

V3665

REPORT NUMBER: CAL-01-2-6

**NATIONAL HIGHWAY TRAFFIC SAFETY ADMINISTRATION
FRONTAL BARRIER 40% OFFSET IMPACT TEST**

**FUJI HEAVY INDUSTRIES
2000 SUBARU LEGACY
4-DOOR SEDAN**

NHTSA NUMBER: RY5503

VERIDIAN TEST NUMBER: 8413-62

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



May 22, 2001

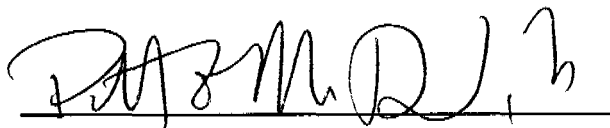
FINAL REPORT

PREPARED FOR

U S. DEPARTMENT OF TRANSPORTATION
National Highway Traffic Safety Administration
Research and Development
Crashworthiness Research Division
Mail Code: NRD-11
400 Seventh Street, SW, Room No 6226
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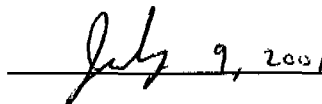
Patrick G. MacDiarmid, Jr., Project Engineer

Approved by

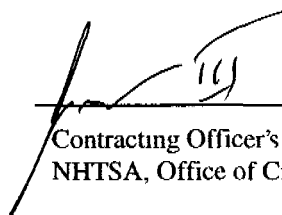


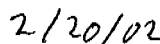
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Approval Date

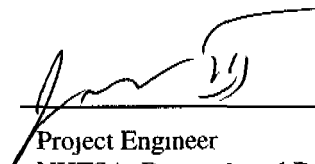


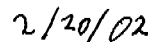
FINAL REPORT ACCEPTANCE BY OCS

 *for Brian Park*
Contracting Officer's Technical Representative (COTR),
NHTSA, Office of Crashworthiness Standards


2/20/02

Date of Report Acceptance


Project Engineer
NHTSA, Research and Development


2/20/02

Date of Report Acceptance

TECHNICAL REPORT STANDARD TITLE PAGE

1 <i>Report No</i> CAL-00-2-6		2 <i>Government Accession No</i>		3 <i>Recipient's Catalog No</i>	
4 <i>Title and Subtitle</i> Final Report of Frontal Barrier 40% Offset Testing of a 2000 Subaru Legacy 4-Door Sedan NHTSA No RY5503				5 <i>Report Date</i> May 22, 2001	
				6 <i>Performing Organization Code</i> CAL	
7 <i>Author(s)</i> David J Travale, Program Manager Patrick G MacDiarmid, Jr , Project Engineer				8 <i>Performing Organization Report No</i> 8413-62	
9 <i>Performing Organization Name and Address</i> Veridian Engineering 4455 Genesee Street Buffalo, New York 14225				10 <i>Work Unit No</i>	
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12 <i>Sponsoring Agency Name and Address</i> U S DEPARTMENT OF TRANSPORTATION National Highway Traffic Safety Administration Research and Development Crashworthiness Research Division Mail Code NRD-11 400 Seventh Street, SW, Room No 6226 Washington, DC 20590				13 <i>Type of Report and Period Covered</i> Final Report	
				14 <i>Sponsoring Agency Code</i> NRD-11	
15 <i>Supplementary Notes</i>					
16 <i>Abstract</i> This test is to evaluate the use of the Thor Advanced Lower Extremity (Thor-FLx) in the frontal 40% offset deformable barrier test. A frontal 40% offset barrier impact test of a 2000 Subaru Legacy 4-Door Sedan was performed at Veridian Engineering crash test facility in Buffalo, New York, on May 22, 2001. The impact velocity was 59.87 kph and the temperature at the barrier face was 21.7°C. The maximum post-test vehicle crush was 468 mm. The test vehicle was equipped with 3-point restraint systems, knee bolsters, and airbags at both the driver and right outboard passenger seating positions. With respect to FMVSS 208 "Occupant Crash Protection - Injury Criteria" both the driver and passenger appeared to comply with head, chest, and femur requirements.					
ATD Position	HIC	Clip (g's)	Chest Disp (mm)	Left Femur (N)	Right Femur (N)
Driver (288)	188 6	36 4	26 2	2935 6	2926 1
Passenger (421)	203 0	37 4	25 2	2023 8	1300 9
17 <i>Key Words</i> Frontal 40% Offset Barrier Impact test Thor-FLx/HIIIr			18 <i>Distribution Statement</i> Copies of this report are available from NHTSA Technical Reference Division National Highway Traffic Safety Admin 400 Seventh St , SW, Room 5108 Washington, DC 20590		
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SECTION 1

PURPOSE AND SUMMARY OF TEST RY5503

PURPOSE

This 59.87 kph frontal 40% offset barrier impact test is part of the Test Procedure Development Program sponsored by the National Highway Traffic Safety Administration (NHTSA) under Contract No. DTNH22-96-D-02010. The purpose of this test was to evaluate the performance of Thor-Lx 5th percentile adult female Hybrid III retrofit (Thor-FLx/HIIIr) version lower legs and obtain vehicle crashworthiness and occupant and restraint system performance data.

The frontal 40% offset barrier impact test was conducted in accordance with the Office of Crashworthiness Standards Laboratory Indicant Test procedure.

SUMMARY

A deformable honeycomb barrier was impacted by a 2000 Subaru Legacy 4-Door Sedan at 40% overlap at a velocity of 59.87 kph. The test was performed at Veridian Engineering on May 22, 2001. 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 5720, 5th percentile female 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. During placement, it was discovered that if the Driver ATD's left leg was positioned at the same lateral distance from the ATD's midsagittal plane as the right leg, the left foot would not rest on the elevated foot rest. Based on this observation, the COTR decided to relocate the left foot to the center of the elevated foot rest. This position did not raise the heel relative to the floorpan.

Both ATDs were fully instrumented with head, chest, and pelvis triaxial accelerometers, chest displacement potentiometers, upper neck transducers, right/left femur load cells, knee sliders and Thor-FLx/HIIIr lower leg instrumentation. The driver (position 1) ATD (Serial No. 288) was used in one test (RY5210) where it did not exceed FMVSS 208 injury criteria. The right-front passenger (position 2) ATD (Serial No. 421) was calibrated previous to this test. Certification details, along with instrumentation calibration data, are found in Appendix C.

The 161 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 188.6. The maximum chest deceleration over 3 milliseconds was 36.4 g's and maximum chest deflection was 26.2 mm. Compressive femur loads were 2935.6 Newtons on the left and 2926.1 Newtons on the right.

The right front passenger's HIC was 203.0. Maximum chest deceleration over 3 milliseconds was 37.4 g's and maximum chest deflection was 25.2 mm. Compressive femur loads were 2023.8 Newtons on the left and 1300.9 Newtons on the right.

SECTION 2

GENERAL TEST AND VEHICLE PARAMETER DATA

DATA SHEET NO. 1 CRASH TEST SUMMARY

Vehicle NHTSA No	RY5503	Test Mode	60 kph Offset Frontal Barrier	
Test Date	May 22, 2001	Time	15 00	Temperature
			23 9	°C
Vehicle Make/Model/Body Style	2000 Subaru Legacy 4-Door Sedan			
Vehicle Test Weight	1726 0	kg		
Vehicle/Barrier Impact Angle	0	°		
Impact Velocity	59 87	kph		
Maximum Static Crush	468	mm		
Actual Vehicle Offset	41 44	%		

DUMMIES

DRIVER

PASSENGER

Type	5720	5720
Restraint System	Seatbelt, Airbag, Knee Bolster	Seatbelt, Airbag, Knee Bolster
Lower Leg	Thor-FLx/HIIIr	Thor-FLx/HIIIr
Number of Data Channels	161	
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

The face to the top of center of the airbag, The back of the head to the left of the center of the headrest

The face to the center of the airbag, The back of the head to the right of the center of the 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 Subaru Legacy 4-Door Sedan

NHTSA No RY5503, VIN 4S3BE6353Y7201270, Color White

Engine Data 4 cylinders, - CID, 2 5 Liters; - cc

Placement X Longitudinal or In-Line, - Transverse or Lateral

Transmission Data 4 speeds, - Manual, X Automatic, X Overdrive

Final Drive - Rear Wheel Drive, - Front Wheel Drive, X 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 10/23/00, Odometer Reading 1426 km

Selling Dealer -

& Address -

DATA FROM TIRE VEHICLE'S CERTIFICATION LABEL

Vehicle Manufactured by Fuji Heavy Industries

Date of Manufacture 8/99

GVWR 1996 kg, GAWR 1007 kg FRONT, 989 kg REAR

DATA FROM TIRE PLACARD

Tire Pressure with Maximum Capacity Vehicle Load 275 kpa FRONT
275 kpa REAR

Recommended Tire Size P205/60R15

* Recommended Cold Tire Pressure 220 kpa FRONT, 221 kpa REAR

Size of Tires on Test Vehicle P205/60R15, Manufacturer Bridgestone

Vehicle Capacity Data

Type of Front Seats - Bench, X Bucket, - Split Bench

Number of Occupants 2 Front, 3 Rear, 5 Total

Vehicle Capacity Weight (VCW) = 386 0 kg

No of Occupants x 68 kg = 340 2 kg

Rated Cargo/Luggage Weight (RCLW) = 45 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	=	<u>408 0</u>	kg	Right Rear	=	<u>333 0</u>	kg
Left Front	=	<u>441 5</u>	kg	Left Rear	=	<u>408 0</u>	kg
TOTAL FRONT	=	<u>849 5</u>	kg	TOTAL REAR	=	<u>741.0</u>	kg
TOTAL DELIVERED WEIGHT	=	<u>1590 5</u>	kg				
% of Total Front of Vehicle Weight	=	<u>53 4</u>	%	% of Total Rear Weight	=	<u>46 6</u>	%

CALCULATION OF VEHICLE'S TARGET TEST WEIGHT

Total Delivered Weight (UDW)	=	<u>1590 5</u>	kg
Rated Cargo/Luggage Weight (RCLW)	=	<u>45 8</u>	kg
Weight of 2 p 572 Dummies @ 49 each	=	<u>98 0</u>	kg
TARGET TEST WEIGHT	=	<u>1734 3</u>	kg

WEIGHT OF TEST VEHICLE WITH TWO DUMMIES AND 38 KG OF CARGO WEIGHT

Right Front	=	<u>422 5</u>	kg	Right Rear	=	<u>435 5</u>	kg
Left Front	=	<u>454 0</u>	kg	Left Rear	=	<u>414 0</u>	kg
TOTAL FRONT	=	<u>876 5</u>	kg	TOTAL REAR	=	<u>849 5</u>	kg
TOTAL TEST WEIGHT	=	<u>1726 0</u>	kg				
% of Total Front Weight	=	<u>50 8</u>	%	% of Total Rear Weight	=	<u>49 2</u>	%
Weight of Ballast Secured in Vehicle Trunk Area	=	<u>68 0</u>	kg				
Vehicle Components Removed for Weight Reduction	=	<u>None</u>					

VEHICLE ATTITUDE (all dimension in millimeters)

AS DELIVERED	RF	<u>683</u>	LF	<u>680</u>	RR	<u>677</u>	LR	<u>682</u>
FULLY LOADED	RF	<u>666</u>	LF	<u>666</u>	RR	<u>645</u>	LR	<u>650</u>
AS TESTED	RF	<u>678</u>	LF	<u>679</u>	RR	<u>656</u>	LR	<u>662</u>
Vehicle's Wheel Base		<u>2650</u>	mm					
Location of Vehicle's C G		<u>1304 3</u>	mm rearward of front wheel center					

FUEL SYSTEM DATA

Fuel System Capacity From Owner's Manual	=	<u>64</u>	liters
Usable Capacity Figure Furnished by COTR	=	<u>64</u>	liters
Test Volume Range (92 to 94% of Usable Capacity)	=	<u>58 9</u>	to <u>60 2</u> liters
ACTUAL TEST VOLUME	=	<u>58 9</u>	liters (with entire fuel system filled)
Test Fluid Type	<u>Stoddard Solution</u> ,	Spec Grav	= <u>0 764</u>
	Kinematic Viscosity	= <u>0 96</u>	centistokes, Color = <u>Orange</u>
Type of Fuel Pump	Electric- <u>X</u> ,	Mechanical-	<u>-</u>
Does Electric Pump operate with ignition switch "ON" & engine "OFF"		Yes- <u>X</u>	No- <u>-</u>
Details of Fuel System	<u>Fuel filler on passenger side, fuel lines along right frame rail,</u> <u>tank centered ahead of rear axle</u>		

DATA SHEET NO 3 POST IMPACT DATA

TYPE OF TEST

Type of Test Frontal Barrier Impact Angle 0°
Test Date May 22, 2001 Time 15 00 Temperature 23.9 °C
Vehicle NHTSA No RY5503
Required Impact Velocity Range 59.2 to 60.8 kph

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

Trap No 1 = 59.87 kph, Trap No 2 = 59.87 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 = 4565, C/L = 4680, Left = 4565
Post-Test Right = 4570, C/L = 4285, Left = 4115
Crush Right = -5.0, C/L = 395.0, Left = 450.0
AVERAGE = 280.0 mm

VEHICLE OFFSET DATA (mm)

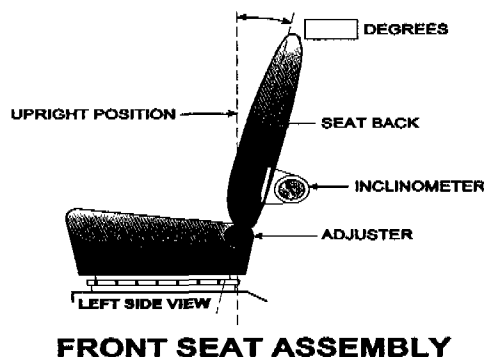
Vehicle Width = 1735 mm
Desired Vehicle Offset = 694.0 mm
Actual Vehicle Offset = 719 mm (from film analysis)
Offset Difference = 25.0 mm
Actual Percent Offset = 41.44 %

DATA SHEET NO 4 TEST VEHICLE INFORMATION

VEHICLE IDENTIFICATION

Model Year 2000 Vehicle Model Subaru Legacy 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.



Seat back angle for driver's seat 18.9

Measurement instructions Full upright

Seat back angle for passenger's seat 18.8

Measurement instructions Full upright

- 2 Seat Fore and Aft Positioning

Positioning of the driver's seat Forwardmost

Positioning of the passenger's seat Forwardmost

- 3 Fuel Tank Capacity Data

3.1 A "Usable Capacity" of the standard equipment fuel tank is 64 liters

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

C "Usable Capacity" of the vehicle(s) used for certification testing to requirements of FMVSS 301 = 64 liters

3.2 Amount of Stoddard solvent added to vehicle(s) used for certification test(s) = 58.9 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

When vehicle ignition is ON

DATA SHEET NO 4 TEST VEHICLE INFORMATION (cont)

4. STEERING COLUMN ADJUSTMENTS

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

Operational Instructions

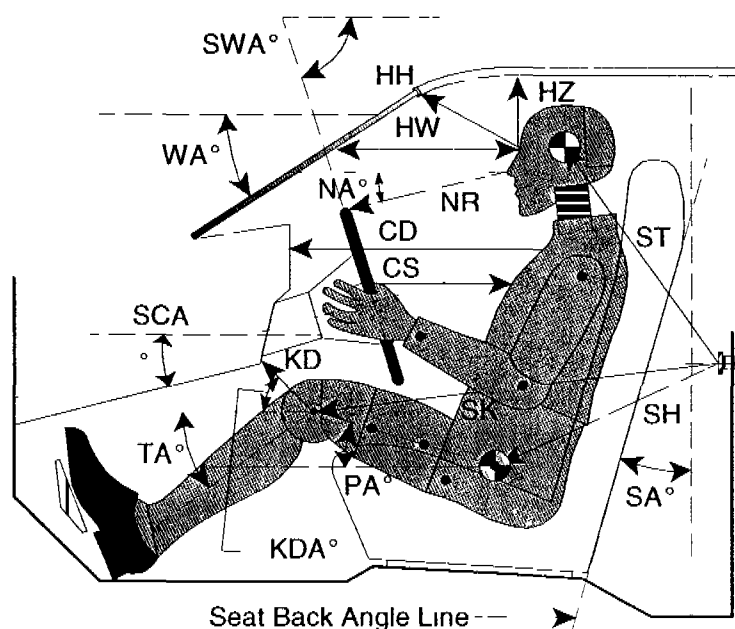
Mid-position

5. SEAT BELT UPPER ANCHORAGE

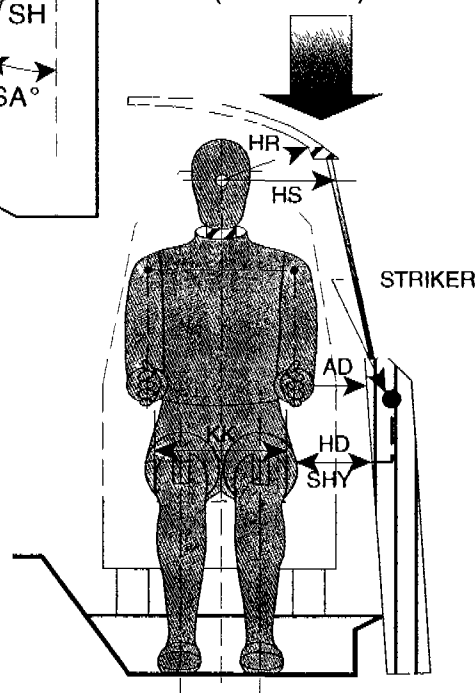
Nominal design riding position

Lowermost

DUMMY MEASUREMENT FOR FRONT SEAT PASSENGERS

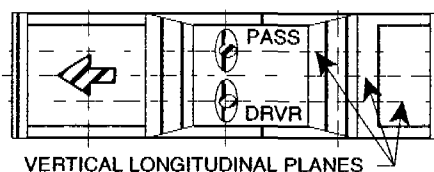


AD - Arm to Door
 HD - H-Point to Door
 HR - Head to Side Header
 HS - Head to Side Window
 KK - Knee to Knee
 SHY- Striker to H-Point (Y Direction)



CD - Chest to Dash
 CS - Steering Wheel to Chest
 HH - Head to Header
 HW - Head to Windshield
 HZ - Head to Roof
 AA - Ankle to Ankle
 KDA- Knee to Dash Angle
 KDL- Left Knee to Dash
 KDR- Right Knee to Dash
 NA - Nose to Rim
 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

VERTICAL TRANSVERSE PLANE



VERTICAL LONGITUDINAL PLANES

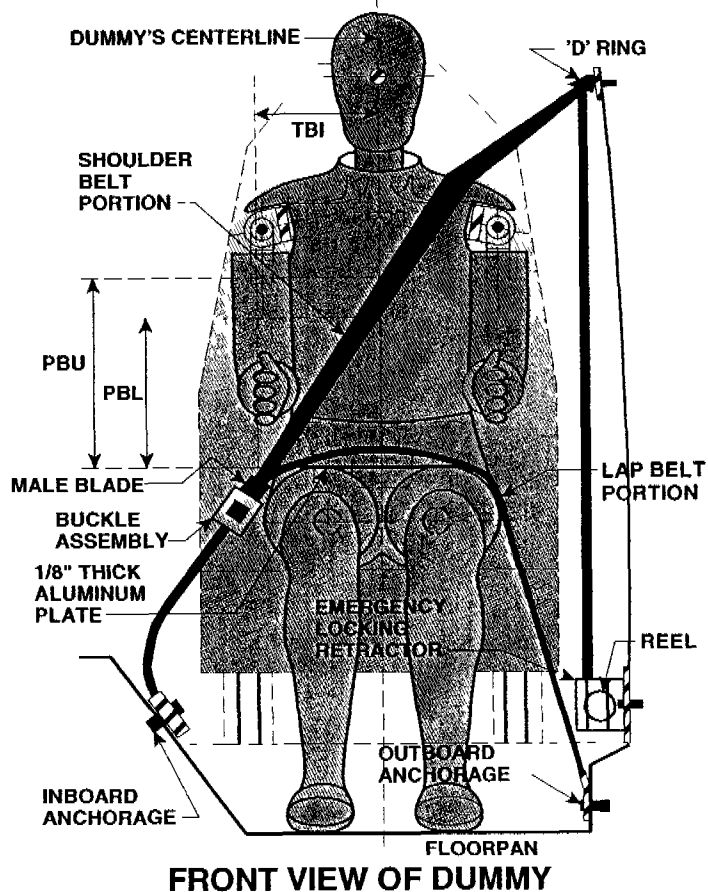
DATA SHEET NO. 5 FRONT SEAT DUMMY POSITIONING MEASUREMENTS IN VEHICLE (cont.)

	DRIVER (Serial #288)			PASS (Serial # 421)		
WA ^o	28 8 deg			N/A		
SWA ^o	67 1 deg			N/A		
SCA ^o	22 9 deg			N/A		
SA ^o	18 9 deg.			18 8 deg		
HZ	214			216		
HH	250			241		
HW	551			543		
HR	270			255		
NR	231	Angle	2 deg	N/A		
CD	410			375		
CS	200			N/A		
RA	79			N/A		
KDL	109	Angle (KDA)	42 deg	74		
KDR	92			89	Angle (KDA)	44 deg
PA ^o	22 0 deg			19 6 deg		
TA ^o	41 5 deg			44 3 deg		
KK	255			250		
AA	280			186		
ST	493	Angle	26 9 deg	515	Angle	27 8 deg
SK	658	Angle	92 deg	660	Angle	85 deg
SH	360	Angle	109 deg	360	Angle	107 deg
SHY	274			282		
HS	354			355		
HD	170			170		
AD	170			166		

Dimensions in millimeters

DATA SHEET NO 6 SEAT BELT POSITIONING DATA

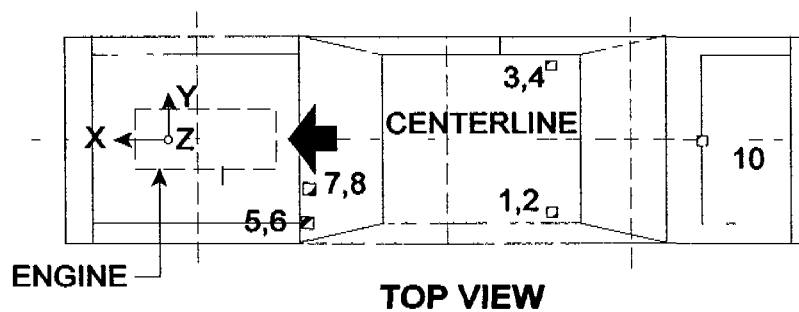
SEAT BELT POSITIONING DATA



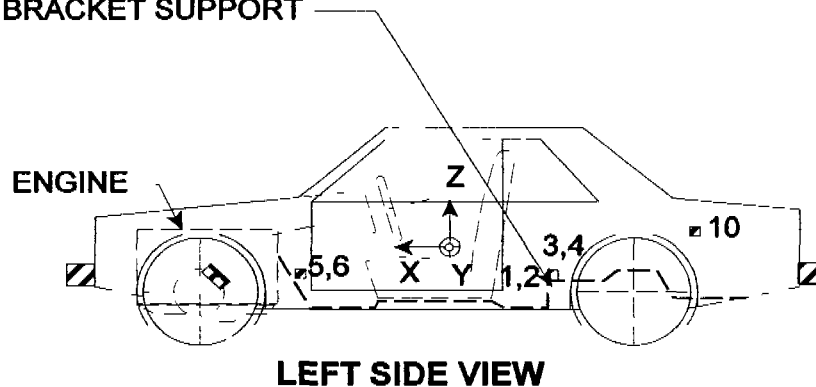
FRONT VIEW OF DUMMY

	DRIVER DUMMY (mm)	PASSENGER DUMMY (mm)
PBU -- Top surface of alum plate to upper edge	270	263
PBL-- Top surface of alum plate to belt lower edge	200	190
<u>LAP BELT TENSION</u>	10 N	10 N
<u>SHOULDER BELT TENSION</u>	Retractor	Retractor

VEHICLE ACCELEROMETER LOCATION AND DATA SUMMARY



REAR SEAT CUSHION
ASSY. FRONT ATTACHMENT
BRACKET SUPPORT



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

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

Accelerometer	X-Direction (mm)	Y-Direction (mm)	Z-Direction (mm)
Left Rear Seat Crossmember	1812	-240	-426
Right Rear Seat Crossmember	1836	251	-430
Driver Left Side Toe Pan	3376	-470	-402
Driver Right Side Toe Pan	3367	-258	-401

X-Direction is referenced from vehicle rear bumper (positive forward)

Y-Direction is referenced from vehicle centerline (positive to right)

Z-Direction is referenced from ground plane (positive down)

