REPORT NUMBER: CAL-00-11

3274

NEW CAR ASSESSMENT PROGRAM (NCAP)
FRONTAL BARRIER IMPACT TEST

GENERAL MOTORS
2000 BUICK LESABRE
4 DOOR SEDAN

NHTSA NUMBER: MY0100

VERIDIAN TEST NUMBER: 8413-50

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

January 21,2000

FINAL REPORT

PREPARED FOR:

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 publication is distributed by the U. S. Department of Transportation, National Highway Traffic Safety Administration, in the interest of information exchange. The opinions, findings and conclusions expressed in this publication are those of the author(s) and not necessarily those of the Department of Transportation or the National Highway Traffic Safety Administration. The United States Government assumes no liability for its contents or use thereof. If trade or manufacturers' names or products are mentioned, it is only because they are considered essential to the object of the publication and should not be construed as an endorsement. The United States Government does not endorse products or manufacturers.

Prepared by: _____

James A. Czarnecki, Project Engineer

Approved by: _____

David J. Travale, Program Manager
Transportation Science Center

Approval Date: February 16, 2000

FINAL REPORT ACCEPTANCE BY OCS:

_____

Manager, New Car Assessment Program (NCAP)
NHTSA, Office of Crashworthiness Standards

_____

Date of Report Acceptance

_____

COTR, New Car Assessment Program (NCAP)
NHTSA, Office of Crashworthiness Standards

_____

Date of Report Acceptance

TECHNICAL REPORT STANDARD TITLE PAGE

1. *Report No.* CAL-00-11	2. *Government Accession No.*	3. *Recipient's Catalog No.*
4. *Title and Subtitle* Final Report of NEW CAR ASSESSMENT PROGRAM (NCAP) Testing of a 2000 Buick LeSabre 4 Door Sedan NHTSA No. MY0100		5. *Report Date* January 21,2000 6. *Performing Organization Code* CAL
7. *Author(s)* David J. Travale, Program Manager James A. Czarnecki, Project Engineer		8. *Performing Organization Report No.* 8413-50
9. *Performing Organization Name and Address* Veridian Engineering 4455 Genesee Street Buffalo, New York 14225		10. *Work Unit No.* 11. *Contract or Grant No.* DTNH22-96-D-02010
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 January - February 2000 14. *Sponsoring Agency Code* NPS-10

15. *Supplementary Notes*

16. *Abstract*

A frontal load cell barrier test of a 2000 Buick LeSabre 4 Door Sedan was performed at Veridian Engineering crash test facility in Buffalo, New York, on January 21,2000.

The impact velocity was 56.5 kph and the temperature at the barrier face was 20°C. The maximum post-test vehicle crush was 504 mm. The test vehicle was equipped with driver and passenger 3-point active safety belts and next generation reduced force frontal airbags.

With respect to FMVSS 208 "Occupant Crash Protection - Injury Criteria" both the driver and front passenger appear to comply with the head , chest and femur requirement.

ATD Position	HIC	Clip (g's)	Chest Disp (mm)	Left Femur (N)	Right Femur (N)
Driver (064)	466.9	42.8	25.6	3269.8	2935.0
Passenger (245)	496.8	41.2	32.4	2276.1	3356.2

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

19. *Security Classif. (of this report)*	20. *Security Classif. (of this page)*	21. *No. of Pages*	22. *Price*
UNCLASSIFIED	UNCLASSIFIED	274	

Form DOT F1700.7 (8-69)

TABLE OF CONTENTS

Section		Page No.
1	PURPOSE AND SUMMARY OF NCAP TEST	1-1
2	OCCUPANT AND VEHICLE INFORMATION	2-1

Data Sheet	Description	
1.	CRASH TEST SUMMARY	2-1
2.	GENERAL TEST AND VEHICLE PARAMETER DATA	2-2
3.	POST IMPACT DATA	2-4
4.	TEST VEHICLE INFORMATION	2-5
5.	DUMMY POSITIONING IN VEHICLE	2-7
6.	SEAT BELT POSITIONING DATA	2-9
7.	VEHICLE ACCELEROMETER LOCATION AND DATA SUMMARY	2-10
8.	DUMMY INJURY CRITERIA VALUES	2-12
9.	SEAT BELT PERFORMANCE DATA	2-16
10.	SUMMARY OF FMVSS 212 DATA	2-17
11.	WINDSHIELD ZONE INTRUSION FMVSS 219 DATA	2-18
12.	FMVSS 301 FUEL SYSTEM INTEGRITY DATA	2-19
13.	FMVSS 310 ROLLOVER DATA	2-20
14.	VEHICLE MEASUREMENTS	2-24
15.	CAMERA DATA	2-31
16.	REFERENCE PHOTO TARGETS	2-33
17.	LOAD CELL LOCATIONS ON FIXED BARRIER	2-34
18.	POST TEST AIR BAG DATA	2-35
19.	ACCIDENT INVESTIGATION DIVISION DATA	2-36

APPENDIX A	PHOTOGRAPHS	A-1
APPENDIX B	VEHICLE, LOAD CELL BARRIER AND DUMMY RESPONSE DATA	B-1
APPENDIX C	PART 572 B\E DUMMY CONFIGURATION AND PERFORMANCE VERIFICATION TESTS	C-1
APPENDIX D	DUMMY, VEHICLE AND LABORATORY INSTRUMENT CALIBRATION	D-1

SECTION 1

PURPOSE AND SUMMARY OF TEST MY0100

PURPOSE

This 56.5 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. DTNH22-96-D-02010. 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 56.5 kph frontal barrier impact test was conducted in accordance with the Office of Crashworthiness Standards Laboratory Indicant Test procedure.

SUMMARY

A load cell barrier consisting of 36 load cells was impacted by a 2000 Buick LeSabre 4 Door Sedan at a velocity of 56.5 kph. The test was performed at Veridian Engineering on January 21,2000. Pre- and post-test photographs of the vehicle and dummies can be found in Appendix A.

The frontal barrier impact event was documented by 1 real-time camera and 16 high-speed cameras. 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 head, chest, and pelvis triaxial accelerometers, chest displacement potentiometers, upper neck transducers, right/left femur load cells, and lower leg instrumentation. Seat belt load cells were also on the driver's and passenger's lap and shoulder belts to measure dummy torso and pelvic section loading. The driver (position 1) ATD (Serial No. 064) 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 129 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.

The driver's HIC was 466.9. The maximum chest deceleration over 3 milliseconds was 42.8 g's and maximum chest deflection was 25.6 mm. Compressive femur loads were 3269.8 Newtons on the left and 2935.0 Newtons on the right.

The right front passenger's HIC was 496.8. Maximum chest deceleration over 3 milliseconds was 41.2 g's and maximum chest deflection was 32.4 mm. Compressive femur loads were 2276.1 Newtons on the left and 3356.2 Newtons on the right.

SECTION 2

GENERAL TEST AND VEHICLE PARAMETER DATA

DATA SHEET NO. 1 CRASH TEST SUMMARY

Vehicle NHTSA No. : MY0100 Test Mode : 56.3 kph Frontal Barrier

Test Date : January 21,2000 Time: 11:30 Temperature : 3 °C

Vehicle Make/Model/Body Style : 2000 Buick LeSabre 4 Door Sedan

Vehicle Test Weight : 1862 kg

Vehicle/Barrier Impact Angle : 0 °

Impact Velocity : 56.5 kph

Maximum Static Crush : 504 mm

Vehicle Rebound : 720 mm

DUMMIES:	DRIVER	PASSENGER
Type :	572E	572E
Restraint System :	3-point belt system with airbag	3-point belt system with airbag

Number of Data Channels : 129

Number of Cameras : 1 Real Time

16 High Speed

DOOR OPENING DATA : Closed/Operable - Left Front

Closed/Operable - Right Front

Front Seat(s) Data :	DRIVER	PASSENGER
Seat Track Failure :(mm of shift)	0	0
Seat Back Failure :	none	none

VISIBLE DUMMY CONTACT POINTS :	DRIVER	PASSENGER
Head :	Airbag / Back of head to headrest	Airbag / Back of head to headrest
Abdomen :	-	-
Chest	Airbag	Airbag
Knees	Knee Bolster	Knee Bolster

DATA SHEET NO. 2 GENERAL TEST AND VEHICLE PARAMETER DATA

TEST VEHICLE INFORMATION :

Year/Make/Model/Body Style : 2000 Buick LeSabre 4 Door Sedan

NHTSA No. : MY0100 ; VIN: 1G4HP54K8Y4158044 ; Color : Silver

Engine Data: 6 cylinders; - CID; 3.8 Liters; - cc

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

Transmission Data : 4 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

Date Received : 1/14/00 ; Odometer Reading 21 km

Selling Dealer : Paul Batt Buick

& Address: 1717 Walden Ave. Cheektowaga, N.Y. 14225

DATA FROM TIRE VEHICLE'S CERTIFICATION LABEL:

Vehicle Manufactured by : General Motors

Date of Manufacture 10/99

GVWR : 2136 kg; GAWR: 1165 kg FRONT; 971 kg REAR

DATA FROM TIRE PLACARD:

Tire Pressure with Maximum Capacity Vehicle Load : 227.5 kpa FRONT

227.5 kpa REAR

Recommended Tire Size : P215/70R15

* Recommended Cold Tire Pressure : 227.5 kpa FRONT; 227.5 kpa REAR

Size of Tires on Test Vehicle: P215/70R15 ; Manufacturer: General

Vehicle Capacity Data :

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

Number of Occupants: 3 Front; 3 Rear; 6 Total

Vehicle Capacity Weight (VCW) = 488.0 kg

No. of Occupants x 68 kg = 408.2 kg

Rated Cargo/Luggage Weight (RCLW) = 79.8 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 =	505	kg	Right Rear =	315.5	kg
Left Front =	504.5	kg	Left Rear =	312.5	kg
TOTAL FRONT =	1009.5	kg	TOTAL REAR =	628.0	kg

TOTAL DELIVERED WEIGHT = 1637.5 kg

% of Total Front of Vehicle Weight = 61.6 % of Total Rear Weight = 38.4 %

CALCULATION OF VEHICLE'S TARGET TEST WEIGHT :

Total Delivered Weight (UDW) =	1637.5	kg
Rated Cargo/Luggage Weight (RCLW) =	79.8	kg
Weight of 2 p.572 Dummies @ 76 each =	152.0	kg
TARGET TEST WEIGHT =	1869.3	kg

WEIGHT OF TEST VEHICLE WITH TWO DUMMIES AND 73 KG OF CARGO WEIGHT:

Right Front =	545	kg	Right Rear =	388	kg
Left Front =	541	kg	Left Rear =	388	kg
TOTAL FRONT =	1086.0	kg	TOTAL REAR =	776.0	kg

TOTAL TEST WEIGHT = 1862.0 kg

% of Total Front Weight = 58.3 % % of Total Rear Weight = 41.7 %

Weight of Ballast Secured in Vehicle Trunk Area = 102 kg

Vehicle Components Removed for Weight Reduction: none

VEHICLE ATTITUDE (all dimension in millimeters):

AS DELIVERED :	RF	740	LF	740	RR	756	LR	755
FULLY LOADED :	RF	727	LF	725	RR	722	LR	722
AS TESTED :	RF	731	LF	737	RR	729	LR	729

Vehicle's Wheel Base : 2867.5 mm

Location of Vehicle's C.G. : 1195.0 mm rearward of front wheel center.

FUEL SYSTEM DATA :

Fuel System Capacity From Owner's Manual = 66.2 liters

Usable Capacity Figure Furnished by COTR = 66.2 liters

Test Volume Range (92 to 94% of Usable Capacity) = 60.9 to 62.3 liters

ACTUAL TEST VOLUME= 60.9 liters (with entire fuel system filled)

Test Fluid Type: Stoddard Solution ; Spec. Grav. = 0.764

Kinematic Viscosity = 0.96 centistokes; Color = Orange

Type of Fuel Pump: Electric- x ; Mechanical- -

Does Electric Pump operate with ignition switch "ON" & engine "OFF" Yes- x No- -

Details of Fuel System Fuel filler is located on left side over rear axle, fuel lines run along left frame rail and fuel tank is centered over rear axle.

DATA SHEET NO. 3 POST IMPACT DATA

TYPE OF TEST:

Type of Test : Frontal Barrier Impact Angle : 0°

Test Date : January 21,2000 Time: 11:30 Temperature: 3 °C

Vehicle NHTSA No. : MY0100

Required Impact Velocity Range : 55.5 to 57.1 kph

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

Trap No. 1 = 56.5 kph; Trap No. 2 = 56.5 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	Right =	5104	; C/L =	5137	; Left =	5108
Post-Test	Right =	4629	; C/L =	4633	; Left =	4648
Crush	Right =	475.0	; C/L =	504.0	; Left =	460.0
AVERAGE	=	479.7	mm			

VEHICLE REBOUND: (From rigid barrier only.)

Distance from front of test vehicle to impact point :

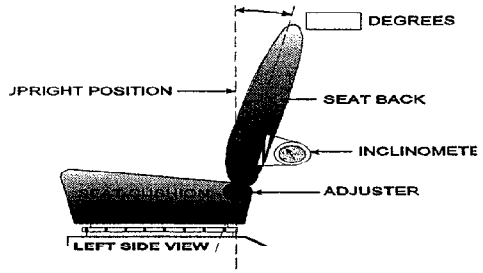
	Right =	690	; C/L =	735	; Left =	735
AVERAGE	=	720.0	mm			

DATA SHEET NO. 4 TEST VEHICLE INFORMATION

VEHICLE IDENTIFICATION:

Model Year : 2000 Vehicle Model: Buick LeSabre Body Style : 4 Door Sedan

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.



FRONT SEAT ASSEMBLY

Seat back angle for driver's seat: 18

Measurement instructions: Electronic adjustment - placed inclinometer on seat back and adjusted seat to 18 degree seat back angle

Seat back angle for passenger's seat: 18

Measurement instructions: Electronic adjustment - placed inclinometer on seat back and adjusted seat to 18 degree seat back angle

2. Seat Fore and Aft Positioning

Positioning of the driver's seat: Electronic adjustment - bisected total travel of seat movement and placed in mid-position

Positioning of the passenger's seat: Located 23 positions , mechanical adjuster was positioned in 12th notch (mid-position).

3. Fuel Tank Capacity Data

3.1 A. "Usable Capacity" of the standard equipment fuel tank is 66.2 liters

B. "Usable Capacity" of the optional equipment fuel tank is 66.2 liters

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

3.2 Amount of Stoddard solvent added to vehicle(s) used for certification test(s) = 60.9 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.

With ignition turned on.

4. STEERING COLUMN ADJUSTMENTS :

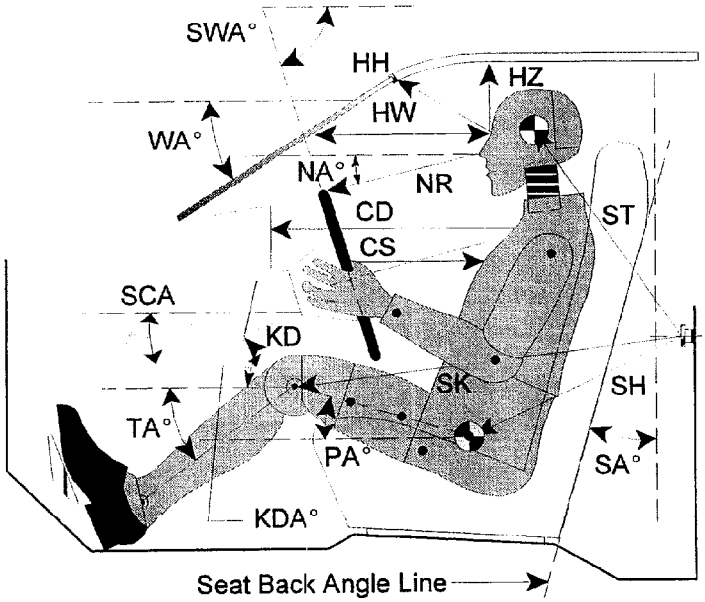
Steering wheel and column adjustments are made so that the steering wheel hub is at the geometric center of the locus it describes when it is moved through its full range of driving positions. If the tested vehicle has any of these adjustments, does your company use any specific procedures to determine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

Operational Instructions: Located 5 positions, placed in 3rd notch

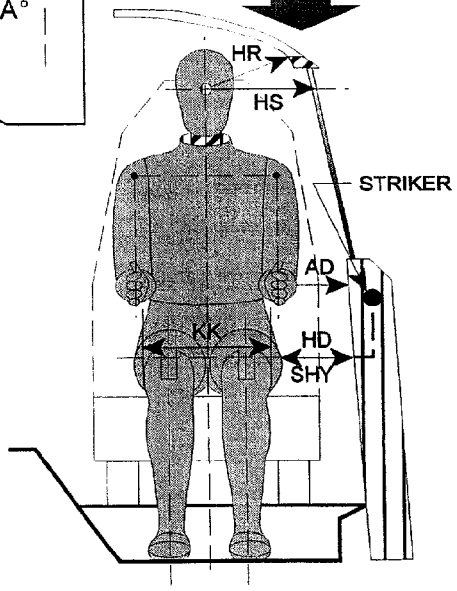
5. SEAT BELT UPPER ANCHORAGE

Nominal design riding position: none

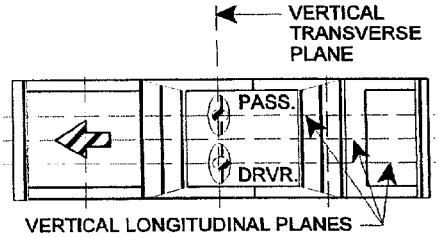
DUMMY MEASUREMENT FOR FRONT SEAT PASSENGERS



AD - Arm to Door
HD - H-Point to Door
HR - Head to Side Header
HS - Head to Side Window
KK - Knee to Knee
SHY- Striker to H-Point (Y Direction)



CD - Chest to Dash
CS - Steering Wheel to Chest
HH - Head to Header
HW - Head to Windshield
HZ - Head to Roof
KDA - Knee to Dash Angle
KDL- Left Knee to Dash
KDR - Right Knee to Dash
NA - Nose to Rim Angle
NR - Nose to Rim
PA - Pelvic Angle
RA - Rim to Abdomen
SA - Seat Back Angle
SCA - Steering Column Angle
SH - Striker to H-Point
SK - Striker to Knee
ST - Striker to Head
SWA- Steering Wheel Angle
TA - Tibial Angle
WA - Windshield Angle



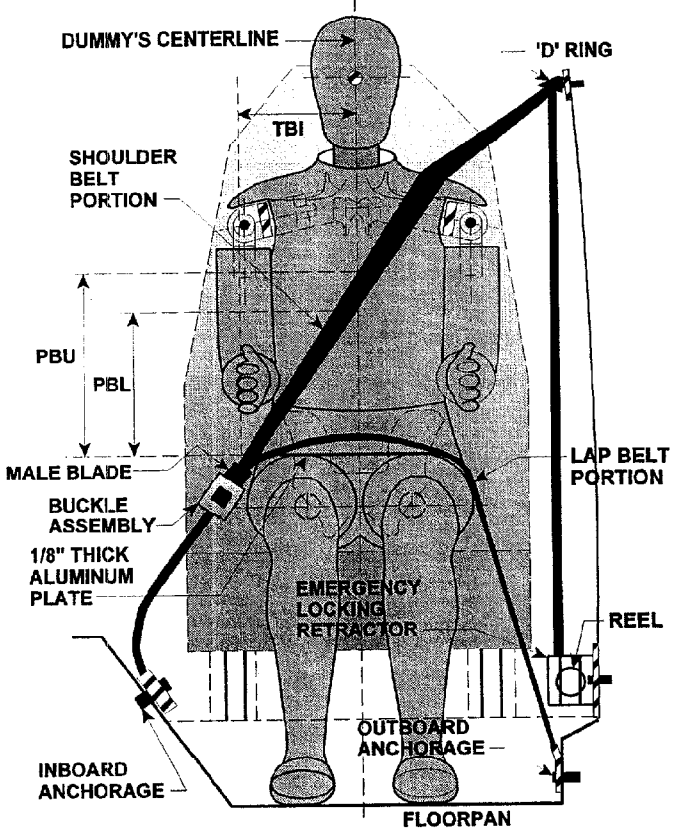
DATA SHEET NO. 5 FRONT SEAT DUMMY POSITIONING MEASUREMENTS IN VEHICLE (cont.)

	DRIVER (Serial #064)			PASS. (Serial # 245)		
WA°	23 deg.			N/A		
SWA°	71 deg.			N/A		
SCA°	19 deg.			N/A		
SA°	18 deg.			18 deg.		
HZ	191			191		
HH	360			365		
HW	621			627		
HR	261			277		
NR	380	Angle	6 deg.	N/A		
CD	499			513		
CS	318			N/A		
RA	205			N/A		
KDL	169	Angle (KDA)	53 deg.	152		
KDR	169			152	Angle (KDA)	55 deg.
PA°	21 deg.			25 deg.		
TA°	43 deg.			50 deg.		
KK	275			270		
ST	495	Angle	15 deg.	489	Angle	10 deg.
SK	567	Angle	90 deg.	573	Angle	87 deg.
SH	263	Angle	129 deg.	249	Angle	126 deg.
SHY	271			275		
HS	319			341		
HD	187			194		
AD	117			141		

Dimensions in millimeters

DATA SHEET NO. 6 SEAT BELT POSITIONING DATA

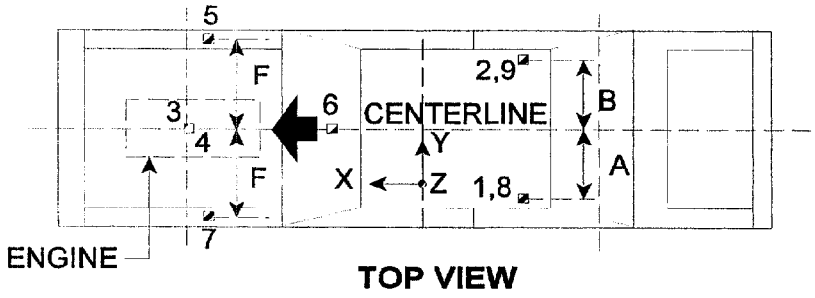
SEAT BELT POSITIONING DATA



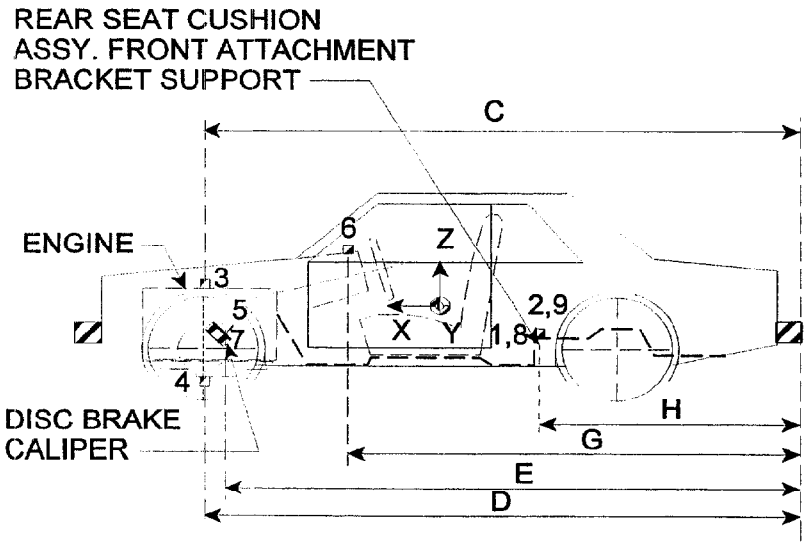
FRONT VIEW OF DUMMY

	DRIVER DUMMY (mm)	PASSENGER DUMMY (mm)
PBU -- Top surface of alum. plate to upper edge	320	305
PBL-- Top surface of alum. plate to belt lower edge	230	225
LAP BELT TENSION	Retractor	Retractor
SHOULDER BELT TENSION	Retractor	Retractor

VEHICLE ACCELEROMETER LOCATION AND DATA SUMMARY



TOP VIEW



LEFT SIDE VIEW

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

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

DIMENSION	LENGTH (mm)
	PRE-TEST VALUES
A Left Rear Seat Crossmember Y	572
B Right Rear Seat Crossmember Y	590
C Top of Engine X	4415
D Bottom of Engine X	4232
E Disc Brake Calipers X	4051
F Disc Brake Calipers Y	671
G Instrument Panel X	3212
H Rear Seat Crossmembers X	2065

LOCATION NUMBER	DESCRIPTION	MAXIMUM VALUE (g's)			
		Pos.	msec.	Neg.	msec.
1	Rear Seat X-Member @ Left Side	4.9	19.3	-29.1	66.9
2	Rear Seat X-Member @ Right Side	3.9	19.0	-31.9	70.8
3	Top of Engine Block	65.2	53.7	-120.8	35.7
4	Bottom of Engine	19.9	299.9	-68.4	39.1
5	Disc Brake Caliper @ Right Side	*	*	*	*
6	Instrument Panel	18.5	28.4	-46.5	42.5
7	Disc Brake Caliper @Left Side	21.9	39.5	-87.1	48.6
8	Rear Seat X-Member @ Left-Redundant	5.8	19.3	-29.3	66.8
9	Rear Seat X-Member @ Right-Redundant	4.5	19.3	-31.6	70.7

* Data is questionable

DATA SHEET NO. 8 DUMMY INJURY CRITERIA VALUES

Vehicle Year/Make/Model/Body Style: 2000 Buick LeSabre 4 Door Sedan

NHTSA Test No.: MY0100 Test Date: January 21,2000

		MAXIMUM VALUE							
		Driver				Passenger			
DESCRIPTION	Unit	Pos	msec	Neg	msec	Pos	msec	Neg	msec
Head X	g	11.9	229.9	-59.2	79.2	13.5	222.7	-48.5	88.0
Head Y	g	4.4	94.7	-3.7	74.1	8.7	60.8	-11.2	96.6
Head Z	g	12.1	46.4	-8.5	92.5	27.7	85.2	-1.9	27.6
Head Resultant	g	59.4	79.2	0.0	-44.1	54.8	87.4	0.0	-19.1
Redundant Head X	g	12.2	230.6	-62.9	79.1	12.2	222.8	-49.4	88.3
Redundant Head Y	g	3.9	127.0	-5.2	74.1	10.2	96.4	-13.7	60.8
Redundant Head Z	g	17.9	46.9	-6.1	131.3	26.0	85.9	-5.5	138.9
Redundant Head Resultant	g	63.0	79.1	0.0	-44.5	55.1	86.9	0.0	-15.1
Upper Neck Fx	N	746.2	81.5	-401.2	137.5	729.1	131.8	-338.9	73.3
Upper Neck Fy	N	78.8	82.5	-108.4	112.2	86.4	253.0	-288.5	97.1
Upper Neck Fz	N	*	*	*	*	878.2	111.4	-37.9	19.2
Upper Neck F Resultant	N	*	*	*	*	1086.2	111.4	1.5	-50.0
Upper Neck Mx	N-m	7.3	64.7	-10.6	116.7	17.2	106.6	-33.1	95.2
Upper Neck My	N-m	49.1	128.9	-27.3	104.8	58.8	136.9	-38.2	99.8
Upper Neck Mz	N-m	11.2	136.5	-11.5	94.5	7.1	88.2	-4.4	142.7
Upper Neck M Resultant	N-m	50.2	128.9	0.0	-38.5	58.9	136.9	0.0	-34.7
Chest X	g	6.2	244.4	-42.8	80.8	8.5	254.9	-40.3	84.5
Chest Y	g	3.8	82.8	-5.8	95.2	3.0	101.5	-10.6	94.6
Chest Z	g	7.8	82.6	-1.3	117.1	2.0	53.1	-14.3	86.4
Chest Resultant	g	43.5	80.8	0.0	-48.3	42.5	84.6	0.0	-49.5
Redundant Chest X	g	5.8	244.2	-39.1	81.3	6.4	260.7	-38.5	84.0
Redundant Chest Y	g	4.3	85.2	-4.1	95.9	9.0	94.6	-3.3	51.6
Redundant Chest Z	g	9.3	82.9	-1.3	115.2	15.4	86.6	-3.2	51.3
Redundant Chest Resultant	g	40.3	81.3	0.1	-24.5	41.2	84.1	0.0	-50.0
Chest Displacement	mm	0.0	1.2	-25.6	95.0	0.1	33.1	-32.4	96.2

* Data is Questionable

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

Vehicle Year/Make/Model/Body Style: 2000 Buick LeSabre 4 Door Sedan

NHTSA Test No.: MY0100 Test Date: January 21,2000

		MAXIMUM VALUE							
		Driver				Passenger			
DESCRIPTION	Unit	Pos	msec	Neg	msec	Pos	msec	Neg	msec
Pelvic X	g	4.8	219.1	-58.5	64.5	5.2	210.9	-43.5	58.0
Pelvic Y	g	7.6	94.8	-7.0	62.4	5.6	93.0	-7.0	66.5
Pelvic Z	g	3.9	215.2	-20.7	71.8	3.7	229.3	-17.0	73.6
Pelvic Resultant	g	61.3	64.6	0.1	-48.9	45.6	58.0	0.1	-48.9
Left Femur	N	230.8	123.7	-3269.8	64.9	154.4	25.9	-2276.1	57.5
Right Femur	N	304.6	120.8	-2935.0	67.0	132.9	126.4	-3356.2	60.6
Left Upper Tibia Mx	N-m	*	*	*	*	25.0	115.8	-14.8	62.3
Left Upper Tibia My	N-m	13.7	131.3	-106.7	42.5	13.9	132.3	-86.3	46.7
Left Lower Tibia Fz	N	105.6	148.3	-4179.3	41.7	196.0	135.6	-2887.2	42.5
Left Lower Tibia Mx	N-m	8.3	42.5	-11.3	92.0	7.1	28.5	-3.4	62.6
Left Lower Tibia My	N-m	26.3	39.7	-23.7	70.0	12.7	299.1	-42.6	62.5
Right Upper Tibia Mx	N-m	8.0	177.4	-23.2	54.4	19.3	138.5	-18.2	97.4
Right Upper Tibia My	N-m	12.4	131.4	-116.3	50.7	12.9	194.7	-93.3	43.7
Right Lower Tibia Fz	N	152.4	150.7	-3750.6	49.5	99.8	131.5	-3415.5	41.9
Right Lower Tibia Mx	N-m	3.7	65.2	-12.6	91.7	4.6	153.5	-6.2	72.6
Right Lower Tibia My	N-m	12.1	278.9	-21.4	59.3	15.8	41.7	-36.0	68.4
Left Foot Aft Ax	g	9.6	255.1	-47.9	41.6	28.2	298.1	-46.1	40.2
Left Foot Aft Az	g	3.9	276.5	-48.7	42.4	10.7	296.6	-46.9	43.4
Left Foot Fore Az	g	20.3	38.0	-64.7	44.8	41.7	217.3	-68.2	31.8
Right Foot Aft Ax	g	8.6	96.7	-85.5	49.5	4.8	131.3	-50.0	39.2
Right Foot Aft Az	g	5.0	244.7	-65.0	50.1	4.1	217.6	-60.7	43.1
Right Foot Fore Az	g	**	**	**	**	17.0	86.0	-62.6	44.0
Lap Belt Load	N	7055.4	64.4	-0.1	-8.8	3580.0	67.2	-3.5	0.7
Torso Belt	N	-	-	-	-	-	-	-	-

* Data is questionable

** Data not accurate after 14 ms

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

Vehicle Year/Make/Model/Body Style: 2000 Buick LeSabre 4 Door Sedan

NHTSA Test No.: MY0100 Test Date: January 21,2000

	HEAD INJURY CRITERIA (HIC)			
	HIC**	t_1 (msec)	t_2 (msec)	Average Acceleration t_1 to t_2
Position #1 - Driver	466.9	58.0	94.0	44.2
Position #2 - Passenger	496.8	69.0	105.0	45.3

** HIC is as defined in FMVSS 208. The maximum time interval from t_1 to t_2 is 36 milliseconds.

	CLIP SUMMARY*			
	CLIP (g's)	t_1 (msec)	t_2 (msec)	CSI
Position #1 - Driver	42.8	79.6	82.6	445.2
Position #2 - Passenger	41.2	83.2	86.2	404.8

* 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: 2000 Buick LeSabre 4 Door Sedan

NHTSA Test No.: MY0100 Test Date: January 21,2000

	HEAD INJURY CRITERIA (HIC) **REDUNDANT**			
	HIC**	t_1 (msec)	t_2 (msec)	Average Acceleration t_1 to t_2
Position #1 - Driver	518.9	57.5	93.5	46.1
Position #2 - Passenger	534.7	70.6	106.6	46.6

** HIC is as defined in FMVSS 208. The maximum time interval from t_1 to t_2 is 36 milliseconds.

	CLIP SUMMARY* **REDUNDANT**			
	CLIP (g's)	t_1 (msec)	t_2 (msec)	CSI
Position #1 - Driver	39.4	79.8	82.8	402.6
Position #2 - Passenger	40.0	82.4	85.4	419.7

* 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:	Driver	Passenger
Belt length from trim panel exit to bolt hole anchor point for continuous webbing systems.	1376	1396
Shoulder belt length as measured on Part 572 Dummy.	805	815
Lap belt length as measured on Part 572 Dummy.	571	581
SHOULDER BELT SPOOL-OFF DATA:		
As determined by film analysis.	‡	‡
As determined mechanically.	‡	‡
As determined electronically.	‡	‡
BELT STRETCH DATA:		
Measured electronically between shoulder belt load cell and the "D" ring.	‡	‡
Measured mechanically.	‡	‡

‡ Vehicle has integrated seat belt design. Test equipment not installed.

Dimensions in millimeters

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 10 mm molding.

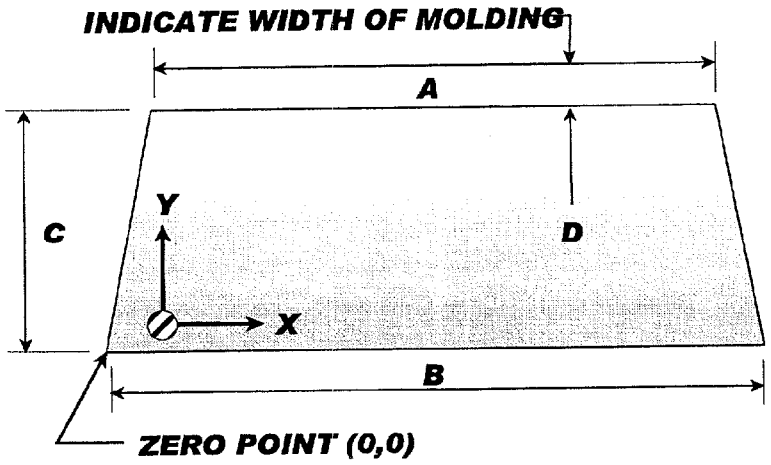
FMVSS 212 REQUIREMENTS:

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		
	PRE-TEST (mm)	POST-TEST(mm)	% OF RETENTION
RIGHT SIDE	2032.5	2032.5	100
LEFT SIDE	2032.5	2032.5	100
TOTAL	4,065	4,065	100

AREA OF RETENTION FAILURE: None



FRONT VIEW OF WINDSHIELD

DIMENSIONS (mm)	
A	1055
B	1640
C	685
D	10

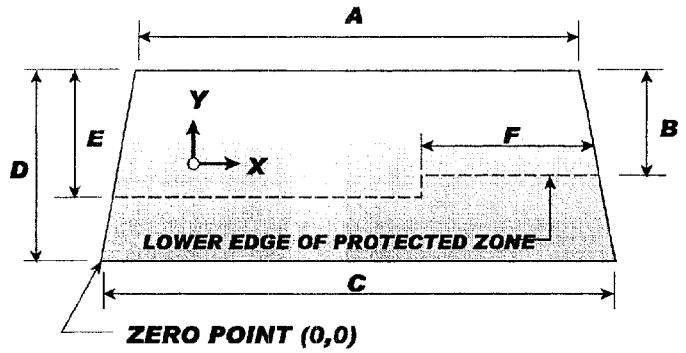
FAILURE DETAILS: None

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

DIMENSIONS (mm)	
A	1055
B	379
C	1640
D	685
E	475
F	785

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.: MY0100 TEST DATE: January 21,2000

VEHICLE MAKE/MODEL: 2000 Buick LeSabre

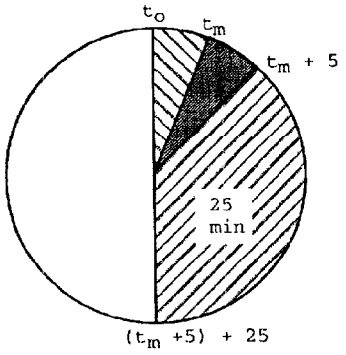
The test vehicle was filled from 92% to 94% of the manufacture's "usable" capacity. The electric fuel pump was operating if it will operate without engine operation. Two Part 572 anthropomorphic test devices were located at each of the front designated seating positions.

==========

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.

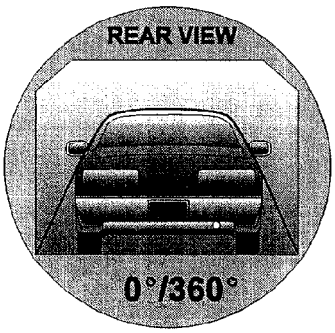
SOLVENT SPILLAGE DETAILS: None

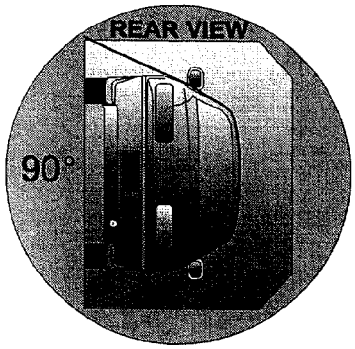
DATA SHEET 13

FMVSS NO. 301 STATIC ROLLOVER DATA SHEET

Vehicle: 2000 Buick LeSabre NHTSA No. MY0100

0 - 90 Degrees





I. DETERMINATION OF SOLVENT COLLECTION TIME PERIOD:

Rollover Fixture 90° Rotation Time (Spec. Range = 1 to 3 minutes)	1	minutes	20	seconds
FMVSS 301 Position Hold Time +	5	minutes	0	seconds
TOTAL	6	minutes	20	seconds
Next whole minute interval	7	minutes		

II. FMVSS 301 REQUIREMENTS :

(1) Time Period

First 5 minutes FROM onset of rotation	6th min.	7th min.	8th min. (if required)

(2) Maximum Allowable Solvent Spillage

142 g	28 g	28 g	28 g

III. ACTUAL TEST VEHICLE SOLVENT SPILLAGE:

0 g	0 g	0 g	N/A

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

IV. SOLVENT SPILLAGE LOCATION(S):

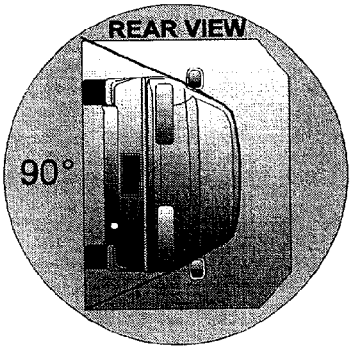
None

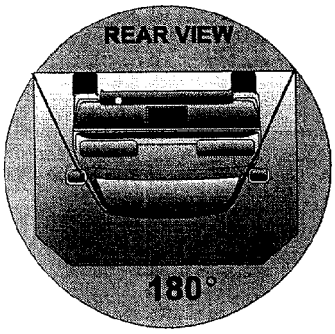
DATA SHEET 13

FMVSS NO. 301 STATIC ROLLOVER DATA SHEET (CONTINUED)

Vehicle: 2000 Buick LeSabre NHTSA No. MY0100

90 - 180 Degrees





I. DETERMINATION OF SOLVENT COLLECTION TIME PERIOD:

Rollover Fixture 90° Rotation Time (Spec. Range = 1 to 3 minutes)	1	minutes	17	seconds
FMVSS 301 Position Hold Time +	5	minutes	0	seconds
TOTAL	6	minutes	17	seconds
Next whole minute interval	7	minutes		

II. FMVSS 301 REQUIREMENTS :

(1) Time Period

First 5 minutes FROM onset of rotation	6th min.	7th min.	8th min. (if required)

(2) Maximum Allowable Solvent Spillage

142 g	28 g	28 g	28 g

III. ACTUAL TEST VEHICLE SOLVENT SPILLAGE:

0 g	0 g	0 g	N/A

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

IV. SOLVENT SPILLAGE LOCATION(S):

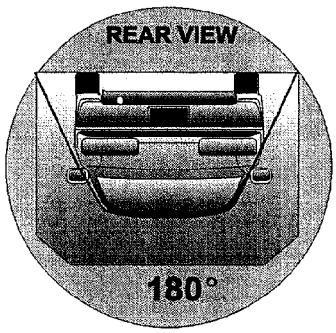
None

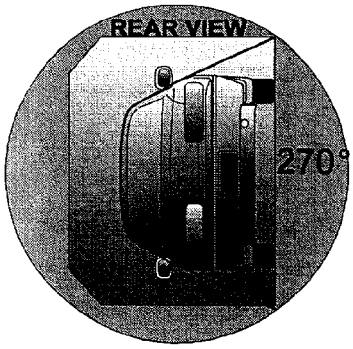
DATA SHEET 13

FMVSS NO. 301 STATIC ROLLOVER DATA SHEET (CONTINUED)

Vehicle: 2000 Buick LeSabre NHTSA No. MY0100

180 - 270 Degrees





I. DETERMINATION OF SOLVENT COLLECTION TIME PERIOD:

Rollover Fixture 90° Rotation Time (Spec. Range = 1 to 3 minutes)	1	minutes	09	seconds
FMVSS 301 Position Hold Time +	5	minutes	0	seconds
TOTAL	6	minutes	9	seconds
Next whole minute interval	7	minutes		

II. FMVSS 301 REQUIREMENTS :

(1) Time Period

First 5 minutes FROM onset of rotation	6th min.	7th min.	8th min. (if required)

(2) Maximum Allowable Solvent Spillage

142 g	28 g	28 g	28 g

III. ACTUAL TEST VEHICLE SOLVENT SPILLAGE:

0 g	0 g	0 g	N/A

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

IV. SOLVENT SPILLAGE LOCATION(S):

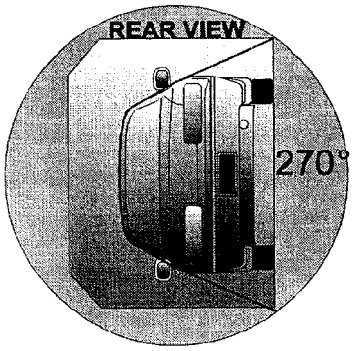
None

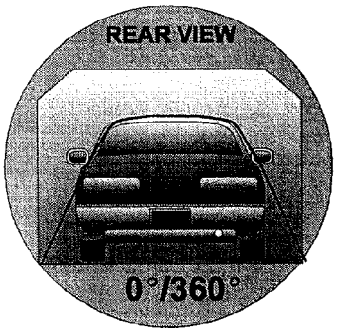
DATA SHEET 13

FMVSS NO. 301 STATIC ROLLOVER DATA SHEET (CONTINUED)

Vehicle: 2000 Buick LeSabre NHTSA No. MY0100

270 - 360 Degrees





I. DETERMINATION OF SOLVENT COLLECTION TIME PERIOD :

Rollover Fixture 90° Rotation Time	1	minutes	15	seconds
(Spec. Range = 1 to 3 minutes)				
FMVSS 301 Position Hold Time +	5	minutes	0	seconds
TOTAL	6	minutes	15	seconds
Next whole minute interval	7	minutes		

II. FMVSS 301 REQUIREMENTS :

(1) Time Period

First 5 minutes FROM onset of rotation	6th min.	7th min.	8th min. (if required)

(2) Maximum Allowable Solvent Spillage

142 g	28 g	28 g	28 g

III. ACTUAL TEST VEHICLE SOLVENT SPILLAGE:

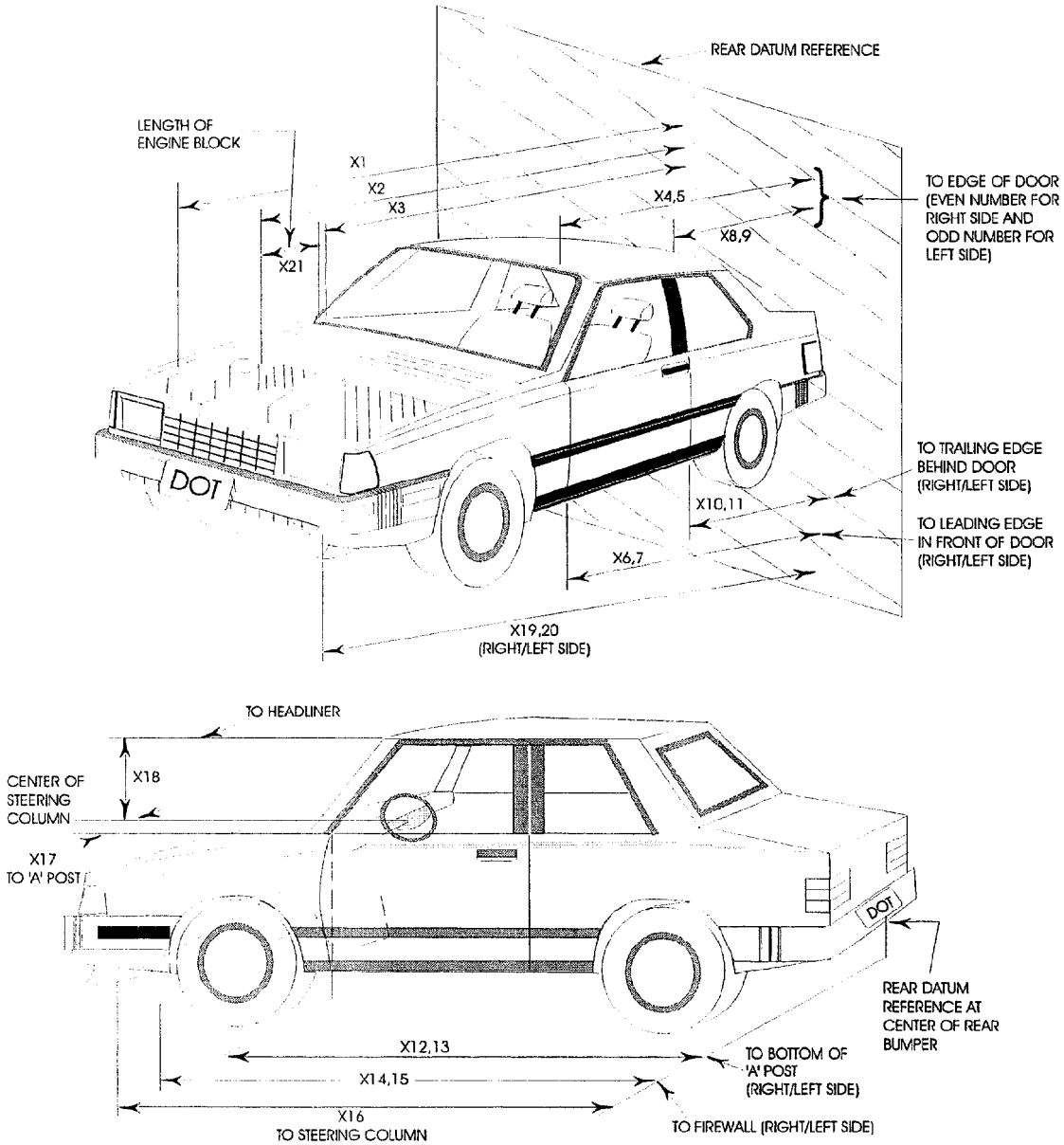
0 g	0 g	0 g	N/A

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

IV. SOLVENT SPILLAGE LOCATION(S) :

None

DATA SHEET NO. 14 TEST VEHICLE MEASUREMENTS



DATA SHEET NO.14 VEHICLE MEASUREMENTS (cont.)

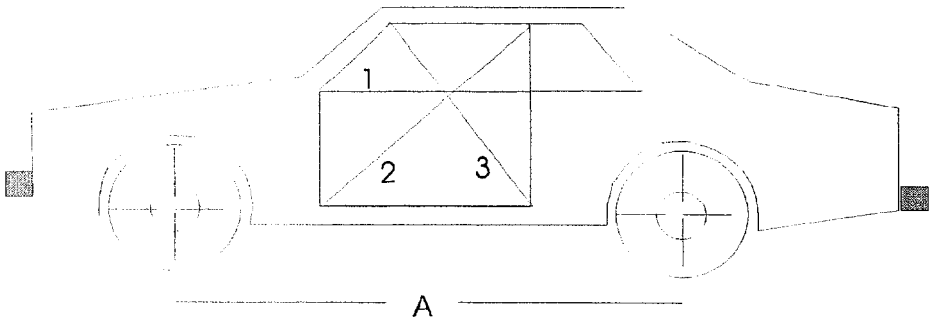
No.		Pre-Test	Post-Test	Differences
X1	Total Length of Vehicle at Centerline	5136.7	4632.9	503.8
X2	Rear Surface of Vehicle to Front of Engine	4484.0	4313.9	170.1
X3	Rear Surface of Vehicle to Firewall	3979.6	4029.1	-49.5
X4	Rear Surface of Vehicle to Upper Leading Edge of Right Door	3449.4	3472.1	-22.7
X5	Rear Surface of Vehicle to Upper Leading Edge of Left Door	3485.1	3489.9	-4.8
X6	Rear Surface of Vehicle to Lower Leading Edge of Right Door	3426.0	3381.1	44.9
X7	Rear Surface of Vehicle to Lower Leading Edge of Left Door	3457.2	3453.2	4.0
X8	Rear Surface of Vehicle to Upper Trailing Edge of Right Door	2385.3	2394.1	-8.8
X9	Rear Surface of Vehicle to Upper Trailing Edge of Left Door	2408.7	2426.7	-18.0
X10	Rear Surface of Vehicle to Lower Trailing Edge of Right Door	2369.8	2349.8	20.0
X11	Rear Surface of Vehicle to Lower Trailing Edge of Left Door	2399.8	2400.5	-0.7
X12	Rear Surface of Vehicle to Bottom of "A" Post of Right Side	3540.7	3507.8	32.9
X13	Rear Surface of Vehicle to Bottom of "A" Post of Left Side	3573.2	3562.3	10.9
X14	Rear Surface of Vehicle to Firewall, Right Side	3987.4	4068.0	-80.6
X15	Rear Surface of Vehicle to Firewall, Left Side	4026.7	4148.5	-121.8
X16	Rear Surface of Vehicle to Steering Column	3018.4	3025.0	-6.6
X17	Center of Steering Column to "A" Post	392.0	382.5	9.5
X18	Center of Steering Column to Headliner	400.7	432.9	-32.2
X19	Rear Surface of Vehicle to Right Side of Front Bumper	5104.1	4628.7	475.4
X20	Rear Surface of Vehicle to Left Side of Front Bumper	5107.7	4647.9	459.8
X21	Length of Engine Block	88.8	88.8	0.0
RD	Rear Surface of Vehicle to Right Side of Dash Panel	3217.3	3301.0	-83.7
CD	Rear Surface of Vehicle to Center of Dash Panel	3184.0	3247.5	-63.5
LD	Rear Surface of Vehicle to Left Side of Dash Panel	3198.1	3211.8	-13.7

All Dimensions in mm

DATA SHEET NO.14 VEHICLE MEASUREMENTS (cont.)

VEHICLE INTRUSION MEASUREMENTS

DOOR OPENING WIDTH



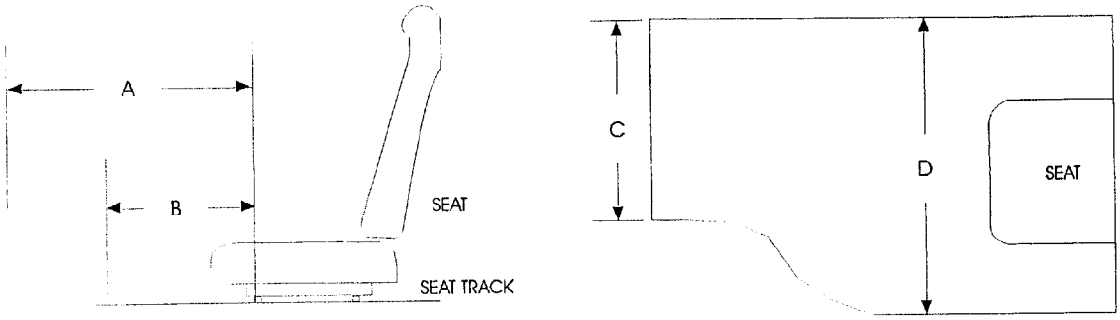
UNITS (mm)	LEFT			RIGHT		
MEASUREMENT	1	2	3	1	2	3
BEFORE TEST	1004.9	1487.4	1021.4	981.1	1482.5	1000.9
AFTER TEST	996.9	1471.9	1007.0	919.6	1489.5	1042.3
DIFFERENCE	8.0	15.5	14.4	61.5	-7.0	-41.4

UNITS (mm)	A = WHEELBASE LEFT	A = WHEELBASE RIGHT
BEFORE TEST	2867.5	2850.2
AFTER TEST	2768.9	2717.2
DIFFERENCE	98.6	133.0

DATA SHEET NO.14 VEHICLE MEASUREMENTS (cont.)

VEHICLE INTRUSION MEASUREMENTS

STATIC FOOTWELL DEFORMATION



DRIVER

Measurement	Pre-Test	Post-Test	Difference
A	565.4	534.4	31.0
B	484.8	448.4	36.4
C	452.4	423.8	28.6
D	475.0	503.1	-28.1

PASSENGER

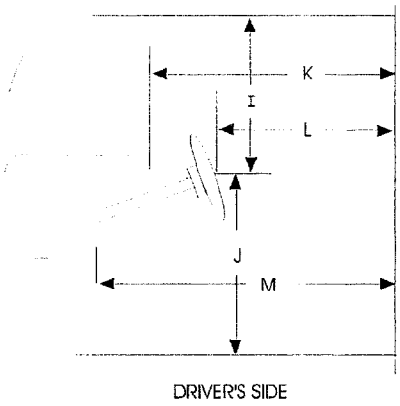
Measurement	Pre-Test	Post-Test	Difference
A	570.4	560.6	9.8
B	479.0	494.5	-15.5
C	481.9	482.5	-0.6
D	530.1	495.1	35.0

Units = mm

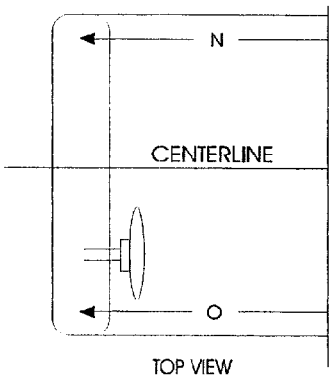
DATA SHEET NO.14 VEHICLE MEASUREMENTS (cont.)

VEHICLE INTRUSION MEASUREMENTS

STATIC PASSENGER COMPARTMENT INTRUSION

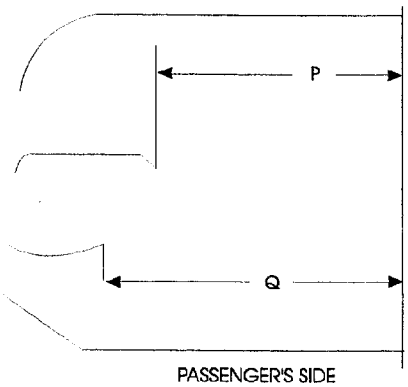


DRIVER'S SIDE



TOP VIEW

MEASUREMENTS
FROM C-PILLAR
BELT ANCHORAGE



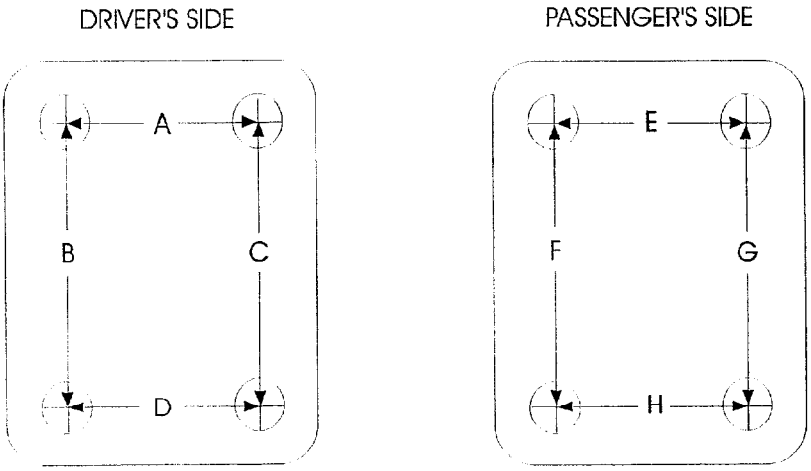
PASSENGER'S SIDE

Measurement	Pre-Test	Post-Test	Difference
I	400.7	432.9	-32.2
J	662.1	657.1	5.0
K	1778.5	1804.8	-26.3
L	1617.7	1606.4	11.3
M	1787.2	1777.9	9.3
N	1845.1	1923.3	-78.2
O	1797.4	1793.3	4.1
P = K (PASS.)	1875.8	1910.4	-34.6
Q = M (PASS.)	1803.3	1792.7	10.6

Units = mm

DATA SHEET NO.14 VEHICLE MEASUREMENTS (cont.)

FLOORBOARD DEFORMATION



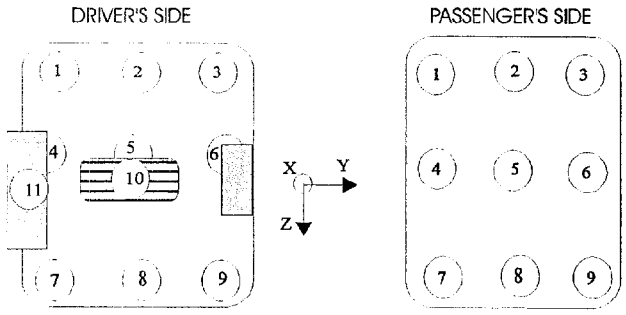
TOP VIEW THROUGH FLOOR PAN

Measurement	Pre-Test	Post-Test	Difference
A	400	395	5
B	590	575	15
C	650	655	-5
D	390	390	0
E	400	405	-5
F	630	615	15
G	655	640	15
H	405	405	0

Units = mm

DATA SHEET NO.14 VEHICLE MEASUREMENTS (cont.)

TOE-PAN INTRUSION



Driver Side Floorpan Measurements

Reference: X = Rear Bumper; Z = Ground

Floorpan Location	X Deformation			Z Deformation		
	Pre-Test	Post-Test	Difference	Pre-Test	Post-Test	Difference
1	3612.1	3558.9	53	-413.8	-382.7	-31
2	3594.9	3556.0	39	-404.2	-362.5	-42
3	3621.6	3554.5	67	-381.6	-349.1	-33
4	3549.1	3538.5	11	-388.8	-385.4	-3
5	3571.7	3520.8	51	-369.1	-341.4	-28
6	3586.8	3529.2	58	-345.3	-295.0	-50
7	3508.8	3469.6	39	-304.8	-279.1	-26
8	3514.2	3470.0	44	-363.4	-268.8	-95
9	3540.6	3478.2	62	-288.8	-231.3	-58
10	3519.9	3440.3	80	-495.1	-466.4	-29
11	3535.4	3497.9	38	-389.2	-335.6	-54

Passenger Side Floorpan Measurements

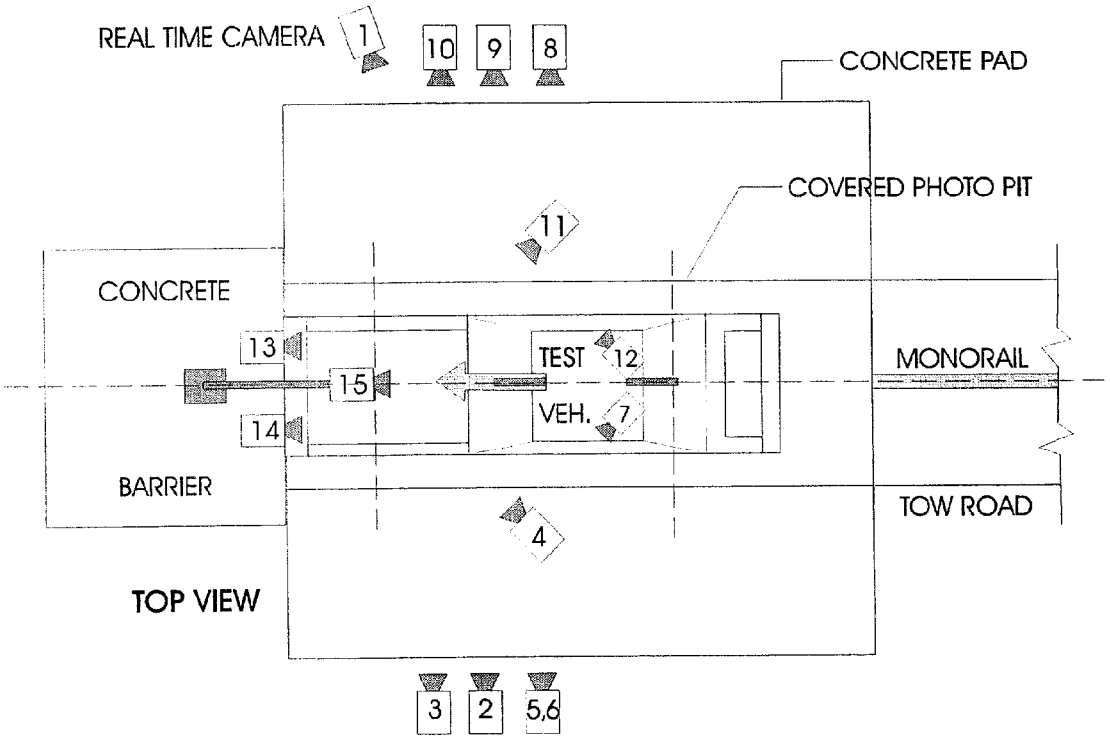
Reference: X = Rear Bumper; Z = Ground

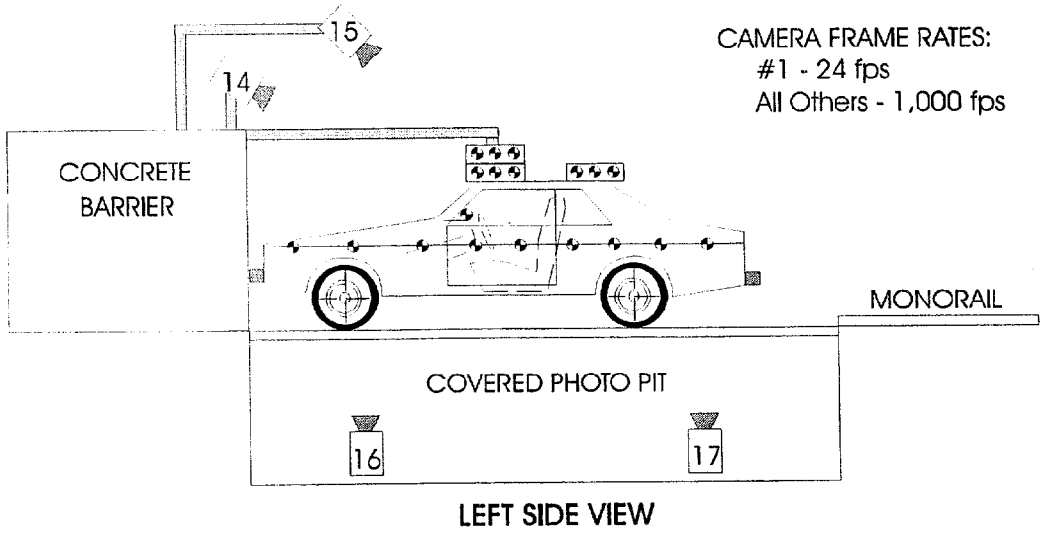
Floorpan Location	X Deformation			Z Deformation		
	Pre-Test	Post-Test	Difference	Pre-Test	Post-Test	Difference
1	3579.6	3501.8	78	-381.4	-301.1	-80
2	3609.5	3462.8	147	-388.6	-294.2	-94
3	3627.2	3473.1	154	-396.1	-331.8	-64
4	3531.4	3443.0	88	-324.4	-220.4	-104
5	3594.5	3436.8	158	-380.7	-269.9	-111
6	3592.5	3453.0	140	-364.9	-291.1	-74
7	3507.5	3407.1	100	-308.3	-178.0	-130
8	3518.2	3396.7	122	-292.8	-185.4	-107
9	3540.9	3419.1	122	-323.7	-263.9	-60

Units in mm

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.: MY0100 Vehicle: 2000 Buick LeSabre 4 Door Sedan

CAMERA NO.	VIEW	CAMERA POSITIONS (mm)* X	Y	Z	ANGLE (deg)**	FILM PLANE TO HEAD TARGET	LENS (mm)	SPEED (fps)
1	Real-Time Camera	-	-	-	-	-	-	24
2	Overall Left Side	7133	1887	1054	-3	6651	12.5	1015
3	Left Side View	8506	1199	1087	-3	8024	25	1020
4	Driver and Interior View	6933	2891	1958	-10	-	35	1055
5	Steering Column (Bottom)	7750	2108	1166	-4	7268	25	1025
6	Steering Column (Top)	7750	2108	1773	-10	7268	25	1015
7	Left Belt	-	-	-	-	-	-	-
8	Overall Right Side	7033	1955	1045	-4	6551	12.5	1020
9	Right Side View	8512	1481	1091	-3	8030	25	1000
10	Right Passenger View	8111	1890	1280	-3	7629	35	1020
11	Passenger and Interior View	6562	2681	1852	-10	-	35	1025
12	Right Belt	-	-	-	-	-	-	-
13	Passenger Front View	579	-25	1975	-38.0	-	13	1030
14	Driver Front View	579	-25	1975	-37.0	-	13	1015
15	Windshield View	0	-92	3588	-51.1	-	13	1005
16	Pit View of Engine	0	680	-3048	90.0	-	13	1050
17	Pit View of Fuel Tank	0	2725	-3048	90.0	-	13	1010

*X = film plane to monorail centerline

Y = film plane to impact location

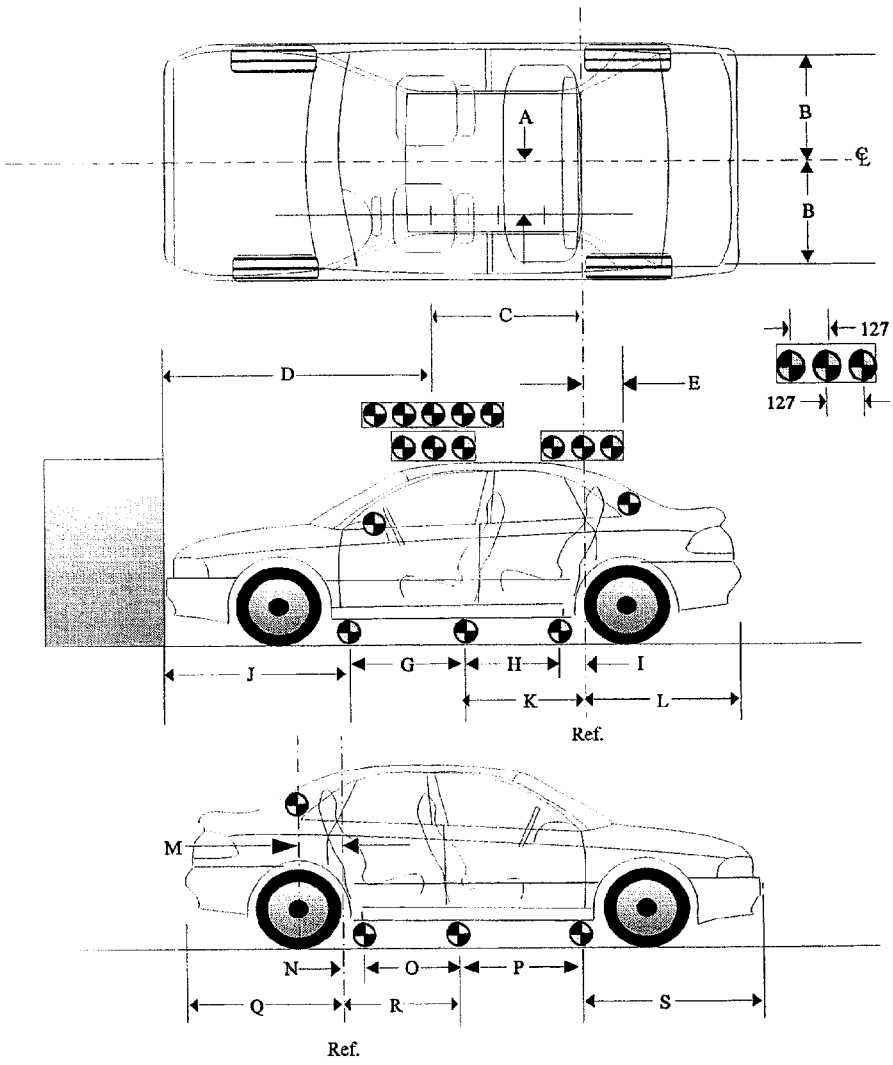
Z = film plane to ground

** = referenced to horizontal plane

N.T. indicates No Timing

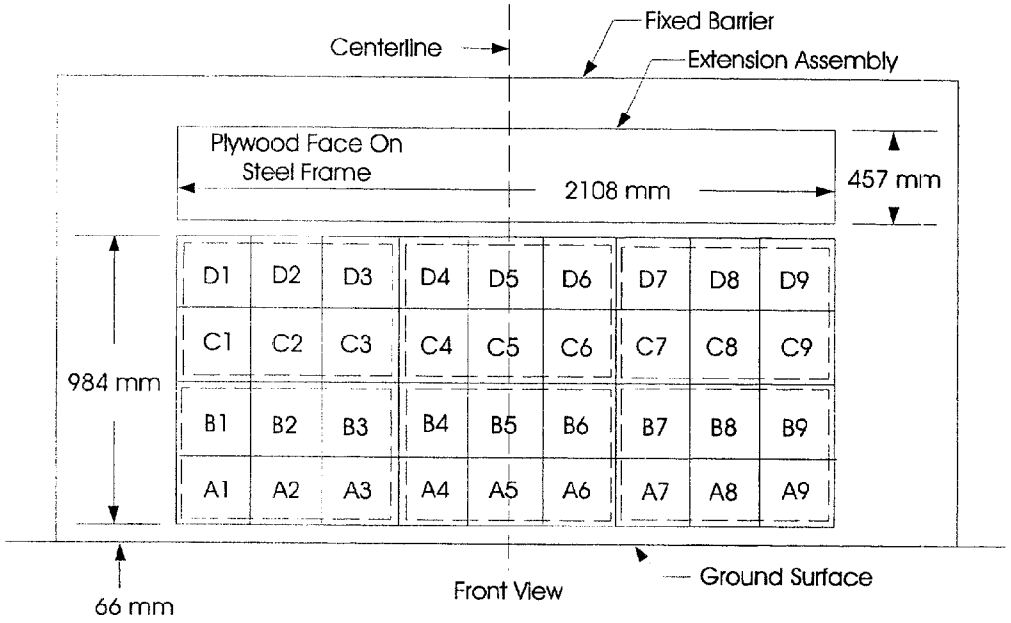
(Dimensions in millimeters)

A	380.1
B	682.3
C	1235.6
D	2408.1
E	304.0
F	1712.9
G	975.5
H	937.3
I	107.0
J	1596.8
K	1044.2
L	1520.1
M	319.1
N	109.0
O	955.0
P	950.4
Q	1489.0
R	1064.0
S	1633.3



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. : MY0100; Test Date: January 21,2000; Technician: James A. Czarnecki

Vehicle Model Year/Make/Model: 2000 Buick LeSabre

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

B. Size of vent holes: (mm^2) 30 -Driver 60 -Passenger

C. Total vent area: (mm^2) 60 -Driver 120 -Passenger

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

Driver: - -Length; - -Width; 525 -Diameter

Passenger: 540 -Height; 580 -Width; 520 -Depth

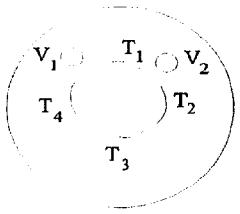
E. Is the air bag tethered?

Driver: x -Yes; - -No; If yes, record length of tether- 220

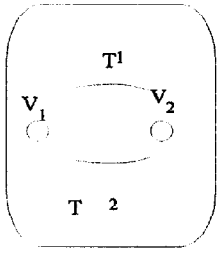
Passenger: x -Yes; - -No; If yes, record length of tether- 450

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$_n$).

Driver



Passenger



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

Driver: Air bag: not available

Generator: AB2164QWTHTDKA

Passenger: Air bag: P121504-06F TS73267M0603

Generator: AL458015279V0789 25654580

DATA SHEET NO. 19 ACCIDENT INVESTIGATION DIVISION DATA

FOR 56.3 KPH FRONTAL BARRIER IMPACT

Vehicle Make/Model/Body Style: Buick LeSabre 4 Door Sedan

NHTSA Test No.: MY0100 VIN: 1G4HP54K8Y4158044

Model Year: 2000 Build Date: 10/99 Test Date: January 21,2000

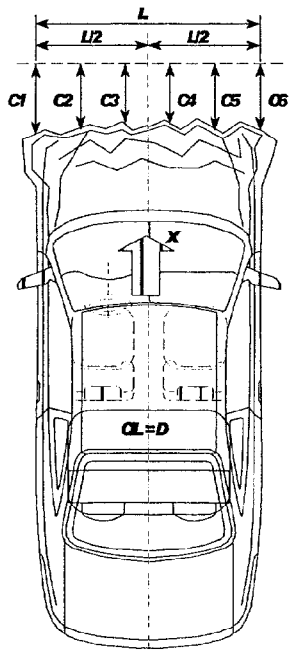
Vehicle Size Category: Sedan Test Weight: 1862 kg

Vehicle Wheelbase: 2867.5 mm; Front Overhang: 1597 mm; Overall Width: 1867 mm

Collision Deformation Classification (CDC) Code: 12FDEW3

Crush Depth Dimensions;

	PRE	POST	DIFF	
C1 =	5099.9	4571.9	-528	mm
C2 =	5126.3	4574.3	-552	mm
C3 =	5139.6	4567.4	-572.2	mm
C4 =	5136.8	4564.5	-572.3	mm
C5 =	5120.0	4556.3	-563.7	mm
C6 =	5093.3	4549.4	-543.9	mm



Midpoint of Damage: D = Vehicle Centerline (Longitudinal)

Length of Damaged Region:

L1= 1862 mm

L2= - mm

L3= - mm

APPENDIX A

PHOTOGRAPHS

TABLE OF PHOTOGRAPHS

Figure	Title	Page
A-1	LOAD CELL LOCATIONS.	A-3
A-2	PRE-TEST FRONT VIEW	A-4
A-3	POST-TEST FRONT VIEW.	A-5
A-4	PRE-TEST LEFT SIDE VIEW	A-6
A-5	POST-TEST LEFT SIDE VIEW	A-7
A-6	PRE-TEST RIGHT SIDE VIEW	A-8
A-7	POST-TEST RIGHT SIDE VIEW	A-9
A-8	PRE-TEST RIGHT FRONT THREE-QUARTER VIEW	A-10
A-9	POST-TEST RIGHT FRONT THREE-QUARTER VIEW	A-11
A-10	PRE-TEST LEFT REAR THREE-QUARTER VIEW	A-12
A-11	POST-TEST LEFT REAR THREE-QUARTER VIEW	A-13
A-12	PRE-TEST WINDSHIELD VIEW	A-14
A-13	POST-TEST WINDSHIELD VIEW	A-15
A-14	PRE-TEST ENGINE COMPARTMENT VIEW	A-16
A-15	FUEL CAP VIEW	A-17
A-16	PRE-TEST FRONT UNDERBODY VIEW	A-18
A-17	POST-TEST FRONT UNDERBODY VIEW	A-19
A-18	PRE-TEST FRONT SIDE UNDERBODY VIEW	A-20
A-19	POST-TEST FRONT SIDE UNDERBODY VIEW	A-21
A-20	PRE-TEST REAR UNDERBODY VIEW	A-22
A-21	POST-TEST REAR UNDERBODY VIEW	A-23
A-22	PRE-TEST DRIVER POSITION VIEW	A-24
A-23	POST-TEST DRIVER POSITION VIEW	A-25
A-24	PRE-TEST PASSENGER POSITION VIEW	A-26
A-25	POST-TEST PASSENGER POSITION VIEW	A-27
A-26	PRE-TEST DRIVER AND INTERIOR VIEW	A-28
A-27	POST-TEST DRIVER AND INTERIOR VIEW	A-29
A-28	PRE-TEST PASSENGER AND INTERIOR VIEW	A-30
A-29	POST-TEST PASSENGER AND INTERIOR VIEW	A-31
A-30	PRE-TEST DRIVER HEAD LOCATION	A-32
A-31	POST-TEST DRIVER HEAD LOCATION	A-33
A-32	PRE-TEST PASSENGER HEAD LOCATION	A-34
A-33	POST-TEST PASSENGER HEAD LOCATION	A-35
A-34	PRE-TEST DRIVER FLOOR PAN VIEW	A-36
A-35	POST-TEST DRIVER FLOOR PAN VIEW	A-37
A-36	PRE-TEST PASSENGER FLOOR PAN VIEW	A-38
A-37	POST-TEST PASSENGER FLOOR PAN VIEW	A-39
A-38	ROLLOVER VIEW	A-40
A-39	IMPACT VIEW	A-41

Figure A-1: LOAD CELL LOCATIONS.

Figure A-2: PRE-TEST FRONT VIEW

Figure A-3: POST-TEST FRONT VIEW.

