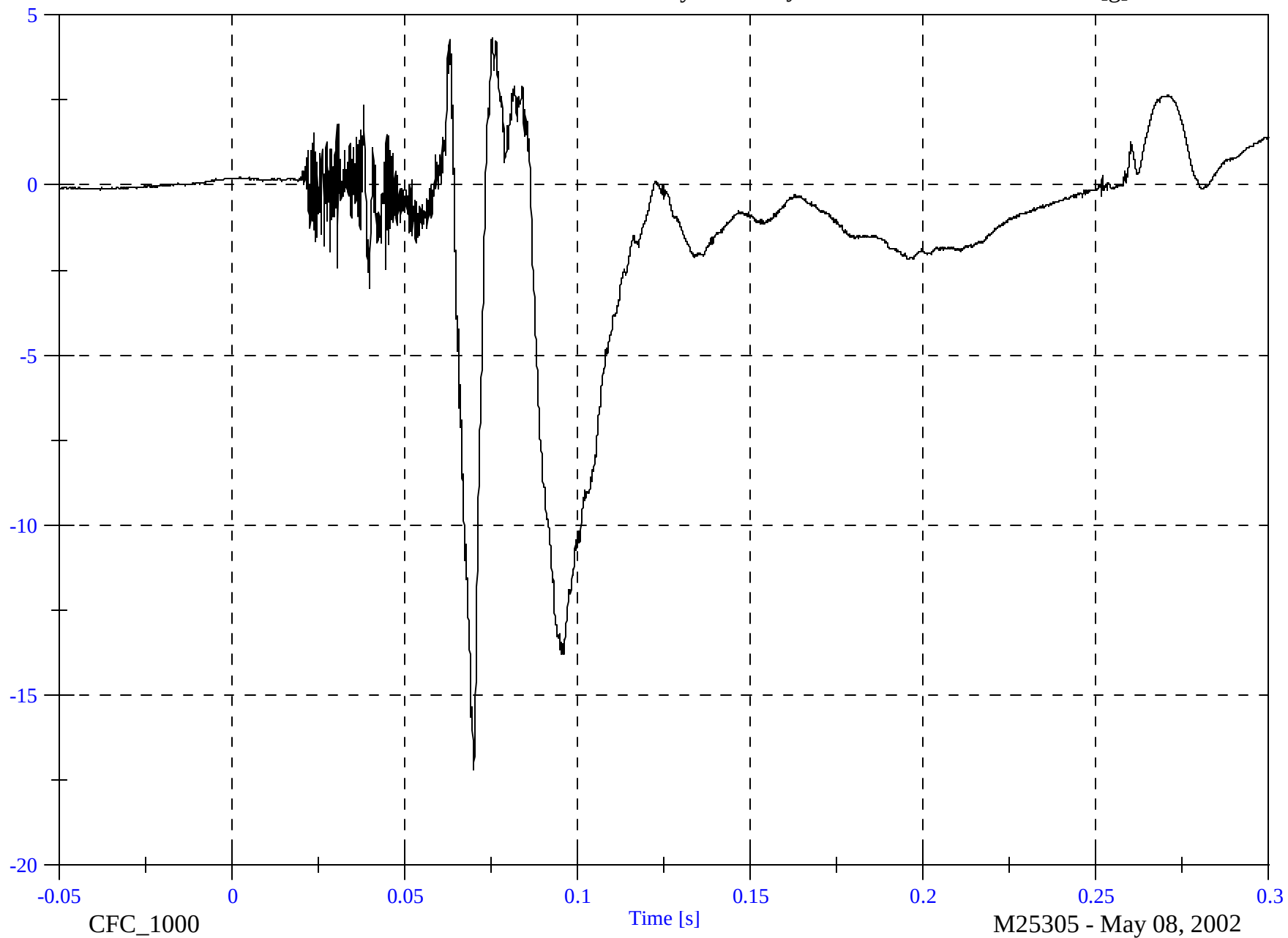
Max: 4.3 [g] at 0.075 [s]

Min: -17.2 [g] at 0.070 [s]

B-62

8642-NCAP-12

g



NCAP Test 12 - 2002 Honda Odyssey

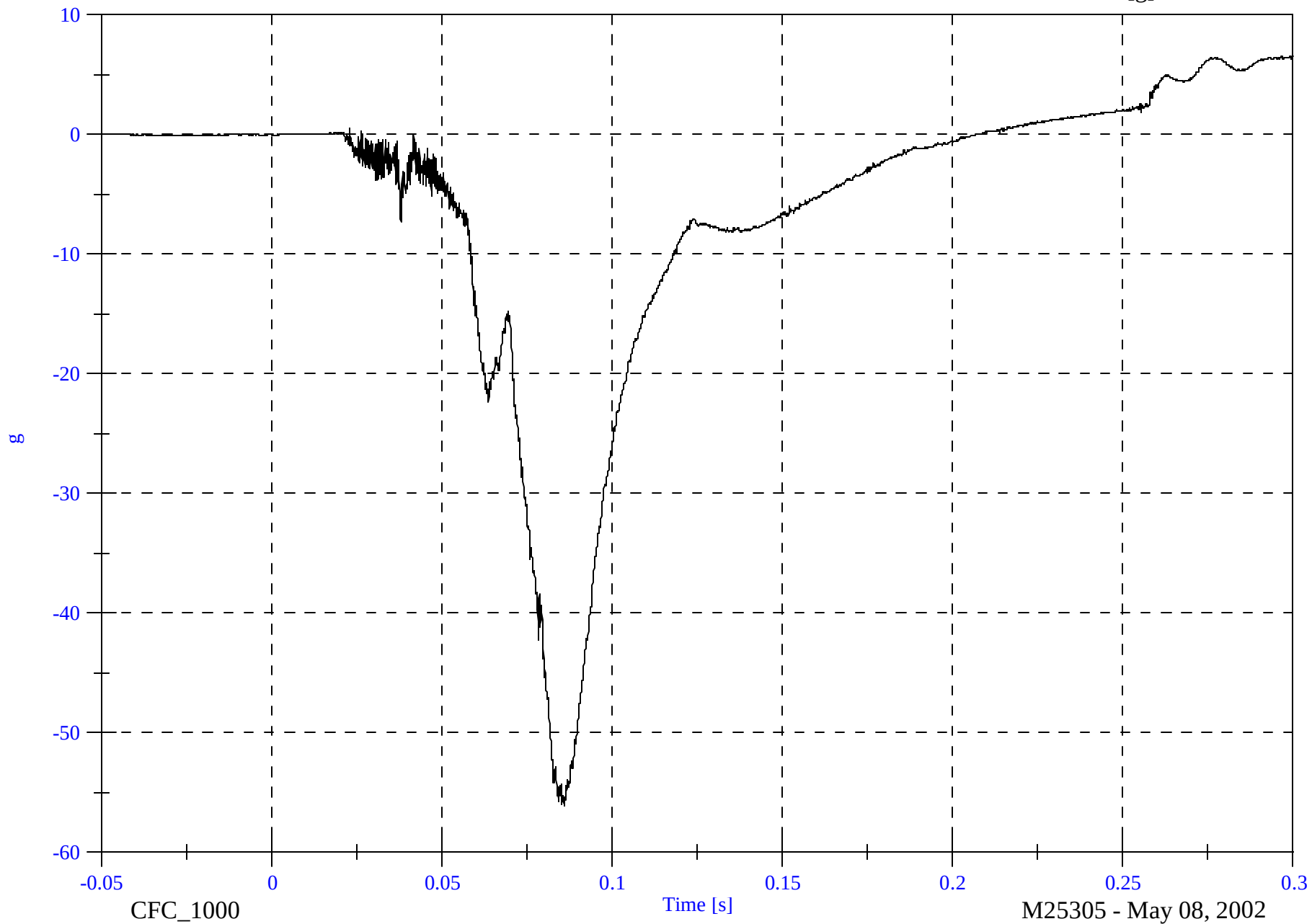
P2 Head CG x

Max: 6.5 [g] at 0.299 [s]

Min: -56.1 [g] at 0.086 [s]

B-63

8642-NCAP-12



NCAP Test 12 - 2002 Honda Odyssey

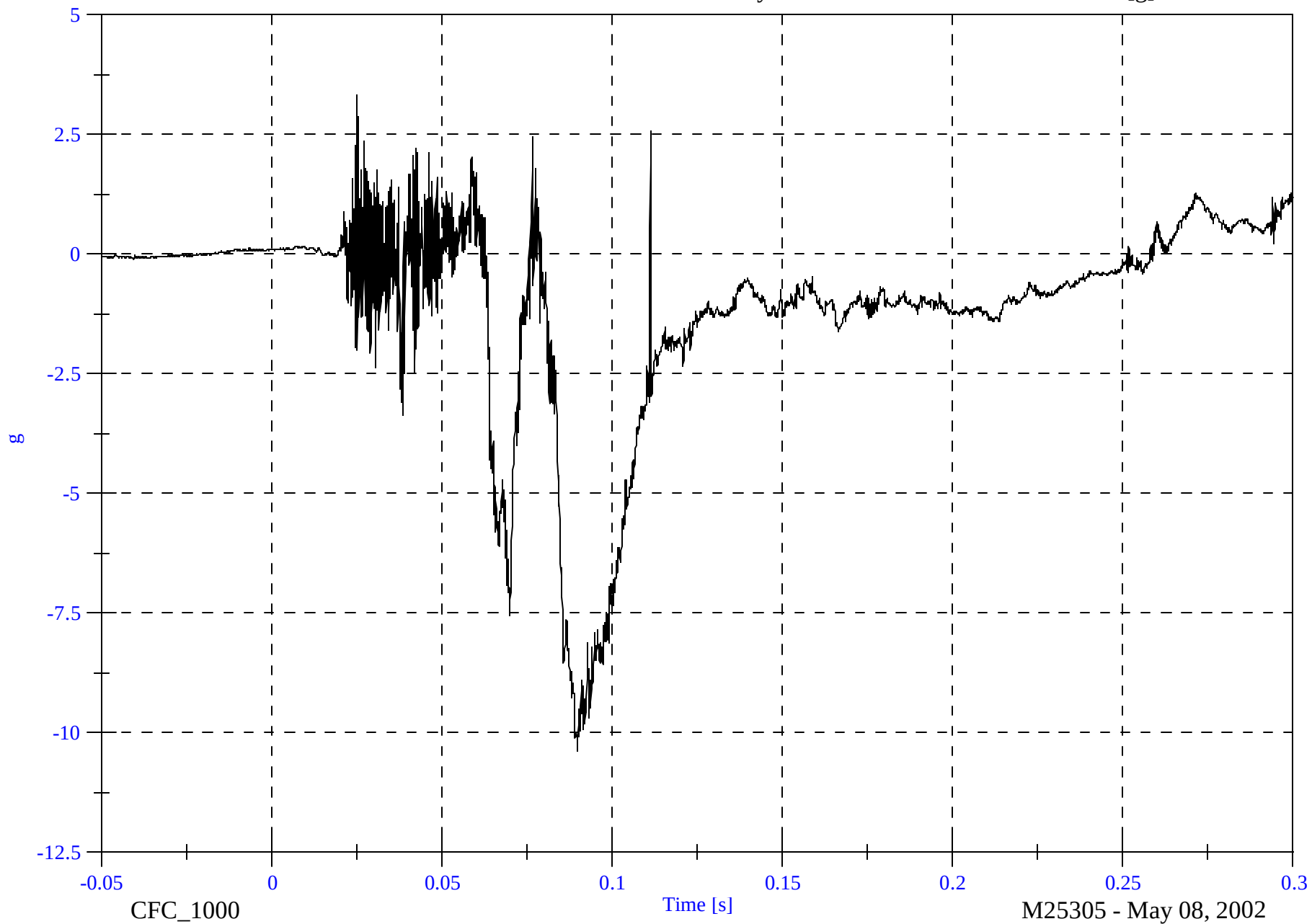
P2 Head CG y

Max: 3.3 [g] at 0.025 [s]

Min: -10.4 [g] at 0.090 [s]

B-64

8642-NCAP-12

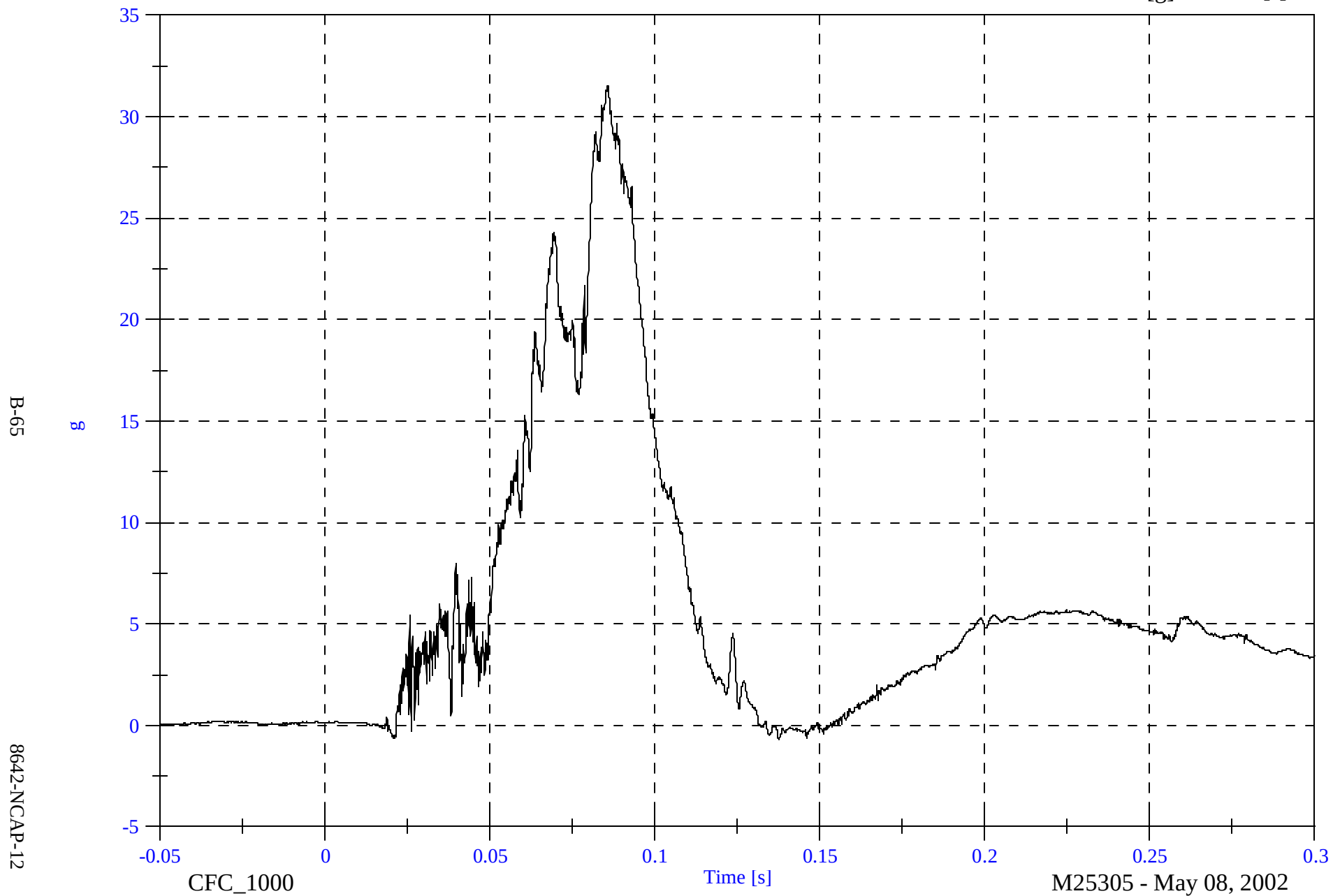


NCAP Test 12 - 2002 Honda Odyssey

Max: 31.5 [g] at 0.086 [s]

Min: -0.7 [g] at 0.138 [s]

P2 Head CG z



NCAP Test 12 - 2002 Honda Odyssey

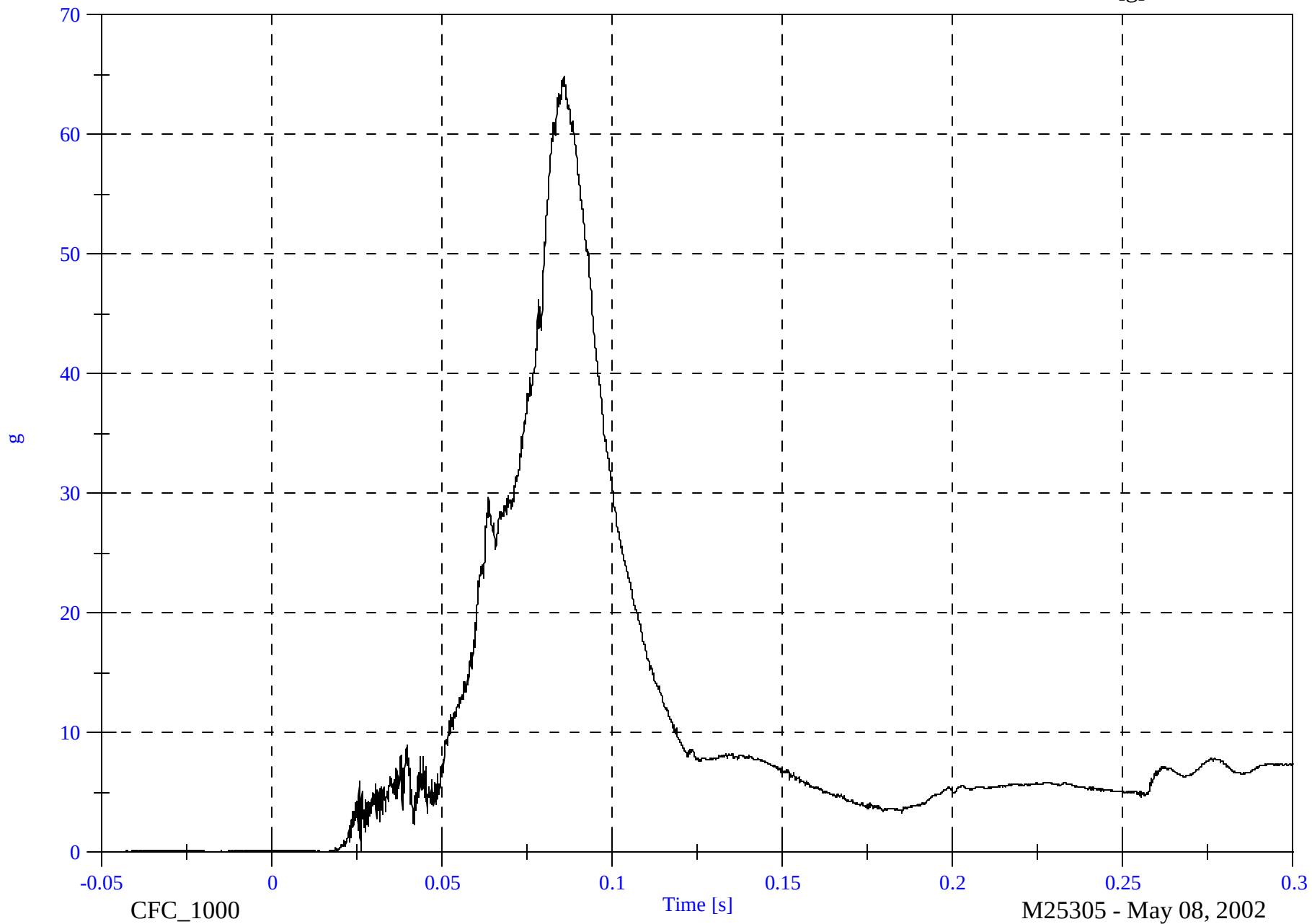
P2 Head CG Resultant

Max: 64.9 [g] at 0.086 [s]

Min: 0.0 [g] at 0.016 [s]

B-66

8642-NCAP-12

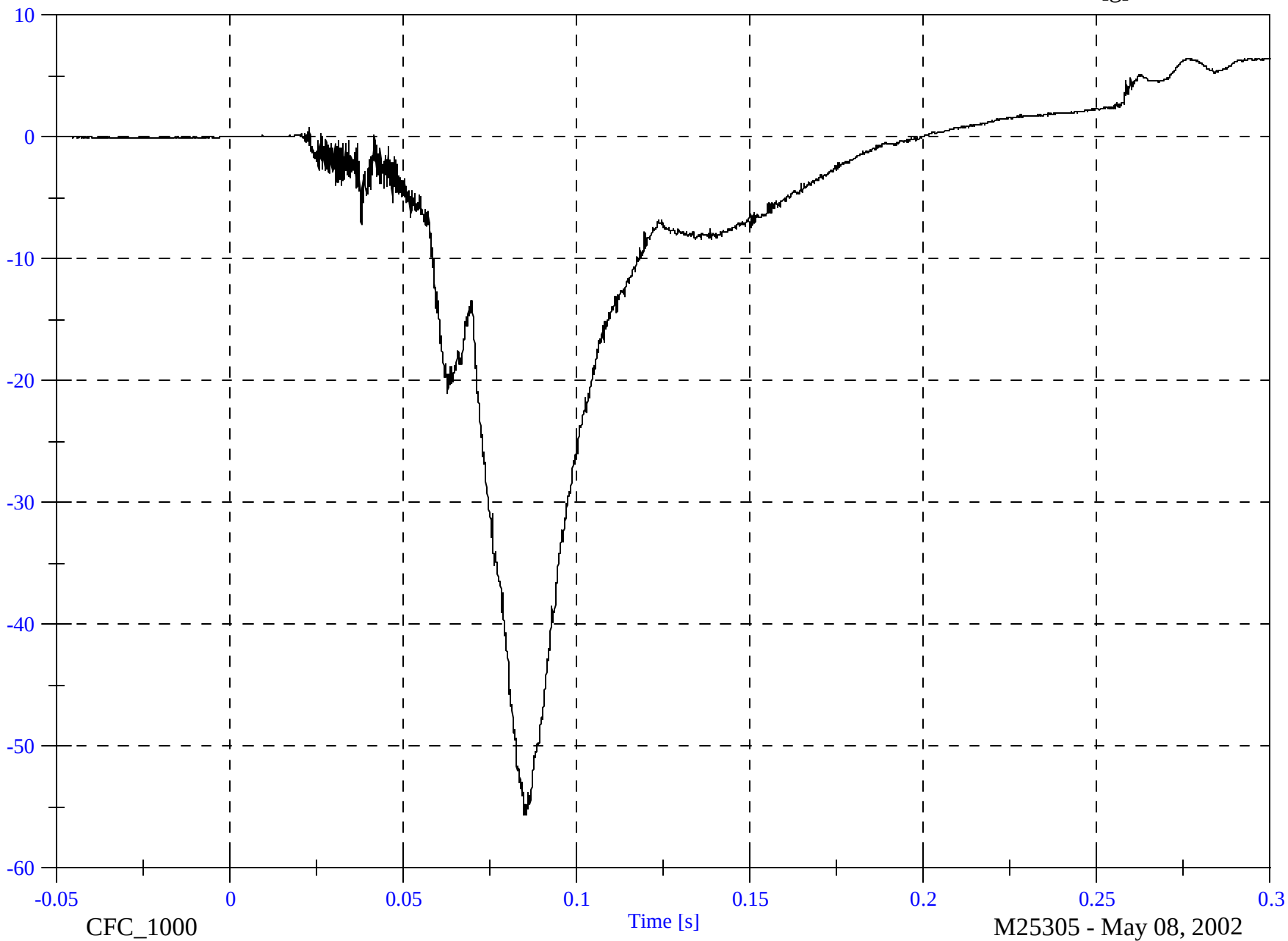


NCAP Test 12 - 2002 Honda Odyssey

P2 Head CG Red x

Max: 6.5 [g] at 0.276 [s]

Min: -55.6 [g] at 0.086 [s]



B-67

8642-NCAP-12

NCAP Test 12 - 2002 Honda Odyssey

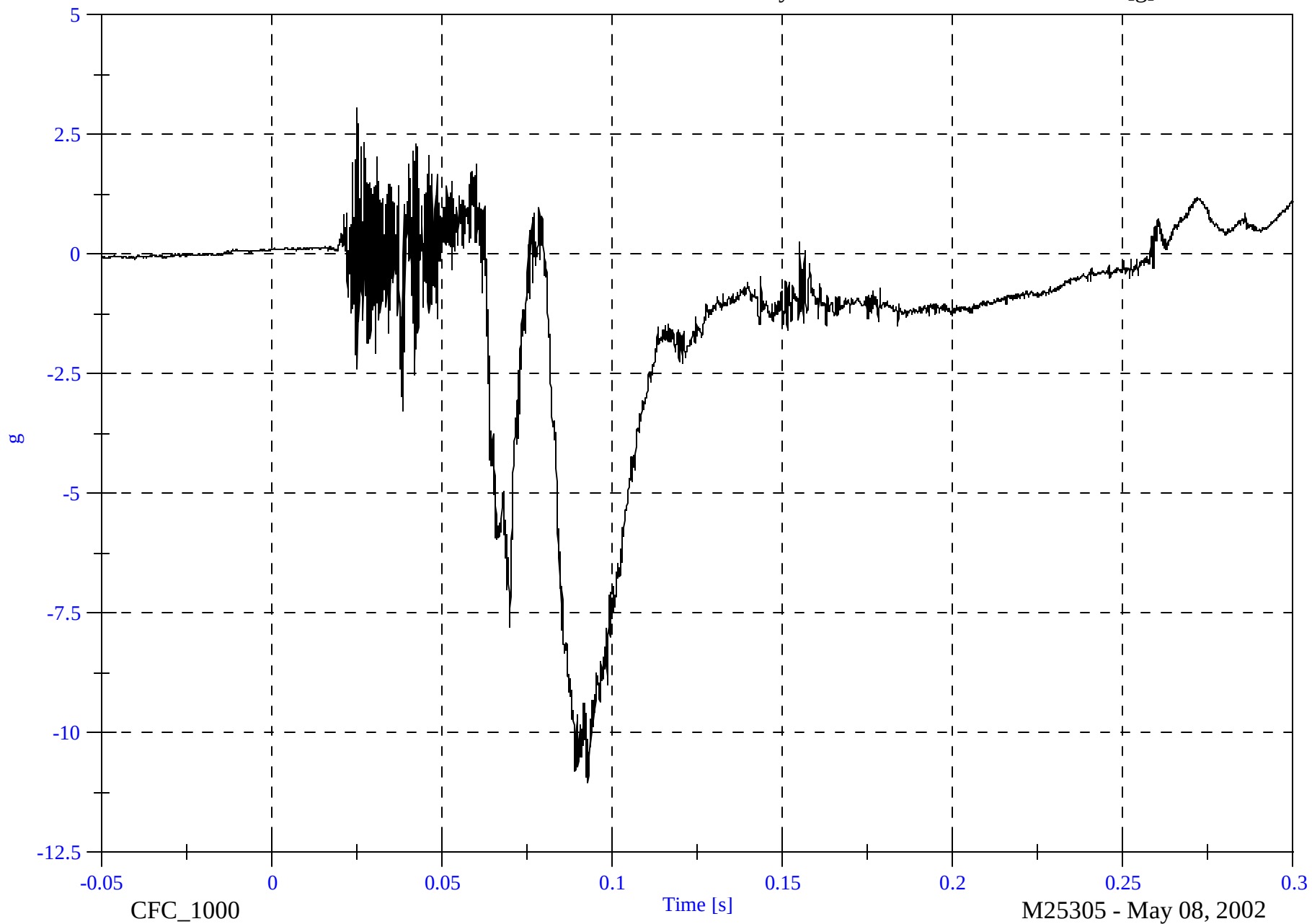
P2 Head CG Red y

Max: 3.1 [g] at 0.025 [s]

Min: -11.0 [g] at 0.093 [s]

B-68

8642-NCAP-12



NCAP Test 12 - 2002 Honda Odyssey

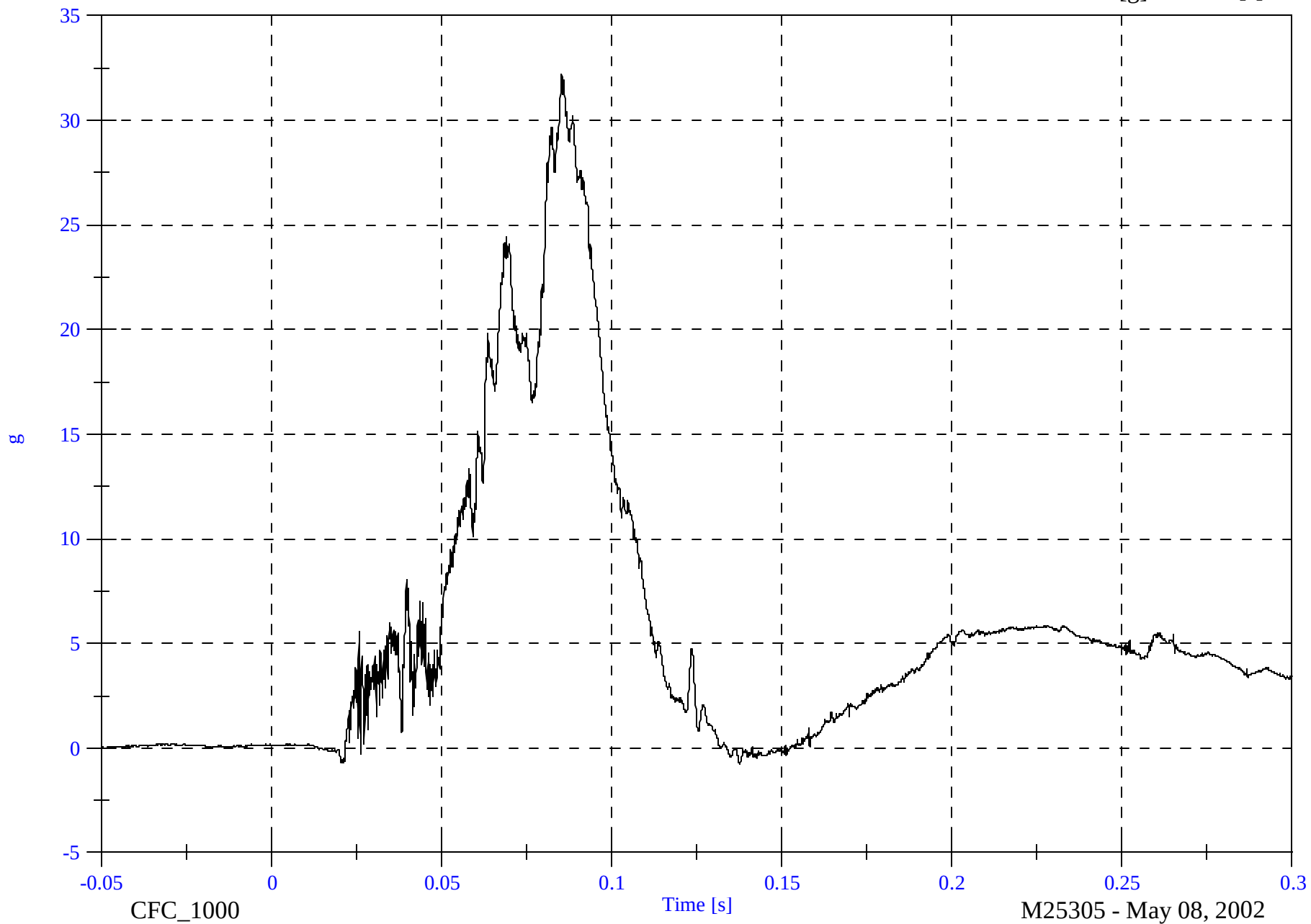
P2 Head CG Red z

Max: 32.2 [g] at 0.085 [s]

Min: -0.8 [g] at 0.138 [s]

B-69

8642-NCAP-12



NCAP Test 12 - 2002 Honda Odyssey

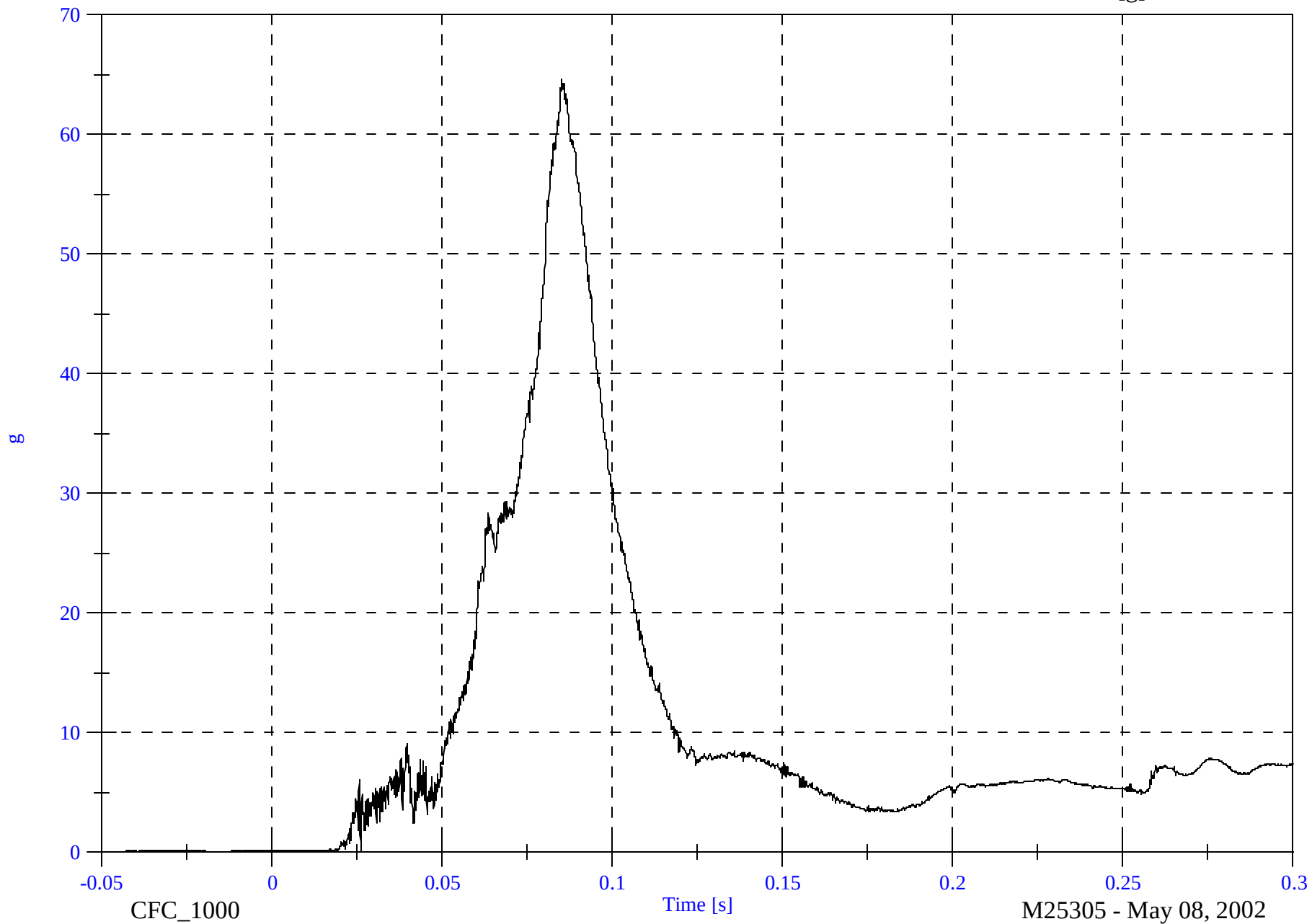
P2 Head CG Red Resultant

Max: 64.6 [g] at 0.085 [s]

Min: 0.0 [g] at -0.046 [s]

B-70

8642-NCAP-12

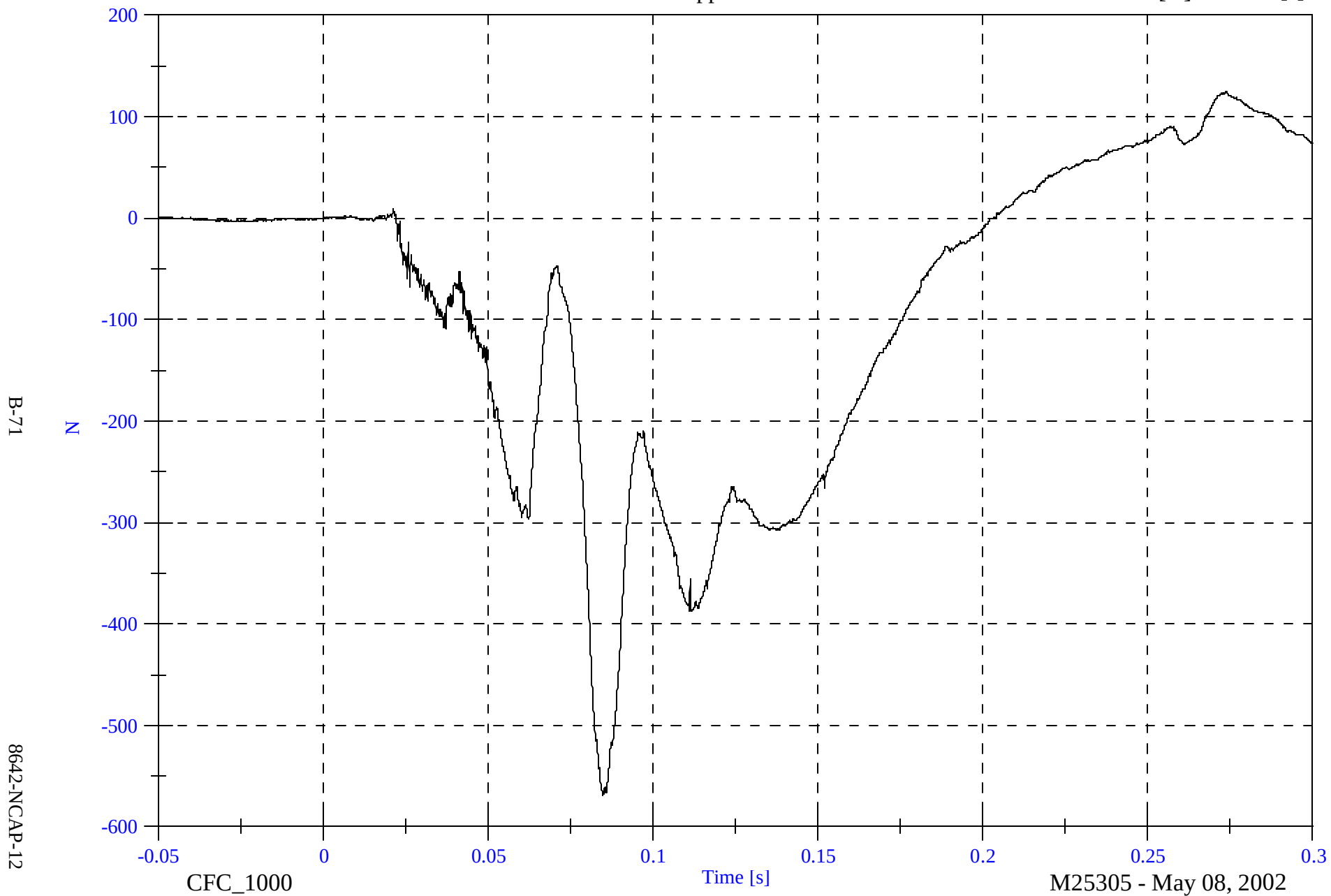


NCAP Test 12 - 2002 Honda Odyssey

P2 Upper Neck Fx

Max: 124.2 [N] at 0.274 [s]

Min: -568.8 [N] at 0.085 [s]

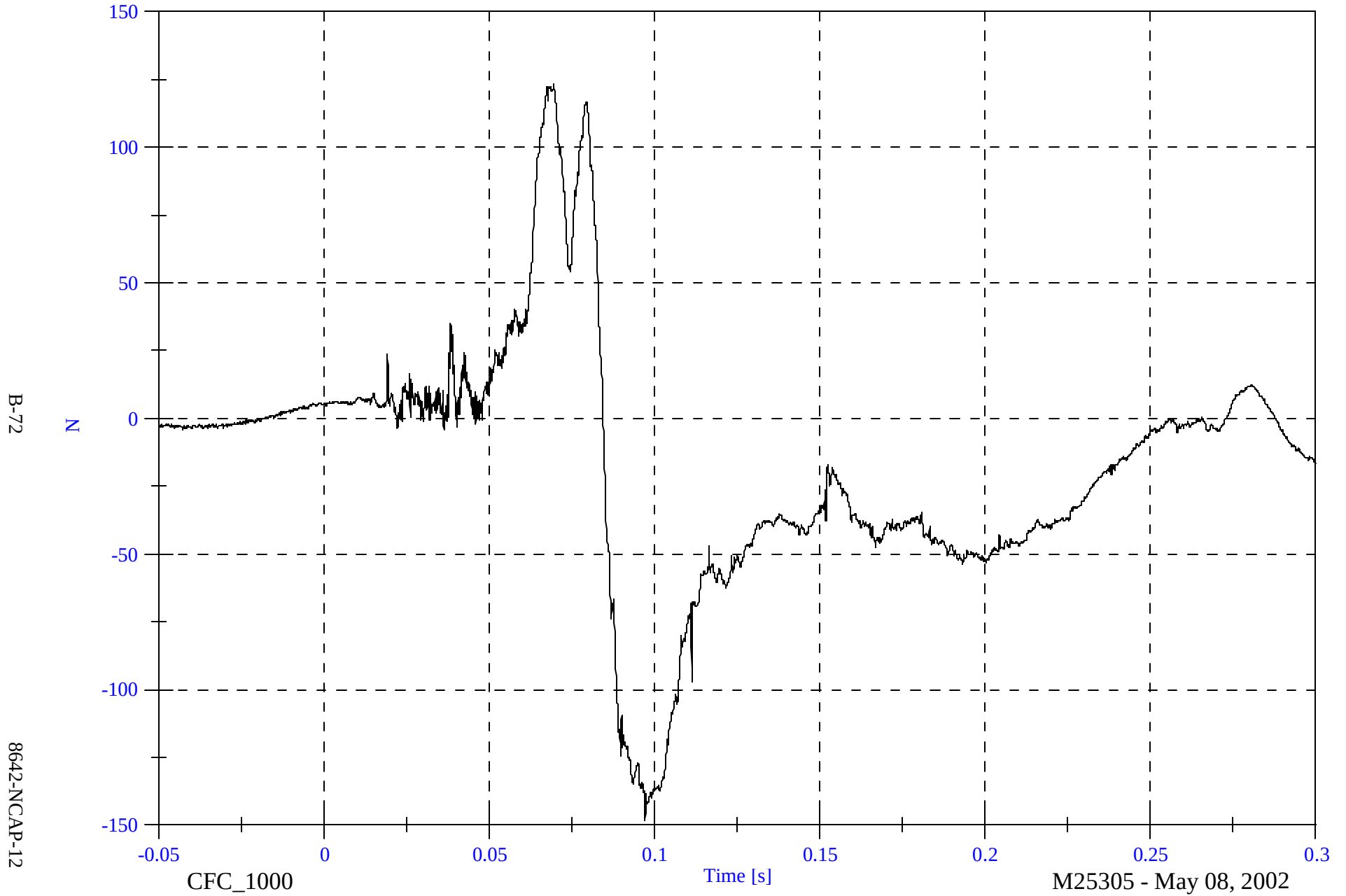


NCAP Test 12 - 2002 Honda Odyssey

P2 Upper Neck Fy

Max: 123.1 [N] at 0.070 [s]

Min: -148.2 [N] at 0.097 [s]

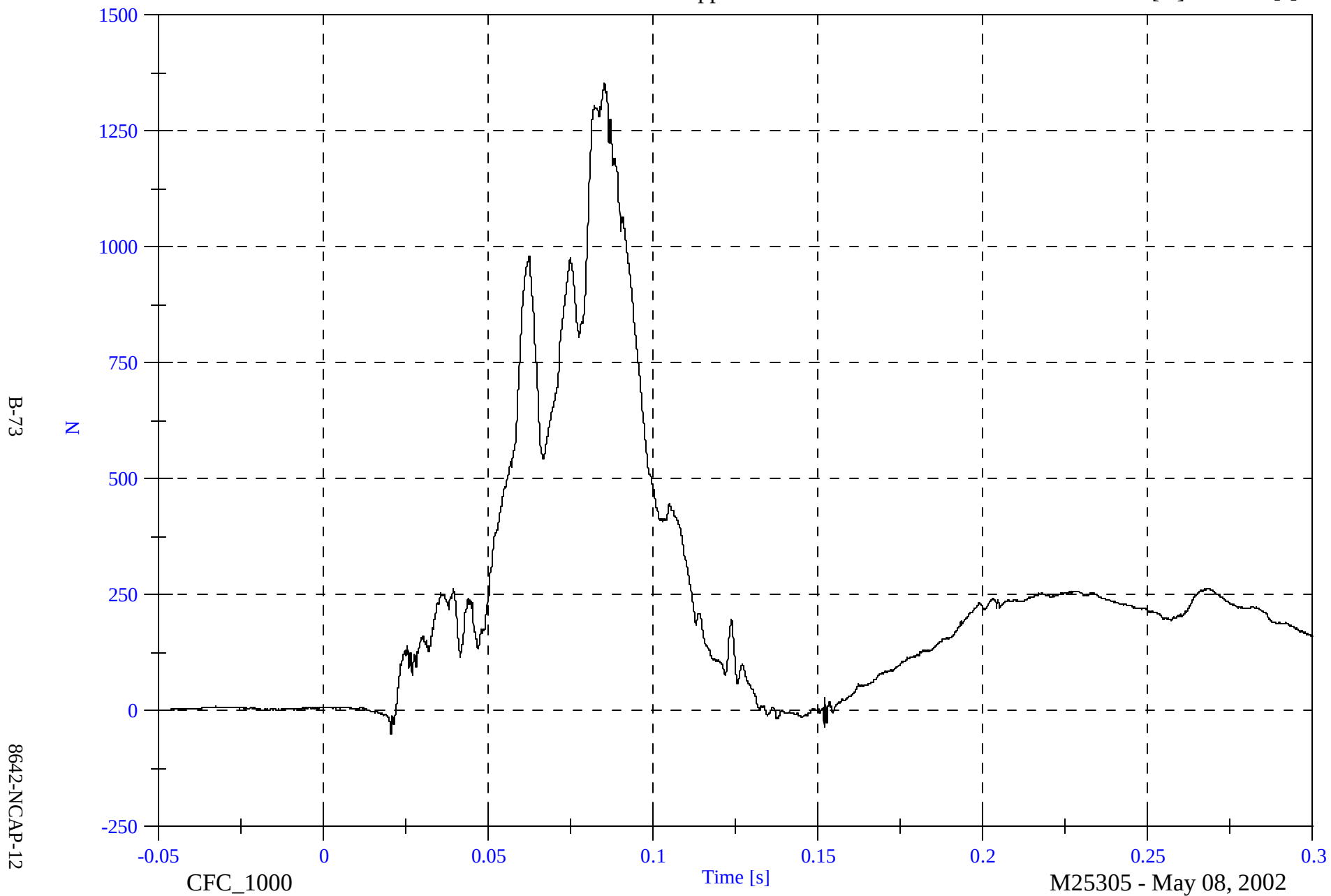


NCAP Test 12 - 2002 Honda Odyssey

Max: 1353.1 [N] at 0.085 [s]

Min: -49.9 [N] at 0.021 [s]

P2 Upper Neck Fz



NCAP Test 12 - 2002 Honda Odyssey

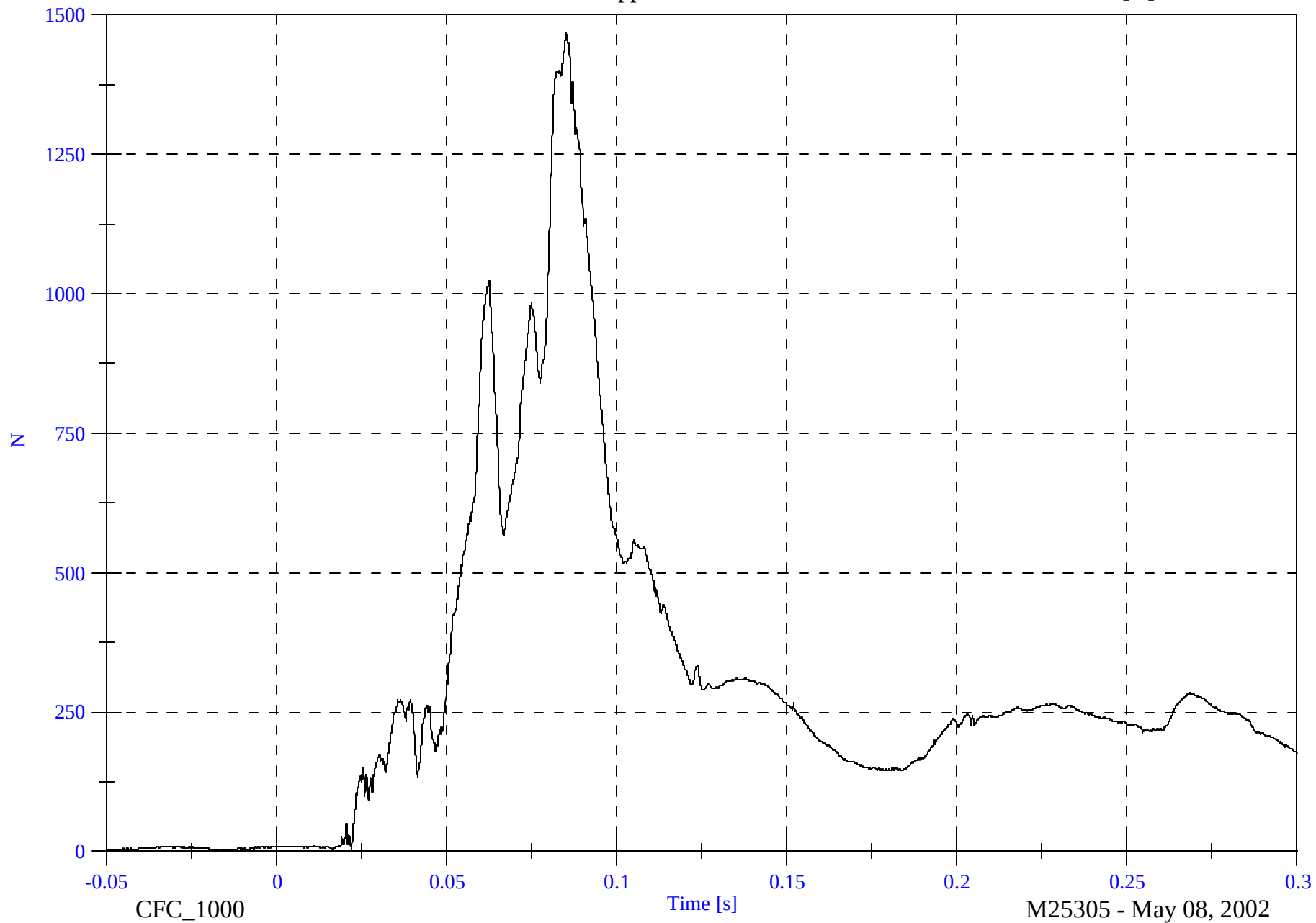
P2 Upper Neck F Resultant

Max: 1466.7 [N] at 0.085 [s]

Min: 1.5 [N] at 0.022 [s]

B-74

8642-NCAP-12



NCAP Test 12 - 2002 Honda Odyssey

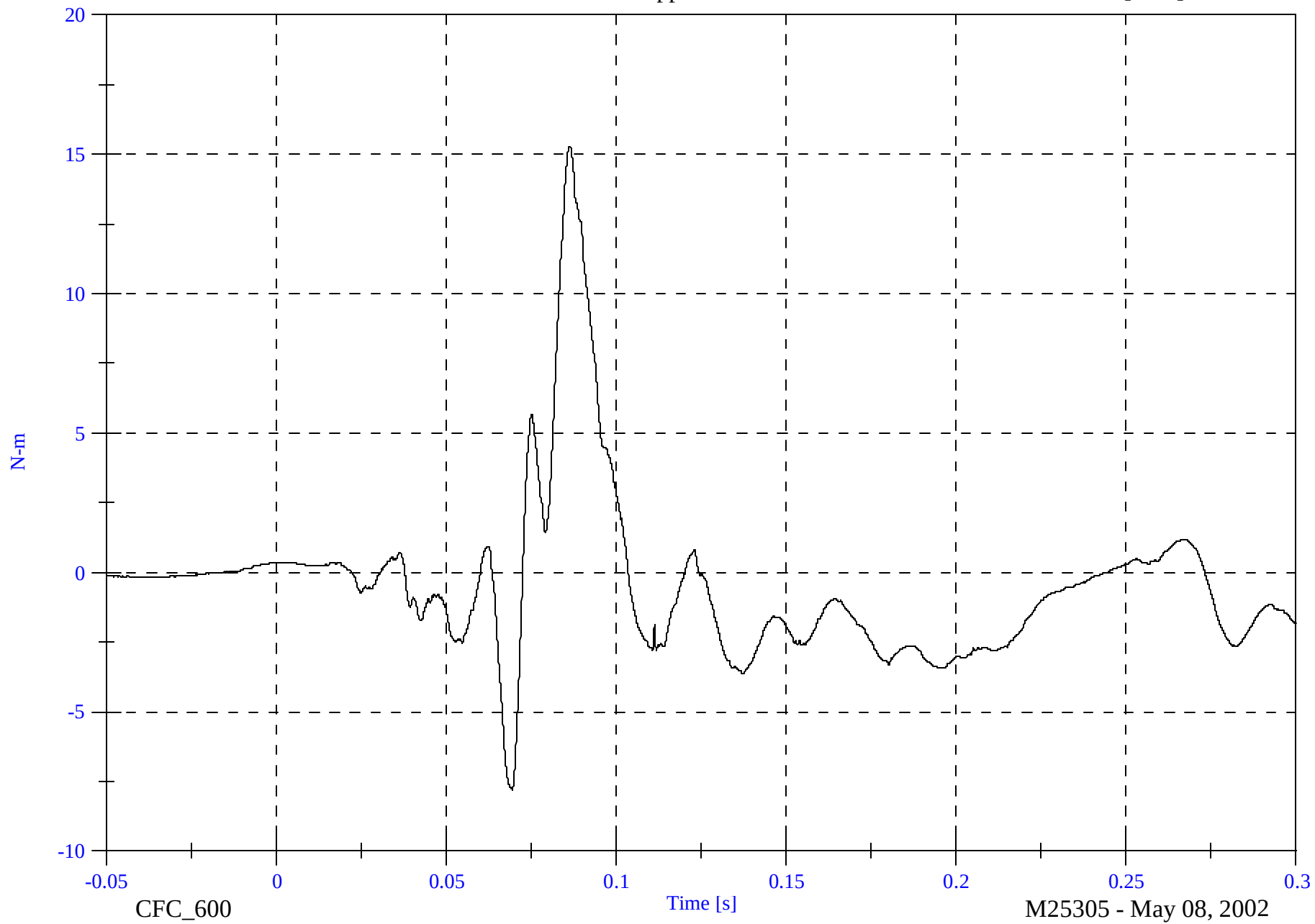
P2 Upper Neck Mx

Max: 15.3 [N-m] at 0.086 [s]

Min: -7.8 [N-m] at 0.069 [s]

B-75

8642-NCAP-12



NCAP Test 12 - 2002 Honda Odyssey

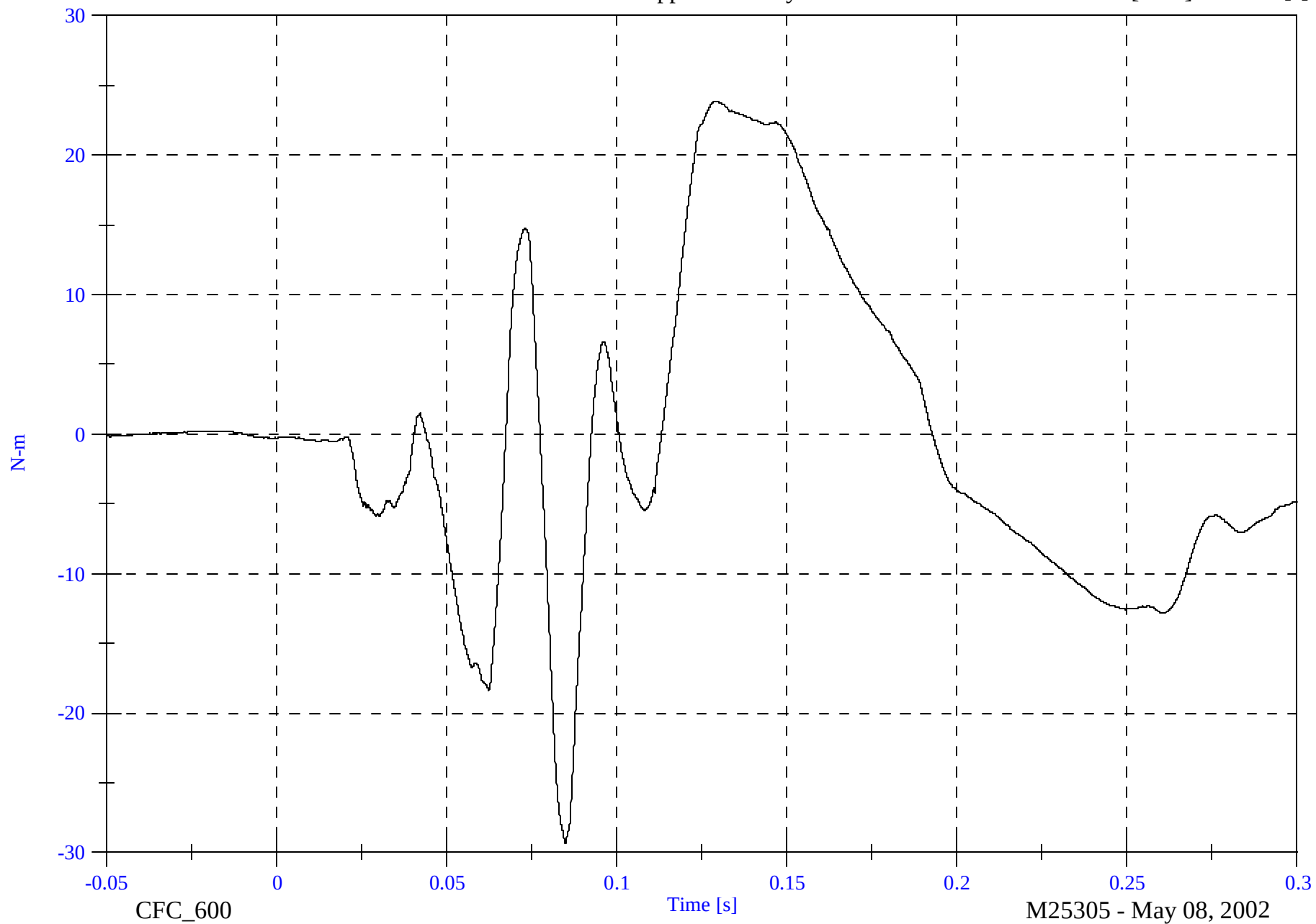
P2 Upper Neck My

Max: 23.8 [N-m] at 0.129 [s]

Min: -29.3 [N-m] at 0.085 [s]

B-76

8642-NCAP-12

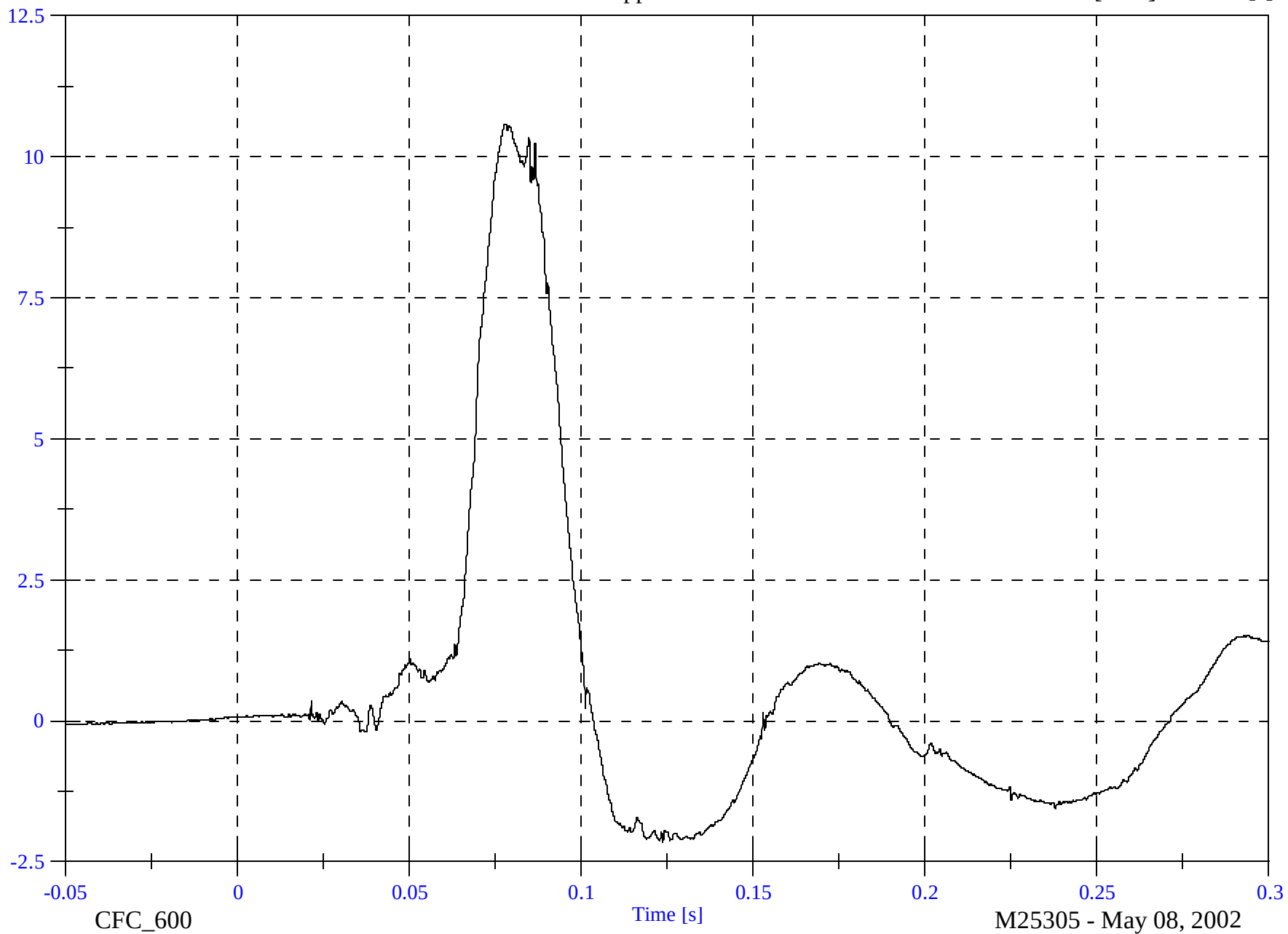


NCAP Test 12 - 2002 Honda Odyssey

P2 Upper Neck Mz

Max: 10.6 [N-m] at 0.078 [s]

Min: -2.1 [N-m] at 0.124 [s]



B-77

8642-NCAP-12

CFC_600

Time [s]

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NCAP Test 12 - 2002 Honda Odyssey

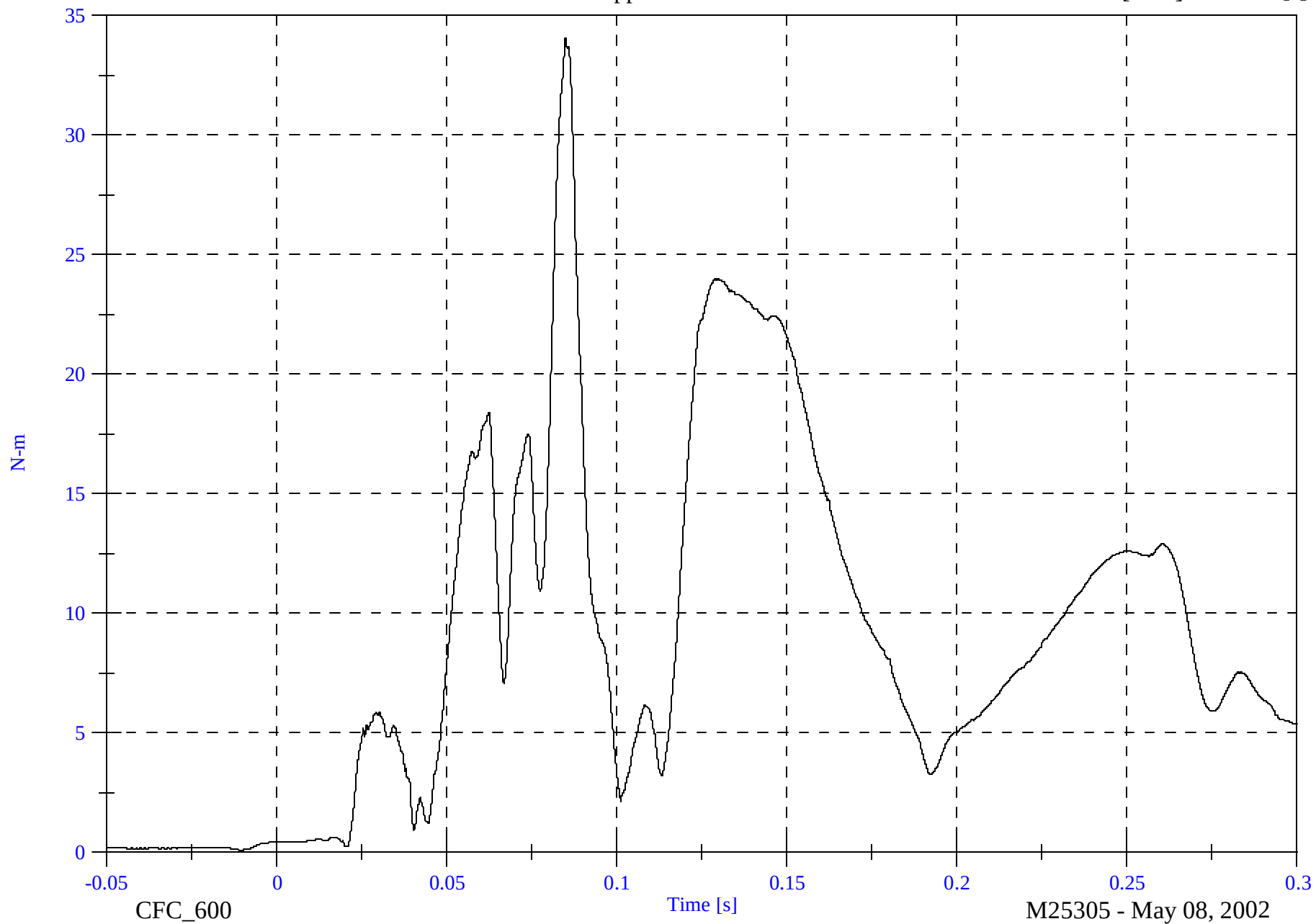
P2 Upper Neck M Resultant

Max: 34.0 [N-m] at 0.085 [s]

Min: 0.1 [N-m] at -0.011 [s]

B-78

8642-NCAP-12

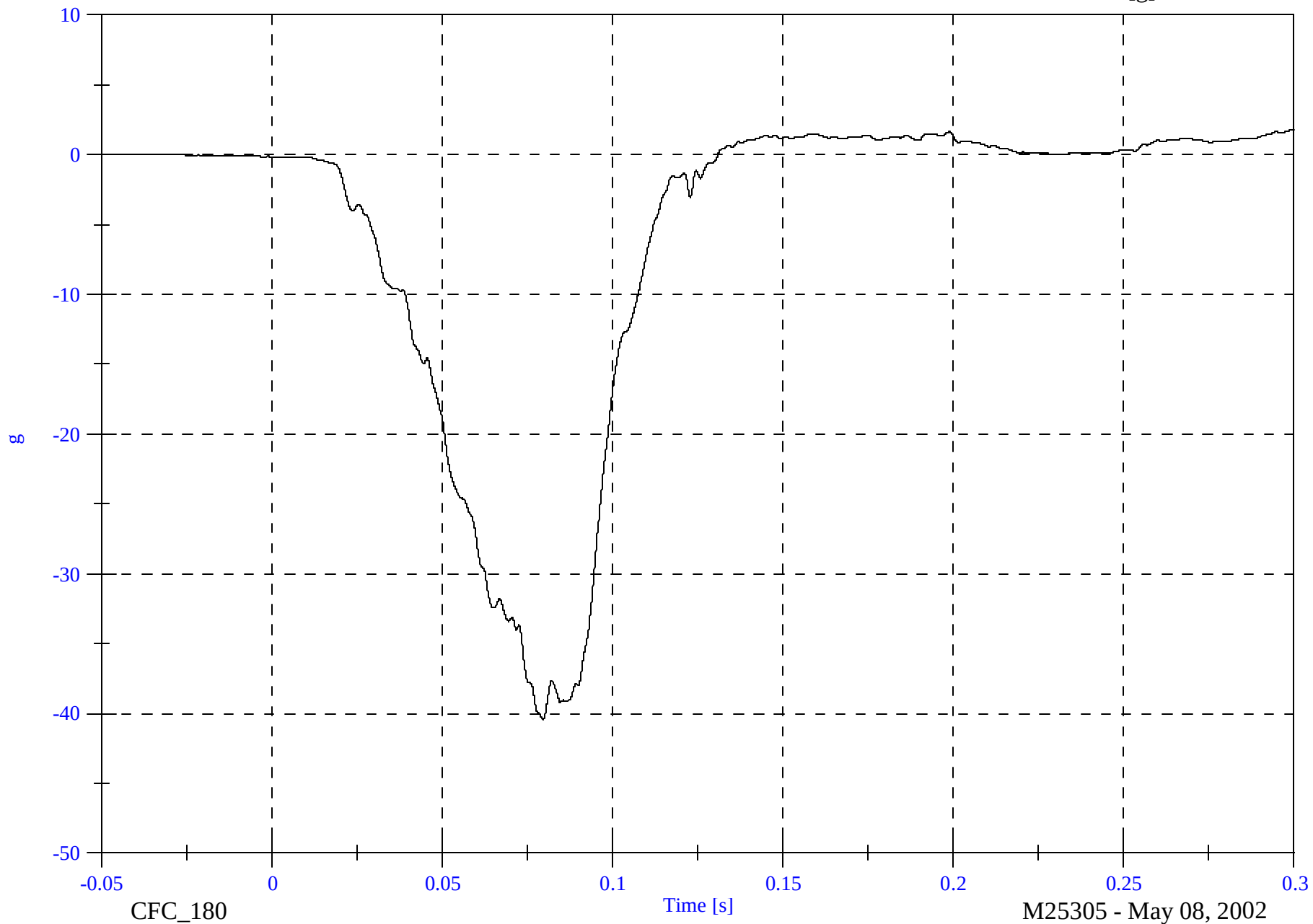


NCAP Test 12 - 2002 Honda Odyssey

P2 Chest x

Max: 1.8 [g] at 0.300 [s]

Min: -40.4 [g] at 0.080 [s]



B-79

8642-NCAP-12

NCAP Test 12 - 2002 Honda Odyssey

P2 Chest y

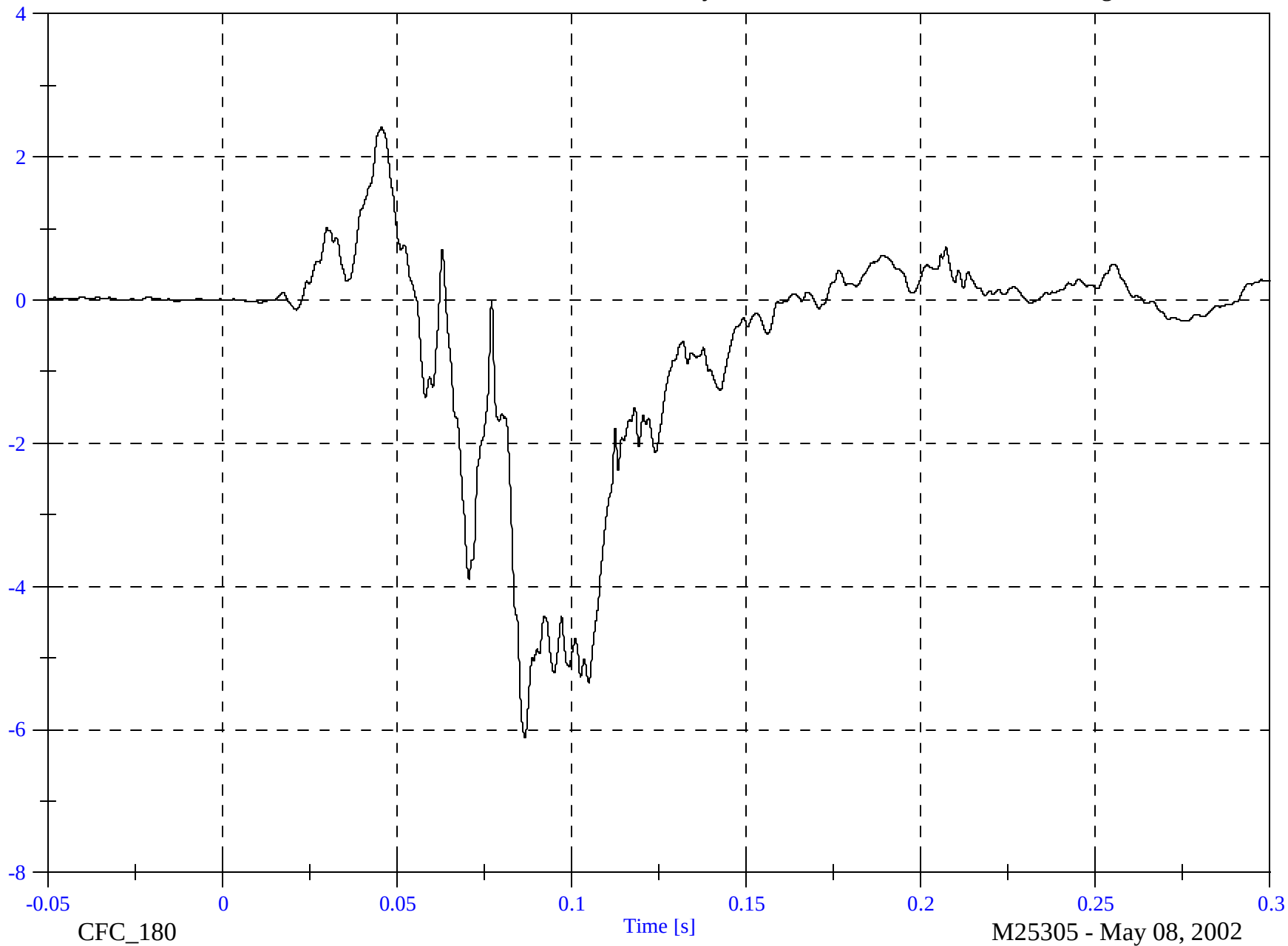
Max: 2.4 [g] at 0.046 [s]

Min: -6.1 [g] at 0.087 [s]

B-80

8642-NCAP-12

g



NCAP Test 12 - 2002 Honda Odyssey

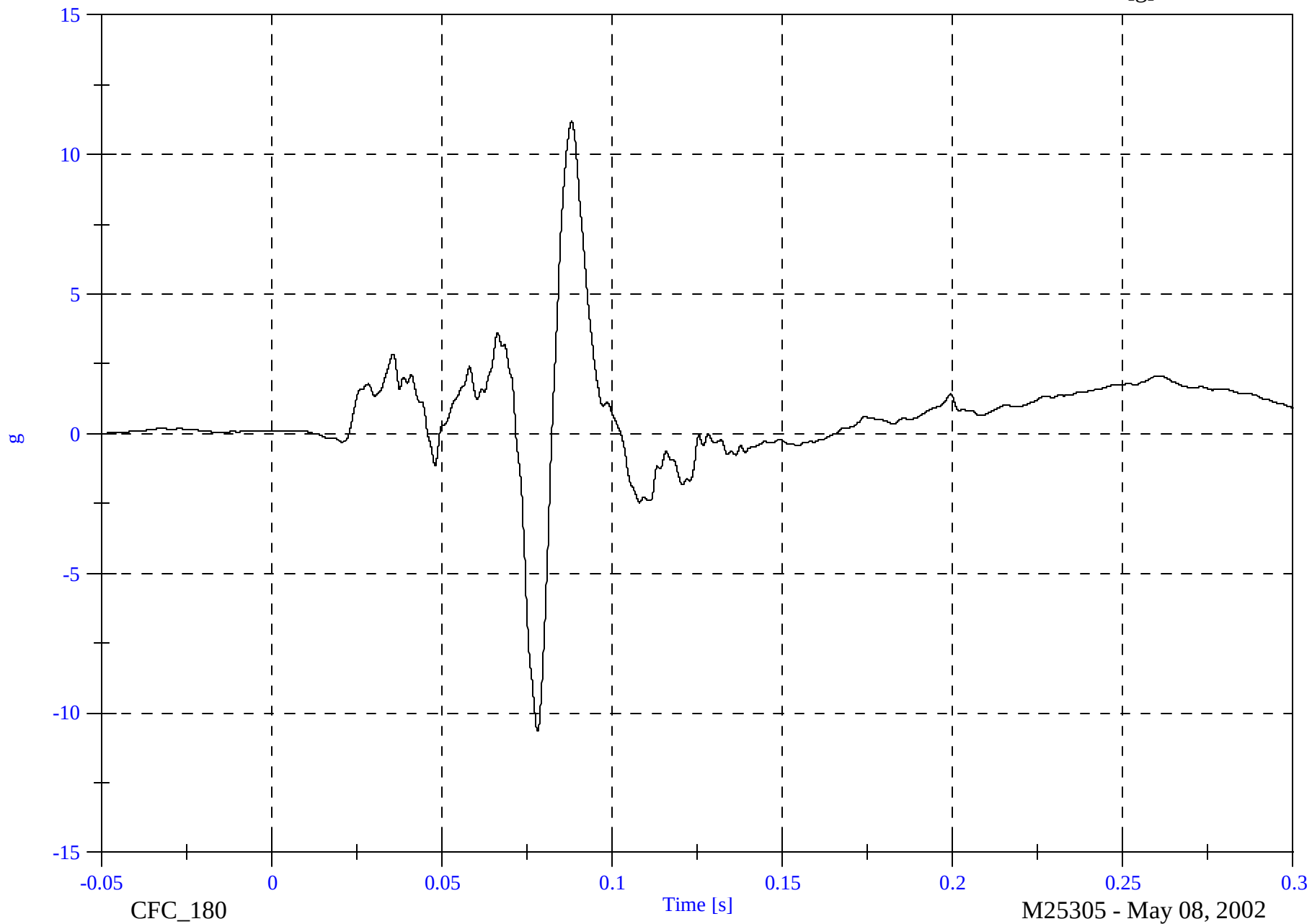
P2 Chest z

Max: 11.2 [g] at 0.088 [s]

Min: -10.6 [g] at 0.078 [s]

B-81

8642-NCAP-12

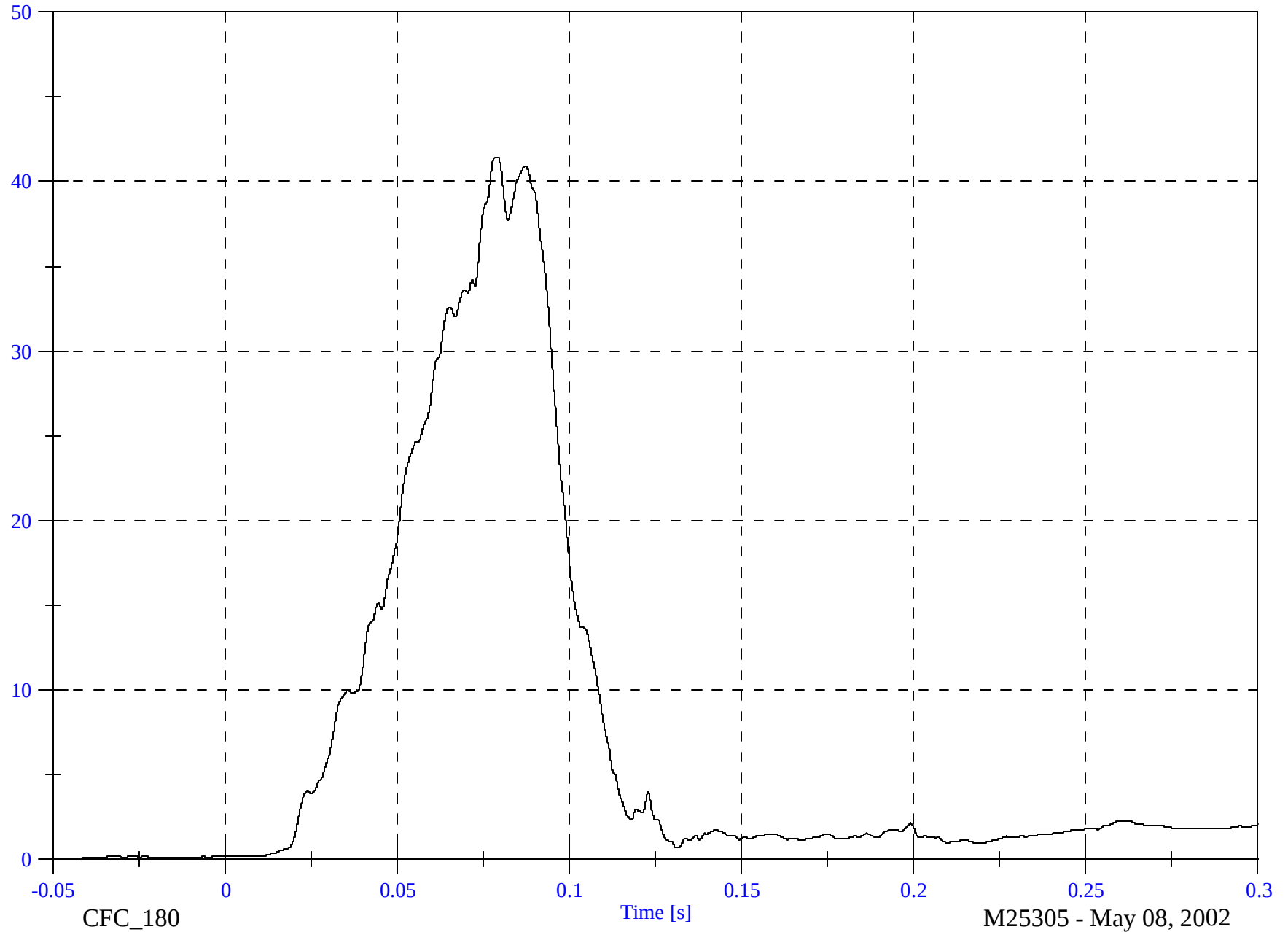


NCAP Test 12 - 2002 Honda Odyssey

P2 Chest Resultant

Max: 41.4 [g] at 0.079 [s]

Min: 0.0 [g] at -0.050 [s]



B-82

8642-NCAP-12

CFC_180

Time [s]

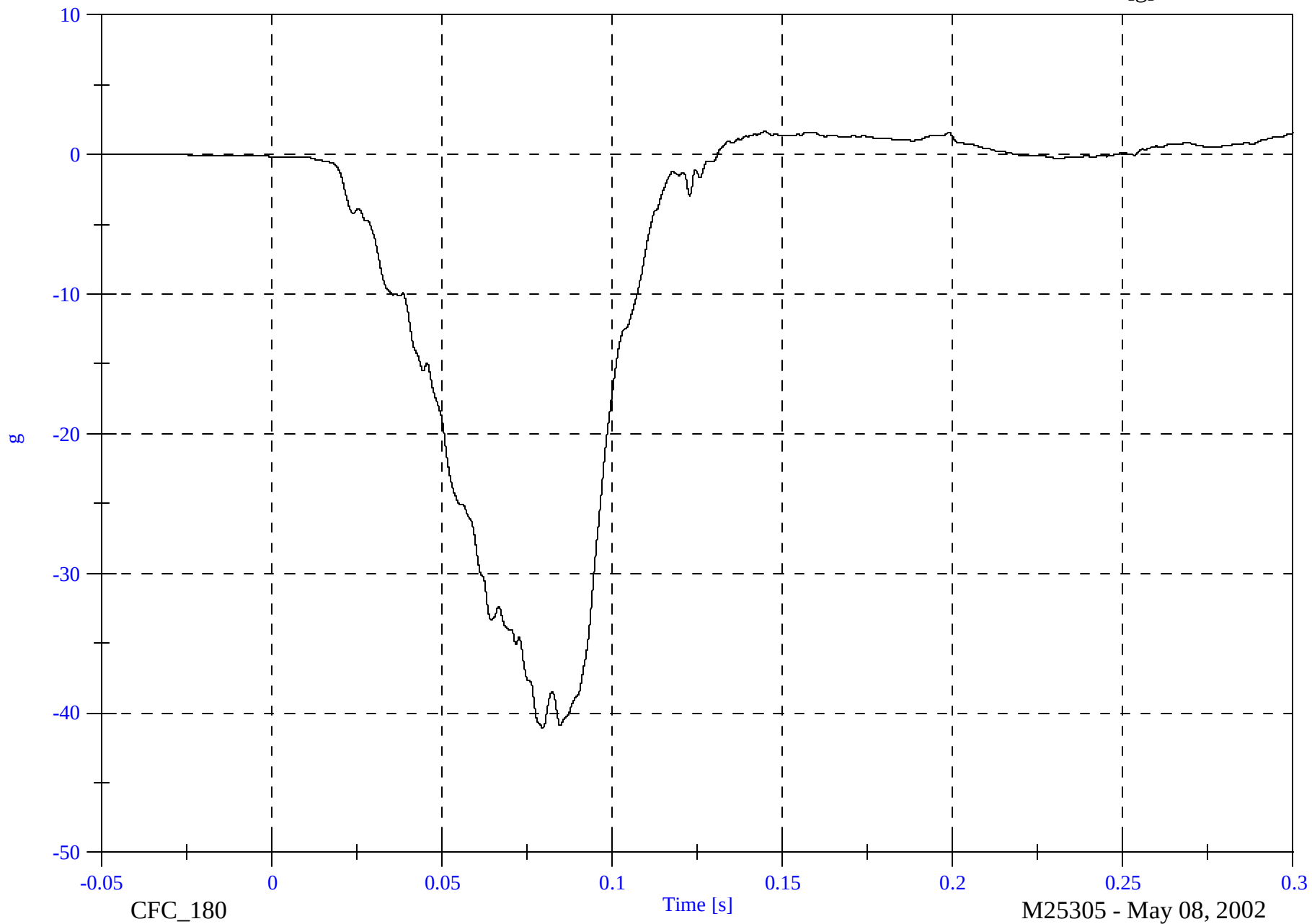
M25305 - May 08, 2002

NCAP Test 12 - 2002 Honda Odyssey

P2 Chest Red x

Max: 1.6 [g] at 0.145 [s]

Min: -41.1 [g] at 0.080 [s]



B-83

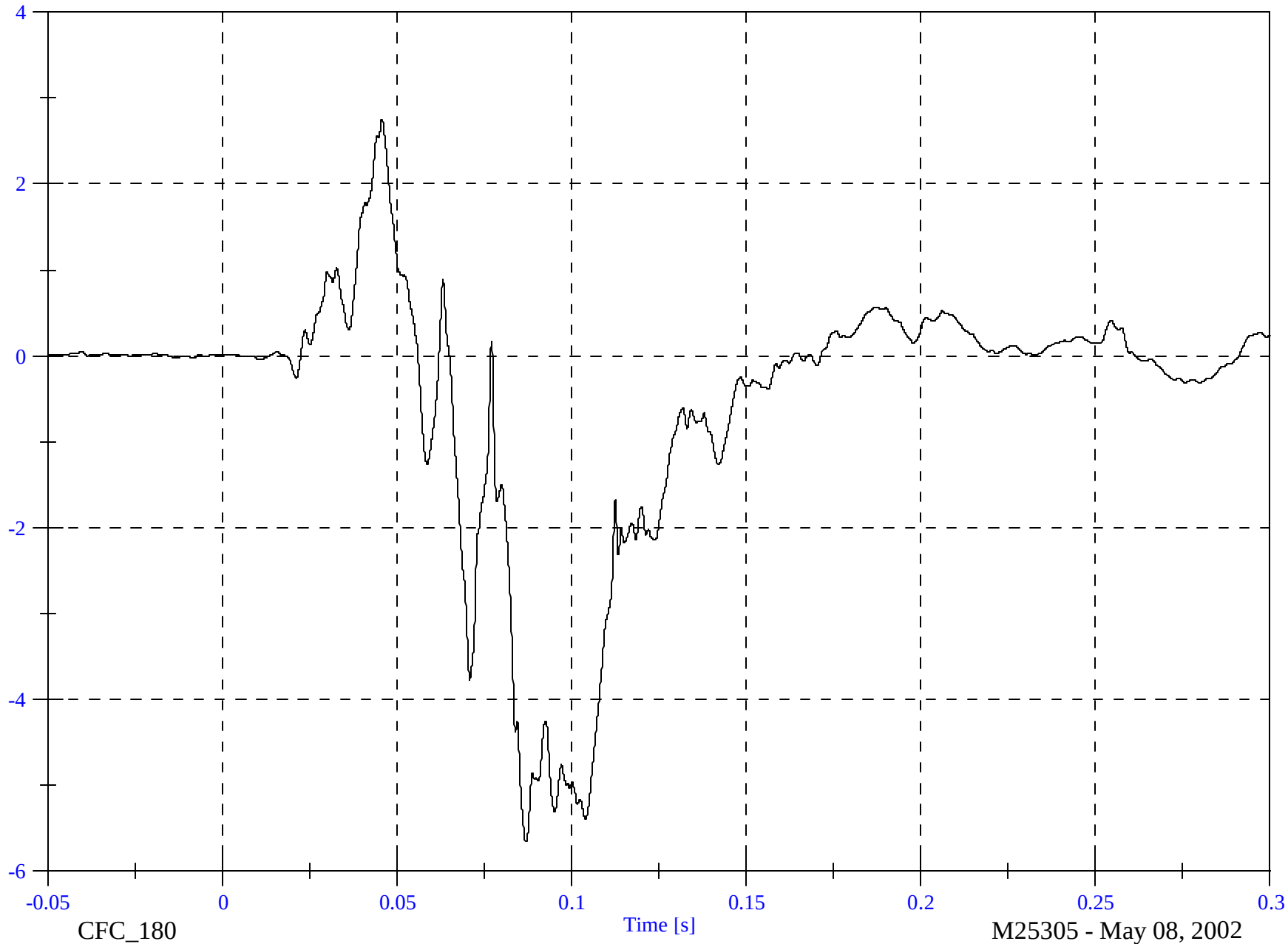
8642-NCAP-12

NCAP Test 12 - 2002 Honda Odyssey

P2 Chest Red y

Max: 2.8 [g] at 0.046 [s]

Min: -5.7 [g] at 0.087 [s]



B-84

8642-NCAP-12

NCAP Test 12 - 2002 Honda Odyssey

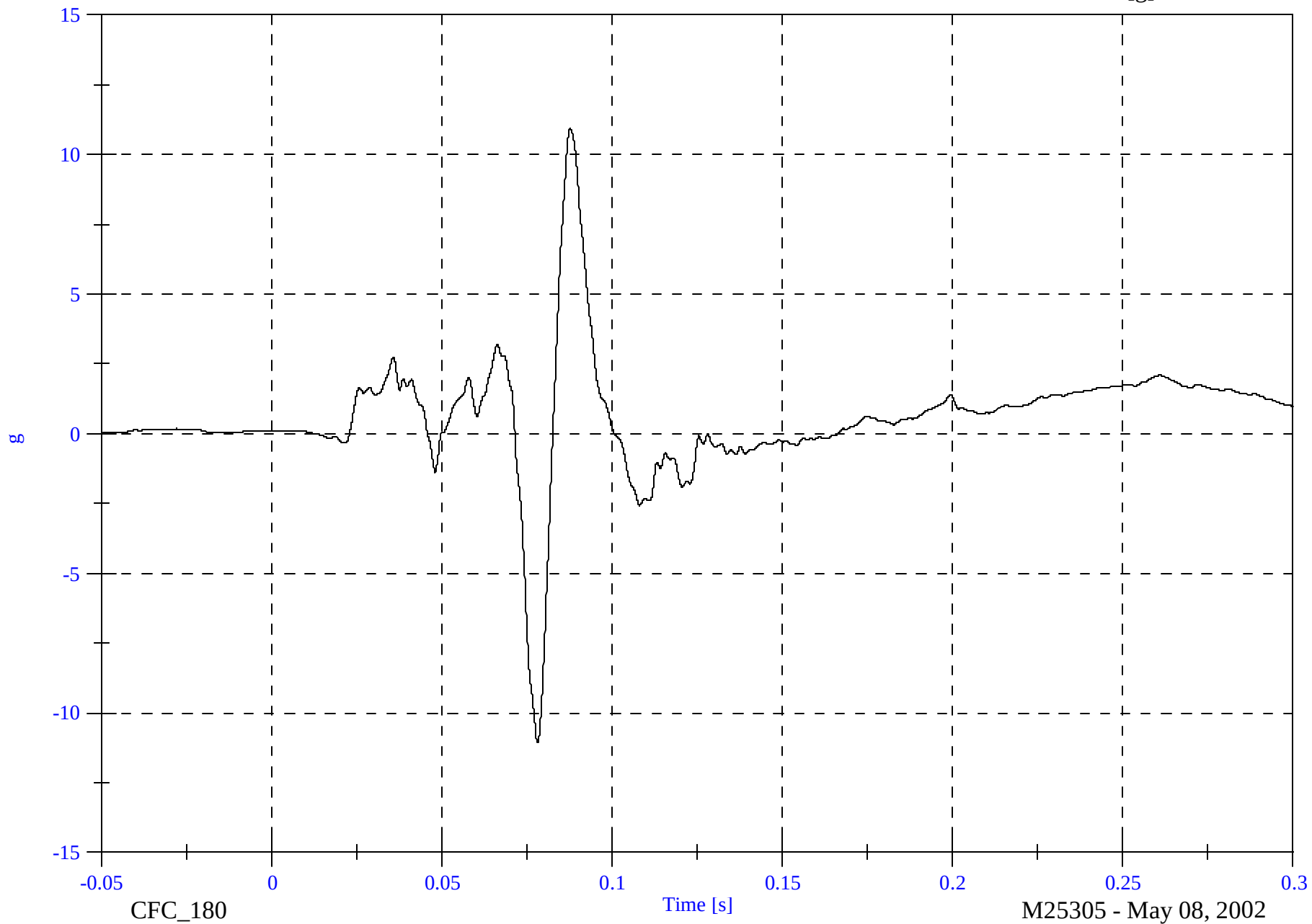
P2 Chest Red z

Max: 10.9 [g] at 0.088 [s]

Min: -11.1 [g] at 0.078 [s]

B-85

8642-NCAP-12

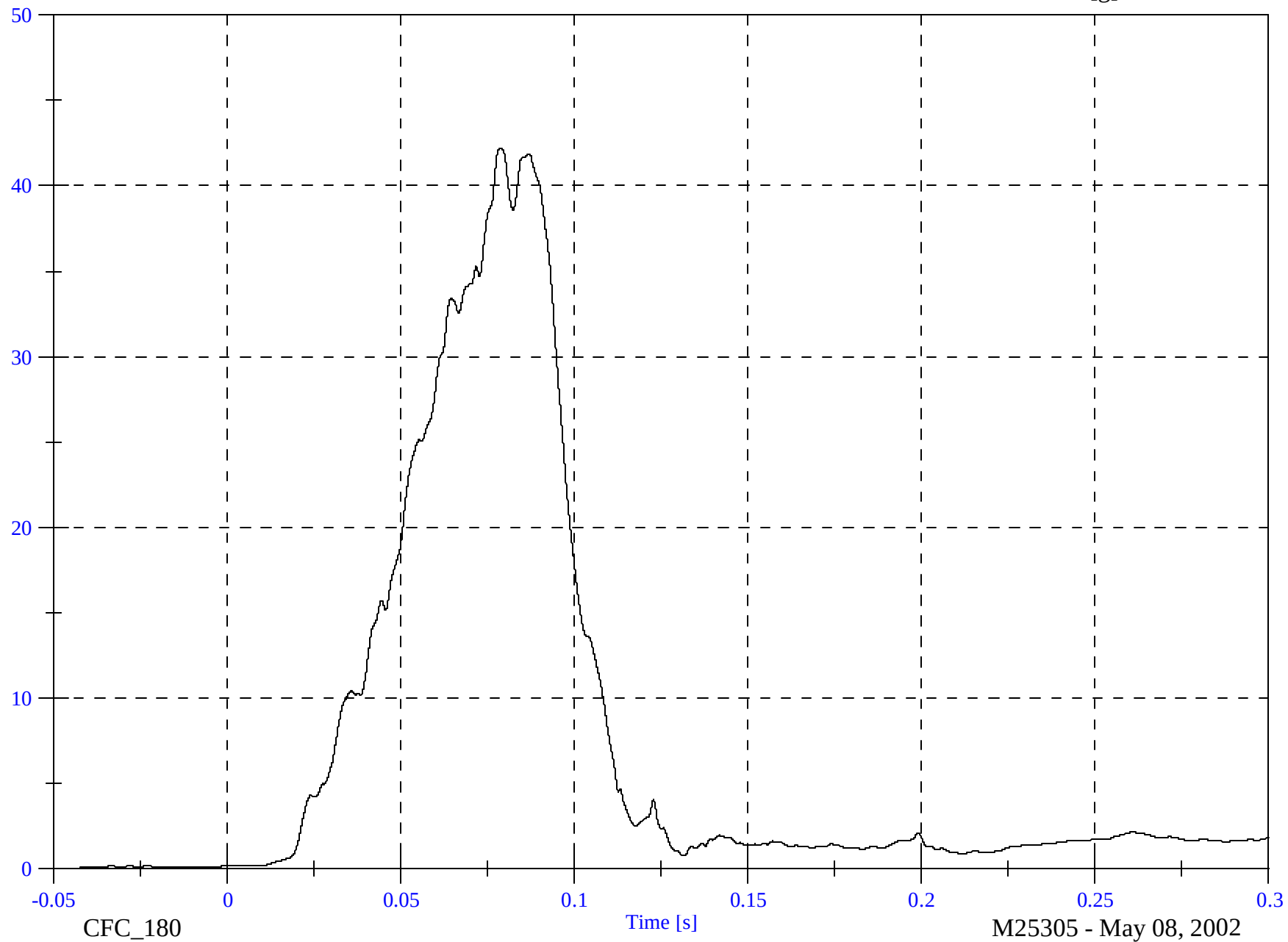


NCAP Test 12 - 2002 Honda Odyssey

P2 Chest Red Resultant

Max: 42.2 [g] at 0.079 [s]

Min: 0.0 [g] at -0.050 [s]



B-86

8642-NCAP-12

CFC_180

Time [s]

M25305 - May 08, 2002

NCAP Test 12 - 2002 Honda Odyssey

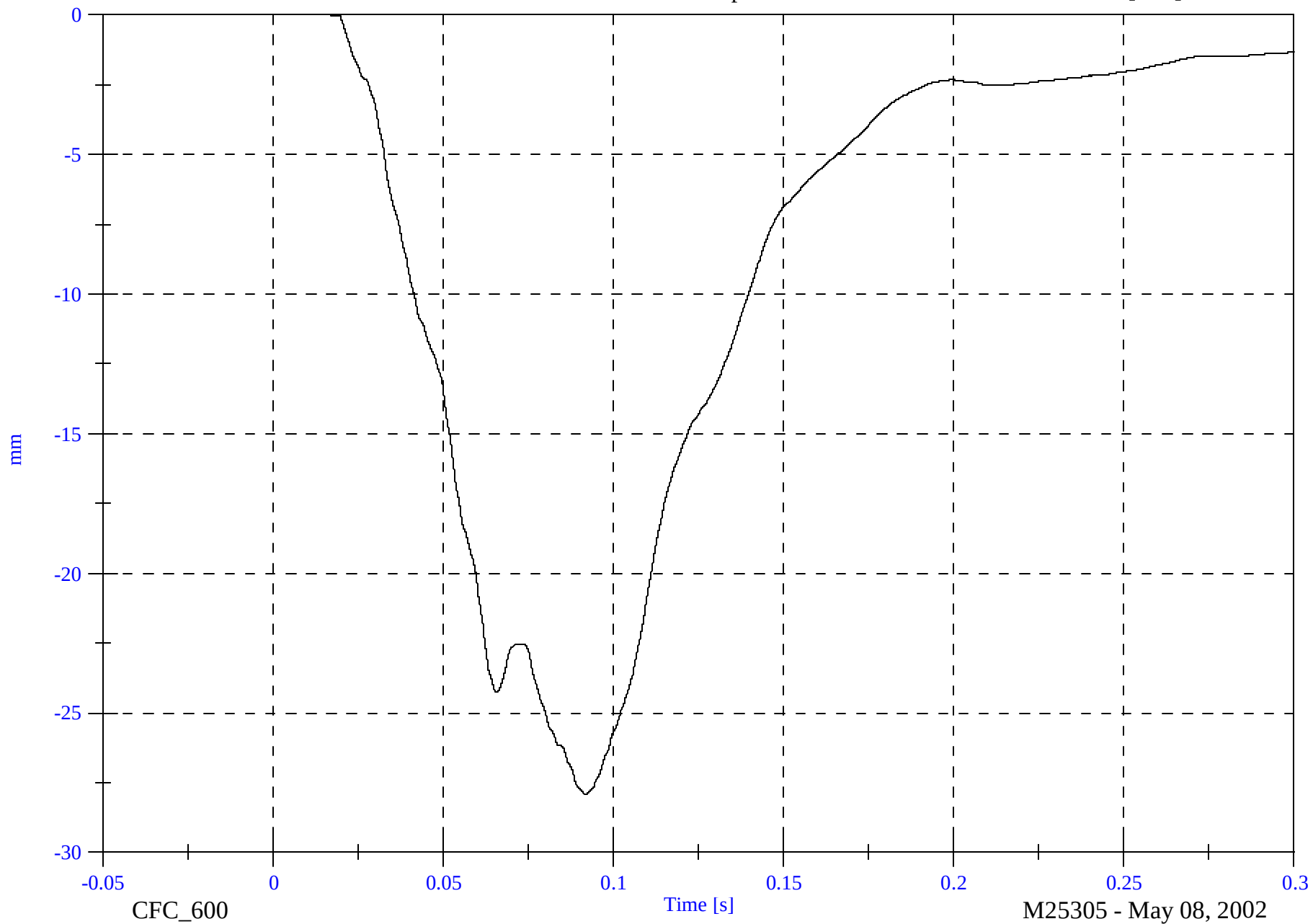
P2 Chest Compression

Max: 0.0 [mm] at -0.002 [s]