LOCATION NUMBER	DESCRIPTION	MAXIMUM VALUE (g's)			
		Pos	msec	Neg	msec
1	Rear Seat X-Member @ Left Side X	2 0	184 6	-30 5	93 1
2	Rear Seat X-Member @ Left Side Y	11 1	95 5	-6 1	191 8
3	Rear Seat X-Member @ Right Side X	1 3	178 1	-29 8	92 7
4	Rear Seat X-Member @ Right Side Y	9 9	88 6	-2 2	116 7
5	Driver Toe Pan @ Left Side X	9 2	36 5	-44 5	83 1
6	Driver Toe Pan @ Left Side Z	19 6	91 6	-16 1	120 8
7	Driver Toe Pan @ Right Side X	15 4	26 2	-45 3	91 2
8	Driver Toe Pan @ Right Side Z	12 0	25 9	-17 8	30 3

DATA SHEET NO 8 DUMMY INJURY CRITERIA VALUES

Vehicle Year/Make/Model/Body Style

2000 Subaru Legacy 4-Door Sedan

NHTSA Test No

RY5503

Test Date

May 22, 2001

DESCRIPTION	Unit	MAXIMUM VALUE							
		Driver				Passenger			
		Pos	msec	Neg	msec	Pos	msec	Neg	msec
Head 9 Array X Arm Y	g	6 6	57 5	-12 9	40 4	35 1	70 4	-7 6	62 0
Head 9 Array X Arm Z	g	23 2	259 3	-20 3	51 2	15 1	103 3	-12 0	63 6
Head 9 Array Y Arm X	g	§	§	§	§	7 1	265 9	-32 0	81 7
Head 9 Array Y Arm Z	g	14 5	259 4	-9 6	62 0	16 5	103 3	-7 4	151 4
Head 9 Array Z Arm X	g	41 0	260 0	-55 7	63 3	11 7	264 1	-33 0	81 1
Head 9 Array Z Arm Y	g	11 0	189 3	-9 3	47 0	20 8	70 0	-7 6	53 9
Head X	g	25 0	260 1	-44 9	60 7	7 1	265 6	-31 1	80 5
Head Y	g	6 6	170 8	-8 3	62 3	19 9	113 3	-3 2	54 0
Head Z	g	‡	‡	‡	‡	15 2	103 3	-9 1	147 6
Head Resultant	g	‡	‡	‡	‡	34 4	72 2	0 0	-86 3
Redundant Head X	g	24 6	260 1	-43 8	60 7	7 3	266 0	-29 7	80 9
Redundant Head Y	g	7 1	169 9	-9 0	62 3	20 9	113 3	-2 8	54 0
Redundant Head Z	g	12 5	259 2	-8 7	56 5	15 7	103 5	-9 0	147 6
Redundant Head Resultant	g	44 4	60 7	0 0	-49 5	33 8	72 2	0 0	-85 3
Upper Neck Fx	N	104 0	266 9	-783 3	65 0	144 1	54 4	-116 3	203 3
Upper Neck Fy	N	222 8	169 3	-53 0	380 1	143 2	176 5	-97 8	81 1
Upper Neck Fz	N	1702 0	65 1	-77 4	195 5	733 7	103 3	-164 7	50 0
Upper Neck F Resultant	N	1879 2	65 1	1 0	-100 0	733 7	103 3	0 1	-85 2
Upper Neck Mx	N-m	16 2	182 1	-14 9	144 1	8 7	182 5	-10 1	107 7
Upper Neck My	N-m	23 1	161 3	-62 6	74 3	8 4	56 5	-15 9	69 4
Upper Neck Mz	N-m	£	£	£	£	6 2	204 2	-17 1	106 3
Upper Neck M Resultant	N-m	£	£	£	£	20 3	107 6	0 0	-46 8
Chest X	g	4 3	195 4	-46 3	94 8	3 0	310 3	-35 5	103 2
Chest Y	g	12 3	116 8	-2 6	49 5	8 6	98 1	-1 7	303 7
Chest Z	g	10 7	140 3	-9 4	118 6	9 4	102 4	-10 4	148 0
Chest Resultant	g	46 4	94 8	0 0	-100 0	37 5	102 5	0 0	-100 0

§ Data spikes 101 - 140 ms

‡ Not accurate after 103 ms

£ Data not accurate spikes

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

Vehicle Year/Make/Model/Body Style 2000 Subaru Legacy 4-Door Sedan
 NHTSA Test No RY5503 Test Date. May 22, 2001

DESCRIPTION	Unit	MAXIMUM VALUE							
		Driver				Passenger			
		Pos	msec	Neg	msec	Pos	msec	Neg	msec
Redundant Chest X	g	4 4	195 3	-46 6	94 9	3 0	310 3	-35 6	103 3
Redundant Chest Y	g	11 6	116 8	-2 9	49 5	8 6	98 1	-1 6	303 8
Redundant Chest Z	g	9 3	113 6	-11 0	140 7	10 2	102 3	-10 2	148 7
Redundant Chest Resultant	g	46 7	94 8	0 0	-100 0	37 8	102 3	0 0	-100 0
Chest Displacement	mm	0 1	24 5	-26 2	121 5	0 1	34 2	-25 2	108 4
Pelvic X	g	2 9	189 3	-33 2	109 9	2 2	175 8	-41 0	100 5
Pelvic Y	g	10 0	110 9	-5 6	150 6	12 9	103 4	-7 0	134 3
Pelvic Z	g	3 0	258 0	-12 8	60 1	2 1	299 7	-8 8	144 3
Pelvic Resultant	g	36 0	109 9	0 0	-5 0	41 7	100 5	0 0	-88 6
Left Femur Fx	N	465 5	108 6	-134 7	138 3	*	*	*	*
Left Femur Fy	N	56 0	34 4	-165 8	130 3	**	**	**	**
Left Femur Fz	N	57 1	19 3	-2935 6	113 3	**	**	**	**
Left Femur Force Resultant	N	2970 7	113 3	0 3	-17 7	*	*	*	*
Left Femur Mx	N-m	27 3	56 8	-27 8	92 0	40 6	85 8	-13 7	125 7
Left Femur My	N-m	58 9	120 4	-7 5	212 7	74 6	113 4	-9 0	212 5
Left Femur Mz	N-m	26 5	85 9	-12 2	178 8	12 0	116 5	-11 2	270 9
Left Femur Moment Res.	N-m	63 0	120 3	0 0	-6 9	76 8	113 4	0 0	-100 0
Right Femur Fx	N	357 8	109 0	-132 5	46 3	341 4	103 1	-134 7	152 7
Right Femur Fy	N	88 0	92 4	-78 7	81 1	209 8	154 4	-46 6	237 7
Right Femur Fz	N	77 6	30 0	-2926 1	111 7	215 1	44 3	-1300 9	58 4
Right Femur Force Resultant	N	2942 6	111 7	0 1	-75 0	1324 3	100 3	0 2	-2 5
Right Femur Mx	N-m	25 3	125 5	-50 3	100 9	10 5	124 0	-39 1	94 9
Right Femur My	N-m	70 4	117 0	-7 1	148 5	57 4	65 3	-15 5	152 5
Right Femur Mz	N-m	24 6	96 0	-5 3	160 1	23 2	119 7	-14 6	176 3
Right Femur Moment Res.	N-m	71 6	117 1	0 0	-100 0	58 6	63 4	0 0	-100 0

* - Data Spike at 90 ms, ** - Data Spike at 150 ms

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

Vehicle Year/Make/Model/Body Style:

2000 Subaru Legacy 4-Door Sedan

NHTSA Test No.:

RY5503

Test Date:

May 22, 2001

		MAXIMUM VALUE							
		Driver				Passenger			
DESCRIPTION	Unit	Pos	msec	Neg	msec	Pos	msec	Neg	msec
Left Knee Shear Dx	mm	0 4	59 0	-1 5	131.0	0 6	103 0	-0 6	132 0
Right Knee Shear Dx	mm	0 2	83 0	-1 5	125 0	0 7	104 0	-0 5	135 0
Left Upper Tibia Fx	N	103 6	58 7	-227 7	123 5	183 5	99 7	-76 3	125.4
Left Upper Tibia Fz	N	29 7	236 4	-1545 8	95 1	81 3	234 5	-1275 6	99 5
Left Upper Tibia Mx	N-m	23 2	116 0	-8 8	178 4	17 4	120 5	-16 6	94 7
Left Upper Tibia My	N-m	26 2	134 6	-30 5	87 7	9 5	131 4	-31 4	99 7
Left Lower Tibia Fx	N	32 0	308 0	-582 4	110 8	16 0	499 5	-313 9	100 1
Left Lower Tibia Fy	N	79 2	137 5	-139 9	114 9	43 5	187 4	-701 0	113 4
Left Lower Tibia Fz	N	5 4	-54 3	-3006 4	110 8	286 8	100 2	-208 0	120 5
Left Lower Tibia FR	N	3063 3	110 8	0 1	-16 1	723 0	100 2	0 2	-100 0
Left Lower Tibia Mx	N-m	19 9	133 4	-12 2	93 5	20 7	121 7	-17 2	93 8
Left Lower Tibia My	N-m	13 3	131 6	-26 1	92 5	6 6	122 8	-24 7	100 2
Right Upper Tibia Fx	N	164 8	86 8	-168 4	128 5	237 6	99 6	-50 6	134 4
Right Upper Tibia Fz	N	93 1	43 8	-1068 0	111 7	82 3	151 7	-800 8	100 4
Right Upper Tibia Mx	N-m	15 0	124 1	-13 1	102 5	25 1	121 7	-18 8	100 1
Right Upper Tibia My	N-m	25 8	123 3	-15 3	48 0	4 9	124 8	-36.5	98 9
Right Lower Tibia Fx	N	32 1	219 4	-436 9	108 0	21 3	131 9	-306 8	99 5
Right Lower Tibia Fy	N	19 7	39 9	-167 8	115 5	119 1	98 2	-109 9	110 1
Right Lower Tibia Fz	N	117 9	37 7	-2498 0	114 7	89 4	161 7	-1020 8	121 0
Right Lower Tibia FR	N	2534 4	114 7	0 1	-66 3	1023 6	121 0	0 1	-9 4
Right Lower Tibia Mx	N-m	5 3	378 0	-43 6	102 9	21 3	123 3	-19 7	99 8
Right Lower Tibia My	N-m	11 1	129 1	-20 5	86 4	4 0	131 8	-30 4	100 2

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

Vehicle Year/Make/Model/Body Style: 2000 Subaru Legacy 4-Door Sedan
 NHTSA Test No. RY5503 Test Date. May 22, 2001

		MAXIMUM VALUE							
		Driver				Passenger			
DESCRIPTION	Unit	Pos	msec	Neg	msec	Pos	msec	Neg	msec
Left Tibia Ax	g	11 0	131 5	-39 6	87 2	2 6	133 6	-25 7	99 7
Left Tibia Ay	g	9 7	98 5	-8 0	151 8	17 3	91 4	-9 9	120 6
Right Tibia Ax	g	11 7	128 8	-33 5	86 2	4 8	133 0	-39 5	100 1
Right Tibia Ay	g	11 5	46 5	-18 1	102 0	7 5	117 7	-18 3	92 9
Left Ankle Rotation X	Deg	14 4	143 6	-4 4	100 2	12 2	131 9	-1 8	6 9
Left Ankle Rotation Y	Deg	34 7	124 4	-1 1	-98 6	11 9	138 5	-4 0	-62 7
Left Ankle Rotation Z	Deg	8 1	114 0	0 8	417 8	2 8	89 6	-2 6	164 9
Right Ankle Rotation X	Deg	-7 1	-88 6	-34 7	117 8	17 8	134 6	5 2	263 1
Right Ankle Rotation Y	Deg	28 0	125 4	-5 7	44 6	5 9	113 6	-8 7	22 5
Right Ankle Rotation Z	Deg	7 5	110 9	-0 1	467 6	5 6	499 9	-1 7	167 3
Left Foot Ax	g	34 8	129 3	-41 4	94 3	7 5	126 1	-31 3	89 4
Left Foot Ay	g	43 9	94 3	-52 1	92 4	9 5	130 3	-20 5	97 0
Left Foot Az	g	3 7	191 6	-49 2	92 3	4 0	207 3	-28 5	88 3
Left Foot A Resultant	g	80 2	92 2	0 0	-100 0	44 3	88 4	0 0	-100 0
Right Foot Ax	g	18 0	128 6	-34 3	85 6	4 2	134 0	-32 4	102 0
Right Foot Ay	g	30 5	104 7	-6 3	132 4	44 6	293 9	-83 8	166 3
Right Foot Az	g	16 7	94 3	-75 3	43 8	3 0	190 0	-18 8	86 8
Right Foot A Resultant	g	75 5	43 8	0 0	-100 0	83 8	166 3	0 0	-88 9

DATA SHEET NO 8 DUMMY INJURY CRITERIA VALUES (cont)

Vehicle Year/Make/Model/Body Style. 2000 Subaru Legacy 4-Door Sedan

NHTSA Test No.. RY5503 Test Date: May 22, 2001

HEAD INJURY CRITERIA (HIC)				
	HIC**	t ₁ (msec)	t ₂ (msec)	Average Acceleration t ₁ to t ₂
Position #1 - Driver	188.6***	54.9	79.7	35.7
Position #2 - Passenger	203.0	67.9	103.9	31.7

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

*** Calculated using Head Redundant Z.

CLIP SUMMARY*				
	CLIP (g's)	t ₁ (msec)	t ₂ (msec)	CSI
Position #1 - Driver	36.4	114.2	117.2	273.9
Position #2 - Passenger	37.4	101.4	104.4	256.2

* 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 Subaru Legacy 4-Door Sedan

NHTSA Test No. RY5503 Test Date: May 22, 2001

HEAD INJURY CRITERIA (HIC) REDUNDANT				
	HIC**	t ₁ (msec)	t ₂ (msec)	Average Acceleration t ₁ to t ₂
Position #1 - Driver	170 1	54 9	79 3	34 5
Position #2 - Passenger	193 1	69 4	105 3	31 0

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

CLIP SUMMARY* REDUNDANT				
	CLIP (g's)	t ₁ (msec)	t ₂ (msec)	CSI
Position #1 - Driver	36 3	113 9	116 9	273 7
Position #2 - Passenger	37 7	101 3	104 3	260 6

* 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:

Belt length from trim panel exit
to bolt hole anchor point for
continuous webbing systems.

Driver

Passenger

1870

1920

Shoulder belt length as measured
on Part 572 Dummy.

910

930

Lap belt length as measured
on Part 572 Dummy

840

870

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 20 mm molding.

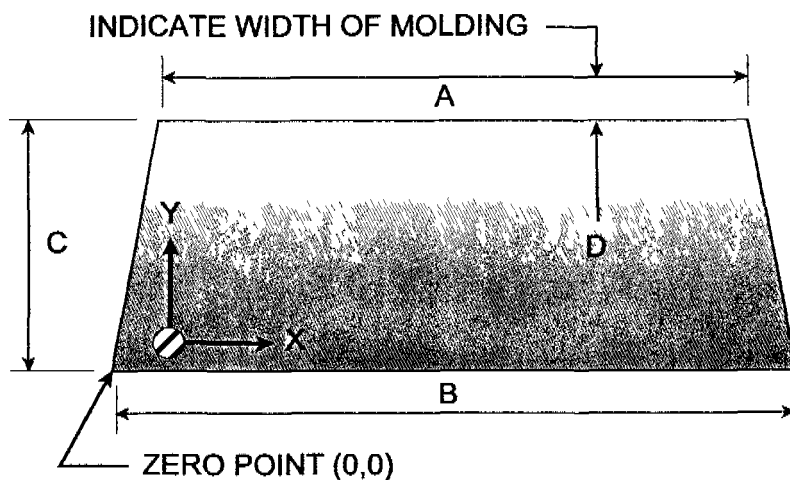
FMVSS 212 REQUIREMENTS

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

FMVSS 212 TEST DATA

	WINDSHIELD PERIPHERY		% OF RETENTION
	PRE-TEST (mm)	POST-TEST(mm)	
RIGHT SIDE	2027.5	2027.5	100
LEFT SIDE	2027.5	2027.5	100
TOTAL	4055	4055	100

AREA OF RETENTION FAILURE None



DIMENSIONS (mm)	
A	1040
B	1515
C	750
D	20

FRONT VIEW OF WINDSHIELD

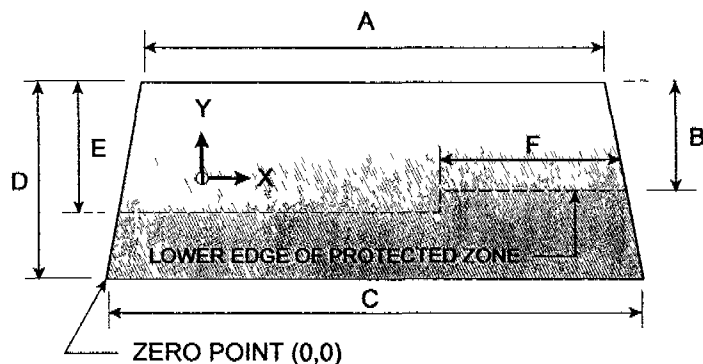
FAILURE DETAILS None

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

PROTECTED ZONE LOWER EDGE REQUIREMENT

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

FMVSS 219 TEST DATA



DIMENSIONS (mm)	
A	1040
B	423
C	1515
D	750
E	465
F	810

FRONT VIEW OF WINDSHIELD

DETAILS OF WINDSHIELD GLASS PENETRATION GREATER THAN 6 mm None

(Show location of penetration on the above sketch)

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

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

NHTSA TEST No. RY5503 TEST DATE May 22, 2001
VEHICLE MAKE/MODEL 2000 Subaru Legacy

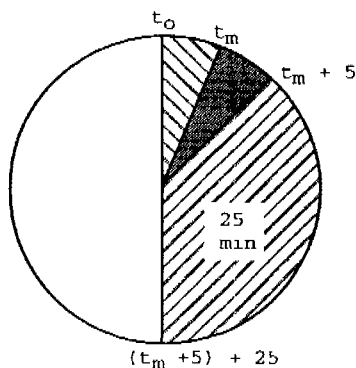
The test vehicle was filled from 92% to 94% of the manufacture's "usable" capacity. The electric fuel pump was operating if it will operate without engine operation Two Part 572 anthropomorphic test devices were located at each of the front designated seating positions

=====

TEST VEHICLE IMPACT TYPE X Offset Frontal (60 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

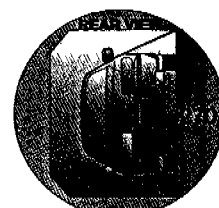
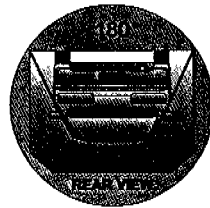
ACTUAL	MAX ALLOWED
0	28 g
0	141 g
0	28 g/min

SOLVENT SPILLAGE DETAILS None

DATA SHEET 13 ROLLOVER DATA

Vehicle 2000 Subaru Legacy

NHTSA No. RY5503



I DETERMINATION OF SOLVENT COLLECTION TIME PERIOD

Rollover Stage	Rotation Time (spec 1 -3 min)				FMVSS 301 Hold Time		Total Time				Next Whole Minute Interval	
0° - 90°	1	minutes	12	seconds	5	minutes	6	minutes	12	seconds	7	minutes
90° - 180°	1	minutes	05	seconds	5	minutes	6	minutes	5	seconds	7	minutes
180° - 270°	1	minutes	01	seconds	5	minutes	6	minutes	1	seconds	7	minutes
270° - 360°	1	minutes	06	seconds	5	minutes	6	minutes	6	seconds	7	minutes

II FMVSS 301 REQUIREMENTS (Maximum allowable solvent spillage)

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

III ACTUAL TEST VEHICLE SOLVENT SPILLAGE

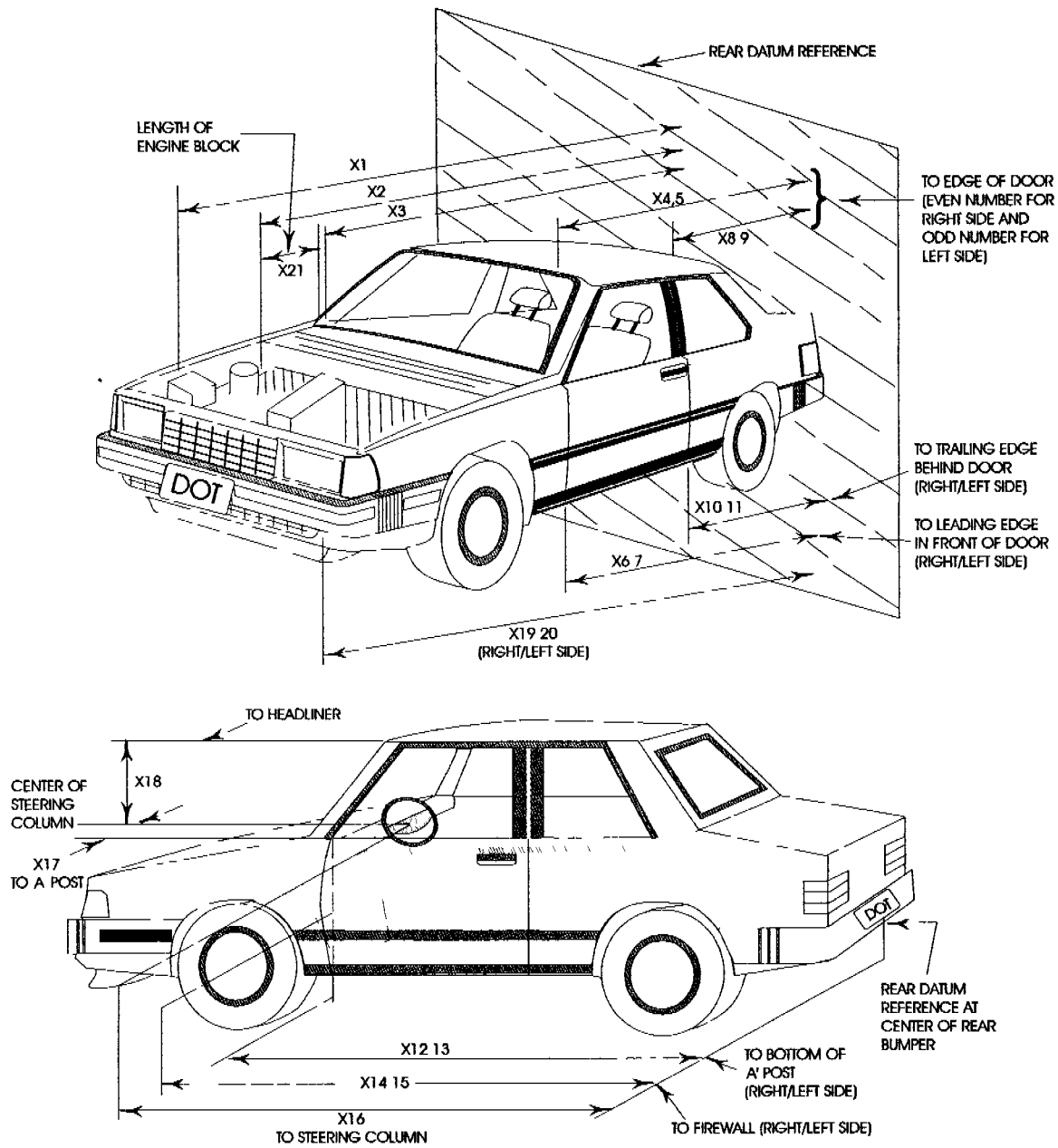
Rollover Stage	First 5 minutes from onset of rotation (g)	6th min (g)	7th min (g)	8th min (if required) (g)
0° - 90°	0	0	0	N/A
90° - 180°	0	0	0	N/A
180° - 270°	0	0	0	N/A
270° - 360°	0	0	0	N/A

Note Record spillage for whole minute intervals only as determined above

IV SOLVENT SPILLAGE LOCATION(S)

Rollover Stage	Spillage Location
0° - 90°	None
90° - 180°	None
180° - 270°	None
270° - 360°	None

DATA SHEET NO. 14 TEST VEHICLE MEASUREMENTS



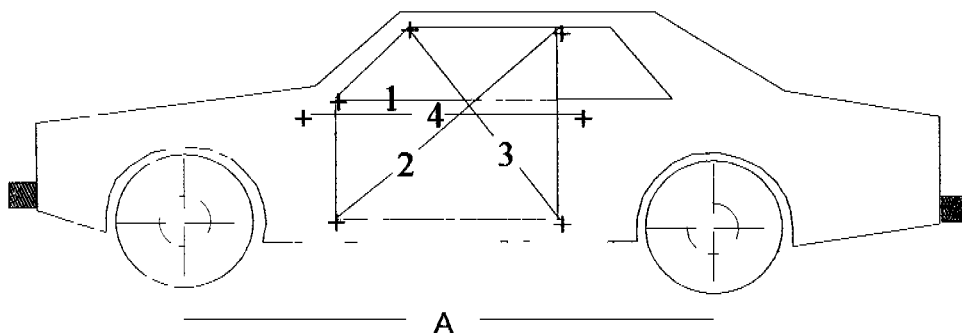
DATA SHEET NO 14 VEHICLE MEASUREMENTS (cont.)