8413-50

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

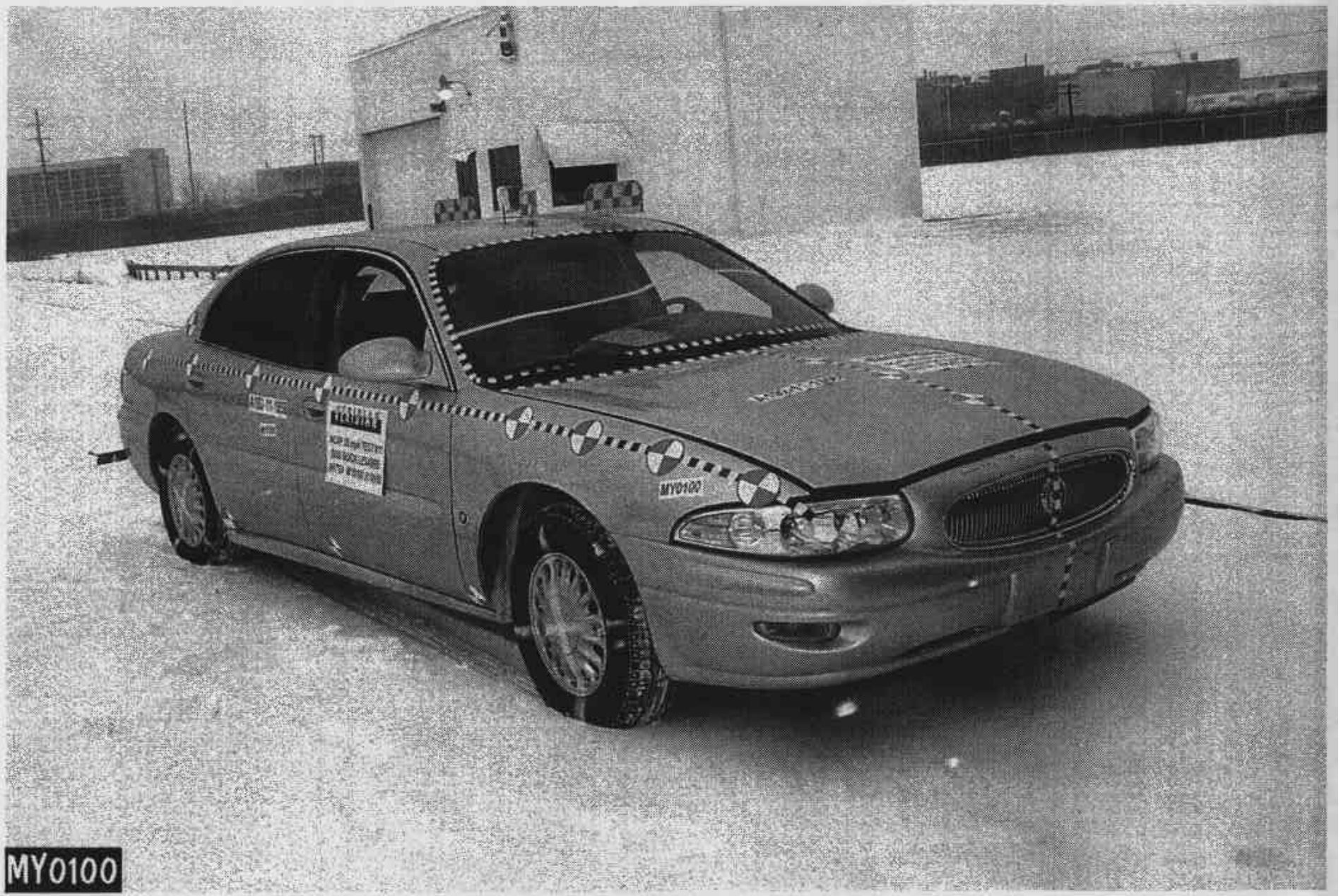


Figure A-8: PRE-TEST RIGHT FRONT THREE-QUARTER VIEW

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

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

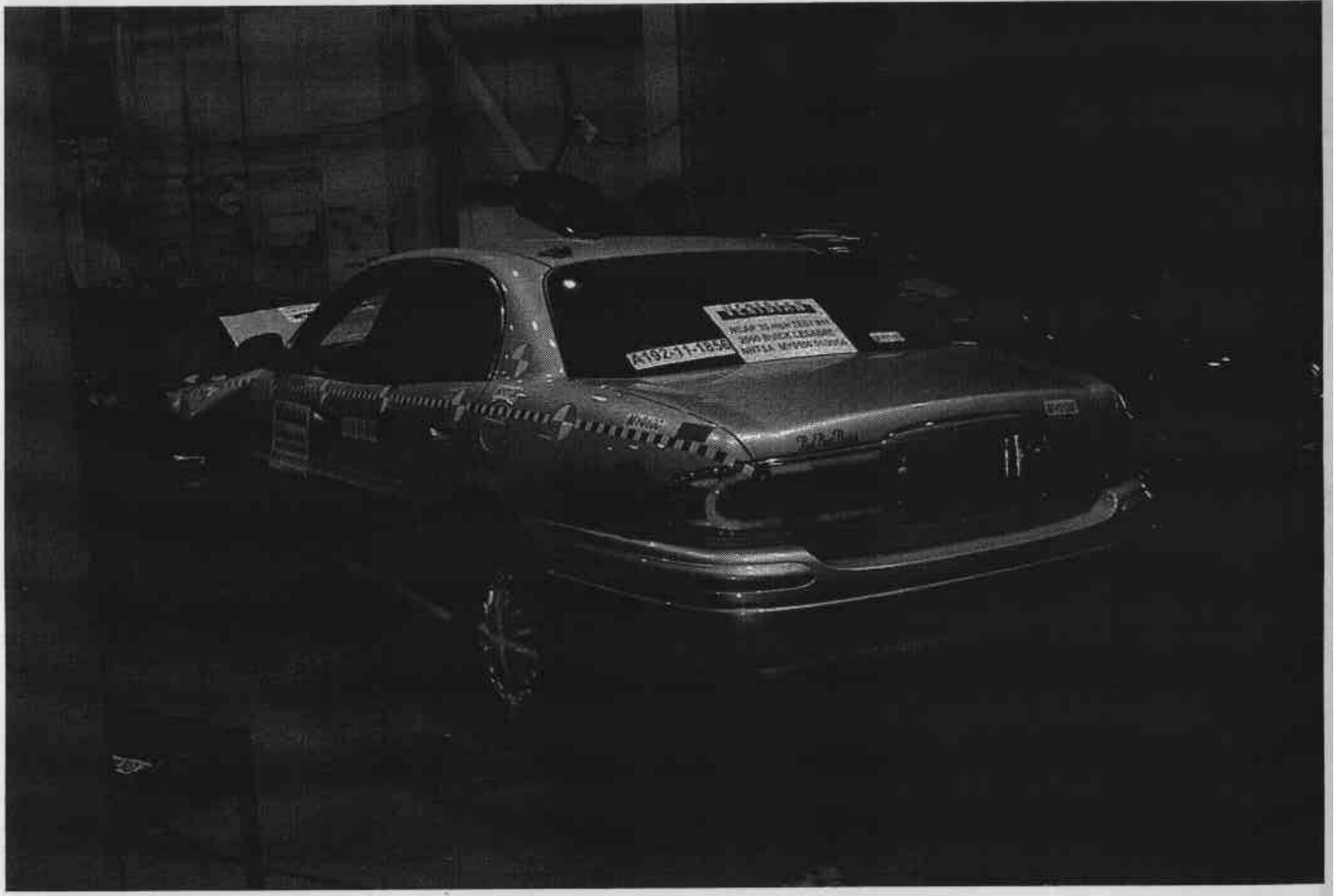


Figure A-11: POST-TEST LEFT REAR THREE-QUARTER VIEW

Figure A-12: PRE-TEST WINDSHIELD VIEW

Figure A-13: POST-TEST WINDSHIELD VIEW

Figure A-14: PRE-TEST ENGINE COMPARTMENT VIEW

8413-50

Figure A-15: FUEL CAP VIEW

Figure A-16: PRE-TEST FRONT UNDERBODY VIEW

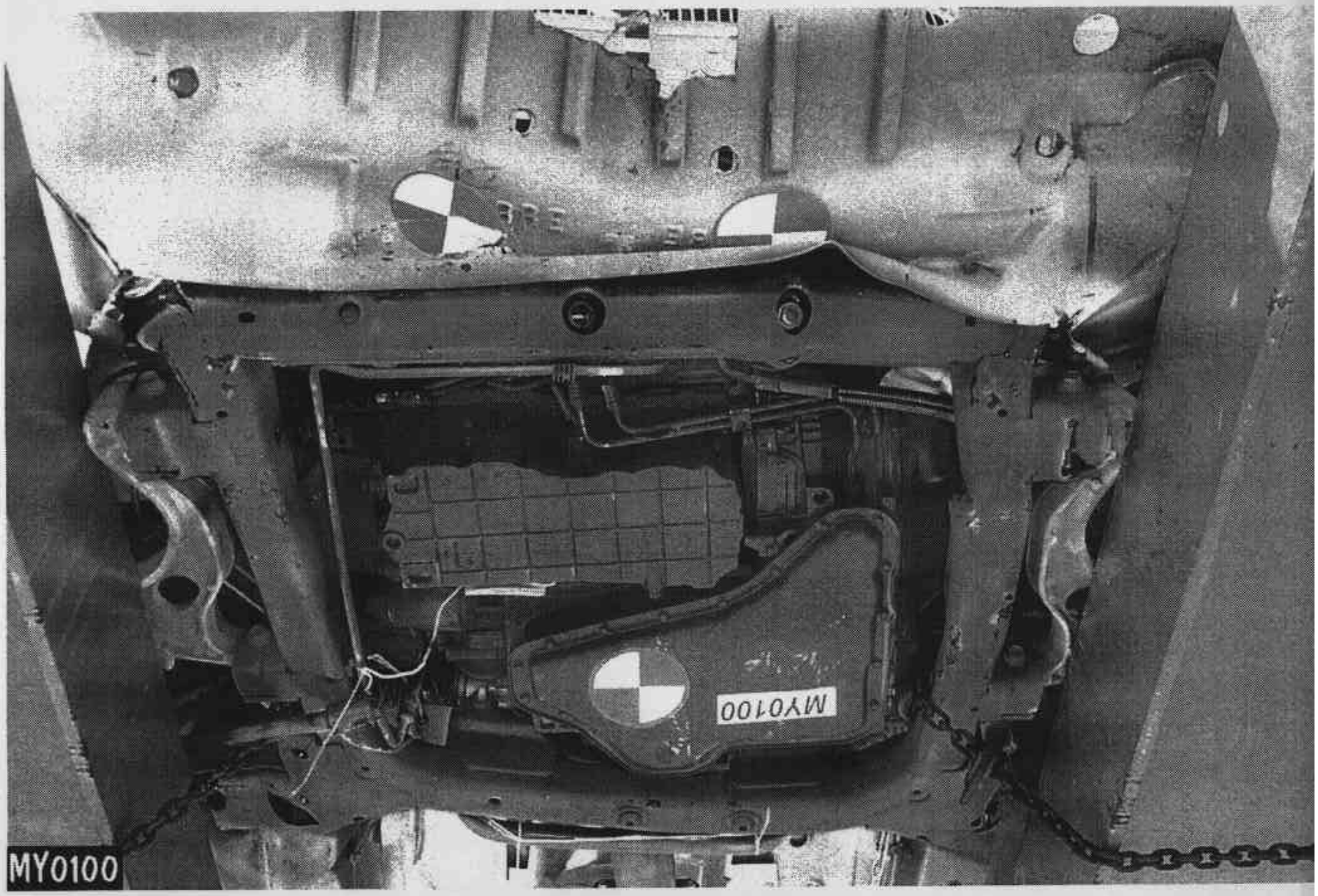


Figure A-17: POST-TEST FRONT UNDERBODY VIEW

8413-50

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

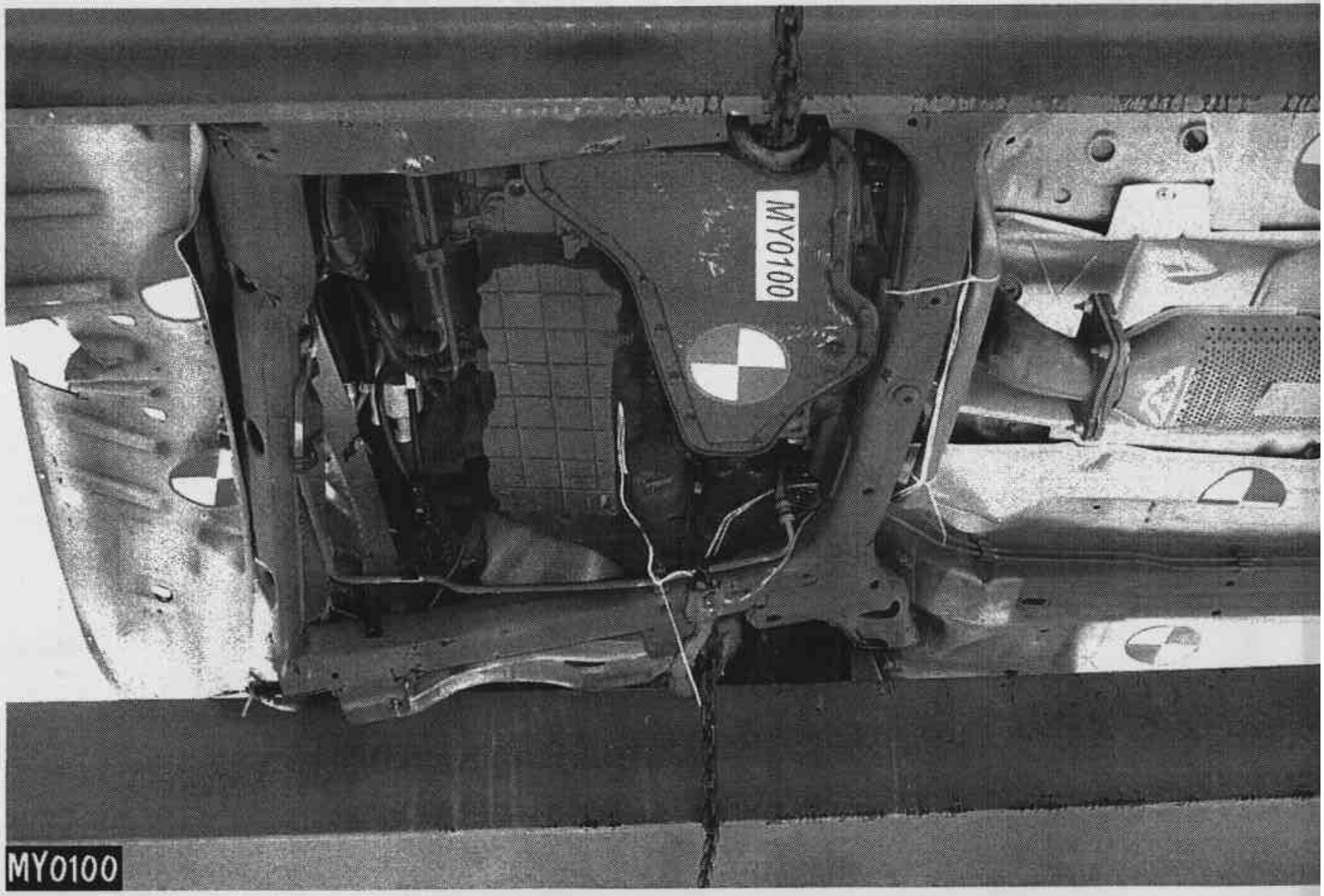


Figure A-19: POST-TEST FRONT SIDE UNDERBODY VIEW

Figure A-20: PRE-TEST REAR UNDERBODY VIEW

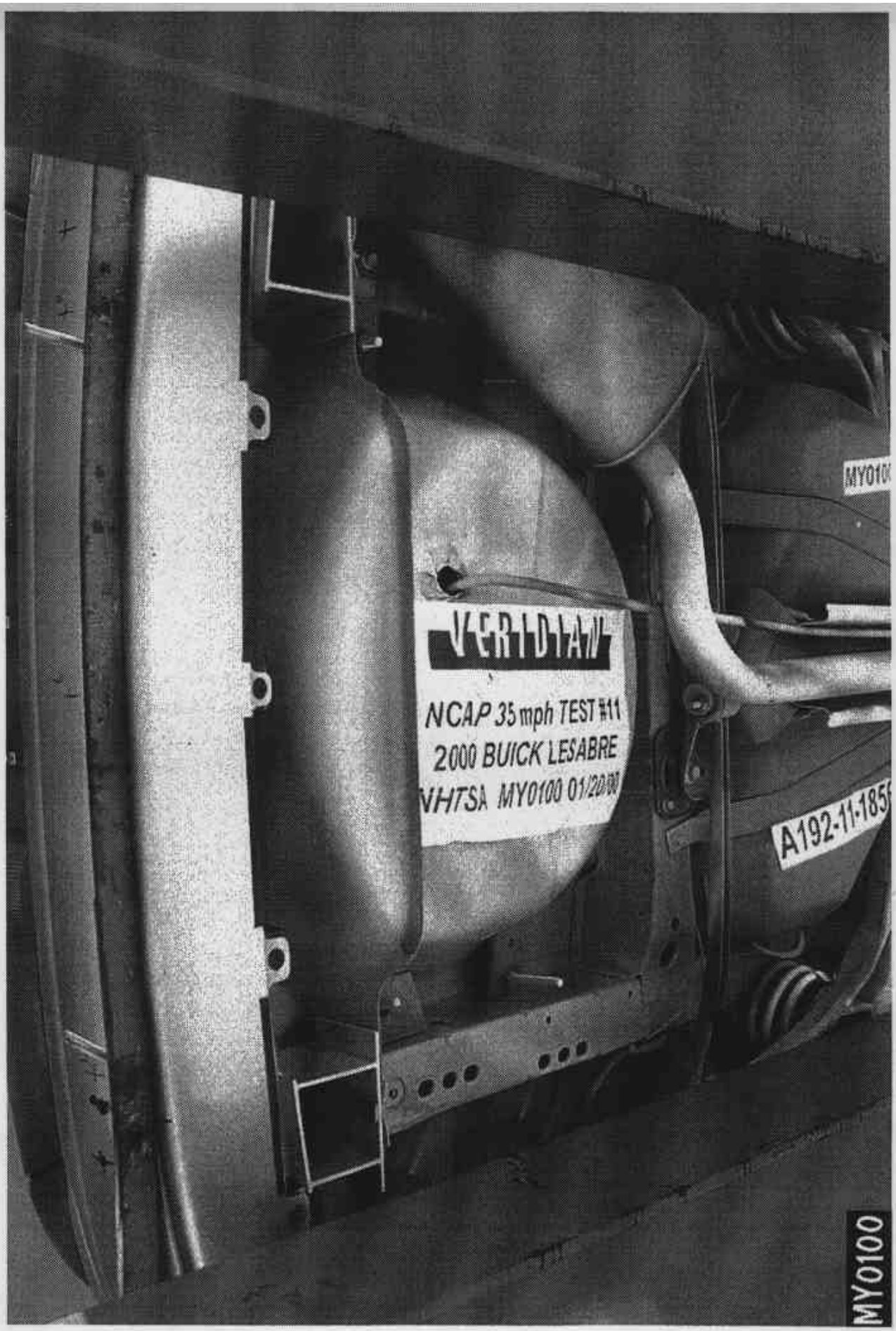


Figure A-21: POST-TEST REAR UNDERBODY VIEW

Figure A-22: PRE-TEST DRIVER POSITION VIEW

Figure A-23: POST-TEST DRIVER POSITION VIEW

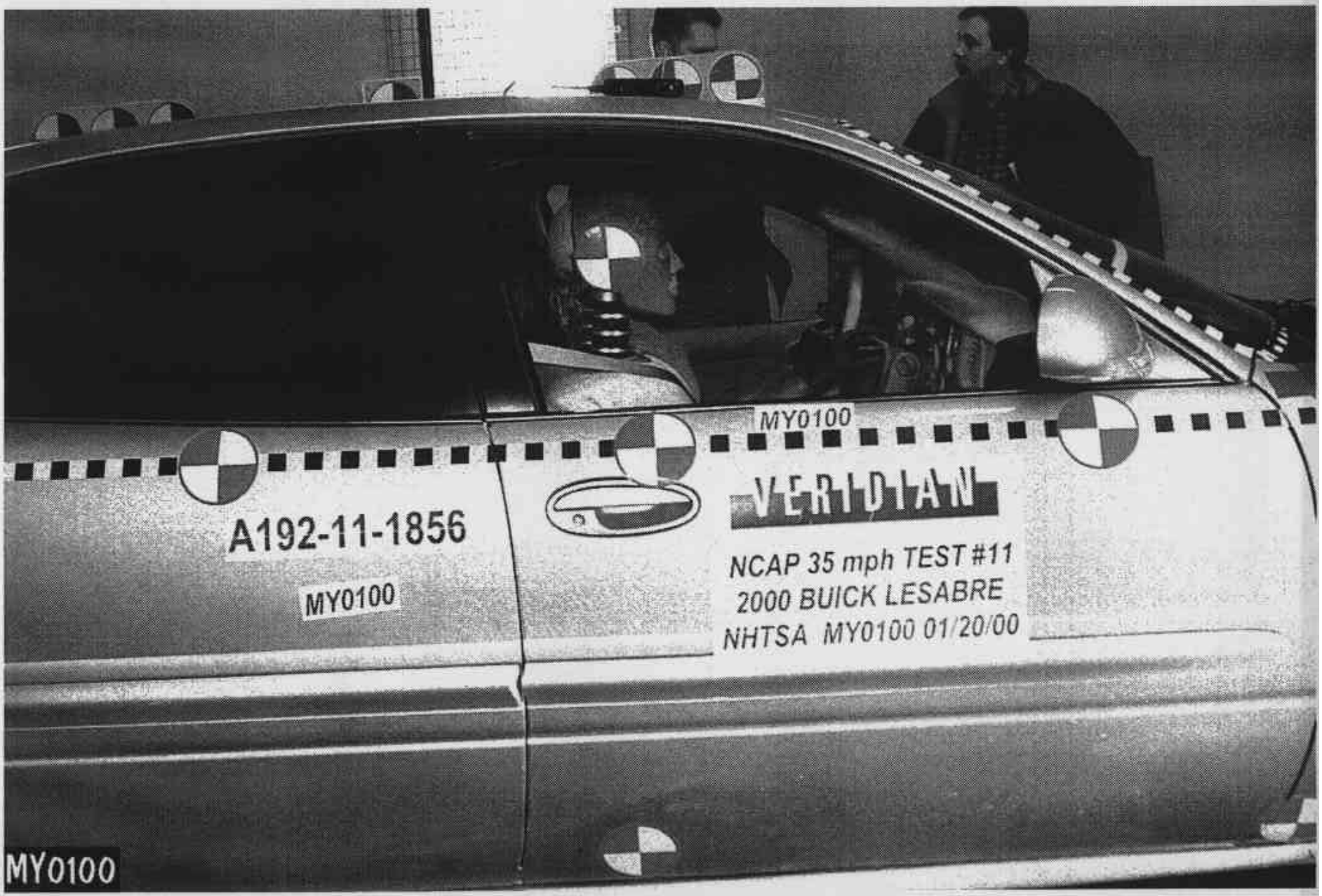


Figure A-24: PRE-TEST PASSENGER POSITION VIEW

Figure A-25: POST-TEST PASSENGER POSITION VIEW

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

8413-50

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

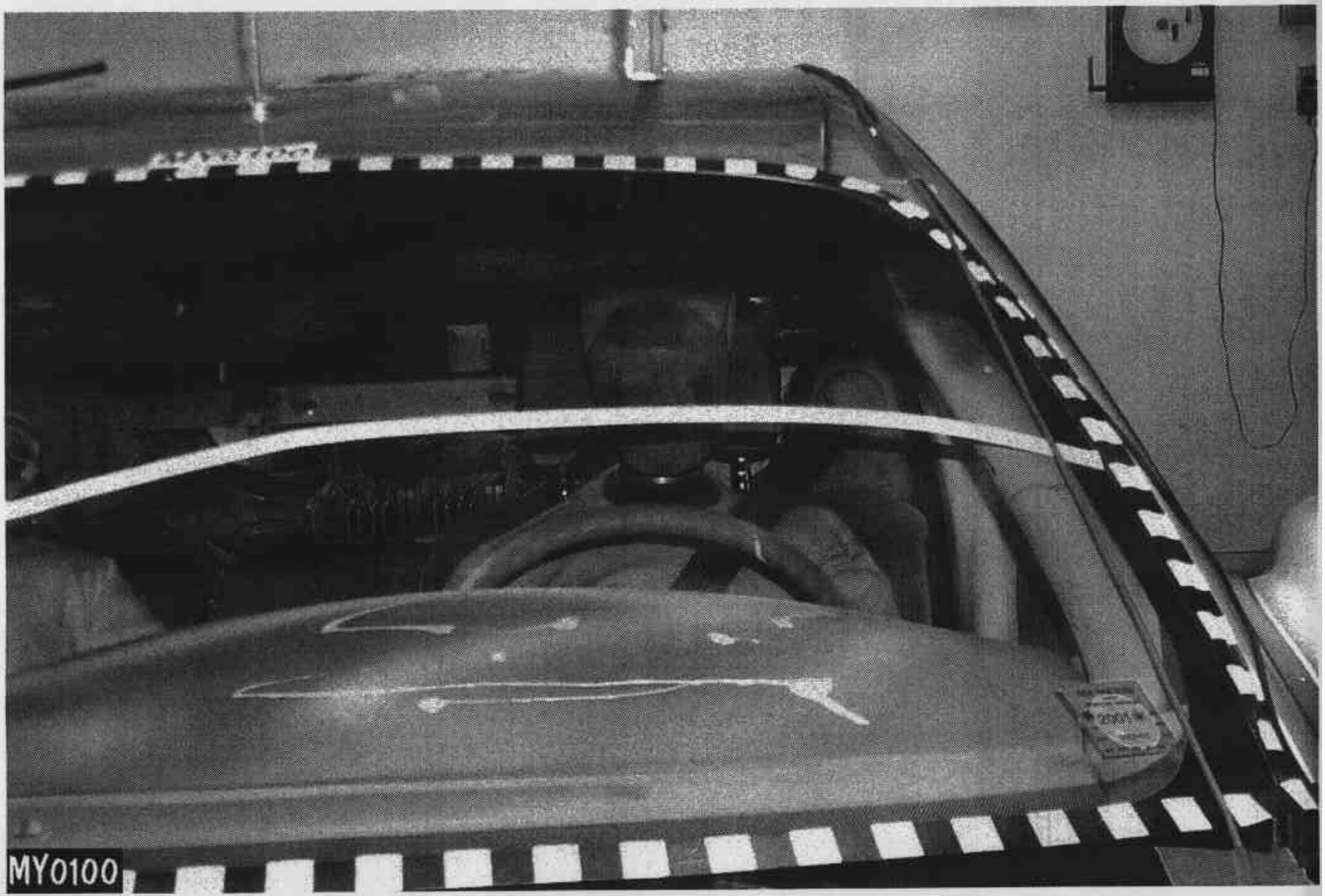


Figure A-30: PRE-TEST DRIVER HEAD LOCATION

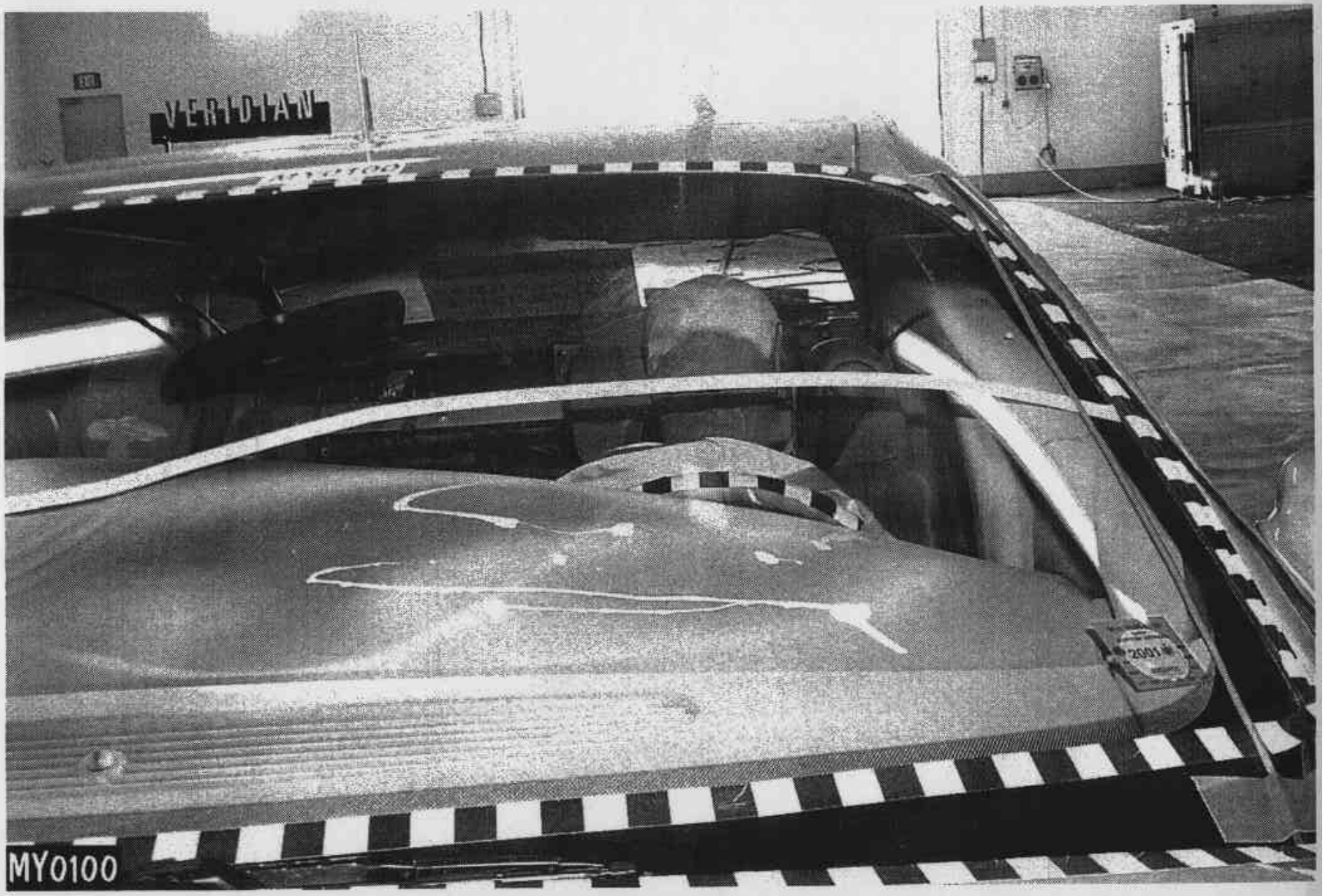


Figure A-31: POST-TEST DRIVER HEAD LOCATION

Figure A-32: PRE-TEST PASSENGER HEAD LOCATION

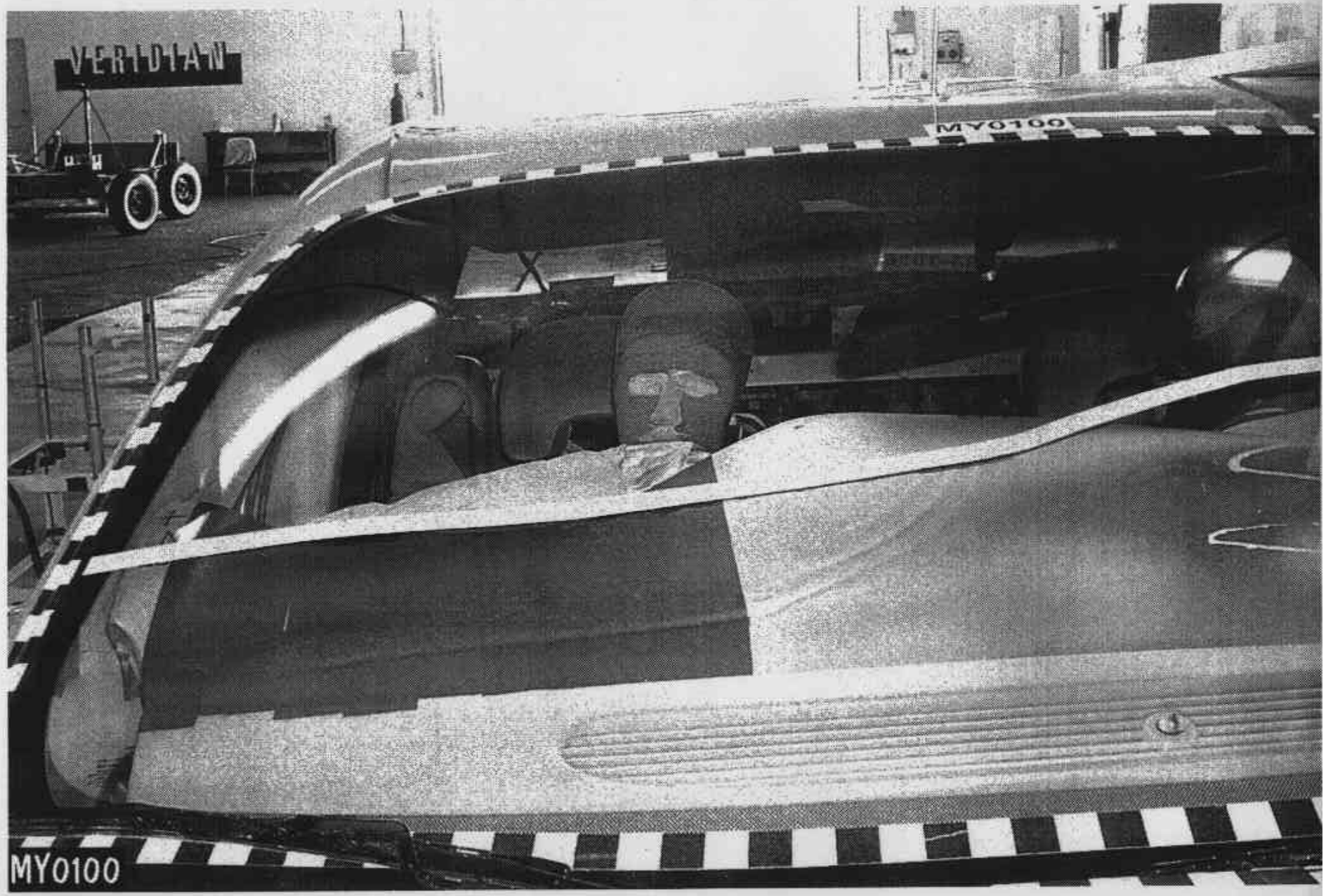


Figure A-33: POST-TEST PASSENGER HEAD LOCATION

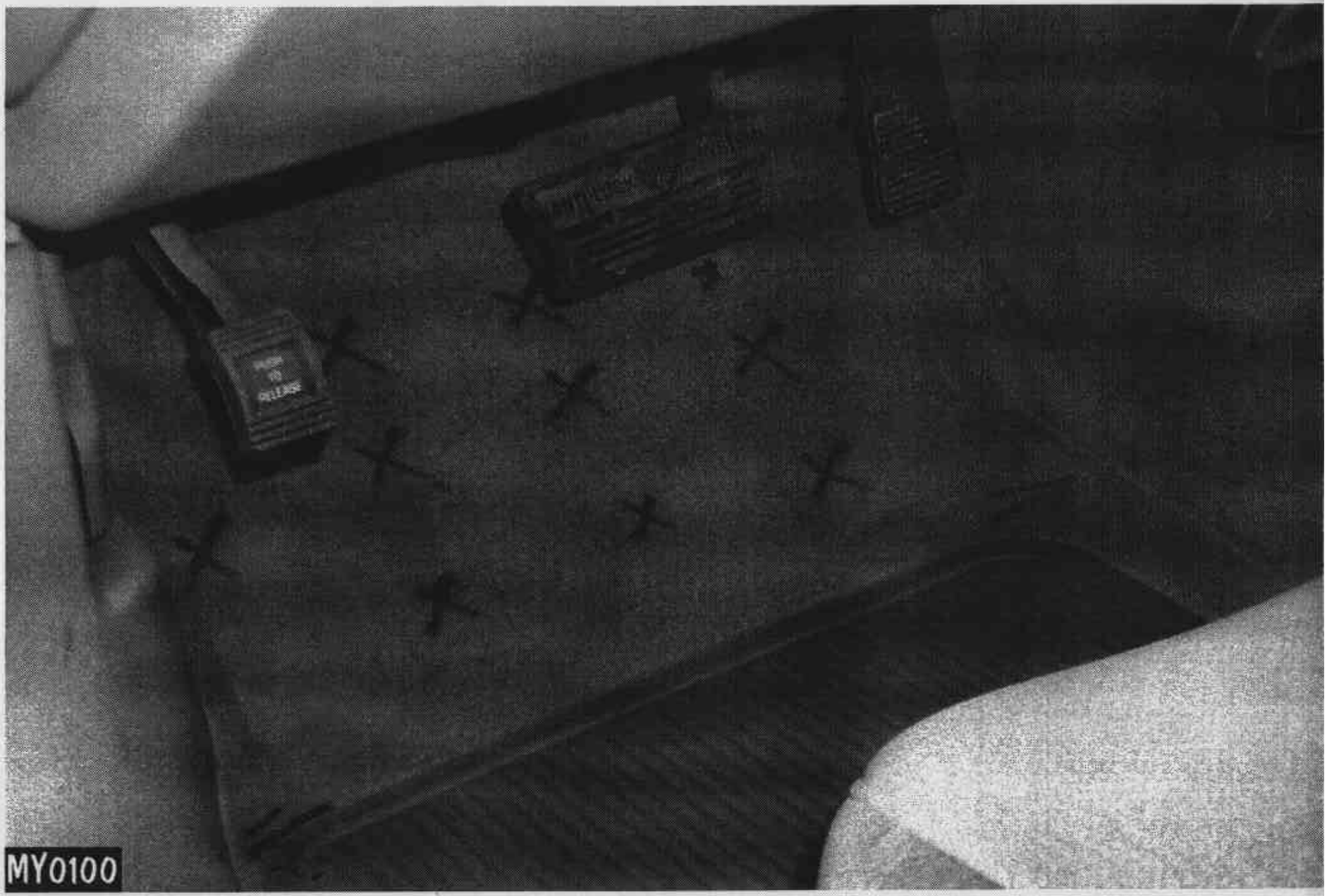


Figure A-34: PRE-TEST DRIVER FLOOR PAN VIEW

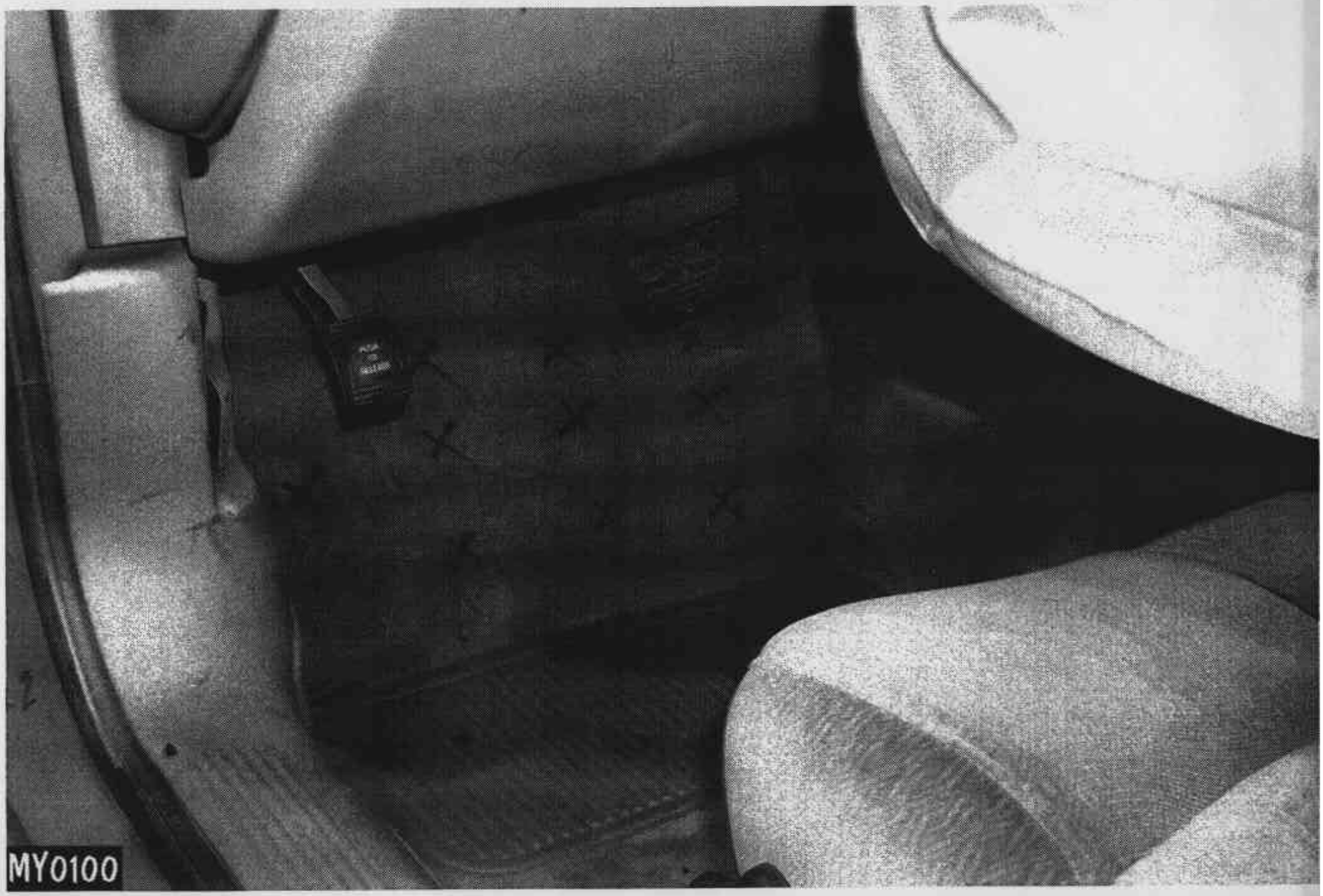


Figure A-35: POST-TEST DRIVER FLOOR PAN VIEW

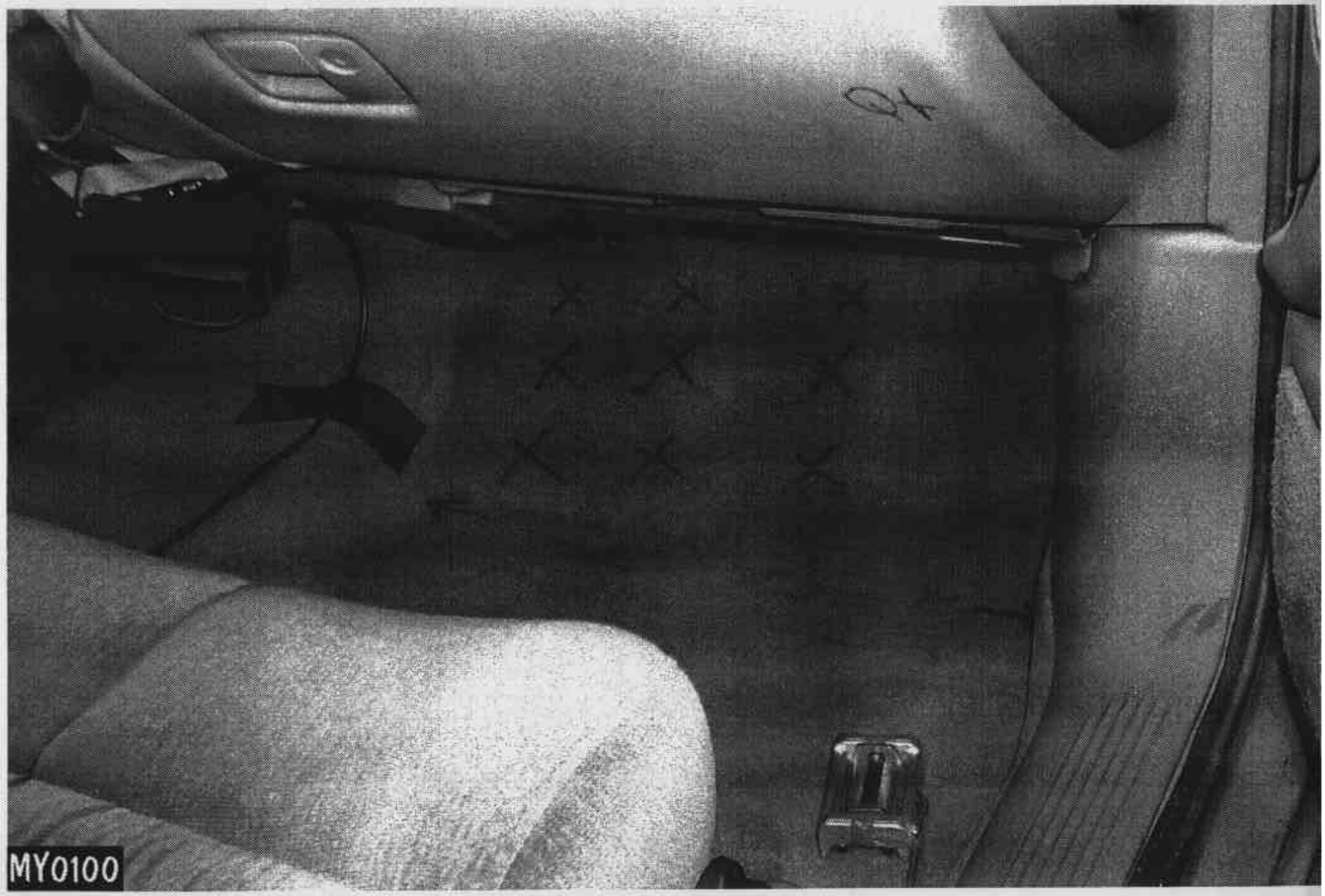


Figure A-36: PRE-TEST PASSENGER FLOOR PAN VIEW

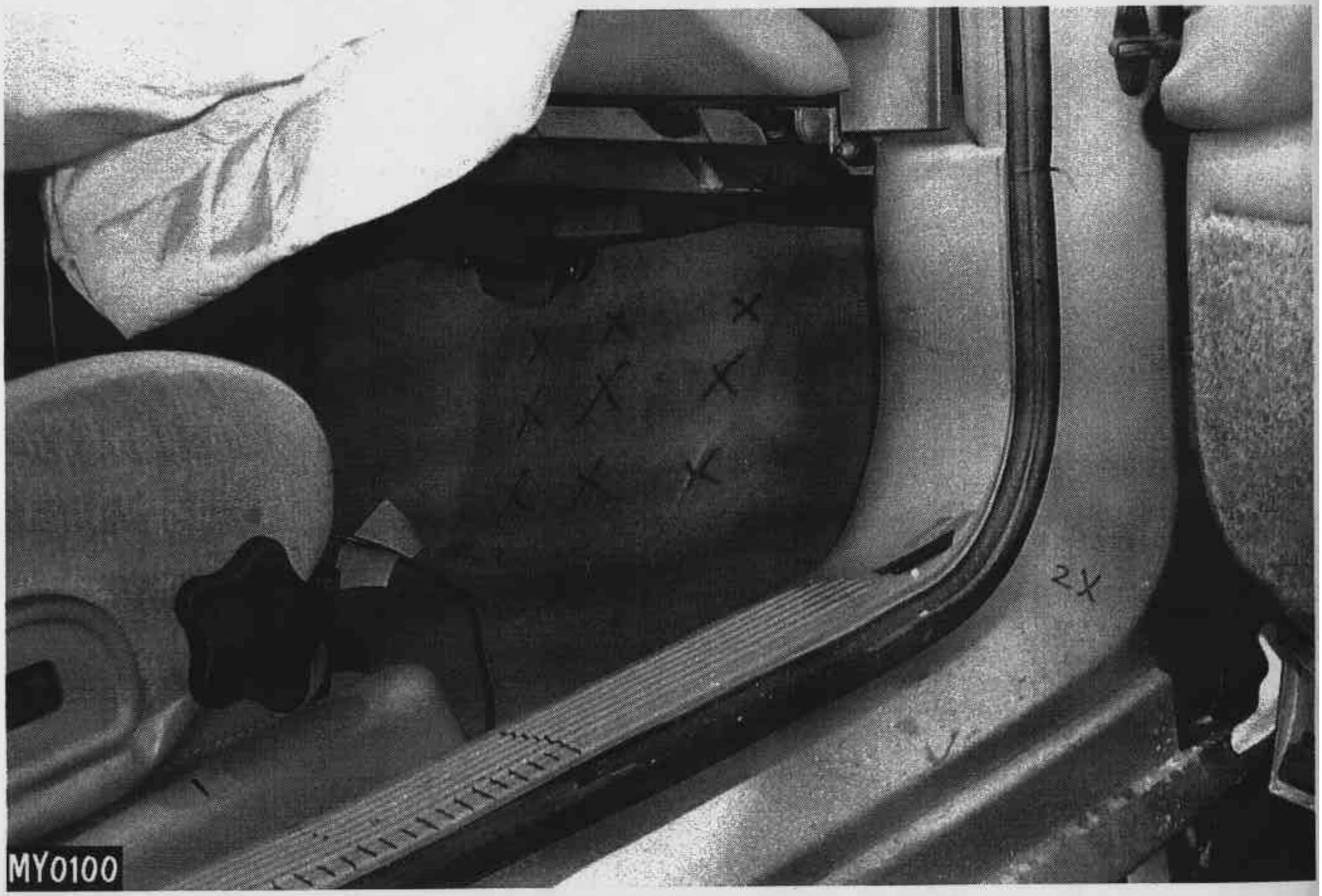


Figure A-37: POST-TEST PASSENGER FLOOR PAN VIEW

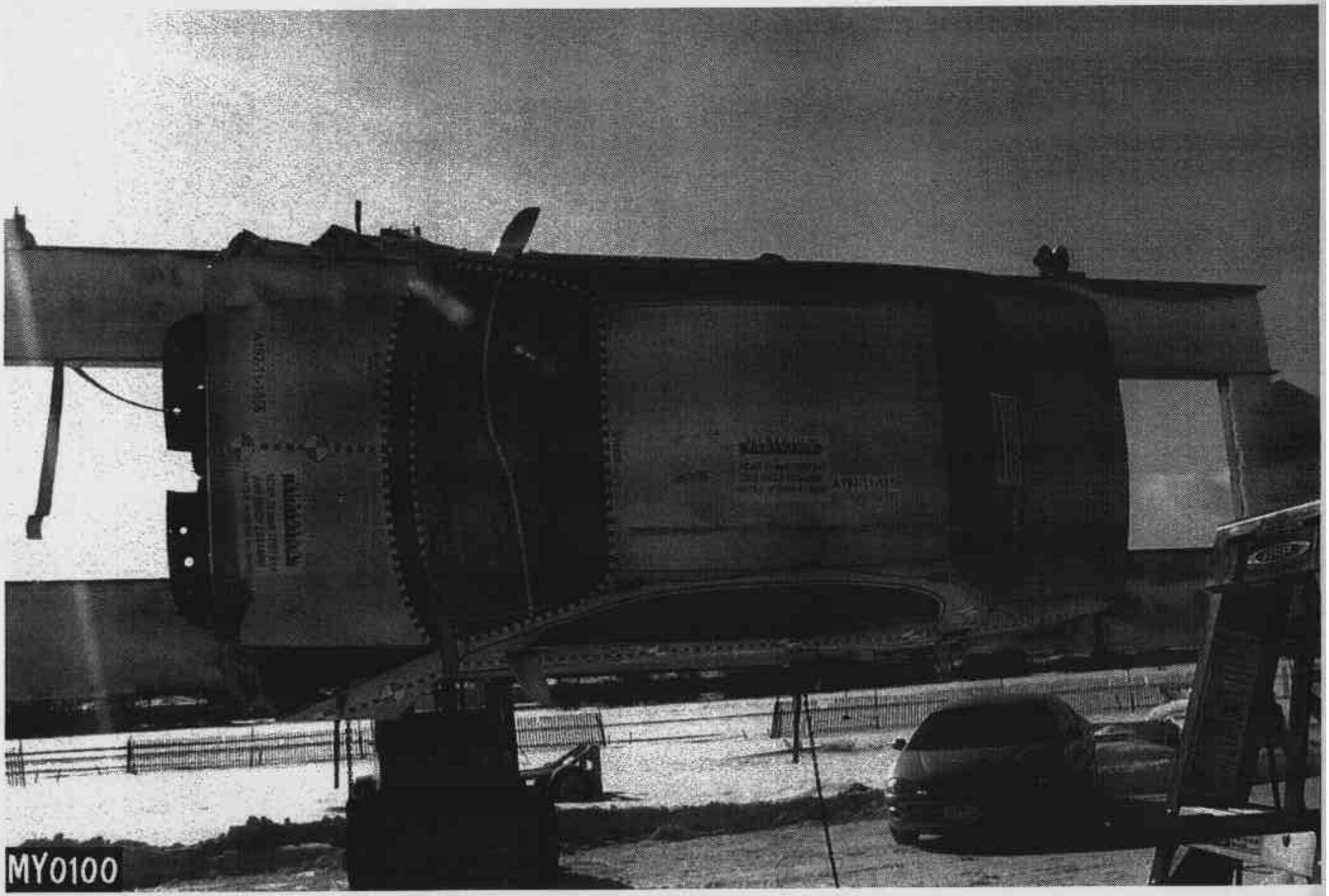


Figure A-38: ROLLOVER VIEW

Figure A-39: IMPACT VIEW

APPENDIX B

DUMMY, VEHICLE AND LOAD CELL BARRIER RESPONSE DATA

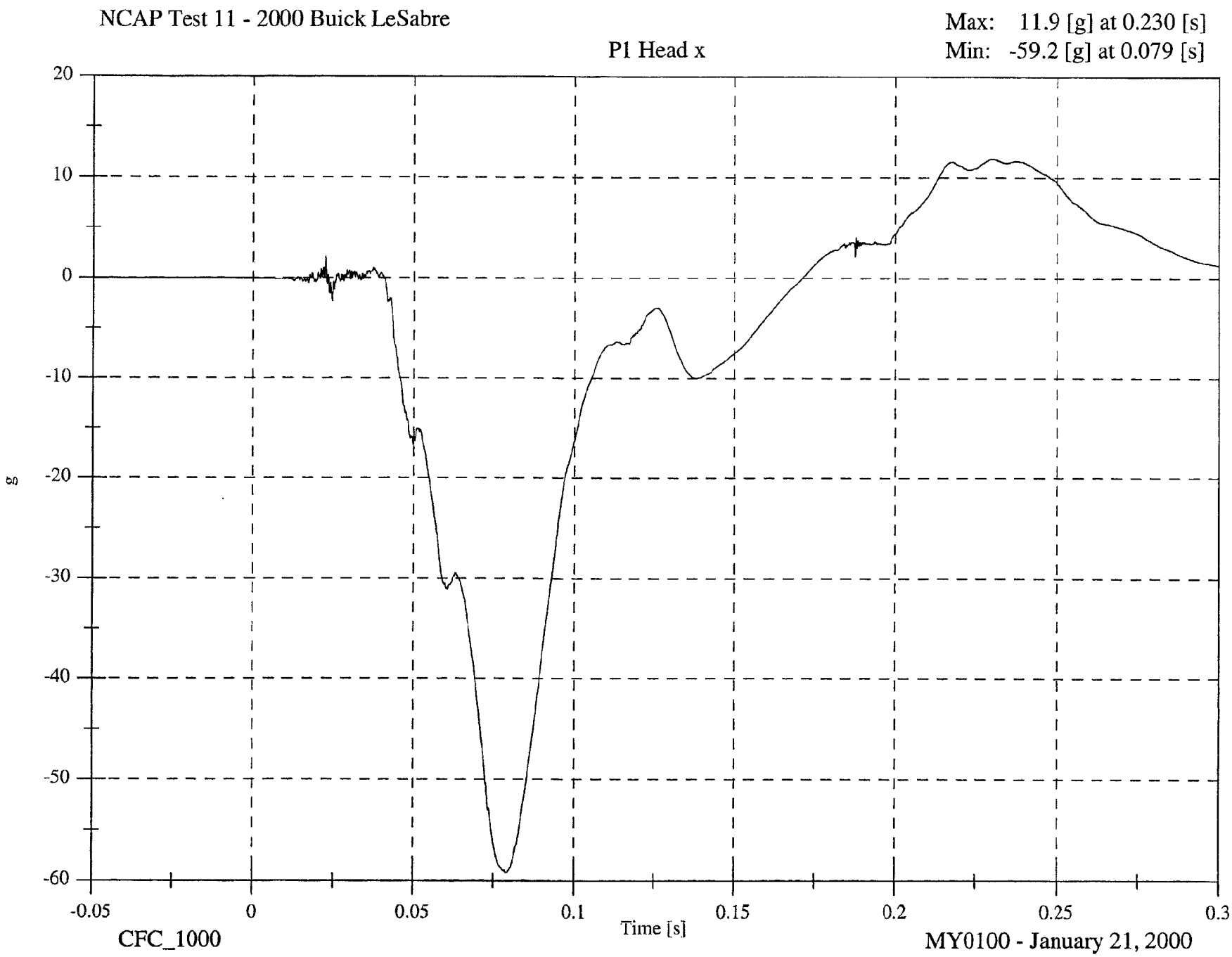
Hybrid III Dummy Sign Conventions
Load Cells and Special Transducers

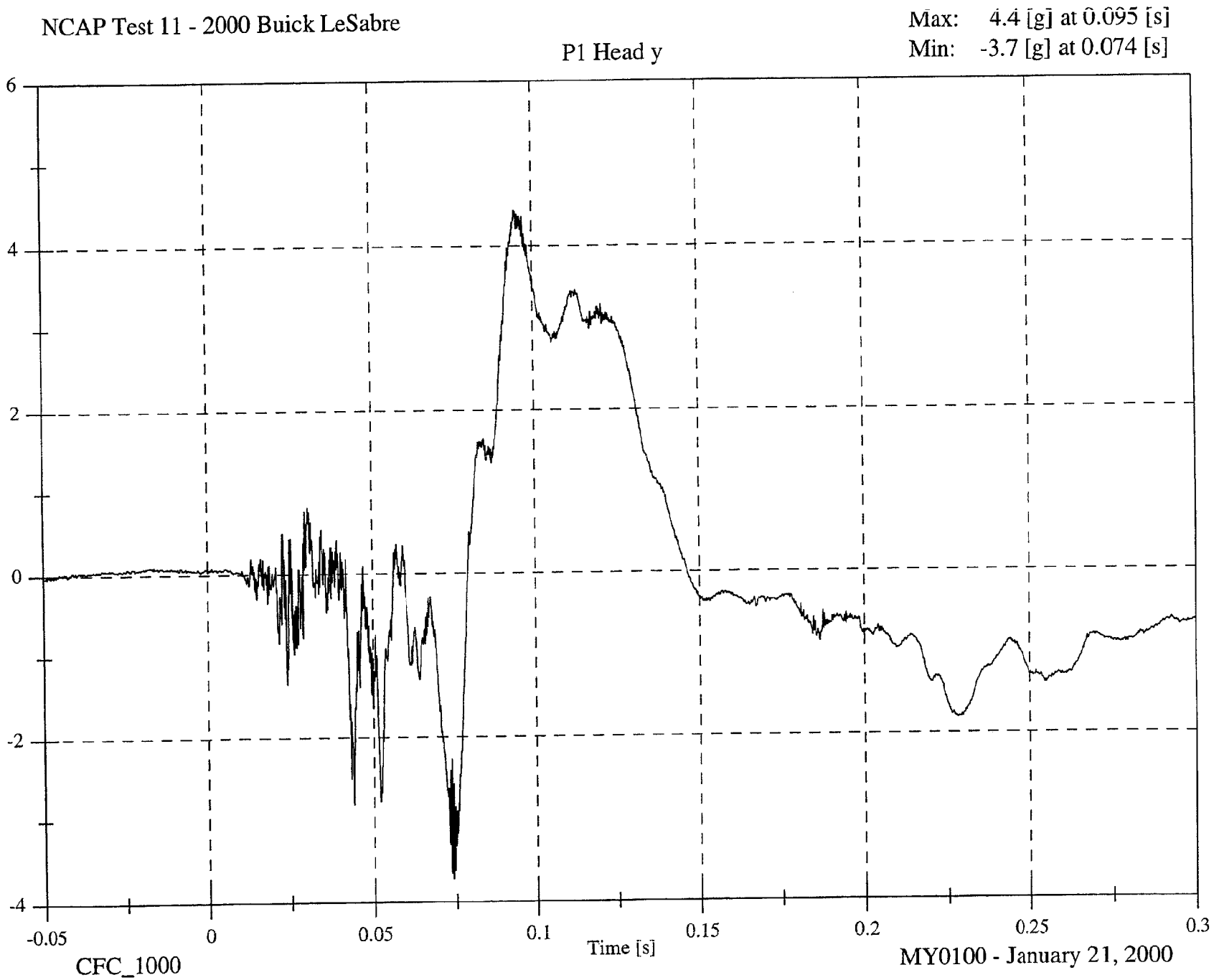
Transducer	SAE Sign Convention (positive unless noted)
Upper Neck Load Cell	Fx Head rearward Fy Head left Fz Neck in tension Mx Left ear to left shoulder My Chin to chest (flexion) Mz Chin to left shoulder (look left)
Chest Displacement Potentiometer	Compression is negative
Pelvic Load Cell (Lower Lumbar)	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

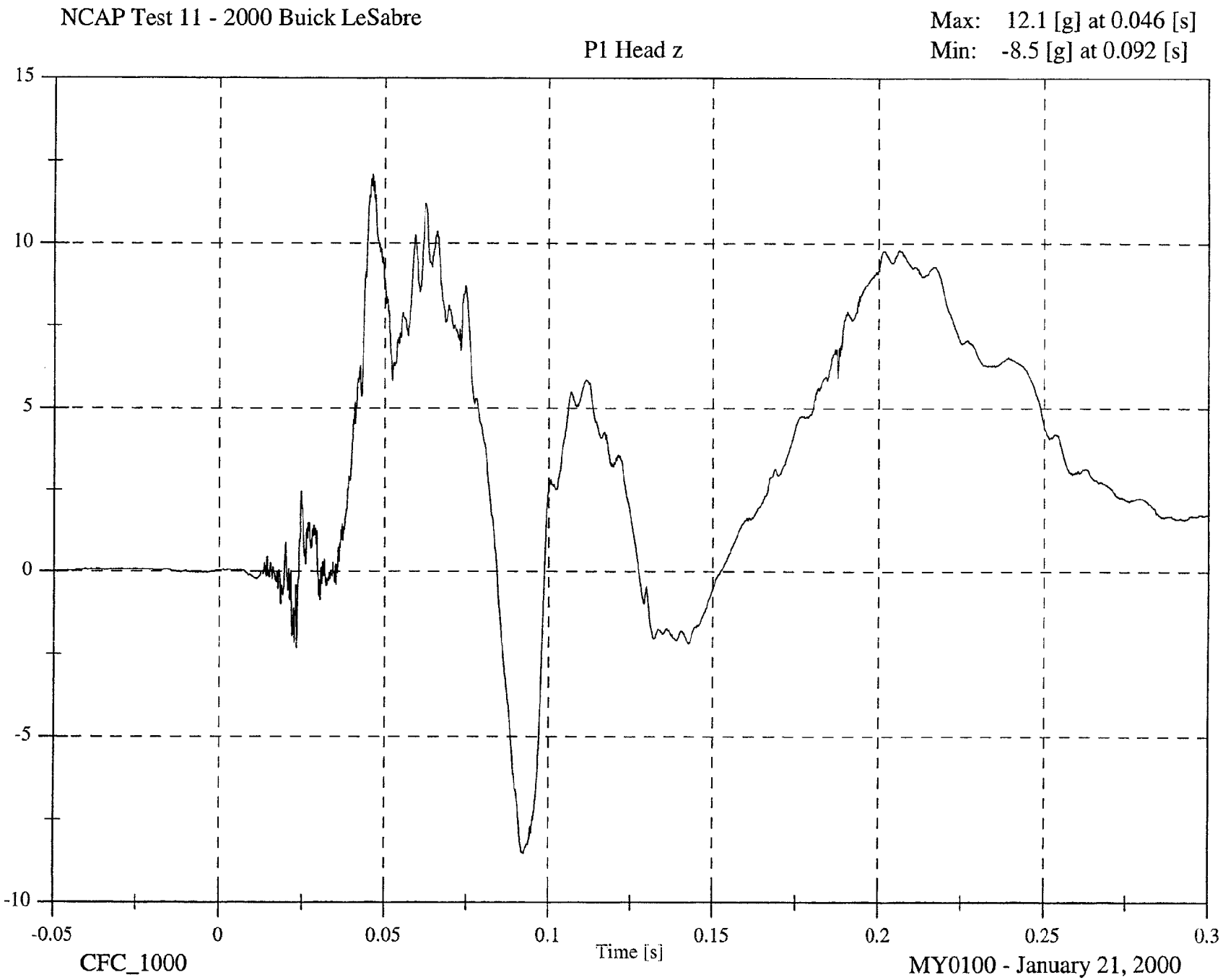
DATA CHANNEL FILTER CLASS SUMMARY

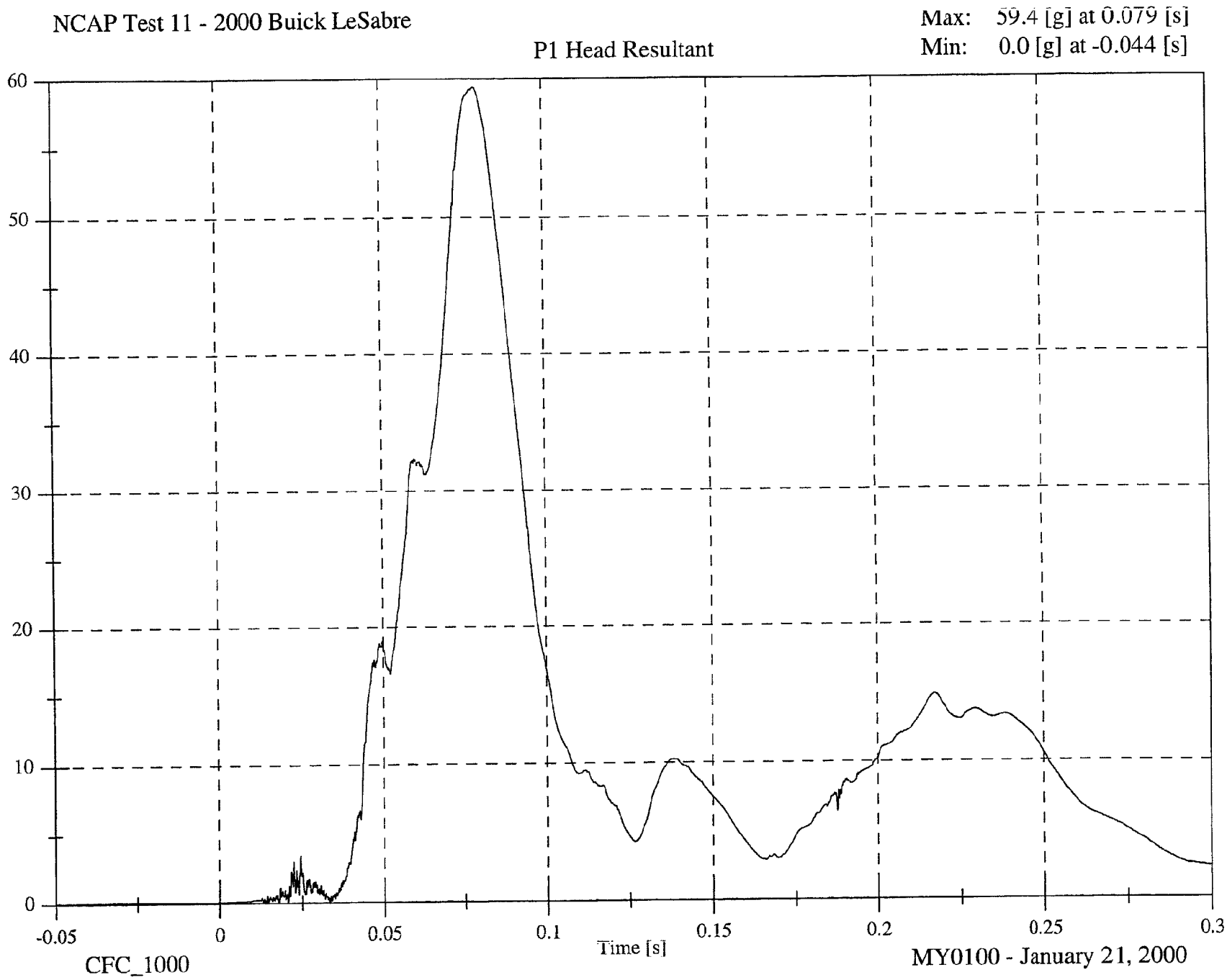
NHTSA TEST NO. MY0100

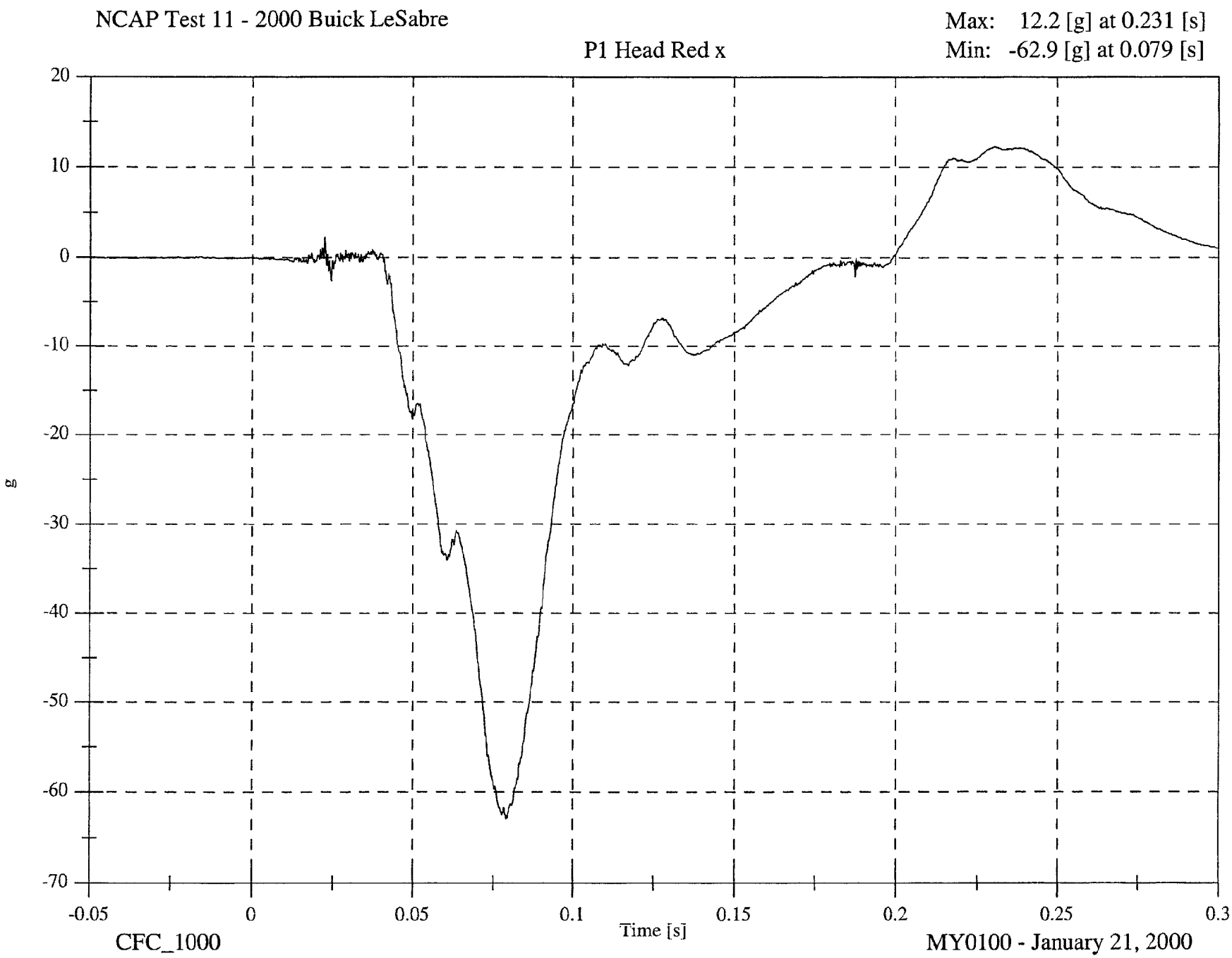
DATA TYPE	SAE FILTER CLASS (Hz)
Dummy Head Accelerations	1000
Dummy Chest Accelerations	180
Dummy Chest Displacements	60
Dummy Femur Forces	600
Dummy Belt Loads	60
Dummy Belt Displacements	180
Dummy Neck Forces	1000
Dummy Neck Moments	600
Vehicle Accelerations	60
Vehicle Velocity Integrations	180
Vehicle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

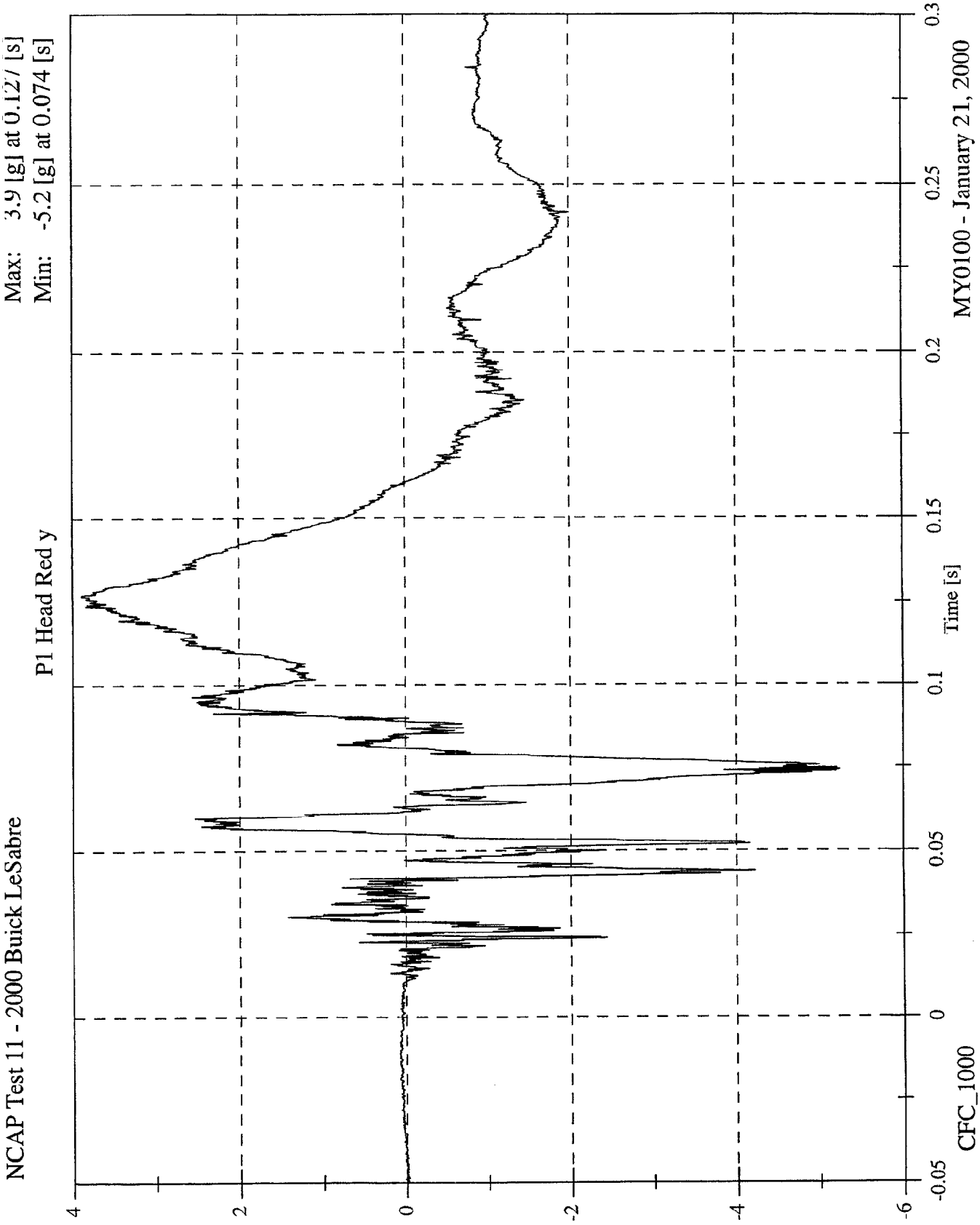

NCAP Test 11 - 2000 Buick LeSabre
P1 Head x
Max: 11.9 [g] at 0.230 [s]
Min: -59.2 [g] at 0.079 [s]
20
10
0
-10
-20
-30
-40
-50
-60
g
-0.05
0
0.05
0.1
0.15
0.2
0.25
0.3
Time [s]
CFC_1000
MY0100 - January 21, 2000

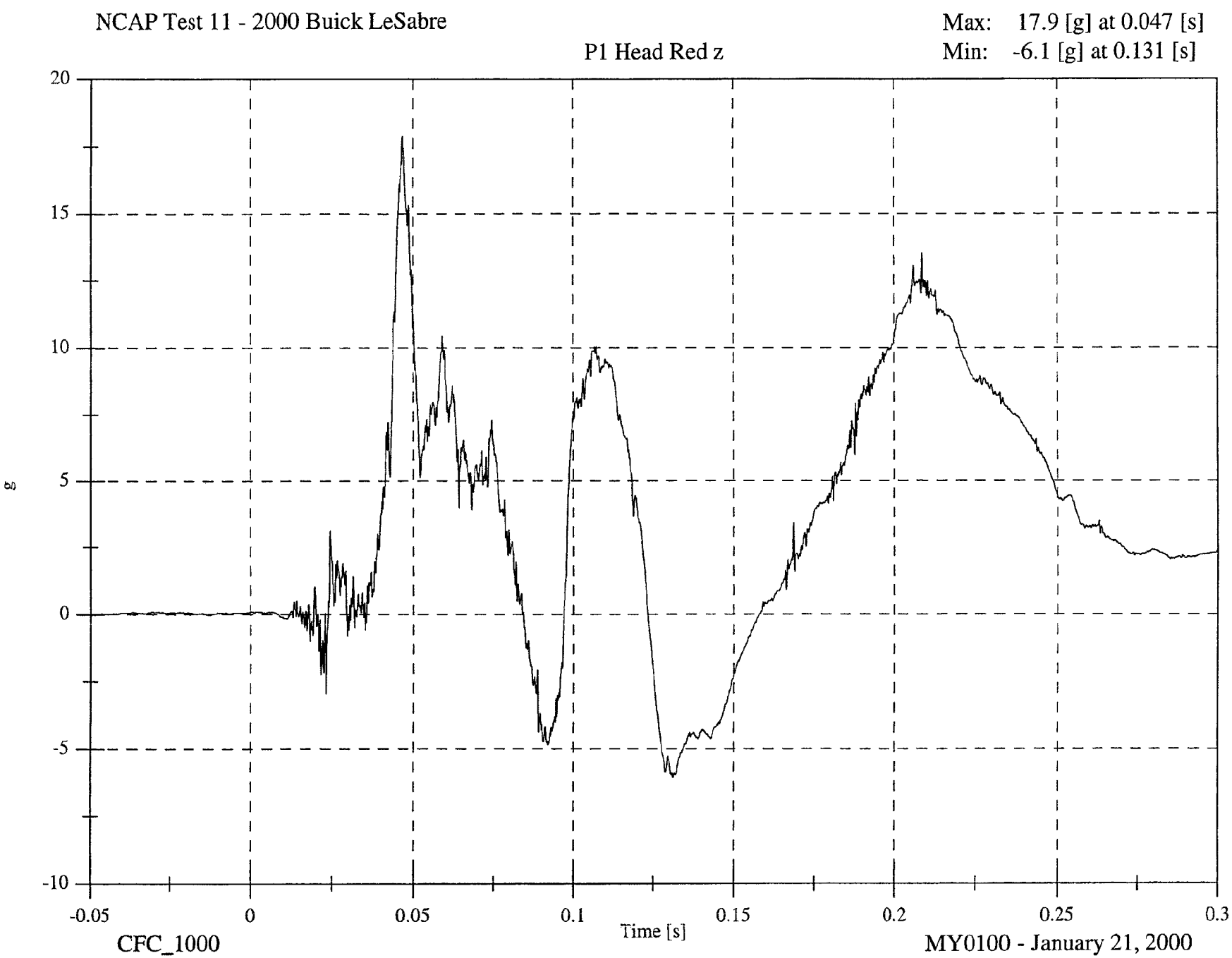

NCAP Test 11 - 2000 Buick LeSabre
P1 Head y
Max: 4.4 [g] at 0.095 [s]
Min: -3.7 [g] at 0.074 [s]
6
4
2
0
-2
-4
g
-0.05
0
0.05
0.1
0.15
0.2
0.25
0.3
Time [s]
CFC_1000
MY0100 - January 21, 2000

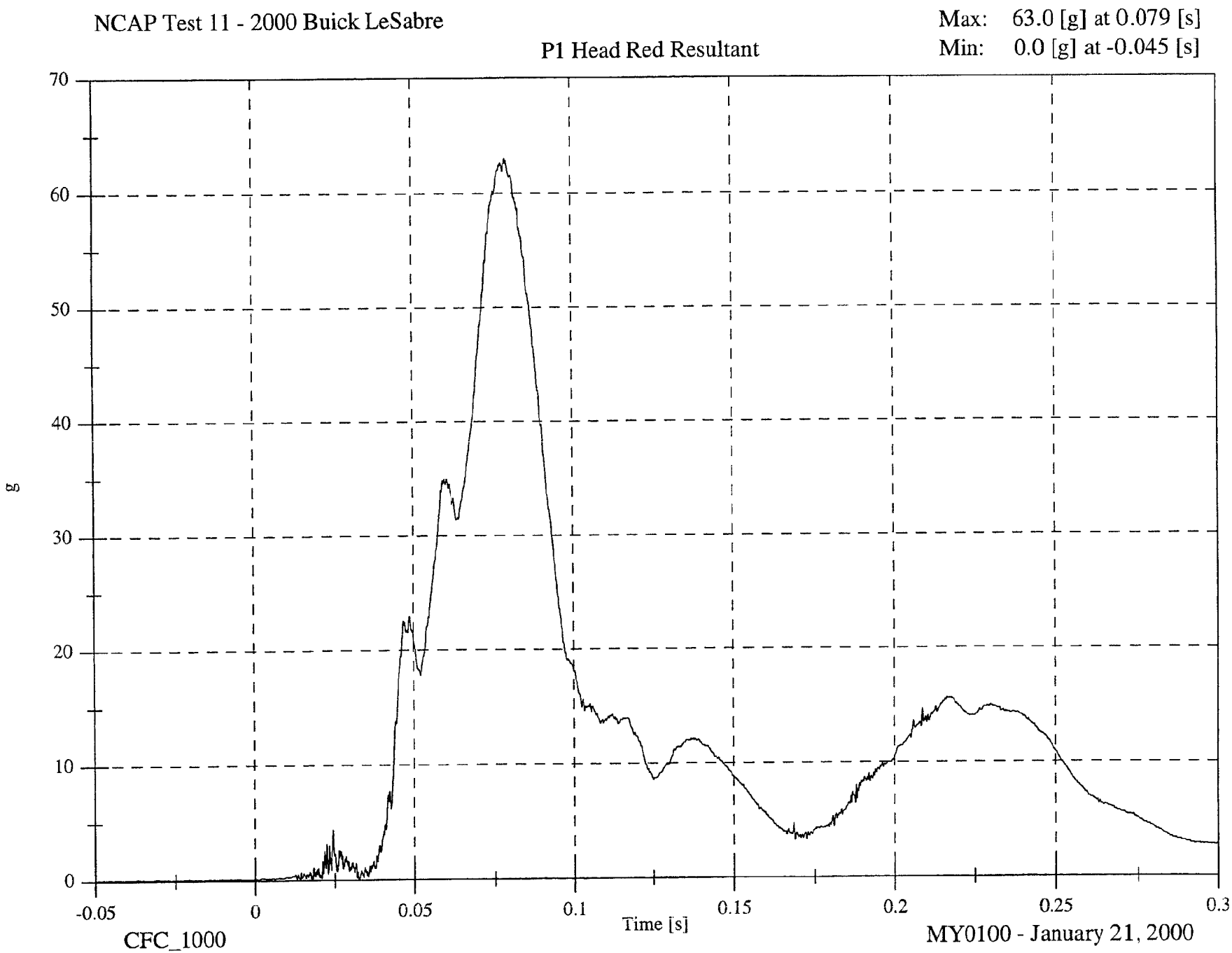

NCAP Test 11 - 2000 Buick LeSabre
P1 Head z
Max: 12.1 [g] at 0.046 [s]
Min: -8.5 [g] at 0.092 [s]
15
10
5
0
-5
-10
g
-0.05
0
0.05
0.1
0.15
0.2
0.25
0.3
Time [s]
CFC_1000
MY0100 - January 21, 2000

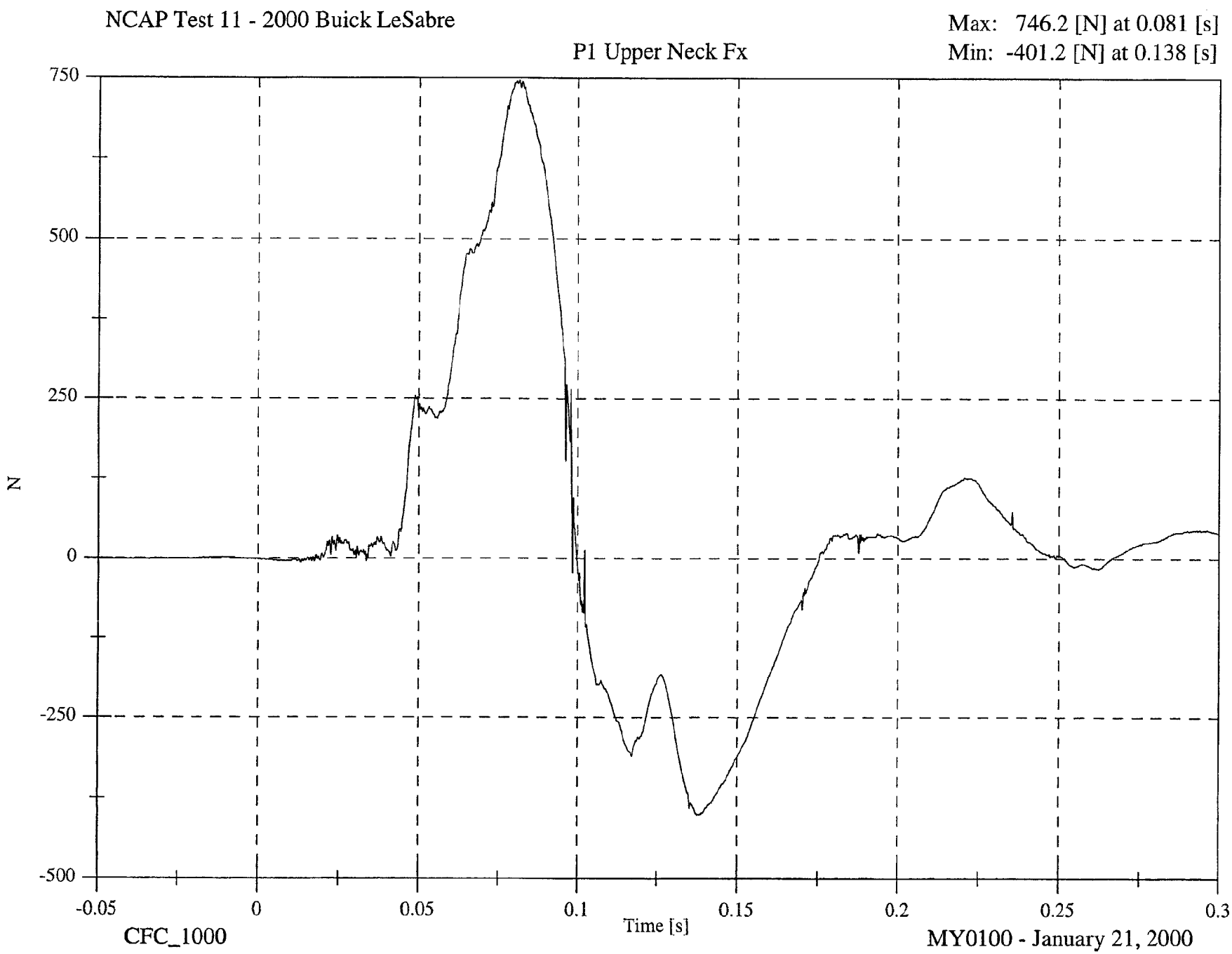

NCAP Test 11 - 2000 Buick LeSabre
P1 Head Resultant
Max: 59.4 [g] at 0.079 [s]
Min: 0.0 [g] at -0.044 [s]
60
50
40
30
20
10
0
g
-0.05
0
0.05
0.1
0.15
0.2
0.25
0.3
Time [s]
CFC_1000
MY0100 - January 21, 2000

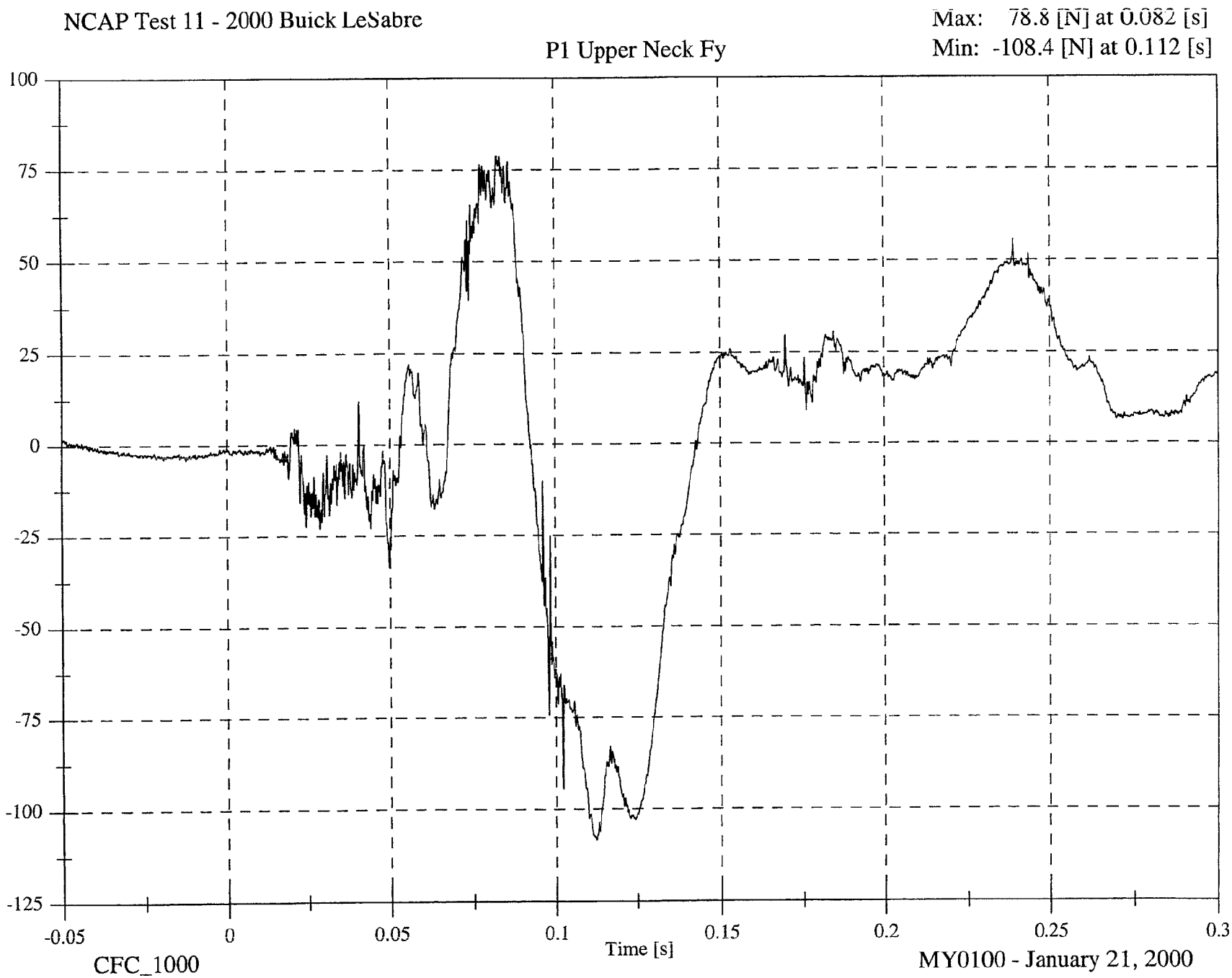

NCAP Test 11 - 2000 Buick LeSabre
P1 Head Red x
Max: 12.2 [g] at 0.231 [s]
Min: -62.9 [g] at 0.079 [s]
20
10
0
-10
-20
-30
-40
-50
-60
-70
g
-0.05
0
0.05
0.1
0.15
0.2
0.25
0.3
Time [s]
CFC_1000
MY0100 - January 21, 2000

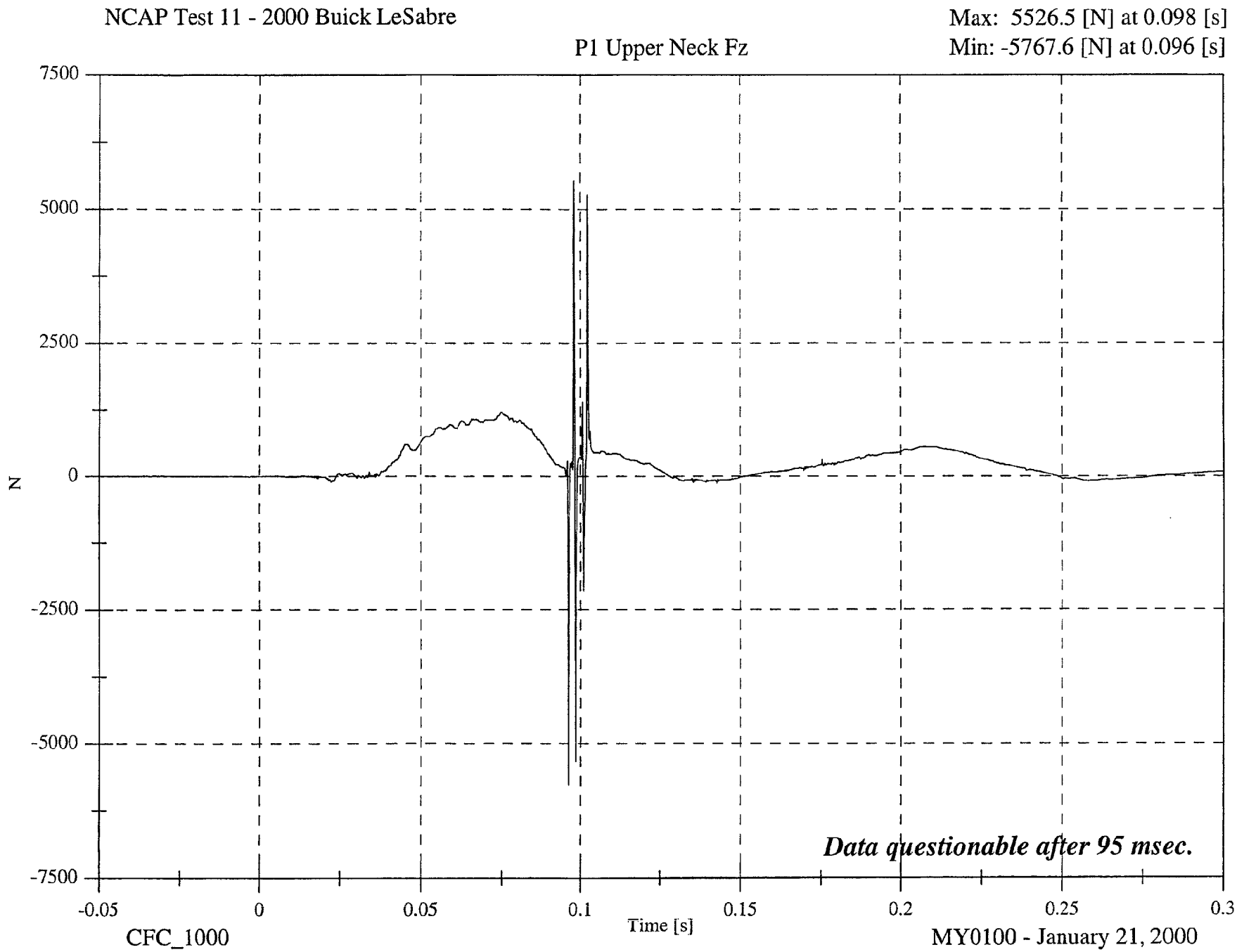

NCAP Test 11 - 2000 Buick LeSabre
Max: 3.9 [g] at 0.127 [s]
Min: -5.2 [g] at 0.074 [s]
P1 Head Red y
MY0100 - January 21, 2000
CFC_1000
Time [s]
g
4
2
0
-2
-4
-6
-0.05
0
0.05
0.1
0.15
0.2
0.25
0.3

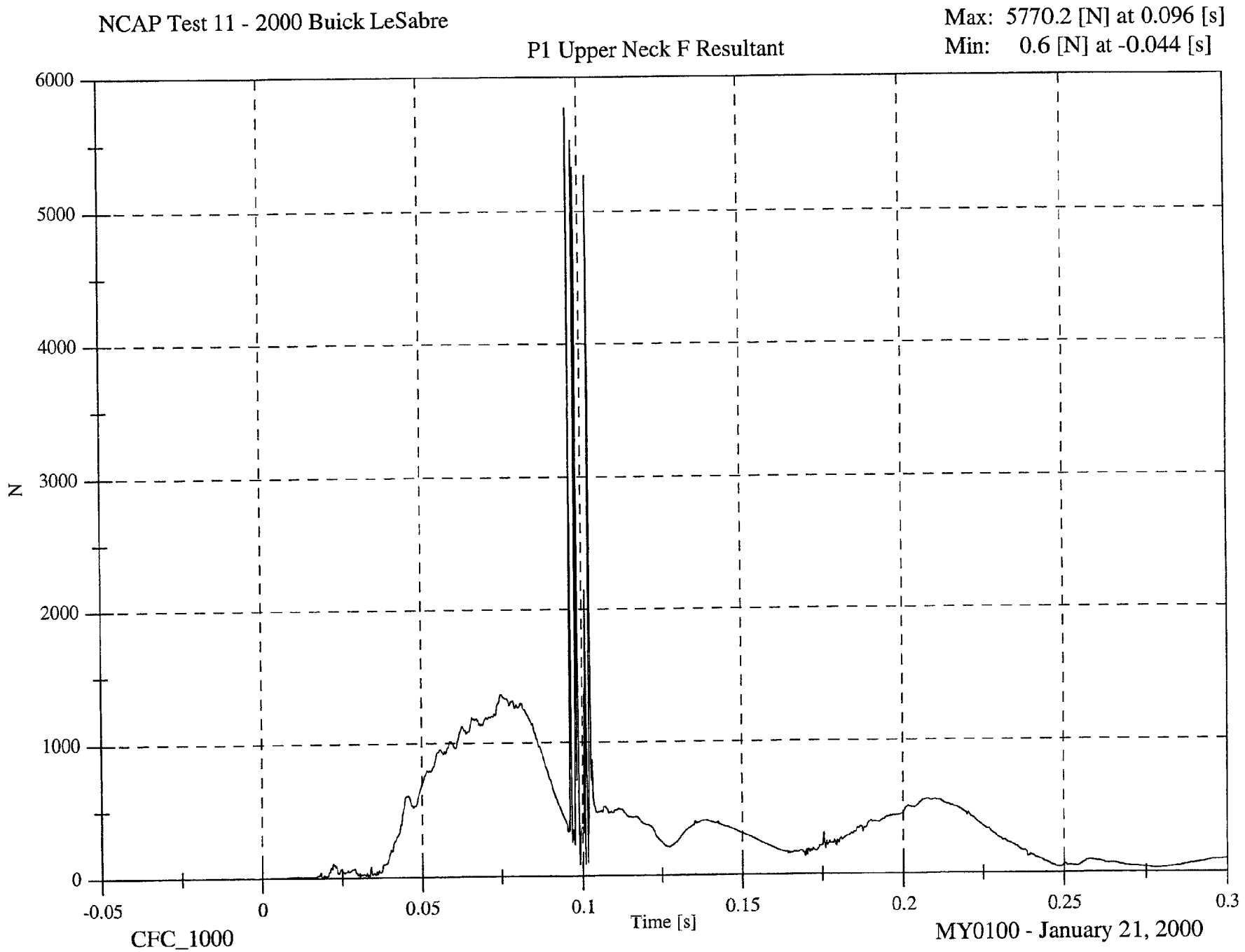

NCAP Test 11 - 2000 Buick LeSabre
P1 Head Red z
Max: 17.9 [g] at 0.047 [s]
Min: -6.1 [g] at 0.131 [s]
20
15
10
5
0
-5
-10
g
-0.05
0
0.05
0.1
0.15
0.2
0.25
0.3
Time [s]
CFC_1000
MY0100 - January 21, 2000

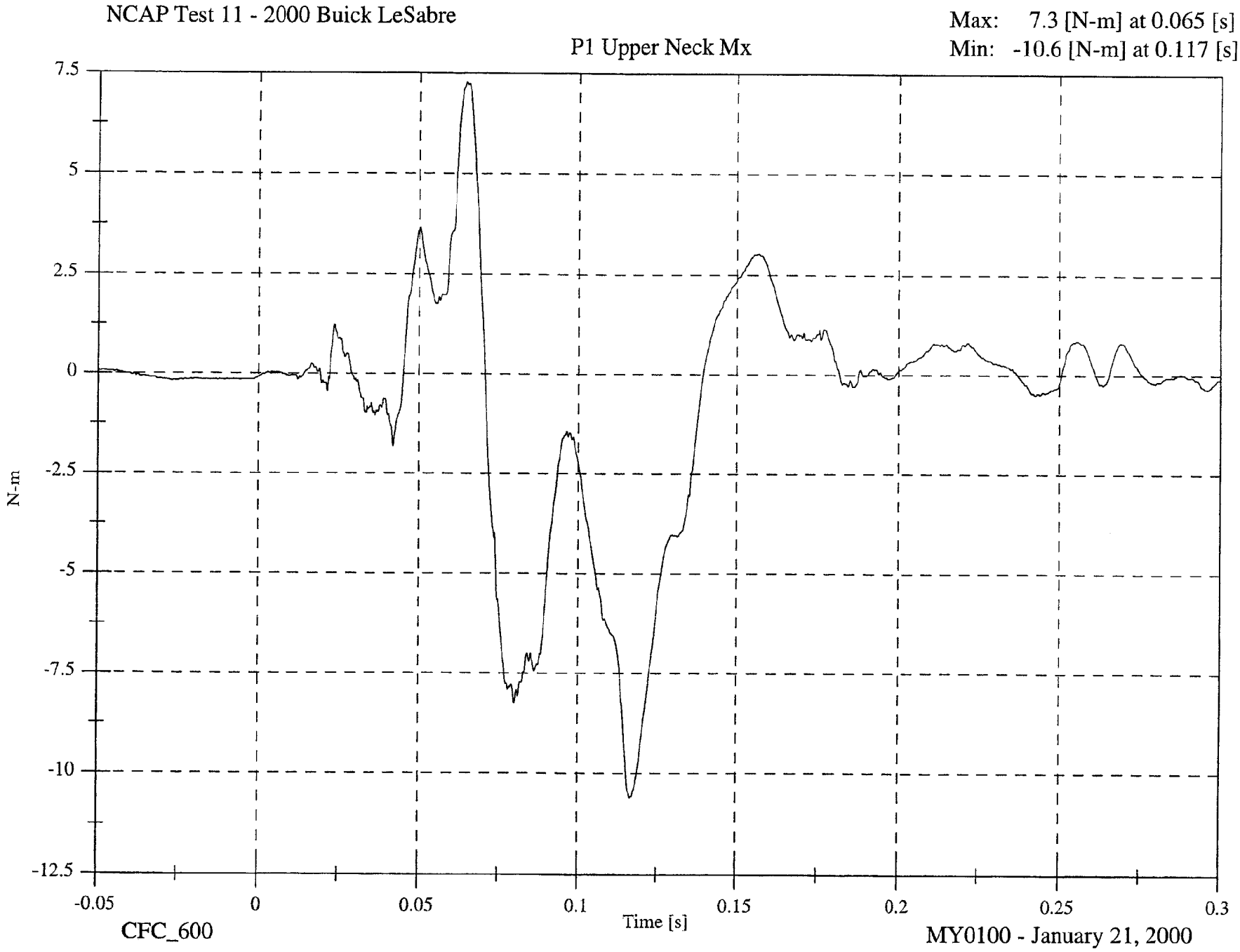

NCAP Test 11 - 2000 Buick LeSabre
P1 Head Red Resultant
Max: 63.0 [g] at 0.079 [s]
Min: 0.0 [g] at -0.045 [s]
70
60
50
40
30
20
10
0
g
-0.05
0
0.05
0.1
0.15
0.2
0.25
0.3
Time [s]
CFC_1000
MY0100 - January 21, 2000

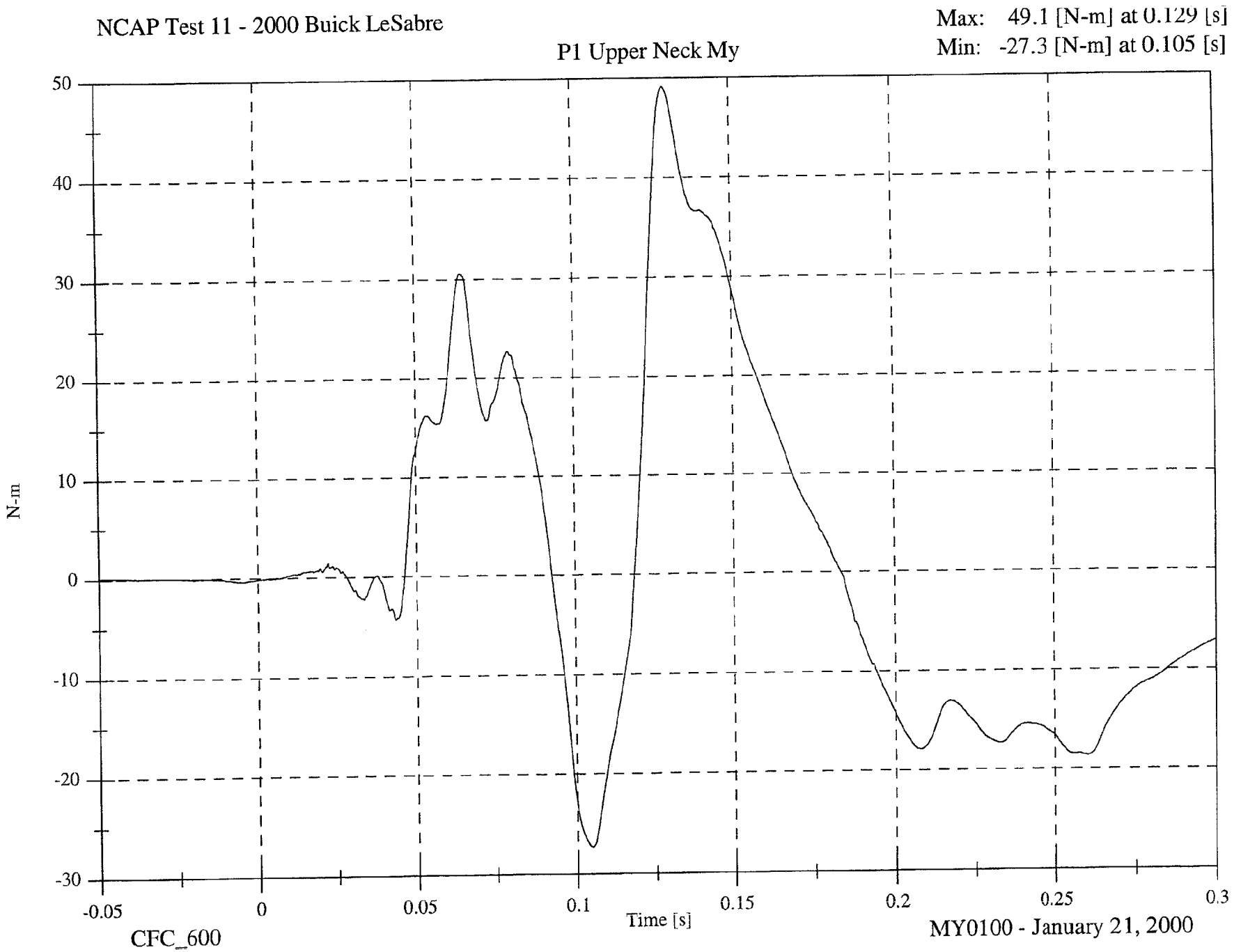

NCAP Test 11 - 2000 Buick LeSabre
P1 Upper Neck Fx
Max: 746.2 [N] at 0.081 [s]
Min: -401.2 [N] at 0.138 [s]
750
500
250
0
-250
-500
N
-0.05
0
0.05
0.1
0.15
0.2
0.25
0.3
Time [s]
CFC_1000
MY0100 - January 21, 2000

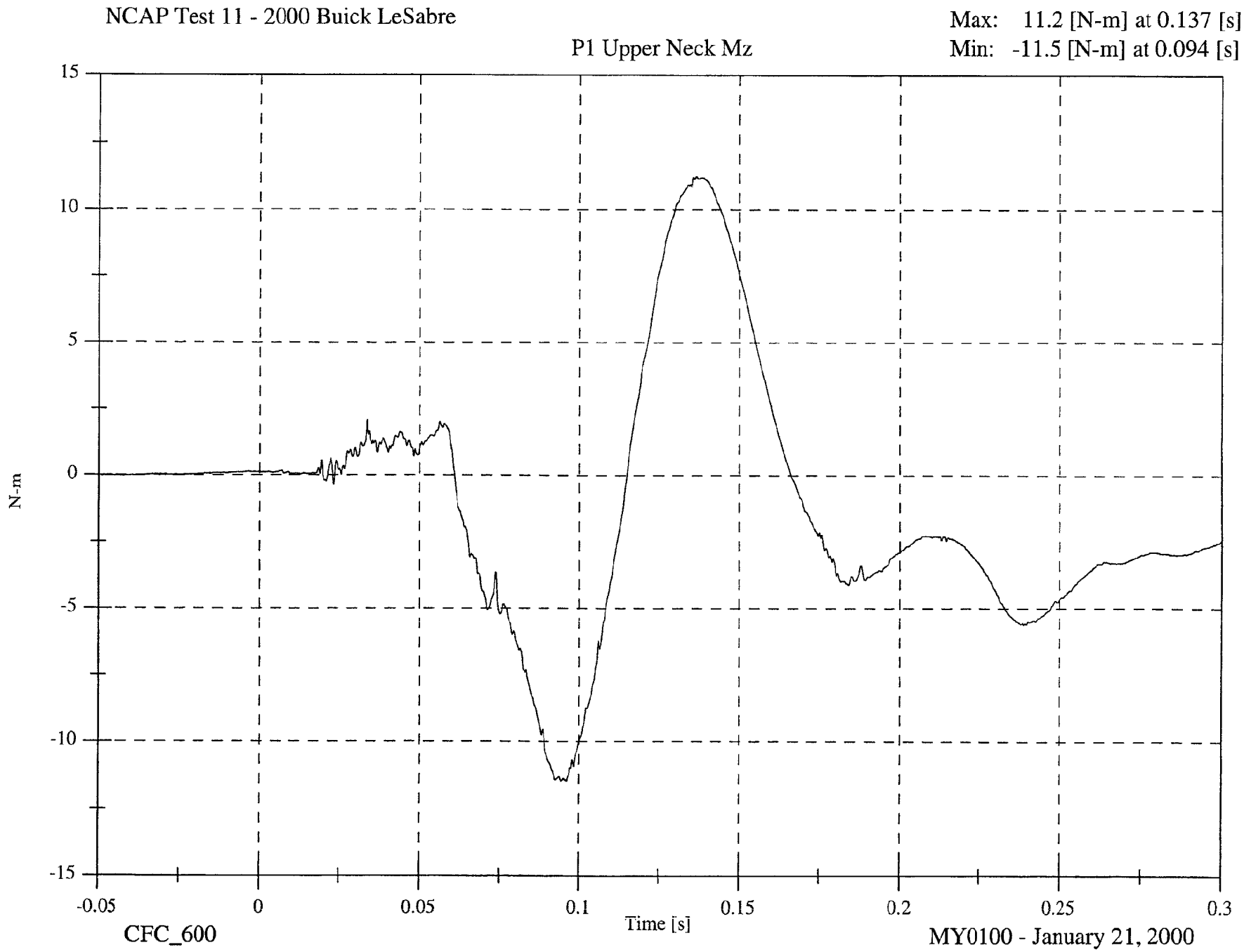

NCAP Test 11 - 2000 Buick LeSabre
P1 Upper Neck Fy
Max: 78.8 [N] at 0.082 [s]
Min: -108.4 [N] at 0.112 [s]
100
75
50
25
0
-25
-50
-75
-100
-125
N
-0.05
0
0.05
0.1
0.15
0.2
0.25
0.3
Time [s]
CFC_1000
MY0100 - January 21, 2000

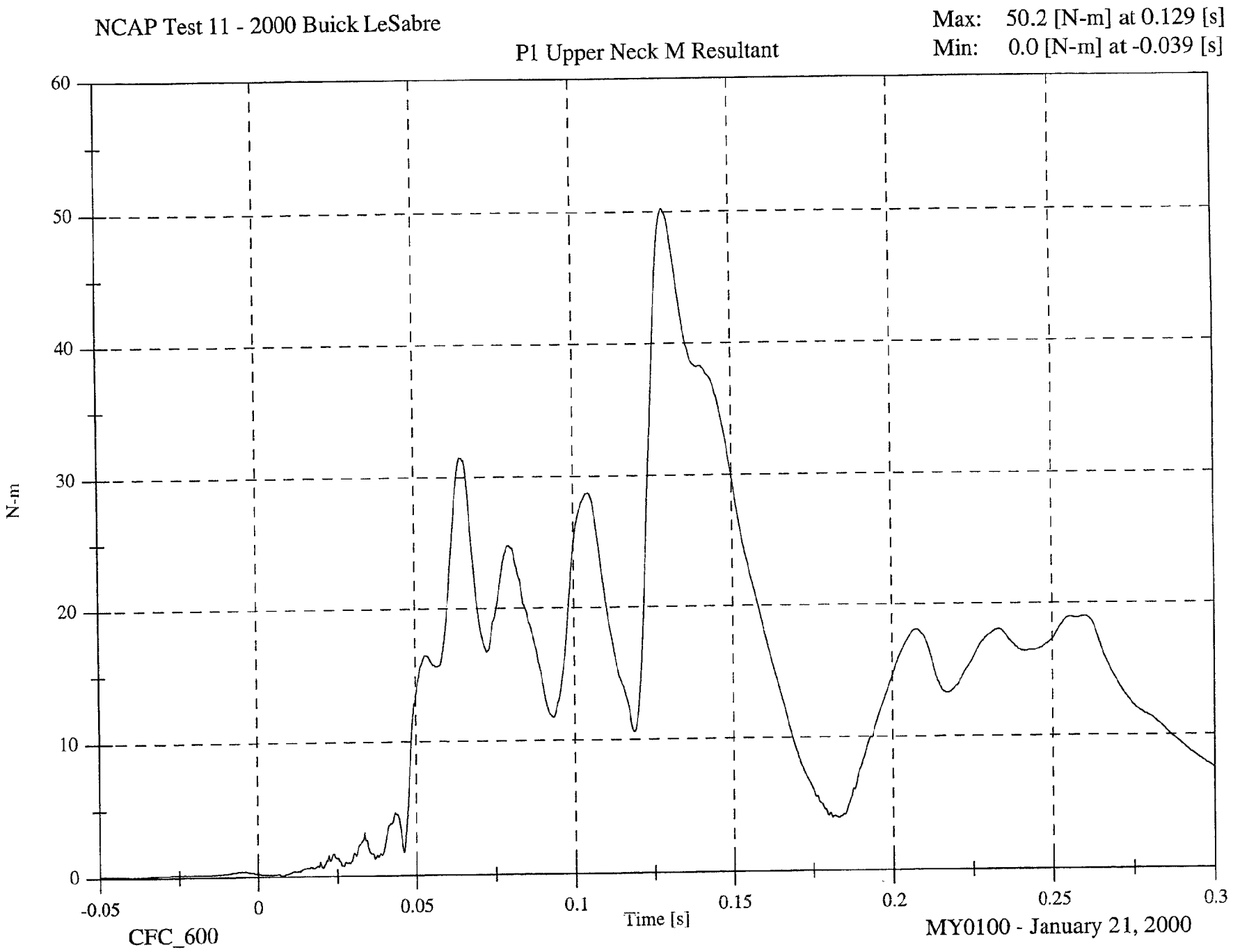

NCAP Test 11 - 2000 Buick LeSabre
P1 Upper Neck Fz
Max: 5526.5 [N] at 0.098 [s]
Min: -5767.6 [N] at 0.096 [s]
7500
5000
2500
0
-2500
-5000
-7500
N
-0.05
0
0.05
0.1
0.15
0.2
0.25
0.3
Time [s]
Data questionable after 95 msec.
CFC_1000
MY0100 - January 21, 2000

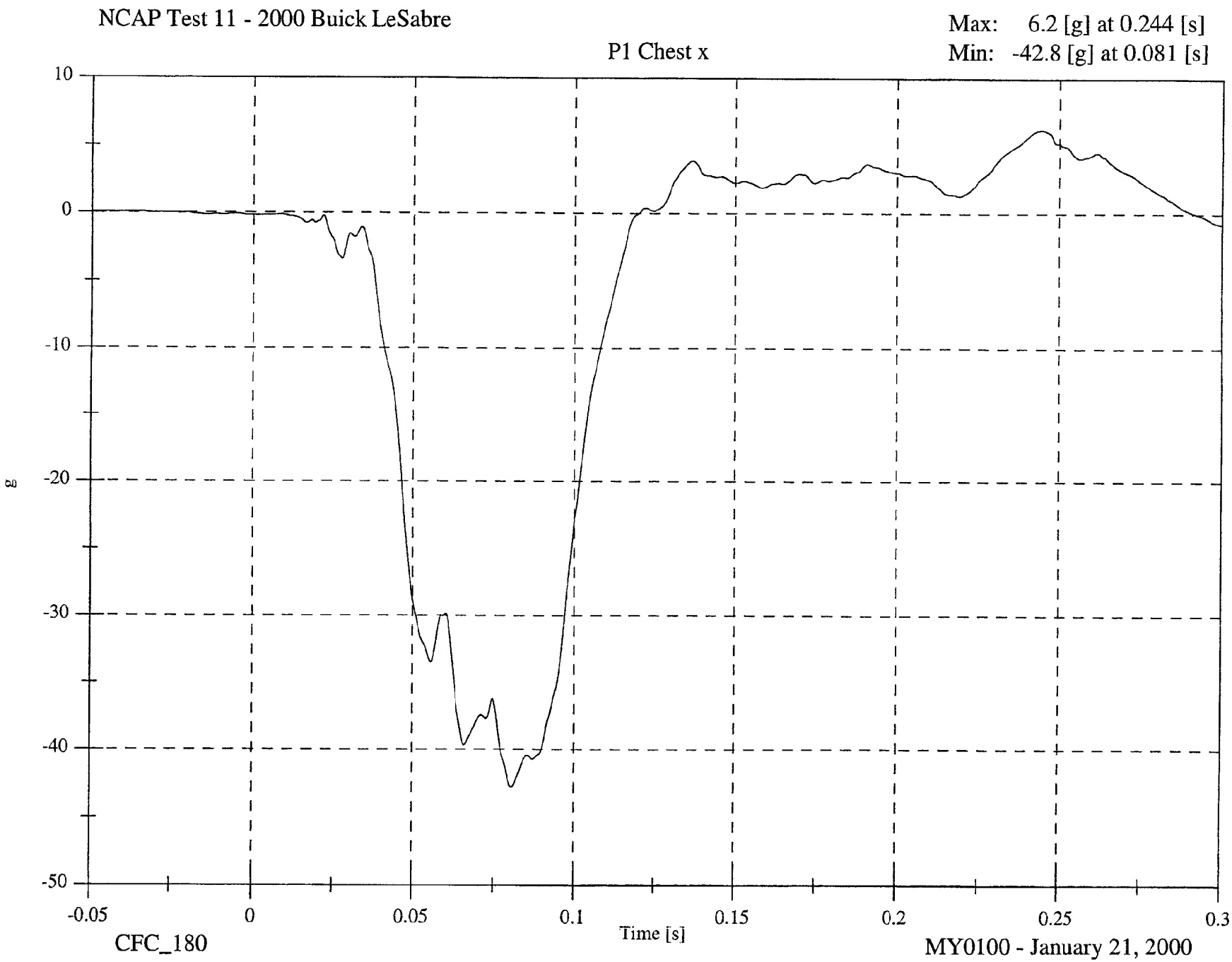

NCAP Test 11 - 2000 Buick LeSabre
P1 Upper Neck F Resultant
Max: 5770.2 [N] at 0.096 [s]
Min: 0.6 [N] at -0.044 [s]
6000
5000
4000
3000
2000
1000
0
N
-0.05
0
0.05
0.1
0.15
0.2
0.25
0.3
Time [s]
CFC_1000
MY0100 - January 21, 2000

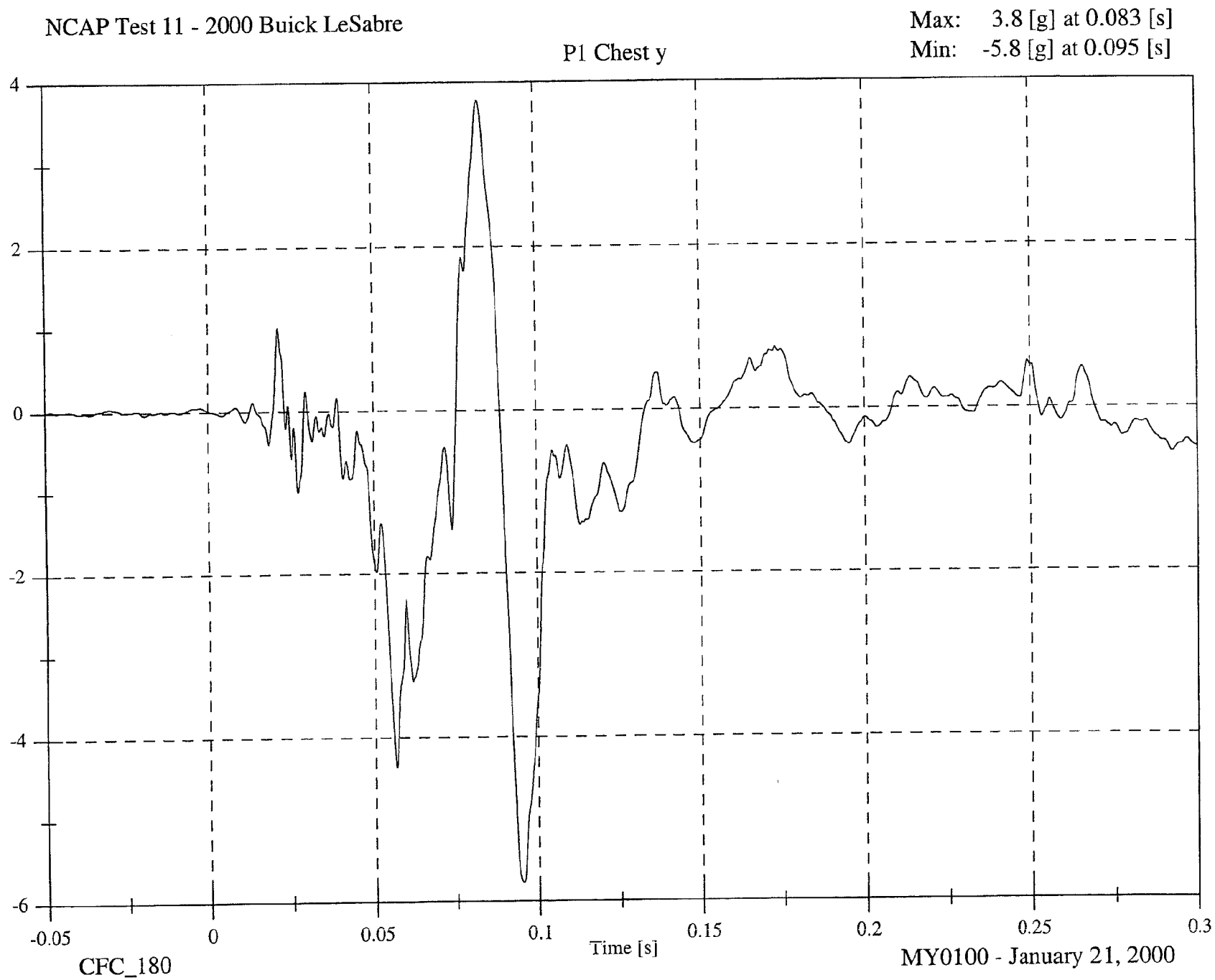

NCAP Test 11 - 2000 Buick LeSabre
P1 Upper Neck Mx
Max: 7.3 [N-m] at 0.065 [s]
Min: -10.6 [N-m] at 0.117 [s]
7.5
5
2.5
0
-2.5
-5
-7.5
-10
-12.5
N-m
-0.05
0
0.05
0.1
0.15
0.2
0.25
0.3
Time [s]
CFC_600
MY0100 - January 21, 2000

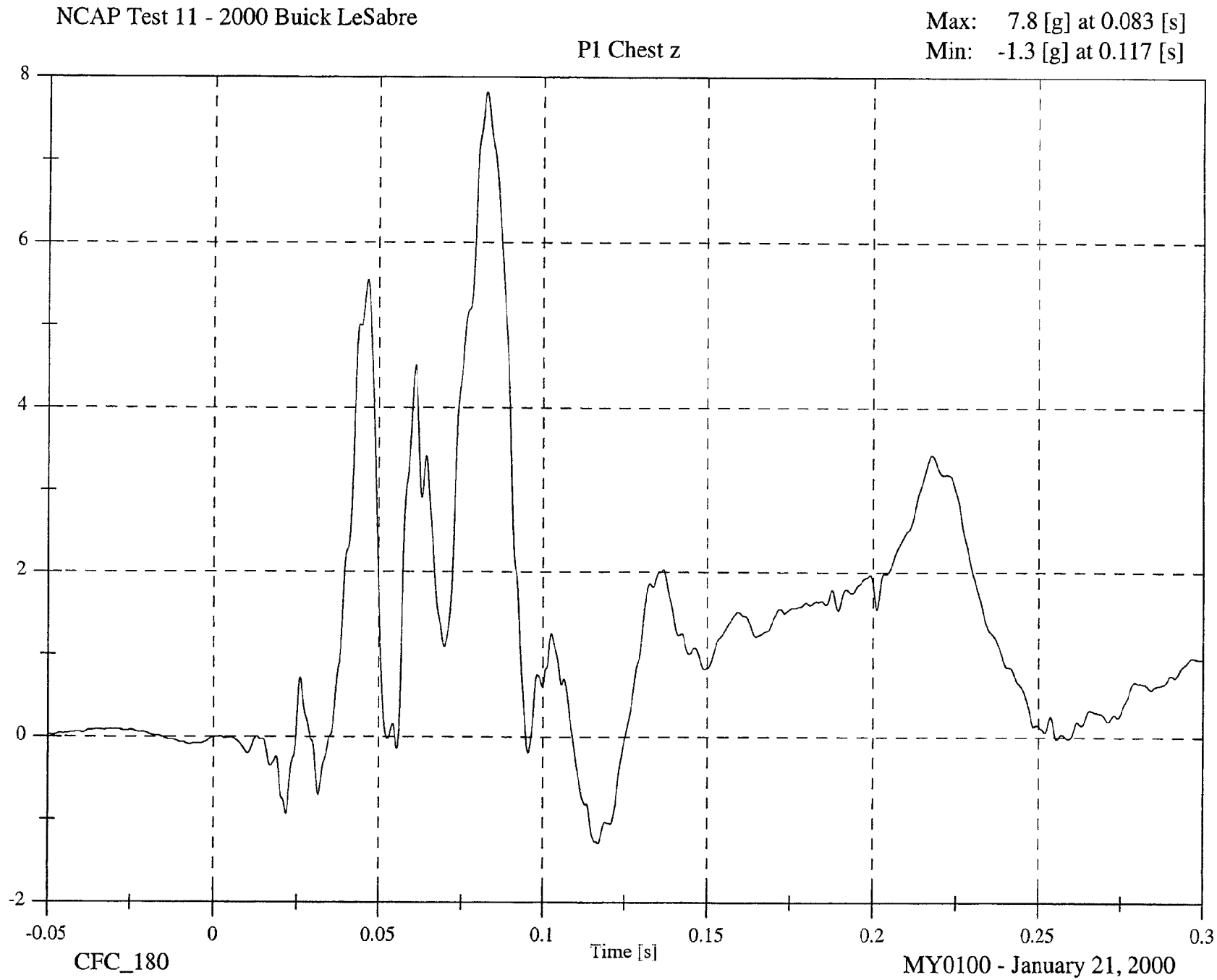

NCAP Test 11 - 2000 Buick LeSabre
P1 Upper Neck My
Max: 49.1 [N-m] at 0.129 [s]
Min: -27.3 [N-m] at 0.105 [s]
N-m
50
40
30
20
10
0
-10
-20
-30
-0.05
0
0.05
0.1
0.15
0.2
0.25
0.3
Time [s]
CFC_600
MY0100 - January 21, 2000