Min: -27.9 [mm] at 0.092 [s]

B-87

8642-NCAP-12

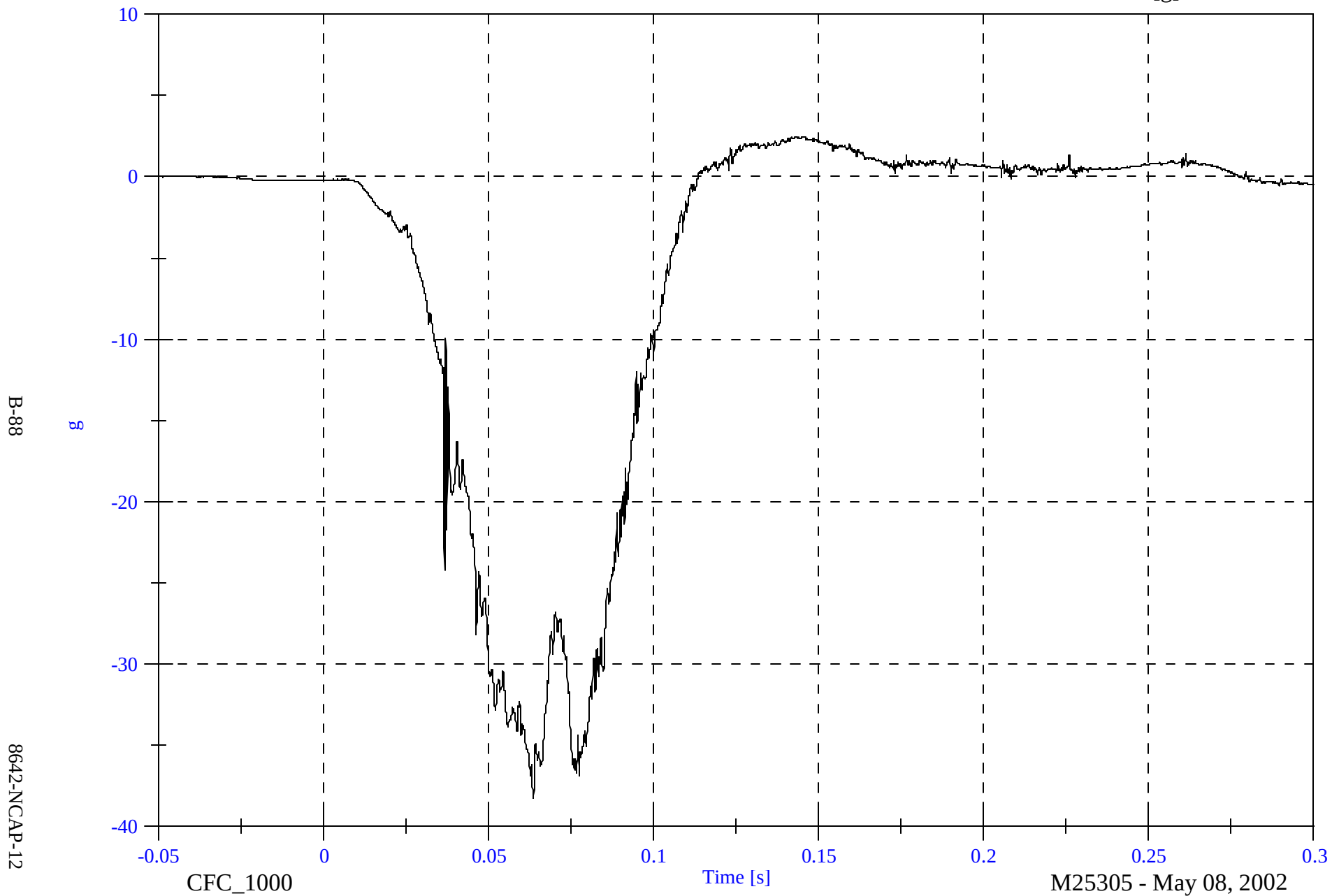


NCAP Test 12 - 2002 Honda Odyssey

Max: 2.5 [g] at 0.145 [s]

Min: -38.3 [g] at 0.064 [s]

P2 Pelvic x



NCAP Test 12 - 2002 Honda Odyssey

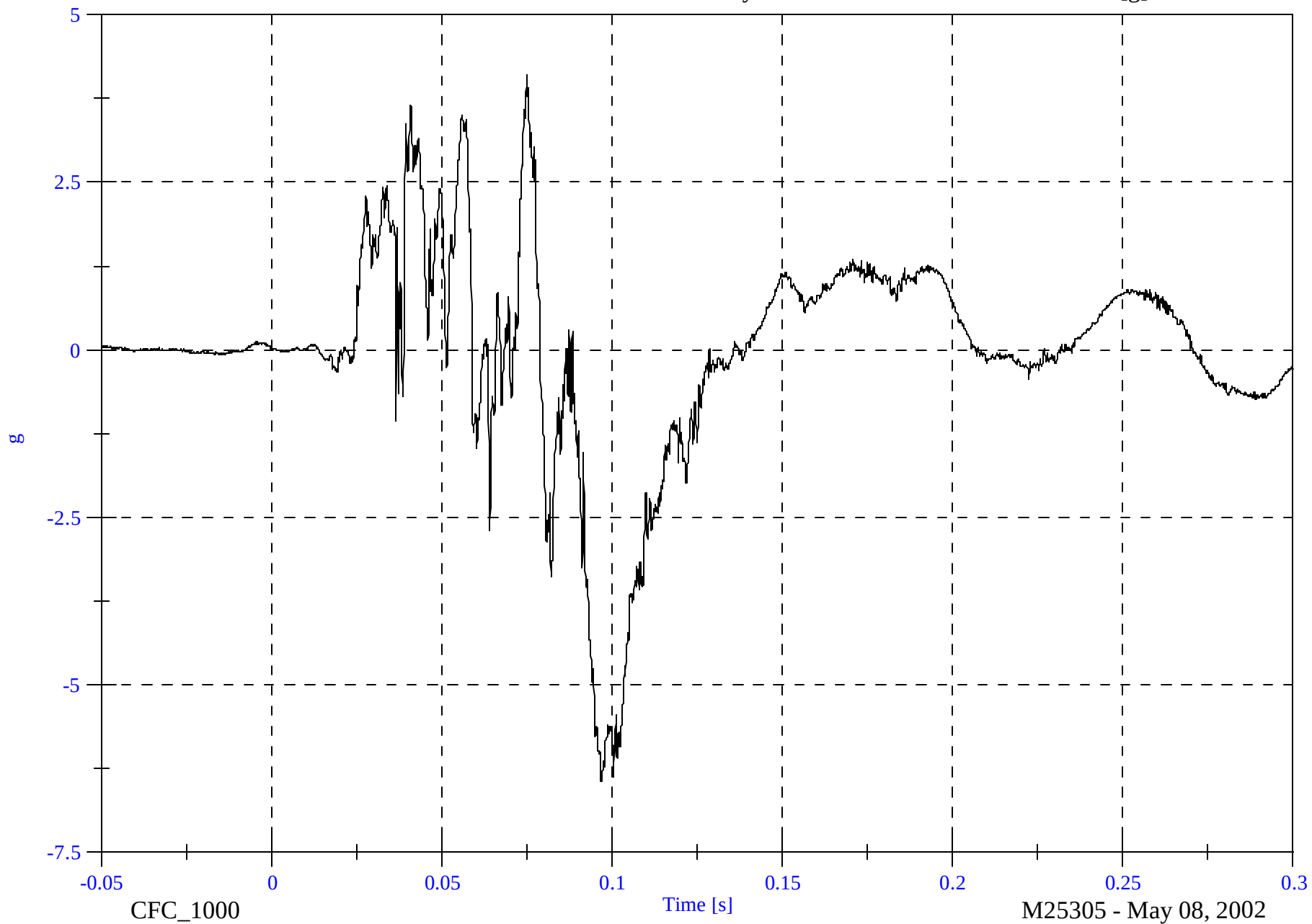
P2 Pelvic y

Max: 4.1 [g] at 0.075 [s]

Min: -6.4 [g] at 0.097 [s]

B-89

8642-NCAP-12



NCAP Test 12 - 2002 Honda Odyssey

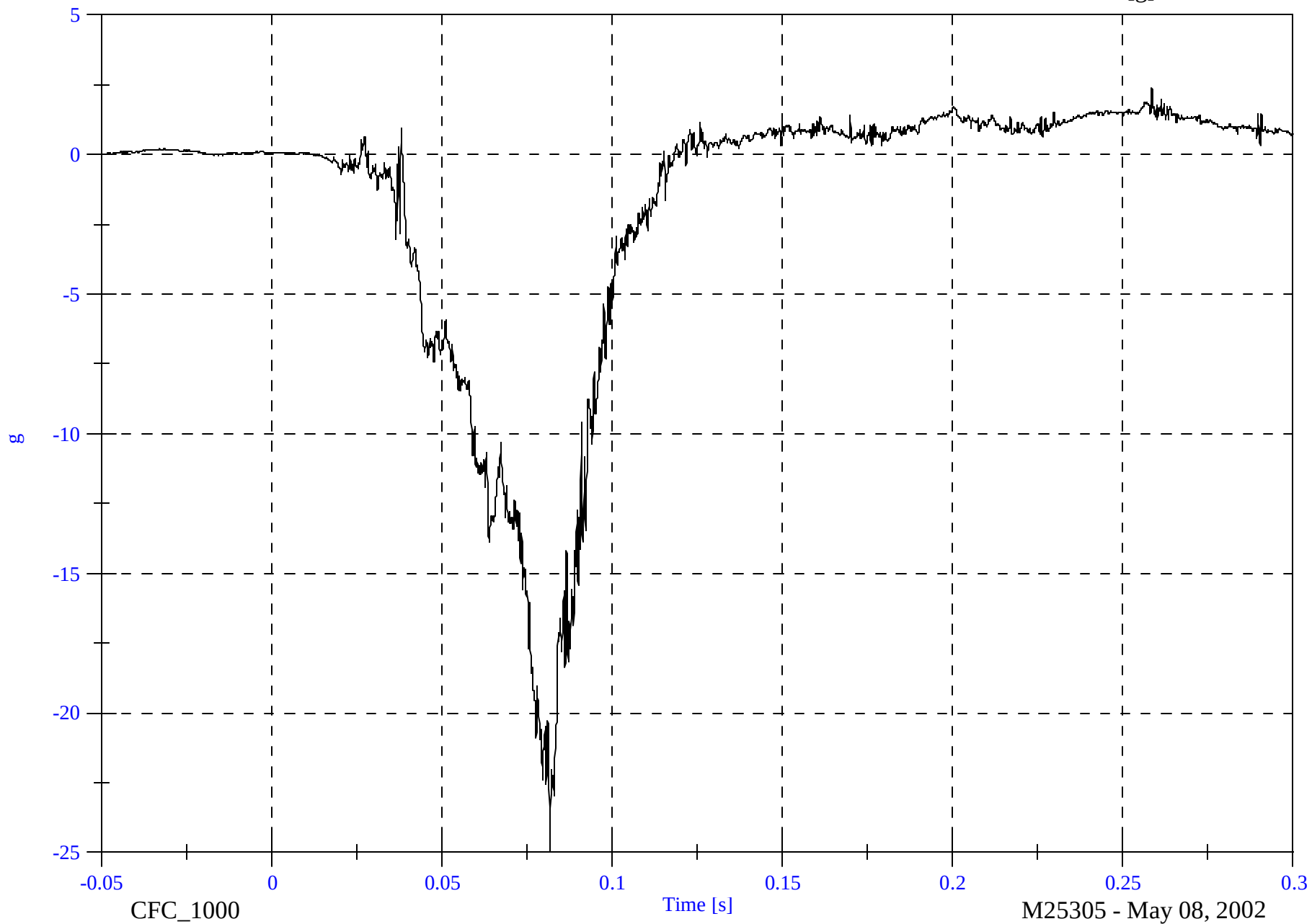
P2 Pelvic z

Max: 2.4 [g] at 0.258 [s]

Min: -24.9 [g] at 0.082 [s]

B-90

8642-NCAP-12



NCAP Test 12 - 2002 Honda Odyssey

P2 Pelvic Resultant

Max: 41.9 [g] at 0.077 [s]

Min: 0.0 [g] at -0.050 [s]



B-91

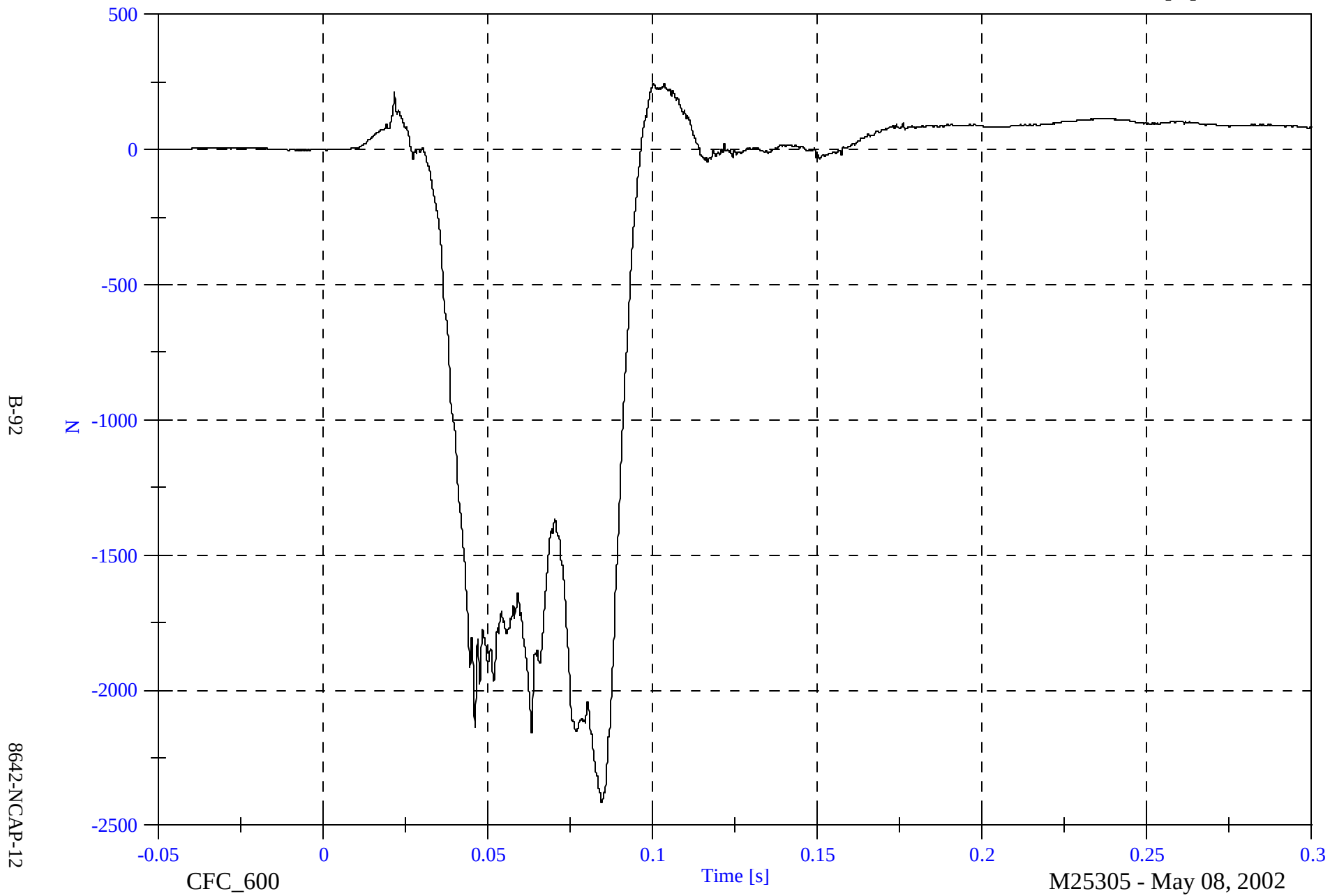
8642-NCAP-12

NCAP Test 12 - 2002 Honda Odyssey

P2 Left Femur

Max: 243.5 [N] at 0.103 [s]

Min: -2414.2 [N] at 0.085 [s]

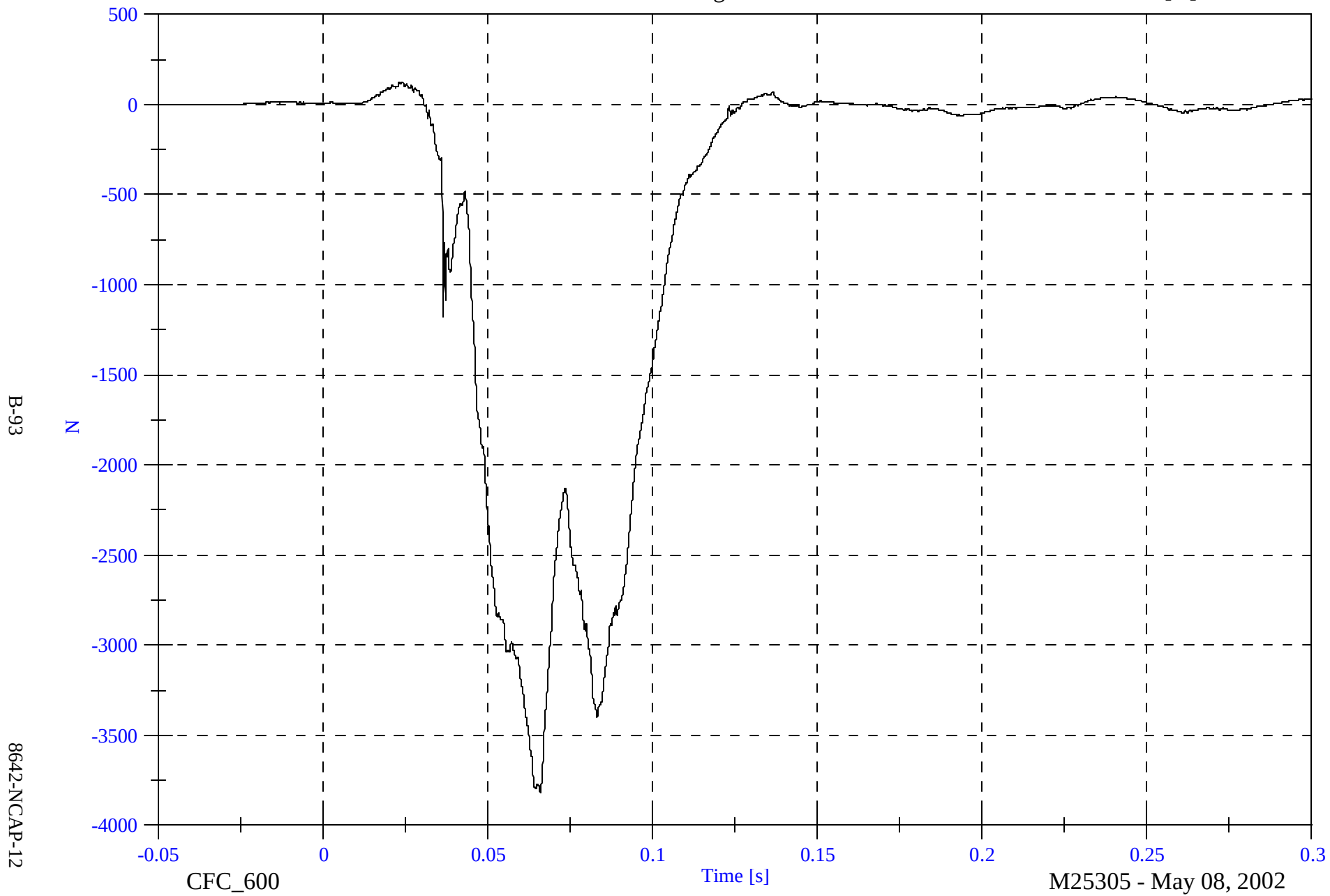


NCAP Test 12 - 2002 Honda Odyssey

P2 Right Femur

Max: 127.1 [N] at 0.023 [s]

Min: -3815.3 [N] at 0.066 [s]



NCAP Test 12 - 2002 Honda Odyssey

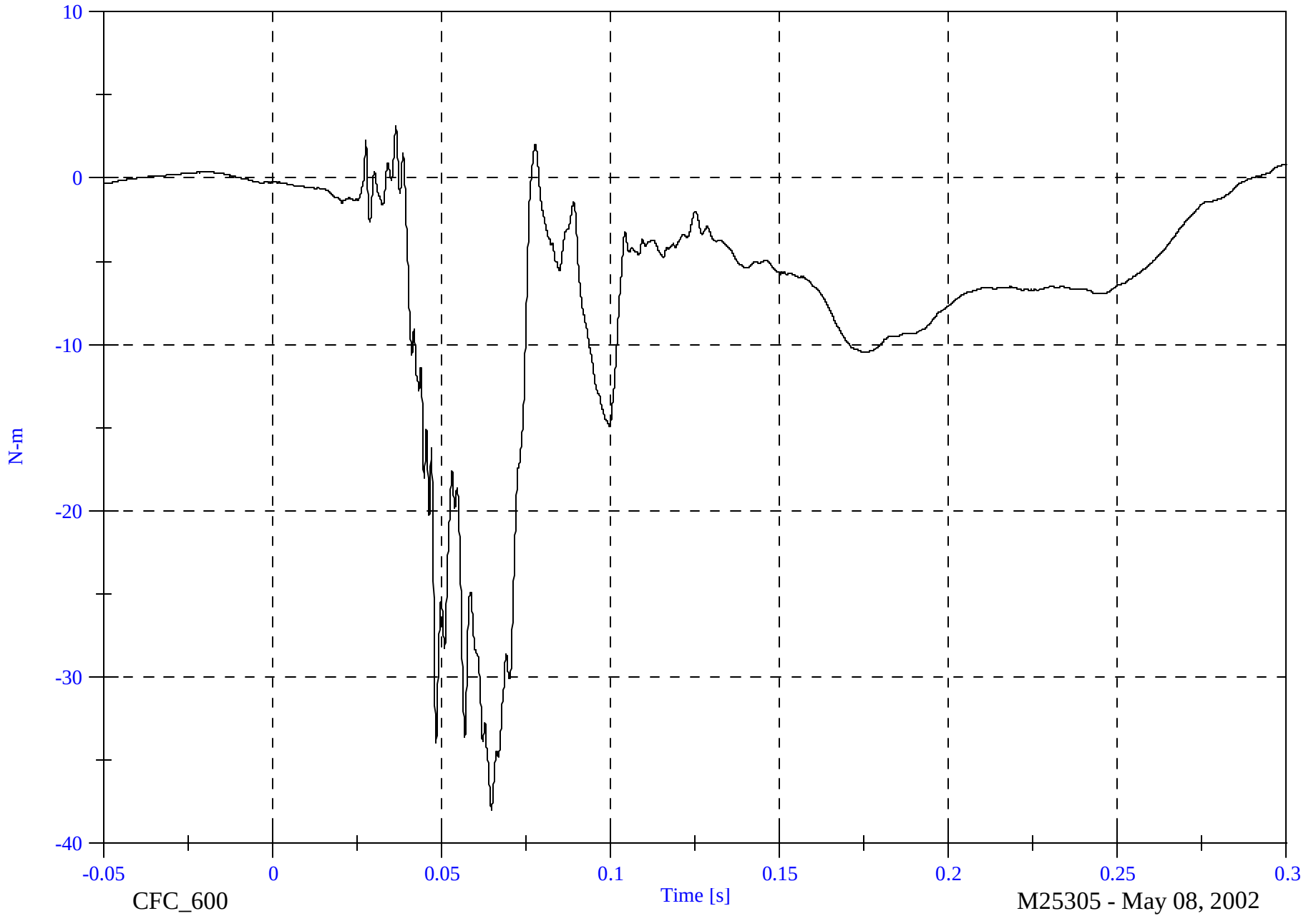
P2 Left Upper Tibia Mx

Max: 3.2 [N-m] at 0.036 [s]

Min: -38.0 [N-m] at 0.065 [s]

B-94

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NCAP Test 12 - 2002 Honda Odyssey

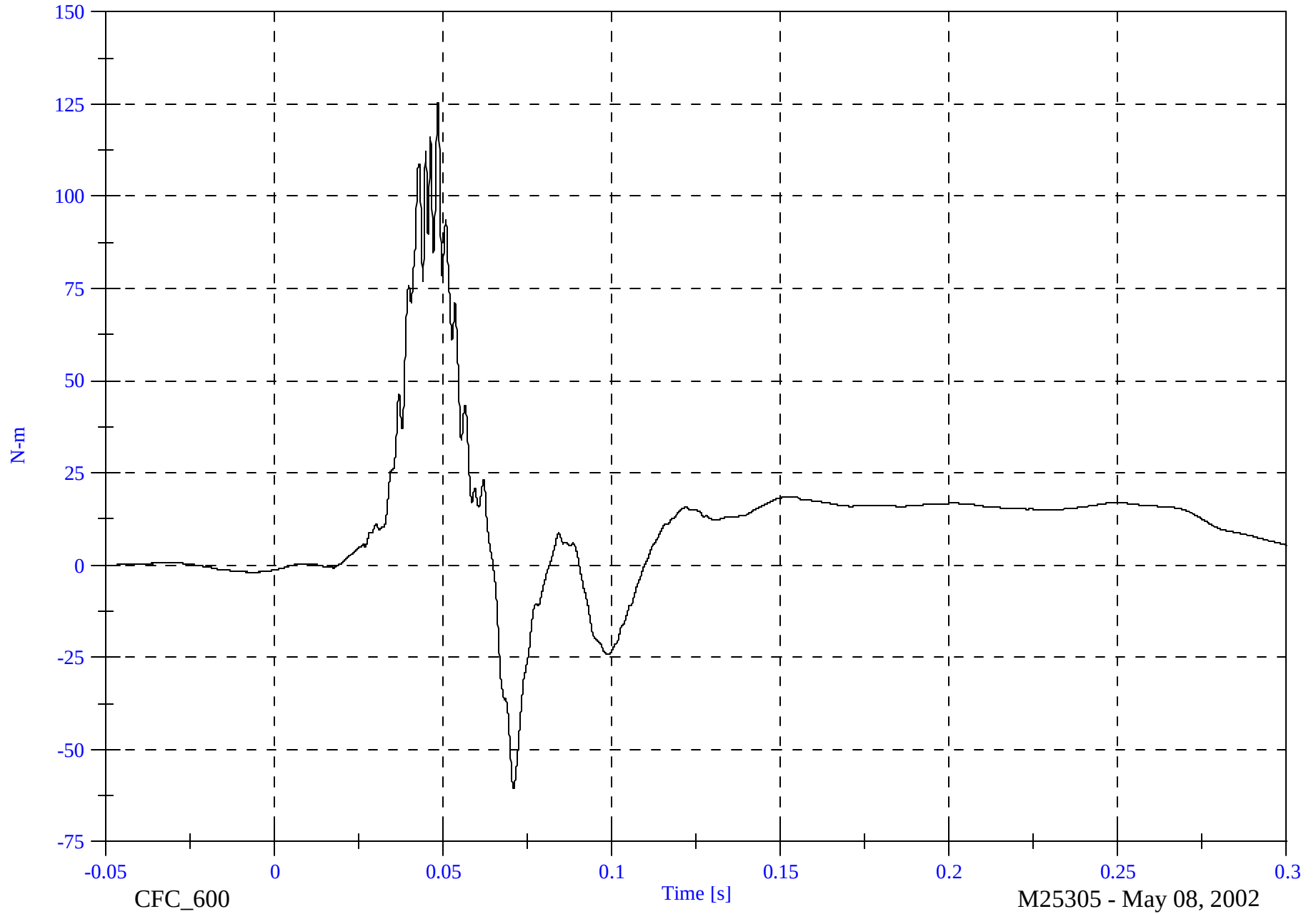
P2 Left Upper Tibia My

Max: 125.5 [N-m] at 0.049 [s]

Min: -60.5 [N-m] at 0.071 [s]

B-95

8642-NCAP-12

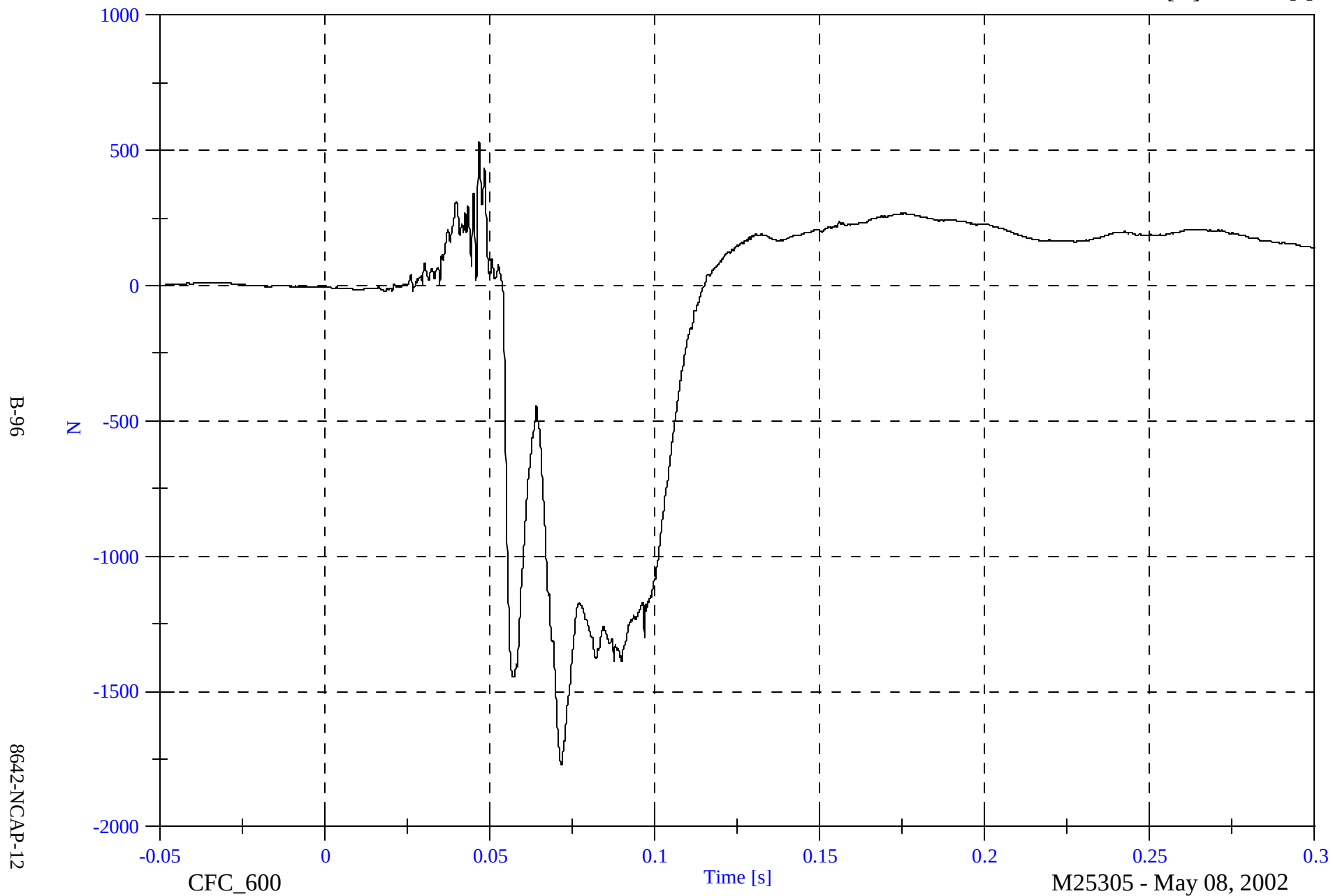


NCAP Test 12 - 2002 Honda Odyssey

P2 Left Lower Tibia Fz

Max: 534.2 [N] at 0.047 [s]

Min: -1773.1 [N] at 0.072 [s]



NCAP Test 12 - 2002 Honda Odyssey

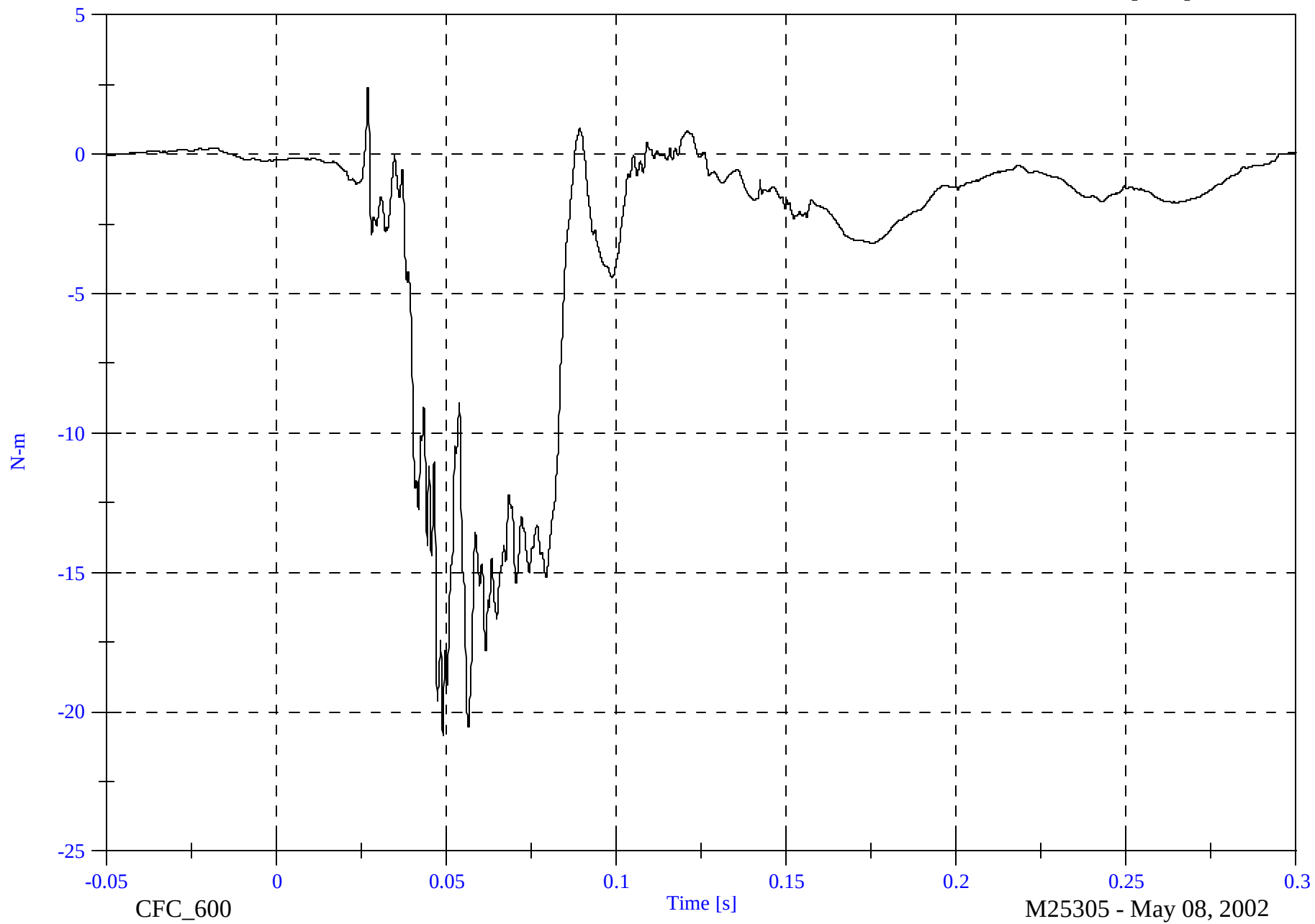
P2 Left Lower Tibia Mx

Max: 2.4 [N-m] at 0.027 [s]

Min: -20.8 [N-m] at 0.049 [s]

B-97

8642-NCAP-12



NCAP Test 12 - 2002 Honda Odyssey

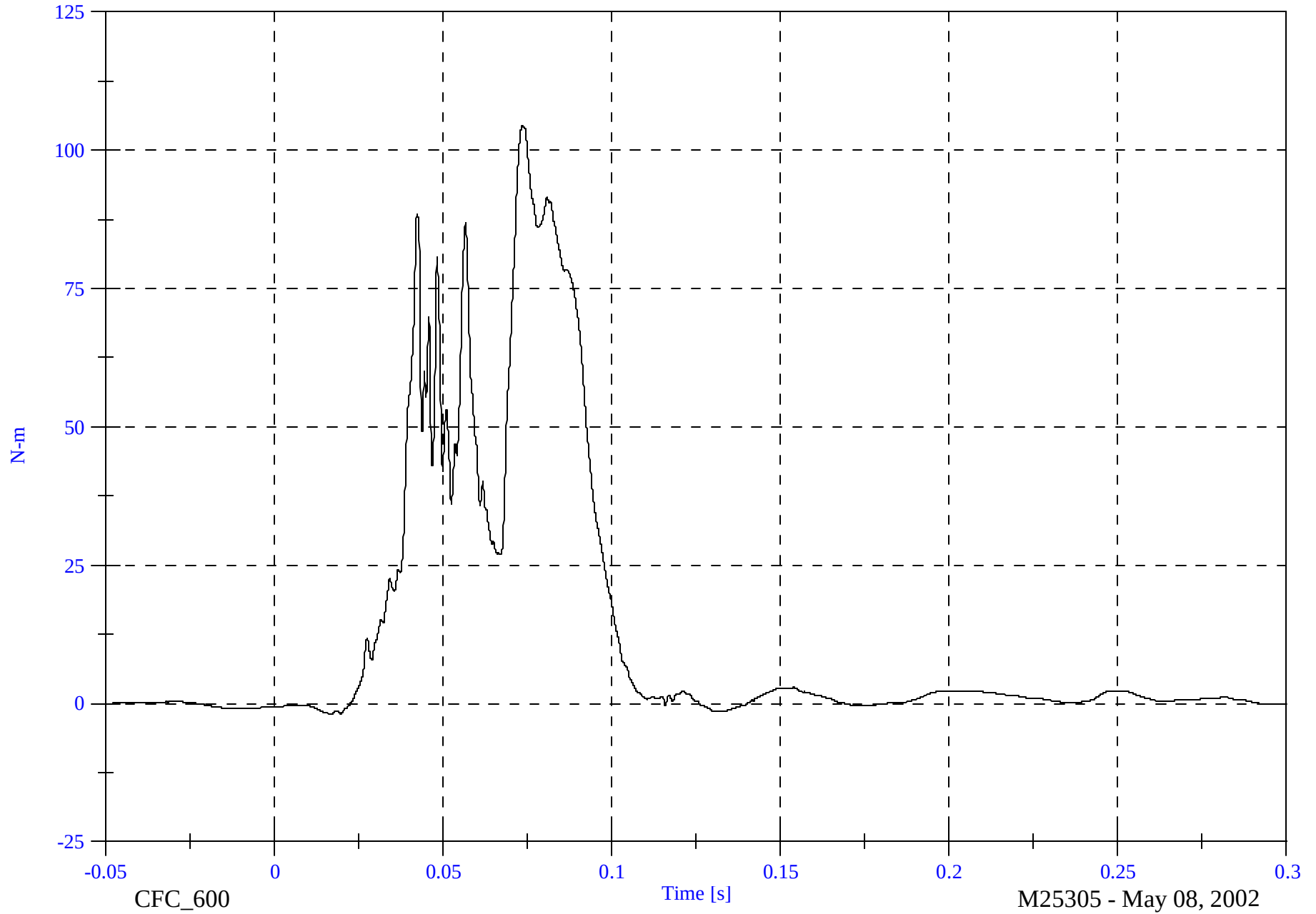
Max: 104.4 [N-m] at 0.073 [s]

Min: -2.0 [N-m] at 0.017 [s]

P2 Left Lower Tibia My

B-98

8642-NCAP-12



NCAP Test 12 - 2002 Honda Odyssey

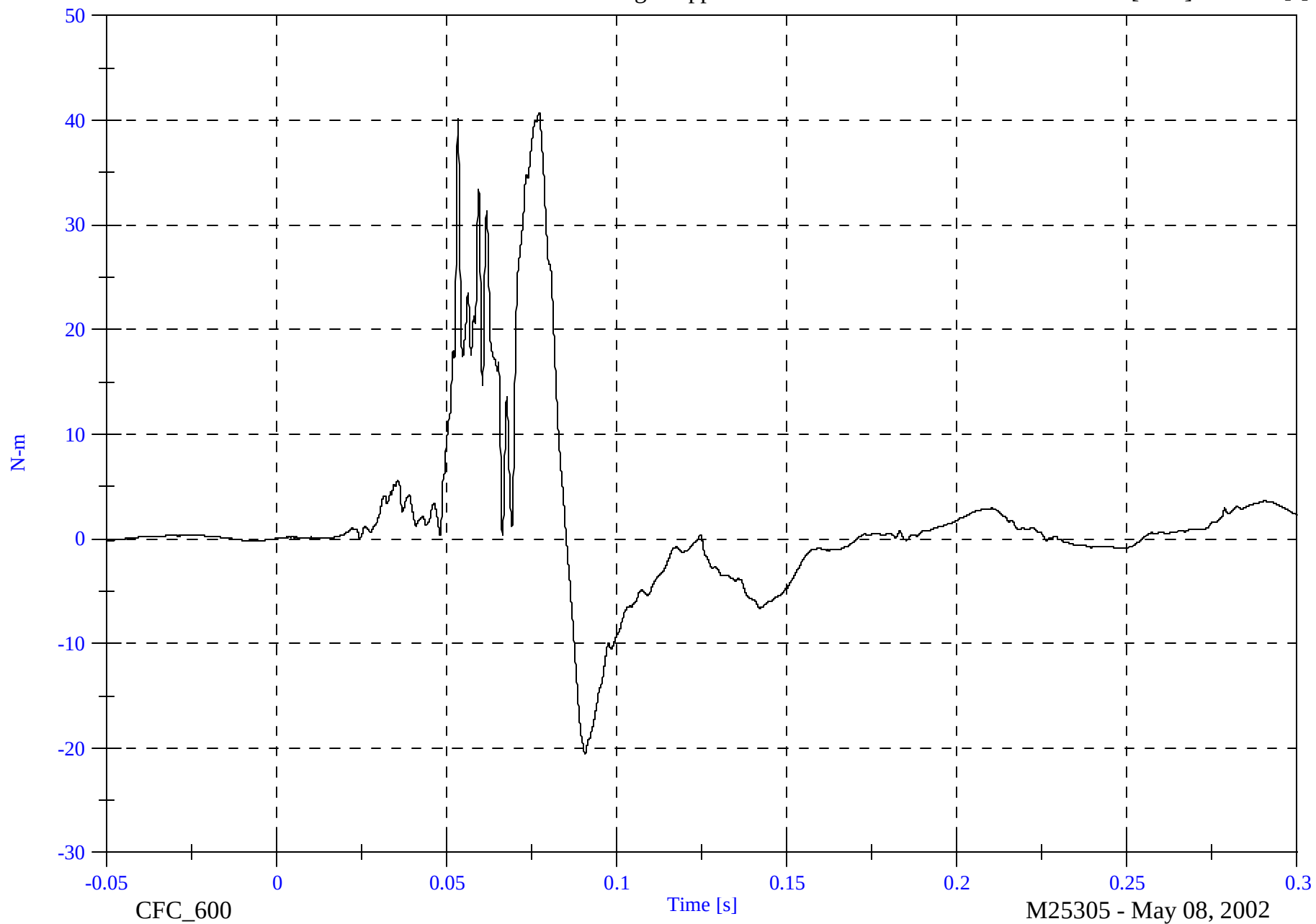
P2 Right Upper Tibia Mx

Max: 40.7 [N-m] at 0.077 [s]

Min: -20.6 [N-m] at 0.091 [s]

B-99

8642-NCAP-12



NCAP Test 12 - 2002 Honda Odyssey

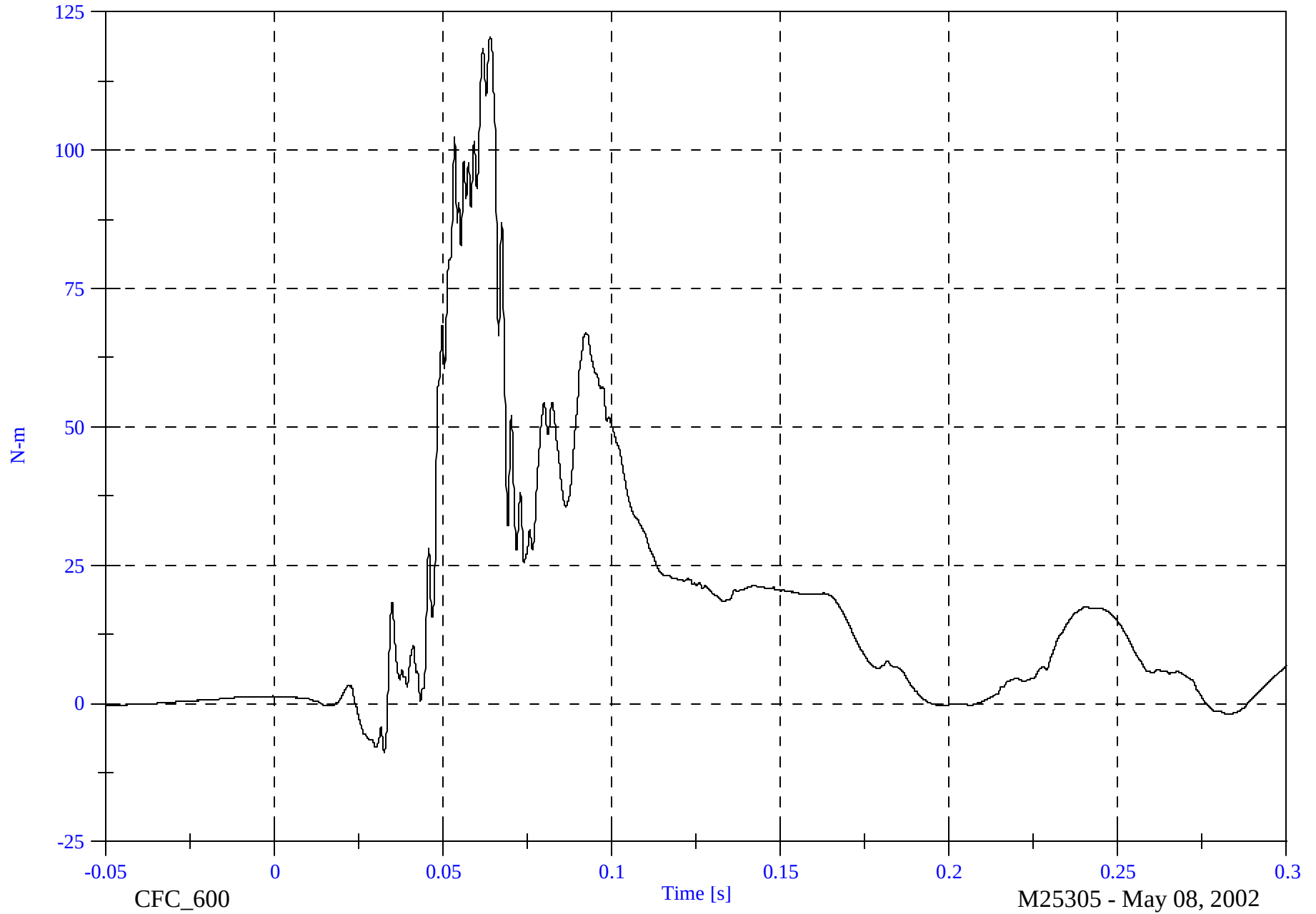
P2 Right Upper Tibia My

Max: 120.4 [N-m] at 0.064 [s]

Min: -8.9 [N-m] at 0.033 [s]

B-100

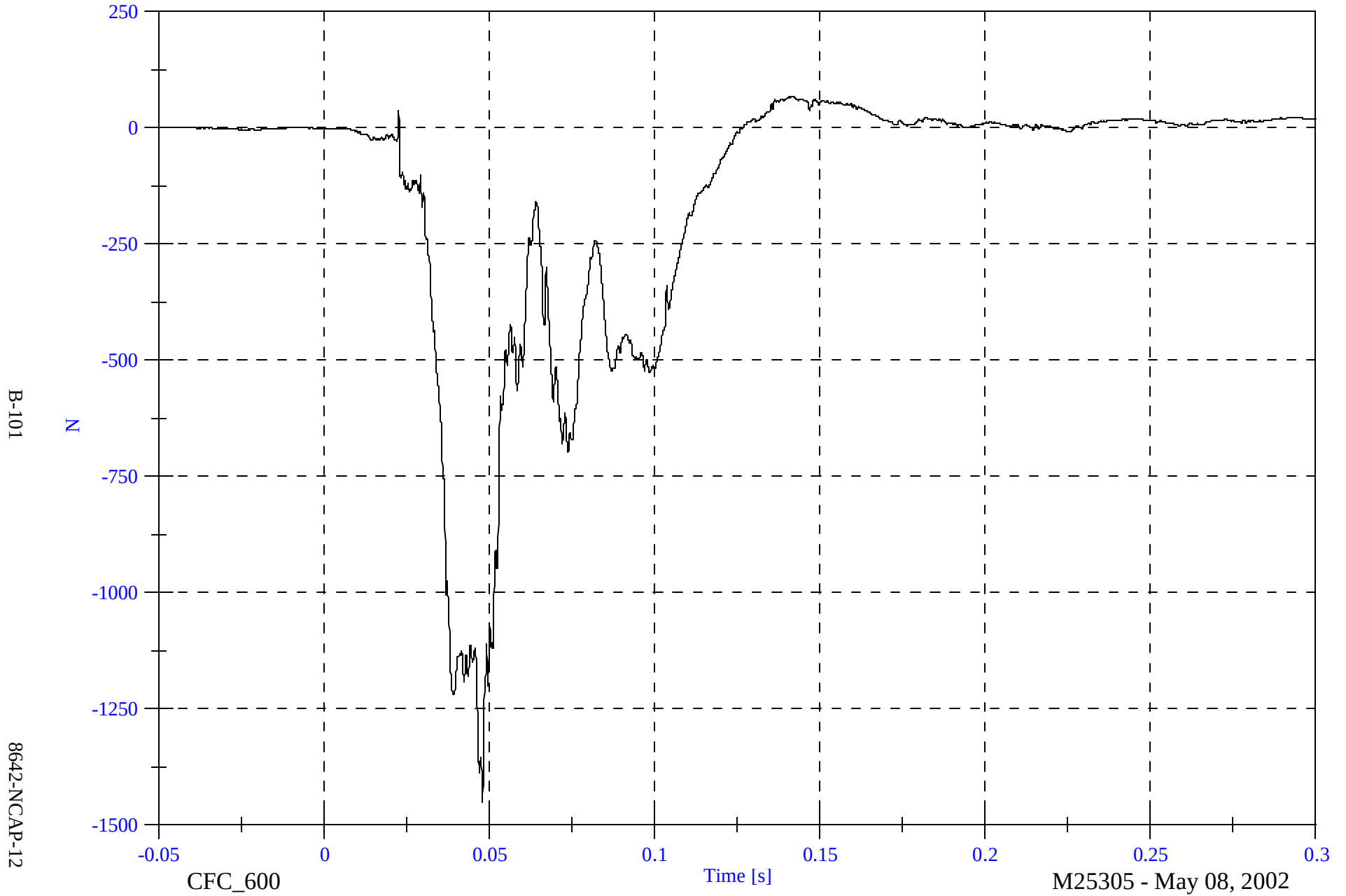
8642-NCAP-12



NCAP Test 12 - 2002 Honda Odyssey

P2 Right Lower Tibia Fz

Max: 68.5 [N] at 0.142 [s]
Min: -1449.1 [N] at 0.048 [s]

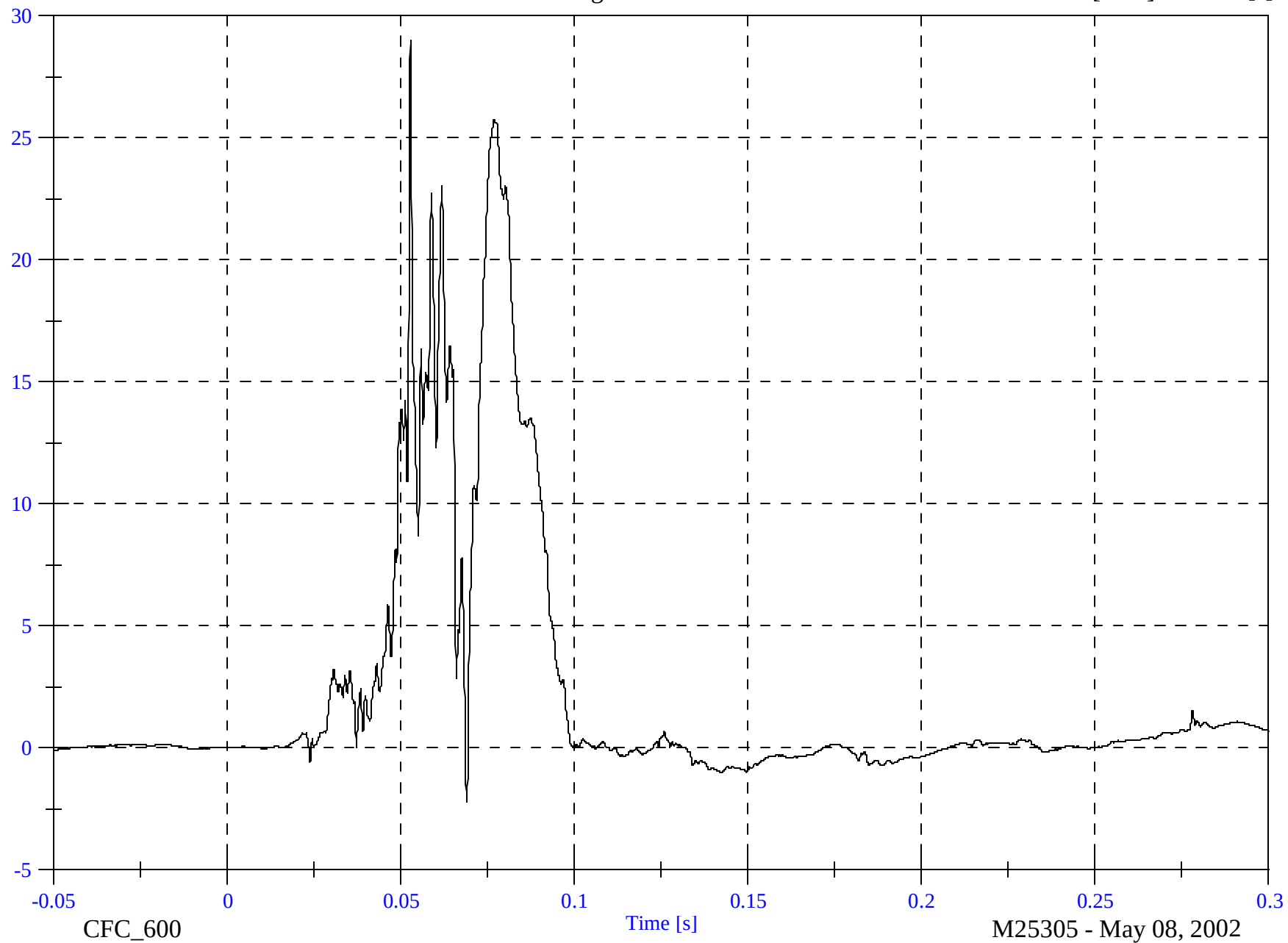


NCAP Test 12 - 2002 Honda Odyssey

P2 Right Lower Tibia Mx

Max: 29.0 [N-m] at 0.053 [s]

Min: -2.2 [N-m] at 0.069 [s]



B-102

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CFC_600

Time [s]

M25305 - May 08, 2002

NCAP Test 12 - 2002 Honda Odyssey

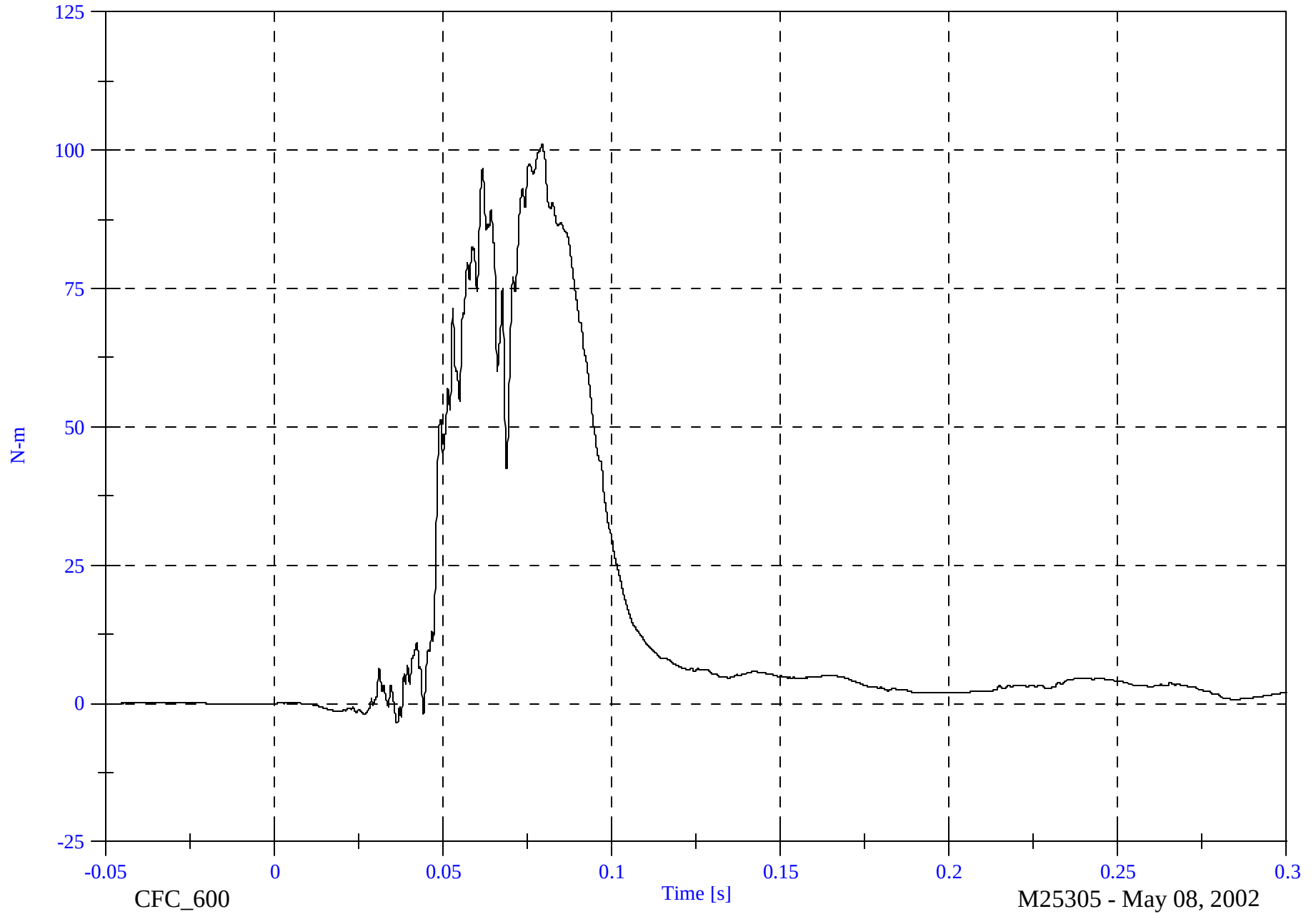
P2 Right Lower Tibia My

Max: 101.2 [N-m] at 0.079 [s]

Min: -3.6 [N-m] at 0.036 [s]

B-103

8642-NCAP-12



NCAP Test 12 - 2002 Honda Odyssey

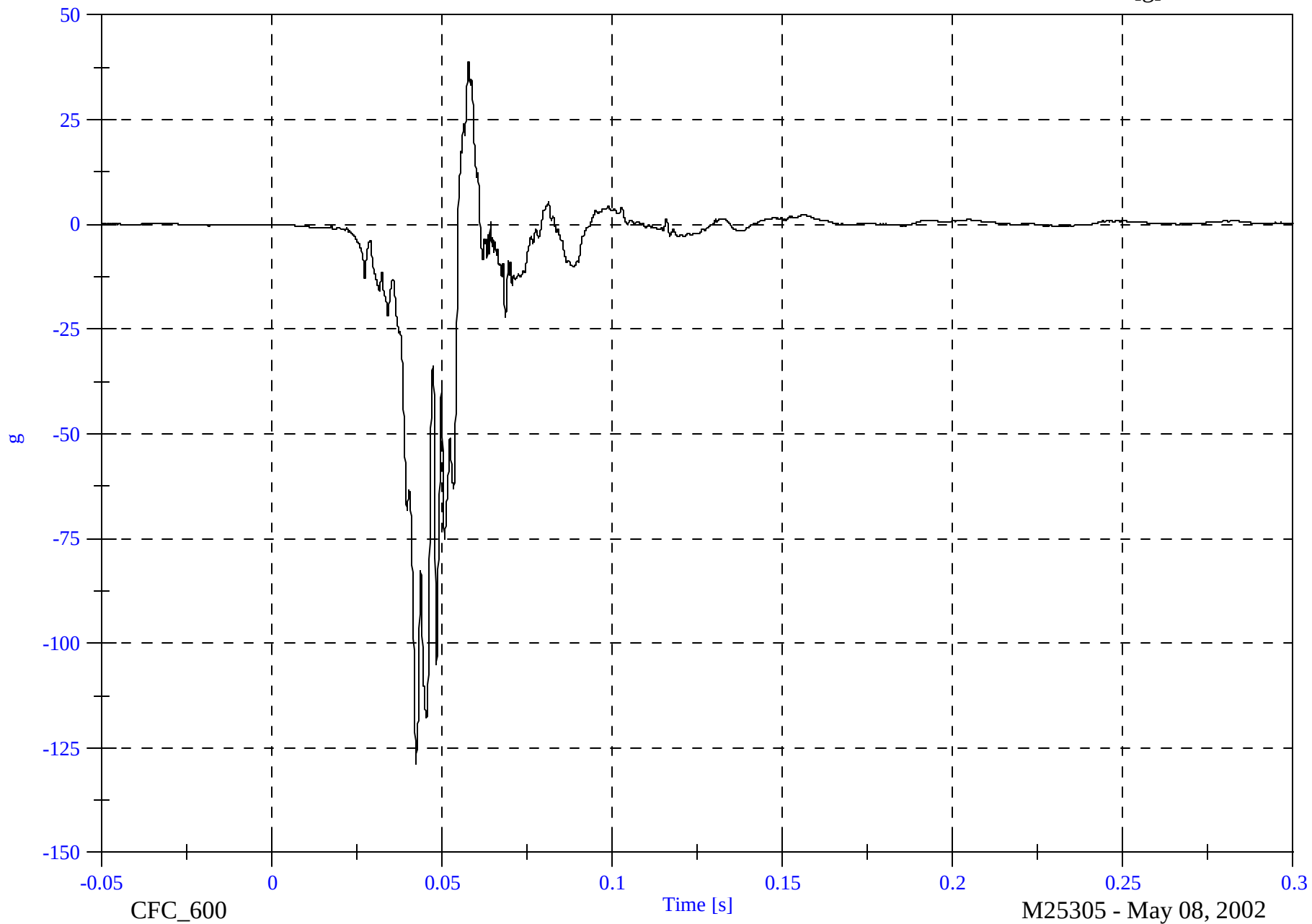
P2 Left Foot Aft x

Max: 38.7 [g] at 0.058 [s]

Min: -128.9 [g] at 0.042 [s]

B-104

8642-NCAP-12



NCAP Test 12 - 2002 Honda Odyssey

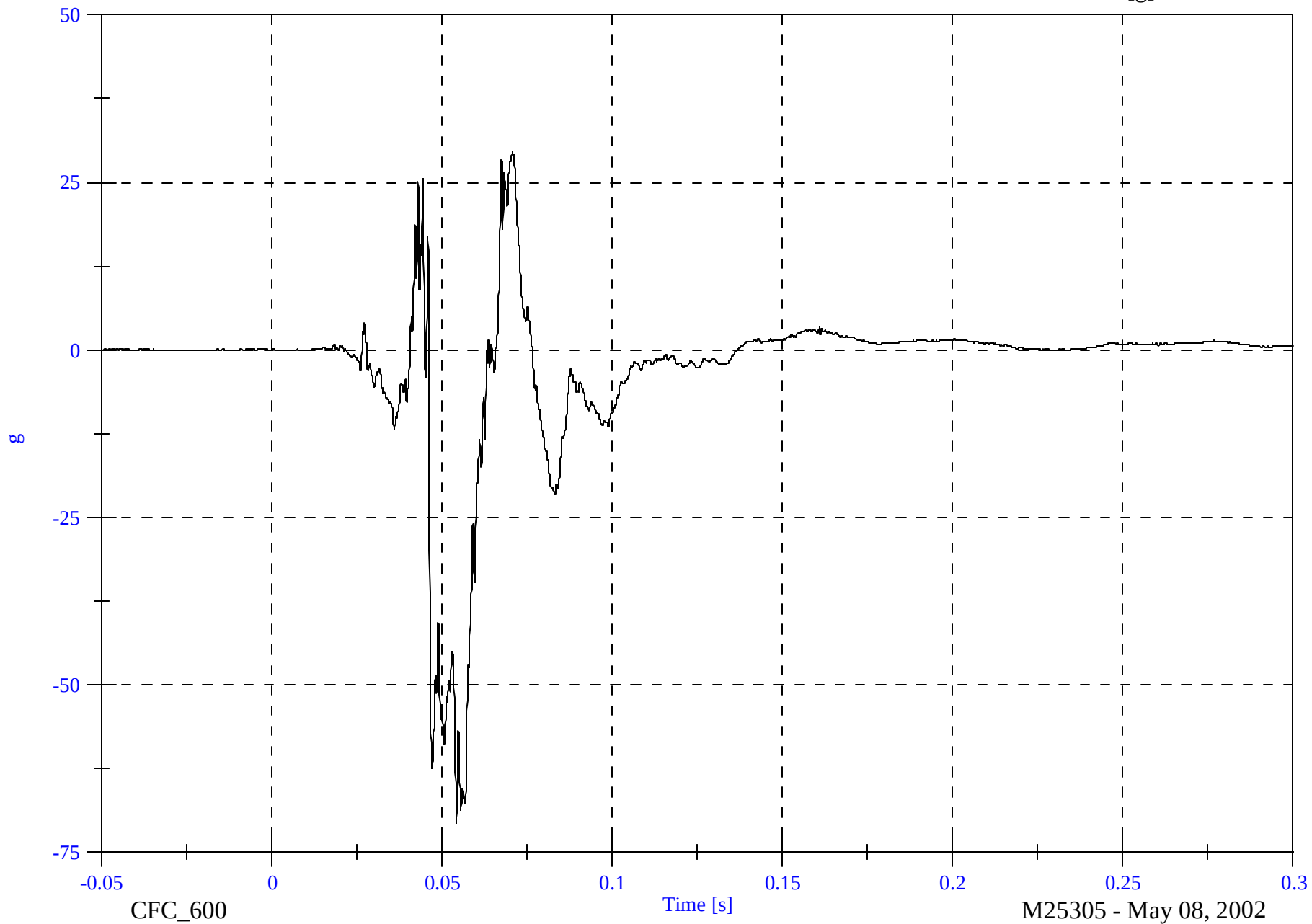
P2 Left Foot Aft z

Max: 29.6 [g] at 0.071 [s]

Min: -70.6 [g] at 0.054 [s]

B-105

8642-NCAP-12

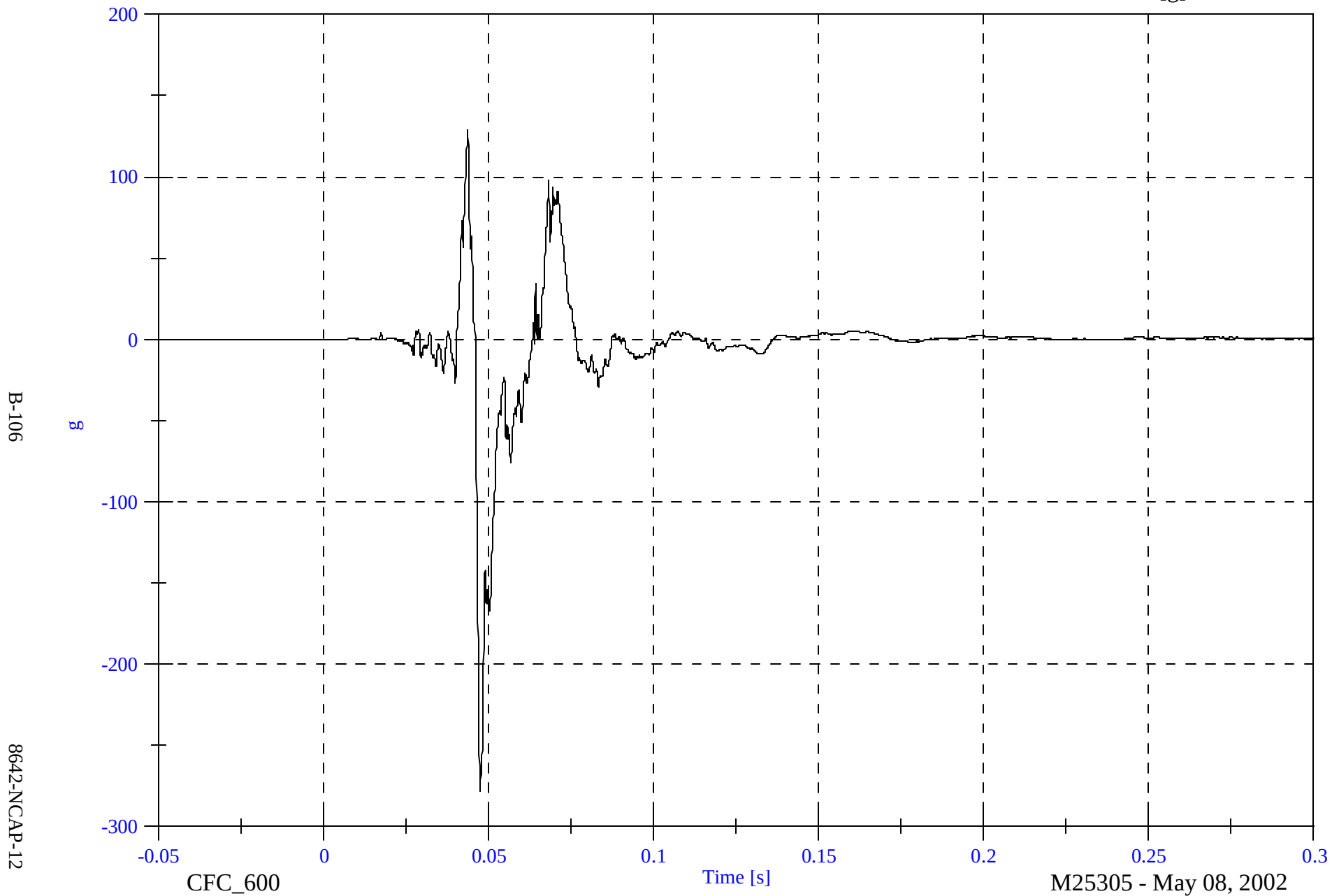


NCAP Test 12 - 2002 Honda Odyssey

P2 Left Foot Fore z

Max: 129.2 [g] at 0.044 [s]

Min: -277.8 [g] at 0.047 [s]

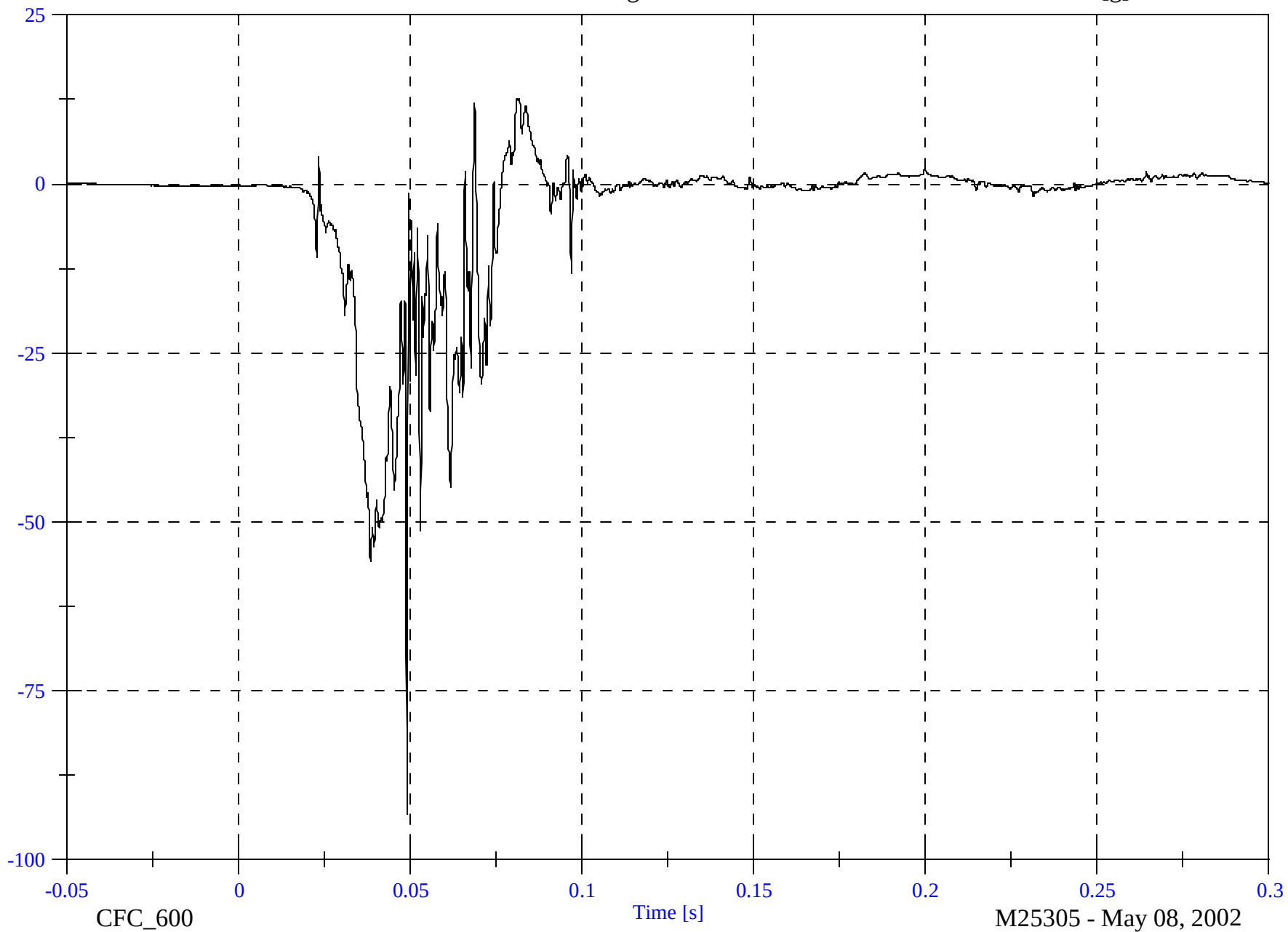


NCAP Test 12 - 2002 Honda Odyssey

P2 Right Foot Aft x

Max: 12.6 [g] at 0.082 [s]

Min: -93.1 [g] at 0.049 [s]



B-107

8642-NCAP-12

CFC_600

Time [s]

M25305 - May 08, 2002

NCAP Test 12 - 2002 Honda Odyssey

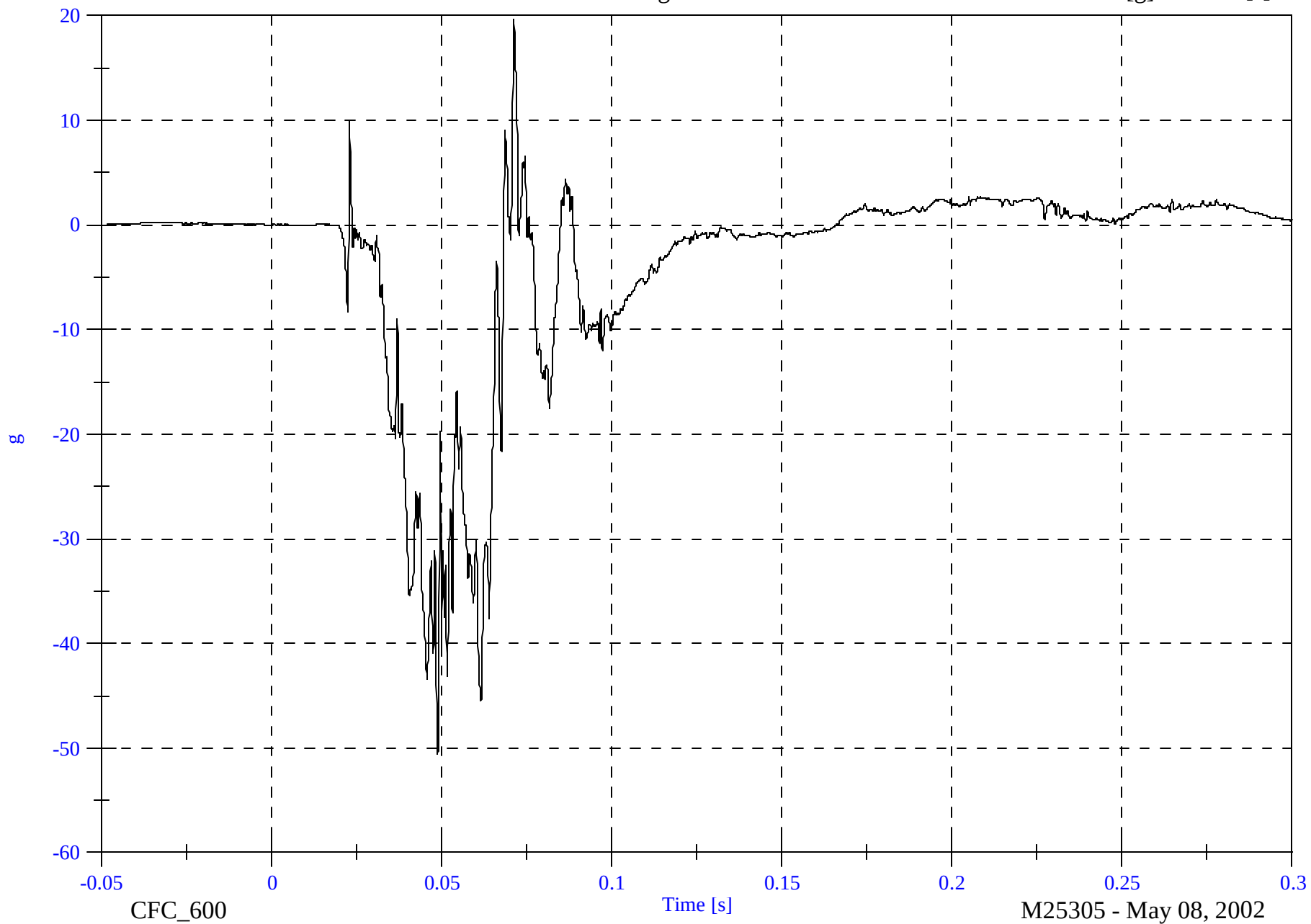
P2 Right Foot Aft z

Max: 19.7 [g] at 0.071 [s]

Min: -50.6 [g] at 0.049 [s]

B-108

8642-NCAP-12



NCAP Test 12 - 2002 Honda Odyssey

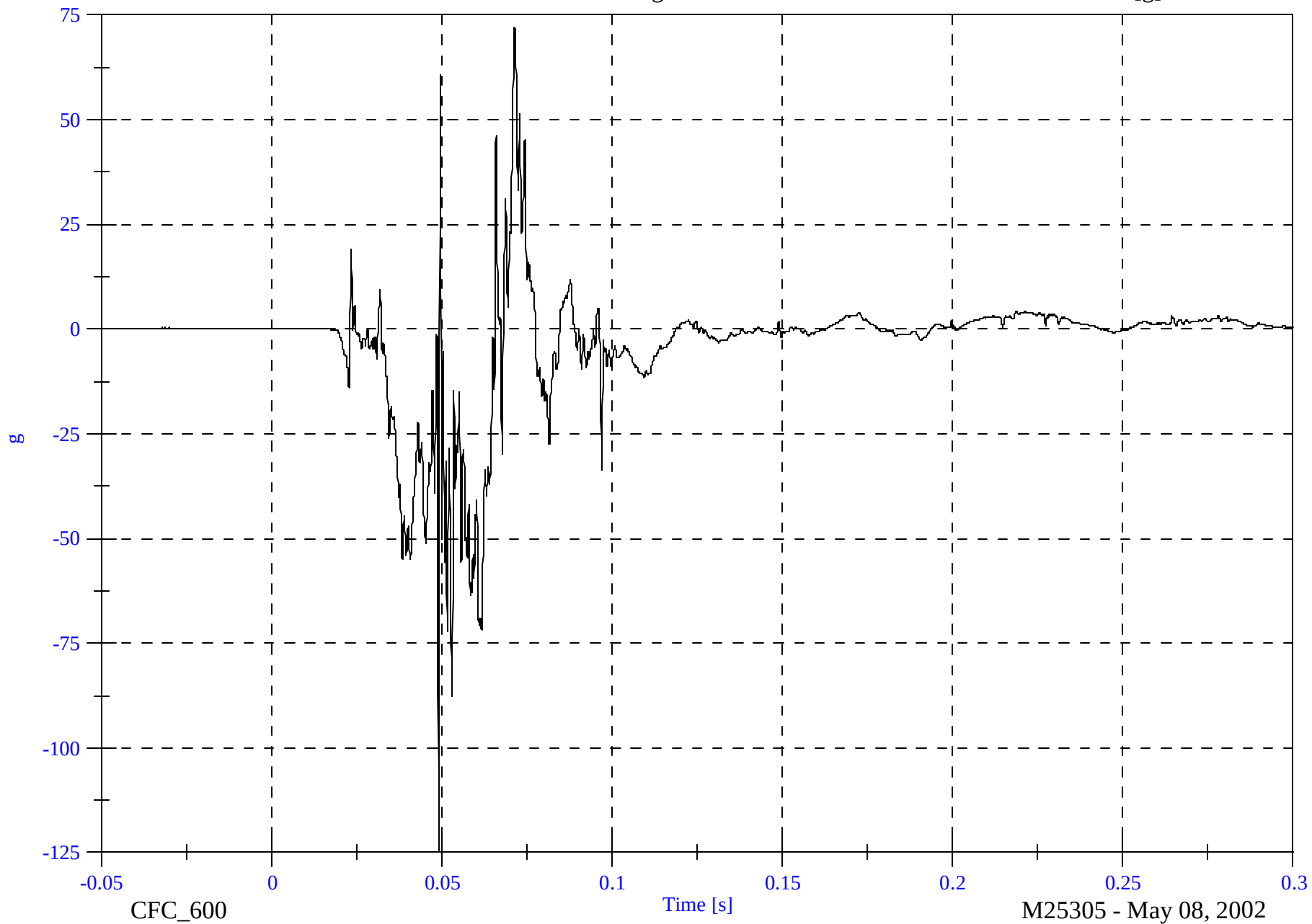
P2 Right Foot Fore z

Max: 71.9 [g] at 0.071 [s]

Min: -124.6 [g] at 0.049 [s]

B-109

8642-NCAP-12



NCAP Test 12 - 2002 Honda Odyssey

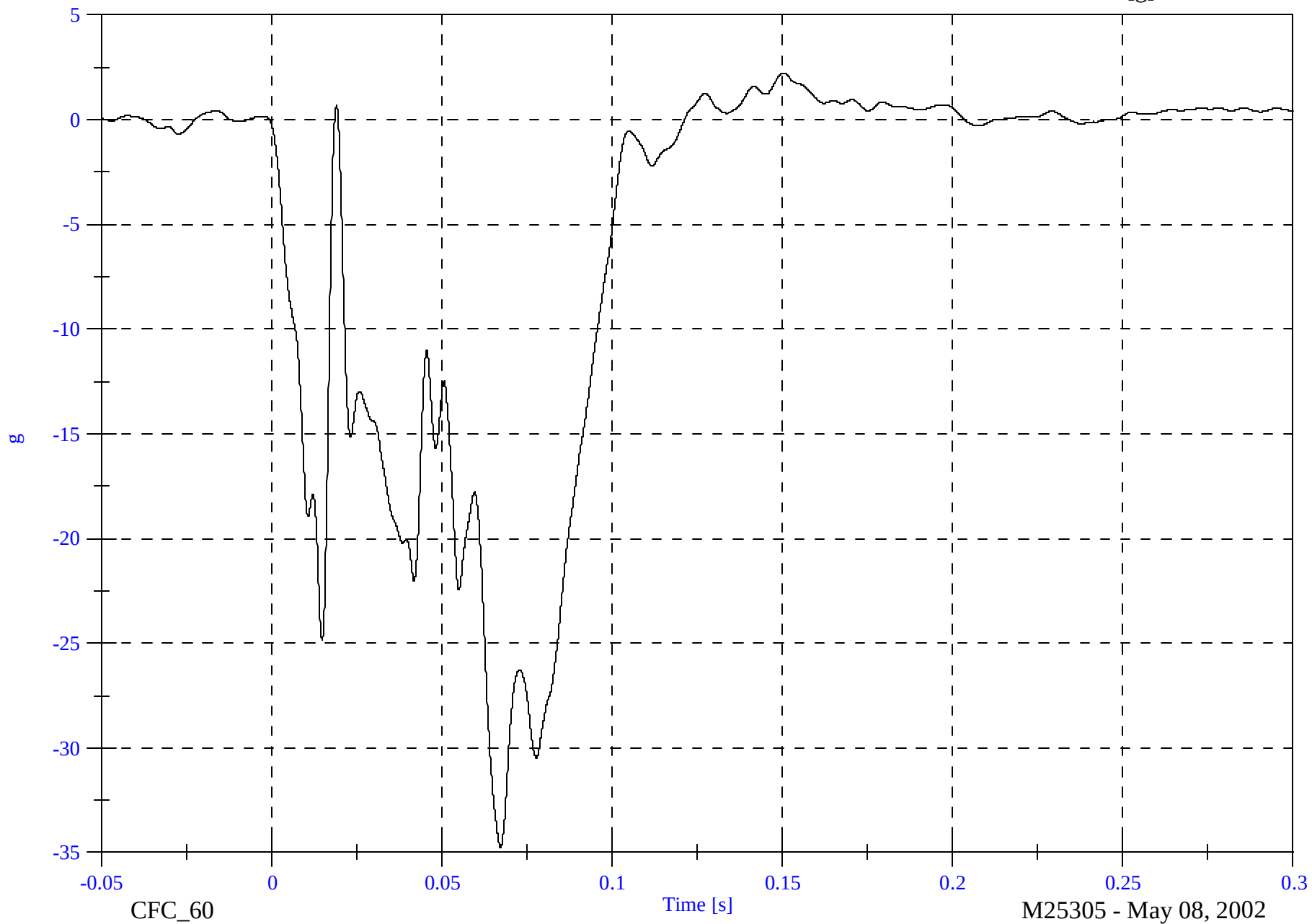
Left Rear #1x

Max: 2.2 [g] at 0.150 [s]

Min: -34.7 [g] at 0.067 [s]

B-110

8642-NCAP-12

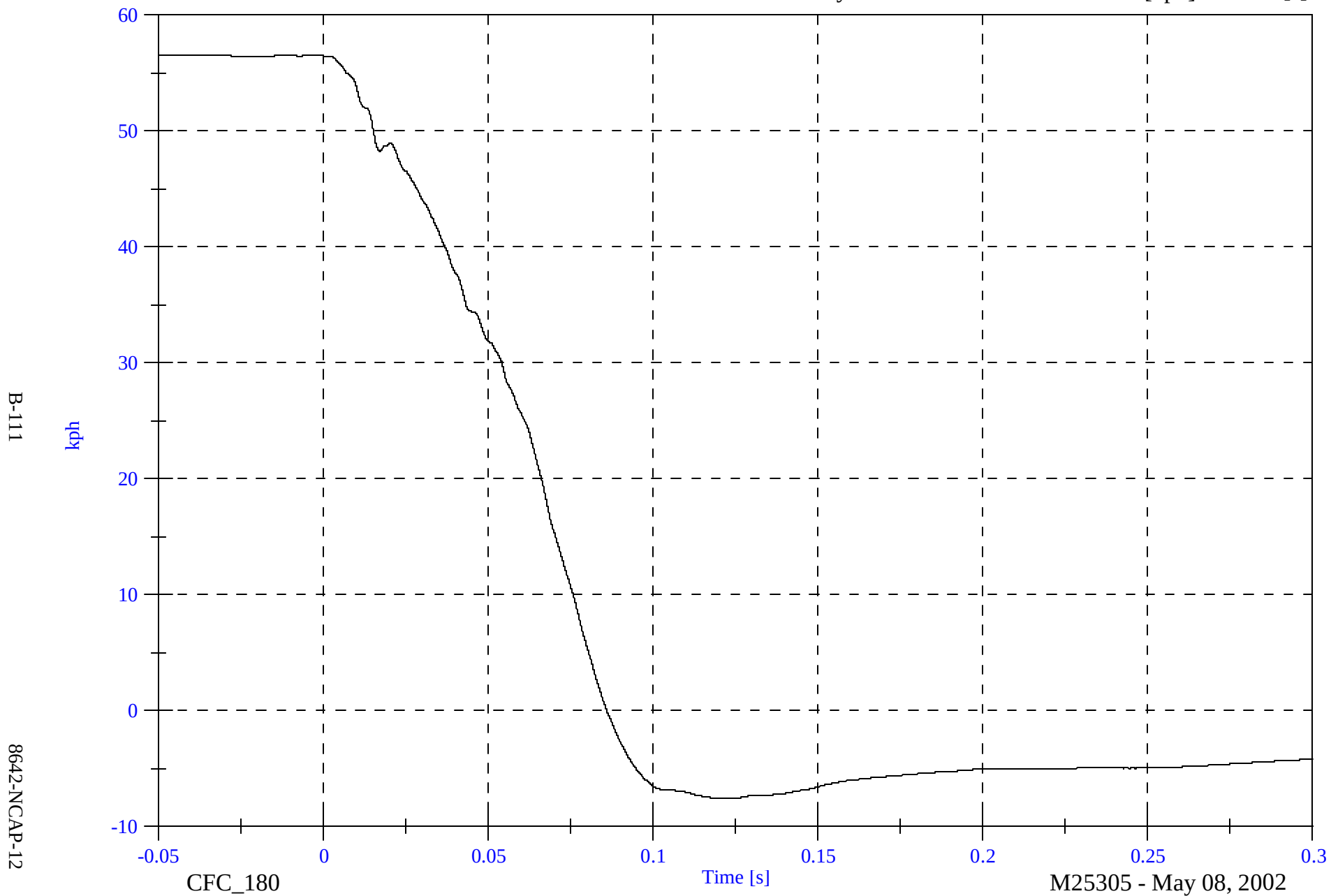


NCAP Test 12 - 2002 Honda Odyssey

Max: 56.6 [kph] at -0.037 [s]

Min: -7.6 [kph] at 0.122 [s]

Left Rear #1x Velocity



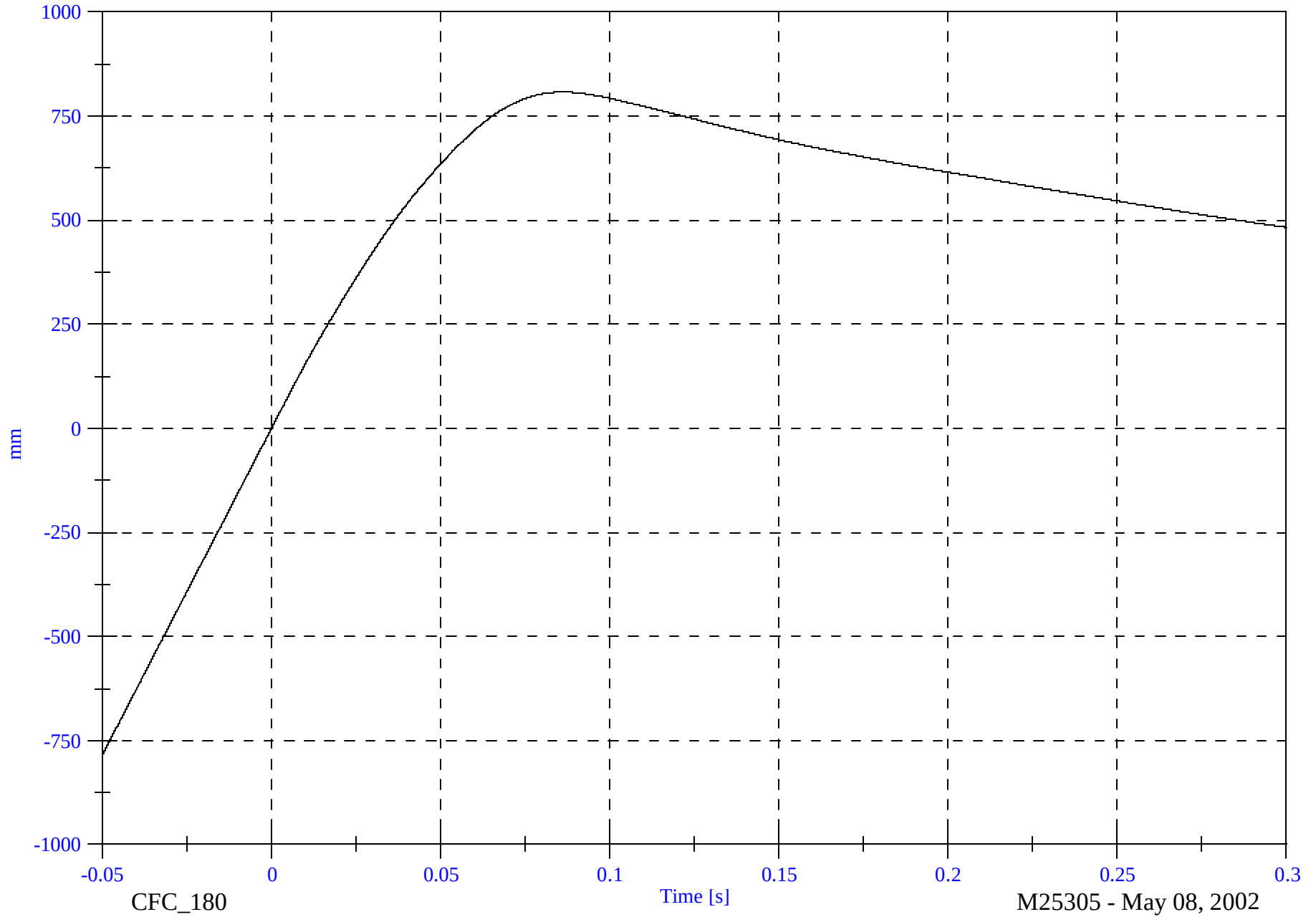
NCAP Test 12 - 2002 Honda Odyssey

Left Rear #1x Displacement

Max: 807.4 [mm] at 0.086 [s]
Min: -784.8 [mm] at -0.050 [s]

B-112

8642-NCAP-12



NCAP Test 12 - 2002 Honda Odyssey

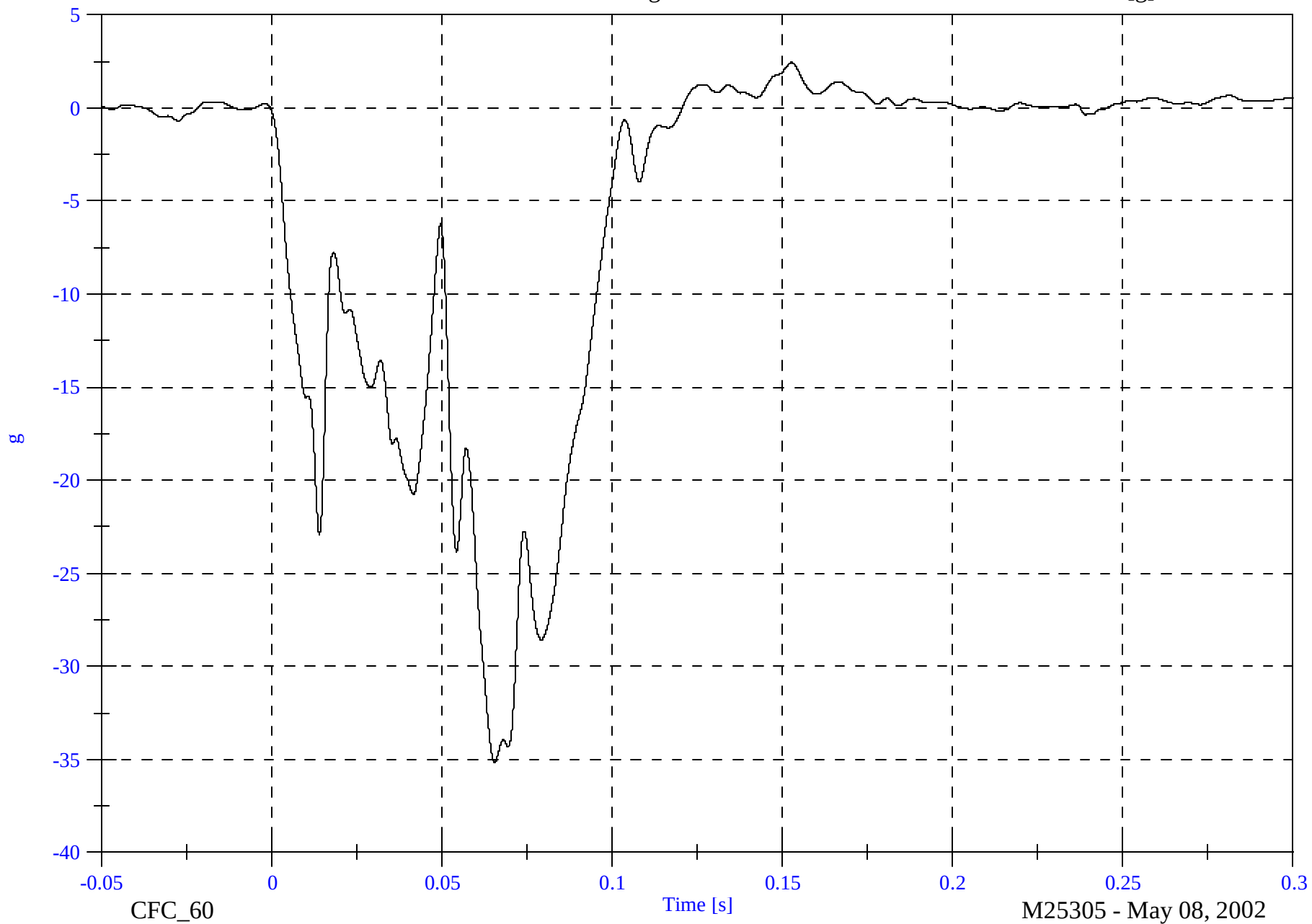
Right Rear #2x

Max: 2.4 [g] at 0.153 [s]

Min: -35.2 [g] at 0.065 [s]