No		Pre-Test	Post-Test	Differences
X1	Total Length of Vehicle at Centerline	4680	4285	395
X2	Rear Surface of Vehicle to Front of Engine	4111	3935	176
X3	Rear Surface of Vehicle to Firewall	3524	3470	54
X4	Rear Surface of Vehicle to Upper Leading Edge of Right Door	3185	3184	1
X5	Rear Surface of Vehicle to Upper Leading Edge of Left Door	3184	3186	-2
X6	Rear Surface of Vehicle to Lower Leading Edge of Right Door	3191	3216	-25
X7	Rear Surface of Vehicle to Lower Leading Edge of Left Door	3192	3192	0
X8	Rear Surface of Vehicle to Upper Trailing Edge of Right Door	2162	2162	0
X9	Rear Surface of Vehicle to Upper Trailing Edge of Left Door	2158	2160	-2
X10	Rear Surface of Vehicle to Lower Trailing Edge of Right Door	2162	2175	-13
X11	Rear Surface of Vehicle to Lower Trailing Edge of Left Door	2166	2172	-6
X12	Rear Surface of Vehicle to Bottom of "A" Post of Right Side	3245	3249	-4
X13	Rear Surface of Vehicle to Bottom of "A" Post of Left Side	3211	3205	6
X14	Rear Surface of Vehicle to Firewall, Right Side	3596	3530	66
X15	Rear Surface of Vehicle to Firewall, Left Side	3547	3440	107
X16	Rear Surface of Vehicle to Steering Column	2742	2733	9
X17	Center of Steering Column to "A" Post	327	312	15
X18	Center of Steering Column to Headliner	436	443	-7
X19	Rear Surface of Vehicle to Right Side of Front Bumper	4607	4599	8
X20	Rear Surface of Vehicle to Left Side of Front Bumper	4608	4156	452
X21	Length of Engine Block	541	541	0
RD	Rear Surface of Vehicle to Right Side of Dash Panel	2982	2975	7
CD	Rear Surface of Vehicle to Center of Dash Panel	2941	2915	26
LD	Rear Surface of Vehicle to Left Side of Dash Panel	2966	2928	38

All Dimensions in mm

All measurements taken forward from a lateral plane located at the rearmost point of the vehicle

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

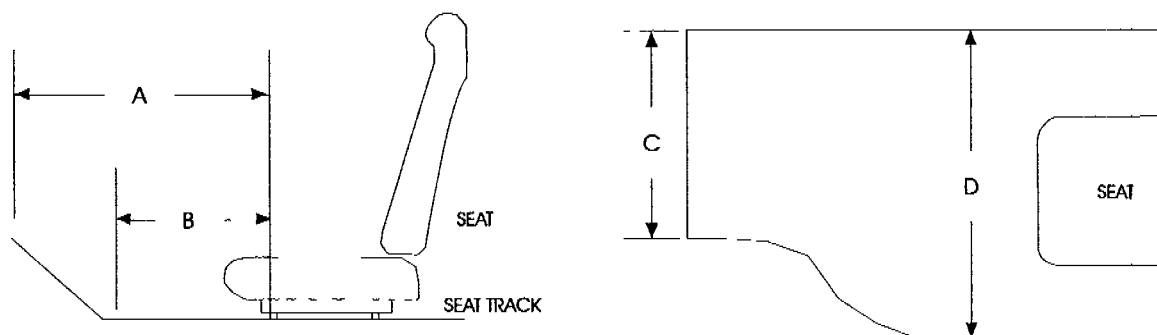


UNITS (mm)	LEFT				RIGHT		
MEASUREMENT	1	2	3	4*	1	2	3
BEFORE TEST	964	1397	920	1020	969	1387	924
AFTER TEST	955	1390	933	1013	967	1388	925
DIFFERENCE	9	7	-13	7	2	-1	-1

* Insurance Institute for Highway Safety (IIHS) measurement for driver's side only

UNITS (mm)	A = WHEELBASE LEFT	A = WHEELBASE RIGHT
BEFORE TEST	2650	2650
AFTER TEST	2492	2707
DIFFERENCE	158	-57

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



DRIVER

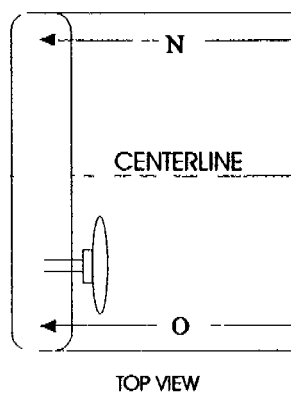
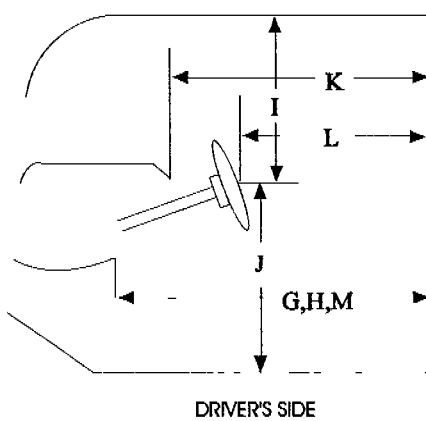
Measurement	Pre-Test	Post-Test	Difference
A	793	661	132
B	690	588	102
C	427	401	26
D	395	377	18

PASSENGER

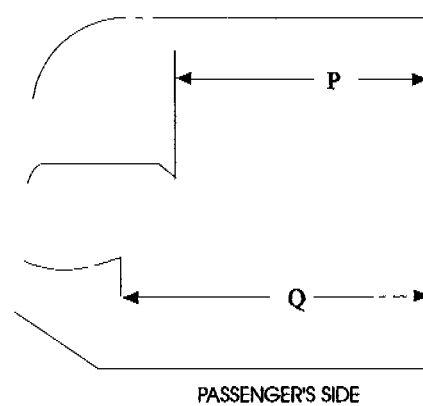
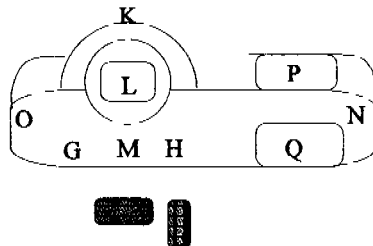
Measurement	Pre-Test	Post-Test	Difference
A	679	658	21
B	525	526	-1
C	363	378	-15
D	462	452	10

Units = mm

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



MEASUREMENTS
FROM C-PILLAR
BELT ANCHORAGE

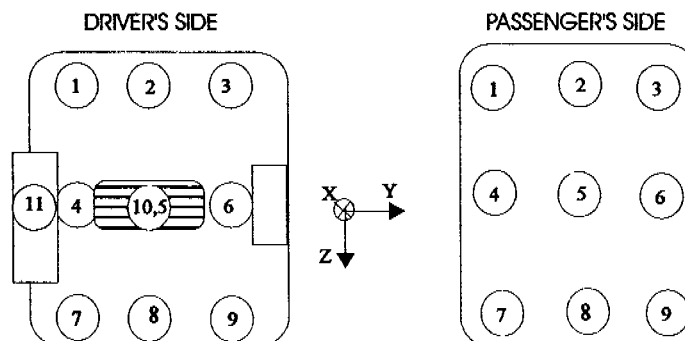


Measurement	Pre-Test	Post-Test	Difference
G*	1672	1659	13
H*	1674	1671	3
I	436	443	-7
J	603	622	-19
K	1643	1599	44
L	1448	1436	12
M	1731	1712	19
N	1705	1678	27
O	1672	1631	41
P = K (PASS)	1777	1746	31
Q = M (PASS)	1689	1663	26

* IHS measurement locations, 15 cm left and right of steering wheel center 45 cm from floor

Units = mm

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



Driver Side Toe-pan Measurements

Toe-pan Location	X Deformation (mm)			Y Deformation (mm)			Z Deformation (mm)		
	Pre	Post	Δ	Pre	Post	Δ	Pre	Post	Δ
1	3457	3307	-150	-488	-489	-1	-571	-576	-5
2	3484	3373	-111	-356	-368	-12	-523	-610	-87
3	3475	3356	-119	-228	-216	12	-518	-515	3
4*	3418	3306	-112	-516	-489	27	-480	-528	-48
5* ^A	3460	3342	-118	-371	-335	36	-445	-497	-52
6*	3417	3357	-60	-198	-194	4	-443	-491	-48
7	3362	3303	-59	-511	-489	22	-379	-421	-42
8	3381	3300	-81	-381	-327	54	-364	-416	-52
9	3336	3318	-18	-240	-223	17	-349	-417	-68
10	3268	3188	-80	-356	-368	-12	-459	-514	-55
11*	3318	3284	-34	-612	-610	2	-455	-470	-15

Passenger Side Toe-pan Measurements

Toe-pan Location	X Deformation (mm)			Y Deformation (mm)			Z Deformation (mm)		
	Pre	Post	Δ	Pre	Post	Δ	Pre	Post	Δ
1	3380	3335	-45	214	209	-5	-439	-465	-26
2	3385	3360	-25	381	386	5	-440	-454	-14
3	3394	3378	-16	535	516	-19	-456	-468	-12
4	3313	3254	-59	231	238	7	-380	-343	37
5	3304	3282	-22	384	381	-3	-376	-365	11
6	3311	3297	-14	524	529	5	-384	-367	17
7	3233	3225	-8	228	224	-4	-301	-302	-1
8	3232	3228	-4	383	376	-7	-296	-300	-4
9	3238	3238	0	531	519	-12	-309	-308	1

Reference (SAE) X = Rear Bumper (pos forward), Y = Vehicle Centerline (pos right), Z = Ground (pos down)

* IIHS measurement locations

*^A IIHS measurement located directly behind 10 (brake pedal center) on the vehicle floorpan in same vertical plane

DATA SHEET NO 14 VEHICLE MEASUREMENTS (cont.)
INSURANCE INSTITUTE MEASUREMENT LOCATION AND FLOOR PAN DEFORMATION DATA

IIHS Measurement Location Data

Meas. Loc*	X Measurement (mm)			Y Measurement (mm)			Z Measurement (mm)		
	Pre	Post	Δ	Pre	Post	Δ	Pre	Post	Δ
1	2742	2733	-9	-344	-374	-30	-868	-872	-4
2	2966	2956	-10	-483	-492	-9	-705	-695	10
3	2968	2967	-1	-180	-189	-9	-706	-699	7
4	3268	3188	-80	-356	-368	-12	-459	-514	-55
5	3418	3306	-112	-516	-489	27	-480	-528	-48
6	3460	3342	-118	-371	-335	36	-445	-497	-52
7	3417	3357	-60	-198	-194	4	-443	-491	-48
8	3318	3284	-34	-612	-610	2	-455	-470	-15
17	3184	3181	-3	-775	-780	-5	-830	-840	-10
18	2165	2168	3	-787	-789	-2	-825	-826	-1

Floor Pan Deformation Measurement Data

Meas Loc**	X Measurement (mm)			Y Measurement (mm)			Z Measurement (mm)		
	Pre	Post	Δ	Pre	Post	Δ	Pre	Post	Δ
1	3274	3255	-19	-508	-502	6	-313	-325	-12
2	3262	3244	-18	-370	-358	12	-300	-301	-1
3	3208	3297	89	-166	-217	-51	-284	-297	-13
4	3128	3133	5	-508	-495	13	-265	-265	0
5	3126	3124	-2	-351	-345	6	-267	-254	13
6	3128	3054	-74	-207	-179	28	-317	-310	7
7	2969	2981	12	-504	-502	2	-263	-262	1
8	2966	2972	6	-345	-350	-5	-269	-256	13
9	2966	2972	6	-212	-203	9	-302	-295	7

Reference (SAE) X = Rear Bumper (pos forward), Y = Vehicle Centerline (pos right), Z = Ground (pos down)

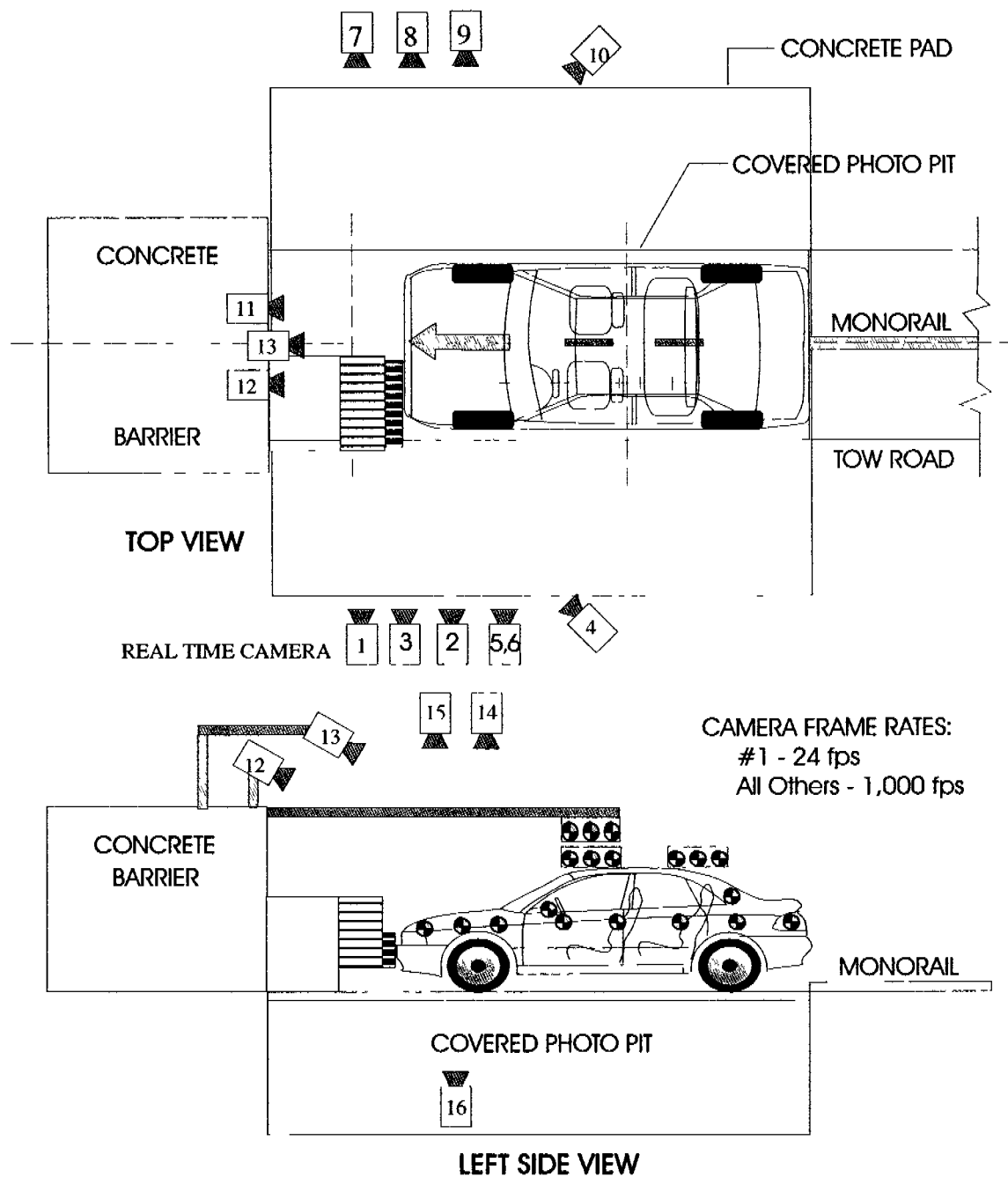
Measurement Location Descriptions*

- 1 Steering Column - Geometric center of the steering wheel on airbag door
- 2 Lower Instrument Panel Left - Taken 45 cm above floorpan and 15 cm to the left of the steering wheel center
- 3 Lower Instrument Panel Right - Taken 45 cm above floorpan and 15 cm to the right of the steering wheel center
- 4 Brake Pedal - Geometric center of the brake pedal
- 5 Toepan Left - Taken 15 cm to the left of the brake pedal center on the same vertical plane on the vehicle toepan
- 6 Toepan Center - Taken directly behind the brake pedal center on the same vertical plane on the vehicle toepan
- 7 Toepan Right - Taken 15 cm to the right of the brake pedal center on the same vertical plane on the vehicle toepan
- 8 Left Footrest - Taken 25 cm to the left of the brake pedal center on the same vertical plane on the vehicle toepan
- 17 A-pillar - Taken on the vehicle exterior at the same vertical coordinate as the base on the left front window
- 18 B-pillar - Taken on the vehicle exterior at the same vertical coordinate as the lower A-pillar mark

** There is an equal spaced 3 x 3 floor pan matrix. Position 1 is floor pan left side forwardmost position, Position 9 is located on the right side rearmost position of the 3 x 3 grid

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 RY5503 Vehicle. 2000 Subaru Legacy 4-Door Sedan

CAMERA NO	VIEW	CAMERA POSITIONS (mm)*			ANGLE (deg)**	FILM PLANE TO HEAD TARGET	LENS (mm)	SPEED (fps)
		X	Y	Z				
1	Real-Time Camera	-	-	-	-	-	-	24
2	Overall Left Side	8782	465	1050	-5	8396	13	1005
3	Left Side View	6832	1427	1105	-4	6446	25	1005
4	Driver and Interior View	7908	2038	1955	-12	-	35	1050
5	Steering Column (Bottom)	7999	1653	1160	-5	7613	25	1005
6	Steering Column (Top)	7999	1653	1765	-10	7613	25	1000
7	Overall Right Side View	7480	1324	1092	-2	6188	12 5	1005
8	Right Side View	9854	505	1095	-3	9468	25	1000
9	Right Passenger View	9079	1430	1311	2	8693	35	1005
10	Passenger and Interior View	8464	2691	1970	-10		35	970
11	Passenger Front View	442	-1300	1039	-28	-	13	1000
12	Driver Front View	440	-1291	1043	-29	-	13	1000
13	Windshield View	0	-1910	3374	-45	-	13	1000
14	Overhead Overall View	0	156	4880	90	-	12 5	995
15	Overhead Close-Up View	0	323	4880	90	-	25	1005
16	Pit View of Engine	0	845	3048	90	-	13	1000

*X = film plane to monorail centerline

** = referenced to horizontal plane

Y = film plane to impact location

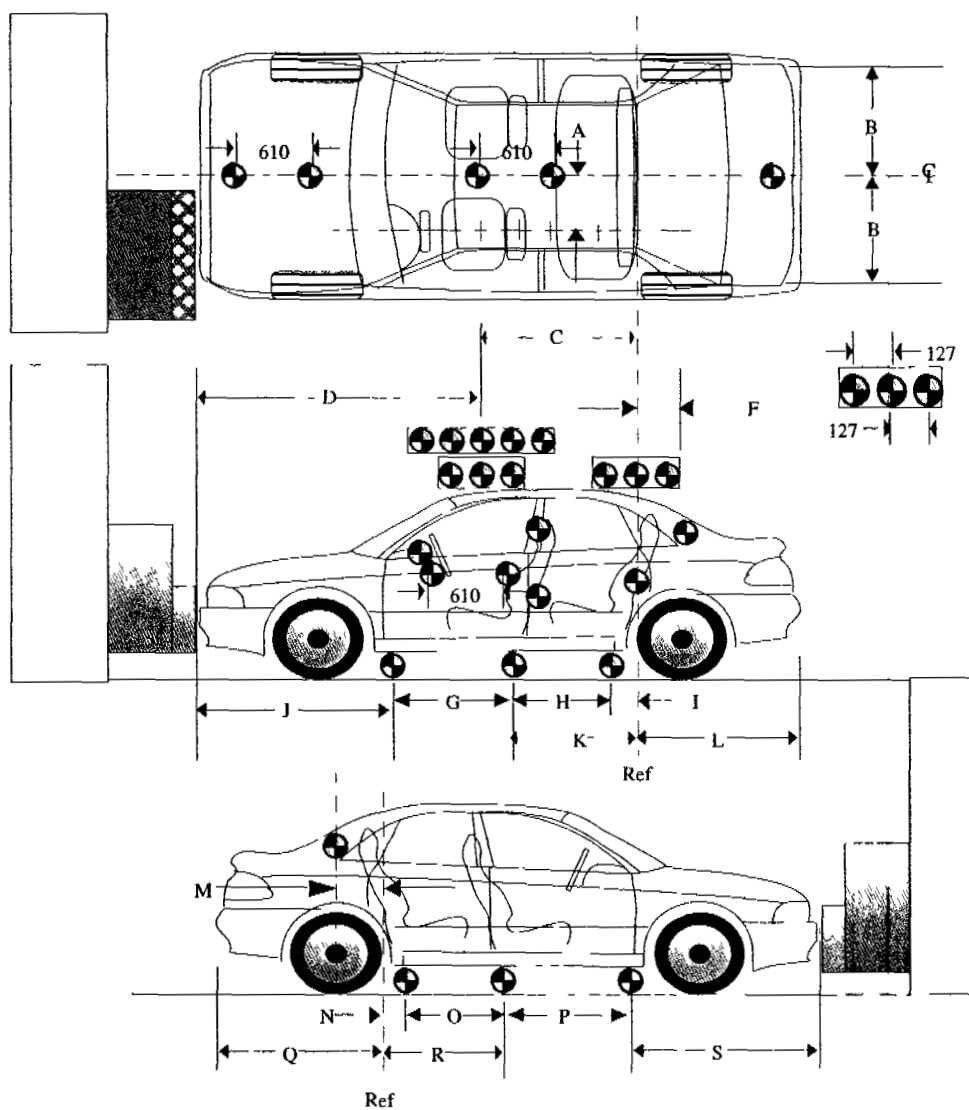
N T indicates No Timing

Z = film plane to ground

DATA SHEET NO. 16 VEHICLE REFERENCE PHOTO TARGET LOCATIONS

(Dimensions in millimeters)

A	310
B	605
C	1216
D	2075
E	374
F	1494
G	873
H	875
I	107
J	1452
K	982
L	1364
M	358
N	108
O	823
P	924
Q	1367
R	931
S	1353



DATA SHEET NO 17 POST TEST AIR BAG DATA

NHTSA No RY5503; Test Date May 22, 2001, Technician Patrick MacDiarmid

Vehicle Model Year/Make/Model 2000 Subaru Legacy

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

B. Size of vent holes (mm²) 490 87 -Driver 1963 49 -Passenger

C Total vent area. (mm²) 981 75 -Driver 3926 99 -Passenger

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

Driver 490 -Height, 570 -Width, 400 -Depth

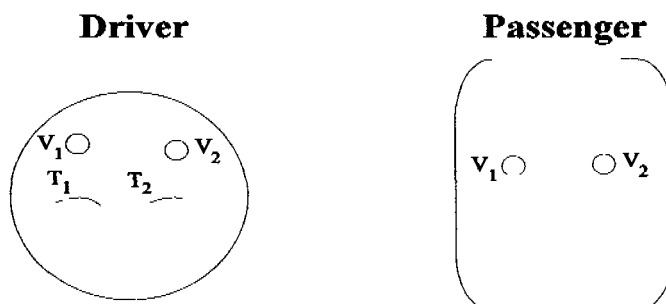
Passenger 720 -Height, 740 -Width, 550 -Depth

E Is the air bag tethered?

Driver X -Yes, - -No, If yes, record length of tether- 250

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

Sketch the air bag showing the location of the vent holes, how the bag is tethered, and where the bag is tethered Also describe how the tethers are attached to the bag and the steering wheel
(Note Not to scale, V_n = Vent hole_n, T_n = Tether_n)



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

Driver Air bag 65 420-33150 1LU09 U15729

Generator N/A

Passenger Air bag 0006660 20 07 99 A018079 Mexico

Generator 66L-S08 *7LU09014612* E0697 BAM-PT-0637 K9302 E0251 E0252

DATA SHEET NO. 18 ACCIDENT INVESTIGATION DIVISION DATA

FOR 56.3 KPH FRONTAL BARRIER IMPACT

Vehicle Make/Model/Body Style: Subaru Legacy 4-Door Sedan

NHTSA Test No. RY5503 VIN 4S3BE6353Y7201270

Model Year. 2000 Build Date. 8/99 Test Date May 22, 2001

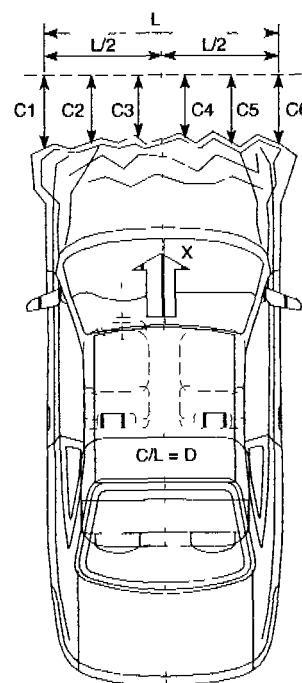
Vehicle Size Category Compact Test Weight 1726.0 kg

Vehicle Wheelbase 2650 mm, Front Overhang 972 mm, Overall Width 1735 mm

Collision Deformation Classification (CDC) Code 12FDEW3

Crush Depth Dimensions.