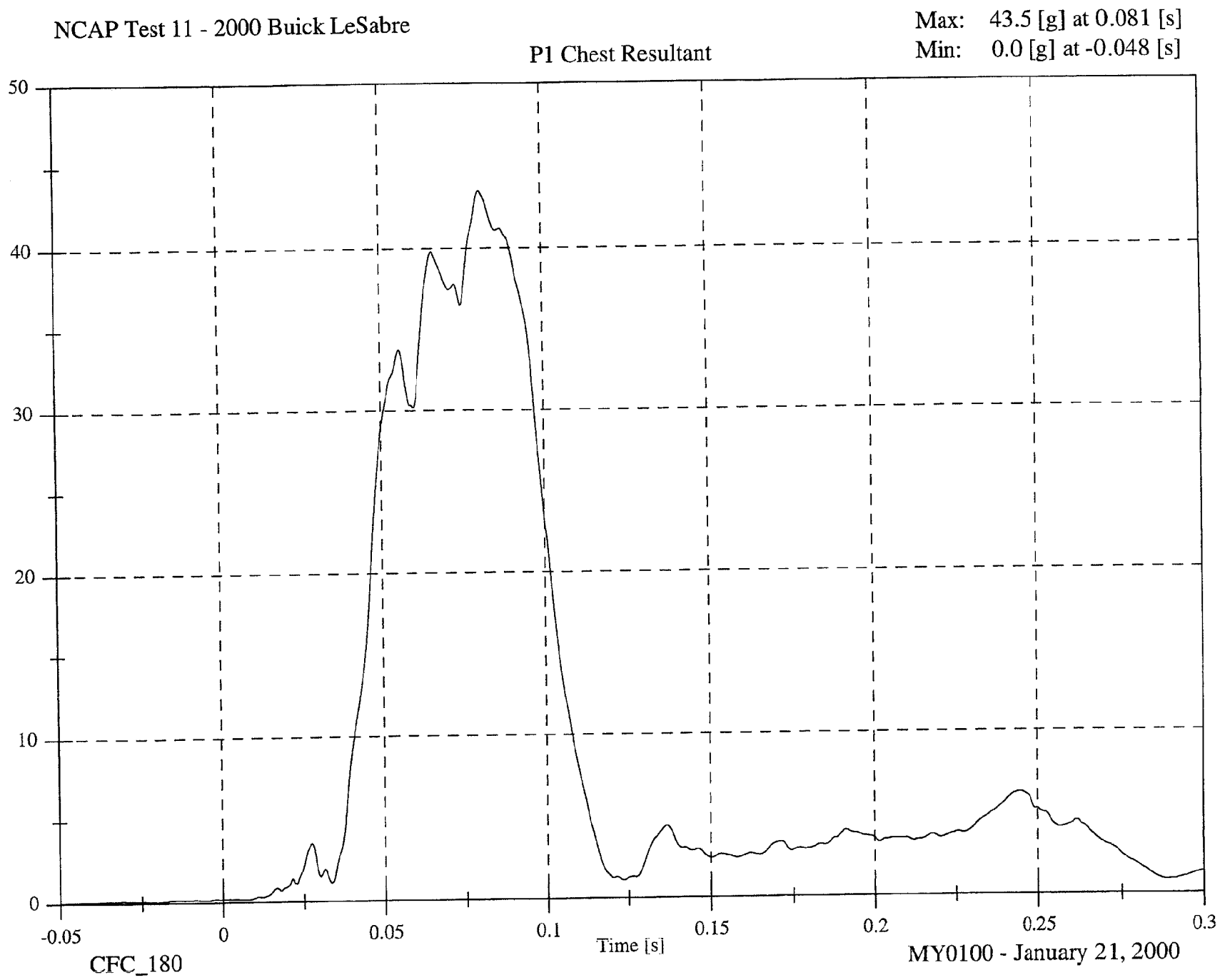

NCAP Test 11 - 2000 Buick LeSabre
P1 Upper Neck Mz
Max: 11.2 [N-m] at 0.137 [s]
Min: -11.5 [N-m] at 0.094 [s]
15
10
5
0
-5
-10
-15
N-m
-0.05
0
0.05
0.1
0.15
0.2
0.25
0.3
Time [s]
CFC_600
MY0100 - January 21, 2000

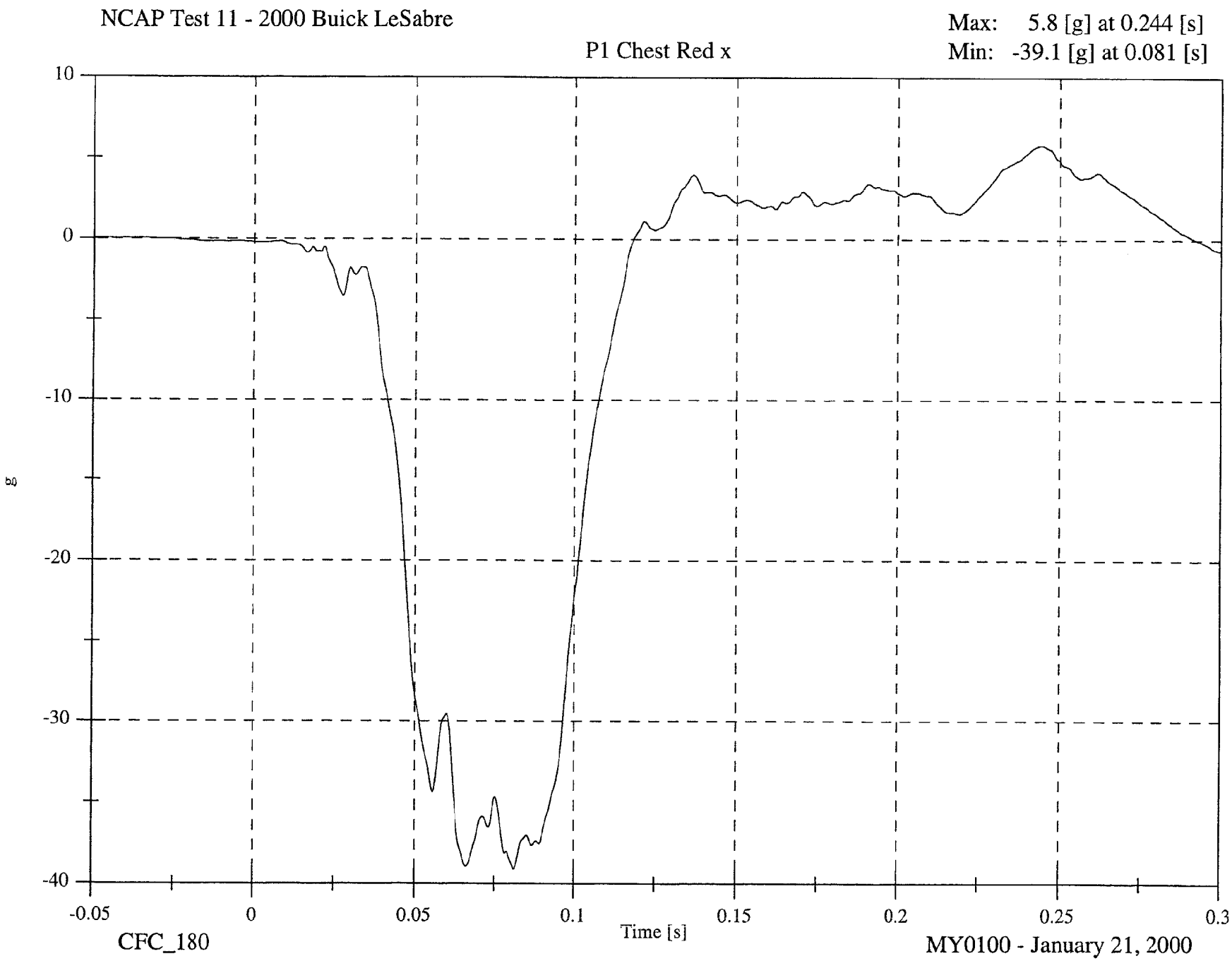

NCAP Test 11 - 2000 Buick LeSabre
P1 Upper Neck M Resultant
Max: 50.2 [N-m] at 0.129 [s]
Min: 0.0 [N-m] at -0.039 [s]
N-m
60
50
40
30
20
10
0
-0.05
0
0.05
0.1
0.15
0.2
0.25
0.3
Time [s]
CFC_600
MY0100 - January 21, 2000

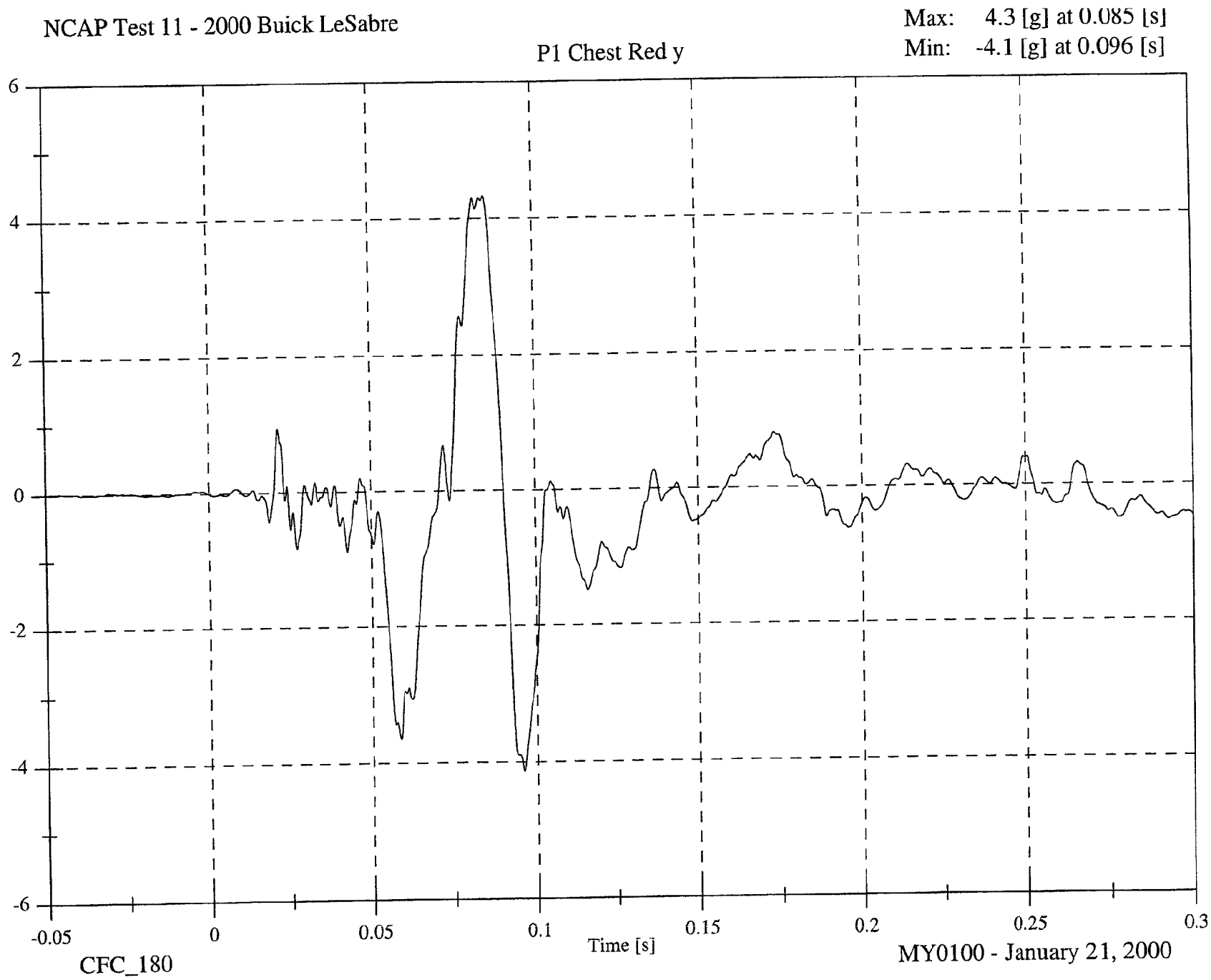

NCAP Test 11 - 2000 Buick LeSabre
P1 Chest x
Max: 6.2 [g] at 0.244 [s]
Min: -42.8 [g] at 0.081 [s]
10
0
-10
-20
-30
-40
-50
g
-0.05
0
0.05
0.1
0.15
0.2
0.25
0.3
Time [s]
CFC_180
MY0100 - January 21, 2000

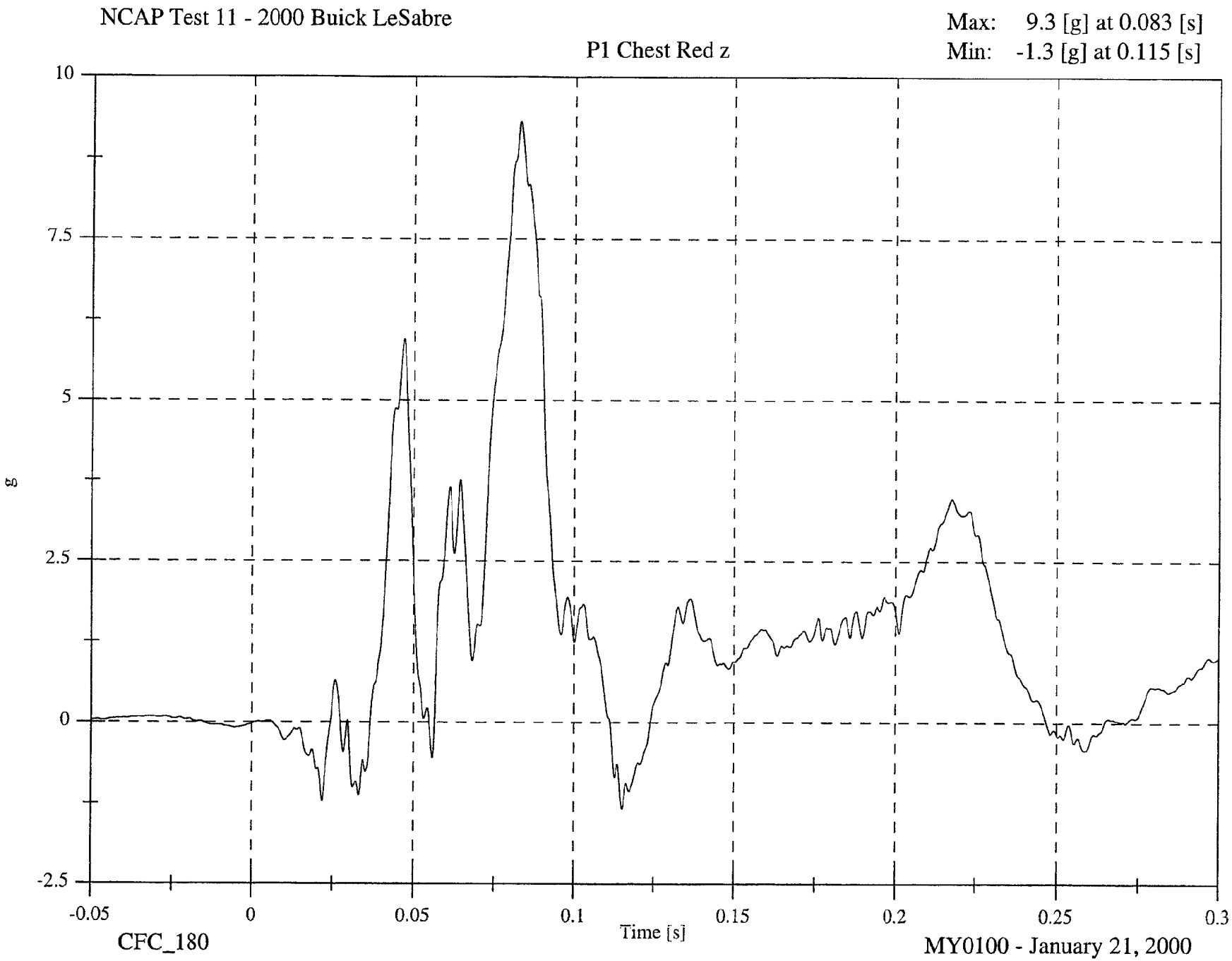

NCAP Test 11 - 2000 Buick LeSabre
P1 Chest y
Max: 3.8 [g] at 0.083 [s]
Min: -5.8 [g] at 0.095 [s]
4
2
0
-2
-4
-6
g
-0.05
0
0.05
0.1
0.15
0.2
0.25
0.3
Time [s]
CFC_180
MY0100 - January 21, 2000

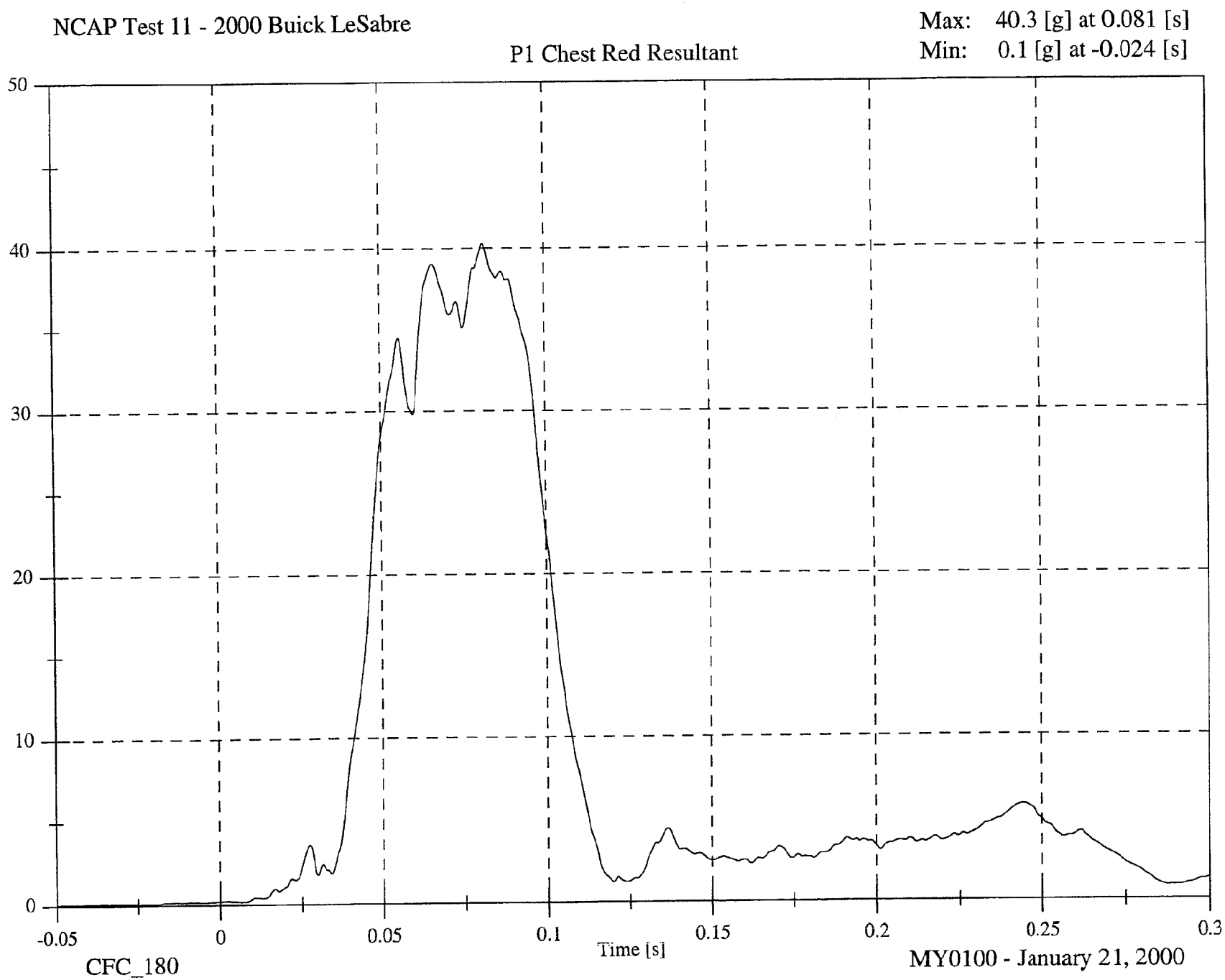

NCAP Test 11 - 2000 Buick LeSabre
P1 Chest z
Max: 7.8 [g] at 0.083 [s]
Min: -1.3 [g] at 0.117 [s]
8
6
4
2
0
-2
g
-0.05
0
0.05
0.1
0.15
0.2
0.25
0.3
Time [s]
CFC_180
MY0100 - January 21, 2000

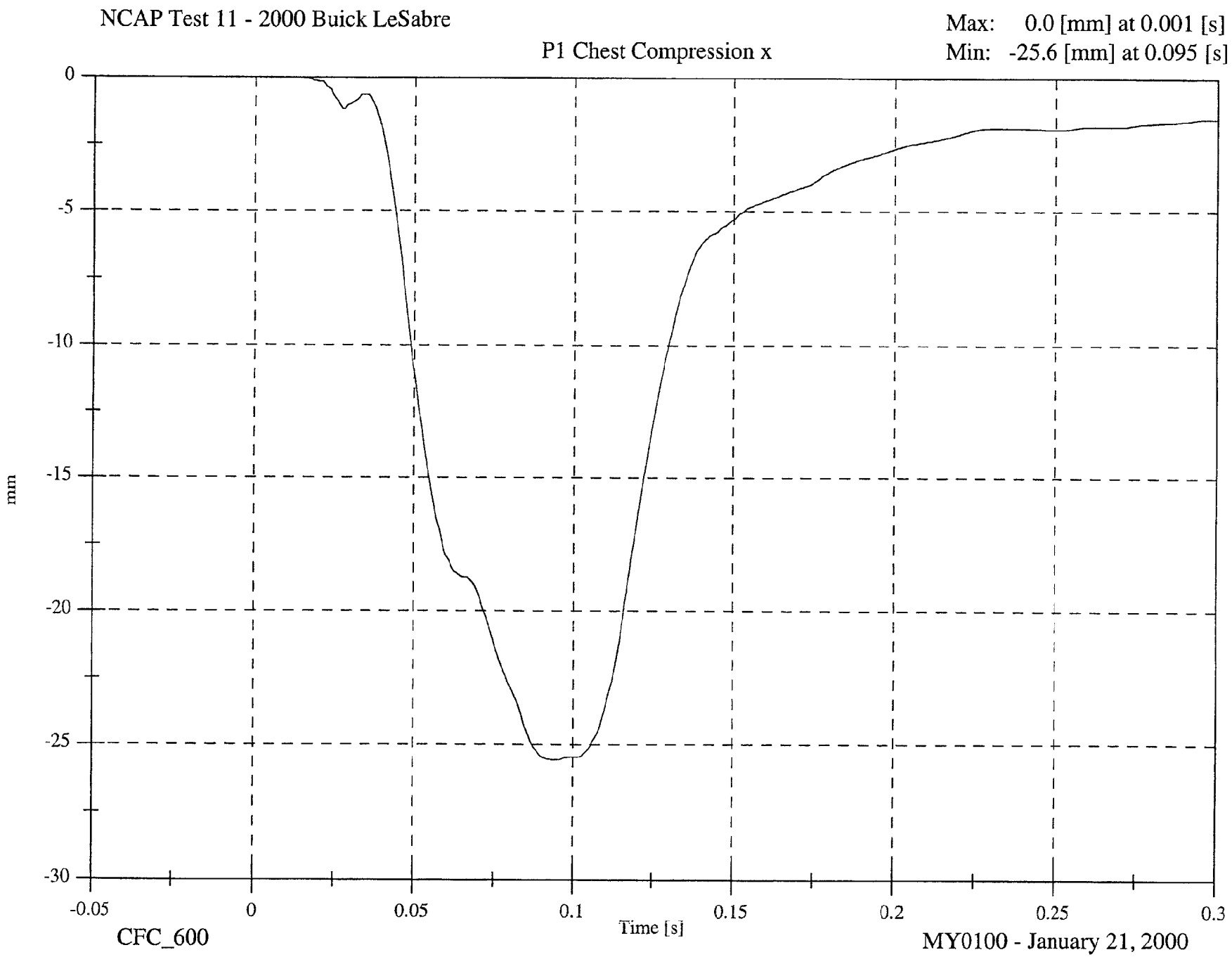

NCAP Test 11 - 2000 Buick LeSabre
P1 Chest Resultant
Max: 43.5 [g] at 0.081 [s]
Min: 0.0 [g] at -0.048 [s]
50
40
30
20
10
0
g
-0.05
0
0.05
0.1
0.15
0.2
0.25
0.3
Time [s]
CFC_180
MY0100 - January 21, 2000

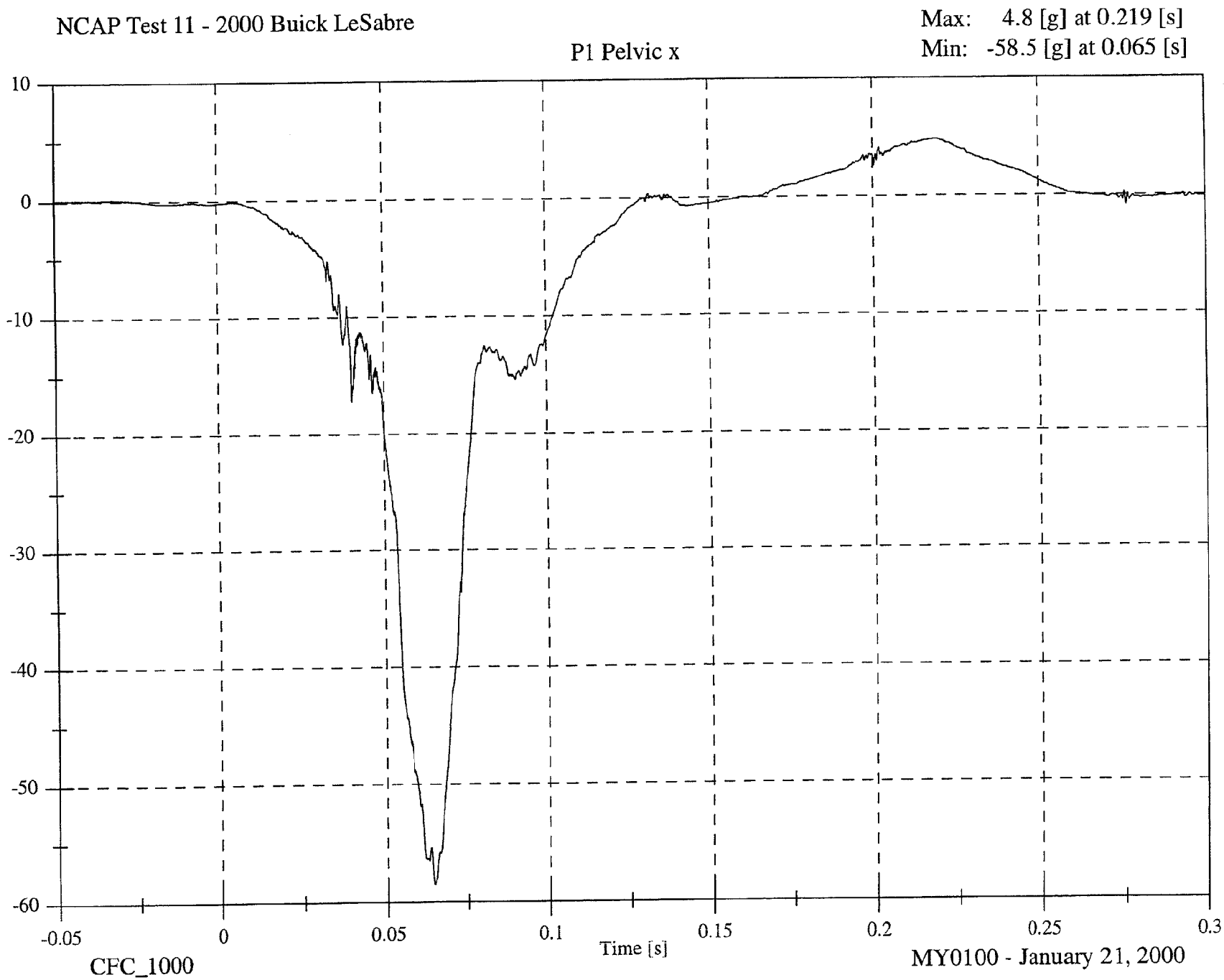

NCAP Test 11 - 2000 Buick LeSabre
P1 Chest Red x
Max: 5.8 [g] at 0.244 [s]
Min: -39.1 [g] at 0.081 [s]
10
0
-10
-20
-30
-40
g
-0.05
0
0.05
0.1
0.15
0.2
0.25
0.3
Time [s]
CFC_180
MY0100 - January 21, 2000

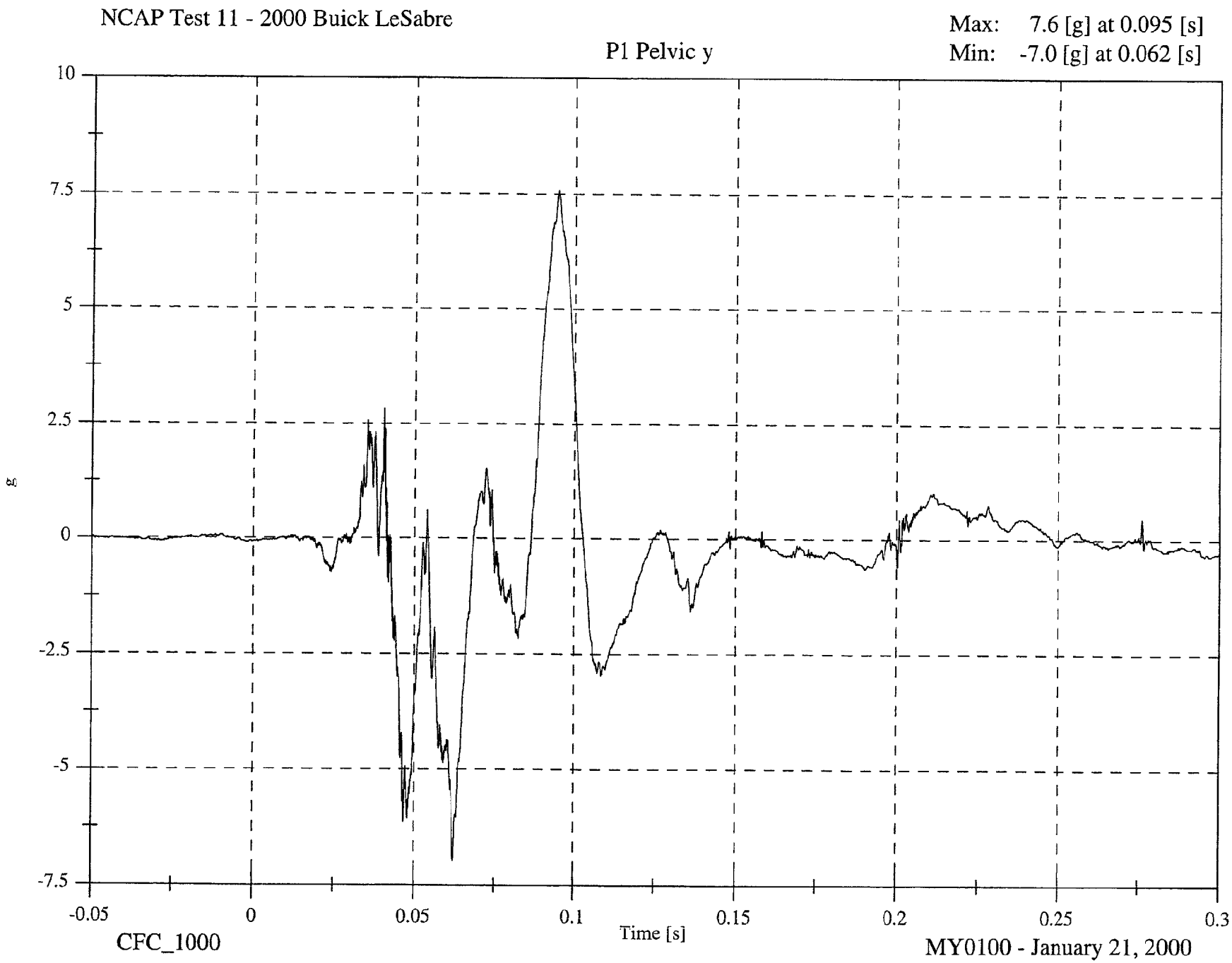

NCAP Test 11 - 2000 Buick LeSabre
P1 Chest Red y
Max: 4.3 [g] at 0.085 [s]
Min: -4.1 [g] at 0.096 [s]
6
4
2
0
-2
-4
-6
g
-0.05
0
0.05
0.1
0.15
0.2
0.25
0.3
Time [s]
CFC_180
MY0100 - January 21, 2000

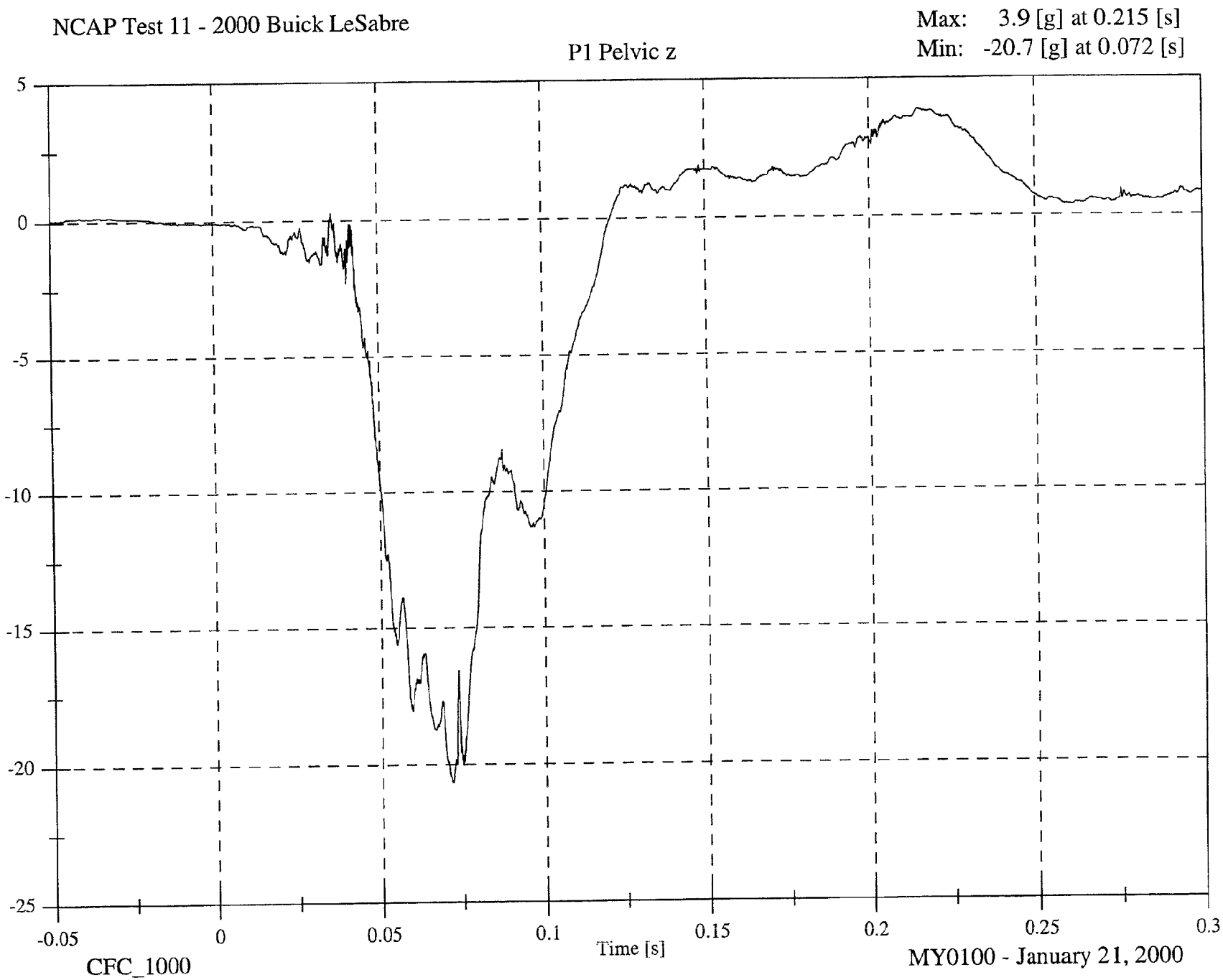

NCAP Test 11 - 2000 Buick LeSabre
P1 Chest Red z
Max: 9.3 [g] at 0.083 [s]
Min: -1.3 [g] at 0.115 [s]
10
7.5
5
2.5
0
-2.5
g
-0.05
0
0.05
0.1
0.15
0.2
0.25
0.3
Time [s]
CFC_180
MY0100 - January 21, 2000

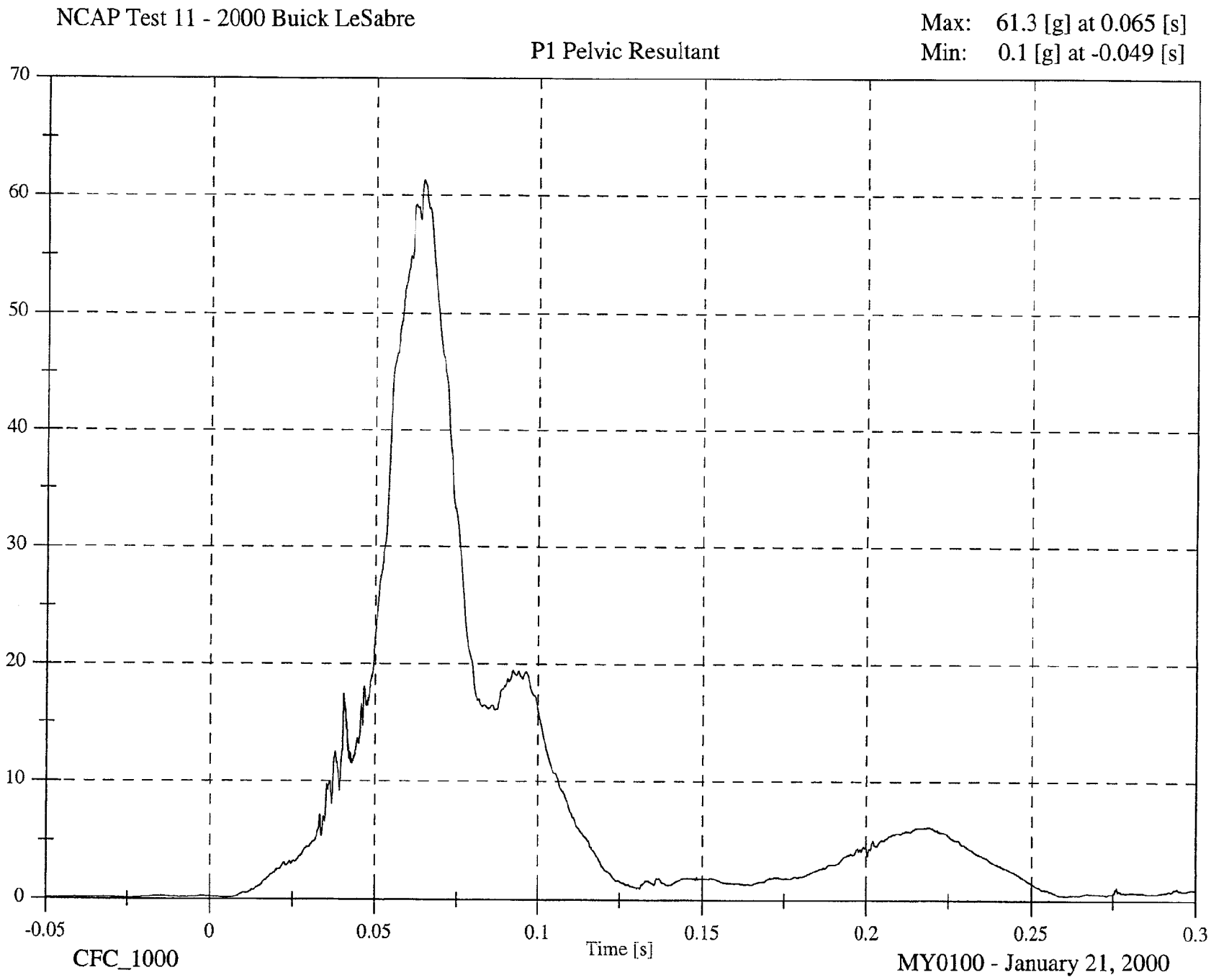

NCAP Test 11 - 2000 Buick LeSabre
P1 Chest Red Resultant
Max: 40.3 [g] at 0.081 [s]
Min: 0.1 [g] at -0.024 [s]
50
40
30
20
10
0
g
-0.05
0
0.05
0.1
0.15
0.2
0.25
0.3
Time [s]
CFC_180
MY0100 - January 21, 2000

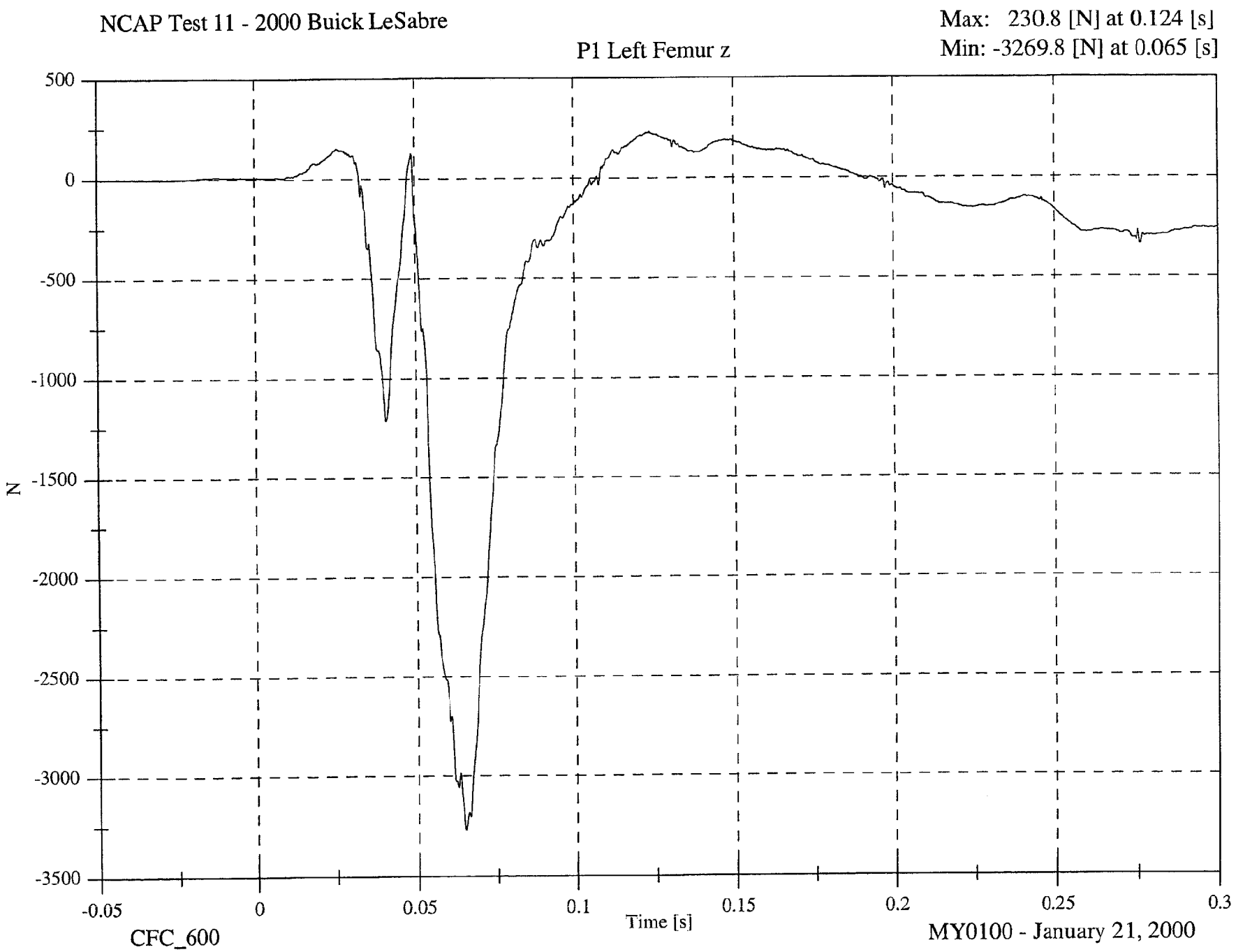

NCAP Test 11 - 2000 Buick LeSabre
P1 Chest Compression x
Max: 0.0 [mm] at 0.001 [s]
Min: -25.6 [mm] at 0.095 [s]
0
-5
-10
-15
-20
-25
-30
mm
-0.05
0
0.05
0.1
0.15
0.2
0.25
0.3
Time [s]
CFC_600
MY0100 - January 21, 2000

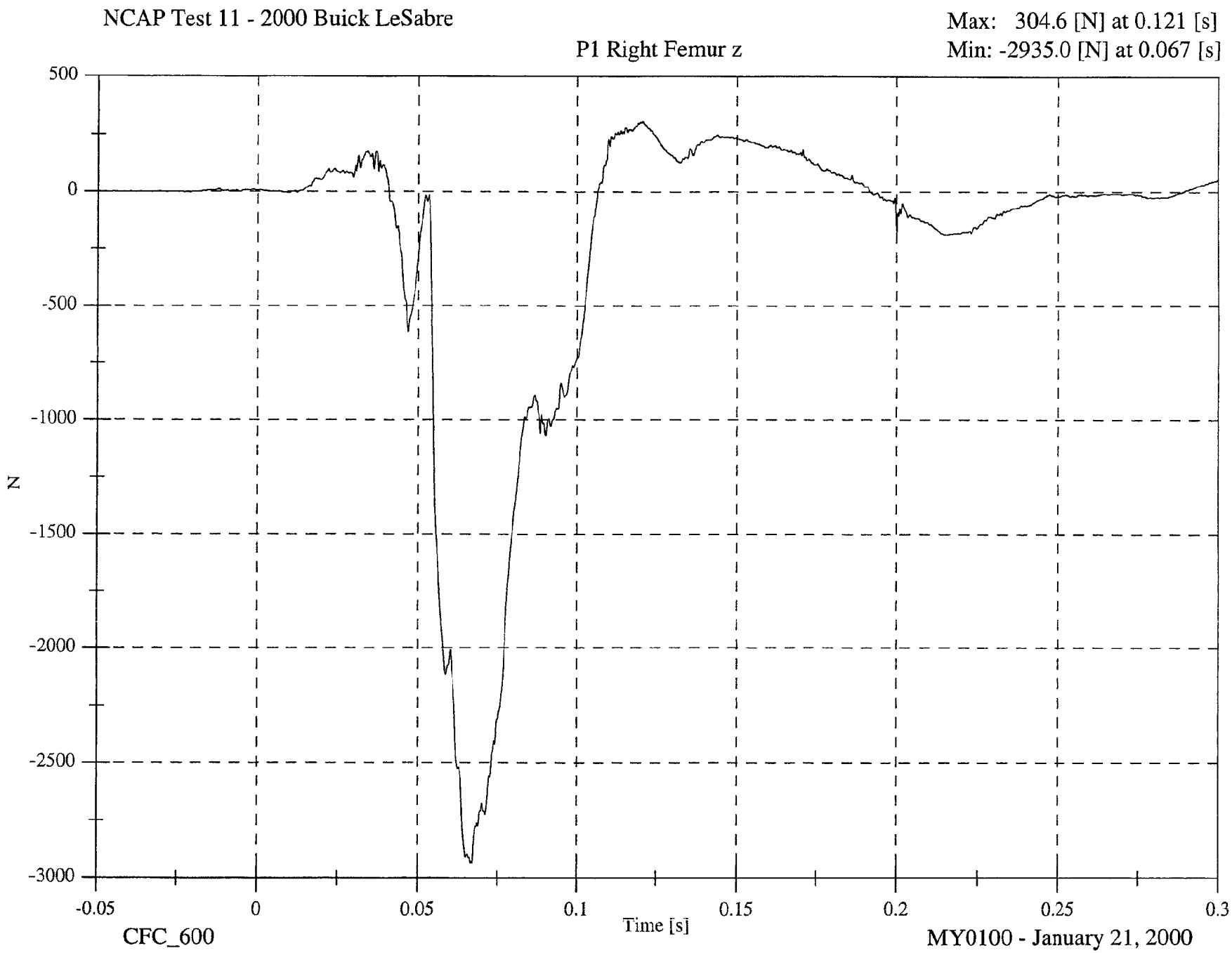

NCAP Test 11 - 2000 Buick LeSabre
P1 Pelvic x
Max: 4.8 [g] at 0.219 [s]
Min: -58.5 [g] at 0.065 [s]
10
0
-10
-20
-30
-40
-50
-60
g
-0.05
0
0.05
0.1
0.15
0.2
0.25
0.3
Time [s]
CFC_1000
MY0100 - January 21, 2000

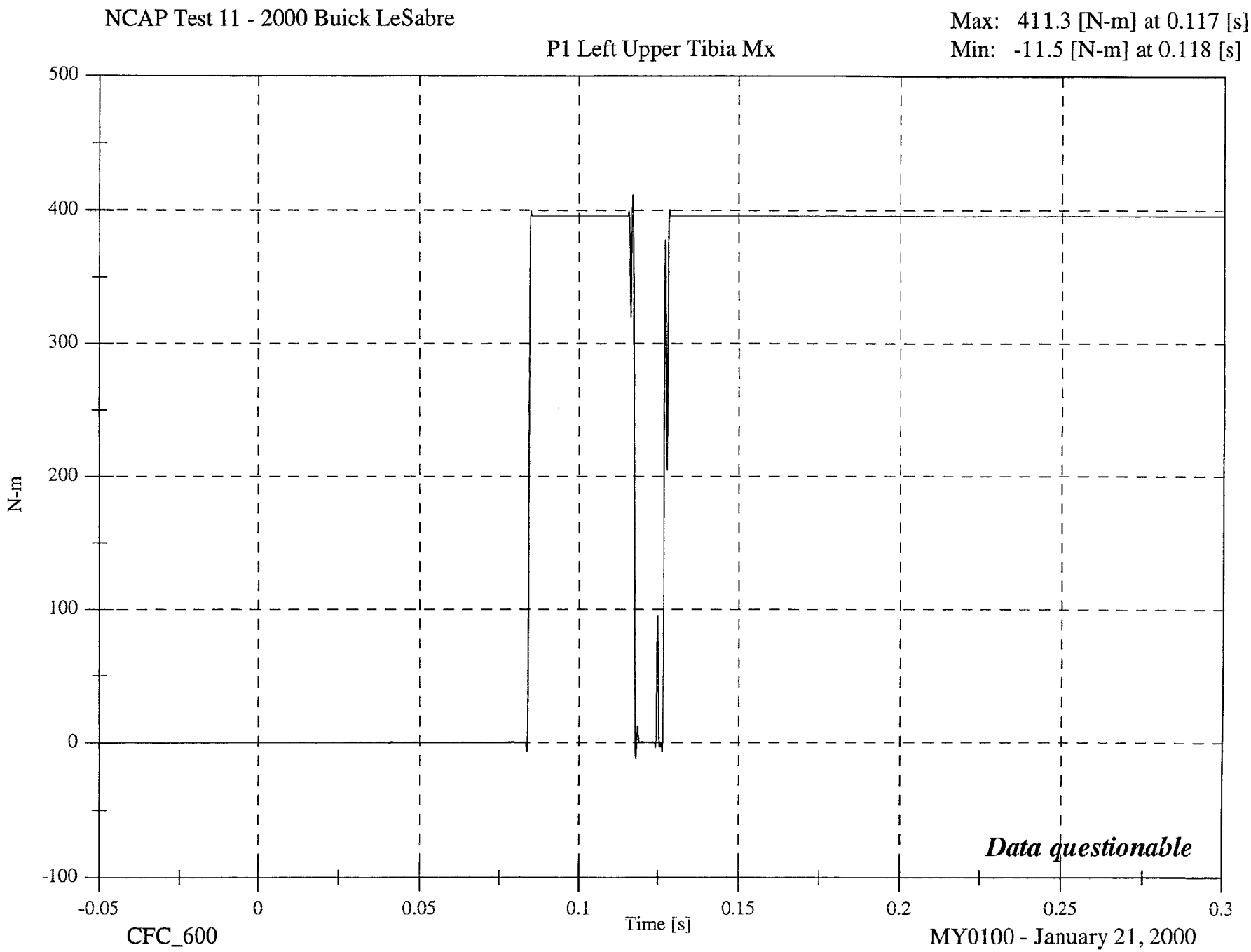

NCAP Test 11 - 2000 Buick LeSabre
P1 Pelvic y
Max: 7.6 [g] at 0.095 [s]
Min: -7.0 [g] at 0.062 [s]
10
7.5
5
2.5
0
-2.5
-5
-7.5
g
-0.05
0
0.05
0.1
0.15
0.2
0.25
0.3
Time [s]
CFC_1000
MY0100 - January 21, 2000

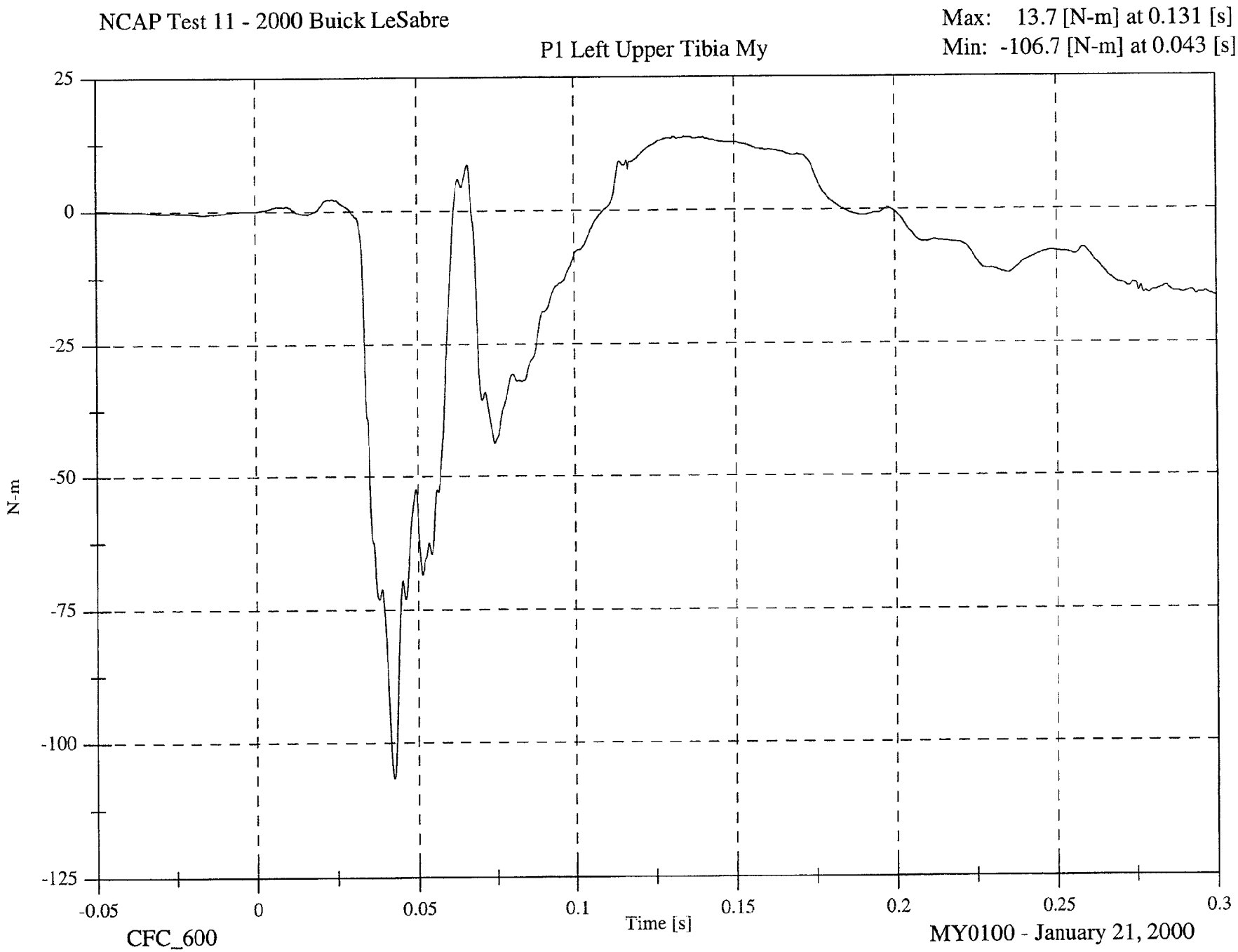

NCAP Test 11 - 2000 Buick LeSabre
P1 Pelvic z
Max: 3.9 [g] at 0.215 [s]
Min: -20.7 [g] at 0.072 [s]
5
0
-5
-10
-15
-20
-25
g
-0.05
0
0.05
0.1
0.15
0.2
0.25
0.3
Time [s]
CFC_1000
MY0100 - January 21, 2000

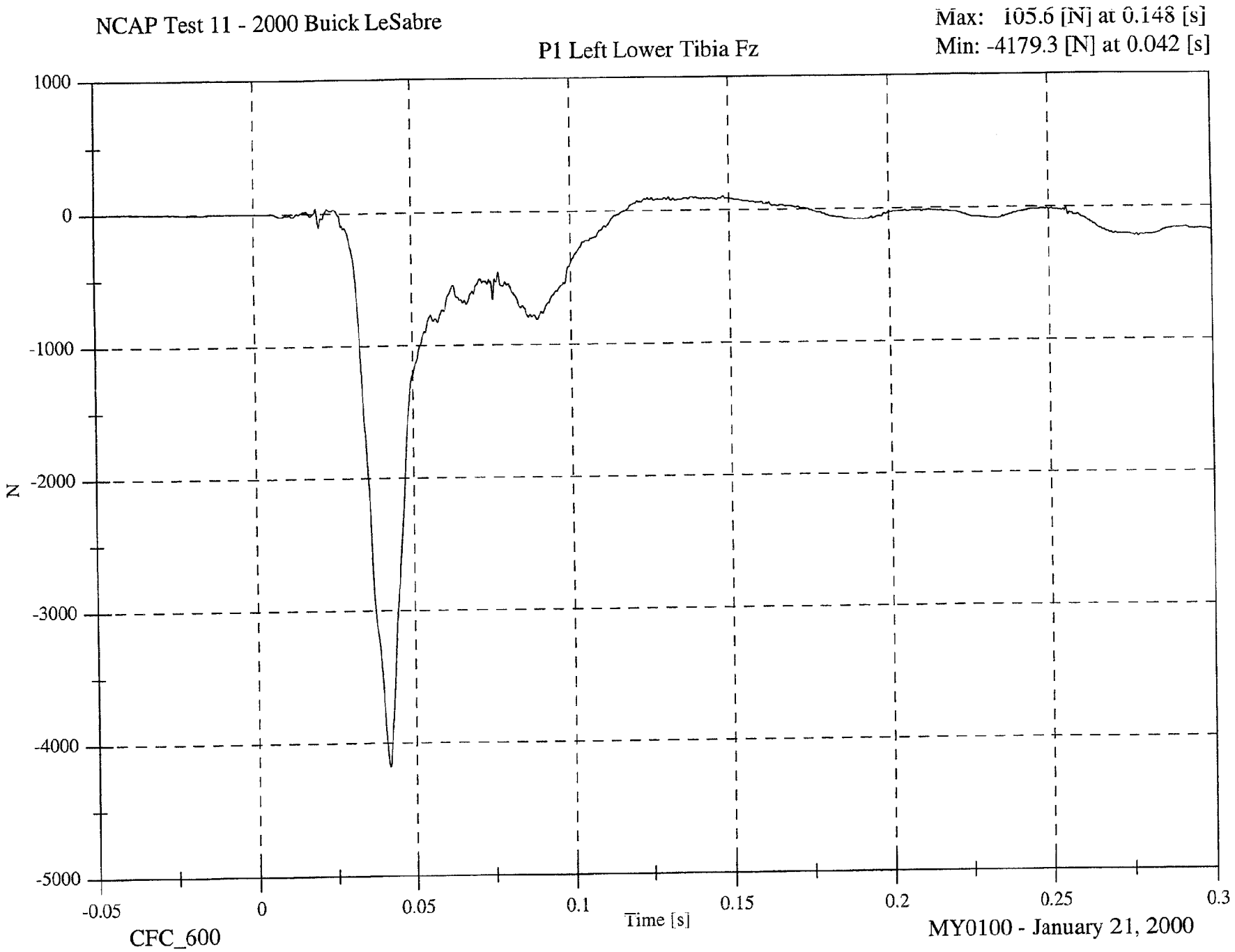

NCAP Test 11 - 2000 Buick LeSabre
P1 Pelvic Resultant
Max: 61.3 [g] at 0.065 [s]
Min: 0.1 [g] at -0.049 [s]
70
60
50
40
30
20
10
0
g
-0.05
0
0.05
0.1
0.15
0.2
0.25
0.3
Time [s]
CFC_1000
MY0100 - January 21, 2000

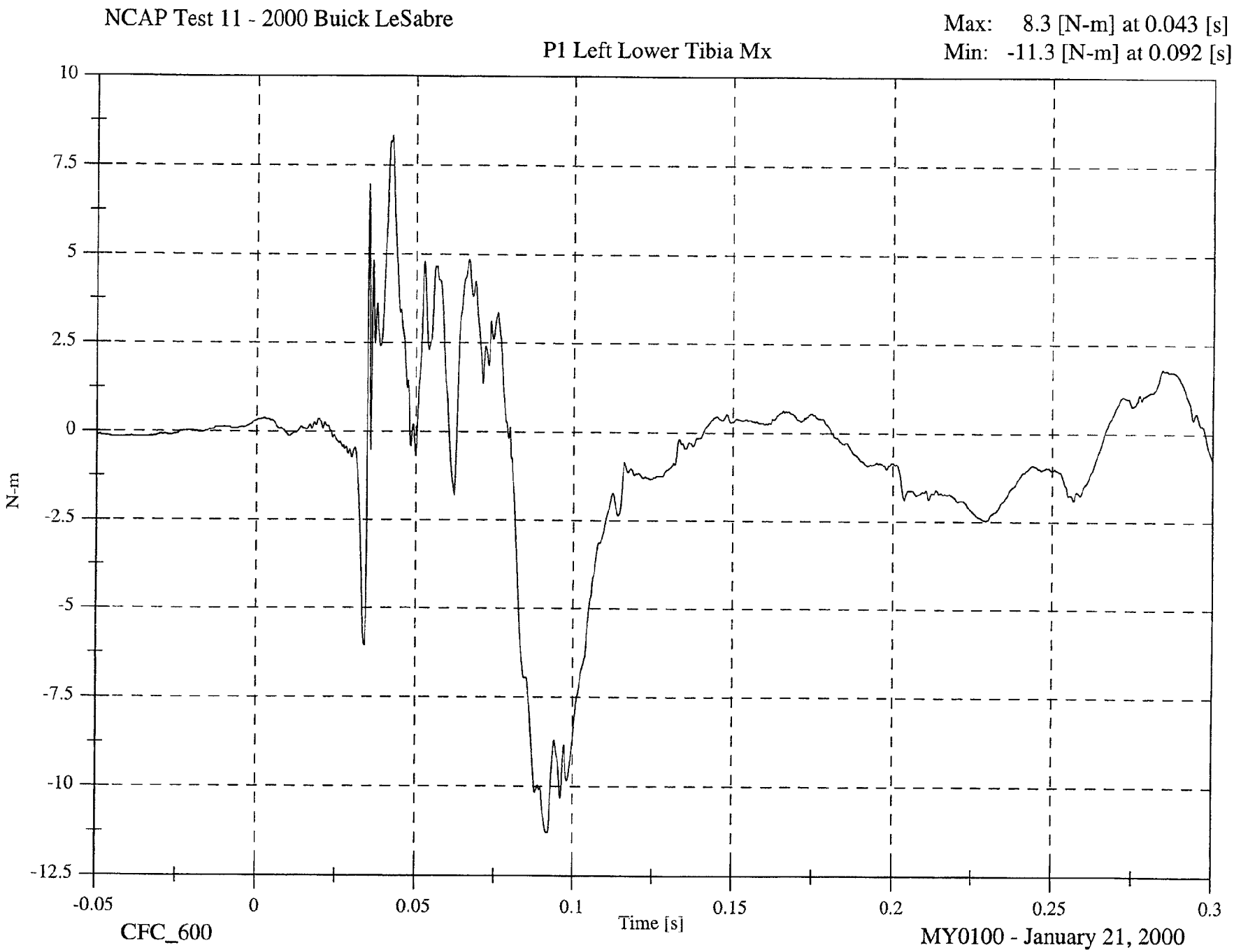

NCAP Test 11 - 2000 Buick LeSabre
P1 Left Femur z
Max: 230.8 [N] at 0.124 [s]
Min: -3269.8 [N] at 0.065 [s]
500
0
-500
-1000
-1500
-2000
-2500
-3000
-3500
N
-0.05
0
0.05
0.1
0.15
0.2
0.25
0.3
Time [s]
CFC_600
MY0100 - January 21, 2000

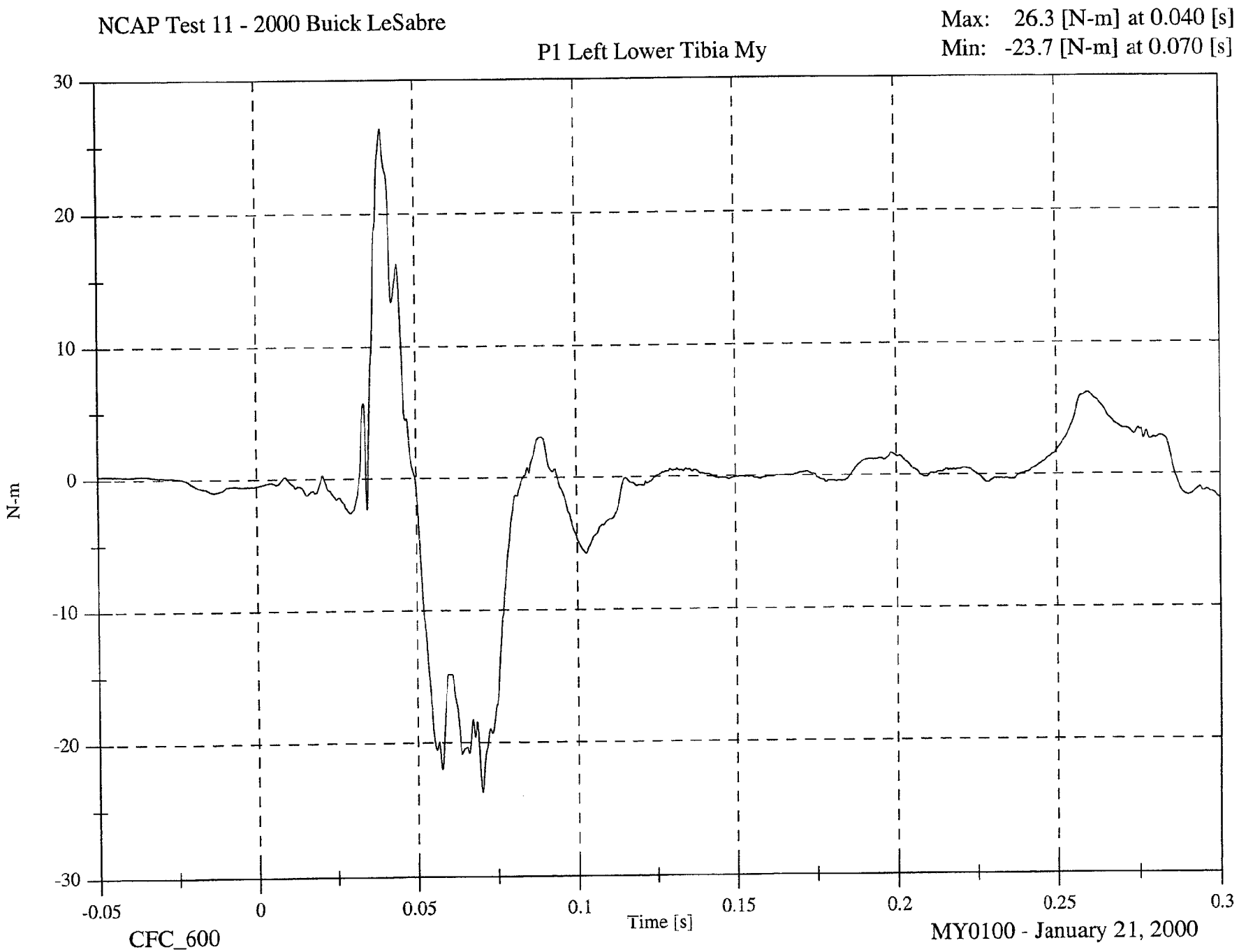

NCAP Test 11 - 2000 Buick LeSabre
P1 Right Femur z
Max: 304.6 [N] at 0.121 [s]
Min: -2935.0 [N] at 0.067 [s]
500
0
-500
-1000
-1500
-2000
-2500
-3000
N
-0.05
0
0.05
0.1
0.15
0.2
0.25
0.3
Time [s]
CFC_600
MY0100 - January 21, 2000

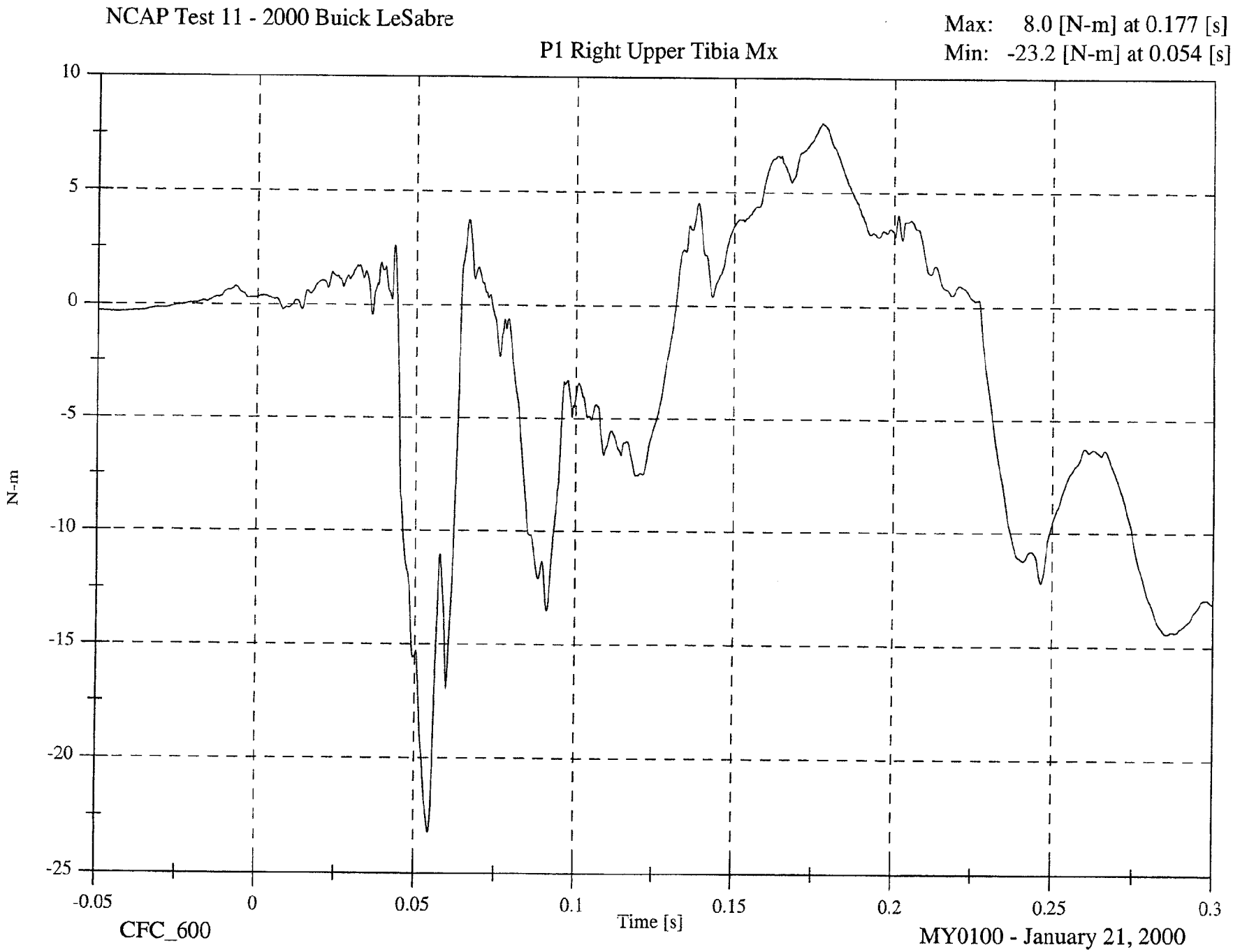

NCAP Test 11 - 2000 Buick LeSabre
P1 Left Upper Tibia Mx
Max: 411.3 [N-m] at 0.117 [s]
Min: -11.5 [N-m] at 0.118 [s]
500
400
300
200
100
0
-100
N-m
-0.05
0
0.05
0.1
0.15
0.2
0.25
0.3
Time [s]
Data questionable
CFC_600
MY0100 - January 21, 2000

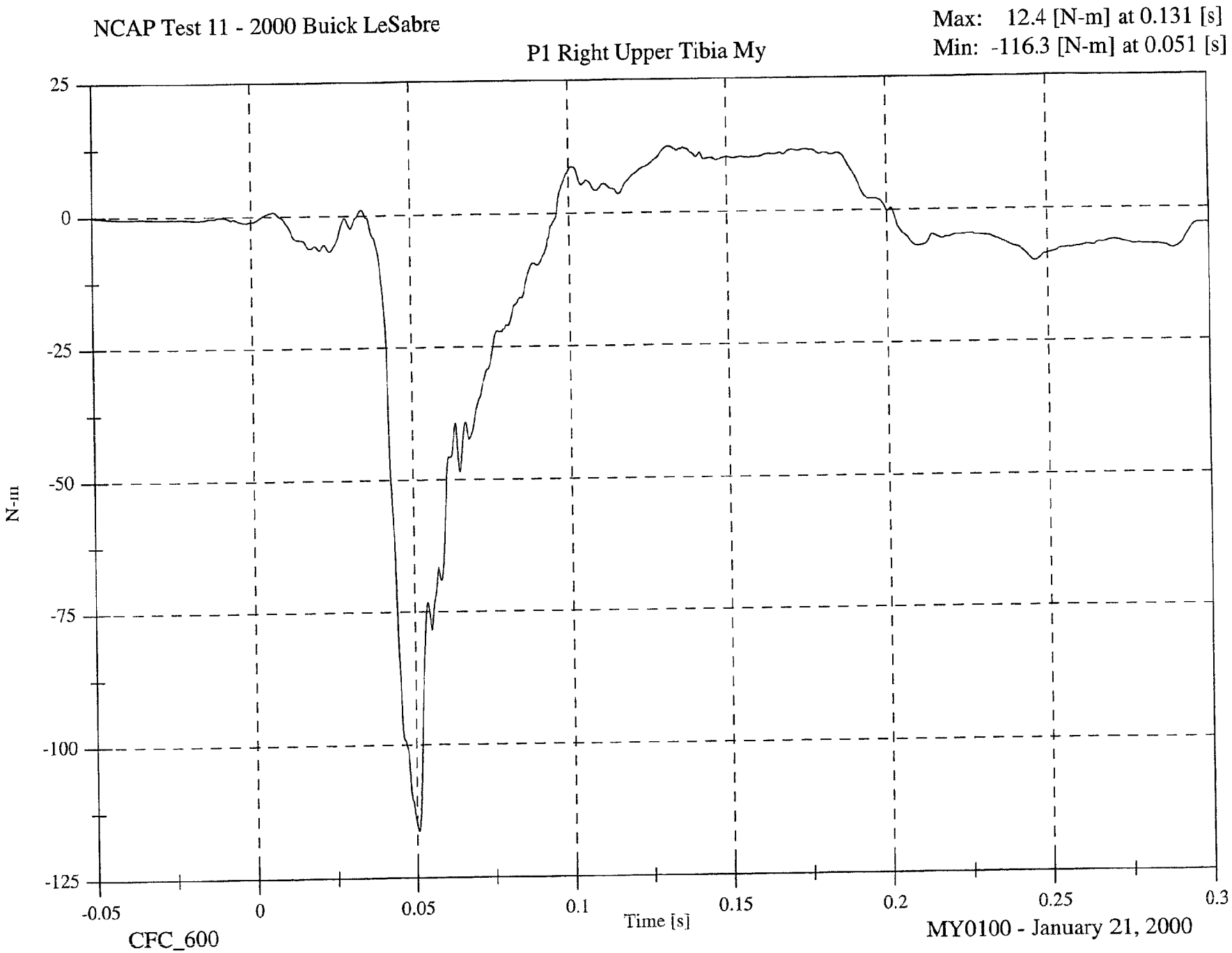

NCAP Test 11 - 2000 Buick LeSabre
P1 Left Upper Tibia My
Max: 13.7 [N-m] at 0.131 [s]
Min: -106.7 [N-m] at 0.043 [s]
25
0
-25
-50
-75
-100
-125
N-m
-0.05
0
0.05
0.1
0.15
0.2
0.25
0.3
Time [s]
CFC_600
MY0100 - January 21, 2000

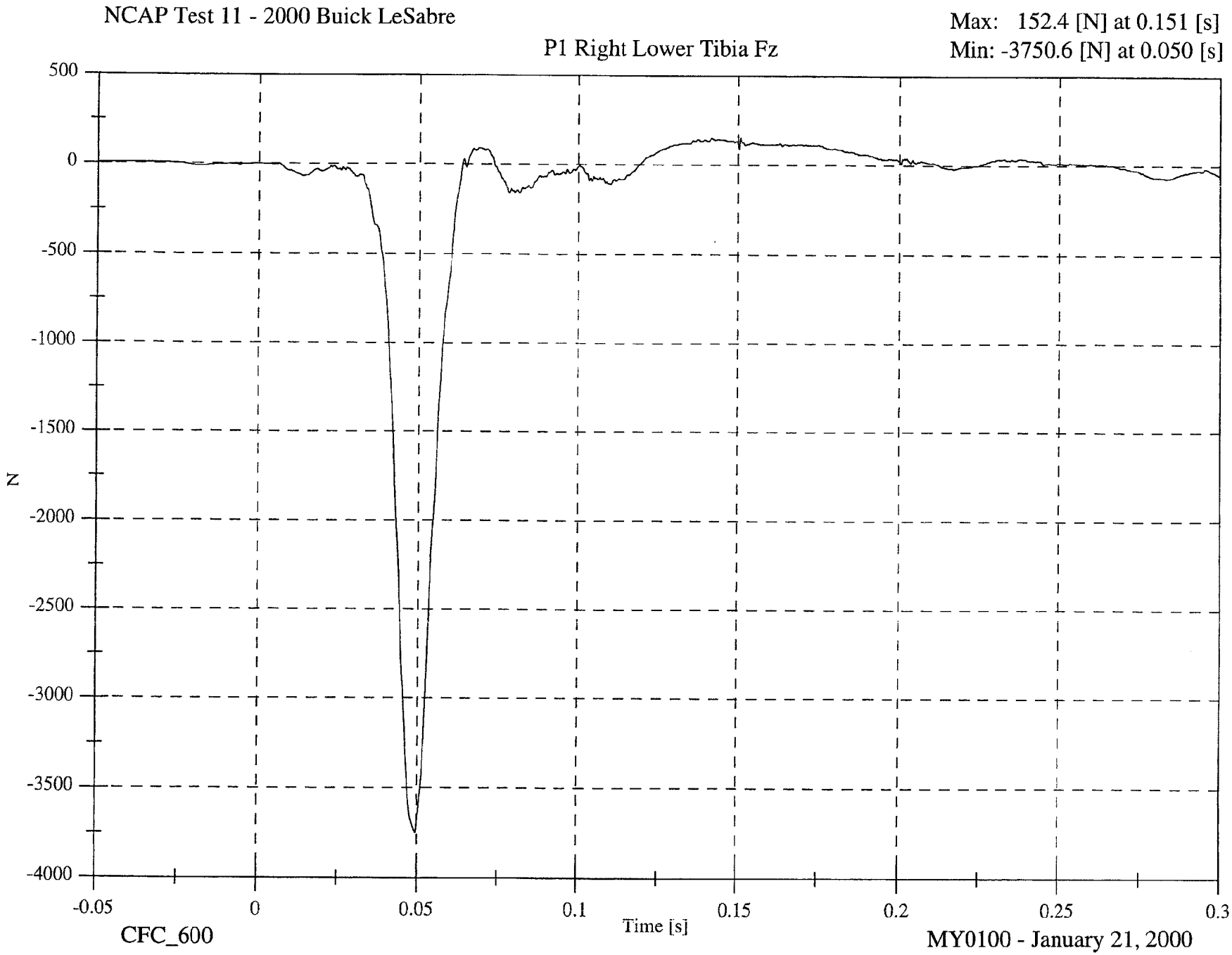

NCAP Test 11 - 2000 Buick LeSabre
P1 Left Lower Tibia Fz
Max: 105.6 [N] at 0.148 [s]
Min: -4179.3 [N] at 0.042 [s]
1000
0
-1000
-2000
-3000
-4000
-5000
N
-0.05
0
0.05
0.1
0.15
0.2
0.25
0.3
Time [s]
CFC_600
MY0100 - January 21, 2000

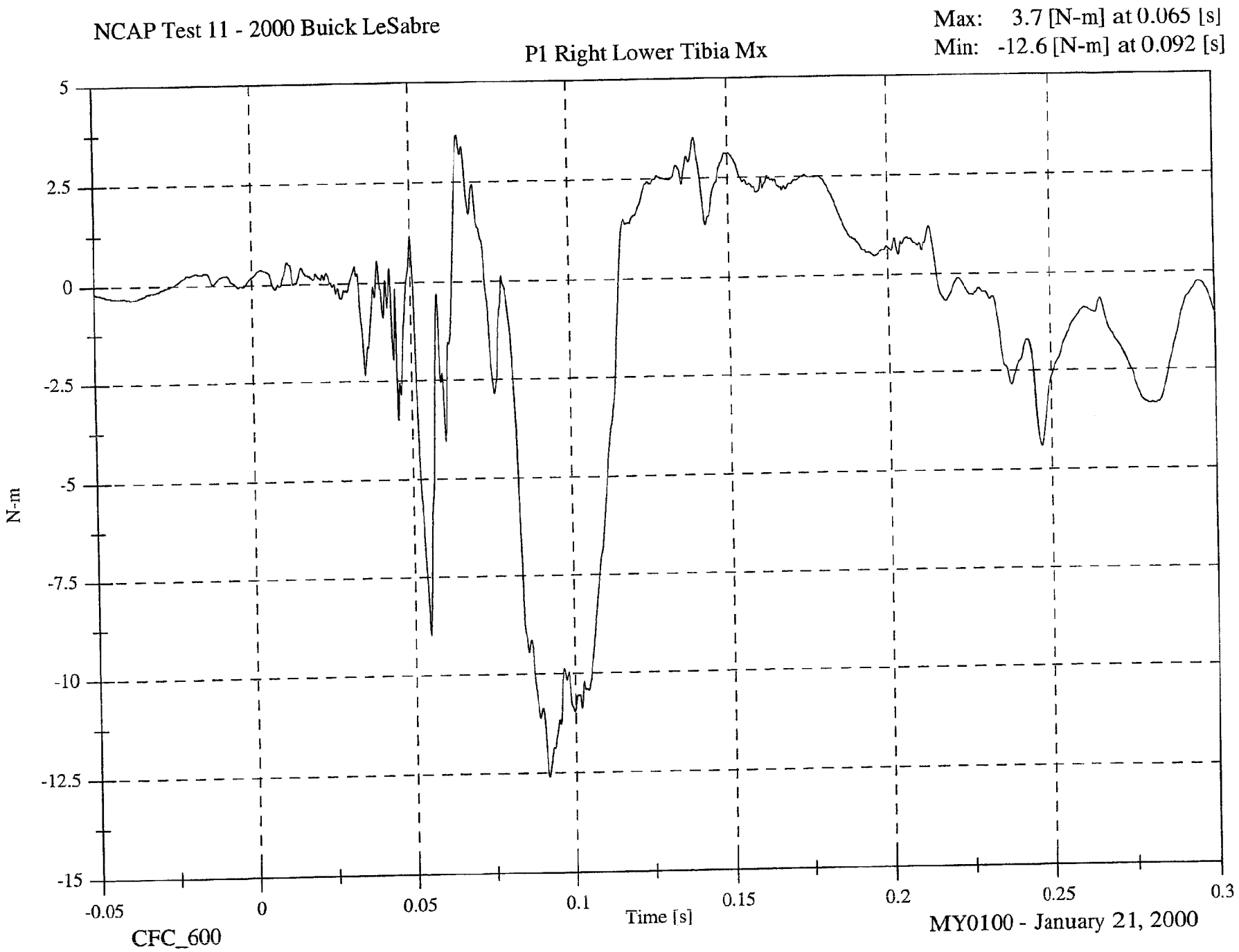

NCAP Test 11 - 2000 Buick LeSabre
P1 Left Lower Tibia Mx
Max: 8.3 [N-m] at 0.043 [s]
Min: -11.3 [N-m] at 0.092 [s]
10
7.5
5
2.5
0
-2.5
-5
-7.5
-10
-12.5
N-m
-0.05
0
0.05
0.1
0.15
0.2
0.25
0.3
Time [s]
CFC_600
MY0100 - January 21, 2000

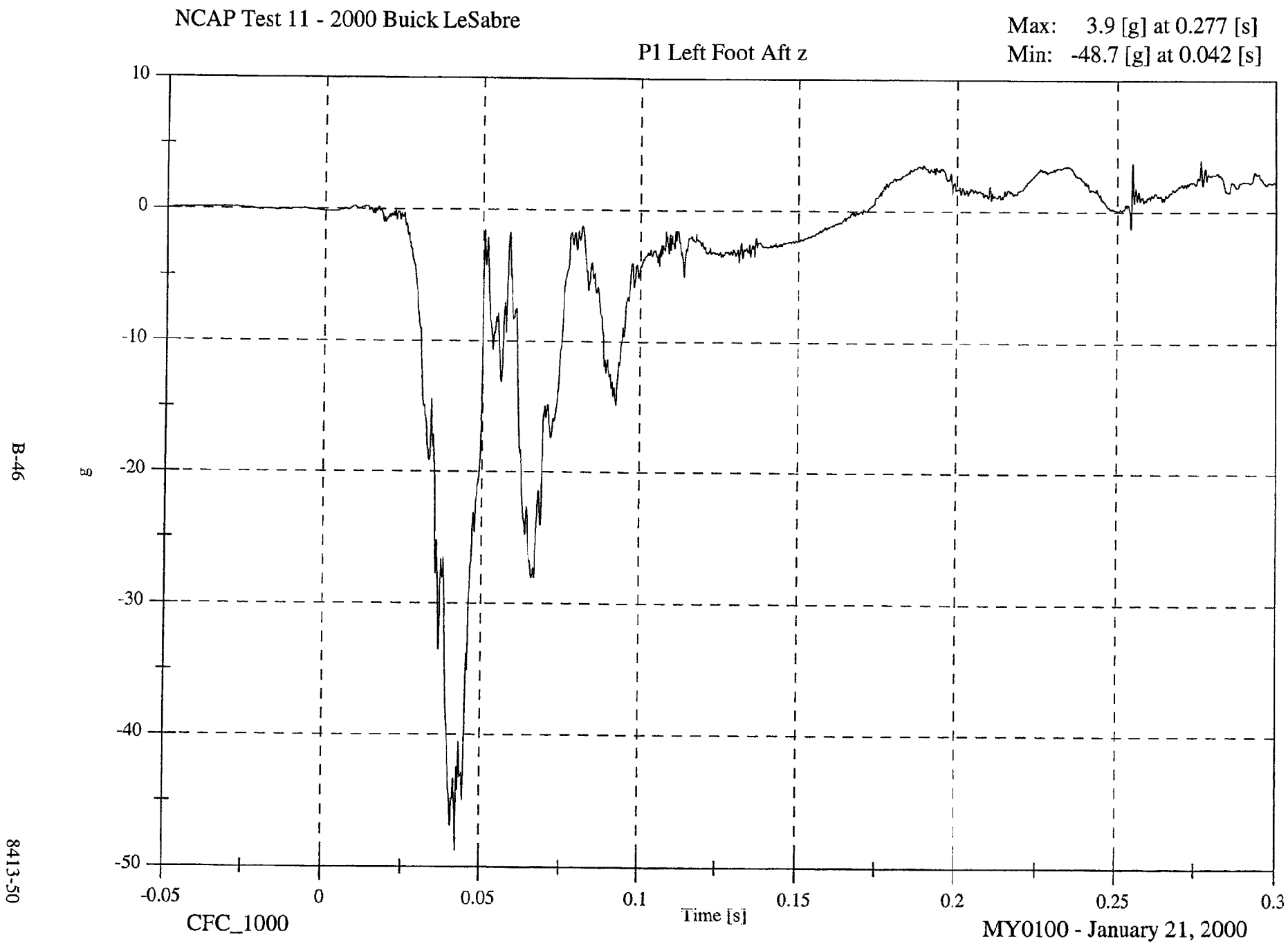

NCAP Test 11 - 2000 Buick LeSabre
P1 Left Lower Tibia My
Max: 26.3 [N-m] at 0.040 [s]
Min: -23.7 [N-m] at 0.070 [s]
30
20
10
0
-10
-20
-30
N-m
-0.05
0
0.05
0.1
0.15
0.2
0.25
0.3
Time [s]
CFC_600
MY0100 - January 21, 2000

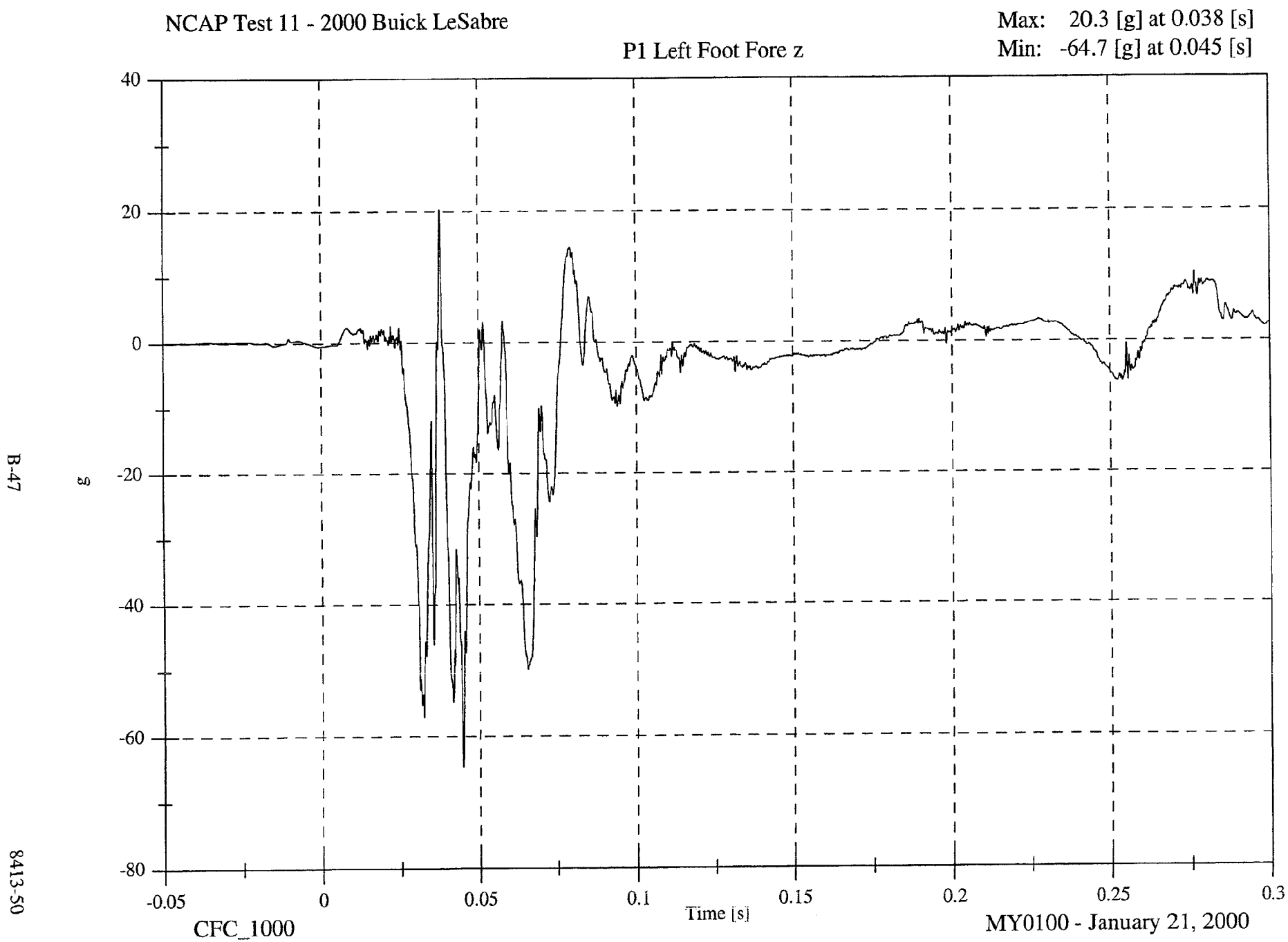

NCAP Test 11 - 2000 Buick LeSabre
P1 Right Upper Tibia Mx
Max: 8.0 [N-m] at 0.177 [s]
Min: -23.2 [N-m] at 0.054 [s]
10
5
0
-5
-10
-15
-20
-25
N-m
-0.05
0
0.05
0.1
0.15
0.2
0.25
0.3
Time [s]
CFC_600
MY0100 - January 21, 2000

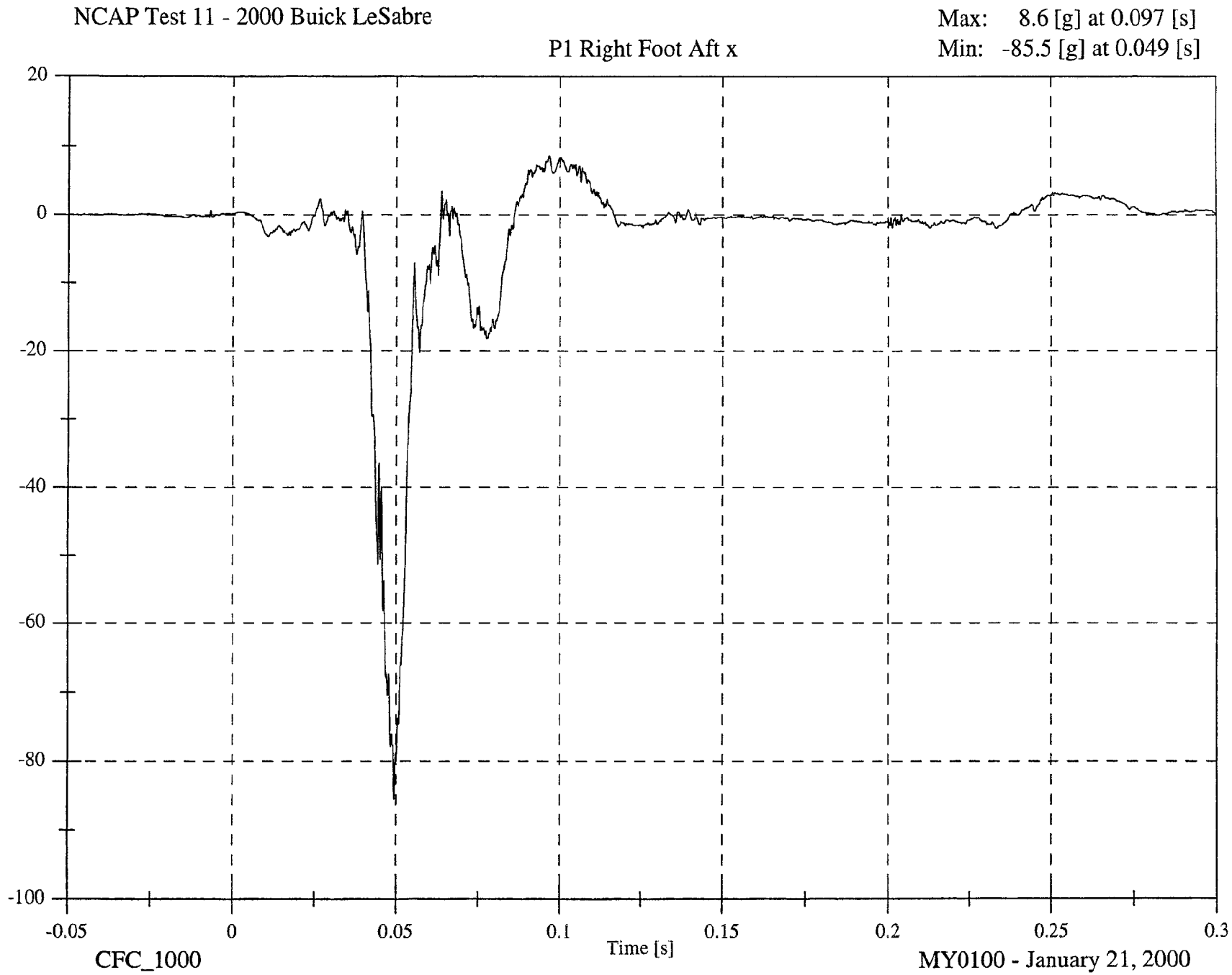

NCAP Test 11 - 2000 Buick LeSabre
P1 Right Upper Tibia My
Max: 12.4 [N-m] at 0.131 [s]
Min: -116.3 [N-m] at 0.051 [s]
25
0
-25
-50
-75
-100
-125
N-m
-0.05
0
0.05
0.1
0.15
0.2
0.25
0.3
Time [s]
CFC_600
MY0100 - January 21, 2000

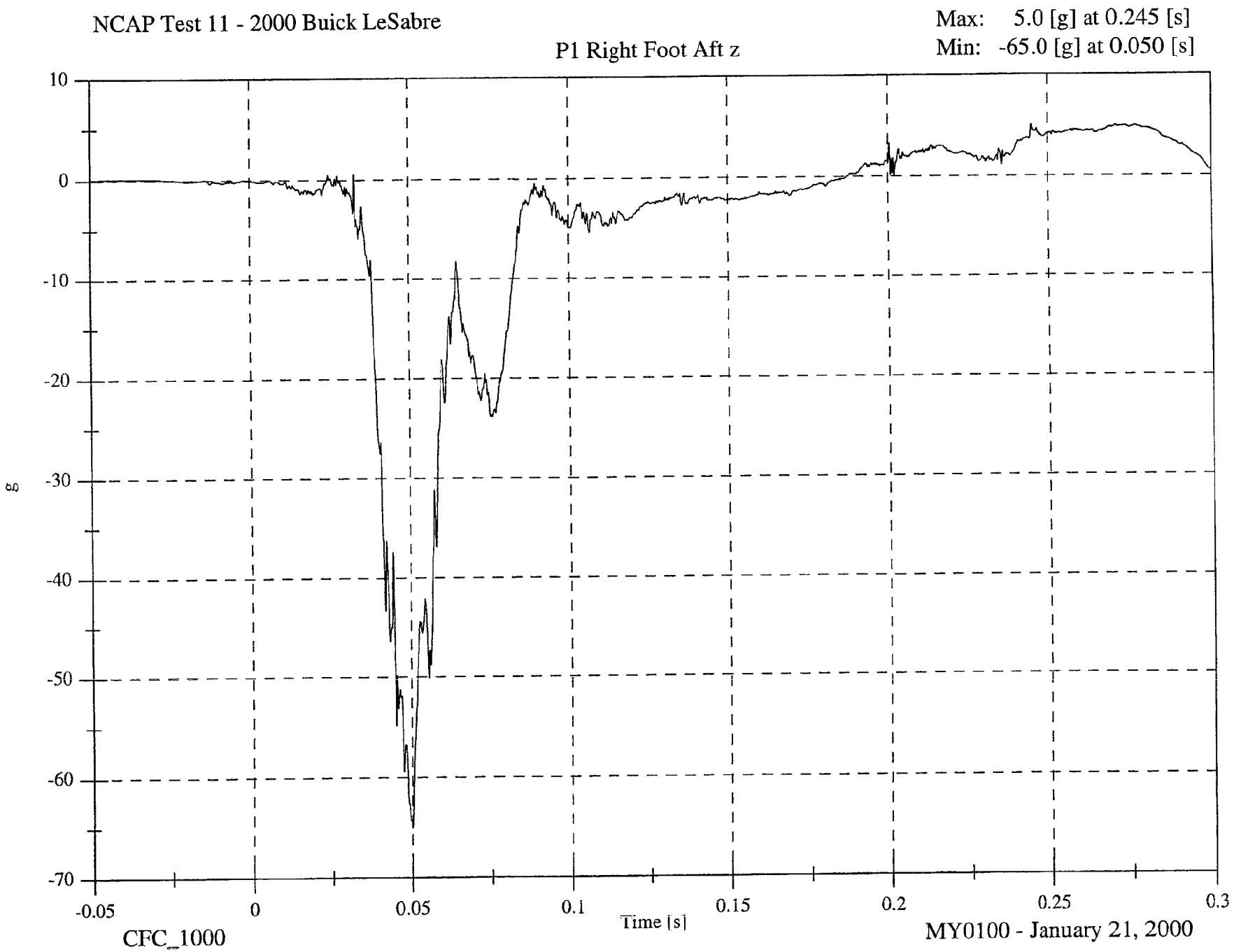

NCAP Test 11 - 2000 Buick LeSabre
P1 Right Lower Tibia Fz
Max: 152.4 [N] at 0.151 [s]
Min: -3750.6 [N] at 0.050 [s]
500
0
-500
-1000
-1500
-2000
-2500
-3000
-3500
-4000
N
-0.05
0
0.05
0.1
0.15
0.2
0.25
0.3
Time [s]
CFC_600
MY0100 - January 21, 2000