B-113

8642-NCAP-12

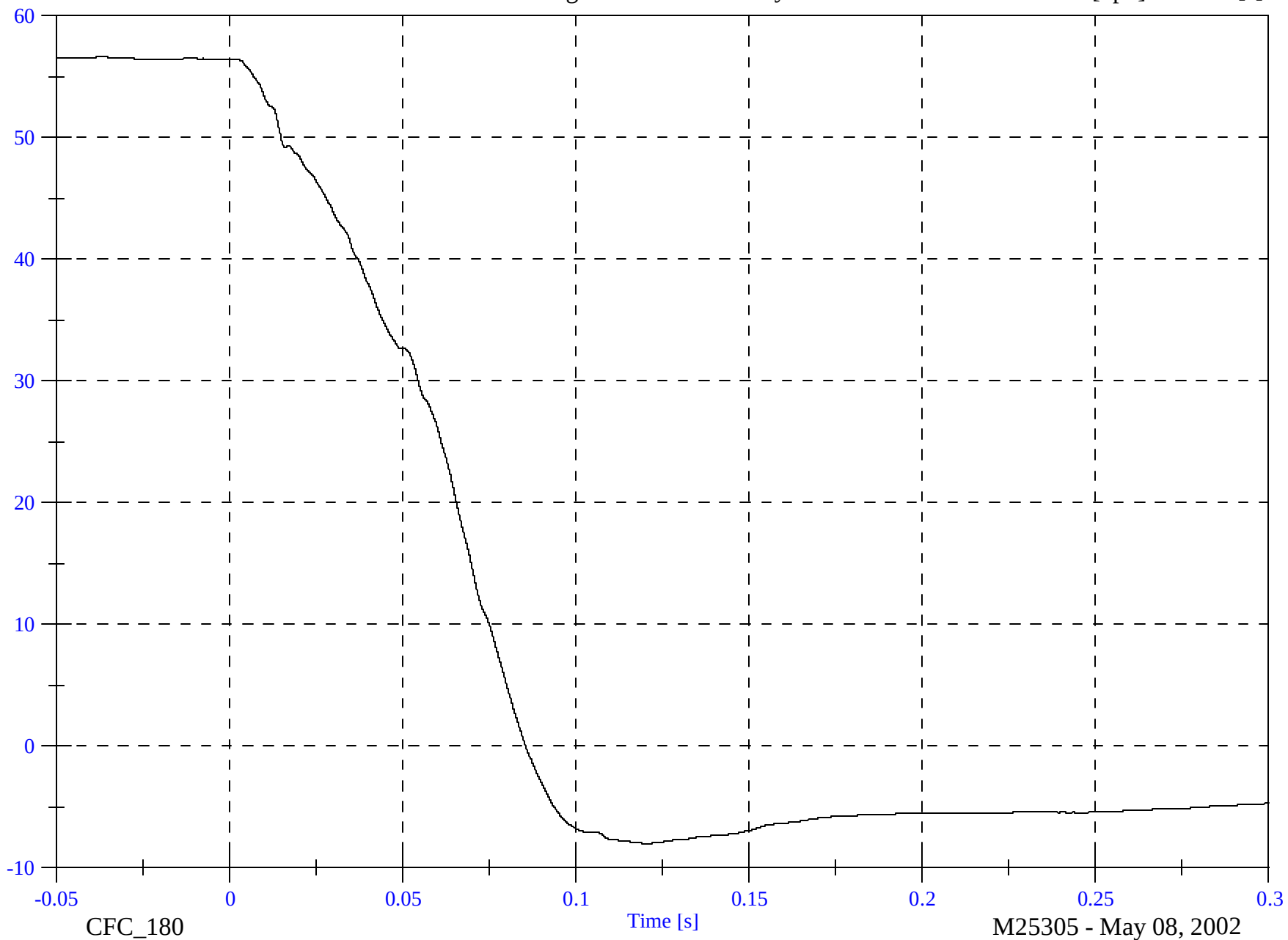


NCAP Test 12 - 2002 Honda Odyssey

Right Rear #2x Velocity

Max: 56.6 [kph] at -0.036 [s]

Min: -8.0 [kph] at 0.120 [s]



B-114

8642-NCAP-12

CFC_180

Time [s]

M25305 - May 08, 2002

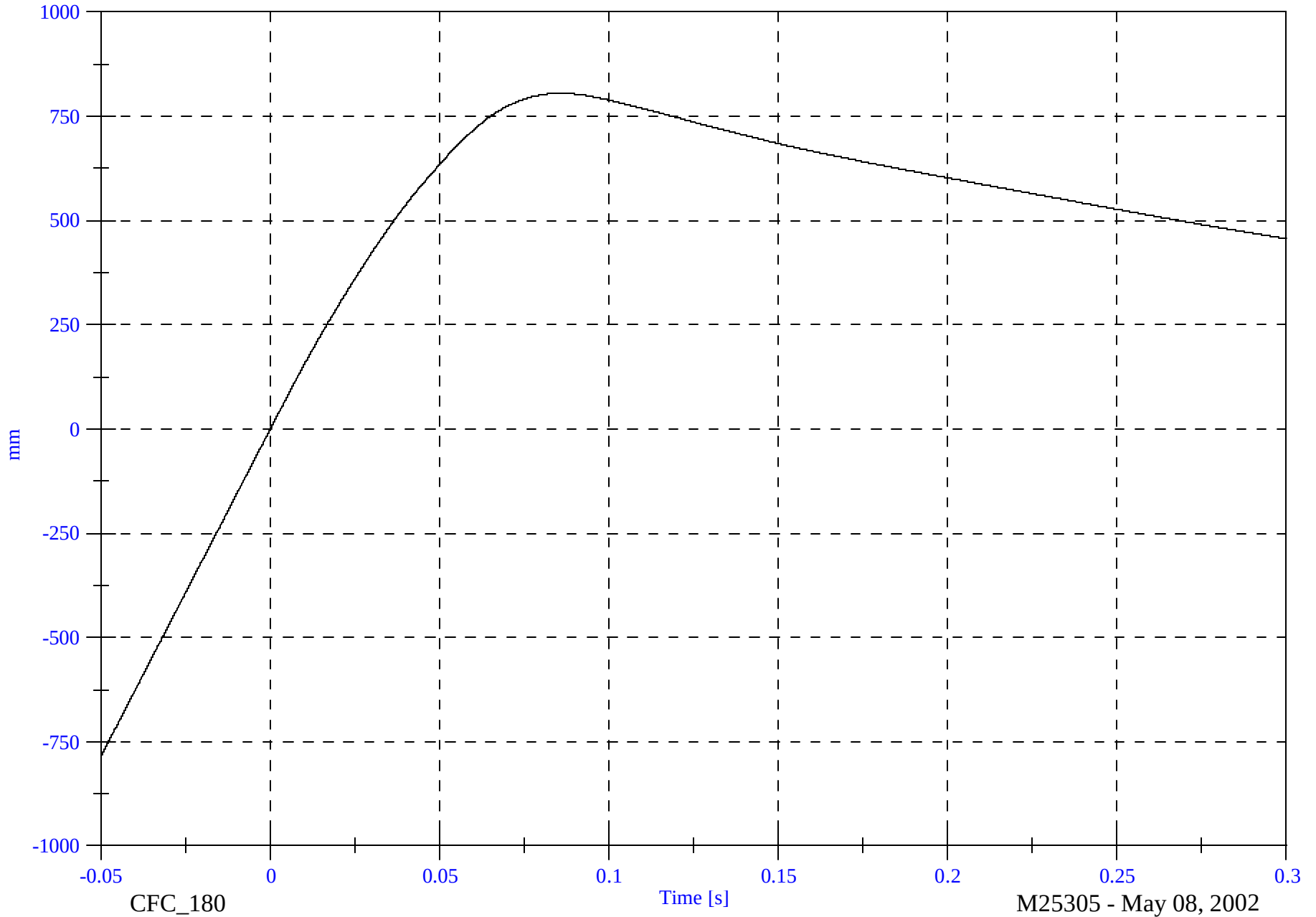
NCAP Test 12 - 2002 Honda Odyssey

Right Rear #2x Displacement

Max: 804.8 [mm] at 0.085 [s]
Min: -784.8 [mm] at -0.050 [s]

B-115

8642-NCAP-12



NCAP Test 12 - 2002 Honda Odyssey

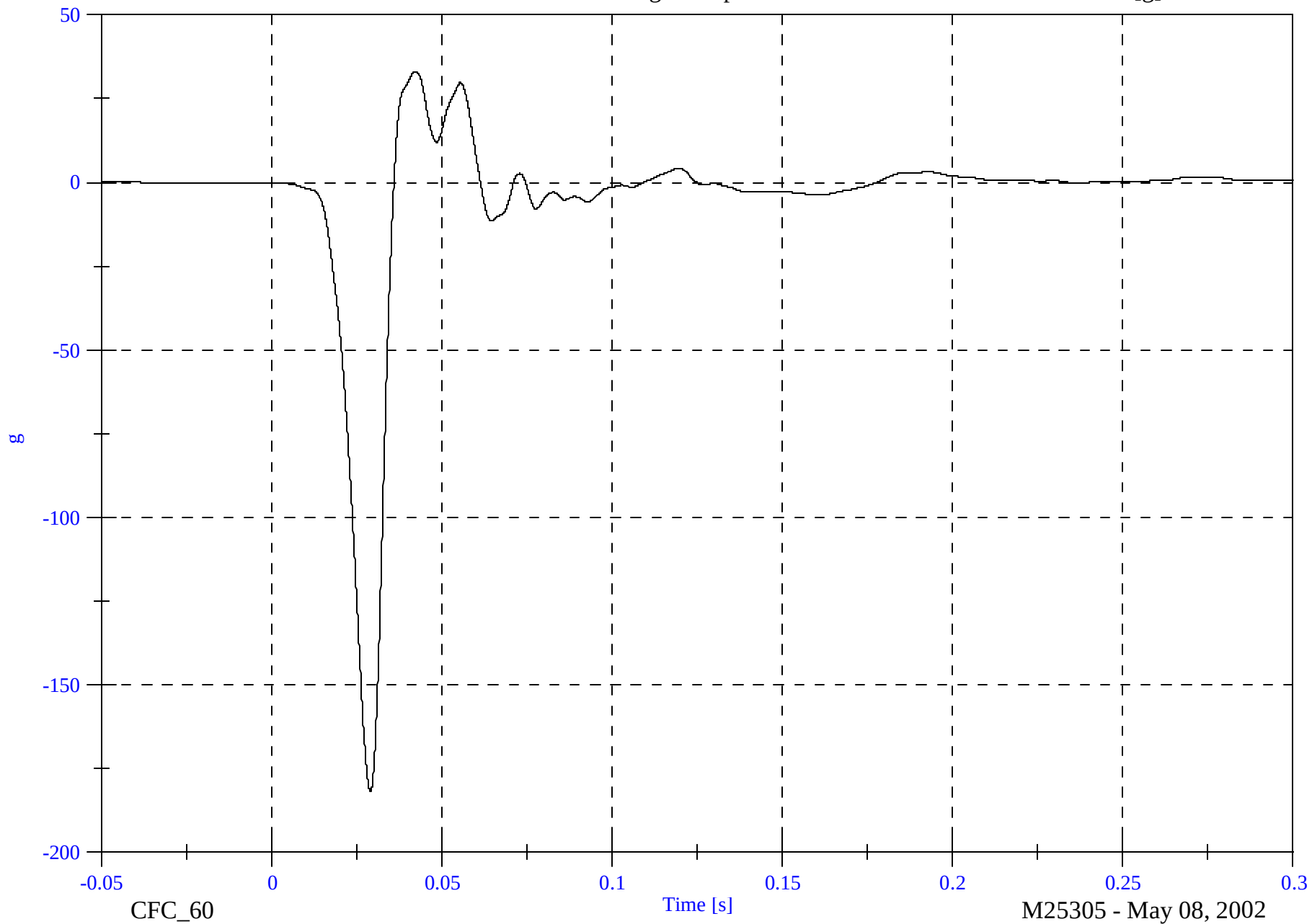
Engine Top #3x

Max: 33.1 [g] at 0.042 [s]

Min: -181.8 [g] at 0.029 [s]

B-116

8642-NCAP-12

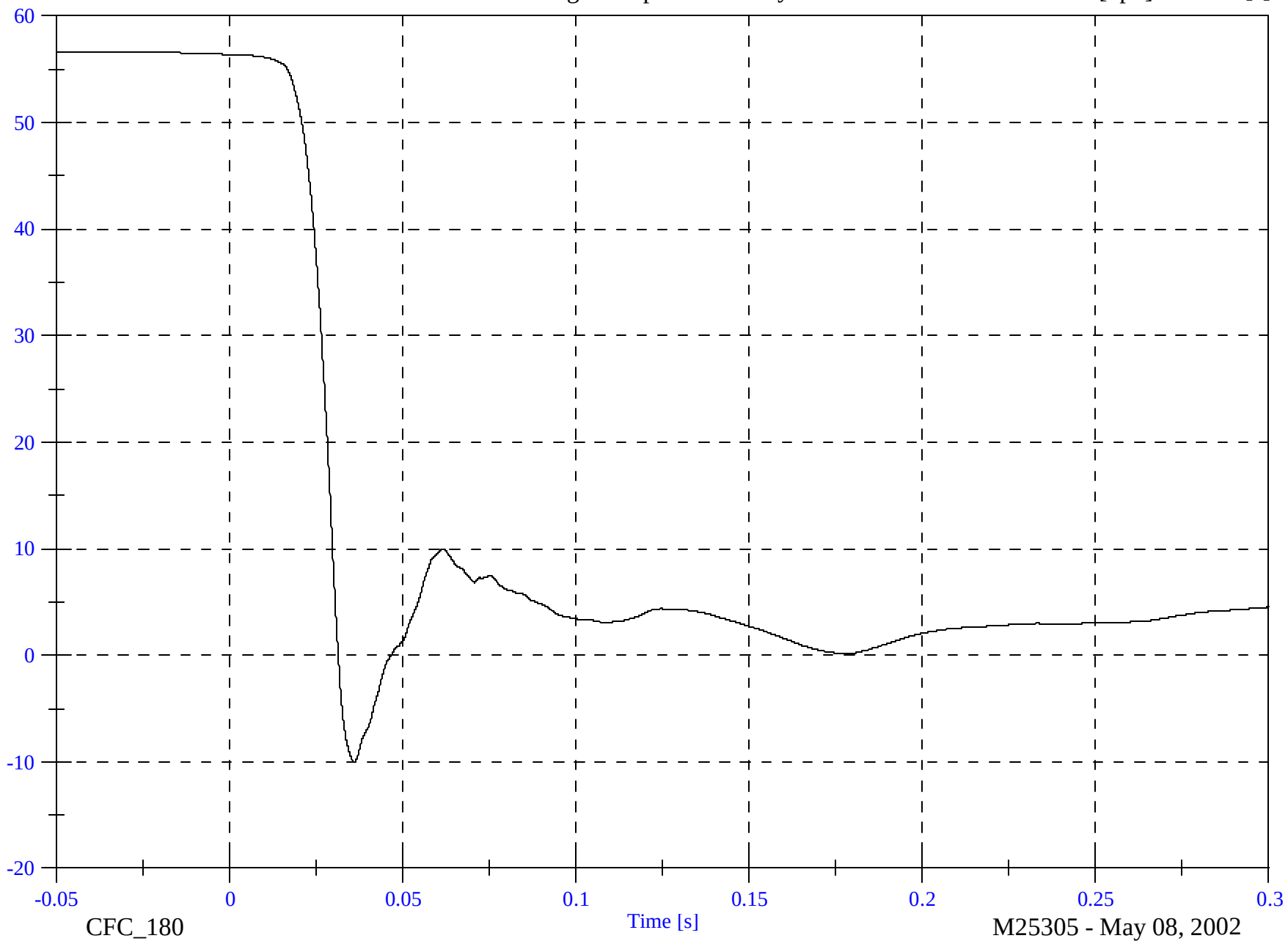


NCAP Test 12 - 2002 Honda Odyssey

Engine Top #3x Velocity

Max: 56.6 [kph] at -0.039 [s]

Min: -10.1 [kph] at 0.036 [s]



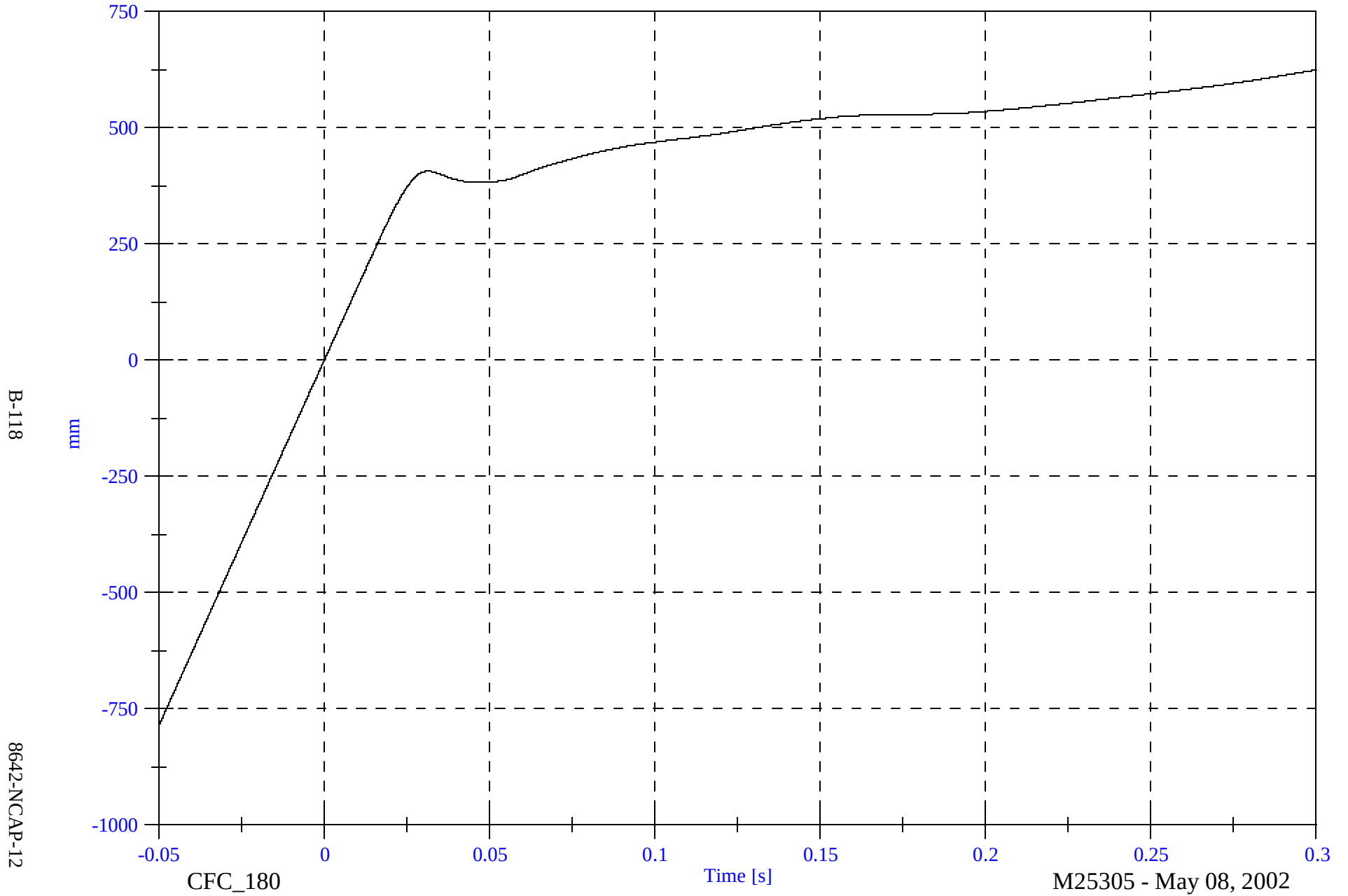
B-117

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NCAP Test 12 - 2002 Honda Odyssey

Engine Top #3x Displacement

Max: 624.9 [mm] at 0.300 [s]
Min: -785.6 [mm] at -0.050 [s]



NCAP Test 12 - 2002 Honda Odyssey

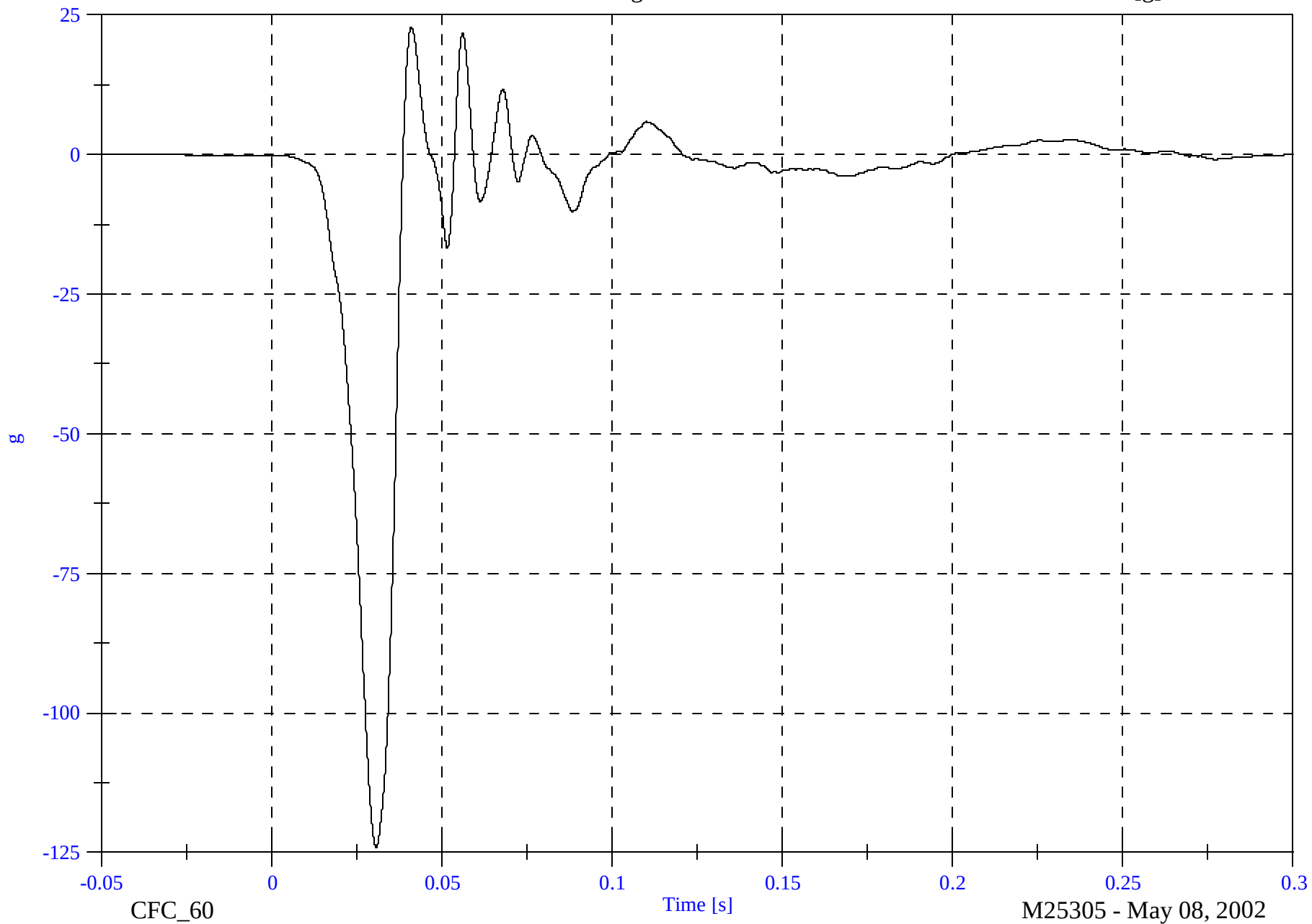
Engine Bottom #4x

Max: 22.7 [g] at 0.041 [s]

Min: -124.1 [g] at 0.031 [s]

B-119

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NCAP Test 12 - 2002 Honda Odyssey

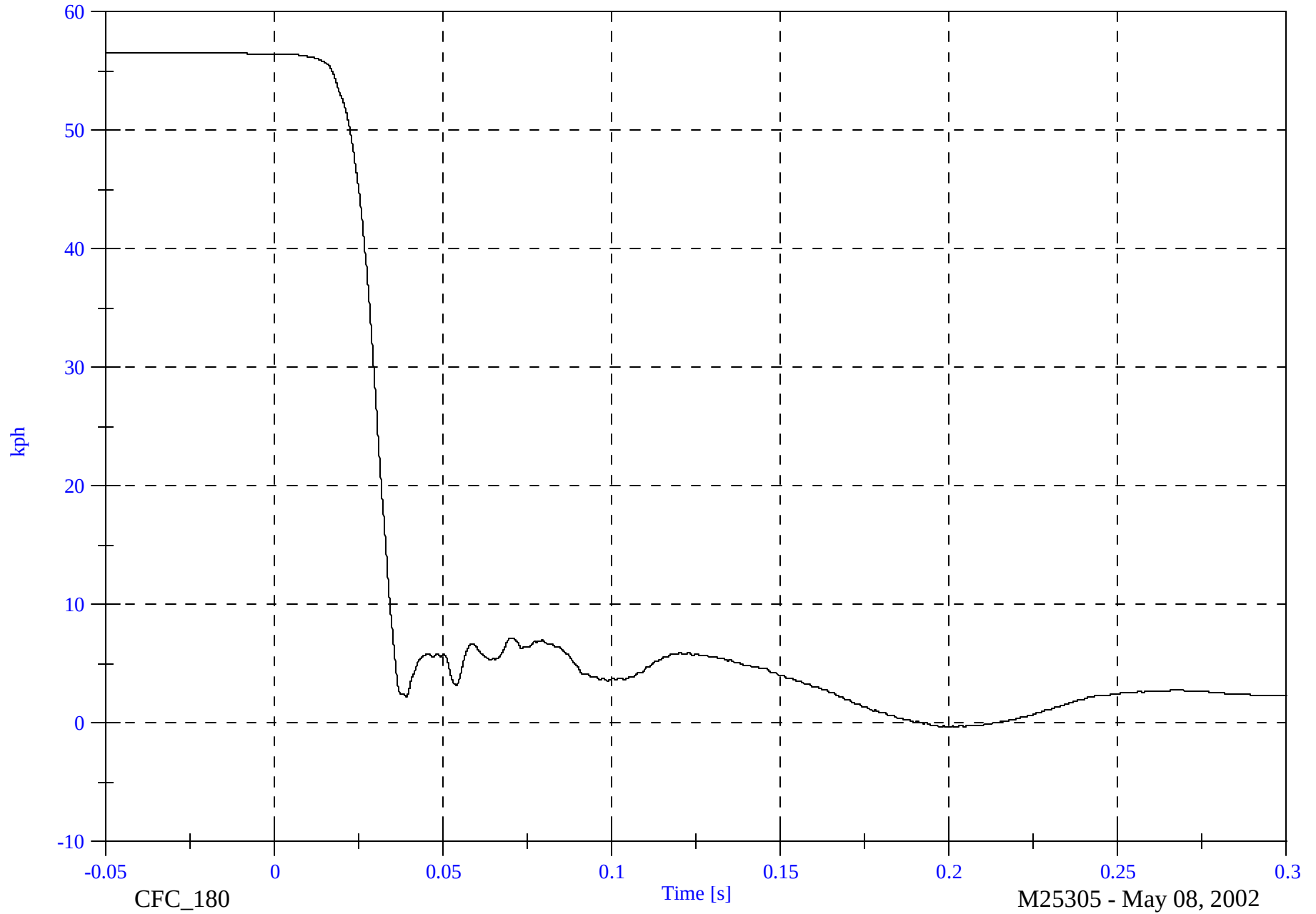
Engine Bottom #4x Velocity

Max: 56.6 [kph] at -0.028 [s]

Min: -0.3 [kph] at 0.200 [s]

B-120

8642-NCAP-12



NCAP Test 12 - 2002 Honda Odyssey

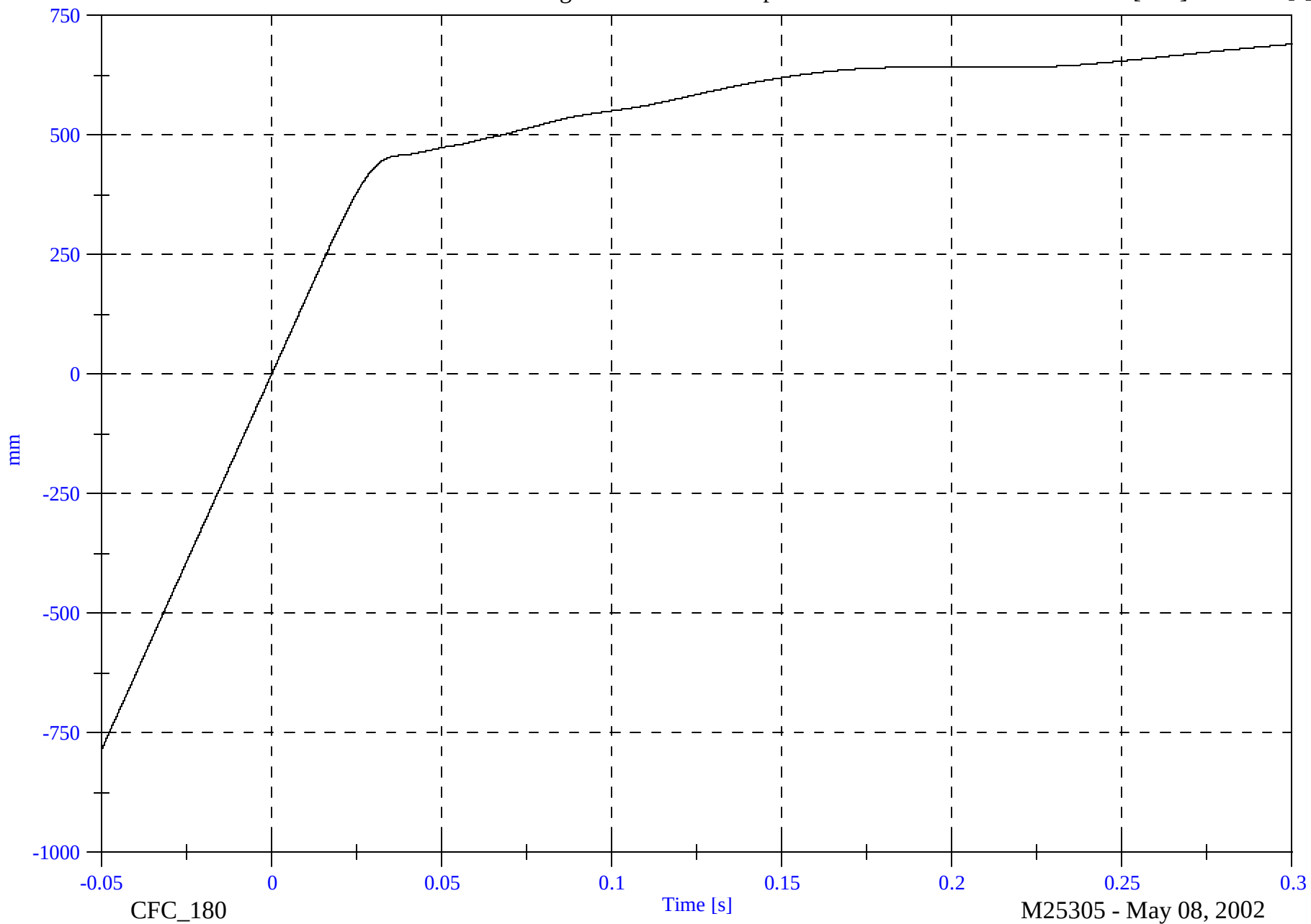
Engine Bottom #4x Displacement

Max: 690.5 [mm] at 0.300 [s]

Min: -785.0 [mm] at -0.050 [s]

B-121

8642-NCAP-12



NCAP Test 12 - 2002 Honda Odyssey

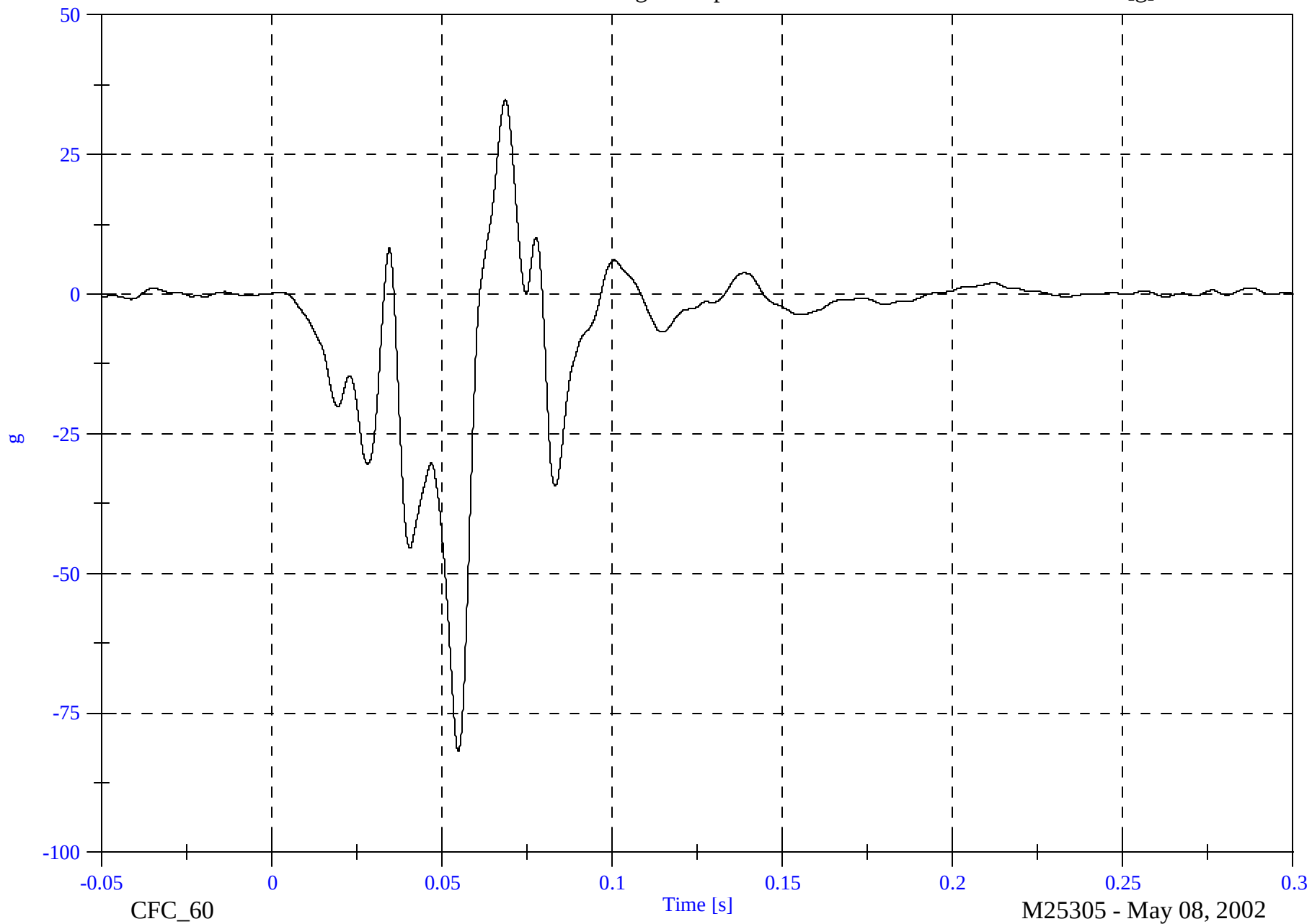
Right Caliper #5x

Max: 34.8 [g] at 0.069 [s]

Min: -81.9 [g] at 0.055 [s]

B-122

8642-NCAP-12

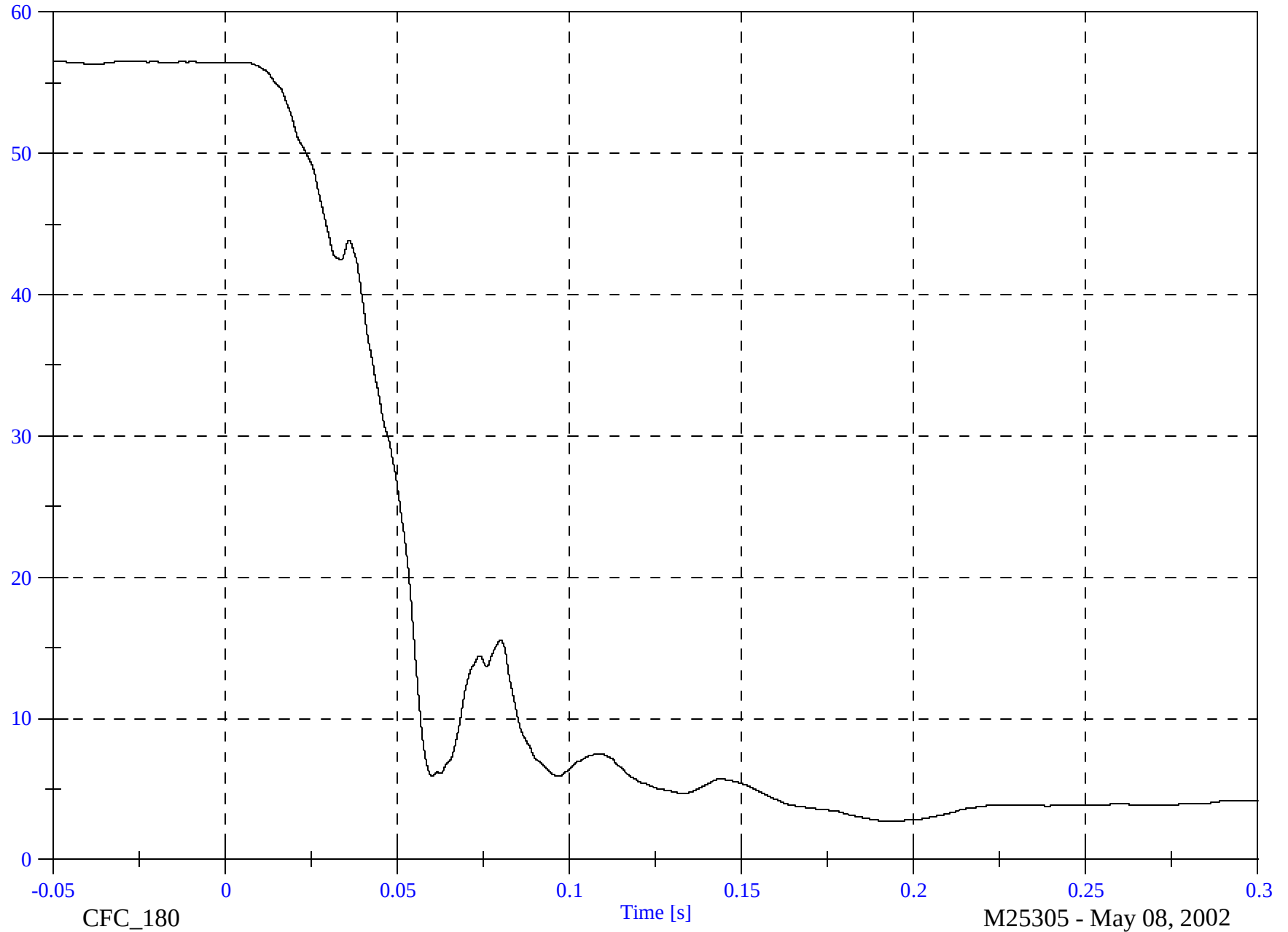


NCAP Test 12 - 2002 Honda Odyssey

Right Caliper #5x Velocity

Max: 56.6 [kph] at -0.025 [s]

Min: 2.7 [kph] at 0.193 [s]



B-123

8642-NCAP-12

CFC_180

Time [s]

M25305 - May 08, 2002

NCAP Test 12 - 2002 Honda Odyssey

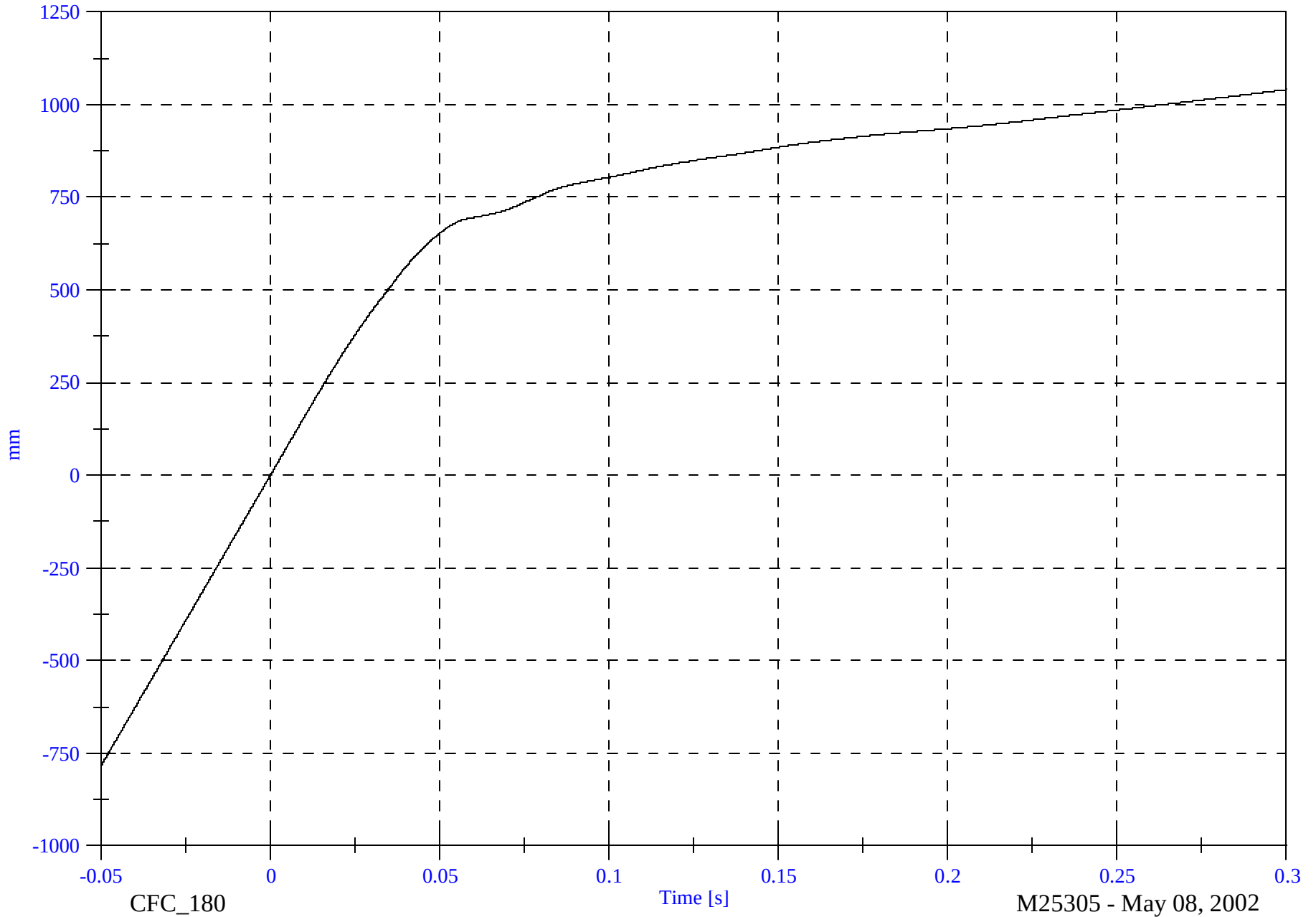
Right Caliper #5x Displacement

Max: 1040.4 [mm] at 0.300 [s]

Min: -784.0 [mm] at -0.050 [s]

B-124

8642-NCAP-12

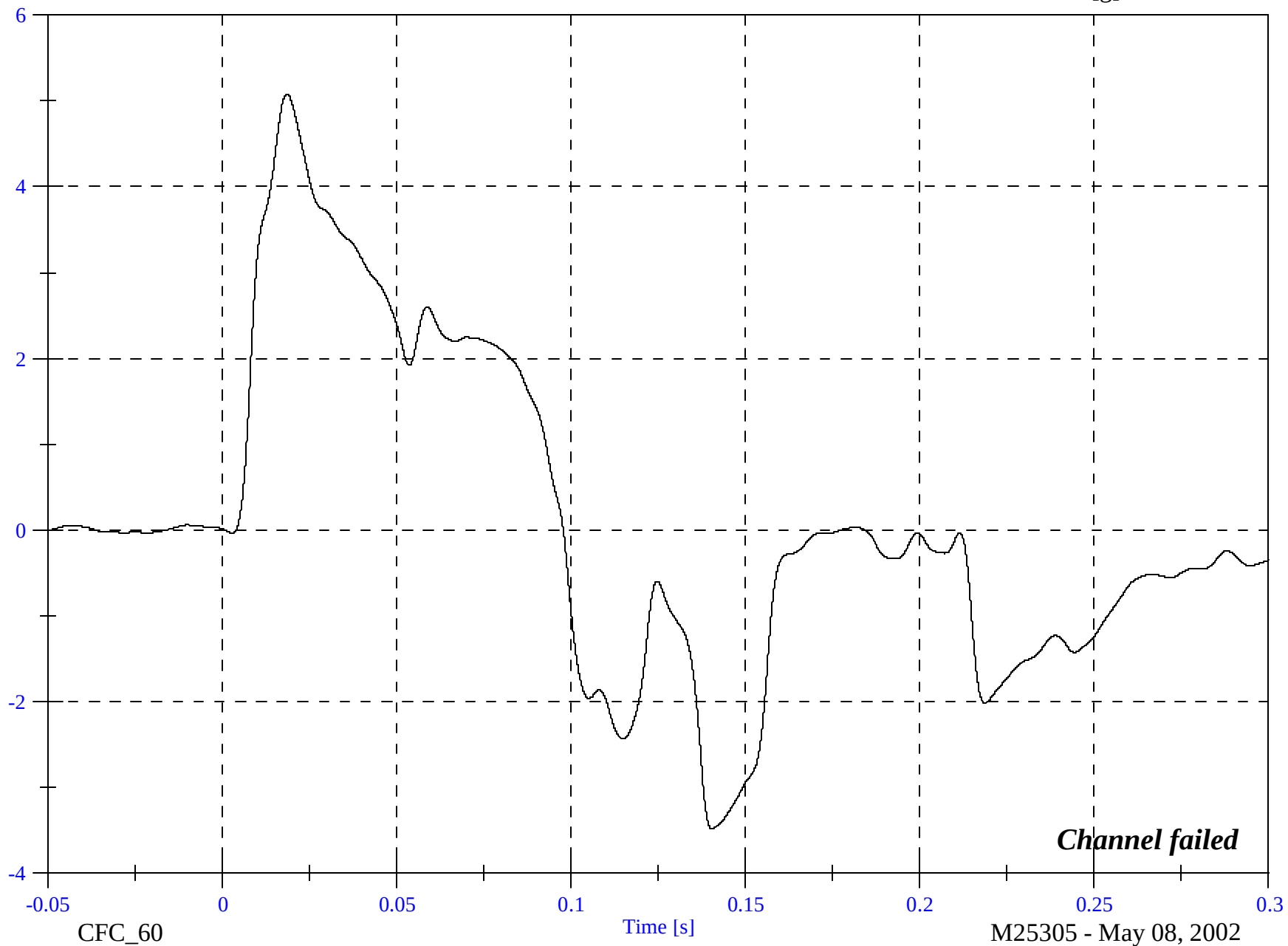


NCAP Test 12 - 2002 Honda Odyssey

Instrument Panel #6x

Max: 5.1 [g] at 0.019 [s]

Min: -3.5 [g] at 0.140 [s]



B-125

8642-NCAP-12

CFC_60

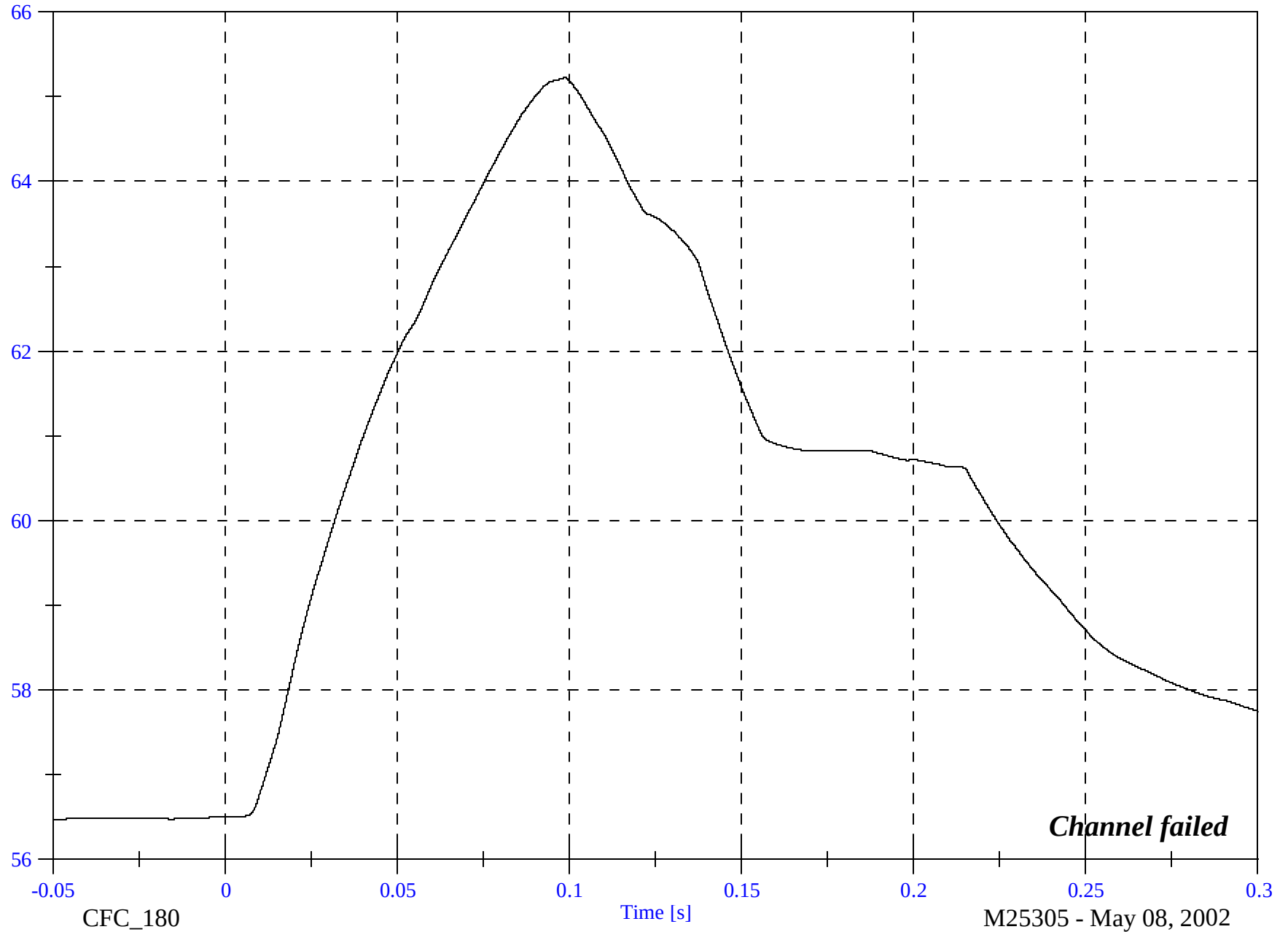
M25305 - May 08, 2002

NCAP Test 12 - 2002 Honda Odyssey

Instrument Panel #6x Velocity

Max: 65.2 [kph] at 0.099 [s]

Min: 56.5 [kph] at -0.049 [s]



B-126

8642-NCAP-12

CFC_180

Time [s]

M25305 - May 08, 2002

NCAP Test 12 - 2002 Honda Odyssey

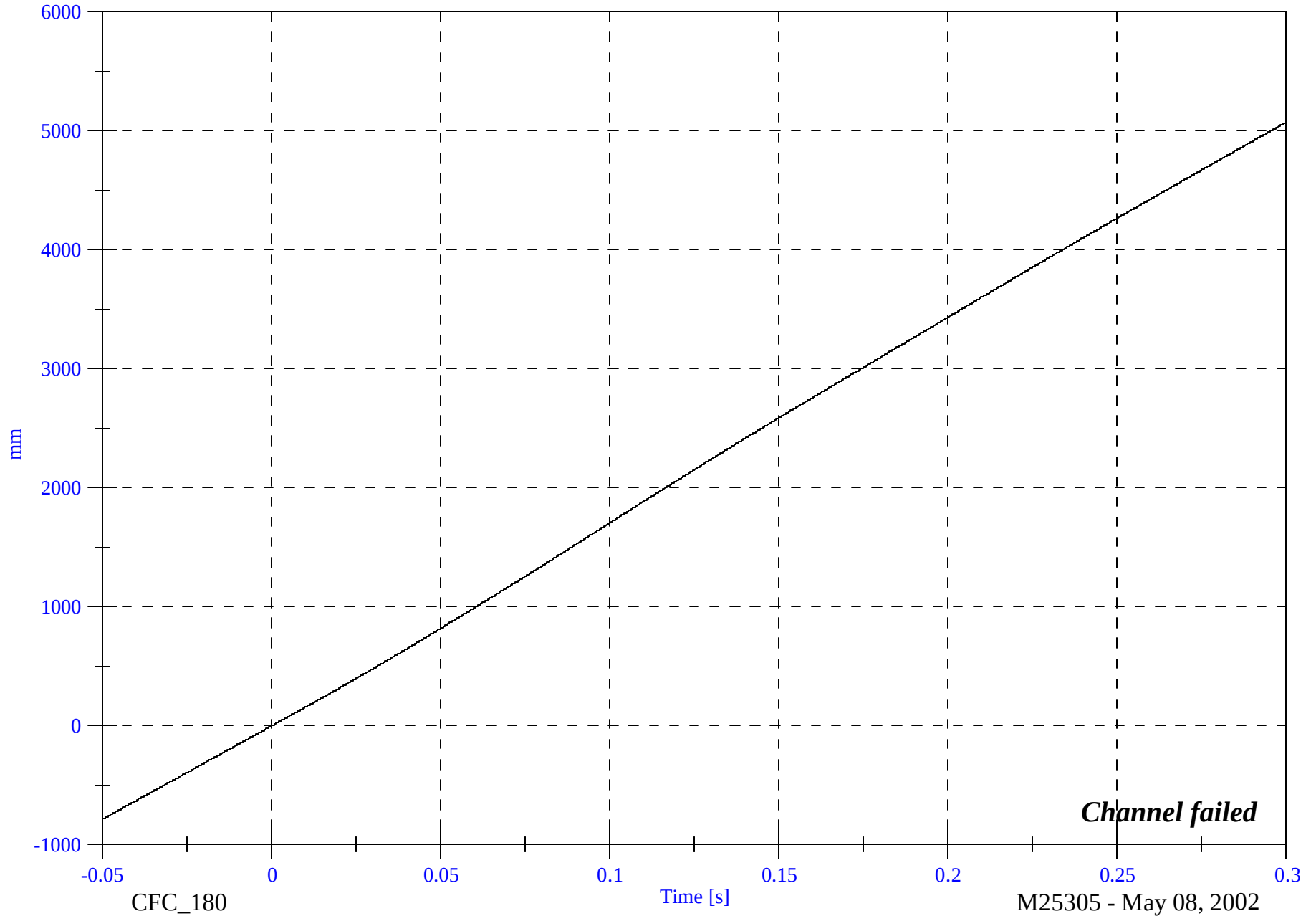
Instrument Panel #6x Displacement

Max: 5073.7 [mm] at 0.300 [s]

Min: -784.6 [mm] at -0.050 [s]

B-127

8642-NCAP-12



NCAP Test 12 - 2002 Honda Odyssey

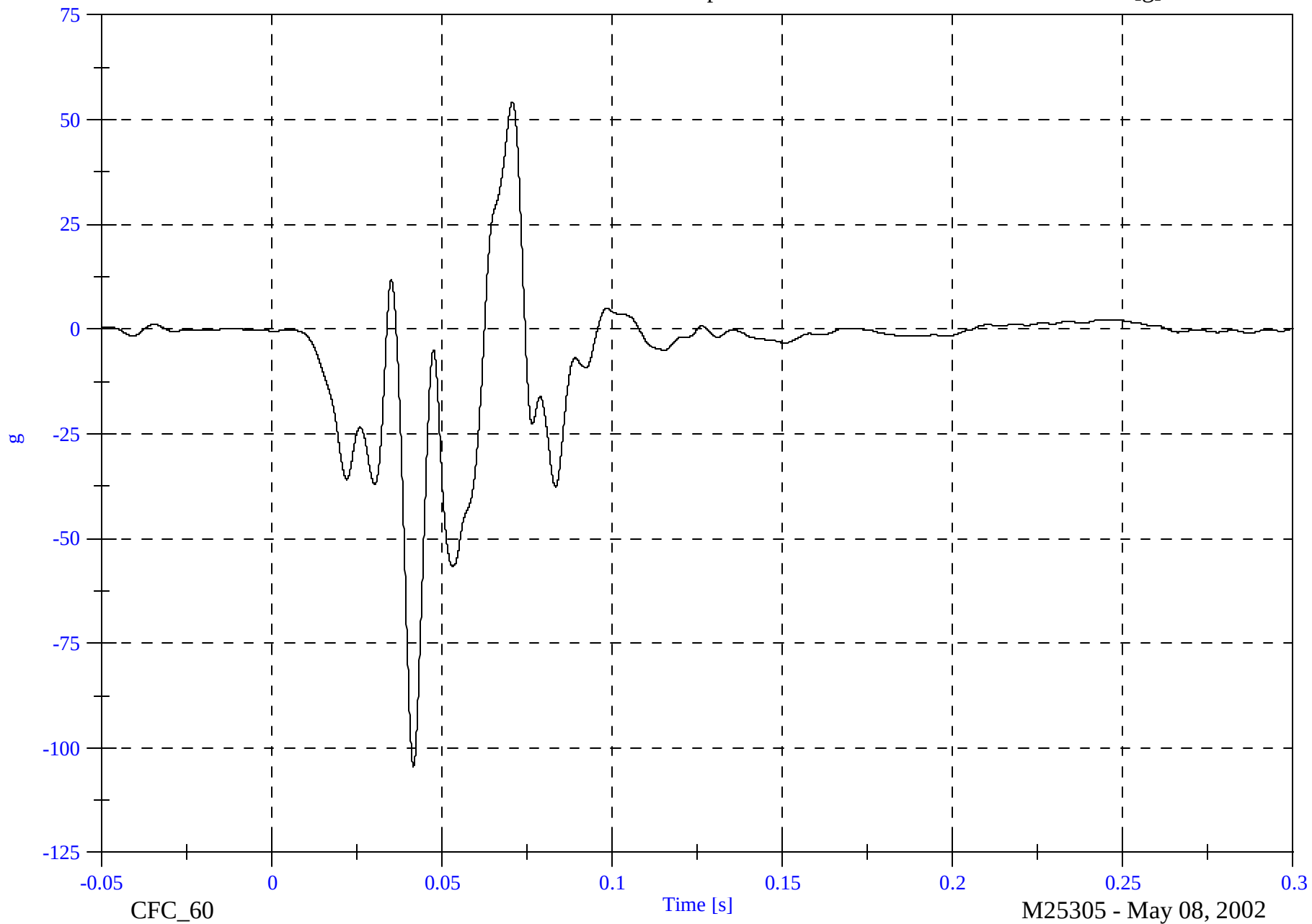
Left Caliper #7x

Max: 54.2 [g] at 0.071 [s]

Min: -104.4 [g] at 0.042 [s]

B-128

8642-NCAP-12

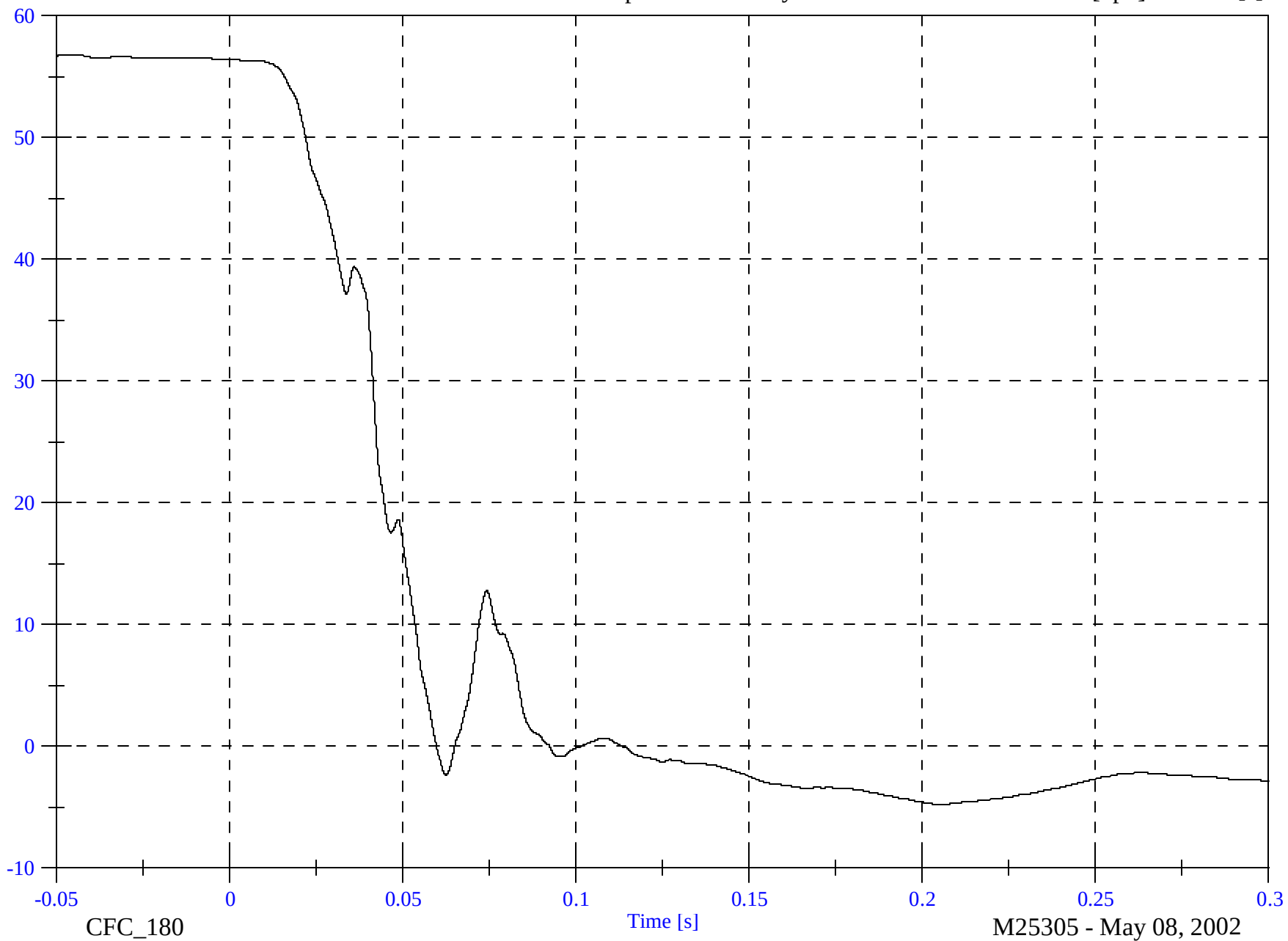


NCAP Test 12 - 2002 Honda Odyssey

Max: 56.8 [kph] at -0.044 [s]

Left Caliper #7x Velocity

Min: -4.8 [kph] at 0.207 [s]



B-129

8642-NCAP-12

CFC_180

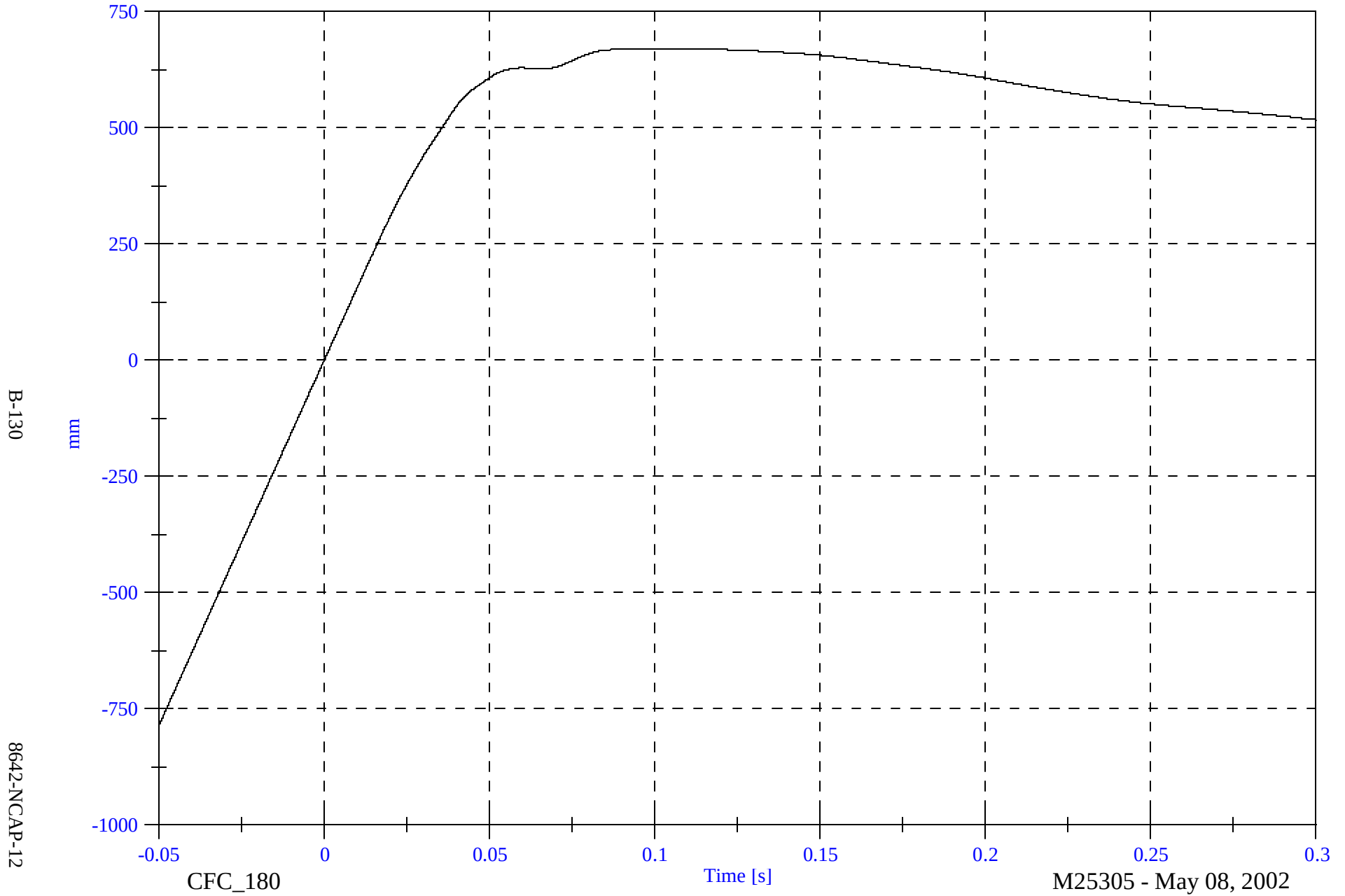
Time [s]

M25305 - May 08, 2002

NCAP Test 12 - 2002 Honda Odyssey

Left Caliper #7x Displacement

Max: 669.5 [mm] at 0.113 [s]
Min: -785.8 [mm] at -0.050 [s]



NCAP Test 12 - 2002 Honda Odyssey

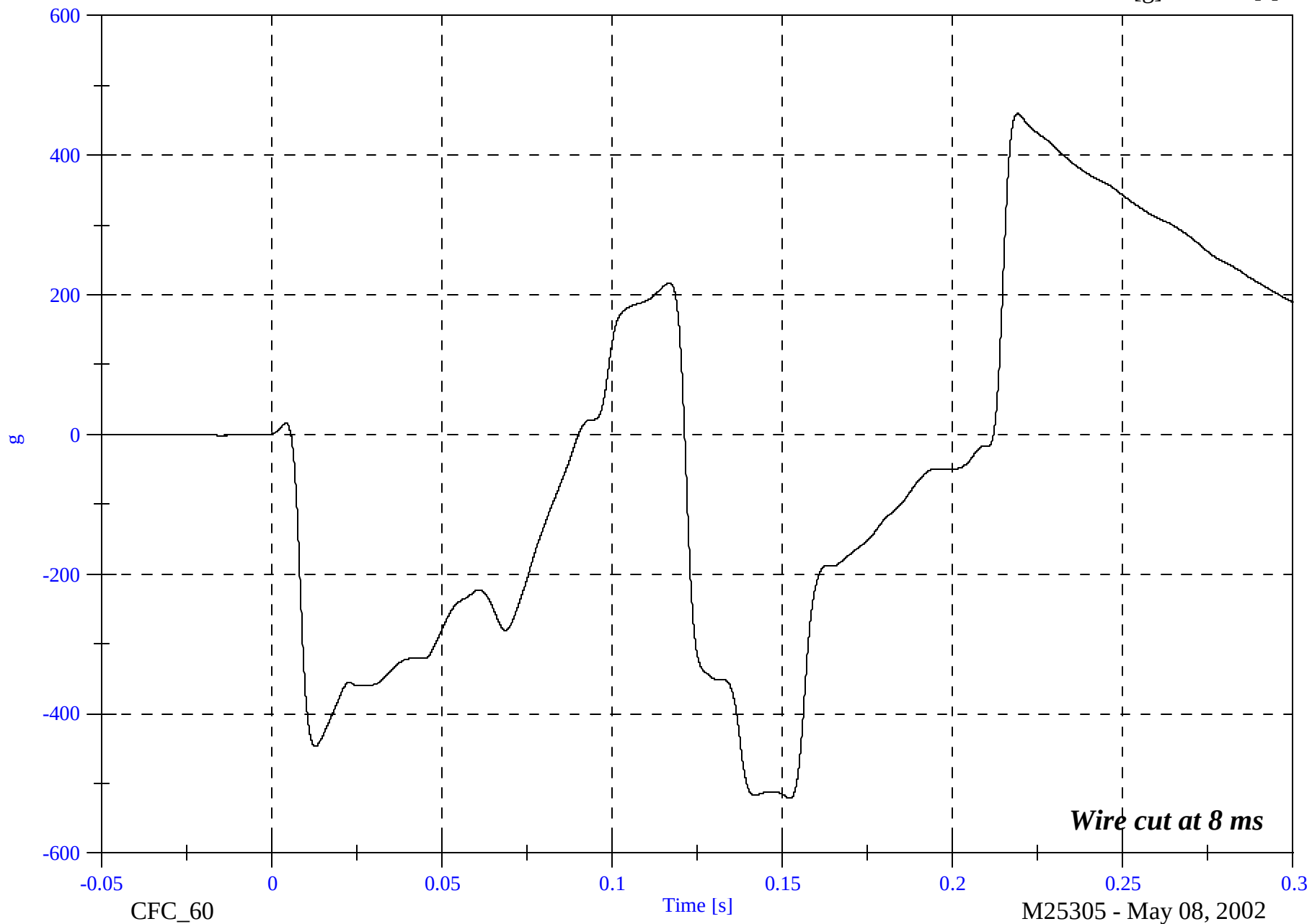
Left Rear #8z

Max: 459.7 [g] at 0.219 [s]

Min: -521.1 [g] at 0.152 [s]

B-131

8642-NCAP-12



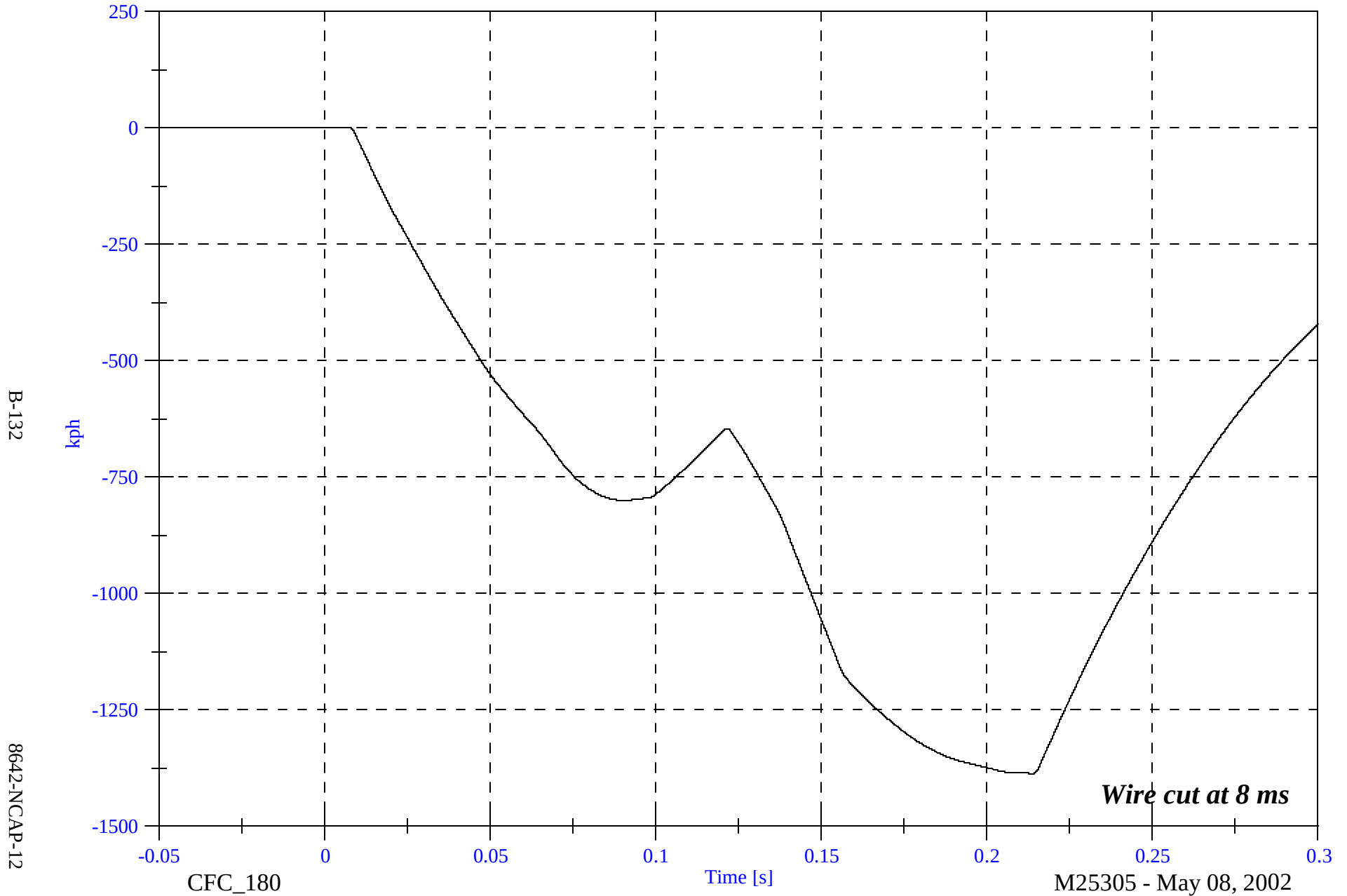
Wire cut at 8 ms

M25305 - May 08, 2002

NCAP Test 12 - 2002 Honda Odyssey

Left Rear #8z Velocity

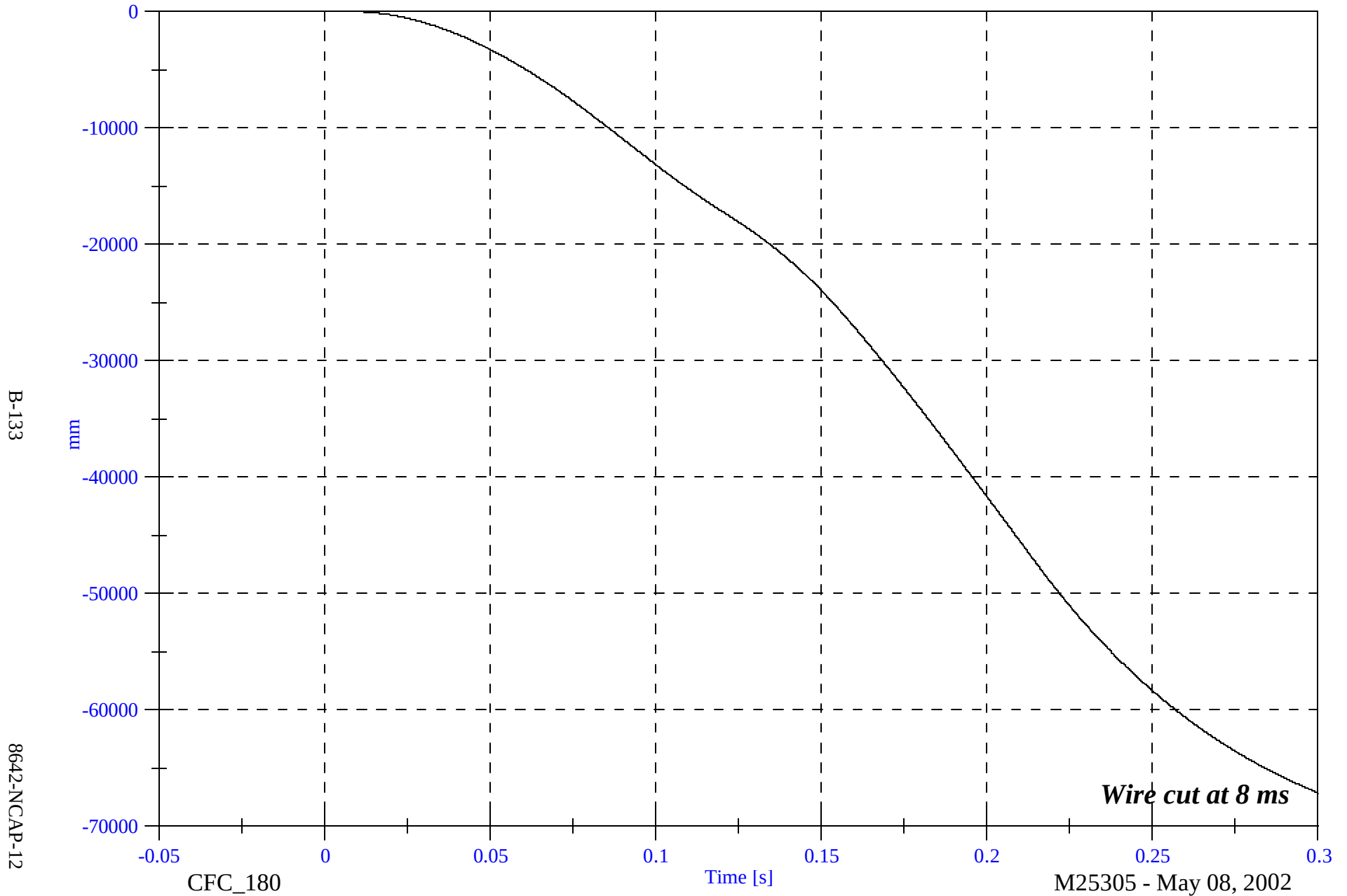
Max: 1.0 [kph] at 0.007 [s]
Min: -1386.0 [kph] at 0.214 [s]



NCAP Test 12 - 2002 Honda Odyssey

Left Rear #8z Displacement

Max: 0.6 [mm] at 0.008 [s]
Min: -67113.4 [mm] at 0.300 [s]



NCAP Test 12 - 2002 Honda Odyssey

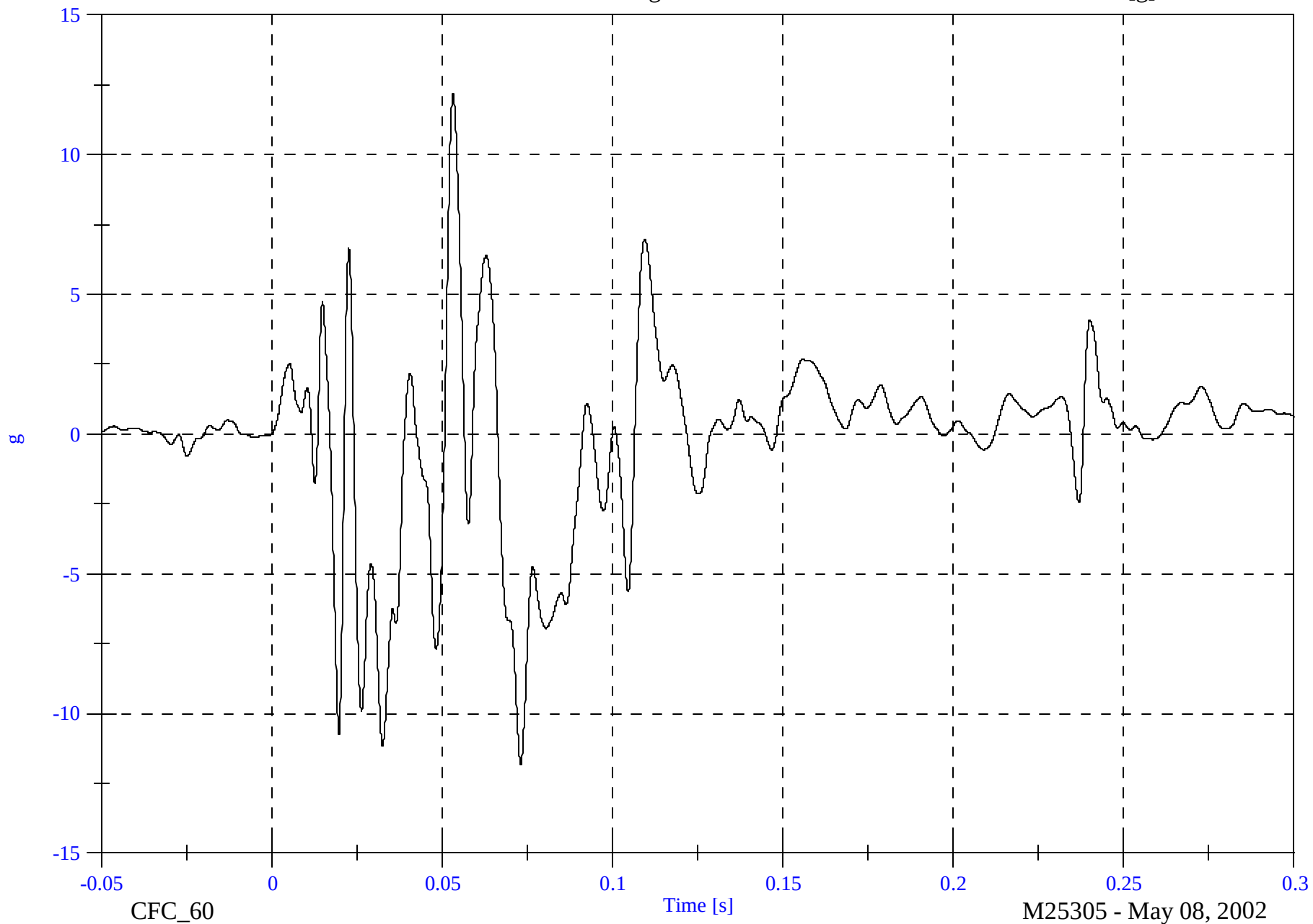
Right Rear #9z

Max: 12.2 [g] at 0.053 [s]

Min: -11.8 [g] at 0.073 [s]

B-134

8642-NCAP-12



NCAP Test 12 - 2002 Honda Odyssey

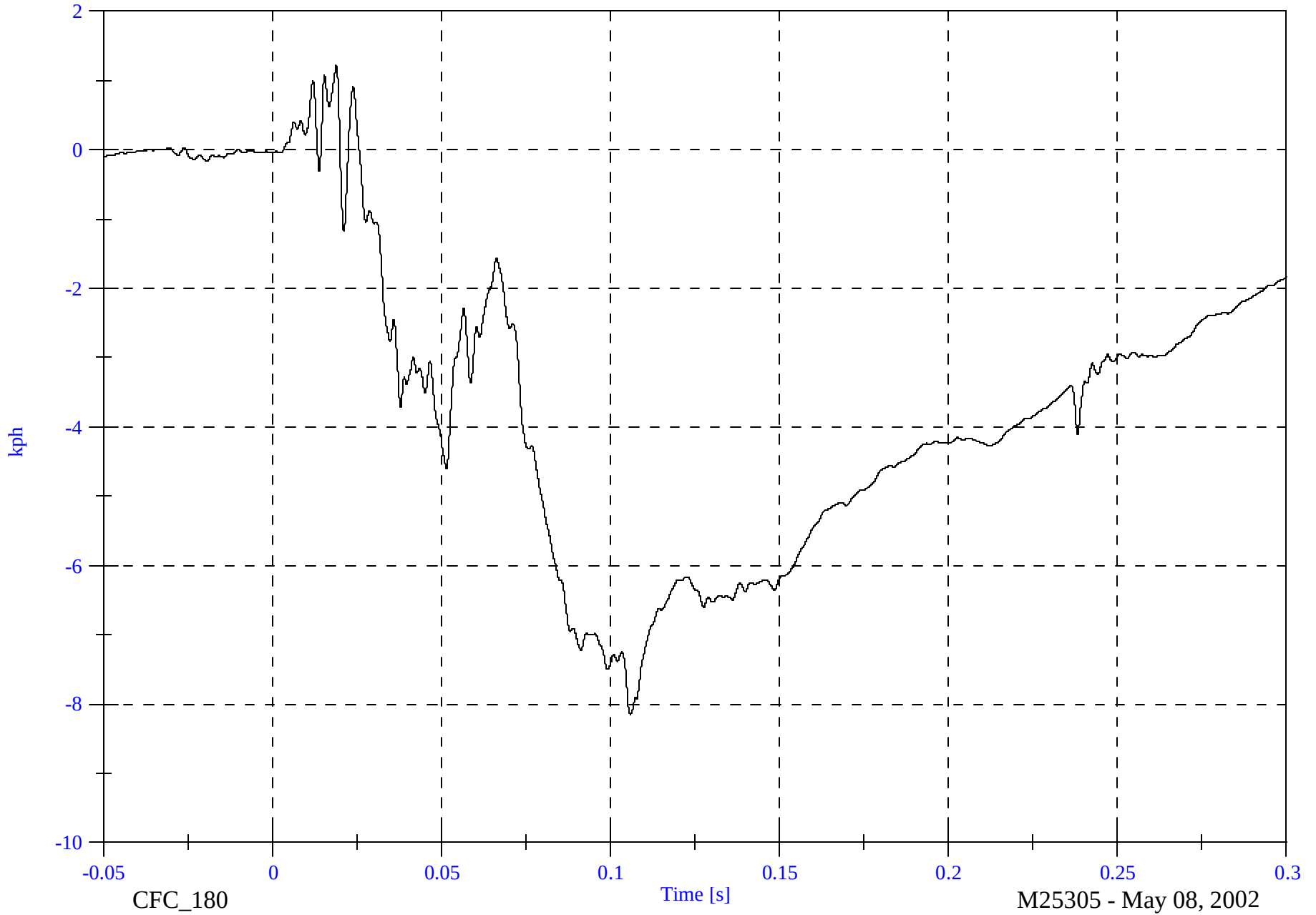
Right Rear #9z Velocity

Max: 1.2 [kph] at 0.019 [s]

Min: -8.1 [kph] at 0.106 [s]

B-135

8642-NCAP-12

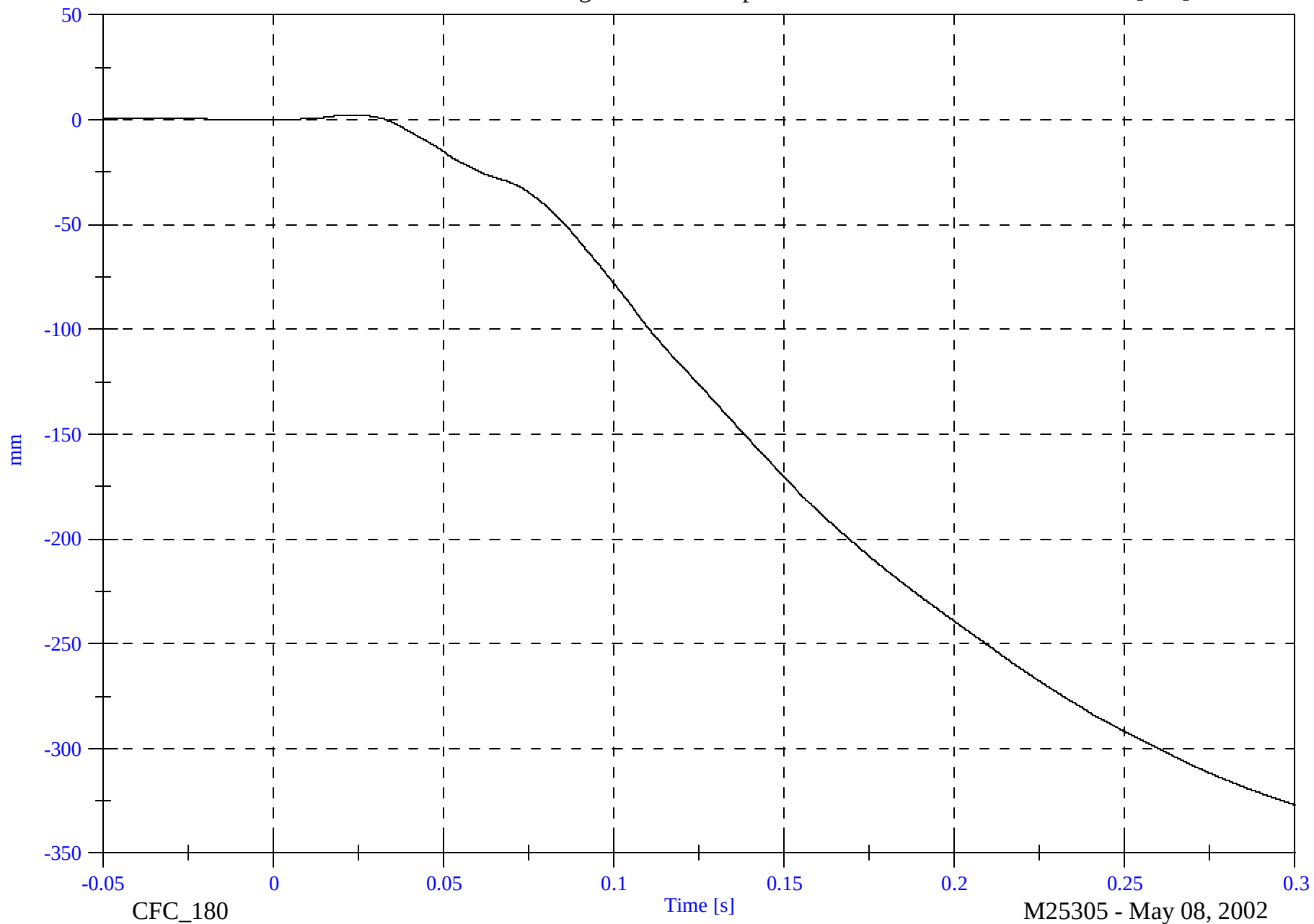


NCAP Test 12 - 2002 Honda Odyssey

Right Rear #9z Displacement

Max: 2.2 [mm] at 0.020 [s]

Min: -326.9 [mm] at 0.300 [s]



B-136

8642-NCAP-12

CFC_180

Time [s]

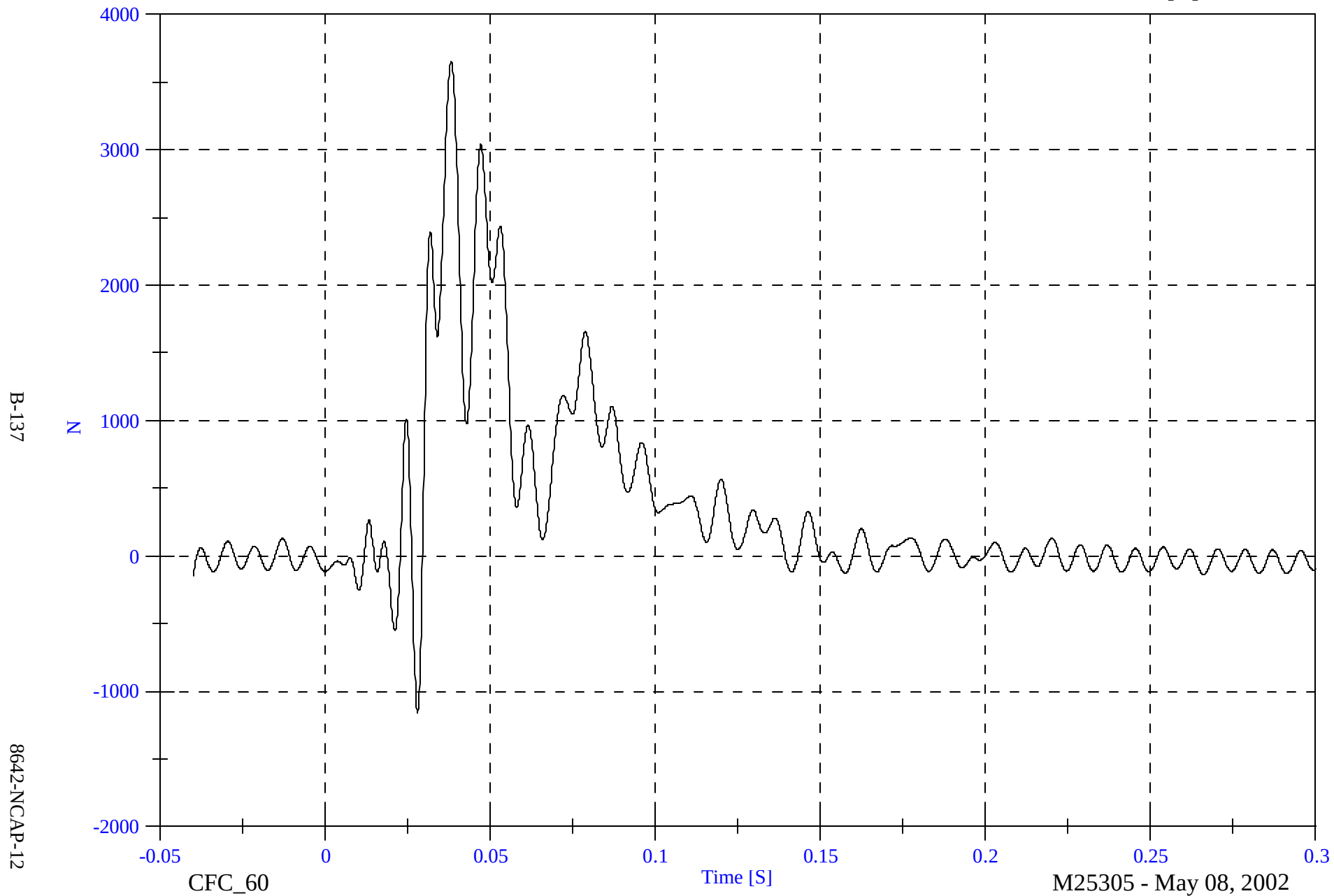
M25305 - May 08, 2002

NCAP Test 12 - 2002 Honda Odyssey

Barrier Load Cell A1 Fx

Max: 3653.0 [N] at 0.038 [S]

Min: -1158.4 [N] at 0.028 [S]

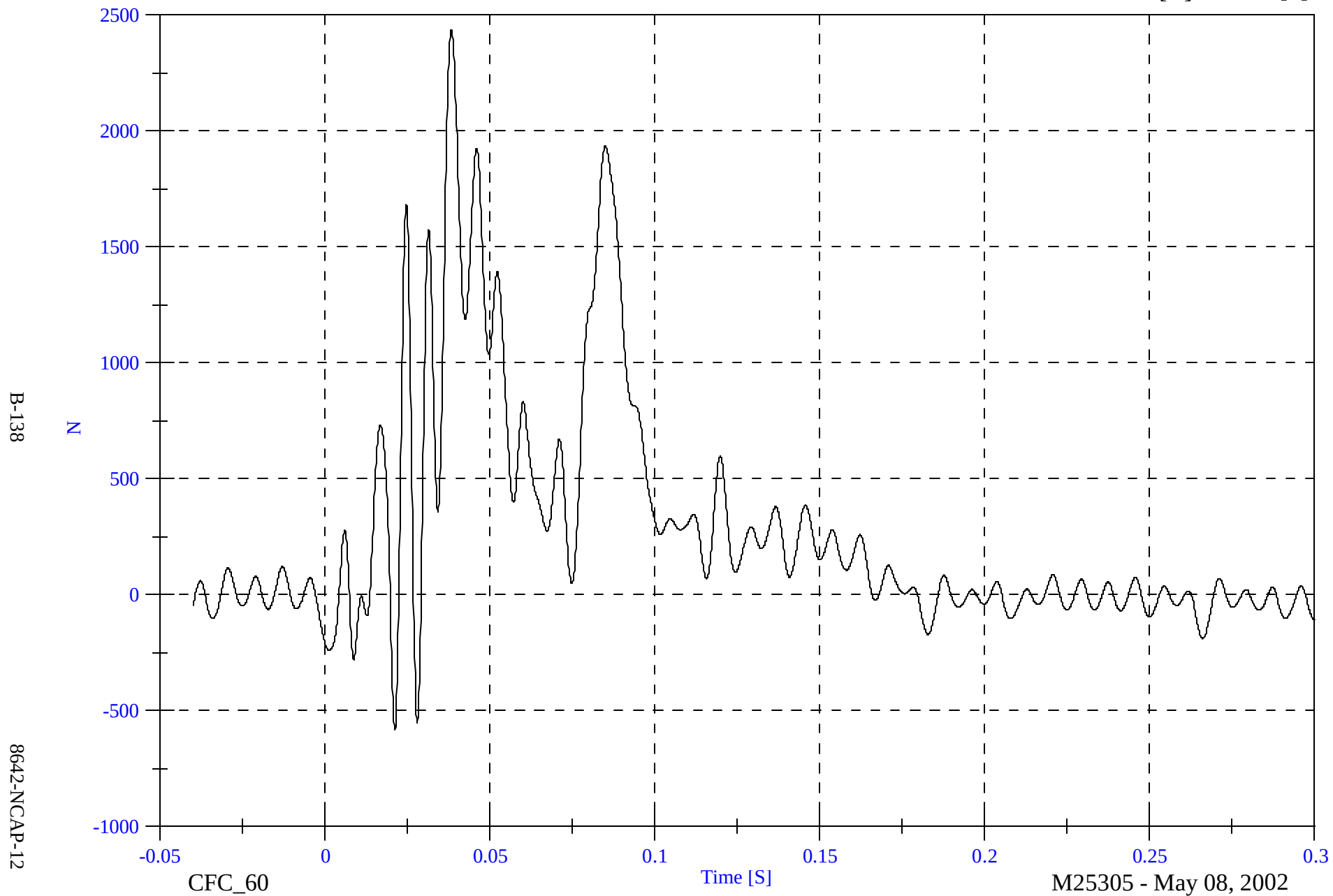


NCAP Test 12 - 2002 Honda Odyssey

Barrier Load Cell A2 Fx

Max: 2436.8 [N] at 0.038 [S]

Min: -582.9 [N] at 0.021 [S]

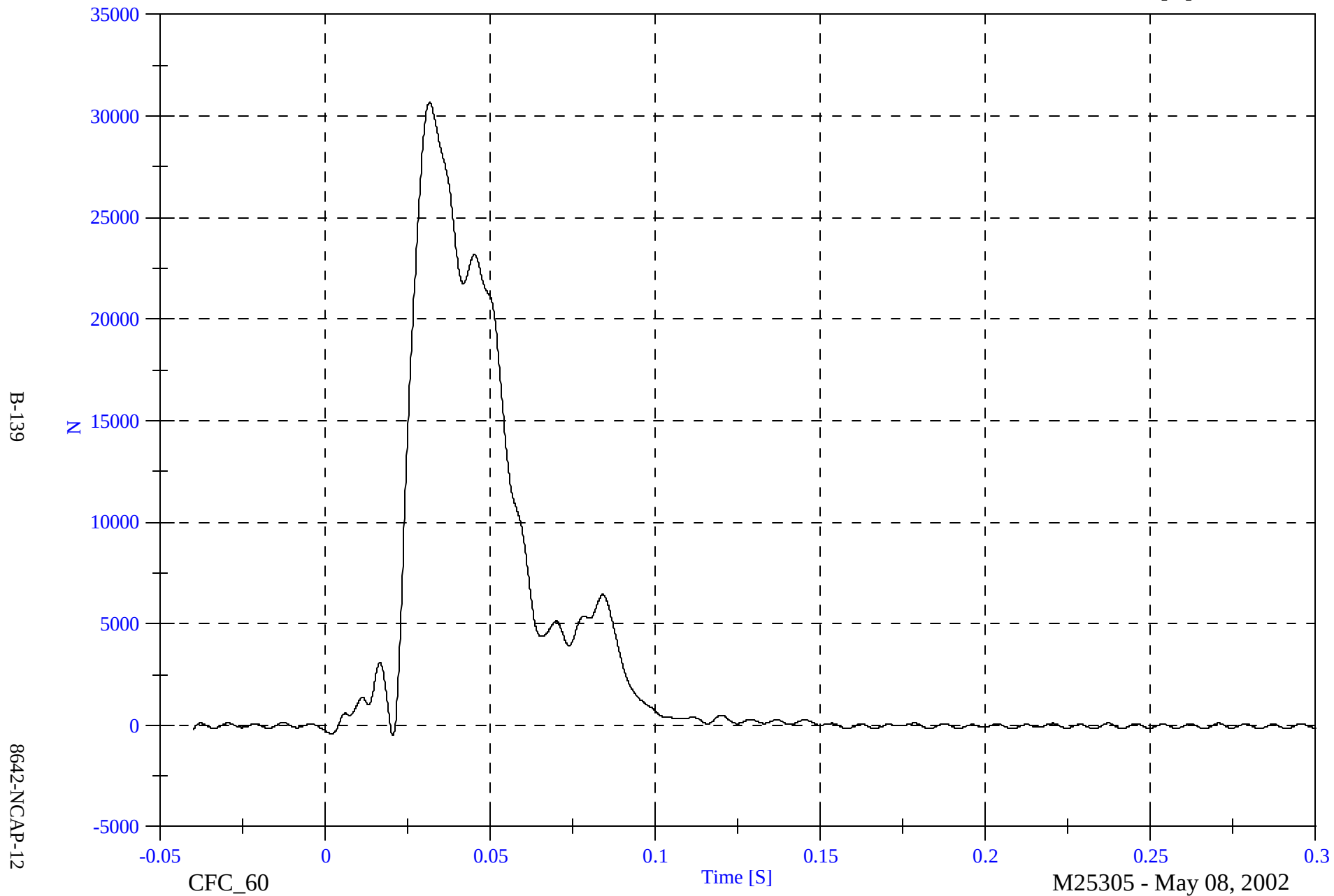


NCAP Test 12 - 2002 Honda Odyssey

Barrier Load Cell A3 Fx

Max: 30654.2 [N] at 0.032 [S]