	PRE	POST	DIFF	
C1 =	4524	4068	-456.0	mm
C2 =	4630	4178	-452.0	mm
C3 =	4668	4200	-468.0	mm
C4 =	4666	4371	-295.0	mm
C5 =	4630	4558	-72.0	mm
C6 =	4524	4680	156.0	mm



Midpoint of Damage $D = \frac{\text{Vehicle Centerline}}{\text{(Longitudinal)}}$

Length of Damaged Region

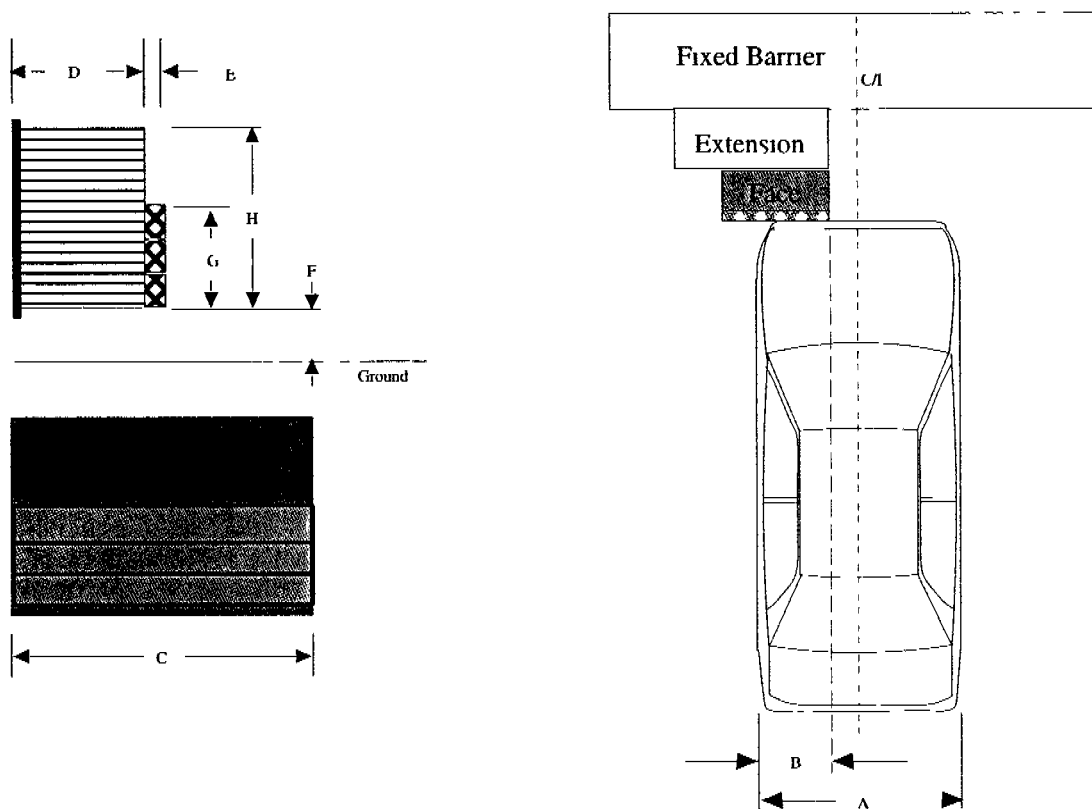
L1= 1349 mm

L2= 674.5 mm

L3= 449.7 mm

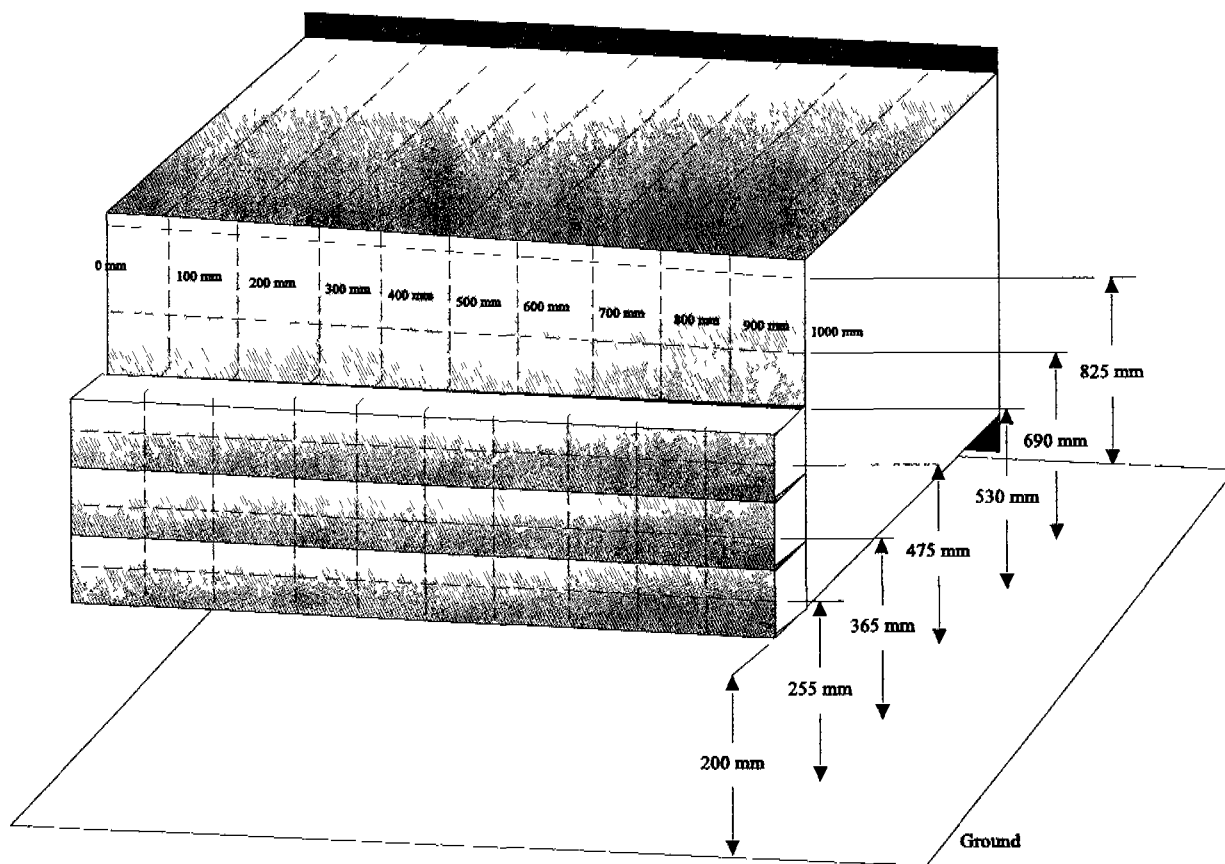
DATA SHEET NO. 19 OFFSET BARRIER AND VEHICLE ORIENTATION

NHTSA Test No. RY5503 Vehicle 2000 Subaru Legacy 4-Door Sedan
 Barrier Manufacturer and Serial Number. Plascore, Inc 06A0600-2B 199C0300



A	Total Vehicle Width	1735	mm
B	40% Overlap Distance	694.0	mm
C	Deformable Face Width	1000	mm
D	Single Stage Honeycomb Depth	450	mm
E	Bumper Element Depth	90	mm
F	Lower Edge Height From Ground	200	mm
G*	Bumper Element Height	330	mm
H	Deformable Barrier Honeycomb Height	650	mm

* The bumper element consists of three 110 mm height blocks of 1 723 MPa honeycomb



DATA SHEET NO 20 OFFSET BARRIER DEFORMATION (continued)

EXTERIOR STATIC CRUSH FOR BARRIER FACE
(Grid as looking at barrier from front)

Vehicle 2000 Subaru Legacy

NHTSA No RY5503

NOTE All dimensions are in millimeters with a tolerance of ± 3 mm

LEVEL	HEIGHT AT CL (mm)*		DISTANCE RIGHT OF CENTER (mm)						DISTANCE LEFT OF CENTER (mm)				
			500	400	300	200	100		100	200	300	400	500
LEVEL 6 TOP STACK	825	PRE	546	546	546	546	546	546	546	546	546	546	546
		POST	493	530	565	626	728	800	810	838	874	903	934
		CRUSH	-53	-16	19	80	182	244	264	292	328	357	388
LEVEL 5 MID STACK	687	PRE	546	546	546	546	546	546	546	546	546	546	546
		POST	472	524	598	670	756	830	872	905	940	958	978
		CRUSH	-74	-22	52	124	210	291	326	359	394	412	432
LEVEL 4 TOP BUMPER	530	PRE	546	546	546	546	546	546	546	546	546	546	546
		POST	507	580	648	720	783	848	897	915	946	960	966
		CRUSH	-39	34	102	174	237	302	351	369	400	414	420
LEVEL 3 BUMPER TOP	475	PRE	456	456	456	456	456	456	456	456	456	456	456
		POST	441	522	596	659	718	779	849	902	932	954	976
		CRUSH	-15	66	140	203	262	323	393	446	476	498	520
LEVEL 2 BUMPER MID	365	PRE	456	456	456	456	456	456	456	456	456	456	456
		POST	444	516	602	650	696	746	811	848	880	908	940
		CRUSH	-12	60	146	194	240	290	355	392	424	452	484
LEVEL 1 BUMPER LOW	255	PRE	456	456	456	456	456	456	456	456	456	456	456
		POST	454	510	570	630	676	717	761	787	813	847	884
		CRUSH	-2	54	114	174	220	261	305	331	357	391	428

*Heights measured above ground level

APPENDIX A
PHOTOGRAPHS

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Figure A-1 PRE-TEST FRONT VIEW