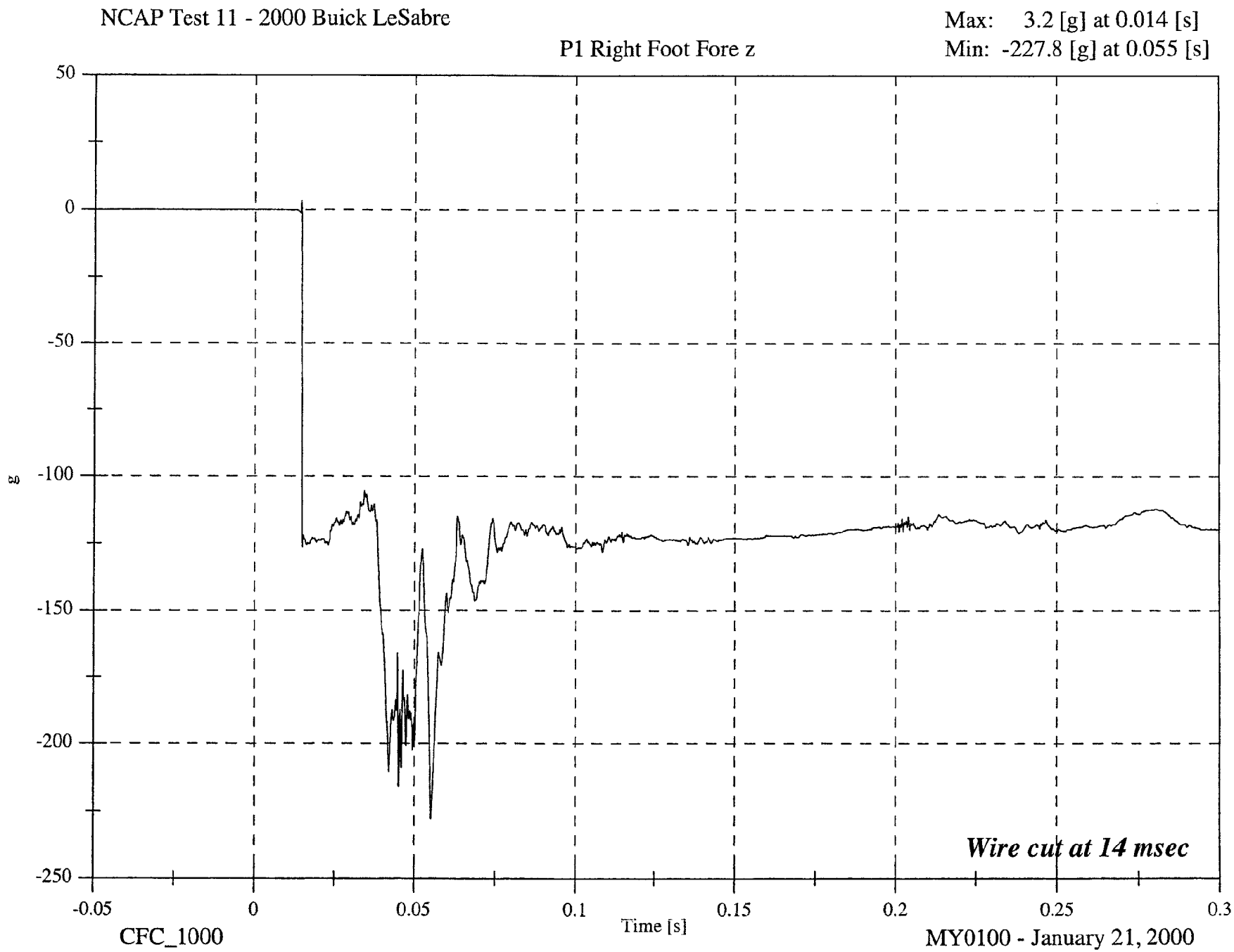

NCAP Test 11 - 2000 Buick LeSabre
P1 Right Lower Tibia Mx
Max: 3.7 [N-m] at 0.065 [s]
Min: -12.6 [N-m] at 0.092 [s]
5
2.5
0
-2.5
-5
-7.5
-10
-12.5
-15
N-m
-0.05
0
0.05
0.1
0.15
0.2
0.25
0.3
Time [s]
CFC_600
MY0100 - January 21, 2000

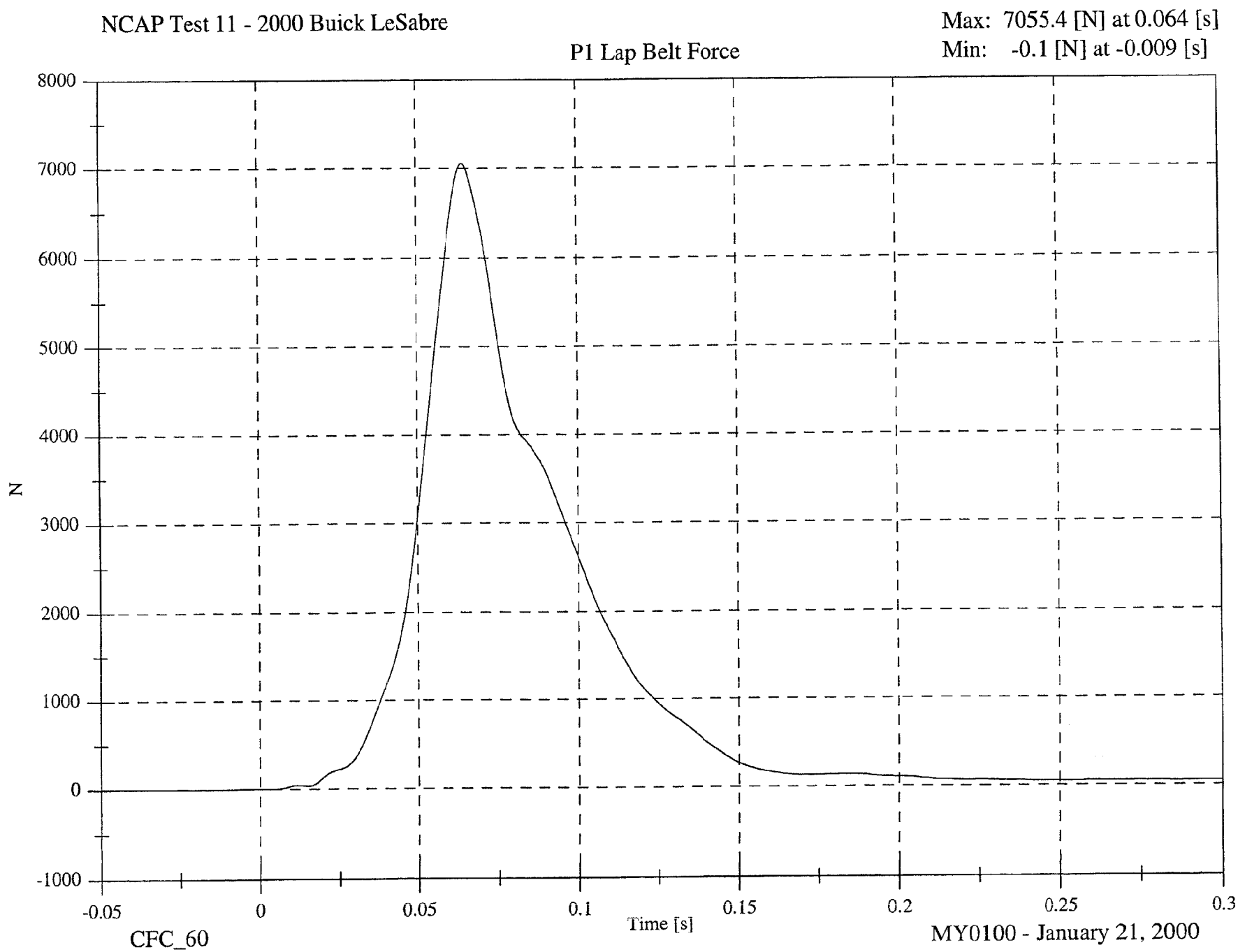

NCAP Test 11 - 2000 Buick LeSabre
P1 Left Foot Aft z
Max: 3.9 [g] at 0.277 [s]
Min: -48.7 [g] at 0.042 [s]
10
0
-10
-20
-30
-40
-50
g
-0.05
0
0.05
0.1
0.15
0.2
0.25
0.3
Time [s]
CFC_1000
MY0100 - January 21, 2000

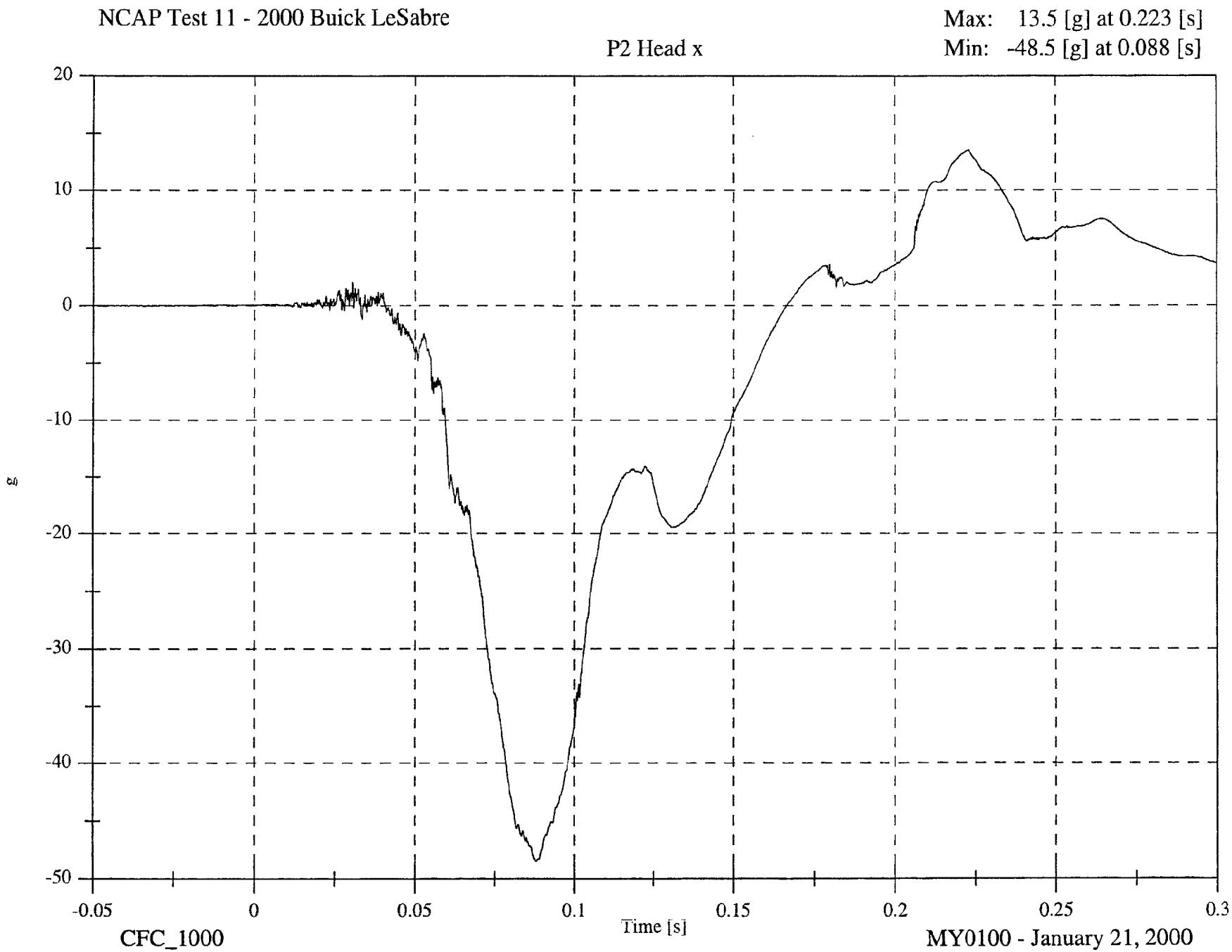

NCAP Test 11 - 2000 Buick LeSabre
P1 Left Foot Fore z
Max: 20.3 [g] at 0.038 [s]
Min: -64.7 [g] at 0.045 [s]
40
20
0
-20
-40
-60
-80
g
-0.05
0
0.05
0.1
0.15
0.2
0.25
0.3
Time [s]
CFC_1000
MY0100 - January 21, 2000

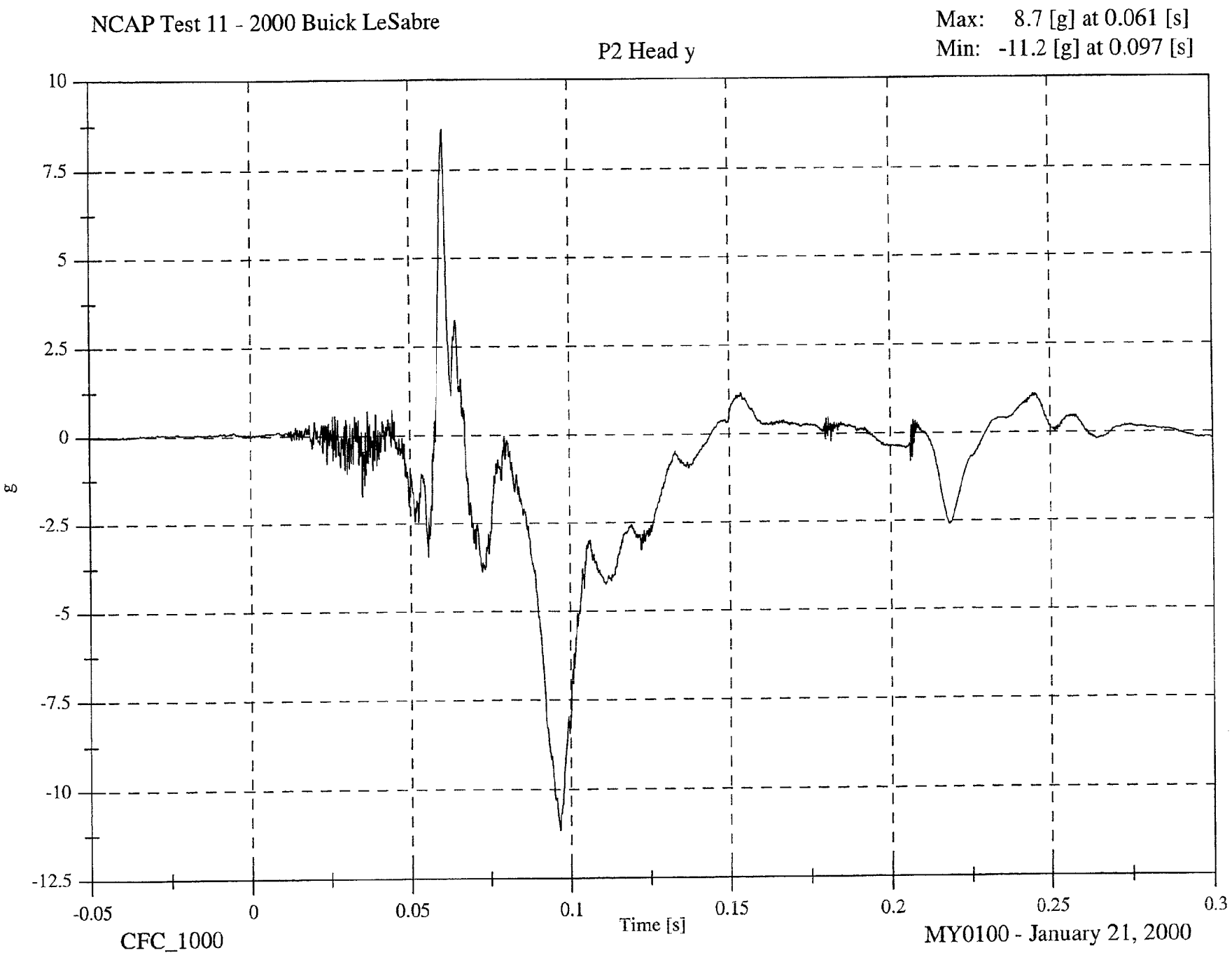

NCAP Test 11 - 2000 Buick LeSabre
P1 Right Foot Aft x
Max: 8.6 [g] at 0.097 [s]
Min: -85.5 [g] at 0.049 [s]
20
0
-20
-40
-60
-80
-100
g
-0.05
0
0.05
0.1
0.15
0.2
0.25
0.3
Time [s]
CFC_1000
MY0100 - January 21, 2000

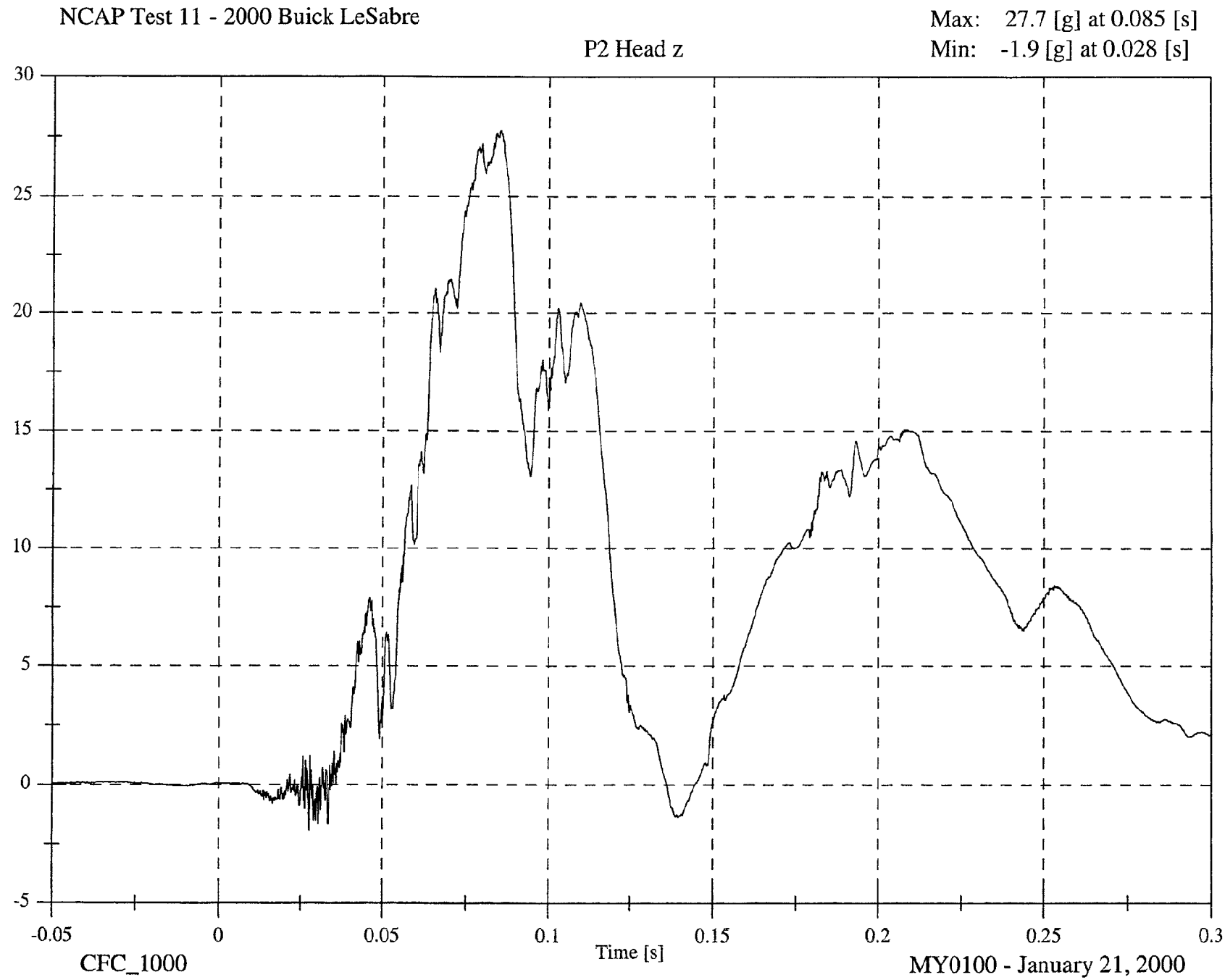

NCAP Test 11 - 2000 Buick LeSabre
P1 Right Foot Aft z
Max: 5.0 [g] at 0.245 [s]
Min: -65.0 [g] at 0.050 [s]
10
0
-10
-20
-30
-40
-50
-60
-70
g
-0.05
0
0.05
0.1
0.15
0.2
0.25
0.3
Time [s]
CFC_1000
MY0100 - January 21, 2000

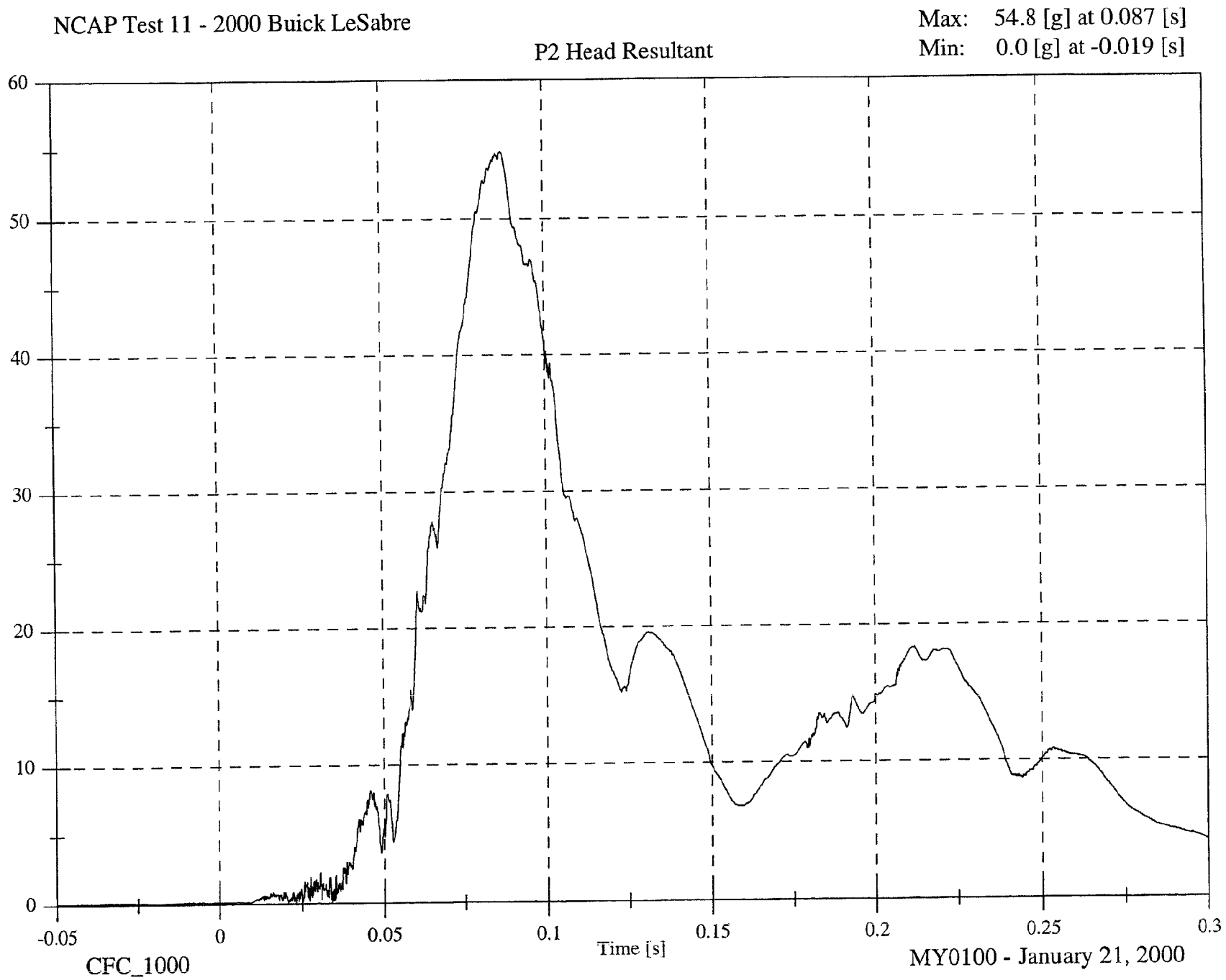

NCAP Test 11 - 2000 Buick LeSabre
P1 Right Foot Fore z
Max: 3.2 [g] at 0.014 [s]
Min: -227.8 [g] at 0.055 [s]
50
0
-50
-100
-150
-200
-250
g
-0.05
0
0.05
0.1
0.15
0.2
0.25
0.3
Time [s]
Wire cut at 14 msec
CFC_1000
MY0100 - January 21, 2000

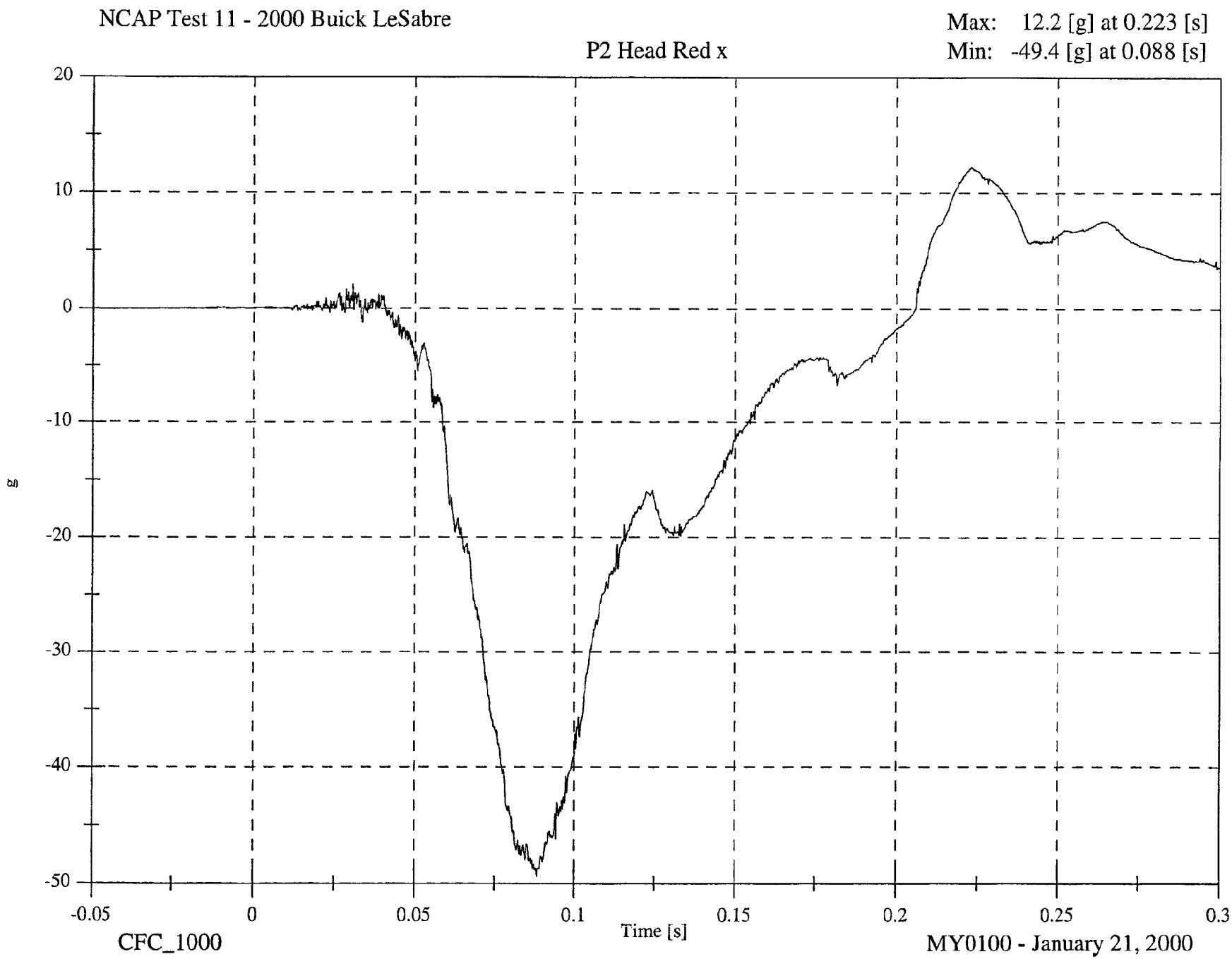

NCAP Test 11 - 2000 Buick LeSabre
P1 Lap Belt Force
Max: 7055.4 [N] at 0.064 [s]
Min: -0.1 [N] at -0.009 [s]
8000
7000
6000
5000
4000
3000
2000
1000
0
-1000
N
-0.05
0
0.05
0.1
0.15
0.2
0.25
0.3
Time [s]
CFC_60
MY0100 - January 21, 2000

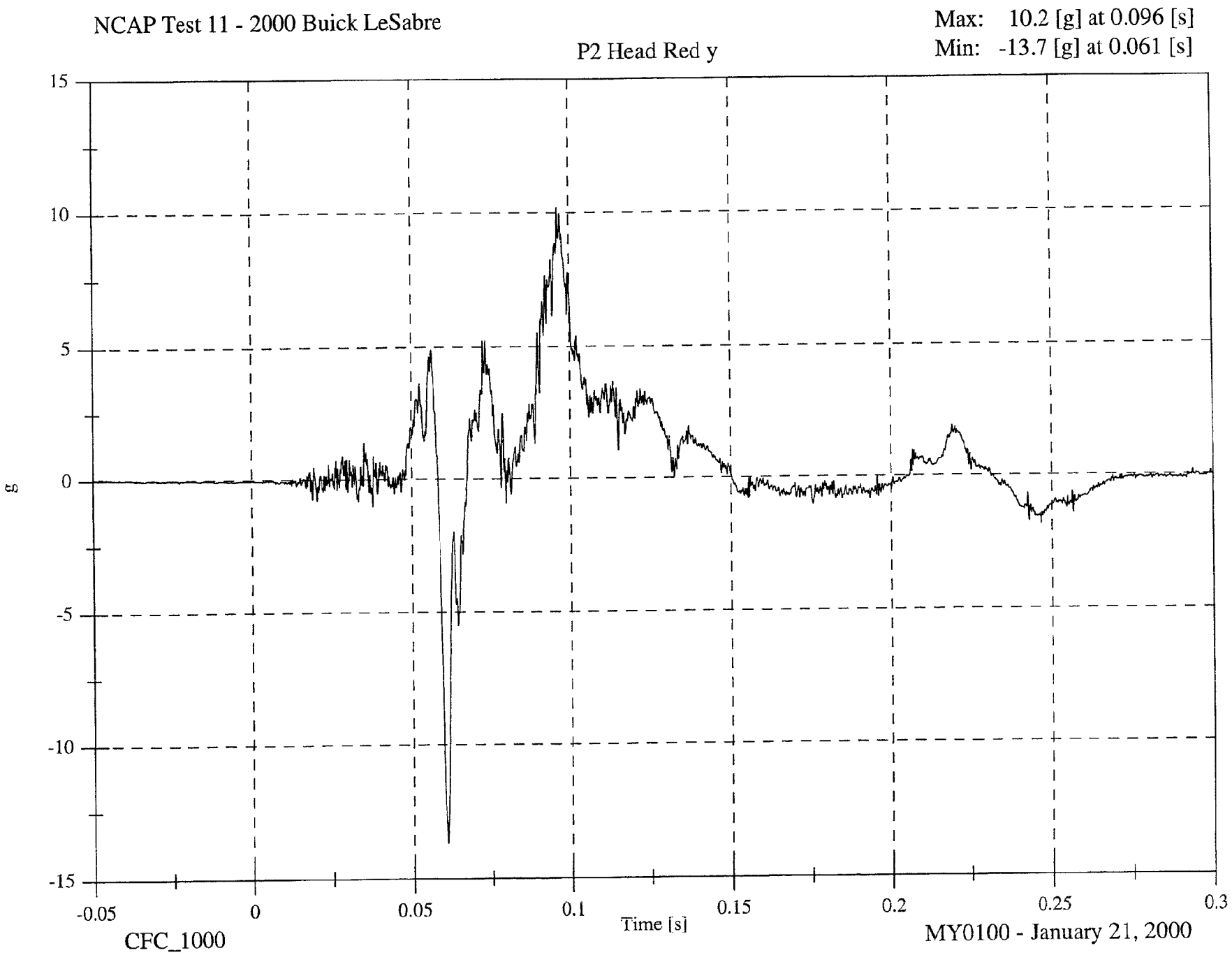

NCAP Test 11 - 2000 Buick LeSabre
P2 Head x
Max: 13.5 [g] at 0.223 [s]
Min: -48.5 [g] at 0.088 [s]
20
10
0
-10
-20
-30
-40
-50
g
-0.05
0
0.05
0.1
0.15
0.2
0.25
0.3
Time [s]
CFC_1000
MY0100 - January 21, 2000

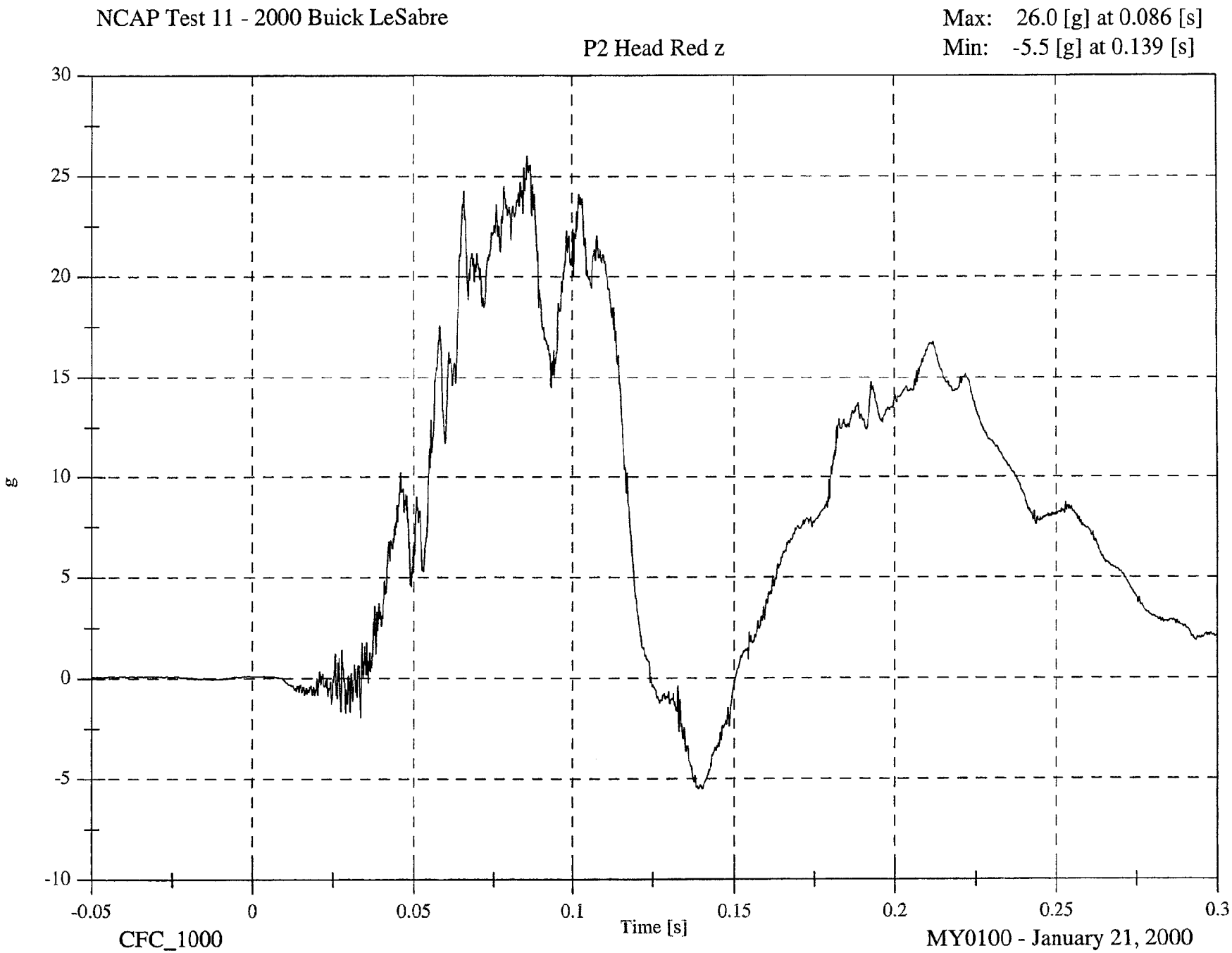

NCAP Test 11 - 2000 Buick LeSabre
P2 Head y
Max: 8.7 [g] at 0.061 [s]
Min: -11.2 [g] at 0.097 [s]
10
7.5
5
2.5
0
-2.5
-5
-7.5
-10
-12.5
g
-0.05
0
0.05
0.1
0.15
0.2
0.25
0.3
Time [s]
CFC_1000
MY0100 - January 21, 2000

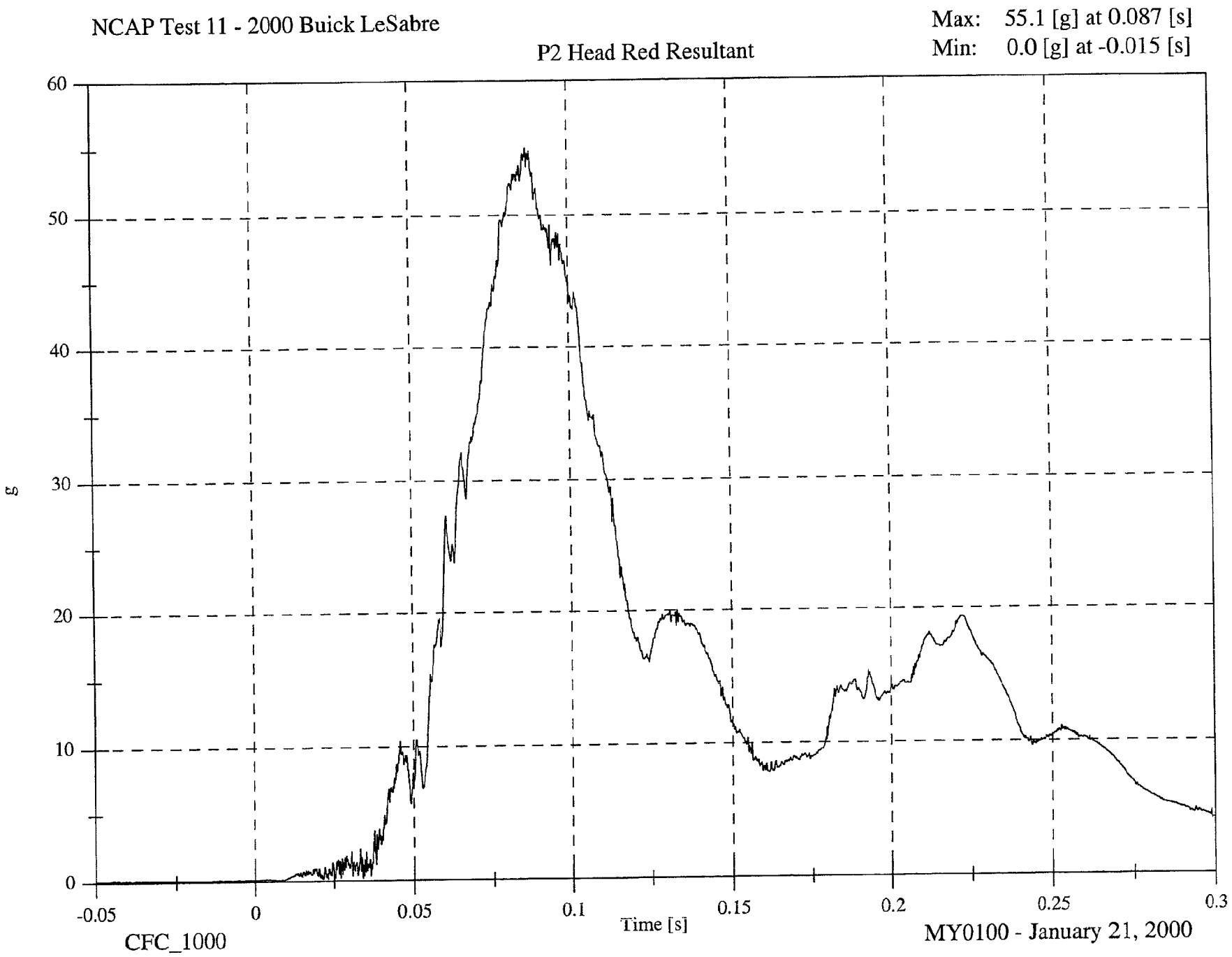

NCAP Test 11 - 2000 Buick LeSabre
P2 Head z
Max: 27.7 [g] at 0.085 [s]
Min: -1.9 [g] at 0.028 [s]
30
25
20
15
10
5
0
-5
g
-0.05
0
0.05
0.1
0.15
0.2
0.25
0.3
Time [s]
CFC_1000
MY0100 - January 21, 2000

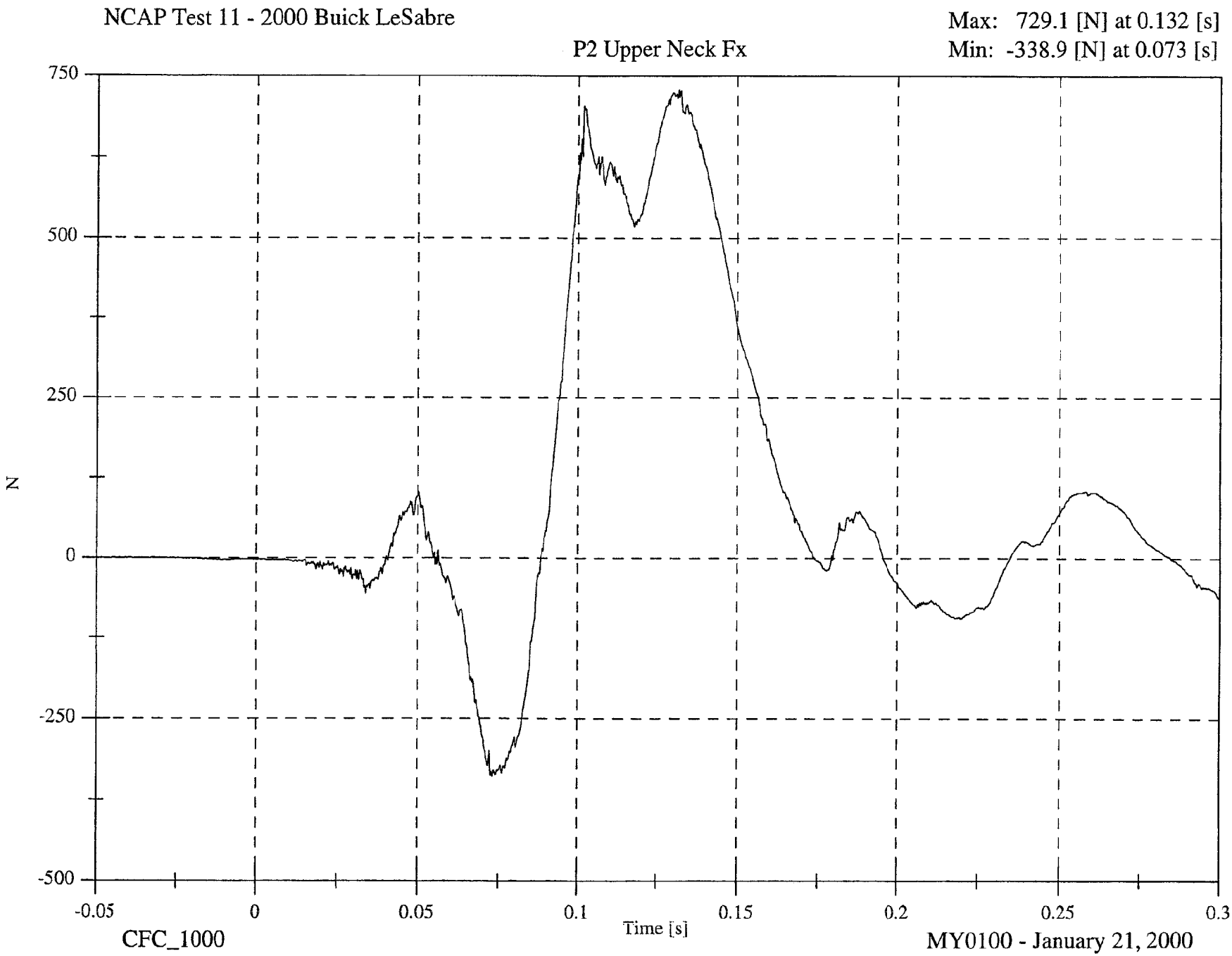

NCAP Test 11 - 2000 Buick LeSabre
P2 Head Resultant
Max: 54.8 [g] at 0.087 [s]
Min: 0.0 [g] at -0.019 [s]
60
50
40
30
20
10
0
g
-0.05
0
0.05
0.1
0.15
0.2
0.25
0.3
Time [s]
CFC_1000
MY0100 - January 21, 2000

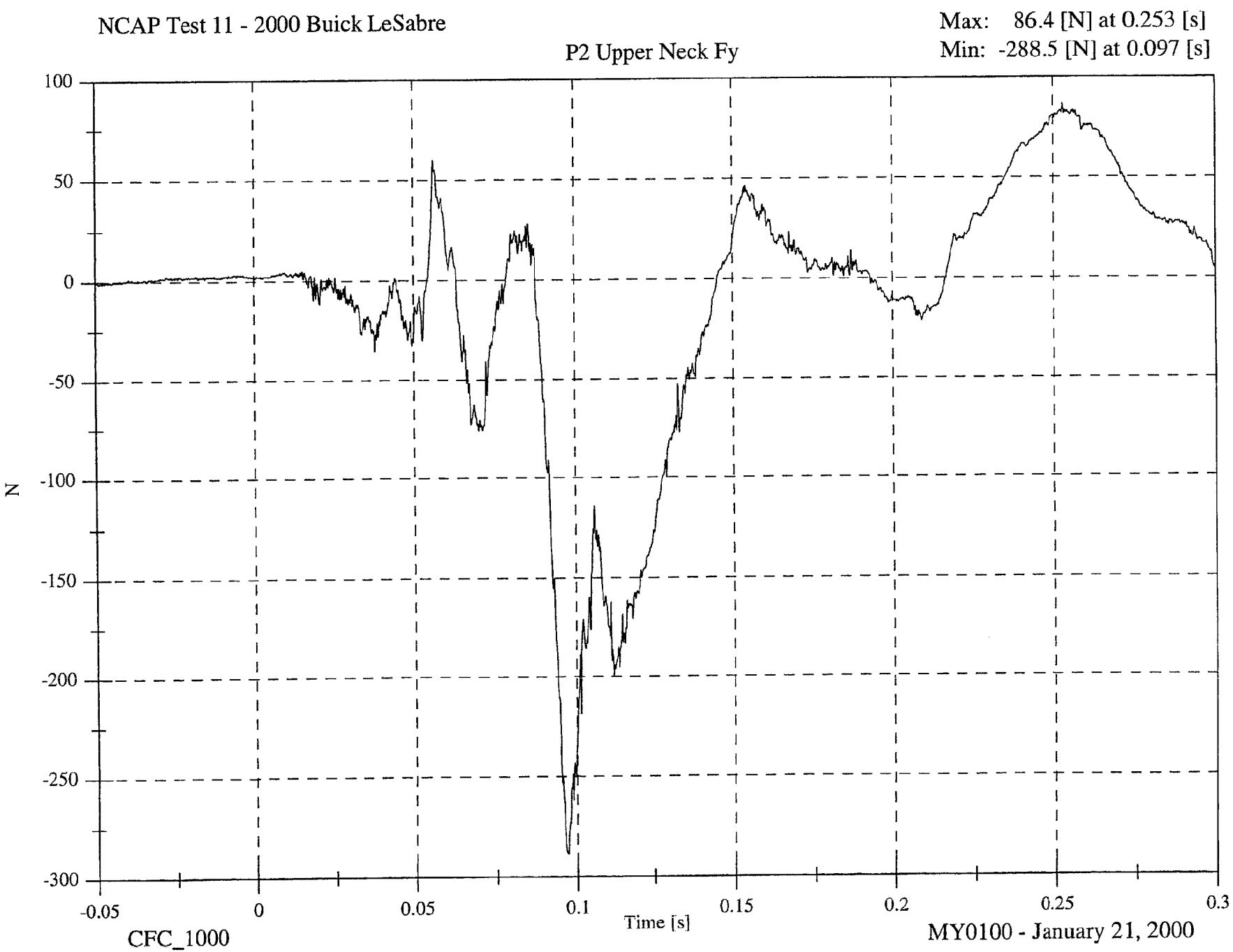

NCAP Test 11 - 2000 Buick LeSabre
P2 Head Red x
Max: 12.2 [g] at 0.223 [s]
Min: -49.4 [g] at 0.088 [s]
20
10
0
-10
-20
-30
-40
-50
g
-0.05
0
0.05
0.1
0.15
0.2
0.25
0.3
Time [s]
CFC_1000
MY0100 - January 21, 2000

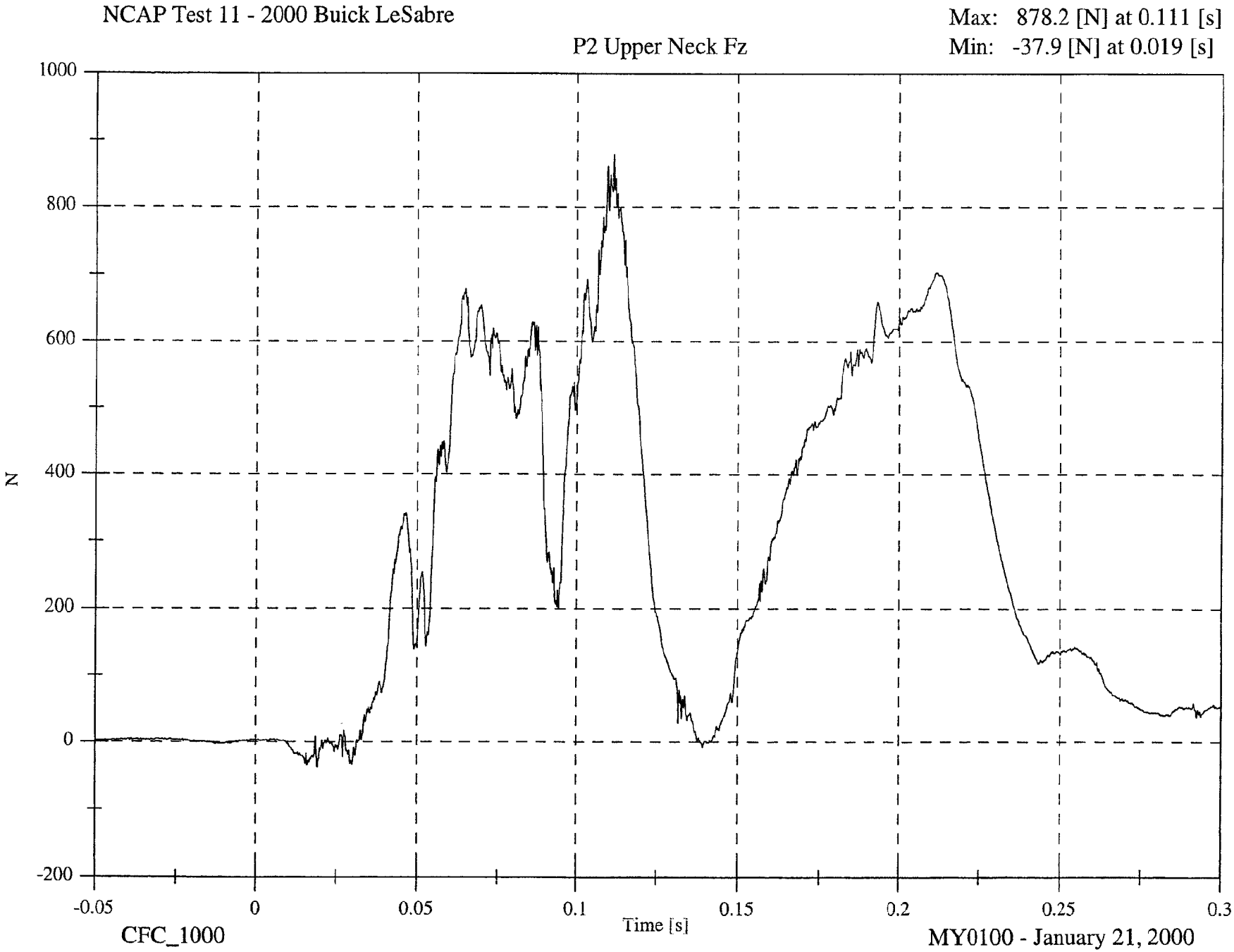

NCAP Test 11 - 2000 Buick LeSabre
P2 Head Red y
Max: 10.2 [g] at 0.096 [s]
Min: -13.7 [g] at 0.061 [s]
15
10
5
0
-5
-10
-15
g
-0.05
0
0.05
0.1
0.15
0.2
0.25
0.3
Time [s]
CFC_1000
MY0100 - January 21, 2000

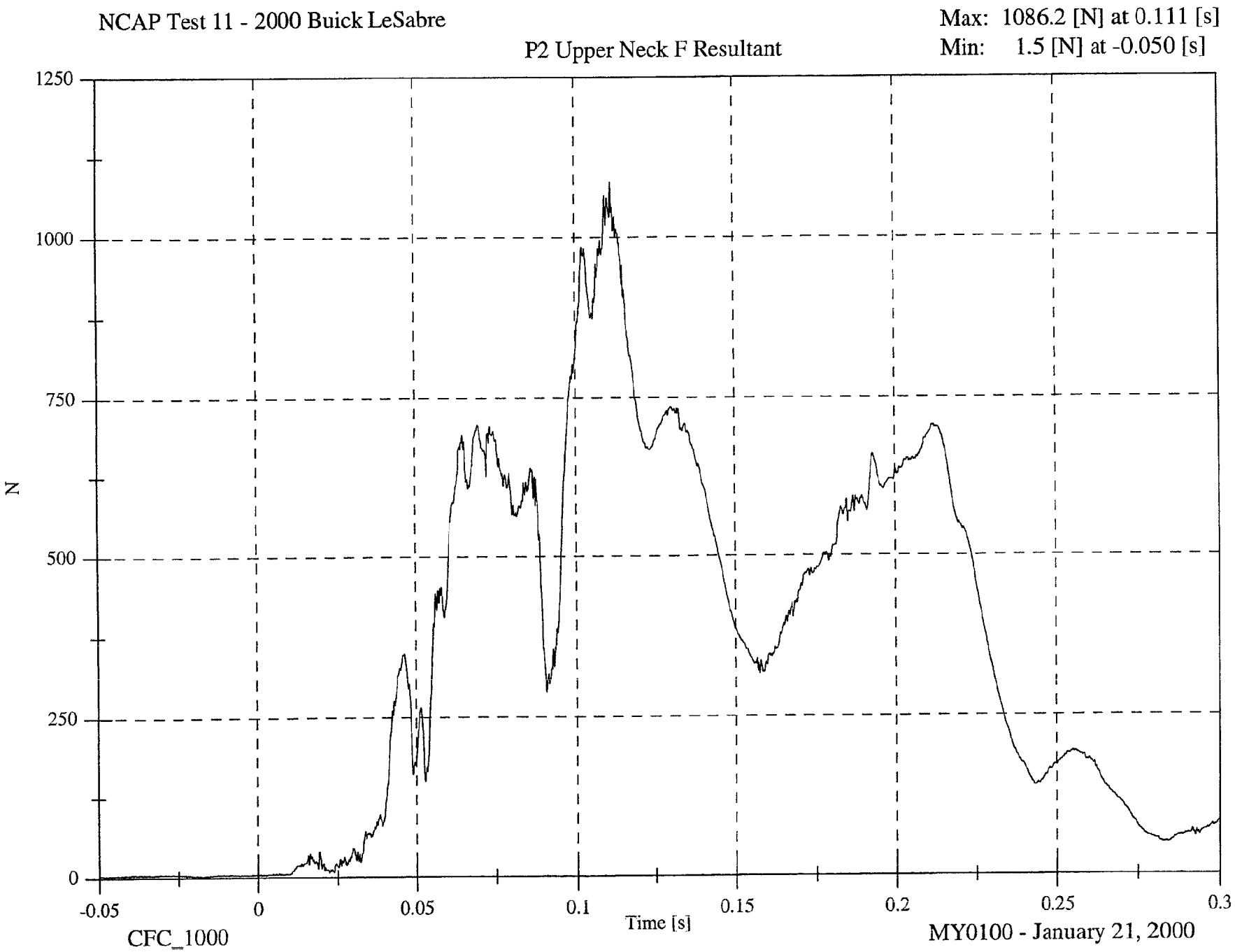

NCAP Test 11 - 2000 Buick LeSabre
P2 Head Red z
Max: 26.0 [g] at 0.086 [s]
Min: -5.5 [g] at 0.139 [s]
30
25
20
15
10
5
0
-5
-10
g
-0.05
0
0.05
0.1
0.15
0.2
0.25
0.3
Time [s]
CFC_1000
MY0100 - January 21, 2000

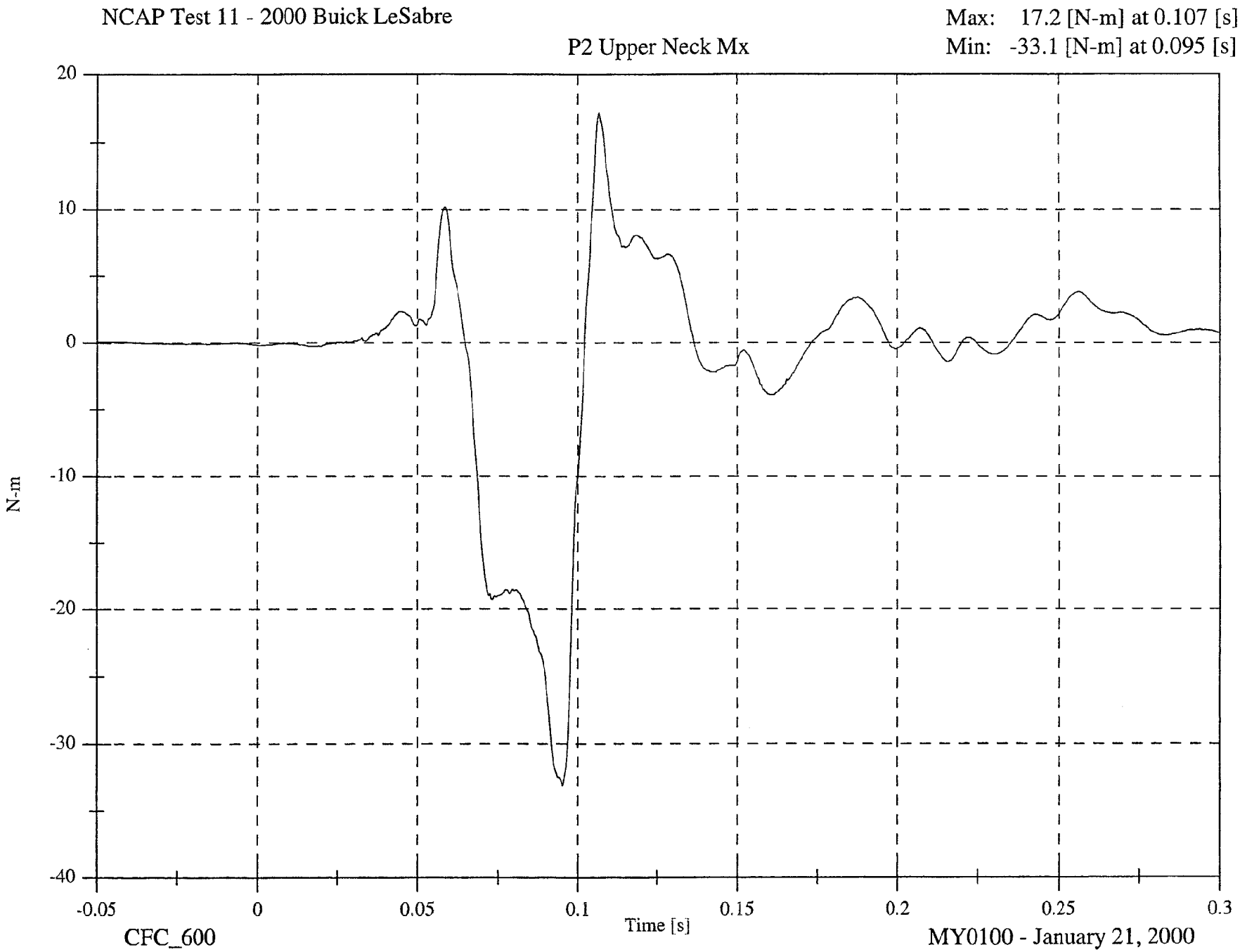

NCAP Test 11 - 2000 Buick LeSabre
P2 Head Red Resultant
Max: 55.1 [g] at 0.087 [s]
Min: 0.0 [g] at -0.015 [s]
60
50
40
30
20
10
0
g
-0.05
0
0.05
0.1
0.15
0.2
0.25
0.3
Time [s]
CFC_1000
MY0100 - January 21, 2000

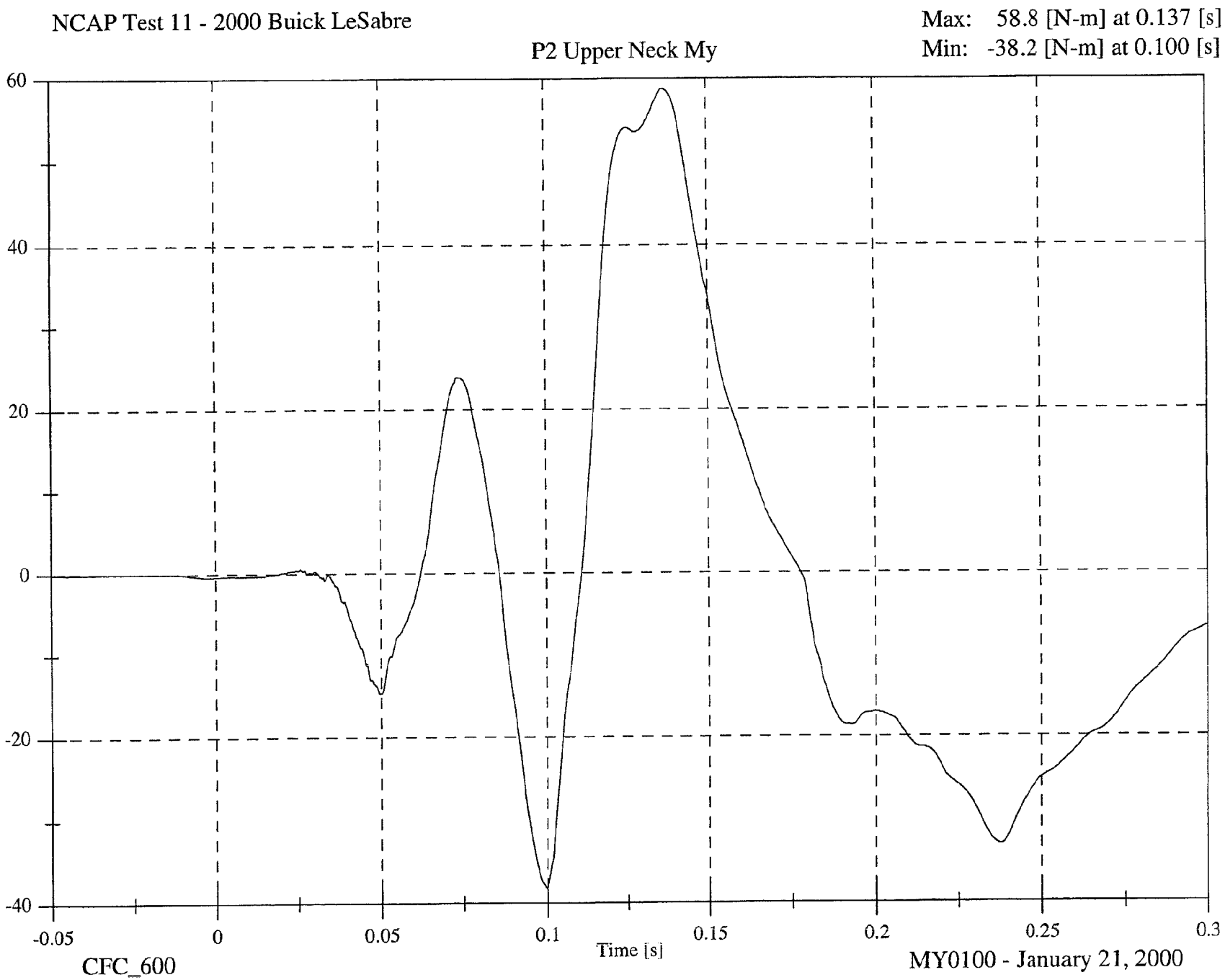

NCAP Test 11 - 2000 Buick LeSabre
P2 Upper Neck Fx
Max: 729.1 [N] at 0.132 [s]
Min: -338.9 [N] at 0.073 [s]
750
500
250
0
-250
-500
N
-0.05
0
0.05
0.1
0.15
0.2
0.25
0.3
Time [s]
CFC_1000
MY0100 - January 21, 2000

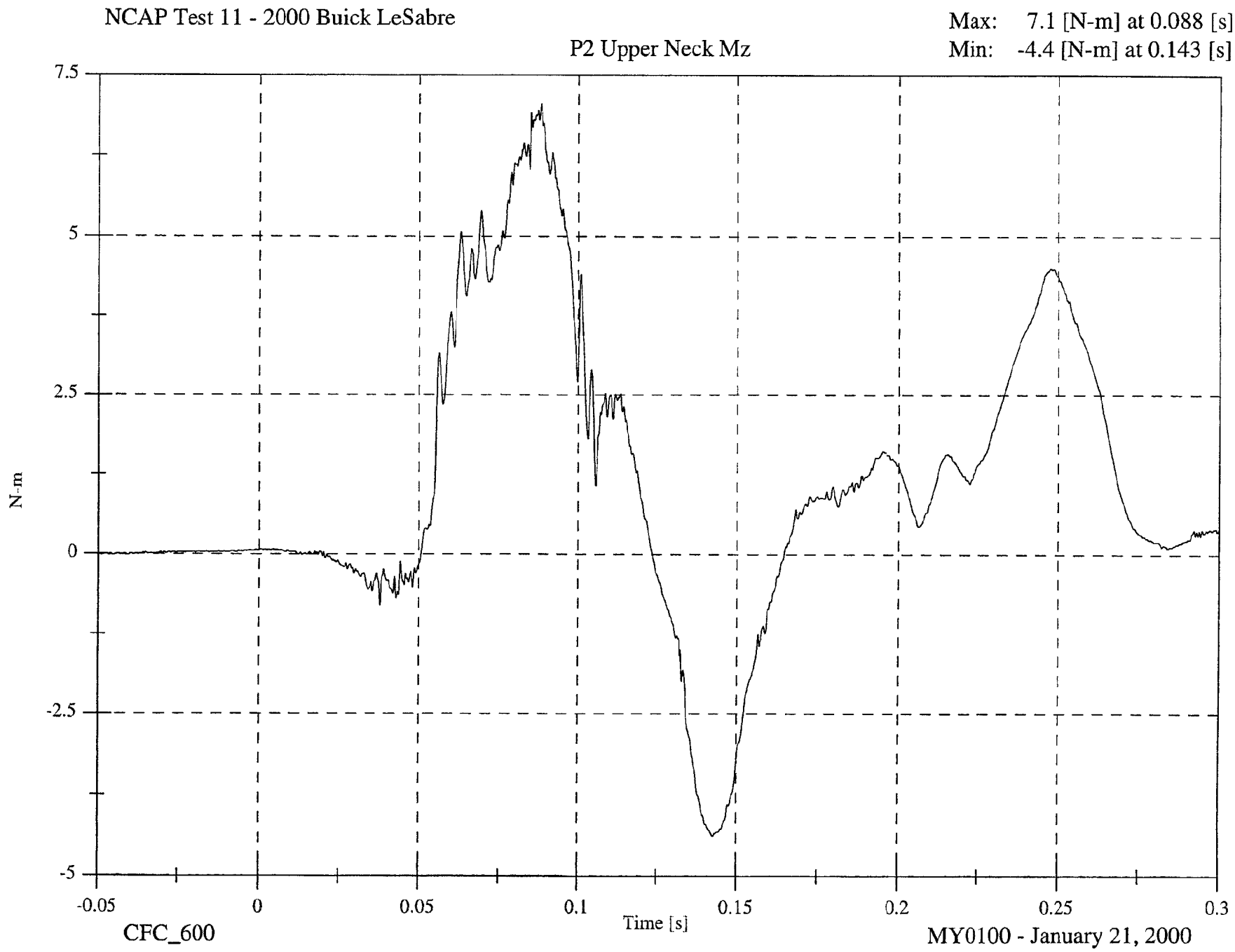

NCAP Test 11 - 2000 Buick LeSabre
P2 Upper Neck Fy
Max: 86.4 [N] at 0.253 [s]
Min: -288.5 [N] at 0.097 [s]
100
50
0
-50
-100
-150
-200
-250
-300
N
-0.05
0
0.05
0.1
0.15
0.2
0.25
0.3
Time [s]
CFC_1000
MY0100 - January 21, 2000

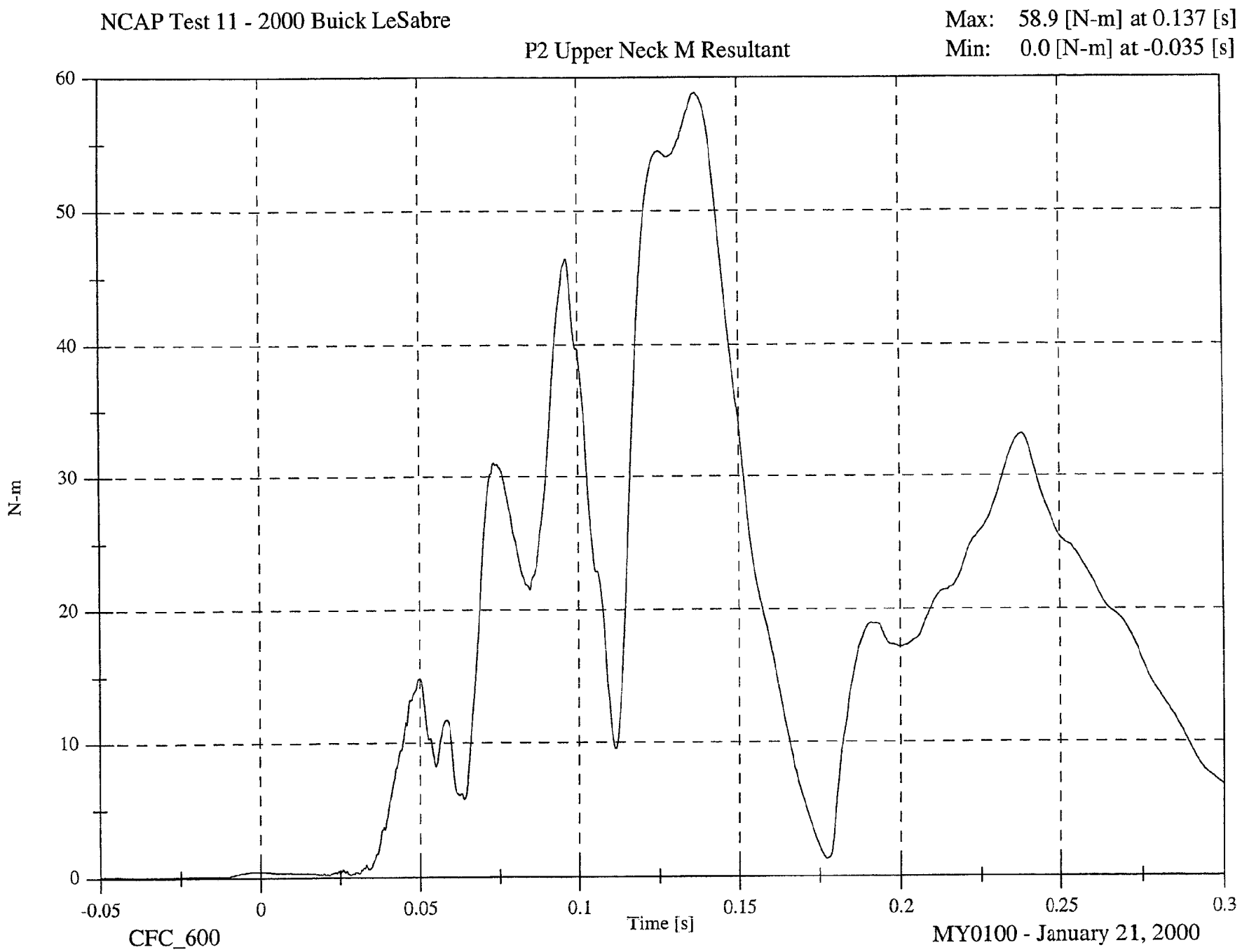

NCAP Test 11 - 2000 Buick LeSabre
P2 Upper Neck Fz
Max: 878.2 [N] at 0.111 [s]
Min: -37.9 [N] at 0.019 [s]
1000
800
600
400
200
0
-200
N
-0.05
0
0.05
0.1
0.15
0.2
0.25
0.3
Time [s]
CFC_1000
MY0100 - January 21, 2000

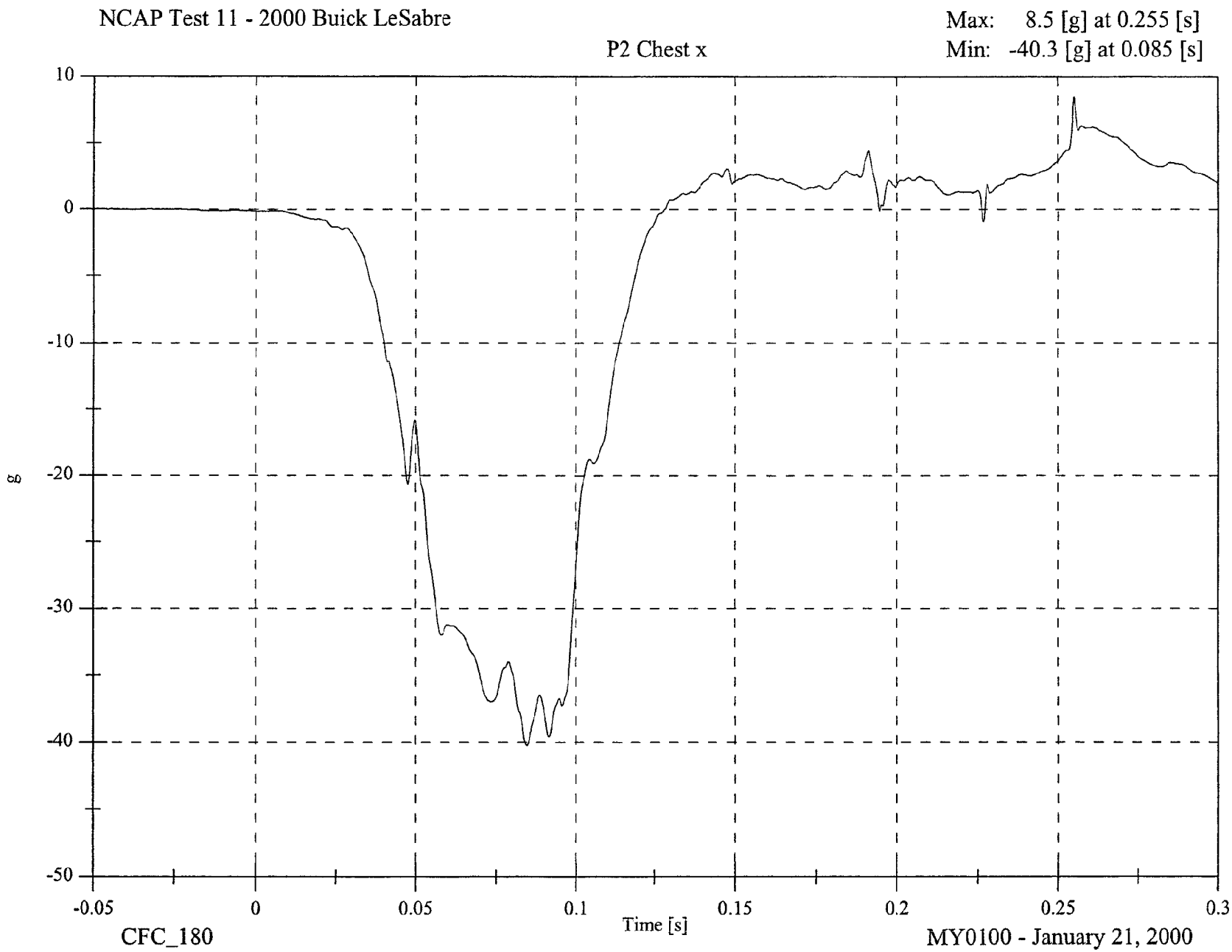

NCAP Test 11 - 2000 Buick LeSabre
P2 Upper Neck F Resultant
Max: 1086.2 [N] at 0.111 [s]
Min: 1.5 [N] at -0.050 [s]
1250
1000
750
500
250
0
N
-0.05
0
0.05
0.1
0.15
0.2
0.25
0.3
Time [s]
CFC_1000
MY0100 - January 21, 2000

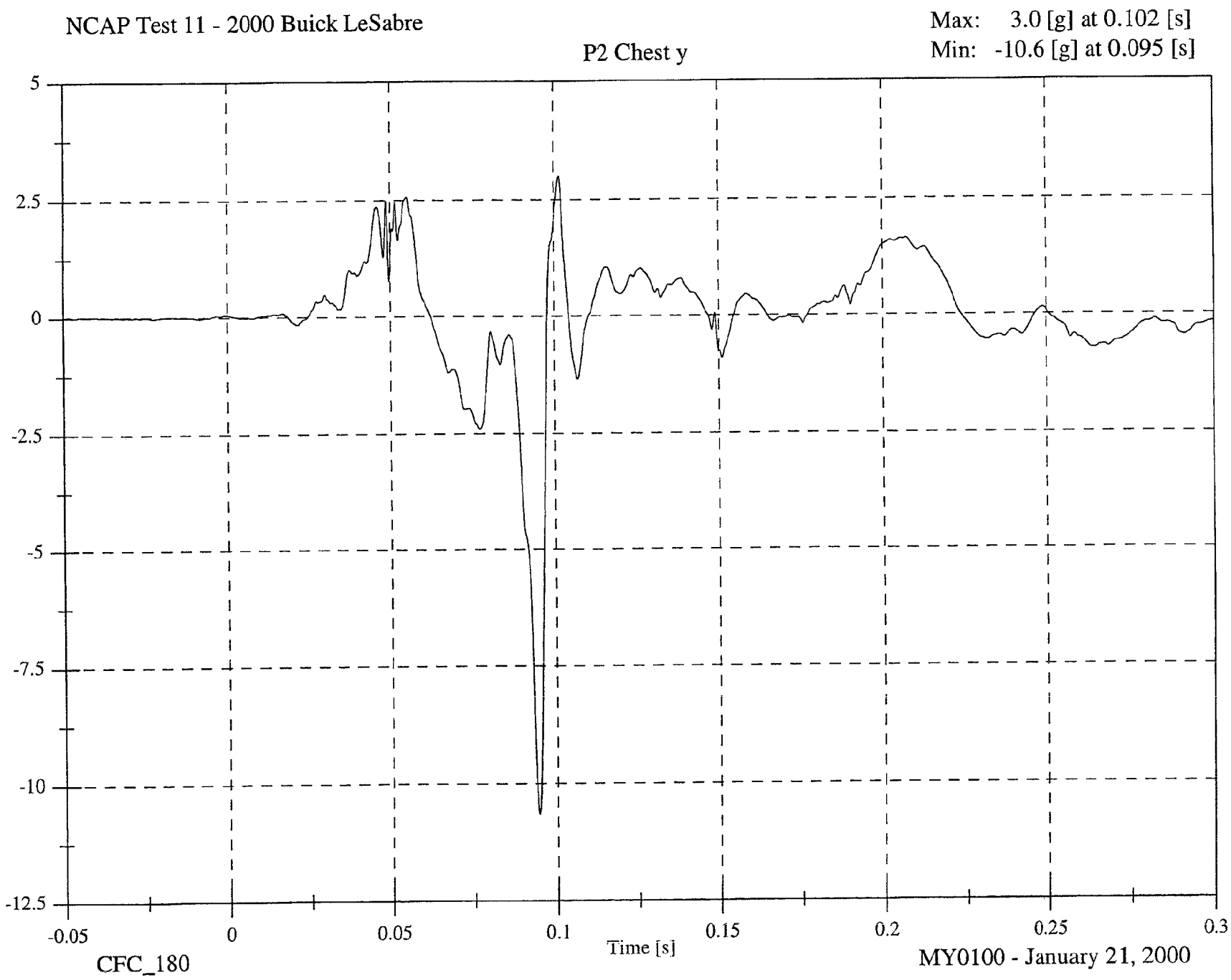

NCAP Test 11 - 2000 Buick LeSabre
P2 Upper Neck Mx
Max: 17.2 [N-m] at 0.107 [s]
Min: -33.1 [N-m] at 0.095 [s]
20
10
0
-10
-20
-30
-40
N-m
-0.05
0
0.05
0.1
0.15
0.2
0.25
0.3
Time [s]
CFC_600
MY0100 - January 21, 2000

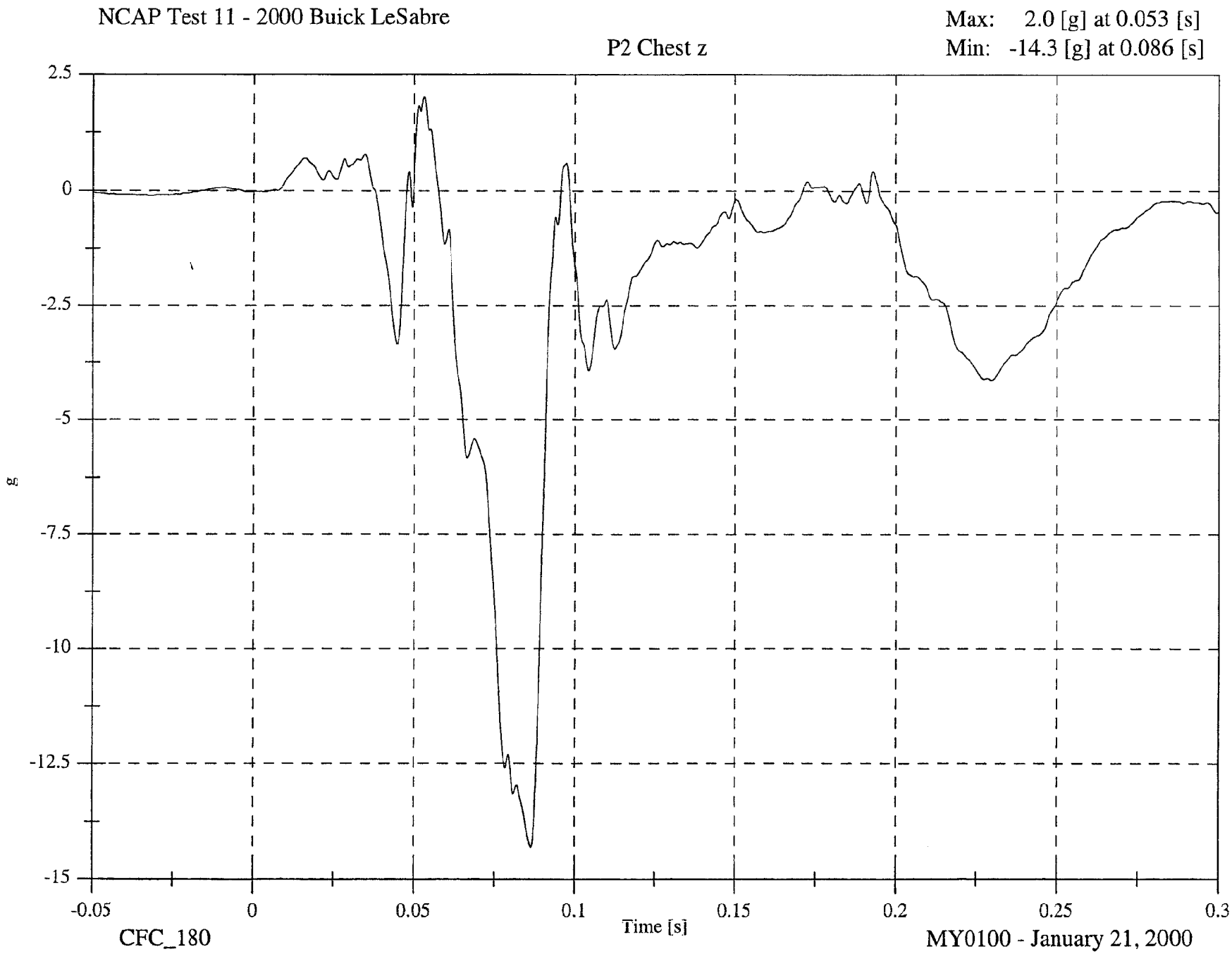

NCAP Test 11 - 2000 Buick LeSabre
P2 Upper Neck My
Max: 58.8 [N-m] at 0.137 [s]
Min: -38.2 [N-m] at 0.100 [s]
60
40
20
0
-20
-40
N-m
-0.05
0
0.05
0.1
0.15
0.2
0.25
0.3
Time [s]
CFC_600
MY0100 - January 21, 2000


NCAP Test 11 - 2000 Buick LeSabre
P2 Upper Neck Mz
Max: 7.1 [N-m] at 0.088 [s]
Min: -4.4 [N-m] at 0.143 [s]
7.5
5
2.5
0
-2.5
-5
N-m
-0.05
0
0.05
0.1
0.15
0.2
0.25
0.3
Time [s]
CFC_600
MY0100 - January 21, 2000


NCAP Test 11 - 2000 Buick LeSabre
P2 Upper Neck M Resultant
Max: 58.9 [N-m] at 0.137 [s]
Min: 0.0 [N-m] at -0.035 [s]
N-m
60
50
40
30
20
10
0
-0.05
0
0.05
0.1
0.15
0.2
0.25
0.3
Time [s]
CFC_600
MY0100 - January 21, 2000

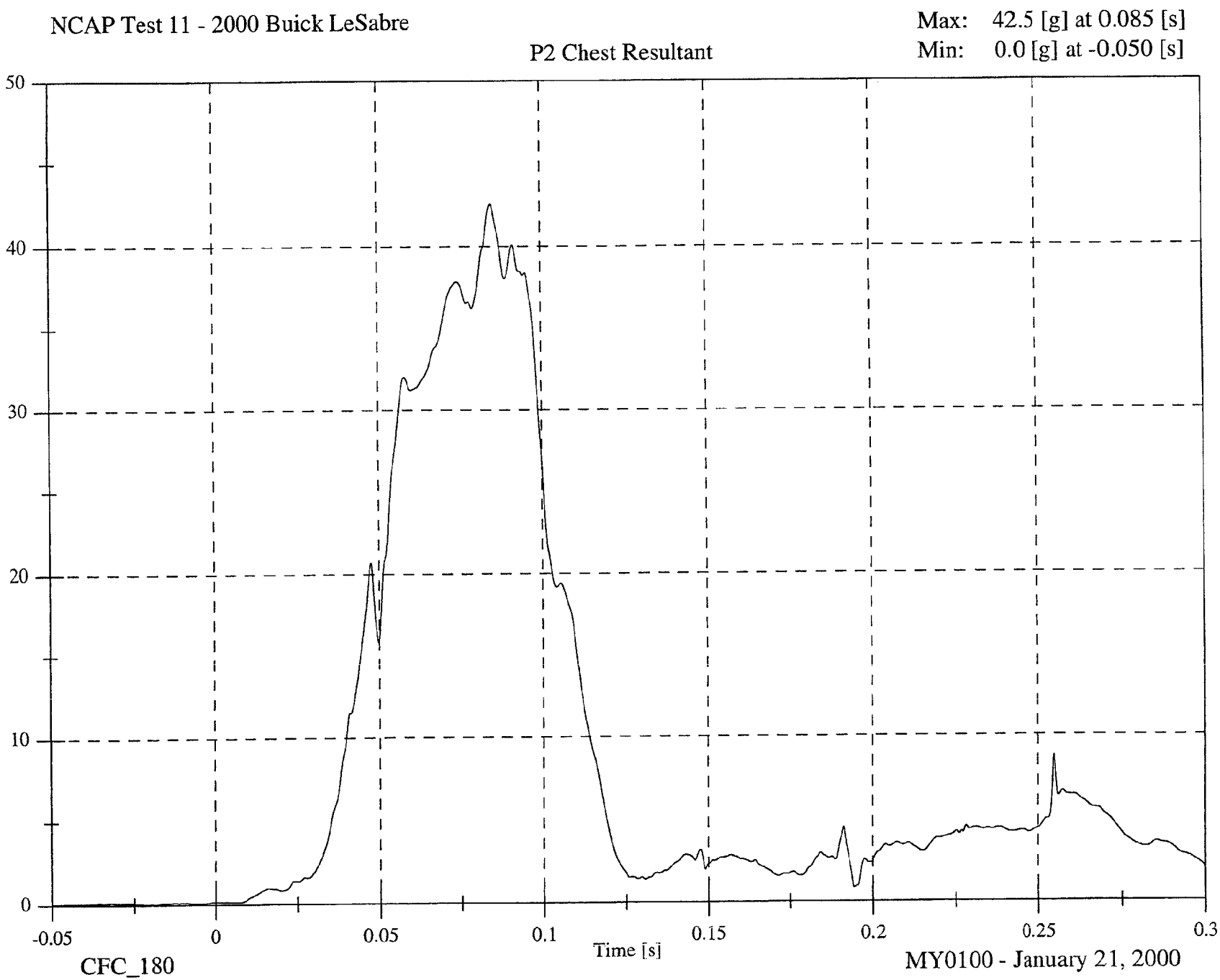

NCAP Test 11 - 2000 Buick LeSabre
P2 Chest x
Max: 8.5 [g] at 0.255 [s]
Min: -40.3 [g] at 0.085 [s]
10
0
-10
-20
-30
-40
-50
g
-0.05
0
0.05
0.1
0.15
0.2
0.25
0.3
Time [s]
CFC_180
MY0100 - January 21, 2000

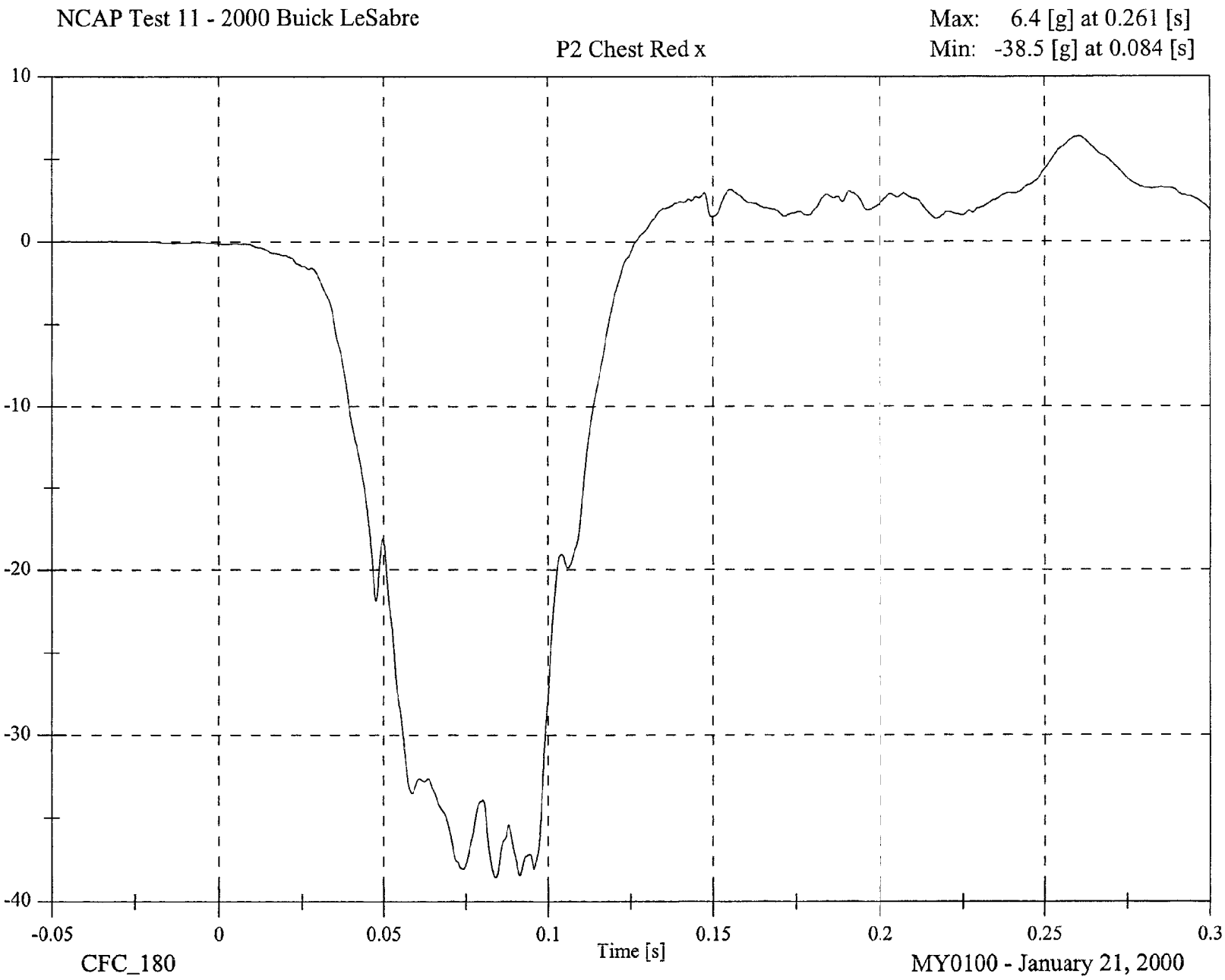

NCAP Test 11 - 2000 Buick LeSabre
P2 Chest y
Max: 3.0 [g] at 0.102 [s]
Min: -10.6 [g] at 0.095 [s]
5
2.5
0
-2.5
-5
-7.5
-10
-12.5
g
-0.05
0
0.05
0.1
0.15
0.2
0.25
0.3
Time [s]
CFC_180
MY0100 - January 21, 2000


NCAP Test 11 - 2000 Buick LeSabre
P2 Chest z
Max: 2.0 [g] at 0.053 [s]
Min: -14.3 [g] at 0.086 [s]
2.5
0
-2.5
-5
-7.5
-10
-12.5
-15
g
-0.05
0
0.05
0.1
0.15
0.2
0.25
0.3
Time [s]
CFC_180
MY0100 - January 21, 2000

B-70

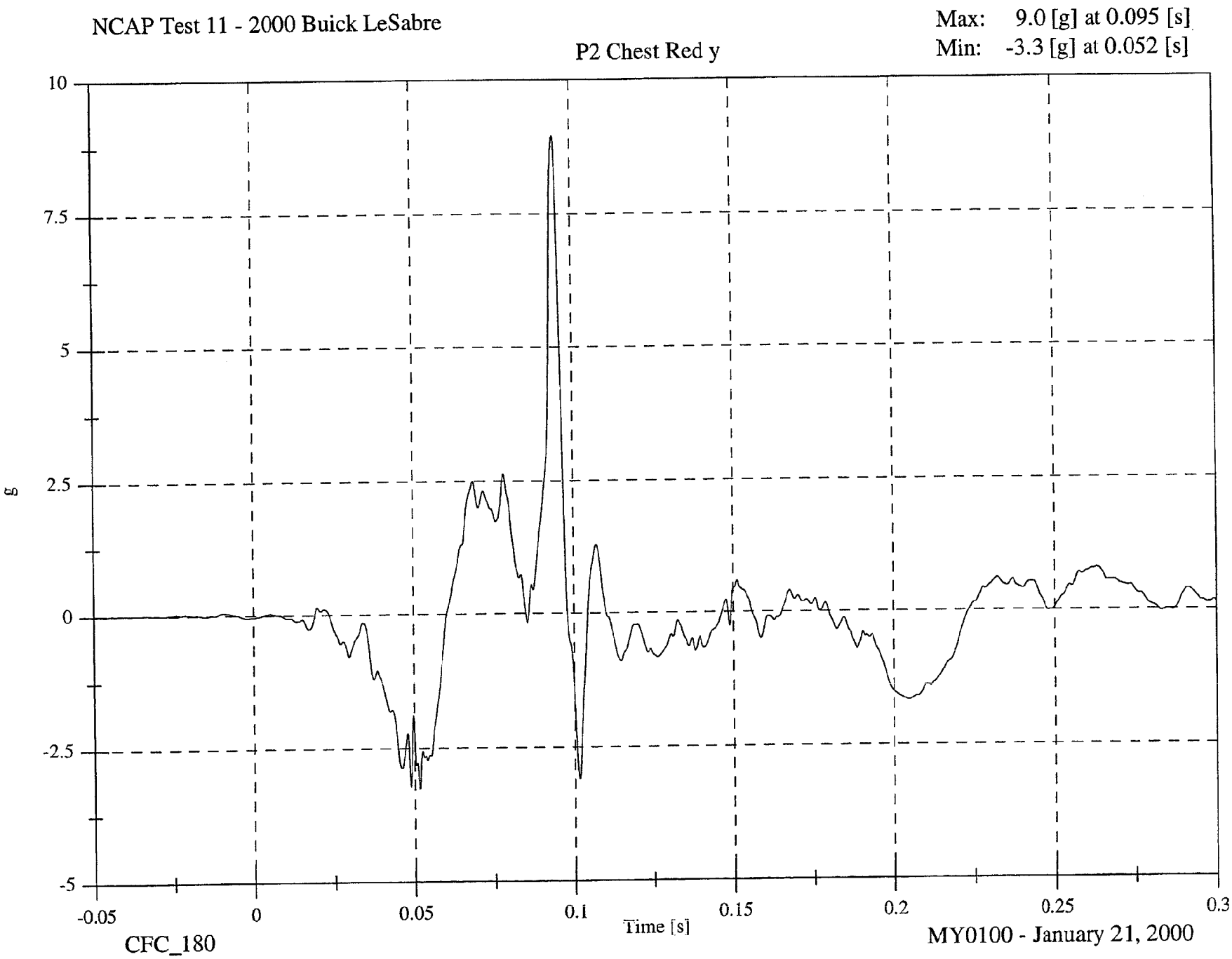
8413-50

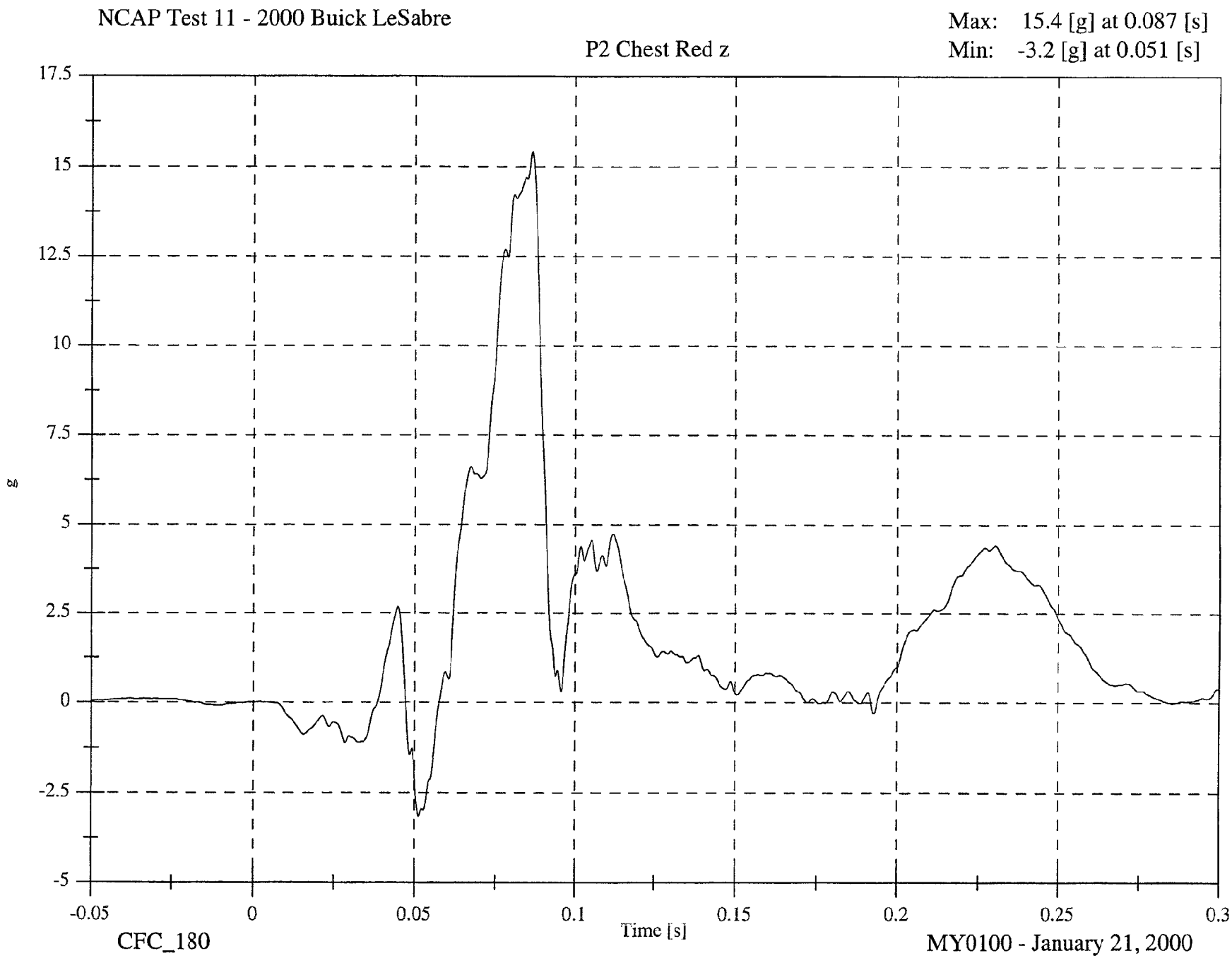

NCAP Test 11 - 2000 Buick LeSabre
P2 Chest Resultant
Max: 42.5 [g] at 0.085 [s]
Min: 0.0 [g] at -0.050 [s]
50
40
30
20
10
0
g
-0.05
0
0.05
0.1
0.15
0.2
0.25
0.3
Time [s]
CFC_180
MY0100 - January 21, 2000