Min: -511.8 [N] at 0.020 [S]

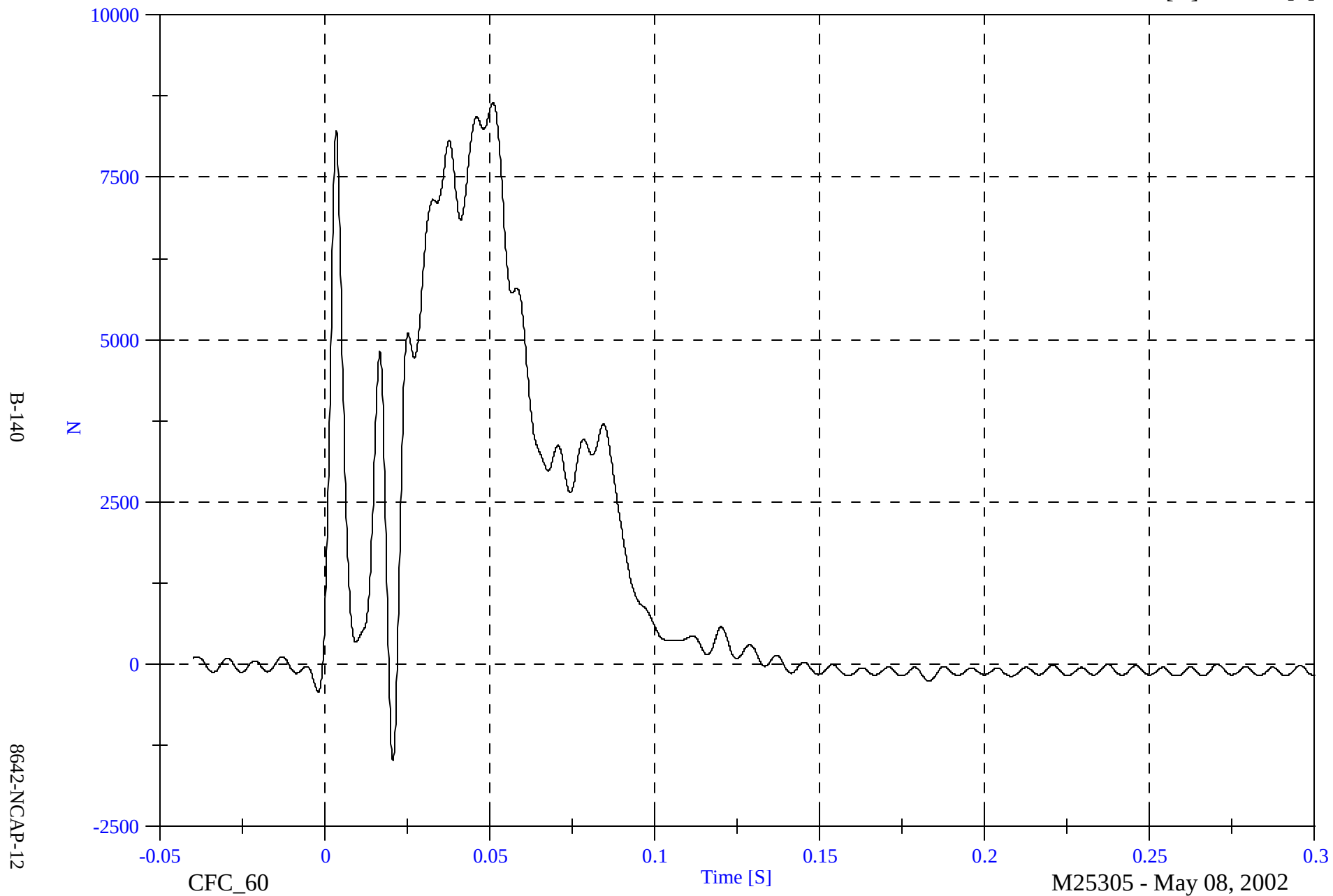


NCAP Test 12 - 2002 Honda Odyssey

Barrier Load Cell A4 Fx

Max: 8652.9 [N] at 0.051 [S]

Min: -1481.2 [N] at 0.021 [S]



NCAP Test 12 - 2002 Honda Odyssey

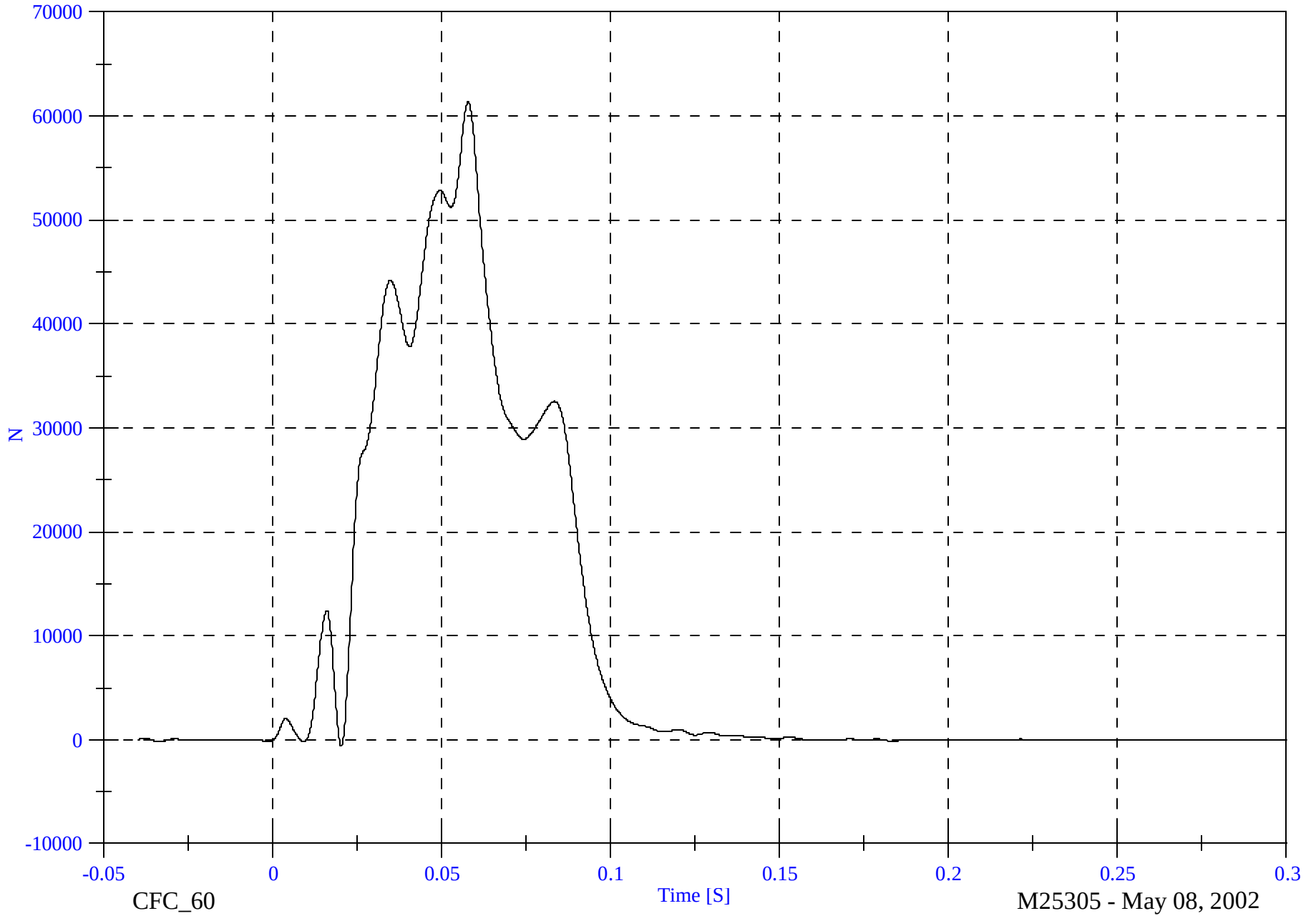
Barrier Load Cell A5 Fx

Max: 61372.0 [N] at 0.058 [S]

Min: -639.8 [N] at 0.020 [S]

B-141

8642-NCAP-12

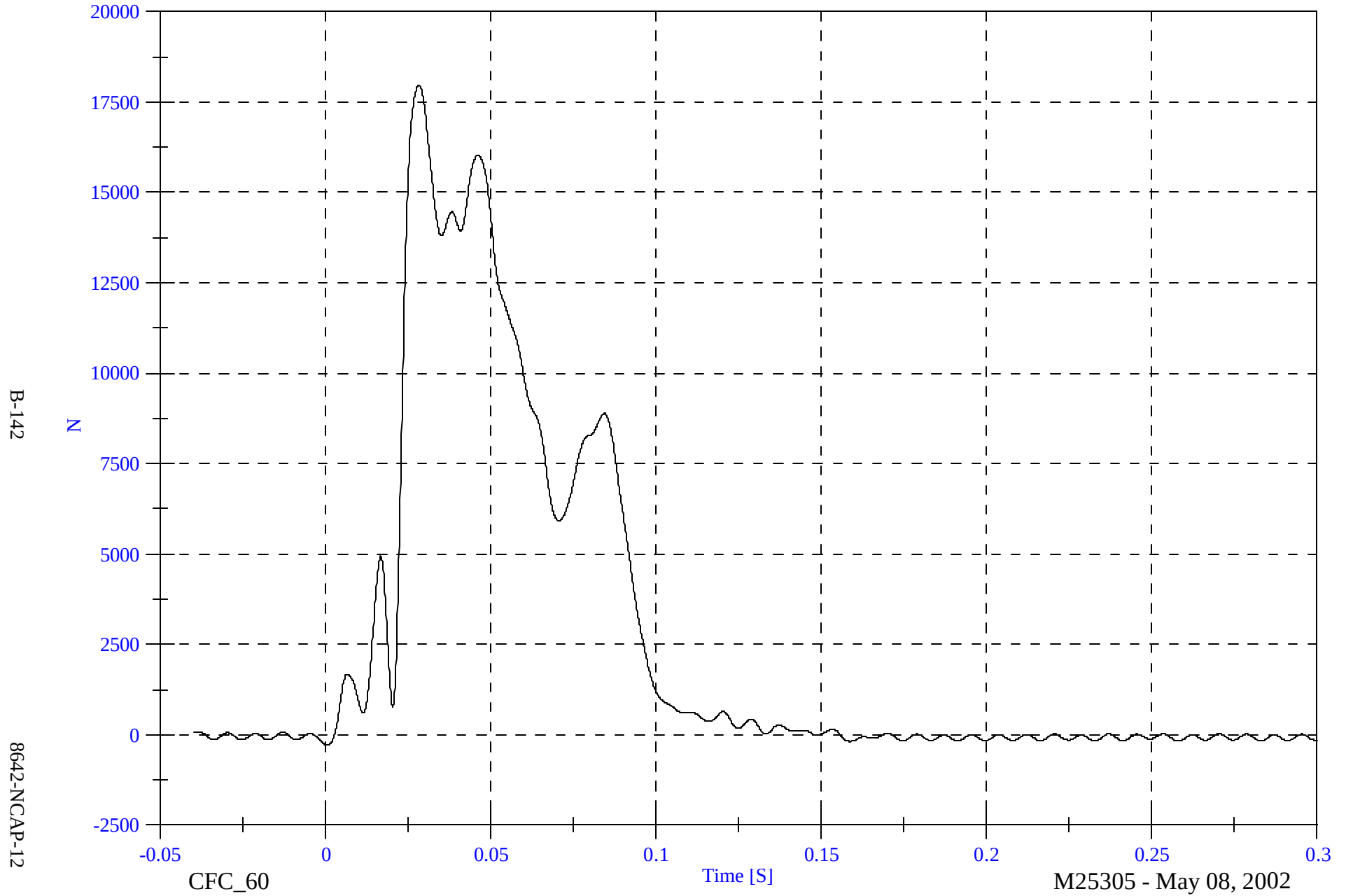


NCAP Test 12 - 2002 Honda Odyssey

Barrier Load Cell A6 Fx

Max: 17969.2 [N] at 0.028 [S]

Min: -289.6 [N] at 0.001 [S]

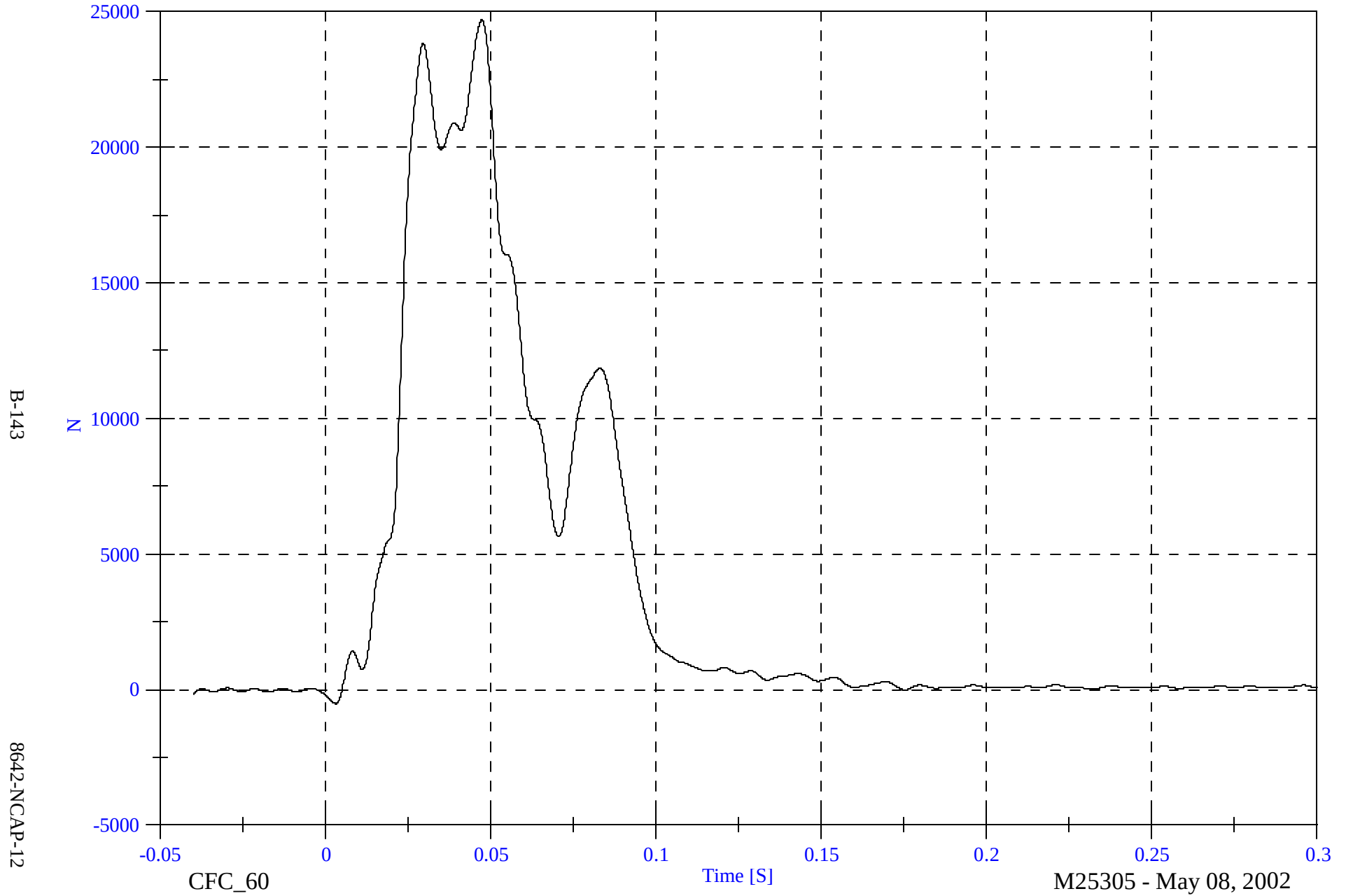


NCAP Test 12 - 2002 Honda Odyssey

Barrier Load Cell A7 Fx

Max: 24687.0 [N] at 0.047 [S]

Min: -514.4 [N] at 0.003 [S]

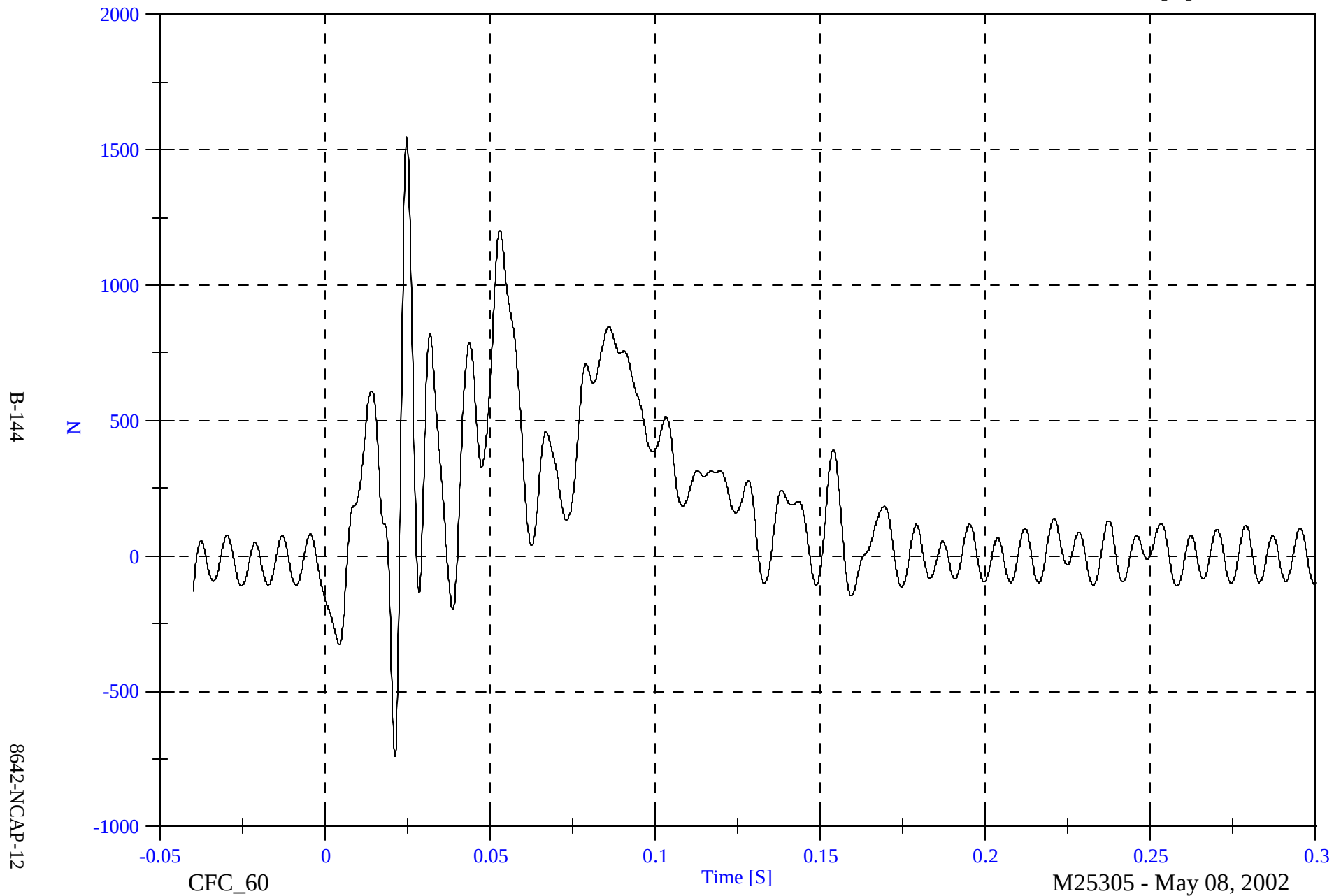


NCAP Test 12 - 2002 Honda Odyssey

Barrier Load Cell A8 Fx

Max: 1547.2 [N] at 0.025 [S]

Min: -737.1 [N] at 0.021 [S]

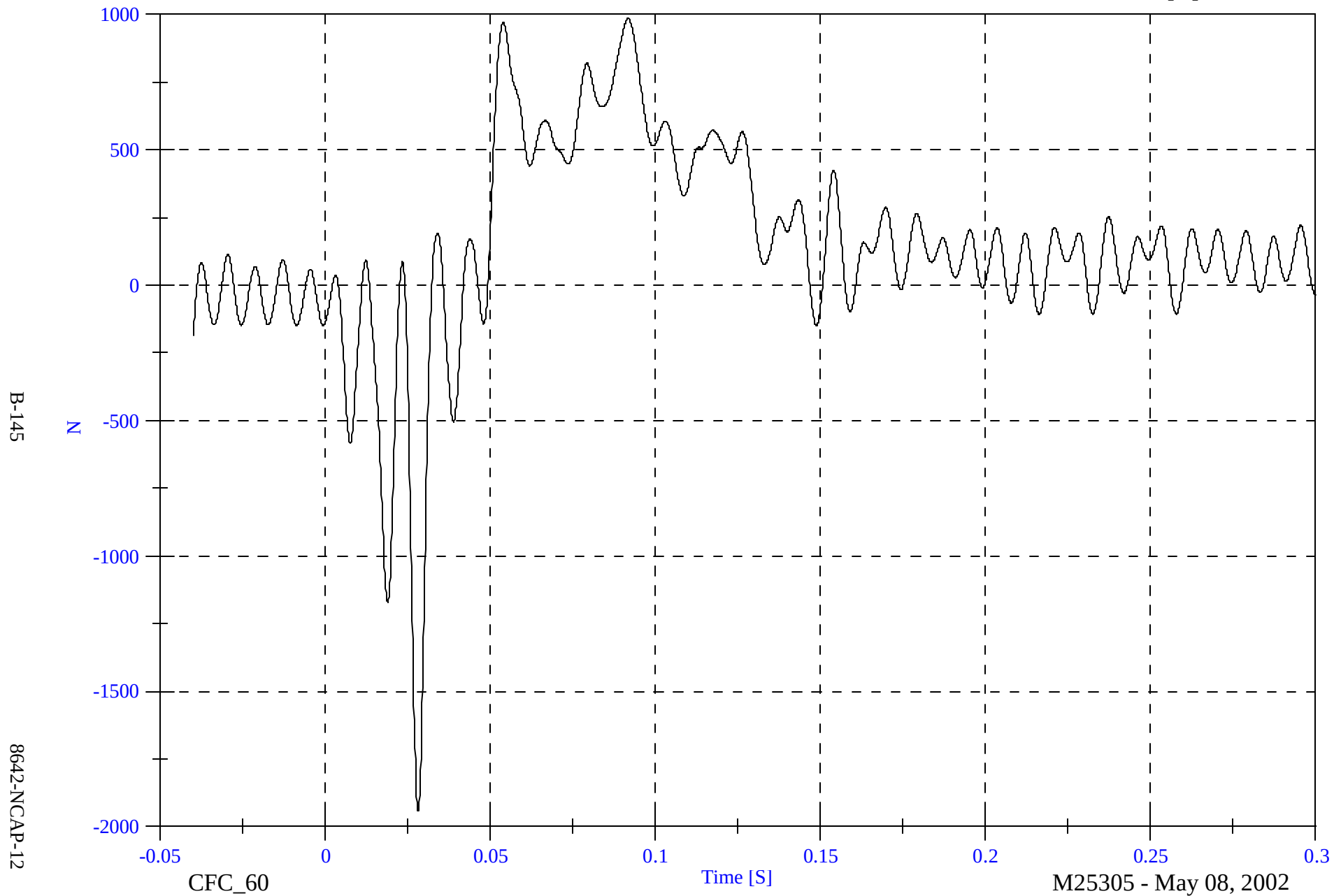


NCAP Test 12 - 2002 Honda Odyssey

Barrier Load Cell A9 Fx

Max: 985.2 [N] at 0.092 [S]

Min: -1942.2 [N] at 0.028 [S]

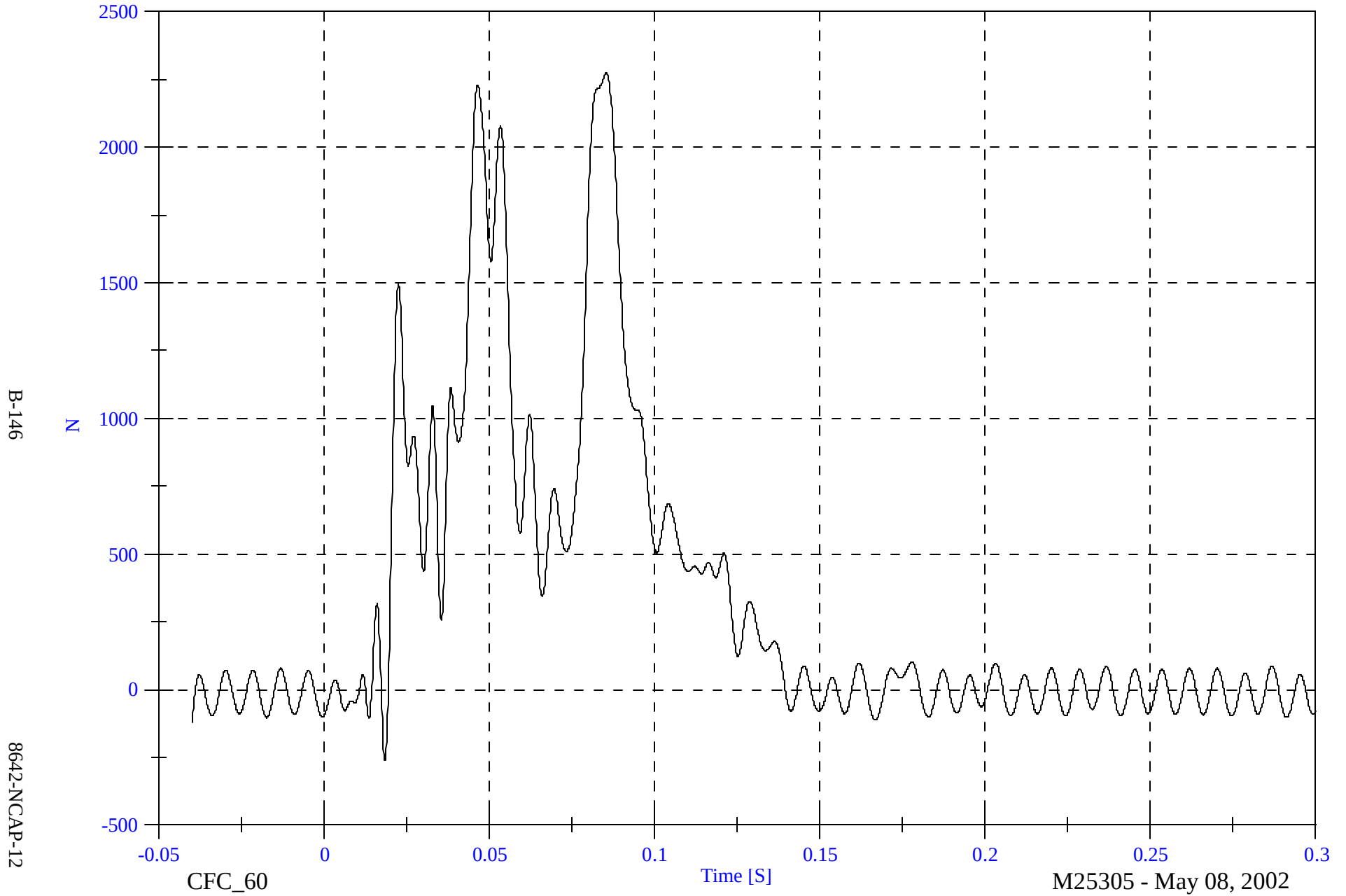


NCAP Test 12 - 2002 Honda Odyssey

Barrier Load Cell B1 Fx

Max: 2272.8 [N] at 0.085 [S]

Min: -262.9 [N] at 0.018 [S]

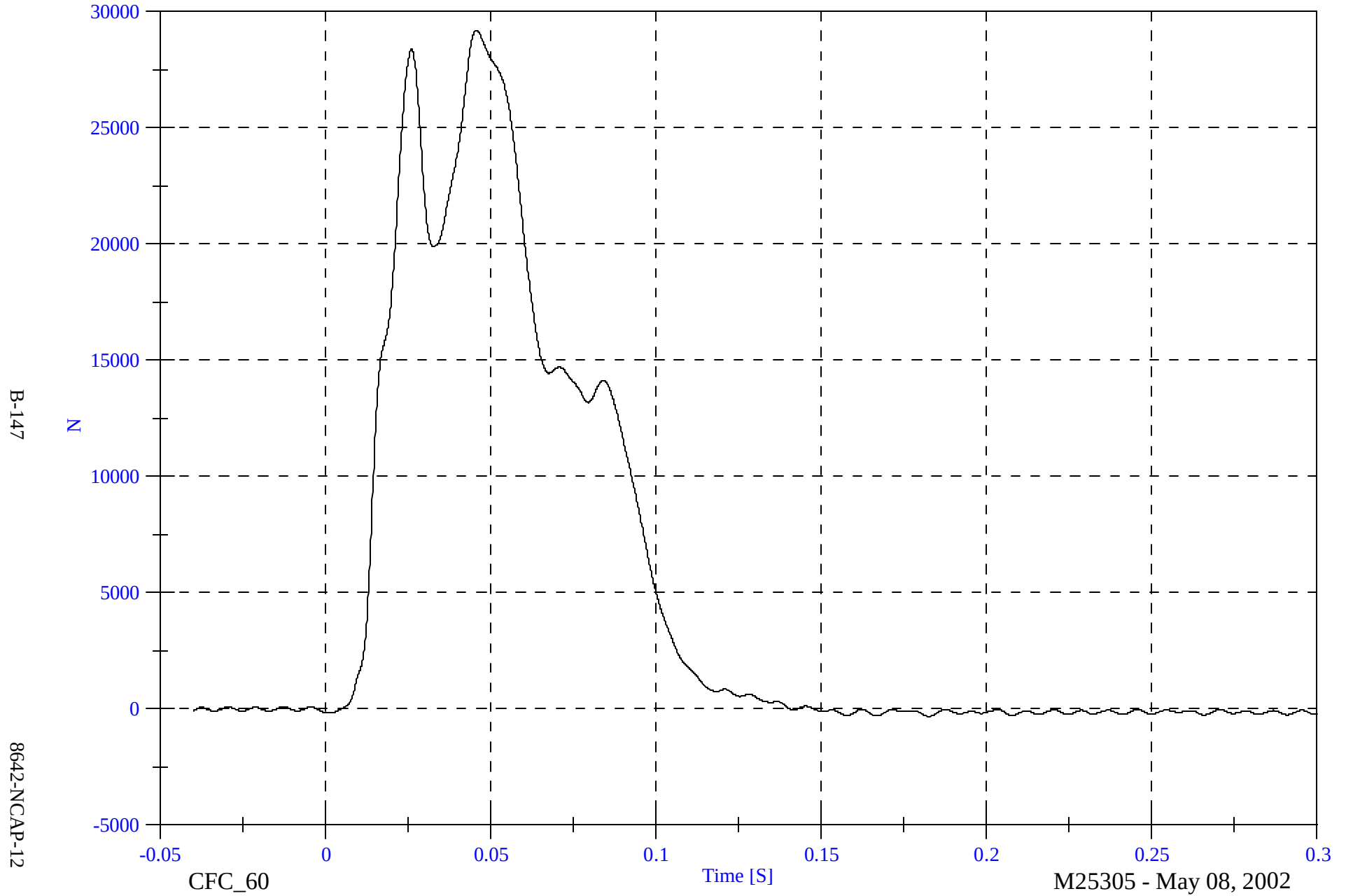


NCAP Test 12 - 2002 Honda Odyssey

Barrier Load Cell B2 Fx

Max: 29202.6 [N] at 0.046 [S]

Min: -315.2 [N] at 0.182 [S]

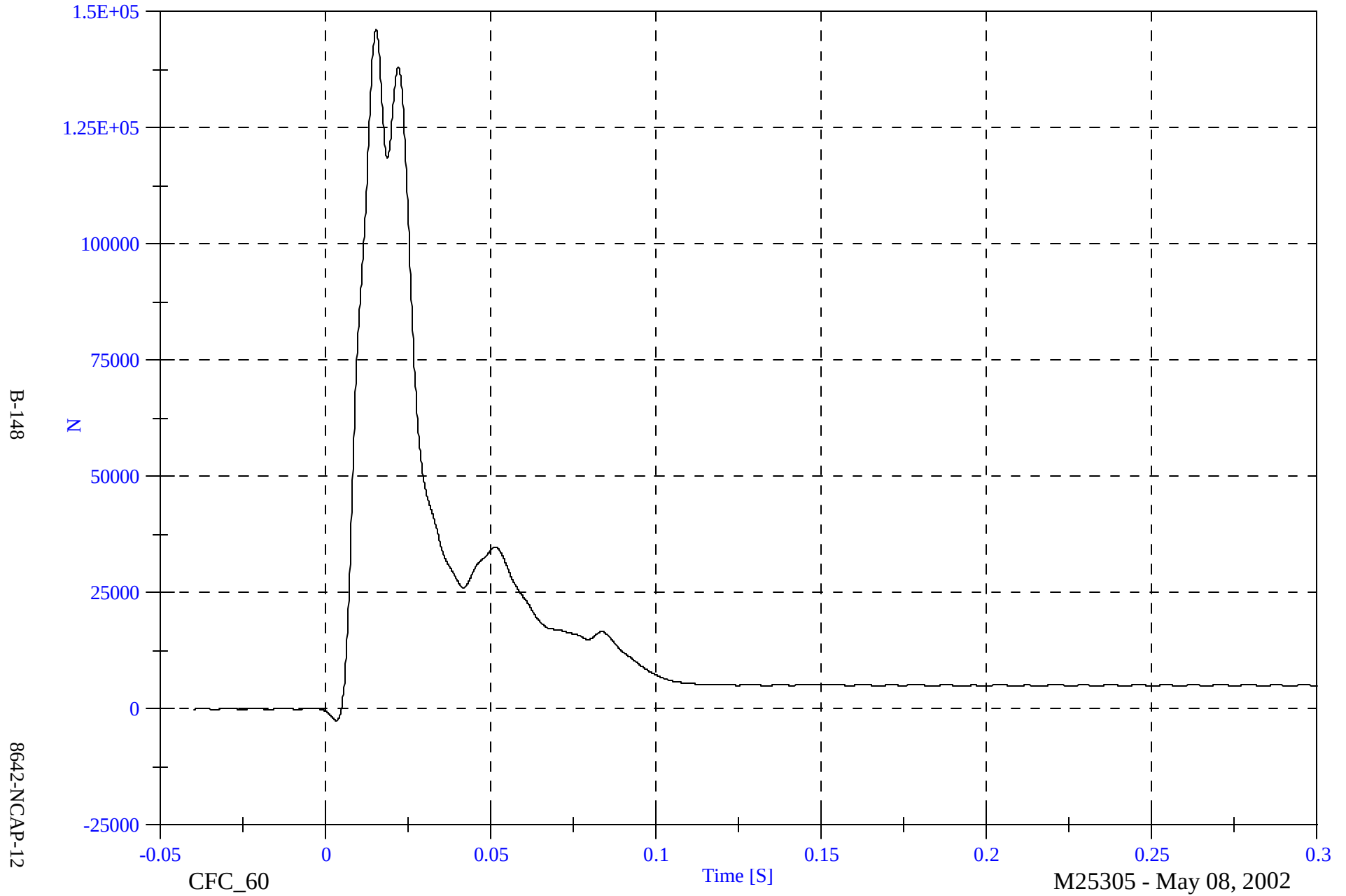


NCAP Test 12 - 2002 Honda Odyssey

Barrier Load Cell B3 Fx

Max: 146124.6 [N] at 0.015 [S]

Min: -2468.3 [N] at 0.003 [S]

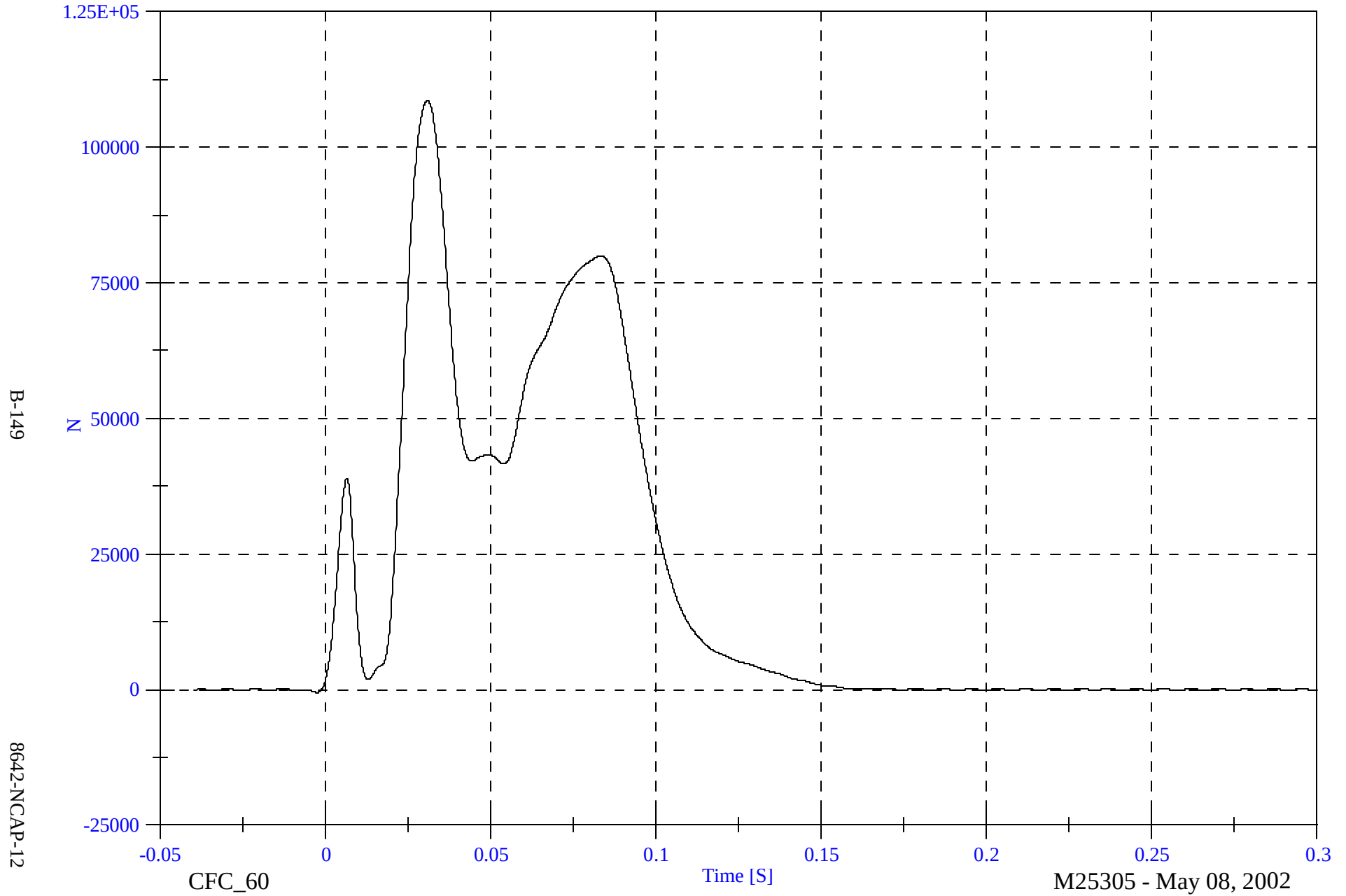


NCAP Test 12 - 2002 Honda Odyssey

Barrier Load Cell B4 Fx

Max: 108571.5 [N] at 0.031 [S]

Min: -518.4 [N] at -0.003 [S]

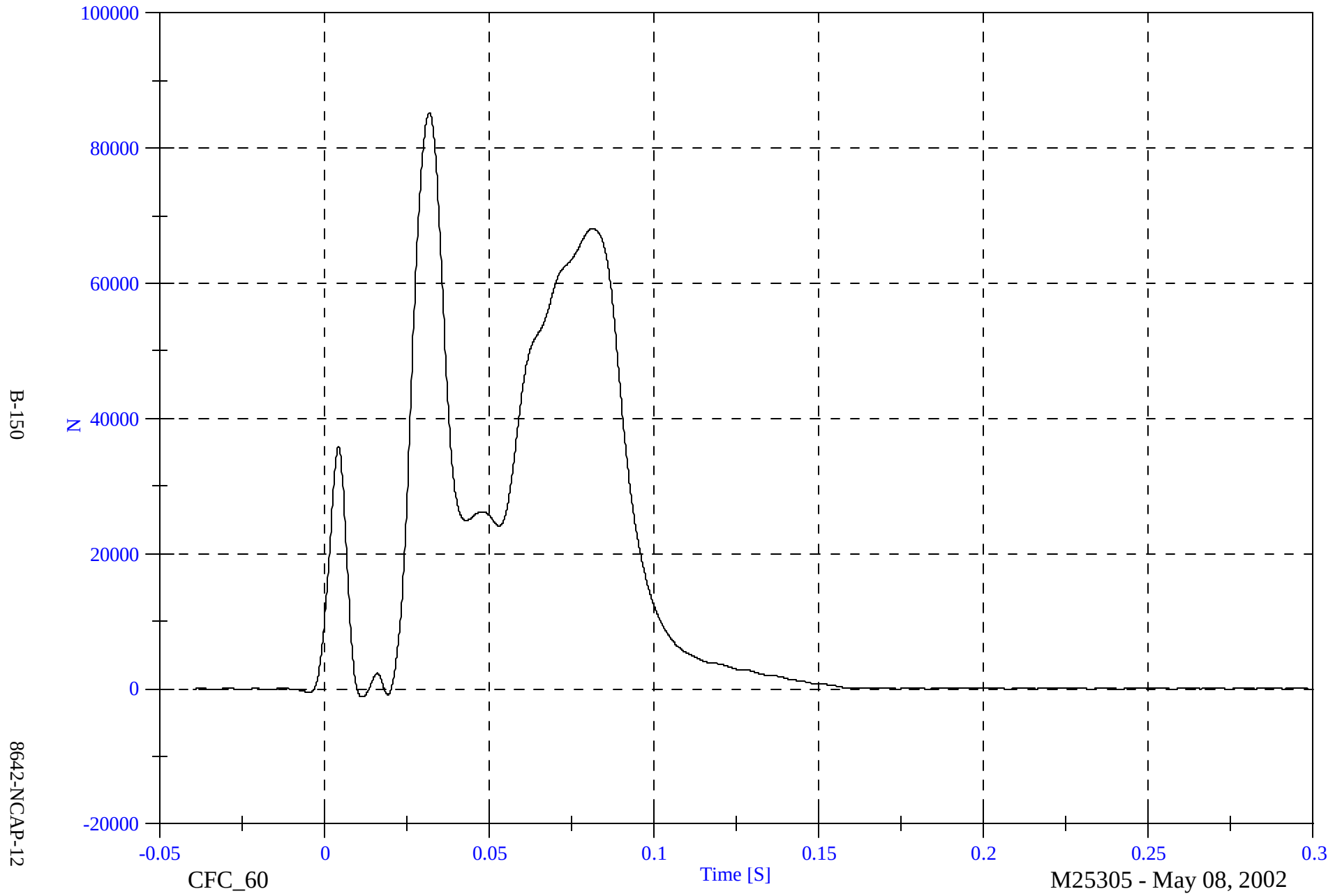


NCAP Test 12 - 2002 Honda Odyssey

Barrier Load Cell B5 Fx

Max: 85204.6 [N] at 0.032 [S]

Min: -1212.4 [N] at 0.011 [S]

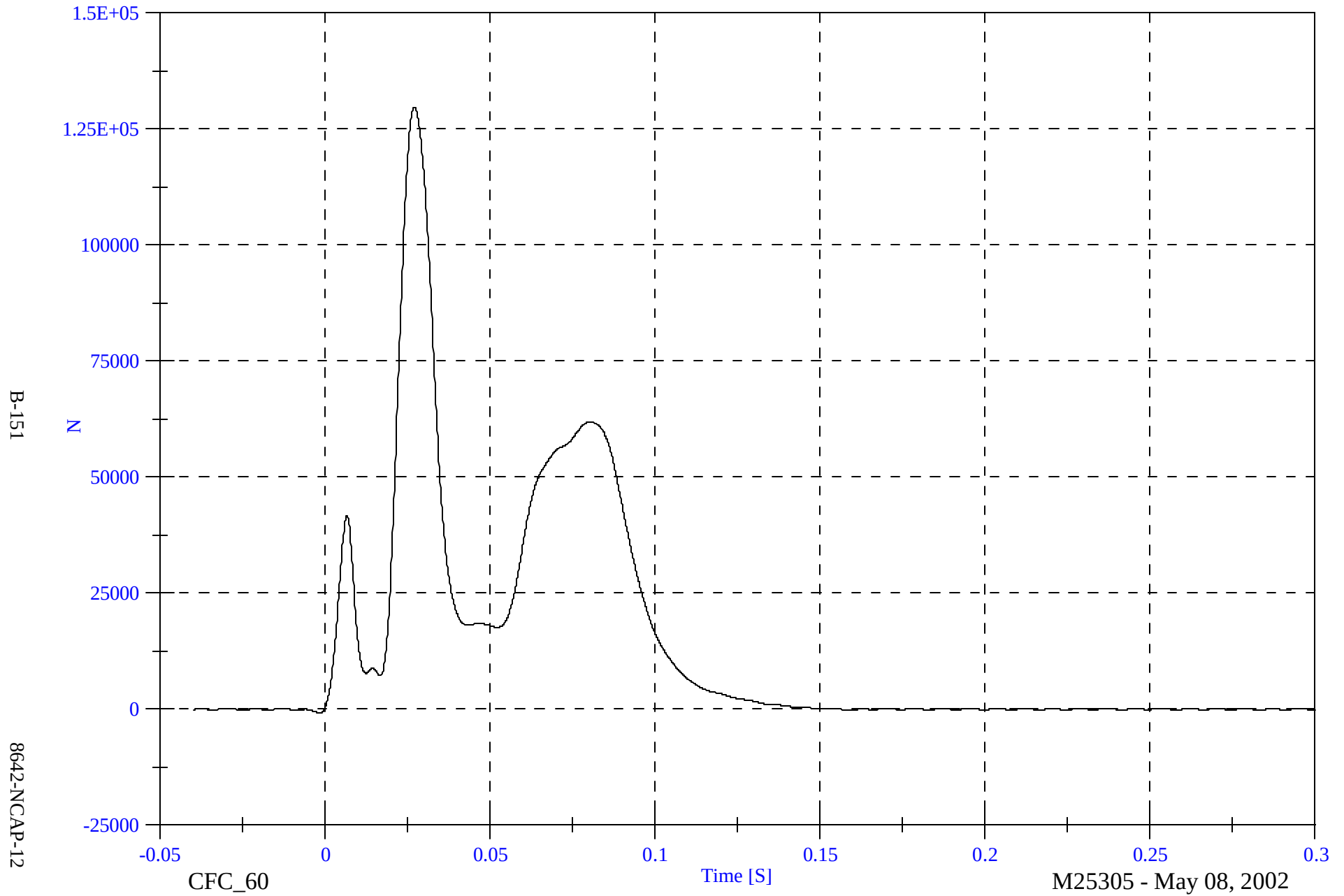


NCAP Test 12 - 2002 Honda Odyssey

Barrier Load Cell B6 Fx

Max: 129690.0 [N] at 0.027 [S]

Min: -773.7 [N] at -0.002 [S]

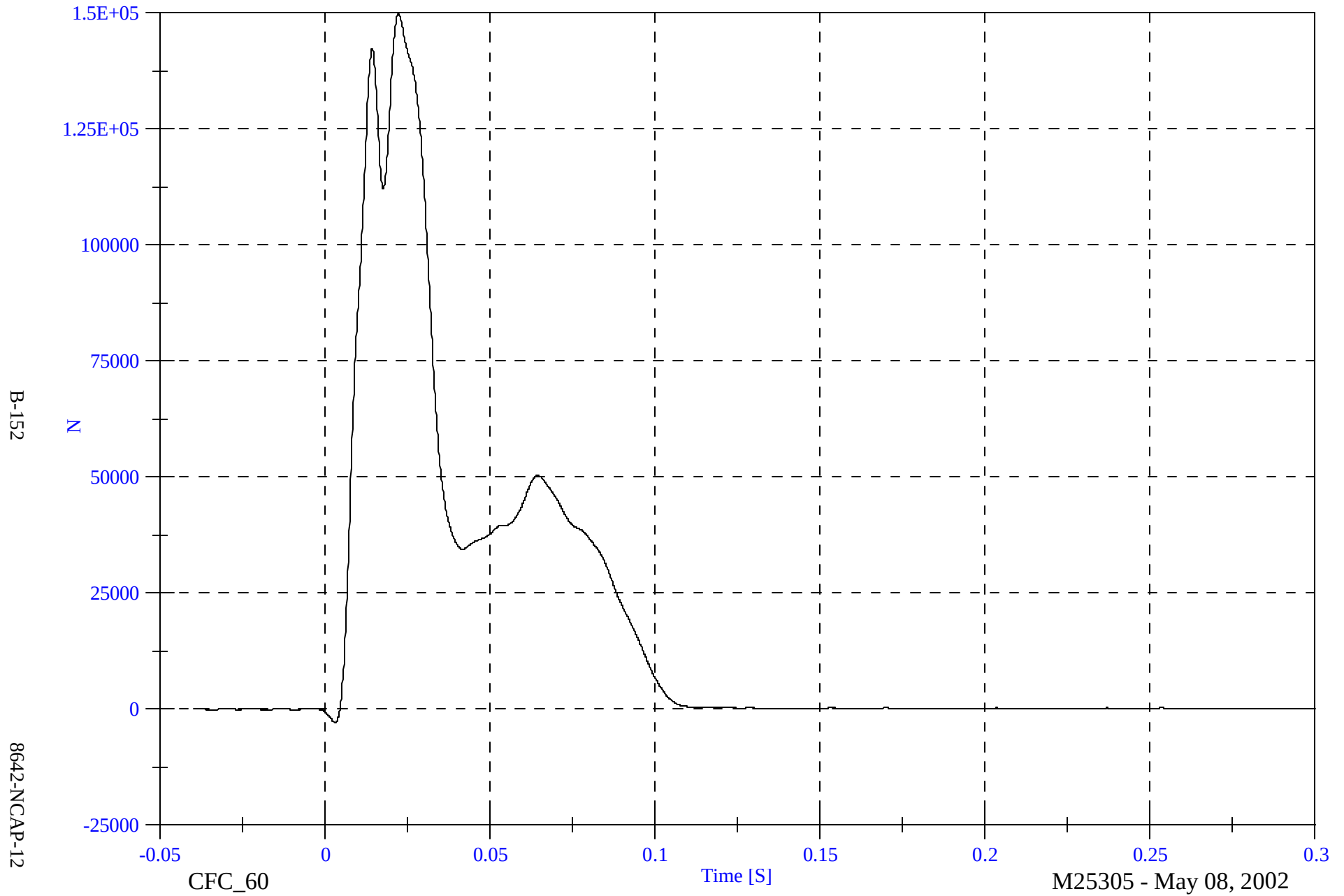


NCAP Test 12 - 2002 Honda Odyssey

Barrier Load Cell B7 Fx

Max: 149679.6 [N] at 0.022 [S]

Min: -2798.8 [N] at 0.003 [S]

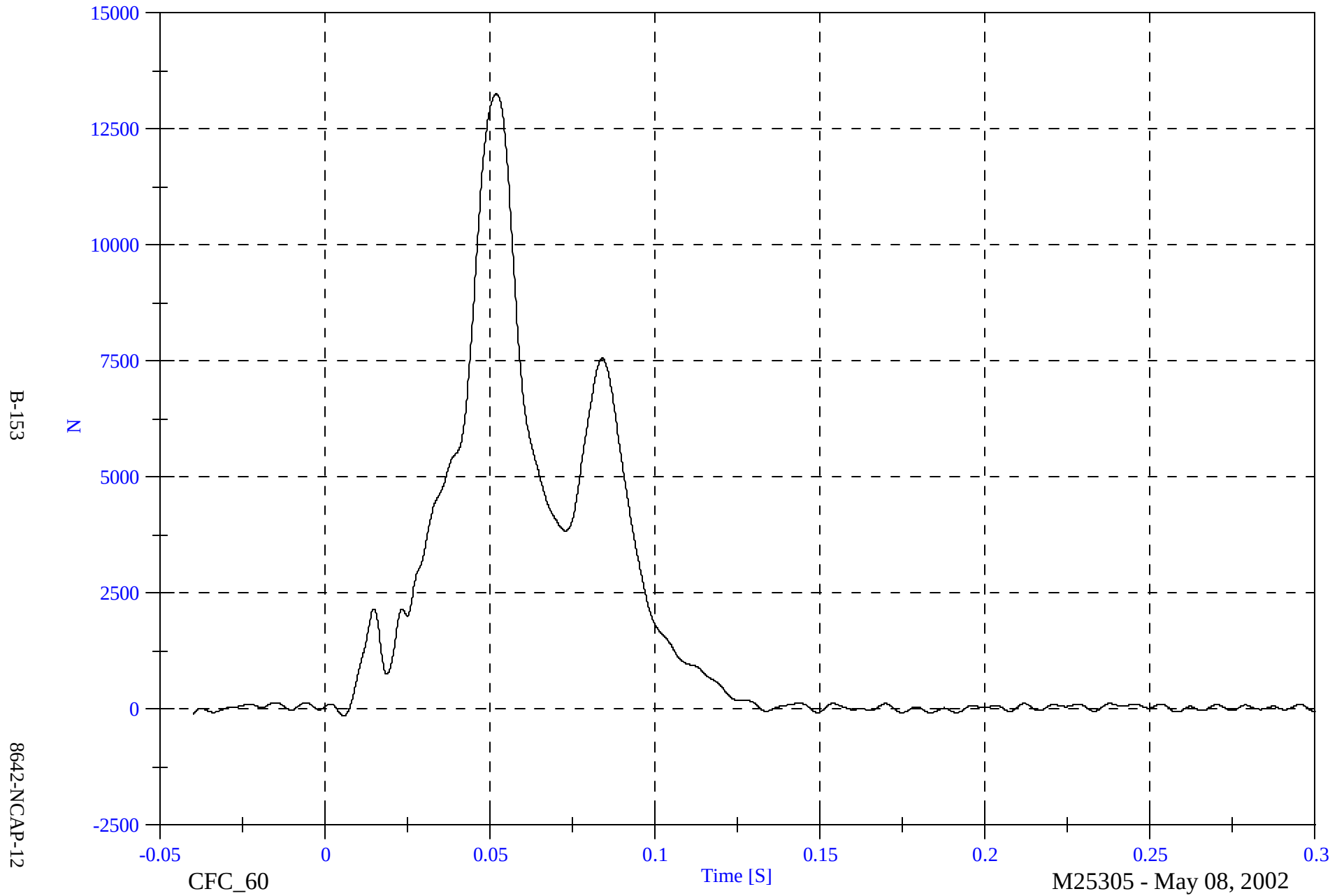


NCAP Test 12 - 2002 Honda Odyssey

Barrier Load Cell B8 Fx

Max: 13251.1 [N] at 0.052 [S]

Min: -144.2 [N] at 0.006 [S]

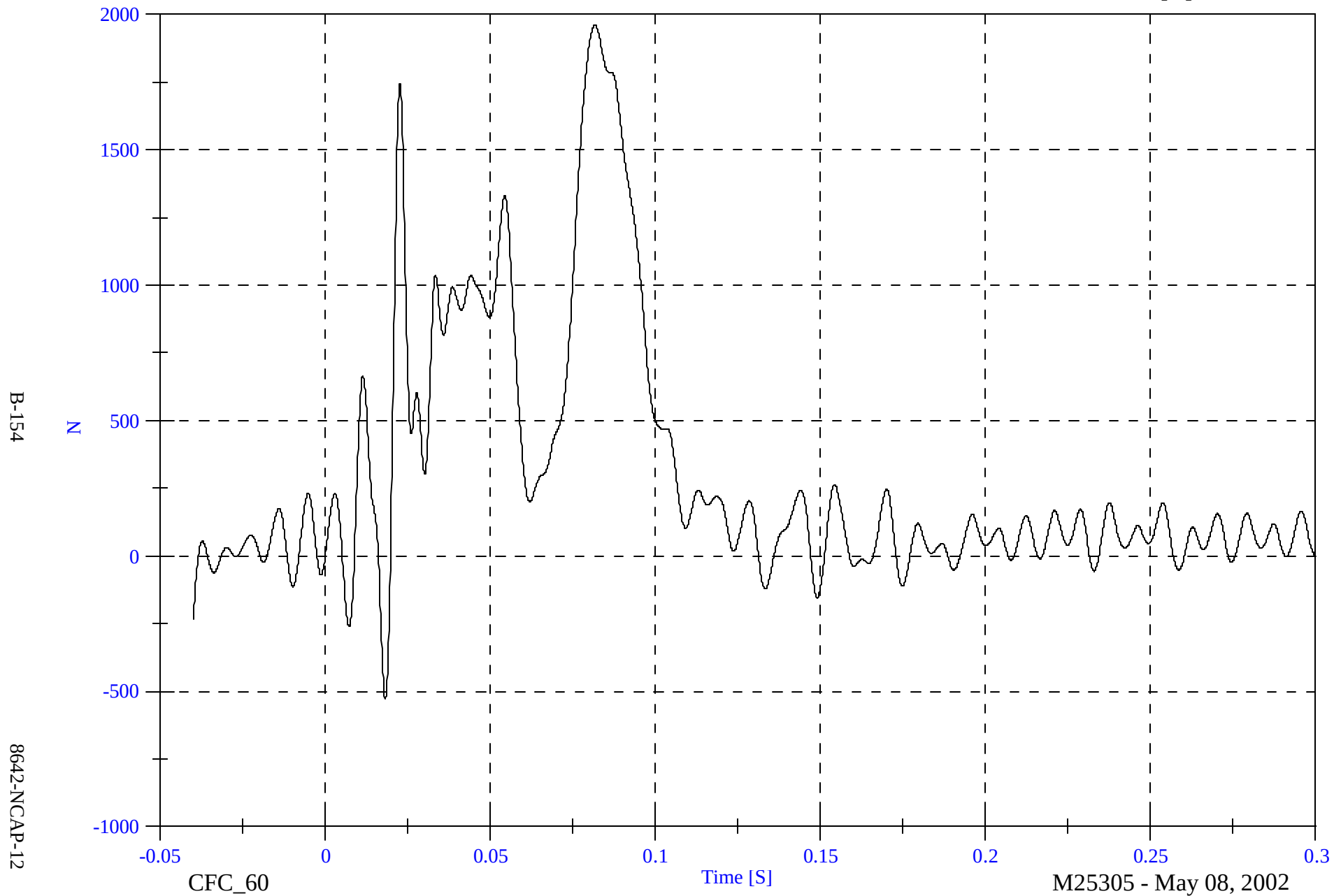


NCAP Test 12 - 2002 Honda Odyssey

Max: 1960.6 [N] at 0.082 [S]

Barrier Load Cell B9 Fx

Min: -529.2 [N] at 0.018 [S]

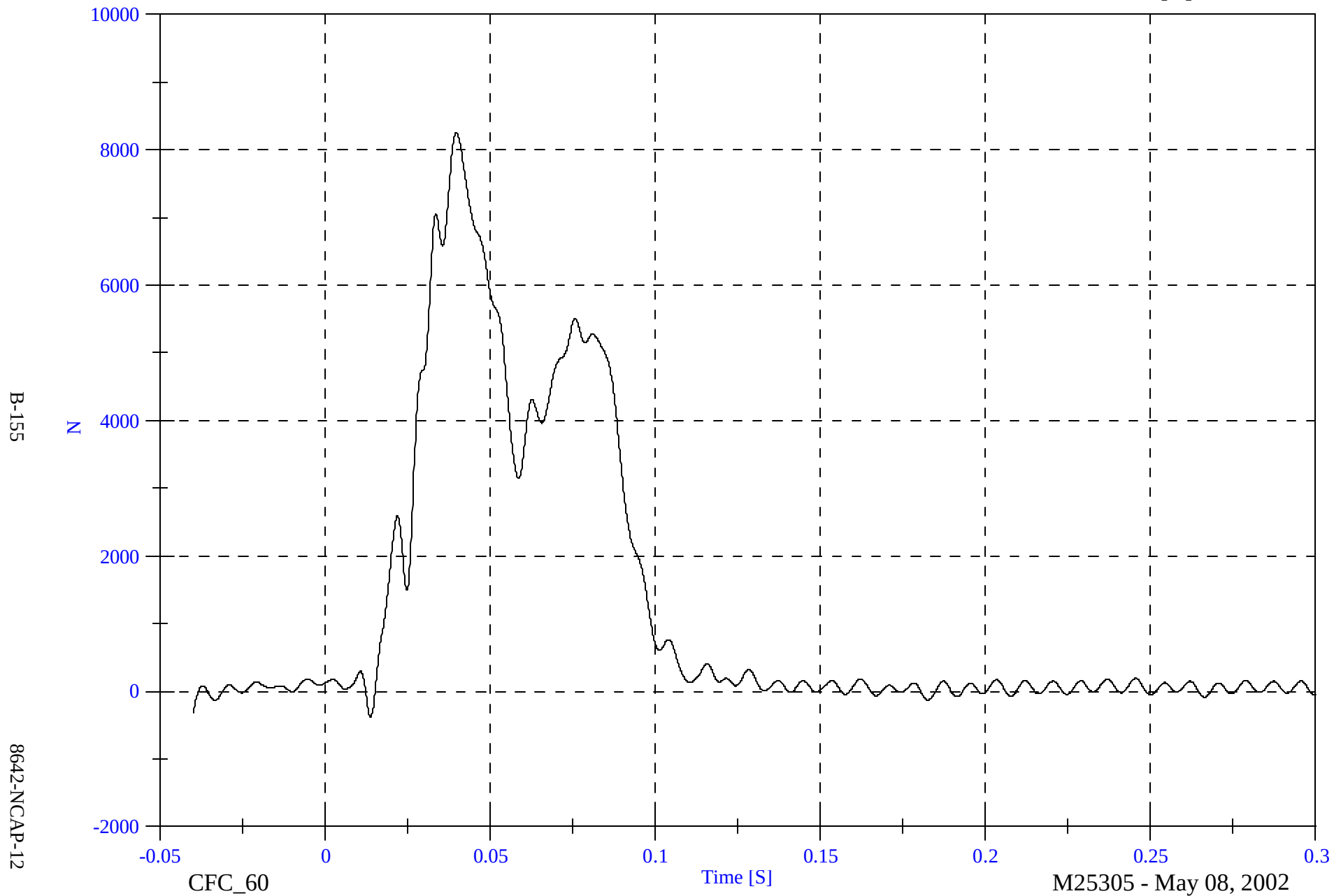


NCAP Test 12 - 2002 Honda Odyssey

Barrier Load Cell C1 Fx

Max: 8251.3 [N] at 0.040 [S]

Min: -384.4 [N] at 0.014 [S]

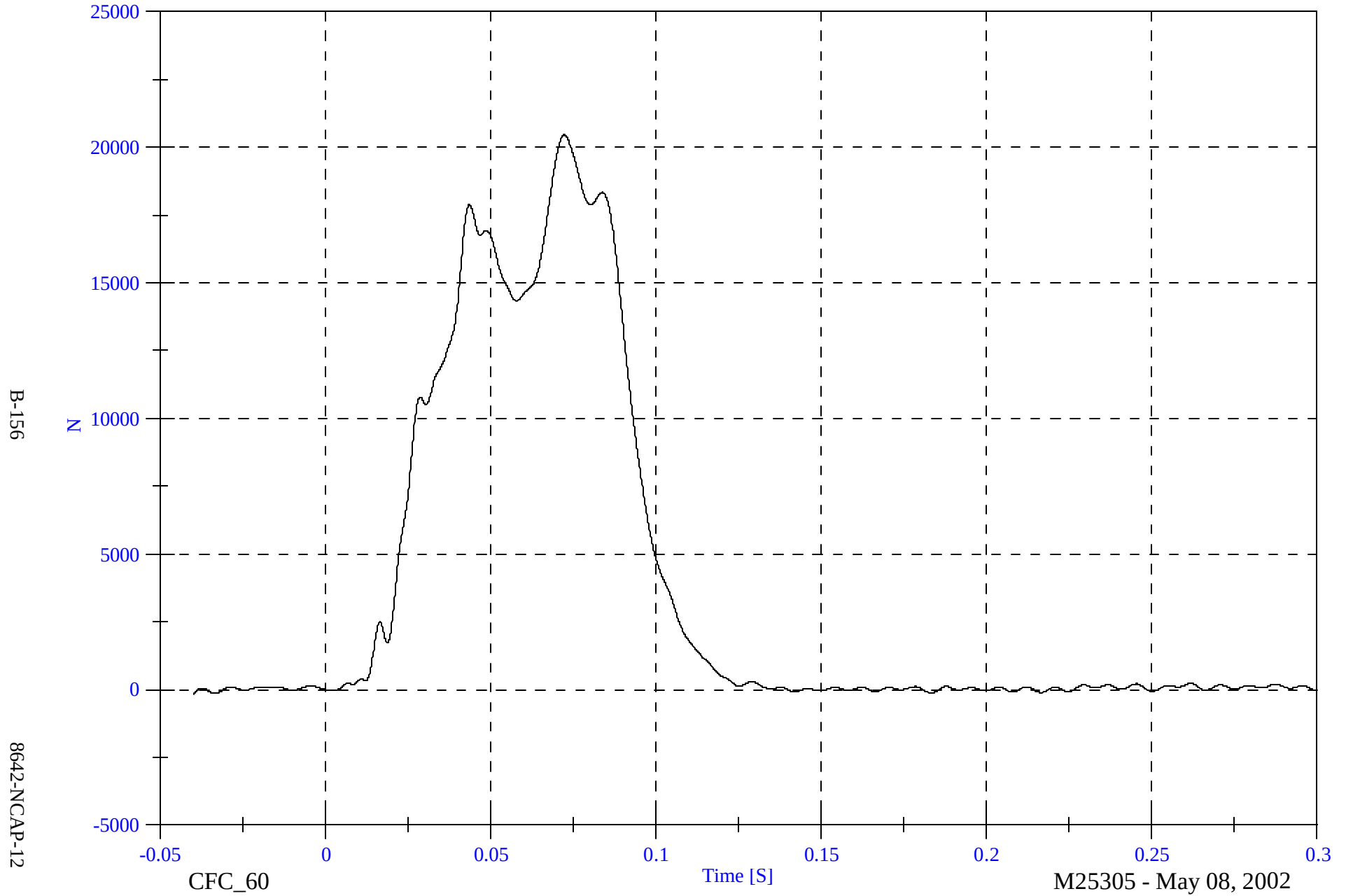


NCAP Test 12 - 2002 Honda Odyssey

Barrier Load Cell C2 Fx

Max: 20456.6 [N] at 0.072 [S]

Min: -177.9 [N] at -0.040 [S]

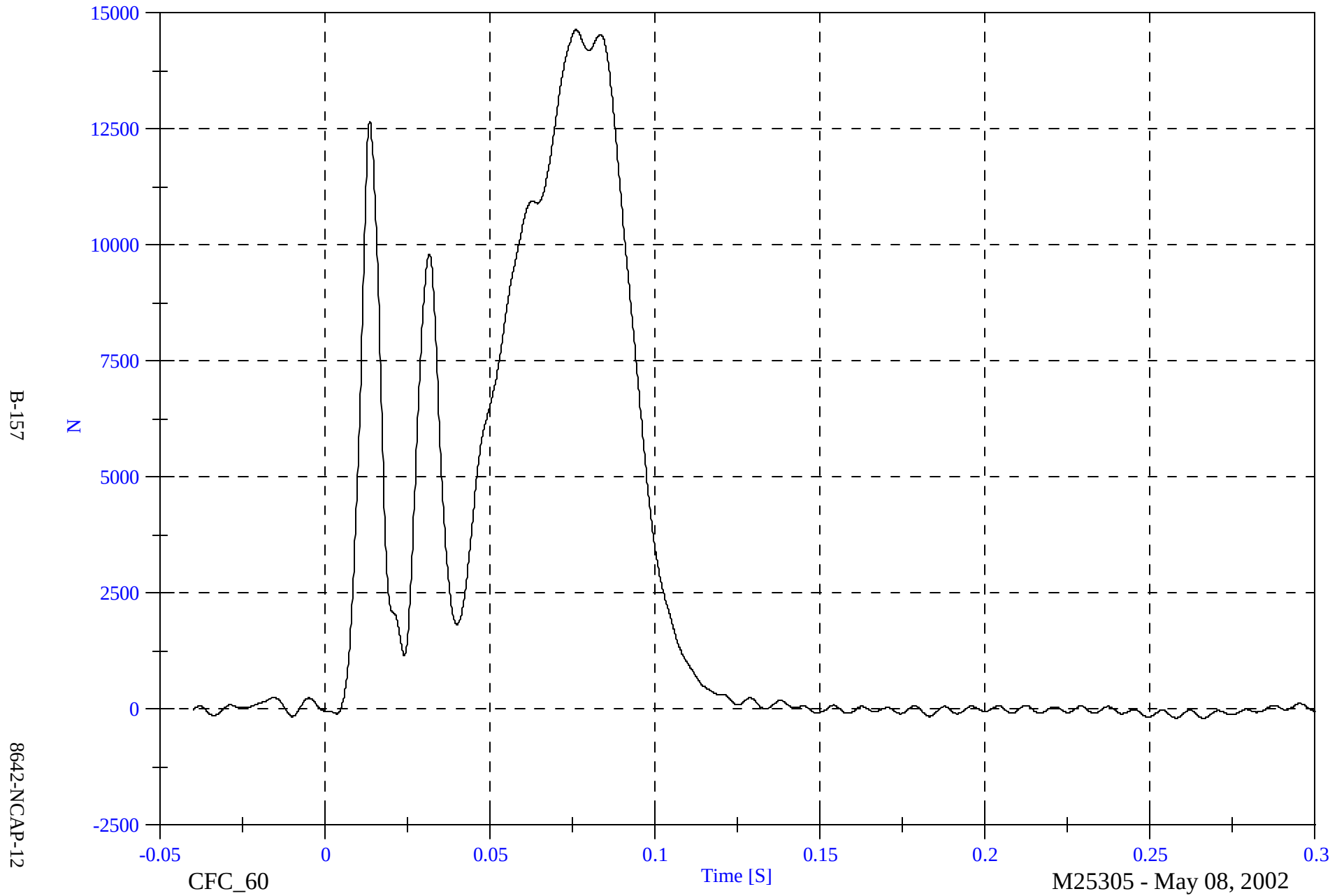


NCAP Test 12 - 2002 Honda Odyssey

Barrier Load Cell C3 Fx

Max: 14638.4 [N] at 0.076 [S]

Min: -190.0 [N] at 0.266 [S]

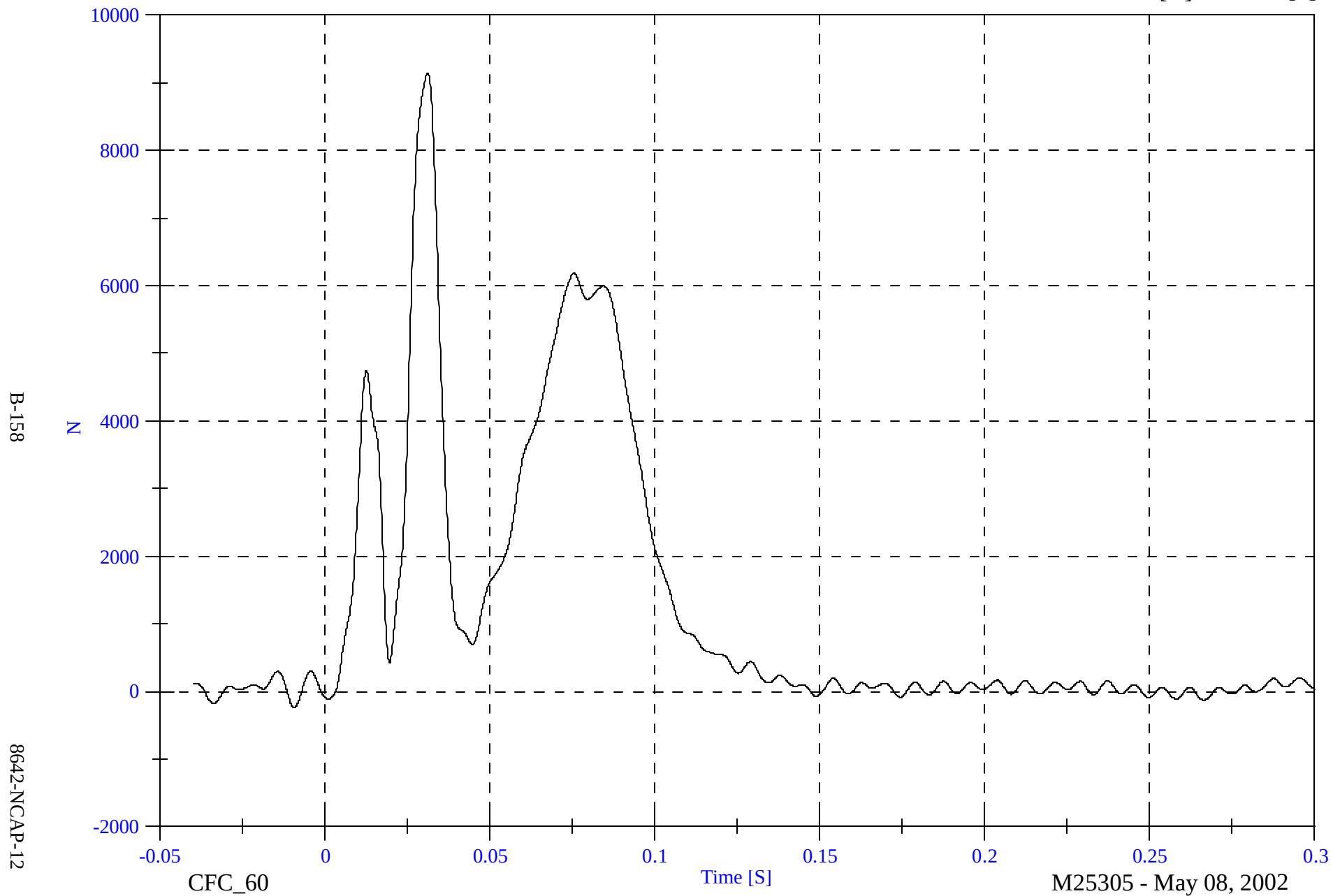


NCAP Test 12 - 2002 Honda Odyssey

Barrier Load Cell C4 Fx

Max: 9142.1 [N] at 0.031 [S]

Min: -239.6 [N] at -0.009 [S]

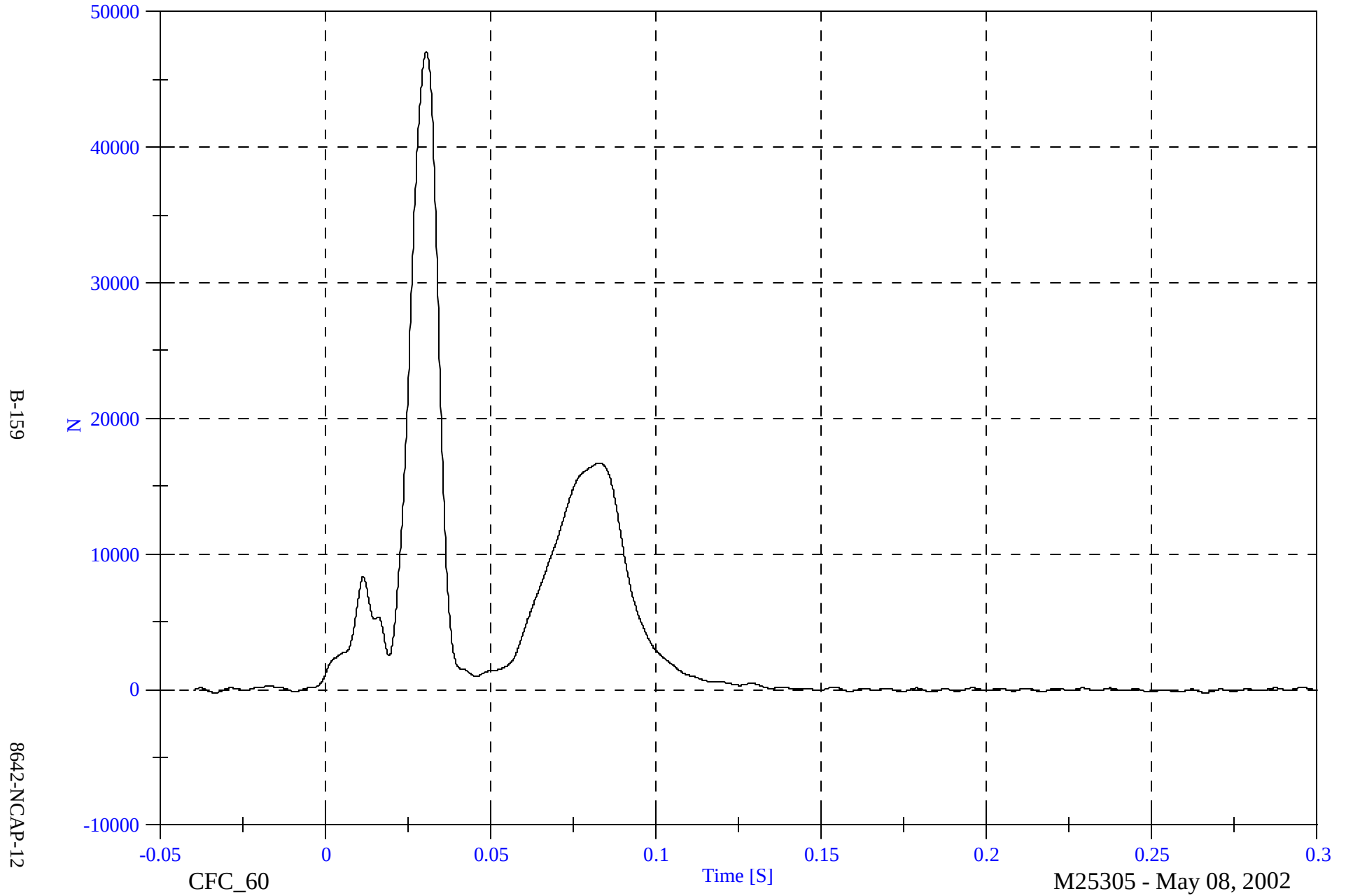


NCAP Test 12 - 2002 Honda Odyssey

Barrier Load Cell C5 Fx

Max: 47055.3 [N] at 0.030 [S]

Min: -226.1 [N] at 0.266 [S]

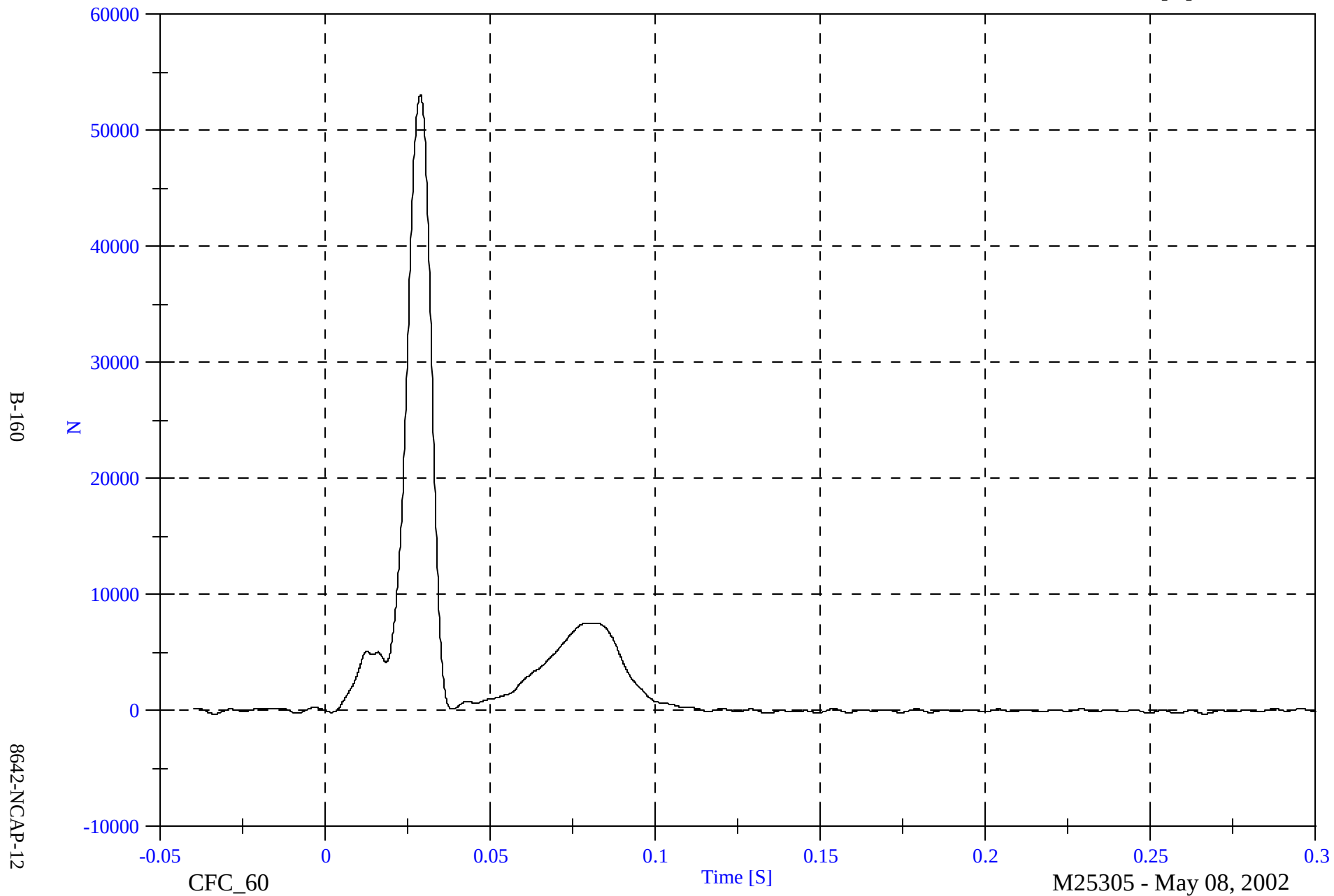


NCAP Test 12 - 2002 Honda Odyssey

Barrier Load Cell C6 Fx

Max: 53049.2 [N] at 0.029 [S]

Min: -277.9 [N] at -0.034 [S]

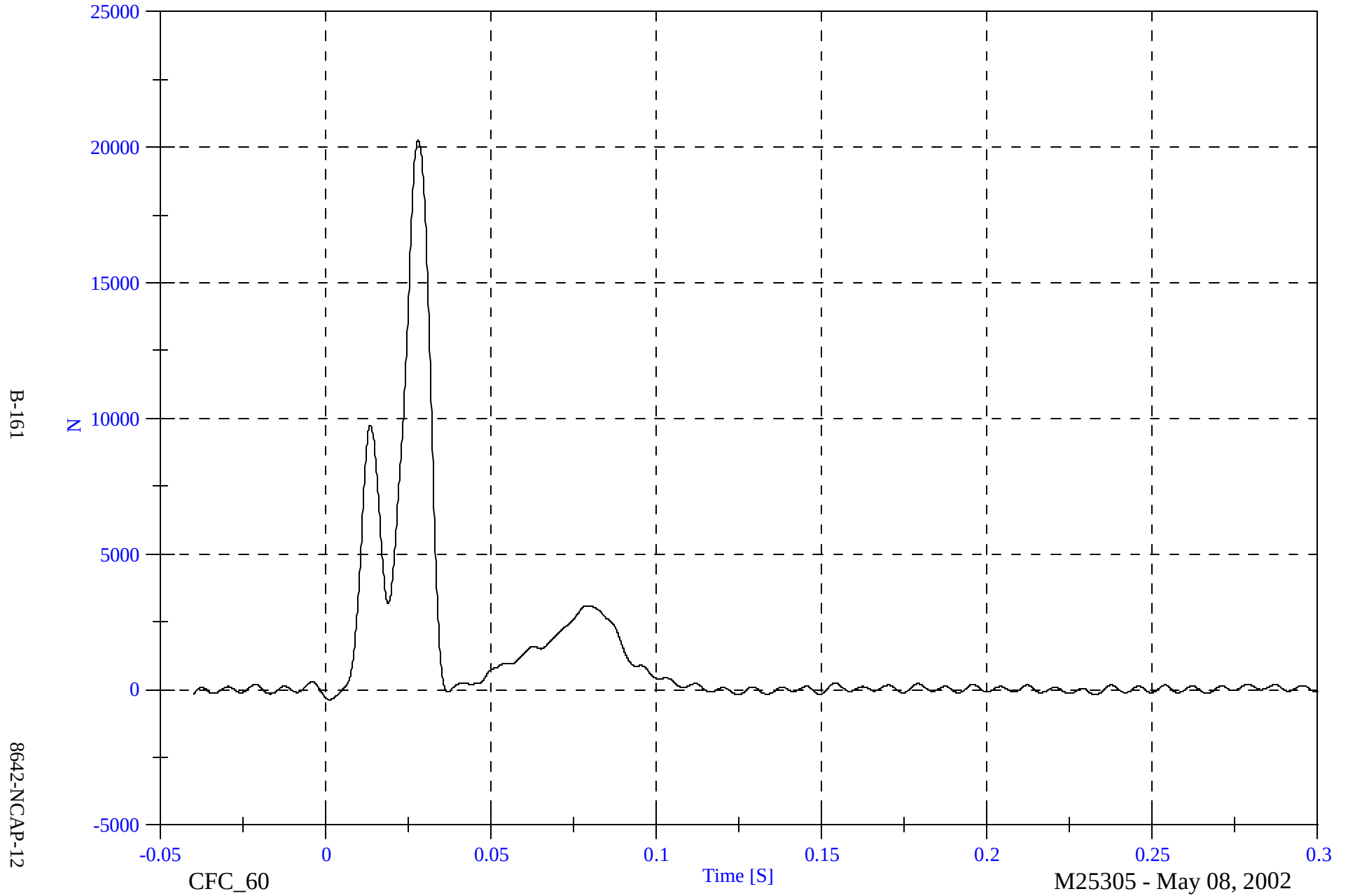


NCAP Test 12 - 2002 Honda Odyssey

Barrier Load Cell C7 Fx

Max: 20248.7 [N] at 0.028 [S]

Min: -372.7 [N] at 0.001 [S]

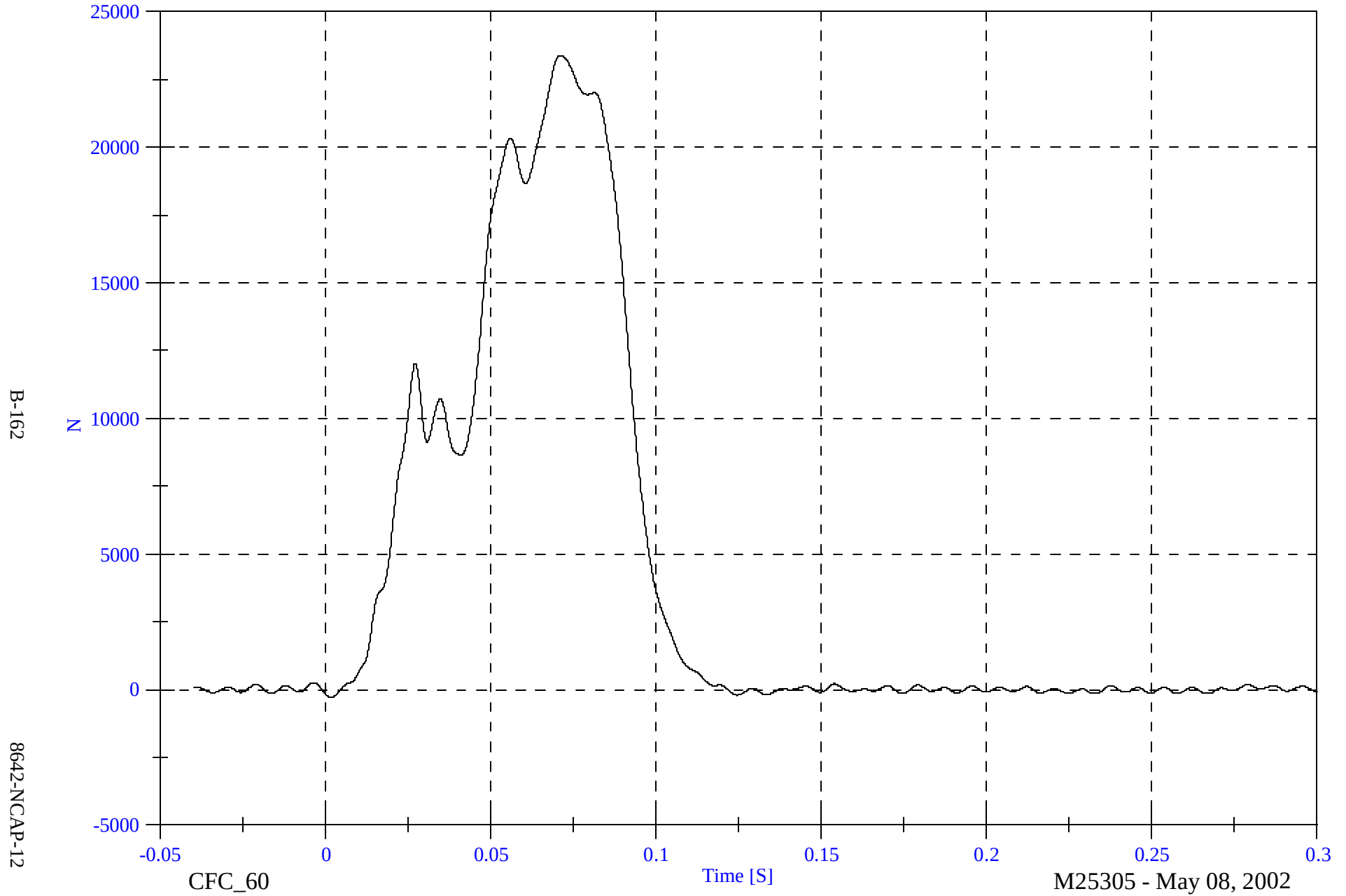


NCAP Test 12 - 2002 Honda Odyssey

Barrier Load Cell C8 Fx

Max: 23379.5 [N] at 0.071 [S]

Min: -298.3 [N] at 0.002 [S]



NCAP Test 12 - 2002 Honda Odyssey

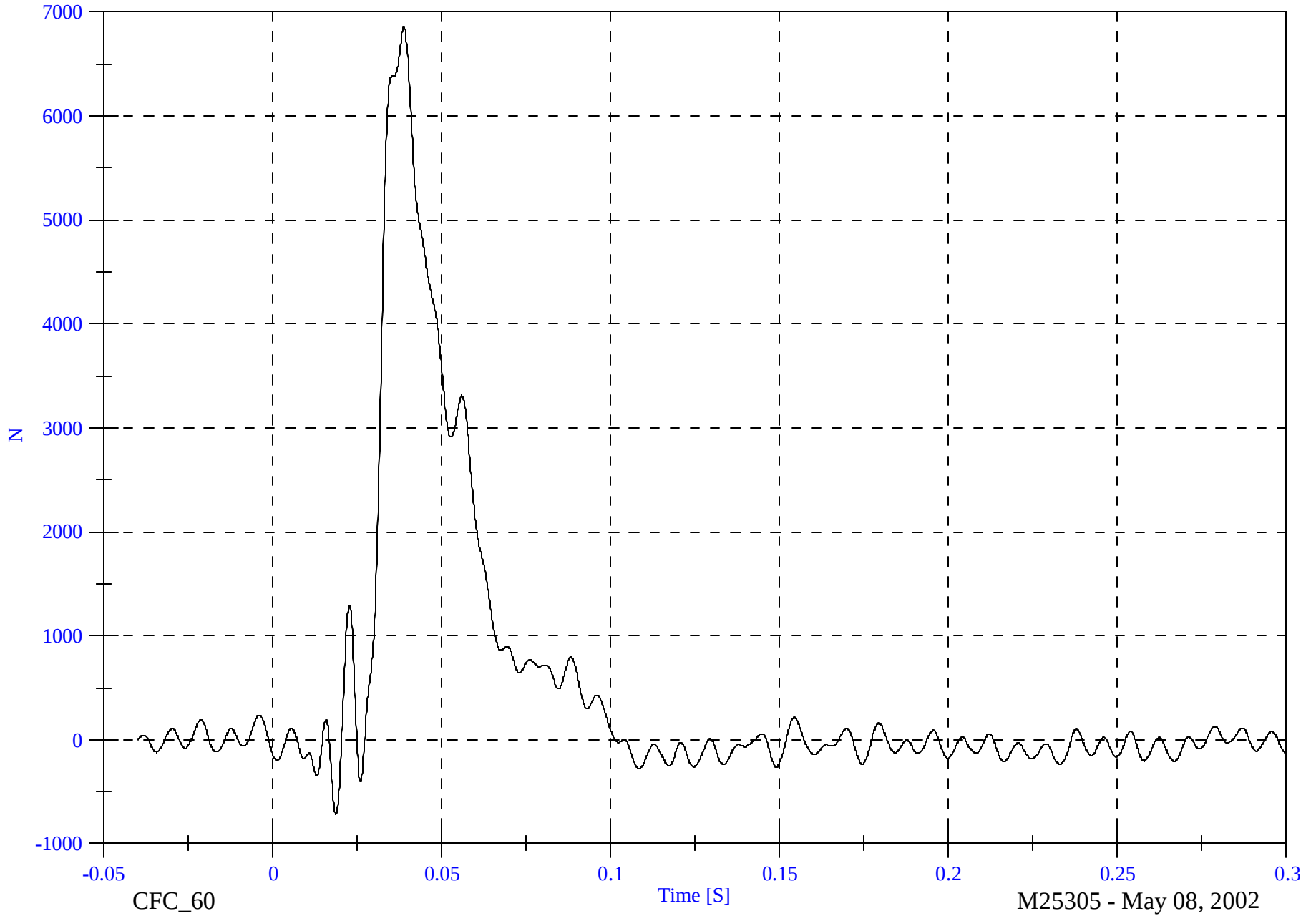
Barrier Load Cell C9 Fx

Max: 6850.1 [N] at 0.039 [S]

Min: -712.4 [N] at 0.019 [S]

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8642-NCAP-12

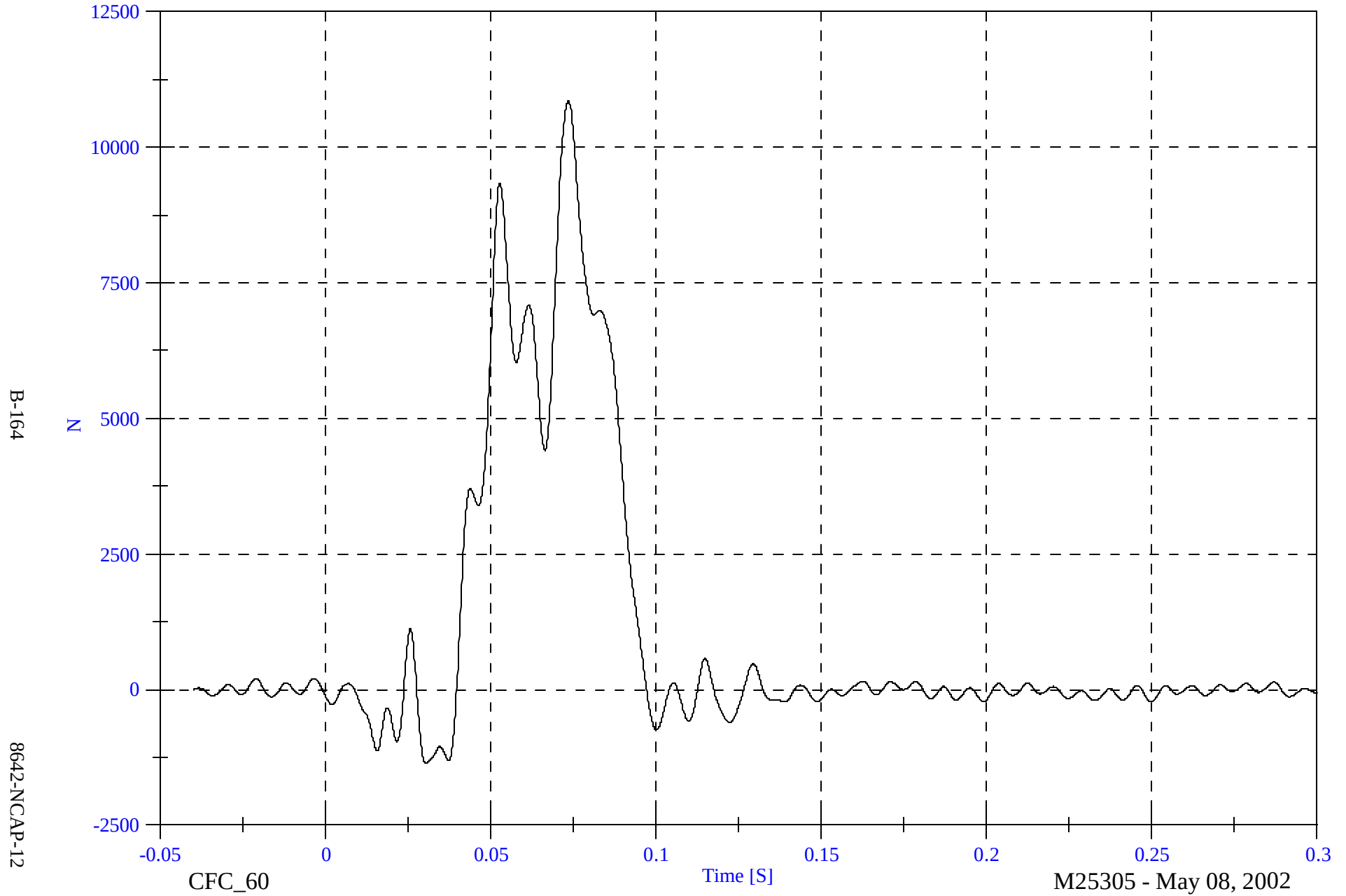


NCAP Test 12 - 2002 Honda Odyssey

Barrier Load Cell D1 Fx

Max: 10852.7 [N] at 0.073 [S]

Min: -1360.6 [N] at 0.030 [S]