Figure A-2 POST-TEST FRONT VIEW



Figure A-3 PRE-TEST LEFT SIDE VIEW



Figure A-4 POST-TEST LEFT SIDE VIEW

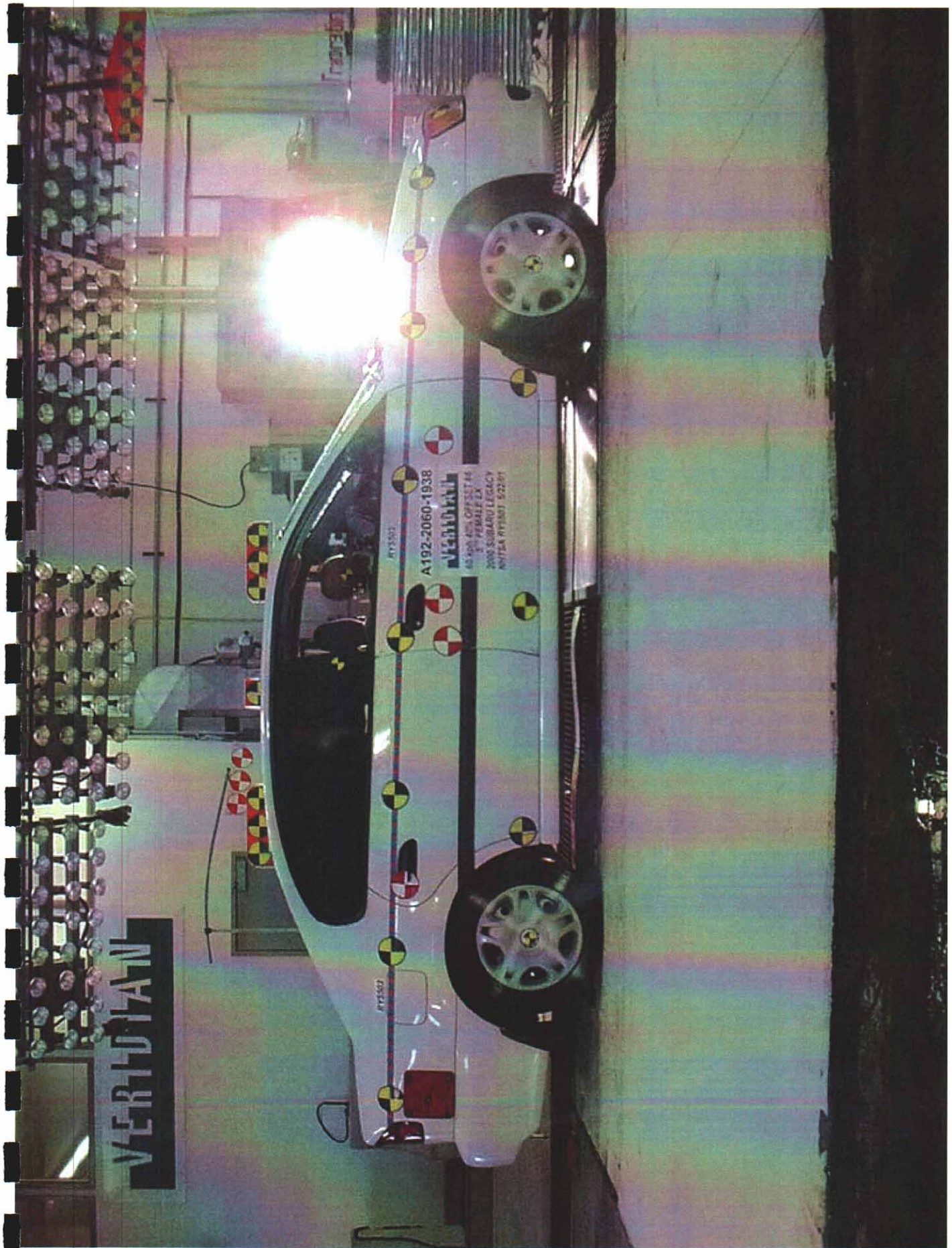


Figure A-5 PRE-TEST RIGHT SIDE VIEW

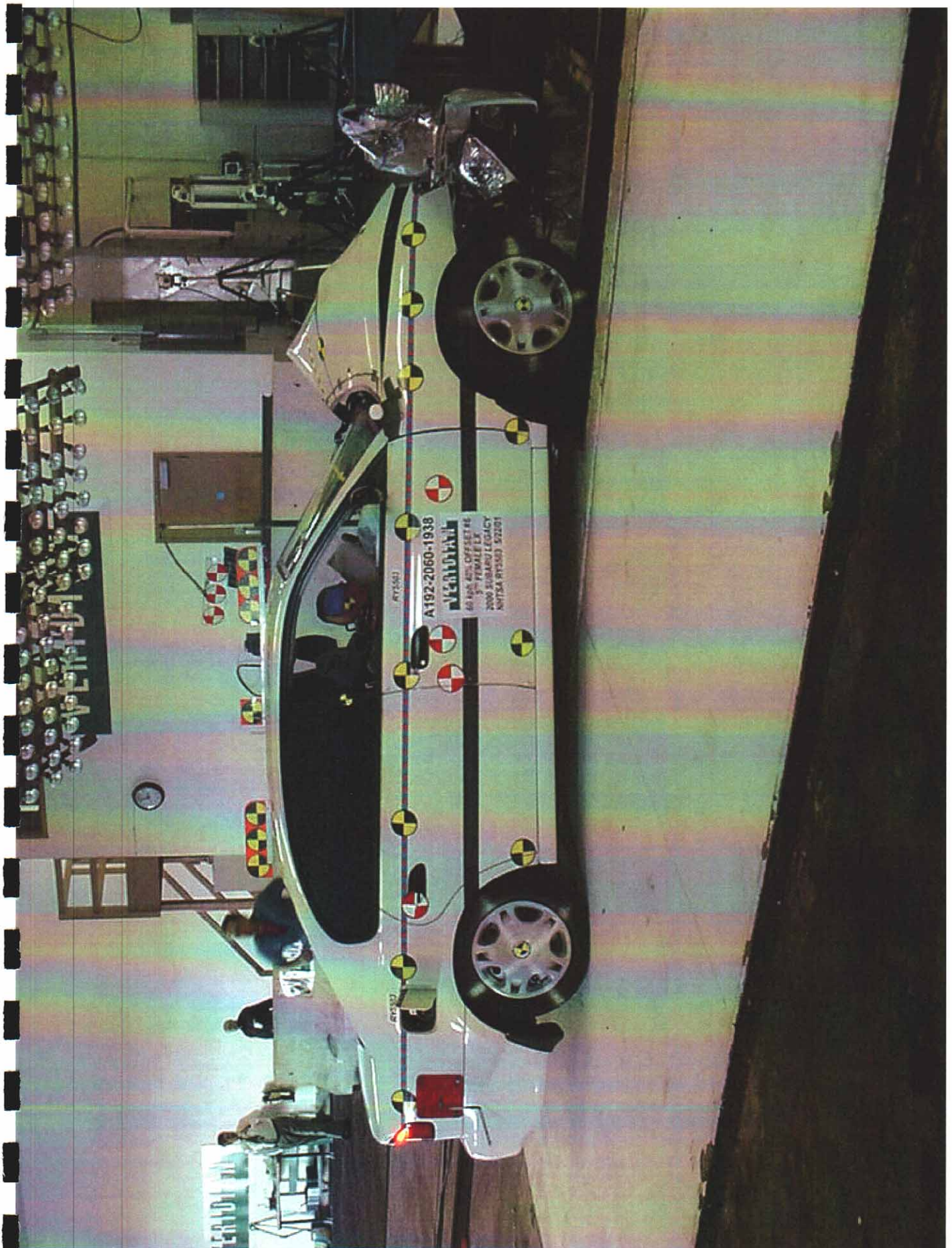


Figure A-6 POST-TEST RIGHT SIDE VIEW

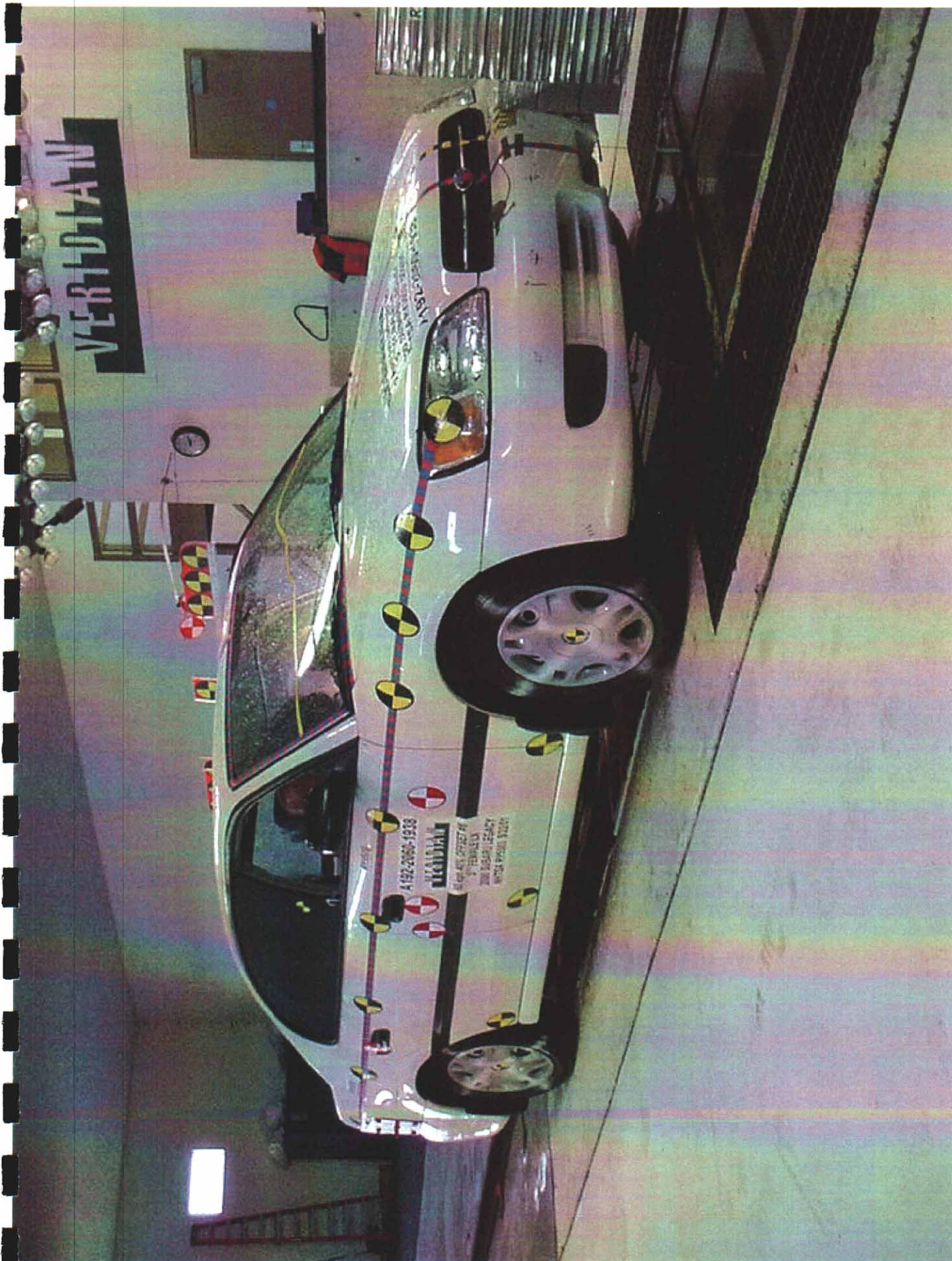


Figure A-7 PRE-TEST RIGHT FRONT THREE-QUARTER VIEW

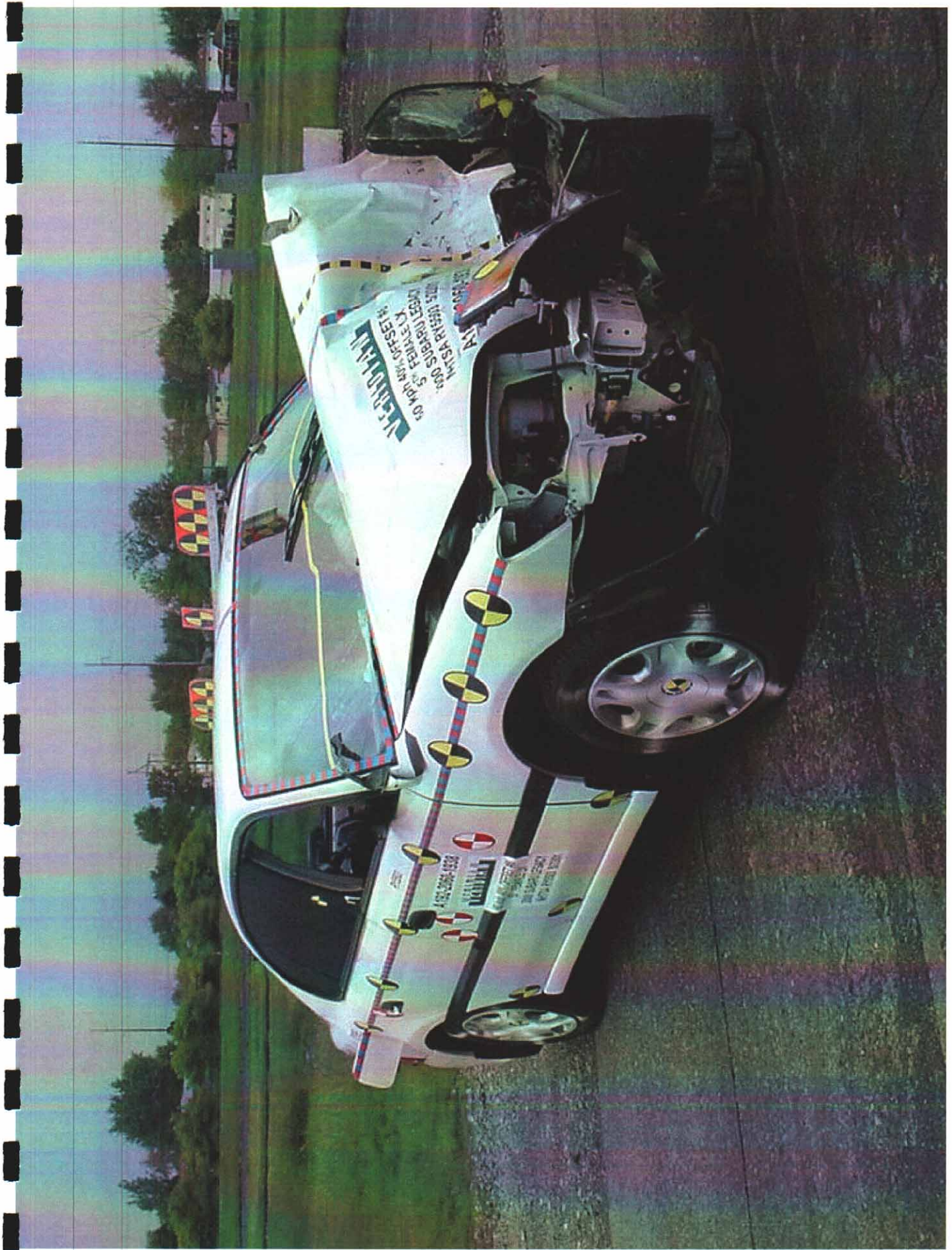


Figure A-8 POST-TEST RIGHT FRONT THREE-QUARTER VIEW

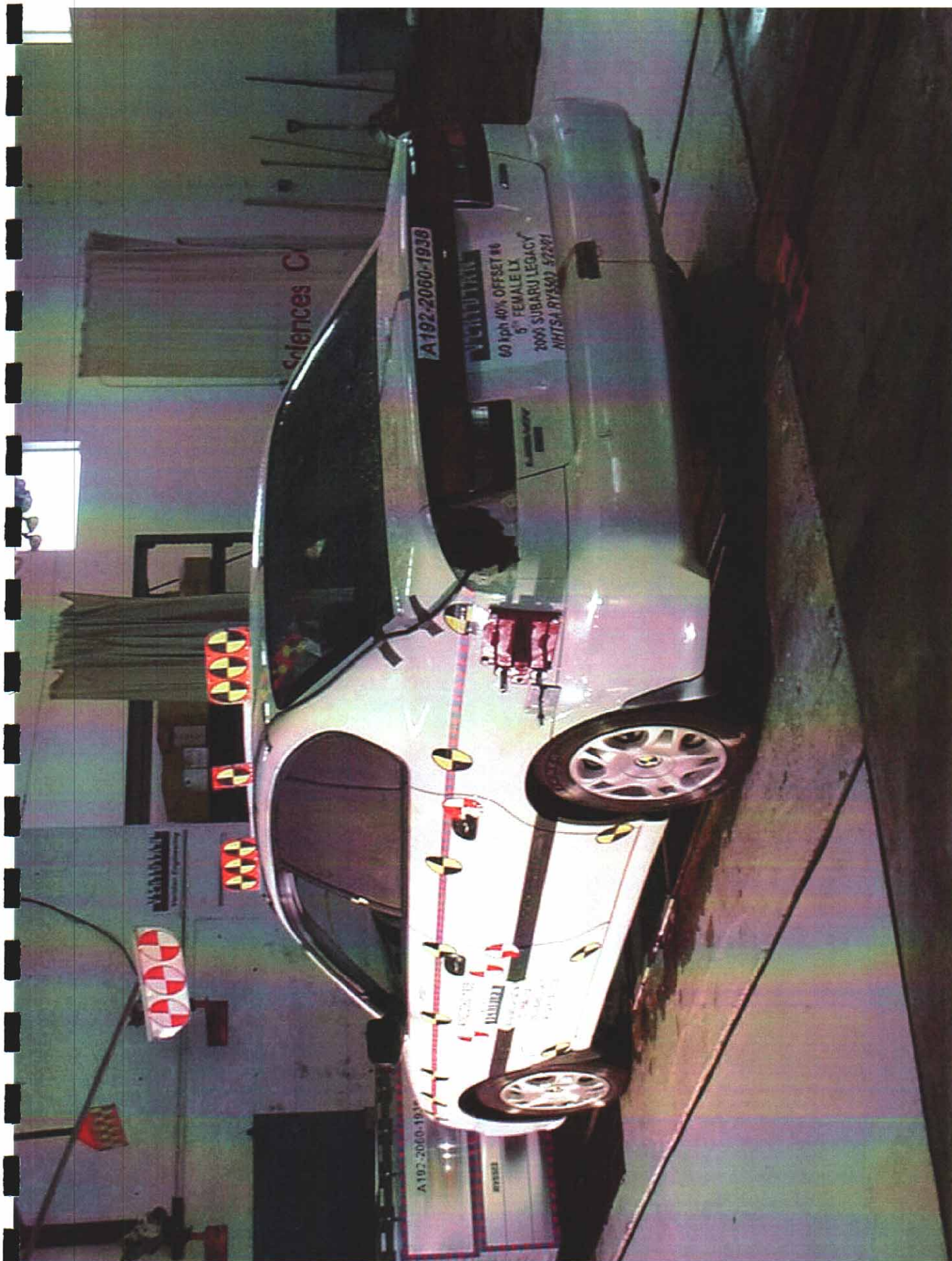


Figure A-9 PRE-TEST LEFT REAR THREE-QUARTER VIEW

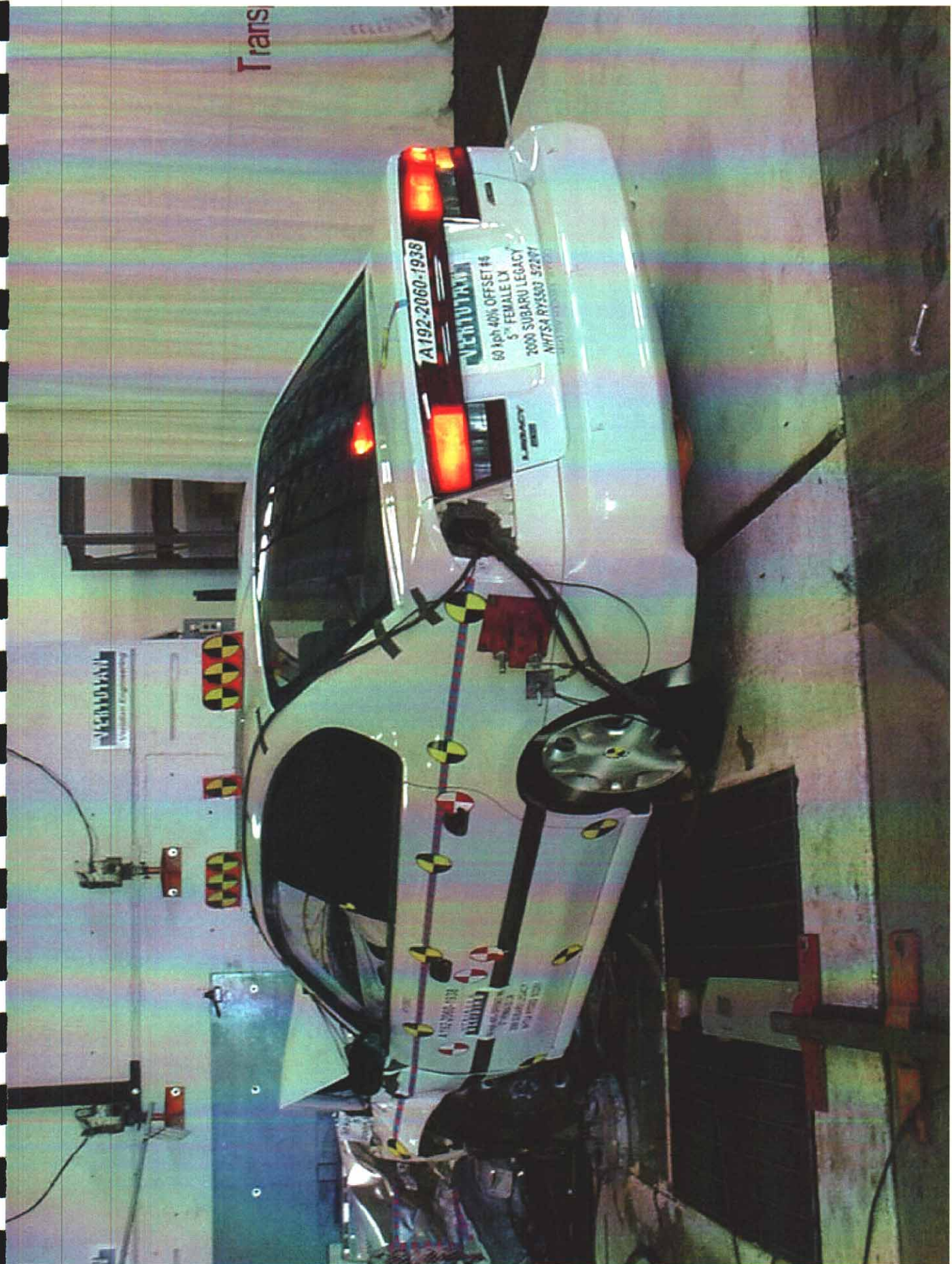


Figure A-10 POST-TEST LEFT REAR THREE-QUARTER VIEW



Figure A-11 PRE-TEST WINDSHIELD VIEW



Figure A-12 POST-TEST WINDSHIELD VIEW

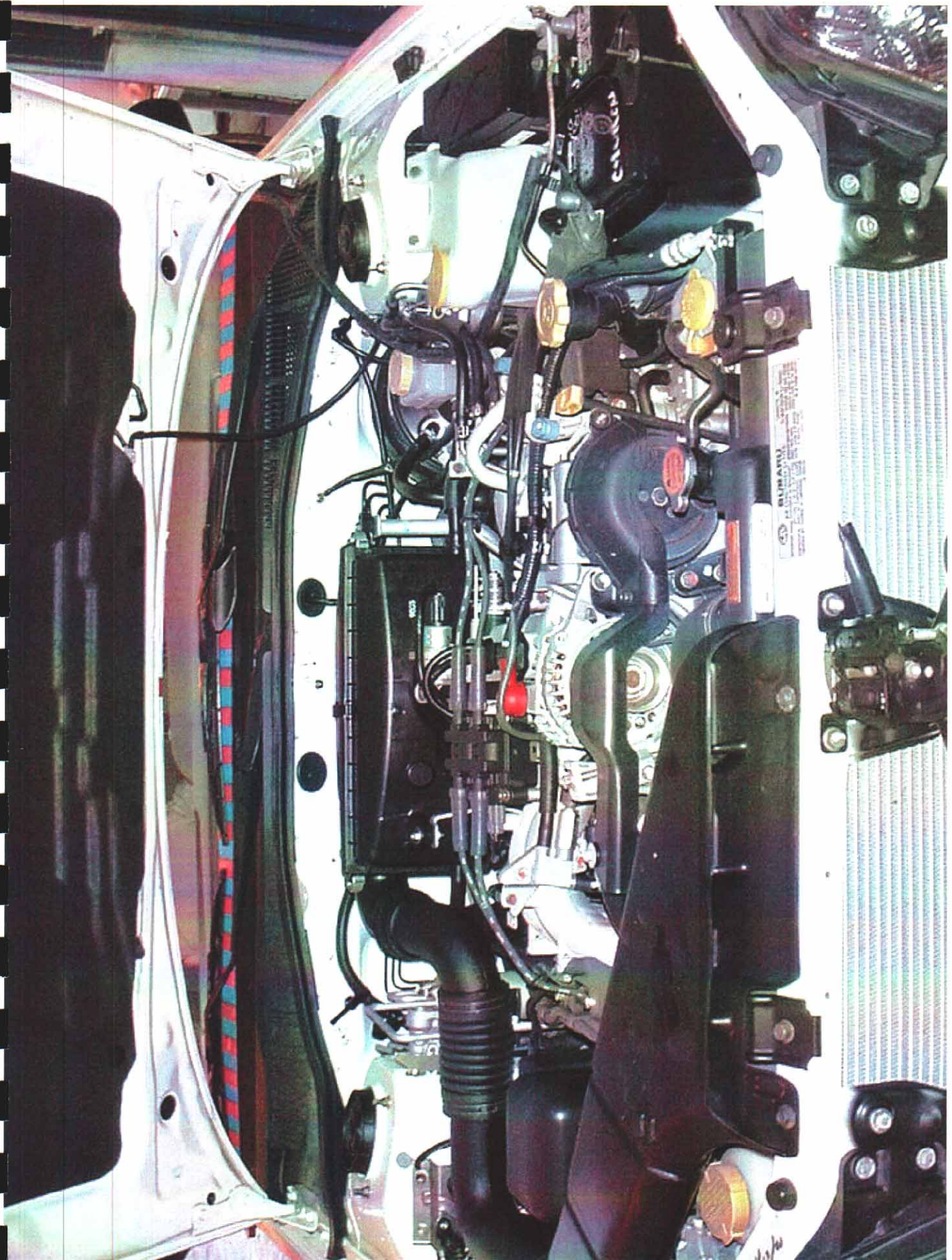


Figure A-13 PRE-TEST ENGINE COMPARTMENT VIEW

RY5503



Figure A-14 FUEL CAP VIEW



Figure A-15 PRE-TEST FRONT UNDERBODY VIEW



Figure A-16 POST-TEST FRONT UNDERBODY VIEW

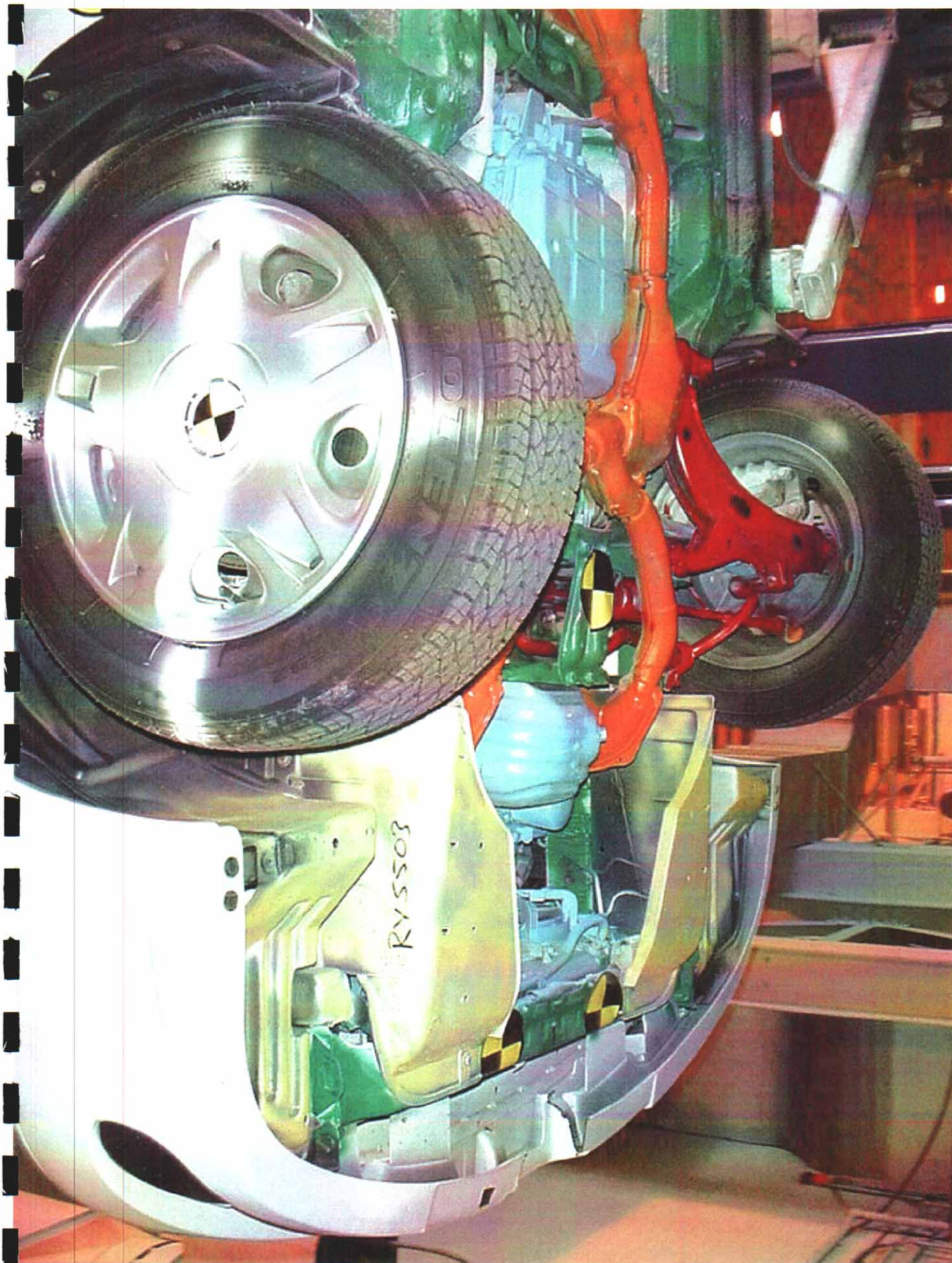


Figure A-17 PRE-TEST FRONT SIDE UNDERBODY VIEW

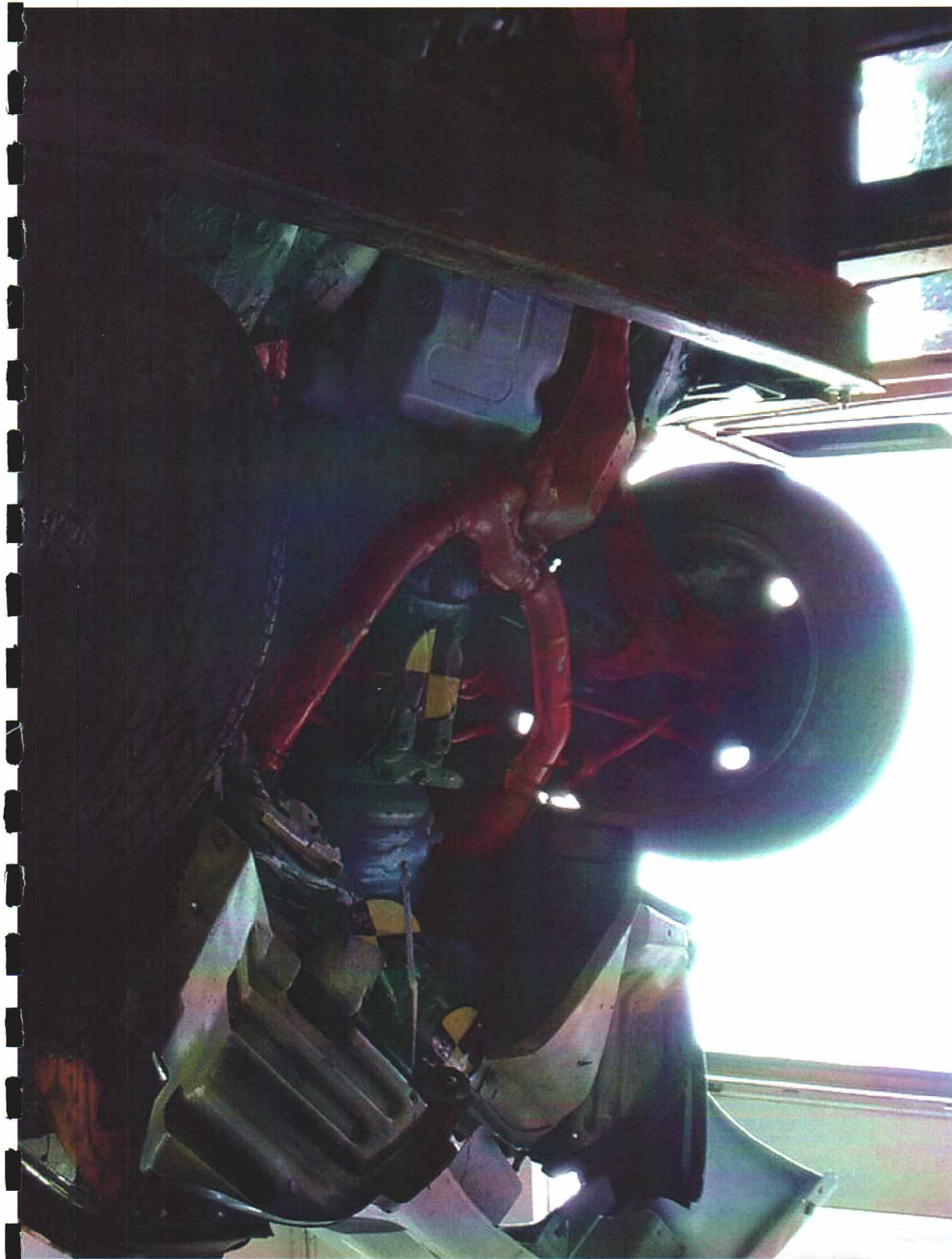


Figure A-18 POST-TEST FRONT SIDE UNDERBODY VIEW

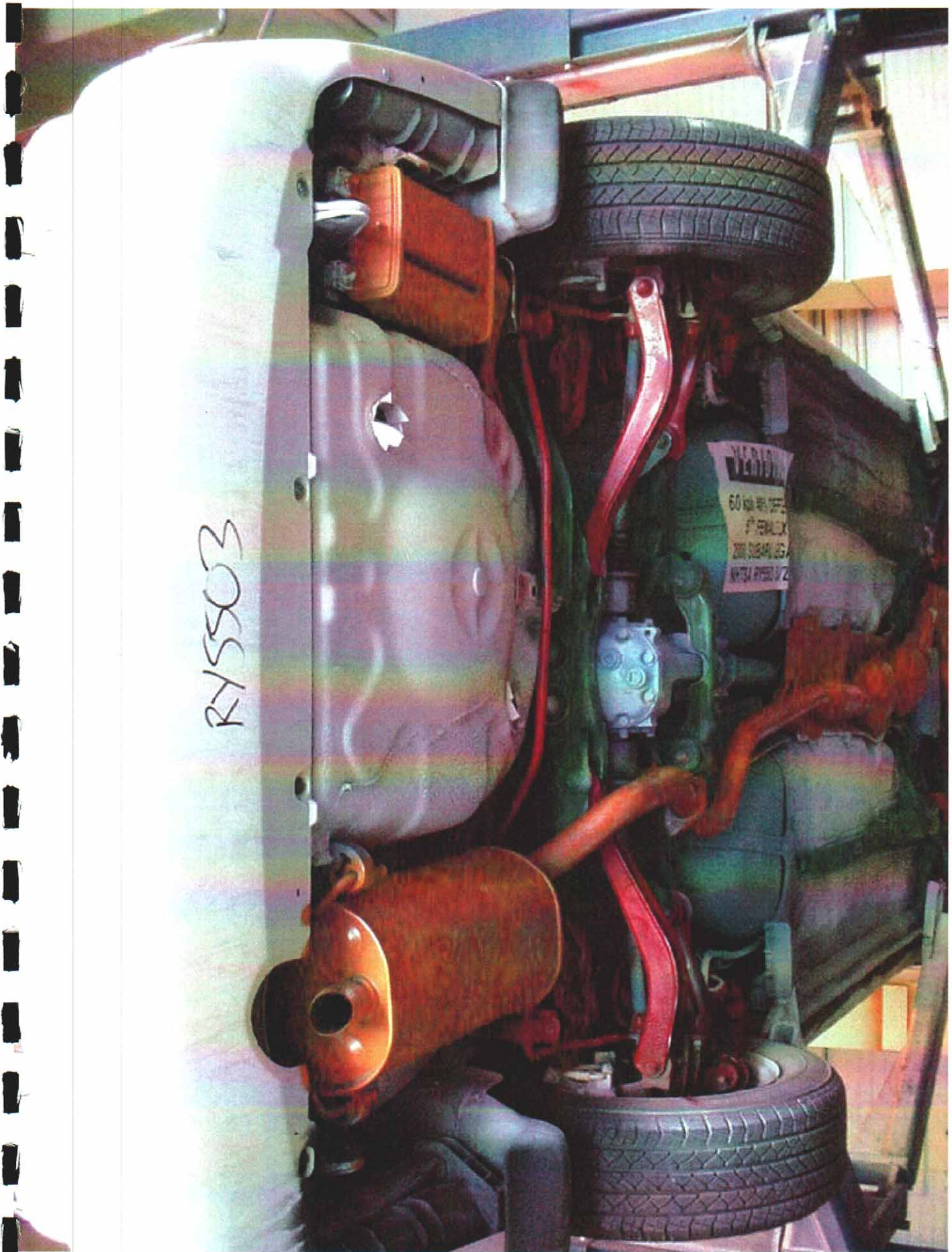


Figure A-19 PRE-TEST REAR UNDERBODY VIEW

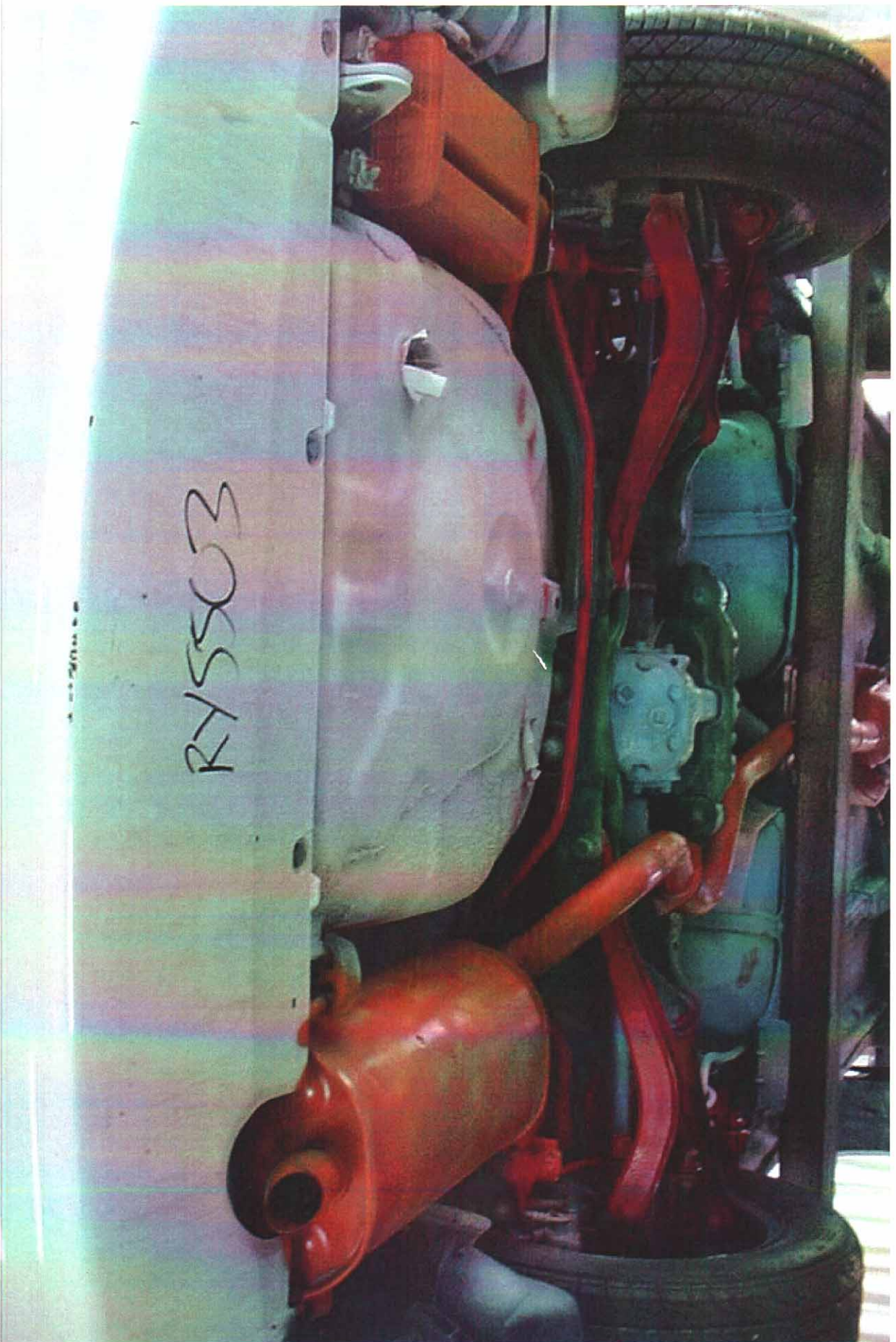


Figure A-20 POST-TEST REAR UNDERBODY VIEW



Figure A-21 PRE-TEST DRIVER POSITION VIEW

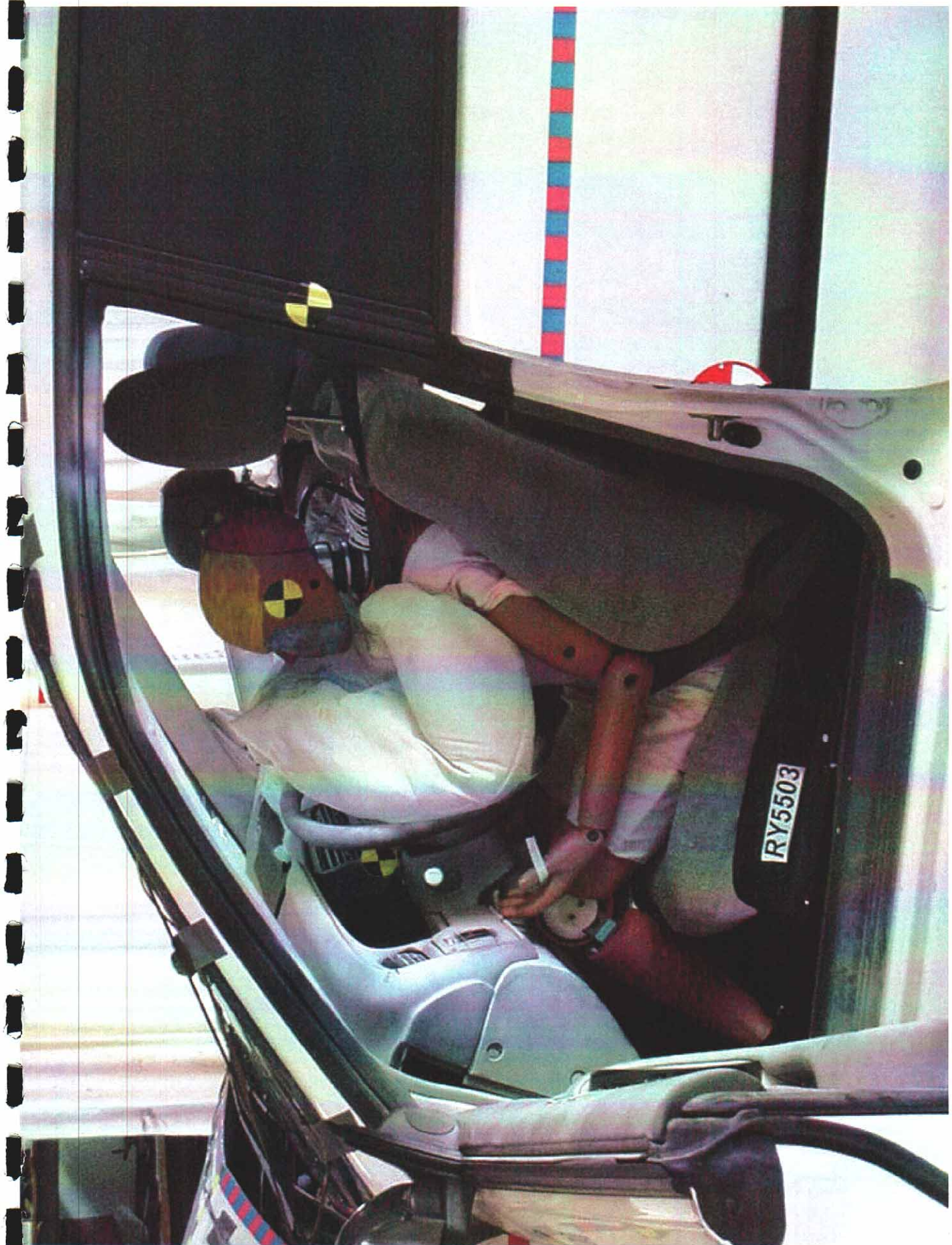


Figure A-22 POST-TEST DRIVER POSITION VIEW



Figure A-23 PRE-TEST PASSENGER POSITION VIEW



Figure A-24 POST-TEST PASSENGER POSITION VIEW



Figure A-25 PRE-TEST DRIVER AND INTERIOR VIEW



Figure A-26 POST-TEST DRIVER AND INTERIOR VIEW

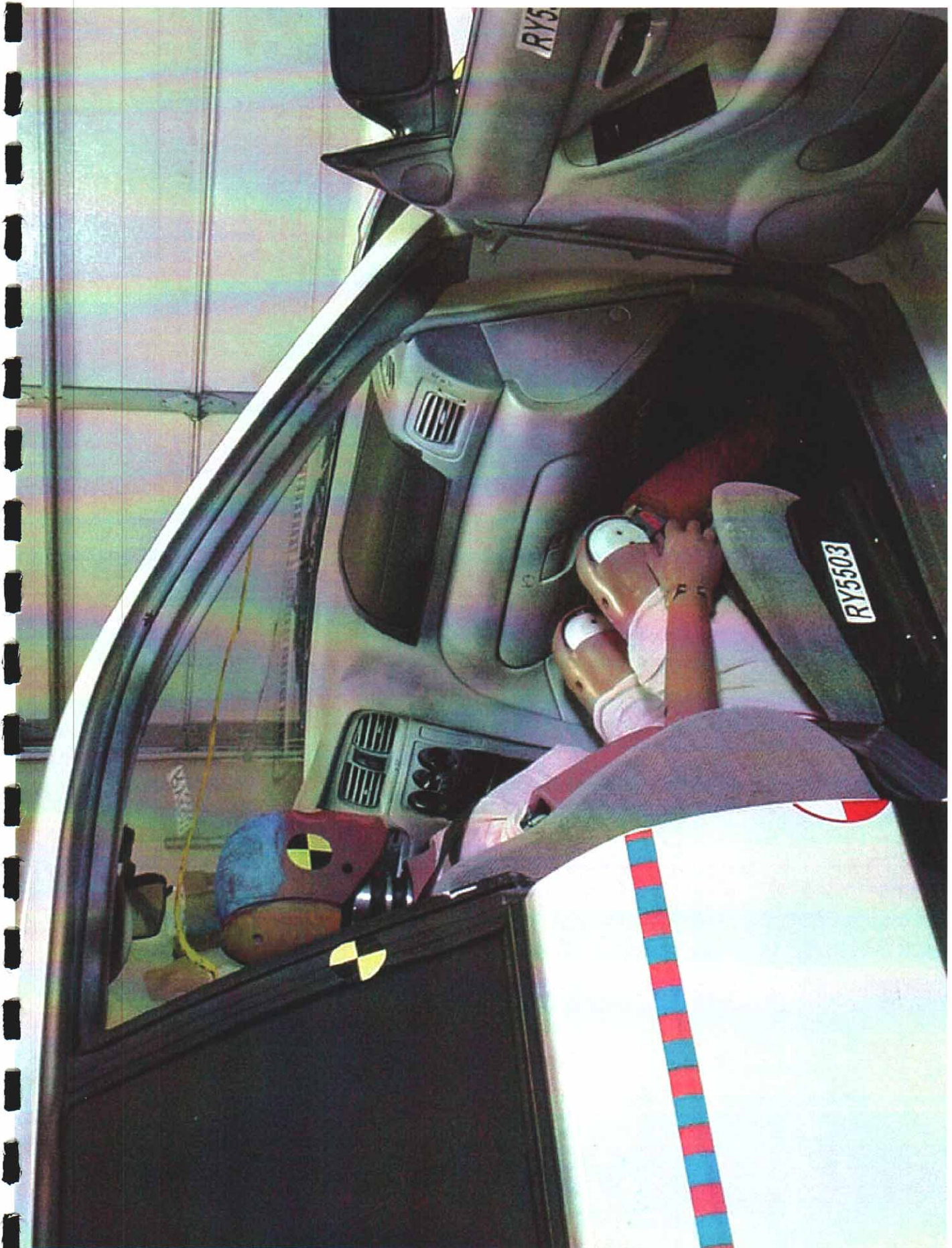


Figure A-27 PRE-TEST PASSENGER AND INTERIOR VIEW

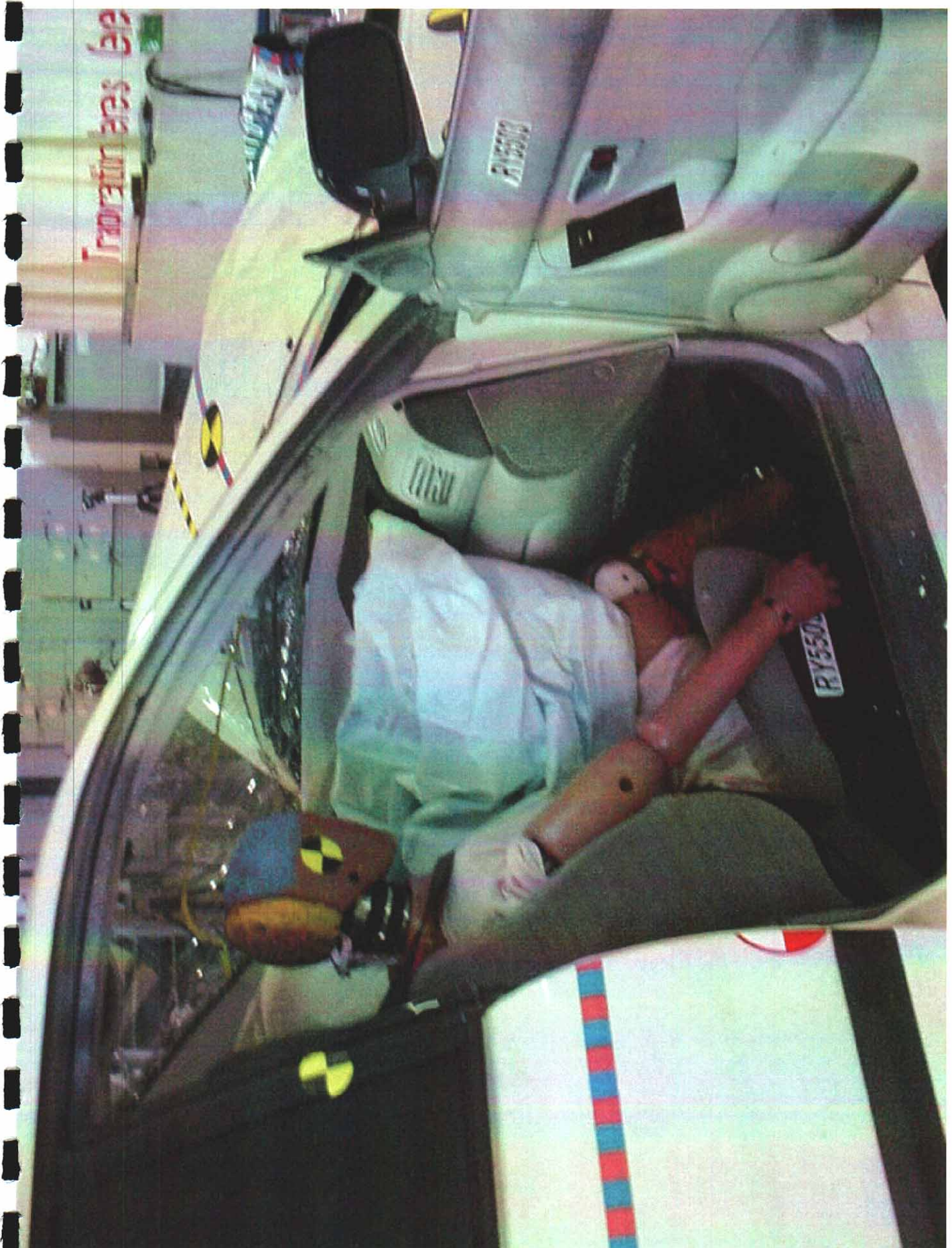


Figure A-28 POST-TEST PASSENGER AND INTERIOR VIEW



Figure A-29 PRE-TEST DRIVER HEAD LOCATION

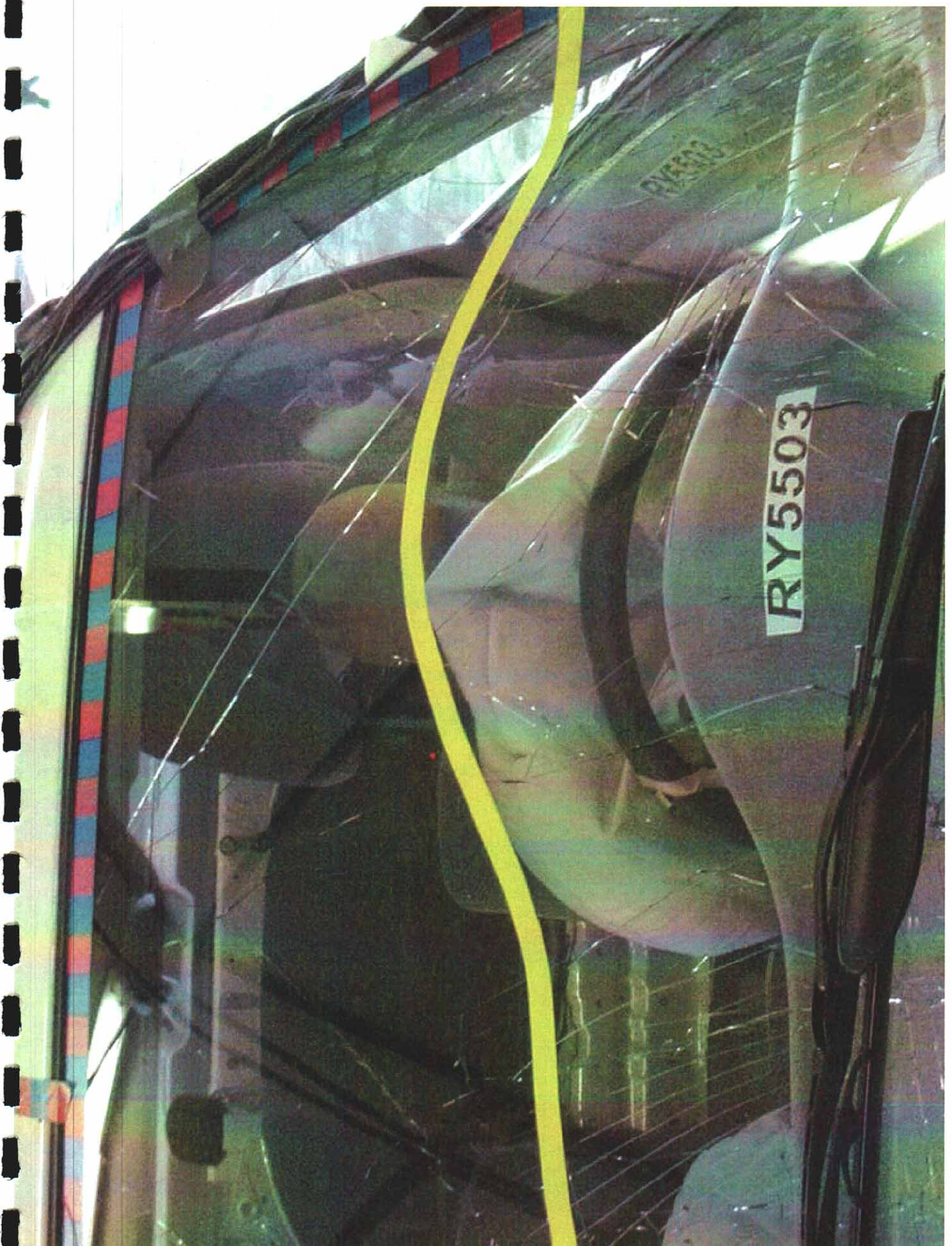


Figure A-30 POST-TEST DRIVER HEAD LOCATION



Figure A-31 PRE-TEST PASSENGER HEAD LOCATION

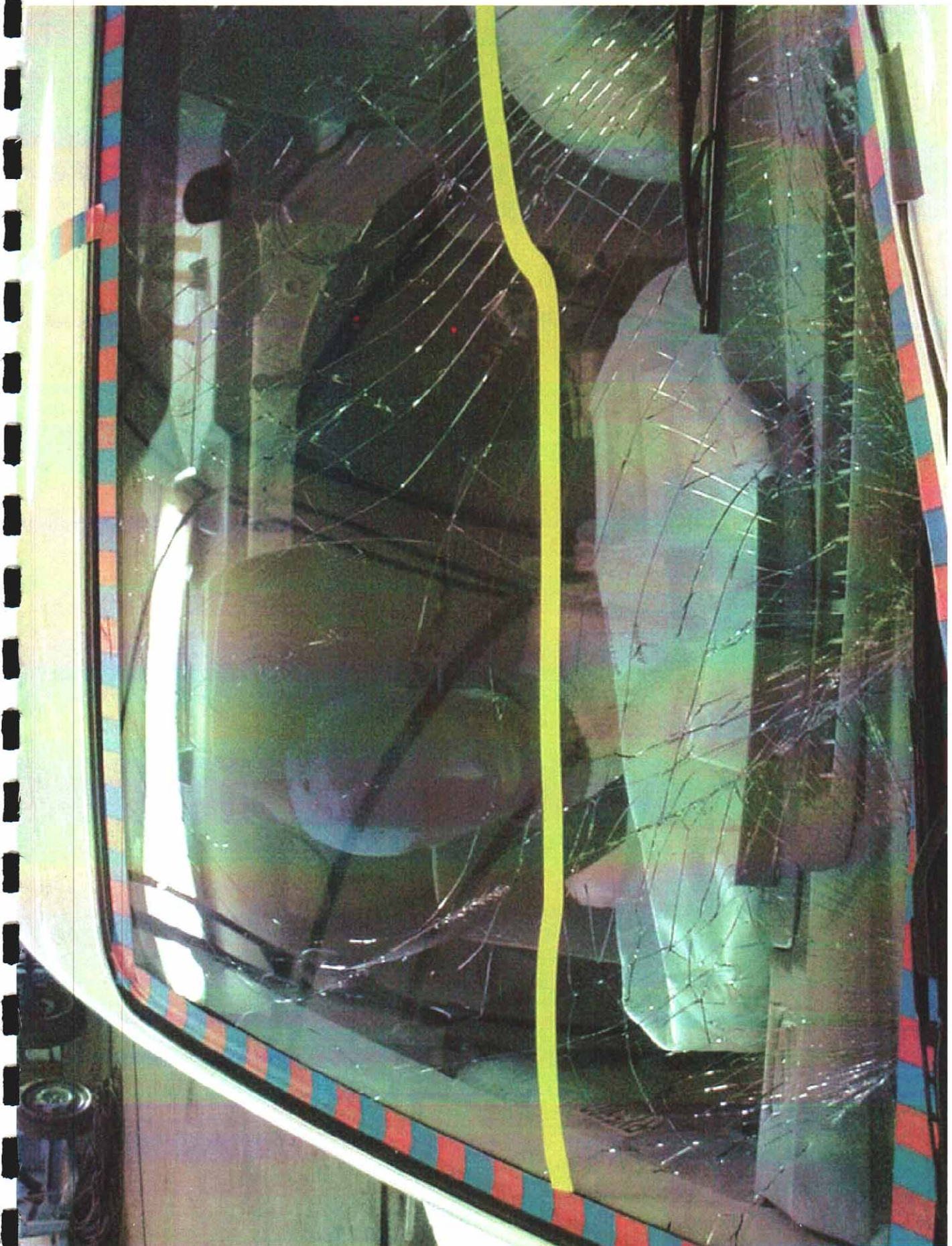


Figure A-32 POST-TEST PASSENGER HEAD LOCATION

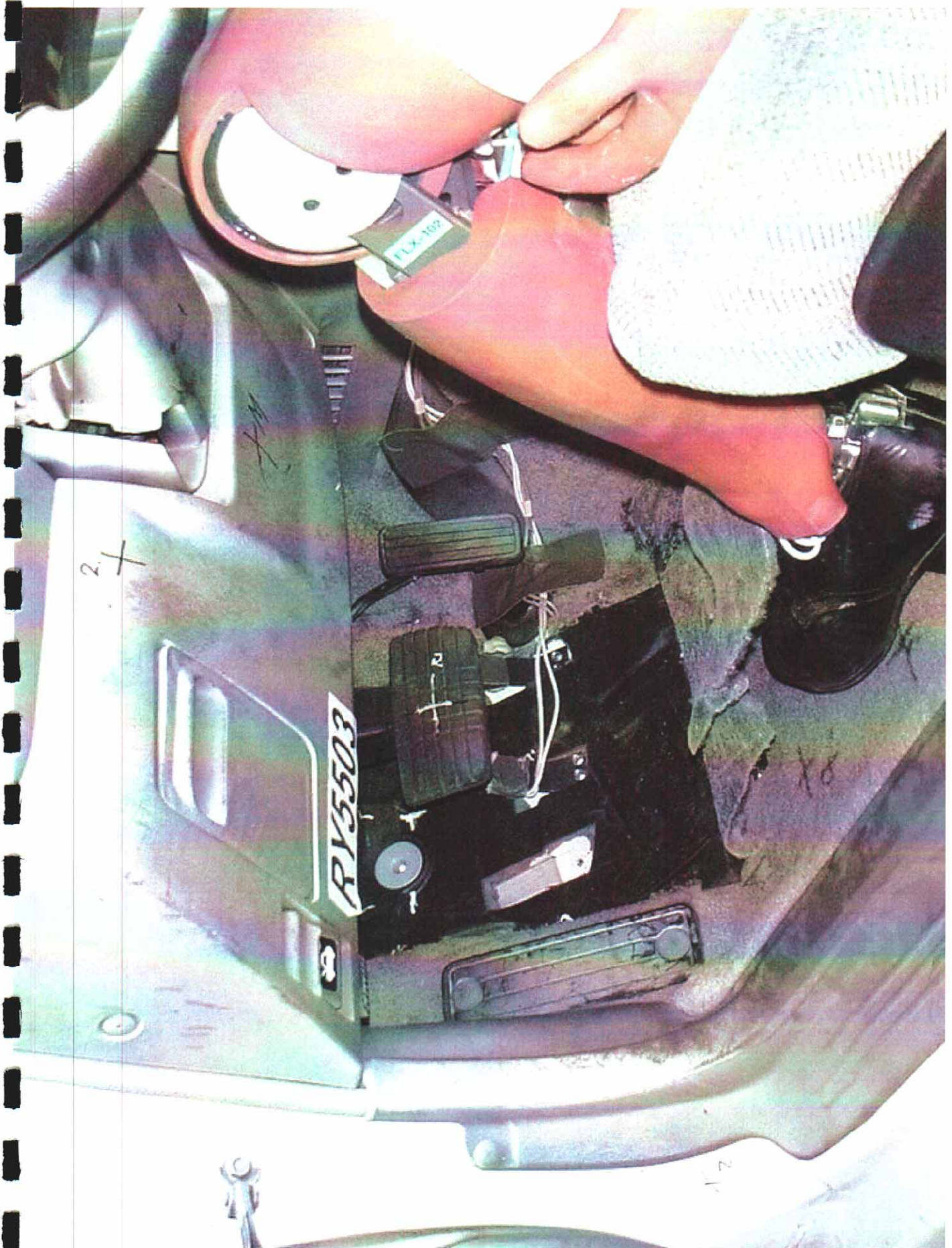


Figure A-33 PRE-TEST DRIVER FLOOR PAN VIEW

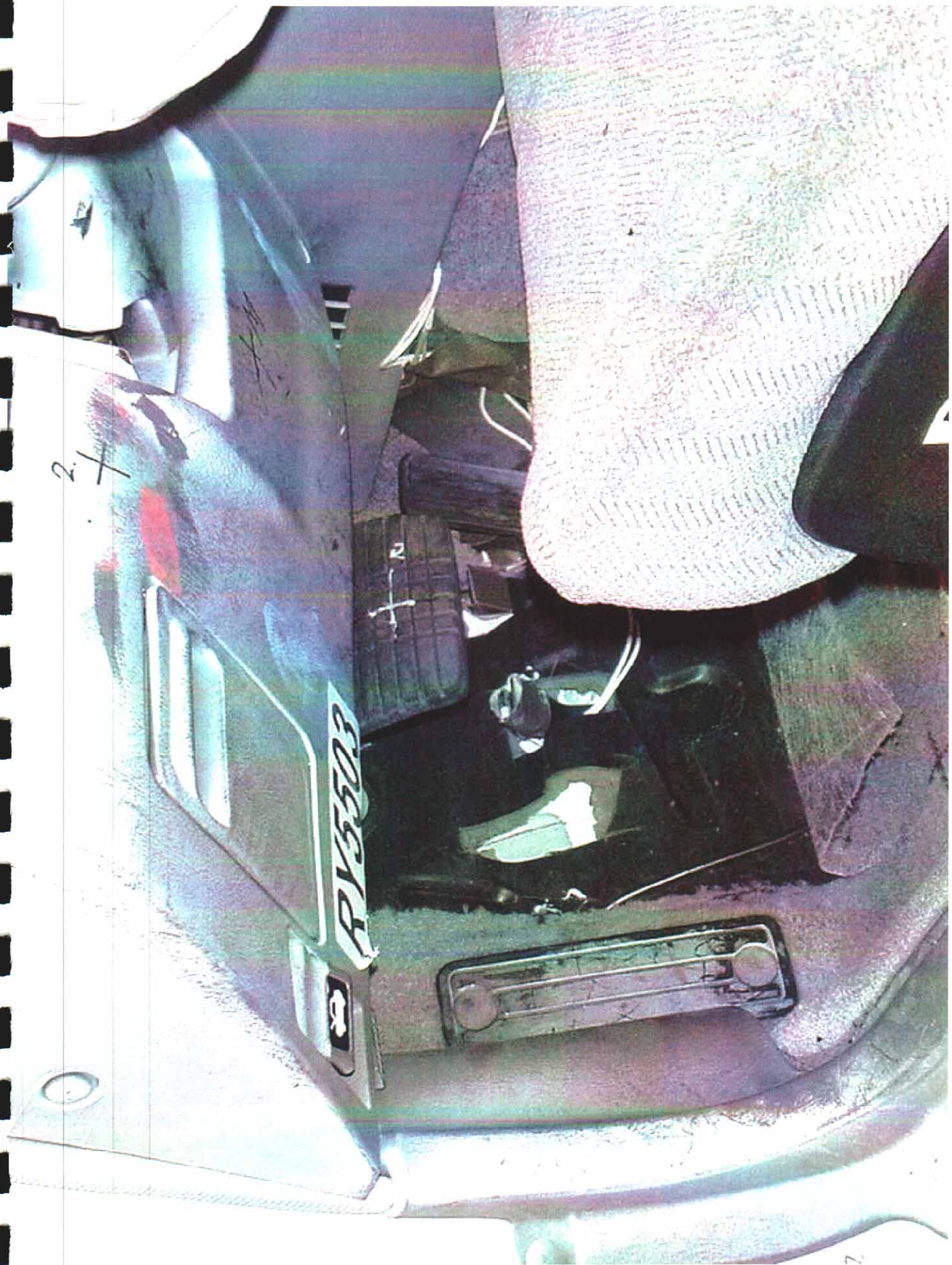


Figure A-34 POST-TEST DRIVER FLOOR PAN VIEW



Figure A-35 PRE-TEST PASSENGER FLOOR PAN VIEW



Figure A-36 POST-TEST PASSENGER FLOOR PAN VIEW

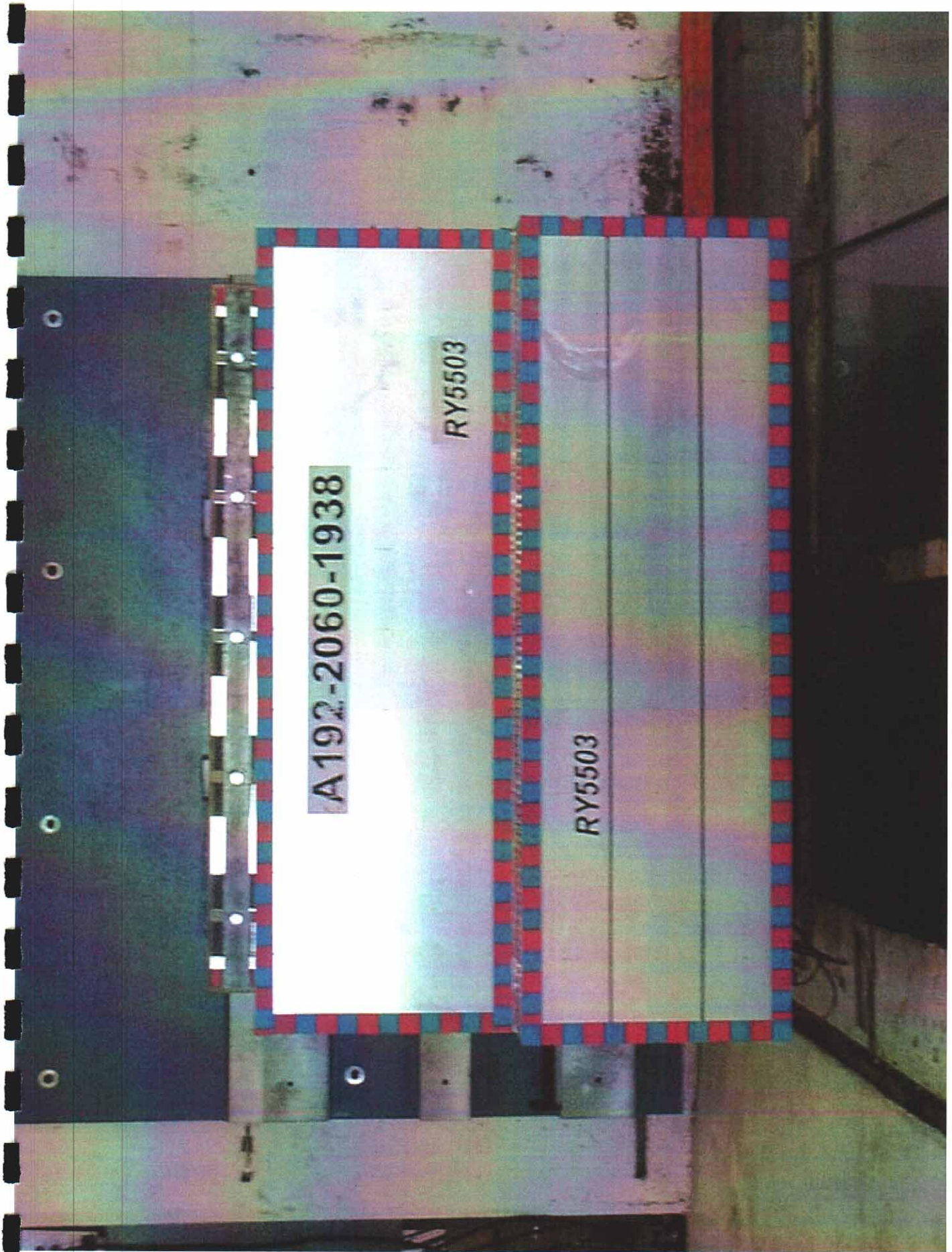


Figure A-37 PRE-TEST BARRIER FRONT VIEW



Figure A-38 POST-TEST BARRIER FRONT VIEW

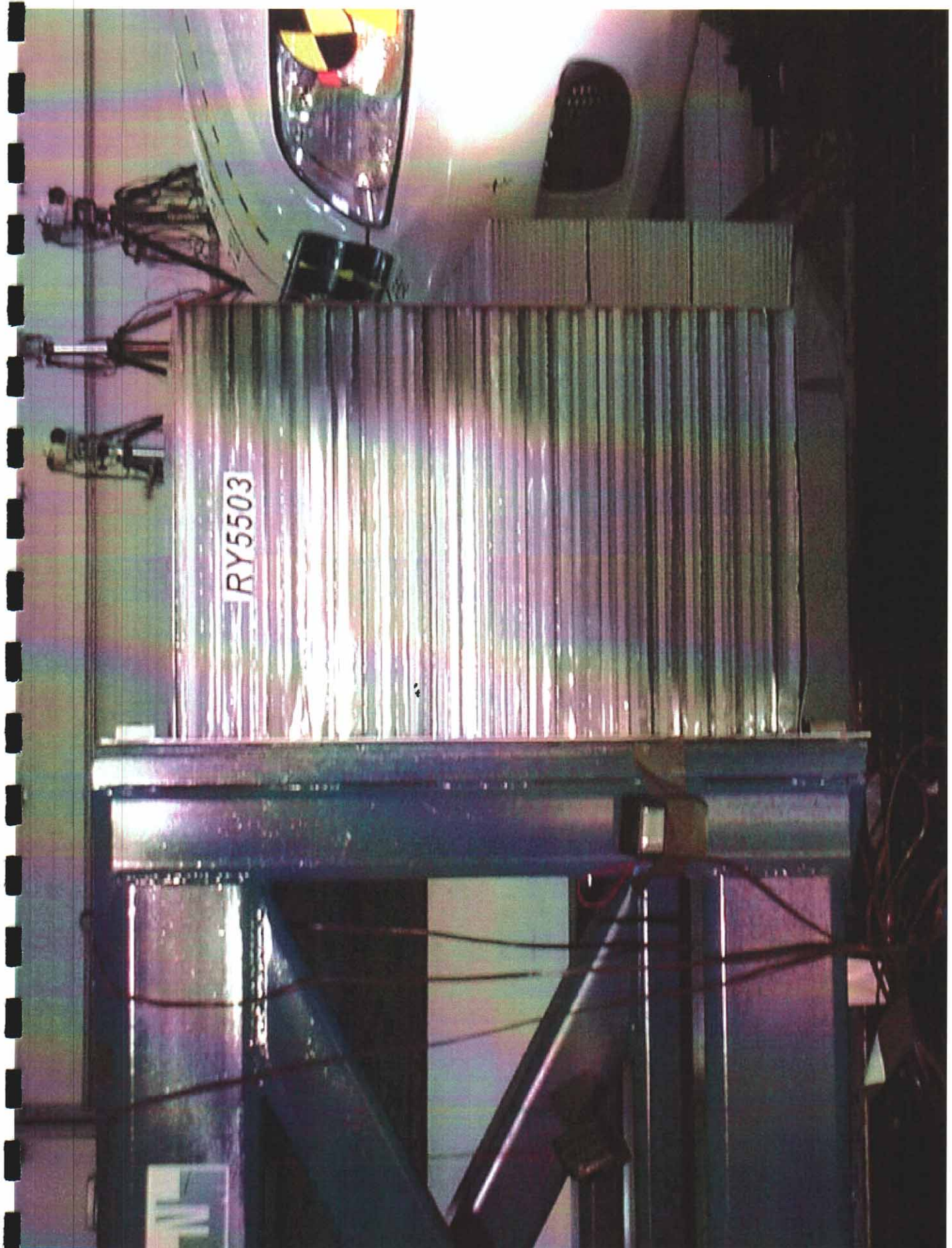


Figure A-39 PRE-TEST BARRIER LEFT SIDE VIEW



Figure A-40 POST-TEST BARRIER LEFTSIDE VIEW

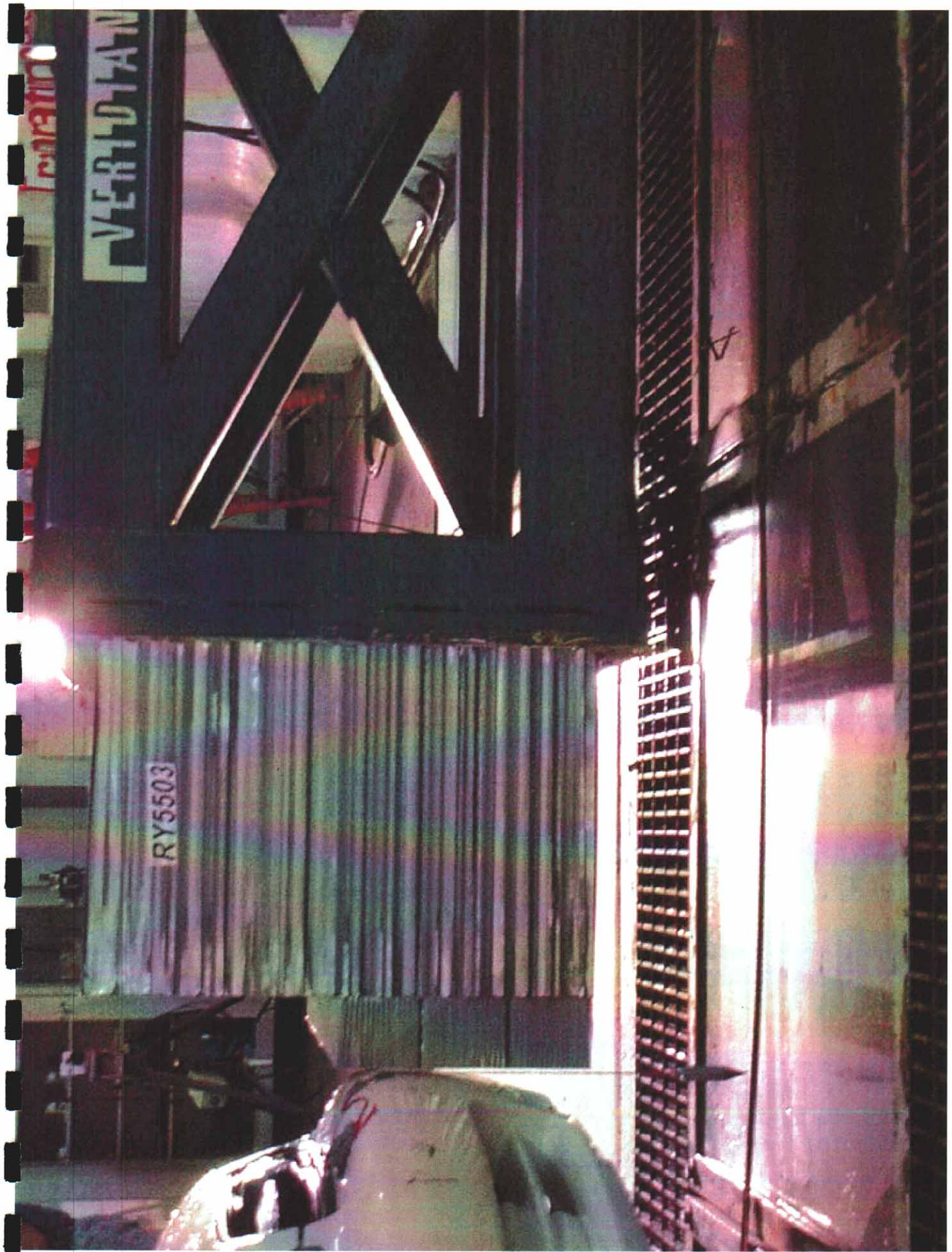


Figure A-41 PRE-TEST BARRIER RIGHT SIDE VIEW

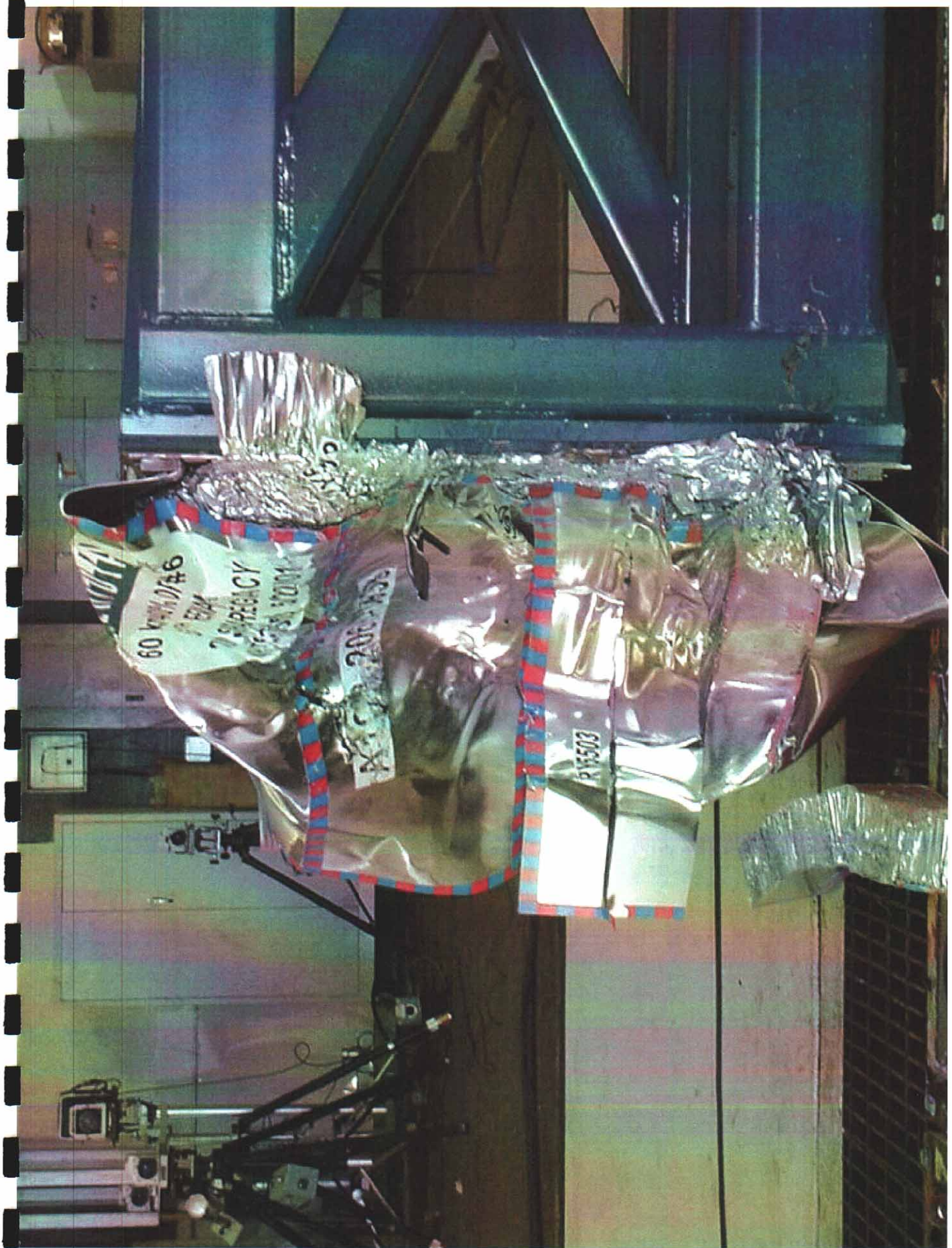


Figure A-42 POST-TEST BARRIER RIGHT SIDE VIEW

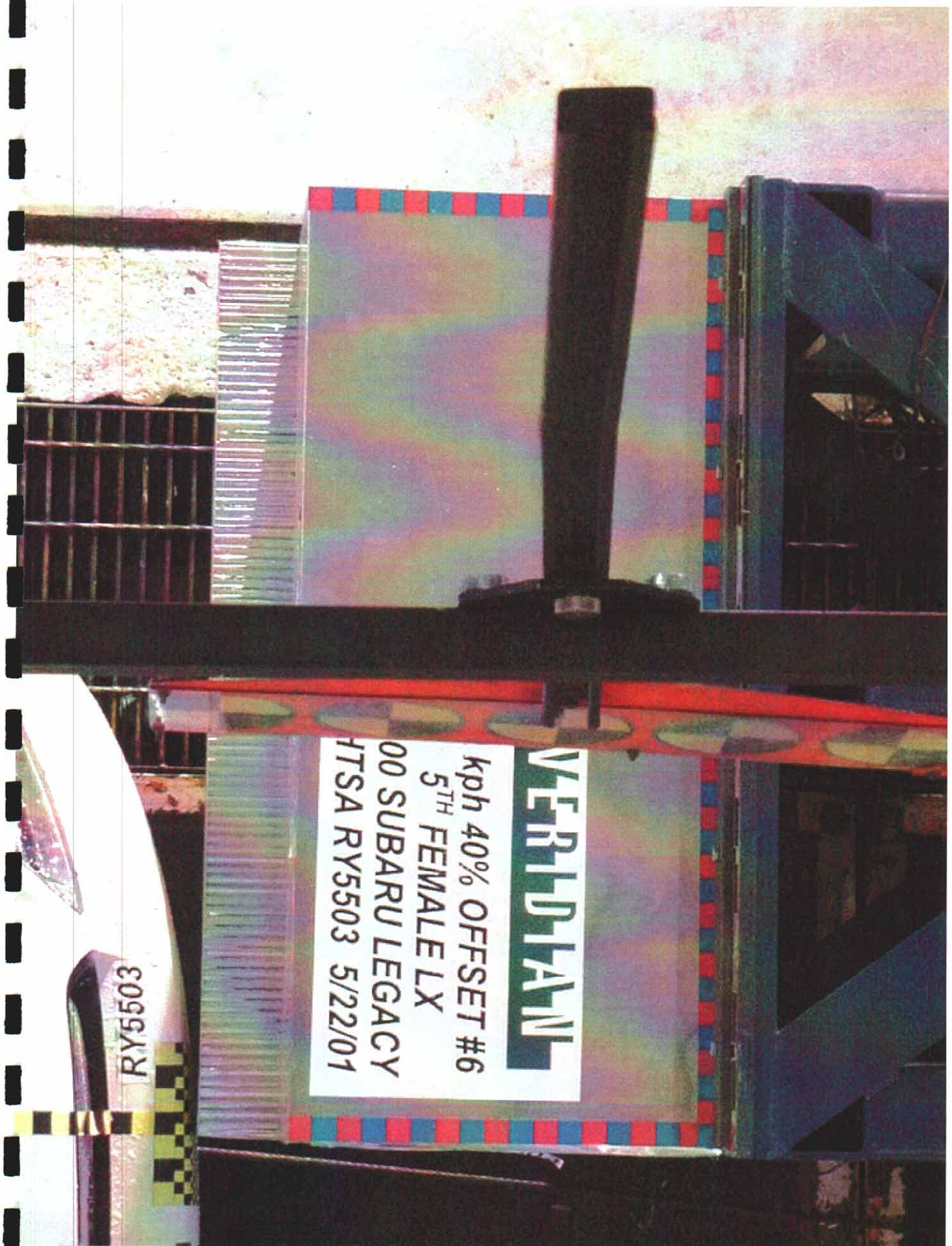


Figure A-43 PRE-TEST BARRIER TOP VIEW



Figure A-44 POST-TEST BARRIER TOP VIEW

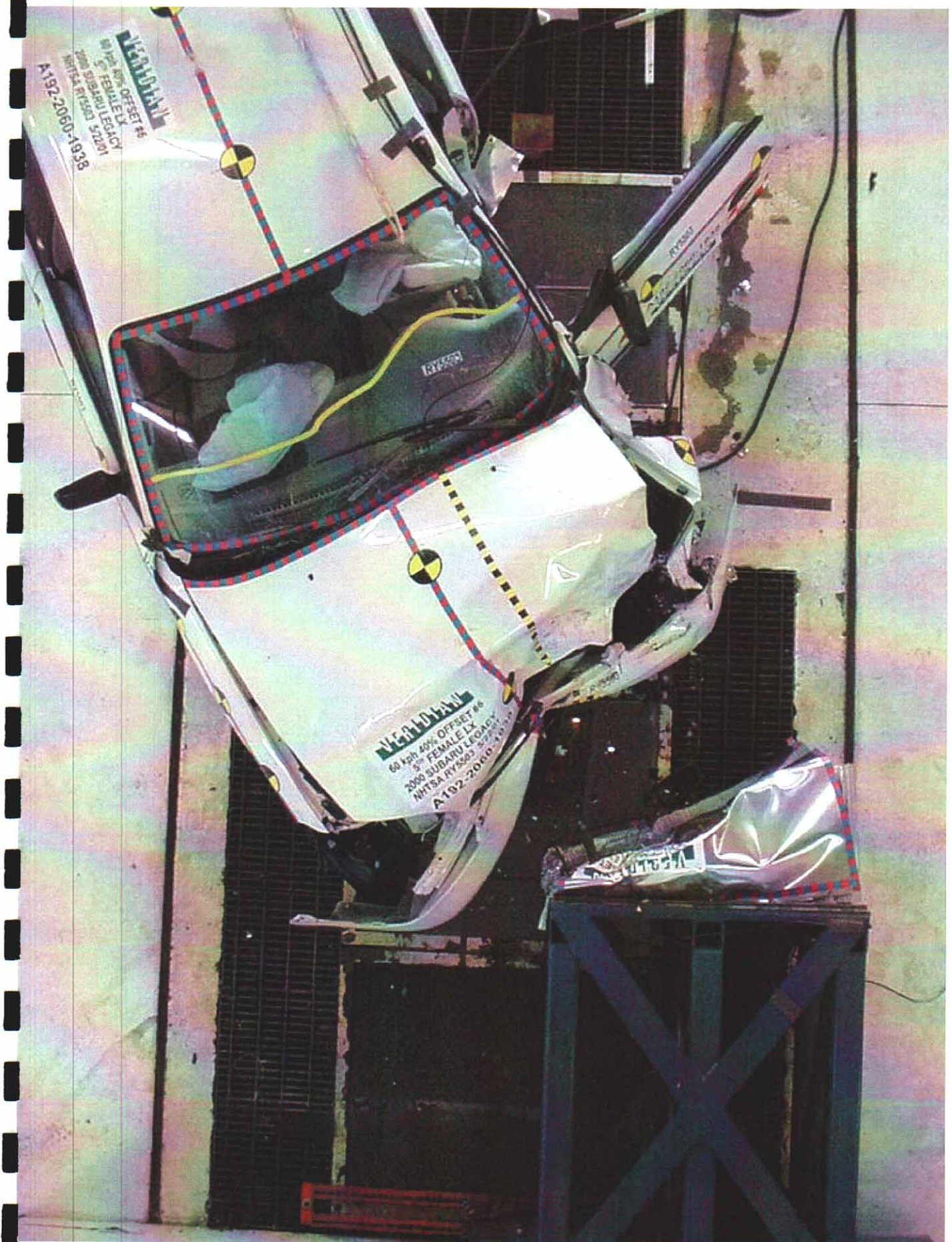


Figure A-45 POST-TEST OVERHEAD VIEW



Figure A-46 ROLLOVER VIEW



Figure A-47 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, Chest Froward Fy Head leftward, Chest rightward Fz Head Upward, Chest Downward Mx Left ear toward left shoulder My Chin toward sternum (flexion) Mz Chin toward 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 (right and left leg)	Fx Knee Upward, Upper Femur Downward Fy Knee Rightward, Upper Femur Leftward Fz Knee Forward, Pelvis Rearward Mx Knee Leftward, Hold Upper Femur in Place My Knee Upward, Hold Upper Femur in Place Mz Tibia Leftward, Hold Pelvis in Place