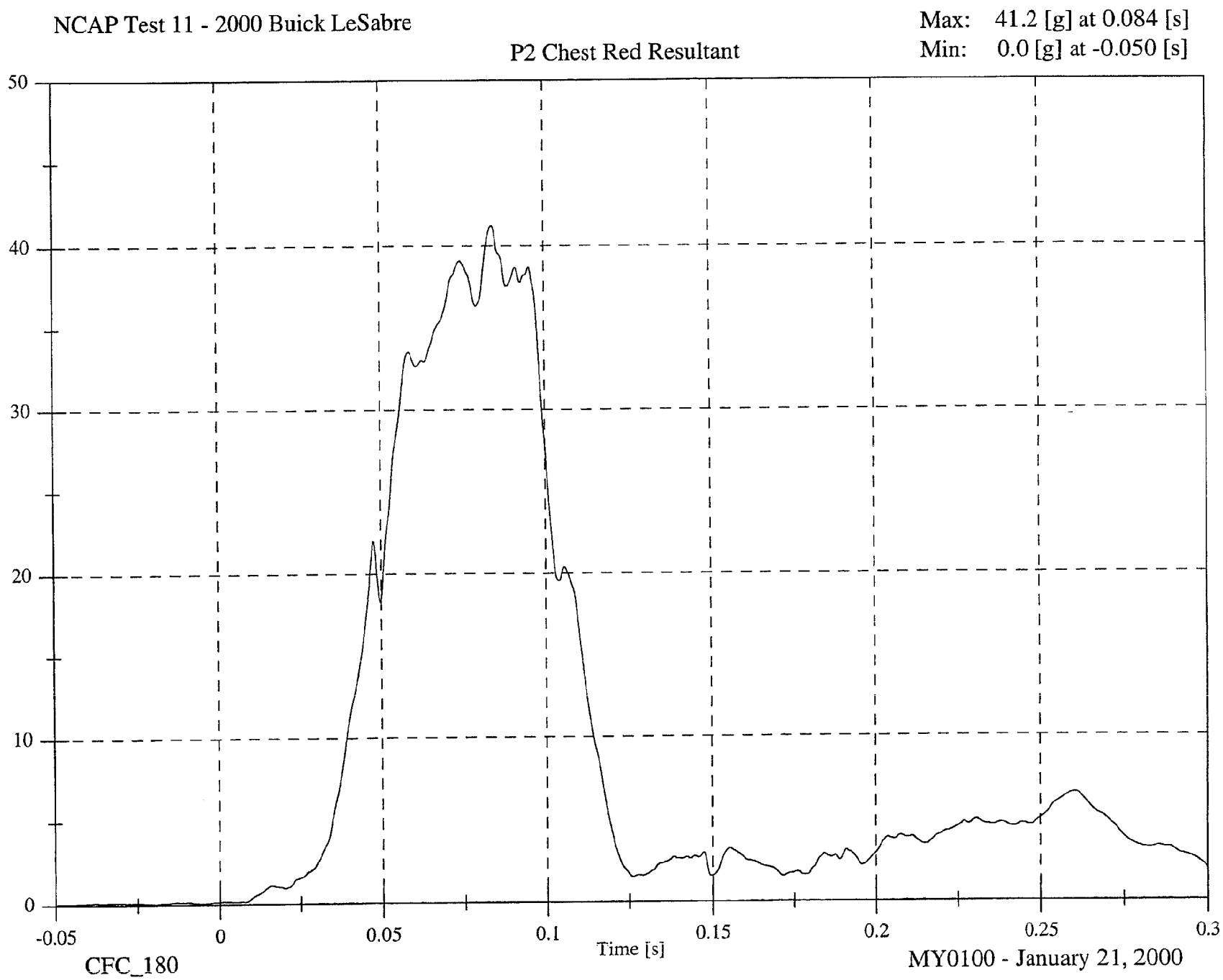

NCAP Test 11 - 2000 Buick LeSabre
P2 Chest Red x
Max: 6.4 [g] at 0.261 [s]
Min: -38.5 [g] at 0.084 [s]
10
0
-10
-20
-30
-40
g
-0.05
0
0.05
0.1
0.15
0.2
0.25
0.3
Time [s]
CFC_180
MY0100 - January 21, 2000

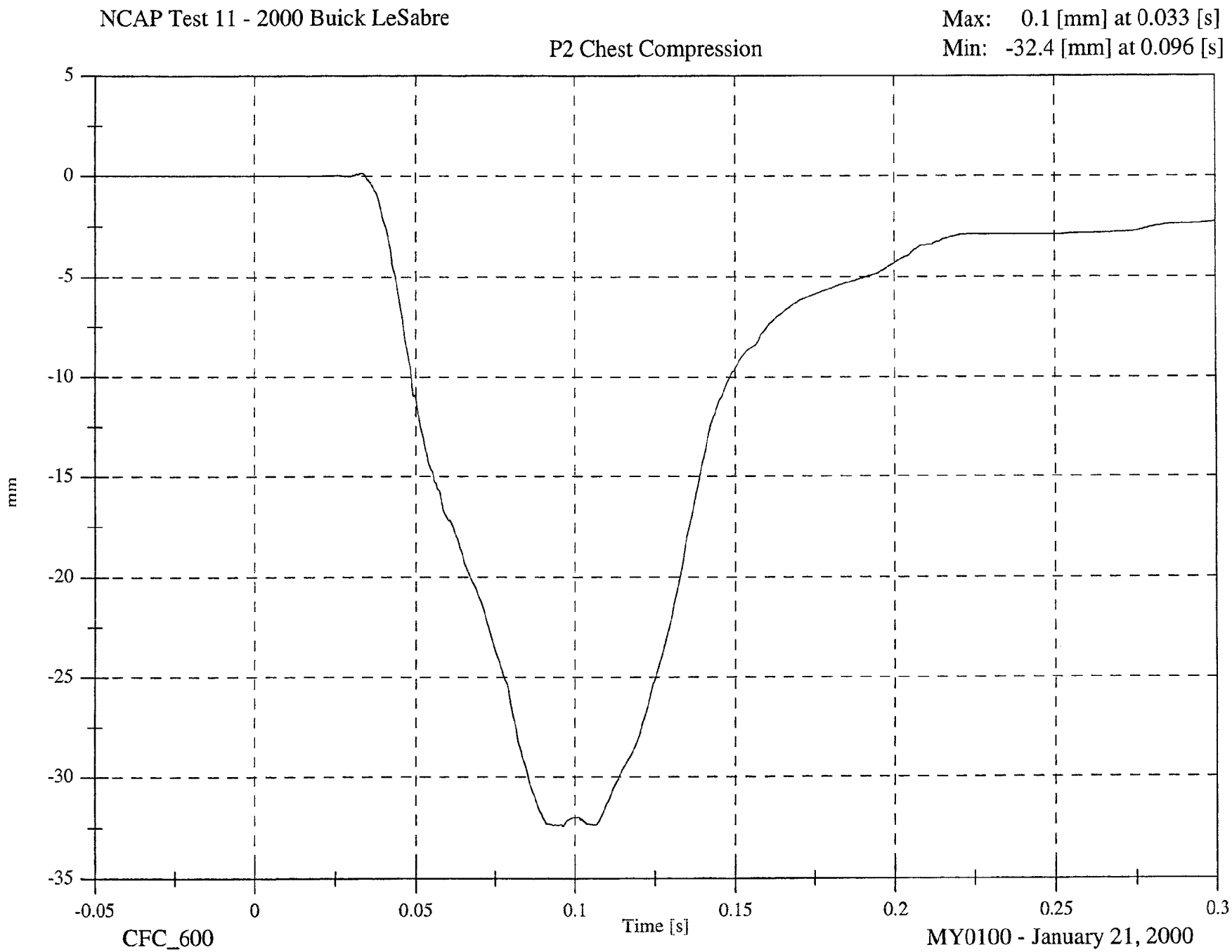
B-72

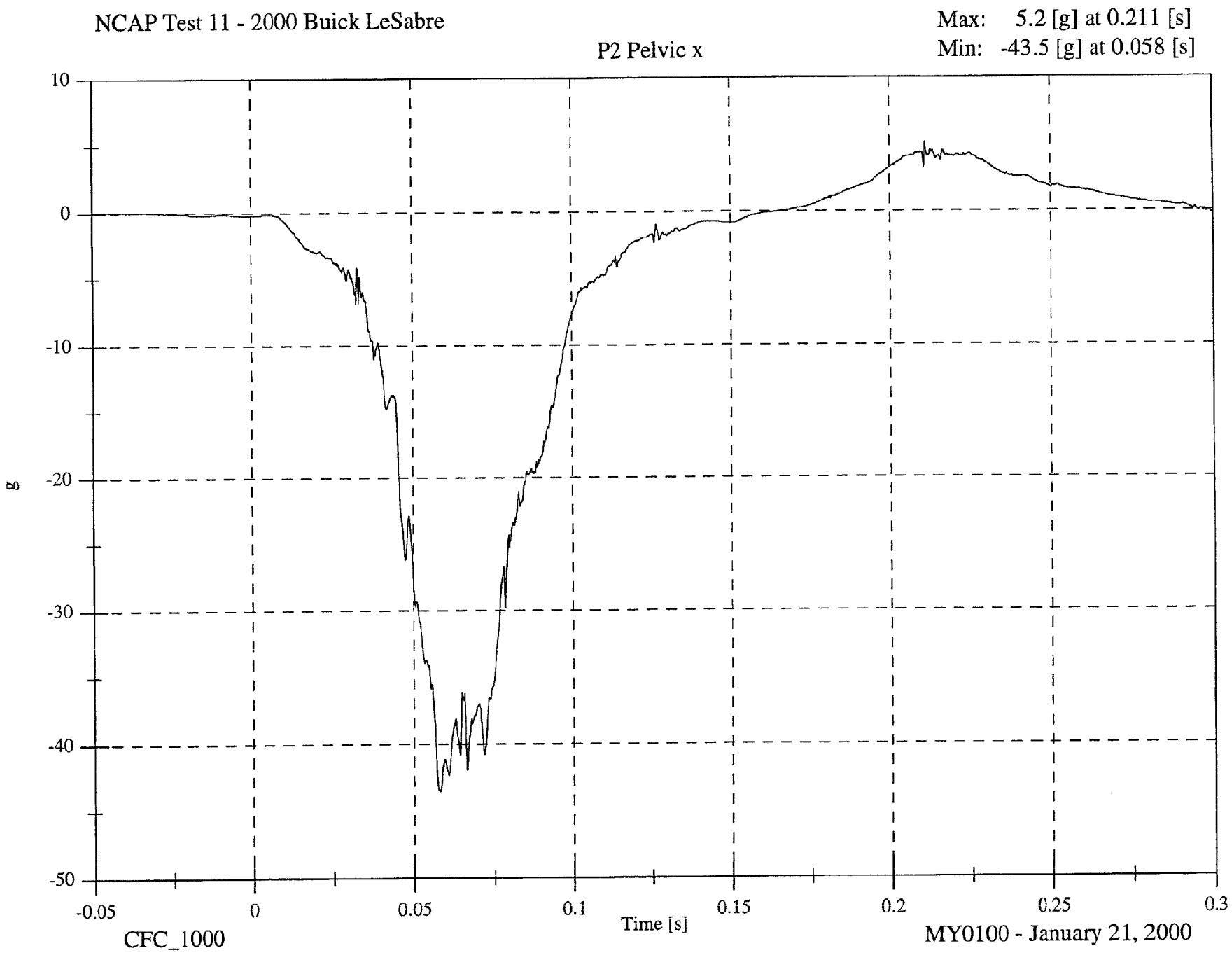
8413-50

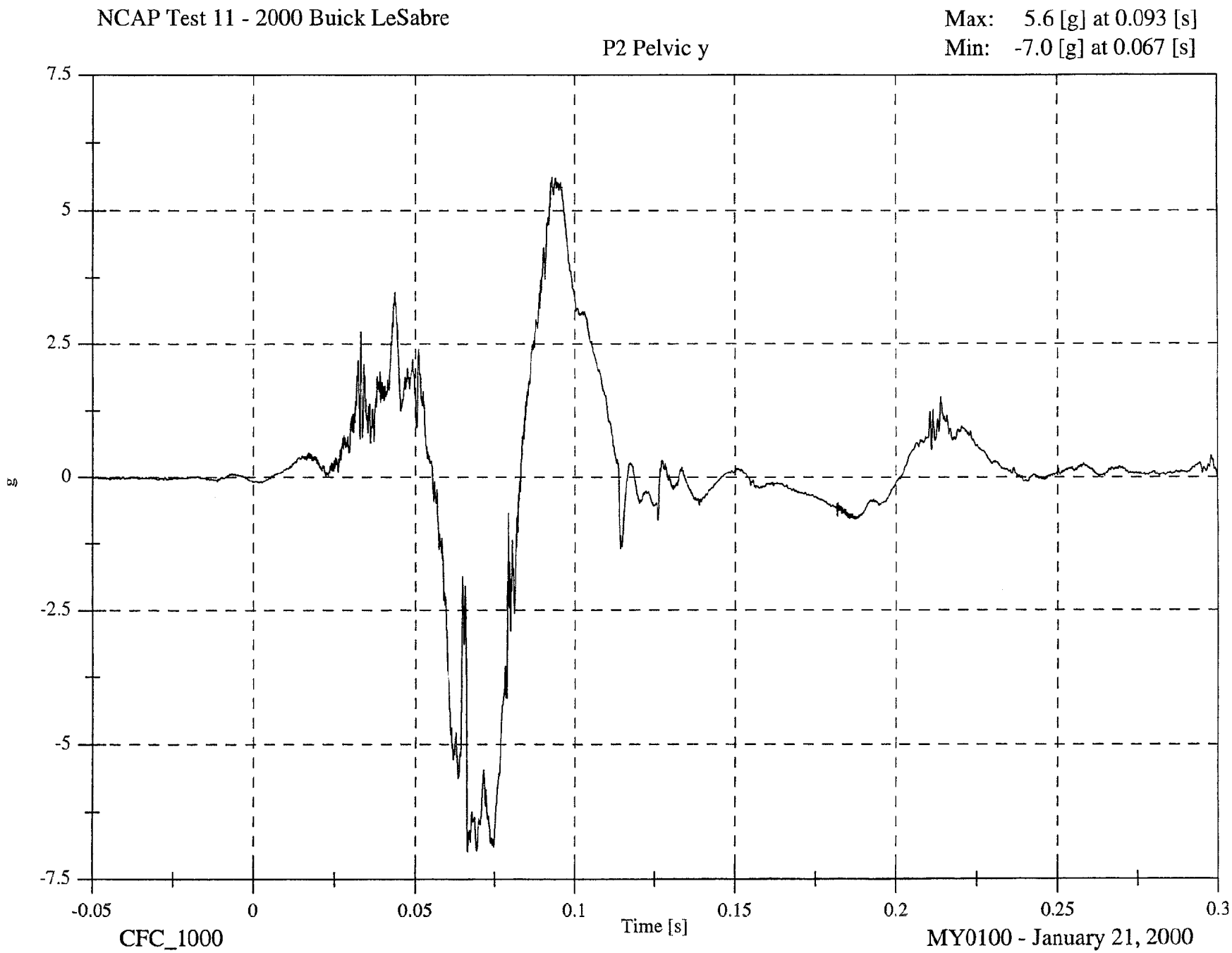

NCAP Test 11 - 2000 Buick LeSabre
P2 Chest Red y
Max: 9.0 [g] at 0.095 [s]
Min: -3.3 [g] at 0.052 [s]
10
7.5
5
2.5
0
-2.5
-5
g
-0.05
0
0.05
0.1
0.15
0.2
0.25
0.3
Time [s]
CFC_180
MY0100 - January 21, 2000

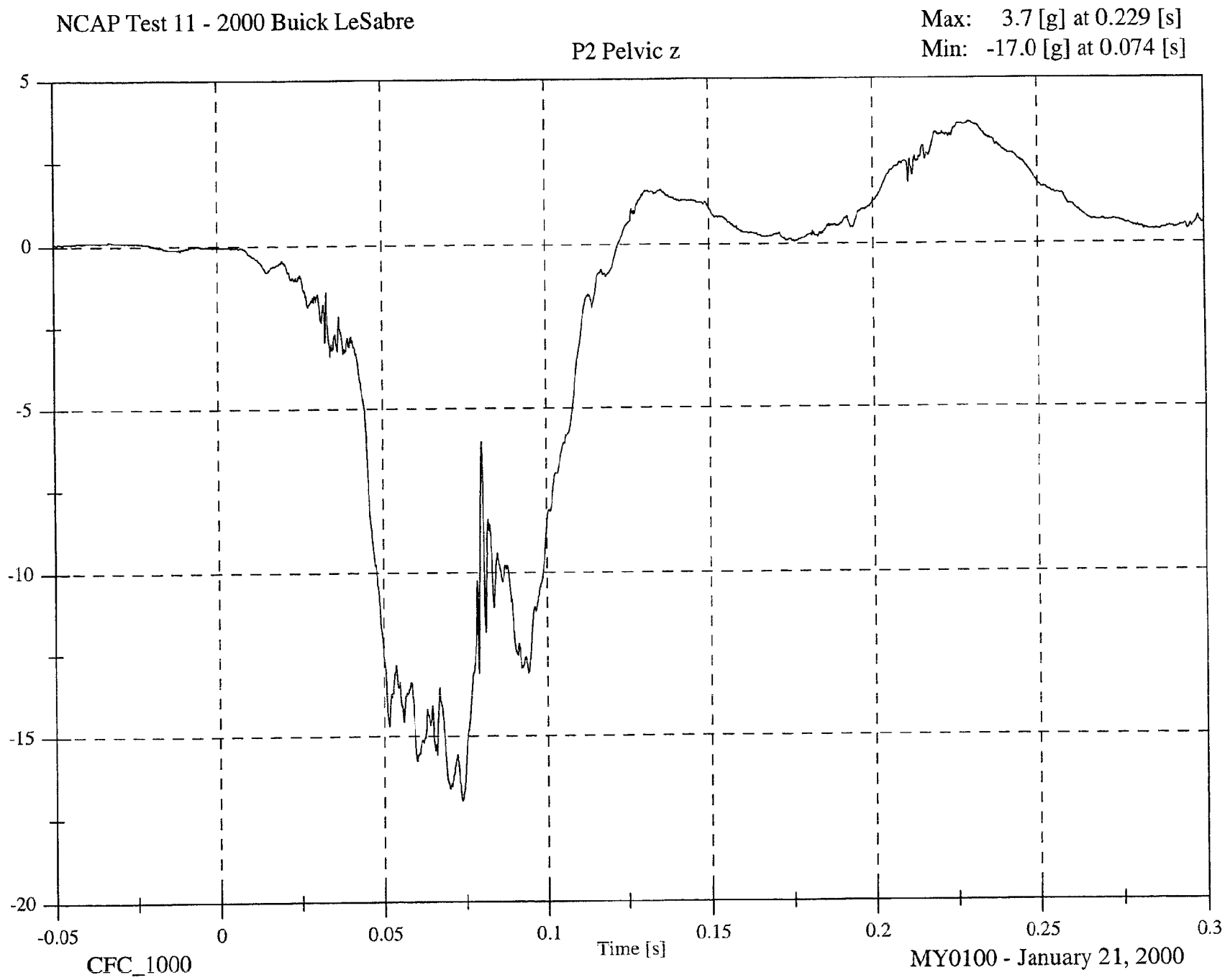

NCAP Test 11 - 2000 Buick LeSabre
P2 Chest Red z
Max: 15.4 [g] at 0.087 [s]
Min: -3.2 [g] at 0.051 [s]
17.5
15
12.5
10
7.5
5
2.5
0
-2.5
-5
g
-0.05
0
0.05
0.1
0.15
0.2
0.25
0.3
Time [s]
CFC_180
MY0100 - January 21, 2000

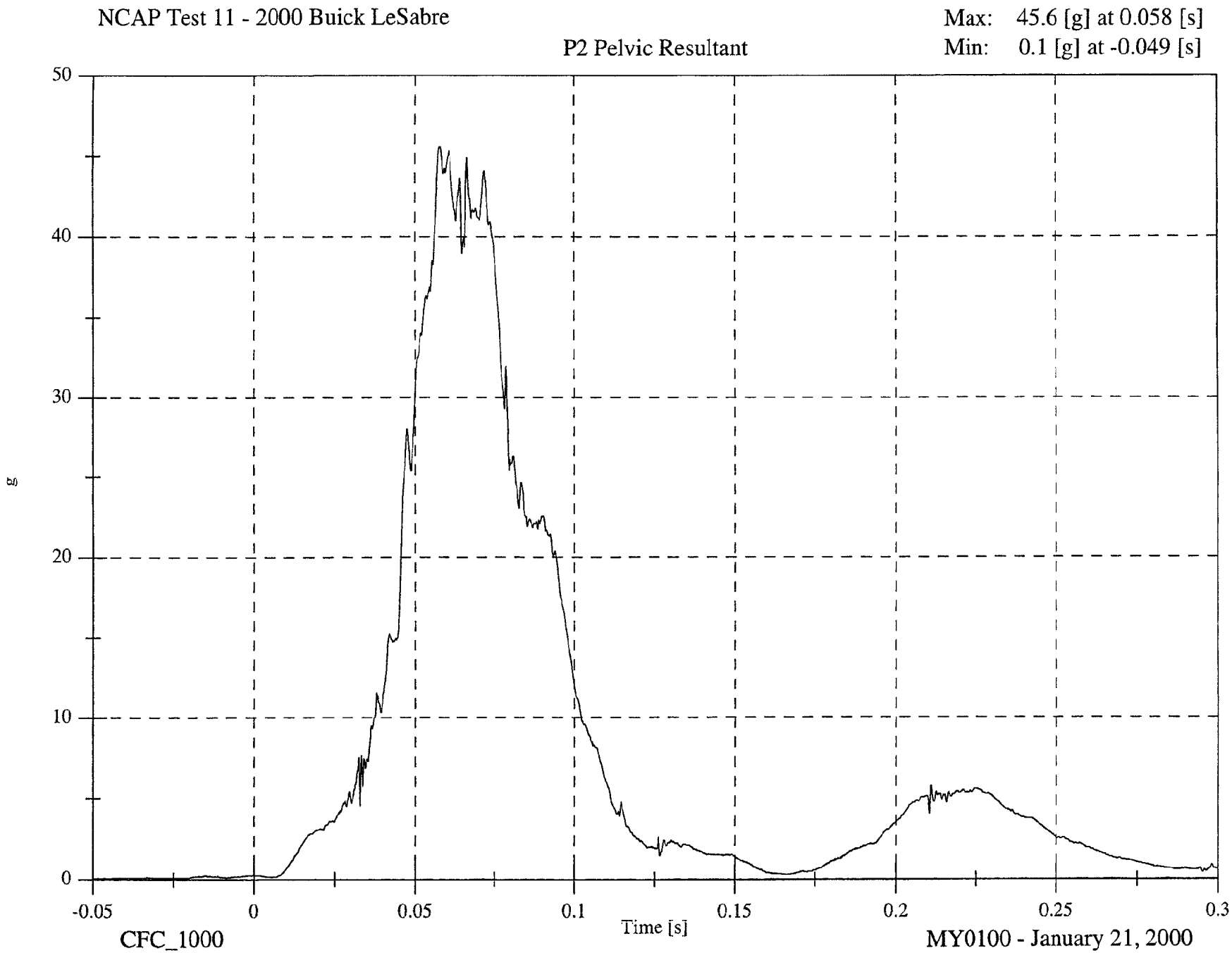

NCAP Test 11 - 2000 Buick LeSabre
P2 Chest Red Resultant
Max: 41.2 [g] at 0.084 [s]
Min: 0.0 [g] at -0.050 [s]
50
40
30
20
10
0
g
-0.05
0
0.05
0.1
0.15
0.2
0.25
0.3
Time [s]
CFC_180
MY0100 - January 21, 2000

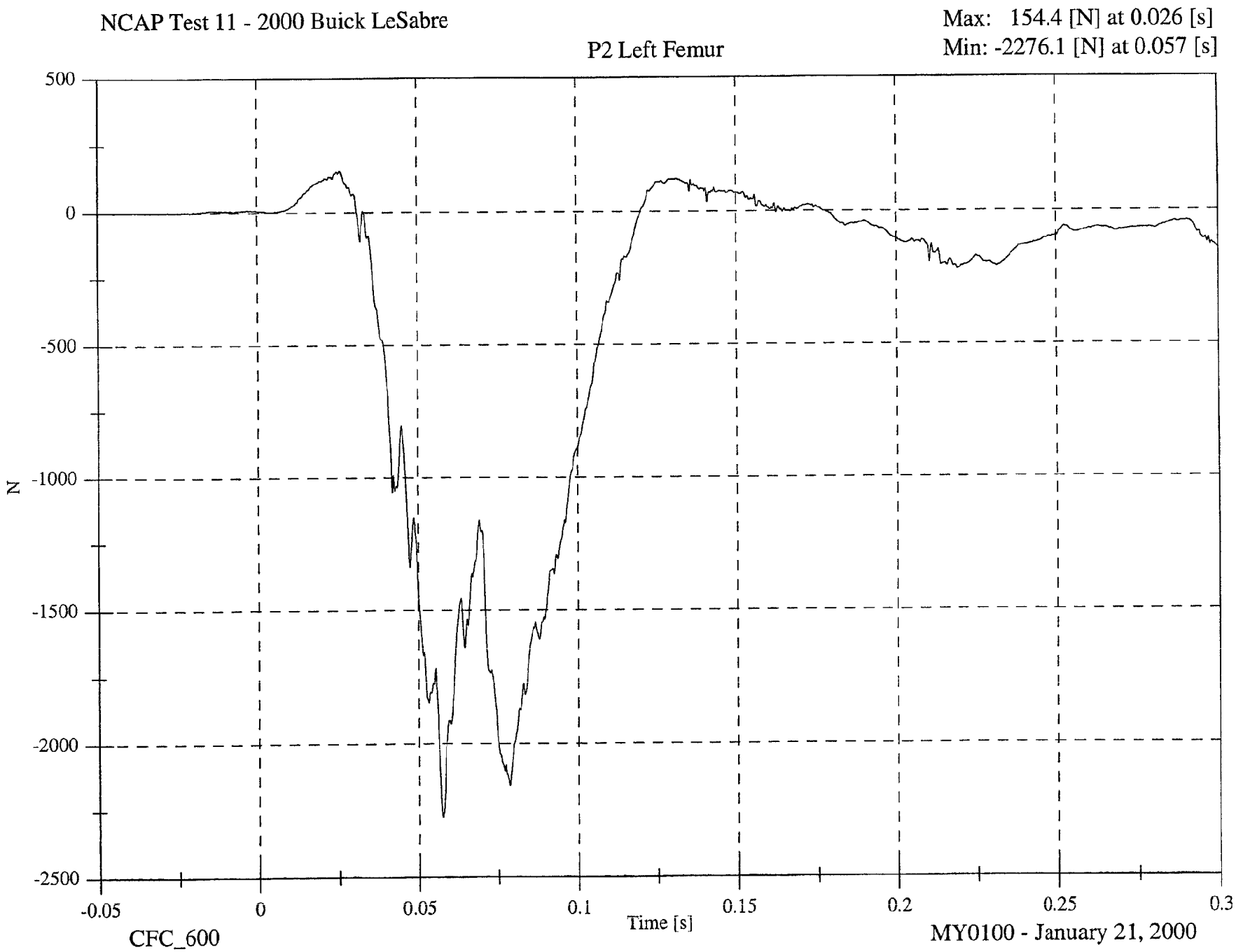

NCAP Test 11 - 2000 Buick LeSabre
P2 Chest Compression
Max: 0.1 [mm] at 0.033 [s]
Min: -32.4 [mm] at 0.096 [s]
5
0
-5
-10
-15
-20
-25
-30
-35
mm
-0.05
0
0.05
0.1
0.15
0.2
0.25
0.3
Time [s]
CFC_600
MY0100 - January 21, 2000

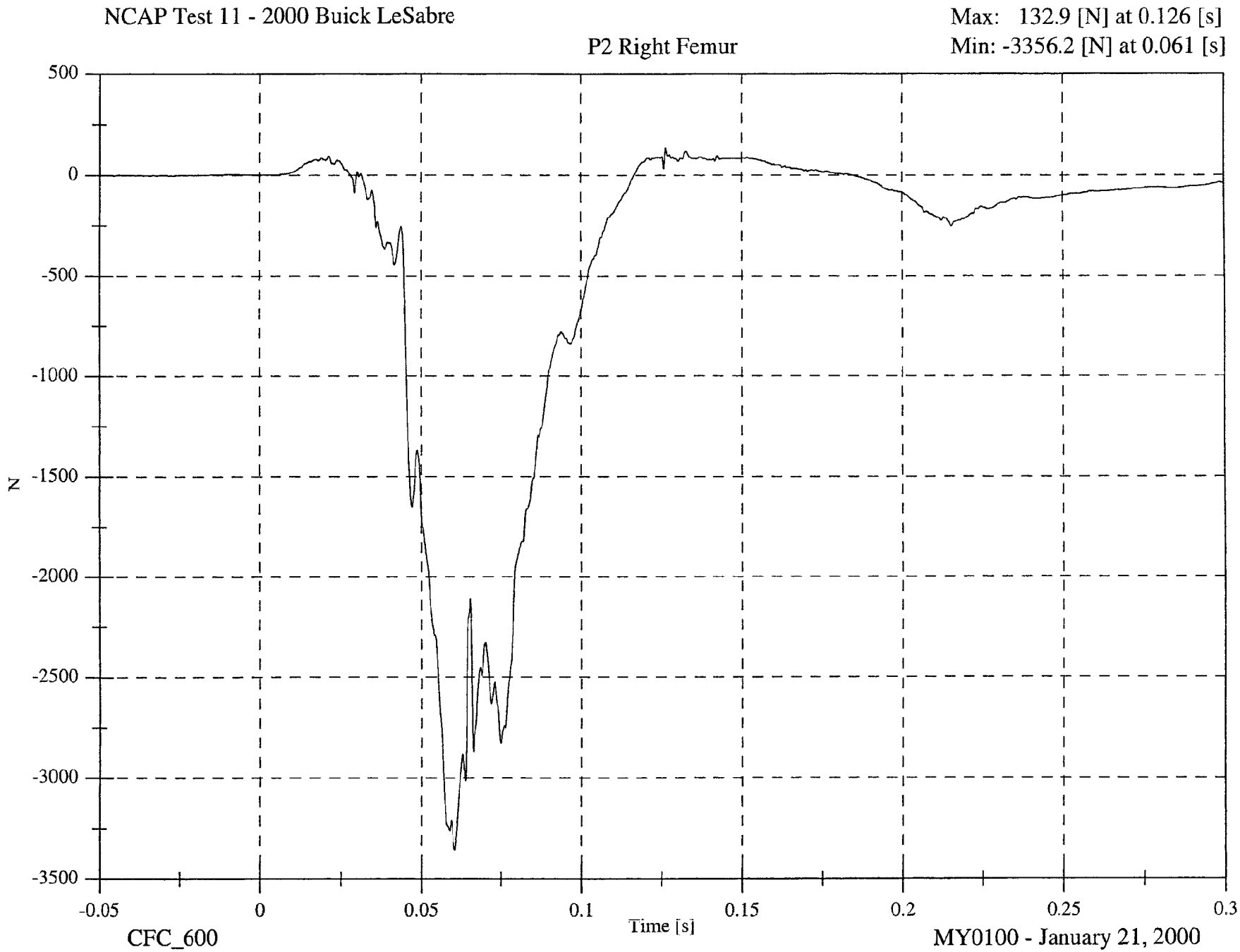

NCAP Test 11 - 2000 Buick LeSabre
P2 Pelvic x
Max: 5.2 [g] at 0.211 [s]
Min: -43.5 [g] at 0.058 [s]
10
0
-10
-20
-30
-40
-50
g
-0.05
0
0.05
0.1
0.15
0.2
0.25
0.3
Time [s]
CFC_1000
MY0100 - January 21, 2000

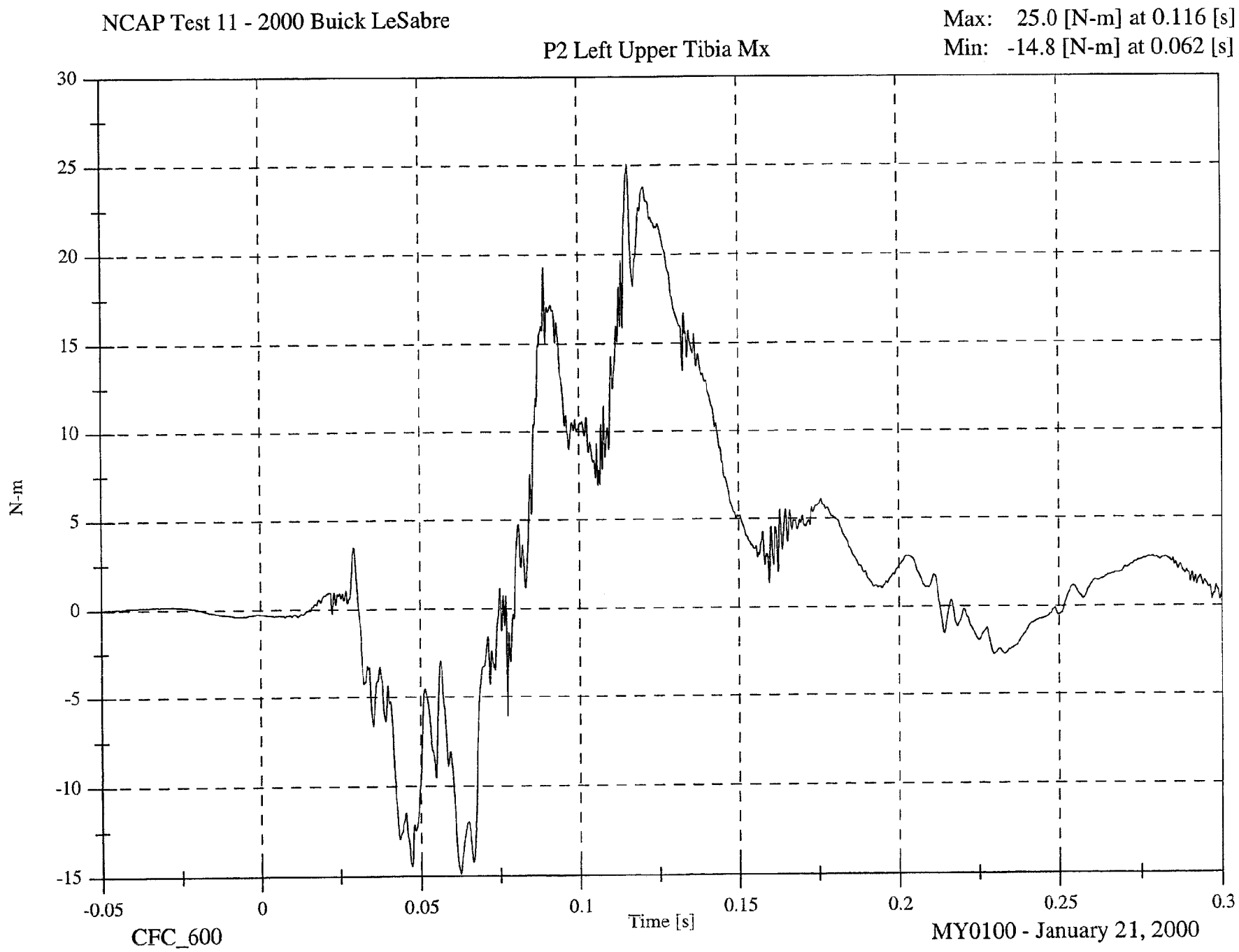

NCAP Test 11 - 2000 Buick LeSabre
P2 Pelvic y
Max: 5.6 [g] at 0.093 [s]
Min: -7.0 [g] at 0.067 [s]
7.5
5
2.5
0
-2.5
-5
-7.5
g
-0.05
0
0.05
0.1
0.15
0.2
0.25
0.3
Time [s]
CFC_1000
MY0100 - January 21, 2000

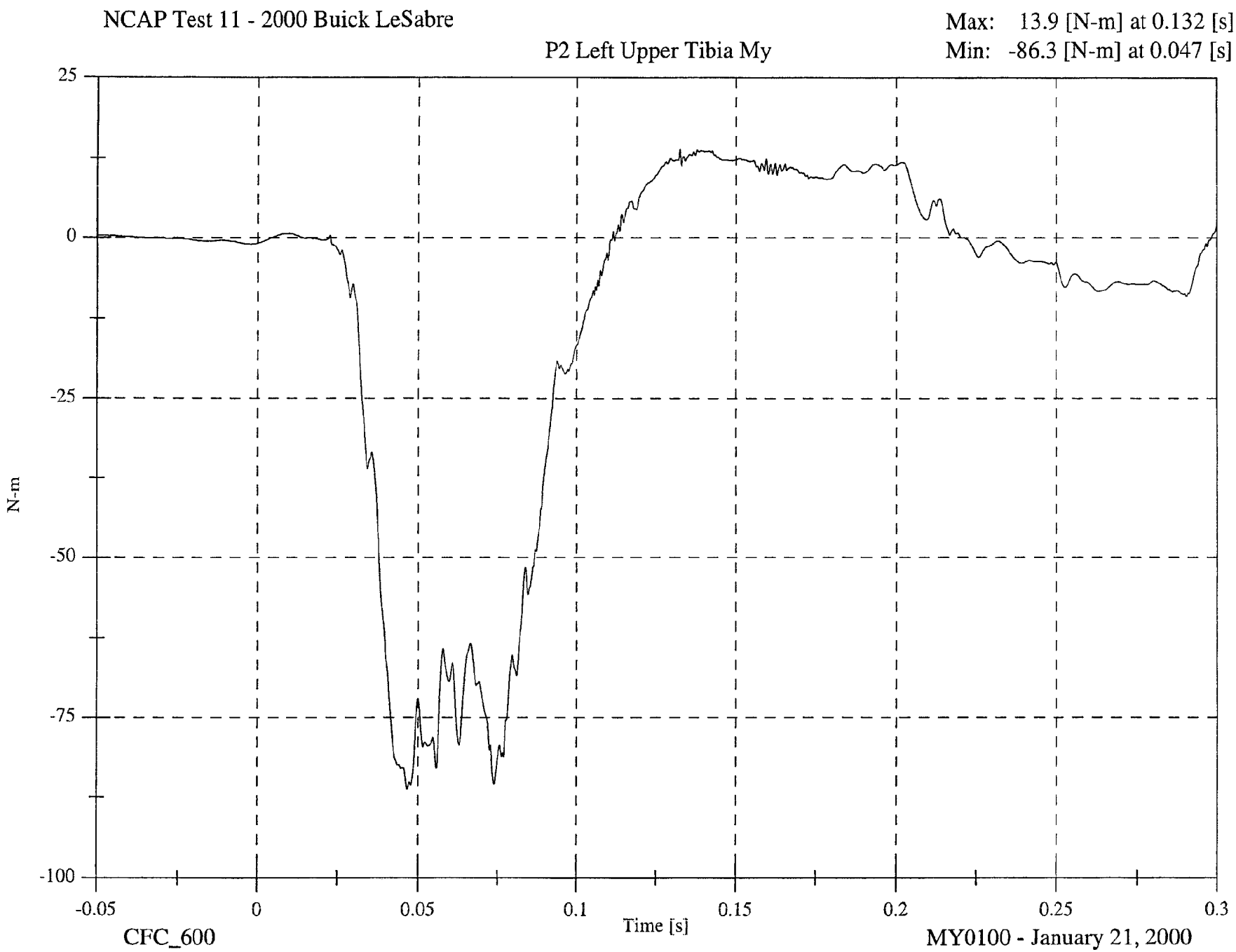

NCAP Test 11 - 2000 Buick LeSabre
P2 Pelvic z
Max: 3.7 [g] at 0.229 [s]
Min: -17.0 [g] at 0.074 [s]
5
0
-5
-10
-15
-20
g
-0.05
0
0.05
0.1
0.15
0.2
0.25
0.3
Time [s]
CFC_1000
MY0100 - January 21, 2000

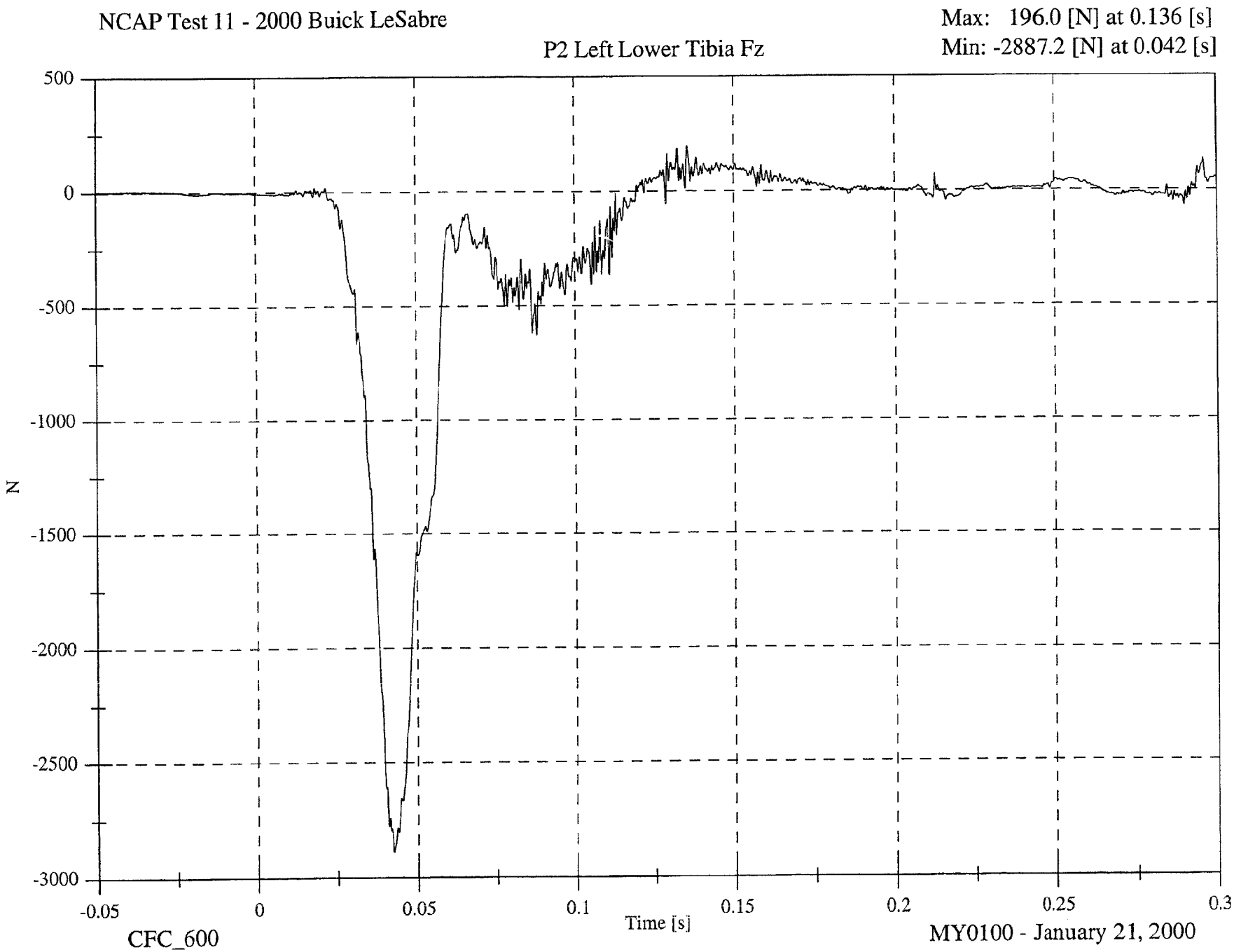

NCAP Test 11 - 2000 Buick LeSabre
P2 Pelvic Resultant
Max: 45.6 [g] at 0.058 [s]
Min: 0.1 [g] at -0.049 [s]
50
40
30
20
10
0
g
-0.05
0
0.05
0.1
0.15
0.2
0.25
0.3
Time [s]
CFC_1000
MY0100 - January 21, 2000

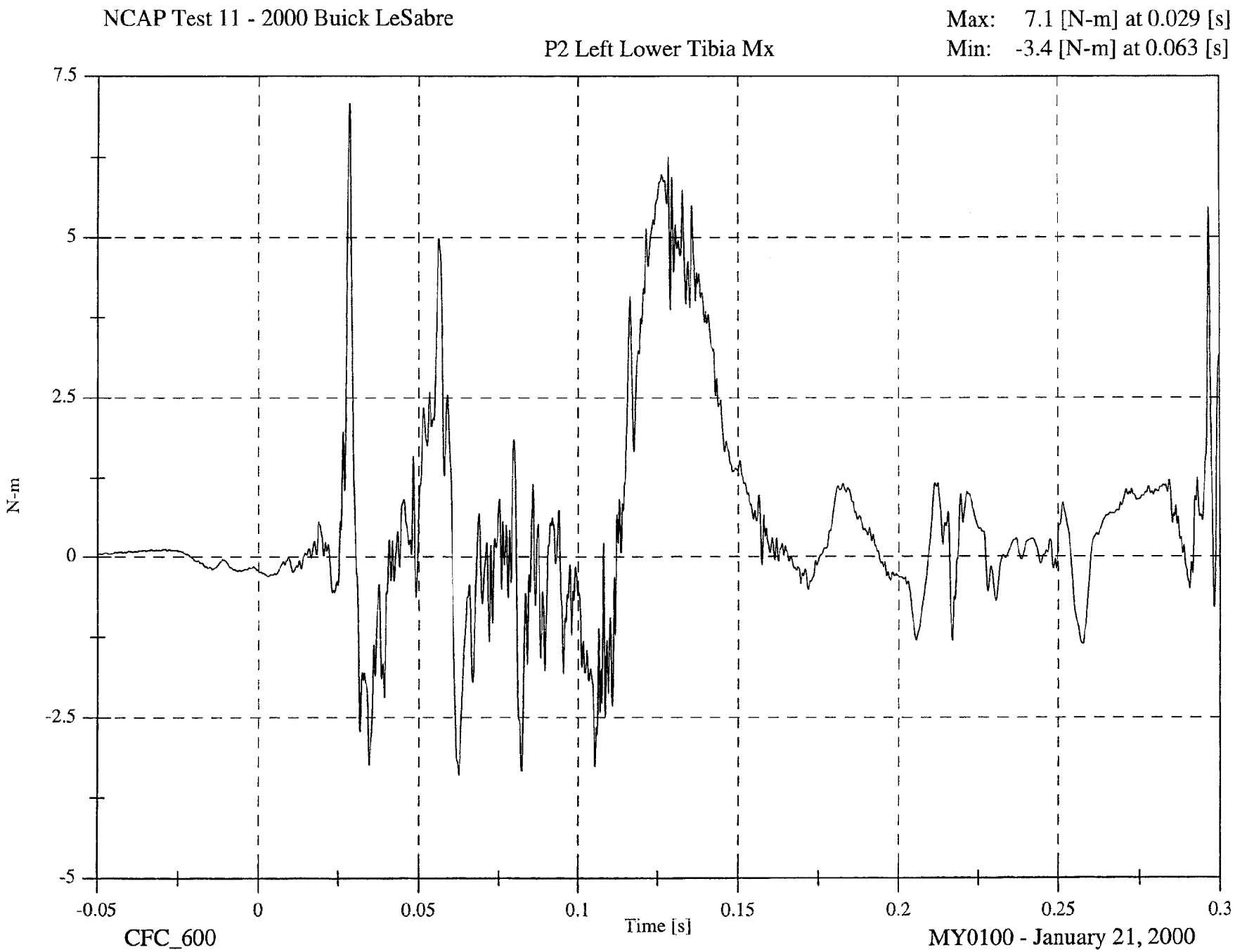

NCAP Test 11 - 2000 Buick LeSabre
P2 Left Femur
Max: 154.4 [N] at 0.026 [s]
Min: -2276.1 [N] at 0.057 [s]
500
0
-500
-1000
-1500
-2000
-2500
N
-0.05
0
0.05
0.1
0.15
0.2
0.25
0.3
Time [s]
CFC_600
MY0100 - January 21, 2000

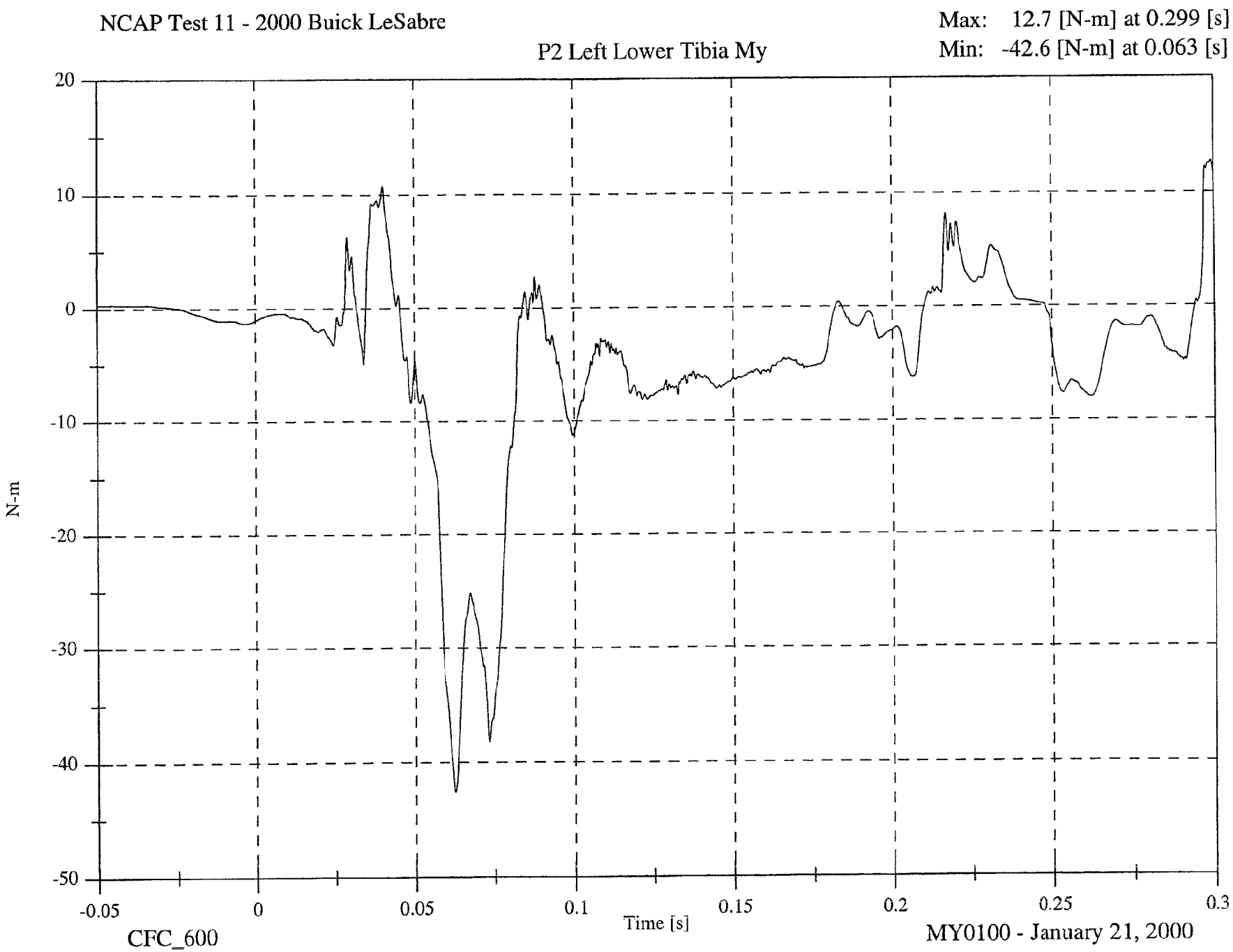

NCAP Test 11 - 2000 Buick LeSabre
P2 Right Femur
Max: 132.9 [N] at 0.126 [s]
Min: -3356.2 [N] at 0.061 [s]
500
0
-500
-1000
-1500
-2000
-2500
-3000
-3500
N
-0.05
0
0.05
0.1
0.15
0.2
0.25
0.3
Time [s]
CFC_600
MY0100 - January 21, 2000

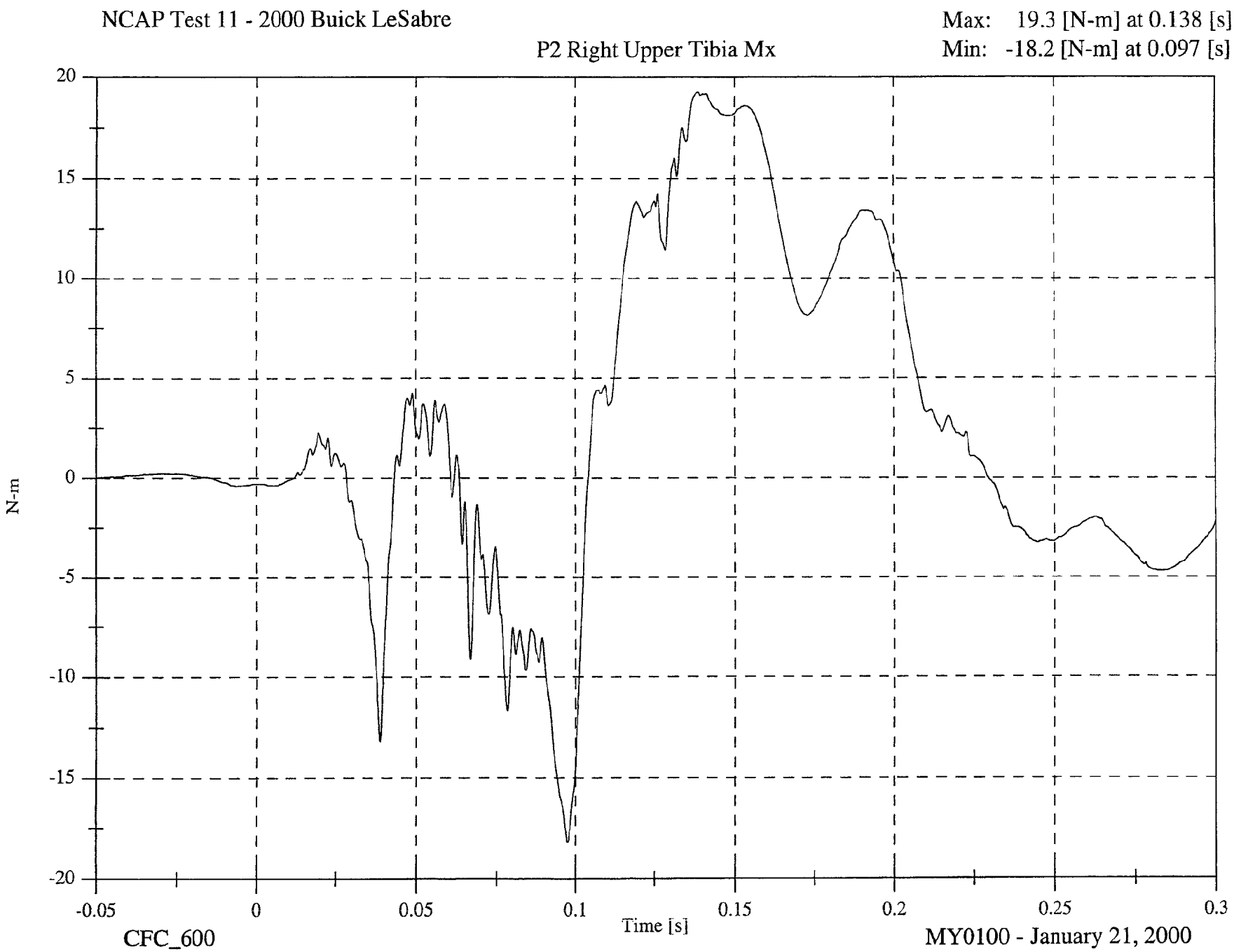

NCAP Test 11 - 2000 Buick LeSabre
P2 Left Upper Tibia Mx
Max: 25.0 [N-m] at 0.116 [s]
Min: -14.8 [N-m] at 0.062 [s]
N-m
30
25
20
15
10
5
0
-5
-10
-15
-0.05
0
0.05
0.1
0.15
0.2
0.25
0.3
Time [s]
CFC_600
MY0100 - January 21, 2000

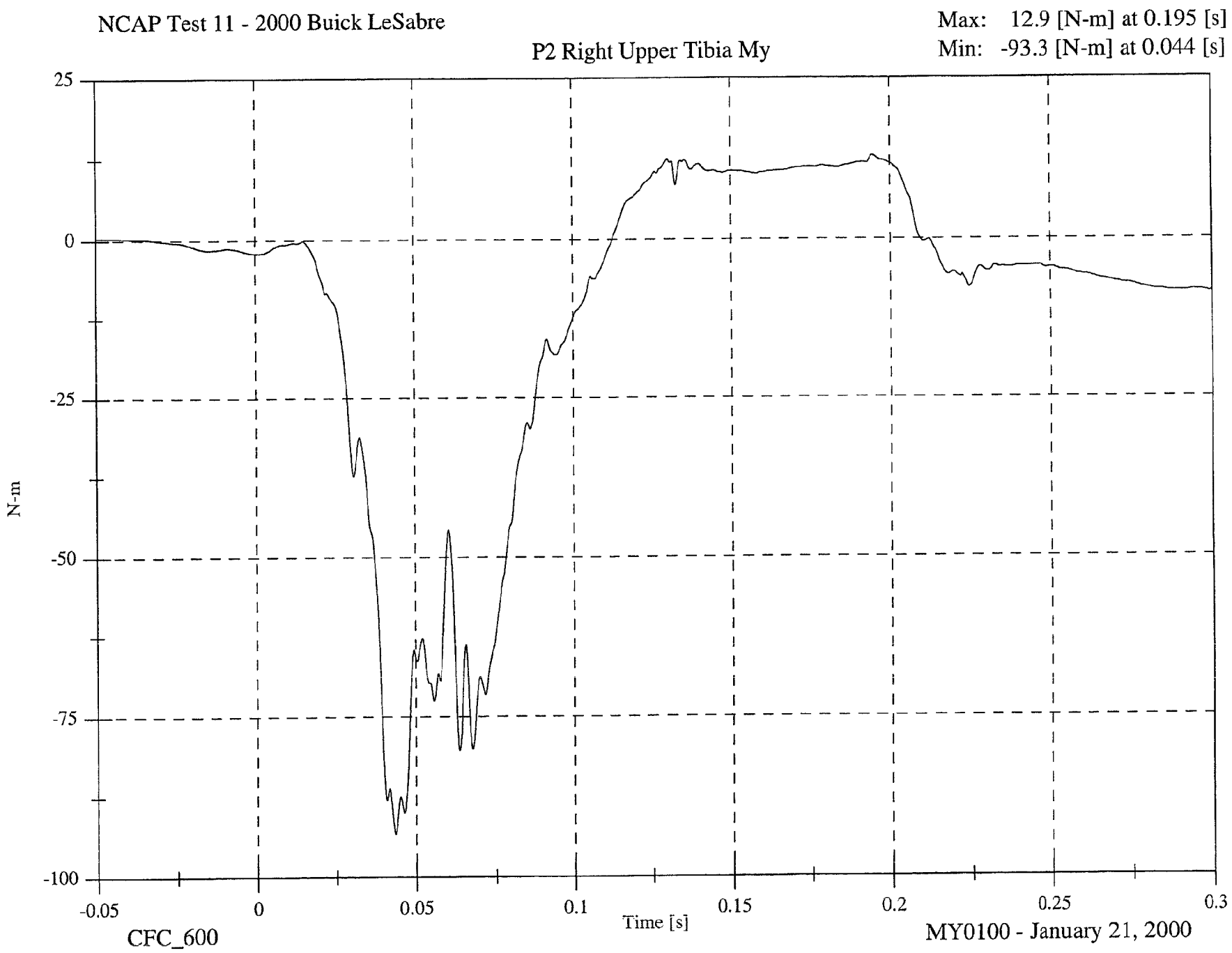

NCAP Test 11 - 2000 Buick LeSabre
P2 Left Upper Tibia My
Max: 13.9 [N-m] at 0.132 [s]
Min: -86.3 [N-m] at 0.047 [s]
25
0
-25
-50
-75
-100
N-m
-0.05
0
0.05
0.1
0.15
0.2
0.25
0.3
Time [s]
CFC_600
MY0100 - January 21, 2000

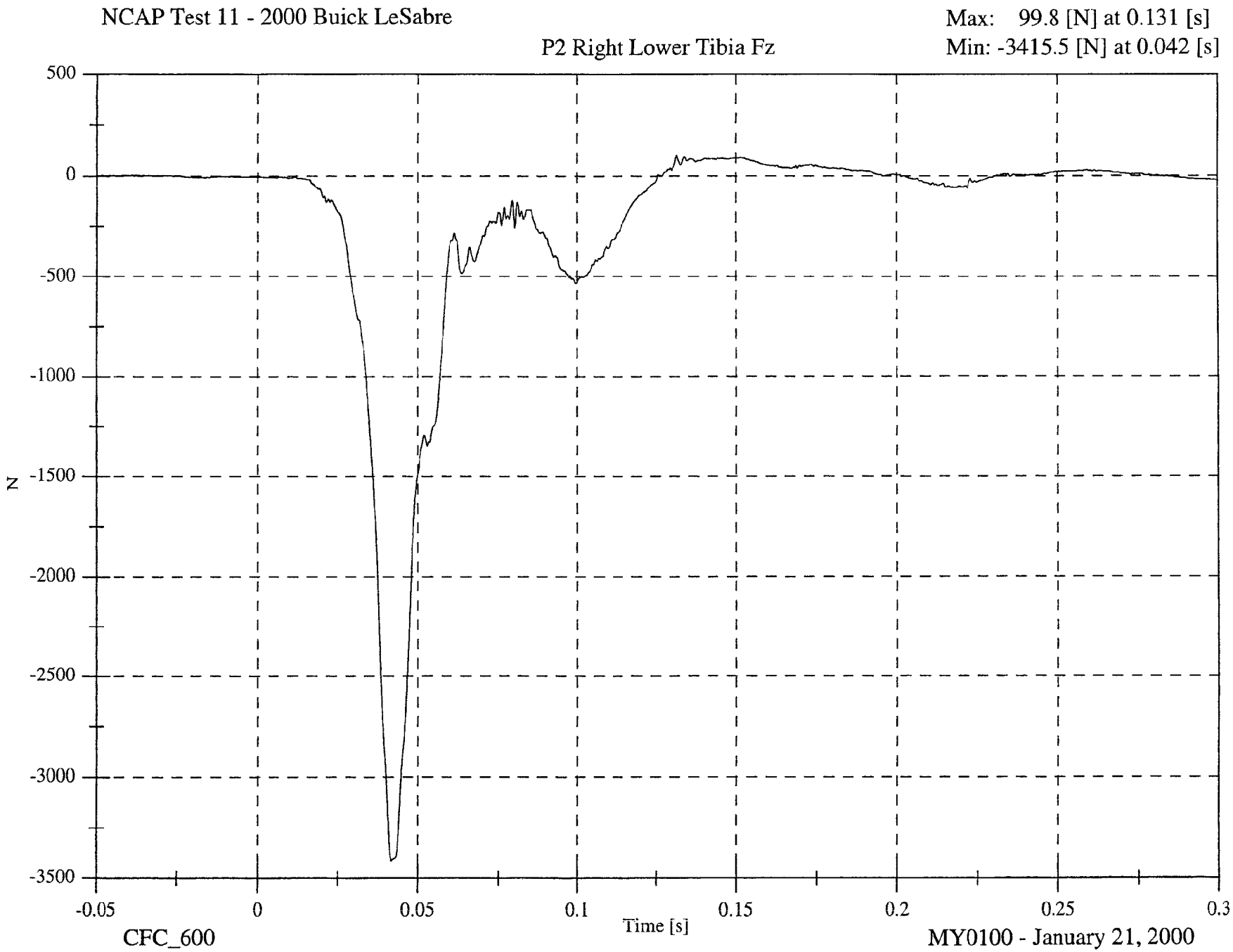

NCAP Test 11 - 2000 Buick LeSabre
P2 Left Lower Tibia Fz
Max: 196.0 [N] at 0.136 [s]
Min: -2887.2 [N] at 0.042 [s]
500
0
-500
-1000
-1500
-2000
-2500
-3000
N
-0.05
0
0.05
0.1
0.15
0.2
0.25
0.3
Time [s]
CFC_600
MY0100 - January 21, 2000


NCAP Test 11 - 2000 Buick LeSabre
P2 Left Lower Tibia Mx
Max: 7.1 [N-m] at 0.029 [s]
Min: -3.4 [N-m] at 0.063 [s]
7.5
5
2.5
0
-2.5
-5
N-m
-0.05
0
0.05
0.1
0.15
0.2
0.25
0.3
Time [s]
CFC_600
MY0100 - January 21, 2000


NCAP Test 11 - 2000 Buick LeSabre
P2 Left Lower Tibia My
Max: 12.7 [N-m] at 0.299 [s]
Min: -42.6 [N-m] at 0.063 [s]
20
10
0
-10
-20
-30
-40
-50
N-m
-0.05
0
0.05
0.1
0.15
0.2
0.25
0.3
Time [s]
CFC_600
MY0100 - January 21, 2000

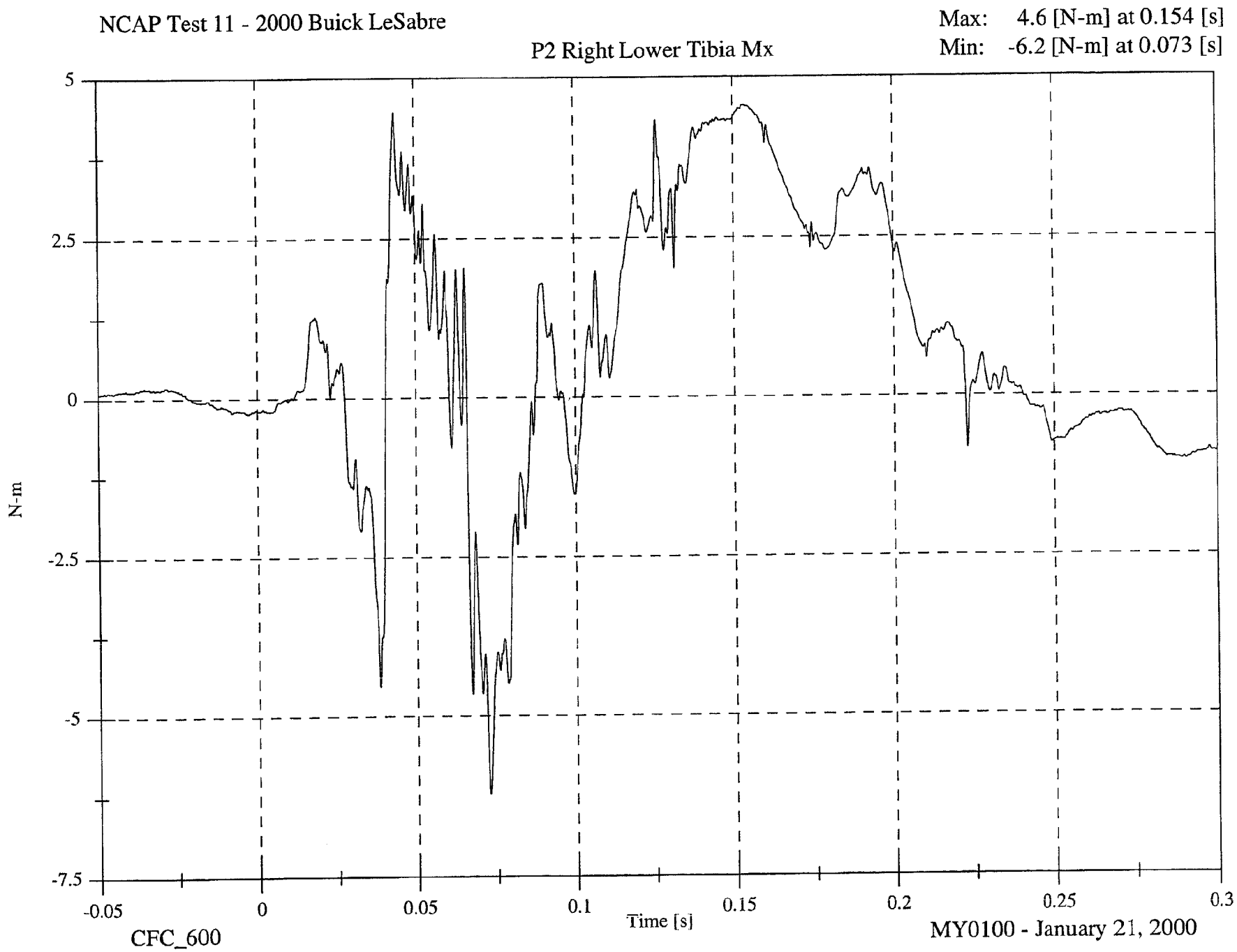

NCAP Test 11 - 2000 Buick LeSabre
P2 Right Upper Tibia Mx
Max: 19.3 [N-m] at 0.138 [s]
Min: -18.2 [N-m] at 0.097 [s]
N-m
20
15
10
5
0
-5
-10
-15
-20
-0.05
0
0.05
0.1
0.15
0.2
0.25
0.3
Time [s]
CFC_600
MY0100 - January 21, 2000

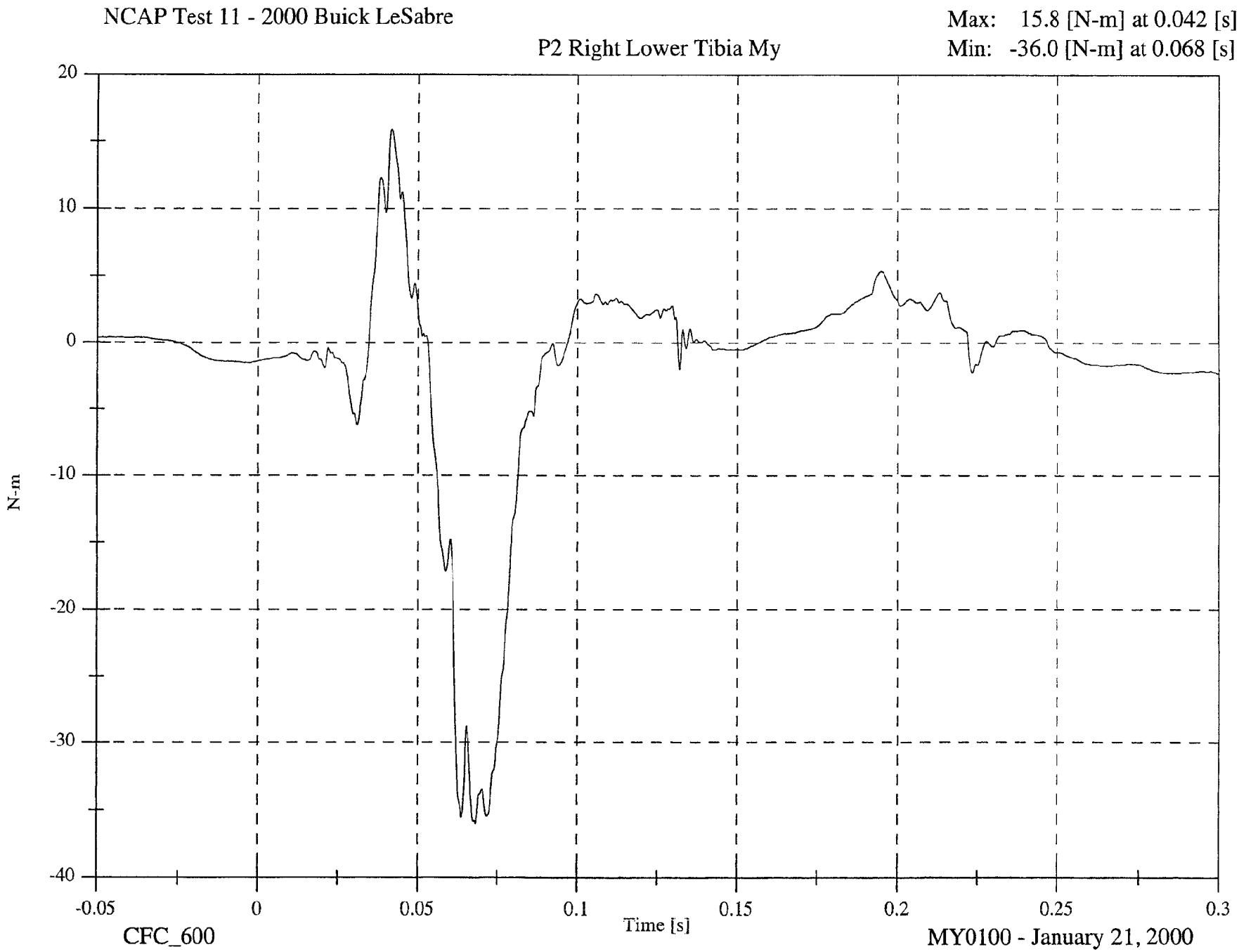

NCAP Test 11 - 2000 Buick LeSabre
P2 Right Upper Tibia My
Max: 12.9 [N-m] at 0.195 [s]
Min: -93.3 [N-m] at 0.044 [s]
25
0
-25
-50
-75
-100
N-m
-0.05
0
0.05
0.1
0.15
0.2
0.25
0.3
Time [s]
CFC_600
MY0100 - January 21, 2000

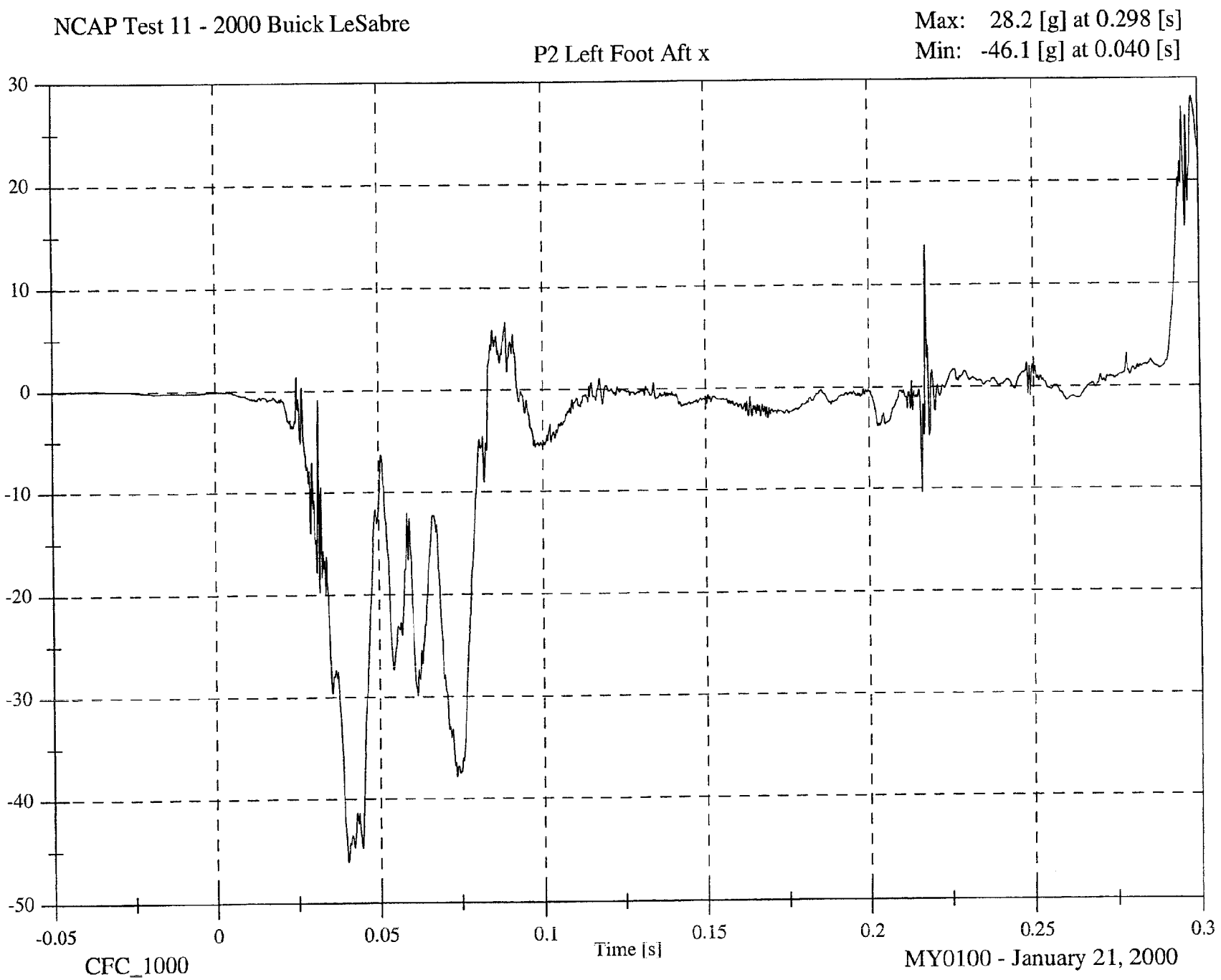

NCAP Test 11 - 2000 Buick LeSabre
P2 Right Lower Tibia Fz
Max: 99.8 [N] at 0.131 [s]
Min: -3415.5 [N] at 0.042 [s]
500
0
-500
-1000
-1500
-2000
-2500
-3000
-3500
N
-0.05
0
0.05
0.1
0.15
0.2
0.25
0.3
Time [s]
CFC_600
MY0100 - January 21, 2000

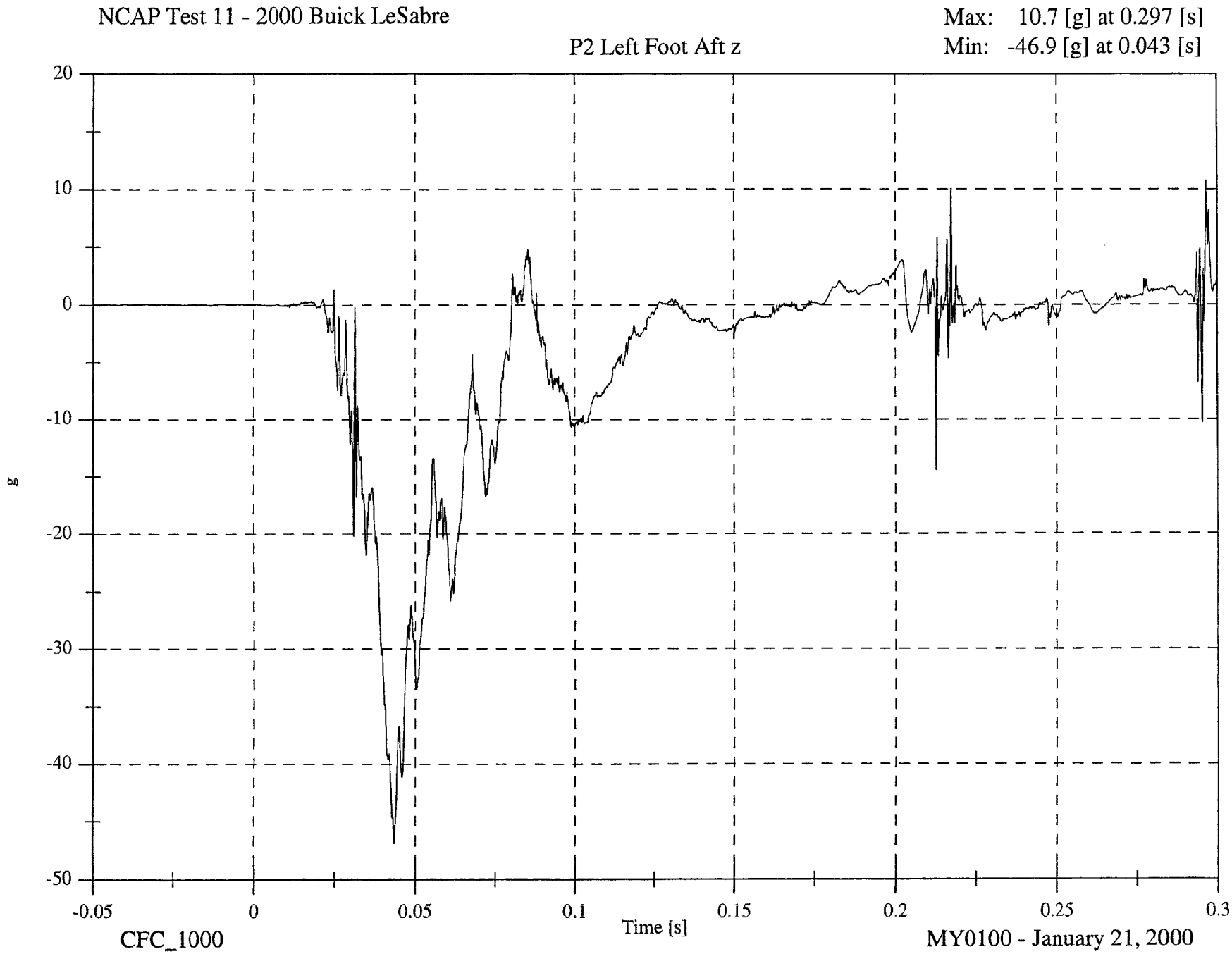
B-90

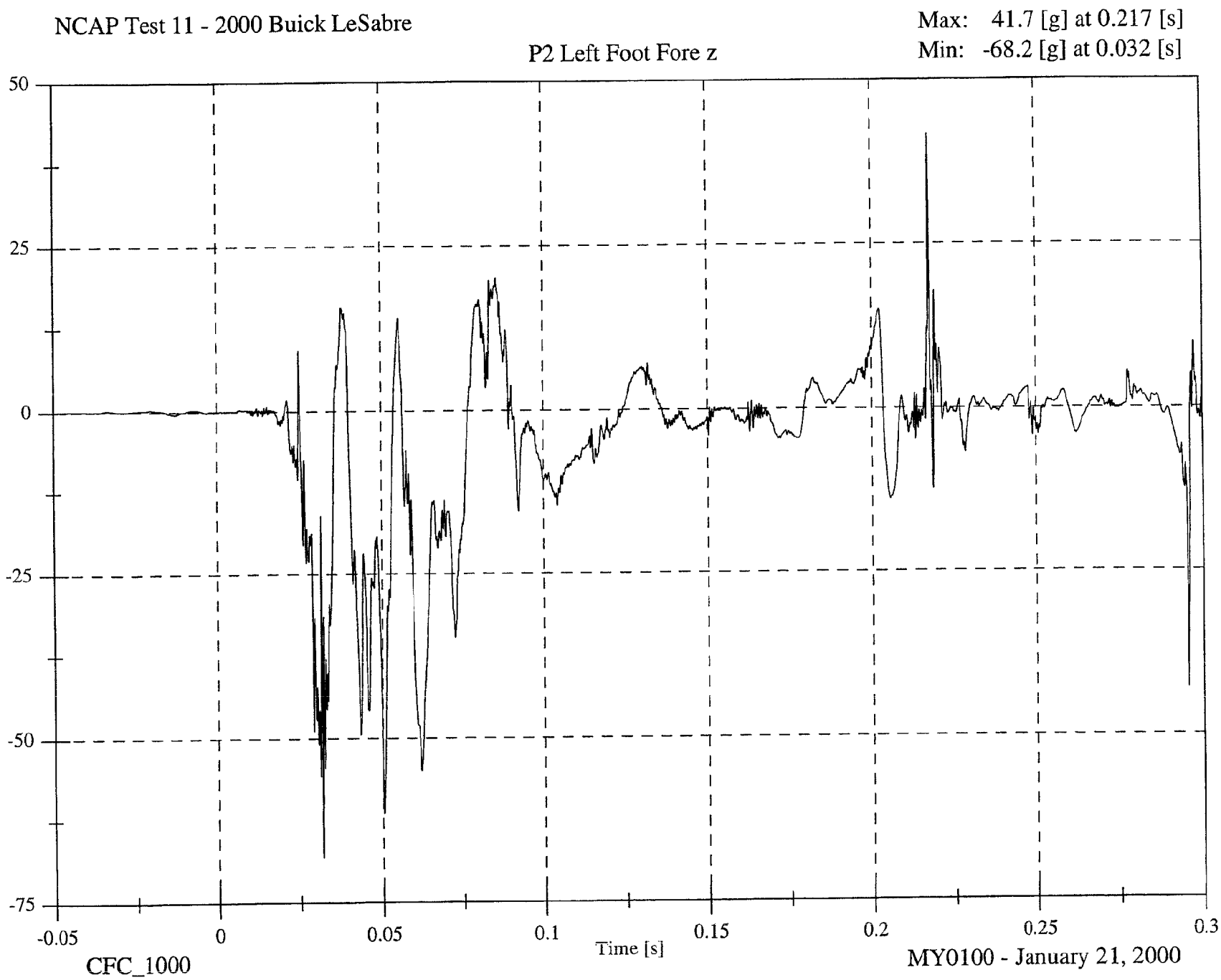
8413-50

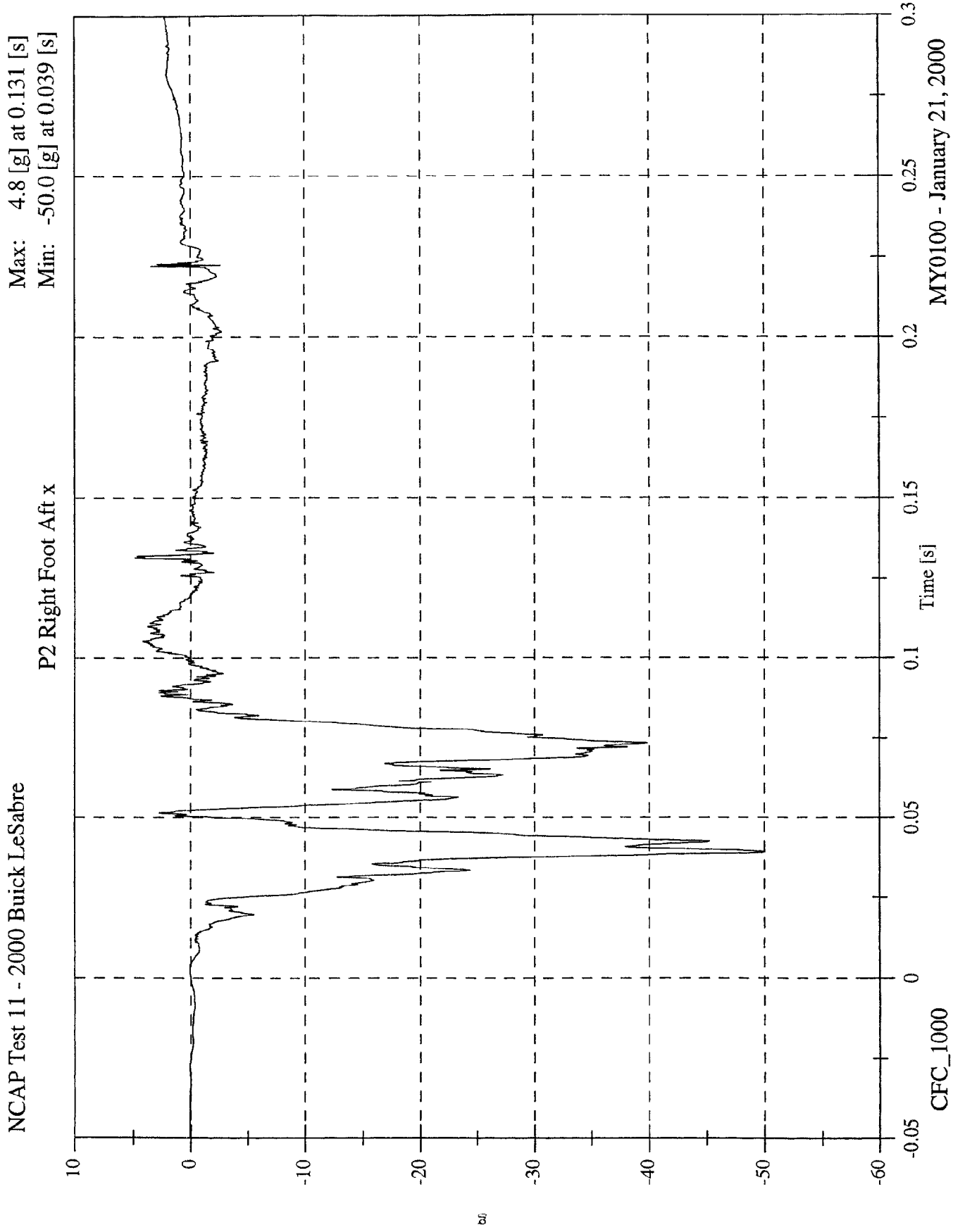

NCAP Test 11 - 2000 Buick LeSabre
P2 Right Lower Tibia Mx
Max: 4.6 [N-m] at 0.154 [s]
Min: -6.2 [N-m] at 0.073 [s]
5
2.5
0
-2.5
-5
-7.5
N-m
-0.05
0
0.05
0.1
0.15
0.2
0.25
0.3
Time [s]
CFC_600
MY0100 - January 21, 2000

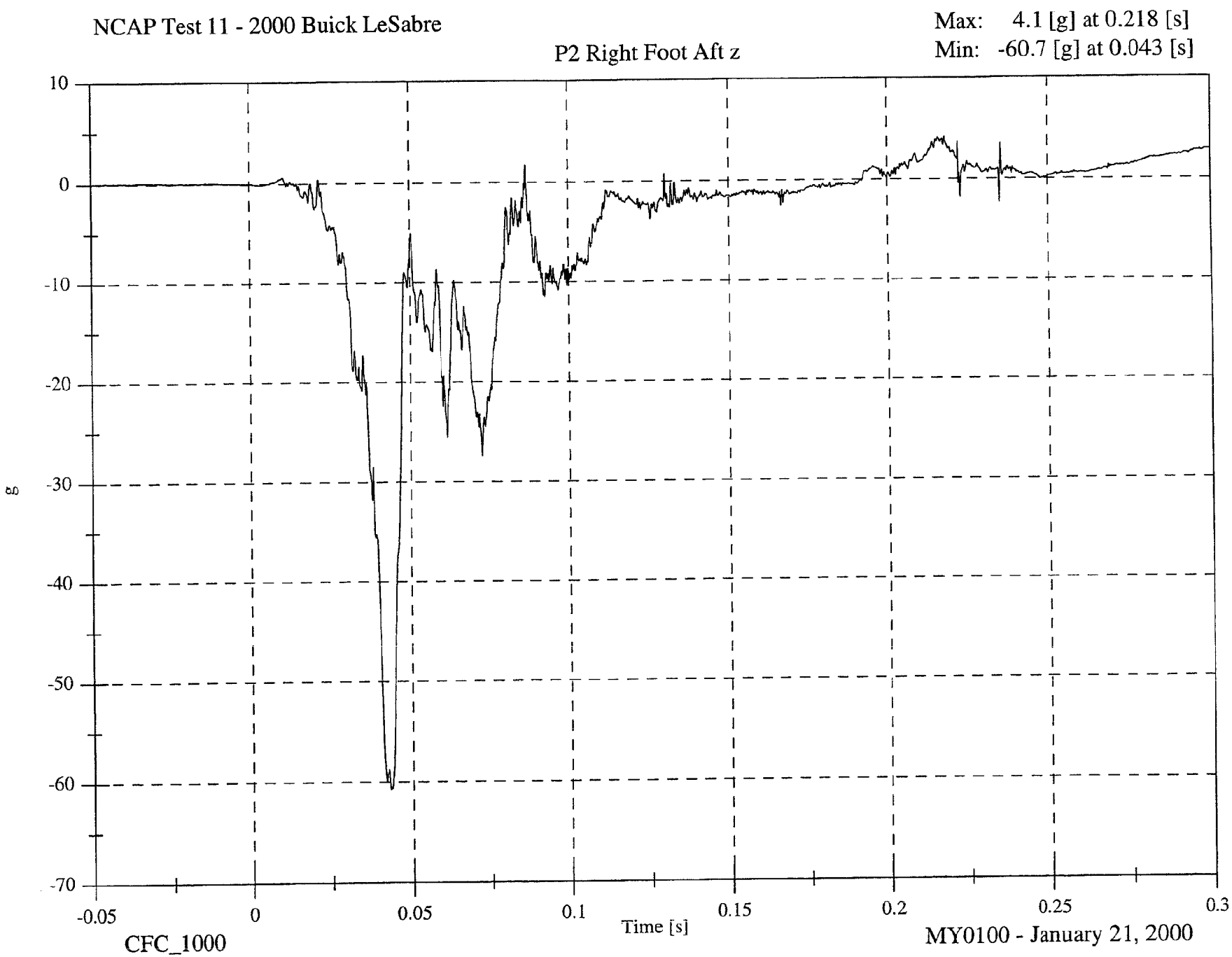

NCAP Test 11 - 2000 Buick LeSabre
P2 Right Lower Tibia My
Max: 15.8 [N-m] at 0.042 [s]
Min: -36.0 [N-m] at 0.068 [s]
20
10
0
-10
-20
-30
-40
N-m
-0.05
0
0.05
0.1
0.15
0.2
0.25
0.3
Time [s]
CFC_600
MY0100 - January 21, 2000

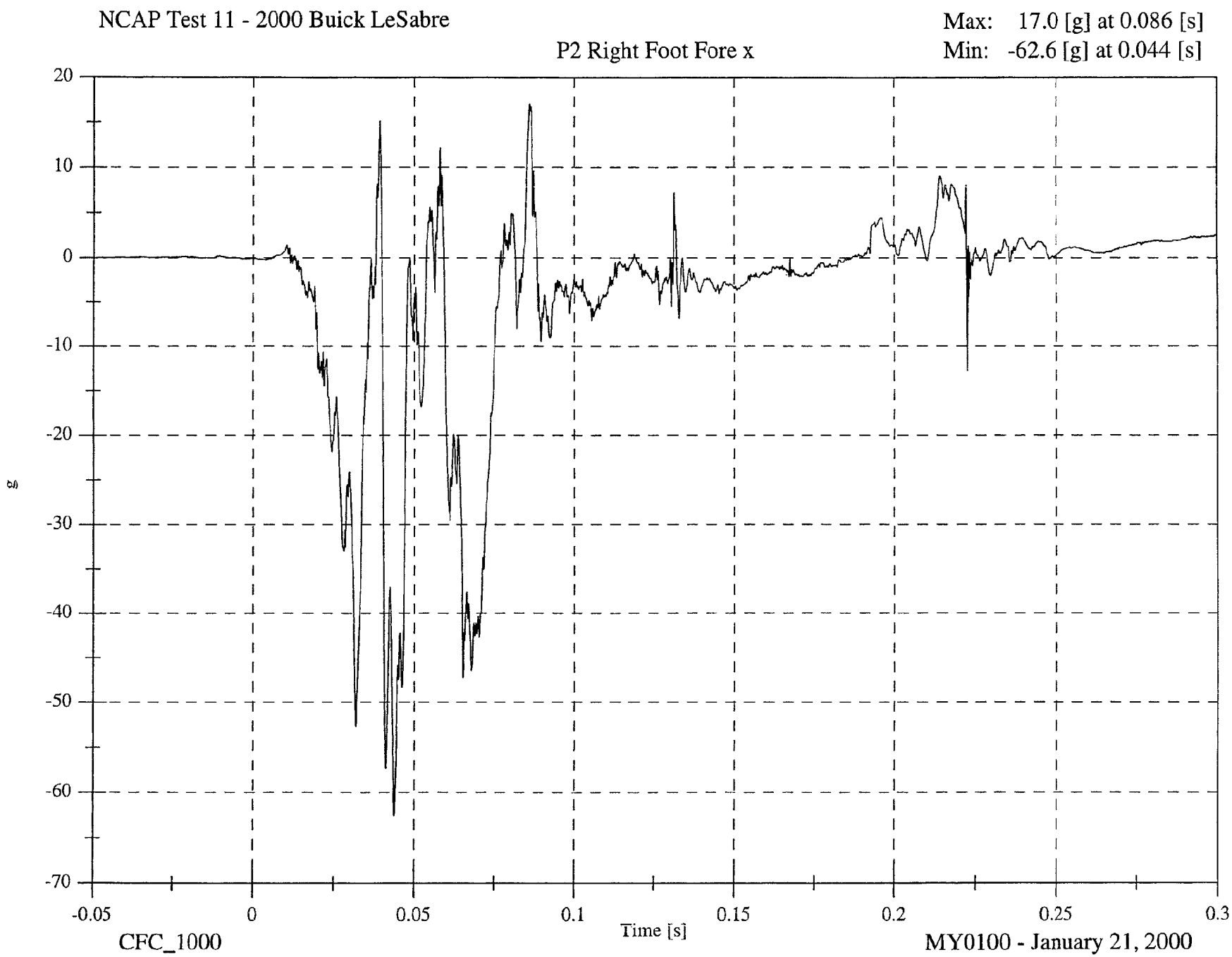

NCAP Test 11 - 2000 Buick LeSabre
P2 Left Foot Aft x
Max: 28.2 [g] at 0.298 [s]
Min: -46.1 [g] at 0.040 [s]
30
20
10
0
-10
-20
-30
-40
-50
g
-0.05
0
0.05
0.1
0.15
0.2
0.25
0.3
Time [s]
CFC_1000
MY0100 - January 21, 2000

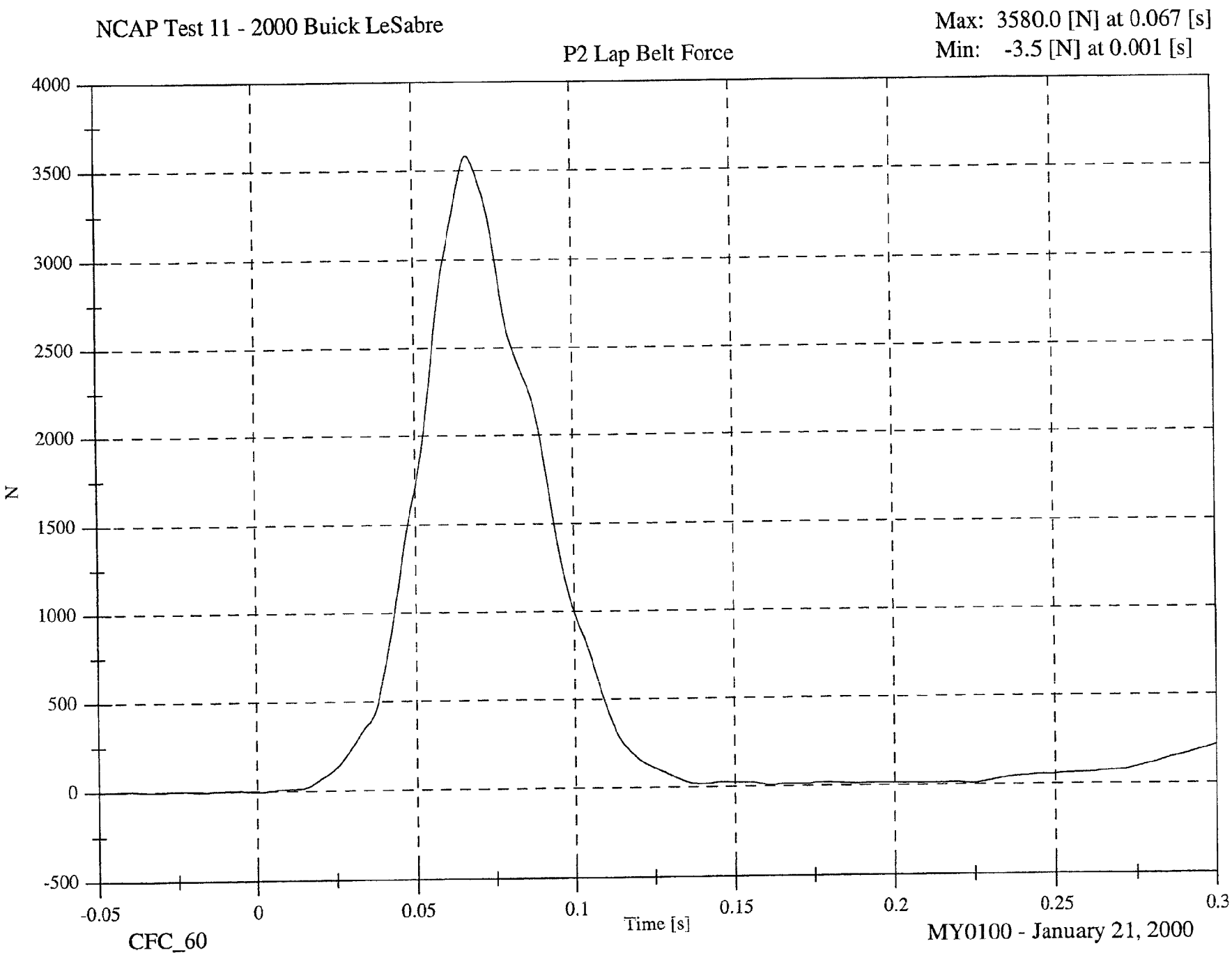

NCAP Test 11 - 2000 Buick LeSabre
P2 Left Foot Aft z
Max: 10.7 [g] at 0.297 [s]
Min: -46.9 [g] at 0.043 [s]
20
10
0
-10
-20
-30
-40
-50
g
-0.05
0
0.05
0.1
0.15
0.2
0.25
0.3
Time [s]
CFC_1000
MY0100 - January 21, 2000

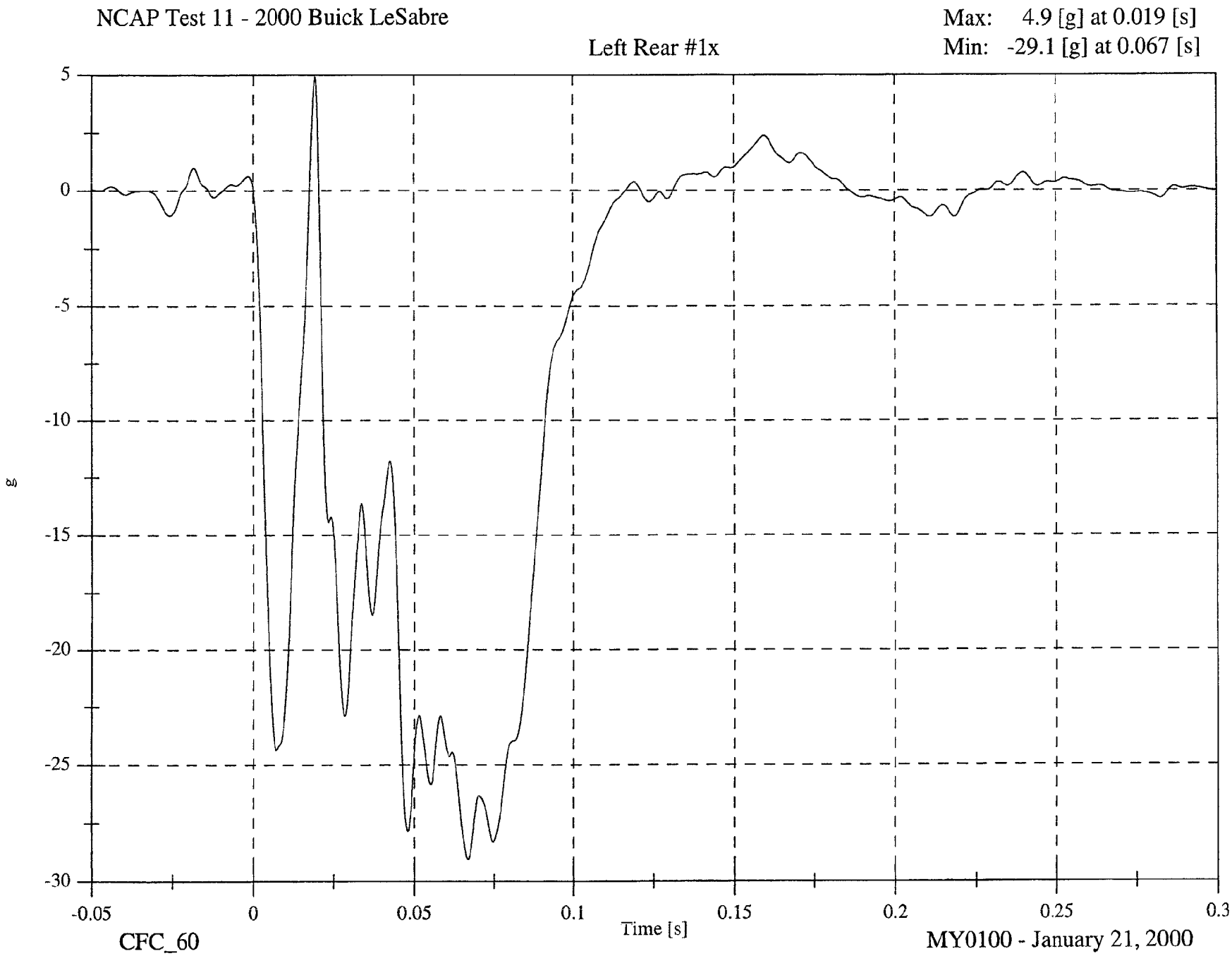

NCAP Test 11 - 2000 Buick LeSabre
P2 Left Foot Fore z
Max: 41.7 [g] at 0.217 [s]
Min: -68.2 [g] at 0.032 [s]
50
25
0
-25
-50
-75
g
-0.05
0
0.05
0.1
0.15
0.2
0.25
0.3
Time [s]
CFC_1000
MY0100 - January 21, 2000