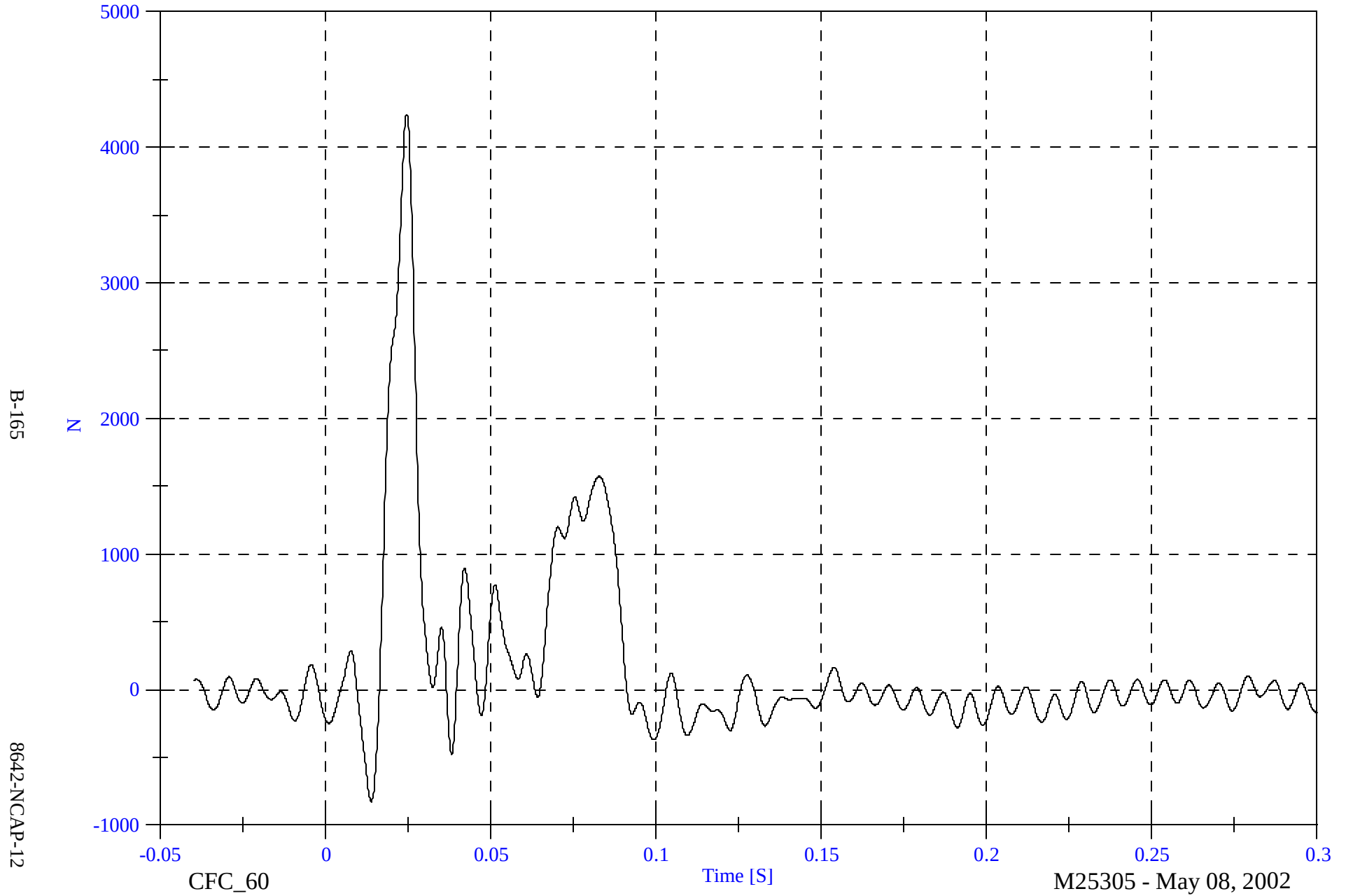


NCAP Test 12 - 2002 Honda Odyssey

Barrier Load Cell D2 Fx

Max: 4242.7 [N] at 0.025 [S]

Min: -826.5 [N] at 0.014 [S]

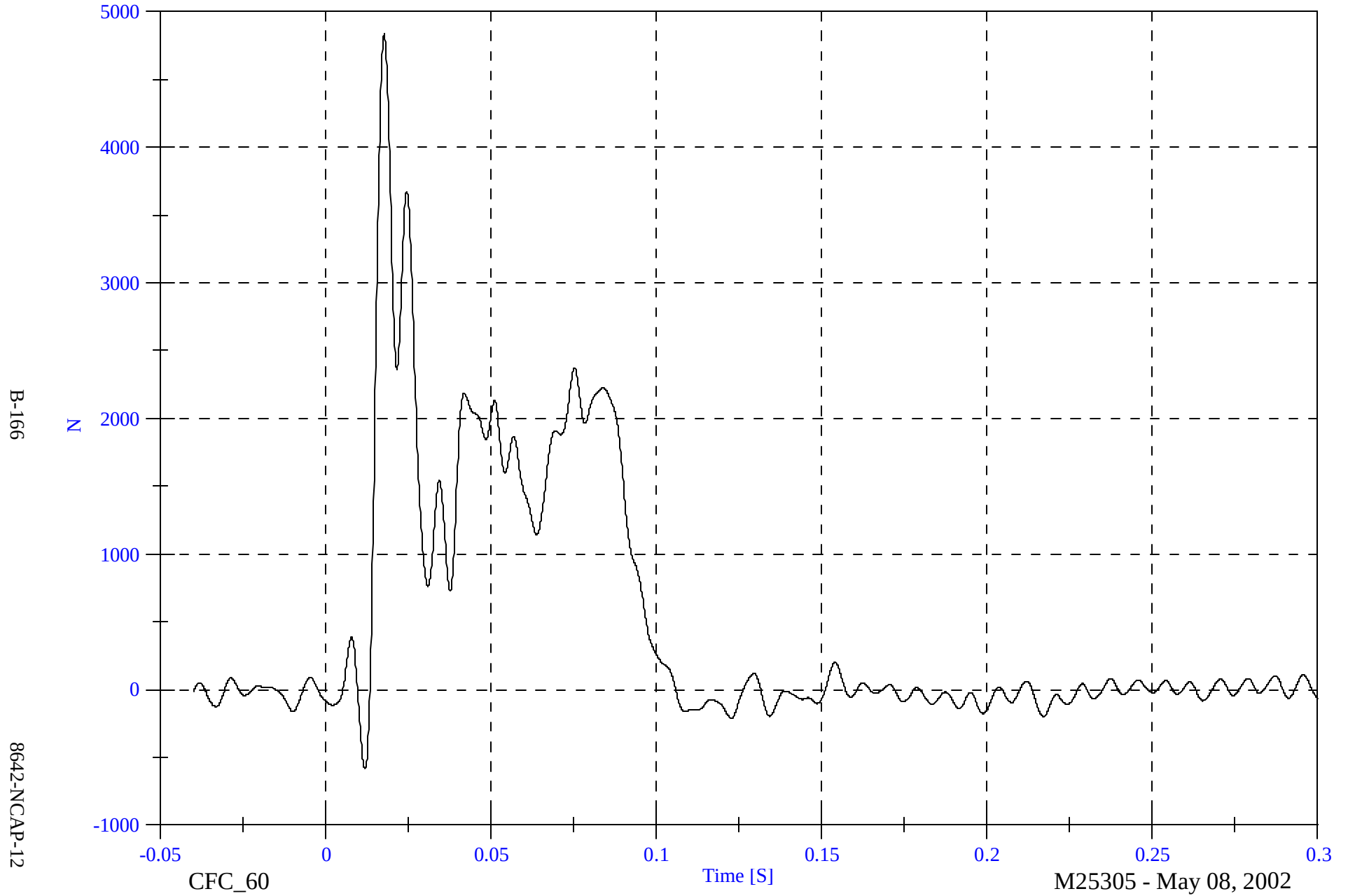


NCAP Test 12 - 2002 Honda Odyssey

Barrier Load Cell D3 Fx

Max: 4836.6 [N] at 0.018 [S]

Min: -584.0 [N] at 0.012 [S]

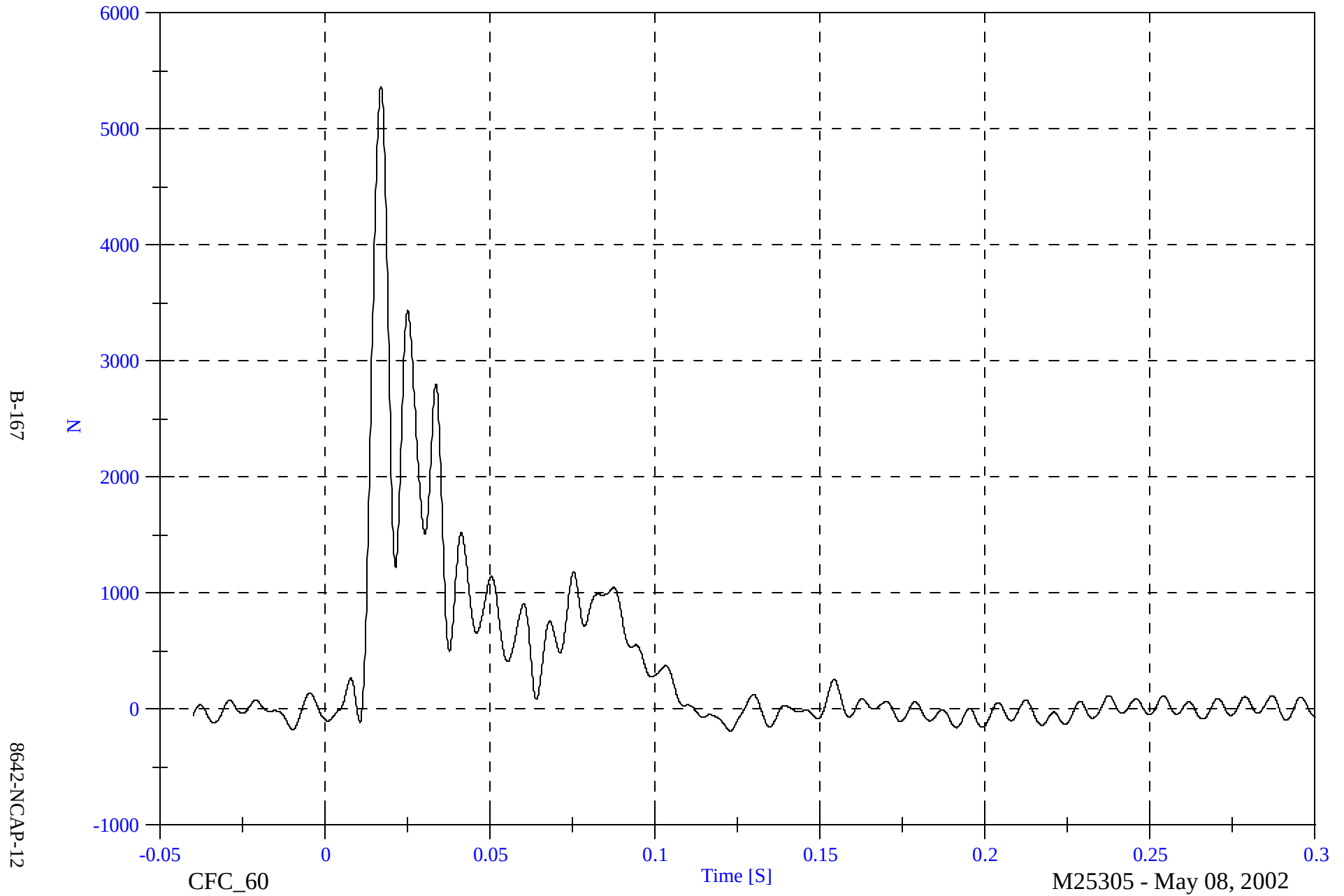


NCAP Test 12 - 2002 Honda Odyssey

Barrier Load Cell D4 Fx

Max: 5369.3 [N] at 0.017 [S]

Min: -184.5 [N] at 0.123 [S]

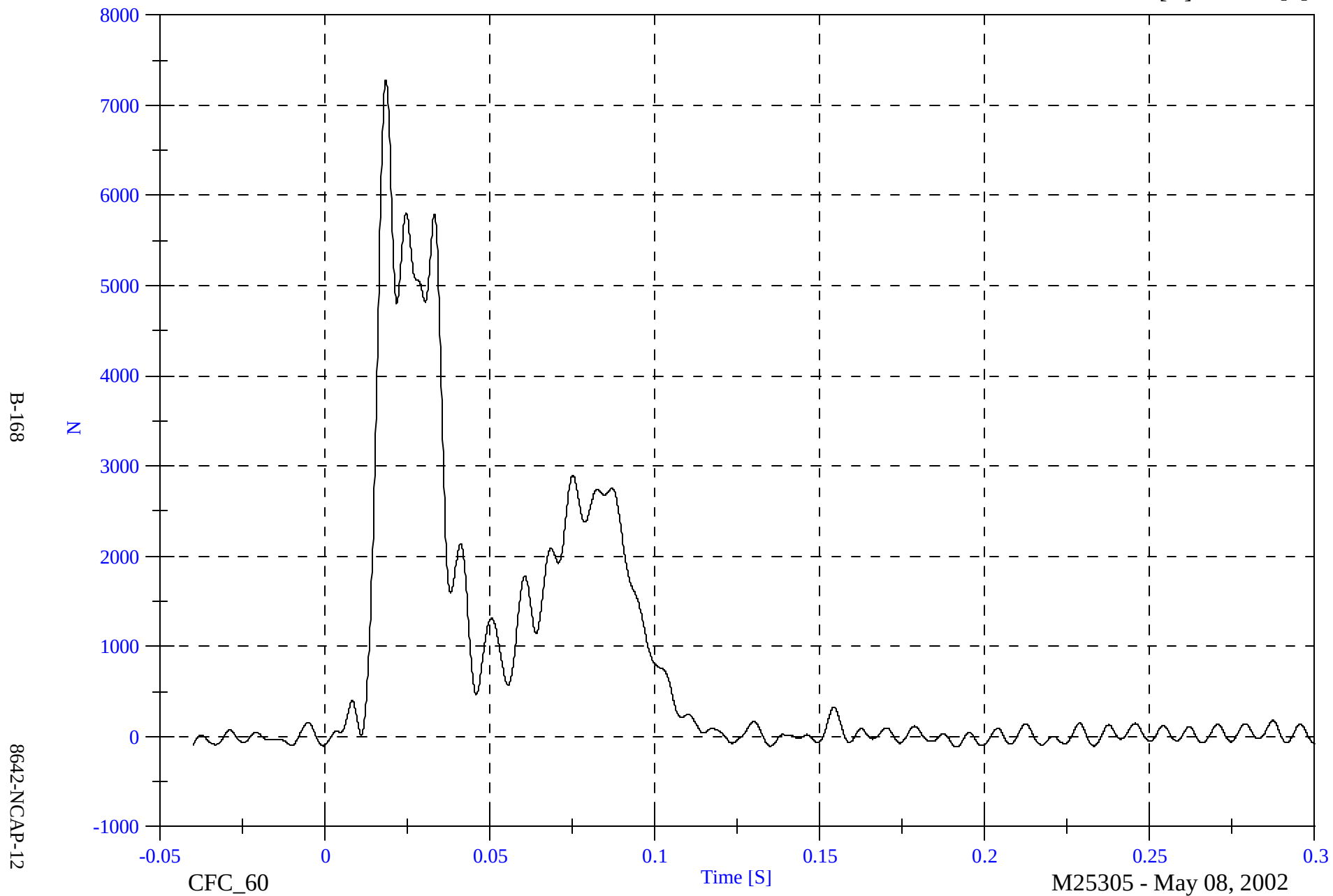


NCAP Test 12 - 2002 Honda Odyssey

Barrier Load Cell D5 Fx

Max: 7280.7 [N] at 0.018 [S]

Min: -126.9 [N] at 0.308 [S]

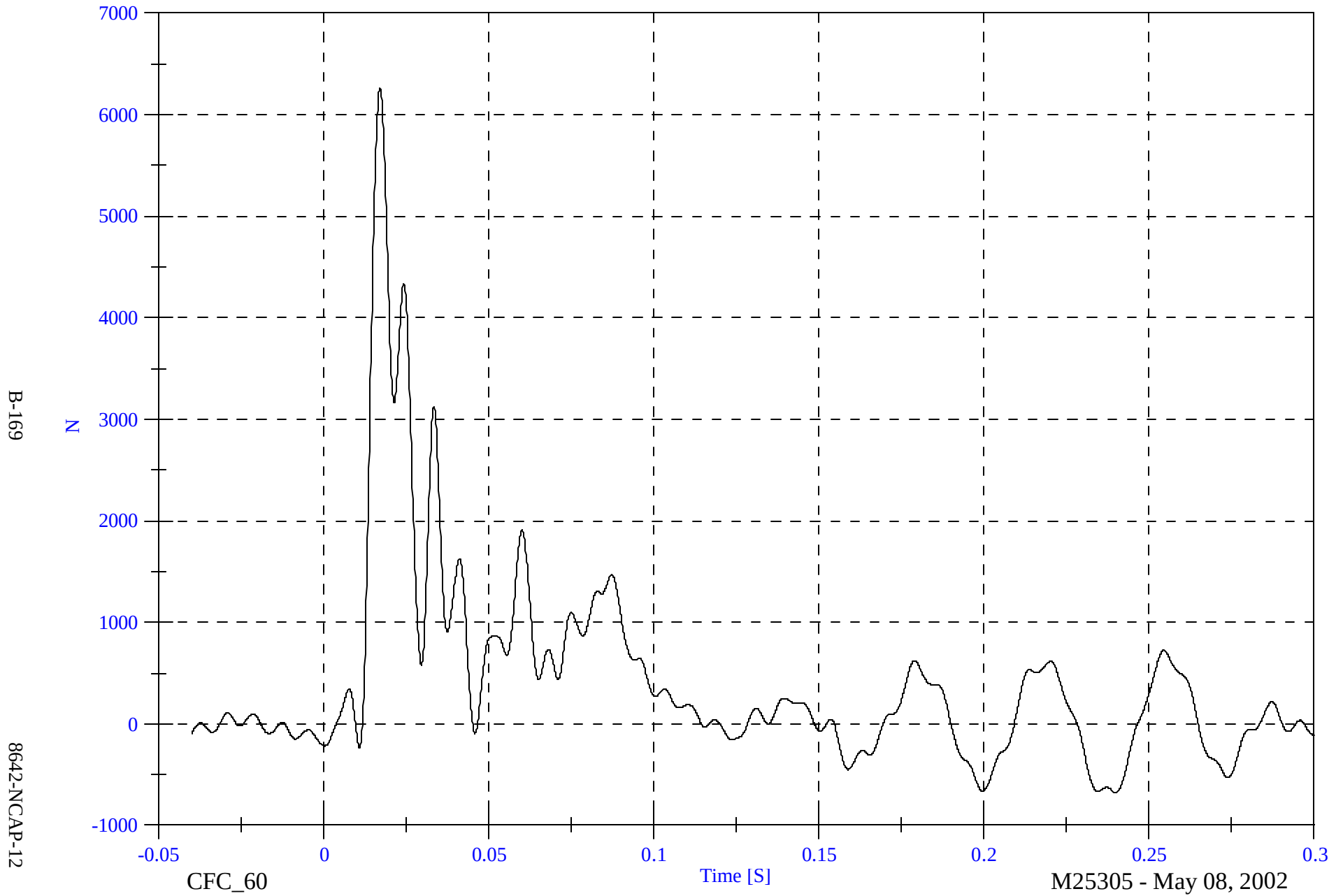


NCAP Test 12 - 2002 Honda Odyssey

Barrier Load Cell D6 Fx

Max: 6257.5 [N] at 0.017 [S]

Min: -678.3 [N] at 0.240 [S]

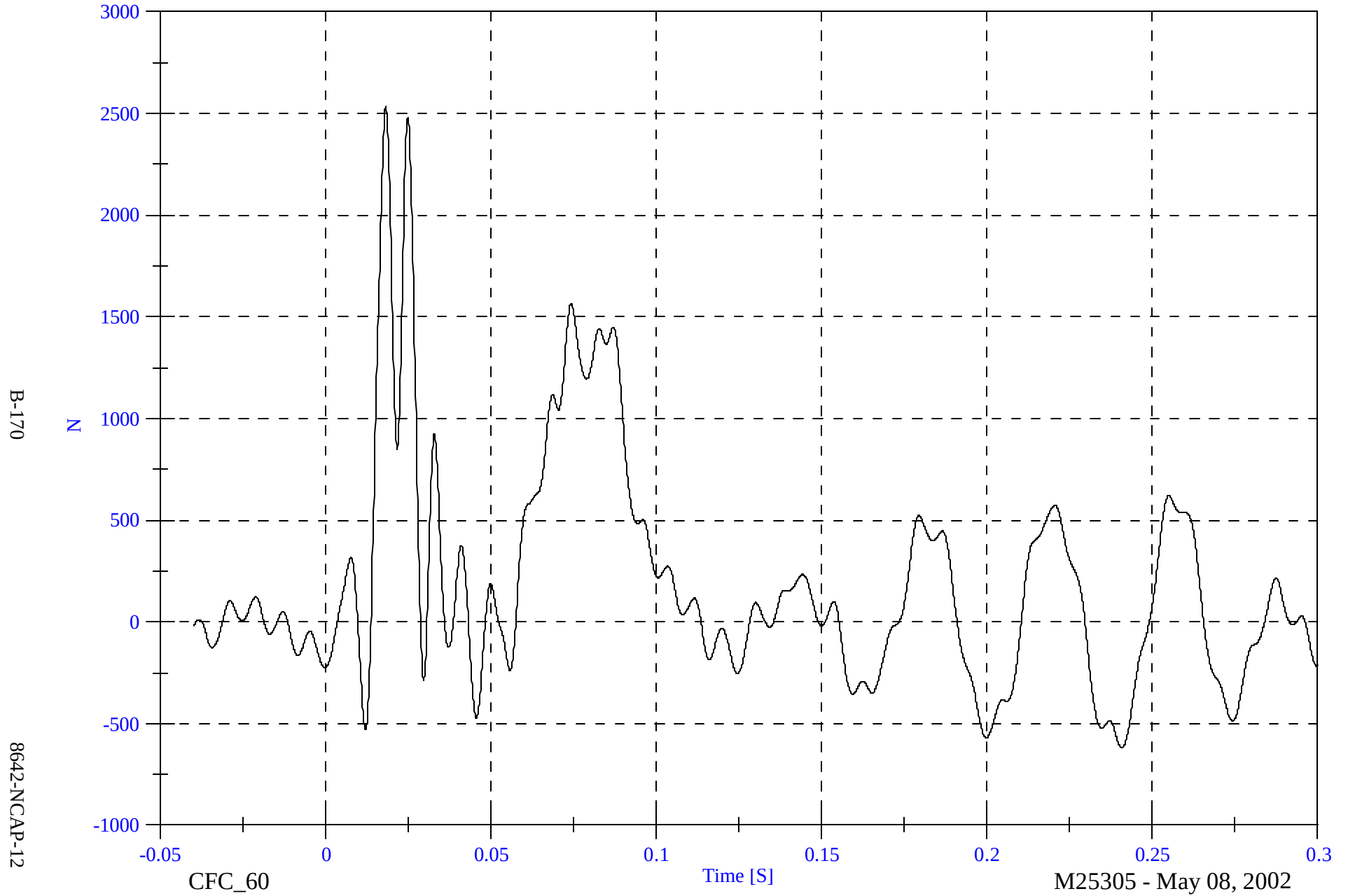


NCAP Test 12 - 2002 Honda Odyssey

Barrier Load Cell D7 Fx

Max: 2531.5 [N] at 0.018 [S]

Min: -618.3 [N] at 0.241 [S]

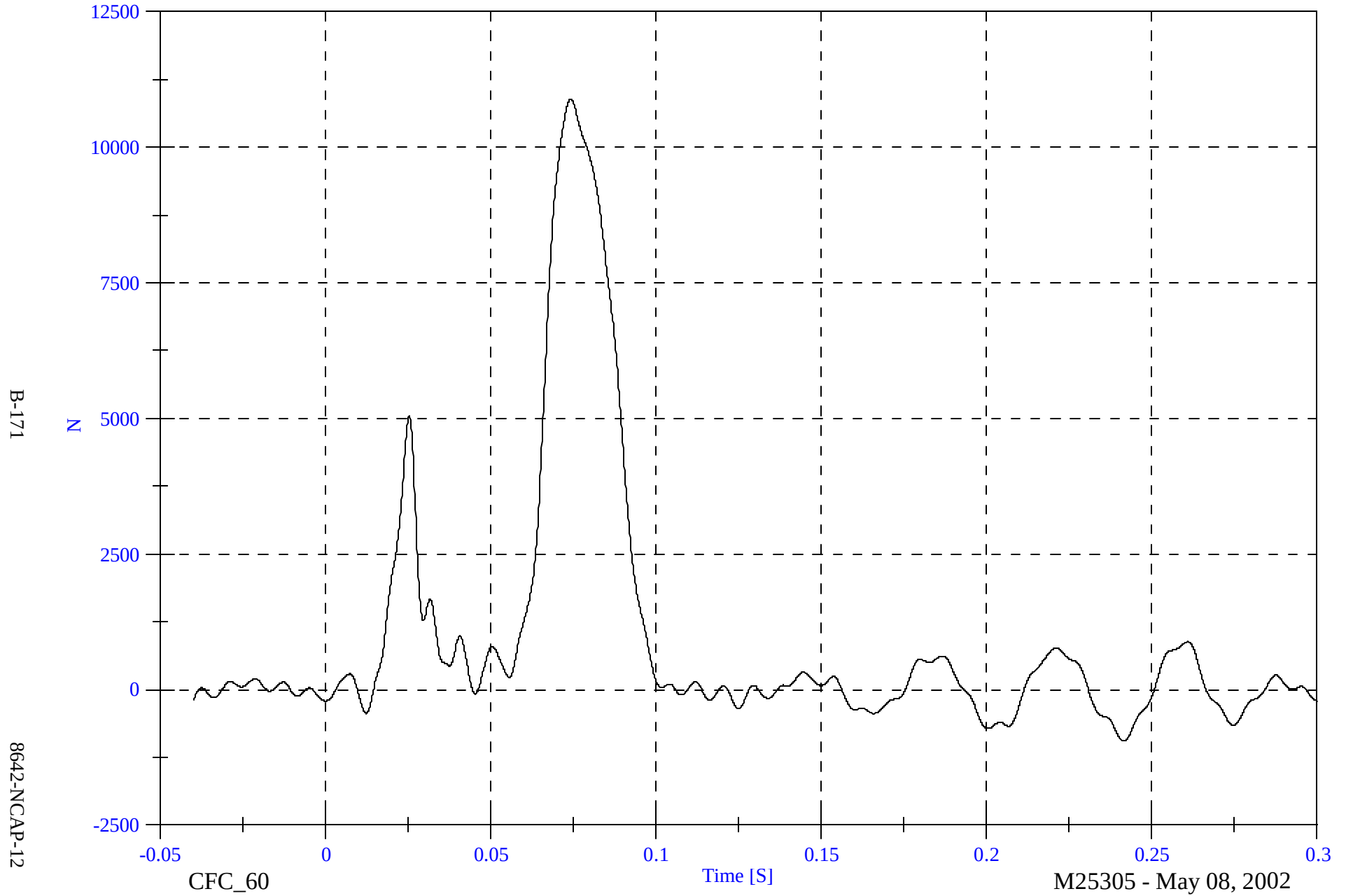


NCAP Test 12 - 2002 Honda Odyssey

Barrier Load Cell D8 Fx

Max: 10891.9 [N] at 0.074 [S]

Min: -943.8 [N] at 0.241 [S]

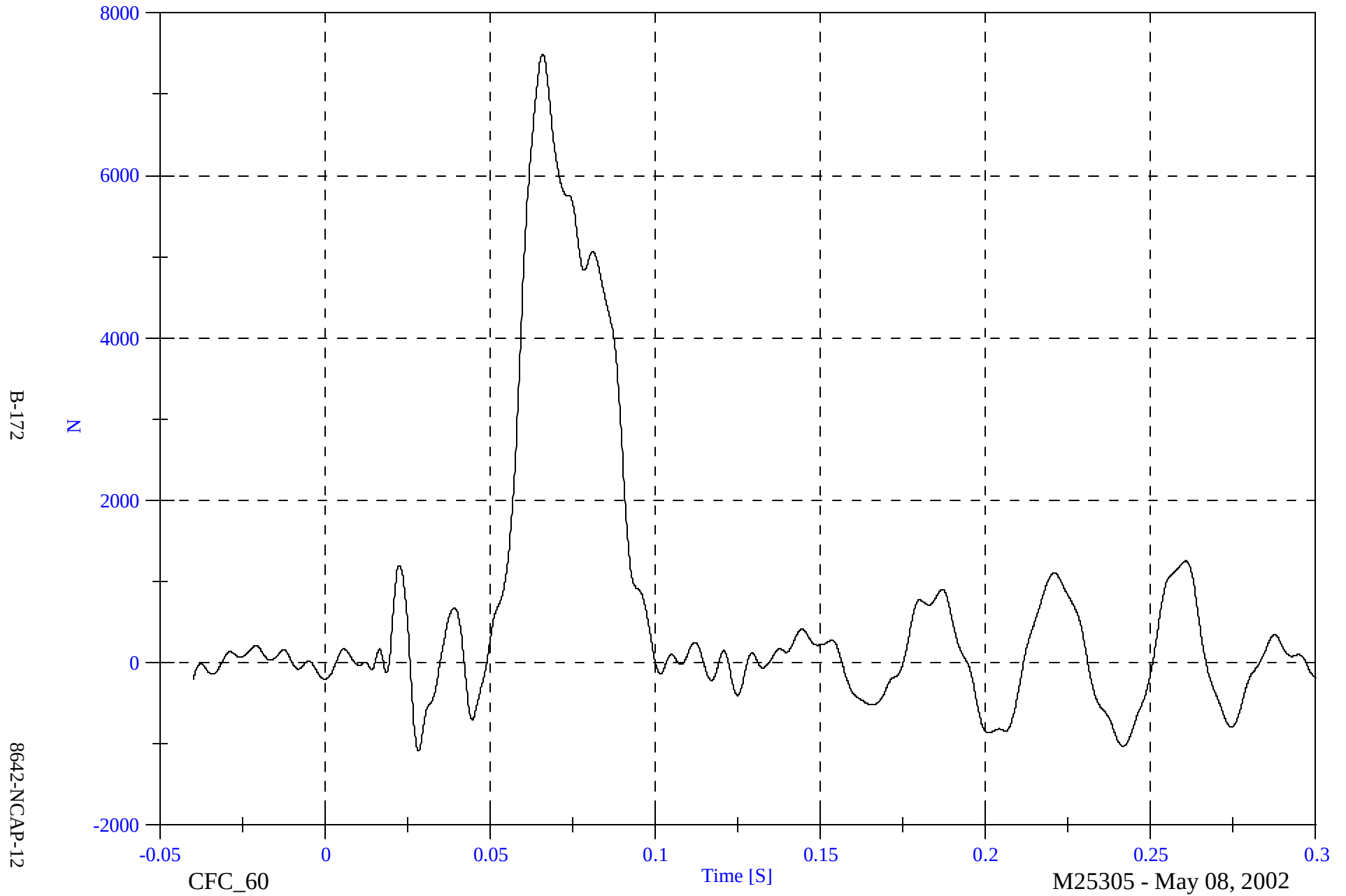


NCAP Test 12 - 2002 Honda Odyssey

Barrier Load Cell D9 Fx

Max: 7496.4 [N] at 0.066 [S]

Min: -1087.7 [N] at 0.028 [S]

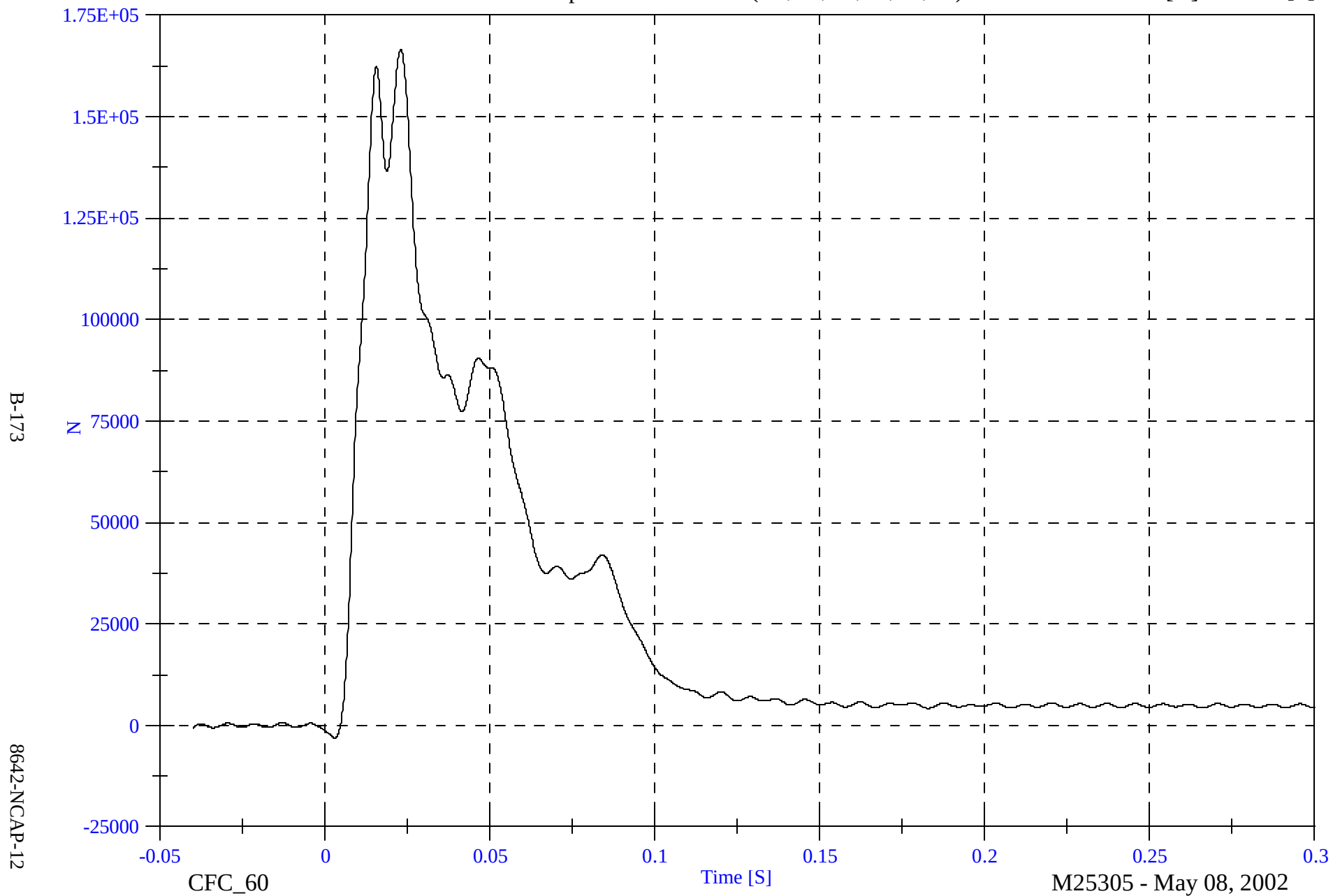


NCAP Test 12 - 2002 Honda Odyssey

Group 1 Load Cell Sum (A1,A2,A3,B1,B2,B3)

Max: 166514.3 [N] at 0.023 [S]

Min: -3062.6 [N] at 0.003 [S]

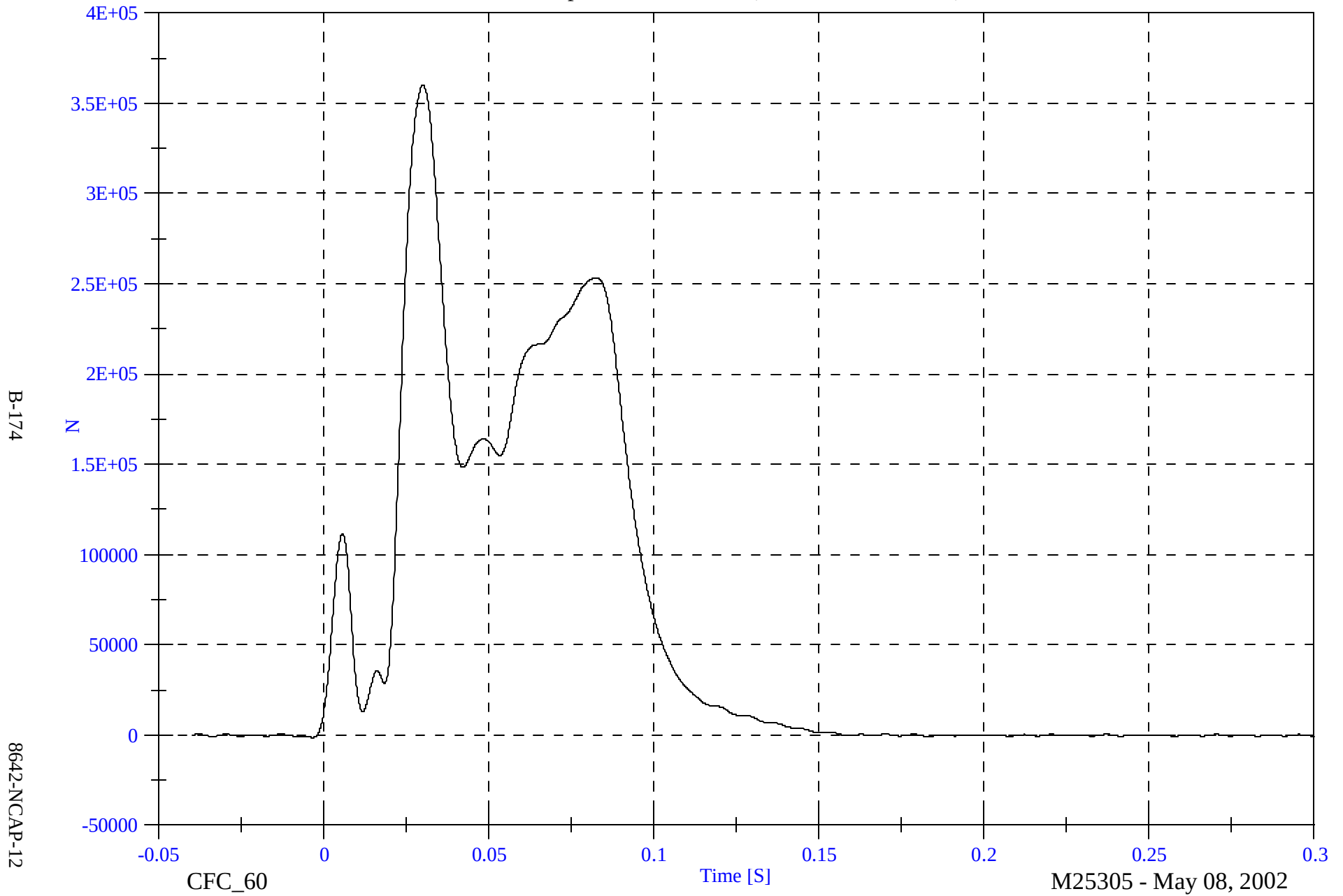


NCAP Test 12 - 2002 Honda Odyssey

Group 2 Load Cell Sum (A4,A5,A6,B4,B5,B6)

Max: 359870.3 [N] at 0.030 [S]

Min: -1352.1 [N] at -0.003 [S]

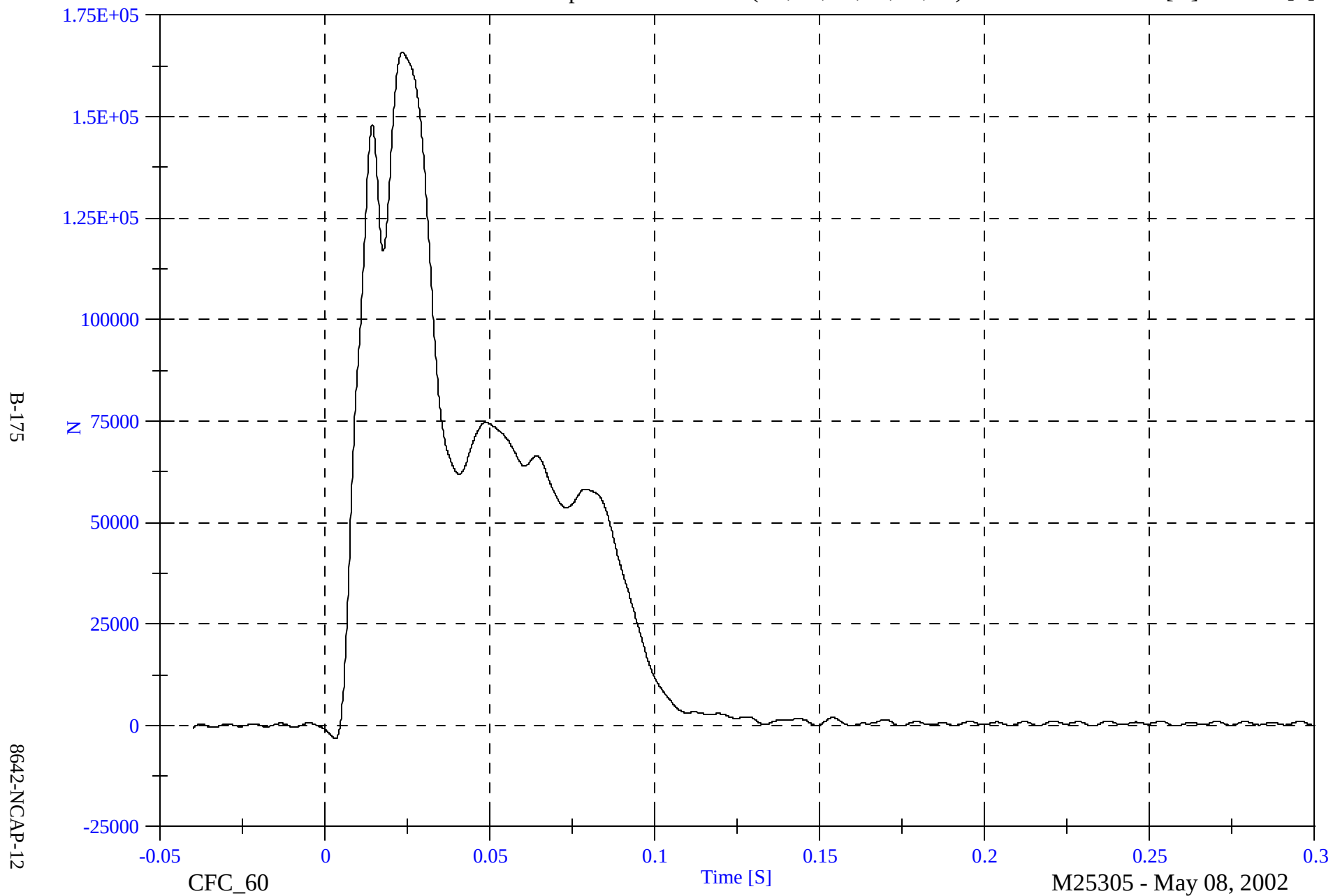


NCAP Test 12 - 2002 Honda Odyssey

Group 3 Load Cell Sum (A7,A8,A9,B7,B8,B9)

Max: 165886.7 [N] at 0.023 [S]

Min: -3276.5 [N] at 0.003 [S]

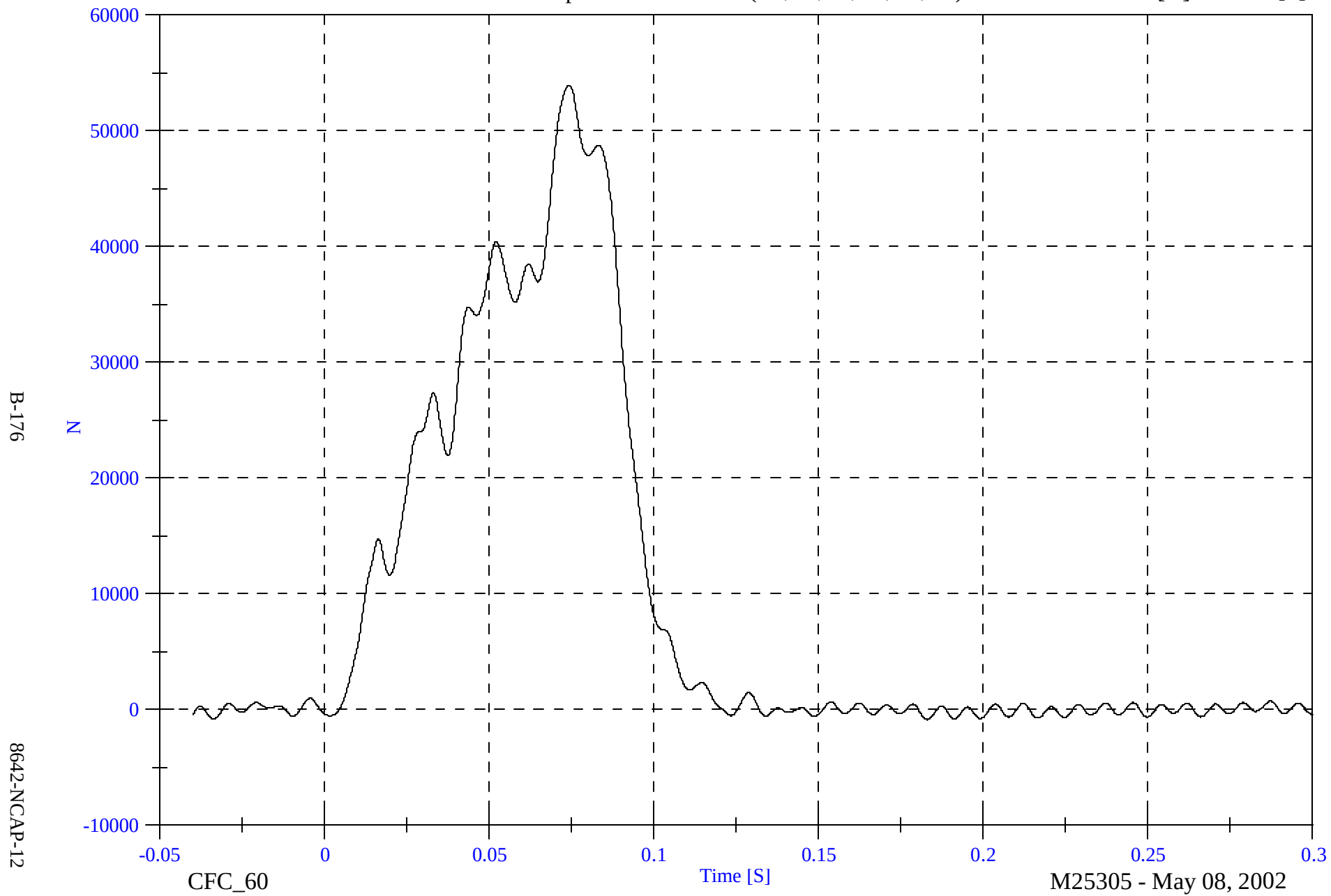


NCAP Test 12 - 2002 Honda Odyssey

Group 4 Load Cell Sum (C1,C2,C3,D1,D2,D3)

Max: 53953.6 [N] at 0.074 [S]

Min: -854.9 [N] at 0.183 [S]

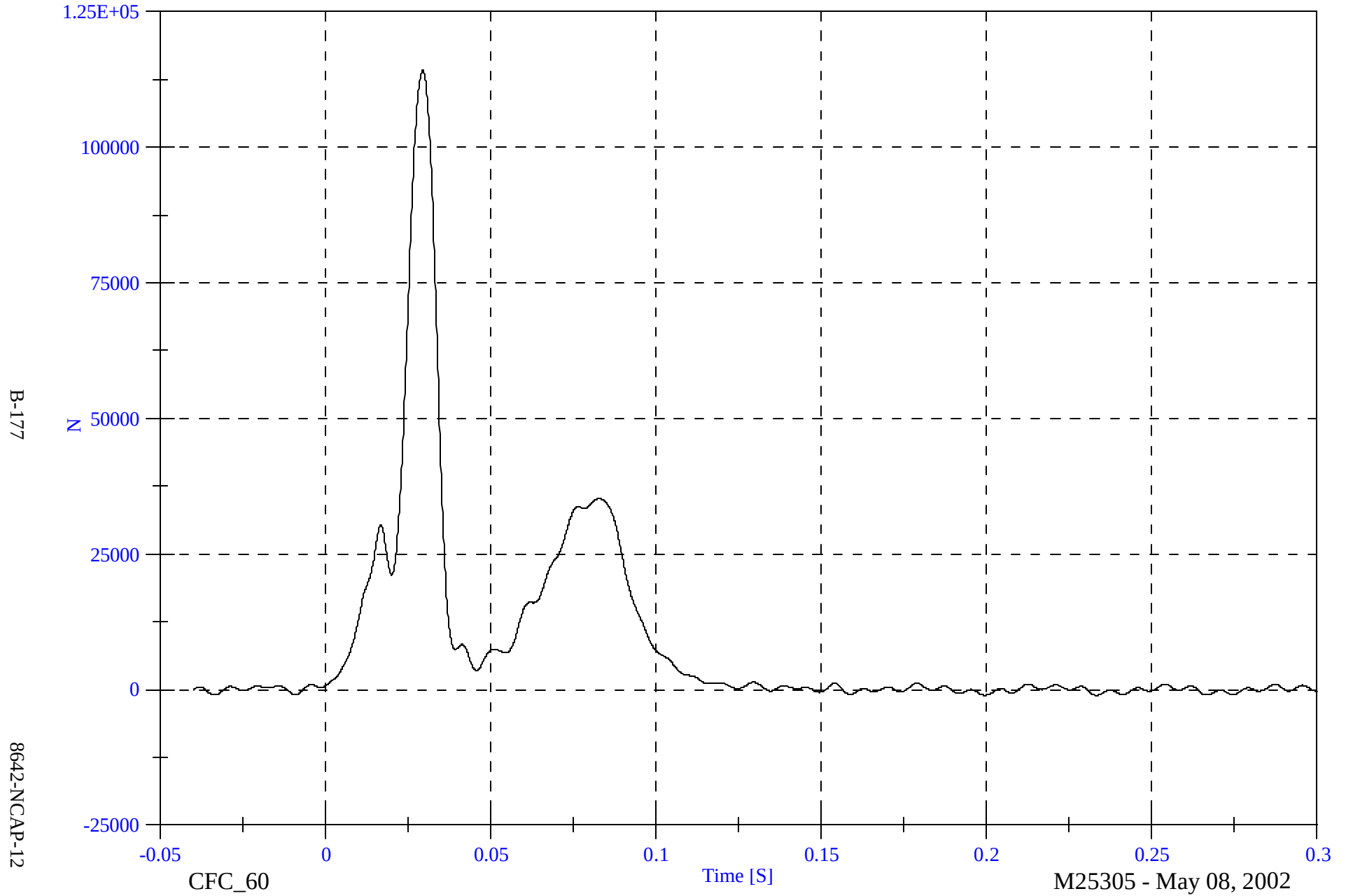


NCAP Test 12 - 2002 Honda Odyssey

Group 5 Load Cell Sum (C4,C5,C6,D4,D5,D6)

Max: 114147.0 [N] at 0.029 [S]

Min: -1056.1 [N] at 0.233 [S]

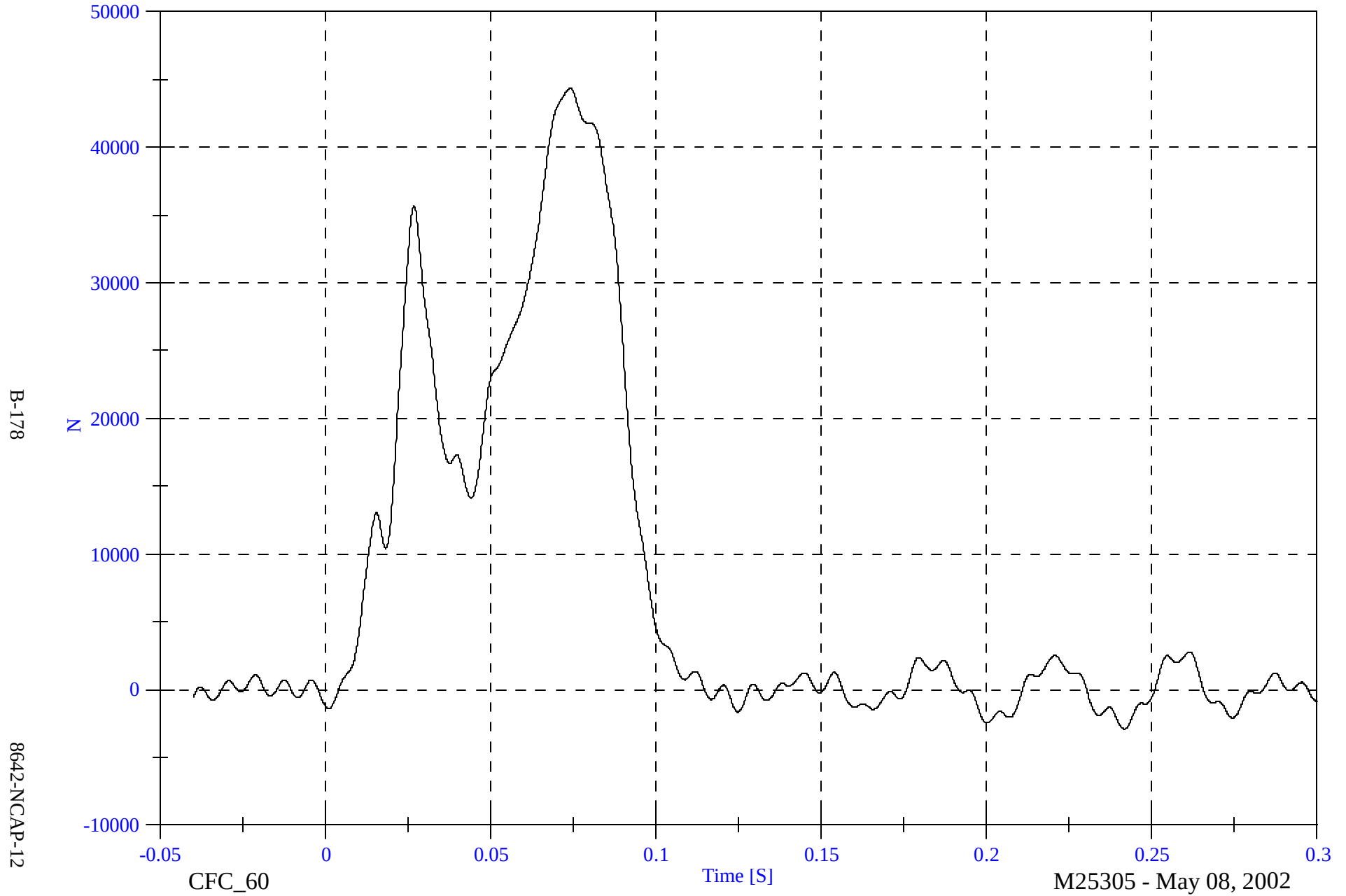


NCAP Test 12 - 2002 Honda Odyssey

Group 6 Load Cell Sum (C7,C8,C9,D7,D8,D9)

Max: 44343.2 [N] at 0.074 [S]

Min: -2908.7 [N] at 0.242 [S]

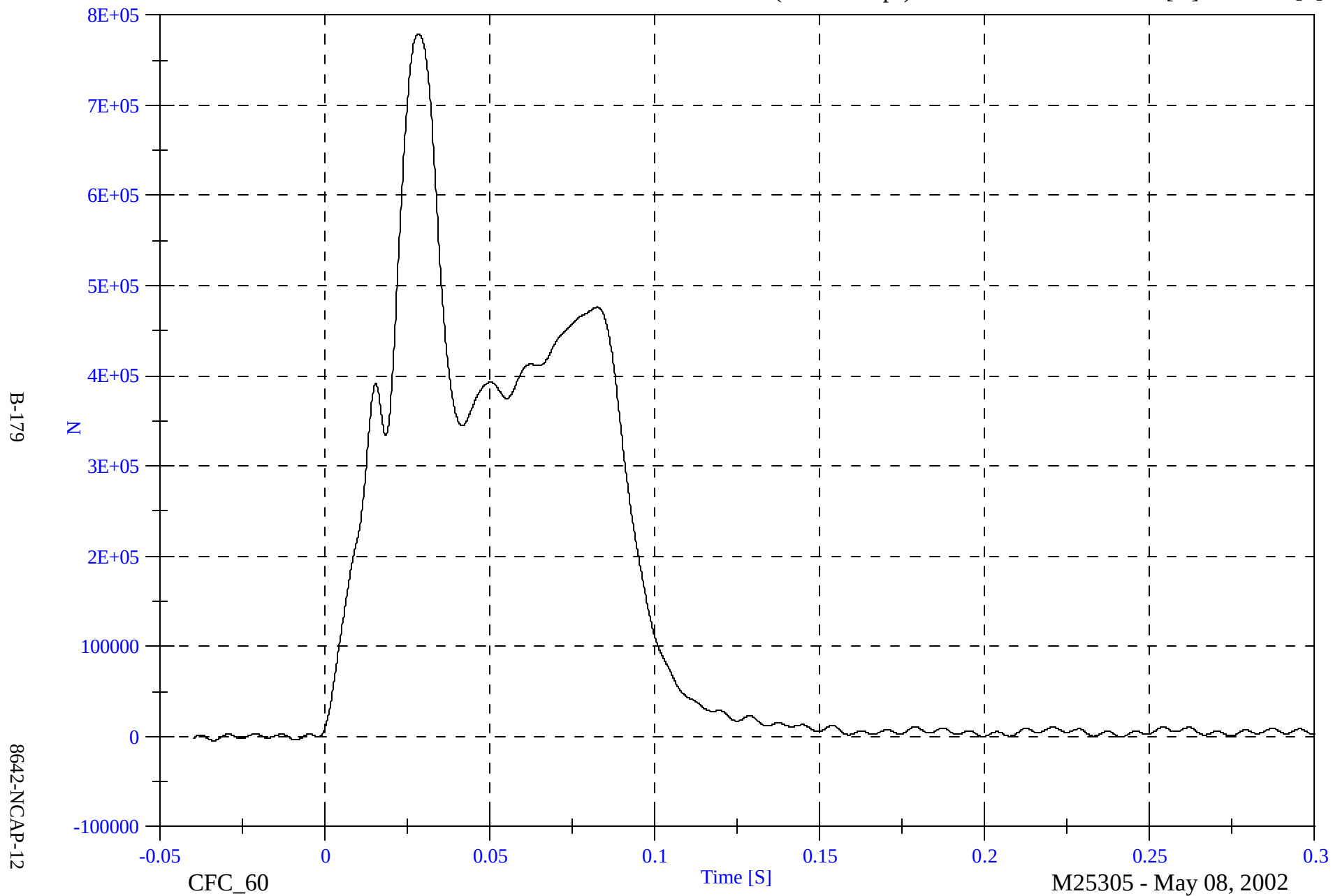


NCAP Test 12 - 2002 Honda Odyssey

Max: 779384.2 [N] at 0.028 [S]

Total Load Cell Sum (All 6 Groups)

Min: -4312.4 [N] at -0.034 [S]



APPENDIX C

PART 572B/E DUMMY CONFIGURATION AND PERFORMANCE VERIFICATION DATA SHEETS

Appendix C contains the results from certification tests performed on the 50th percentile male anthropomorphic test devices utilized for this crash test. The results indicate that the dummies meet all of the performance requirements of the six standard tests as specified in 49 CFR Part 572, Federal Register, Volume 42, No. 25, dated February 7, 1977.

The tests were conducted at the Dummy Certification Test Facility of Veridian Engineering. A summary of the test results, and Part 572 specifications are included in this Appendix.

Dummy serial numbers and certification dates are:

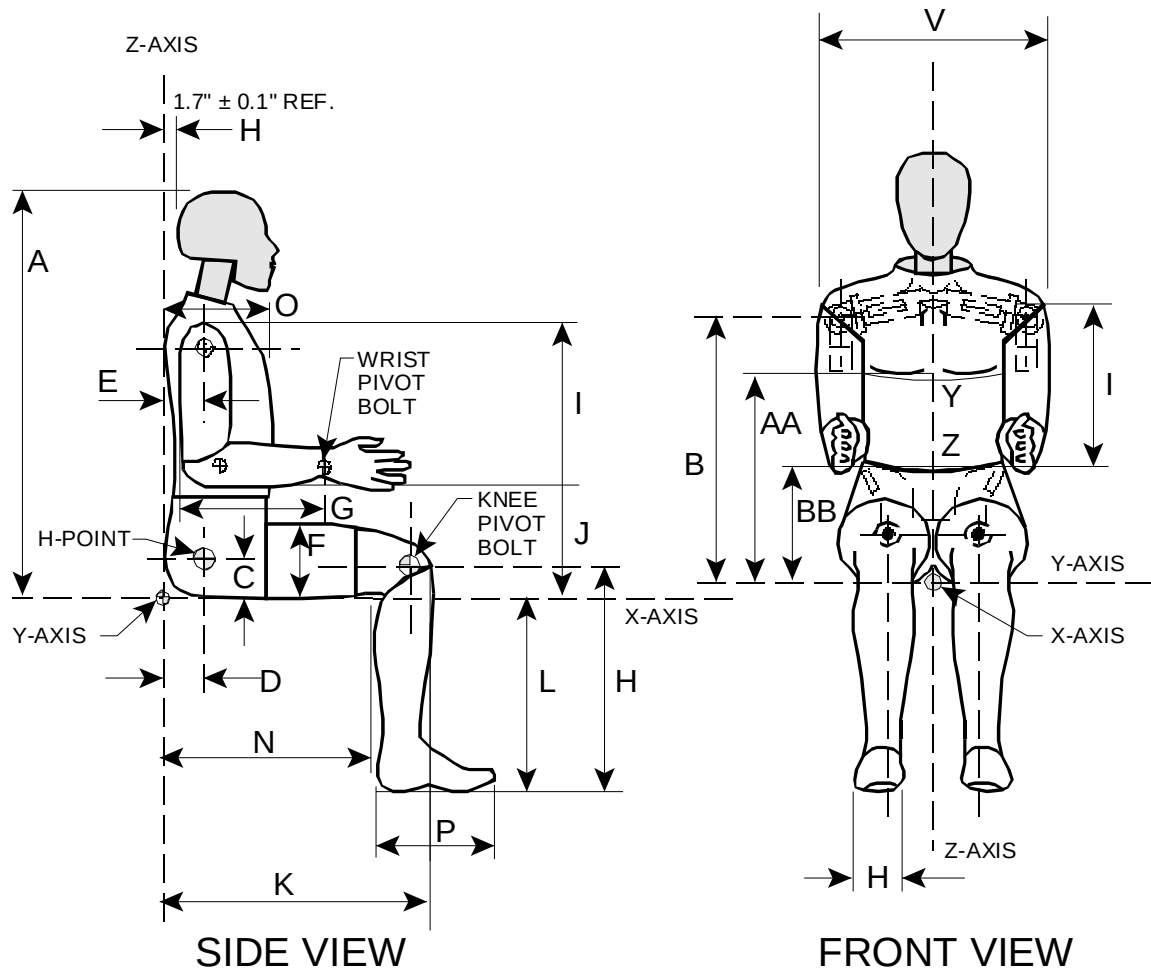
<u>Position No./Location</u>	<u>Serial No.</u>	<u>Completion Date</u>
#1/Driver	150	April 24, 2002
#2/Right Front Passenger	245	April 24, 2002

Electronic Test Equipment

The complement of signal conditioning, recording and display equipment, in conjunction with dummy certification testing, can be found in New Car Assessment and Standards Inducant Testing Final Report No. 6525-V-1.

DUMMY CONFIGURATION DIMENSIONS

EXTERNAL DIMENSIONS SPECIFICATIONS



NOTE: Figure is referenced to the erect seated position. The curved lumbar does not allow the Hybrid III to be positioned in a perfect erect attitude.
(REF: S572.31(A)(6))

PART 572E
HEAD DROP TEST

Dummy Serial Number 150
Sequential Test Number 1
Date April 22, 2002
Workfile 150H2

TEST PARAMETER	SPECIFICATION	TEST RESULTS
Temperature	66-78 Deg F	71.0
Relative Humidity	10% - 70%	45.0
Peak Resultant Acceleration	225-275 G's	252.70
Peak Lateral Acceleration	15 G's Max	1.19
Is Acceleration Curve Unimodal?	YES	YES

Remarks:

Laboratory Technician:

B. Swiecicki

PART 572E
NECK FLEXION TEST

Dummy Serial Number	150	
Sequential Test Number	1	
Date	April 23, 2002	6 Axis Neck Transducer
Workfile	150Flx	

TEST PARAMETER		SPECIFICATION	TEST RESULTS
Temperature		69-72 Deg F	72.0
Relative Humidity		10% - 70%	45.0
Impact Velocity		22.60 - 23.40 Ft/s	23.12
Pendulum Deceleration	10 ms	22.50 - 27.50 G's	22.70
	20 ms	17.60 - 22.60 G's	21.64
	30 ms	12.50 - 18.50 G's	14.22
Max Pendulum G's Above 30 ms		29 G's Max	14.22
Deceleration - Time Curve Decay Time to 5 G's		34 - 42 ms	41.90
D Plane Rotation	Max	64 - 78 Deg	66.63
	Time	57 - 64 ms	58.80
Moment About Occipital Condyle	Max	65 - 80 Ft-Lbs	77.55
	Time	47 - 58 ms	53.00
Rotation Angle - Time Curve Decay Time to Zero		113 - 128 ms	113.90
Positive Moment - Time Curve Decay Time to Zero		97 - 107 ms	97.90

Remarks:

Laboratory Technician: B. Swiecicki

PART 572E
NECK EXTENSION TEST

Dummy Serial Number	150	
Sequential Test Number	1	
Date	April 23, 2002	6 Axis Neck Transducer
Workfile	150Ext	

TEST PARAMETER		SPECIFICATION	TEST RESULTS
Temperature		69-72 Deg F	72.0
Relative Humidity		10% - 70%	45.0
Impact Velocity		19.50 - 20.30 Ft/s	19.80
Pendulum Deceleration	10 ms	17.20 - 21.20 G's	20.47
	20 ms	14.00 - 19.00 G's	17.31
	30 ms	11.00 - 16.00 G's	14.12
Max Pendulum G's Above 30 ms		22 G's Max	14.90
Deceleration - Time Curve Decay Time to 5 G's		38 - 46 ms	39.70
D Plane Rotation	Max	81 - 106 Deg	88.69
	Time	72 - 82 ms	74.20
Moment About Occipital Condyle	Max	-59.0 - -39.0 Ft-Lbs	-40.32
	Time	65 - 79 ms	69.70
Rotation Angle - Time Curve Decay Time to Zero		147 - 174 ms	153.30
Positive Moment - Time Curve Decay Time to Zero		120 - 148 ms	148.00

Remarks:

Laboratory Technician: B. Swiecicki

PART 572E
THORAX IMPACT TEST

Dummy Serial Number 150
Sequential Test Number 1
Date April 24, 2002
Workfile 150T

TEST PARAMETER	SPECIFICATION	TEST RESULTS
Temperature	69-72 Deg F	70.0
Relative Humidity	10% - 70%	17.0
Pendulum Velocity	21.6 - 22.4 Ft/s	22.12
Maximum Deflection	2.50 - 2.86 in	2.51
Maximum Resistive Force	1160 - 1325 Lbs	1320.51
Internal Hysteresis	69 - 85 %	70.15

Remarks:

Laboratory Technician:

B. Swiecicki

PART 572E
KNEE IMPACT TEST

Dummy Serial Number 150
Sequential Test Number 1
Date April 29, 2002
Workfile 150LF/150RF

TEST PARAMETER	SPECIFICATION	TEST RESULTS
LEFT KNEE		
Temperature	66 - 78 Deg F	74.0
Relative Humidity	10% - 70%	35.0
Probe Velocity	6.8 - 7.0 Ft/s	6.90
Peak Knee Impact Force	1060 - 1300 Lbs	1158.79
RIGHT KNEE		
Temperature	66 - 78 Deg F	74.0
Relative Humidity	10% - 70%	35.0
Probe Velocity	6.8 - 7.0 Ft/s	6.90
Peak Knee Impact Force	1060 - 1300 Lbs	1245.87

Remarks:

Laboratory Technician:

B. Swiecicki

PART 572E
EXTERNAL DIMENSIONS

Dummy Serial Number 150
Sequential Test Number 1
Date April 24, 2002

TEST PARAMETER		SPECIFICATION	TEST RESULTS
Temperature			70
Relative Humidity			20
Location for Chest Circumference	AA	16.9 - 17.1 in	17.0
Location for Waist Circumference	BB	8.9 - 9.1 in	9.0
Chest Circumference (With Jacket)	Y	38.2 - 39.4 in	39.2
Waist Circumference	Z	32.9 - 34.1 in	34.0
Chest Depth	O	8.4 - 9.0 in	8.4
H-Point Height	C	3.3 - 3.5 in	3.4
H-Point from Backline	D	5.3 - 5.5 in	5.4
Skull Cap to Backline	H	1.6 - 1.8 in	1.7
Total Sitting Height	A	34.6 - 35.0 in	34.7
Thigh Clearance	F	5.5 - 6.1 in	5.8
Buttock Knee Length	K	22.8 - 23.8 in	23.4
Buttock Popliteal Length	N	17.8 - 18.8 in	18.5
Popliteal Height	L	16.9 - 17.9 in	17.8
Knee Pivot Height	M	19.1 - 19.7 in	19.6
Foot Length	P	9.9 - 10.5 in	10.1
Foot Breadth	W	3.6 - 4.2 in	3.8
Shoulder Pivot from Backline	E	3.3 - 3.7 in	3.7
Shoulder Breadth	V	16.6 - 17.2 in	16.8
Shoulder Pivot Height	B	19.9 - 20.5 in	20.2
Elbow Rest Height	J	7.5 - 8.3 in	8.1
Shoulder - Elbow Length	I	13.0 - 13.6 in	13.2
Back of Elbow to Wrist Pivot	G	11.4 - 12.0 in	11.5

Remarks:

Laboratory Technician:

B. Swiecicki

PART 572E
HEAD DROP TEST

Dummy Serial Number 245
Sequential Test Number 1
Date April 22, 2002
Workfile 245H

TEST PARAMETER	SPECIFICATION	TEST RESULTS
Temperature	66-78 Deg F	71.0
Relative Humidity	10% - 70%	45.0
Peak Resultant Acceleration	225-275 G's	259.15
Peak Lateral Acceleration	15 G's Max	13.53
Is Acceleration Curve Unimodal?	YES	YES

Remarks:

Laboratory Technician:

B. Swiecicki

PART 572E
NECK FLEXION TEST

Dummy Serial Number	245	
Sequential Test Number	1	
Date	April 24, 2002	6 Axis Neck Transducer
Workfile	245Flx	

TEST PARAMETER		SPECIFICATION	TEST RESULTS
Temperature		69-72 Deg F	72.0
Relative Humidity		10% - 70%	40.0
Impact Velocity		22.60 - 23.40 Ft/s	23.06
Pendulum Deceleration	10 ms	22.50 - 27.50 G's	23.68
	20 ms	17.60 - 22.60 G's	22.22
	30 ms	12.50 - 18.50 G's	15.77
Max Pendulum G's Above 30 ms		29 G's Max	15.77
Deceleration - Time Curve Decay Time to 5 G's		34 - 42 ms	36.80
D Plane Rotation	Max	64 - 78 Deg	72.62
	Time	57 - 64 ms	63.60
Moment About Occipital Condyle	Max	65 - 80 Ft-Lbs	78.80
	Time	47 - 58 ms	51.30
Rotation Angle - Time Curve Decay Time to Zero		113 - 128 ms	124.10
Positive Moment - Time Curve Decay Time to Zero		97 - 107 ms	101.70

Remarks:

Laboratory Technician:

B. Swiecicki

PART 572E
NECK EXTENSION TEST

Dummy Serial Number	245	
Sequential Test Number	1	
Date	April 24, 2002	6 Axis Neck Transducer
Workfile	245Ext	

TEST PARAMETER		SPECIFICATION	TEST RESULTS
Temperature		69-72 Deg F	72.0
Relative Humidity		10% - 70%	40.0
Impact Velocity		19.50 - 20.30 Ft/s	19.90
Pendulum Deceleration	10 ms	17.20 - 21.20 G's	18.66
	20 ms	14.00 - 19.00 G's	16.96
	30 ms	11.00 - 16.00 G's	13.41
Max Pendulum G's Above 30 ms		22 G's Max	13.41
Deceleration - Time Curve Decay Time to 5 G's		38 - 46 ms	44.20
D Plane Rotation	Max	81 - 106 Deg	100.59
	Time	72 - 82 ms	80.30
Moment About Occipital Condyle	Max	-59.0 - -39.0 Ft-Lbs	-39.30
	Time	65 - 79 ms	76.40
Rotation Angle - Time Curve Decay Time to Zero		147 - 174 ms	167.40
Positive Moment - Time Curve Decay Time to Zero		120 - 148 ms	126.90

Remarks:

Laboratory Technician:

B. Swiecicki

PART 572E
THORAX IMPACT TEST

Dummy Serial Number 245
Sequential Test Number 1
Date April 24, 2002
Workfile 245T

TEST PARAMETER	SPECIFICATION	TEST RESULTS
Temperature	69-72 Deg F	70.0
Relative Humidity	10% - 70%	17.0
Pendulum Velocity	21.6 - 22.4 Ft/s	22.01
Maximum Deflection	2.50 - 2.86 in	2.51
Maximum Resistive Force	1160 - 1325 Lbs	1303.81
Internal Hysteresis	69 - 85 %	71.74

Remarks:

Laboratory Technician:

B. Swiecicki

PART 572E
KNEE IMPACT TEST

Dummy Serial Number 245
Sequential Test Number 1
Date April 29, 2002
Workfile 245LF/245RF

TEST PARAMETER	SPECIFICATION	TEST RESULTS
LEFT KNEE		
Temperature	66 - 78 Deg F	74.0
Relative Humidity	10% - 70%	35.0
Probe Velocity	6.8 - 7.0 Ft/s	7.00
Peak Knee Impact Force	1060 - 1300 Lbs	1184.93
RIGHT KNEE		
Temperature	66 - 78 Deg F	74.0
Relative Humidity	10% - 70%	35.0
Probe Velocity	6.8 - 7.0 Ft/s	7.00
Peak Knee Impact Force	1060 - 1300 Lbs	1150.56

Remarks:

Laboratory Technician:

B. Swiecicki

PART 572E
EXTERNAL DIMENSIONS

Dummy Serial Number 245
Sequential Test Number 1
Date April 24, 2002

TEST PARAMETER		SPECIFICATION	TEST RESULTS
Temperature			70
Relative Humidity			20
Location for Chest Circumference	AA	16.9 - 17.1 in	17.0
Location for Waist Circumference	BB	8.9 - 9.1 in	9.0
Chest Circumference (With Jacket)	Y	38.2 - 39.4 in	39.2
Waist Circumference	Z	32.9 - 34.1 in	33.8
Chest Depth	O	8.4 - 9.0 in	8.4
H-Point Height	C	3.3 - 3.5 in	3.4
H-Point from Backline	D	5.3 - 5.5 in	5.4
Skull Cap to Backline	H	1.6 - 1.8 in	1.7
Total Sitting Height	A	34.6 - 35.0 in	34.7
Thigh Clearance	F	5.5 - 6.1 in	6.0
Buttock Knee Length	K	22.8 - 23.8 in	23.4
Buttock Popliteal Length	N	17.8 - 18.8 in	18.5
Popliteal Height	L	16.9 - 17.9 in	17.5
Knee Pivot Height	M	19.1 - 19.7 in	19.6
Foot Length	P	9.9 - 10.5 in	10.2
Foot Breadth	W	3.6 - 4.2 in	3.8
Shoulder Pivot from Backline	E	3.3 - 3.7 in	3.6
Shoulder Breadth	V	16.6 - 17.2 in	16.8
Shoulder Pivot Height	B	19.9 - 20.5 in	20.2
Elbow Rest Height	J	7.5 - 8.3 in	8.1
Shoulder - Elbow Length	I	13.0 - 13.6 in	13.2
Back of Elbow to Wrist Pivot	G	11.4 - 12.0 in	11.6

Remarks:

Laboratory Technician:

B. Swiecicki

APPENDIX D

DUMMY, VEHICLE AND LABORATORY INSTRUMENT CALIBRATION

INSTRUMENT CALIBRATION FOR DRIVER DUMMY
(Six Month Calibration Minimum)

DRIVER DUMMY (S/N 150)		Manufacturer	Serial #	Calibration	
				Last	Next
Head 9 Array	X Arm Y	ENDEVCO	AC-P17531	03/25/02	09/23/02
	X Arm Z	ENDEVCO	AC-P14965	03/25/02	09/23/02
	Y Arm X	ENDEVCO	AC-P17563	03/25/02	09/23/02
	Y Arm Z	ENDEVCO	AC-P18551	03/25/02	09/23/02
	Z Arm X	ENDEVCO	AC-P17539	03/25/02	09/23/02
	Z Arm Y	ENDEVCO	AC-P18718	03/25/02	09/23/02
Head	X	ENDEVCO	AC-P16832	03/26/02	09/24/02
	Y	ENDEVCO	AC-P16591	03/26/02	09/24/02
	Z	ENDEVCO	AC-P16286	03/26/02	09/24/02
Head	X (R)	ENDEVCO	AC-P17141	03/26/02	09/24/02
	Y (R)	ENDEVCO	AC-P17242	03/26/02	09/24/02
	Z (R)	ENDEVCO	AC-P17152	03/26/02	09/24/02
Neck Load Cell	X	DENTON	LC-269FX	01/17/02	07/18/02
	Y	DENTON	LC-269FY	01/17/02	07/18/02
	Z	DENTON	LC-269FZ	01/17/02	07/18/02
Neck Moment	X	DENTON	LC-269MX	01/17/02	07/18/02
	Y	DENTON	LC-269MY	01/17/02	07/18/02
	Z	DENTON	LC-269MZ	01/17/02	07/18/02
Chest	X	ENDEVCO	AC-P17235	04/04/02	10/03/02
	Y	ENDEVCO	AC-P14393	04/04/02	10/03/02
	Z	ENDEVCO	AC-P17285	04/04/02	10/03/02
Chest	X (R)	ENDEVCO	AC-P16863	04/04/02	10/03/02
	Y (R)	ENDEVCO	AC-P17248	04/04/02	10/03/02
	Z (R)	ENDEVCO	AC-P17283	04/04/02	10/03/02
Chest Deflection	X	SERVO	DS-150	03/22/02	09/20/02
Pelvic	X	ENDEVCO	AC-J30041	03/25/02	09/23/02
	Y	ENDEVCO	AC-P13355	03/25/02	09/23/02
	Z	ENDEVCO	AC-P13329	03/25/02	09/23/02

INSTRUMENT CALIBRATION FOR DRIVER DUMMY
(Six Month Calibration Minimum)

DRIVER DUMMY (S/N 150)		Manufacturer	Serial #	Calibration	
				Last	Next
Left Femur Load Cell	Fz	GSE	LC-418	01/24/02	07/25/02
Right Femur Load Cell	Fz	GSE	LC-419	01/24/02	07/25/02
Left Upper Tibia	Mx	DENTON	LC-016MX	04/08/02	10/07/02
	My	DENTON	LC-016MY	04/08/02	10/07/02
Left Lower Tibia	Fz	DENTON	LC-123FZ	04/08/02	10/07/02
	Mx	DENTON	LC-123MX	04/08/02	10/07/02
	My	DENTON	LC-123MY	04/08/02	10/07/02
Right Upper Tibia	Mx	DENTON	LC-023MX	04/08/02	10/07/02
	My	DENTON	LC-023MY	04/08/02	10/07/02
Right Lower Tibia	Fz	DENTON	LC-111FZ	04/08/02	10/07/02
	Mx	DENTON	LC-111MX	04/08/02	10/07/02
	My	DENTON	LC-111MY	04/08/02	10/07/02
Left Foot Rear	X	ENDEVCO	AC-P19343	04/04/02	10/03/02
	Z	ENDEVCO	AC-P16583	04/04/02	10/03/02
Left Foot Front	Z	ENDEVCO	AC-P18728	04/04/02	10/03/02
Right Foot Rear	X	ENDEVCO	AC-P18628	04/04/02	10/03/02
	Z	ENDEVCO	AC-P18741	04/04/02	10/03/02
Right Foot Front	Z	ENDEVCO	AC-P16587	04/04/02	10/03/02
Lap Belt Load Cell		-	-	-	-
Shoulder Belt Load Cell		-	-	-	-
Belt Stretch Transducer		-	-	-	-

INSTRUMENT CALIBRATION FOR PASSENGER DUMMY
(Six Month Calibration Minimum)

PASSENGER DUMMY (S/N 245)		Manufacturer	Serial #	Calibration	
				Last	Next
Head 9 Array	X Arm Y	ENDEVCO	AC-P18558	03/21/02	09/19/02
	X Arm Z	ENDEVCO	AC-P19212	03/21/02	09/19/02
	Y Arm X	ENDEVCO	AC-P19197	03/21/02	09/19/02
	Y Arm Z	ENDEVCO	AC-P18738	03/21/02	09/19/02
	Z Arm X	ENDEVCO	AC-P19217	03/21/02	09/19/02
	Z Arm Y	ENDEVCO	AC-P18739	03/21/02	09/19/02
Head	X	ENDEVCO	AC-J32184	03/22/02	09/20/02
	Y	ENDEVCO	AC-J32185	03/22/02	09/20/02
	Z	ENDEVCO	AC-J31011	03/22/02	09/20/02
Head	X (R)	ENDEVCO	AC-J31020	03/24/02	09/22/02
	Y (R)	ENDEVCO	AC-J31101	03/22/02	09/20/02
	Z (R)	ENDEVCO	AC-J31059	03/22/02	09/20/02
Neck Load Cell	X	DENTON	LC-076FX	01/17/02	07/18/02
	Y	DENTON	LC-076FY	01/17/02	07/18/02
	Z	DENTON	LC-076FZ	01/17/02	07/18/02
Neck Moment	X	DENTON	LC-076MX	01/17/02	07/18/02
	Y	DENTON	LC-076MY	01/17/02	07/18/02
	Z	DENTON	LC-076MZ	01/17/02	07/18/02
Chest	X	ENDEVCO	AC-J34019	03/21/02	09/19/02
	Y	ENDEVCO	AC-J33018	03/21/02	09/19/02
	Z	ENDEVCO	AC-J32783	03/21/02	09/19/02
Chest	X (R)	ENDEVCO	AC-J31066	03/21/02	09/19/02
	Y (R)	ENDEVCO	AC-P16979	03/21/02	09/19/02
	Z (R)	ENDEVCO	AC-J31022	03/21/02	09/19/02
Chest Deflection	X	SERVO	DS-245	03/22/02	09/20/02
Pelvic	X	ENDEVCO	AC-J31034	03/21/02	09/19/02
	Y	ENDEVCO	AC-P17258	03/21/02	09/19/02
	Z	ENDEVCO	AC-J31010	03/21/02	09/19/02

INSTRUMENT CALIBRATION FOR PASSENGER DUMMY
(Six Month Calibration Minimum)

PASSENGER DUMMY (S/N 245)		Manufacturer	Serial #	Calibration	
				Last	Next
Left Femur Load Cell	Fz	GSE	LC-551	01/24/02	07/25/02
Right Femur Load Cell	Fz	GSE	LC-951	01/24/02	07/25/02
Left Upper Tibia	Mx	DENTON	LC-045MX	04/08/02	10/07/02
	My	DENTON	LC-045MY	04/08/02	10/07/02
Left Lower Tibia	Fz	DENTON	LC-125FZ	04/08/02	10/07/02
	Mx	DENTON	LC-125MX	04/08/02	10/07/02
	My	DENTON	LC-125MY	04/08/02	10/07/02
Right Upper Tibia	Mx	DENTON	LC-038MX	04/08/02	10/07/02
	My	DENTON	LC-038MY	04/08/02	10/07/02
Right Lower Tibia	Fz	DENTON	LC-124FZ	04/08/02	10/07/02
	Mx	DENTON	LC-124MX	04/08/02	10/07/02
	My	DENTON	LC-124MY	04/08/02	10/07/02
Left Foot Rear	X	ENDEVCO	AC-J30491	03/21/02	09/19/02
	Z	ENDEVCO	AC-J31026	03/21/02	09/19/02
Left Foot Front	Z	ENDEVCO	AC-J32831	03/21/02	09/19/02
Right Foot Rear	X	ENDEVCO	AC-J33376	03/21/02	09/19/02
	Z	ENDEVCO	AC-J32832	03/21/02	09/19/02
Right Foot Front	Z	ENDEVCO	AC-J31095	03/21/02	09/19/02
Lap Belt Load Cell		-	-	-	-
Shoulder Belt Load Cell		-	-	-	-
Belt Stretch Transducer		-	-	-	-

INSTRUMENT CALIBRATION FOR VEHICLE ACCELEROMETERS
(Six Month Calibration Minimum)

	Manufacturer	Serial #	Calibration	
			Last	Next
Left Seat Rear Crossmember X	ICS	AC-X83	01/15/02	07/16/02
Right Rear Seat Crossmember X	ICS	AC-X86	04/25/02	10/24/02
Top of Engine	ENDEVCO	AC-A13883	02/11/02	08/12/02
Bottom of Engine	ENDEVCO	AC-J32186	02/11/02	08/12/02
Right Disc Brake Caliper	ENDEVCO	AC-J32787	02/14/02	08/15/02
Instrument Panel	ENDEVCO	AC-J32098	02/14/02	08/15/02
Left Disc Brake Caliper	ENDEVCO	AC-P23288	04/25/02	10/24/02
Left Seat Rear Crossmember Z	ICS	AC-D61	04/04/02	10/03/02
Right Seat Rear Crossmember Z	ICS	AC-D82	04/04/02	10/03/02

REPORT NUMBER: CAL-02-12

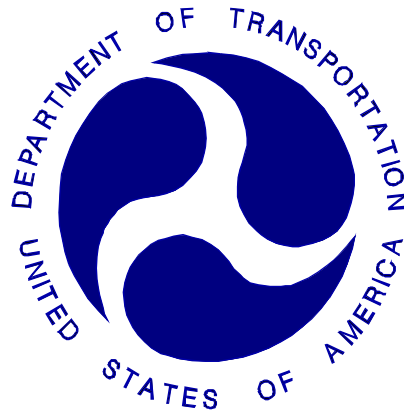
NEW CAR ASSESSMENT PROGRAM (NCAP)
FRONTAL BARRIER IMPACT TEST

COSCO SAFETY FIRST FORERUNNER (REAR FACING)
SECURED WITH THE LATCH SYSTEM IN POSITION 3
AND
GRACO SNUGERIDE (REAR FACING)
SECURED WITH THE LATCH SYSTEM IN POSITION 4

NHTSA NUMBER: M25305

VERIDIAN ENGINEERING TEST NUMBER: 8642-NCAP-12

VERIDIAN ENGINEERING
TRANSPORTATION SCIENCES CENTER
P.O. BOX 400
BUFFALO, NEW YORK 14225



May 8, 2002

FINAL REPORT

U. S. DEPARTMENT OF TRANSPORTATION
National Highway Traffic Safety Administration
Safety Performance Standards
Office of Crashworthiness Standards
Mail Code: NPS-10
400 Seventh Street, SW, Room No. 5313
Washington, DC 20590

This Final Test Report was prepared for the U.S. Department of Transportation, National Highway Traffic Safety Administration, under Contract No. DTNH22-01-D-32005. This document is disseminated under the sponsorship of the U.S. Department of Transportation in the interest of information exchange. The United States Government assumes no liability for its contents or use thereof.

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Accepted By:

Acceptance Date:

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				6. Performing Organization Code CAL	
7. Author(s) Lawrence Q. Valvo, Project Engineer David J. Travale, Program Manager				8. Performing Organization Report No. 8642-NCAP-12	
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12. Sponsoring Agency Name and Address U.S. Department of Transportation National Highway Traffic Safety Administration Office of Crashworthiness Standards Mail Code: NPS-10 400 Seventh SW, Room 5313 Washington, D.C. 20590				13. Type of Report and Period Covered Final Report, May 2002	
				14. Sponsoring Agency Code NPS-10	
15. Supplementary Notes					
16. Abstract A frontal load cell barrier test was conducted on the subject CRSs (Cosco Safety First Forerunner secured with the LATCH system in P3 and Graco SnugeRide secured with the LATCH system in P4) in accordance with the specifications of the Office of Crashworthiness Standards Test Procedure for the determination of CRS crashworthiness. This test was conducted at the Veridian Engineering Crash Test Facility in Buffalo, New York, on May 8, 2002. The P3 inboard rear seat anchor was unlatched following the test. The outboard anchor remained latched and the front anchor hooks remained engaged in the floor and prevented forward movement of the seat. There was no visible damage to or deformation of the latch in question or its striker. Examination of the seating system following the test revealed that under certain conditions the seat may be installed with one rear latch engaged and the other disengaged. This condition may have existed prior to the test and eluded detection.					
17. Key Words New Car Assessment Program (NCAP)				18. Distribution Statement <u>Copies of this report are available from:</u> National Highway Traffic Safety Administration Technical Reference Division Room 5108 (NAD-52) 400 Seventh St., S.W. Washington, D.C. 20590 Telephone No. (202) 366-4946 ATTN: Robert Hornicle	
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SECTION 1

PURPOSE AND SUMMARY OF TEST M25305

The purpose of this test was to obtain CRS performance data in a frontal impact NCAP condition. The 56.49 kph NCAP frontal impact test was conducted in accordance with the Office of Crashworthiness Standards (OCS) NCAP Laboratory Test Procedure.

SUMMARY

Both child dummies were instrumented with head, chest, and pelvic triaxial accelerometers. In addition, redundant head z acceleration, upper and lower six axial neck and lower lumbar force and moment load cell sensors were utilized.

The right rear (Position 3) child dummy (serial no. 090) and left rear (Position 4) child dummy (serial no. 093) were calibrated previous to this test series. Child dummy certification information is found in section 5.

The right rear child dummy's HIC was 178.2, maximum chest deceleration over 3 ms was 43.0 g's. The left rear child dummy's HIC was 208.6, maximum chest deceleration over 3 ms was 44.6 g's.

The P3 inboard rear seat anchor was unlatched following the test. The outboard anchor remained latched and the front anchor hooks remained engaged in the floor and prevented forward movement of the seat. There was no visible damage to or deformation of the latch in question or its striker. Examination of the seating system following the test revealed that under certain conditions the seat may be installed with one rear latch engaged and the other disengaged. This condition may have existed prior to the test and eluded detection.

SECTION 2
DATA SHEET NO. 1
CRASH TEST SUMMARY

TEST DUMMY INFORMATION:

DESCRIPTION	Position #3 CRS	Position #4 CRS
ATD Type/Serial No.	CRABI (P572 R) /090	CRABI (P572 R) /093
Restraint System:	Cosco Safety First Forerunner (Rear Facing Configuration) Secured with the LATCH System	Graco SnuggRide (Rear Facing) Secured with the LATCH System

Number of Data Channels 59
Number of Cameras: 1 Real Time
2 High Speed

POST TEST DOOR OPENING

DESCRIPTION	FRONT	REAR
Left Side Doors	Door remained closed and latched; Door opened without tools	Door remained closed and latched; Door opened without tools
Right Side Doors	Door remained closed and latched; Door opened without tools	Door remained closed and latched; Door opened without tools
Hatch/Other Door	-	Door remained closed and latched; Door opened without tools

POST TEST SEAT DATA

LOCATION	SEAT MOVEMENT (mm)	SEAT BACK FAILURE
P1 (Left Front)	0	None
P2 (Right Front)	0	None
P3 (Right Rear)	0†	None
P4 (Left Rear)	0	None

VISIBLE DUMMY CONTACT POINTS

	Position #3 CRS	Position #4 CRS
Head Contact:	Back of head to upper portion of CRS seat back; Feet to P3 backrest	Back of head to upper portion of CRS seat back; Feet to P4 backrest
Upper Torso Contact:	None	None
Lower Torso Contact:	None	None
Left Knee Contact:	None	None
Right Knee Contact:	None	None

† The P3 inboard rear seat anchor was unlatched following the test. The outboard anchor remained latched and the front anchor hooks remained engaged in the floor and prevented forward movement of the seat. There was no visible damage to or deformation of the latch in question or its striker. Examination of the seating system following the test revealed that under certain conditions the seat may be installed with one rear latch engaged and the other disengaged. This condition may have existed prior to the test and eluded detection.

DATA SHEET NO. 2

CRS PARAMETER DATA

CRSs: Cosco Safety First Forerunner (Rear Facing) Secured With The Latch System In P3
Graco Snugride (Rear Facing) Secured With The Latch System In P4

NHTSA No. M25305

CALCULATION OF VEHICLE'S TARGET TEST WEIGHT:

Delivered Weight of Vehicle with Maximum Fluids = 1982.0 kg (A)

AS TESTED WEIGHT OF VEHICLE (2 ATDs + 2 CRABI w/ CRS +CARGO + EQUIPMENT & INSTRUMENTATION):

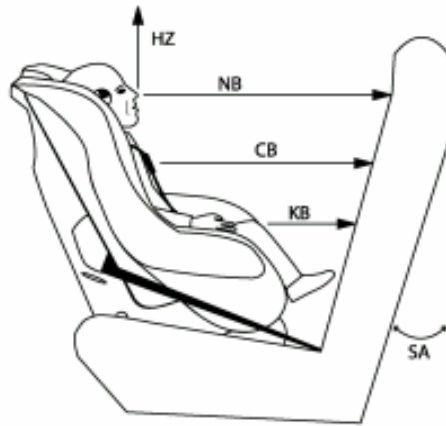
Left Front	=	<u>614.5</u>	kg	Left Rear	=	<u>515.0</u>	kg
Right Front	=	<u>610.5</u>	kg	Right Rear	=	<u>488.0</u>	kg
TOTAL FRONT	=	<u>1225.0</u>	kg	TOTAL REAR	=	<u>1003.0</u>	kg
TOTAL TEST WEIGHT	=	<u>2228.0</u>	kg				

DATA SHEET NO. 3

CHILD DUMMY POSITIONING IN VEHICLE

CRSs: Cosco Safety First Forerunner (Rear Facing) Secured With The Latch System In P3 NHTSA No. M25305
 Graco Snugeride (Rear Facing) Secured With The Latch System In P4

Dummy Measurements for Rear-facing CRS Passengers



X—Z View

HZ	-	Head to Roof
NB	-	Nose to Front of Back Seat
CB	-	Chest to Front of Back Seat
KB	-	Knee to Front of Back Seat
SA	-	Seat Back Angle

Measurement	Pre-Test (mm)		Post Test (mm)	
	P3 CRS (090)	P4 CRS (093)	P3 CRS (090)	P4 CRS (093)
SA	13°	13°	5°	14°
HZ	485	478	500	480
NB	458	515	458	515
CB	371	421	353	428
KB – LEFT	165	158	163	160
KB – RIGHT	170	166	166	165

All dimensions in mm (unless noted)

P3 – Right Rear Passenger (CRS #1)

P4 – Left Rear Passenger (CRS #2)

DATA SHEET 4

CHILD DUMMY INJURY CRITERIA VALUES

CRSs: Cosco Safety First Forerunner (Rear Facing) Secured With The Latch System In P3
Graco Snugride (Rear Facing) Secured With The Latch System In P4

NHTSA No. M25305

DESCRIPTION	Unit	MAXIMUM VALUE							
		Position #3				Position #4			
		Pos	msec	Neg	msec	Pos	msec	Neg	msec
Head X	g	30.6	69.8	-7.5	221.7	42.7	103.7	-6.5	126.1
Head Y	g	5.2	143.4	-12.0	104.9	4.7	99.3	-2.4	115.8
Head Z	g	33.5	80.0	-6.3	189.6	36.7	83.7	-0.7	-1.5
Head Resultant	g	43.1	78.9	-	-	46.6	87.5	-	-
Redundant Head Z	g	35.9	79.3	-7.8	192.5	33.9	50.2	-5.3	110.0
Upper Neck Fx	N	39.4	116.5	-152.4	218.6	121.7	70.2	-185.7	84.3
Upper Neck Fy	N	88.8	142.9	-155.5	115.4	45.6	83.7	-36.0	124.9
Upper Neck Fz	N	948.8	66.6	-176.0	190.6	1045.7	87.5	-56.7	293.1
Upper Neck F Resultant	N	954.0	67.1	-	-	1060.3	87.5	-	-
Upper Neck Mx	N-m	5.0	160.5	-4.7	286.2	4.6†	210.1	-4.1†	201.6
Upper Neck My	N-m	5.0	240.3	-5.1	294.2	5.4†	69.9	-6.7†	84.0
Upper Neck Mz	N-m	4.1	174.5	-1.9	111.8	1.3†	278.9	-1.6†	187.5
Upper Neck M Resultant	N-m	6.6	291.2	-	-	6.8†	84.0	-	-
Lower Neck Fx	N	331.9	67.5	-97.0	228.2	260.1	70.8	-90.5	129.6
Lower Neck Fy	N	62.3	147.4	-167.8	85.1	60.1	84.9	-23.1	143.8
Lower Neck Fz	N	955.5	66.5	-197.0	191.5	1100.4	87.6	-76.9	176.7
Lower Neck F Resultant	N	1020.2	67.3	-	-	1107.3	87.6	-	-
Lower Neck Mx	N-m	7.6	153.8	-8.8	281.2	2.9	84.7	-2.4	143.8
Lower Neck My	N-m	12.7	227.9	-11.4	65.6	9.6	182.0	-8.8	69.7
Lower Neck Mz	N-m	2.6	172.8	-0.7	231.0	1.1	79.1	-0.2	144.1
Lower Neck M Resultant	N-m	14.4	220.4	-	-	9.6	182.0	-	-
Chest X	g	37.6	78.5	-10.1	223.1	32.8	94.5	-9.1	184.4
Chest Y	g	9.3	125.1	-11.3	101.4	5.7	67.4	-4.6	112.8
Chest Z	g	21.9	79.8	-10.5	191.0	31.7	89.8	-5.7	176.2
Chest Resultant	g	43.7	78.8	-	-	45.0	81.5	-	-
Lumbar Fx	N	89.7	191.2	-68.5	68.4	81.8	176.7	-331.8	91.9
Lumbar Fy	N	73.9	190.7	-29.4	230.0	36.8	186.7	-56.8	127.5
Lumbar Fz	N	200.3	67.1	-323.2	192.3	364.9	105.6	-216.1	183.5
Lumbar F Resultant	N	342.4	192.3	-	-	402.7	105.6	-	-
Lumbar Mx	N-m	5.7	193.2	-1.4	109.3	1.9	188.3	-2.6	131.1
Lumbar My	N-m	2.7	86.2	-3.4	193.1	7.4	115.0	-1.9	180.5
Lumbar Mz	N-m	0.6	203.7	-1.1	95.2	0.8	87.1	-0.8	44.3
Lumbar M Resultant	N-m	6.6	193.1	-	-	7.4	115.0	-	-
Pelvic X	g	18.9	93.7	-6.8	215.5	20.6	100.0	-16.9	184.7
Pelvic Y	g	7.9	140.9	-10.1	101.2	8.6	59.1	-5.5	105.6
Pelvic Z	g	33.7	79.8	-14.9	187.2	38.3	82.0	-14.3	181.2
Pelvic Resultant	g	38.8	79.9	-	-	39.8	82.0	-	-

† Not Accurate - Spikes in data due to faulty transducer

DATA SHEET 4

CHILD DUMMY INJURY CRITERIA VALUES (CONTINUED)

CRSs: Cosco Safety First Forerunner (Rear Facing) Secured With The Latch System In P3
Graco Snugride (Rear Facing) Secured With The Latch System In P4

NHTSA No. M25305

	HEAD INJURY CRITERIA (HIC15)			
	HIC**	t ₁ (msec)	t ₂ (msec)	Average Acceleration (g's) t ₁ to t ₂
Position #3 - Right	178.2	67.1	82.1	42.7
Position #4 - Left	208.6	75.3	90.3	45.4

** HIC is as defined in FMVSS 208. The maximum time interval from t₁ to t₂ is 15 milliseconds.

	CLIP SUMMARY*			
	CLIP (g's)	t ₁ (msec)	t ₂ (msec)	CSI
Position #3 - Right	43.0	77.4	80.4	350.0
Position #4 - Left	44.6	79.9	82.9	456.0

* The maximum chest resultant acceleration is defined as the maximum acceleration which exceeds 0.003 seconds in duration.