Upper Tibia Load Cell (right and left leg)	Fx Ankle Forward, Knee Rearward Fy Ankle Rightward, Knee Leftward Fz Tibia Downward, Femur Upward Mx Ankle Leftward, Hold Knee in Place My Ankle Forward, Bottom of Knee Clevis Rearward
Lower Tibia Load Cell (right and left leg)	Fx Ankle Forward, Knee Rearward Fy Ankle Rightward, Knee Leftward Fz Tibia Downward, Femur Upward Mx Ankle Leftward, Hold Knee in Place My Ankle Forward, Bottom of Knee Clevis Rearward
Knee Shear Displacement	X Hold Femur Move Tibia Forward
Tibia Mid-Shaft Accelerometer	X Forward Y To the Right
Foot Rotations (left foot)	X Eversion Y Dorsi Flexion Z Internal Rotation
Foot Rotations (right foot)	X Inversion Y Dorsi Flexion Z External Rotation
Foot Accelerometer (right and left foot)	X Forward Y To the Right Z Down

DATA CHANNEL FILTER CLASS SUMMARY

NHTSA TEST NO. RY5503

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

PLOT	PLOT NAME [UNITS, CHANNEL FILTER CLASS]	PAGE
1	P1 Head 9 Array X Arm Ay [g, CFC_1000]	B-8
2	P1 Head 9 Array X Arm Az [g, CFC_1000]	B-9
3	P1 Head 9 Array Y Arm Ax [g, CFC_1000]	B-10
4	P1 Head 9 Array Y Arm Az [g, CFC_1000]	B-11
5	P1 Head 9 Array Z Arm Ax [g, CFC_1000]	B-12
6	P1 Head 9 Array Z Arm Ay [g, CFC_1000]	B-13
7	P1 Head CG Ax [g, CFC_1000]	B-14
8	P1 Head CG Ay [g, CFC_1000]	B-15
9	P1 Head CG Az [g, CFC_1000]	B-16
10	P1 Head CG A Resultant [g, CFC_1000]	B-17
11	P1 Head CG Red Ax [g, CFC_1000]	B-18
12	P1 Head CG Red Ay [g, CFC_1000]	B-19
13	P1 Head CG Red Az [g, CFC_1000]	B-20
14	P1 Head CG Red A Resultant [g, CFC_1000]	B-21
15	P1 Upper Neck Fx [N, CFC_1000]	B-22
16	P1 Upper Neck Fy [N, CFC_1000]	B-23
17	P1 Upper Neck Fz [N, CFC_1000]	B-24
18	P1 Upper Neck F Resultant [N, CFC_1000]	B-25
19	P1 Upper Neck Mx [Nm, CFC_600]	B-26
20	P1 Upper Neck My [Nm, CFC_600]	B-27
21	P1 Upper Neck Mz [Nm, CFC_600]	B-28
22	P1 Upper Neck M Resultant [Nm, CFC_600]	B-29
23	P1 Chest Ax [g, CFC_180]	B-30
24	P1 Chest Ay [g, CFC_180]	B-31
25	P1 Chest Az [g, CFC_180]	B-32
26	P1 Chest A Resultant [g, CFC_180]	B-33
27	P1 Chest Red Ax [g, CFC_180]	B-34
28	P1 Chest Red Ay [g, CFC_180]	B-35
29	P1 Chest Red Az [g, CFC_180]	B-36
30	P1 Chest Red A Resultant [g, CFC_180]	B-37
31	P1 Chest Displacement [mm, CFC_600]	B-38
32	P1 Pelvic Ax [g, CFC_1000]	B-39
33	P1 Pelvic Ay [g, CFC_1000]	B-40
34	P1 Pelvic Az [g, CFC_1000]	B-41
35	P1 Pelvic A Resultant [g, CFC_1000]	B-42
36	P1 Left Femur Fx [N, CFC_600]	B-43
37	P1 Left Femur Fy [N, CFC_600]	B-44
38	P1 Left Femur Fz [N, CFC_600]	B-45
39	P1 Left Femur F Resultant [N, CFC_600]	B-46
40	P1 Left Femur Mx [Nm, CFC_600]	B-47
41	P1 Left Femur My [Nm, CFC_600]	B-48
42	P1 Left Femur Mz [Nm, CFC_600]	B-49
43	P1 Left Femur M Resultant [Nm, CFC_600]	B-50
44	P1 Right Femur Fx [N, CFC_600]	B-51
45	P1 Right Femur Fy [N, CFC_600]	B-52
46	P1 Right Femur Fz [N, CFC_600]	B-53
47	P1 Right Femur F Resultant [N, CFC_600]	B-54
48	P1 Right Femur Mx [Nm, CFC_600]	B-55
49	P1 Right Femur My [Nm, CFC_600]	B-56
50	P1 Right Femur Mz [Nm, CFC_600]	B-57
51	P1 Right Femur M Resultant [Nm, CFC_600]	B-58
52	P1 Left Knee Shear Dx [mm, CFC_180]	B-59

53	P1 Right Knee Shear Dx [mm, CFC_180]	B-60
54	P1 Left Upper Tibia Fx [N, CFC_600]	B-61
55	P1 Left Upper Tibia Fz [N, CFC_600]	B-62
56	P1 Left Upper Tibia Mx [Nm, CFC_600]	B-63
57	P1 Left Upper Tibia My [Nm, CFC_600]	B-64
58	P1 Left Lower Tibia Fx [N, CFC_600]	B-65