NCAP Test 11 - 2000 Buick LeSabre
Max: 4.8 [g] at 0.131 [s]
Min: -50.0 [g] at 0.039 [s]
P2 Right Foot Aft x
CFC_1000
MY0100 - January 21, 2000
Time [s]
g
10
0
-10
-20
-30
-40
-50
-60
-0.05
0
0.05
0.1
0.15
0.2
0.25
0.3


NCAP Test 11 - 2000 Buick LeSabre
P2 Right Foot Aft z
Max: 4.1 [g] at 0.218 [s]
Min: -60.7 [g] at 0.043 [s]
10
0
-10
-20
-30
-40
-50
-60
-70
g
-0.05
0
0.05
0.1
0.15
0.2
0.25
0.3
Time [s]
CFC_1000
MY0100 - January 21, 2000


NCAP Test 11 - 2000 Buick LeSabre
P2 Right Foot Fore x
Max: 17.0 [g] at 0.086 [s]
Min: -62.6 [g] at 0.044 [s]
20
10
0
-10
-20
-30
-40
-50
-60
-70
g
-0.05
0
0.05
0.1
0.15
0.2
0.25
0.3
Time [s]
CFC_1000
MY0100 - January 21, 2000

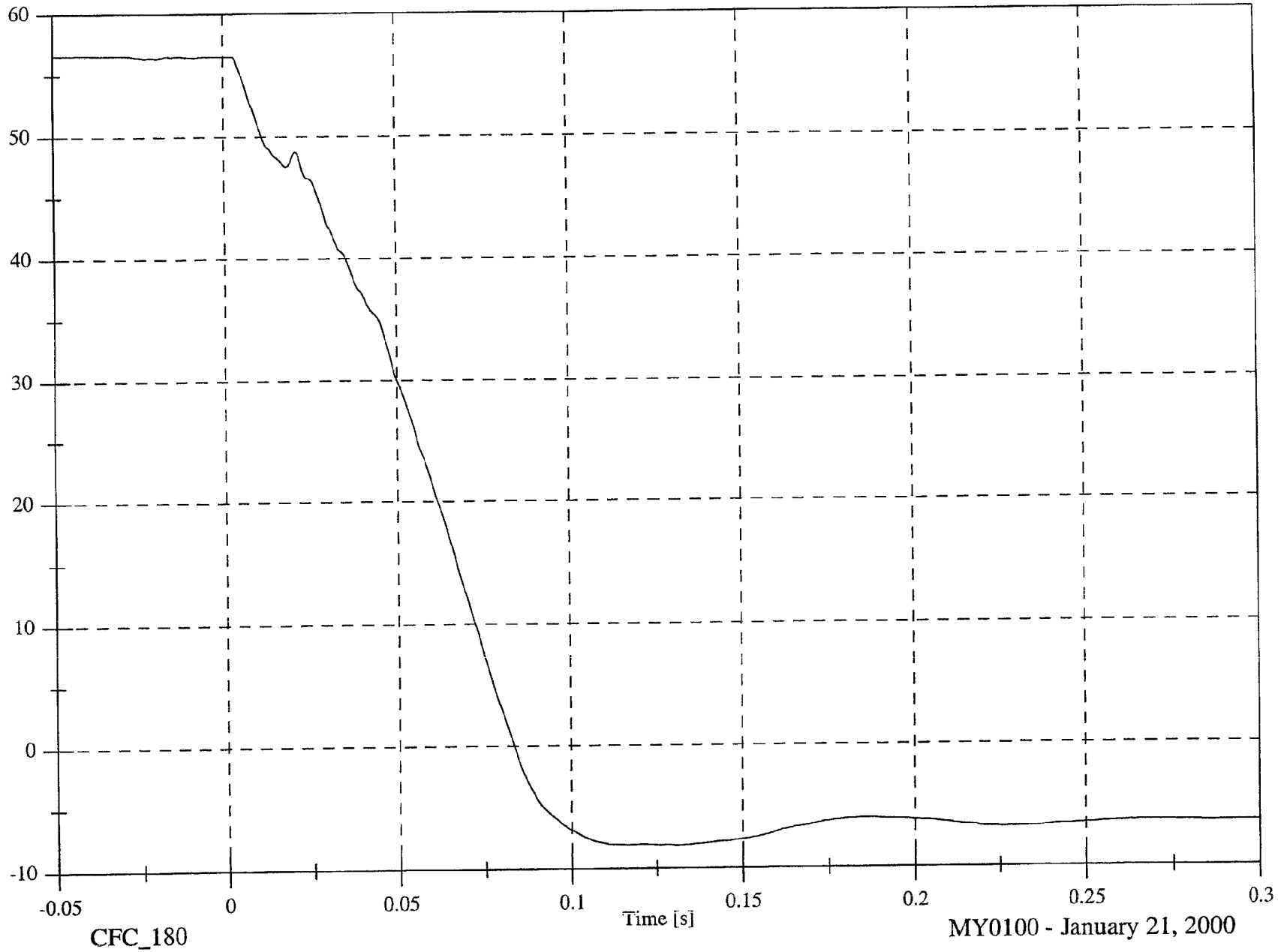

NCAP Test 11 - 2000 Buick LeSabre
P2 Lap Belt Force
Max: 3580.0 [N] at 0.067 [s]
Min: -3.5 [N] at 0.001 [s]
4000
3500
3000
2500
2000
1500
1000
500
0
-500
N
-0.05
0
0.05
0.1
0.15
0.2
0.25
0.3
Time [s]
CFC_60
MY0100 - January 21, 2000


NCAP Test 11 - 2000 Buick LeSabre
Left Rear #1x
Max: 4.9 [g] at 0.019 [s]
Min: -29.1 [g] at 0.067 [s]
5
0
-5
-10
-15
-20
-25
-30
g
-0.05
0
0.05
0.1
0.15
0.2
0.25
0.3
Time [s]
CFC_60
MY0100 - January 21, 2000

NCAP Test 11 - 2000 Buick LeSabre

Left Rear #1x Velocity

Max: 56.6 [kph] at -0.042 [s]
Min: -8.2 [kph] at 0.131 [s]

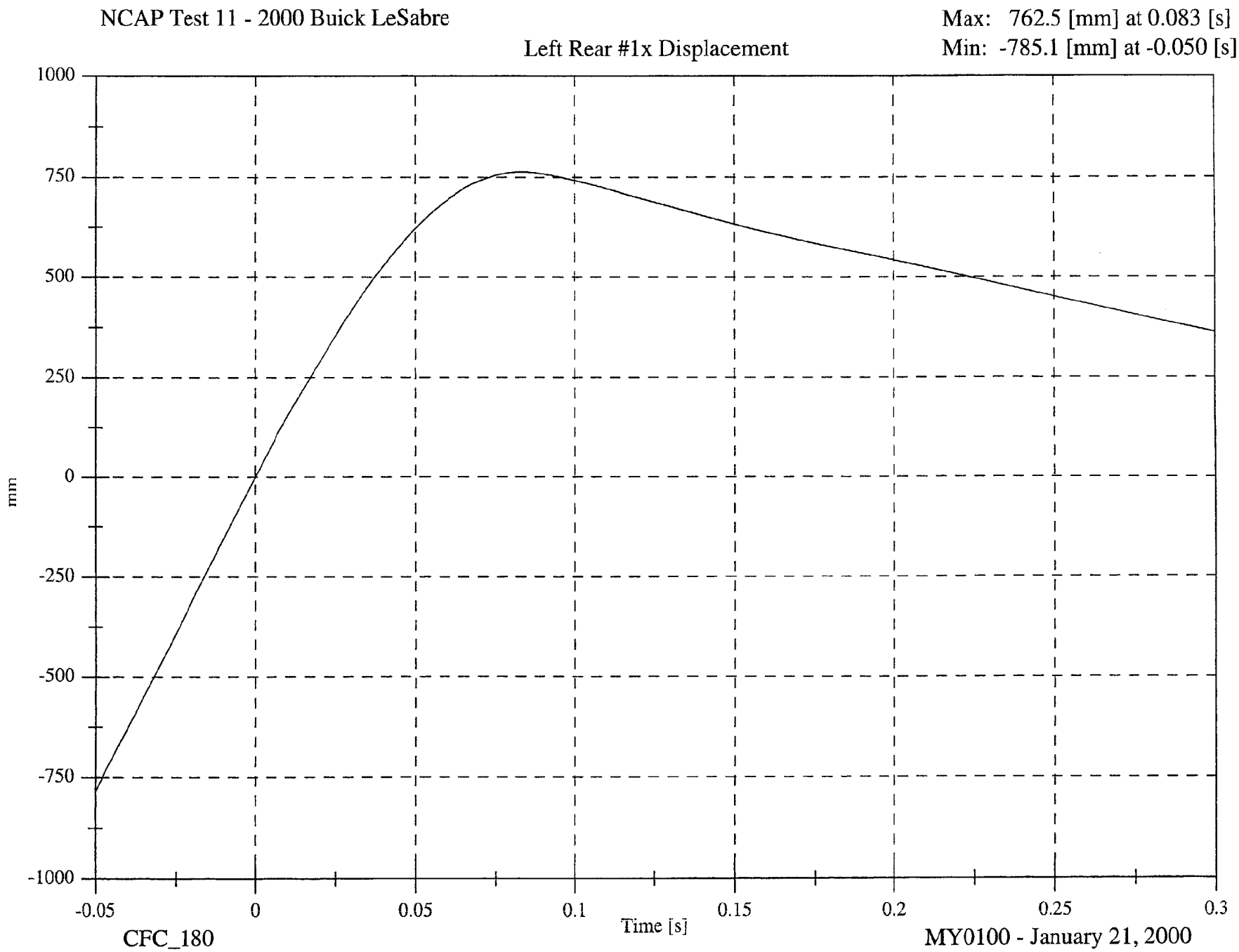


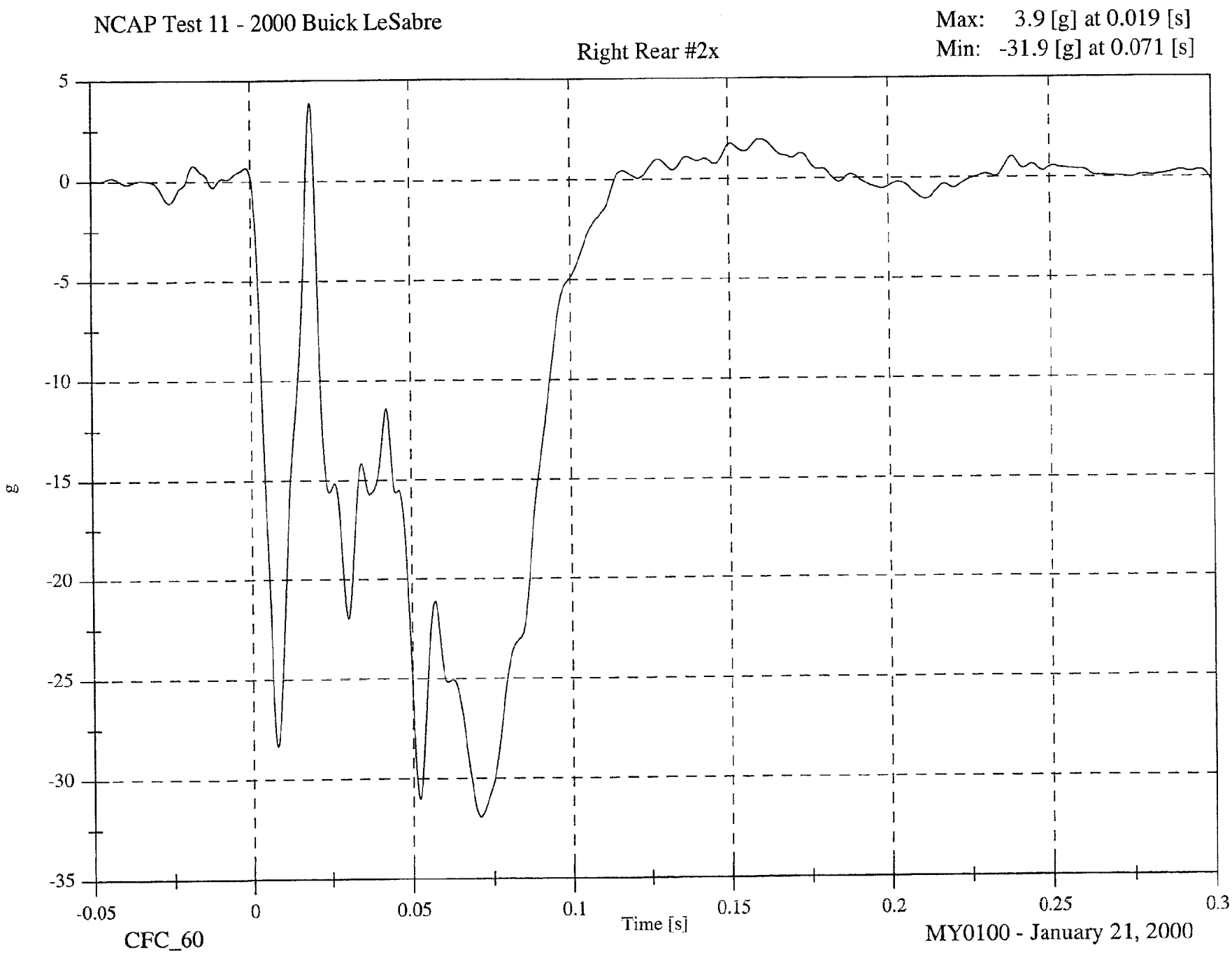
CFC_180

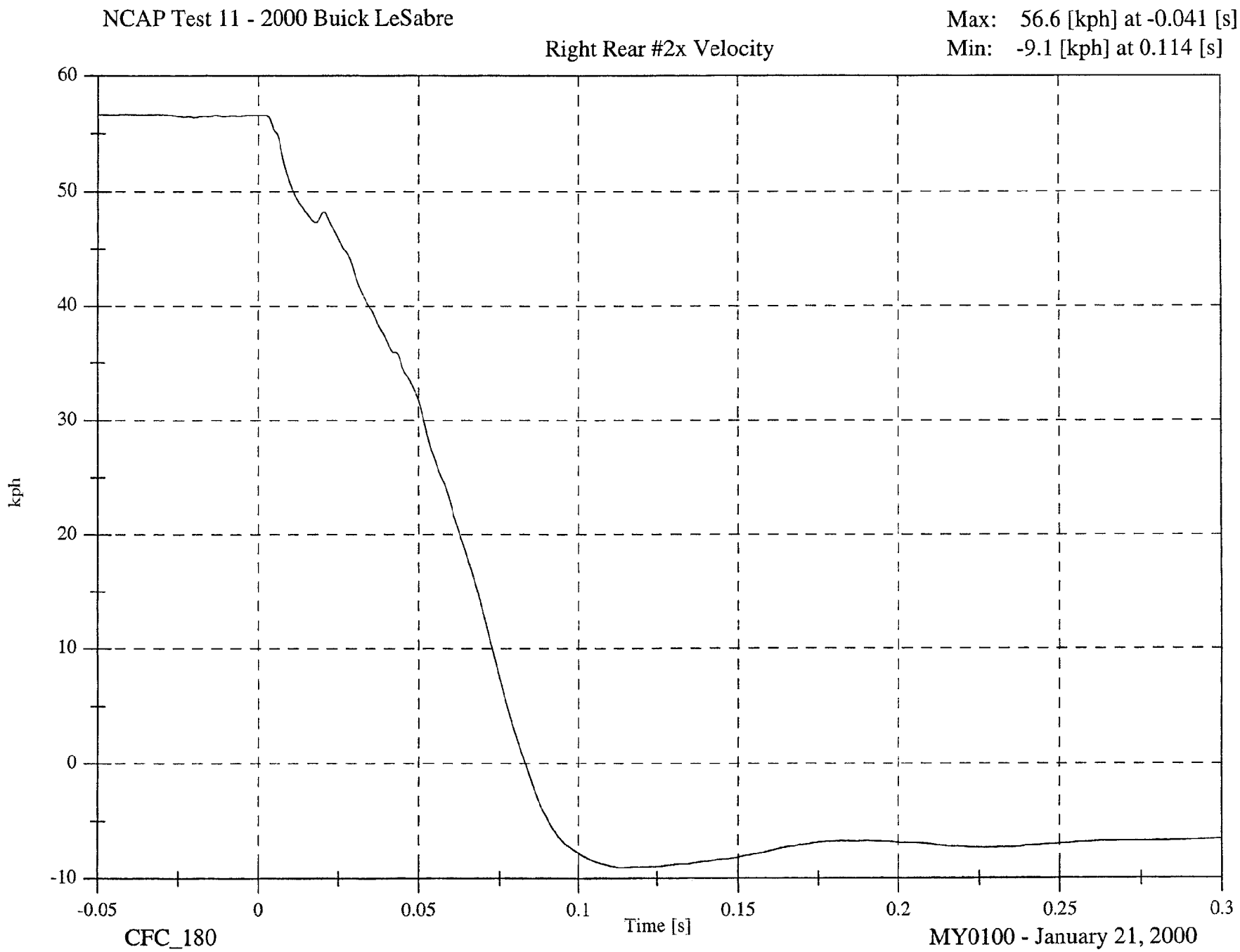
MY0100 - January 21, 2000

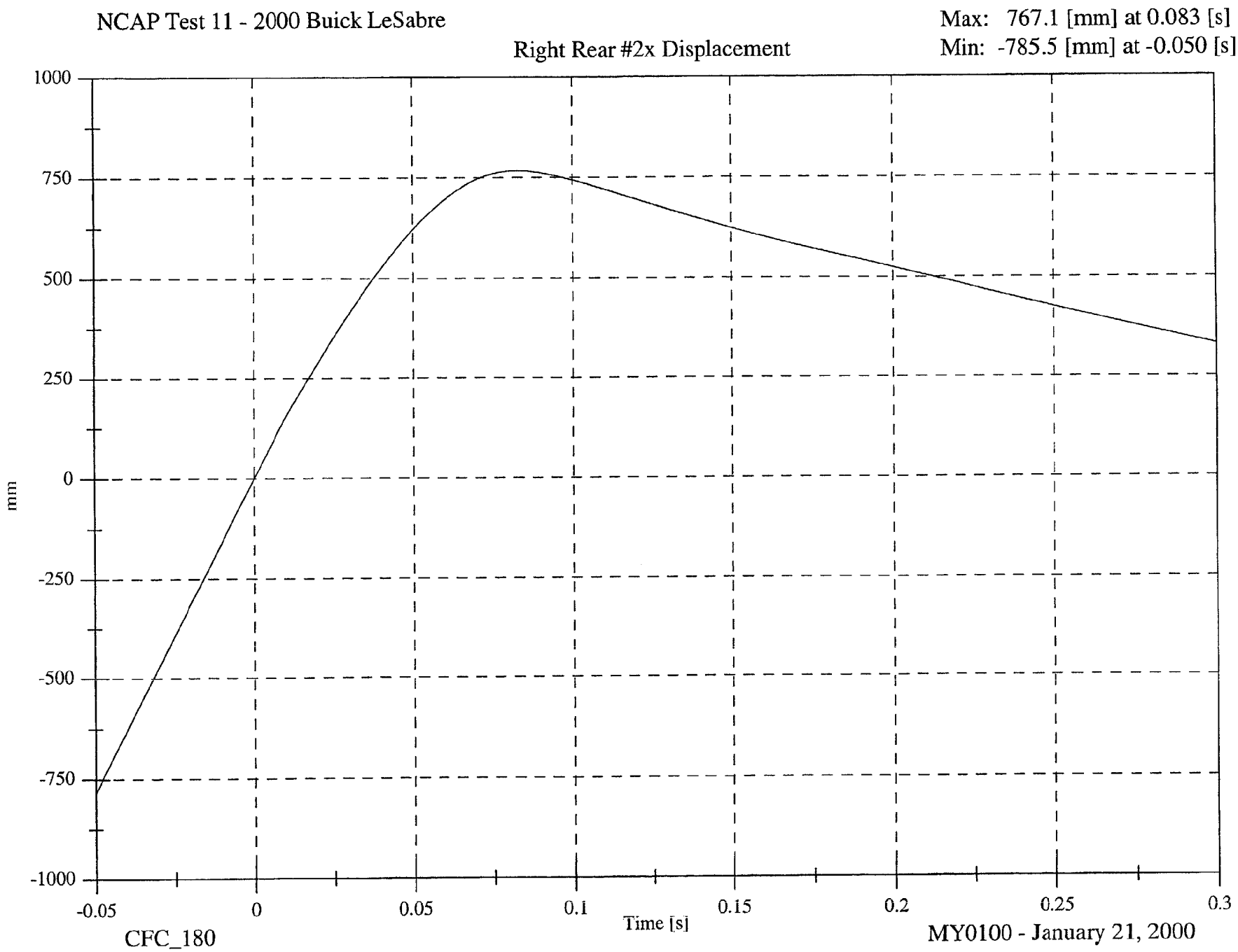
B-101

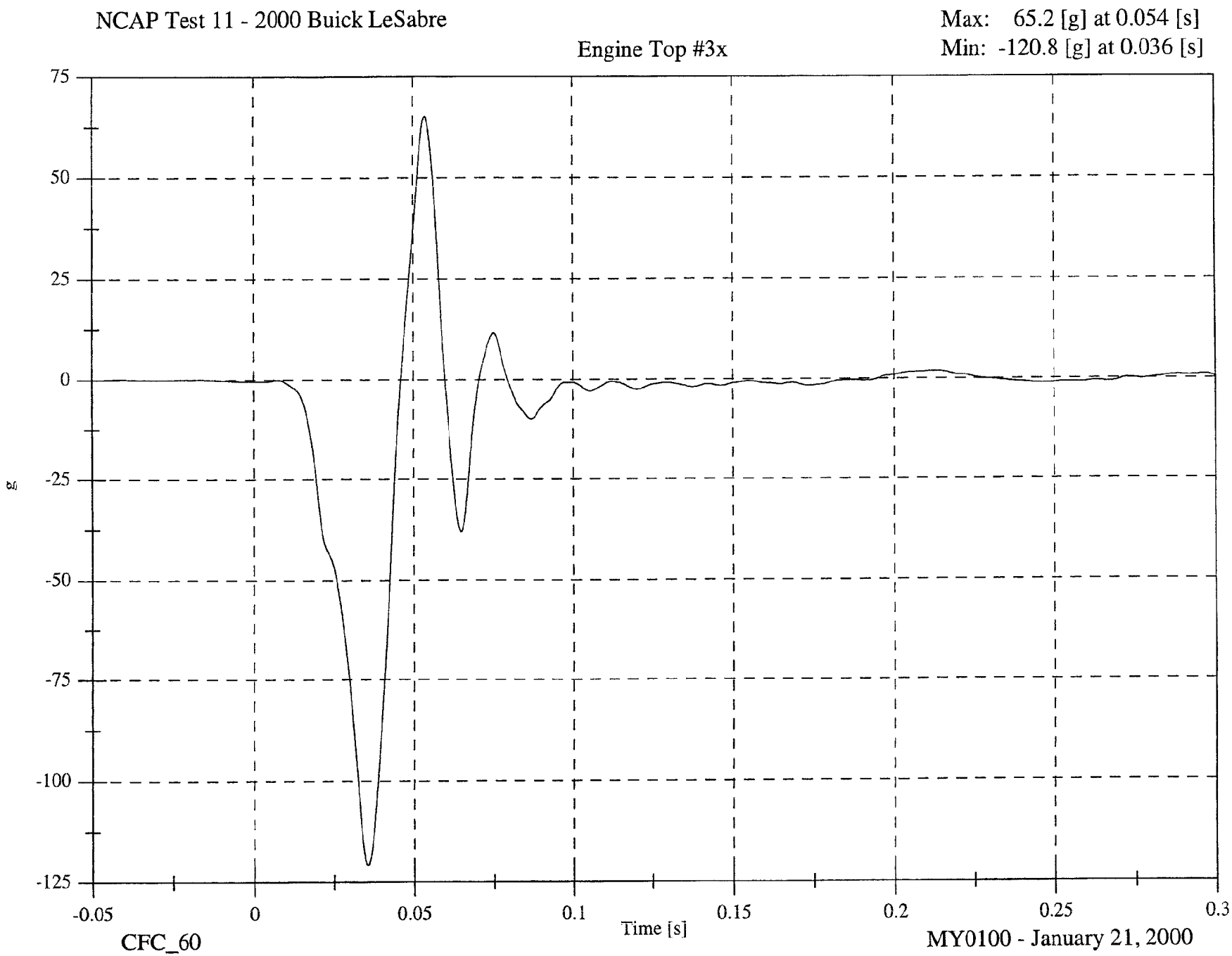
8413-50

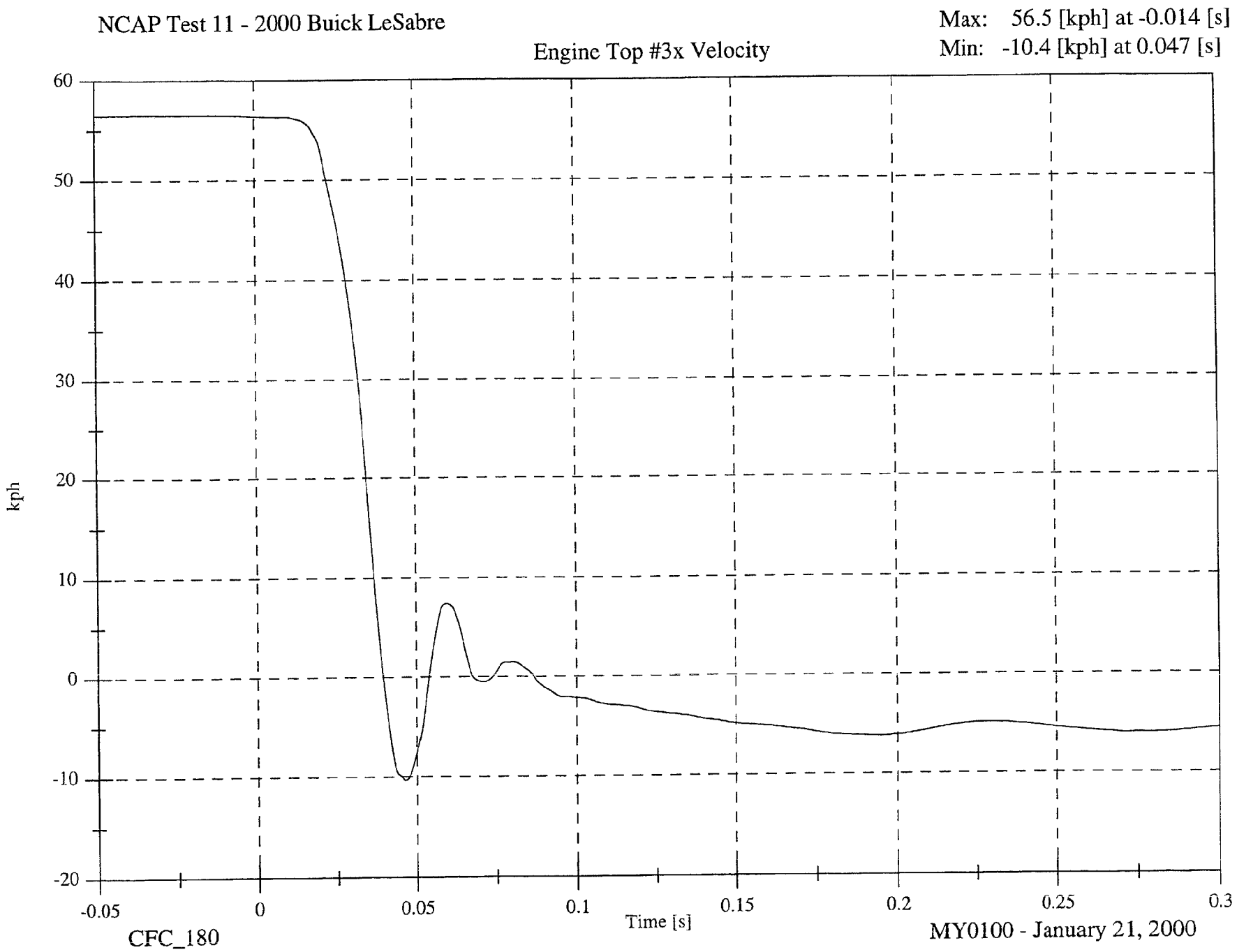

NCAP Test 11 - 2000 Buick LeSabre
Left Rear #1x Displacement
Max: 762.5 [mm] at 0.083 [s]
Min: -785.1 [mm] at -0.050 [s]
1000
750
500
250
0
-250
-500
-750
-1000
mm
-0.05
0
0.05
0.1
0.15
0.2
0.25
0.3
Time [s]
CFC_180
MY0100 - January 21, 2000

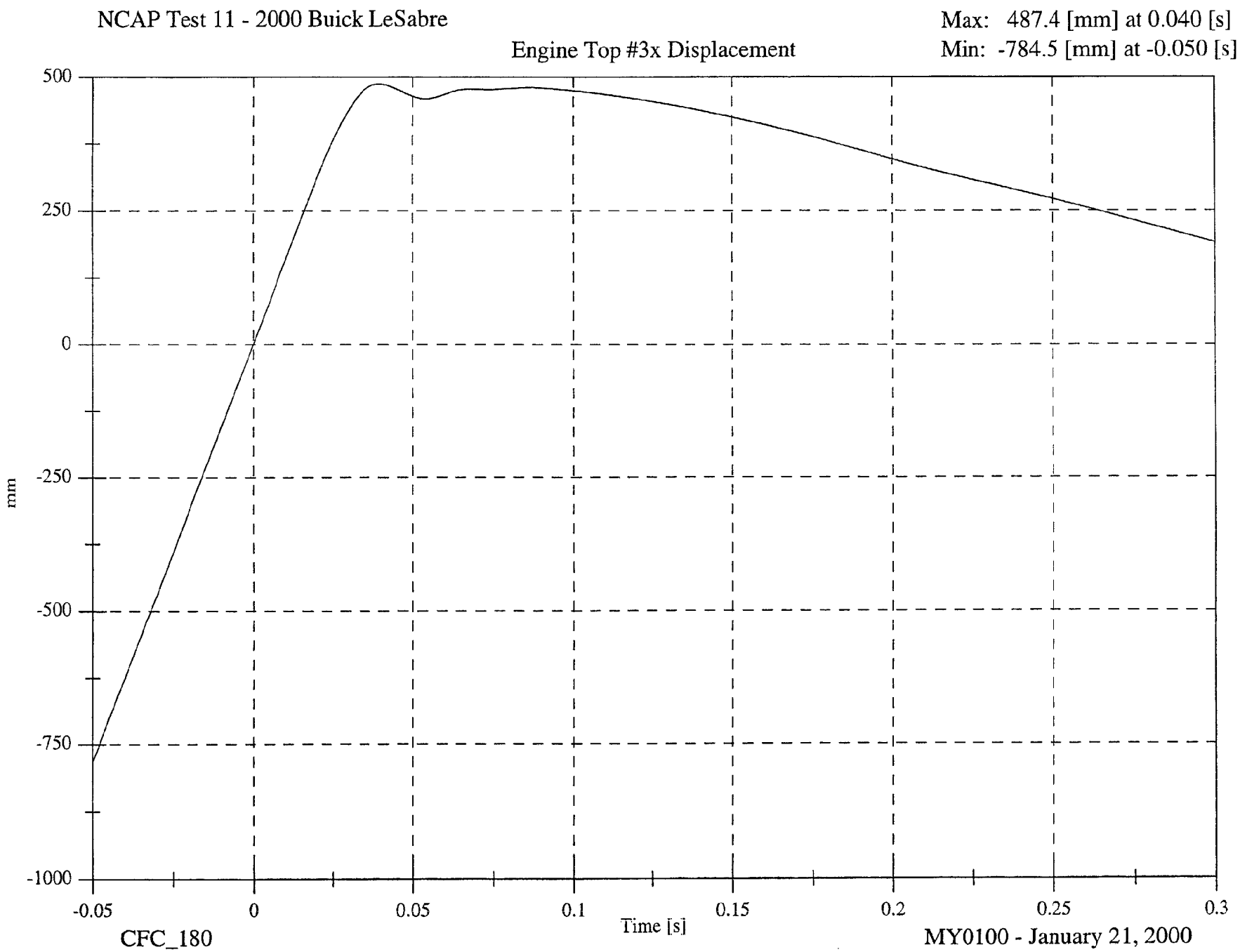

NCAP Test 11 - 2000 Buick LeSabre
Right Rear #2x
Max: 3.9 [g] at 0.019 [s]
Min: -31.9 [g] at 0.071 [s]
5
0
-5
-10
-15
-20
-25
-30
-35
g
-0.05
0
0.05
0.1
0.15
0.2
0.25
0.3
Time [s]
CFC_60
MY0100 - January 21, 2000

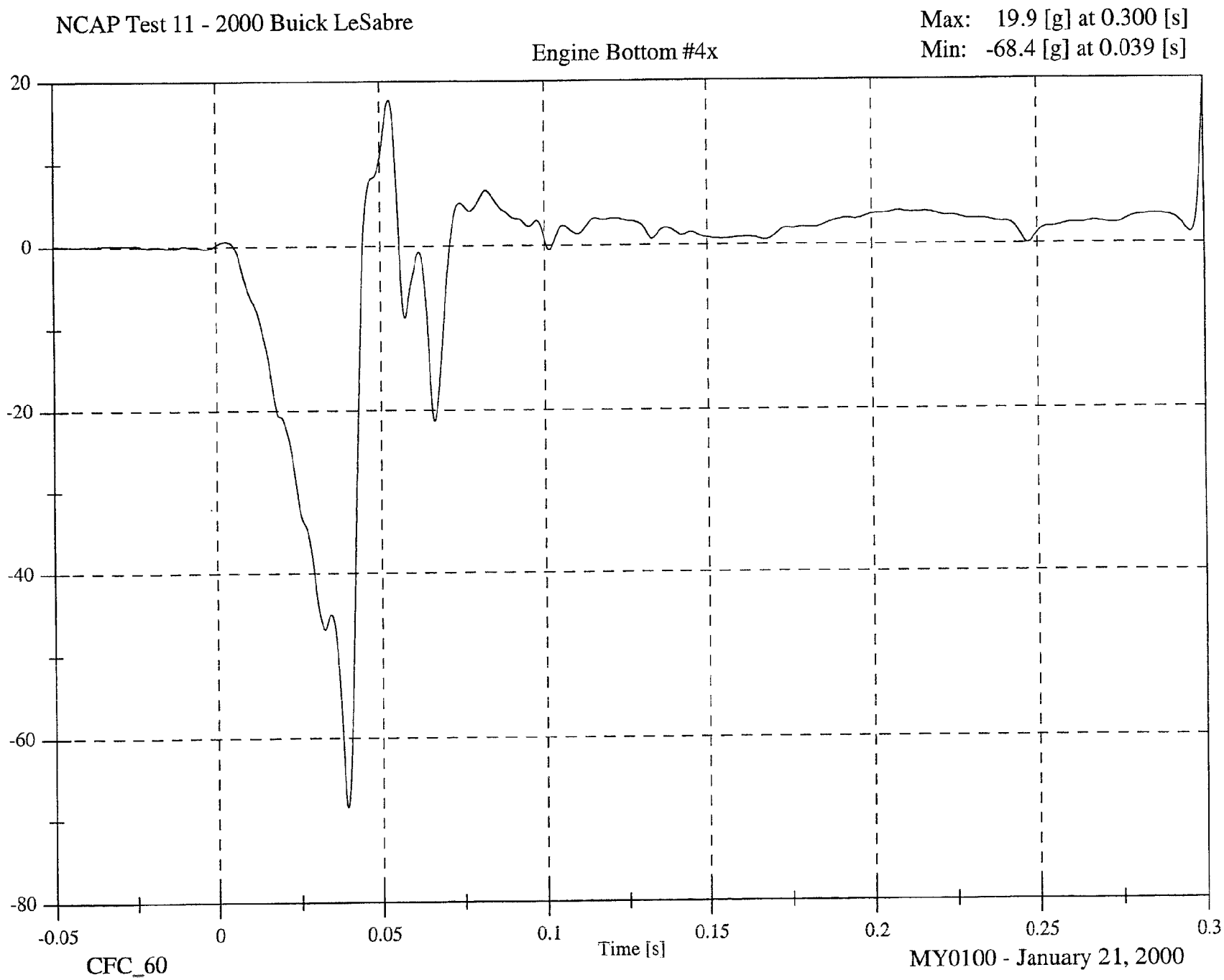

NCAP Test 11 - 2000 Buick LeSabre
Right Rear #2x Velocity
Max: 56.6 [kph] at -0.041 [s]
Min: -9.1 [kph] at 0.114 [s]
60
50
40
30
20
10
0
-10
kph
-0.05
0
0.05
0.1
0.15
0.2
0.25
0.3
Time [s]
CFC_180
MY0100 - January 21, 2000

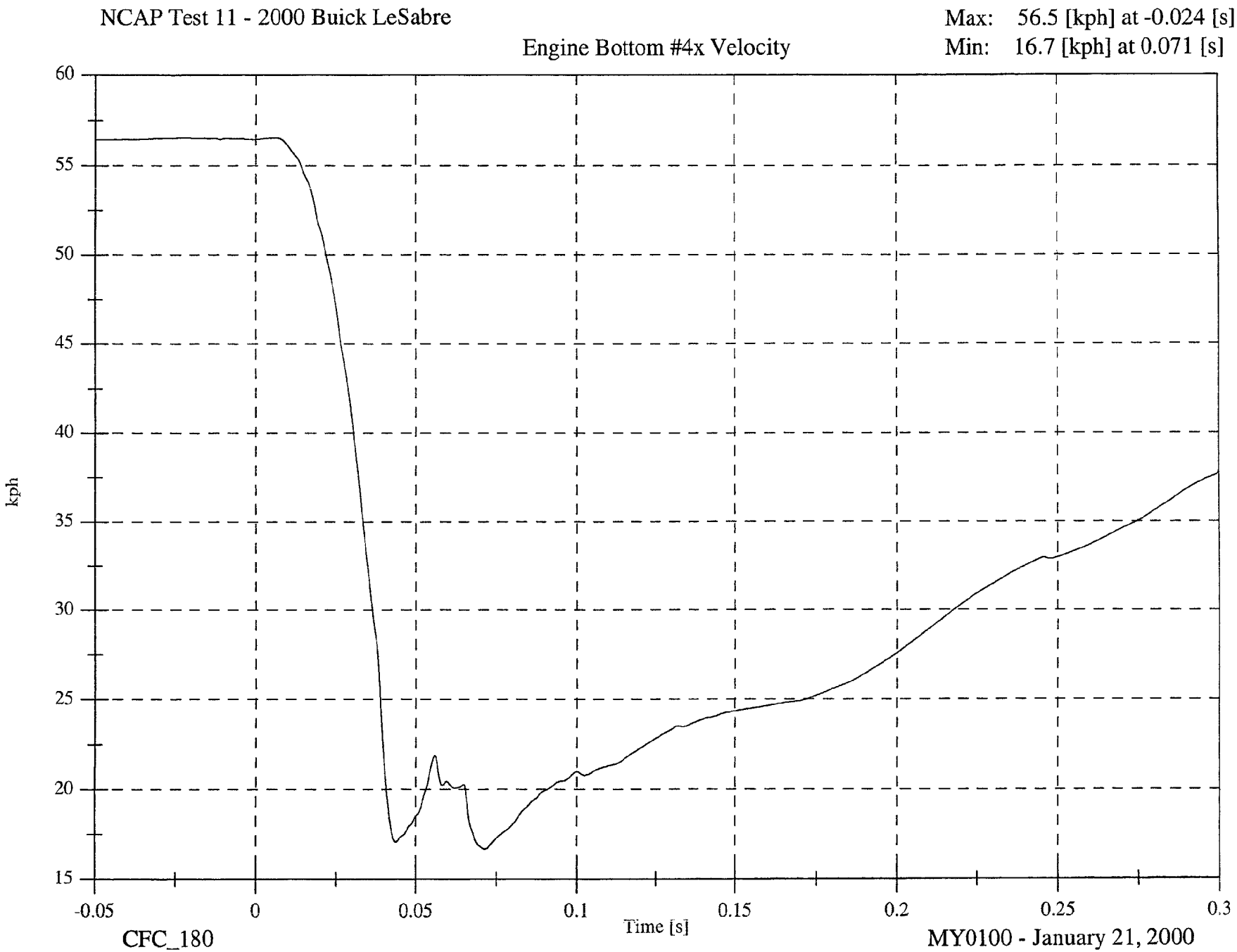

NCAP Test 11 - 2000 Buick LeSabre
Right Rear #2x Displacement
Max: 767.1 [mm] at 0.083 [s]
Min: -785.5 [mm] at -0.050 [s]
1000
750
500
250
0
-250
-500
-750
-1000
mm
-0.05
0
0.05
0.1
0.15
0.2
0.25
0.3
Time [s]
CFC_180
MY0100 - January 21, 2000


NCAP Test 11 - 2000 Buick LeSabre
Engine Top #3x
Max: 65.2 [g] at 0.054 [s]
Min: -120.8 [g] at 0.036 [s]
75
50
25
0
-25
-50
-75
-100
-125
g
-0.05
0
0.05
0.1
0.15
0.2
0.25
0.3
Time [s]
CFC_60
MY0100 - January 21, 2000


NCAP Test 11 - 2000 Buick LeSabre
Engine Top #3x Velocity
Max: 56.5 [kph] at -0.014 [s]
Min: -10.4 [kph] at 0.047 [s]
kph
60
50
40
30
20
10
0
-10
-20
-0.05
0
0.05
0.1
0.15
0.2
0.25
0.3
Time [s]
CFC_180
MY0100 - January 21, 2000


NCAP Test 11 - 2000 Buick LeSabre
Engine Top #3x Displacement
Max: 487.4 [mm] at 0.040 [s]
Min: -784.5 [mm] at -0.050 [s]
500
250
0
-250
-500
-750
-1000
mm
-0.05
0
0.05
0.1
0.15
0.2
0.25
0.3
Time [s]
CFC_180
MY0100 - January 21, 2000

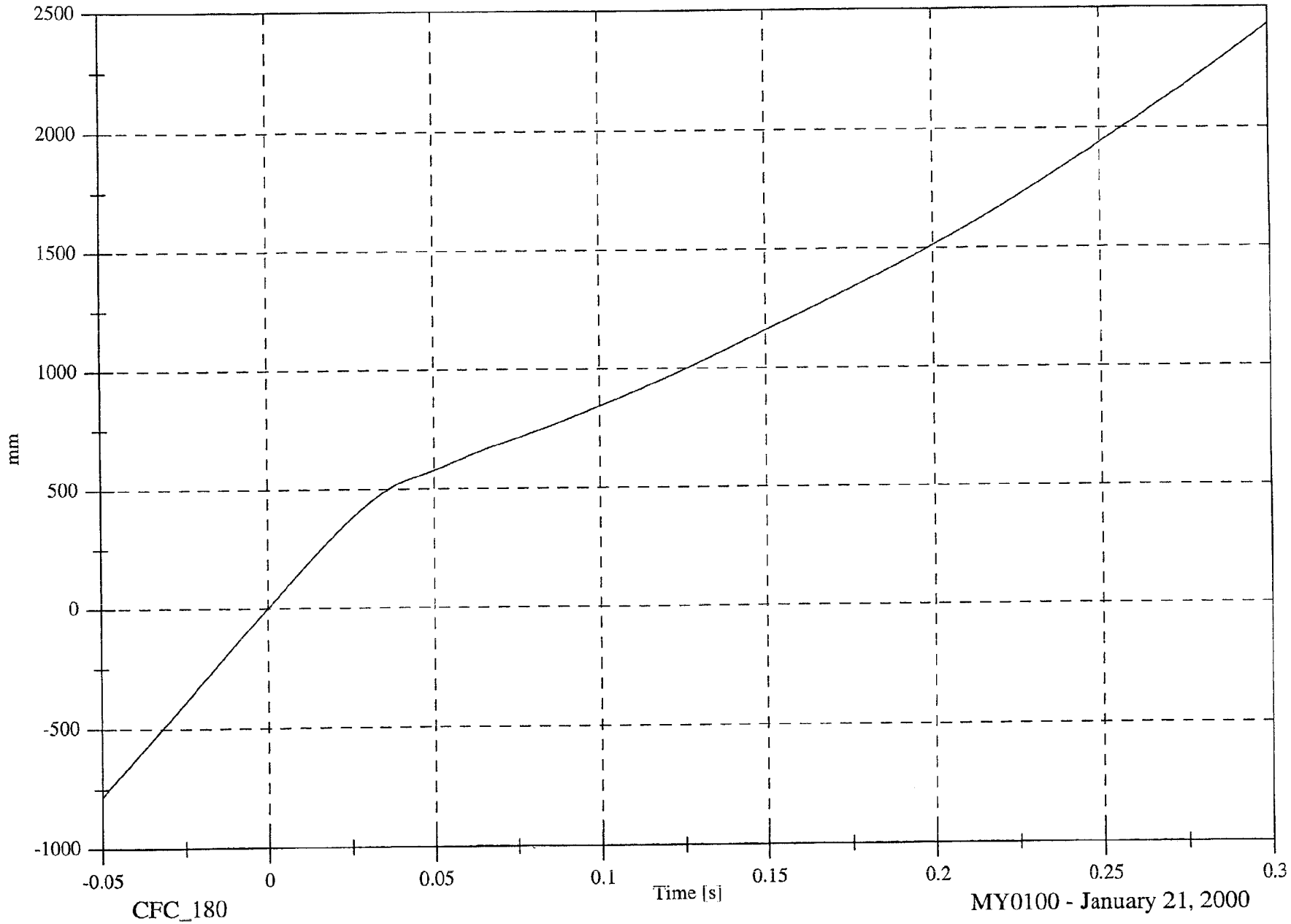

NCAP Test 11 - 2000 Buick LeSabre
Engine Bottom #4x
Max: 19.9 [g] at 0.300 [s]
Min: -68.4 [g] at 0.039 [s]
20
0
-20
-40
-60
-80
g
-0.05
0
0.05
0.1
0.15
0.2
0.25
0.3
Time [s]
CFC_60
MY0100 - January 21, 2000


NCAP Test 11 - 2000 Buick LeSabre
Engine Bottom #4x Velocity
Max: 56.5 [kph] at -0.024 [s]
Min: 16.7 [kph] at 0.071 [s]
kph
60
55
50
45
40
35
30
25
20
15
-0.05
0
0.05
0.1
0.15
0.2
0.25
0.3
Time [s]
CFC_180
MY0100 - January 21, 2000

NCAP Test 11 - 2000 Buick LeSabre

Engine Bottom #4x Displacement

Max: 2427.5 [mm] at 0.300 [s]
Min: -784.6 [mm] at -0.050 [s]

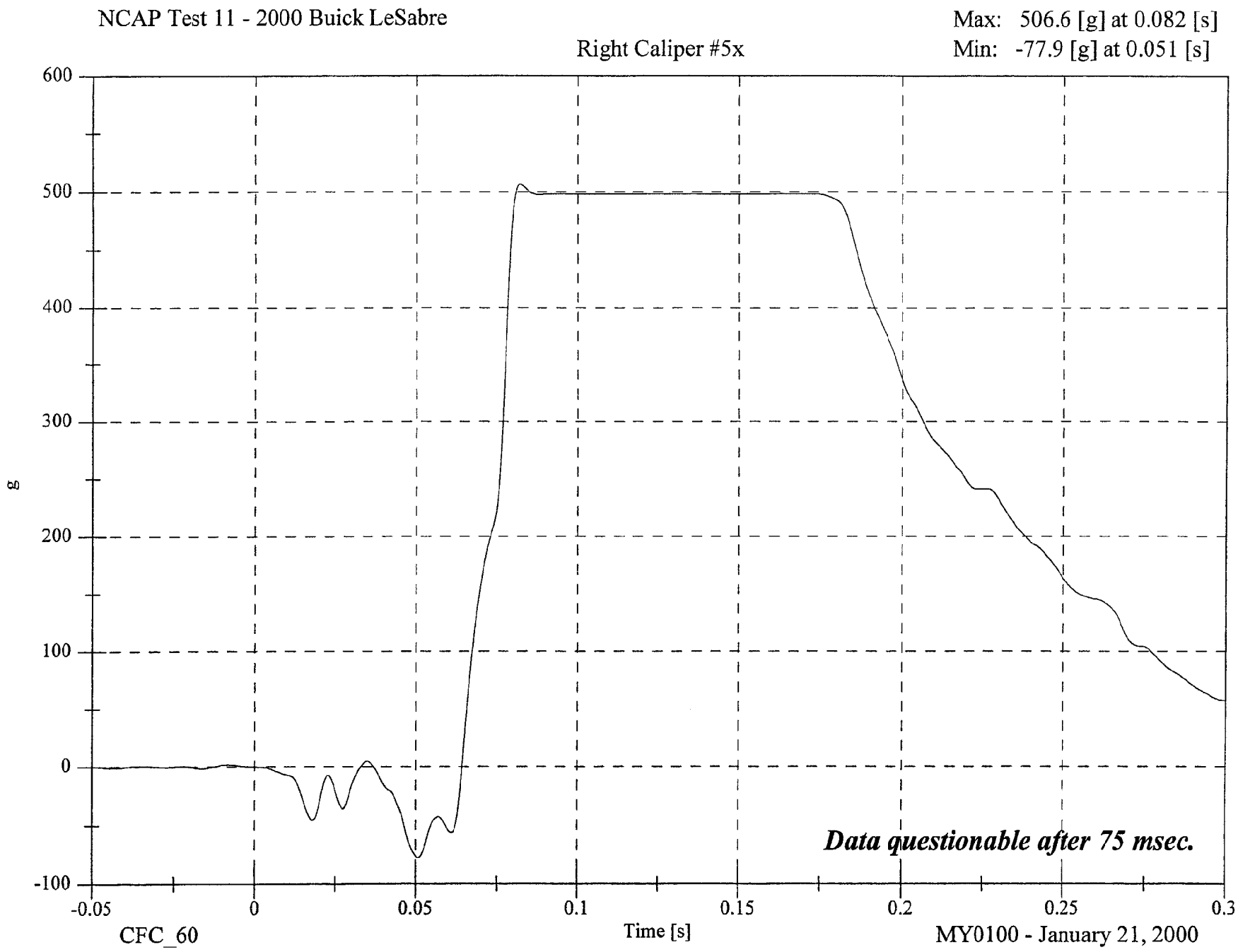


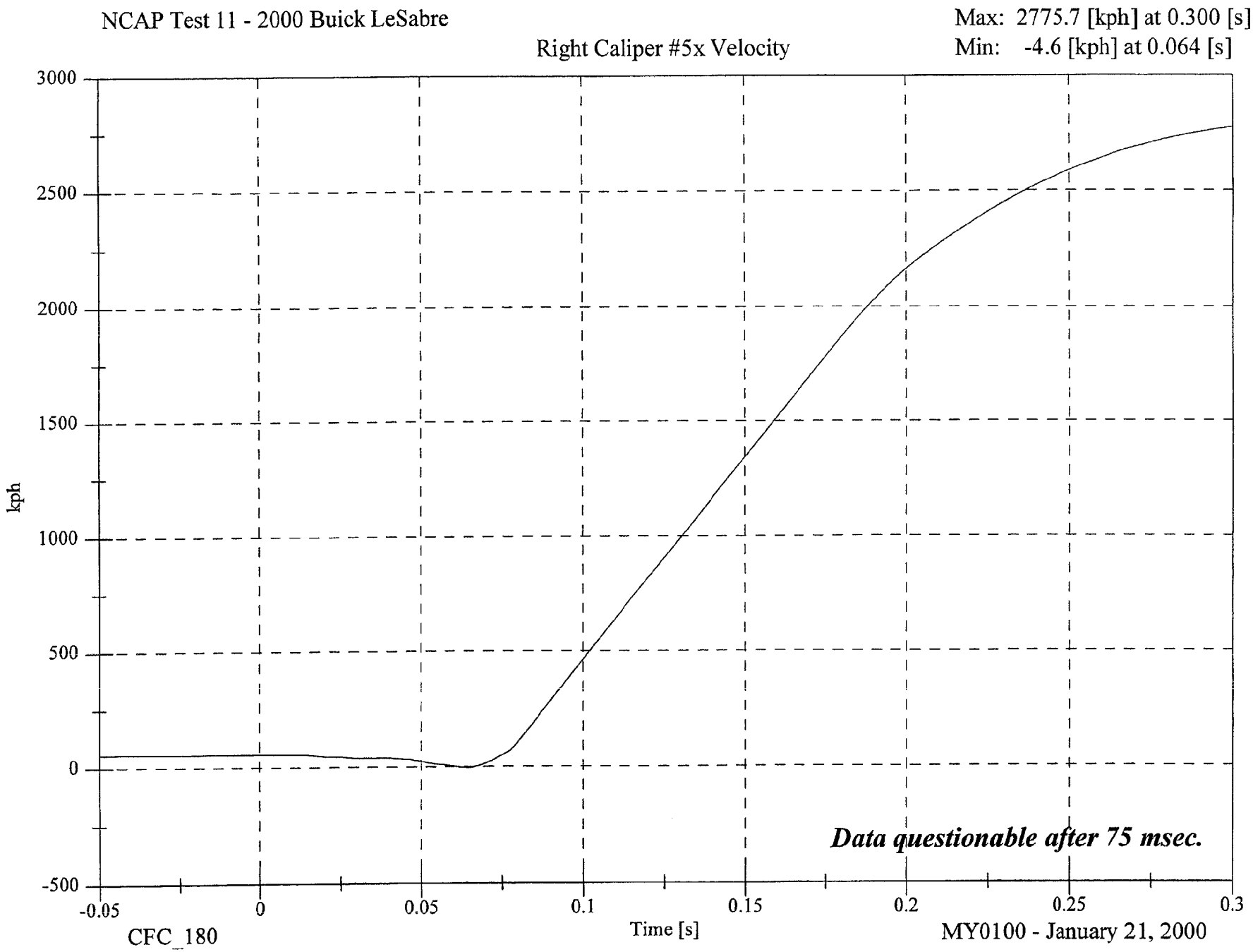
CFC_180

MY0100 - January 21, 2000

B-111

8413-50

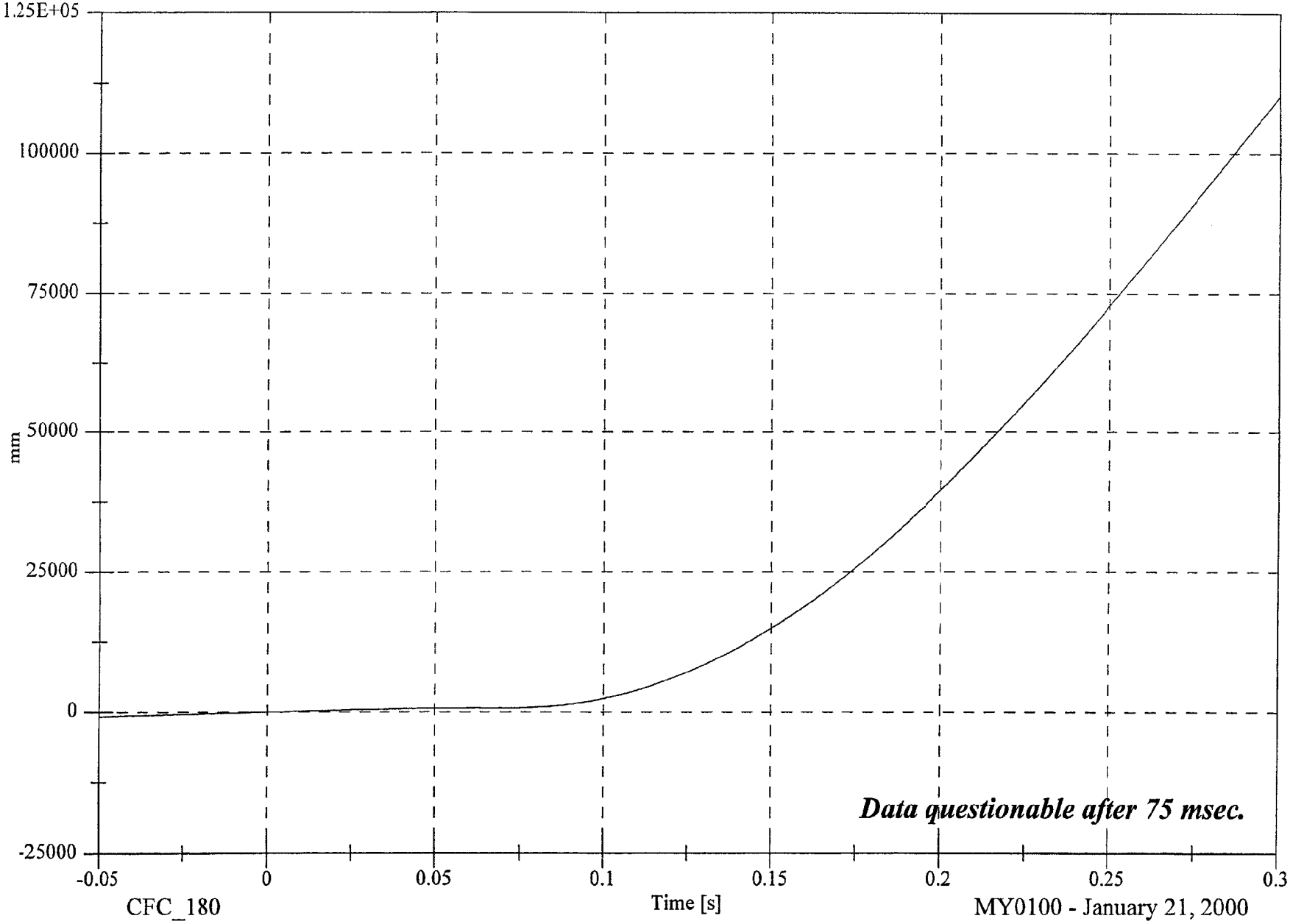

NCAP Test 11 - 2000 Buick LeSabre
Right Caliper #5x
Max: 506.6 [g] at 0.082 [s]
Min: -77.9 [g] at 0.051 [s]
600
500
400
300
200
100
0
-100
g
-0.05
0
0.05
0.1
0.15
0.2
0.25
0.3
Time [s]
Data questionable after 75 msec.
CFC_60
MY0100 - January 21, 2000


NCAP Test 11 - 2000 Buick LeSabre
Right Caliper #5x Velocity
Max: 2775.7 [kph] at 0.300 [s]
Min: -4.6 [kph] at 0.064 [s]
3000
2500
2000
1500
1000
500
0
-500
kph
-0.05
0
0.05
0.1
0.15
0.2
0.25
0.3
Time [s]
Data questionable after 75 msec.
CFC_180
MY0100 - January 21, 2000

NCAP Test 11 - 2000 Buick LeSabre

Right Caliper #5x Displacement

Max: 110309.6 [mm] at 0.300 [s]
Min: -786.8 [mm] at -0.050 [s]

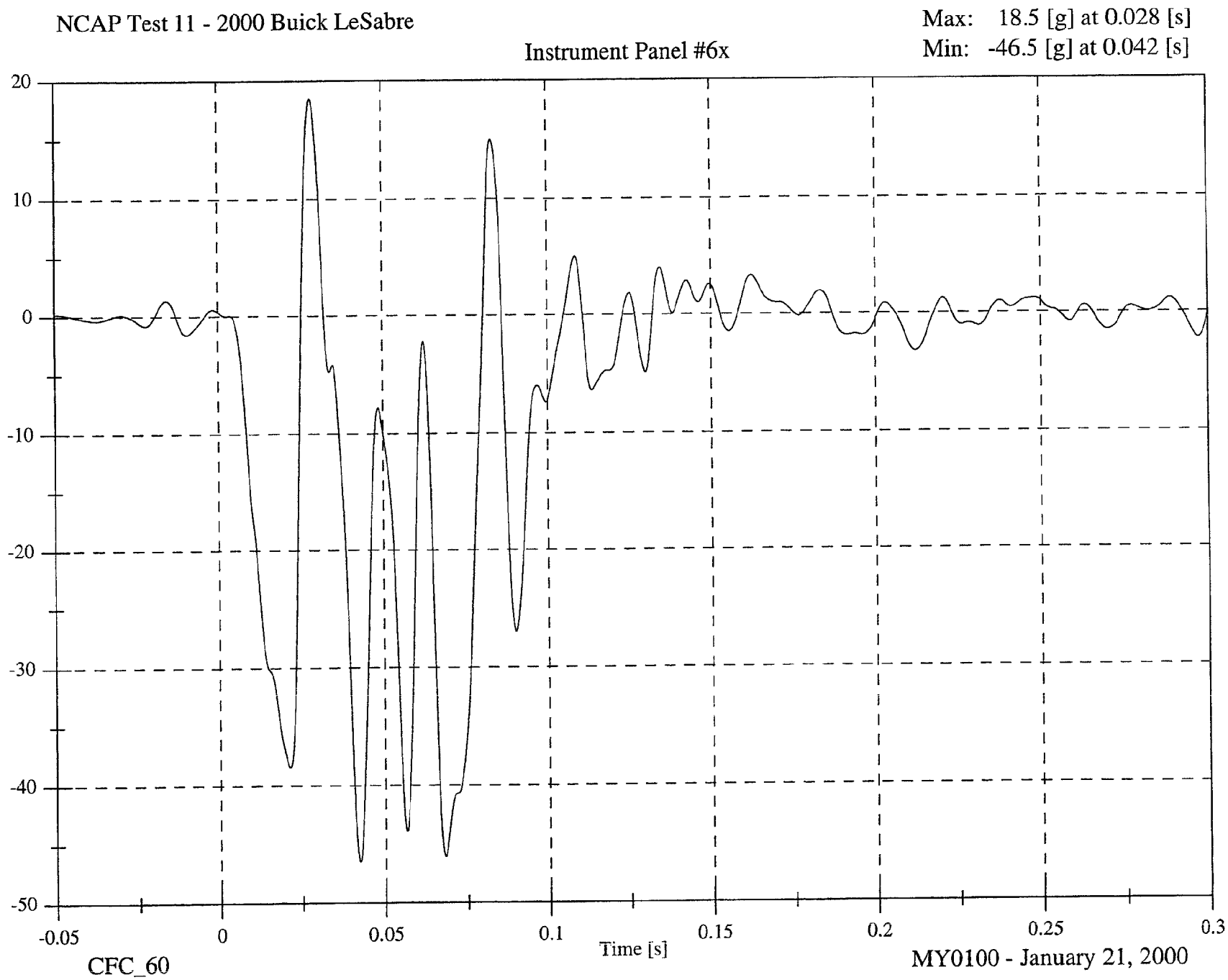


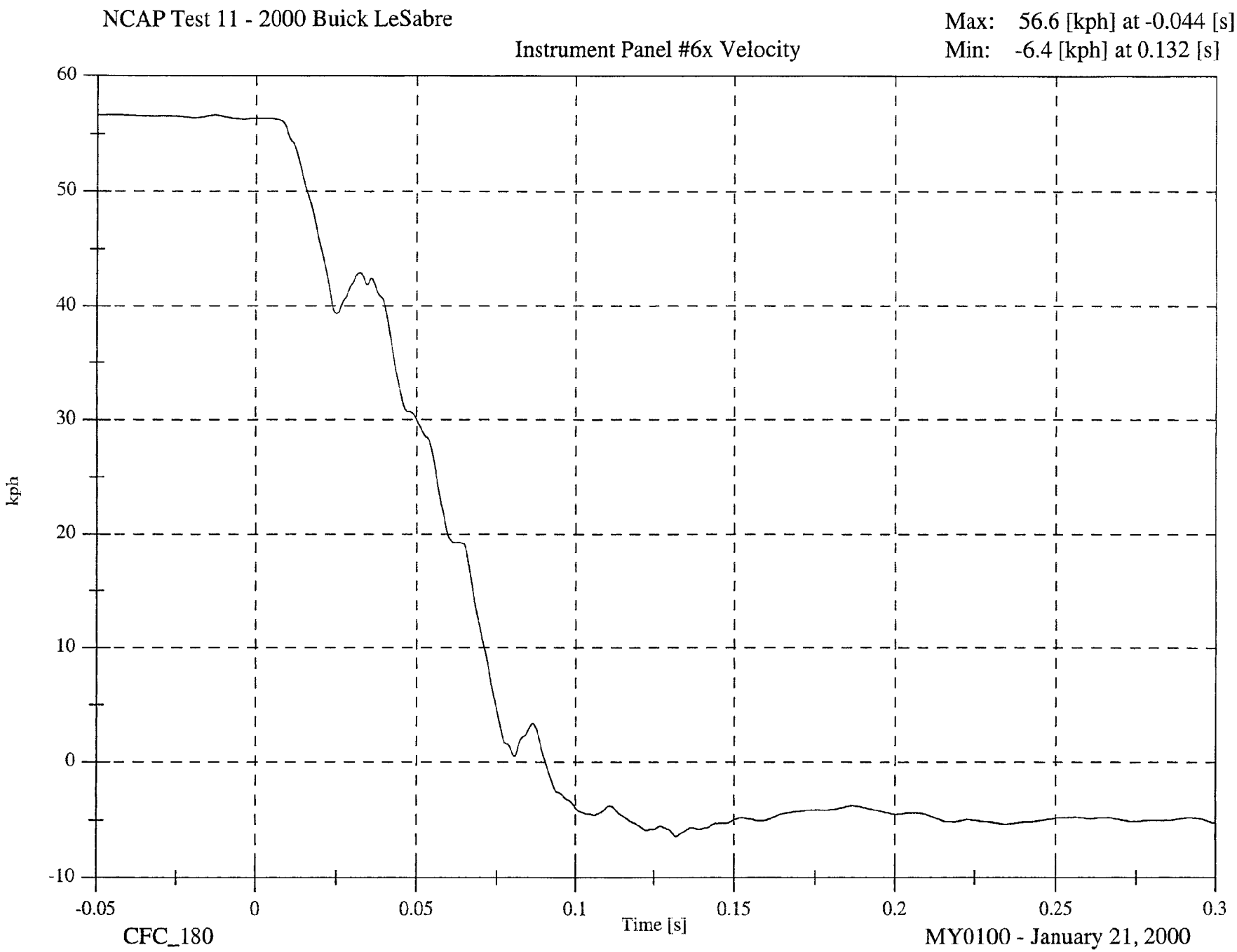
CFC_180

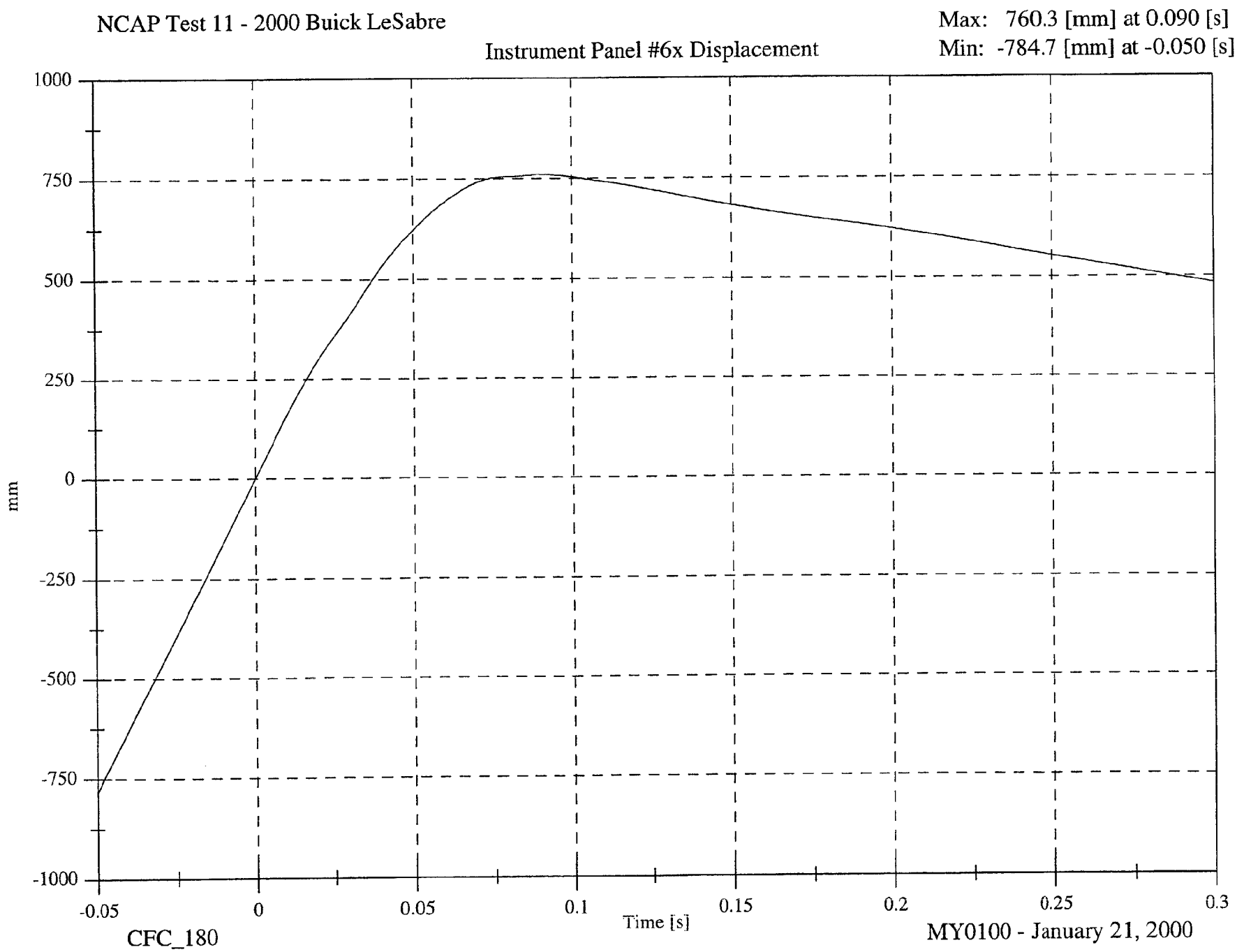
MY0100 - January 21, 2000

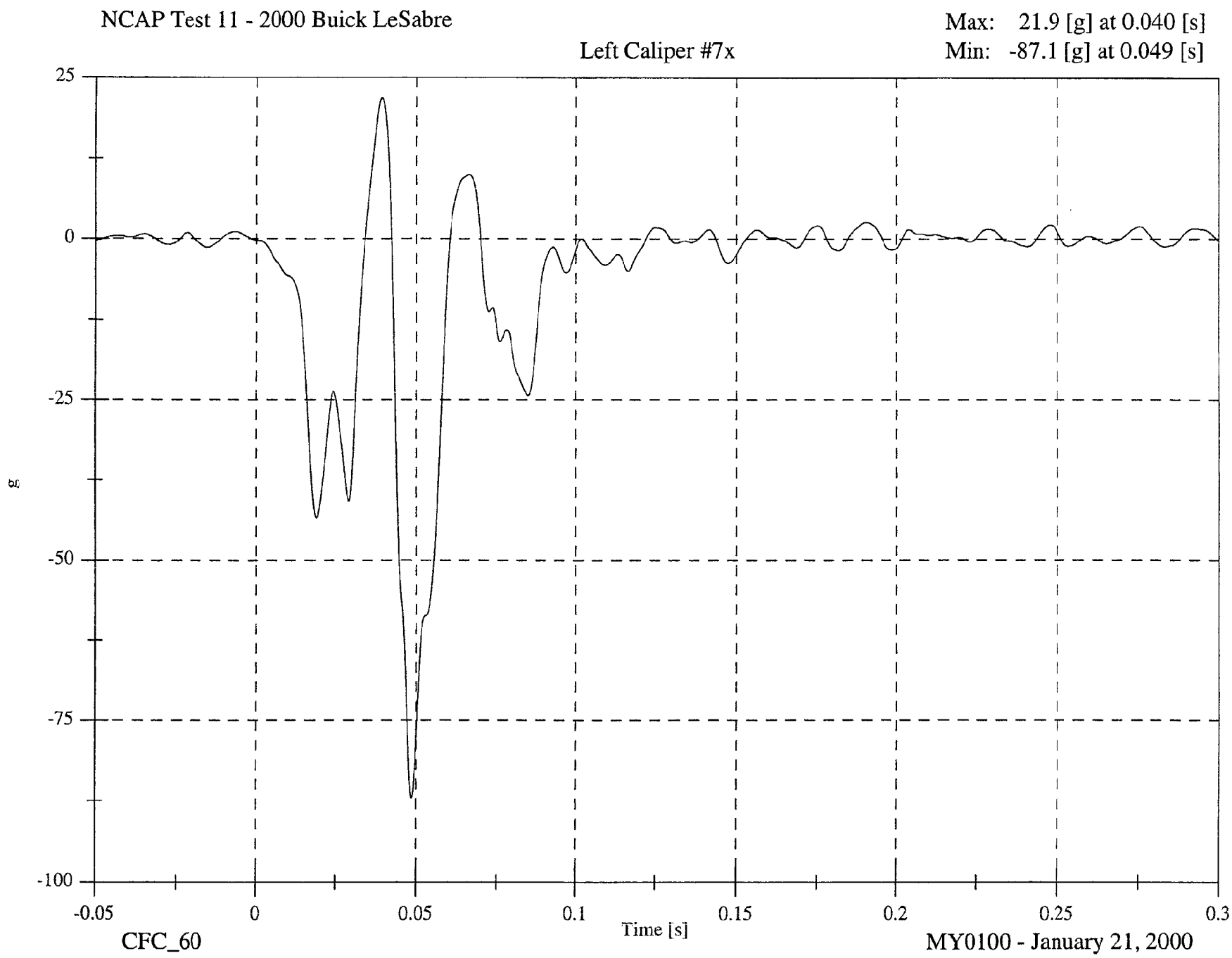
B-114

8413-50


NCAP Test 11 - 2000 Buick LeSabre
Instrument Panel #6x
Max: 18.5 [g] at 0.028 [s]
Min: -46.5 [g] at 0.042 [s]
20
10
0
-10
-20
-30
-40
-50
g
-0.05
0
0.05
0.1
0.15
0.2
0.25
0.3
Time [s]
CFC_60
MY0100 - January 21, 2000


NCAP Test 11 - 2000 Buick LeSabre
Instrument Panel #6x Velocity
Max: 56.6 [kph] at -0.044 [s]
Min: -6.4 [kph] at 0.132 [s]
60
50
40
30
20
10
0
-10
kph
-0.05
0
0.05
0.1
0.15
0.2
0.25
0.3
Time [s]
CFC_180
MY0100 - January 21, 2000

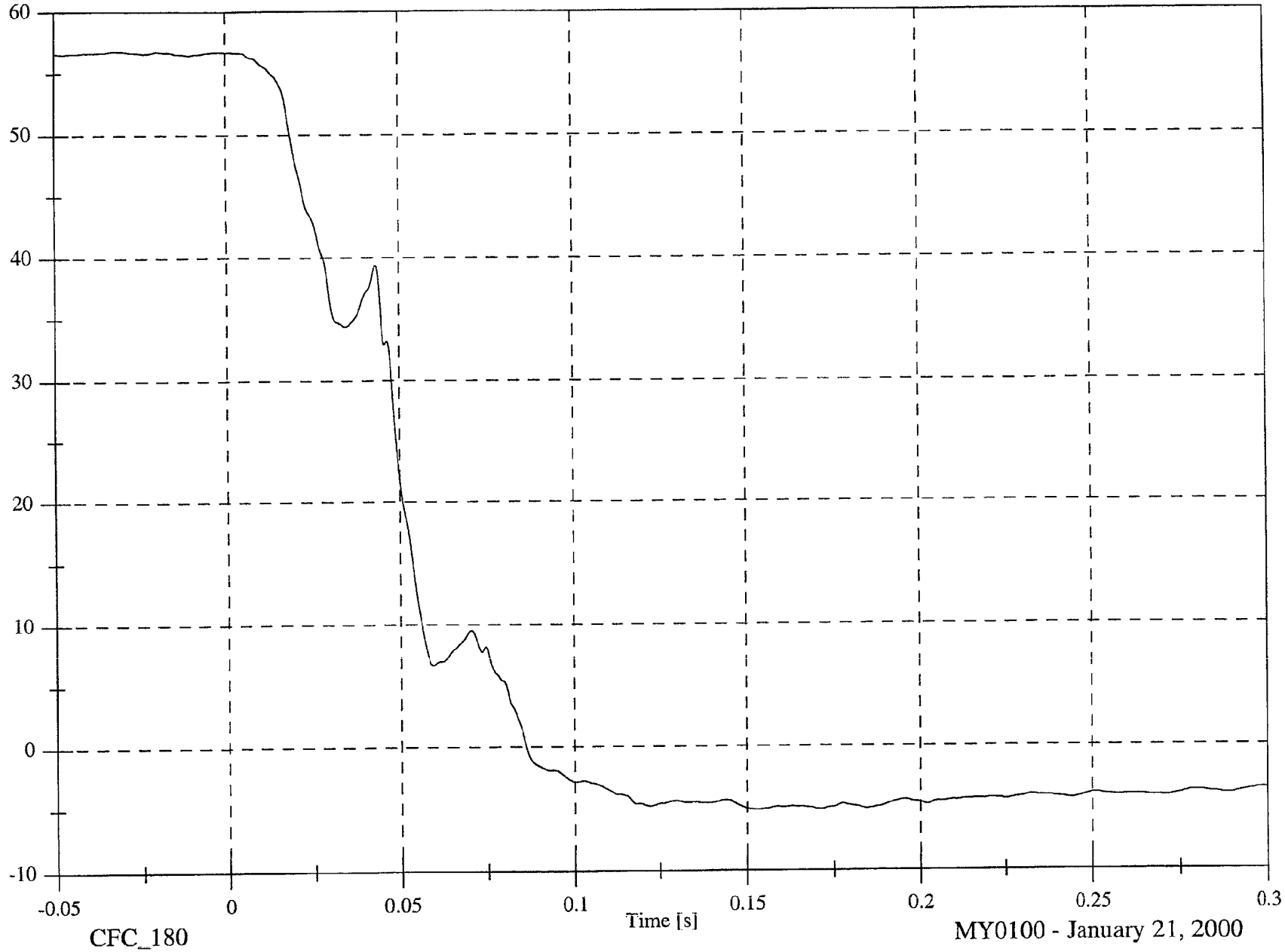

NCAP Test 11 - 2000 Buick LeSabre
Instrument Panel #6x Displacement
Max: 760.3 [mm] at 0.090 [s]
Min: -784.7 [mm] at -0.050 [s]
1000
750
500
250
0
-250
-500
-750
-1000
mm
-0.05
0
0.05
0.1
0.15
0.2
0.25
0.3
Time [s]
CFC_180
MY0100 - January 21, 2000


NCAP Test 11 - 2000 Buick LeSabre
Left Caliper #7x
Max: 21.9 [g] at 0.040 [s]
Min: -87.1 [g] at 0.049 [s]
25
0
-25
-50
-75
-100
g
-0.05
0
0.05
0.1
0.15
0.2
0.25
0.3
Time [s]
CFC_60
MY0100 - January 21, 2000

NCAP Test 11 - 2000 Buick LeSabre

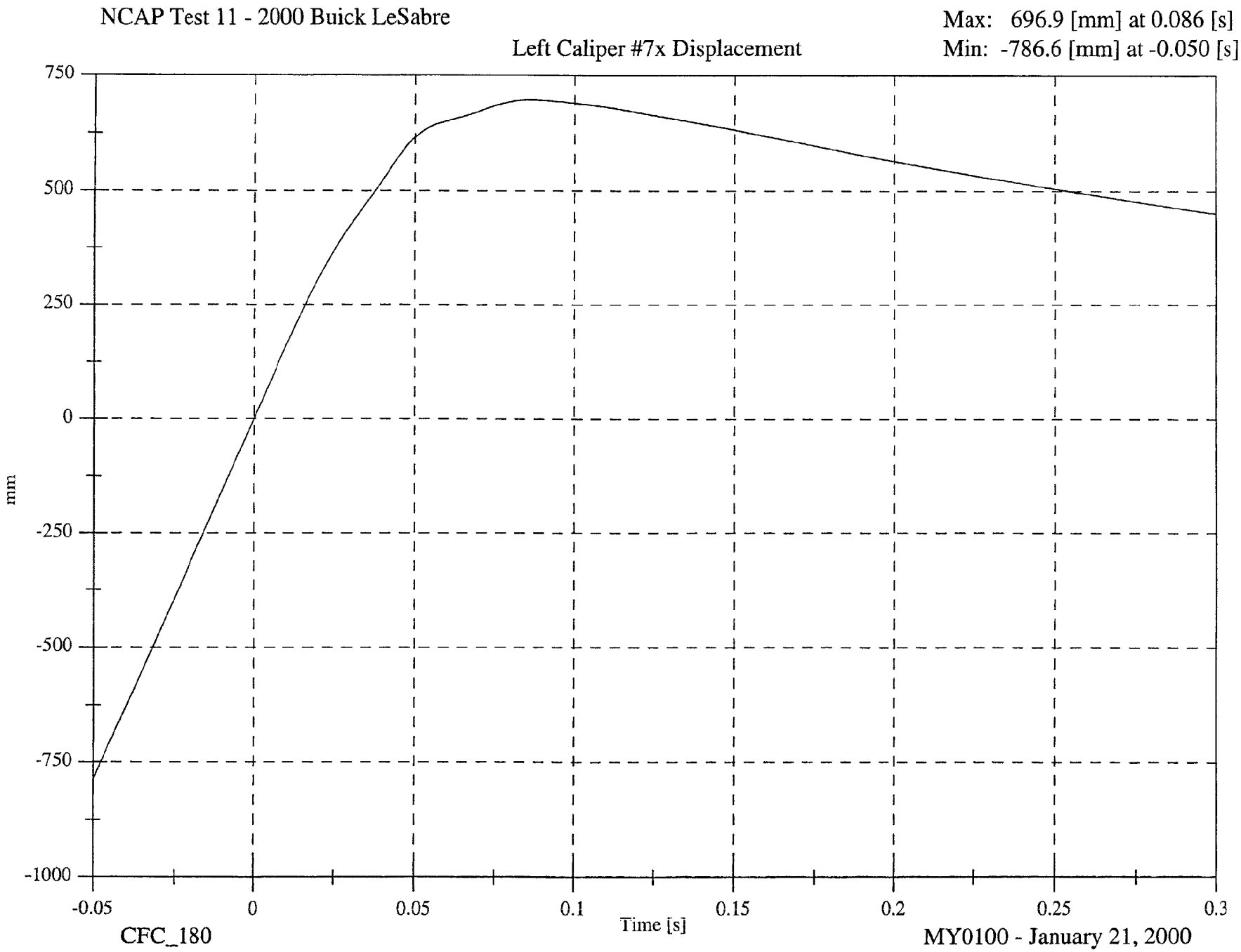
Left Caliper #7x Velocity

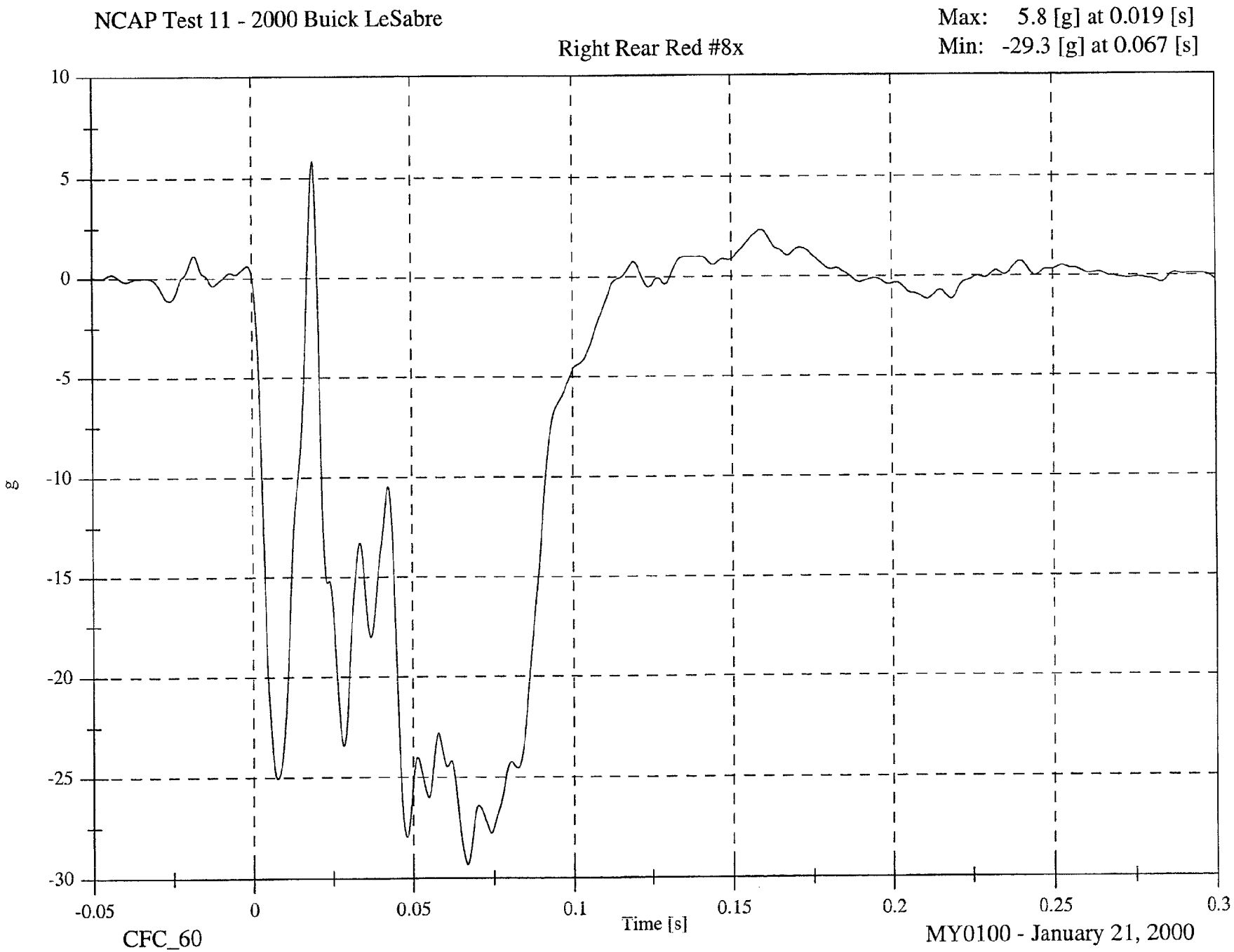
Max: 56.8 [kph] at -0.031 [s]
Min: -5.1 [kph] at 0.171 [s]



CFC_180

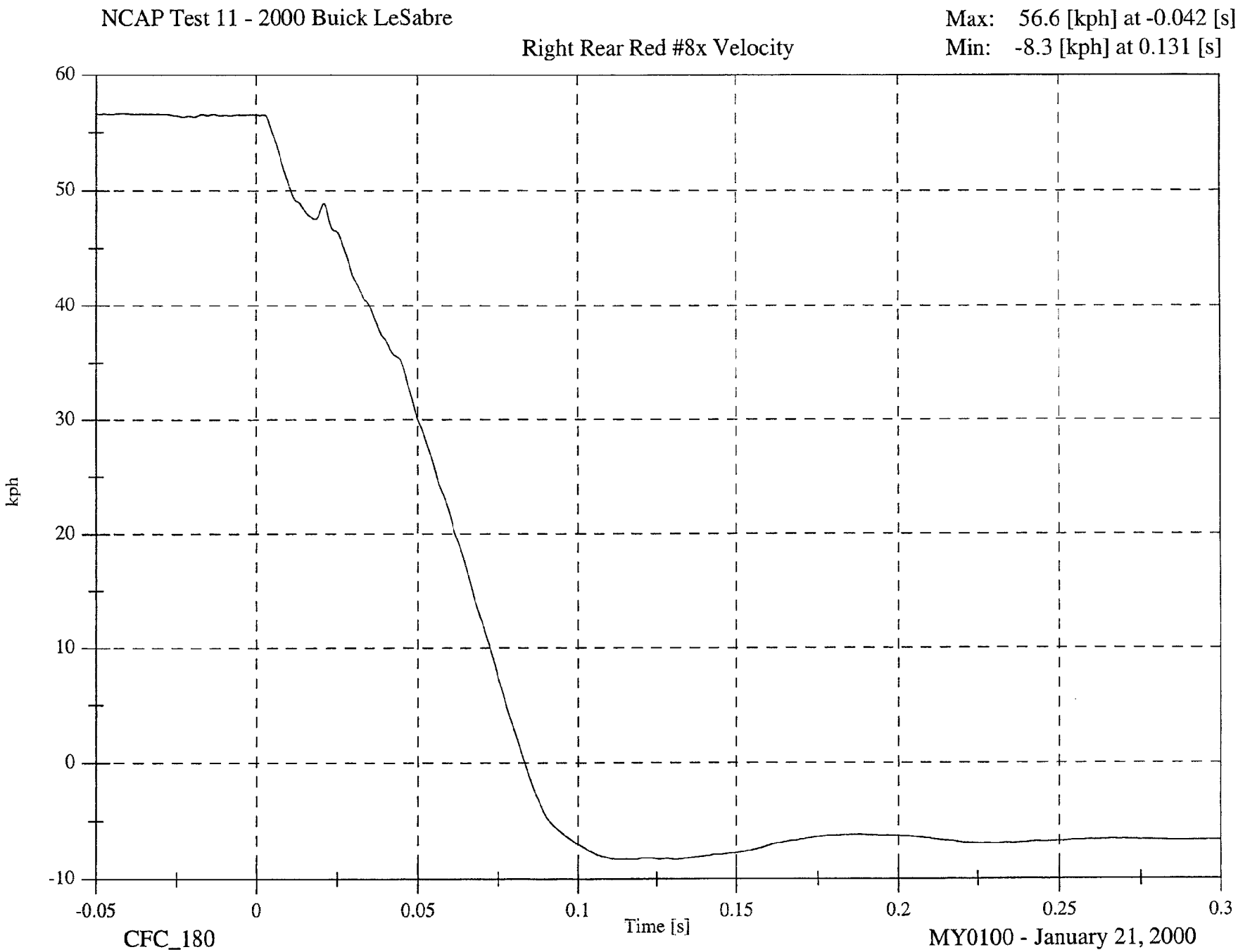
MY0100 - January 21, 2000

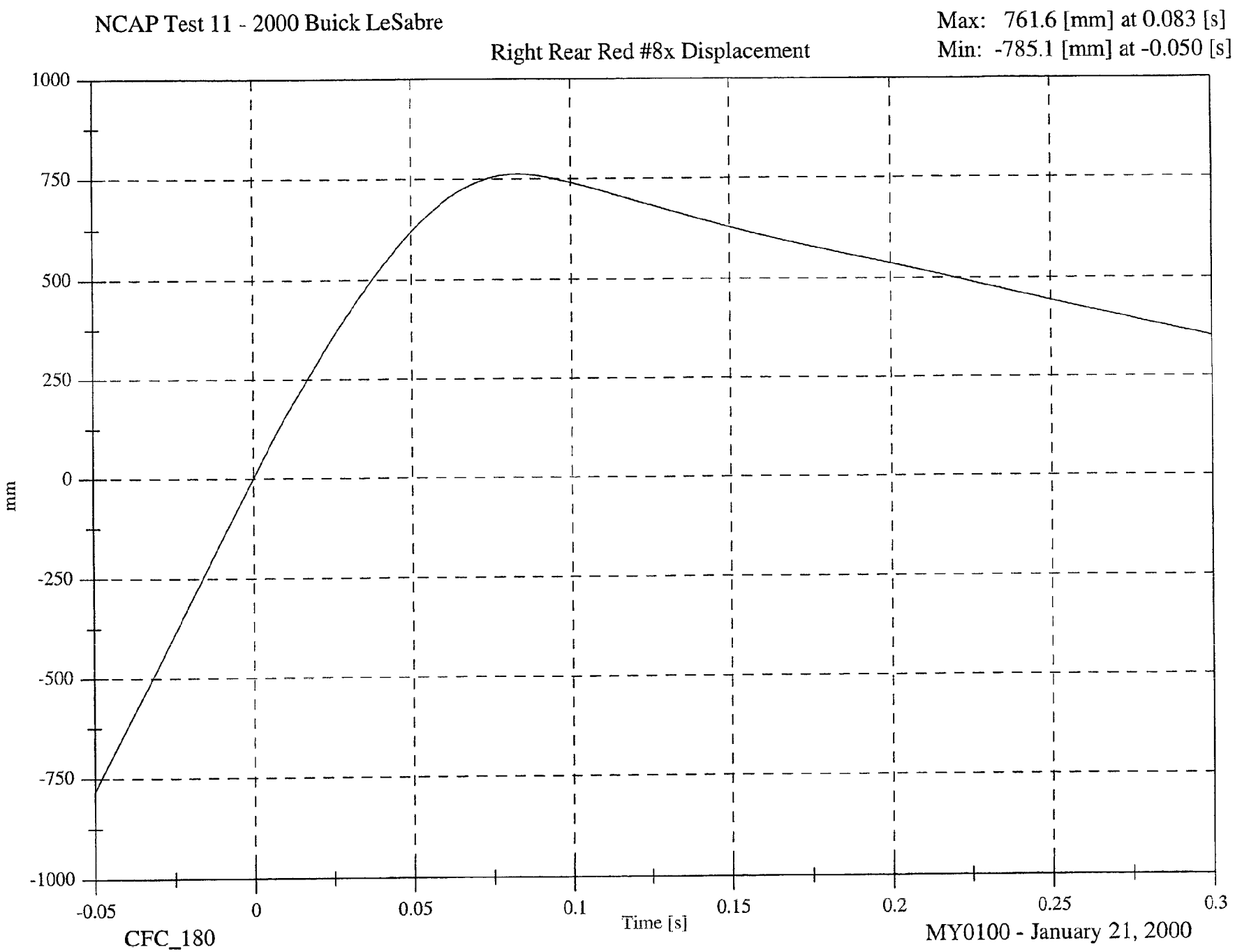

NCAP Test 11 - 2000 Buick LeSabre
Left Caliper #7x Displacement
Max: 696.9 [mm] at 0.086 [s]
Min: -786.6 [mm] at -0.050 [s]
750
500
250
0
-250
-500
-750
-1000
mm
-0.05
0
0.05
0.1
0.15
0.2
0.25
0.3
Time [s]
CFC_180
MY0100 - January 21, 2000

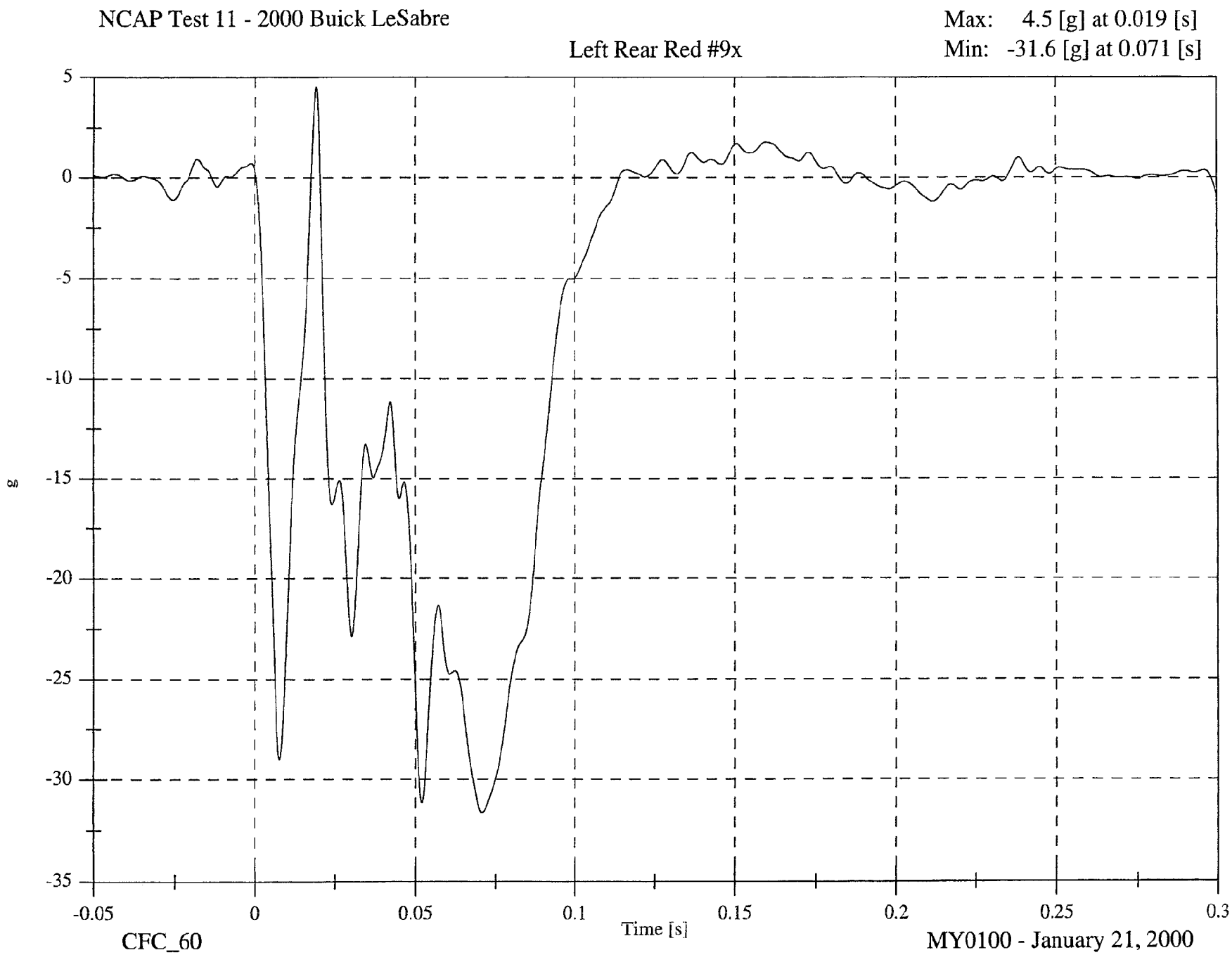

NCAP Test 11 - 2000 Buick LeSabre
Right Rear Red #8x
Max: 5.8 [g] at 0.019 [s]
Min: -29.3 [g] at 0.067 [s]
10
5
0
-5
-10
-15
-20
-25
-30
g
-0.05
0
0.05
0.1
0.15
0.2
0.25
0.3
Time [s]
CFC_60
MY0100 - January 21, 2000