Position 3 Neck Injury Summary (CRABI 12 month old (P572 R) – In Position)

Nij V10	Nij	Time (ms)	Z Force (N)	X Force (N)	Y Moment (N-m)
Ntf	0.33	109.7	466.3	8.2	0.4
Nte	0.73	85.5	825.0	-111.1	-2.9
Ncf	0.20	189.4	-166.6	-97.0	3.5
Nce	0.00	10.6	-0.1	-3.5	-0.1

Peak Tension (CFC1000) 949.02 N

Peak Compression (CFC1000) 176.09 N

Critical Values

Nij Intercepts				Peak Limits	
Tension (CVt)	1460 N	Extension (mCVe)	17 N-m	Tension	780 N
Compression (CVc)	1460 N	Flexion (mCVf)	43 N-m	Compression	-960 N

Condyle Offset -0.0058

Position 4 Neck Injury Summary (CRABI 12 month old (P572 R) – In Position)

Nij V10	Nij	Time (ms)	Z Force (N)	X Force (N)	Y Moment (N-m)
Ntf	0.55†	72.7	719.8	74.8	2.3†
Nte	1.04†	83.9	1034.4	-185.1	-5.6†
Ncf	0.16†	158.7	-53.1	-60.5	5.2†
Nce	0.00†	8.2	0.0	-1.0	-0.1†

Peak Tension (CFC1000) 1046.20 N

Peak Compression (CFC1000) 56.91 N

Critical Values

Nij Intercepts				Peak Limits	
Tension (CVt)	1460 N	Extension (mCVe)	17 N-m	Tension	780 N
Compression (CVc)	1460 N	Flexion (mCVf)	43 N-m	Compression	-960 N

Condyle Offset -0.0058

† Not Accurate - Spikes in data due to faulty transducer

DATA SHEET NO. 5**CRS PERFORMANCE DATA**

CRSs: Cosco Safety First Forerunner (Rear Facing) Secured With The Latch System In P3
Graco Snugeride (Rear Facing) Secured With The Latch System In P4

NHTSA No. M25305

		MAXIMUM VALUE			
DESCRIPTION	Unit	Positive	Time (ms)	Negative	Time (ms)
P4 CRS X	g	8.9	155.5	-40.5	87.1
P4 CRS Y	g	8.3	108.4	-8.1	125.5
P4 CRS Z	g	10.7	44.3	-12.7	57.8
P4 CRS Resultant	g	40.7	87.0	-	-

DATA SHEET NO. 5**CRS PERFORMANCE DATA (CONTINUED)**

CRSs: Cosco Safety First Forerunner (Rear Facing) Secured With The Latch System In P3
 Graco Snugride (Rear Facing) Secured With The Latch System In P4

NHTSA No. M25305

POSITION #3 CRS POST-TEST INSPECTION (Model No. 02-925-BRD)

LOCATION	DAMAGE	REMARKS
Upper Tether Strap	N/A	-
Upper Tether Buckle	N/A	-
Upper Tether Hook	N/A	-
Vehicle Upper Tether Anchor	N/A	-
Lower Anchor Strap	N/A	-
Lower Anchor Buckle	N/A	-
Lower Anchor Hooks	N/A	-
Vehicle Lower CRS Anchors	N/A	-
Five Point Harness Connections	NO	-
Cracks on CRS	NO	-
Fabric Tears on CRS	NO	-
Vehicle Seat Structure	NO	-
Vehicle Seat Fabric Tears	NO	-
Vehicle Seat Belt Assembly	NO	-
Child Dummy	NO	-

POSITION #4 CRS POST-TEST INSPECTION (Model No. 8446VIN)

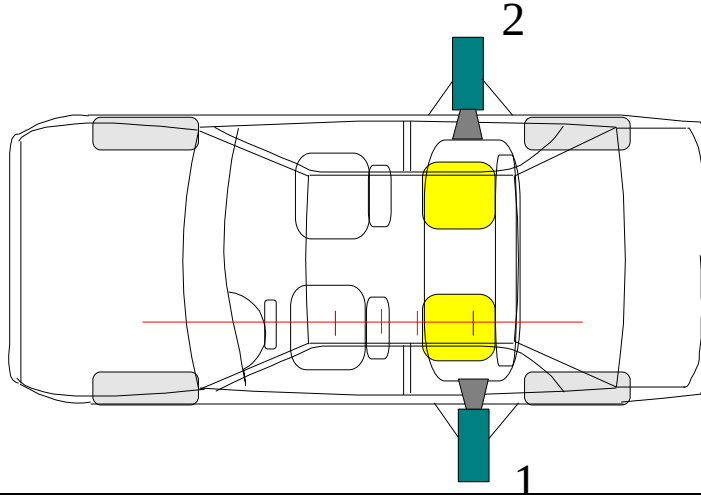
LOCATION	DAMAGE	REMARKS
Upper Tether Strap	N/A	-
Upper Tether Buckle	N/A	-
Upper Tether Hook	N/A	-
Vehicle Upper Tether Anchor	N/A	-
Lower Anchor Strap	N/A	-
Lower Anchor Buckle	N/A	-
Lower Anchor Hooks	N/A	-
Vehicle Lower CRS Anchors	N/A	-
Five Point Harness Connections	NO	-
Cracks on CRS	NO	-
Fabric Tears on CRS	NO	-
Vehicle Seat Structure	NO	-
Vehicle Seat Fabric Tears	NO	-
Vehicle Seat Belt Assembly	NO	-
Child Dummy	NO	-

DATA SHEET NO. 6

CRS CAMERA DATA

CRSs: Cosco Safety First Forerunner (Rear Facing) Secured With The Latch System In P3
Graco Snugride (Rear Facing) Secured With The Latch System In P4

NHTSA No. M25305



Camera No.	View	Coordinates (millimeters)			Angle (deg.)	Lens (mm)	Film Speed (fps)
		X*	Y*	Z*			
1	Left side CRS lateral view	3597	2815	2540	-24.0	13	500
2	Right side CRS lateral view	3322	2920	2460	-23.5	13	505

* Reference (from point of impact); all measurements accurate to within ± 6 mm.

X = + Forward

Y = + To Right

Z = + Down

SECTION 3

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**Forward-facing
lap belt here**



4359-3454

Manufactured in:

02-925-BRD

1/12/2002

TO3C

M25305

Figure 3-1: CLOSE-UP VIEW OF POSITION 3 CRS LABEL



Figure 3-2: PRE-TEST FRONTAL VIEW OF POSITION 3 CRS



Figure 3-3: POST-TEST FRONTAL VIEW OF POSITION 3 CRS



Figure 3-4: PRE-TEST REAR VIEW OF POSITION 3 CRS



Figure 3-5: POST-TEST REAR VIEW OF POSITION 3 CRS



Figure 3-6: PRE-TEST LEFT SIDE VIEW OF POSITION 3 CRS



Figure 3-7: POST-TEST LEFT SIDE VIEW OF POSITION 3 CRS



Figure 3-8: PRE-TEST RIGHT SIDE VIEW OF POSITION 3 CRS



Figure 3-9: POST-TEST RIGHT SIDE VIEW OF POSITION 3 CRS

MODEL **8446VIN**

Manufactured in 042902 10

GRACO CHILDREN'S PRODUCTS, INC.

ELVERSON, PA 19520 1-888-224-6549

Made in U.S.A.

PB-25777

M25305

Figure 3-10: CLOSE-UP VIEW OF POSITION 4 CRS LABEL



Figure 3-11: PRE-TEST FRONTAL VIEW OF POSITION 4 CRS



Figure 3-12: POST-TEST FRONTAL VIEW OF POSITION 4 CRS



Figure 3-13: PRE-TEST REAR VIEW OF POSITION 4 CRS



Figure 3-14: POST-TEST REAR VIEW OF POSITION 4 CRS



Figure 3-15: PRE-TEST LEFT SIDE VIEW OF POSITION 4 CRS



Figure 3-16: POST-TEST LEFT SIDE VIEW OF POSITION 4 CRS



Figure 3-17: PRE-TEST RIGHT SIDE VIEW OF POSITION 4 CRS



Figure 3-18: POST-TEST RIGHT SIDE VIEW OF POSITION 4 CRS



Figure 3-19: PRE-TEST POSITION 3 LEFT SIDE VIEW



Figure 3-20: POST-TEST POSITION 3 LEFT SIDE VIEW



Figure 3-21: PRE-TEST POSITION 4 LEFT SIDE VIEW



Figure 3-22: POST-TEST POSITION 4 LEFT SIDE VIEW



Figure 3-23: PRE-TEST POSITION 3 RIGHT SIDE VIEW



Figure 3-24: POST-TEST POSITION 3 RIGHT SIDE VIEW



Figure 3-25: PRE-TEST POSITION 4 RIGHT SIDE VIEW



Figure 3-26: POST-TEST POSITION 4 RIGHT SIDE VIEW



Figure 3-27: PRE-TEST POSITION 3 REAR VIEW



Figure 3-28: POST-TEST POSITION 3 REAR VIEW



Figure 3-29: PRE-TEST POSITION 4 REAR VIEW



Figure 3-30: POST-TEST POSITION 4 REAR VIEW

SECTION 4

CHILD DUMMY RESPONSE AND CRS DATA TRACES

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NCAP Test 12 - 2002 Honda Odyssey

P3 Head x

Max: 30.6 [g] at 0.070 [s]

Min: -7.5 [g] at 0.222 [s]



4-4

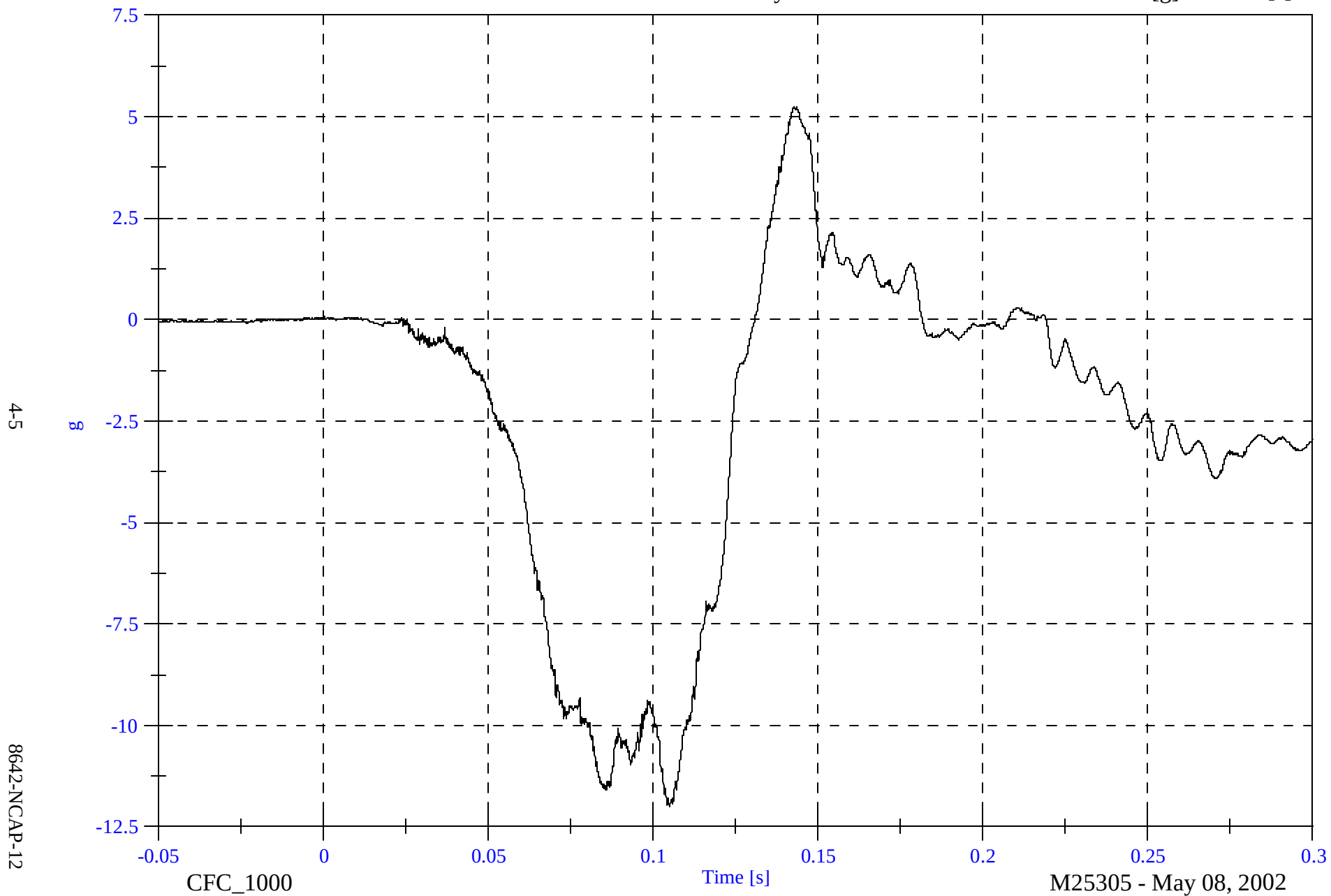
8642-NCAP-12

NCAP Test 12 - 2002 Honda Odyssey

P3 Head y

Max: 5.2 [g] at 0.143 [s]

Min: -12.0 [g] at 0.105 [s]



NCAP Test 12 - 2002 Honda Odyssey

P3 Head z

Max: 33.5 [g] at 0.080 [s]

Min: -6.3 [g] at 0.190 [s]

4-6

g

8642-NCAP-12

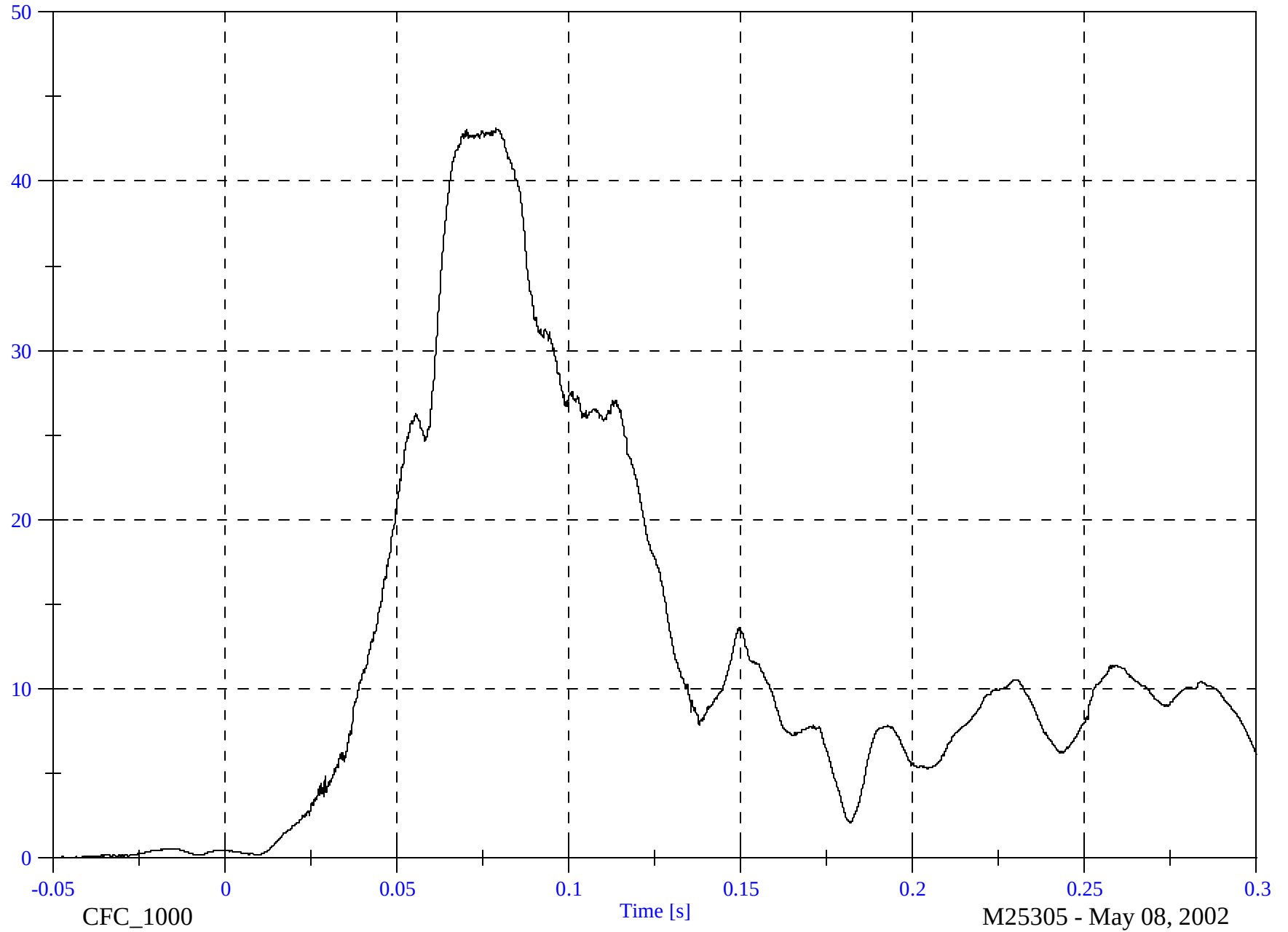


NCAP Test 12 - 2002 Honda Odyssey

P3 Head Resultant

Max: 43.1 [g] at 0.079 [s]

Min: 0.0 [g] at -0.044 [s]



4-7

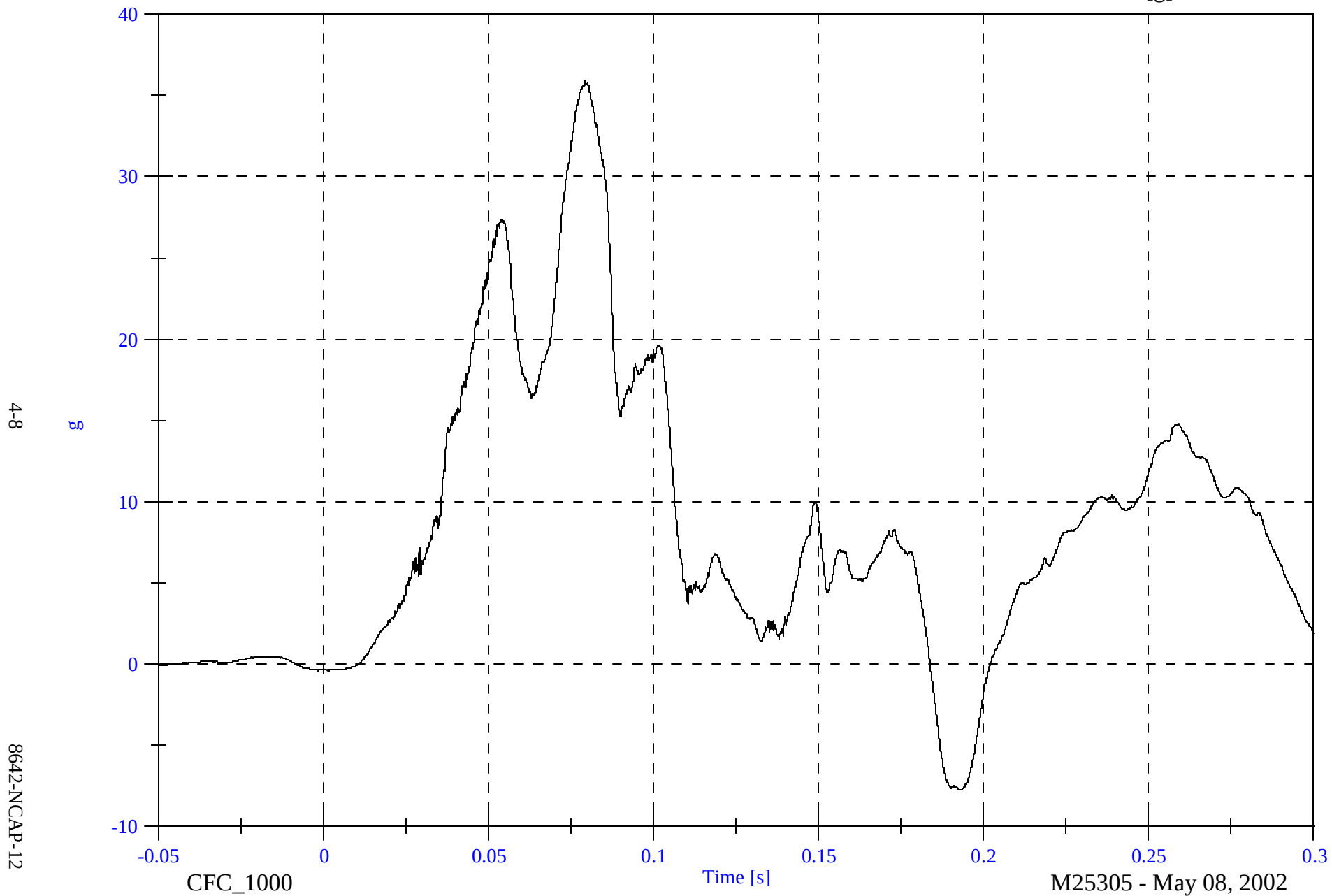
8642-NCAP-12

NCAP Test 12 - 2002 Honda Odyssey

P3 Head Red z

Max: 35.9 [g] at 0.079 [s]

Min: -7.8 [g] at 0.193 [s]



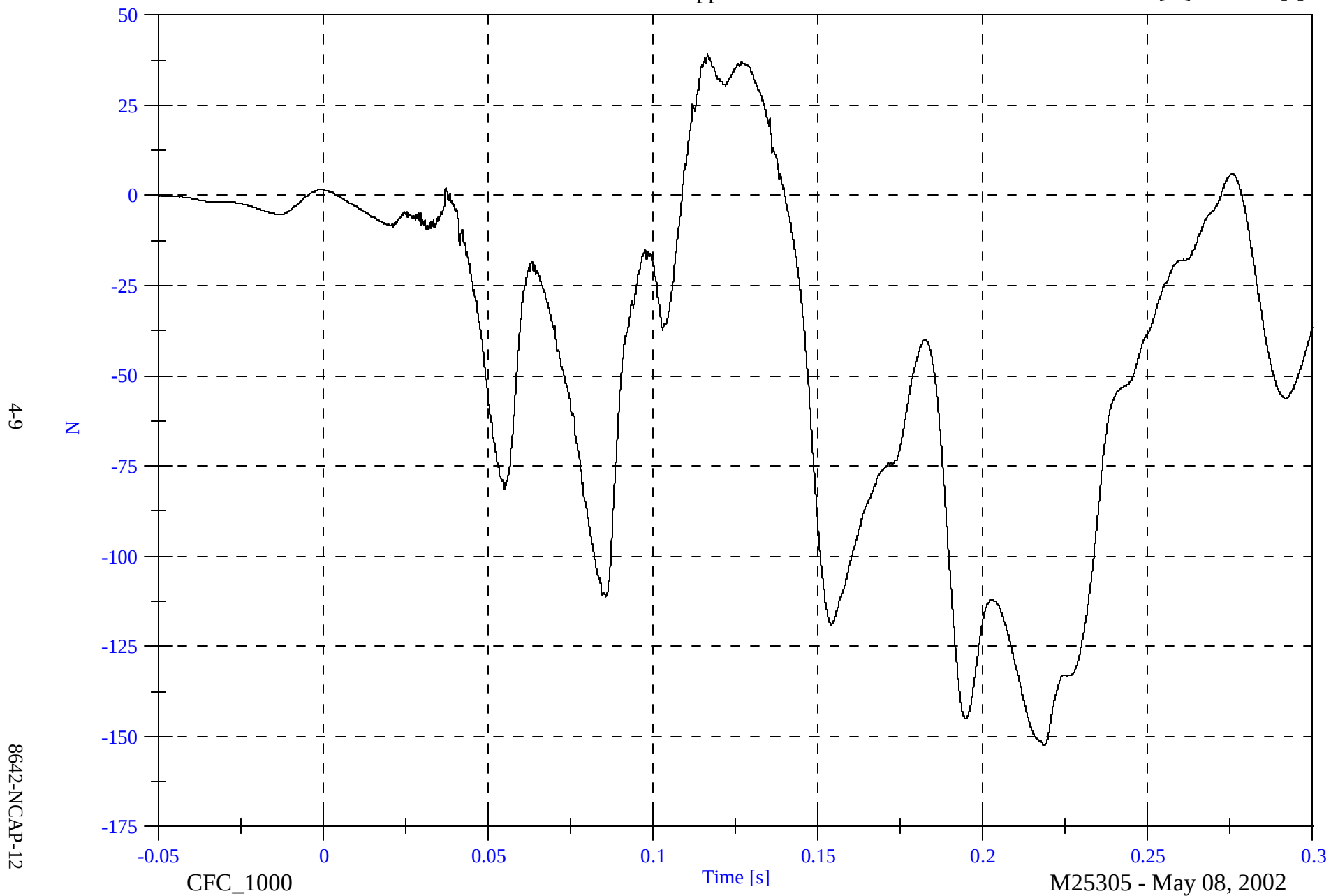
8642-NCAP-12

NCAP Test 12 - 2002 Honda Odyssey

P3 Upper Neck Fx

Max: 39.4 [N] at 0.117 [s]

Min: -152.4 [N] at 0.219 [s]

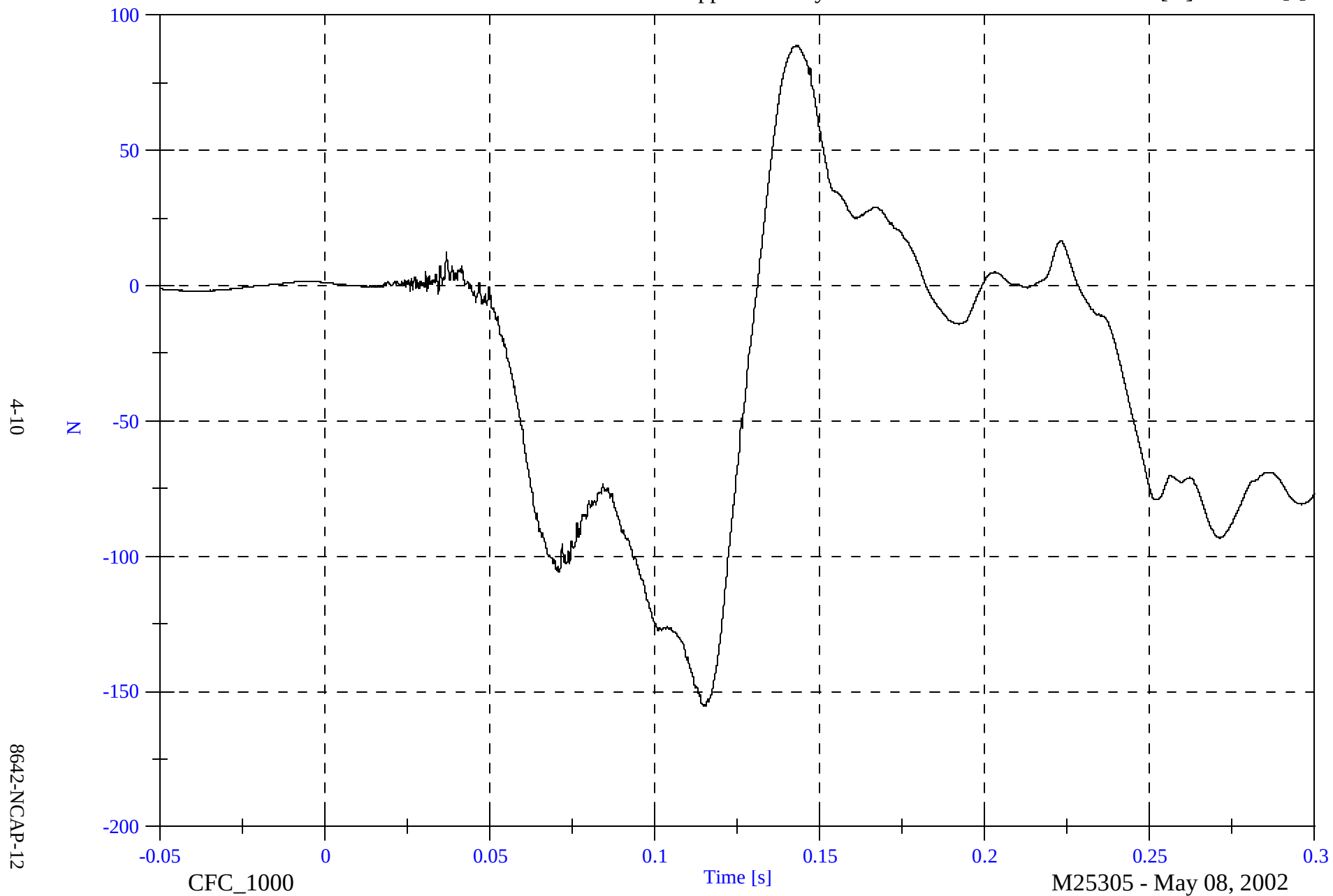


NCAP Test 12 - 2002 Honda Odyssey

P3 Upper Neck Fy

Max: 88.8 [N] at 0.143 [s]

Min: -155.5 [N] at 0.115 [s]

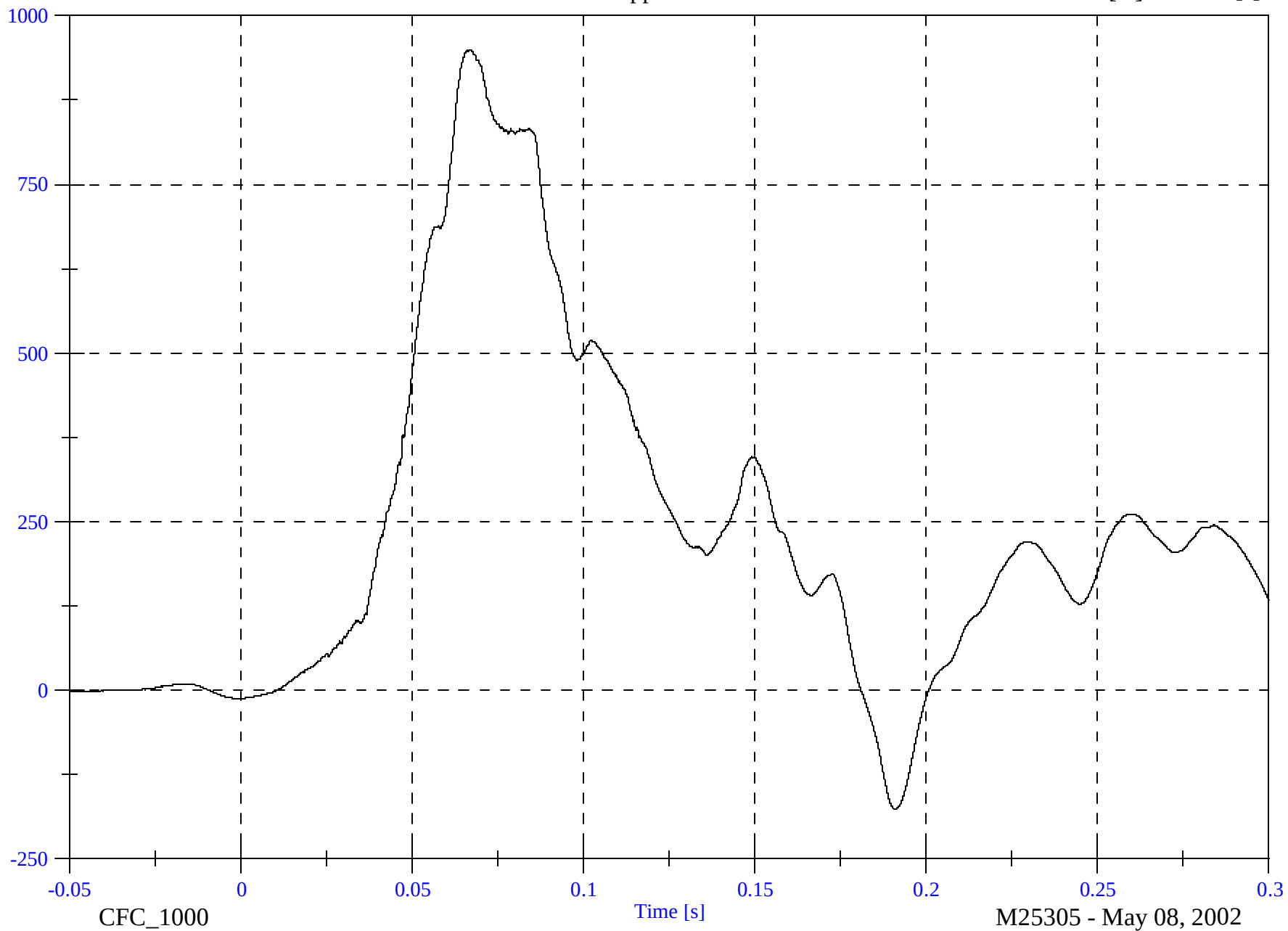


NCAP Test 12 - 2002 Honda Odyssey

P3 Upper Neck Fz

Max: 948.8 [N] at 0.067 [s]

Min: -176.0 [N] at 0.191 [s]



4-11

8642-NCAP-12

CFC_1000

Time [s]

M25305 - May 08, 2002

NCAP Test 12 - 2002 Honda Odyssey

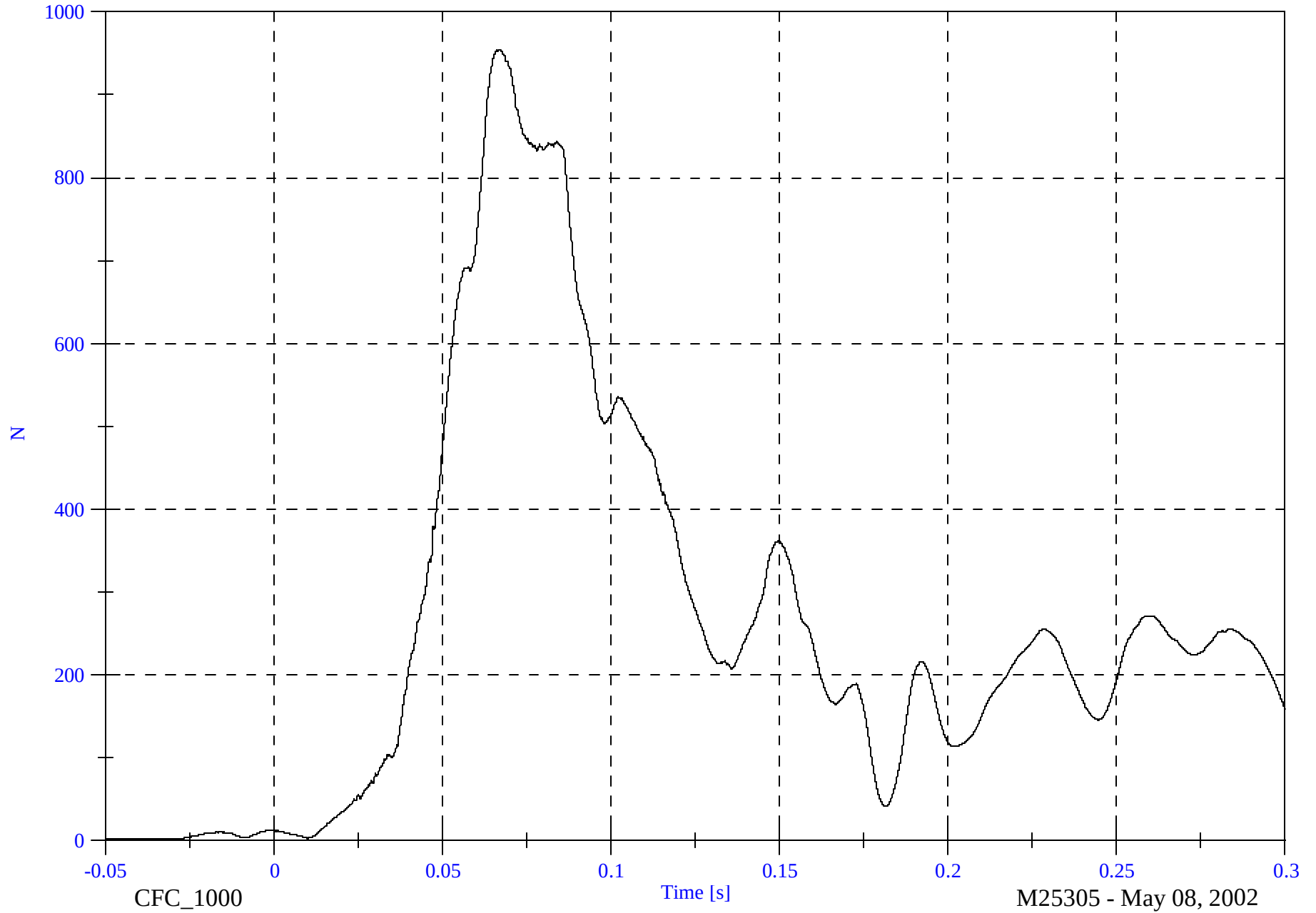
P3 Upper Neck F Resultant

Max: 954.0 [N] at 0.067 [s]

Min: 1.4 [N] at -0.050 [s]

4-12

8642-NCAP-12

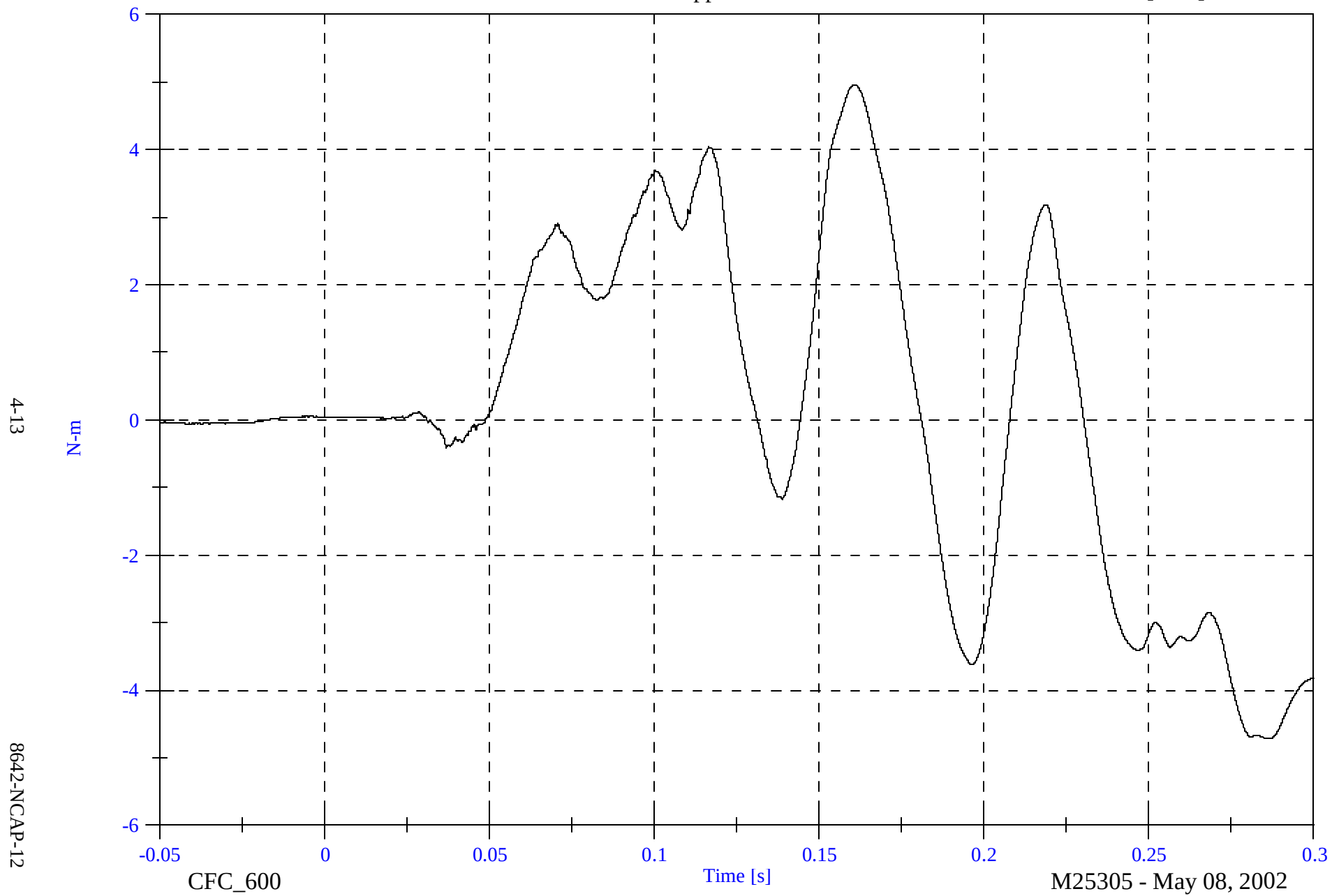


NCAP Test 12 - 2002 Honda Odyssey

P3 Upper Neck Mx

Max: 5.0 [N-m] at 0.161 [s]

Min: -4.7 [N-m] at 0.286 [s]



NCAP Test 12 - 2002 Honda Odyssey

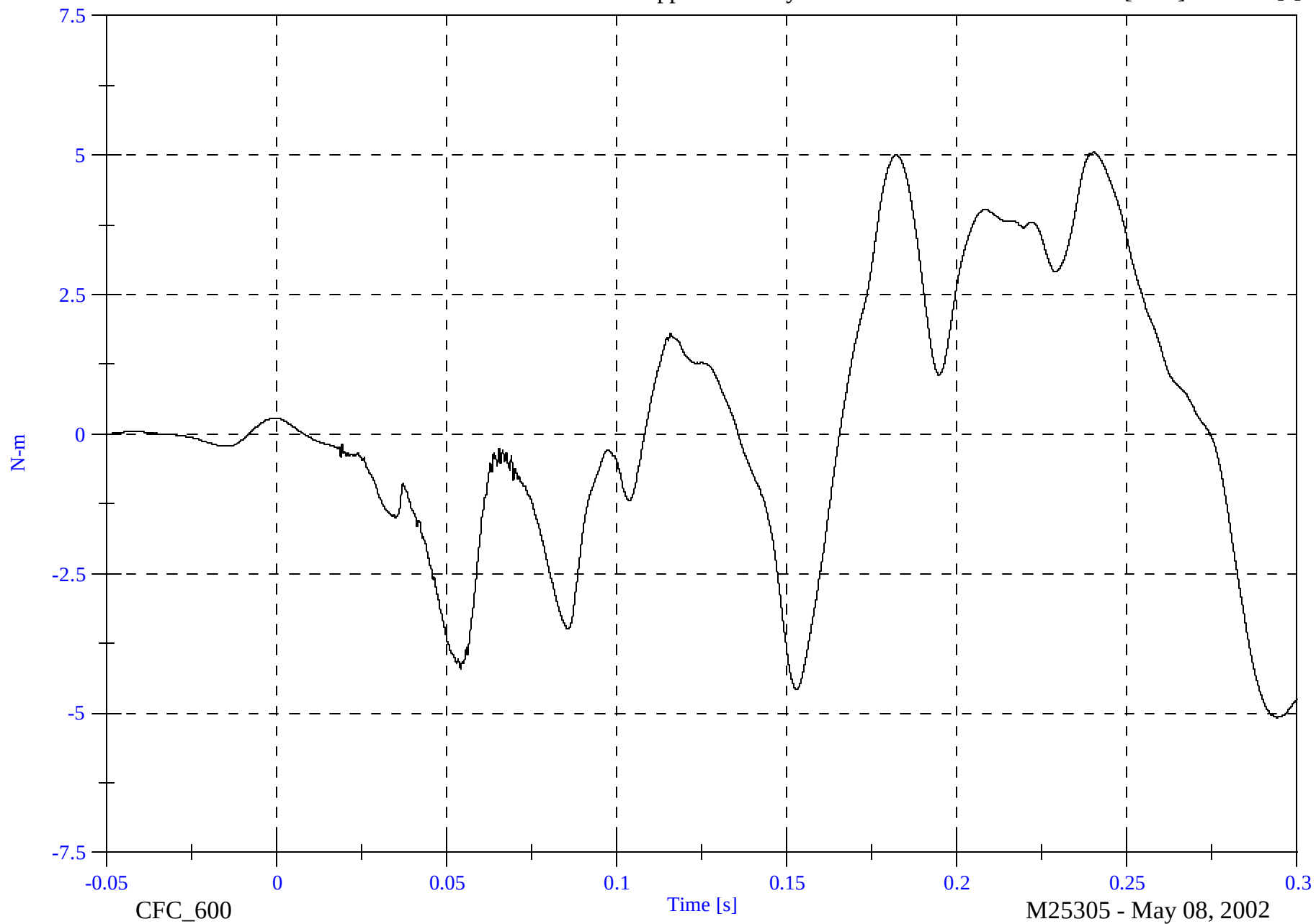
P3 Upper Neck My

Max: 5.0 [N-m] at 0.240 [s]

Min: -5.1 [N-m] at 0.294 [s]

4-14

8642-NCAP-12



NCAP Test 12 - 2002 Honda Odyssey

P3 Upper Neck Mz

Max: 4.1 [N-m] at 0.174 [s]

Min: -1.9 [N-m] at 0.112 [s]



4-15

8642-NCAP-12

CFC_600

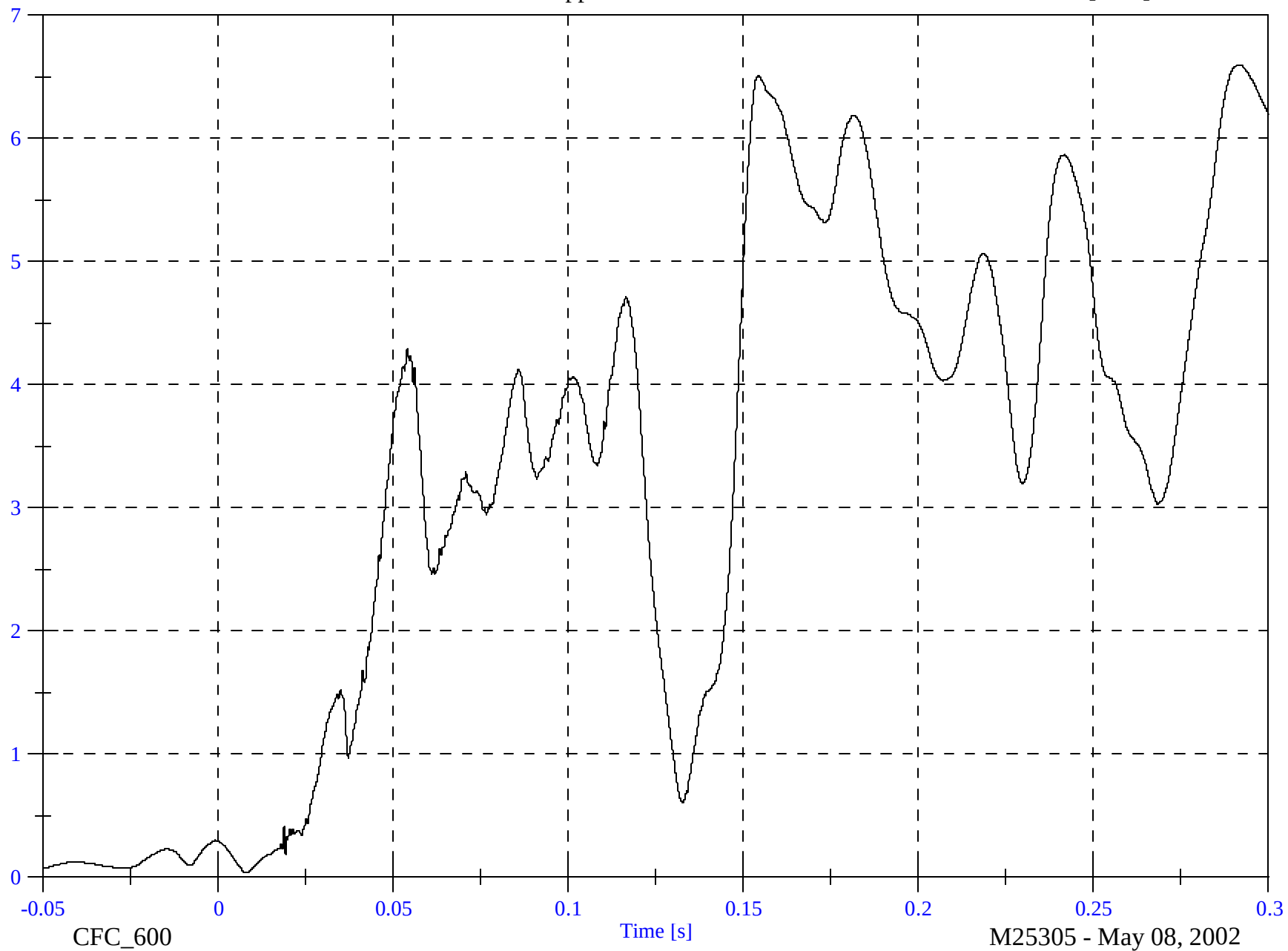
M25305 - May 08, 2002

NCAP Test 12 - 2002 Honda Odyssey

P3 Upper Neck M Resultant

Max: 6.6 [N-m] at 0.291 [s]

Min: 0.0 [N-m] at 0.008 [s]



4-16

8642-NCAP-12

CFC_600

M25305 - May 08, 2002

NCAP Test 12 - 2002 Honda Odyssey

P3 Lower Neck Fx

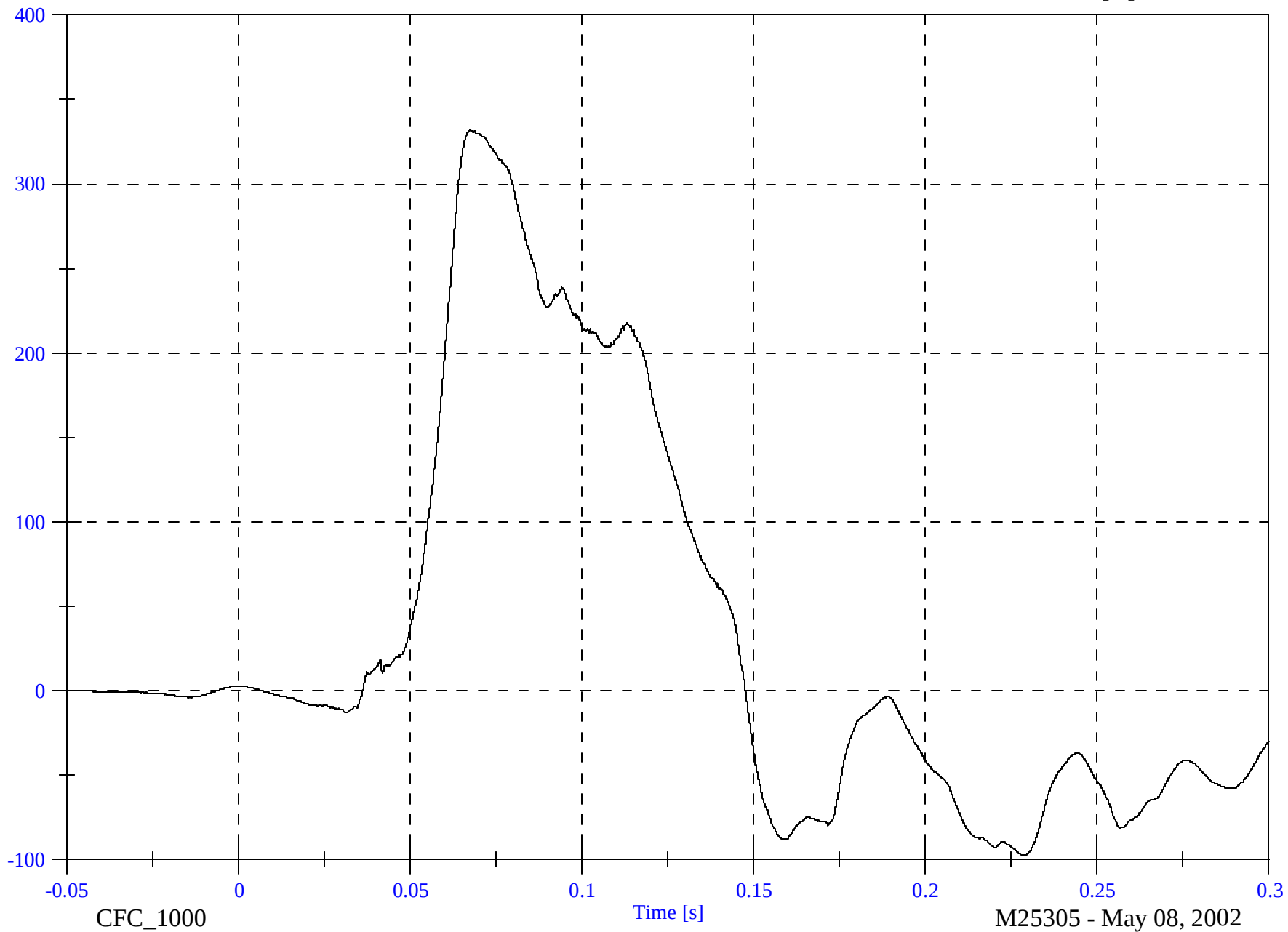
Max: 331.9 [N] at 0.068 [s]

Min: -97.0 [N] at 0.228 [s]

4-17

8642-NCAP-12

N

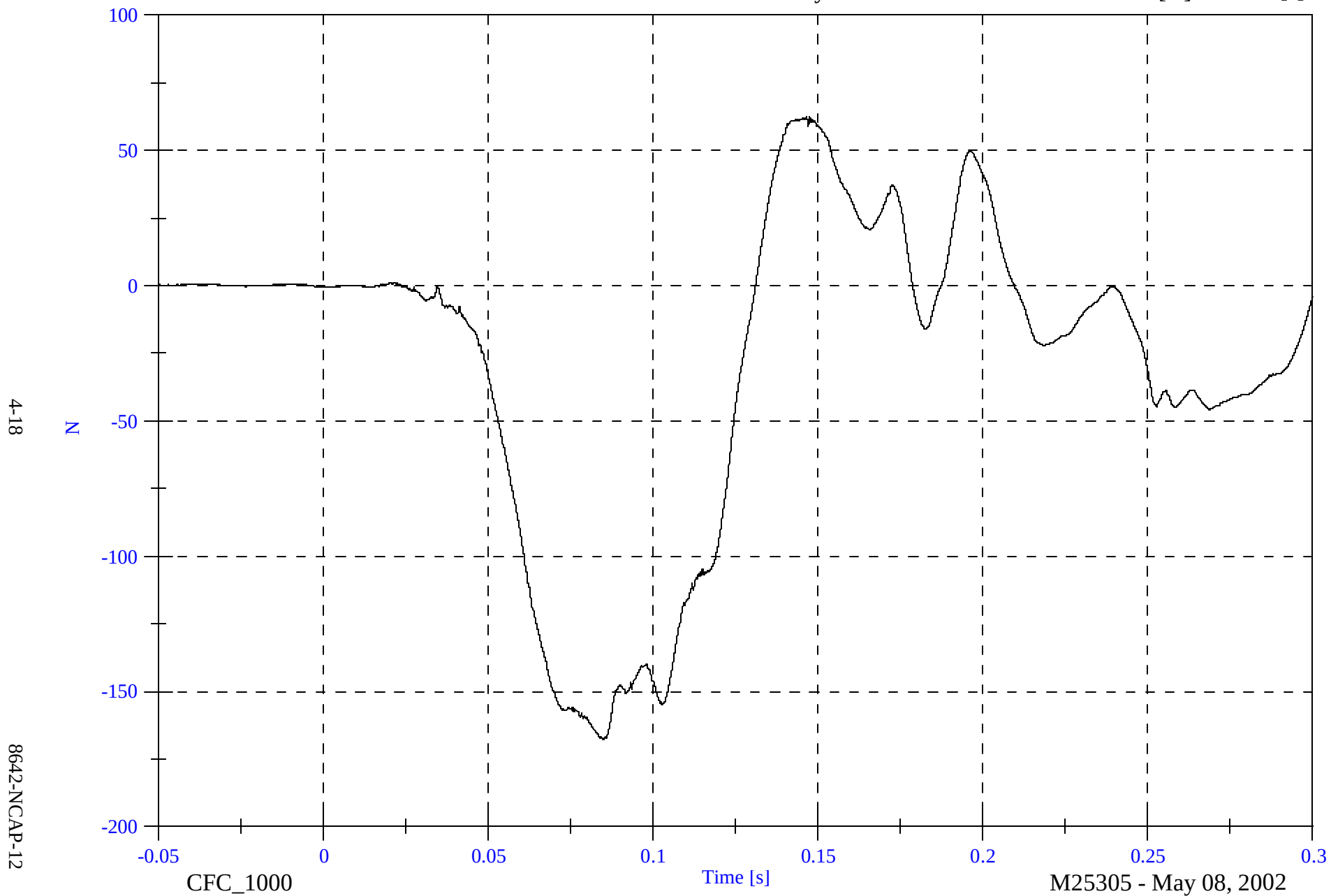


NCAP Test 12 - 2002 Honda Odyssey

P3 Lower Neck Fy

Max: 62.3 [N] at 0.147 [s]

Min: -167.8 [N] at 0.085 [s]



NCAP Test 12 - 2002 Honda Odyssey

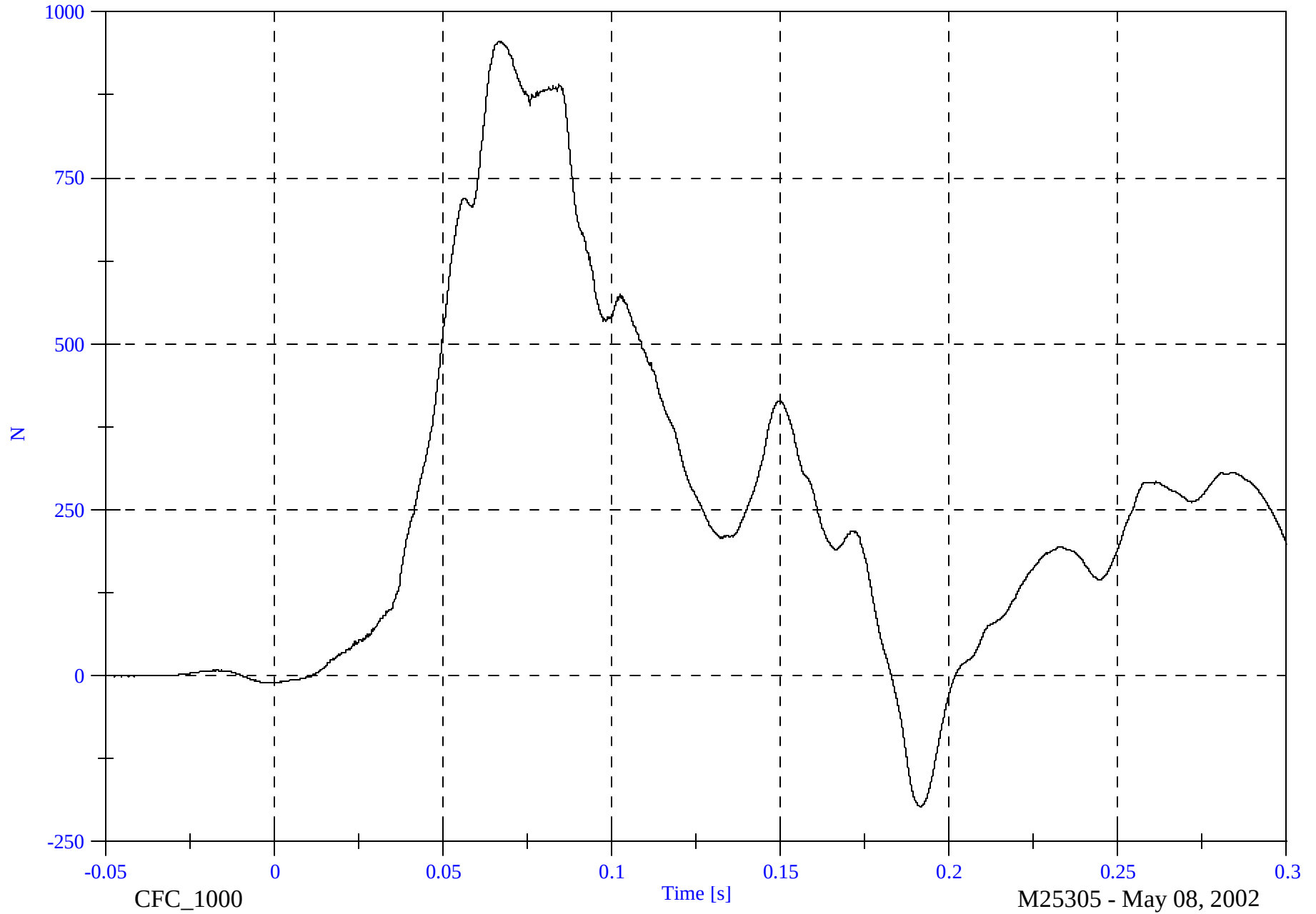
P3 Lower Neck Fz

Max: 955.5 [N] at 0.066 [s]

Min: -197.0 [N] at 0.192 [s]

4-19

8642-NCAP-12



NCAP Test 12 - 2002 Honda Odyssey

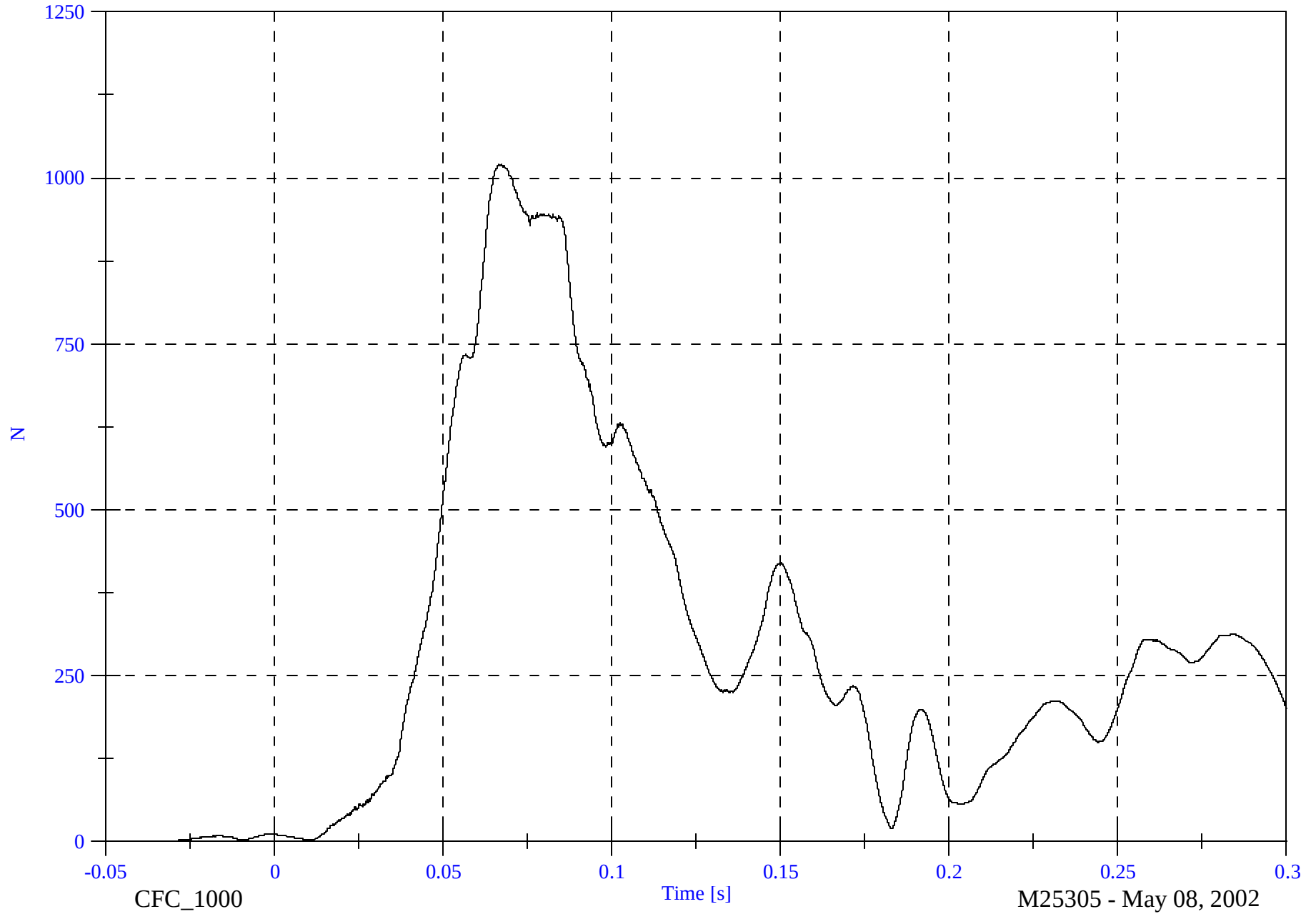
P3 Lower Neck F Resultant

Max: 1020.2 [N] at 0.067 [s]

Min: 0.4 [N] at -0.049 [s]

4-20

8642-NCAP-12



NCAP Test 12 - 2002 Honda Odyssey

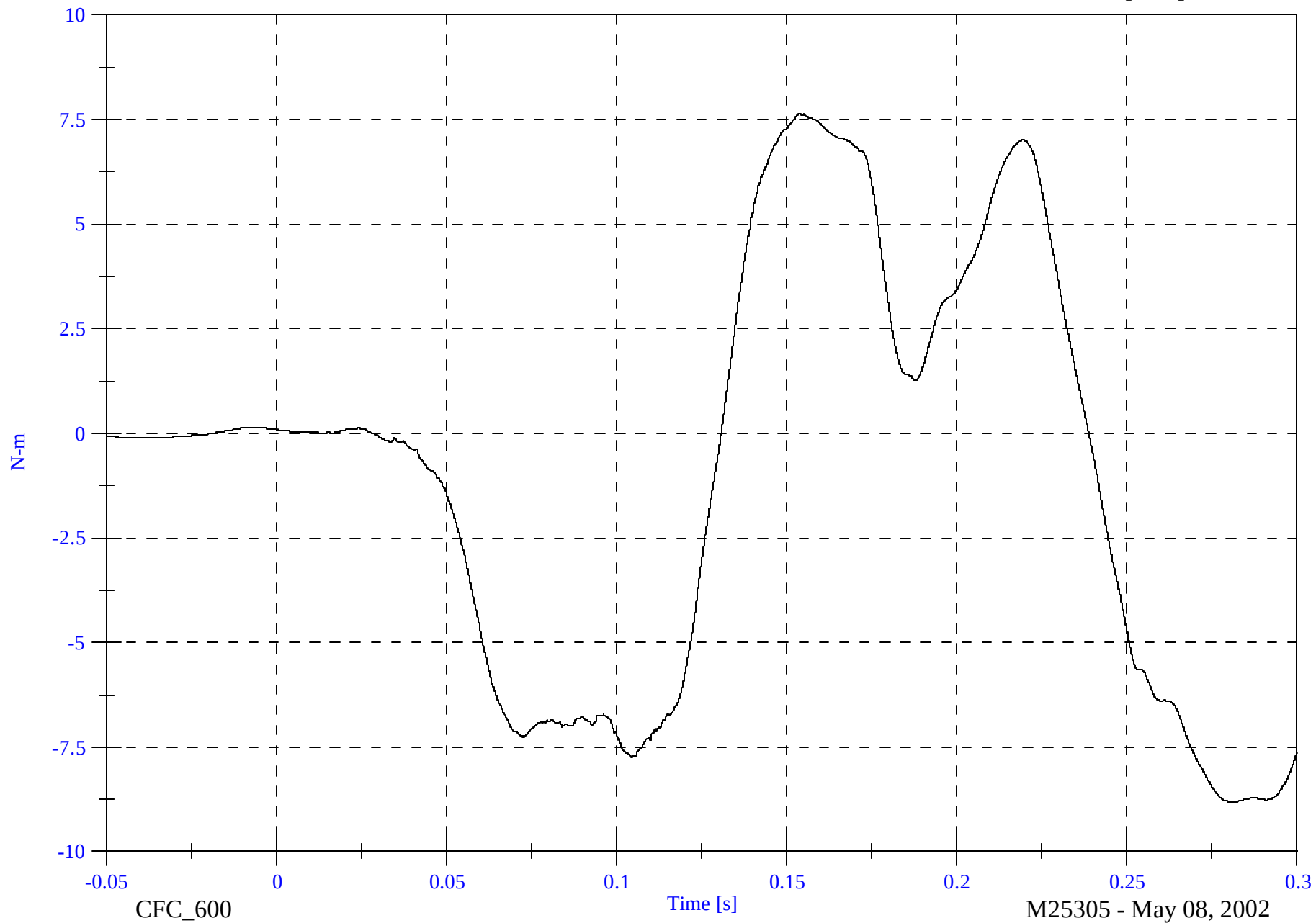
P3 Lower Neck Mx

Max: 7.6 [N-m] at 0.154 [s]

Min: -8.8 [N-m] at 0.281 [s]

4-21

8642-NCAP-12



NCAP Test 12 - 2002 Honda Odyssey

P3 Lower Neck My

Max: 12.7 [N-m] at 0.228 [s]

Min: -11.4 [N-m] at 0.066 [s]

4-22

8642-NCAP-12



NCAP Test 12 - 2002 Honda Odyssey

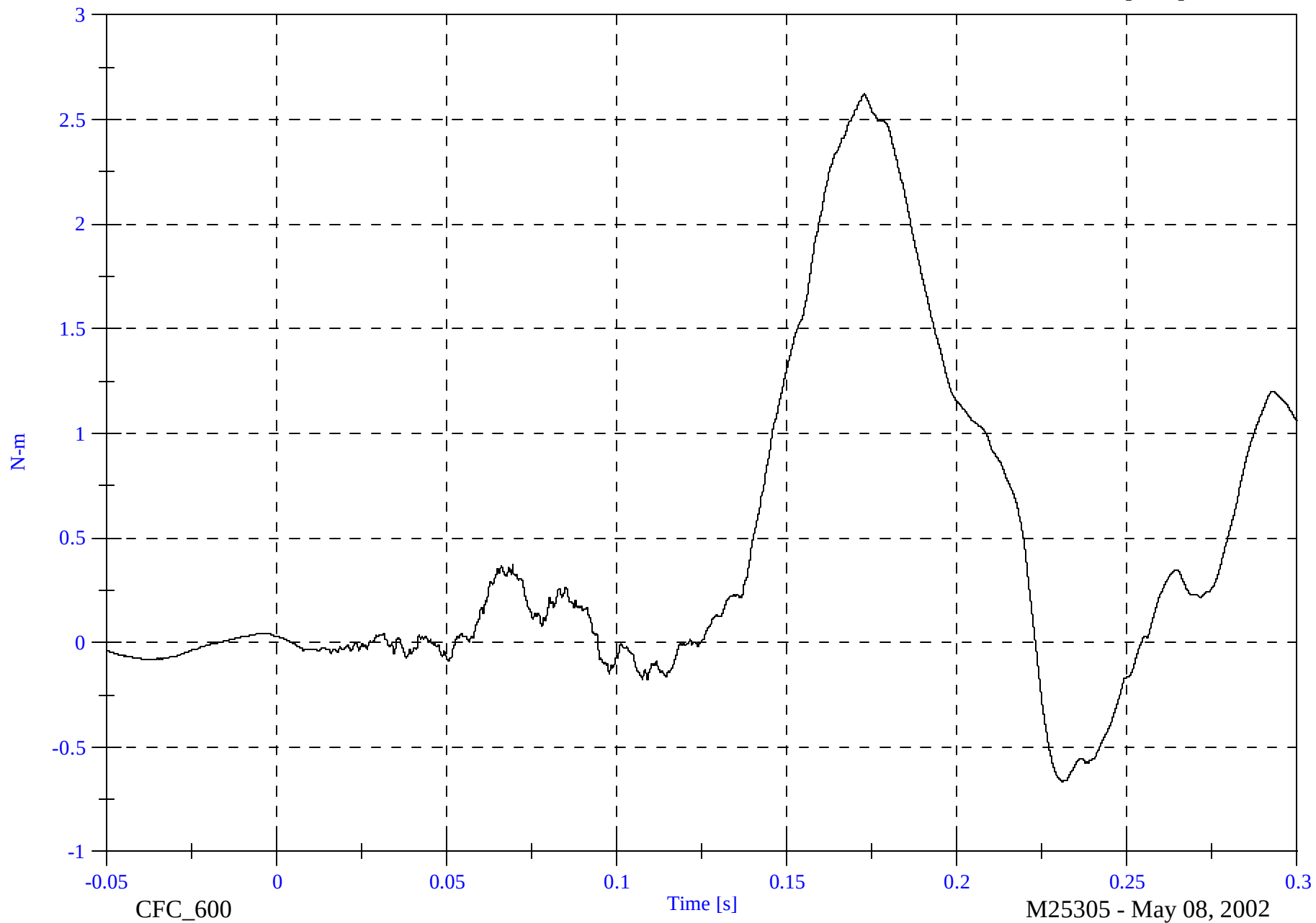
P3 Lower Neck Mz

Max: 2.6 [N-m] at 0.173 [s]

Min: -0.7 [N-m] at 0.231 [s]

4-23

8642-NCAP-12



NCAP Test 12 - 2002 Honda Odyssey

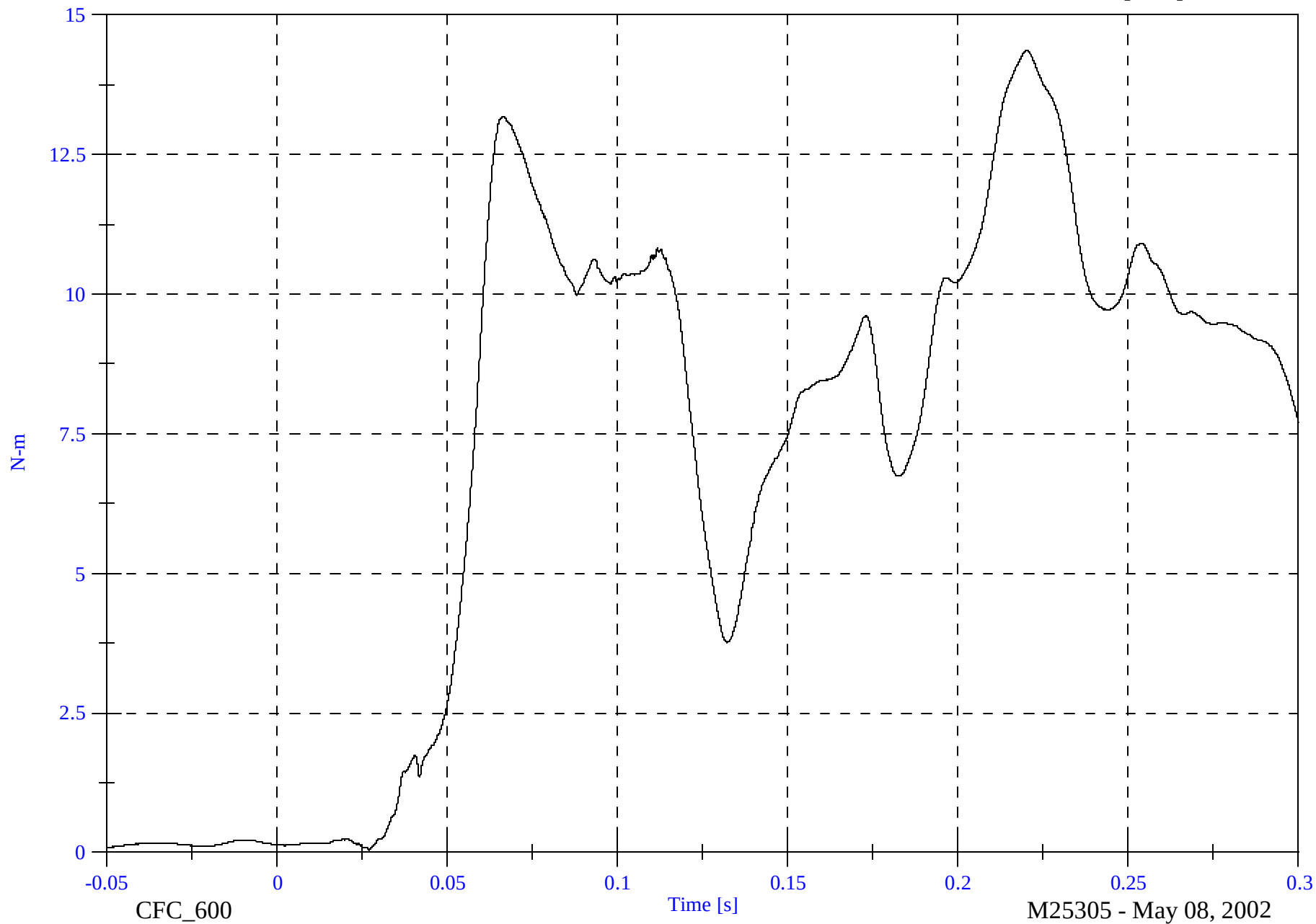
P3 Lower Neck M Resultant

Max: 14.4 [N-m] at 0.220 [s]

Min: 0.0 [N-m] at 0.027 [s]

4-24

8642-NCAP-12



NCAP Test 12 - 2002 Honda Odyssey

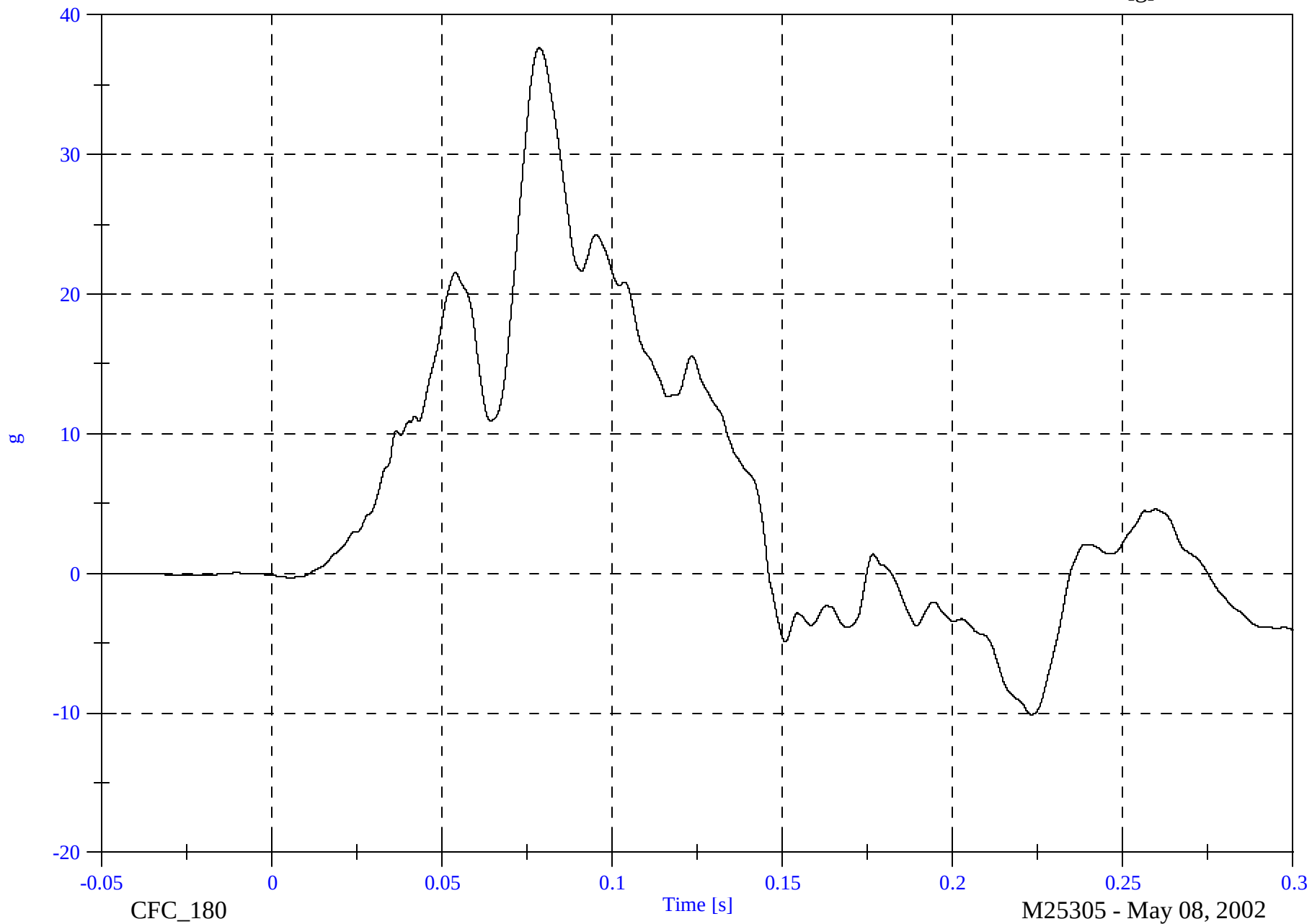
P3 Chest x

Max: 37.6 [g] at 0.079 [s]

Min: -10.1 [g] at 0.223 [s]

4-25

8642-NCAP-12

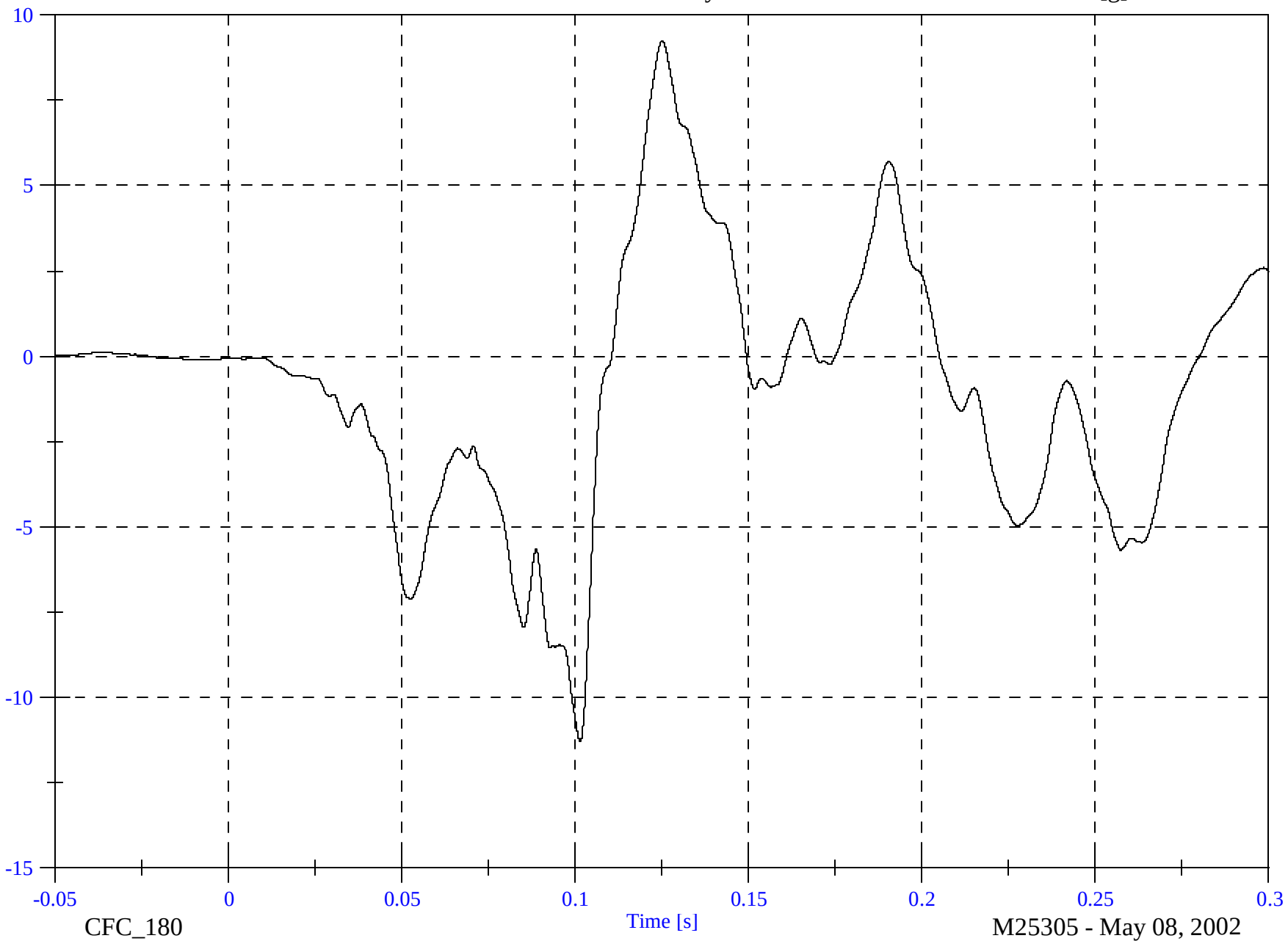


NCAP Test 12 - 2002 Honda Odyssey

P3 Chest y

Max: 9.3 [g] at 0.125 [s]

Min: -11.3 [g] at 0.101 [s]



NCAP Test 12 - 2002 Honda Odyssey

P3 Chest z

Max: 21.9 [g] at 0.080 [s]

Min: -10.5 [g] at 0.191 [s]



4-27

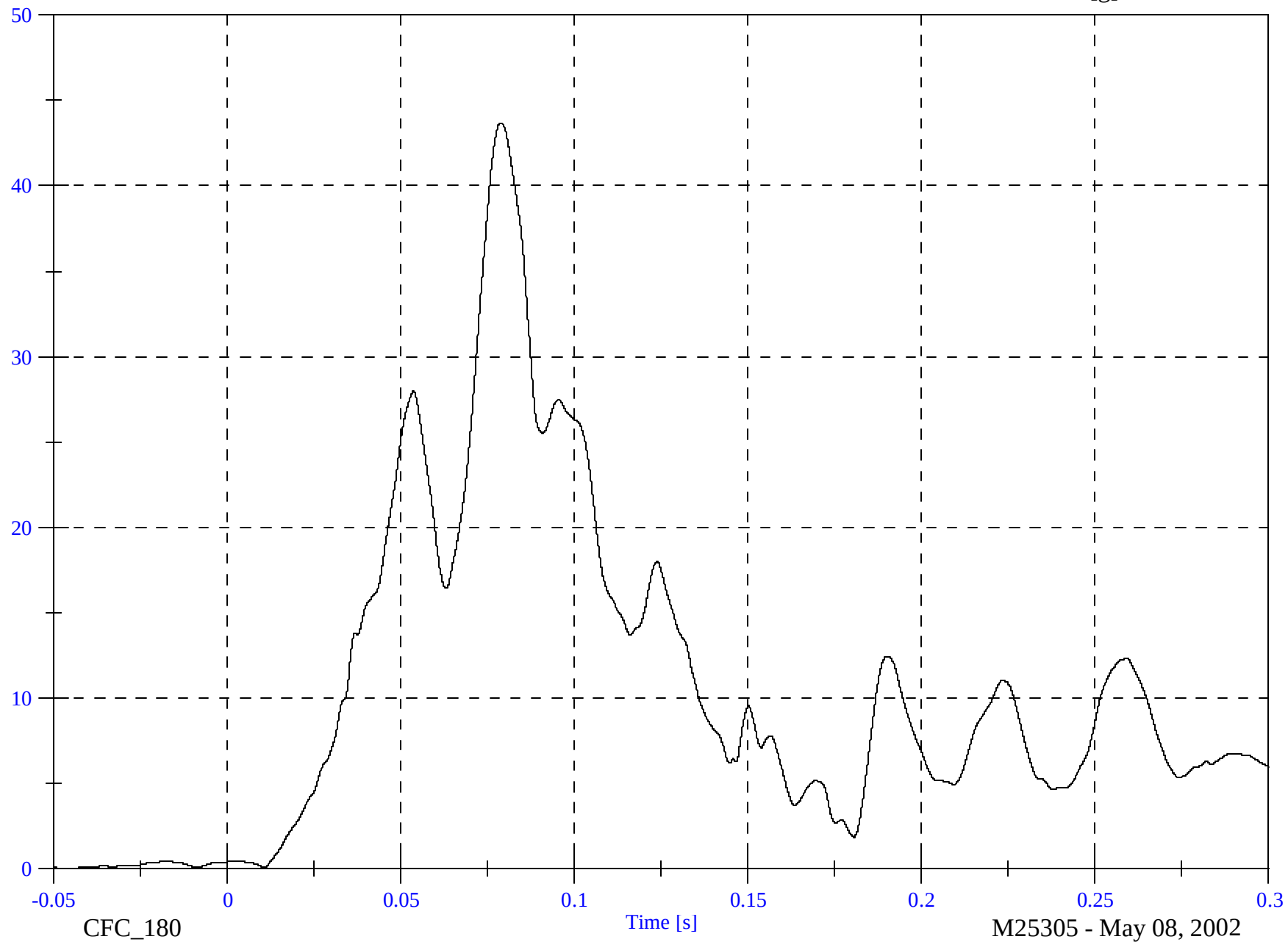
8642-NCAP-12

NCAP Test 12 - 2002 Honda Odyssey

P3 Chest Resultant

Max: 43.7 [g] at 0.079 [s]

Min: 0.0 [g] at -0.047 [s]



4-28

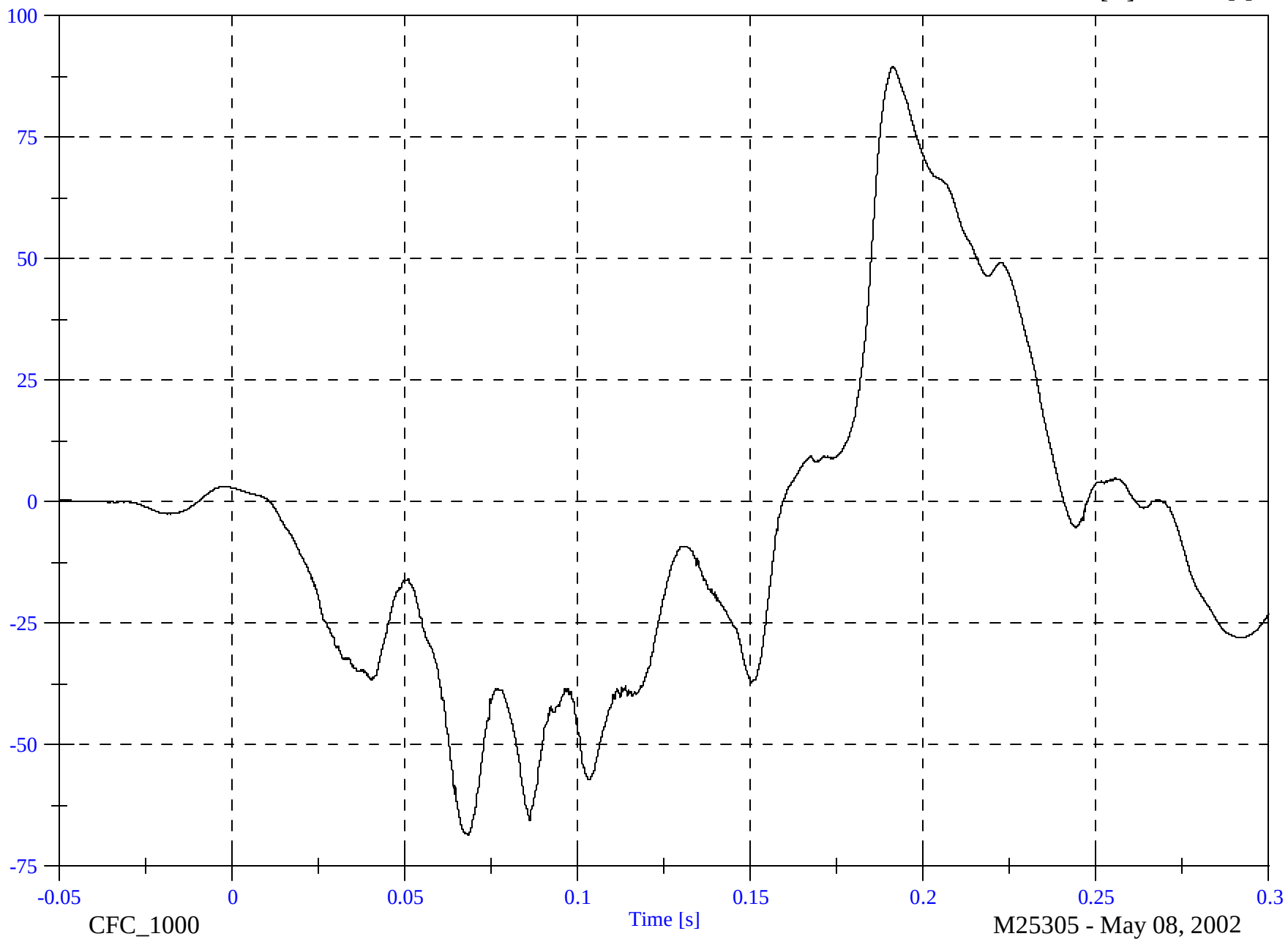
8642-NCAP-12

NCAP Test 12 - 2002 Honda Odyssey

P3 Lumbar Fx

Max: 89.7 [N] at 0.191 [s]

Min: -68.5 [N] at 0.068 [s]



4-29

8642-NCAP-12

NCAP Test 12 - 2002 Honda Odyssey

P3 Lumbar Fy

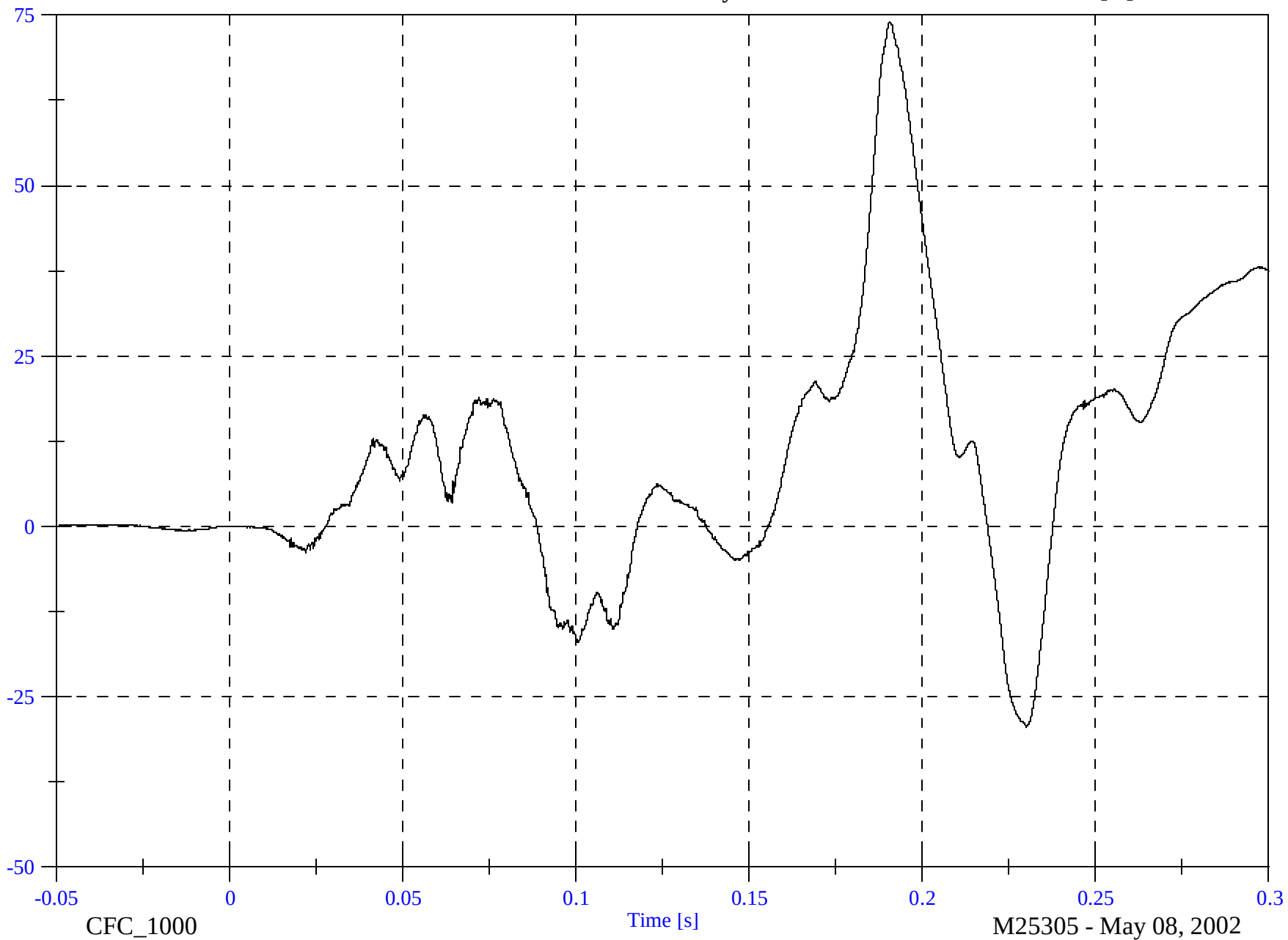
Max: 73.9 [N] at 0.191 [s]

Min: -29.4 [N] at 0.230 [s]

4-30

8642-NCAP-12

N

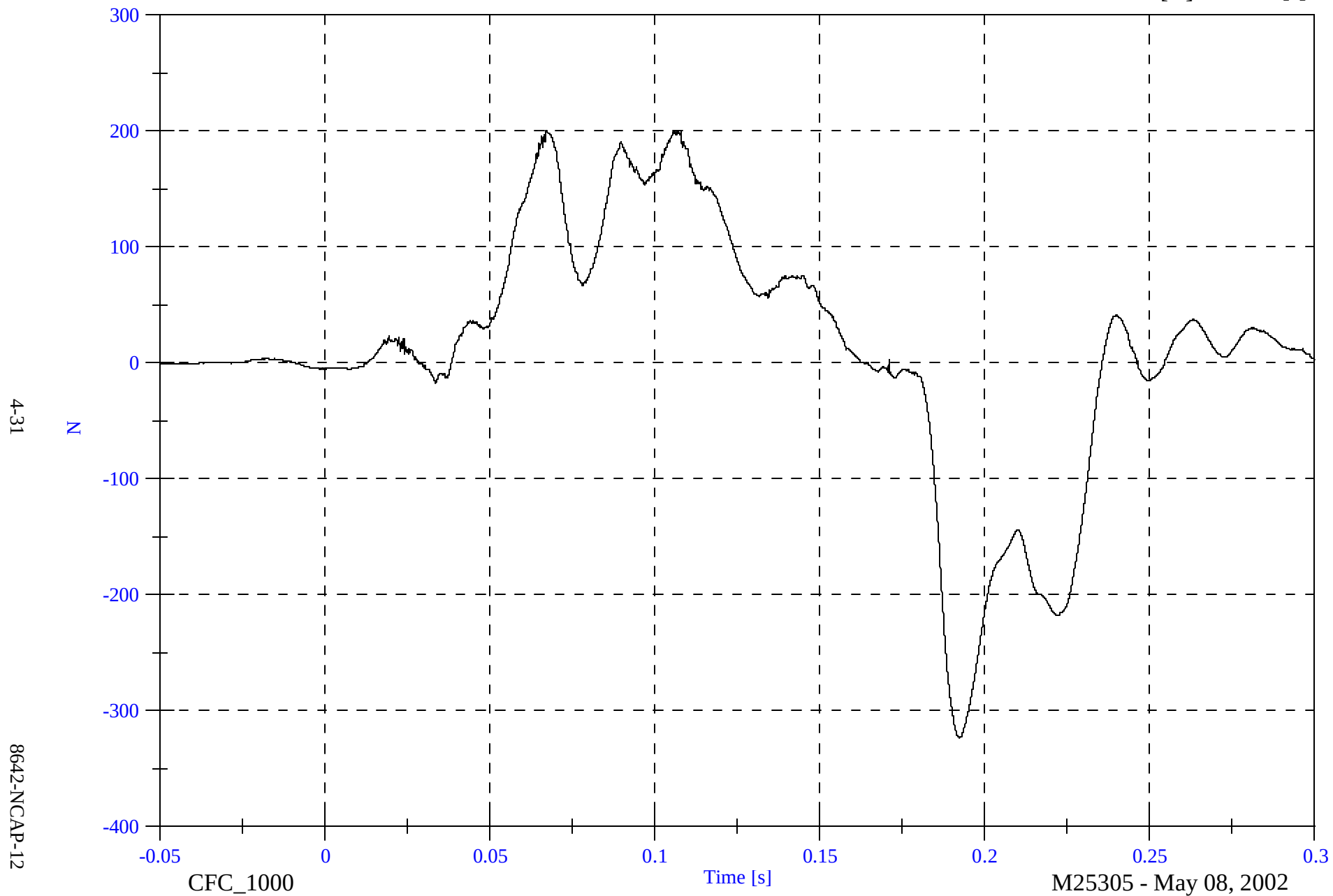


NCAP Test 12 - 2002 Honda Odyssey

Max: 200.3 [N] at 0.067 [s]

Min: -323.2 [N] at 0.192 [s]

P3 Lumbar Fz



NCAP Test 12 - 2002 Honda Odyssey

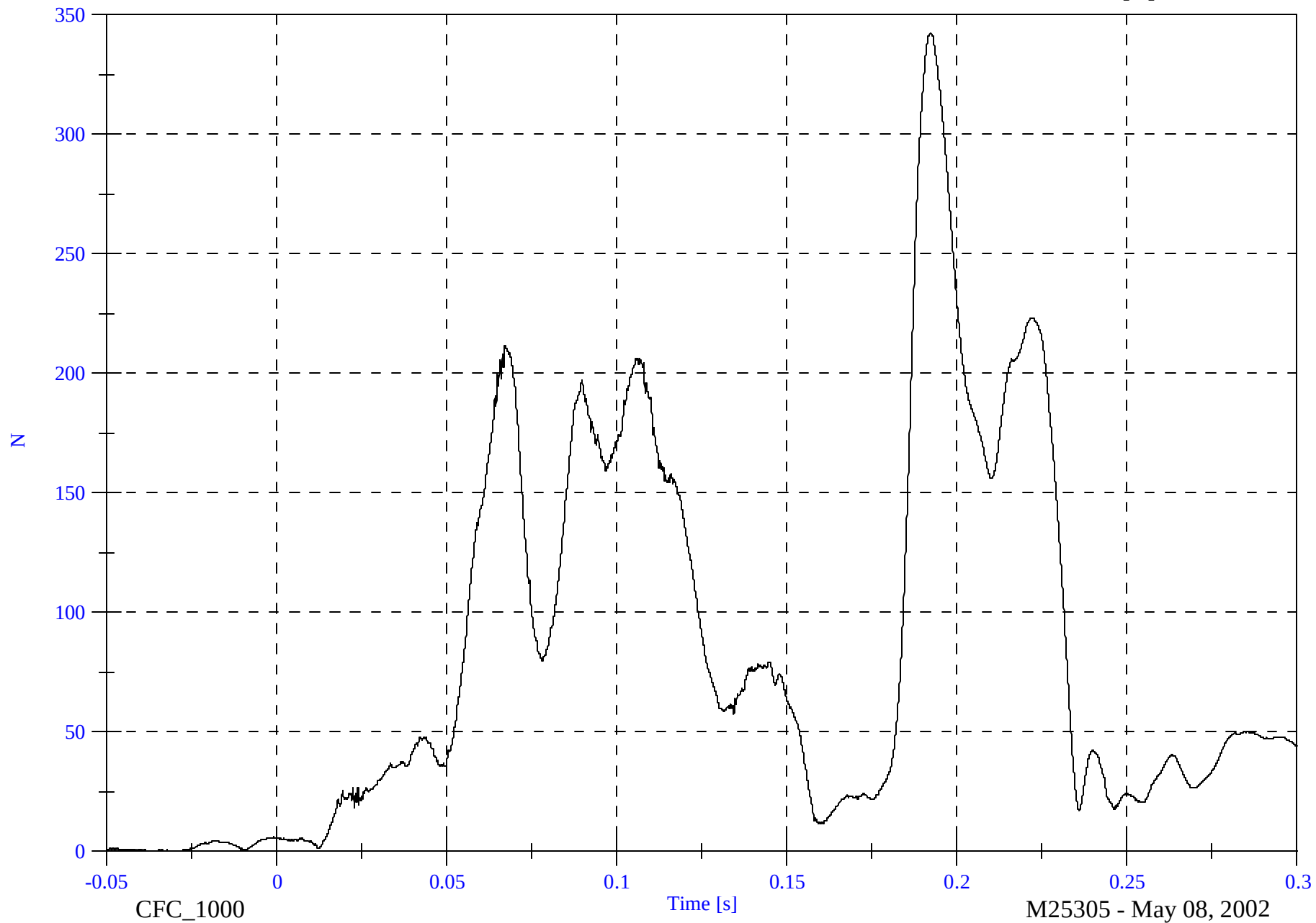
P3 Lumbar F Resultant

Max: 342.4 [N] at 0.192 [s]