59	P1 Left Lower Tibia Fy [N, CFC_600]	B-66
60	P1 Left Lower Tibia Fz [N, CFC_600]	B-67
61	P1 Left Lower Tibia F Resultant [N, CFC_600]	B-68
62	P1 Left Lower Tibia Mx [Nm, CFC_600]	B-69
63	P1 Left Lower Tibia My [Nm, CFC_600]	B-70
64	P1 Right Upper Tibia Fx [N, CFC_600]	B-71
65	P1 Right Upper Tibia Fz [N, CFC_600]	B-72
66	P1 Right Upper Tibia Mx [Nm, CFC_600]	B-73
67	P1 Right Upper Tibia My [Nm, CFC_600]	B-74
68	P1 Right Lower Tibia Fx [N, CFC_600]	B-75
69	P1 Right Lower Tibia Fy [N, CFC_600]	B-76
70	P1 Right Lower Tibia Fz [N, CFC_600]	B-77
71	P1 Right Lower Tibia F Resultant [N, CFC_600]	B-78
72	P1 Right Lower Tibia Mx [Nm, CFC_600]	B-79
73	P1 Right Lower Tibia My [Nm, CFC_600]	B-80
74	P1 Left Tibia Ax [g, CFC_600]	B-81
75	P1 Left Tibia Ay [g, CFC_600]	B-82
76	P1 Right Tibia Ax [g, CFC_600]	B-83
77	P1 Right Tibia Ay [g, CFC_600]	B-84
78	P1 Left Ankle Rotation x [Deg, CFC_180]	B-85
79	P1 Left Ankle Rotation y [Deg, CFC_180]	B-86
80	P1 Left ankle Rotation z [Deg, CFC_180]	B-87
81	P1 Right Ankle Rotation x [Deg, CFC_180]	B-88
82	P1 Right Ankle Rotation y [Deg, CFC_180]	B-89
83	P1 Right Ankle Rotation z [Deg, CFC_180]	B-90
84	P1 Left Foot Ax [g, CFC_600]	B-91
85	P1 Left Foot Ay [g, CFC_600]	B-92
86	P1 Left Foot Az [g, CFC_600]	B-93
87	P1 Left Foot A Resultant [g, CFC_600]	B-94
88	P1 Right Foot Ax [g, CFC_600]	B-95
89	P1 Right Foot Ay [g, CFC_600]	B-96
90	P1 Right foot Az [g, CFC_600]	B-97
91	P1 Right Foot A Resultant [g, CFC_600]	B-98
92	P2 Head 9 Array X Arm Ay [g, CFC_1000]	B-99
93	P2 Head 9 Array X Arm Az [g, CFC_1000]	B-100
94	P2 Head 9 Array Y Arm Ax [g, CFC_1000]	B-101
95	P2 Head 9 Array Y Arm Az [g, CFC_1000]	B-102
96	P2 Head 9 Array Z Arm Ax [g, CFC_1000]	B-103
97	P2 Head 9 Array Z Arm Ay [g, CFC_1000]	B-104
98	P2 Head CG Ax [g, CFC_1000]	B-105
99	P2 Head CG Ay [g, CFC_1000]	B-106
100	P2 Head CG Az [g, CFC_1000]	B-107
101	P2 Head CG A Resultant [g, CFC_1000]	B-108
102	P2 Head CG Red Ax [g, CFC_1000]	B-109
103	P2 Head CG Red Ay [g, CFC_1000]	B-110
104	P2 Head CG Red Az [g, CFC_1000]	B-111
105	P2 Head CG Red A Resultant [g, CFC_1000]	B-112
106	P2 Upper Neck Fx [N, CFC_1000]	B-113

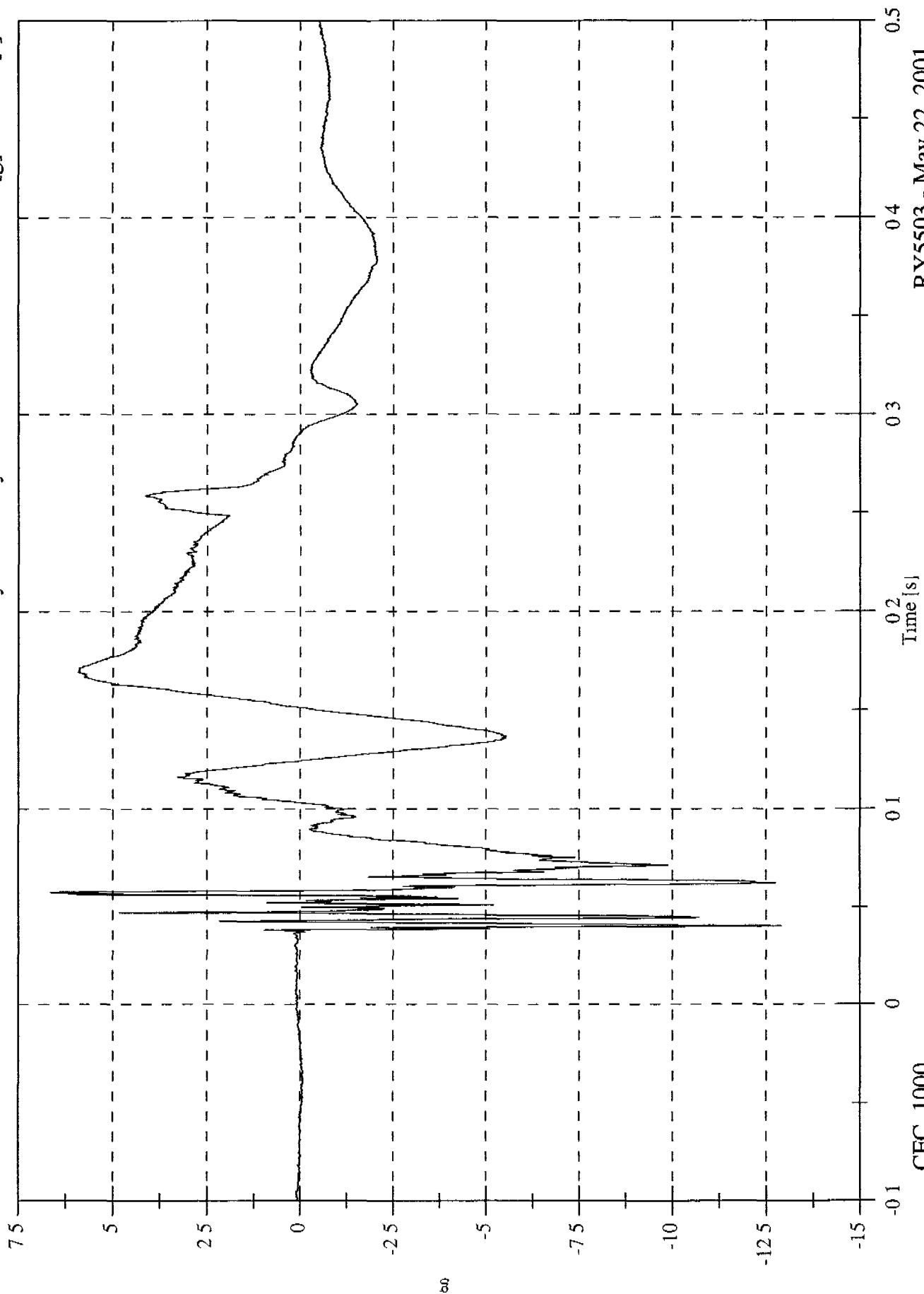
107	P2 Upper Neck Fy [N, CFC_1000]	B-114
108	P2 Upper Neck Fz [N, CFC_1000]	B-115
109	P2 Upper Neck F Resultant [N, CFC_1000]	B-116
110	P2 Upper Neck Mx [Nm, CFC_600]	B-117
111	P2 Upper Neck My [Nm, CFC_600]	B-118
112	P2 Upper Neck Mz [Nm, CFC_600]	B-119
113	P2 Upper Neck M Resultant [Nm, CFC_600]	B-120
114	P2 Chest Ax [g, CFC_180]	B-121
115	P2 Chest Ay [g, CFC_180]	B-122
116	P2 Chest Az [g, CFC_180]	B-123
117	P2 Chest A Resultant [g, CFC_180]	B-124
118	P2 Chest Red Ax [g, CFC_180]	B-125
119	P2 Chest Red Ay [g, CFC_180]	B-126
120	P2 Chest Red Az [g, CFC_180]	B-127
121	P2 Chest Red A Resultant [g, CFC_180]	B-128
122	P2 Chest Displacement [mm, CFC_600]	B-129
123	P2 Pelvic Ax [g, CFC_1000]	B-130
124	P2 Pelvic Ay [g, CFC_1000]	B-131
125	P2 Pelvic Az [g, CFC_1000]	B-132
126	P2 Pelvic A Resultant [g, CFC_1000]	B-133
127	P2 Left Femur Fx [N, CFC_600]	B-134
128	P2 Left Femur Fy [N, CFC_600]	B-135
129	P2 Left Femur Fz [N, CFC_600]	B-136
130	P2 Left Femur F Resultant [N, CFC_600]	B-137
131	P2 Left Femur Mx [Nm, CFC_600]	B-138
132	P2 Left Femur My [Nm, CFC_600]	B-139
133	P2 Left Femur Mz [Nm, CFC_600]	B-140
134	P2 Left Femur M Resultant [Nm, CFC_600]	B-141
135	P2 Right Femur Fx [N, CFC_600]	B-142
136	P2 Right Femur Fy [N, CFC_600]	B-143
137	P2 Right Femur Fz [N, CFC_600]	B-144