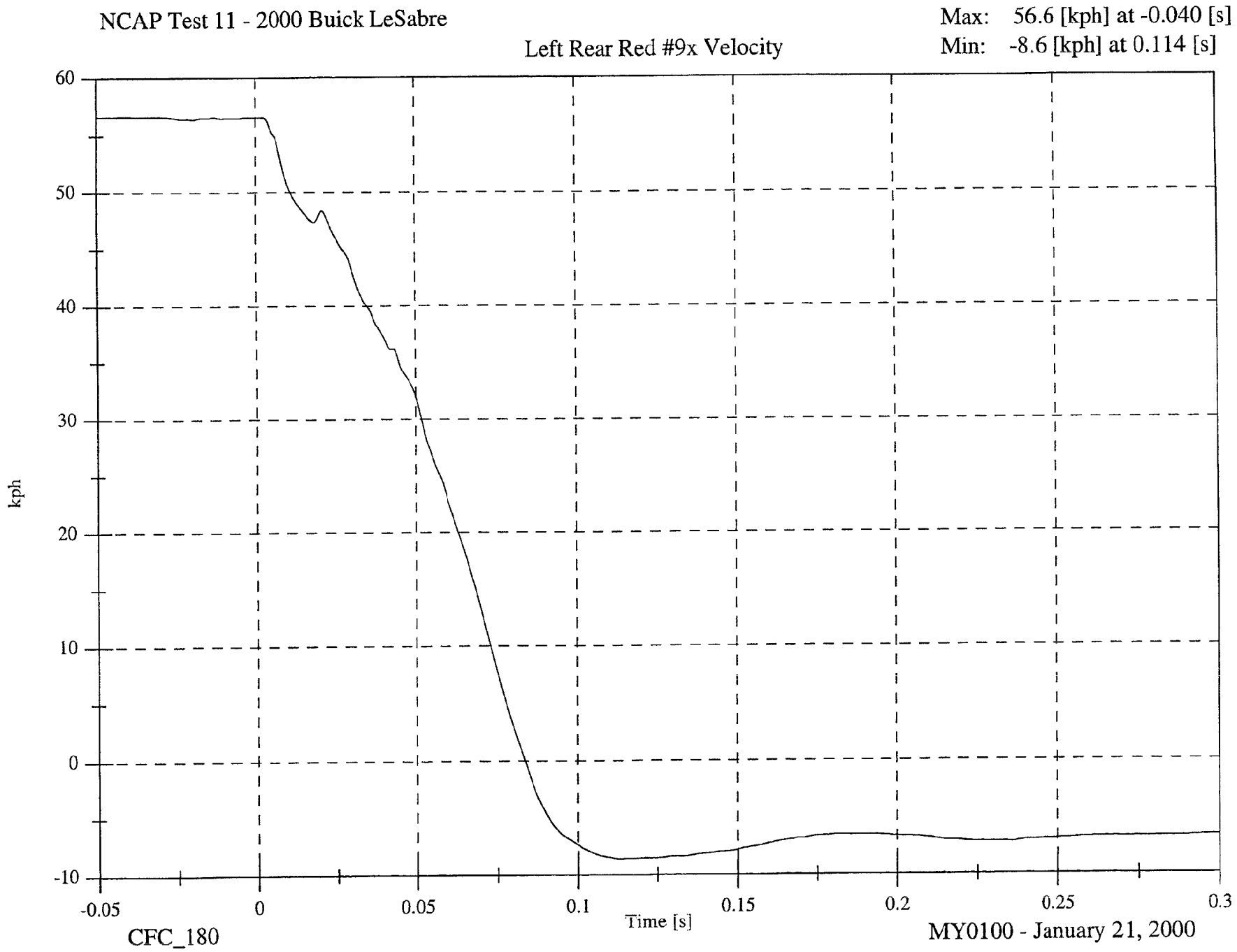
B-121

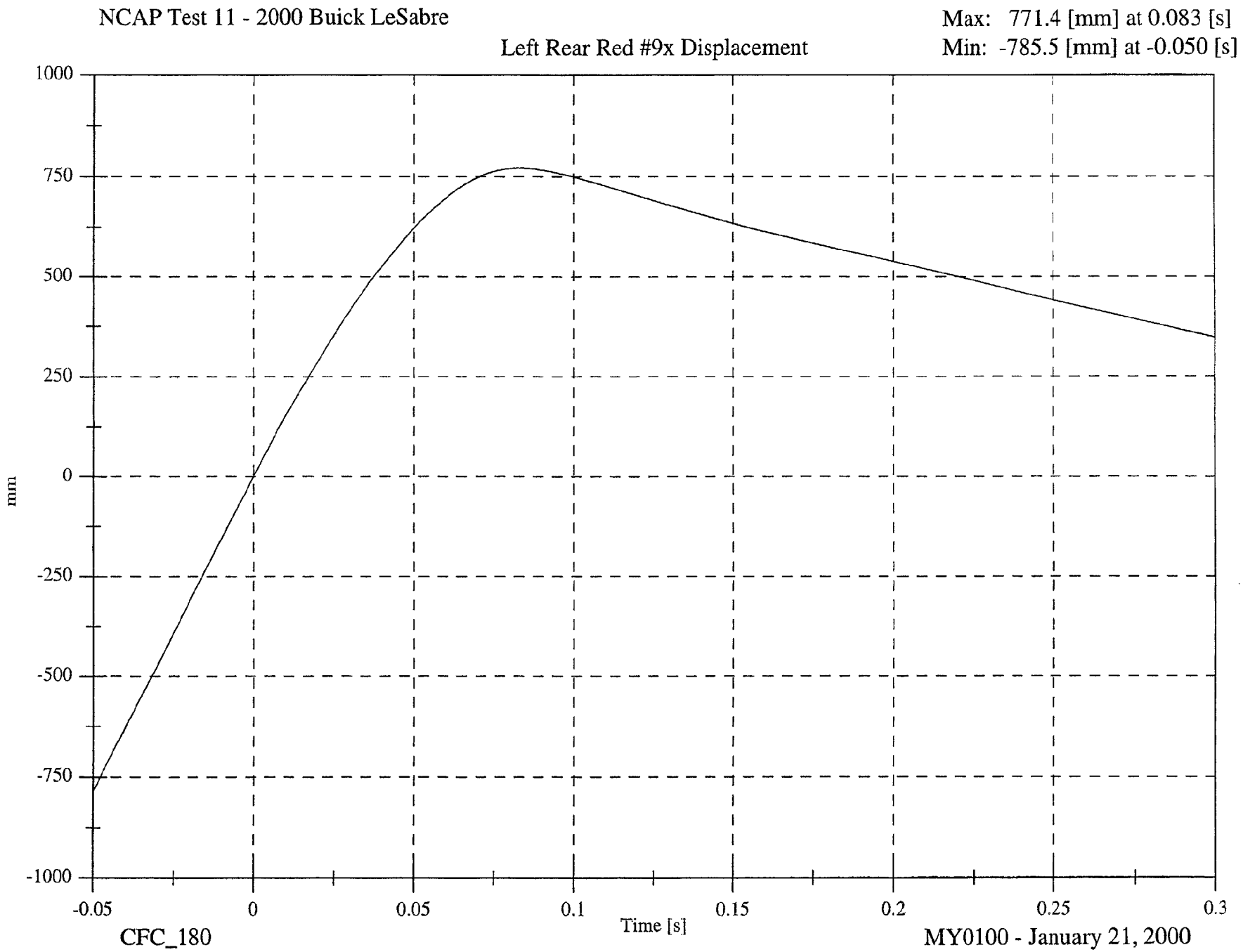
8413-50

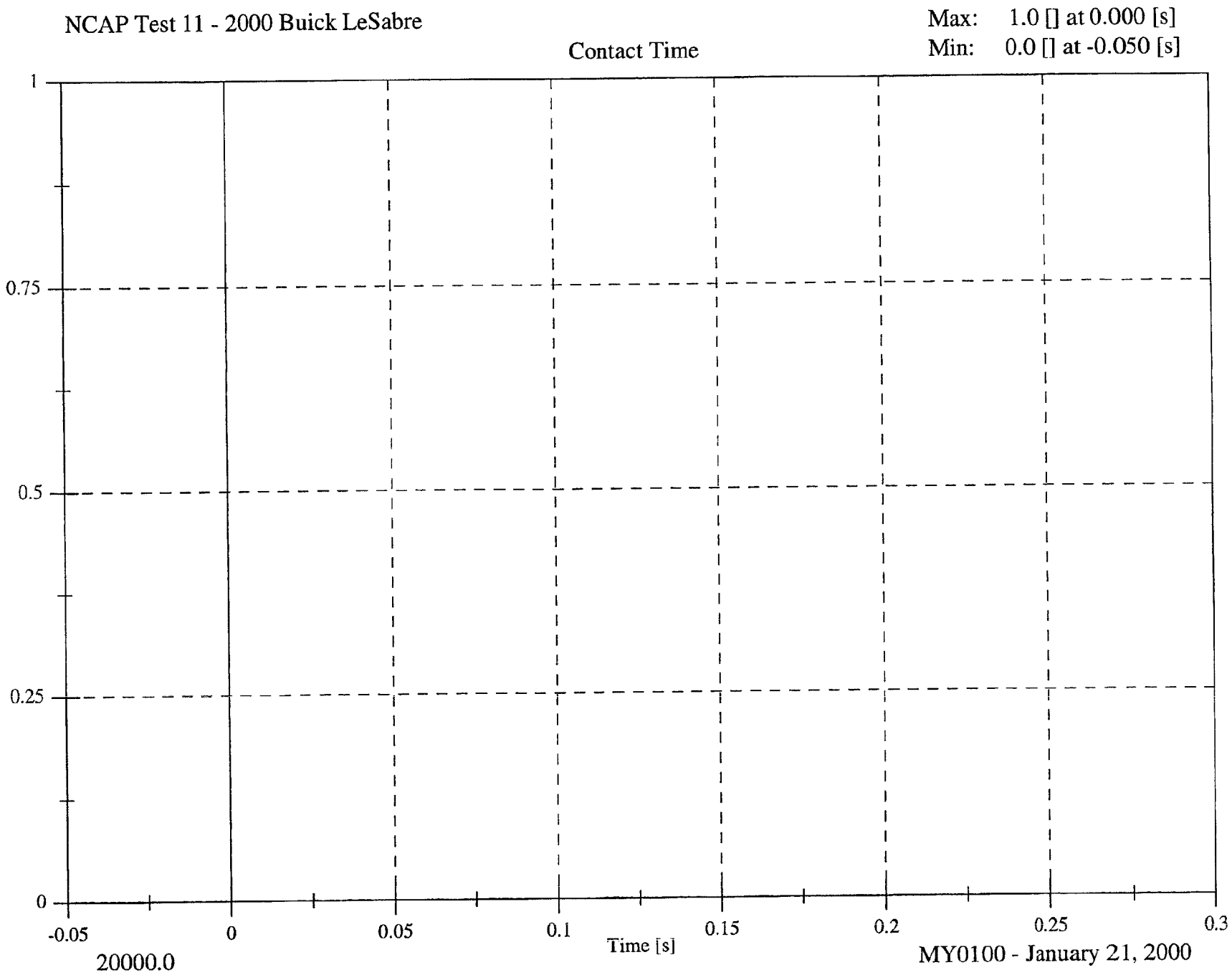

NCAP Test 11 - 2000 Buick LeSabre
Right Rear Red #8x Velocity
Max: 56.6 [kph] at -0.042 [s]
Min: -8.3 [kph] at 0.131 [s]
60
50
40
30
20
10
0
-10
kph
-0.05
0
0.05
0.1
0.15
0.2
0.25
0.3
Time [s]
CFC_180
MY0100 - January 21, 2000


NCAP Test 11 - 2000 Buick LeSabre
Right Rear Red #8x Displacement
Max: 761.6 [mm] at 0.083 [s]
Min: -785.1 [mm] at -0.050 [s]
1000
750
500
250
0
-250
-500
-750
-1000
mm
-0.05
0
0.05
0.1
0.15
0.2
0.25
0.3
Time [s]
CFC_180
MY0100 - January 21, 2000

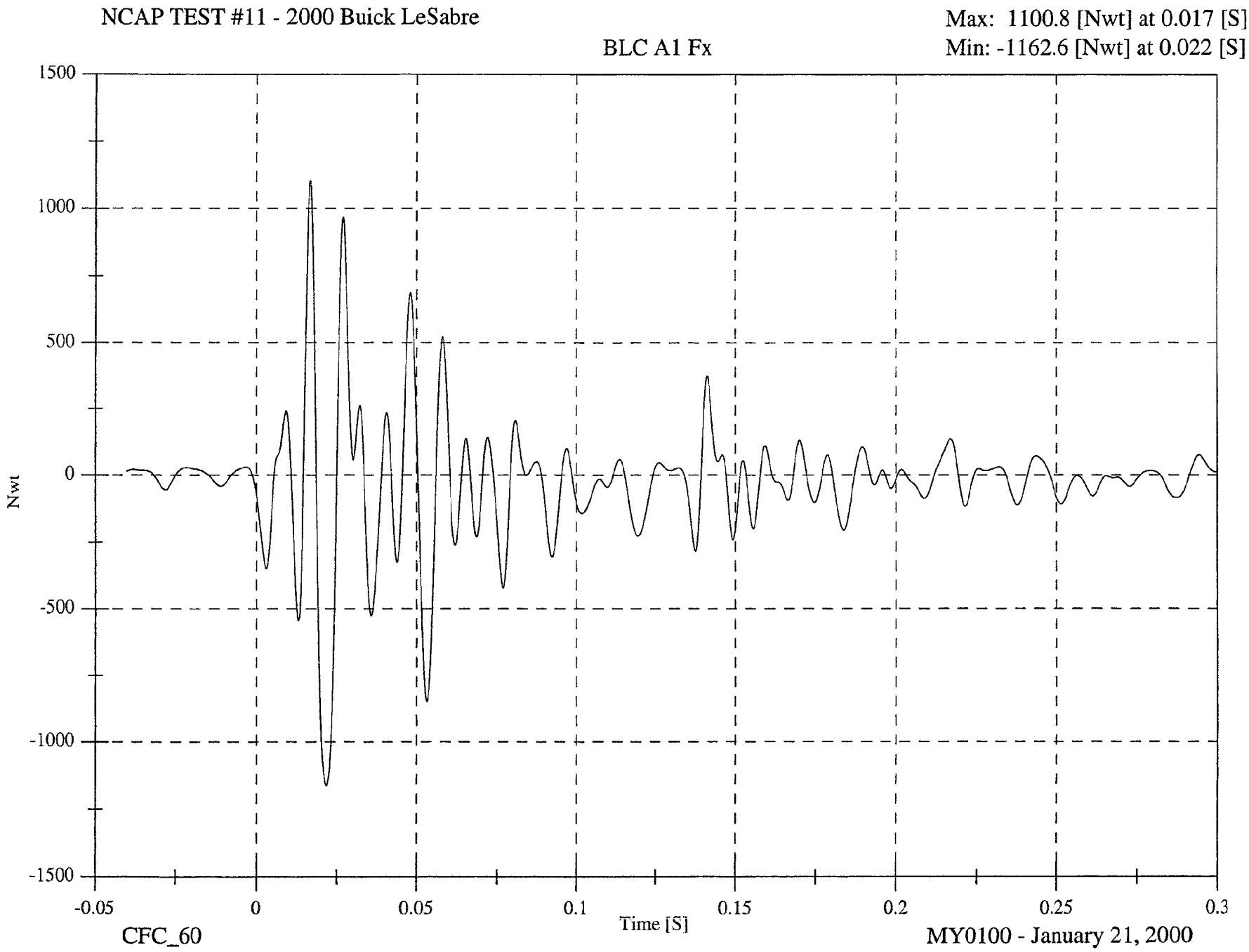

NCAP Test 11 - 2000 Buick LeSabre
Left Rear Red #9x
Max: 4.5 [g] at 0.019 [s]
Min: -31.6 [g] at 0.071 [s]
5
0
-5
-10
-15
-20
-25
-30
-35
g
-0.05
0
0.05
0.1
0.15
0.2
0.25
0.3
Time [s]
CFC_60
MY0100 - January 21, 2000


NCAP Test 11 - 2000 Buick LeSabre
Left Rear Red #9x Velocity
Max: 56.6 [kph] at -0.040 [s]
Min: -8.6 [kph] at 0.114 [s]
60
50
40
30
20
10
0
-10
kph
-0.05
0
0.05
0.1
0.15
0.2
0.25
0.3
Time [s]
CFC_180
MY0100 - January 21, 2000


NCAP Test 11 - 2000 Buick LeSabre
Left Rear Red #9x Displacement
Max: 771.4 [mm] at 0.083 [s]
Min: -785.5 [mm] at -0.050 [s]
1000
750
500
250
0
-250
-500
-750
-1000
mm
-0.05
0
0.05
0.1
0.15
0.2
0.25
0.3
Time [s]
CFC_180
MY0100 - January 21, 2000


NCAP Test 11 - 2000 Buick LeSabre
Contact Time
Max: 1.0 [] at 0.000 [s]
Min: 0.0 [] at -0.050 [s]
1
0.75
0.5
0.25
0
-0.05
0
0.05
0.1
0.15
0.2
0.25
0.3
Time [s]
20000.0
MY0100 - January 21, 2000

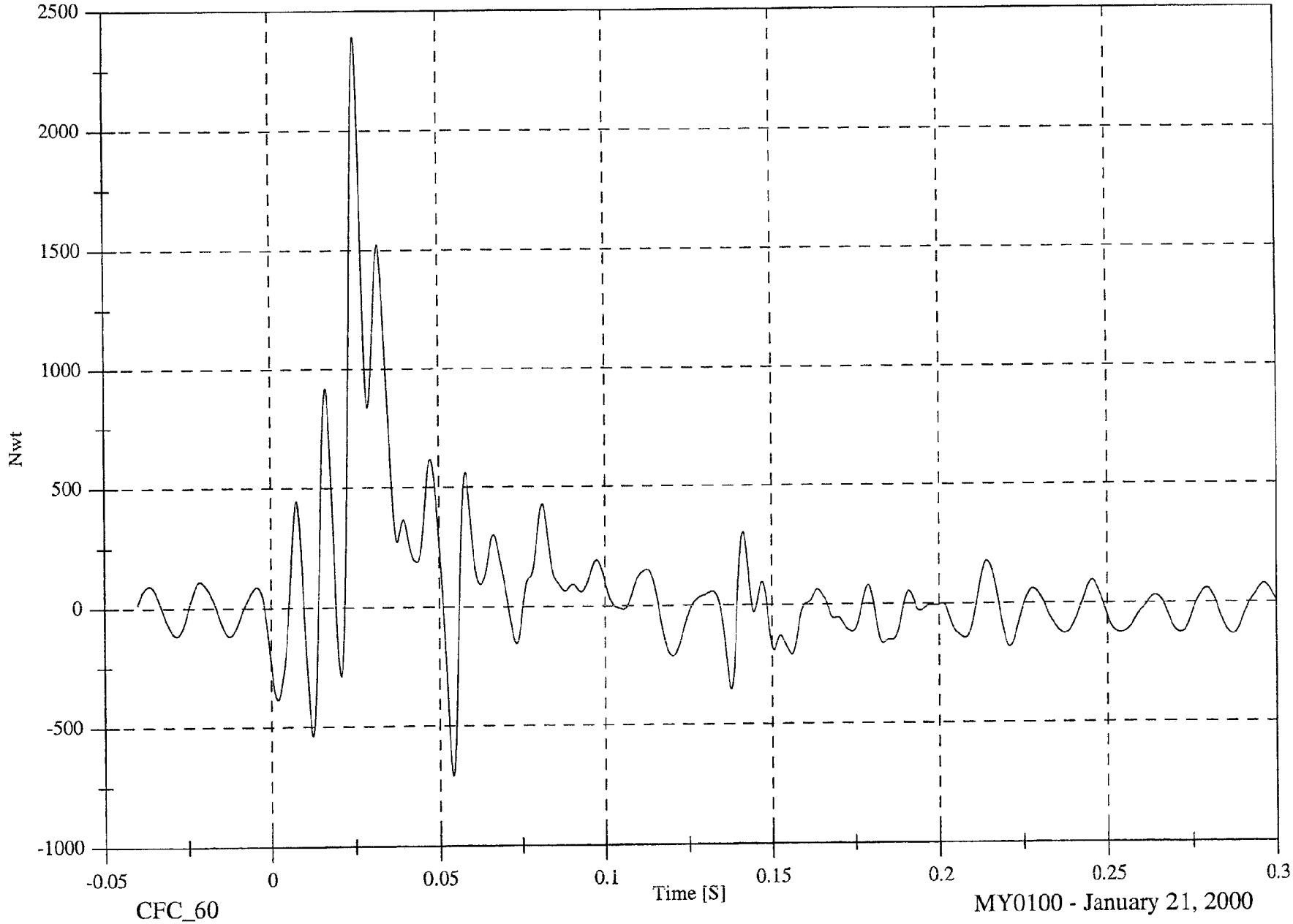
8413-50


NCAP TEST #11 - 2000 Buick LeSabre
BLC A1 Fx
Max: 1100.8 [Nwt] at 0.017 [S]
Min: -1162.6 [Nwt] at 0.022 [S]
1500
1000
500
0
-500
-1000
-1500
Nwt
-0.05
0
0.05
0.1
0.15
0.2
0.25
0.3
Time [S]
CFC_60
MY0100 - January 21, 2000

NCAP TEST #11 - 2000 Buick LeSabre

BLC A2 Fx

Max: 2389.9 [Nwt] at 0.025 [S]
Min: -709.7 [Nwt] at 0.054 [S]



CFC_60

MY0100 - January 21, 2000

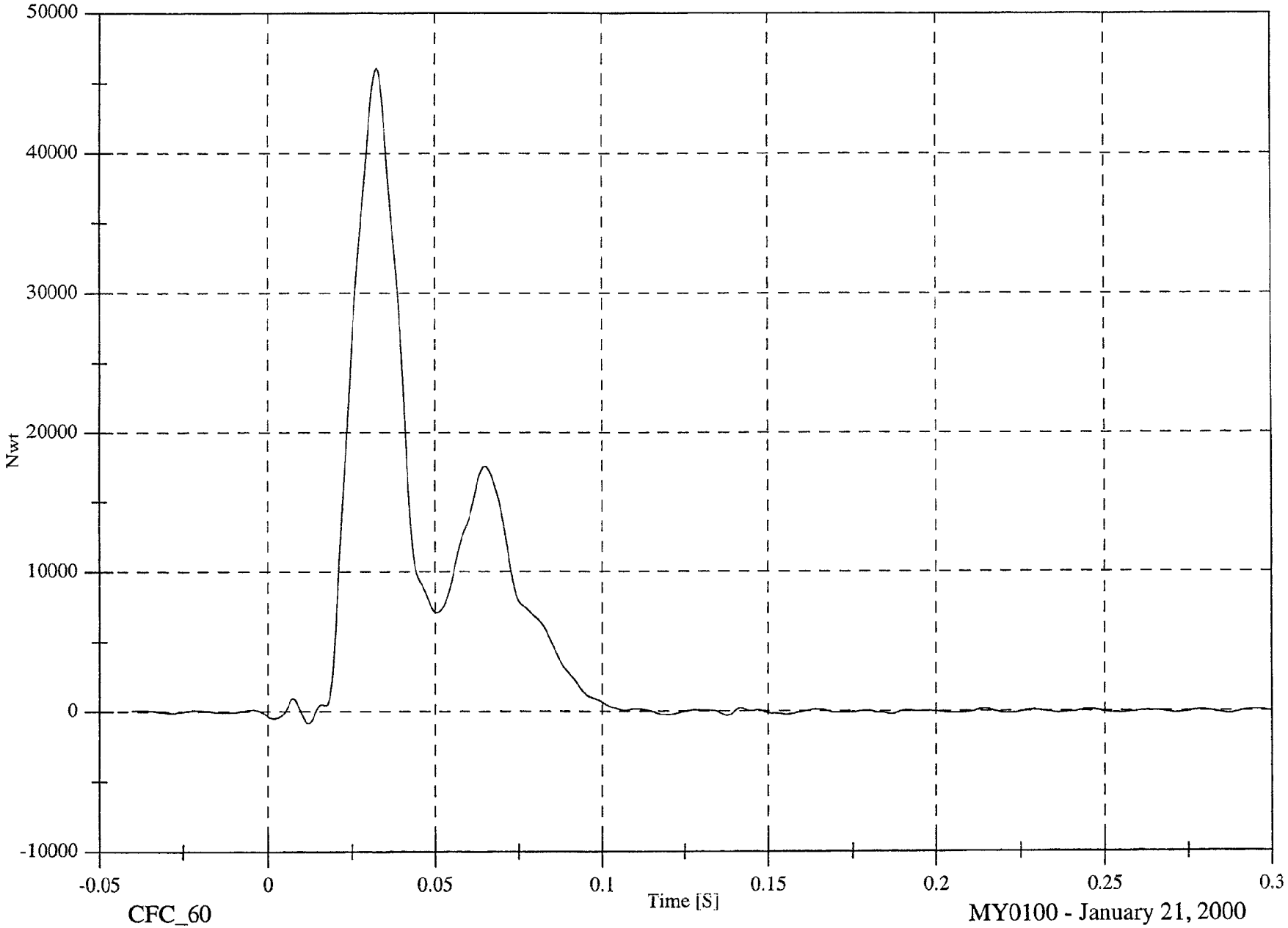
B-129

8413-50

NCAP TEST #11 - 2000 Buick LeSabre

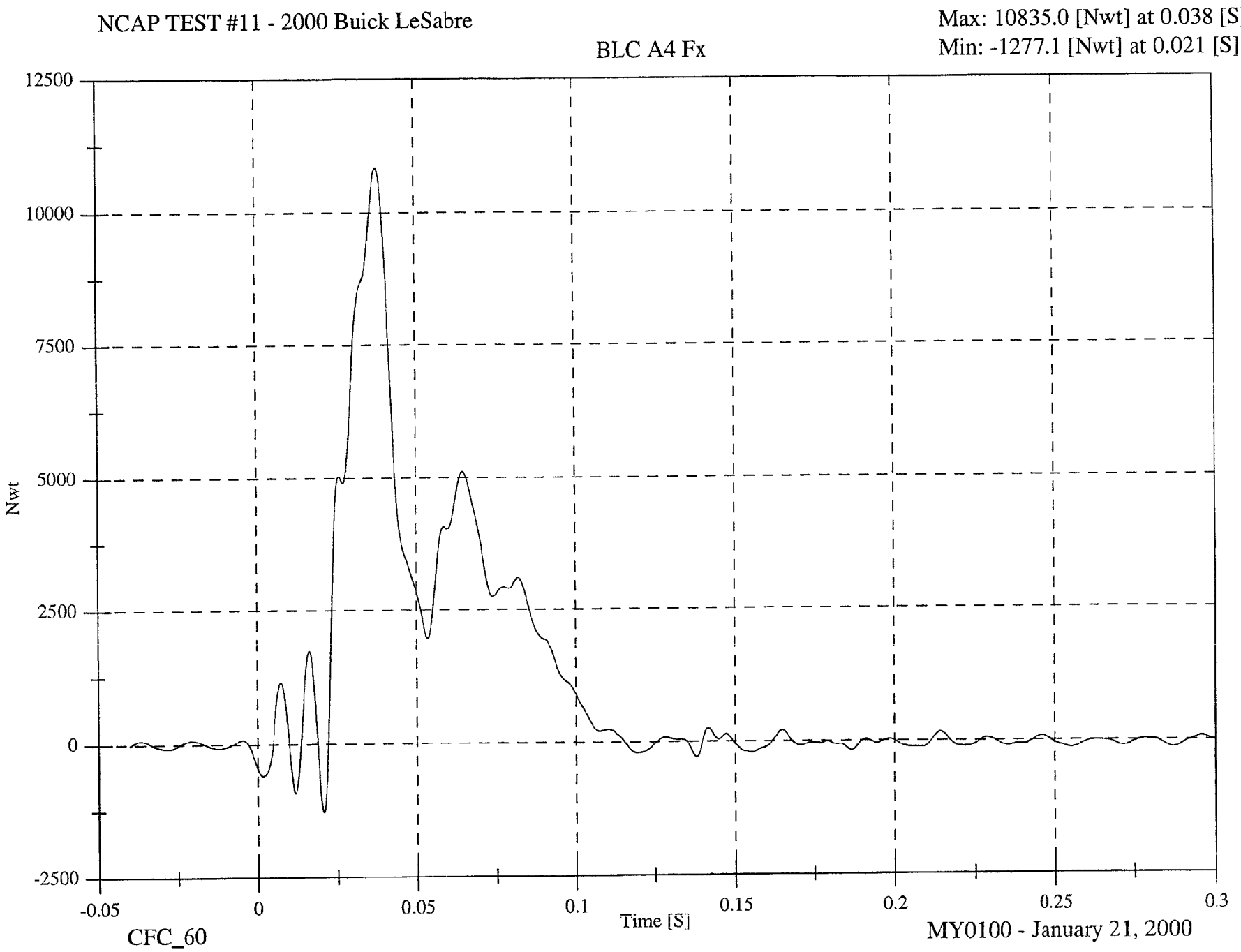
BLC A3 Fx

Max: 46031.1 [Nwt] at 0.032 [S]
Min: -860.3 [Nwt] at 0.012 [S]



CFC_60

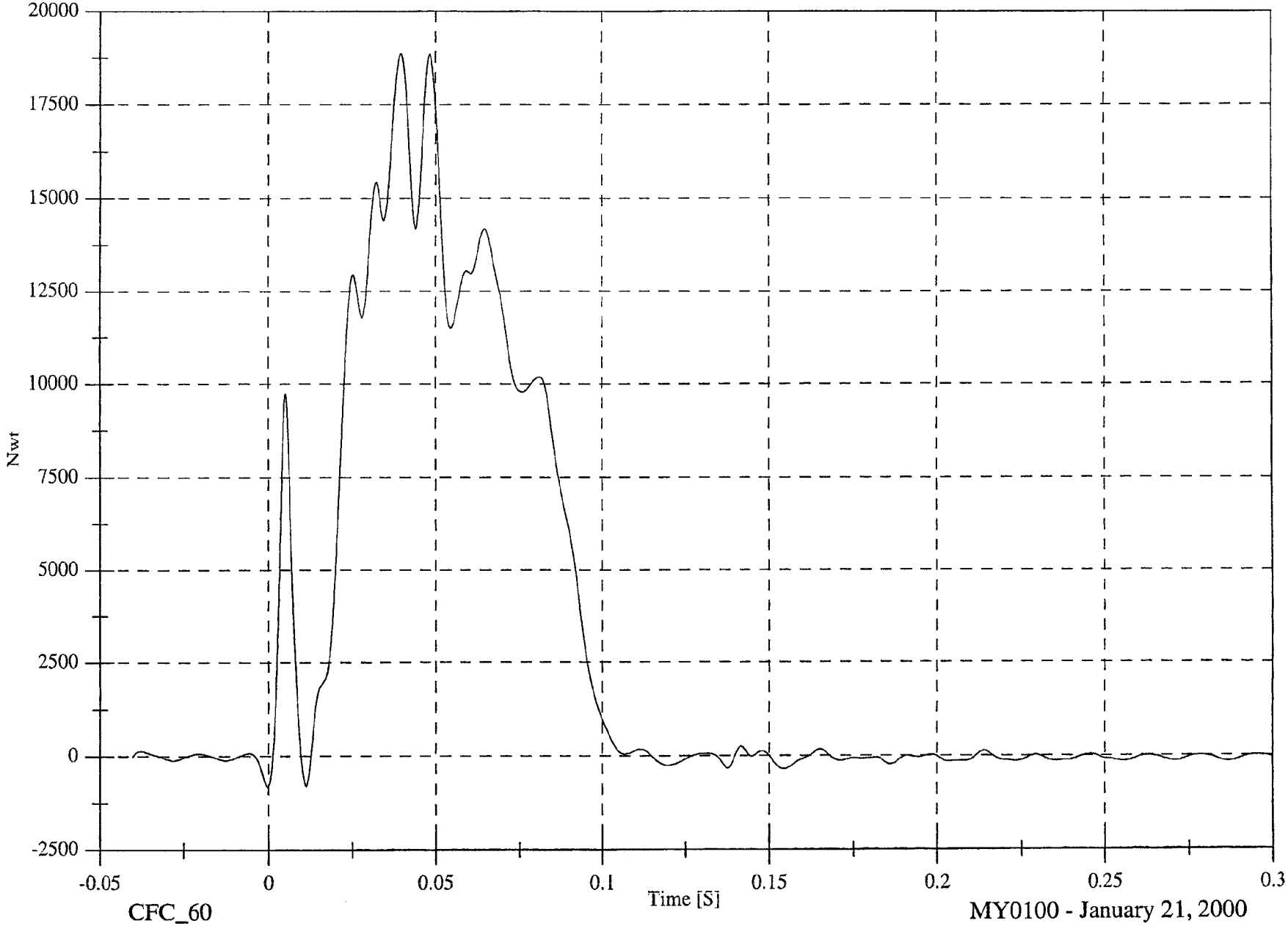
MY0100 - January 21, 2000


NCAP TEST #11 - 2000 Buick LeSabre
BLC A4 Fx
Max: 10835.0 [Nwt] at 0.038 [S]
Min: -1277.1 [Nwt] at 0.021 [S]
12500
10000
7500
5000
2500
0
-2500
Nwt
-0.05
0
0.05
0.1
0.15
0.2
0.25
0.3
Time [S]
CFC_60
MY0100 - January 21, 2000

NCAP TEST #11 - 2000 Buick LeSabre

BLC A5 Fx

Max: 18856.8 [Nwt] at 0.040 [S]
Min: -817.9 [Nwt] at -0.000 [S]

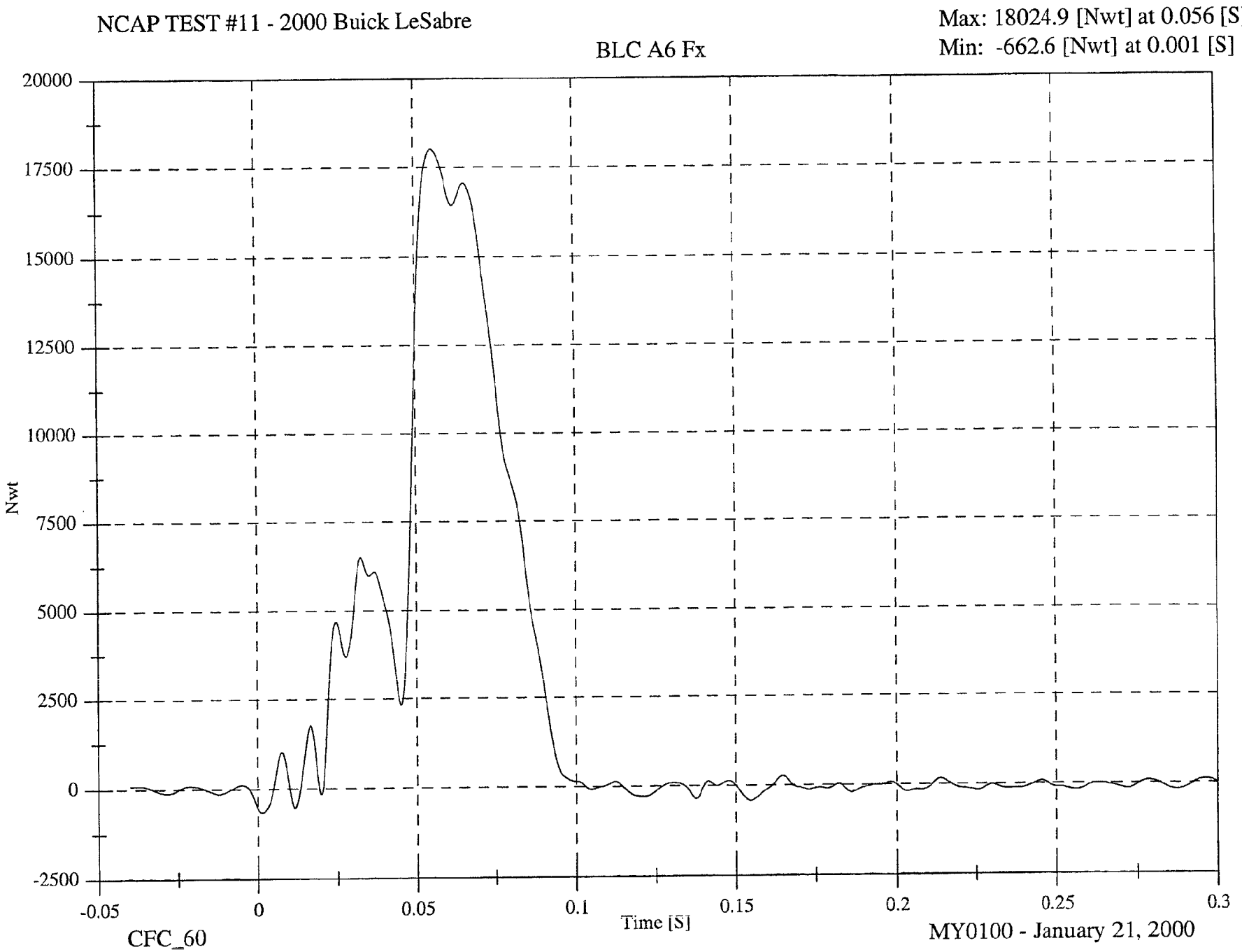


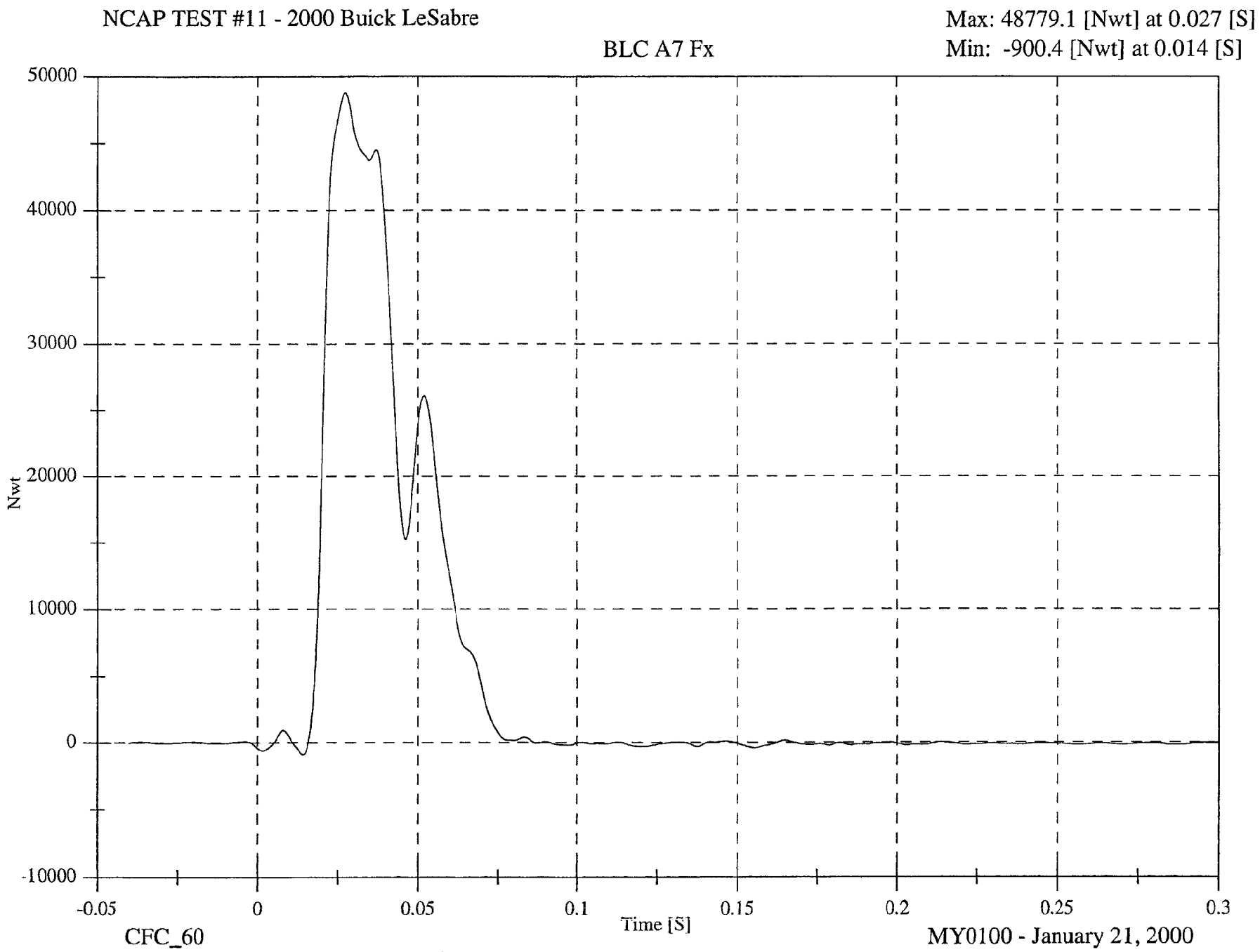
CFC_60

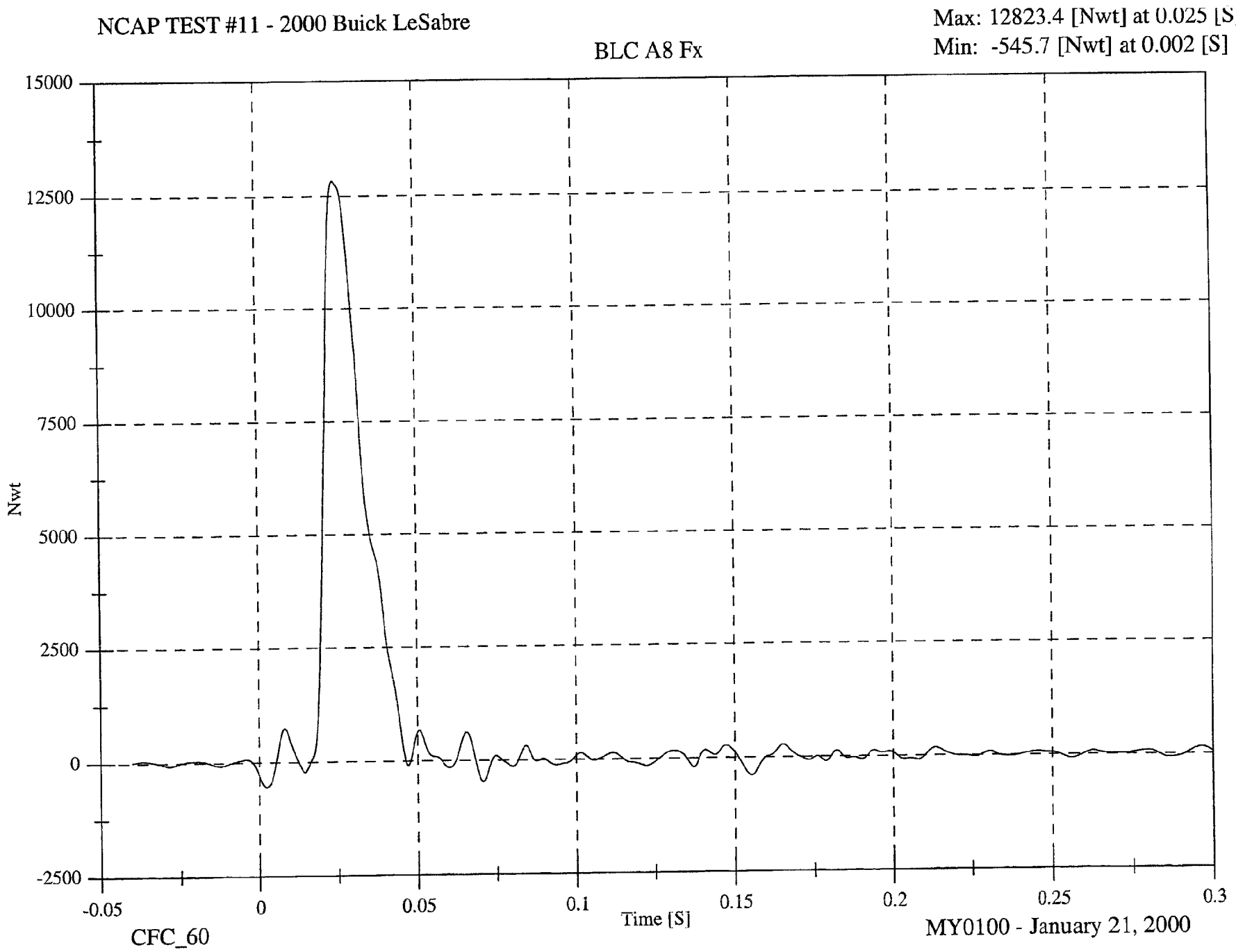
MY0100 - January 21, 2000

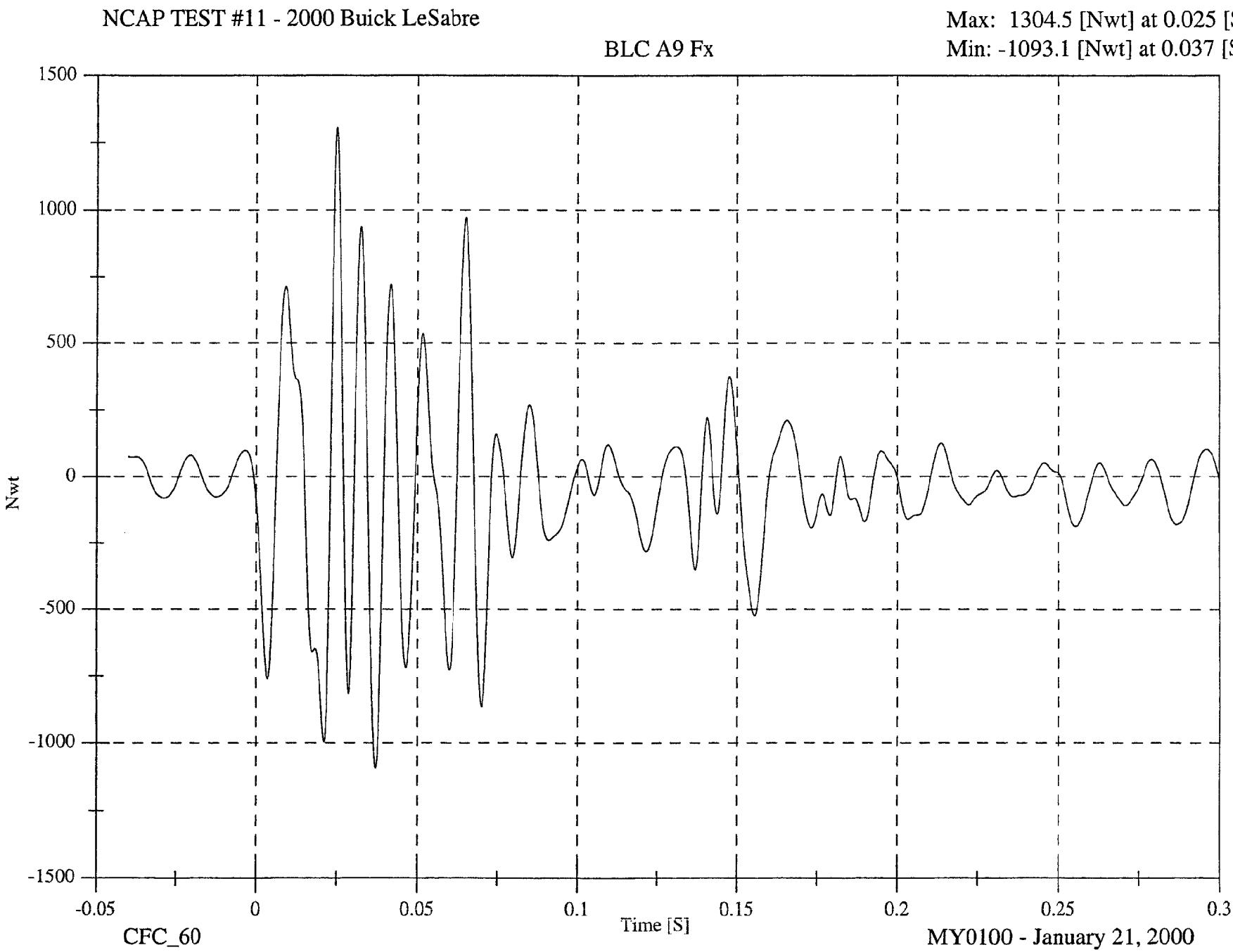
B-132

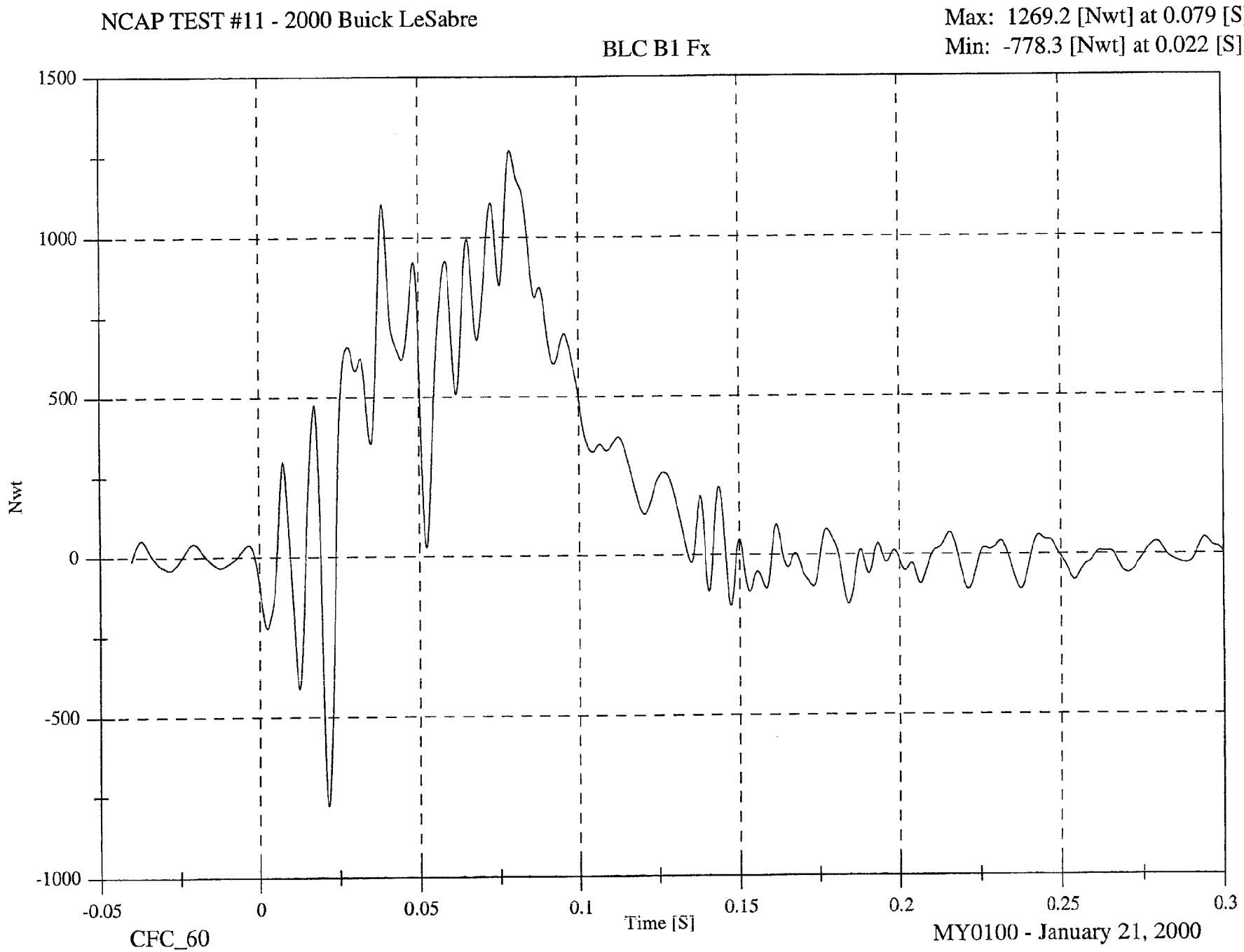
8413-50

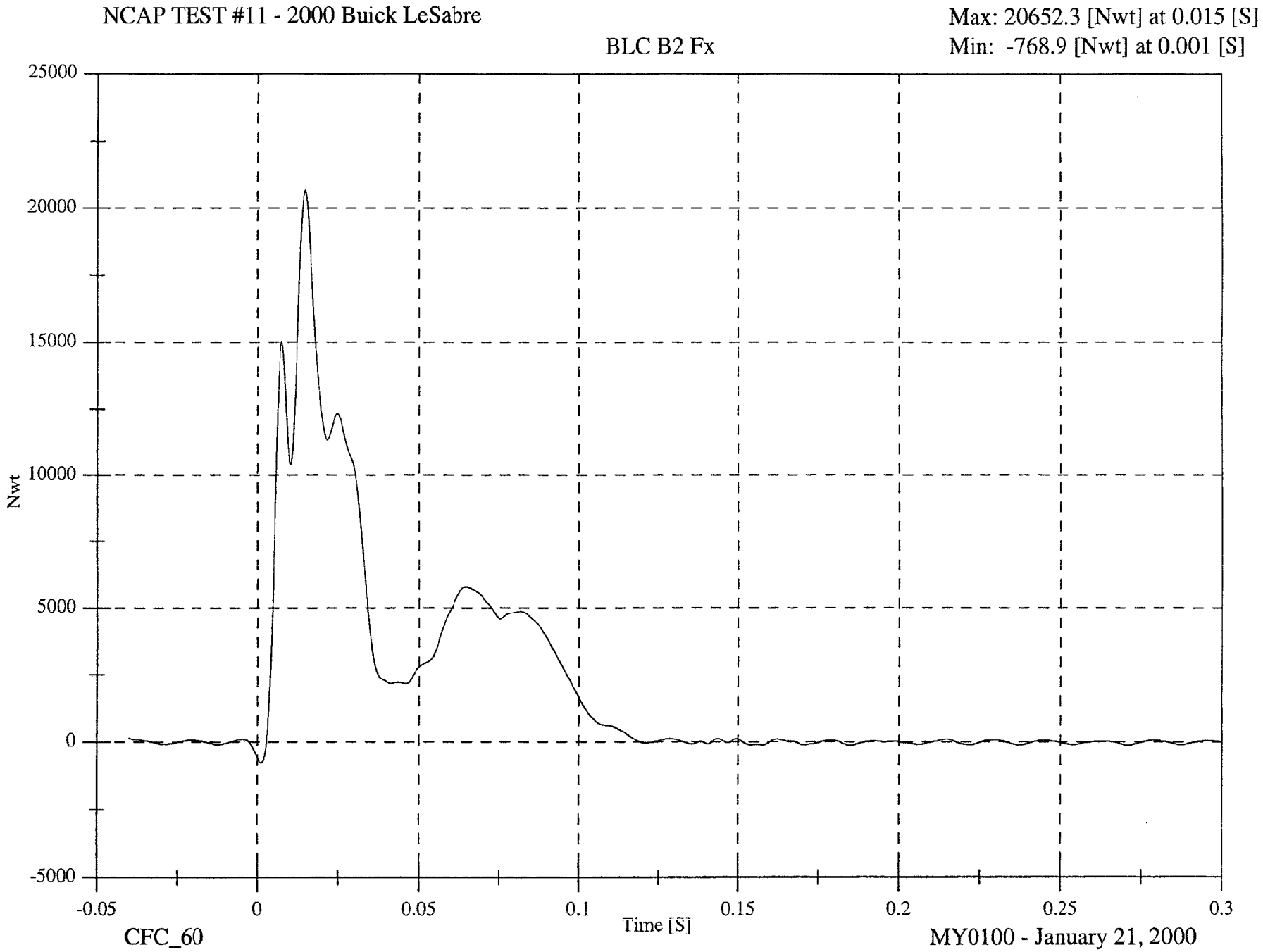

NCAP TEST #11 - 2000 Buick LeSabre
BLC A6 Fx
Max: 18024.9 [Nwt] at 0.056 [S]
Min: -662.6 [Nwt] at 0.001 [S]
20000
17500
15000
12500
10000
7500
5000
2500
0
-2500
Nwt
-0.05
0
0.05
0.1
0.15
0.2
0.25
0.3
Time [S]
CFC_60
MY0100 - January 21, 2000


NCAP TEST #11 - 2000 Buick LeSabre
BLC A7 Fx
Max: 48779.1 [Nwt] at 0.027 [S]
Min: -900.4 [Nwt] at 0.014 [S]
50000
40000
30000
20000
10000
0
-10000
Nwt
-0.05
0
0.05
0.1
0.15
0.2
0.25
0.3
Time [S]
CFC_60
MY0100 - January 21, 2000


NCAP TEST #11 - 2000 Buick LeSabre
BLC A8 Fx
Max: 12823.4 [Nwt] at 0.025 [S]
Min: -545.7 [Nwt] at 0.002 [S]
15000
12500
10000
7500
5000
2500
0
-2500
Nwt
-0.05
0
0.05
0.1
0.15
0.2
0.25
0.3
Time [S]
CFC_60
MY0100 - January 21, 2000


NCAP TEST #11 - 2000 Buick LeSabre
BLC A9 Fx
Max: 1304.5 [Nwt] at 0.025 [S]
Min: -1093.1 [Nwt] at 0.037 [S]
1500
1000
500
0
-500
-1000
-1500
Nwt
-0.05
0
0.05
0.1
0.15
0.2
0.25
0.3
Time [S]
CFC_60
MY0100 - January 21, 2000

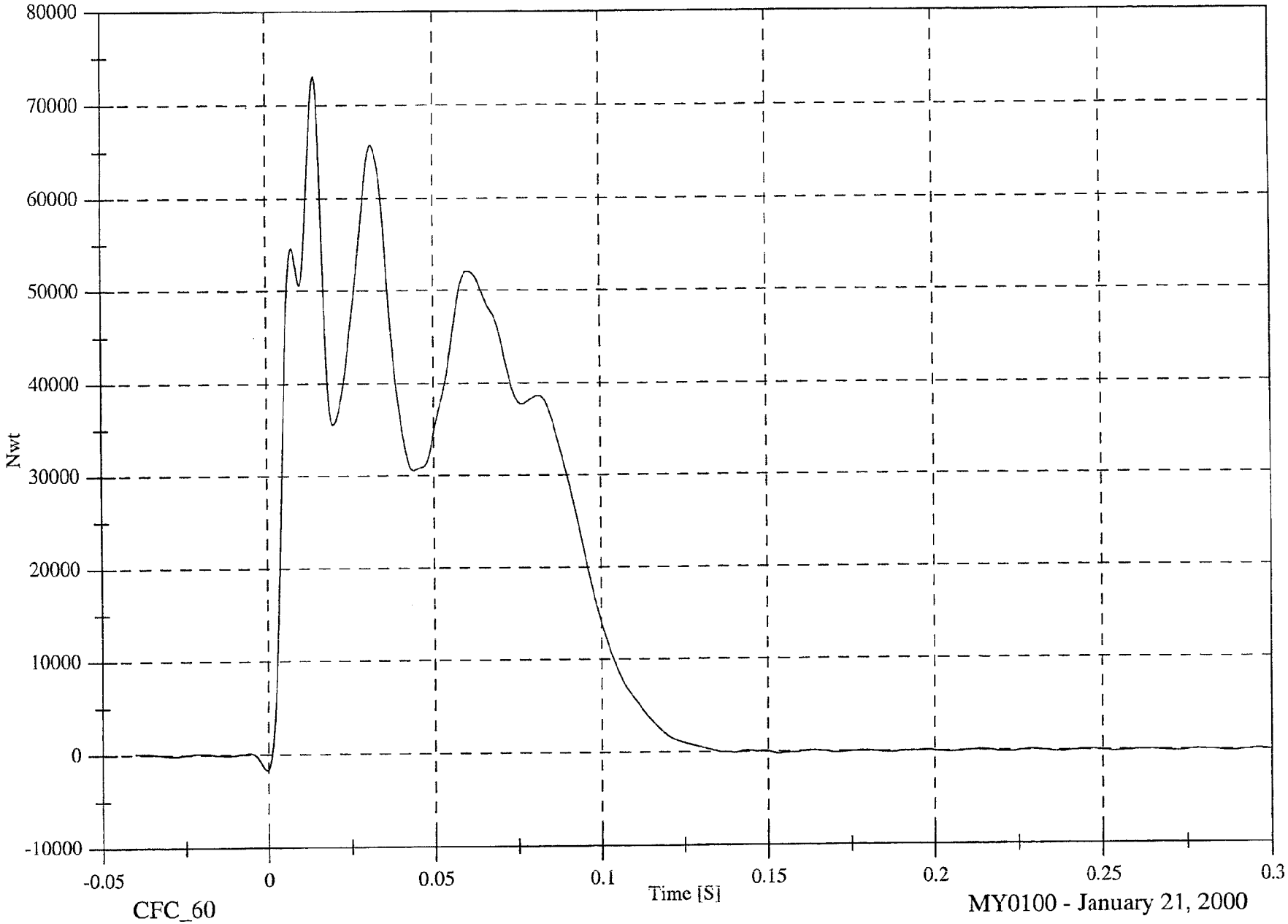

NCAP TEST #11 - 2000 Buick LeSabre
BLC B1 Fx
Max: 1269.2 [Nwt] at 0.079 [S]
Min: -778.3 [Nwt] at 0.022 [S]
1500
1000
500
0
-500
-1000
Nwt
-0.05
0
0.05
0.1
0.15
0.2
0.25
0.3
Time [S]
CFC_60
MY0100 - January 21, 2000


NCAP TEST #11 - 2000 Buick LeSabre
BLC B2 Fx
Max: 20652.3 [Nwt] at 0.015 [S]
Min: -768.9 [Nwt] at 0.001 [S]
25000
20000
15000
10000
5000
0
-5000
Nwt
-0.05
0
0.05
0.1
0.15
0.2
0.25
0.3
Time [S]
CFC_60
MY0100 - January 21, 2000

NCAP TEST #11 - 2000 Buick LeSabre

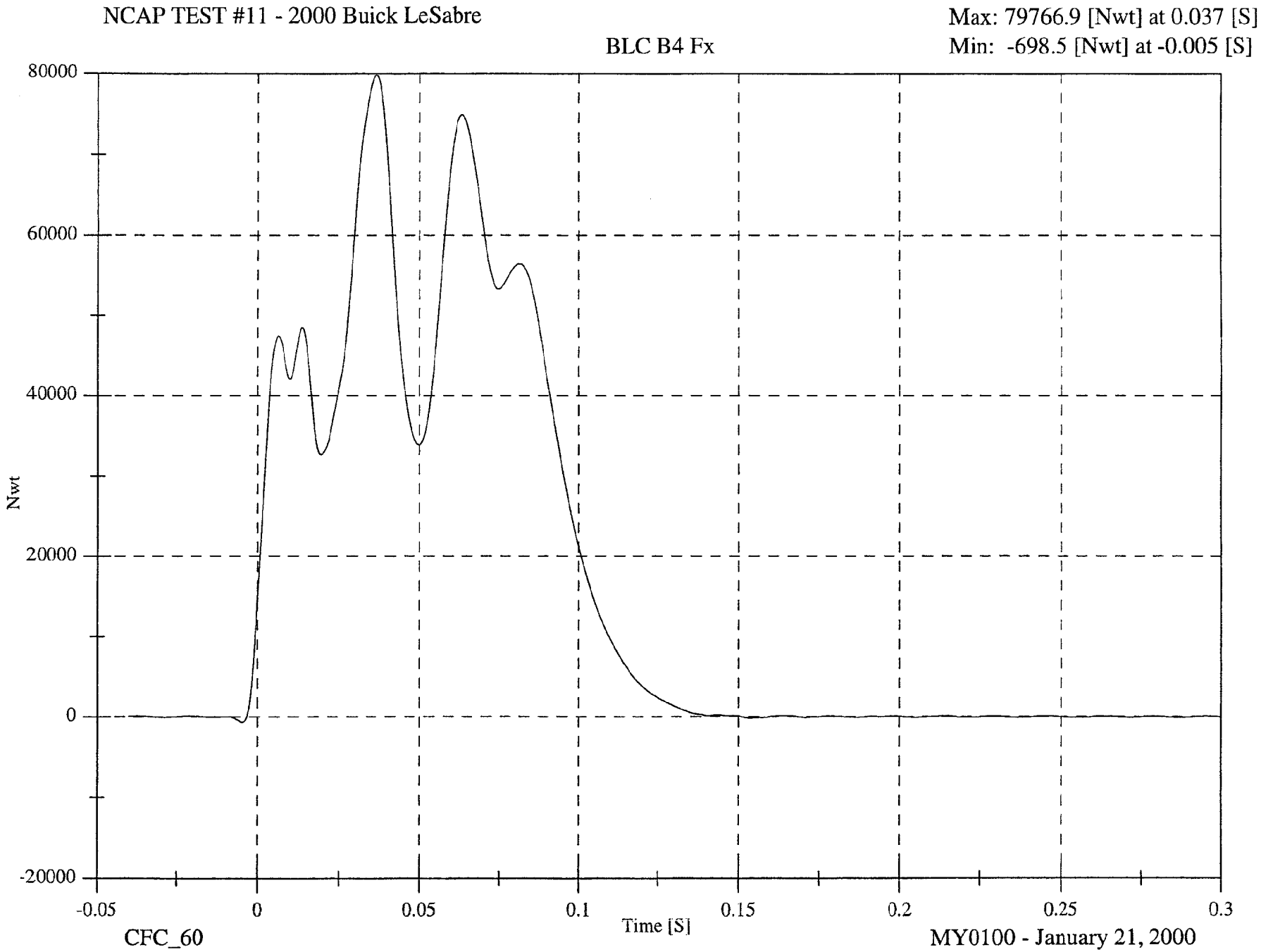
BLC B3 Fx

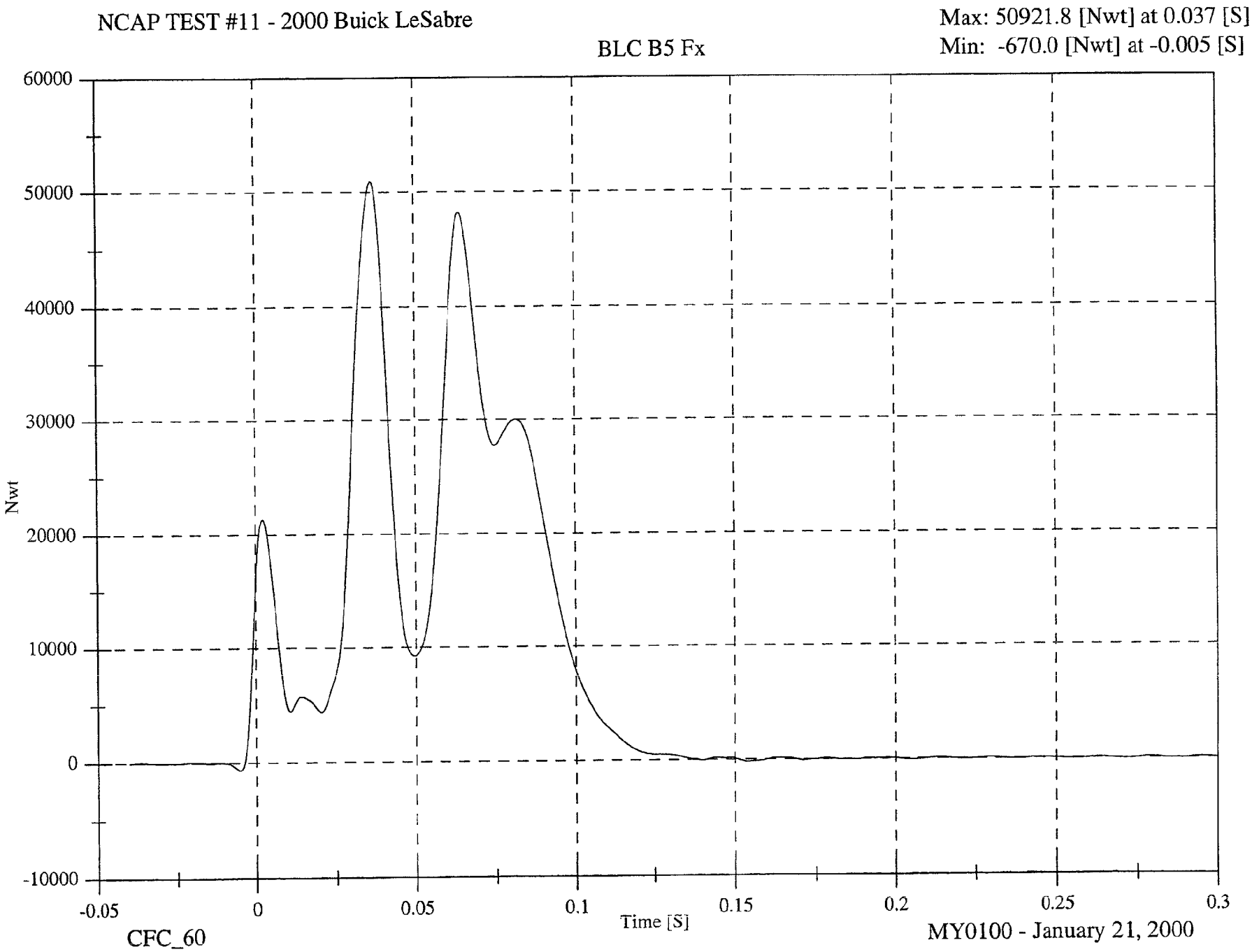
Max: 73048.3 [Nwt] at 0.014 [S]
Min: -1658.0 [Nwt] at -0.000 [S]

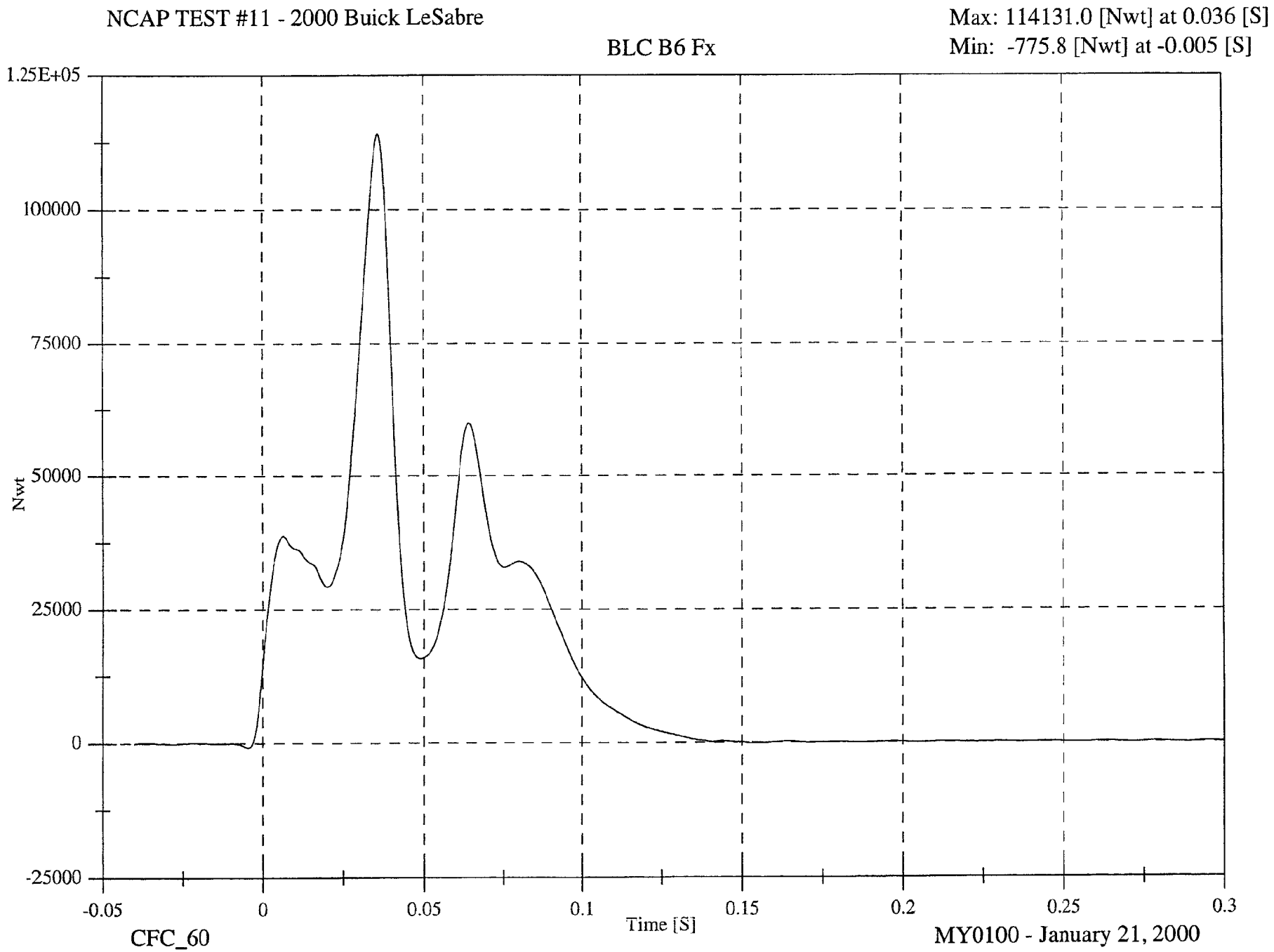


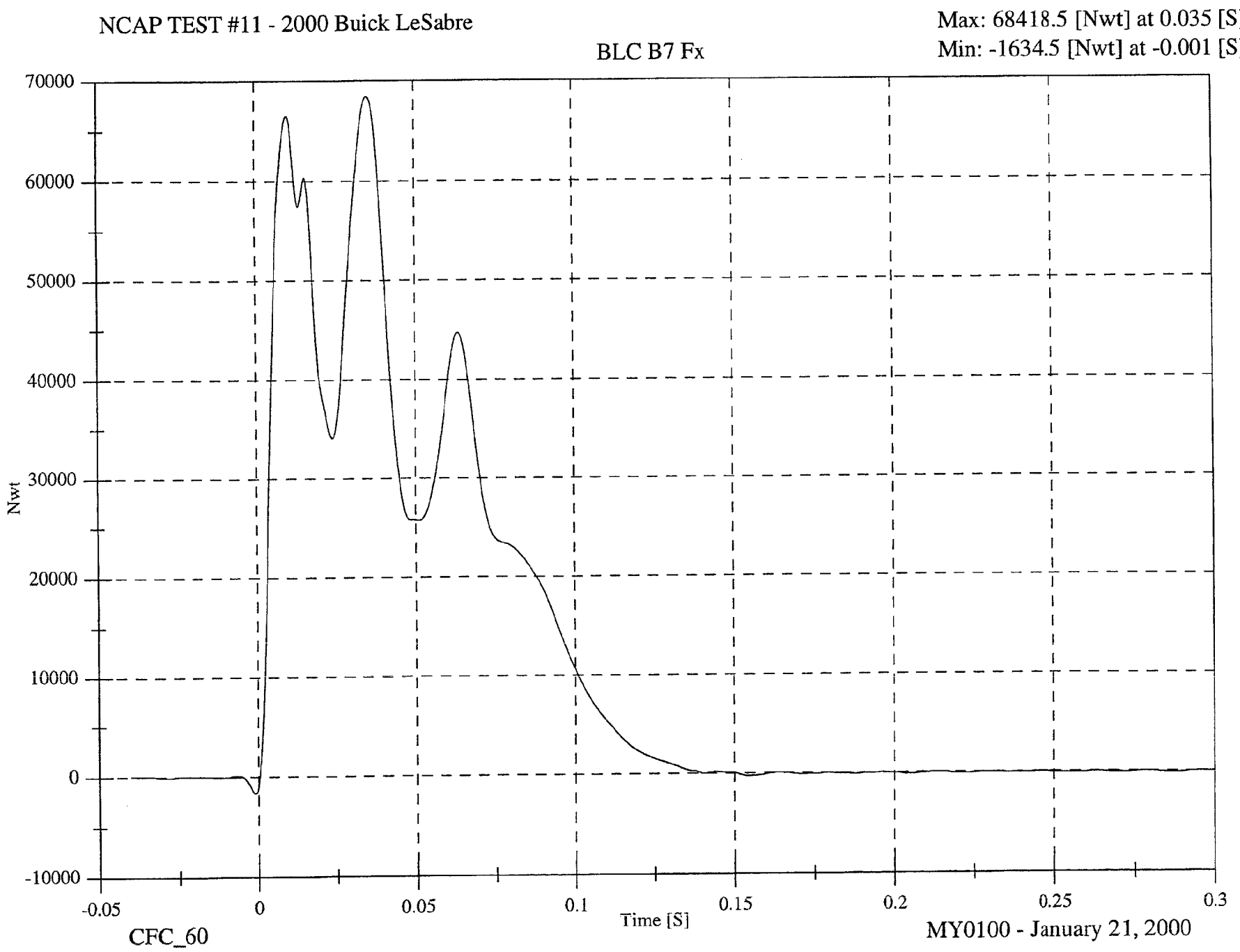
CFC_60

MY0100 - January 21, 2000


NCAP TEST #11 - 2000 Buick LeSabre
BLC B4 Fx
Max: 79766.9 [Nwt] at 0.037 [S]
Min: -698.5 [Nwt] at -0.005 [S]
80000
60000
40000
20000
0
-20000
Nwt
-0.05
0
0.05
0.1
0.15
0.2
0.25
0.3
Time [S]
CFC_60
MY0100 - January 21, 2000


NCAP TEST #11 - 2000 Buick LeSabre
BLC B5 Fx
Max: 50921.8 [Nwt] at 0.037 [S]
Min: -670.0 [Nwt] at -0.005 [S]
60000
50000
40000
30000
20000
10000
0
-10000
Nwt
-0.05
0
0.05
0.1
0.15
0.2
0.25
0.3
Time [S]
CFC_60
MY0100 - January 21, 2000

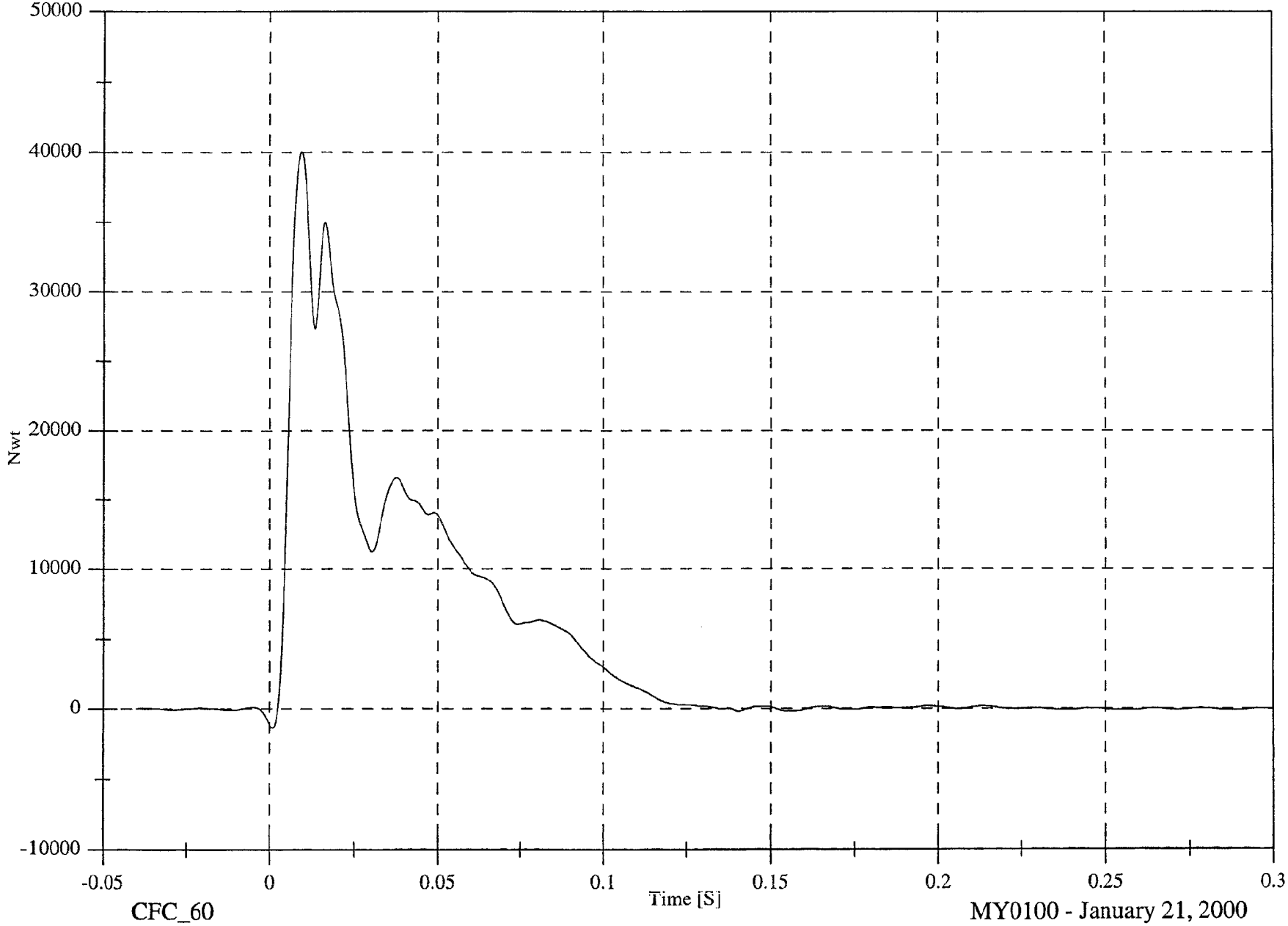

NCAP TEST #11 - 2000 Buick LeSabre
BLC B6 Fx
Max: 114131.0 [Nwt] at 0.036 [S]
Min: -775.8 [Nwt] at -0.005 [S]
1.25E+05
100000
75000
50000
25000
0
-25000
Nwt
-0.05
0
0.05
0.1
0.15
0.2
0.25
0.3
Time [S]
CFC_60
MY0100 - January 21, 2000


NCAP TEST #11 - 2000 Buick LeSabre
BLC B7 Fx
Max: 68418.5 [Nwt] at 0.035 [S]
Min: -1634.5 [Nwt] at -0.001 [S]
70000
60000
50000
40000
30000
20000
10000
0
-10000
Nwt
-0.05
0
0.05
0.1
0.15
0.2
0.25
0.3
Time [S]
CFC_60
MY0100 - January 21, 2000

NCAP TEST #11 - 2000 Buick LeSabre

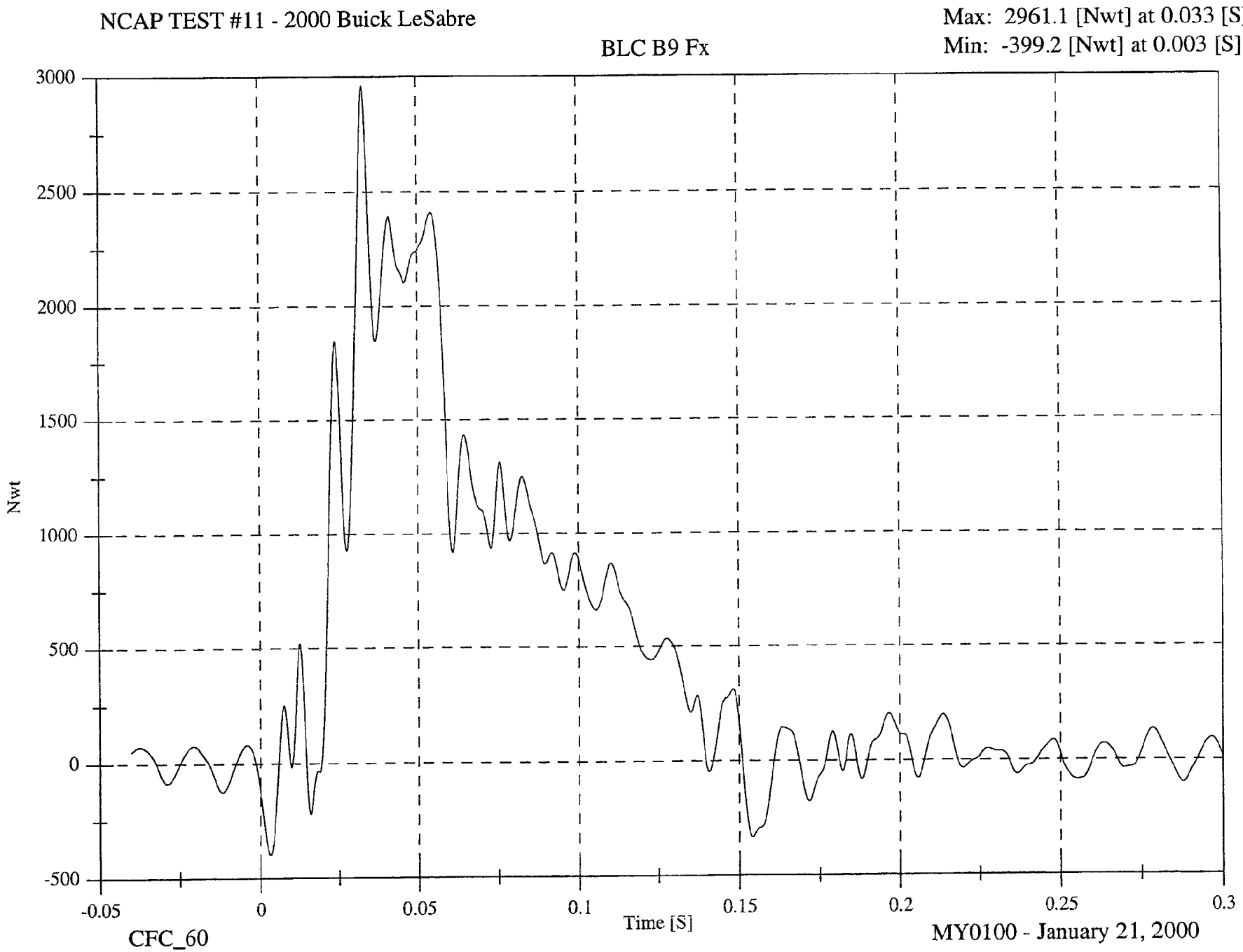
BLC B8 Fx

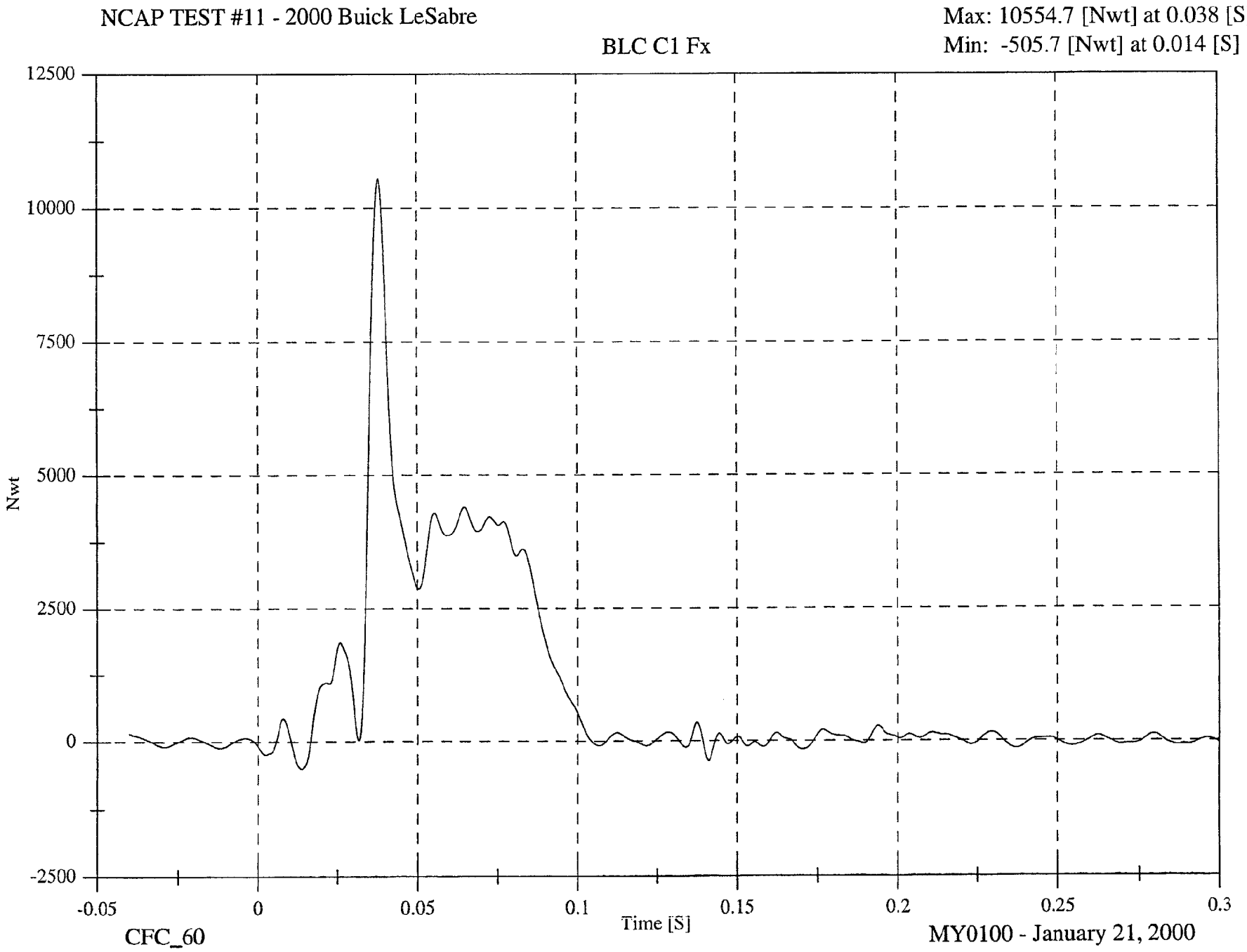
Max: 40018.3 [Nwt] at 0.010 [S]
Min: -1351.8 [Nwt] at 0.001 [S]

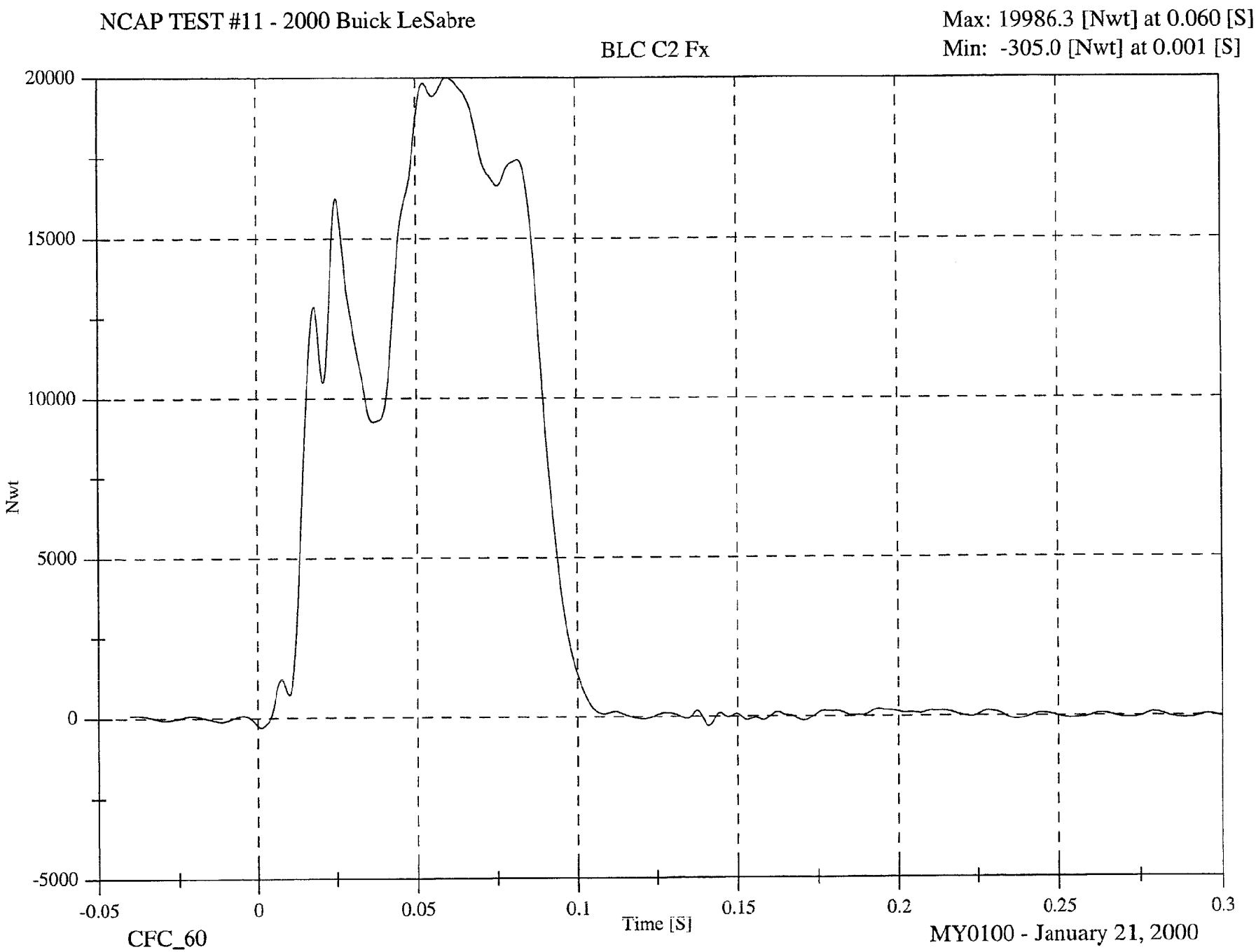


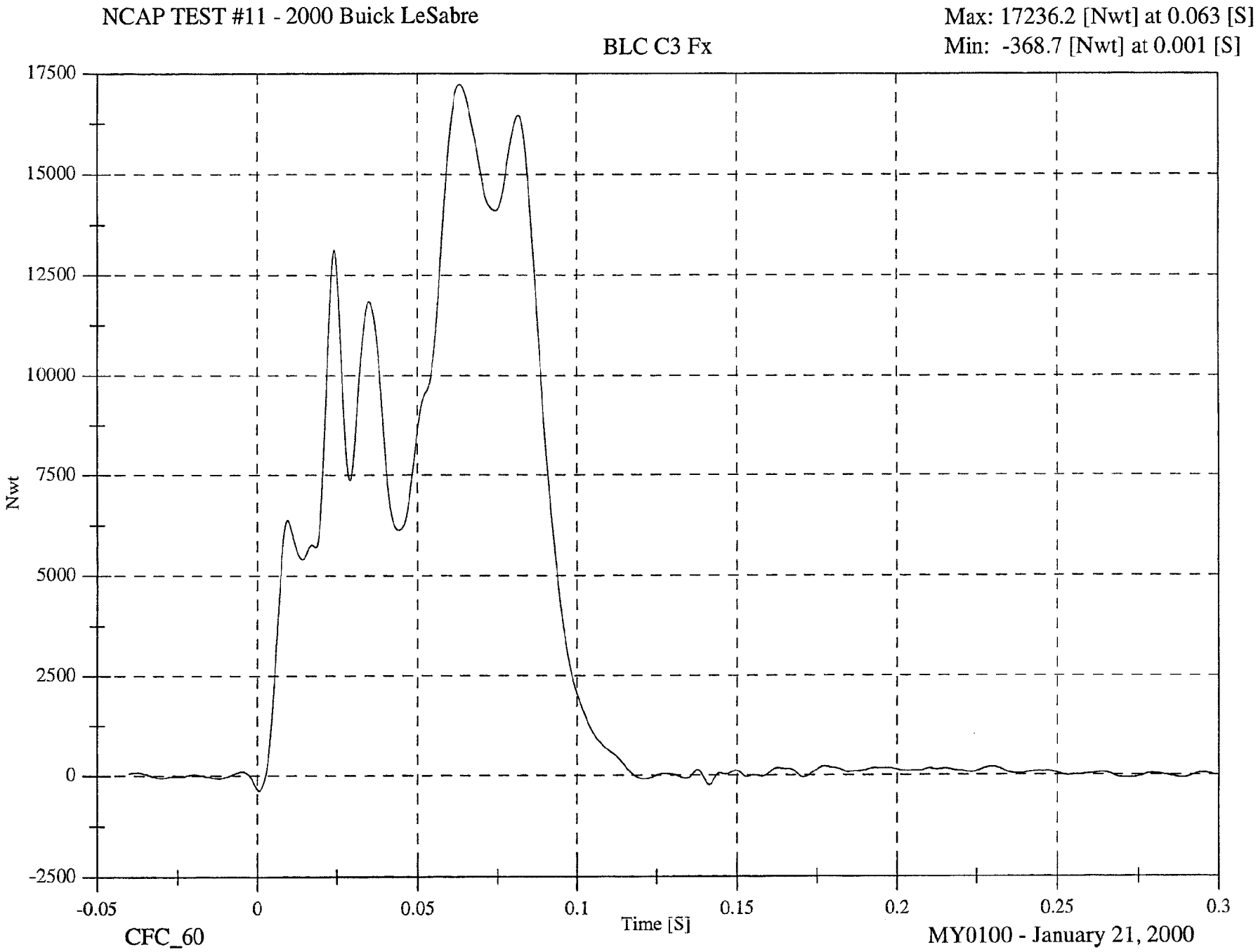
CFC_60

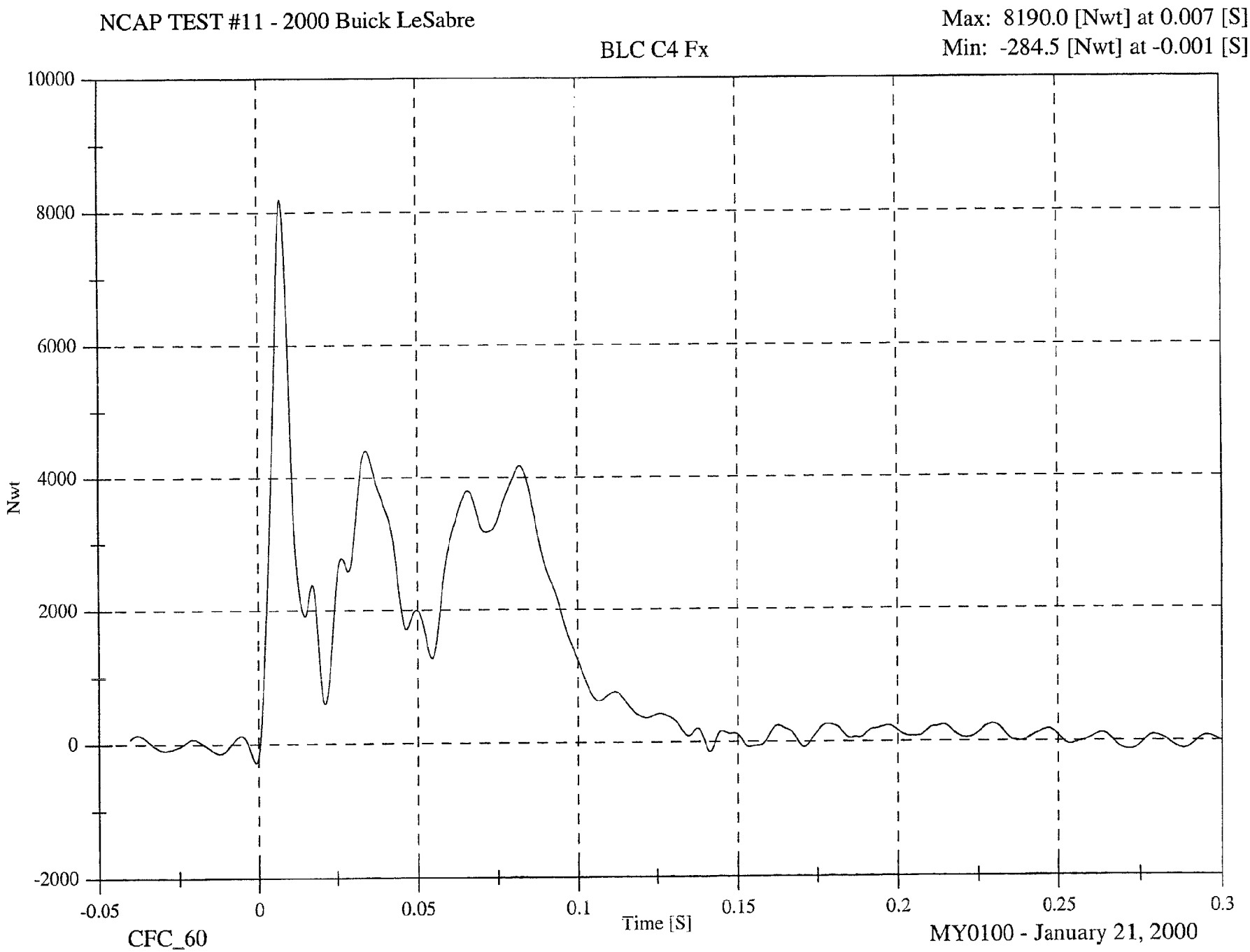
MY0100 - January 21, 2000

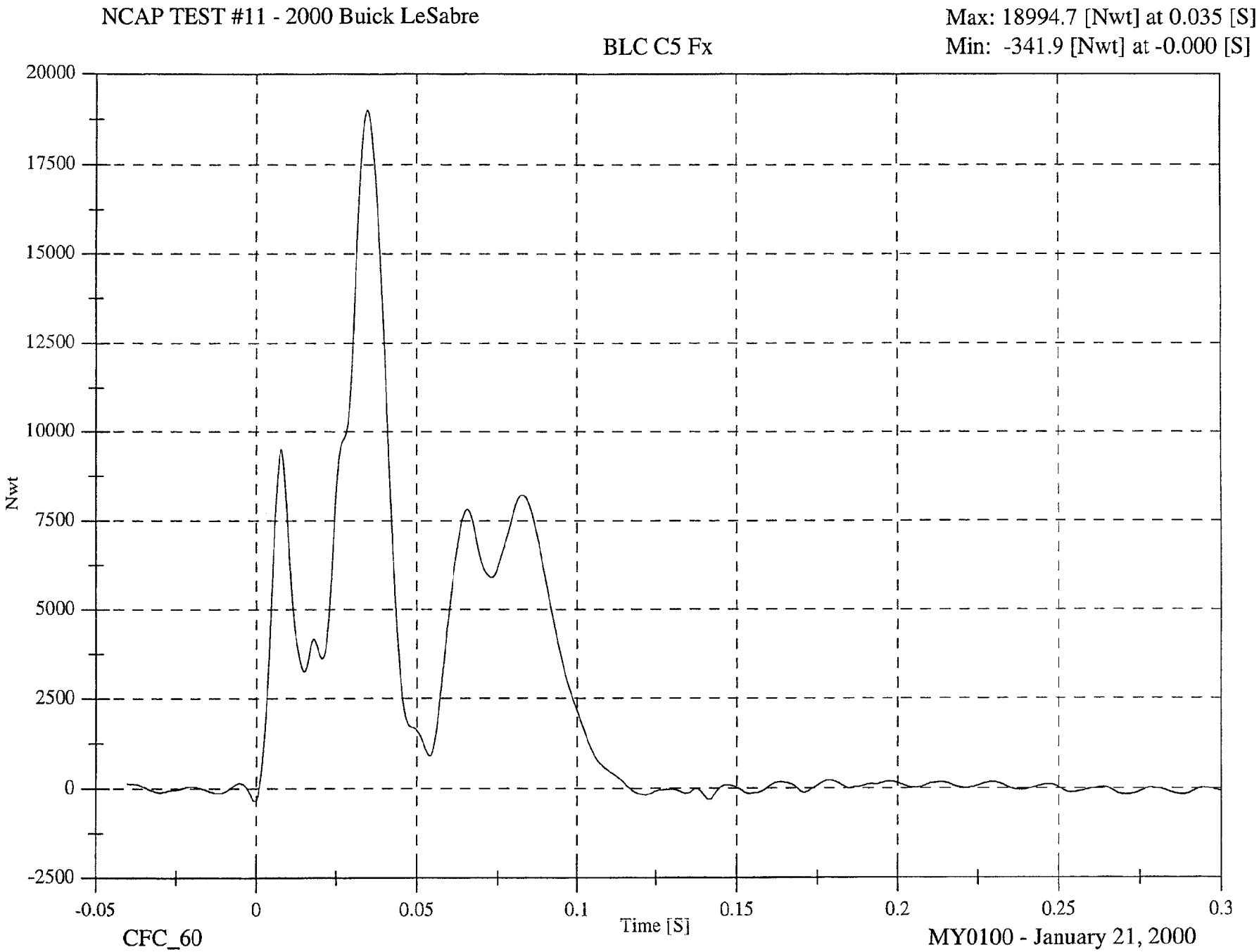

NCAP TEST #11 - 2000 Buick LeSabre
BLC B9 Fx
Max: 2961.1 [Nwt] at 0.033 [S]
Min: -399.2 [Nwt] at 0.003 [S]
3000
2500
2000
1500
1000
500
0
-500
Nwt
-0.05
0
0.05
0.1
0.15
0.2
0.25
0.3
Time [S]
CFC_60
MY0100 - January 21, 2000


NCAP TEST #11 - 2000 Buick LeSabre
BLC C1 Fx
Max: 10554.7 [Nwt] at 0.038 [S]
Min: -505.7 [Nwt] at 0.014 [S]
12500
10000
7500
5000
2500
0
-2500
Nwt
-0.05
0
0.05
0.1
0.15
0.2
0.25
0.3
Time [S]
CFC_60
MY0100 - January 21, 2000


NCAP TEST #11 - 2000 Buick LeSabre
BLC C2 Fx
Max: 19986.3 [Nwt] at 0.060 [S]
Min: -305.0 [Nwt] at 0.001 [S]
20000
15000
10000
5000
0
-5000
Nwt
-0.05
0
0.05
0.1
0.15
0.2
0.25
0.3
Time [S]
CFC_60
MY0100 - January 21, 2000


NCAP TEST #11 - 2000 Buick LeSabre
BLC C3 Fx
Max: 17236.2 [Nwt] at 0.063 [S]
Min: -368.7 [Nwt] at 0.001 [S]
17500
15000
12500
10000
7500
5000
2500
0
-2500
Nwt
-0.05
0
0.05
0.1
0.15
0.2
0.25
0.3
Time [S]
CFC_60
MY0100 - January 21, 2000


NCAP TEST #11 - 2000 Buick LeSabre
BLC C4 Fx
Max: 8190.0 [Nwt] at 0.007 [S]
Min: -284.5 [Nwt] at -0.001 [S]
10000
8000
6000
4000
2000
0
-2000
Nwt
-0.05
0
0.05
0.1
0.15
0.2
0.25
0.3
Time [S]
CFC_60
MY0100 - January 21, 2000


NCAP TEST #11 - 2000 Buick LeSabre
BLC C5 Fx
Max: 18994.7 [Nwt] at 0.035 [S]
Min: -341.9 [Nwt] at -0.000 [S]
20000
17500
15000
12500
10000
7500
5000
2500
0
-2500
Nwt
-0.05
0
0.05
0.1
0.15
0.2
0.25
0.3
Time [S]
CFC_60
MY0100 - January 21, 2000