Min: 0.1 [N] at -0.029 [s]

4-32

8642-NCAP-12



NCAP Test 12 - 2002 Honda Odyssey

P3 Lumbar Mx

Max: 5.7 [N-m] at 0.193 [s]

Min: -1.4 [N-m] at 0.109 [s]



NCAP Test 12 - 2002 Honda Odyssey

P3 Lumbar My

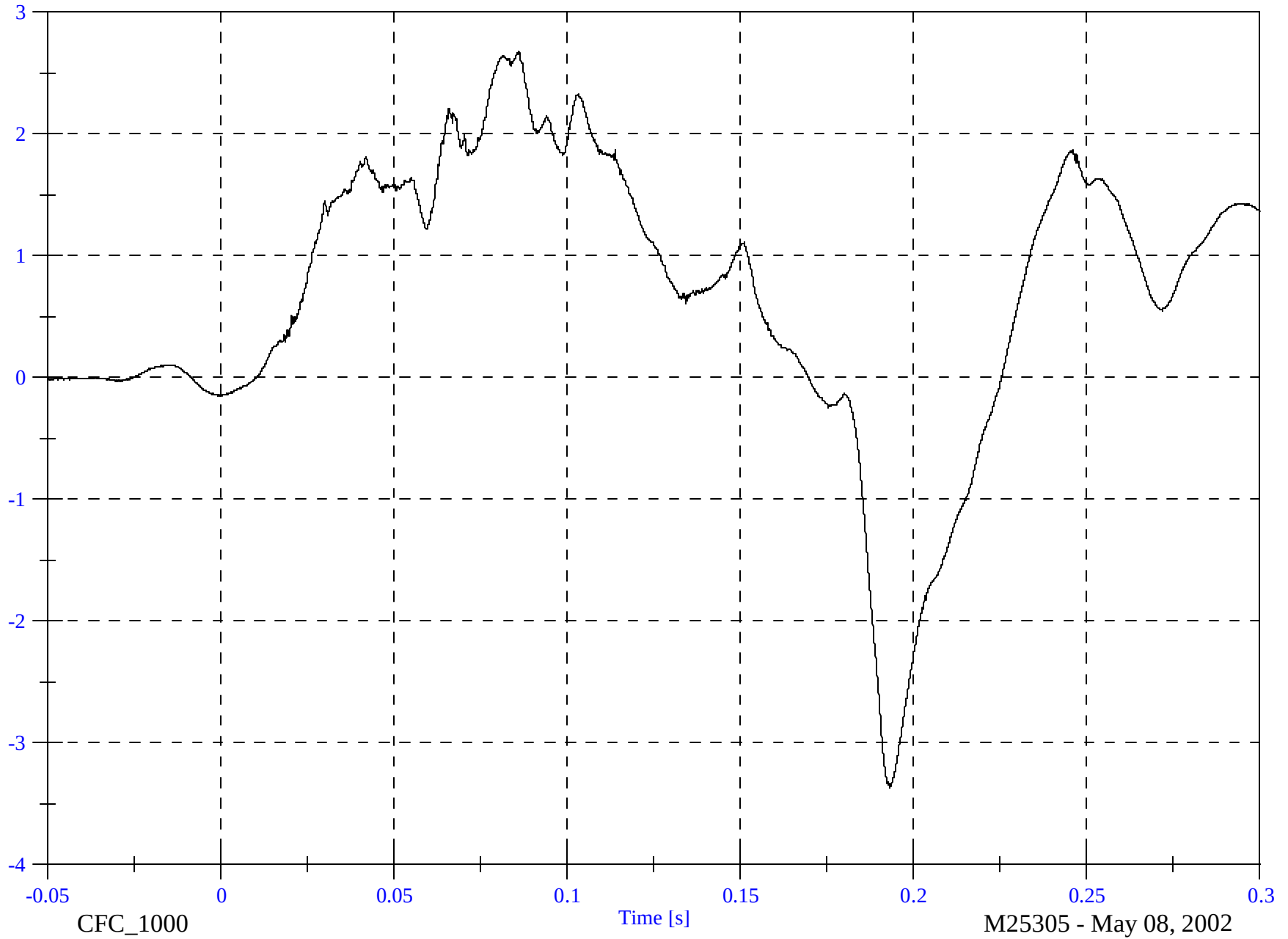
Max: 2.7 [N-m] at 0.086 [s]

Min: -3.4 [N-m] at 0.193 [s]

4-34

8642-NCAP-12

N-m



CFC_1000

Time [s]

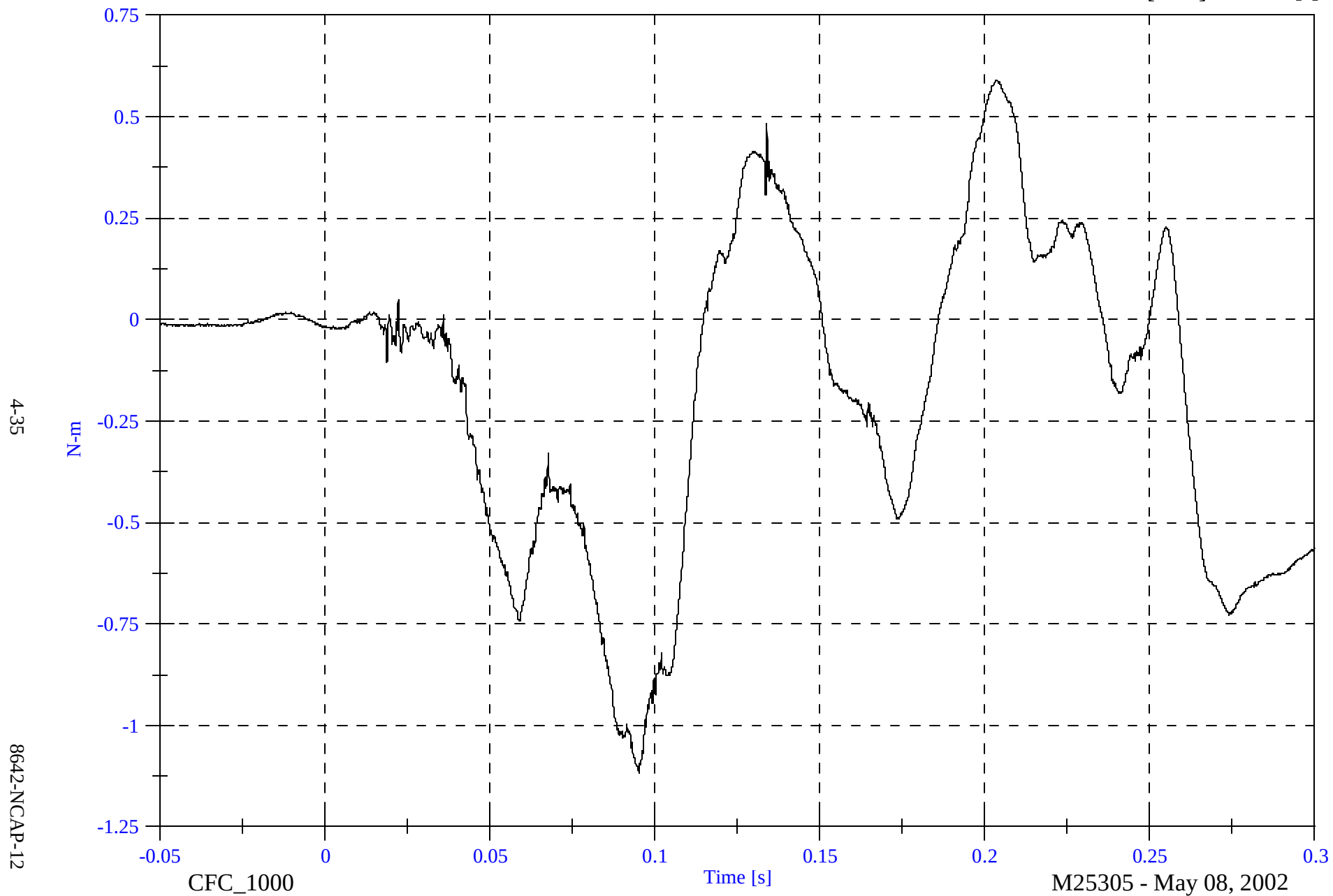
M25305 - May 08, 2002

NCAP Test 12 - 2002 Honda Odyssey

P3 Lumbar Mz

Max: 0.6 [N-m] at 0.204 [s]

Min: -1.1 [N-m] at 0.095 [s]



NCAP Test 12 - 2002 Honda Odyssey

P3 Lumbar M Resultant

Max: 6.6 [N-m] at 0.193 [s]

Min: 0.0 [N-m] at -0.009 [s]



4-36

8642-NCAP-12

CFC_1000

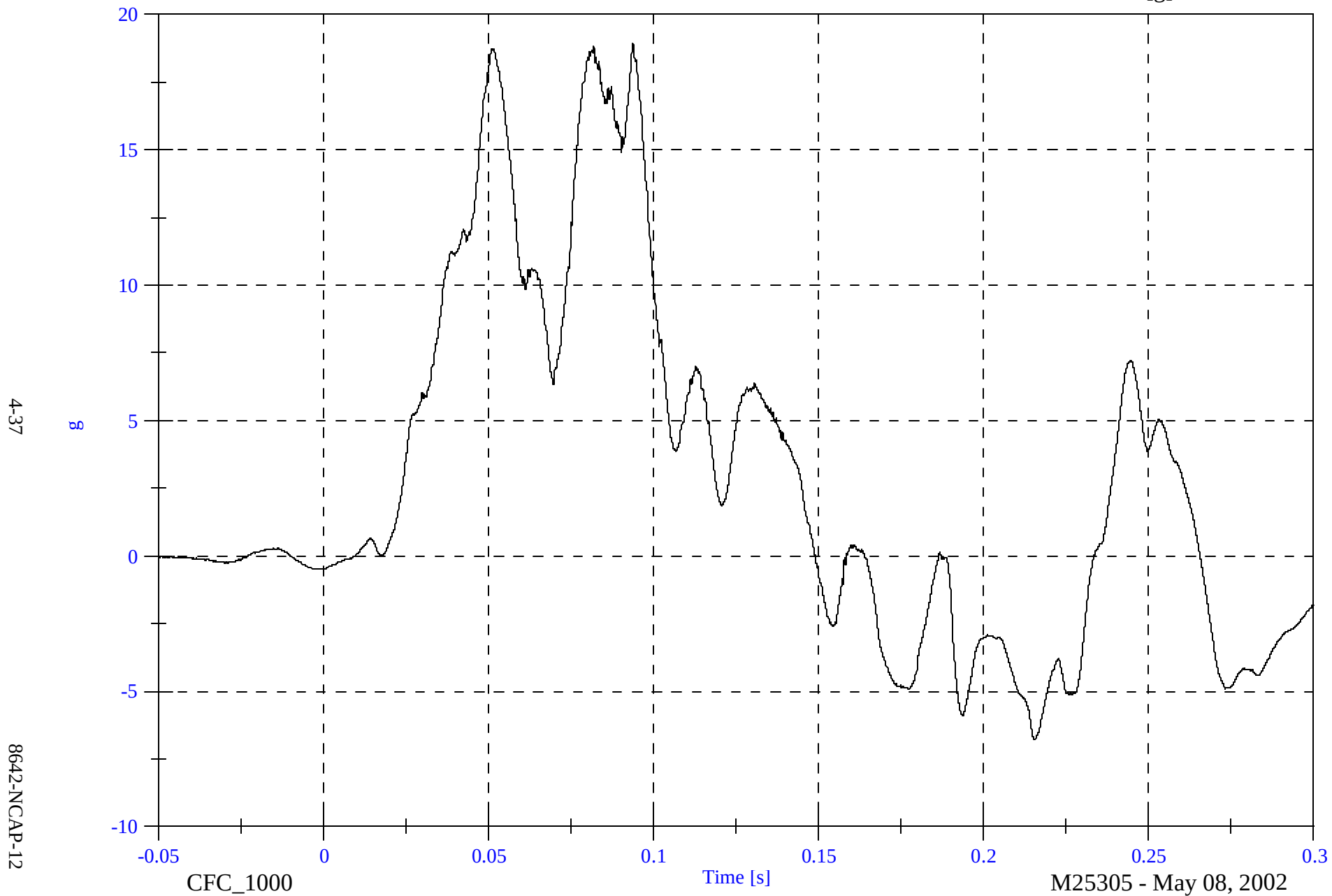
M25305 - May 08, 2002

NCAP Test 12 - 2002 Honda Odyssey

Max: 18.9 [g] at 0.094 [s]

Min: -6.8 [g] at 0.216 [s]

P3 Pelvic x



8642-NCAP-12

NCAP Test 12 - 2002 Honda Odyssey

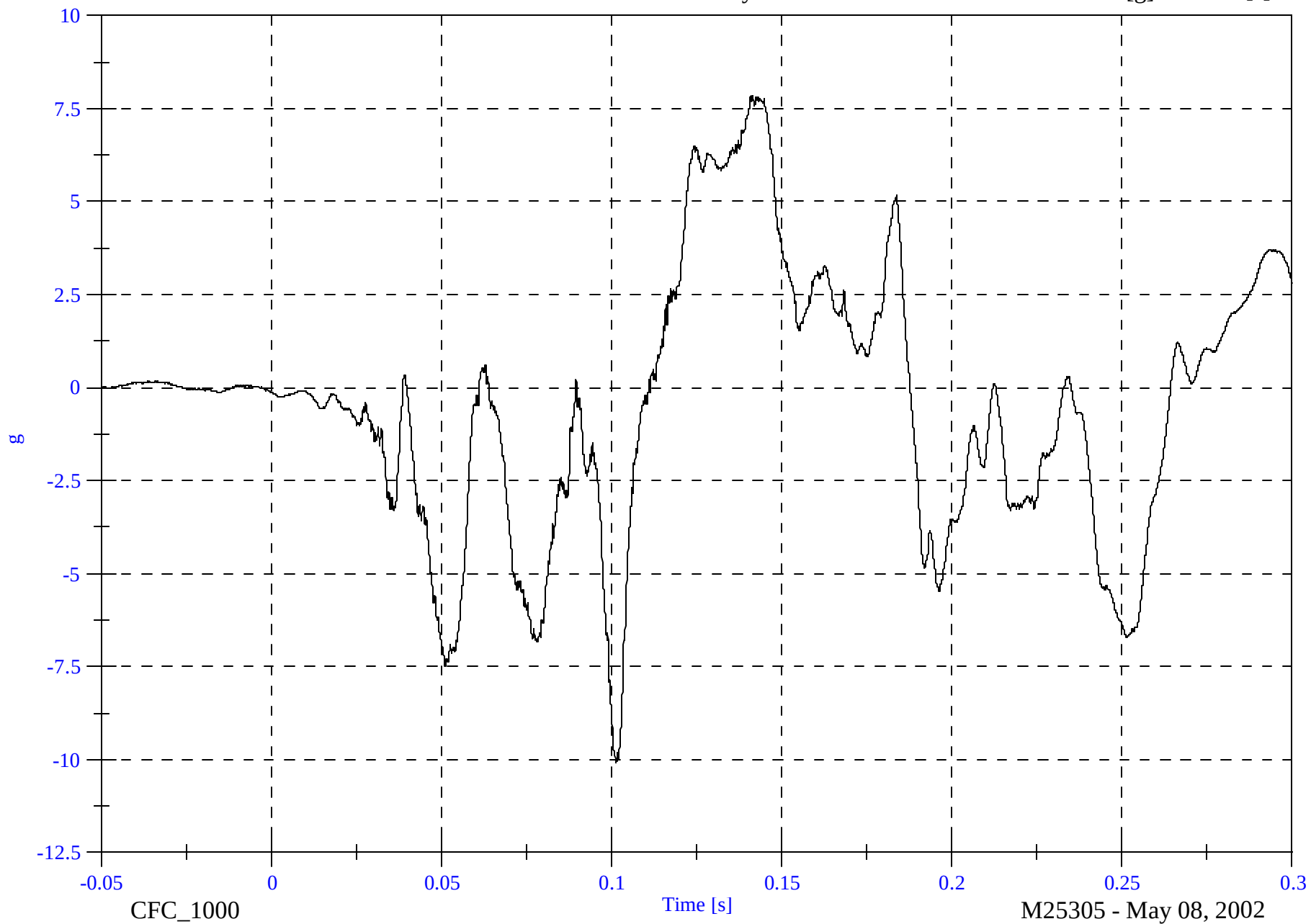
P3 Pelvic y

Max: 7.9 [g] at 0.141 [s]

Min: -10.1 [g] at 0.101 [s]

4-38

8642-NCAP-12



NCAP Test 12 - 2002 Honda Odyssey

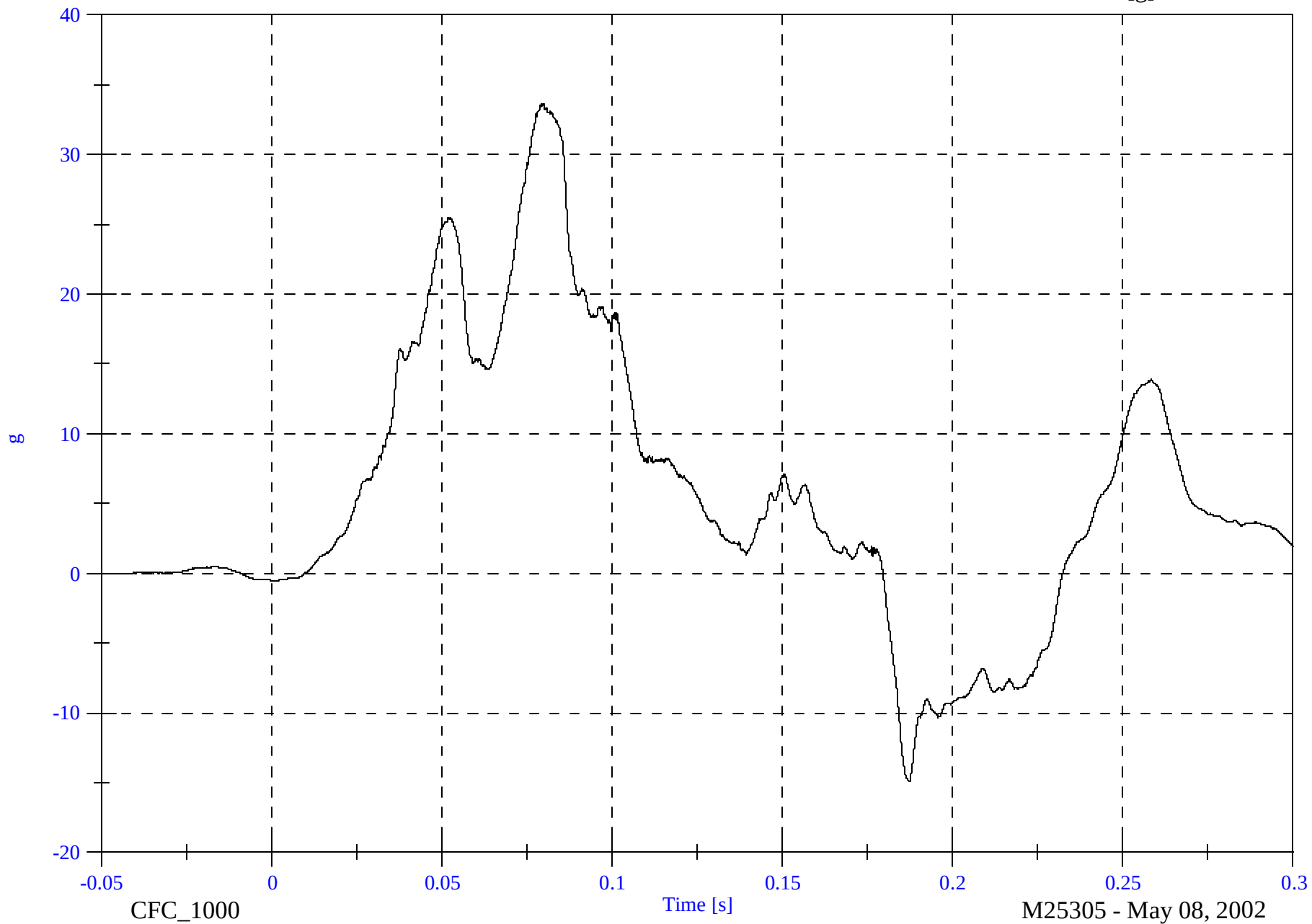
P3 Pelvic z

Max: 33.7 [g] at 0.080 [s]

Min: -14.9 [g] at 0.187 [s]

4-39

8642-NCAP-12



NCAP Test 12 - 2002 Honda Odyssey

P3 Pelvic Resultant

Max: 38.8 [g] at 0.080 [s]

Min: 0.0 [g] at -0.047 [s]

4-40

g

8642-NCAP-12

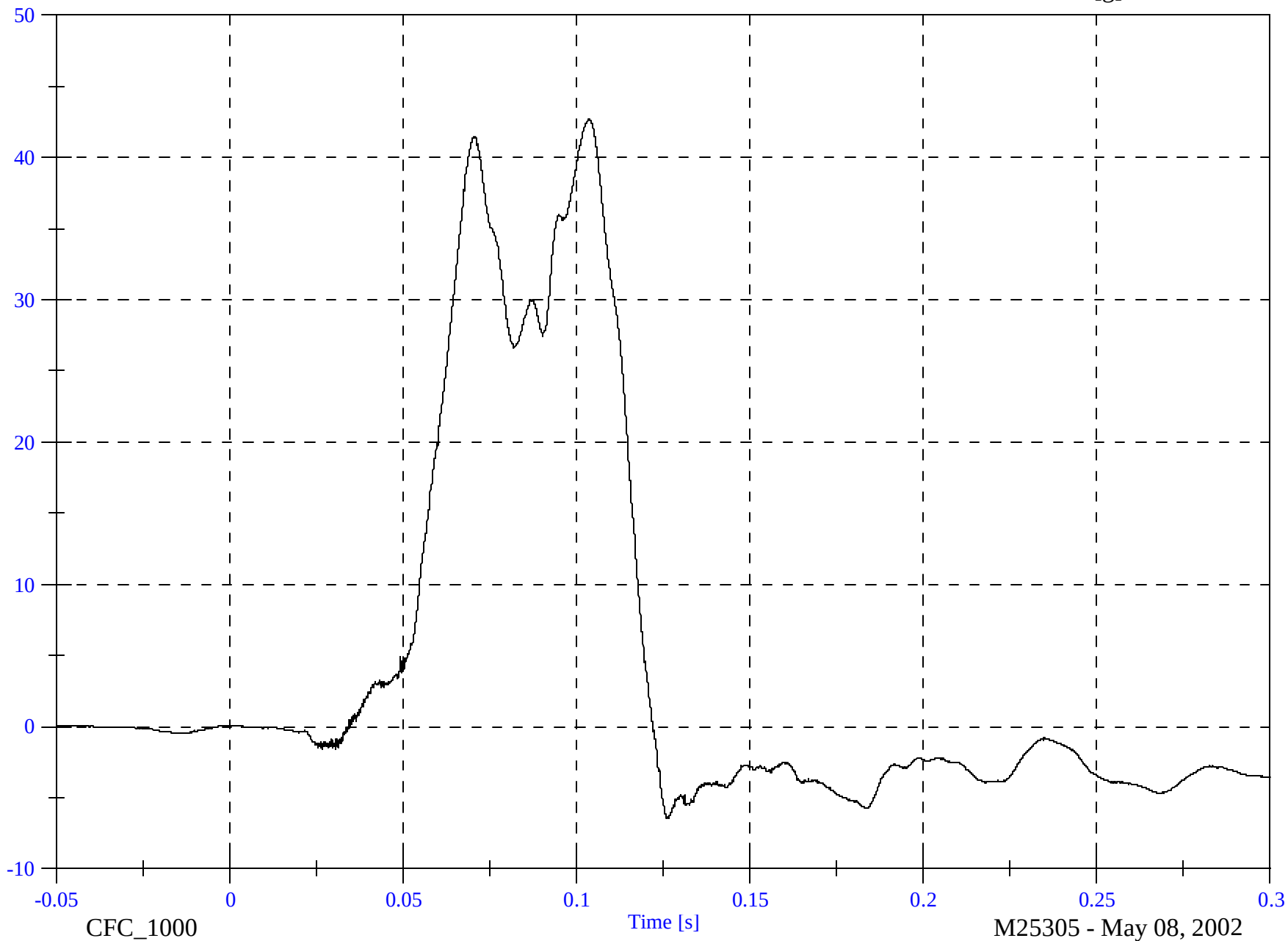


NCAP Test 12 - 2002 Honda Odyssey

P4 Head x

Max: 42.7 [g] at 0.104 [s]

Min: -6.5 [g] at 0.126 [s]



4-41

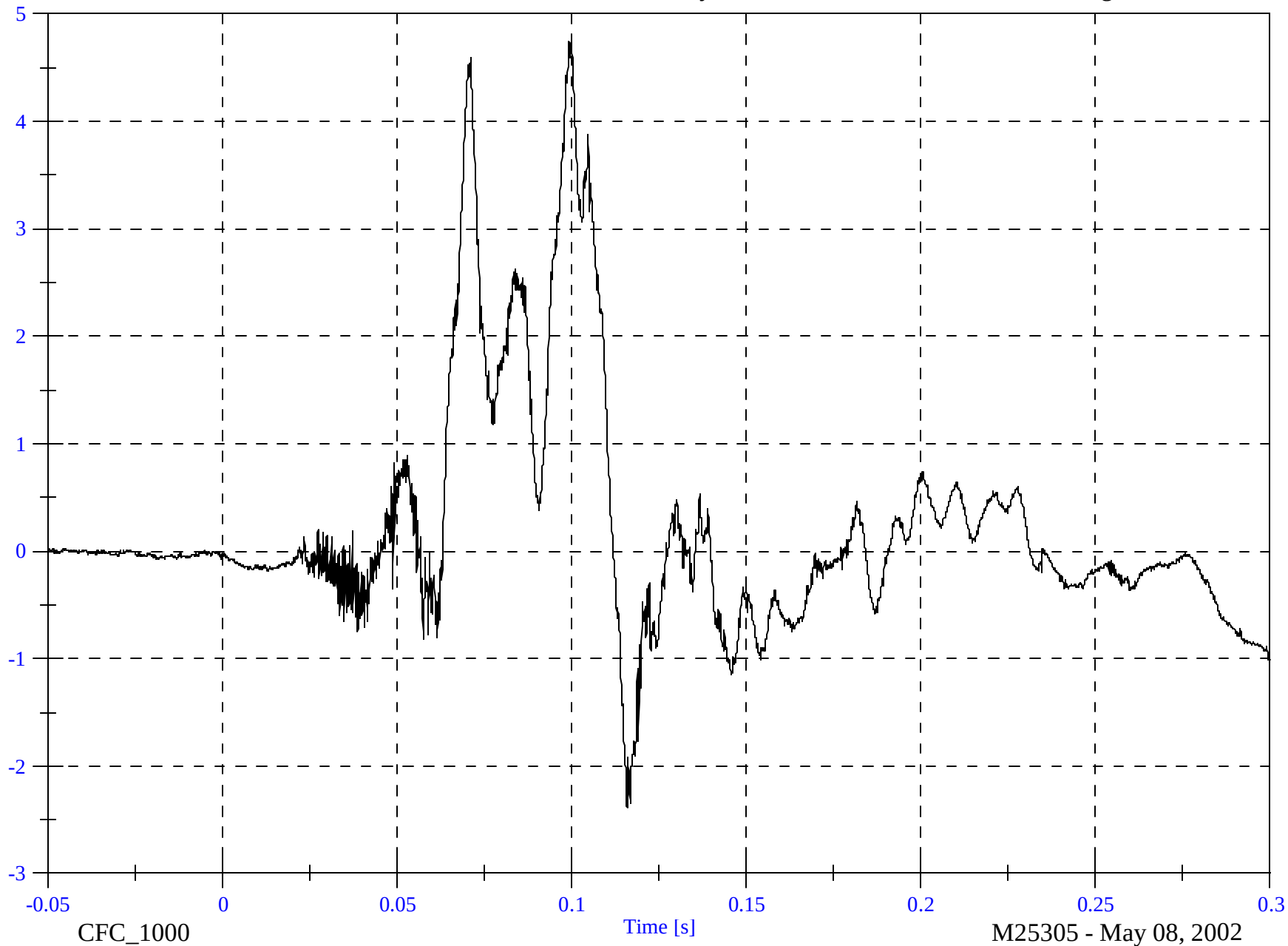
8642-NCAP-12

NCAP Test 12 - 2002 Honda Odyssey

P4 Head y

Max: 4.7 [g] at 0.099 [s]

Min: -2.4 [g] at 0.116 [s]



4-42

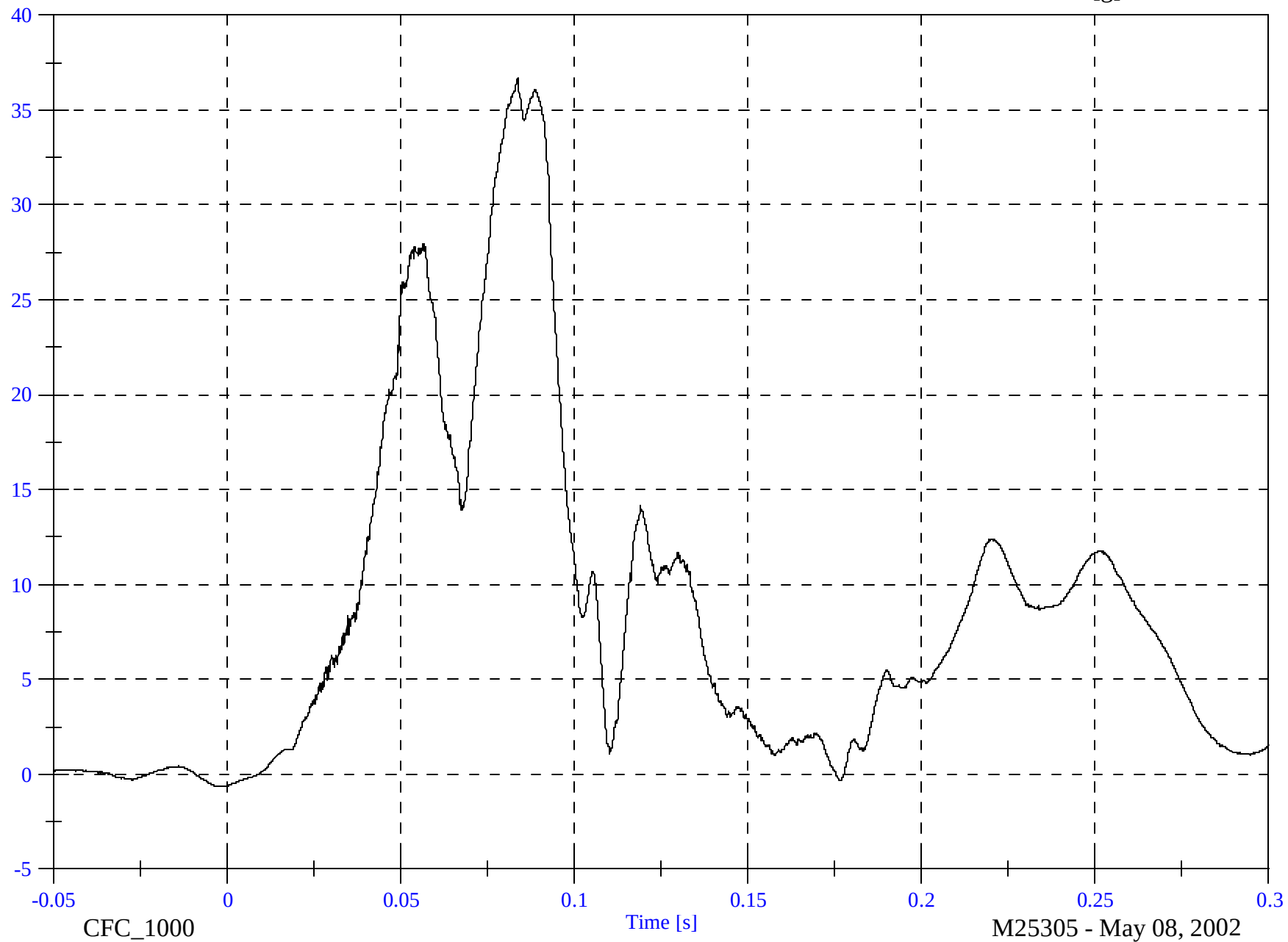
8642-NCAP-12

NCAP Test 12 - 2002 Honda Odyssey

P4 Head z

Max: 36.7 [g] at 0.084 [s]

Min: -0.7 [g] at -0.002 [s]



4-43

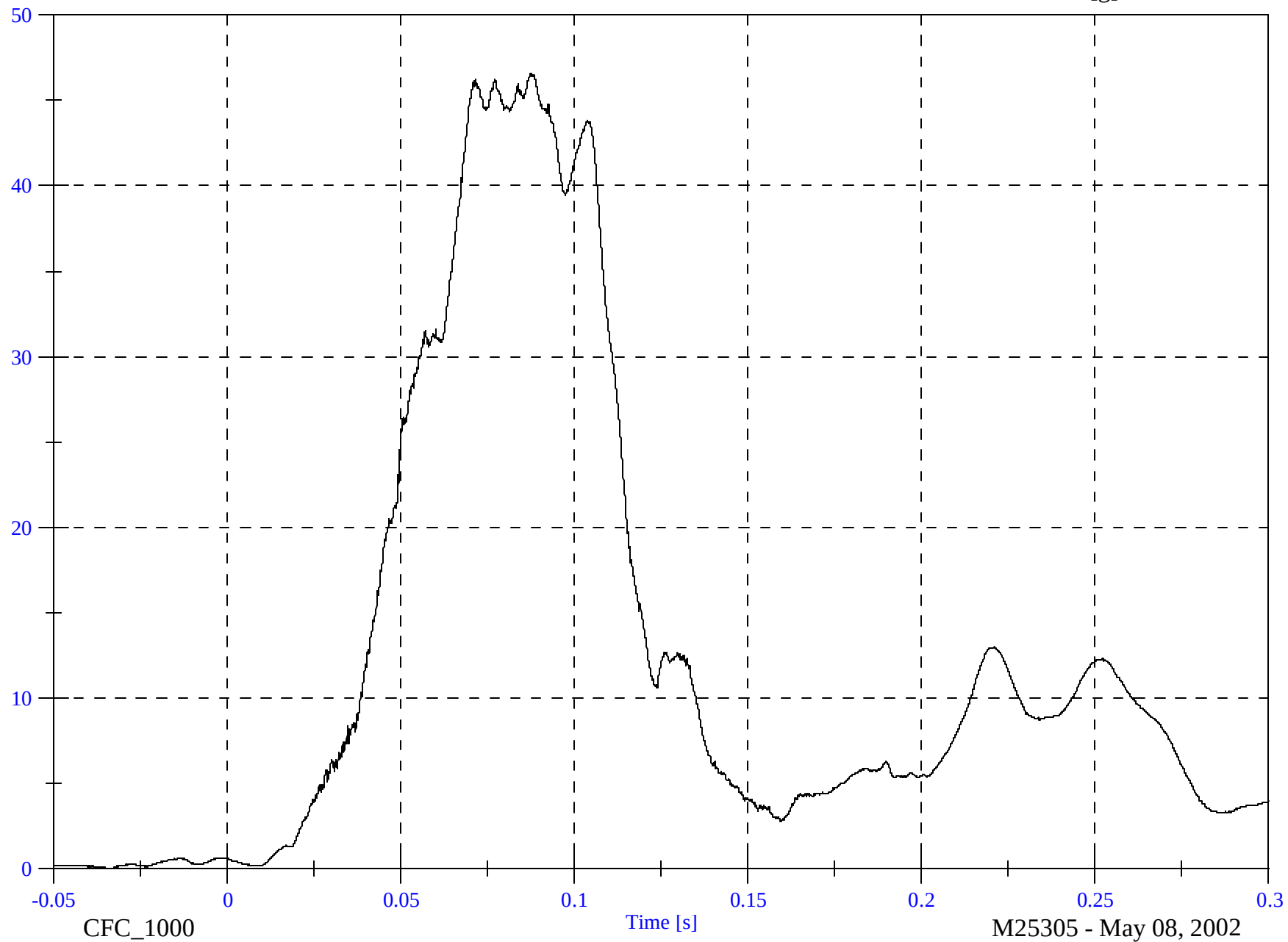
8642-NCAP-12

NCAP Test 12 - 2002 Honda Odyssey

P4 Head Resultant

Max: 46.6 [g] at 0.087 [s]

Min: 0.0 [g] at -0.033 [s]



4-44

8642-NCAP-12

NCAP Test 12 - 2002 Honda Odyssey

P4 Head Red z

Max: 33.9 [g] at 0.050 [s]

Min: -5.3 [g] at 0.110 [s]

4-45

8642-NCAP-12

g

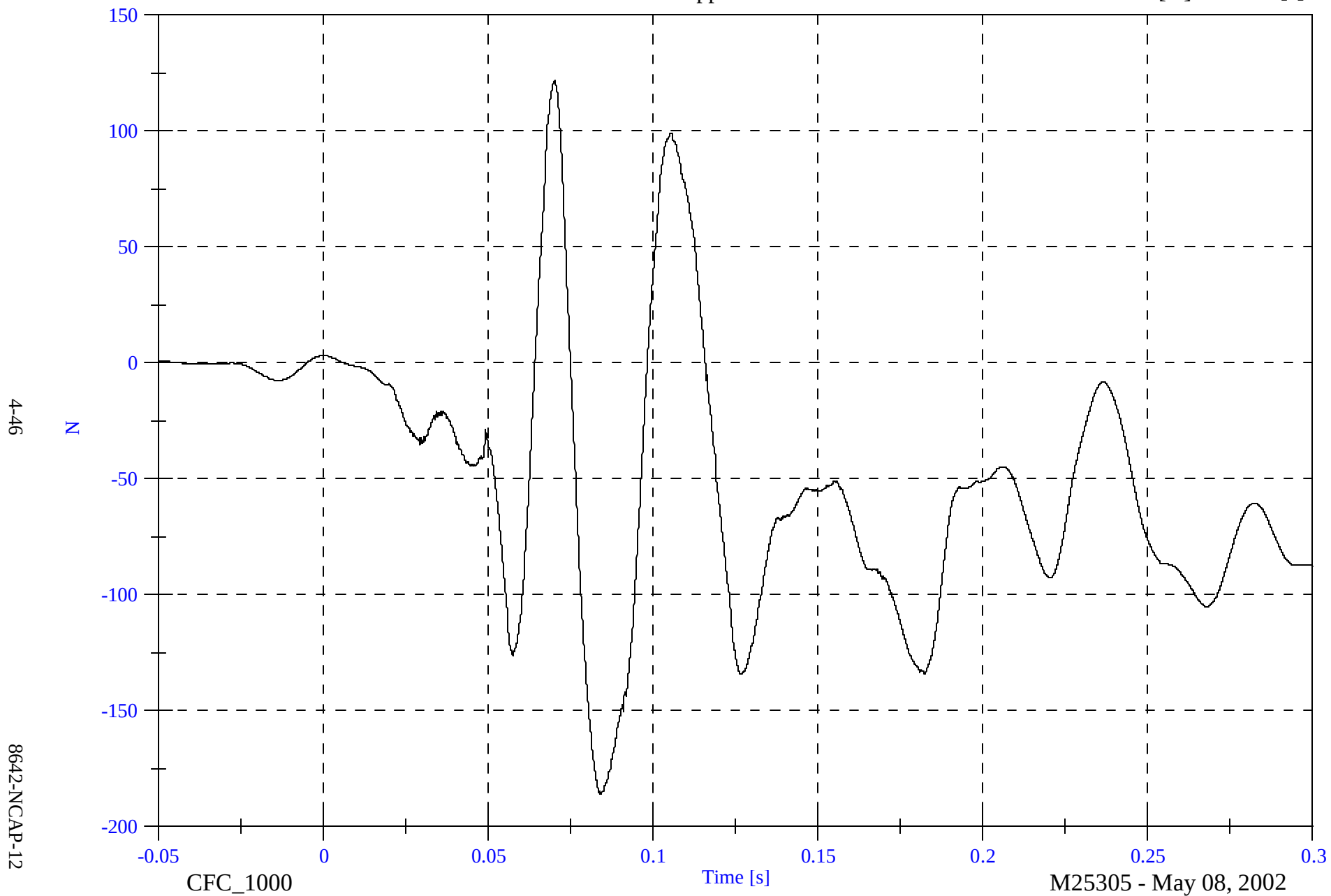


NCAP Test 12 - 2002 Honda Odyssey

P4 Upper Neck Fx

Max: 121.7 [N] at 0.070 [s]

Min: -185.7 [N] at 0.084 [s]

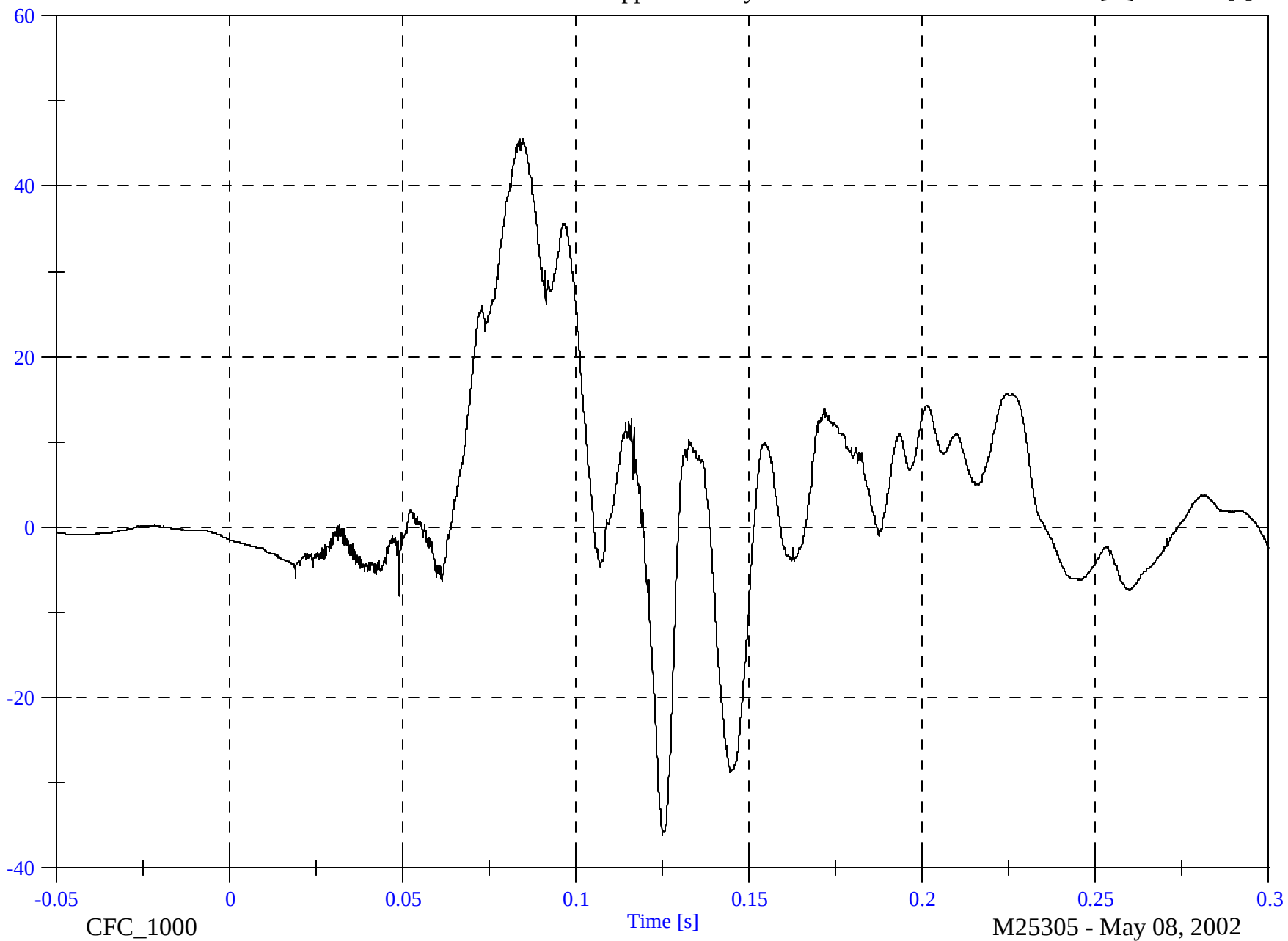


NCAP Test 12 - 2002 Honda Odyssey

P4 Upper Neck Fy

Max: 45.6 [N] at 0.084 [s]

Min: -36.0 [N] at 0.125 [s]

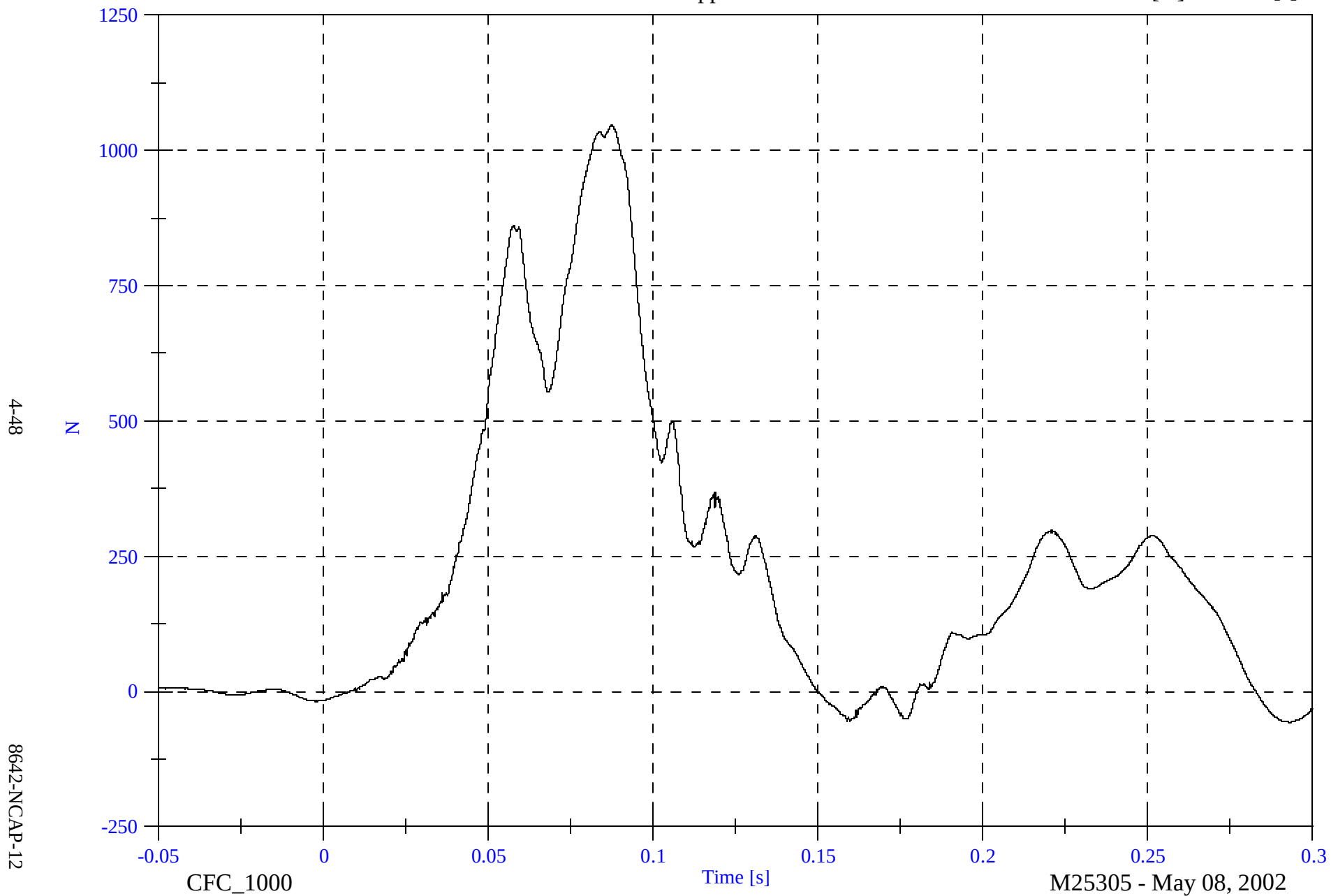


NCAP Test 12 - 2002 Honda Odyssey

P4 Upper Neck Fz

Max: 1045.7 [N] at 0.087 [s]

Min: -56.7 [N] at 0.293 [s]



NCAP Test 12 - 2002 Honda Odyssey

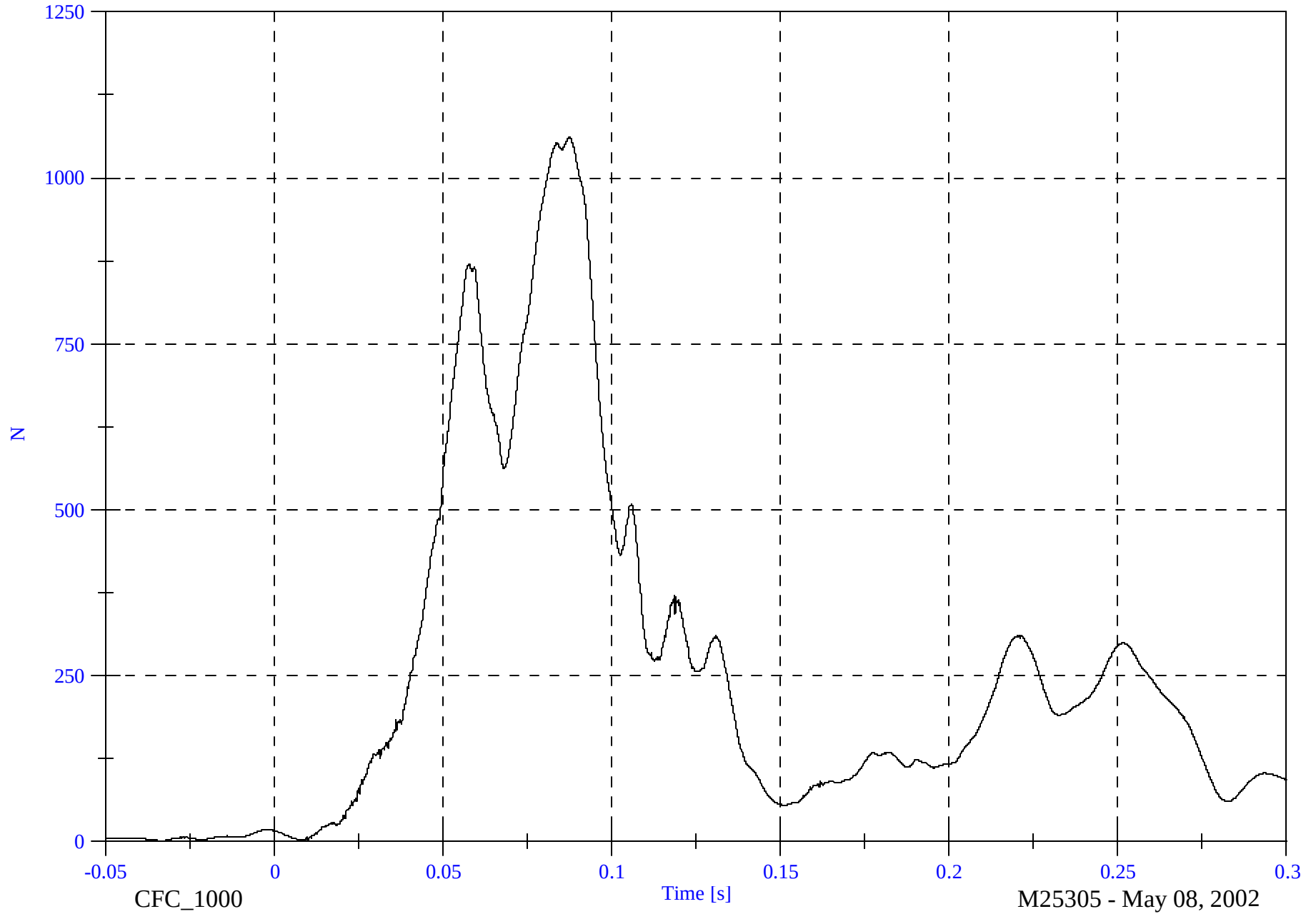
P4 Upper Neck F Resultant

Max: 1060.3 [N] at 0.087 [s]

Min: 0.7 [N] at -0.033 [s]

4-49

8642-NCAP-12

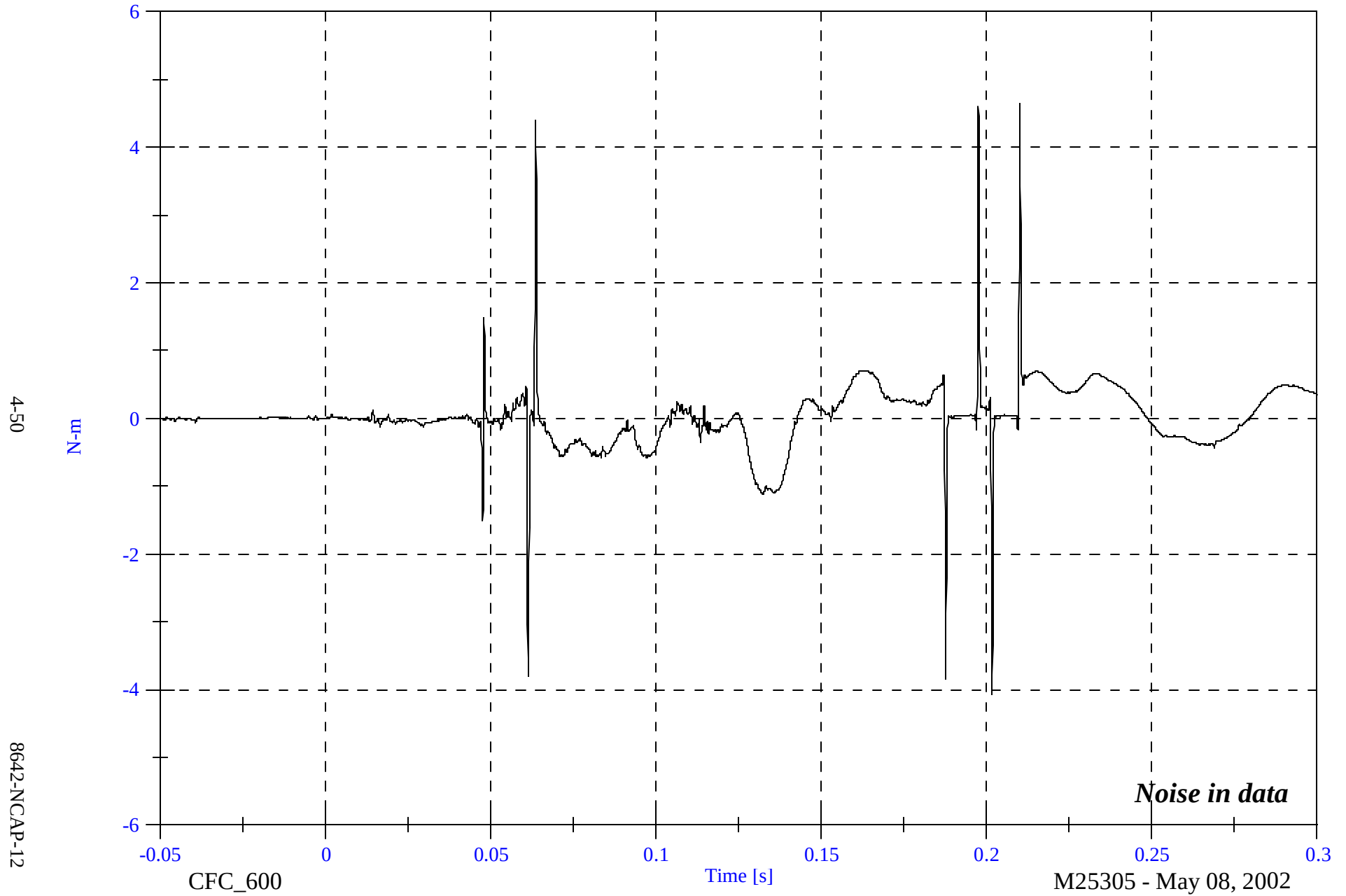


NCAP Test 12 - 2002 Honda Odyssey

P4 Upper Neck Mx

Max: 4.6 [N-m] at 0.210 [s]

Min: -4.1 [N-m] at 0.202 [s]



8642-NCAP-12

NCAP Test 12 - 2002 Honda Odyssey

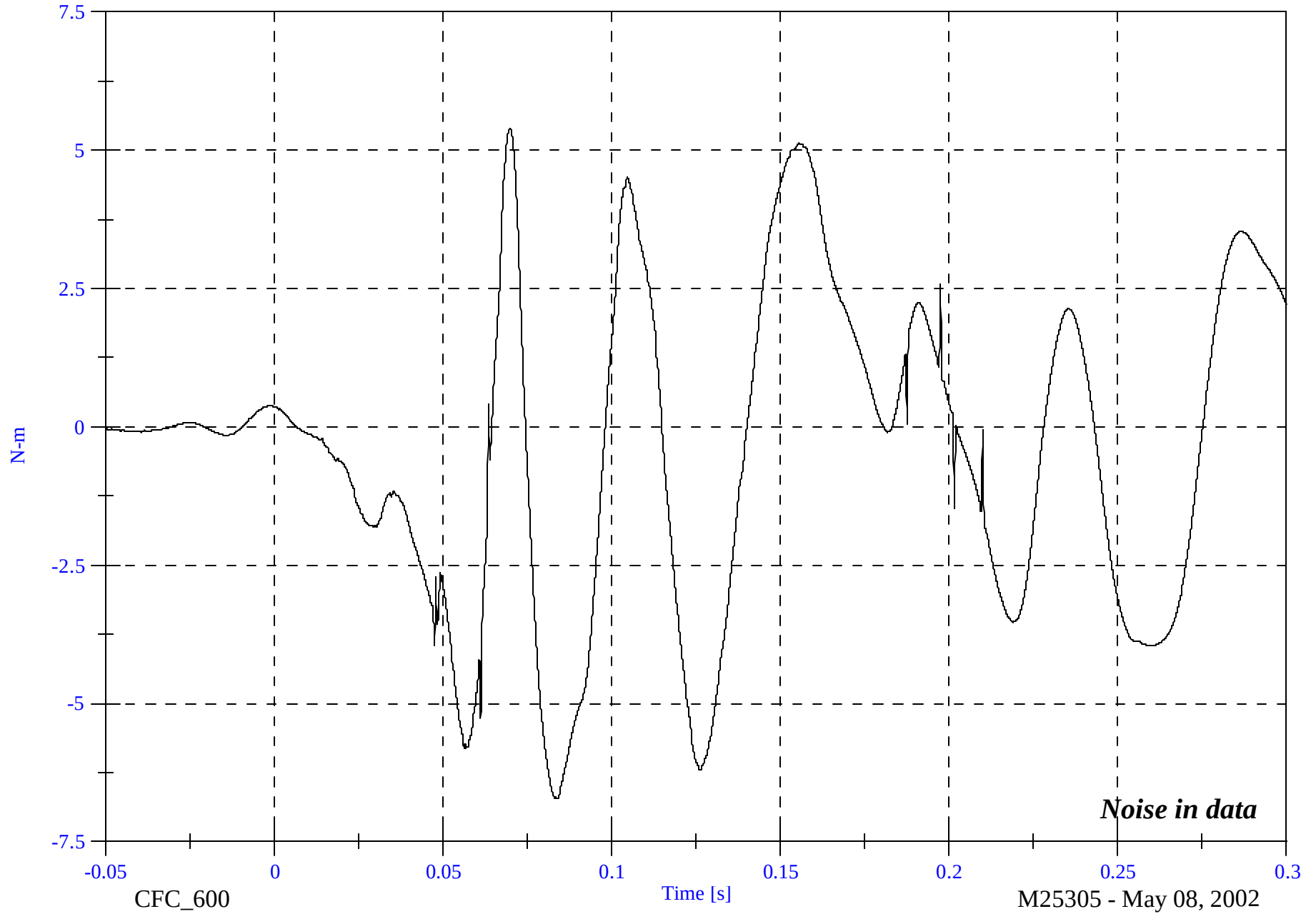
P4 Upper Neck My

Max: 5.4 [N-m] at 0.070 [s]

Min: -6.7 [N-m] at 0.084 [s]

4-51

8642-NCAP-12



NCAP Test 12 - 2002 Honda Odyssey

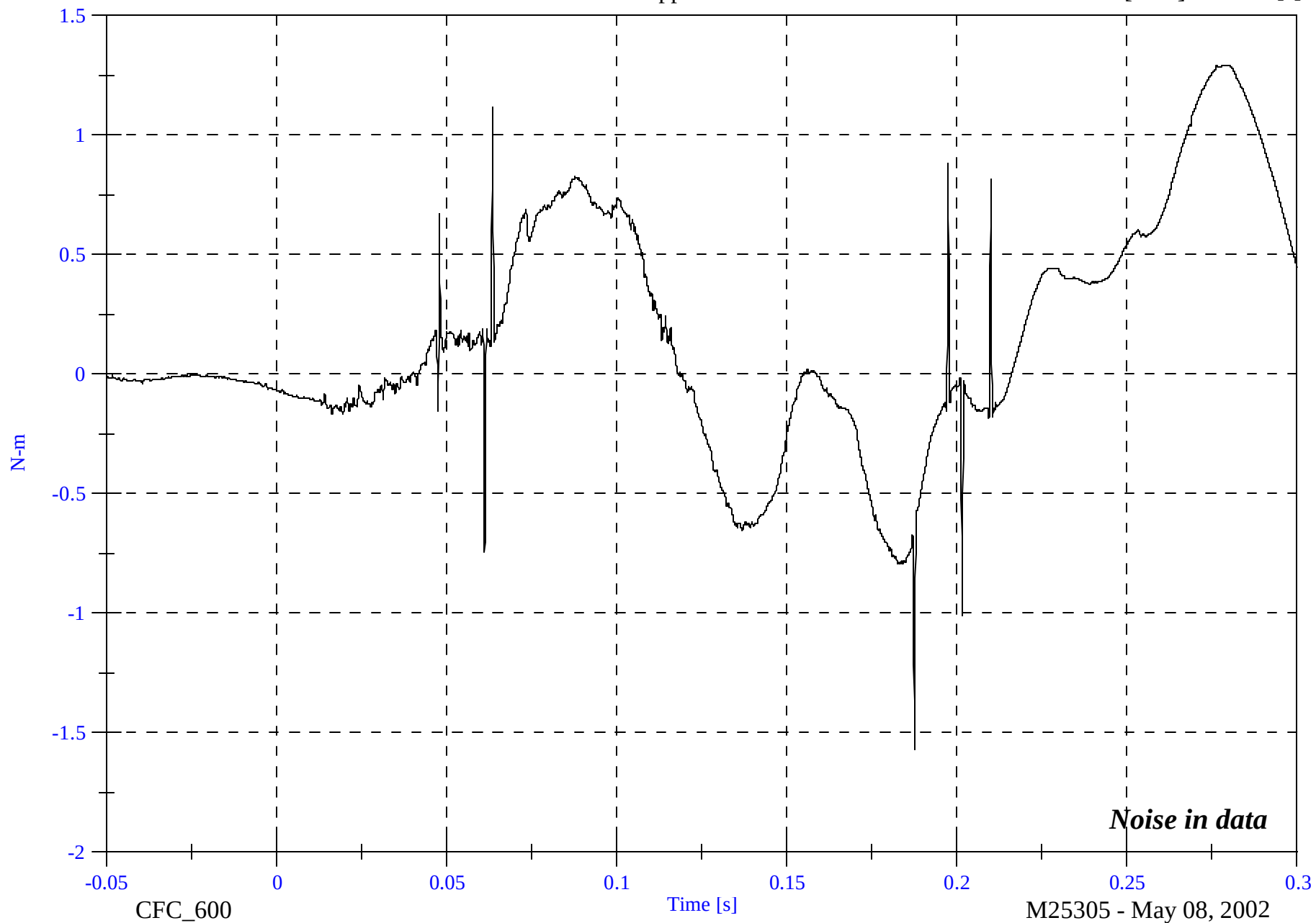
P4 Upper Neck Mz

Max: 1.3 [N-m] at 0.279 [s]

Min: -1.6 [N-m] at 0.187 [s]

4-52

8642-NCAP-12

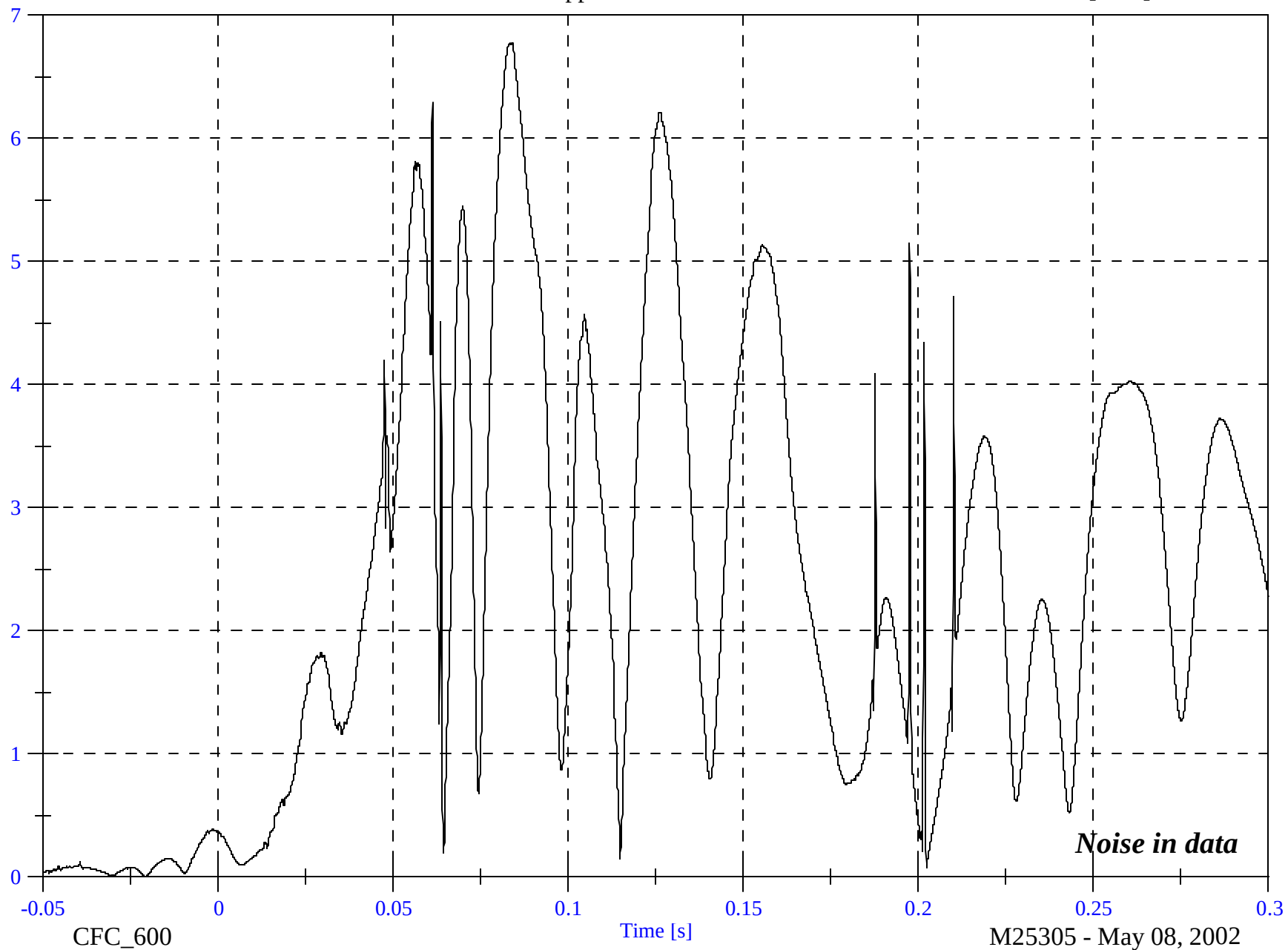


NCAP Test 12 - 2002 Honda Odyssey

P4 Upper Neck M Resultant

Max: 6.8 [N-m] at 0.084 [s]

Min: 0.0 [N-m] at -0.021 [s]

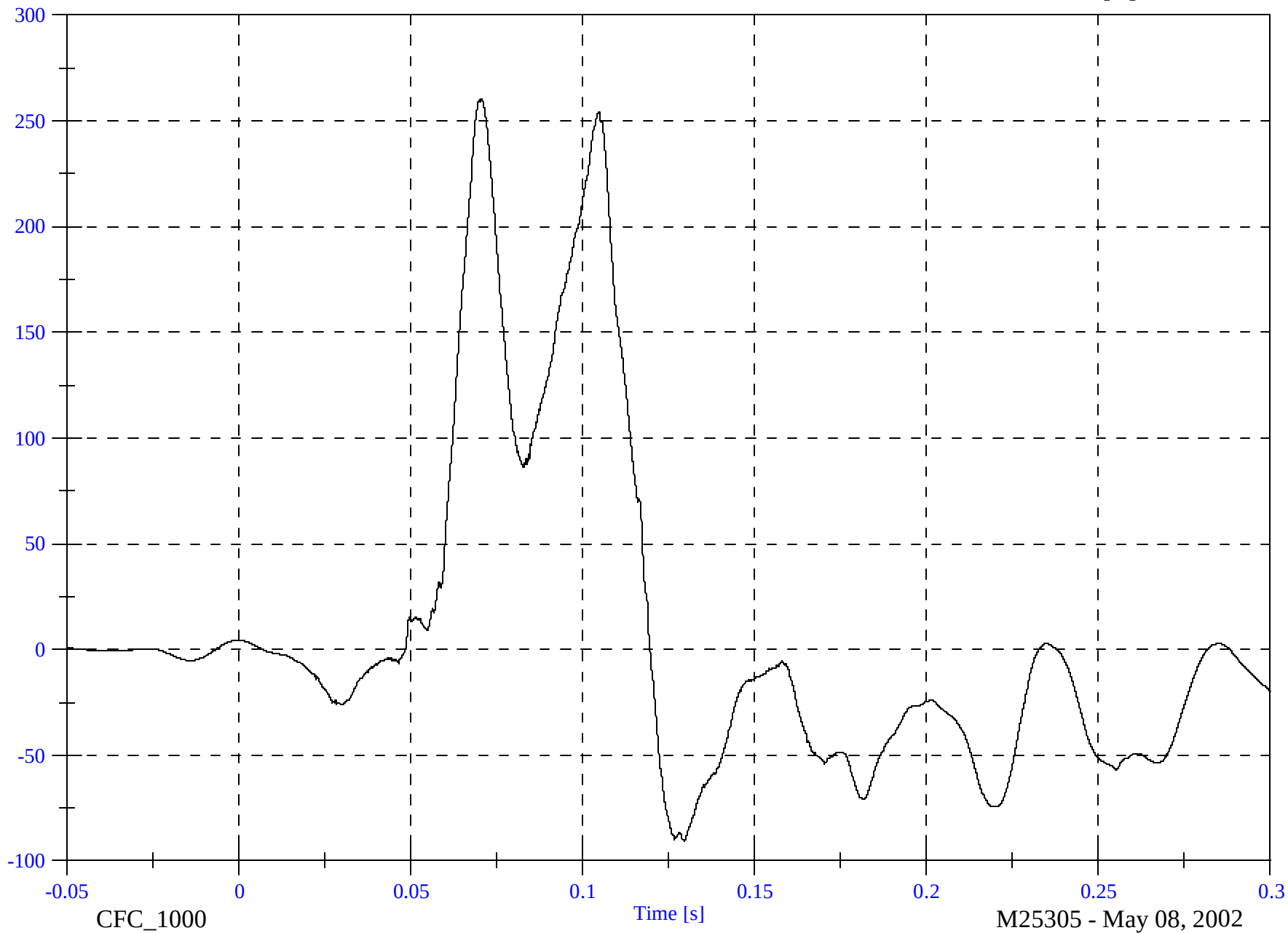


NCAP Test 12 - 2002 Honda Odyssey

P4 Lower Neck Fx

Max: 260.1 [N] at 0.071 [s]

Min: -90.5 [N] at 0.130 [s]



NCAP Test 12 - 2002 Honda Odyssey

P4 Lower Neck Fy

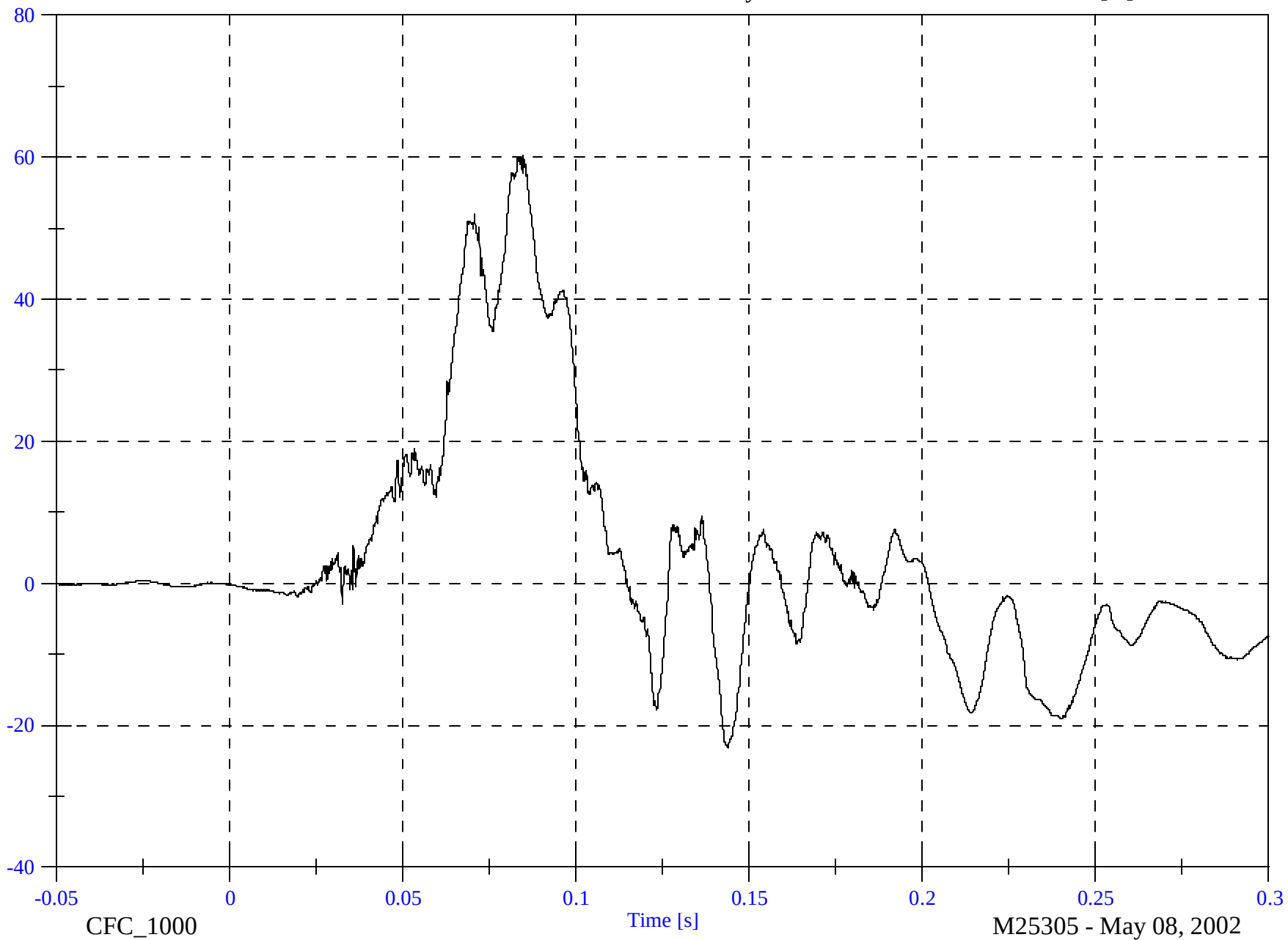
Max: 60.1 [N] at 0.085 [s]

Min: -23.1 [N] at 0.144 [s]

4-55

8642-NCAP-12

N

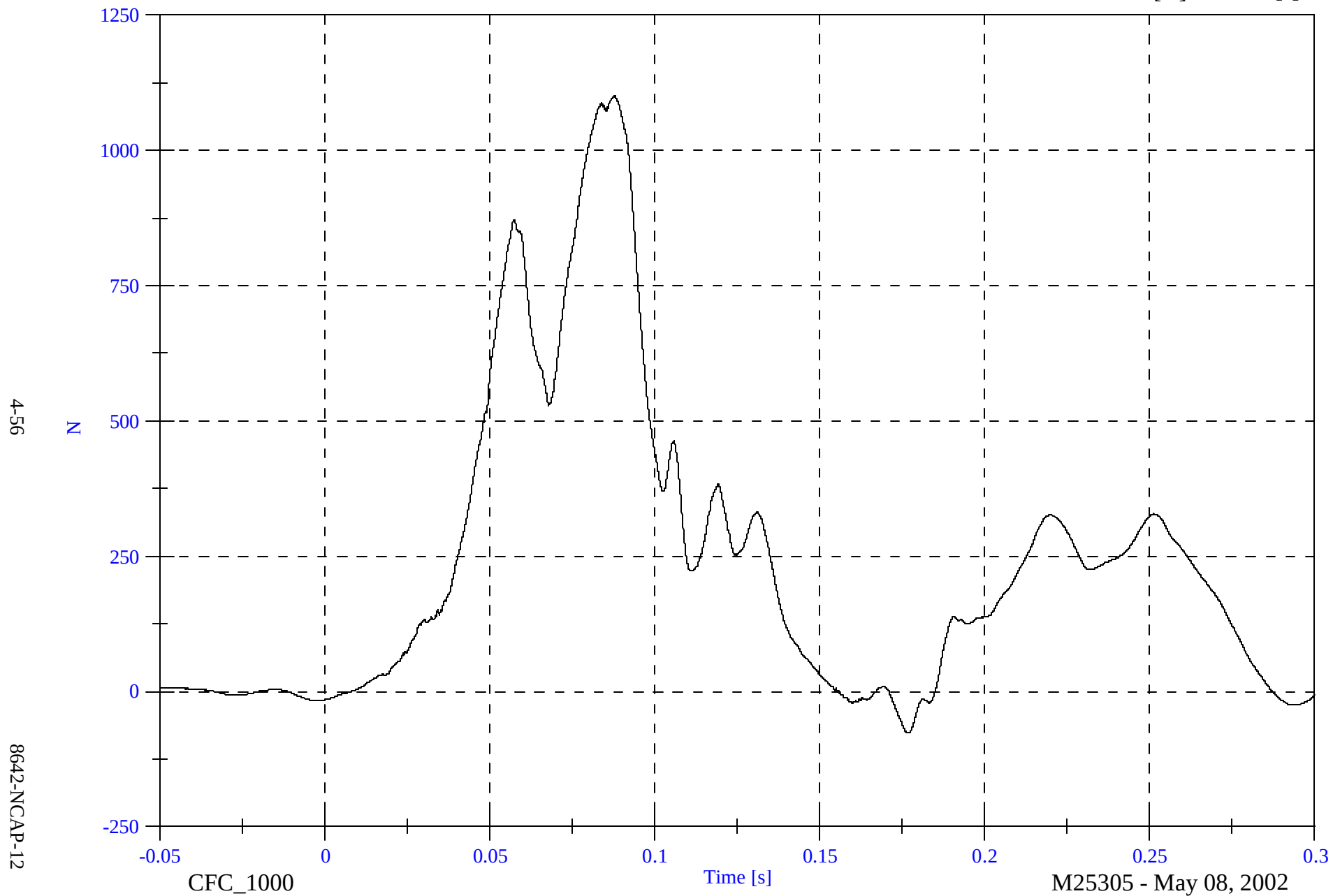


NCAP Test 12 - 2002 Honda Odyssey

P4 Lower Neck Fz

Max: 1100.4 [N] at 0.088 [s]

Min: -76.9 [N] at 0.177 [s]



NCAP Test 12 - 2002 Honda Odyssey

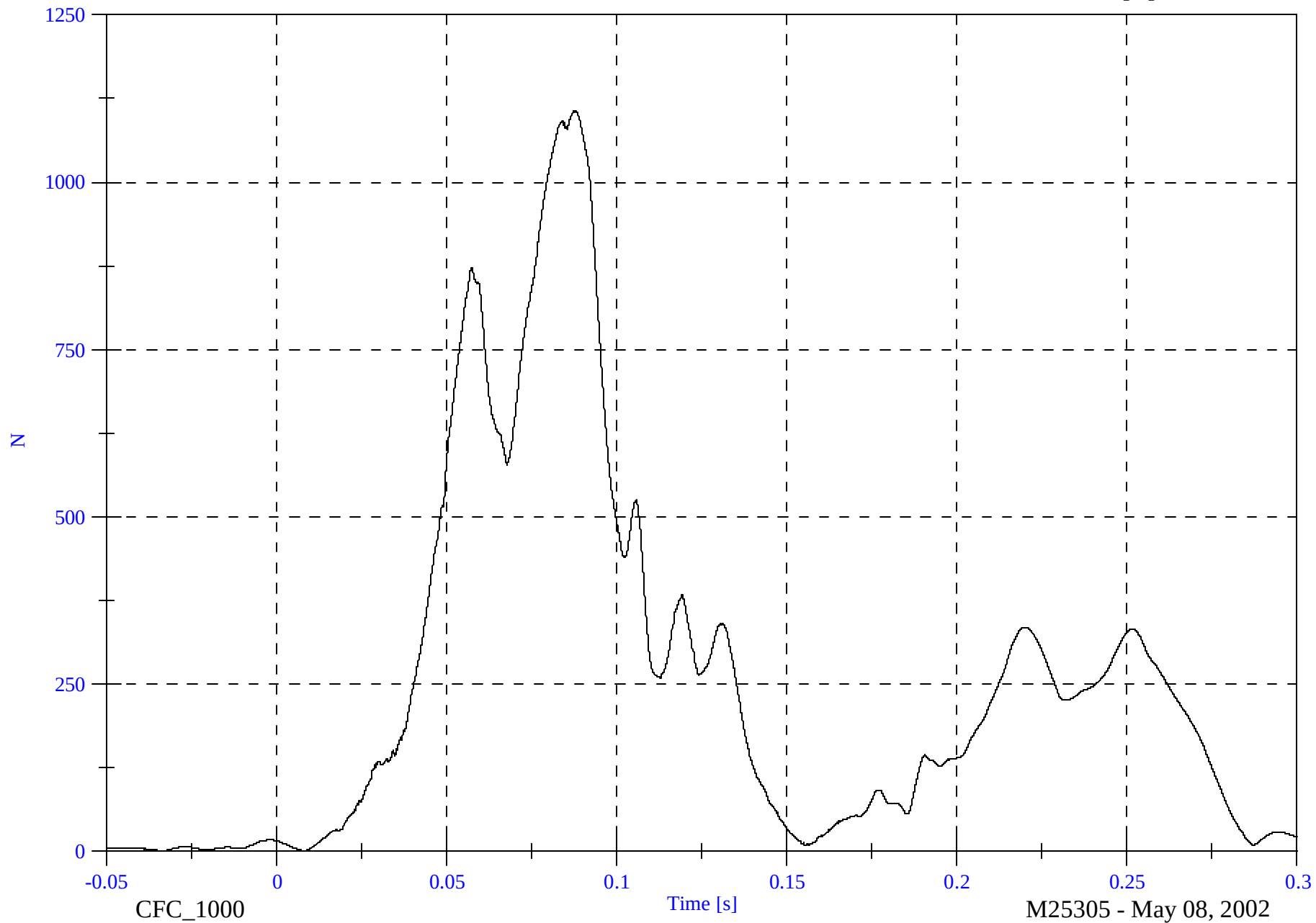
P4 Lower Neck F Resultant

Max: 1107.3 [N] at 0.088 [s]

Min: 0.4 [N] at -0.034 [s]

4-57

8642-NCAP-12



NCAP Test 12 - 2002 Honda Odyssey

P4 Lower Neck Mx

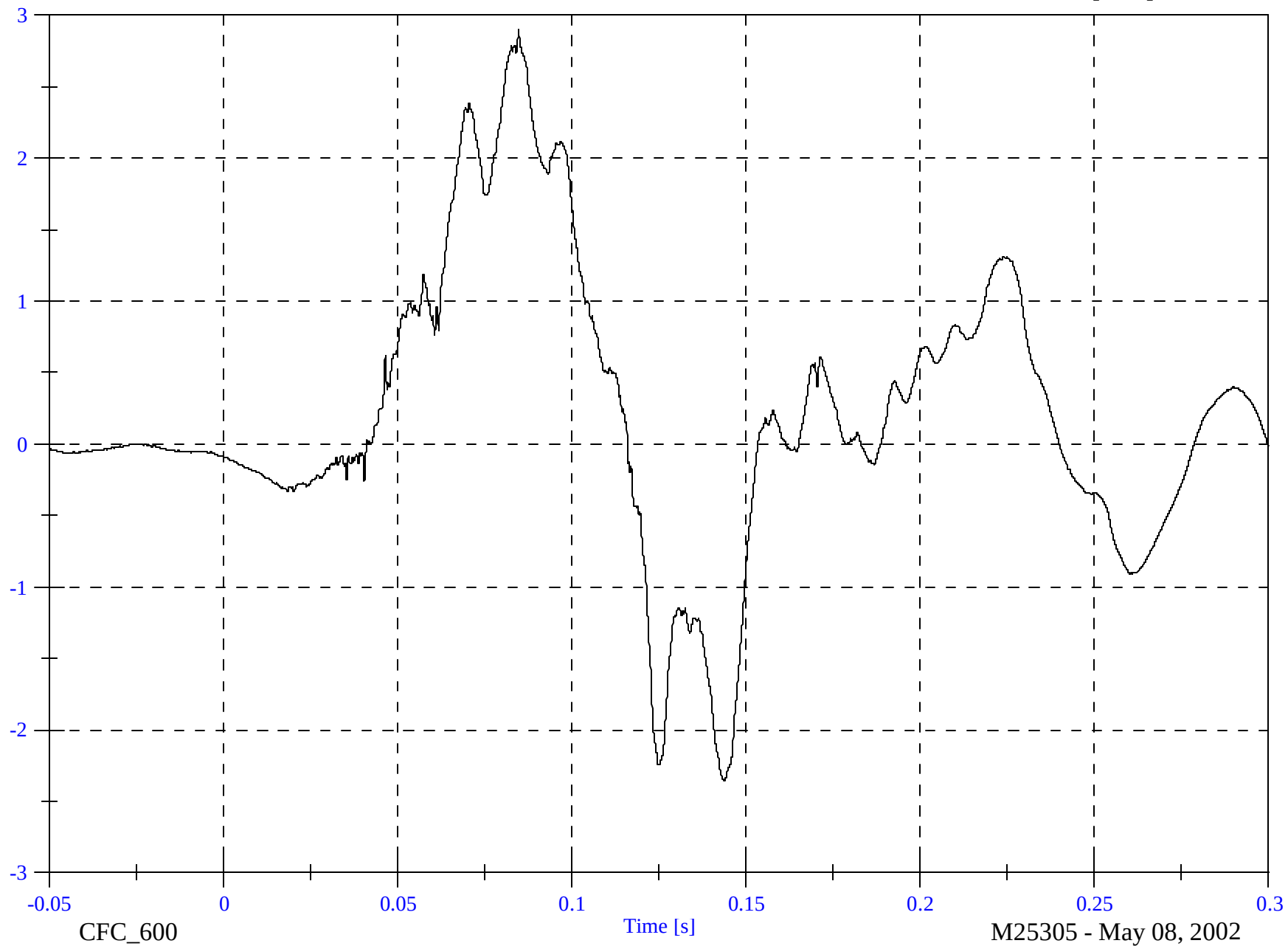
Max: 2.9 [N-m] at 0.085 [s]

Min: -2.4 [N-m] at 0.144 [s]

4-58

N-m

8642-NCAP-12



NCAP Test 12 - 2002 Honda Odyssey

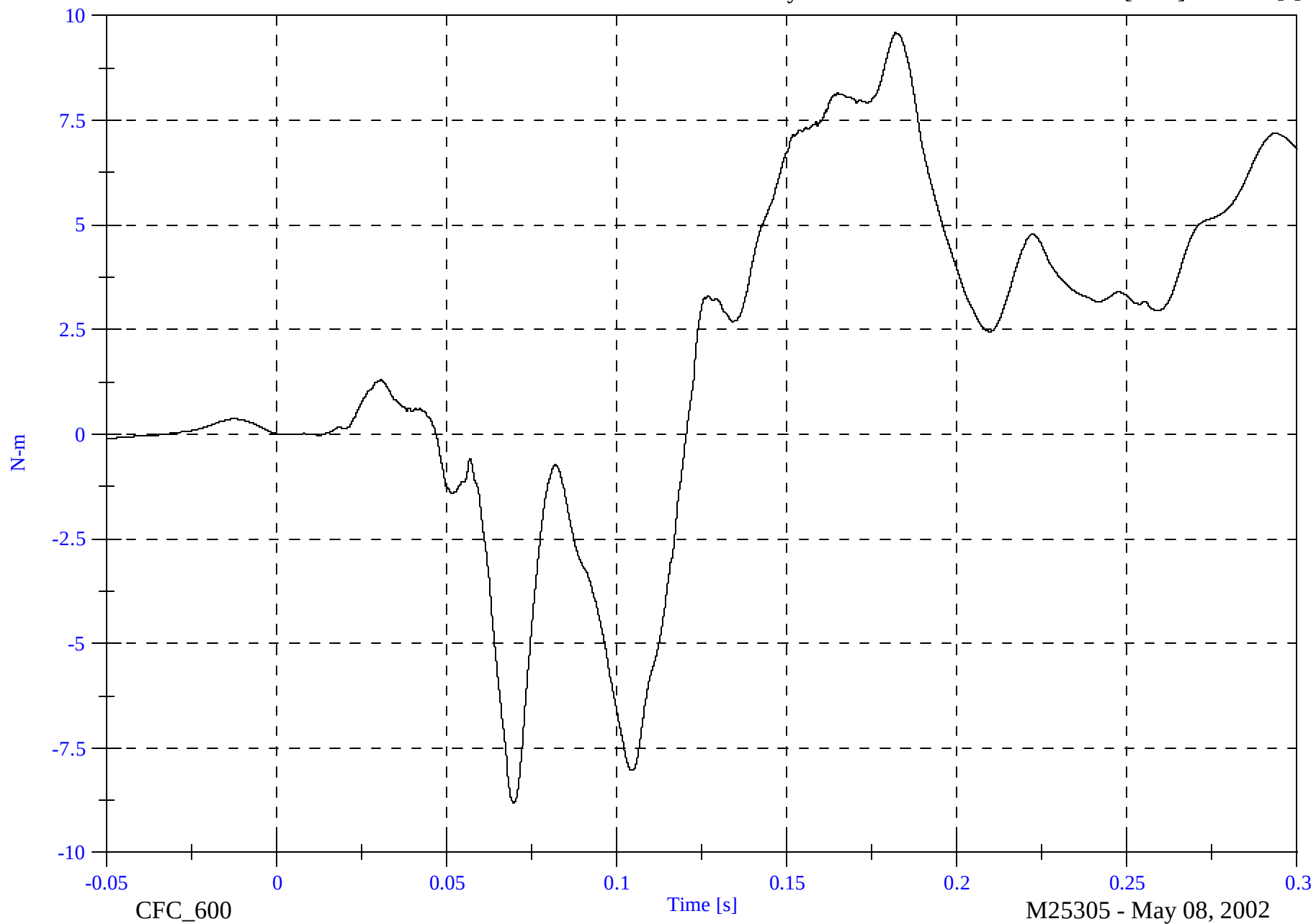
P4 Lower Neck My

Max: 9.6 [N-m] at 0.182 [s]

Min: -8.8 [N-m] at 0.070 [s]

4-59

8642-NCAP-12

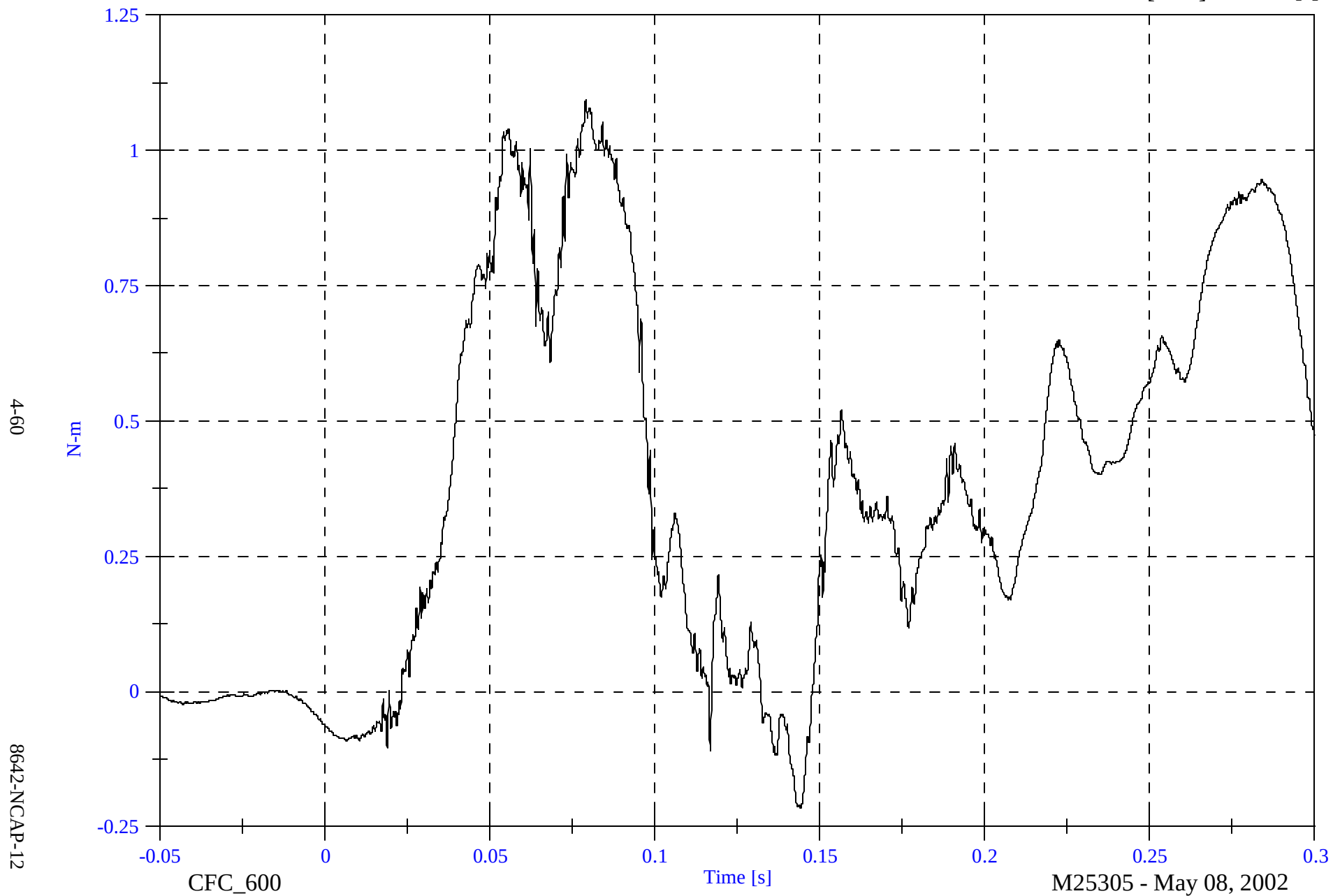


NCAP Test 12 - 2002 Honda Odyssey

P4 Lower Neck Mz

Max: 1.1 [N-m] at 0.079 [s]

Min: -0.2 [N-m] at 0.144 [s]

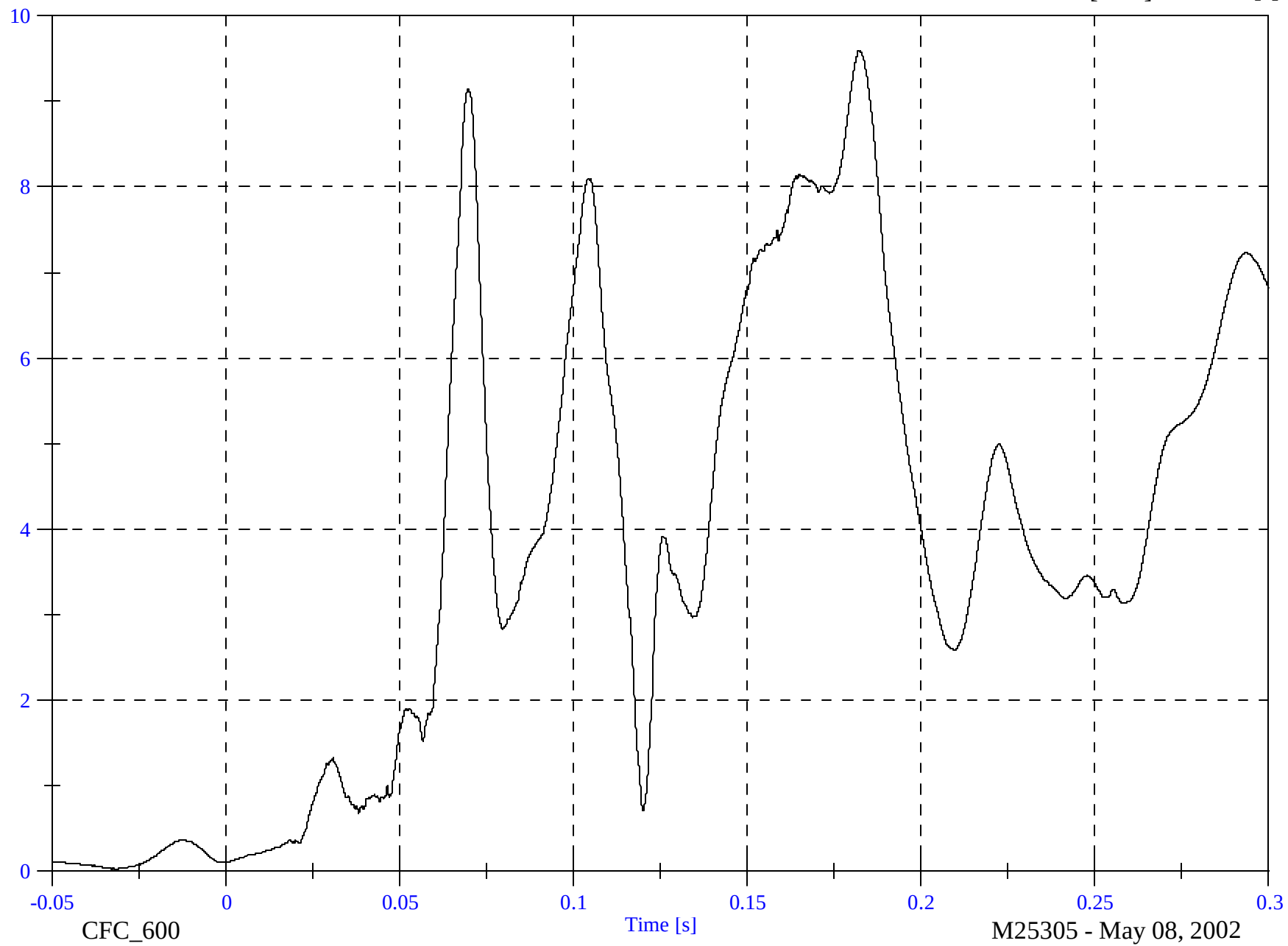


NCAP Test 12 - 2002 Honda Odyssey

P4 Lower Neck M Resultant

Max: 9.6 [N-m] at 0.182 [s]