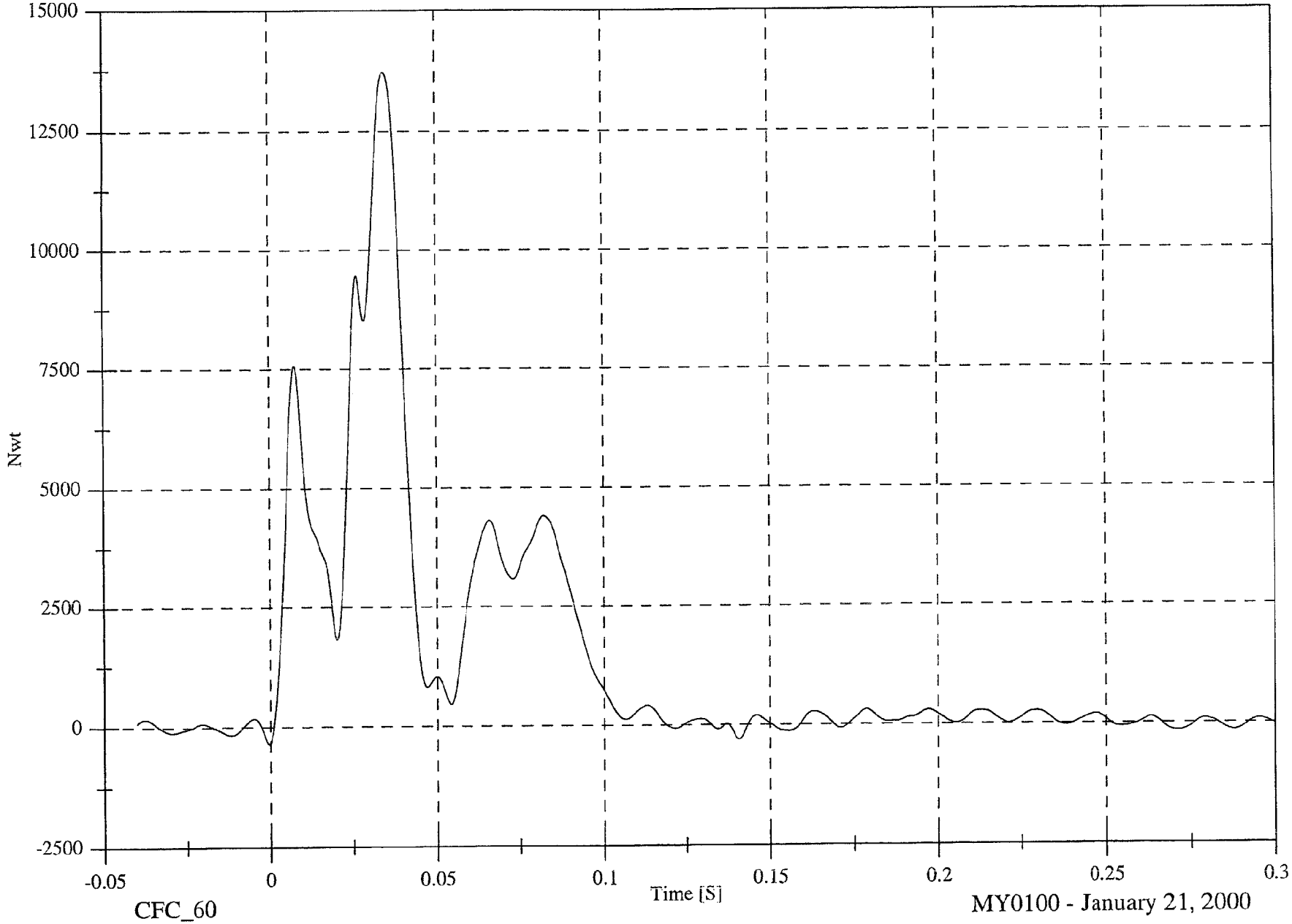
B-150

8413-50

NCAP TEST #11 - 2000 Buick LeSabre

BLC C6 Fx

Max: 13716.2 [Nwt] at 0.035 [S]
Min: -347.8 [Nwt] at -0.000 [S]

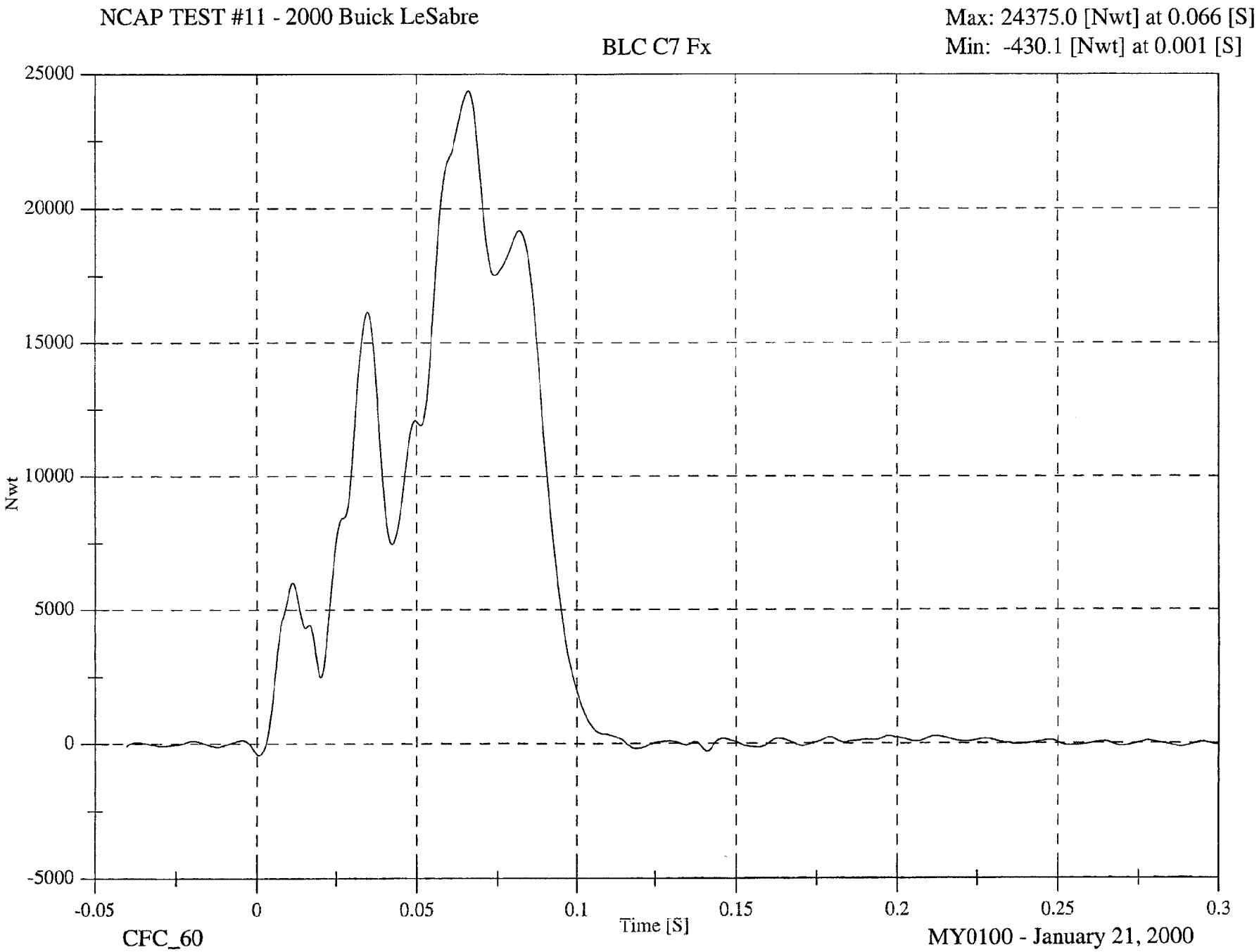


CFC_60

MY0100 - January 21, 2000

B-151

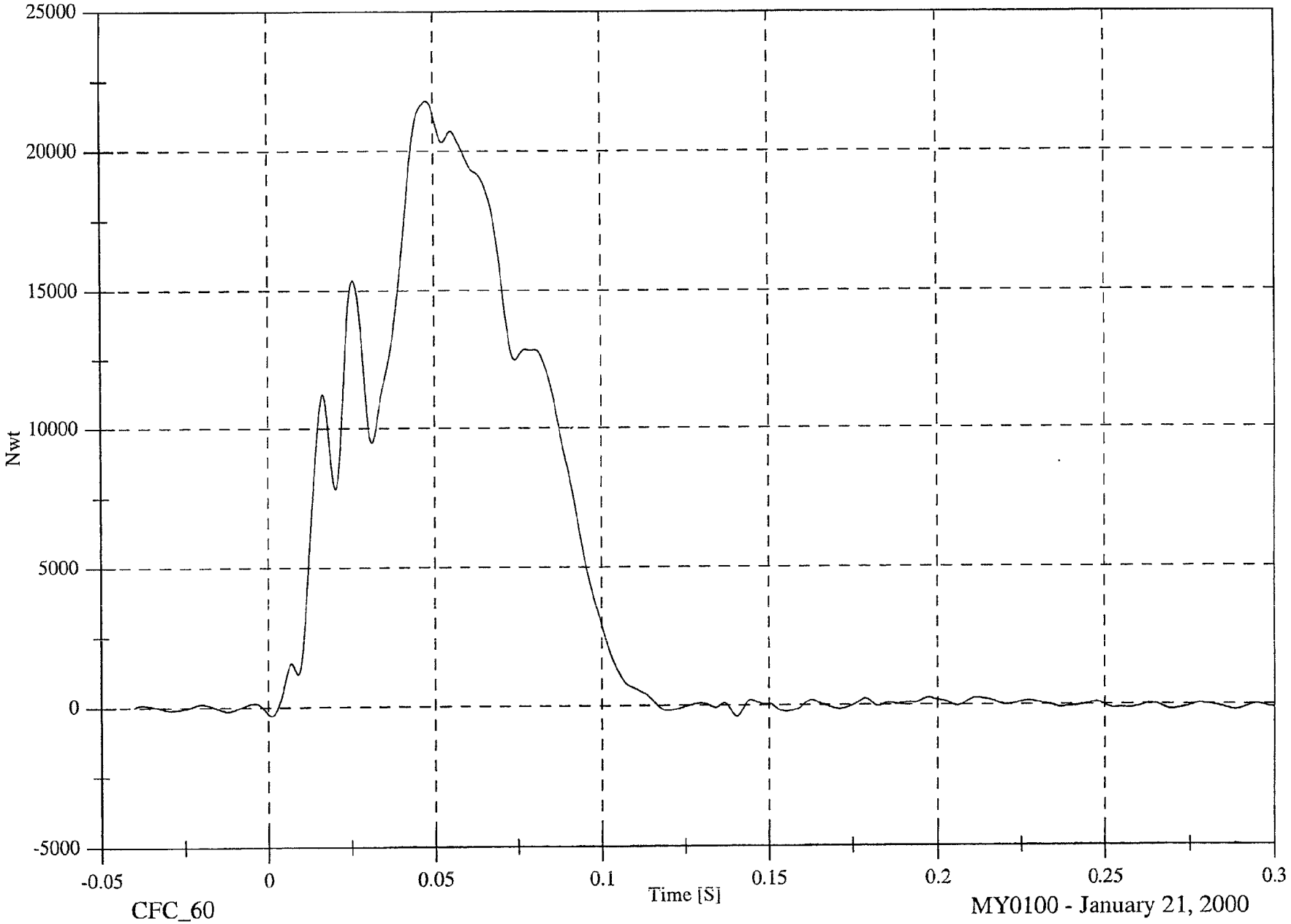
8413-50


NCAP TEST #11 - 2000 Buick LeSabre
BLC C7 Fx
Max: 24375.0 [Nwt] at 0.066 [S]
Min: -430.1 [Nwt] at 0.001 [S]
25000
20000
15000
10000
5000
0
-5000
Nwt
-0.05
0
0.05
0.1
0.15
0.2
0.25
0.3
Time [S]
CFC_60
MY0100 - January 21, 2000

NCAP TEST #11 - 2000 Buick LeSabre

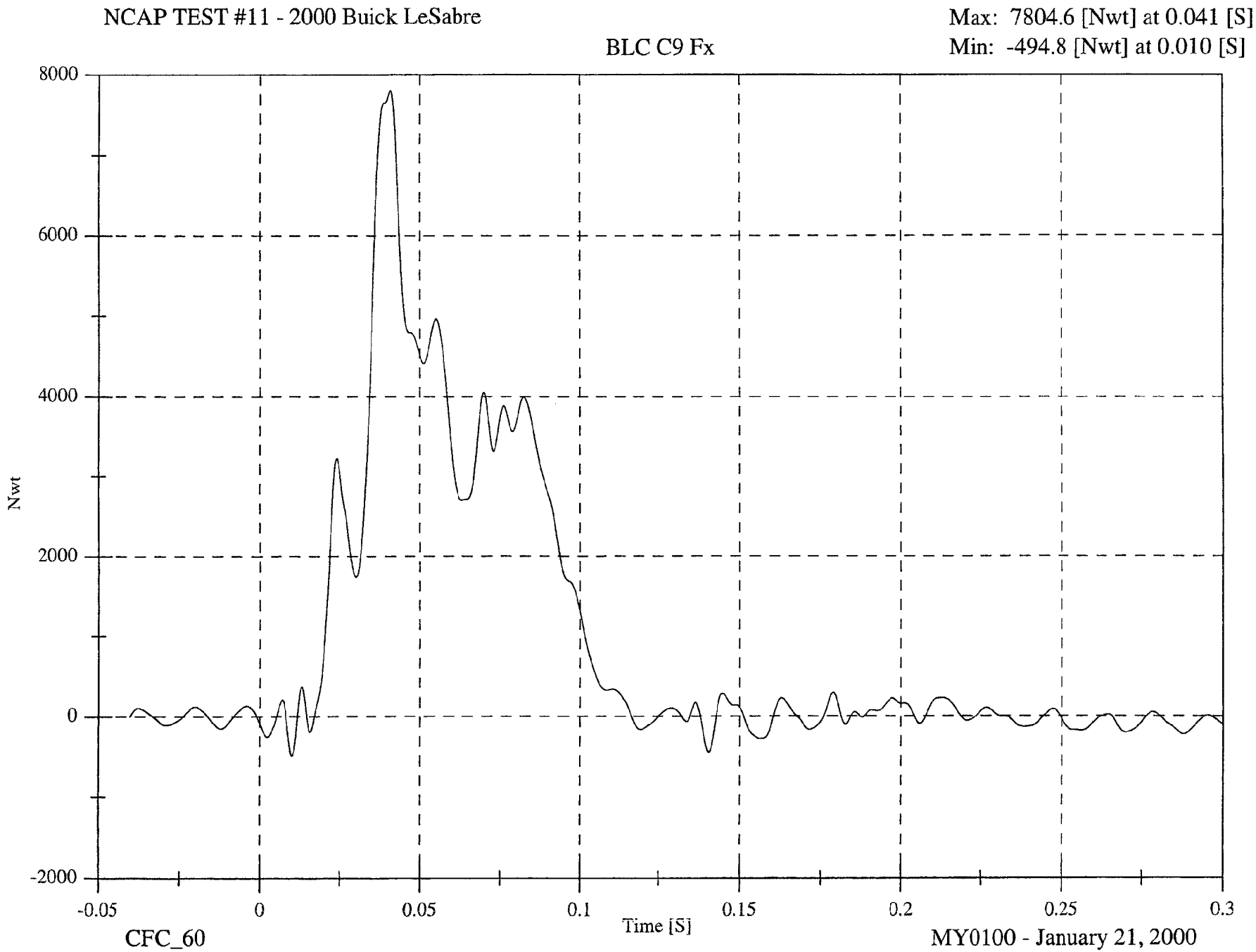
BLC C8 Fx

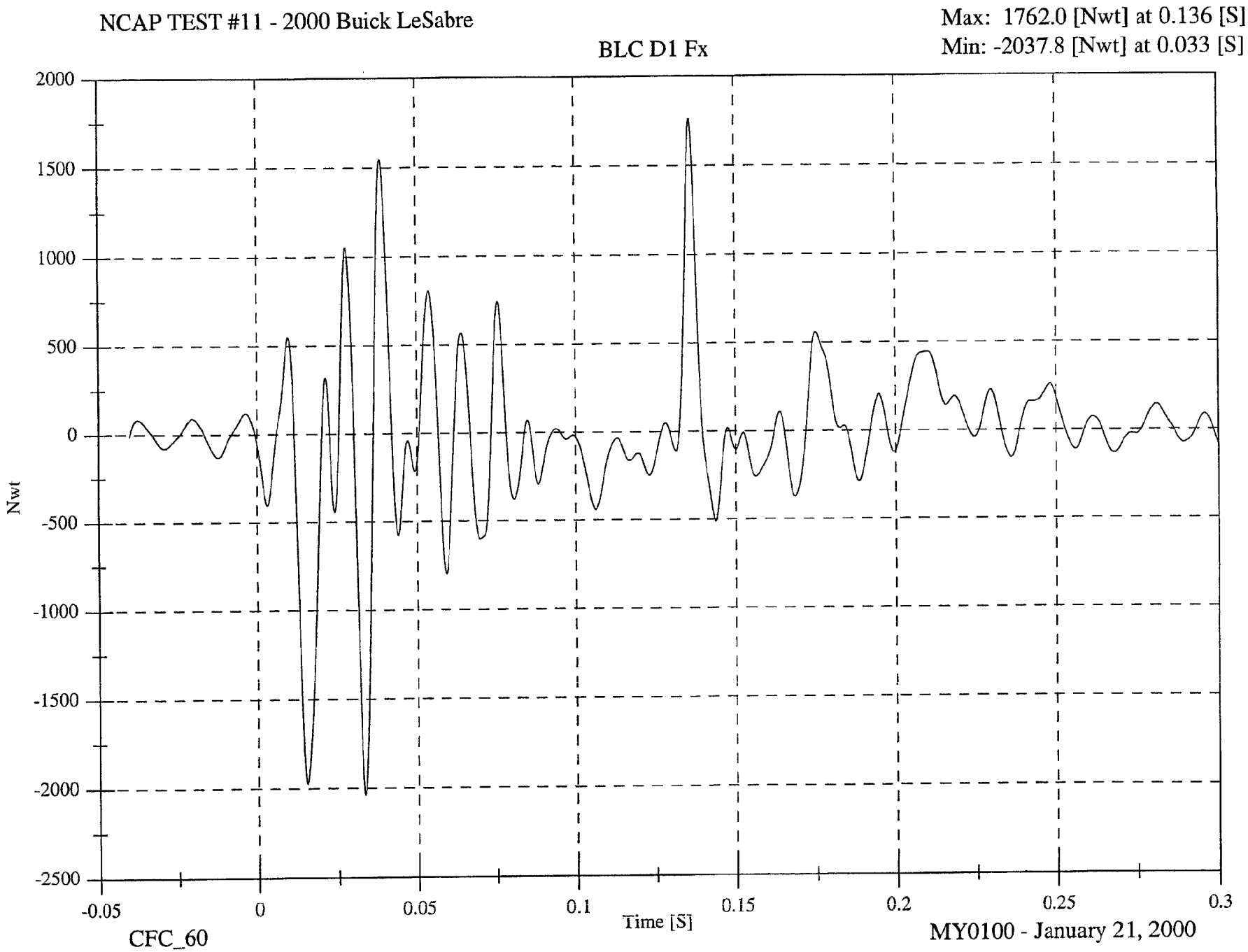
Max: 21784.1 [Nwt] at 0.048 [S]
Min: -398.0 [Nwt] at 0.140 [S]

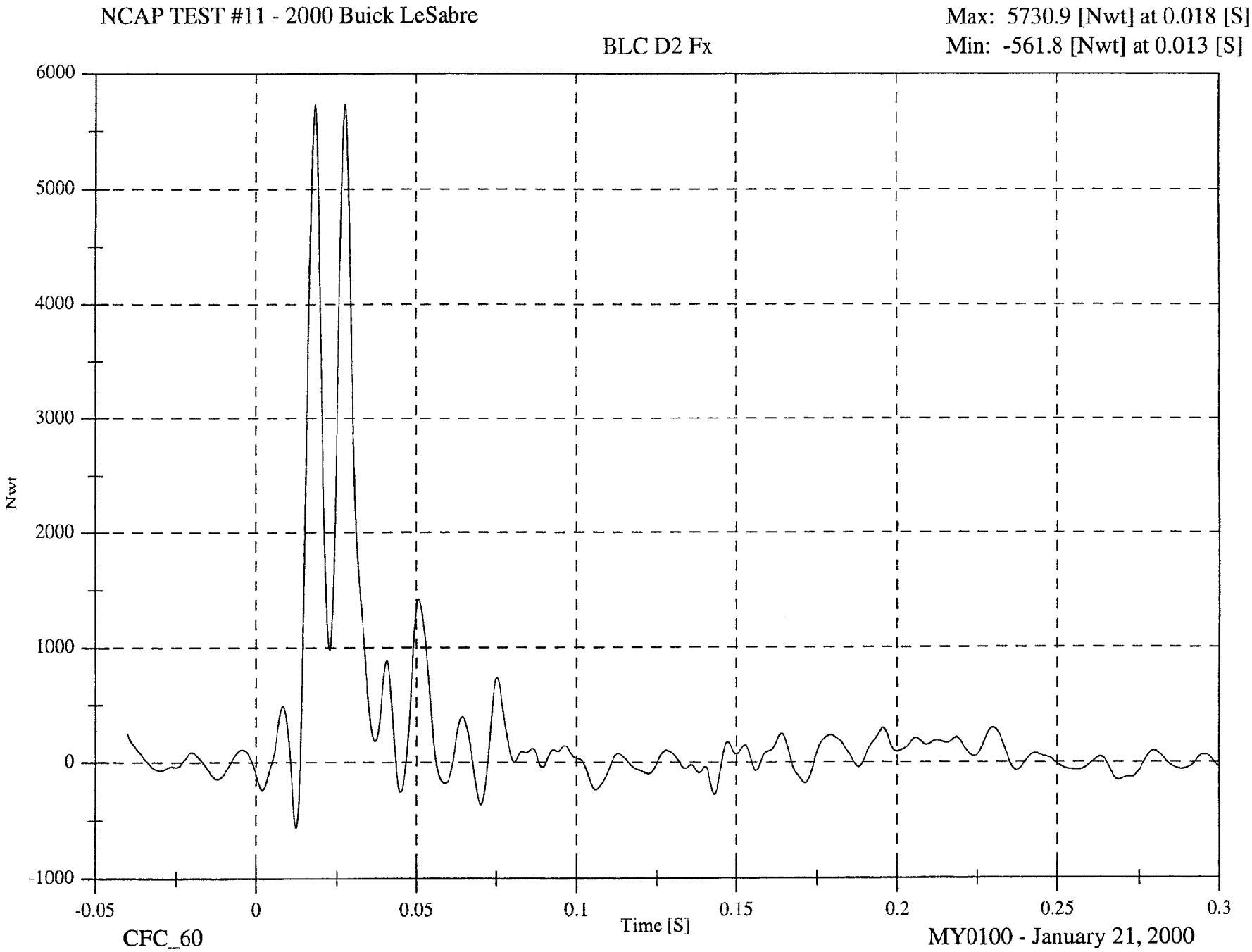


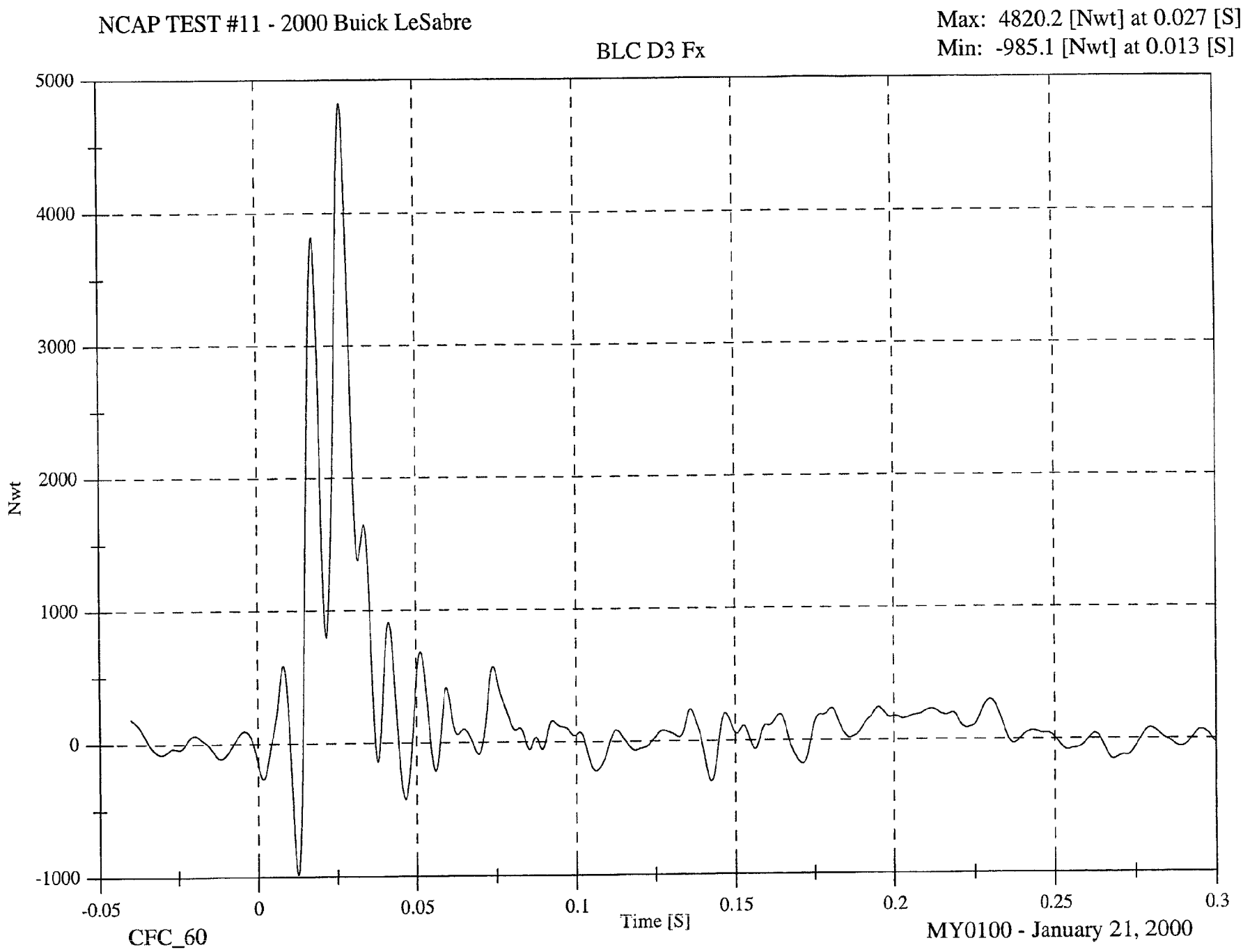
CFC_60

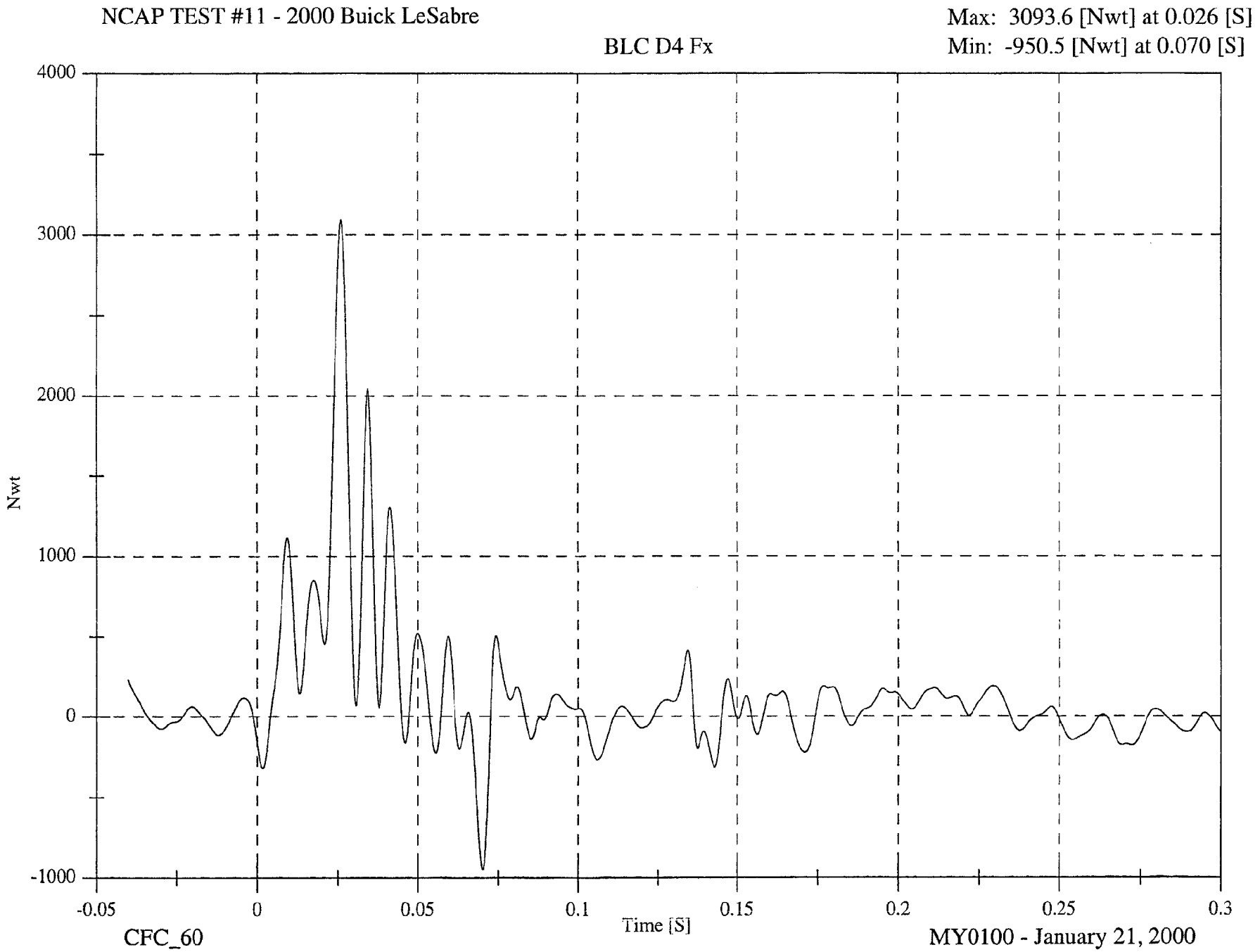
MY0100 - January 21, 2000

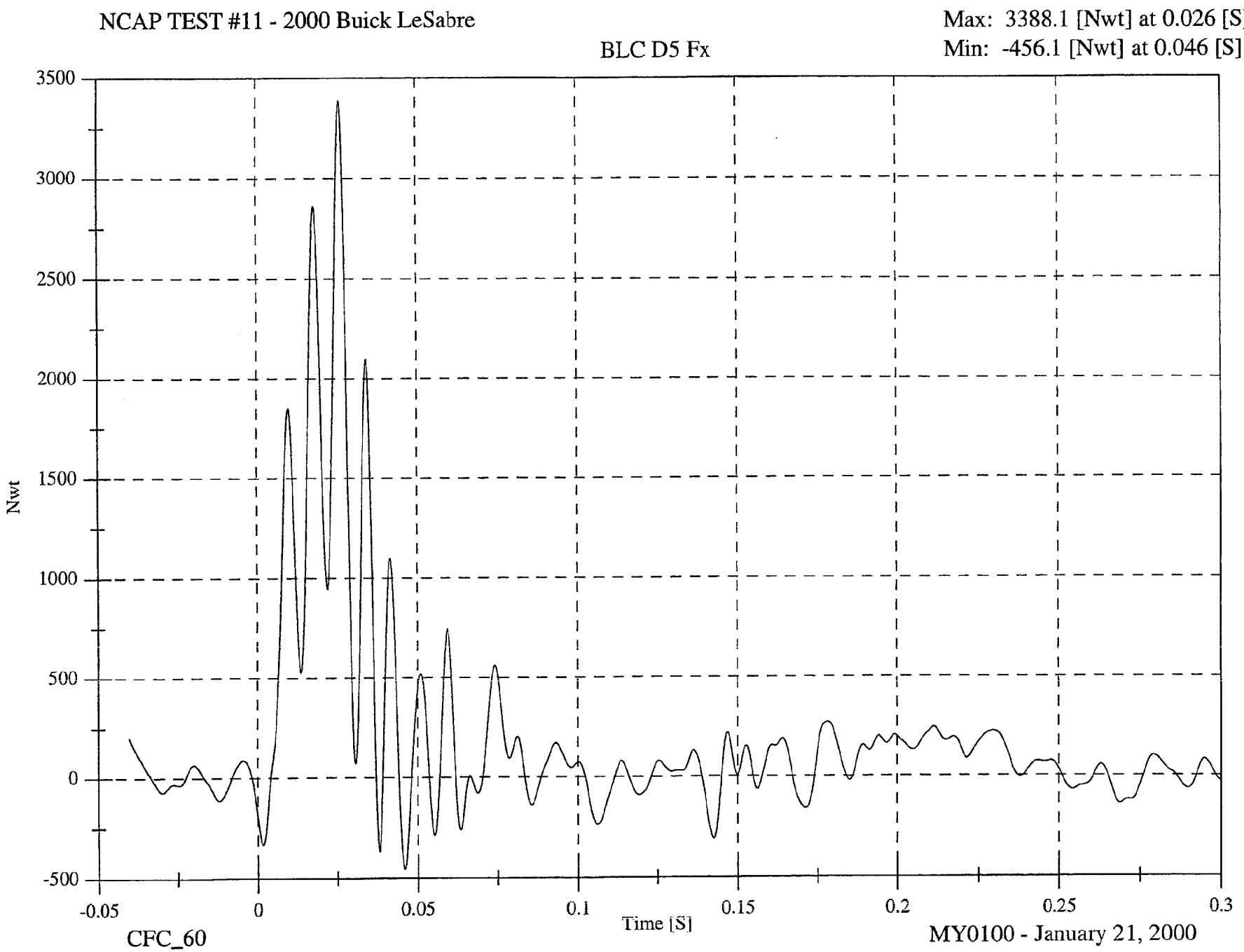

NCAP TEST #11 - 2000 Buick LeSabre
BLC C9 Fx
Max: 7804.6 [Nwt] at 0.041 [S]
Min: -494.8 [Nwt] at 0.010 [S]
8000
6000
4000
2000
0
-2000
Nwt
-0.05
0
0.05
0.1
0.15
0.2
0.25
0.3
Time [S]
CFC_60
MY0100 - January 21, 2000

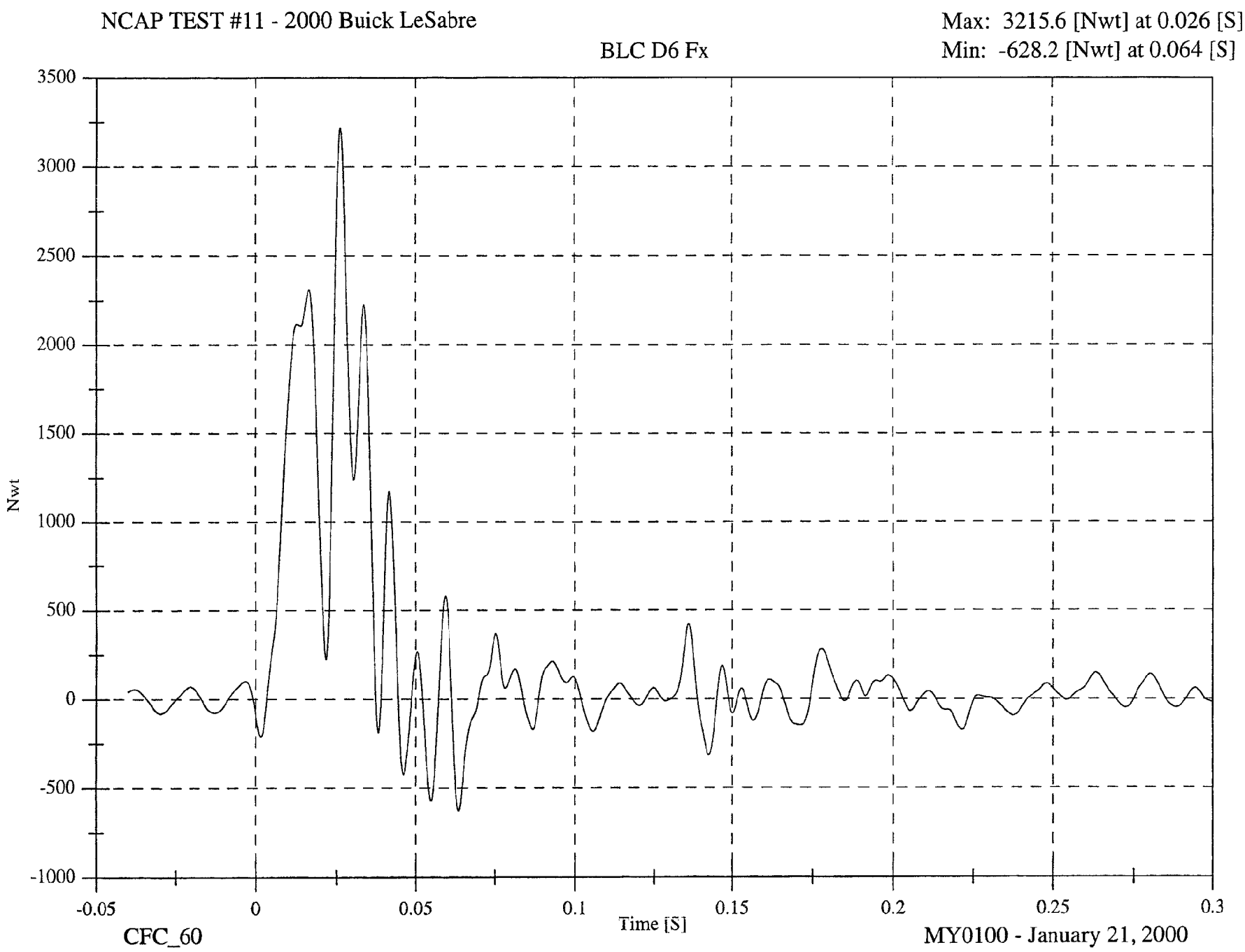

NCAP TEST #11 - 2000 Buick LeSabre
BLC D1 Fx
Max: 1762.0 [Nwt] at 0.136 [S]
Min: -2037.8 [Nwt] at 0.033 [S]
2000
1500
1000
500
0
-500
-1000
-1500
-2000
-2500
Nwt
-0.05
0
0.05
0.1
0.15
0.2
0.25
0.3
Time [S]
CFC_60
MY0100 - January 21, 2000

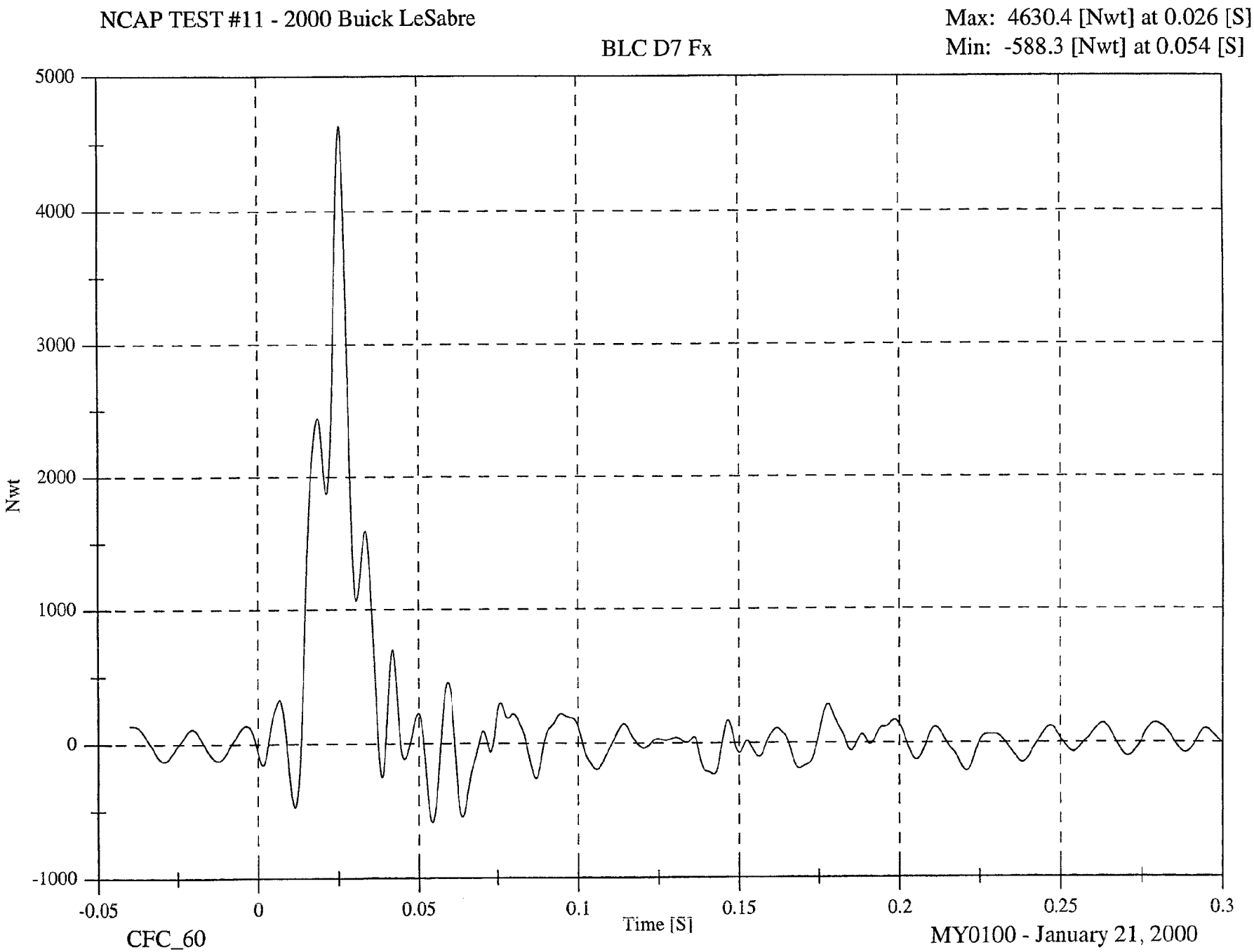

NCAP TEST #11 - 2000 Buick LeSabre
BLC D2 Fx
Max: 5730.9 [Nwt] at 0.018 [S]
Min: -561.8 [Nwt] at 0.013 [S]
6000
5000
4000
3000
2000
1000
0
-1000
Nwt
-0.05
0
0.05
0.1
0.15
0.2
0.25
0.3
Time [S]
CFC_60
MY0100 - January 21, 2000

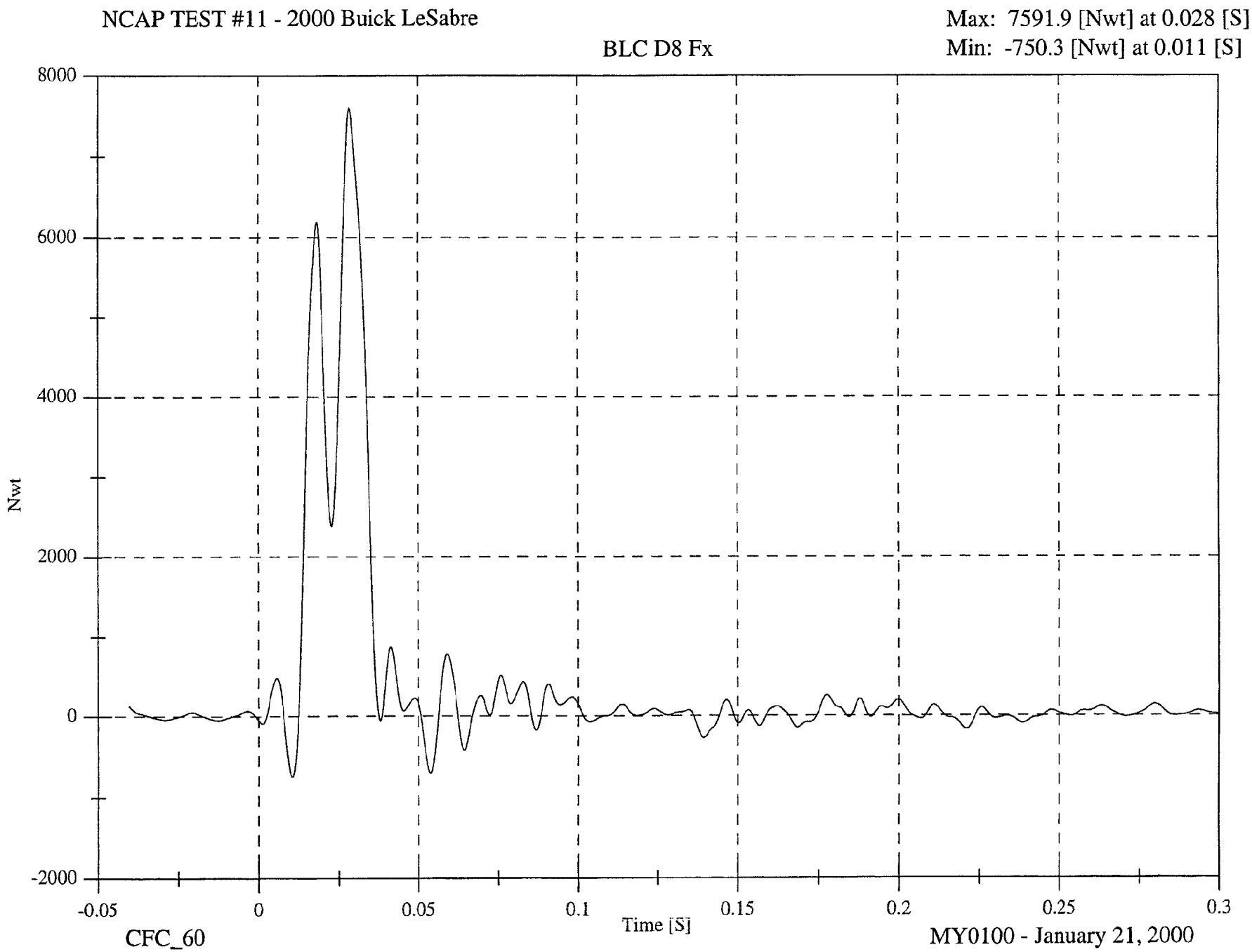

NCAP TEST #11 - 2000 Buick LeSabre
BLC D3 Fx
Max: 4820.2 [Nwt] at 0.027 [S]
Min: -985.1 [Nwt] at 0.013 [S]
5000
4000
3000
2000
1000
0
-1000
Nwt
-0.05
0
0.05
0.1
0.15
0.2
0.25
0.3
Time [S]
CFC_60
MY0100 - January 21, 2000

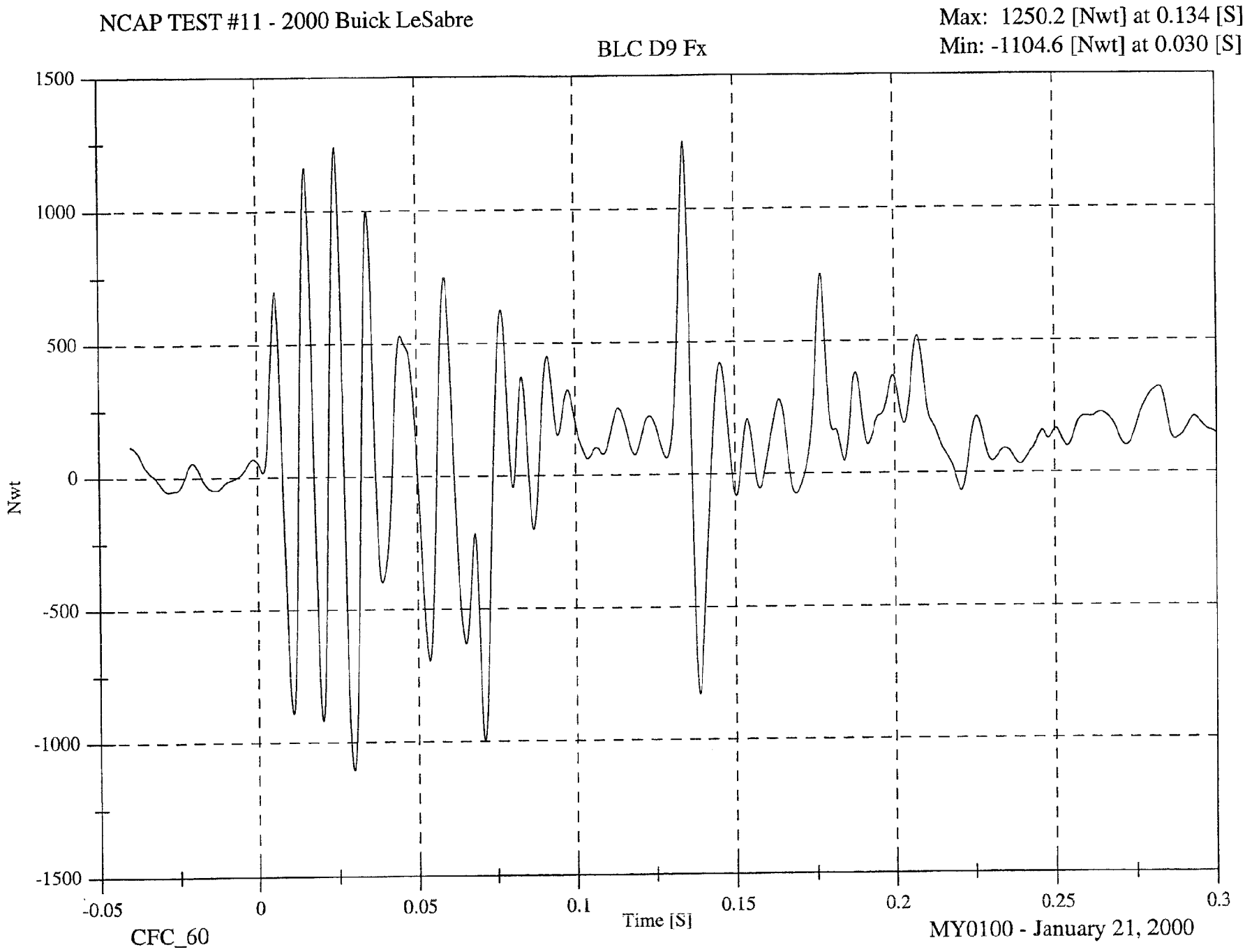

NCAP TEST #11 - 2000 Buick LeSabre
BLC D4 Fx
Max: 3093.6 [Nwt] at 0.026 [S]
Min: -950.5 [Nwt] at 0.070 [S]
4000
3000
2000
1000
0
-1000
Nwt
-0.05
0
0.05
0.1
0.15
0.2
0.25
0.3
Time [S]
CFC_60
MY0100 - January 21, 2000

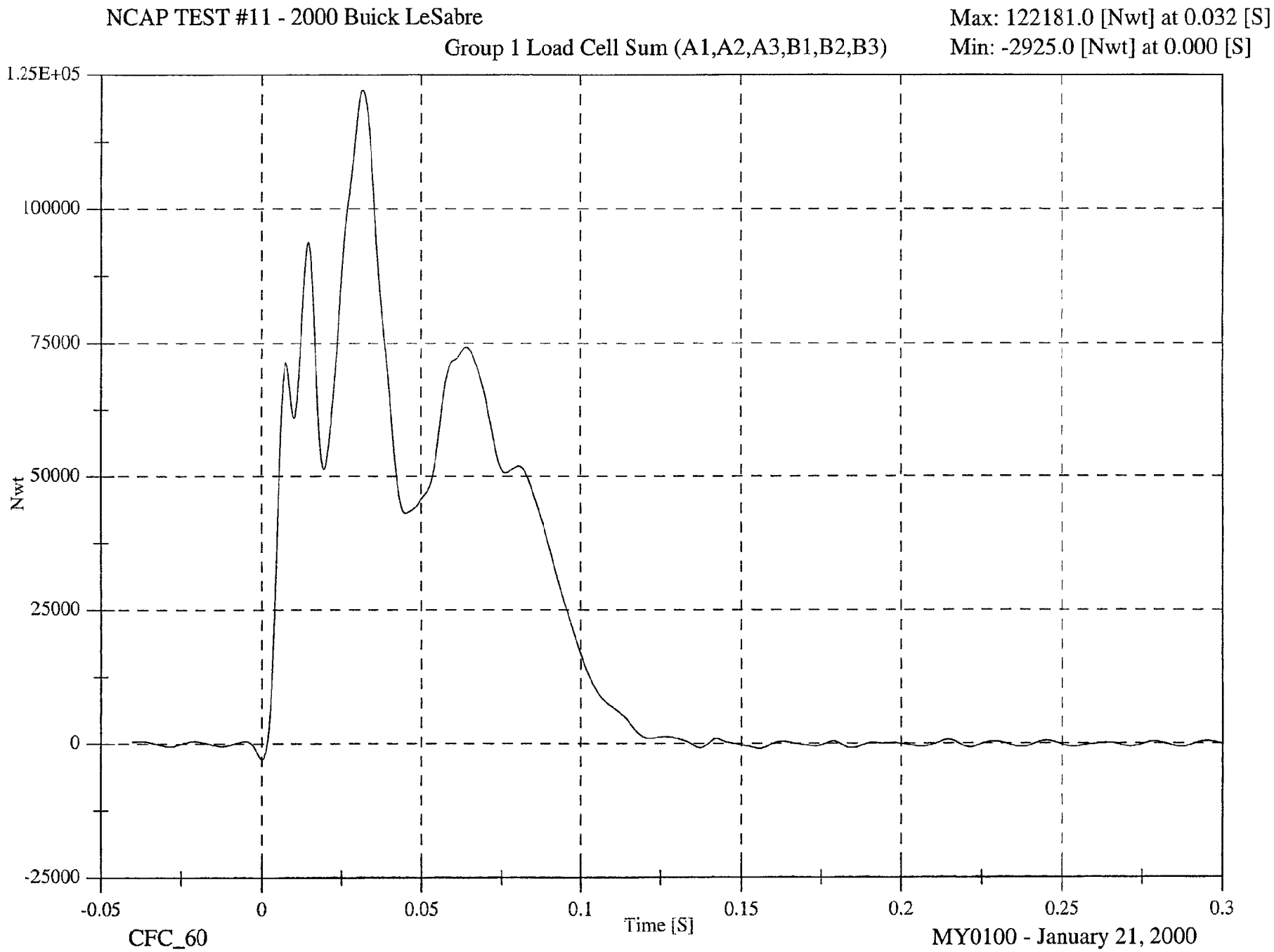

NCAP TEST #11 - 2000 Buick LeSabre
BLC D5 Fx
Max: 3388.1 [Nwt] at 0.026 [S]
Min: -456.1 [Nwt] at 0.046 [S]
3500
3000
2500
2000
1500
1000
500
0
-500
Nwt
-0.05
0
0.05
0.1
0.15
0.2
0.25
0.3
Time [S]
CFC_60
MY0100 - January 21, 2000

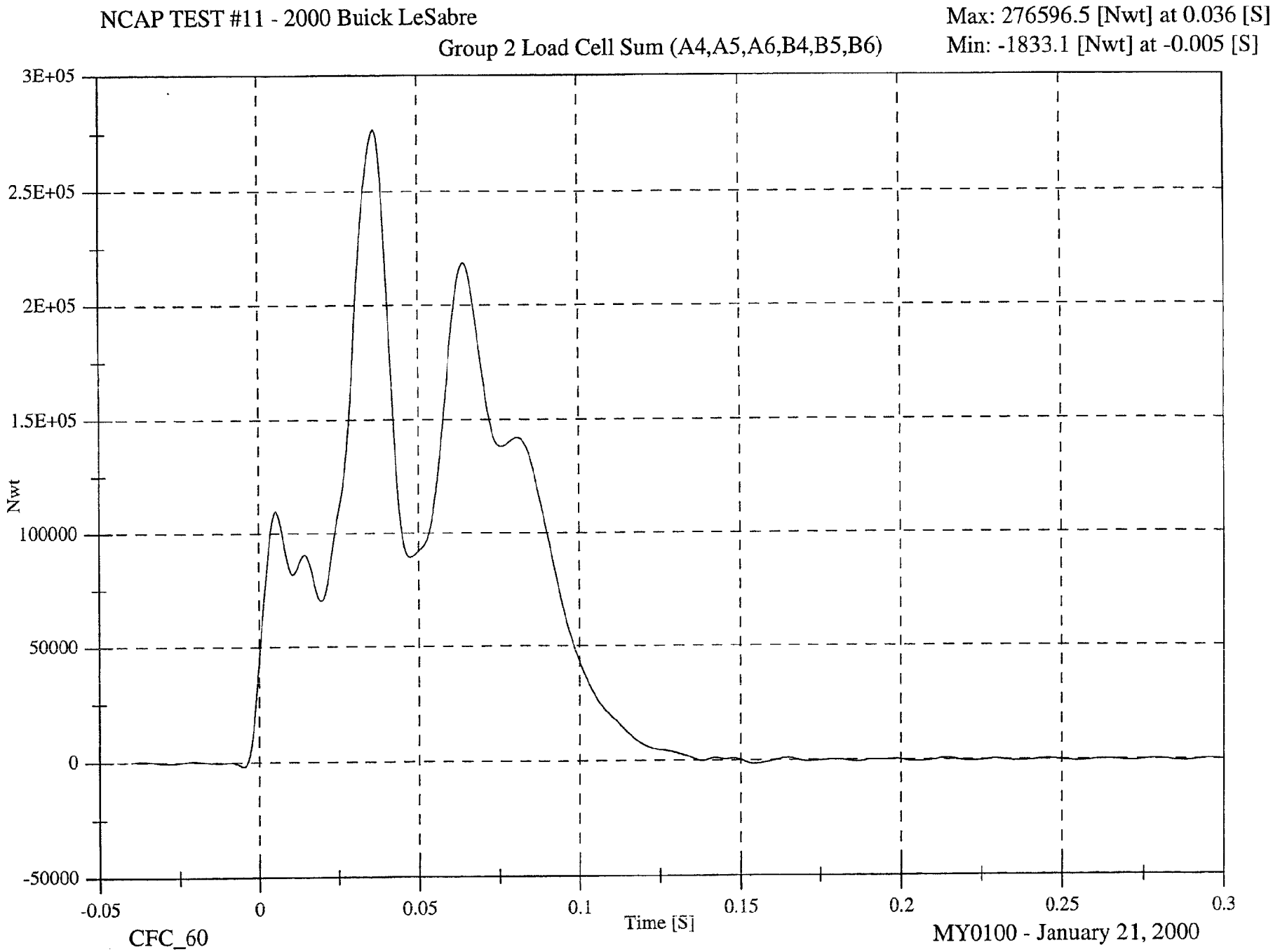

NCAP TEST #11 - 2000 Buick LeSabre
BLC D6 Fx
Max: 3215.6 [Nwt] at 0.026 [S]
Min: -628.2 [Nwt] at 0.064 [S]
3500
3000
2500
2000
1500
1000
500
0
-500
-1000
Nwt
-0.05
0
0.05
0.1
0.15
0.2
0.25
0.3
Time [S]
CFC_60
MY0100 - January 21, 2000

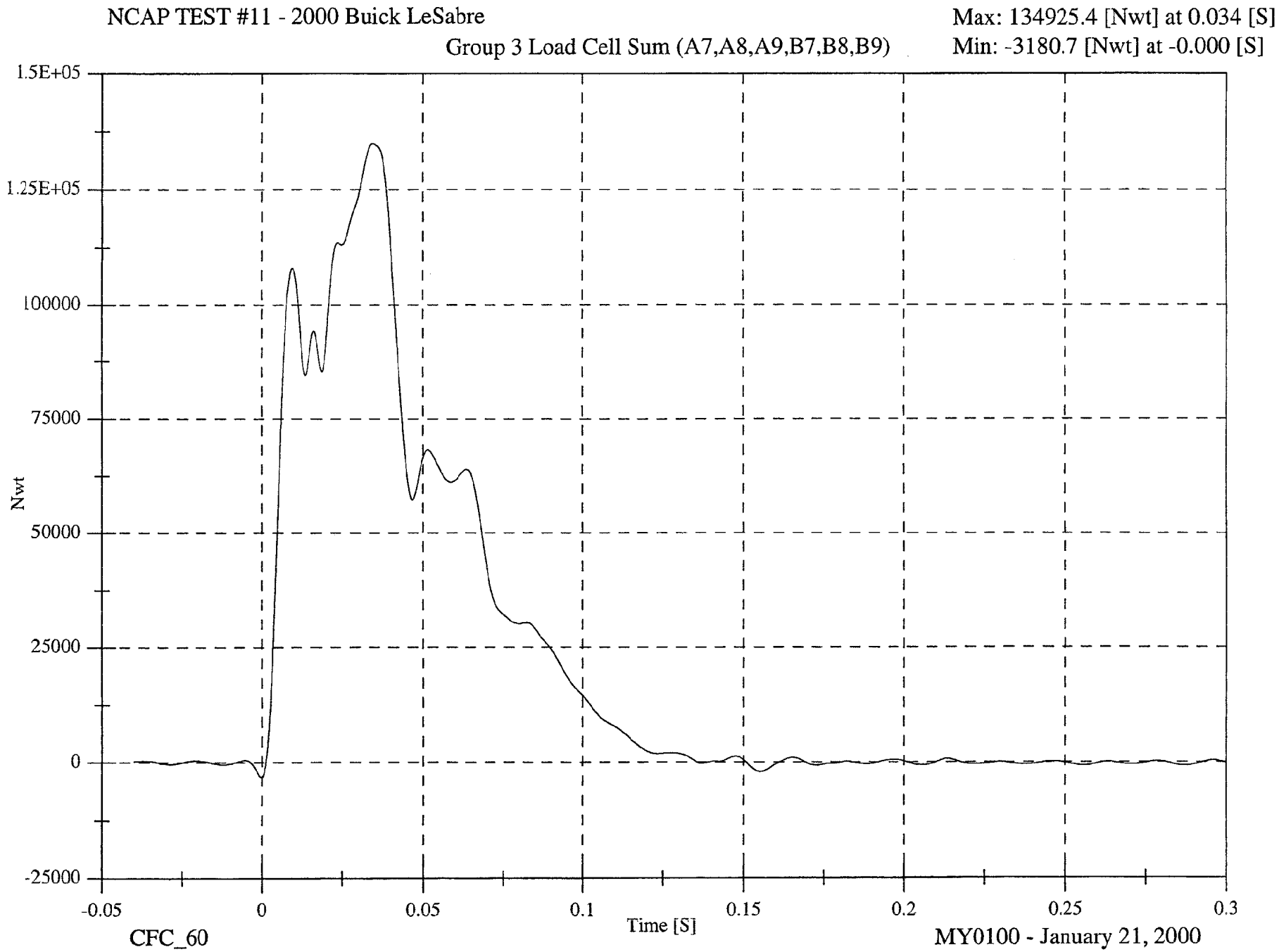

NCAP TEST #11 - 2000 Buick LeSabre
BLC D7 Fx
Max: 4630.4 [Nwt] at 0.026 [S]
Min: -588.3 [Nwt] at 0.054 [S]
5000
4000
3000
2000
1000
0
-1000
Nwt
-0.05
0
0.05
0.1
0.15
0.2
0.25
0.3
Time [S]
CFC_60
MY0100 - January 21, 2000

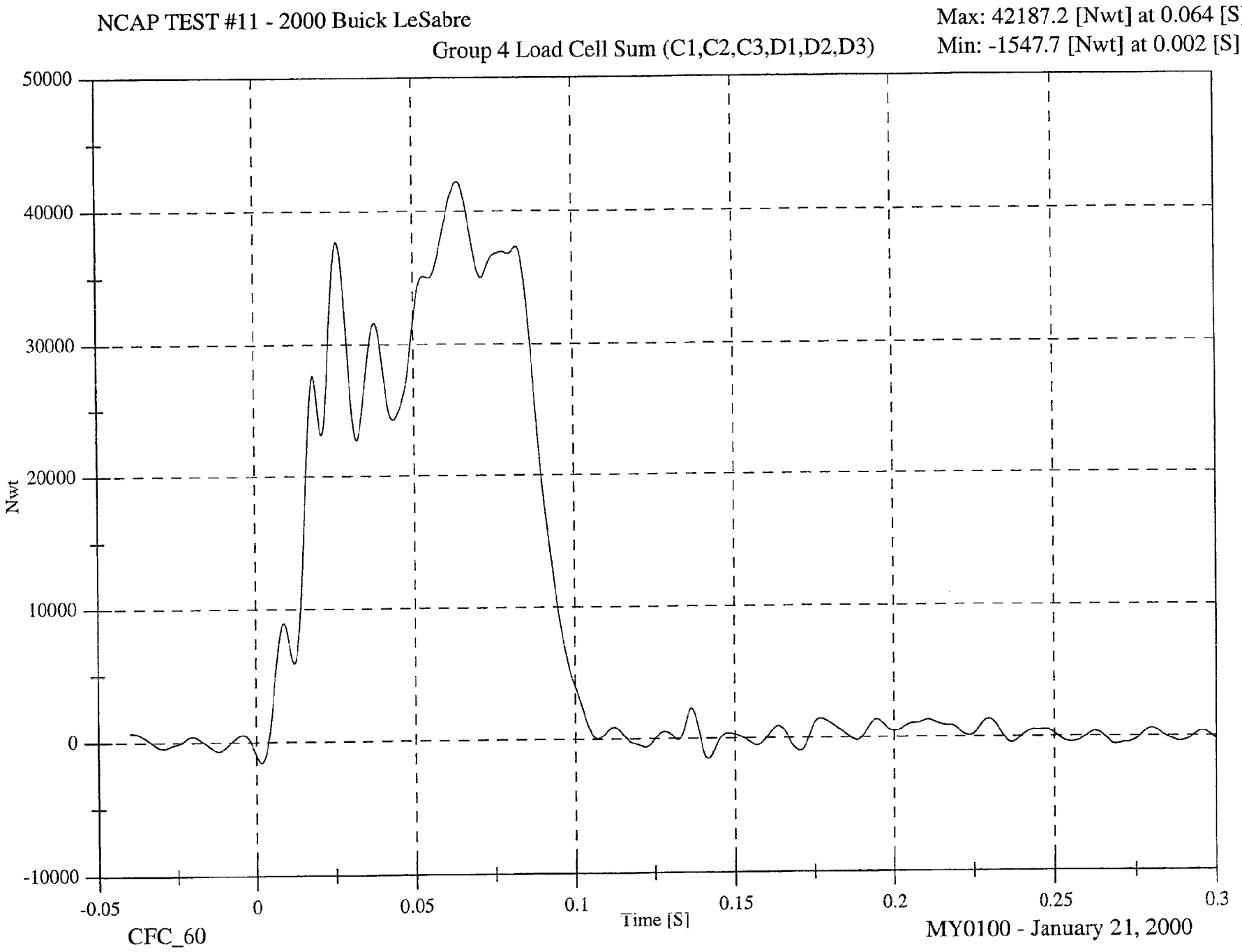

NCAP TEST #11 - 2000 Buick LeSabre
BLC D8 Fx
Max: 7591.9 [Nwt] at 0.028 [S]
Min: -750.3 [Nwt] at 0.011 [S]
8000
6000
4000
2000
0
-2000
Nwt
-0.05
0
0.05
0.1
0.15
0.2
0.25
0.3
Time [S]
CFC_60
MY0100 - January 21, 2000

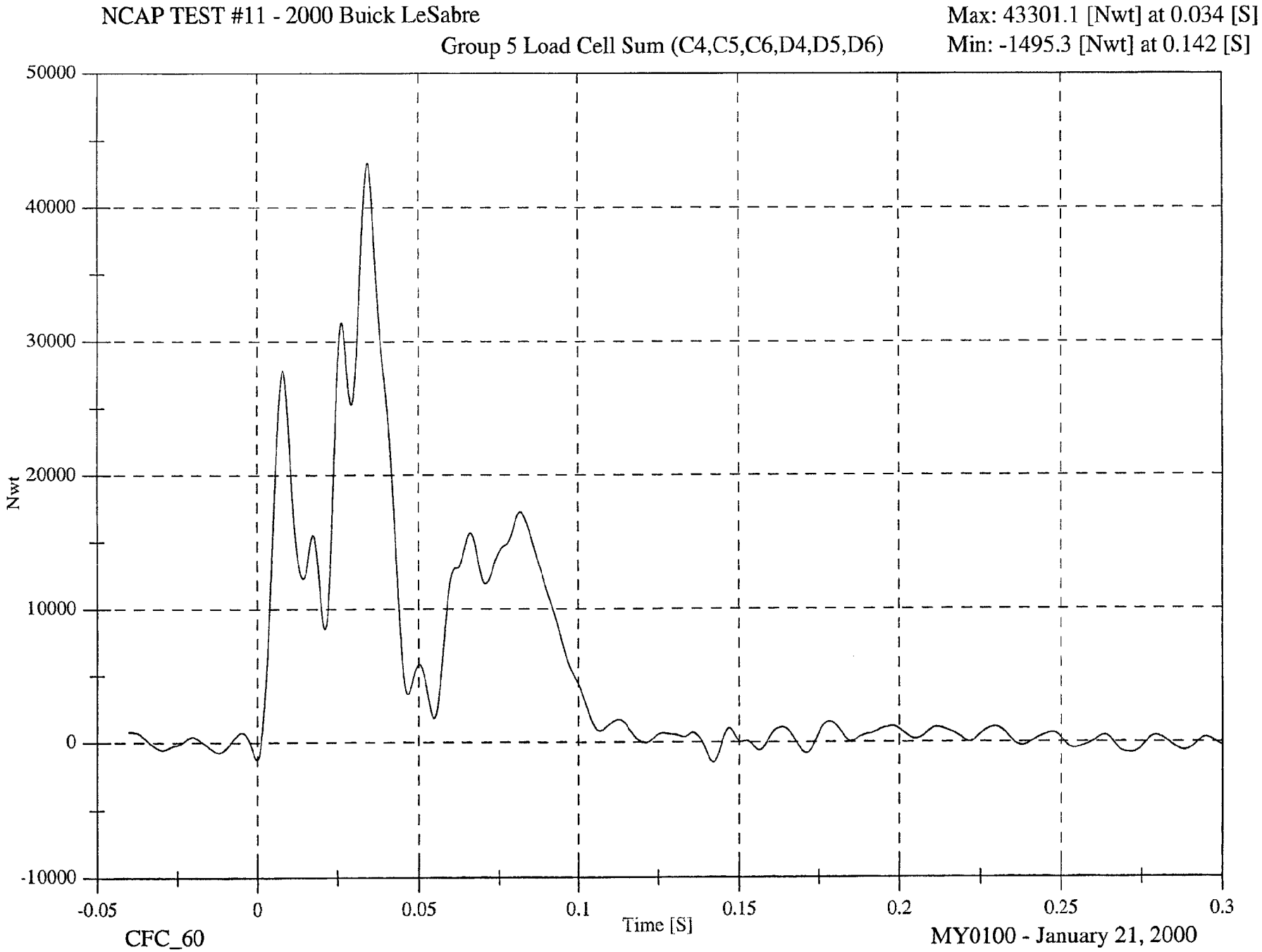

NCAP TEST #11 - 2000 Buick LeSabre
BLC D9 Fx
Max: 1250.2 [Nwt] at 0.134 [S]
Min: -1104.6 [Nwt] at 0.030 [S]
1500
1000
500
0
-500
-1000
-1500
Nwt
-0.05
0
0.05
0.1
0.15
0.2
0.25
0.3
Time [S]
CFC_60
MY0100 - January 21, 2000

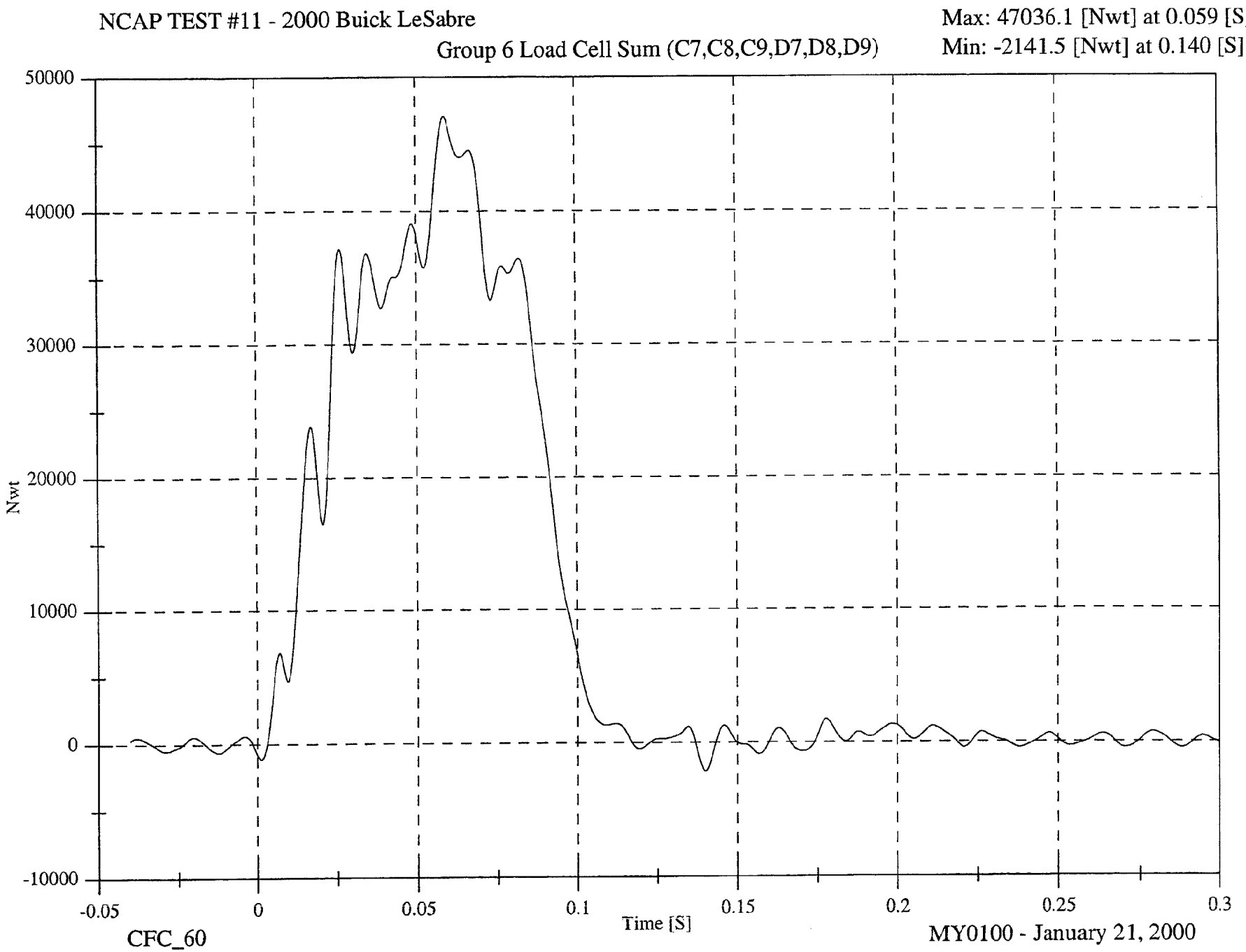

NCAP TEST #11 - 2000 Buick LeSabre
Group 1 Load Cell Sum (A1,A2,A3,B1,B2,B3)
Max: 122181.0 [Nwt] at 0.032 [S]
Min: -2925.0 [Nwt] at 0.000 [S]
1.25E+05
100000
75000
50000
25000
0
-25000
Nwt
-0.05
0
0.05
0.1
0.15
0.2
0.25
0.3
Time [S]
CFC_60
MY0100 - January 21, 2000

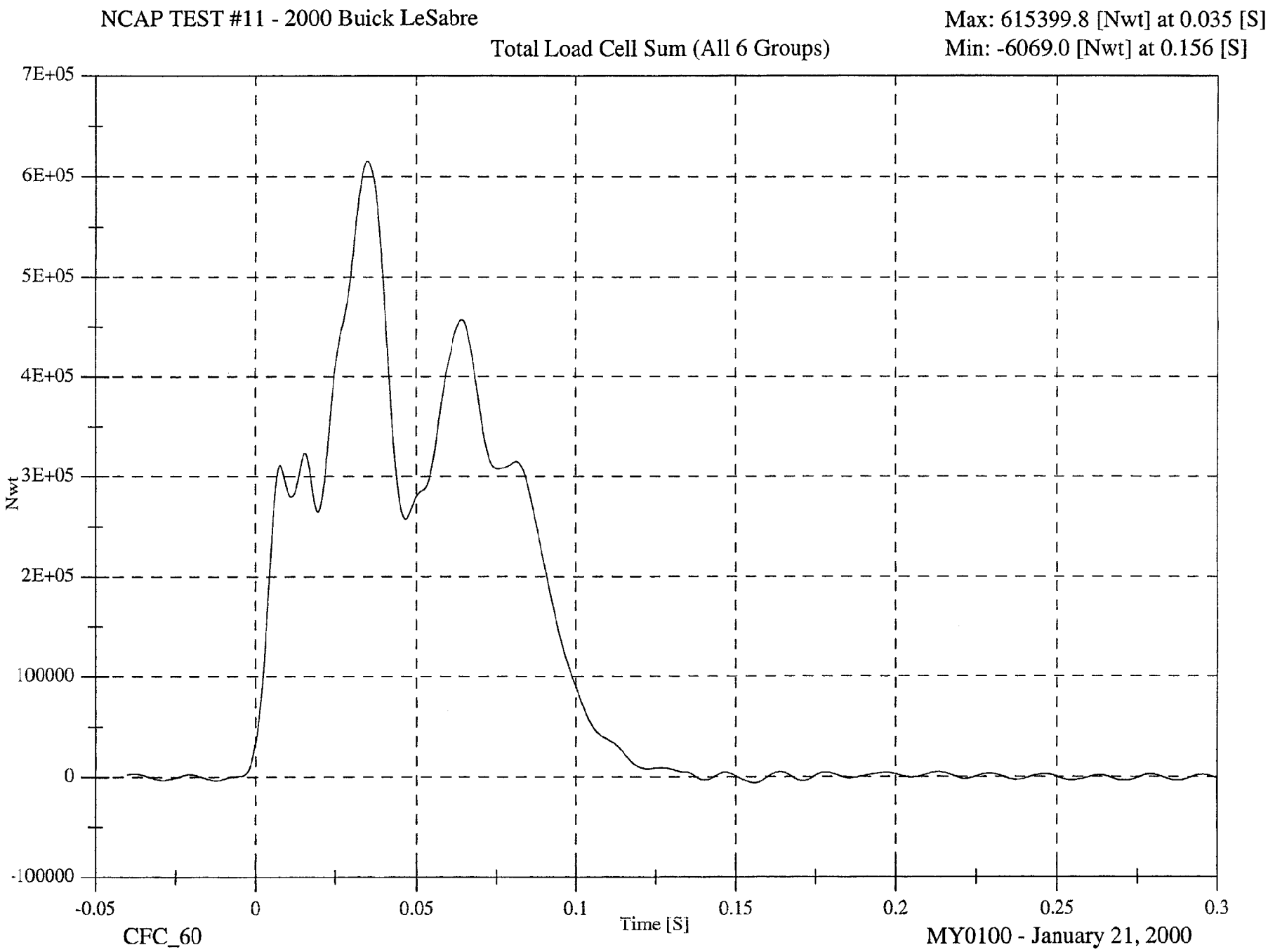

NCAP TEST #11 - 2000 Buick LeSabre
Group 2 Load Cell Sum (A4,A5,A6,B4,B5,B6)
Max: 276596.5 [Nwt] at 0.036 [S]
Min: -1833.1 [Nwt] at -0.005 [S]
3E+05
2.5E+05
2E+05
1.5E+05
100000
50000
0
-50000
Nwt
-0.05
0
0.05
0.1
0.15
0.2
0.25
0.3
Time [S]
CFC_60
MY0100 - January 21, 2000


NCAP TEST #11 - 2000 Buick LeSabre
Group 3 Load Cell Sum (A7,A8,A9,B7,B8,B9)
Max: 134925.4 [Nwt] at 0.034 [S]
Min: -3180.7 [Nwt] at -0.000 [S]
1.5E+05
1.25E+05
100000
75000
50000
25000
0
-25000
Nwt
-0.05
0
0.05
0.1
0.15
0.2
0.25
0.3
Time [S]
CFC_60
MY0100 - January 21, 2000


NCAP TEST #11 - 2000 Buick LeSabre
Group 4 Load Cell Sum (C1,C2,C3,D1,D2,D3)
Max: 42187.2 [Nwt] at 0.064 [S]
Min: -1547.7 [Nwt] at 0.002 [S]
50000
40000
30000
20000
10000
0
-10000
Nwt
-0.05
0
0.05
0.1
0.15
0.2
0.25
0.3
Time [S]
CFC_60
MY0100 - January 21, 2000


NCAP TEST #11 - 2000 Buick LeSabre
Group 5 Load Cell Sum (C4,C5,C6,D4,D5,D6)
Max: 43301.1 [Nwt] at 0.034 [S]
Min: -1495.3 [Nwt] at 0.142 [S]
50000
40000
30000
20000
10000
0
-10000
Nwt
-0.05
0
0.05
0.1
0.15
0.2
0.25
0.3
Time [S]
CFC_60
MY0100 - January 21, 2000


NCAP TEST #11 - 2000 Buick LeSabre
Group 6 Load Cell Sum (C7,C8,C9,D7,D8,D9)
Max: 47036.1 [Nwt] at 0.059 [S]
Min: -2141.5 [Nwt] at 0.140 [S]
50000
40000
30000
20000
10000
0
-10000
Nwt
-0.05
0
0.05
0.1
0.15
0.2
0.25
0.3
Time [S]
CFC_60
MY0100 - January 21, 2000


NCAP TEST #11 - 2000 Buick LeSabre
Total Load Cell Sum (All 6 Groups)
Max: 615399.8 [Nwt] at 0.035 [S]
Min: -6069.0 [Nwt] at 0.156 [S]
7E+05
6E+05
5E+05
4E+05
3E+05
2E+05
100000
0
-100000
Nwt
-0.05
0
0.05
0.1
0.15
0.2
0.25
0.3
Time [S]
CFC_60
MY0100 - January 21, 2000

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.

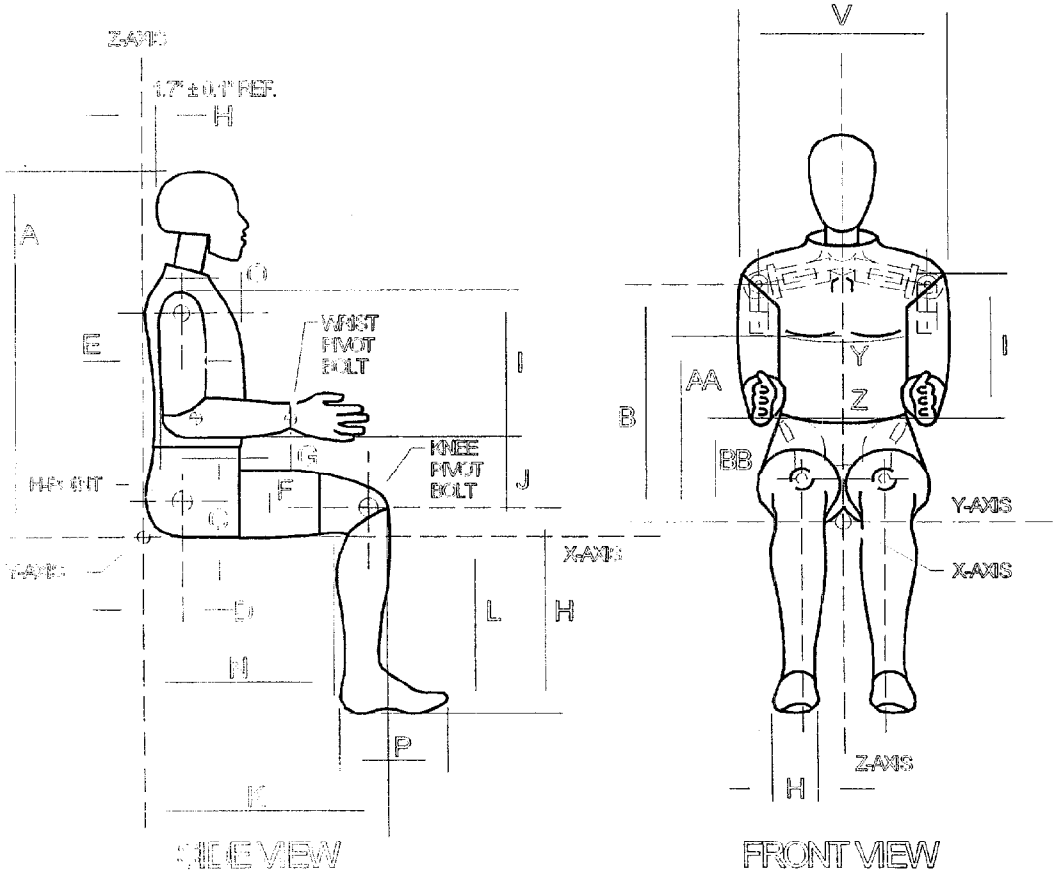
Dummy serial numbers and certification dates are:

Position No./Location	Serial No.	Completion Date
#1/Driver	064	1/14/00
#2/Right Front Passenger	245	1/10/00

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 Indicant Testing Final Report No. 6525-V-1.

EXTERNAL DIMENSIONS SPECIFICATIONS



NOTE: Pelvis is referenced to the ear-eye seated position. The curved lumbar does not allow the Hybrid III to be positioned in a perfect ear-eye attitude. (REF: SAE J1733(Aug 94))

PART 572E
HEAD DROP TEST

Dummy Serial Number	064
Sequential Test Number	1
Date	1/14/99
Workfile	064100.hdp

TEST PARAMETER	SPECIFICATION	TEST RESULTS
Temperature	66-78 Deg F	70
Relative Humidity	10% - 70%	31
Peak Resultant Acceleration	225-275 G's	253.2
Peak Lateral Acceleration	15 G's Max	8.3
Is Acceleration Curve Unimodal?	YES	yes

Remarks:

Laboratory Technician: B. Swiecicki

PART 572E
NECK FLEXION TEST

Dummy Serial Number	064
Sequential Test Number	1
Date	1/14/00
Workfile	064100.nfx

6 Axis Neck Transducer

TEST PARAMETER		SPECIFICATION	TEST RESULTS
Temperature		69-72 Deg F	70
Relative Humidity		10% - 70%	31
Impact Velocity		22.60 - 23.40 Ft/s	22.71
Pendulum Deceleration	10 ms	22.50 - 27.50 G's	23.71
	20 ms	17.60 - 22.60 G's	19.60
	30 ms	12.50 - 18.50 G's	15.60
Max Pendulum G's Above 30 ms		29 G's Max	15.60
Deceleration - Time Curve Decay Time to 5 G's		34 - 42 ms	40.50
D Plane Rotation	Max	64 - 78 Deg	73.03
	Time	57 - 64 ms	60.50
Moment About Occipital Condyle	Max	65 - 80 Ft-Lbs	79.17
	Time	47 - 58 ms	54.00
Rotation Angle - Time Curve Decay Time to Zero		113 - 128 ms	120.88
Positive Moment - Time Curve Decay Time to Zero		97 - 107 ms	101.75

Remarks:

Laboratory Technician: B. Swiecicki

PART 572E
NECK EXTENSION TEST

Dummy Serial Number	064
Sequential Test Number	1
Date	1/14/00
Workfile	064100.nex

6 Axis Neck Transducer

TEST PARAMETER		SPECIFICATION	TEST RESULTS
Temperature		69-72 Deg F	70
Relative Humidity		10% - 70%	31
Impact Velocity		19.50 - 20.30 Ft/s	19.77
Pendulum Deceleration	10 ms	17.20 - 21.20 G's	19.56
	20 ms	14.00 - 19.00 G's	16.94
	30 ms	11.00 - 16.00 G's	13.93
Max Pendulum G's Above 30 ms		22 G's Max	13.93
Deceleration - Time Curve Decay Time to 5 G's		38 - 46 ms	42.25
D Plane Rotation	Max	81 - 106 Deg	98.13
	Time	72 - 82 ms	75.25
Moment About Occipital Condyle	Max	-59.0 - -39.0 Ft-Lbs	-57.58
	Time	65 - 79 ms	69.75
Rotation Angle - Time Curve Decay Time to Zero		147 - 174 ms	146.88
Positive Moment - Time Curve Decay Time to Zero		120 - 148 ms	141.88

Remarks:

Laboratory Technician: B. Swiecicki

PART 572E
THORAX IMPACT TEST

Dummy Serial Number	064
Sequential Test Number	1
Date	1/14/00
Workfile	064100.th3

TEST PARAMETER	SPECIFICATION	TEST RESULTS
Temperature	69-72 Deg F	71
Relative Humidity	10% - 70%	32
Pendulum Velocity	21.6 - 22.4 Ft/s	21.75
Maximum Deflection	2.50 - 2.86 in	2.59
Maximum Resistive Force	1160 - 1325 Lbs	1278.73
Internal Hysteresis	69 - 85 %	74.4

Remarks:

Laboratory Technician: B. Swiecicki

PART 572E
KNEE IMPACT TEST

Dummy Serial Number	064
Sequential Test Number	1
Date	1/14/00
Workfile	064100

TEST PARAMETER	SPECIFICATION	TEST RESULTS
LEFT KNEE		
Temperature	66 - 78 Deg F	71
Relative Humidity	10% - 70%	32
Probe Velocity	6.8 - 7.0 Ft/s	7.00
Peak Knee Impact Force	1060 - 1300 Lbs	1255
RIGHT KNEE		
Temperature	66 - 78 Deg F	71
Relative Humidity	10% - 70%	32
Probe Velocity	6.8 - 7.0 Ft/s	7.00
Peak Knee Impact Force	1060 - 1300 Lbs	1246

Remarks:

Laboratory Technician: B. Swiecicki

PART 572E
EXTERNAL DIMENSIONS

Dummy Serial Number 064
Sequential Test Number 1
Date 1/14/00

TEST PARAMETER		SPECIFICATION	TEST RESULTS
Temperature			70
Relative Humidity			32
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	38.8
Waist Circumference	Z	32.9 - 34.1 in	33.3
Chest Depth	O	8.4 - 9.0 in	8.6
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	34.8
Thigh Clearance	F	5.5 - 6.1 in	6.0
Buttock Knee Length	K	22.8 - 23.8 in	23.6
Buttock Popliteal Length	N	17.8 - 18.8 in	18.4
Popliteal Height	L	16.9 - 17.9 in	17.3
Knee Pivot Height	M	19.1 - 19.7 in	19.4
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	3.6
Shoulder Breadth	V	16.6 - 17.2 in	16.8
Shoulder Pivot Height	B	19.9 - 20.5 in	20.4
Elbow Rest Height	J	7.5 - 8.3 in	8.0
Shoulder - Elbow Length	I	13.0 - 13.6 in	13.3
Back of Elbow to Wrist Pivot	G	11.4 - 12.0 in	11.6

Remarks:

Laboratory Technician: B. Swiecicki

PART 572E
HEAD DROP TEST

Dummy Serial Number	245
Sequential Test Number	1
Date	1/04/00
Workfile	245100.hdp

TEST PARAMETER	SPECIFICATION	TEST RESULTS
Temperature	66-78 Deg F	71
Relative Humidity	10% - 70%	33
Peak Resultant Acceleration	225-275 G's	271.2
Peak Lateral Acceleration	15 G's Max	11.3
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	1/11/00
Workfile	245100.nfx

6 Axis Neck Transducer

TEST PARAMETER		SPECIFICATION	TEST RESULTS
Temperature		69-72 Deg F	71
Relative Humidity		10% - 70%	33
Impact Velocity		22.60 - 23.40 Ft/s	22.80
Pendulum Deceleration	10 ms	22.50 - 27.50 G's	23.21
	20 ms	17.60 - 22.60 G's	19.58
	30 ms	12.50 - 18.50 G's	15.78
Max Pendulum G's Above 30 ms		29 G's Max	15.78
Deceleration - Time Curve Decay Time to 5 G's		34 - 42 ms	40.50
D Plane Rotation	Max	64 - 78 Deg	69.79
	Time	57 - 64 ms	63.75
Moment About Occipital Condyle	Max	65 - 80 Ft-Lbs	69.40
	Time	47 - 58 ms	53.50
Rotation Angle - Time Curve Decay Time to Zero		113 - 128 ms	121.38
Positive Moment - Time Curve Decay Time to Zero		97 - 107 ms	104.50

Remarks:

Laboratory Technician: B. Swiecicki

PART 572E
NECK EXTENSION TEST

Dummy Serial Number	245
Sequential Test Number	1
Date	1/11/00
Workfile	245100.nex

6 Axis Neck Transducer

TEST PARAMETER		SPECIFICATION	TEST RESULTS
Temperature		69-72 Deg F	70
Relative Humidity		10% - 70%	33
Impact Velocity		19.50 - 20.30 Ft/s	19.59
Pendulum Deceleration	10 ms	17.20 - 21.20 G's	19.42
	20 ms	14.00 - 19.00 G's	17.29
	30 ms	11.00 - 16.00 G's	15.04
Max Pendulum G's Above 30 ms		22 G's Max	15.04
Deceleration - Time Curve Decay Time to 5 G's		38 - 46 ms	41.75
D Plane Rotation	Max	81 - 106 Deg	93.02
	Time	72 - 82 ms	76.25
Moment About Occipital Condyle	Max	-59.0 - -39.0 Ft-Lbs	-42.10
	Time	65 - 79 ms	65.38
Rotation Angle - Time Curve Decay Time to Zero		147 - 174 ms	151.88
Positive Moment - Time Curve Decay Time to Zero		120 - 148 ms	139.50

Remarks:

Laboratory Technician: B. Swiecicki

PART 572E
THORAX IMPACT TEST

Dummy Serial Number	245
Sequential Test Number	1
Date	1/11/00
Workfile	245100.th3

TEST PARAMETER	SPECIFICATION	TEST RESULTS
Temperature	69-72 Deg F	70
Relative Humidity	10% - 70%	31
Pendulum Velocity	21.6 - 22.4 Ft/s	21.67
Maximum Deflection	2.50 - 2.86 in	2.64
Maximum Resistive Force	1160 - 1325 Lbs	1169.04
Internal Hysteresis	69 - 85 %	72.3

Remarks:

Laboratory Technician: B. Swiecicki

PART 572E
KNEE IMPACT TEST

Dummy Serial Number	245
Sequential Test Number	1
Date	1/14/00
Workfile	245100

TEST PARAMETER	SPECIFICATION	TEST RESULTS
LEFT KNEE		
Temperature	66 - 78 Deg F	71
Relative Humidity	10% - 70%	31
Probe Velocity	6.8 - 7.0 Ft/s	7.00
Peak Knee Impact Force	1060 - 1300 Lbs	1147
RIGHT KNEE		
Temperature	66 - 78 Deg F	71
Relative Humidity	10% - 70%	31
Probe Velocity	6.8 - 7.0 Ft/s	7.00
Peak Knee Impact Force	1060 - 1300 Lbs	1150

Remarks:

Laboratory Technician: B. Swiecicki

PART 572E
EXTERNAL DIMENSIONS

Dummy Serial Number 245
Sequential Test Number 1
Date 1/10/00

TEST PARAMETER		SPECIFICATION	TEST RESULTS
Temperature			71
Relative Humidity			32
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	39.0
Waist Circumference	Z	32.9 - 34.1 in	33.7
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	34.9
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	18.3
Popliteal Height	L	16.9 - 17.9 in	17.5
Knee Pivot Height	M	19.1 - 19.7 in	19.2
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	8.0
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

(6 Month Calibration Minimum)

DRIVER DUMMY (S/N 064)		Manufacturer	Serial #	Calibration	
				Last	Next
Head	X	ENDEVCO	AC-C15021	11/12/99	5/12/00
	Y	ENDEVCO	AC-C15007	11/12/99	5/12/00
	Z	ENDEVCO	AC-AH5N0	11/12/99	5/12/00
Head	X (R)	ENDEVCO	AC-P13329	10/5/99	4/5/00
	Y (R)	ENDEVCO	AC-P13355	10/5/99	4/5/00
	Z (R)	ENDEVCO	AC-J31026	11/17/99	5/17/00
Neck Load Cell	X	DENTON	LC-440FX	8/6/99	2/6/00
	Y	DENTON	LC-440FY	8/6/99	2/6/00
	Z	DENTON	LC-440FZ	8/6/99	2/6/00
Neck Moment	X	DENTON	LC-440MX	8/6/99	2/6/00
	Y	DENTON	LC-440MY	8/6/99	2/6/00
	Z	DENTON	LC-440MZ	8/6/99	2/6/00
Chest	X	ENDEVCO	AC-A08A	12/17/99	6/17/00
	Y	ENDEVCO	AC-ADL42	12/17/99	6/17/00
	Z	ENDEVCO	AC-A28F	12/17/99	6/17/00
Chest	X (R)	ENDEVCO	AC-A14077	12/17/99	6/17/00
	Y (R)	ENDEVCO	AC-A13882	12/17/99	6/17/00
	Z (R)	ENDEVCO	AC-ACCW0	12/17/99	6/17/00
Chest Deflection Gauge		SERVO	DS-064	8/6/99	2/6/00
Hybrid III Use Only					
Pelvic	X	ENDEVCO	AC-AF480	12/17/99	6/17/00
	Y	ENDEVCO	AC-AC2M6	12/17/99	6/17/00
	Z	ENDEVCO	AC-AF5C1	12/17/99	6/17/00

INSTRUMENT CALIBRATION FOR DRIVER DUMMY

(6 Month Calibration Minimum)

DRIVER DUMMY (S/N 064)		Manufacturer	Serial #	Calibration	
				Last	Next
Left Femur Load Cell		GSE	LC-954	10/19/99	4/19/00
Right Femur Load Cell		GSE	LC-955	10/19/99	4/19/00
Left Upper Tibia	Mx	DENTON	LC-045MX	9/16/99	3/16/00
	My	DENTON	LC-045MY	9/16/99	3/16/00
Left Lower Tibia	Fz	DENTON	LC-125FZ	9/16/99	3/16/00
	Mx	DENTON	LC-125MX	9/16/99	3/16/00
	My	DENTON	LC-125MY	9/16/99	3/16/00
Right Upper Tibia	Mx	DENTON	LC-038MX	9/16/99	3/16/00
	My	DENTON	LC-038MY	9/16/99	3/16/00
Right Lower Tibia	Fz	DENTON	LC-124FZ	9/16/99	3/16/00
	Mx	DENTON	LC-124MX	9/16/99	3/16/00
	My	DENTON	LC-124MY	9/16/99	3/16/00
Left Foot Rear	X	ENDEVCO	AC-J32176	10/11/99	4/11/00
	Z	ENDEVCO	AC-J31042	10/11/99	4/11/00
Left Foot Front	Z	ENDEVCO	AC-J31009	10/11/99	4/11/00
Right Foot Rear	X	ENDEVCO	AC-J31050	10/11/99	4/11/00
	Z	ENDEVCO	AC-J31060	10/11/99	4/11/00
Right Foot Front	Z	ENDEVCO	AC-J32143	10/11/99	4/11/00
Lap Belt Load Cells		LEBOW	LC-635	10/19/99	4/11/00
Shoulder Belt Load Cells		-	-	-	-
Spool-Out Potentiometer		-	-	-	-
Belt Stretch Transducer		-	-	-	-

INSTRUMENT CALIBRATION FOR PASSENGER DUMMY

(6 Month Calibration Minimum)

PASSENGER DUMMY (S/N 245)		Manufacturer	Serial #	Calibration	
				Last	Next
Head	X	ENDEVCO	AC-A57G	9/27/99	3/27/00
	Y	ENDEVCO	AC-AGHF5	9/27/99	3/27/00
	Z	ENDEVCO	AC-AL6K2	9/27/99	3/27/00
Head	X (R)	ENDEVCO	AC-J31058	10/7/99	4/7/00
	Y (R)	ENDEVCO	AC-J31010	10/7/99	4/7/00
	Z (R)	ENDEVCO	AC-J31034	10/7/99	4/7/00
Neck Load Cell	X	DENTON	LC-076Fx	8/6/99	2/6/00
	Y	DENTON	LC-076Fy	8/6/99	2/6/00
	Z	DENTON	LC-076Fz	8/6/99	2/6/00
Neck Moment	X	DENTON	LC-076Mx	8/6/99	2/6/00
	Y	DENTON	LC-076My	8/6/99	2/6/00
	Z	DENTON	LC-076Mz	8/6/99	2/6/00
Chest	X	ENDEVCO	AC-FB32L	9/27/99	3/27/00
	Y	ENDEVCO	AC-AE8W7	9/27/99	3/27/00
	Z	ENDEVCO	AC-AL508	9/27/99	3/27/00
Chest	X (R)	ENDEVCO	AC-P13331	10/5/99	4/5/00
	Y (R)	ENDEVCO	AC-P13356	10/5/99	4/5/00
	Z (R)	ENDEVCO	AC-P13323	10/5/99	4/5/00
Chest Deflection Gauge		SERVO	DS-245	11/23/99	5/23/00
Hybrid III Use Only					
Pelvic	X	ENDEVCO	AC-C14953	9/27/99	3/27/00
	Y	ENDEVCO	AC-C14966	9/27/99	3/27/00
	Z	ENDEVCO	AC-C14968	9/27/99	3/27/00

INSTRUMENT CALIBRATION FOR PASSENGER DUMMY

(6 Month Calibration Minimum)

PASSENGER DUMMY (S/N 245)		Manufacturer	Serial #	Calibration	
				Last	Next
Left Femur Load Cell		GSE	LC-723	10/20/99	4/20/00
Right Femur Load Cell		GSE	LC-419	10/20/99	4/20/00
Left Upper Tibia	Mx	DENTON	LC-016Mx	9/16/99	3/16/00
	My	DENTON	LC-016My	9/16/99	3/16/00
Left Lower Tibia	Fz	DENTON	LC-123Fz	9/16/99	3/16/00
	Mx	DENTON	LC-123Mx	9/16/99	3/16/00
	My	DENTON	LC-123My	9/16/99	3/16/00
Right Upper Tibia	Mx	DENTON	LC-023Mx	10/12/99	4/12/00
	My	DENTON	LC-023My	10/12/99	4/12/00
Right Lower Tibia	Fz	DENTON	LC-111Fz	10/12/99	4/12/00
	Mx	DENTON	LC-111Mx	10/12/99	4/12/00
	My	DENTON	LC-111My	10/12/99	4/12/00
Left Foot Rear	X	ENDEVCO	AC-J32184	10/11/99	4/11/00
	Z	ENDEVCO	AC-J31011	10/11/99	4/11/00
Left Foot Front	Z	ENDEVCO	AC-J32185	10/11/99	4/11/00
Right Foot Rear	X	ENDEVCO	AC-J31101	10/11/99	4/11/00
	Z	ENDEVCO	AC-J31020	10/11/99	4/11/00
Right Foot Front	Z	ENDEVCO	AC-J31059	10/11/99	4/11/00
Lap Belt Load Cells		LEBOW	LC-711	10/19/99	4/19/00
Shoulder Belt Load Cells		-	-	-	-
Spool-Out Potentiometer		-	-	-	-
Belt Stretch Transducer		-	-	-	-

INSTRUMENT CALIBRATION FOR VEHICLE ACCELEROMETERS

(6 Month Calibration Minimum)

	Manufacturer	Serial #	Calibration	
			Last	Next
Left Seat Rear Crossmember	ICS	AC-D69	9/1/99	3/1/00
Right Rear Seat Crossmember	ICS	AC-D93	12/7/99	6/7/00
Top of Engine	ENDEVCO	AC-AP1A0	9/3/99	3/3/00
Bottom of Engine	ENTRAN	AC-D03	9/3/99	3/3/00
Right Disc Brake Caliper	ENDEVCO	AC-J18570	12/6/99	6/6/00
Instrument Panel	ENDEVCO	AC-BC48	9/14/99	3/14/00
Left Disc Brake Caliper	ENDEVCO	AC-BA65	9/3/99	3/3/00
Left Seat Rear Crossmember (R)	ICS	AC-D29	9/14/99	3/14/00
Right Seat Rear Crossmember (R)	ICS	AC-Y151	9/1/99	3/1/00