Min: 0.0 [N-m] at -0.032 [s]



4-61

8642-NCAP-12

NCAP Test 12 - 2002 Honda Odyssey

Max: 32.8 [g] at 0.095 [s]

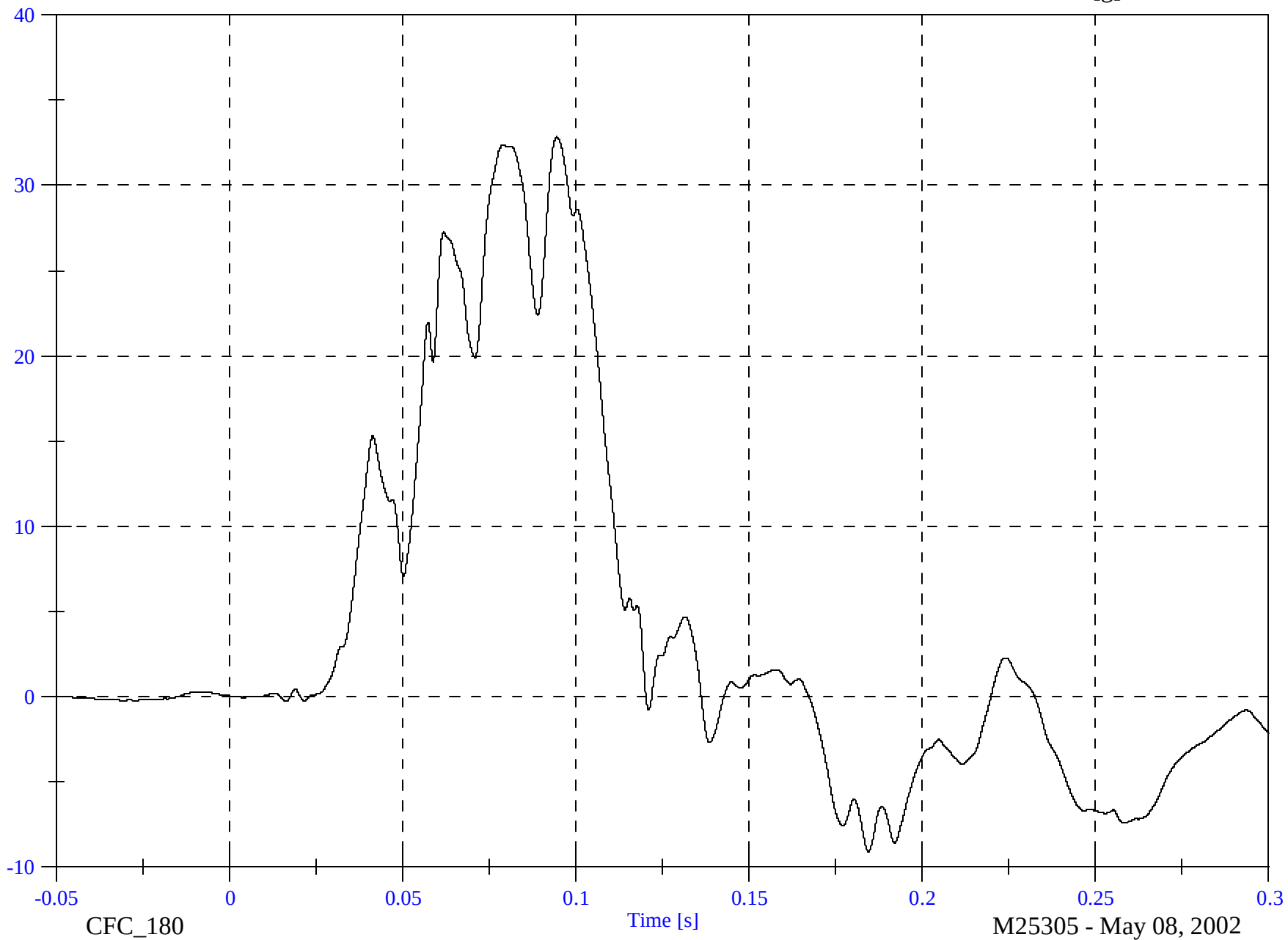
Min: -9.1 [g] at 0.184 [s]

P4 Chest x

4-62

8642-NCAP-12

g



NCAP Test 12 - 2002 Honda Odyssey

P4 Chest y

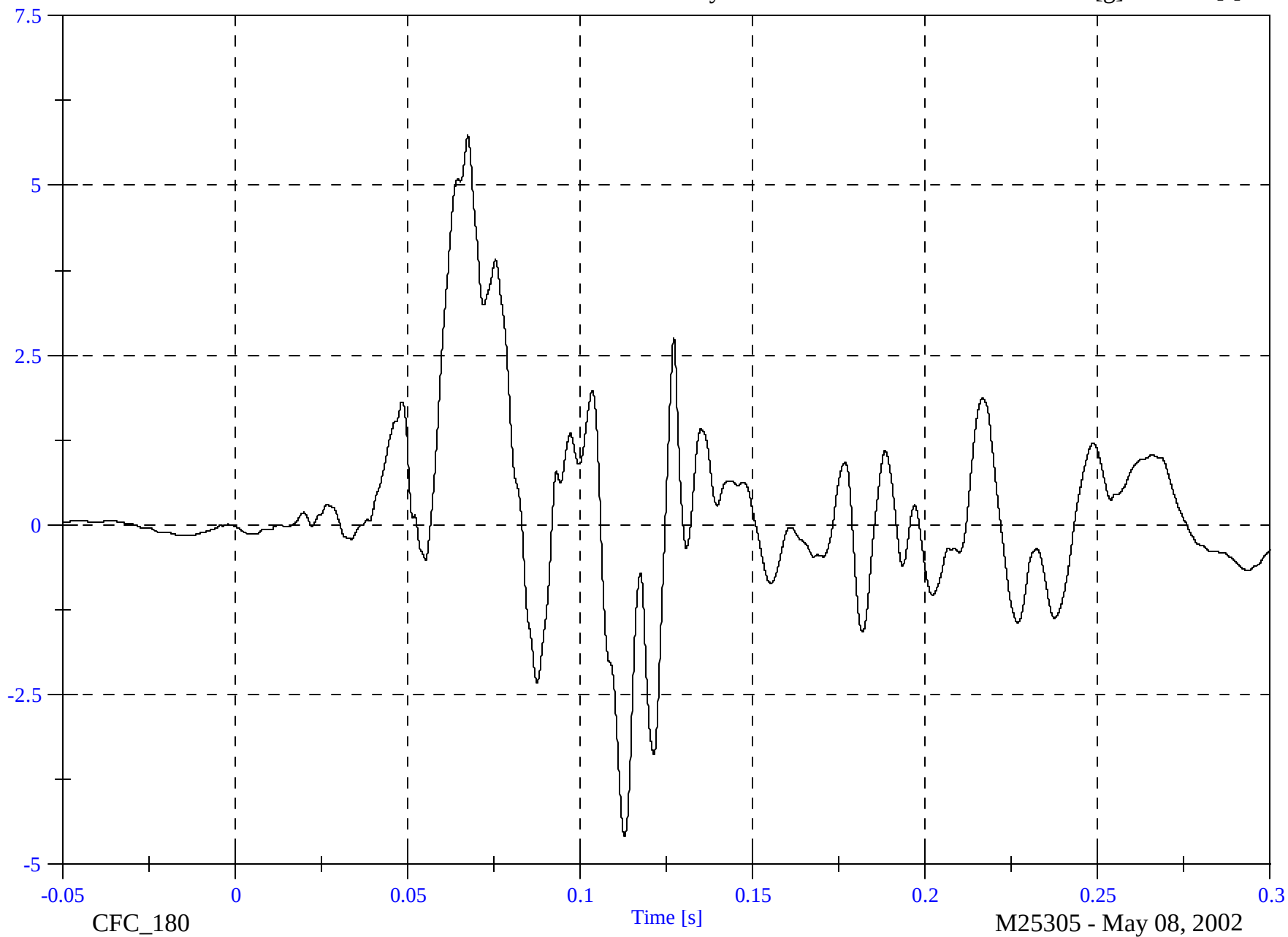
Max: 5.7 [g] at 0.067 [s]

Min: -4.6 [g] at 0.113 [s]

4-63

8642-NCAP-12

g



NCAP Test 12 - 2002 Honda Odyssey

P4 Chest z

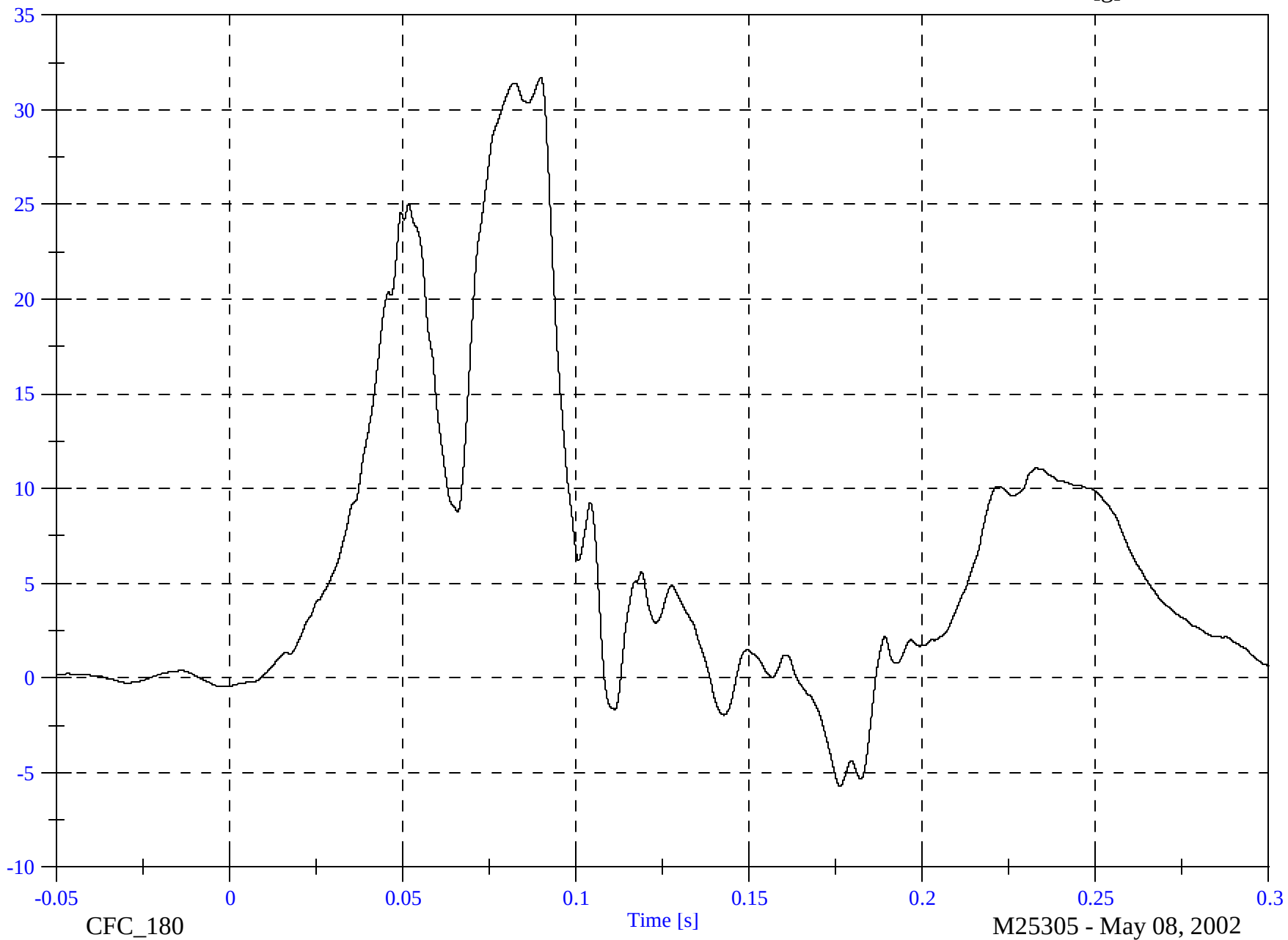
Max: 31.7 [g] at 0.090 [s]

Min: -5.7 [g] at 0.176 [s]

4-64

8642-NCAP-12

g



NCAP Test 12 - 2002 Honda Odyssey

P4 Chest Resultant

Max: 45.0 [g] at 0.082 [s]

Min: 0.1 [g] at 0.009 [s]

4-65

g

8642-NCAP-12



CFC_180

Time [s]

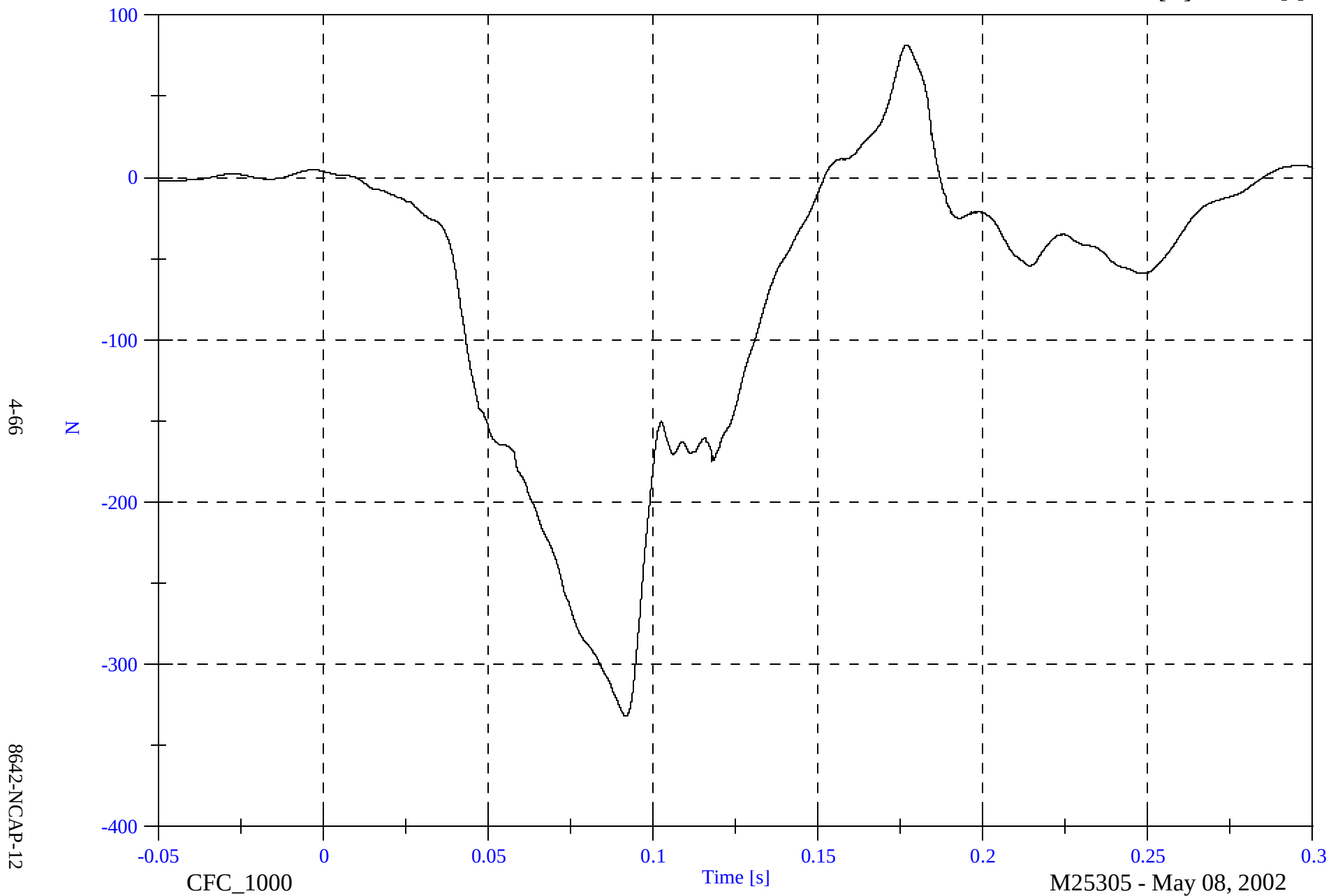
M25305 - May 08, 2002

NCAP Test 12 - 2002 Honda Odyssey

P4 Lumbar Fx

Max: 81.8 [N] at 0.177 [s]

Min: -331.8 [N] at 0.092 [s]



NCAP Test 12 - 2002 Honda Odyssey

P4 Lumbar Fy

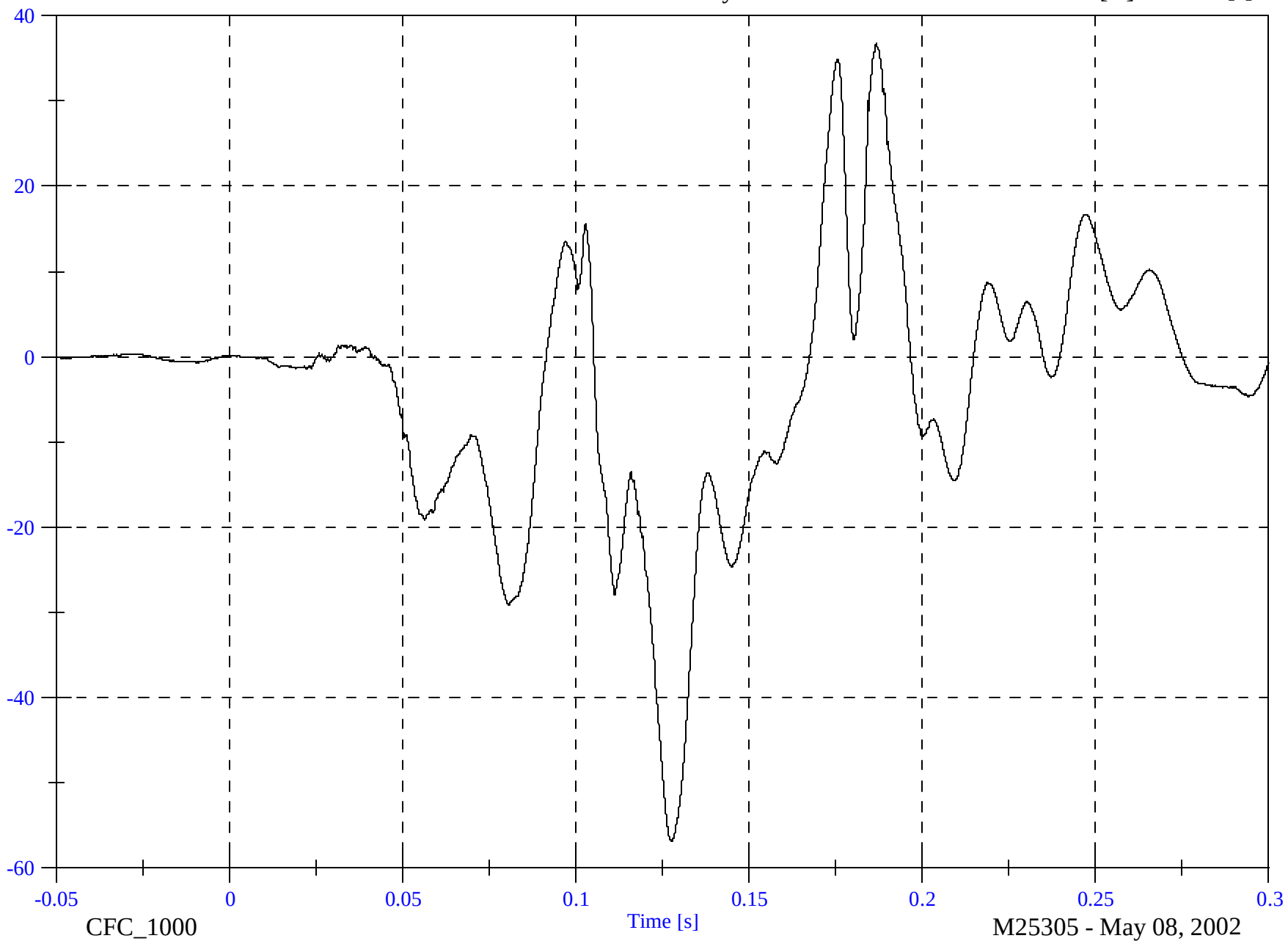
Max: 36.8 [N] at 0.187 [s]

Min: -56.8 [N] at 0.128 [s]

4-67

8642-NCAP-12

N

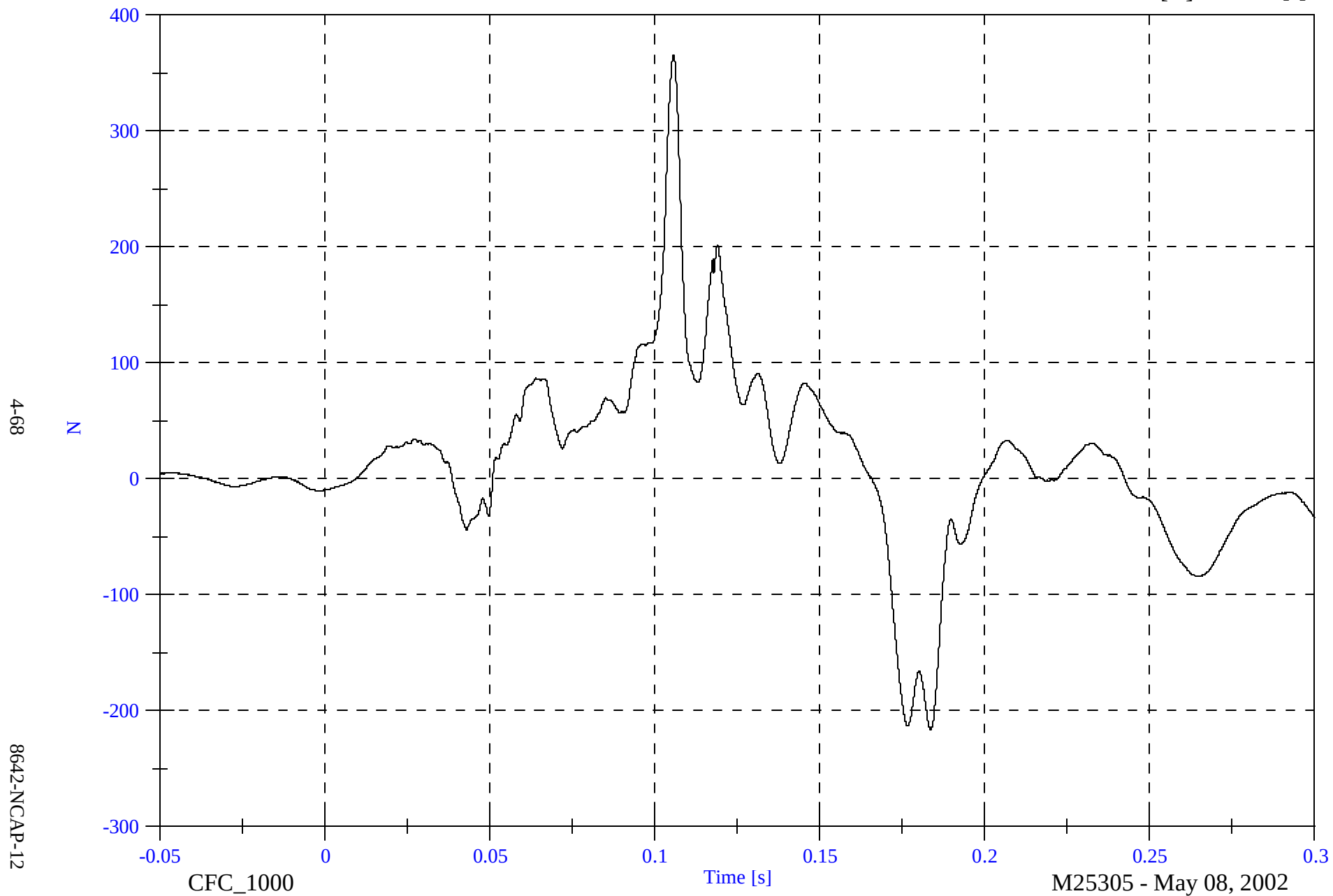


NCAP Test 12 - 2002 Honda Odyssey

Max: 364.9 [N] at 0.106 [s]

Min: -216.1 [N] at 0.184 [s]

P4 Lumbar Fz



NCAP Test 12 - 2002 Honda Odyssey

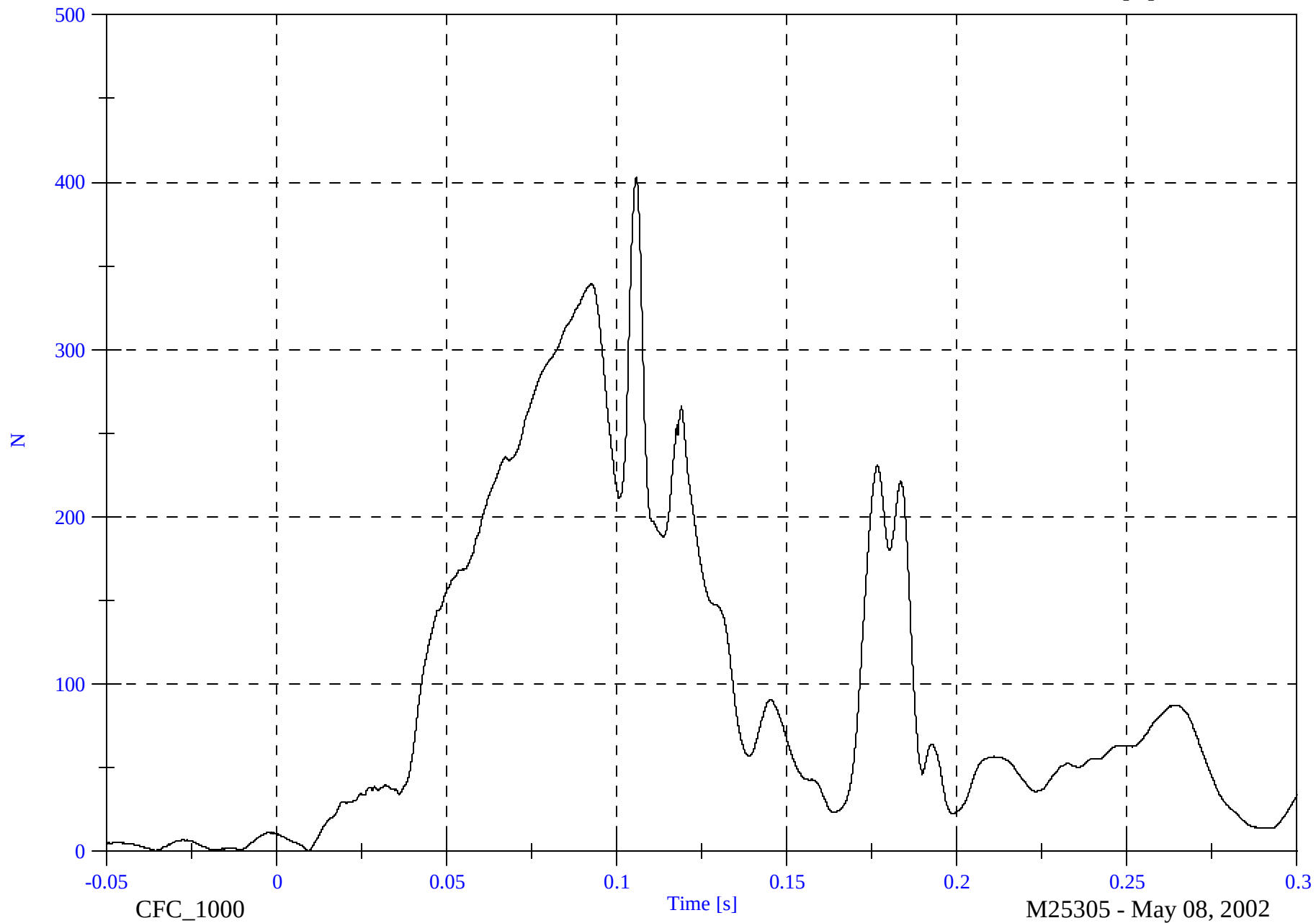
P4 Lumbar F Resultant

Max: 402.7 [N] at 0.106 [s]

Min: 0.2 [N] at 0.009 [s]

4-69

8642-NCAP-12

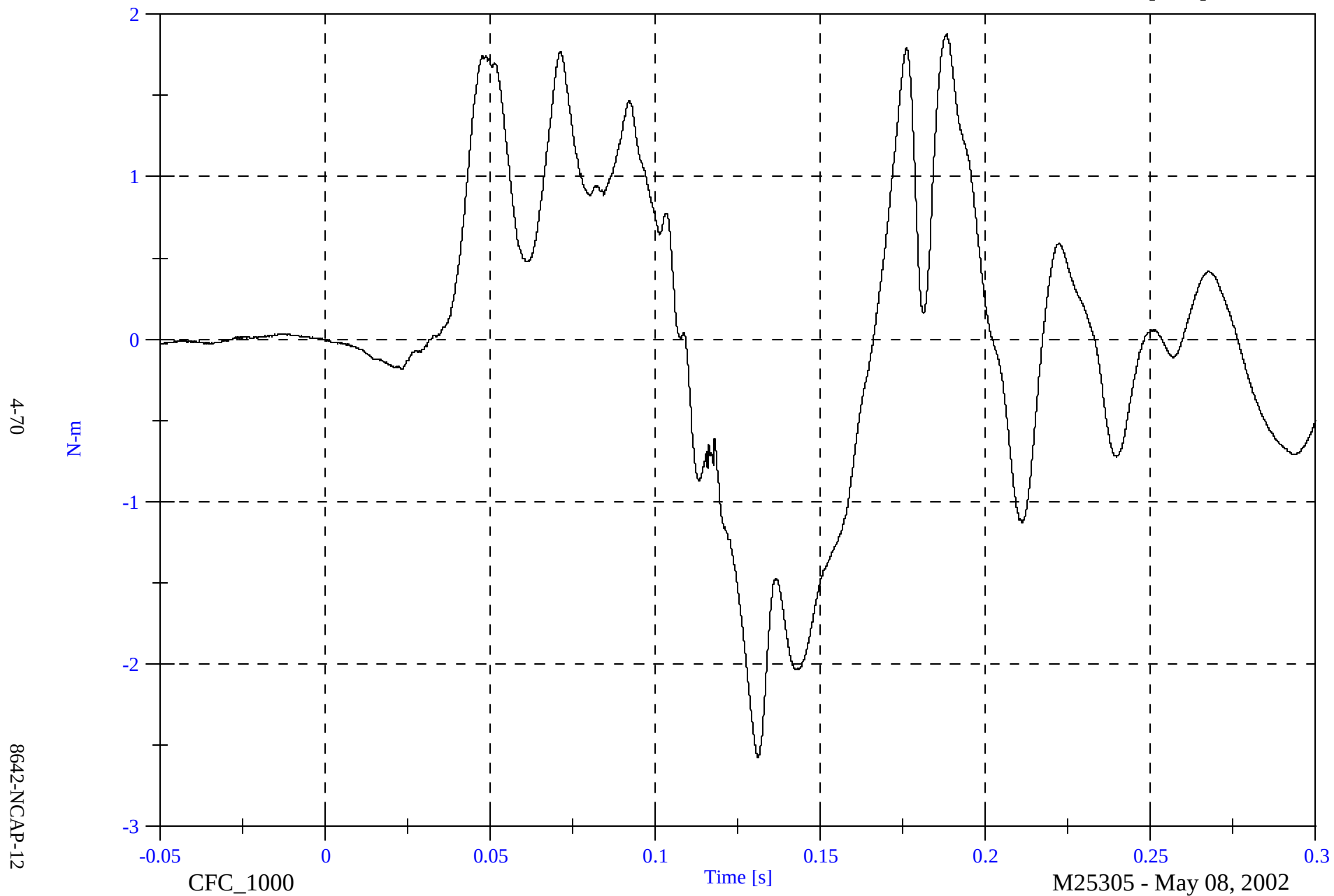


NCAP Test 12 - 2002 Honda Odyssey

P4 Lumbar Mx

Max: 1.9 [N-m] at 0.188 [s]

Min: -2.6 [N-m] at 0.131 [s]



NCAP Test 12 - 2002 Honda Odyssey

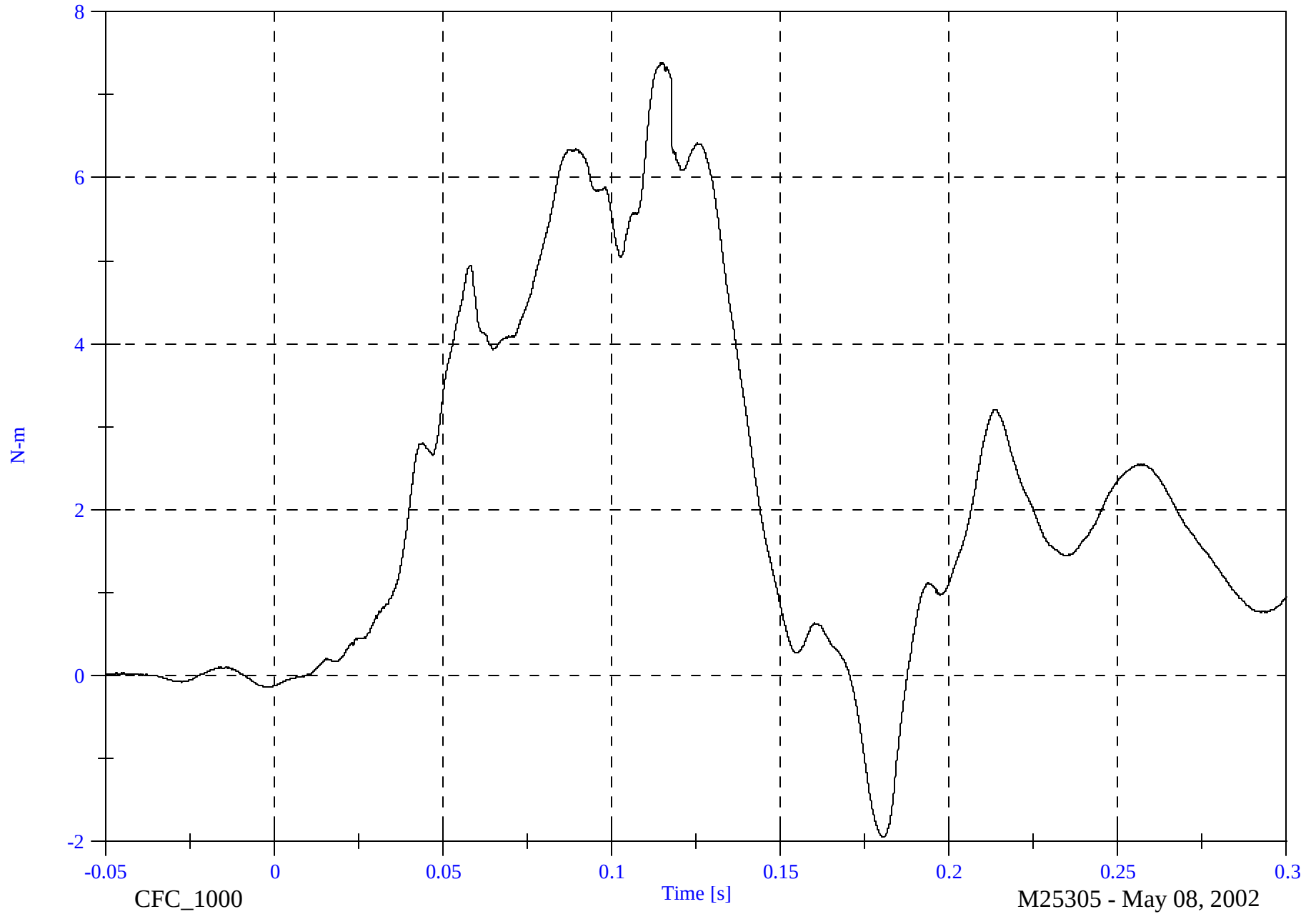
Max: 7.4 [N-m] at 0.115 [s]

Min: -1.9 [N-m] at 0.180 [s]

P4 Lumbar My

4-71

8642-NCAP-12

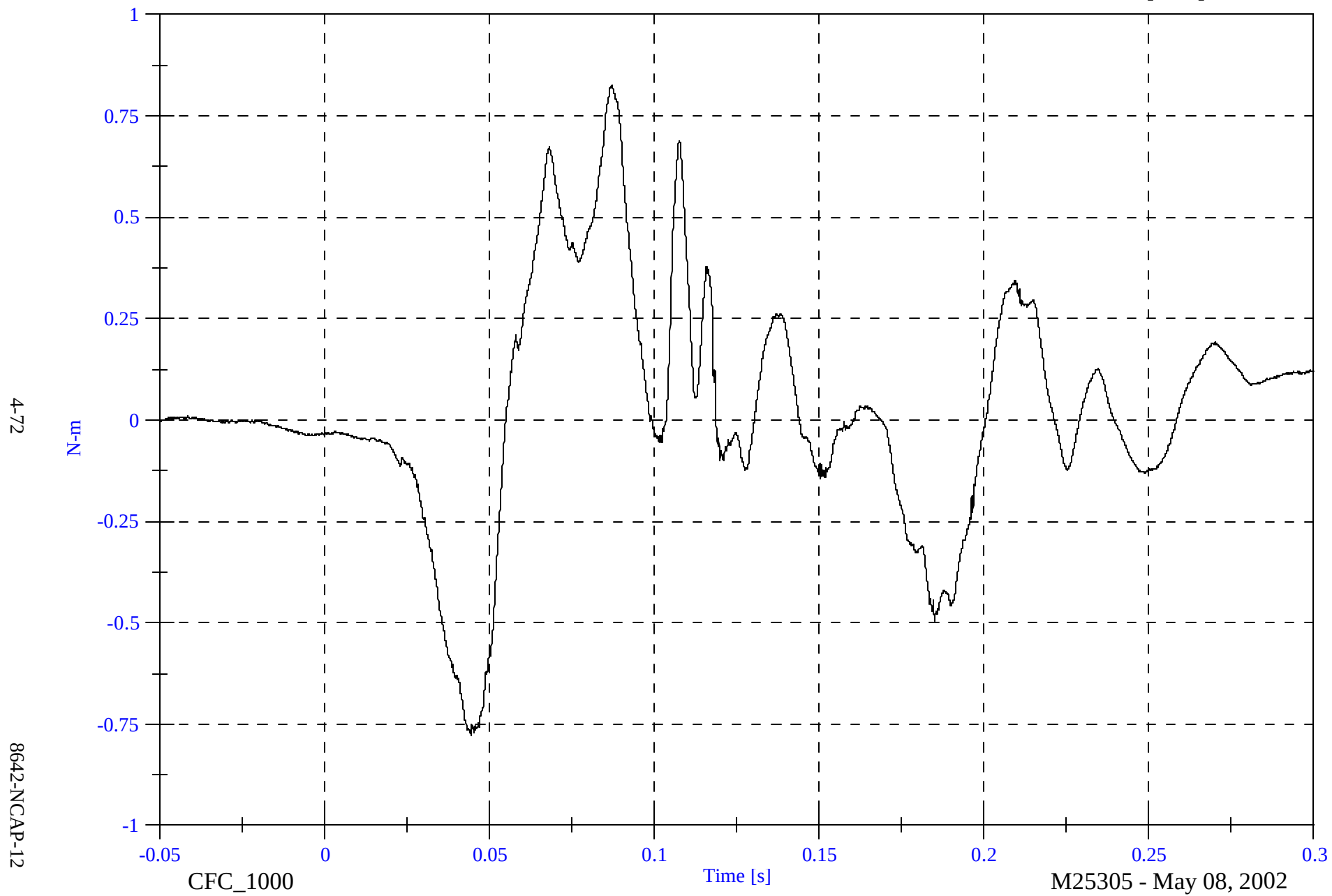


NCAP Test 12 - 2002 Honda Odyssey

P4 Lumbar Mz

Max: 0.8 [N-m] at 0.087 [s]

Min: -0.8 [N-m] at 0.044 [s]



NCAP Test 12 - 2002 Honda Odyssey

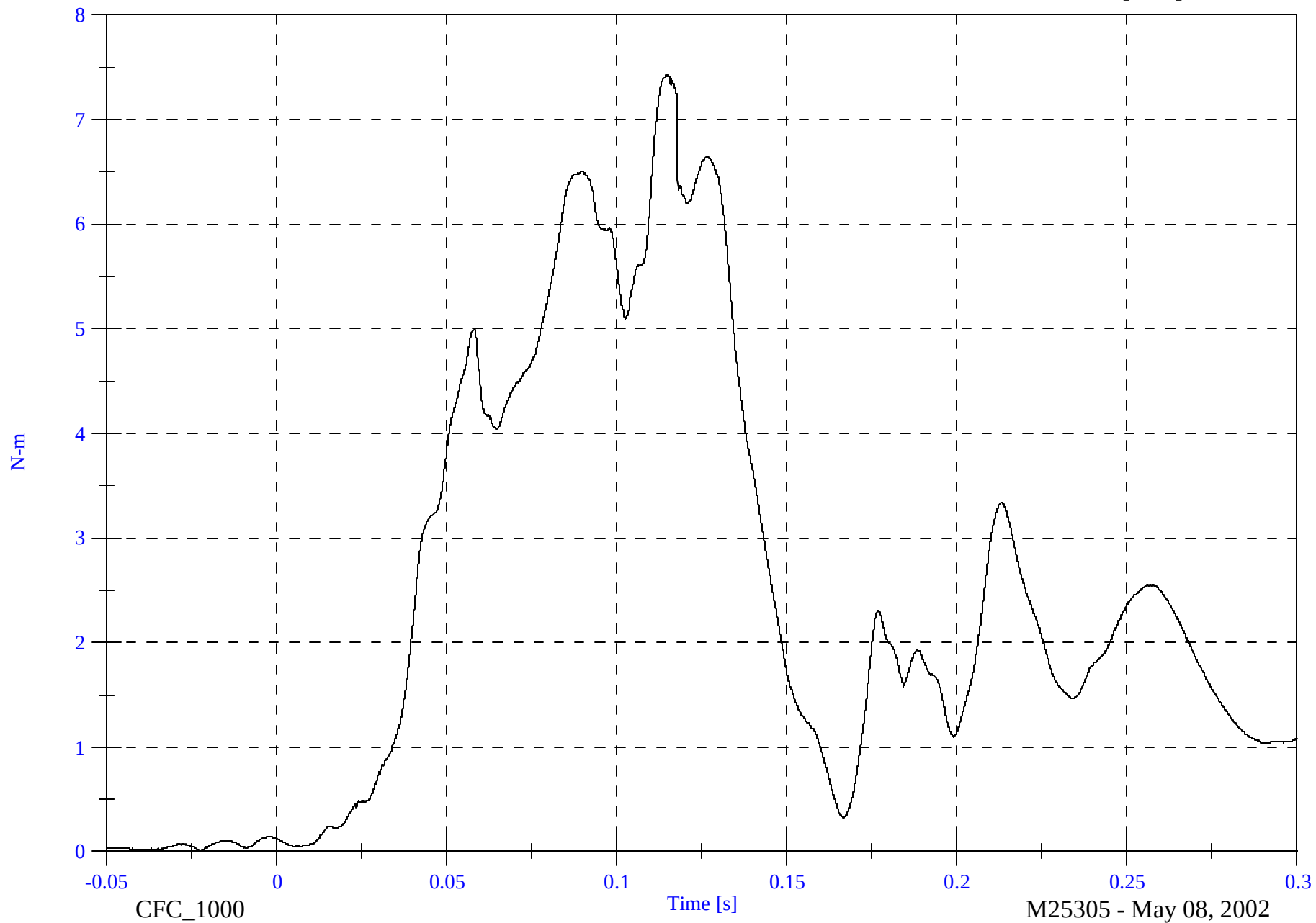
P4 Lumbar M Resultant

Max: 7.4 [N-m] at 0.115 [s]

Min: 0.0 [N-m] at -0.023 [s]

4-73

8642-NCAP-12



NCAP Test 12 - 2002 Honda Odyssey

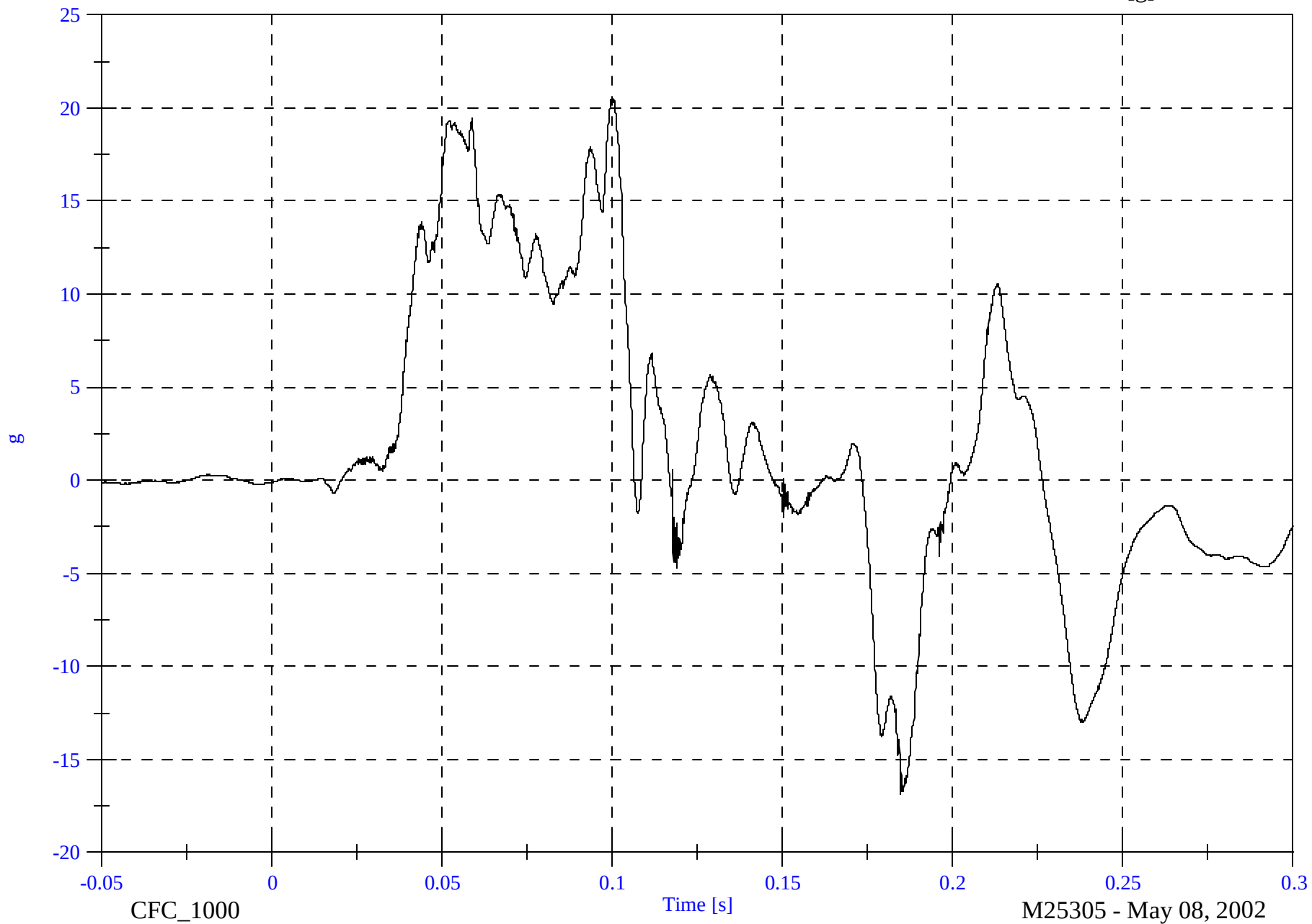
P4 Pelvic x

Max: 20.6 [g] at 0.100 [s]

Min: -16.9 [g] at 0.185 [s]

4-74

8642-NCAP-12

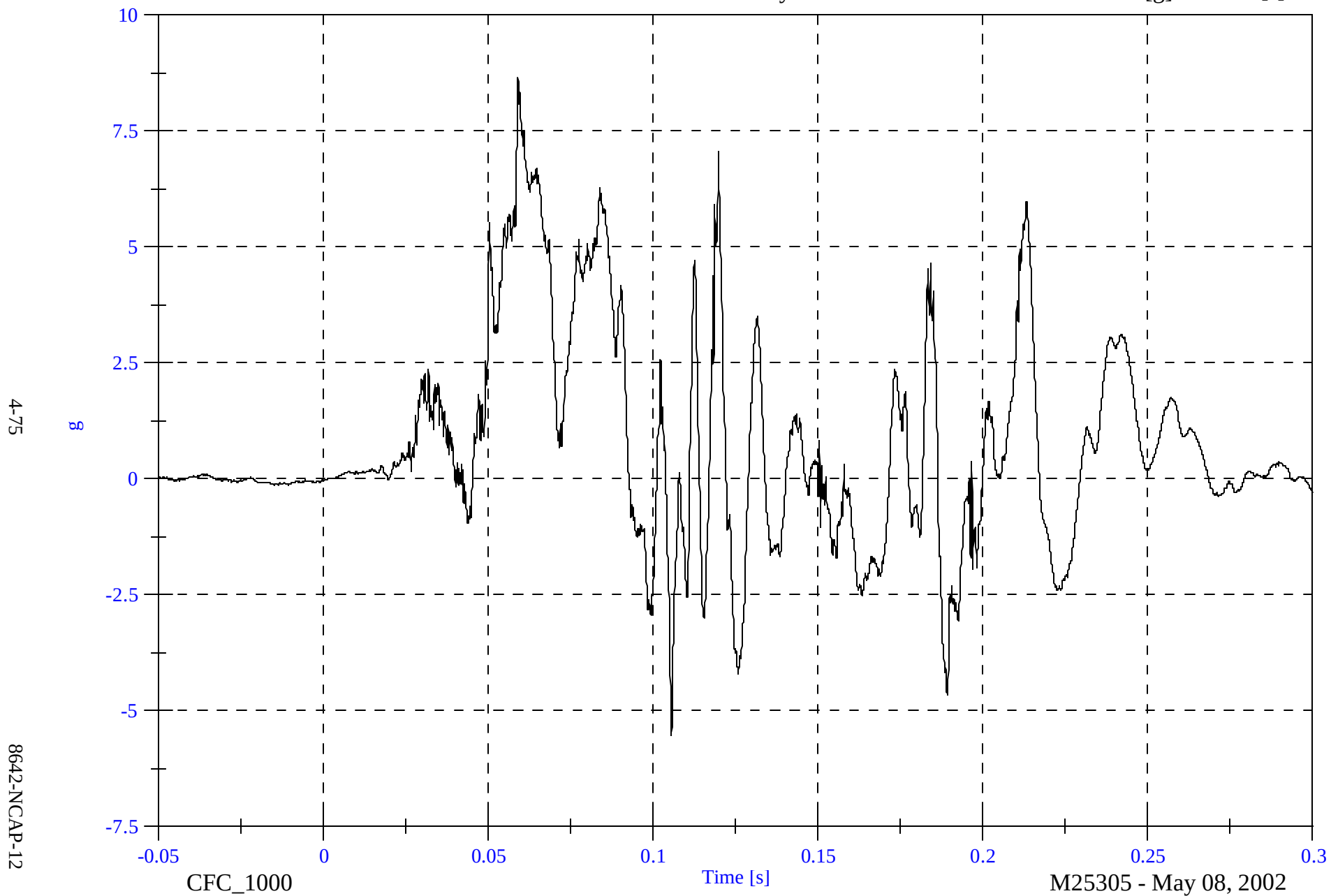


NCAP Test 12 - 2002 Honda Odyssey

P4 Pelvic y

Max: 8.6 [g] at 0.059 [s]

Min: -5.5 [g] at 0.106 [s]



NCAP Test 12 - 2002 Honda Odyssey

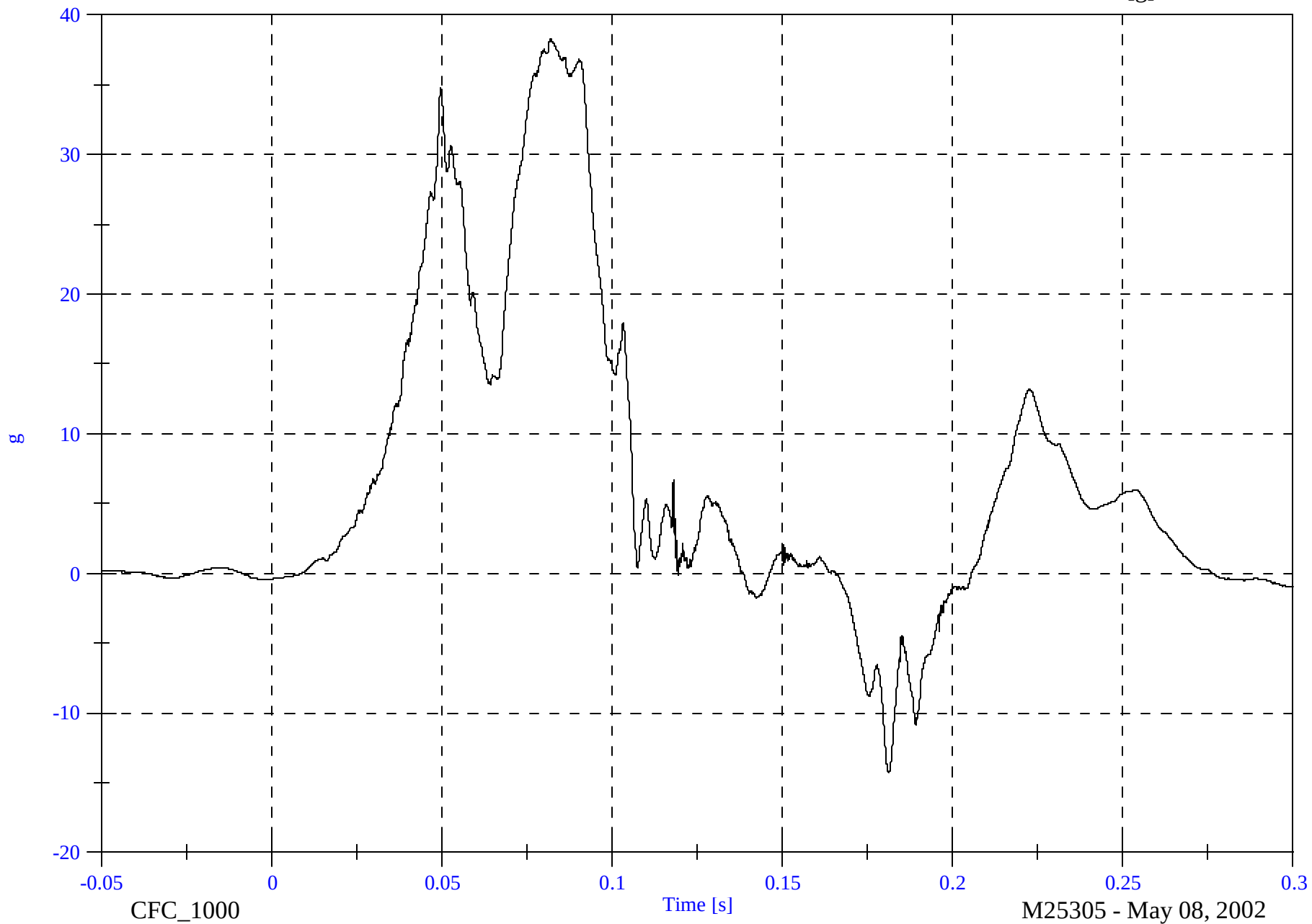
P4 Pelvic z

Max: 38.3 [g] at 0.082 [s]

Min: -14.3 [g] at 0.181 [s]

4-76

8642-NCAP-12

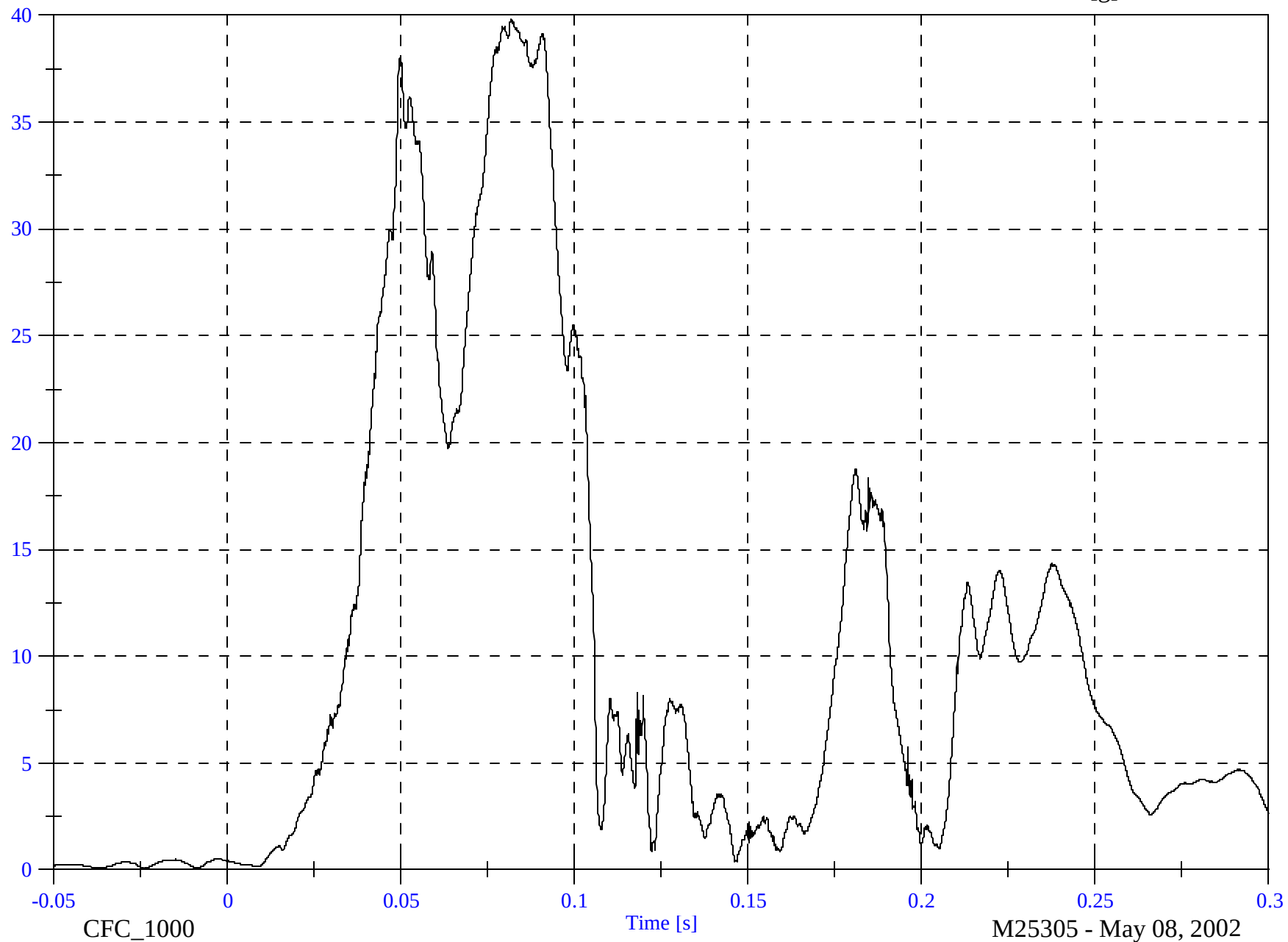


NCAP Test 12 - 2002 Honda Odyssey

P4 Pelvic Resultant

Max: 39.8 [g] at 0.082 [s]

Min: 0.1 [g] at -0.024 [s]



4-77

8642-NCAP-12

NCAP Test 12 - 2002 Honda Odyssey

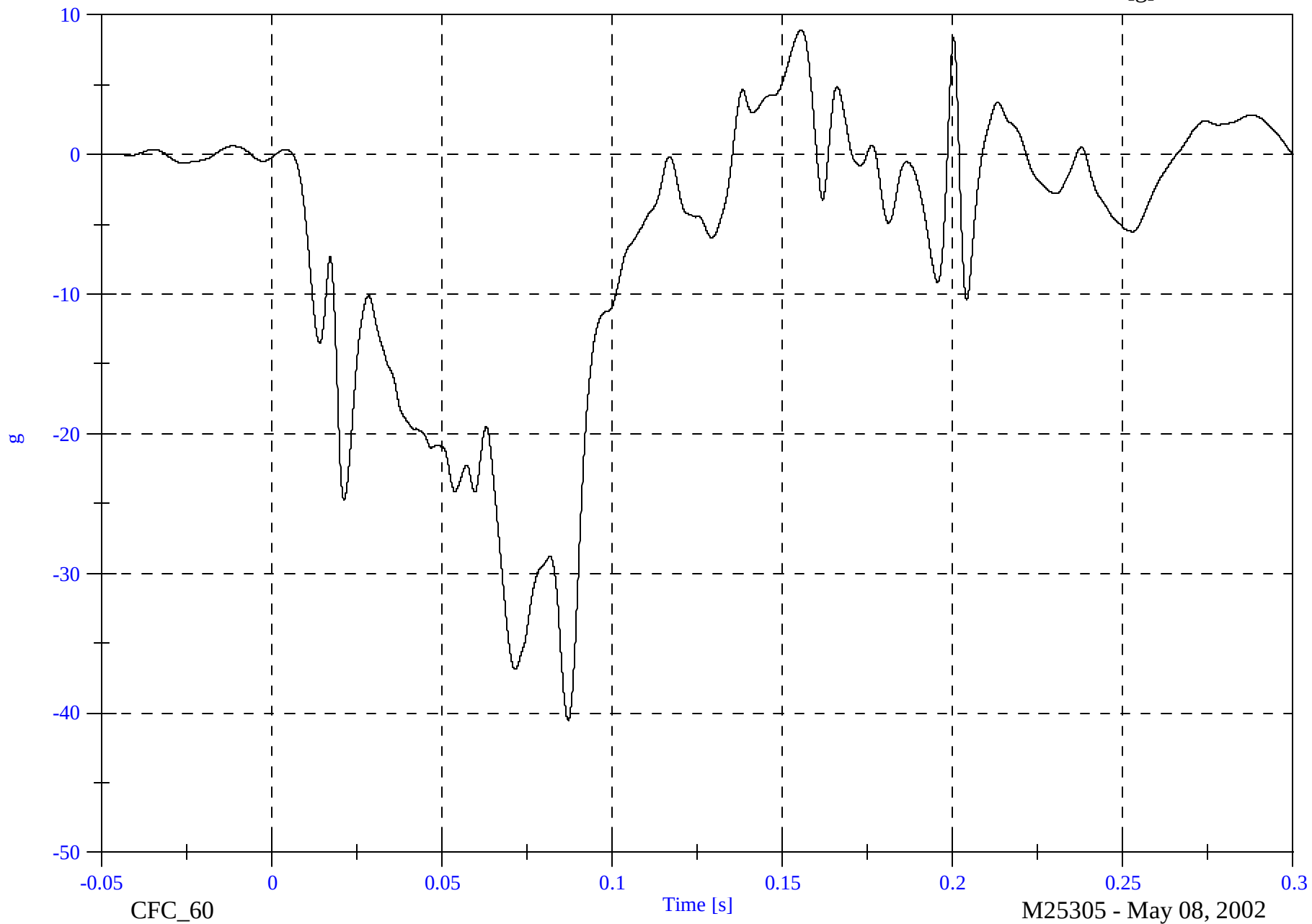
P4 Child Seat x

Max: 8.9 [g] at 0.155 [s]

Min: -40.5 [g] at 0.087 [s]

4-78

8642-NCAP-12

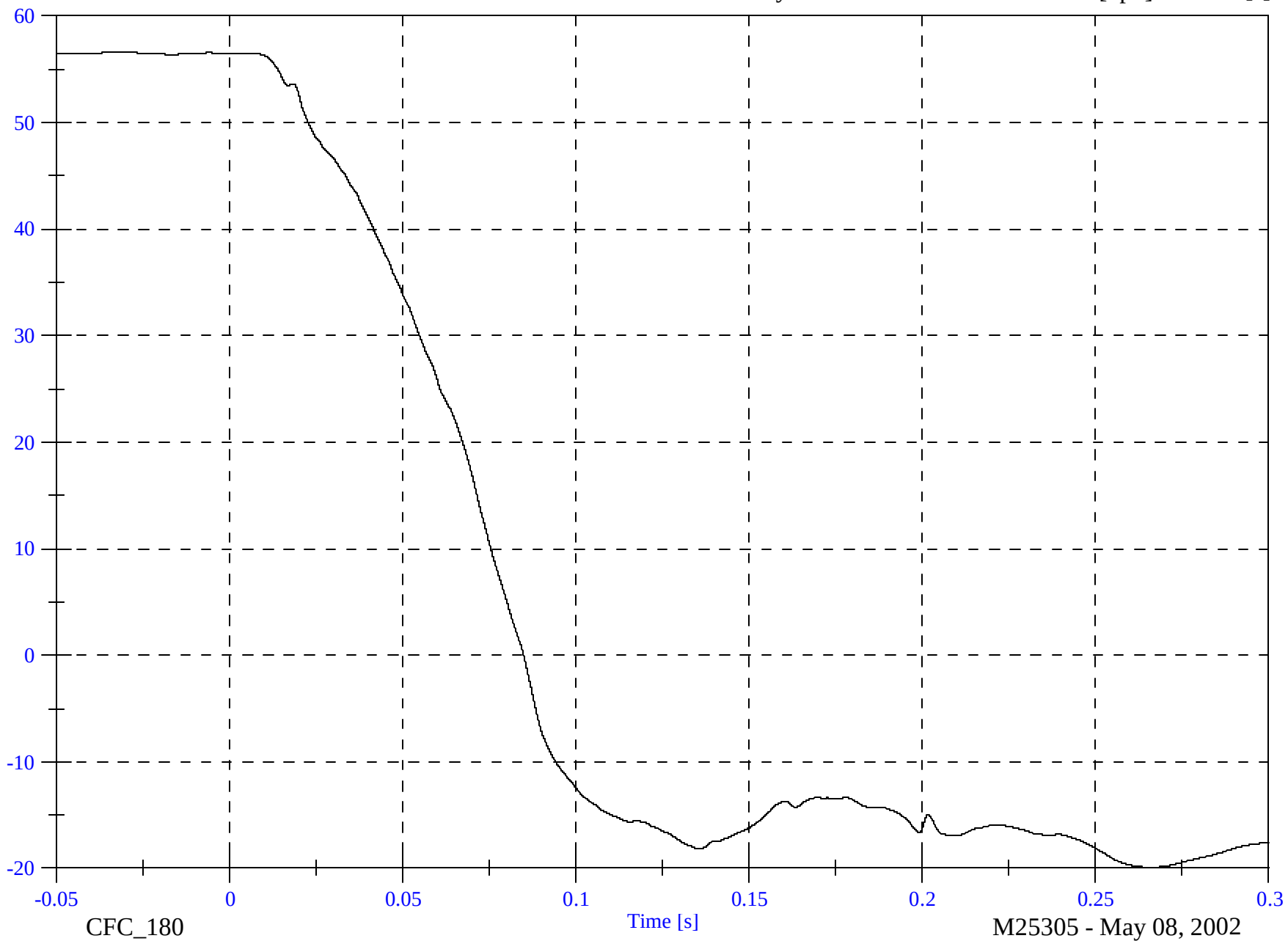


NCAP Test 12 - 2002 Honda Odyssey

P4 Child Seat x Velocity

Max: 56.6 [kph] at -0.031 [s]

Min: -19.9 [kph] at 0.265 [s]



4-79

8642-NCAP-12

CFC_180

Time [s]

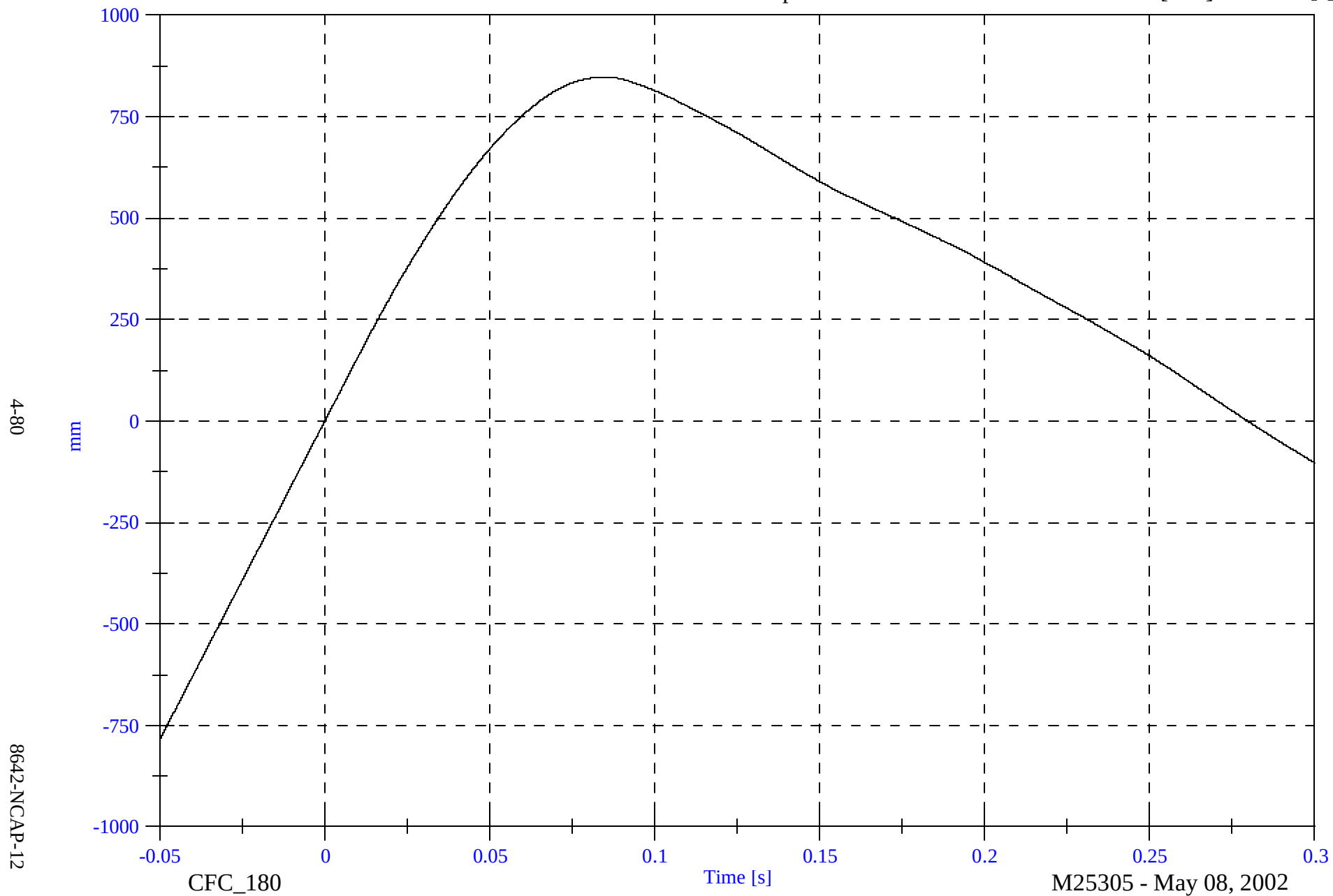
M25305 - May 08, 2002

NCAP Test 12 - 2002 Honda Odyssey

P4 Child Seat x Displacement

Max: 847.3 [mm] at 0.085 [s]

Min: -784.8 [mm] at -0.050 [s]

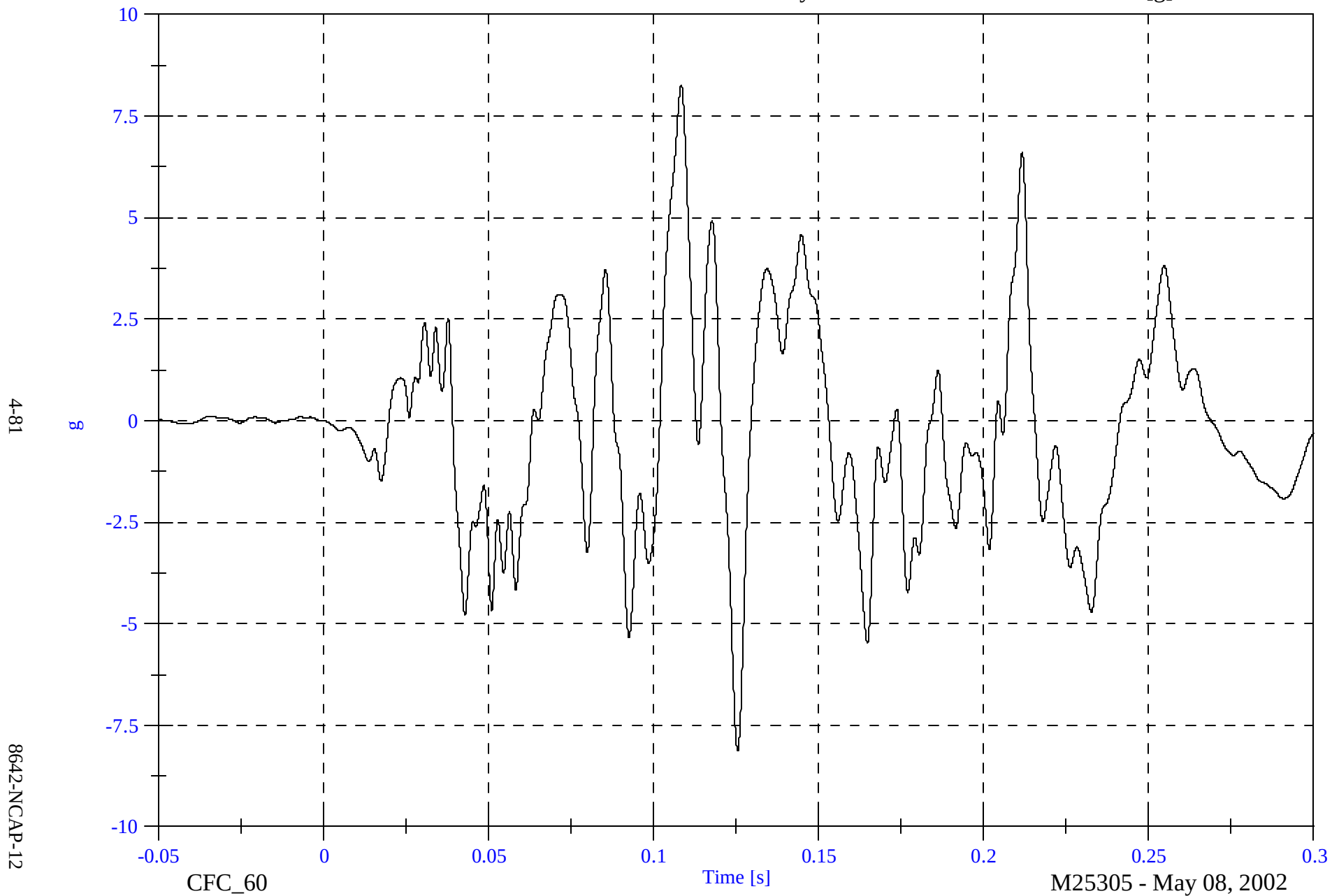


NCAP Test 12 - 2002 Honda Odyssey

P4 Child Seat y

Max: 8.3 [g] at 0.108 [s]

Min: -8.1 [g] at 0.125 [s]

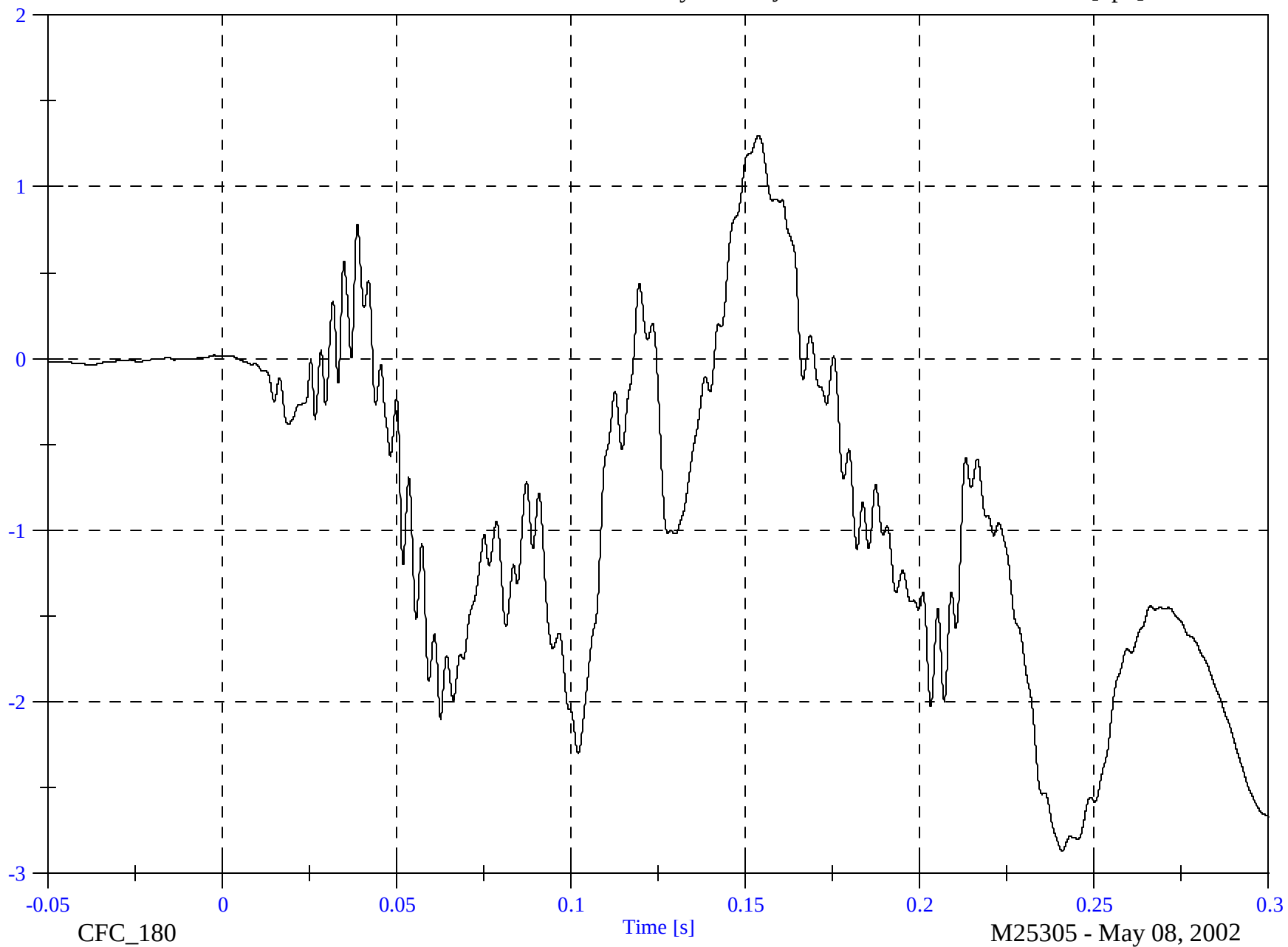


NCAP Test 12 - 2002 Honda Odyssey

P4 Child Seat y Velocity

Max: 1.3 [kph] at 0.154 [s]

Min: -2.9 [kph] at 0.241 [s]



4-82

8642-NCAP-12

NCAP Test 12 - 2002 Honda Odyssey

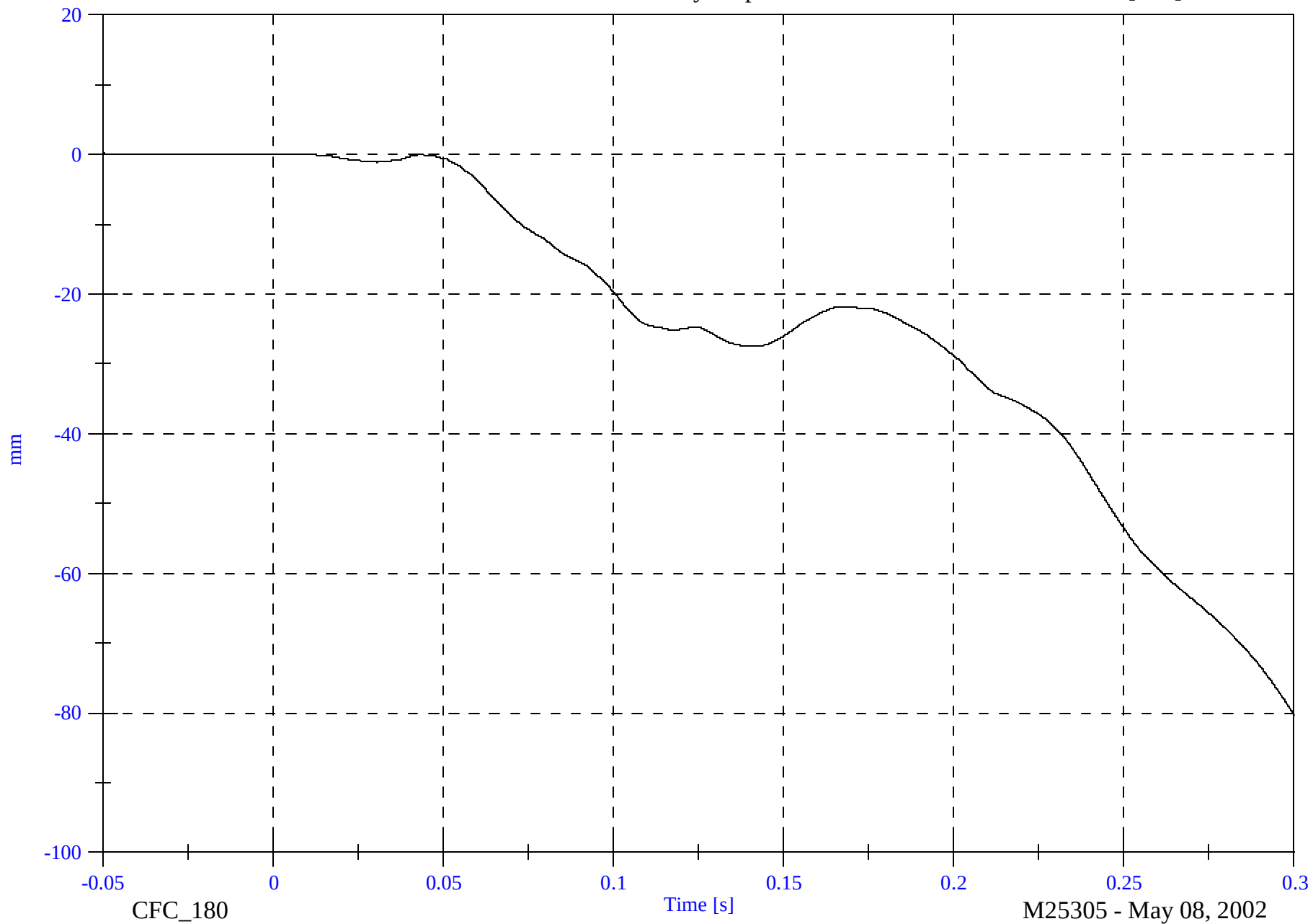
P4 Child Seat y Displacement

Max: 0.1 [mm] at -0.050 [s]

Min: -80.2 [mm] at 0.300 [s]

4-83

8642-NCAP-12



NCAP Test 12 - 2002 Honda Odyssey

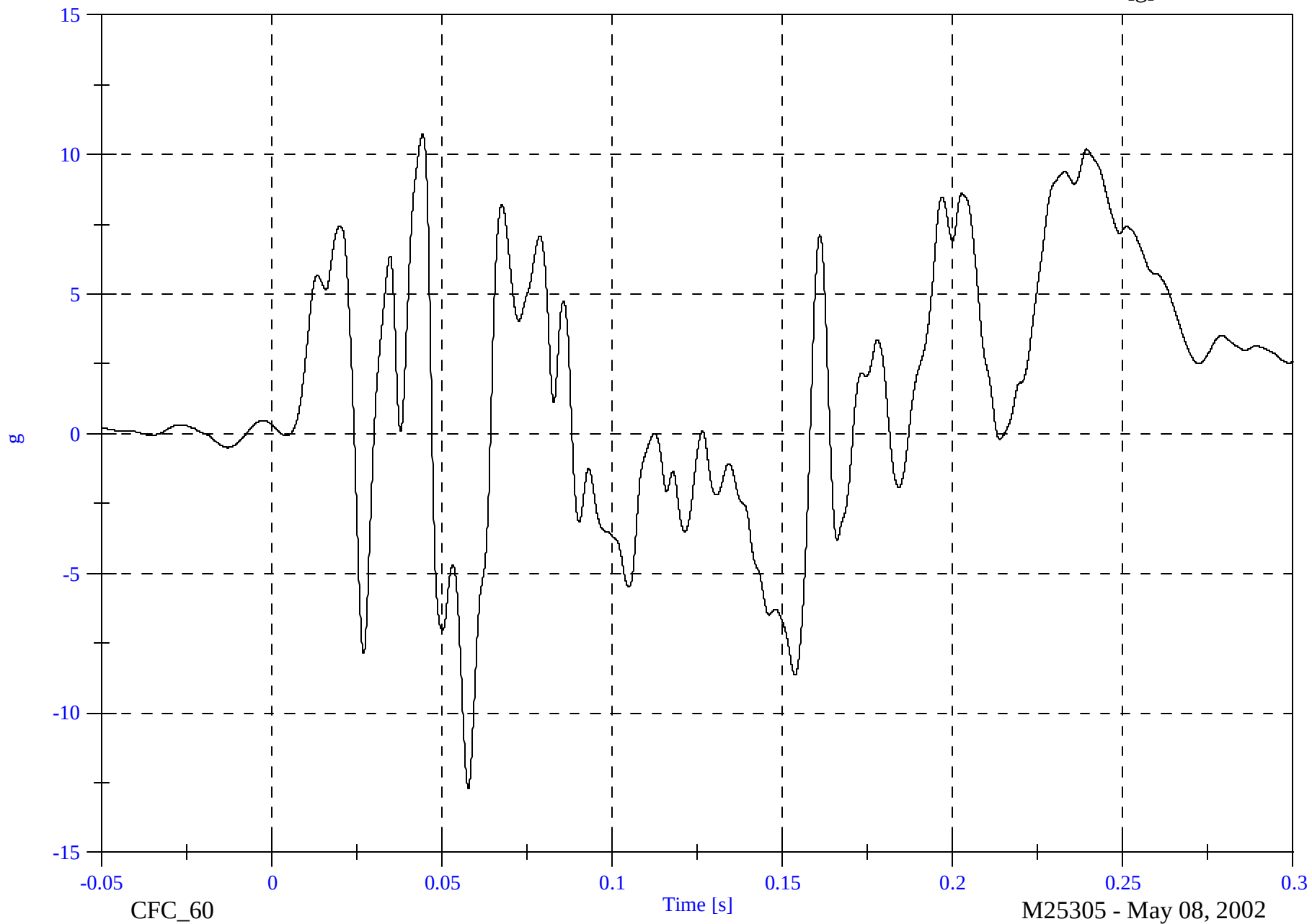
P4 Child Seat z

Max: 10.7 [g] at 0.044 [s]

Min: -12.7 [g] at 0.058 [s]

4-84

8642-NCAP-12



NCAP Test 12 - 2002 Honda Odyssey

P4 Child Seat z Velocity

Max: 18.2 [kph] at 0.300 [s]

Min: -2.8 [kph] at 0.158 [s]



4-85

8642-NCAP-12

CFC_180

Time [s]

M25305 - May 08, 2002

NCAP Test 12 - 2002 Honda Odyssey

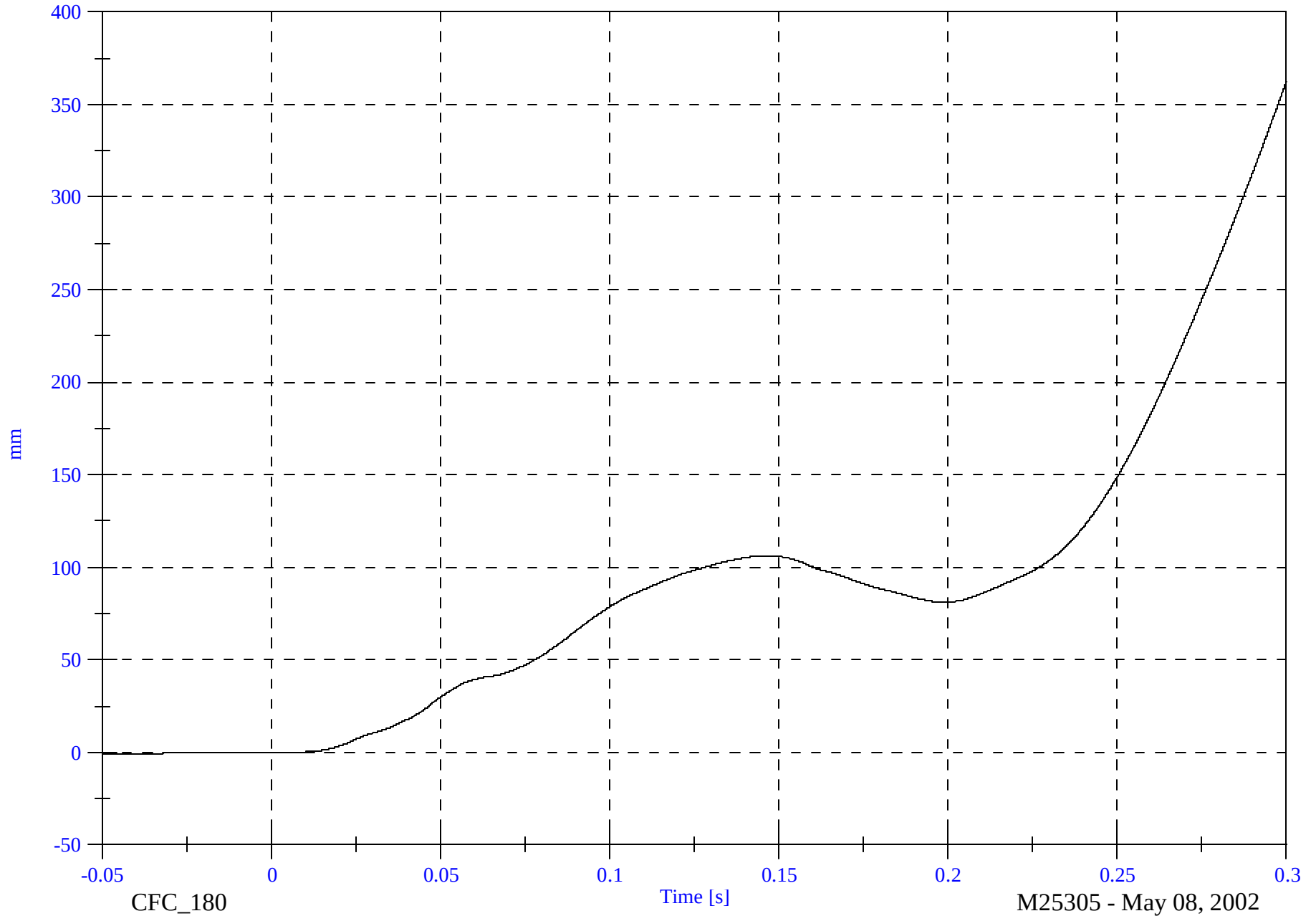
P4 Child Seat z Displacement

Max: 362.3 [mm] at 0.300 [s]

Min: -0.6 [mm] at -0.047 [s]

4-86

8642-NCAP-12

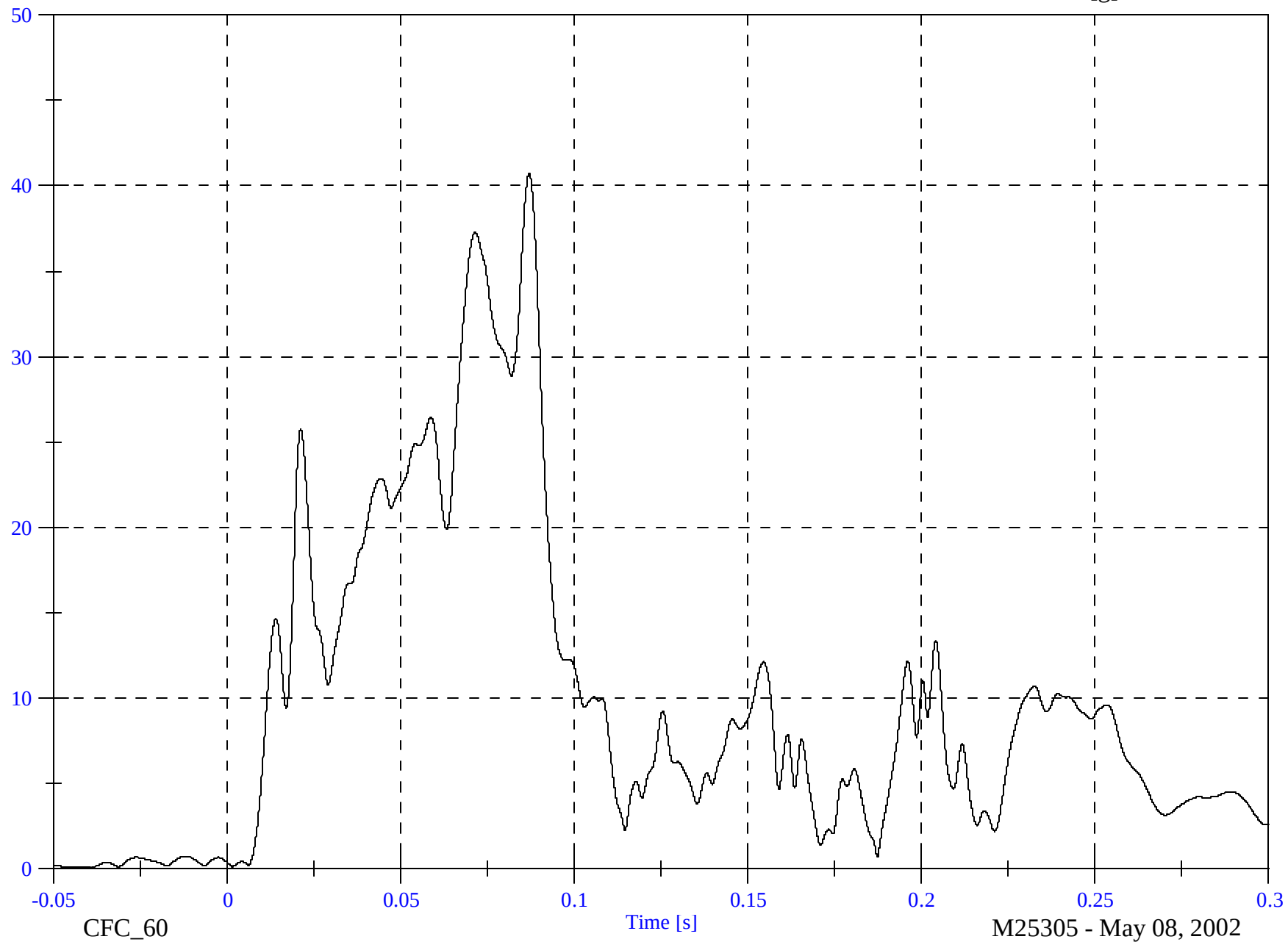


NCAP Test 12 - 2002 Honda Odyssey

P4 Child Seat Resultant

Max: 40.7 [g] at 0.087 [s]

Min: 0.1 [g] at -0.039 [s]



4-87

8642-NCAP-12

SECTION 5

CHILD DUMMY CALIBRATION INFORMATION

SECTION 6

TEST EQUIPMENT LIST AND CALIBRATION INFORMATION

TEST EQUIPMENT LIST AND CALIBRATION INFORMATION

P572R INSTRUMENTATION

	POSITION #3 (RIGHT) SERIAL NO.: 090		
	MANUFACTURER	SERIAL NUMBER	CALIBRATION DATE
HEAD AX	ENTRAN	AC-00L13-F33	01/22/02
HEAD AY	ENTRAN	AC-98H10-F01	01/22/02
HEAD AZ	ENTRAN	AC-01J02-F08	01/22/02
HEAD RAZ	ENTRAN	AC-98H13-F15	01/22/02
UPPER NECK FX	DENTON	LC-276FX	01/14/02
UPPER NECK FY	DENTON	LC-276FY	01/14/02
UPPER NECK FZ	DENTON	LC-276FZ	01/14/02
UPPER NECK MX	DENTON	LC-276MX	01/14/02
UPPER NECK MY	DENTON	LC-276MY	01/14/02
UPPER NECK MZ	DENTON	LC-276MZ	01/14/02
LOWER NECK FX	DENTON	LC-281FX	01/15/02
LOWER NECK FY	DENTON	LC-281FY	01/15/02
LOWER NECK FZ	DENTON	LC-281FZ	01/15/02
LOWER NECK MX	DENTON	LC-281MX	01/15/02
LOWER NECK MY	DENTON	LC-281MY	01/15/02
LOWER NECK MZ	DENTON	LC-281MZ	01/15/02
CHEST AX	ENTRAN	AC-01G25-N18	01/24/02
CHEST AY	ENTRAN	AC-98H10-F18	01/22/02
CHEST AZ	ENTRAN	AC-01G25-N04	01/25/02
LUMBAR FX	DENTON	LC-278FX	01/14/02
LUMBAR FY	DENTON	LC-278FY	01/14/02
LUMBAR FZ	DENTON	LC-278FZ	01/14/02
LUMBAR MX	DENTON	LC-278MX	01/14/02
LUMBAR MY	DENTON	LC-278MY	01/14/02
LUMBAR MZ	DENTON	LC-278MZ	01/14/02
PELVIS AX	ENTRAN	AC-00L20-A15	01/22/02
PELVIS AY	ENTRAN	AC-01G18-F02	01/22/02
PELVIS AZ	ENTRAN	AC-00L20-A14	01/22/02
TETHER	-	-	-

TEST EQUIPMENT LIST AND CALIBRATION INFORMATION

P572R INSTRUMENTATION

	POSITION #4 (LEFT) SERIAL NO.: 093		
	SERIAL NUMBER	MANUFACTURER	CALIBRATION DATE
HEAD AX	ENTRAN	AC-B02A25-N05	02/08/02
HEAD AY	ENTRAN	AC-B02A18-N13	02/08/02
HEAD AZ	ENTRAN	AC-B02A18-N03	02/11/02
HEAD RAZ	ENTRAN	AC-B02A25-N01	02/08/02
UPPER NECK FX	DENTON	LC-282-FX	01/15/02
UPPER NECK FY	DENTON	LC-282-FY	01/15/02
UPPER NECK FZ	DENTON	LC-282-FZ	01/15/02
UPPER NECK MX	DENTON	LC-282-MX	01/15/02
UPPER NECK MY	DENTON	LC-282-MY	01/15/02
UPPER NECK MZ	DENTON	LC-282-MZ	01/15/02
LOWER NECK FX	DENTON	LC-279-FX	01/15/02
LOWER NECK FY	DENTON	LC-279-FY	01/15/02
LOWER NECK FZ	DENTON	LC-279-FZ	01/15/02
LOWER NECK MX	DENTON	LC-279-MX	01/15/02
LOWER NECK MY	DENTON	LC-279-MY	01/15/02
LOWER NECK MZ	DENTON	LC-279-MZ	01/15/02
CHEST AX	ENTRAN	AC-B02A09-F05	02/08/02
CHEST AY	ENTRAN	AC-02A16-A13	01/30/02
CHEST AZ	ENTRAN	AC-B02A09-F04	02/08/02
PELVIS AX	DENTON	LC-211-FX	01/05/02
PELVIS AY	DENTON	LC-211-FY	01/05/02
PELVIS AZ	DENTON	LC-211-FZ	01/05/02
LUMBAR FX	DENTON	LC-211-MX	01/05/02
LUMBAR FY	DENTON	LC-211-MY	01/05/02
LUMBAR FZ	DENTON	LC-211-MZ	01/05/02
LUMBAR MX	ENTRAN	AC-02A18-N03	02/01/02
LUMBAR MY	ENTRAN	AC-B02A25-N04	02/08/02
LUMBAR MZ	ENTRAN	AC-B02A18-N14	02/08/02
TETHER	-	-	-

TEST EQUIPMENT LIST AND CALIBRATION INFORMATION

VEHICLE AND MDB INSTRUMENTATION

	VEHICLE AND MDB INSTRUMENTS		
	SERIAL NUMBER	MANUFACTURER	CALIBRATION DATE
P3 CRS (X)	-	-	-
P3 CRS (Y)	-	-	-
P3 CRS (Z)	-	-	-
P4 CRS (X)	ENDEVCO	AC-P23471	02/26/02
P4 CRS (Y)	ENDEVCO	AC-P22943	02/26/02
P4 CRS (Z)	ENDEVCO	AC-P18948	02/26/02

REMARKS: None