138	P2 Right Femur F Resultant [N, CFC_600]	B-145
139	P2 Right Femur Mx [Nm, CFC_600]	B-146
140	P2 Right Femur My [Nm, CFC_600]	B-147
141	P2 Right Femur Mz [Nm, CFC_600]	B-148
142	P2 Right Femur M Resultant [Nm, CFC_600]	B-149
143	P2 Left Knee Shear Dx [mm, CFC_180]	B-150
144	P2 Right Knee Shear Dx [mm, CFC_180]	B-151
145	P2 Left Upper Tibia Fx [N, CFC_600]	B-152
146	P2 Left Upper Tibia Fz [N, CFC_600]	B-153
147	P2 Left Upper Tibia Mx [Nm, CFC_600]	B-154
148	P2 Left Upper Tibia My [Nm, CFC_600]	B-155
149	P2 Left Lower Tibia Fx [N, CFC_600]	B-156
150	P2 Left Lower Tibia Fy [N, CFC_600]	B-157
151	P2 Left Lower Tibia Fz [N, CFC_600]	B-158
152	P2 Left Lower Tibia F Resultant [N, CFC_600]	B-159
153	P2 Left Lower Tibia Mx [Nm, CFC_600]	B-160
154	P2 Left Lower Tibia My [Nm, CFC_600]	B-161
155	P2 Right Upper Tibia Fx [N, CFC_600]	B-162
156	P2 Right Upper Tibia Fz [N, CFC_600]	B-163
157	P2 Right Upper Tibia Mx [Nm, CFC_600]	B-164
158	P2 Right Upper Tibia My [Nm, CFC_600]	B-165
159	P2 Right Lower Tibia Fx [N, CFC_600]	B-166
160	P2 Right Lower Tibia Fy [N, CFC_600]	B-167

161	P2 Right Lower Tibia Fz [N, CFC_600]	B-168
162	P2 Right Lower Tibia F Resultant [N, CFC_600]	B-169
163	P2 Right Lower Tibia Mx [Nm, CFC_600]	B-170
164	P2 Right Lower Tibia My [Nm, CFC_600]	B-171
165	P2 Left Tibia Ax [g, CFC_600]	B-172
166	P2 Left Tibia Ay [g, CFC_600]	B-173
167	P2 Right Tibia Ax [g, CFC_600]	B-174
168	P2 Right Tibia Ay [g, CFC_600]	B-175
169	P2 Left Ankle Rotation x [Deg, CFC_180]	B-176
170	P2 Left Ankle Rotation y [Deg, CFC_180]	B-177
171	P2 Left ankle Rotation z [Deg, CFC_180]	B-178
172	P2 Right Ankle Rotation x [Deg, CFC_180]	B-179
173	P2 Right Ankle Rotation y [Deg, CFC_180]	B-180
174	P2 Right Ankle Rotation z [Deg, CFC_180]	B-181
175	P2 Left Foot Ax [g, CFC_600]	B-182
176	P2 Left Foot Ay [g, CFC_600]	B-183
177	P2 Left Foot Az [g, CFC_600]	B-184
178	P2 Left Foot A Resultant [g, CFC_600]	B-185
179	P2 Right Foot Ax [g, CFC_600]	B-186
180	P2 Right Foot Ay [g, CFC_600]	B-187
181	P2 Right foot Az [g, CFC_600]	B-188
182	P2 Right Foot A Resultant [g, CFC_600]	B-189
183	Acc 1 Rear XMBR Left X [g, CFC_60]	B-190
184	Acc 1 Rear XMBR Left X Velocity [kph, CFC_180]	B-191
185	Acc 1 Rear XMBR Left X Displacement [mm, CFC_180]	B-192
186	Acc 2 Rear XMBR Left Y [g, CFC_60]	B-193
187	Acc 2 Rear XMBR Left Y Velocity [kph, CFC_180]	B-194
188	Acc 2 Rear XMBR Left Y Displacement [mm, CFC_180]	B-195
189	Acc 3 Rear XMBR Right X [g, CFC_60]	B-196
190	Acc 3 Rear XMBR Right X Velocity [kph, CFC_180]	B-197
191	Acc 3 Rear XMBR Right X Displacement [mm, CFC_180]	B-198
192	Acc 4 Rear XMBR Right Y [g, CFC_60]	B-199
193	Acc 4 Rear XMBR Right Y Velocity [kph, CFC_180]	B-200
194	Acc 4 Rear XMBR Right Y Displacement [mm, CFC_180]	B-201
195	Acc 5 P1 Toepan Left X [g, CFC_60]	B-202
196	Acc 5 P1 Toepan Left X Velocity [kph, CFC_180]	B-203
197	Acc 5 P1 Toepan Left X Displacement [mm, CFC_180]	B-204
198	Acc 6 P1 Toepan Left Z [g, CFC_60]	B-205
199	Acc 6 P1 Toepan Left Z Velocity [kph, CFC_180]	B-206
200	Acc 6 P1 Toepan Left Z Displacement [mm, CFC_180]	B-207
201	Acc 7 P1 Toepan Right X [g, CFC_60]	B-208
202	Acc 7 P1 Toepan Right X Velocity [kph, CFC_180]	B-209
203	Acc 7 P1 Toepan Right X Displacement [mm, CFC_180]	B-210
204	Acc 8 P1 Toepan Right Z [g, CFC_60]	B-211
205	Acc 8 P1 Toepan Right Z Velocity [kph, CFC_180]	B-212

40% Frontal Offset Test # 6

P1 Head 9 Array X Arm Ay

Max: 6.6 [g] at 0.057 [s]
Min: -12.9 [g] at 0.040 [s]

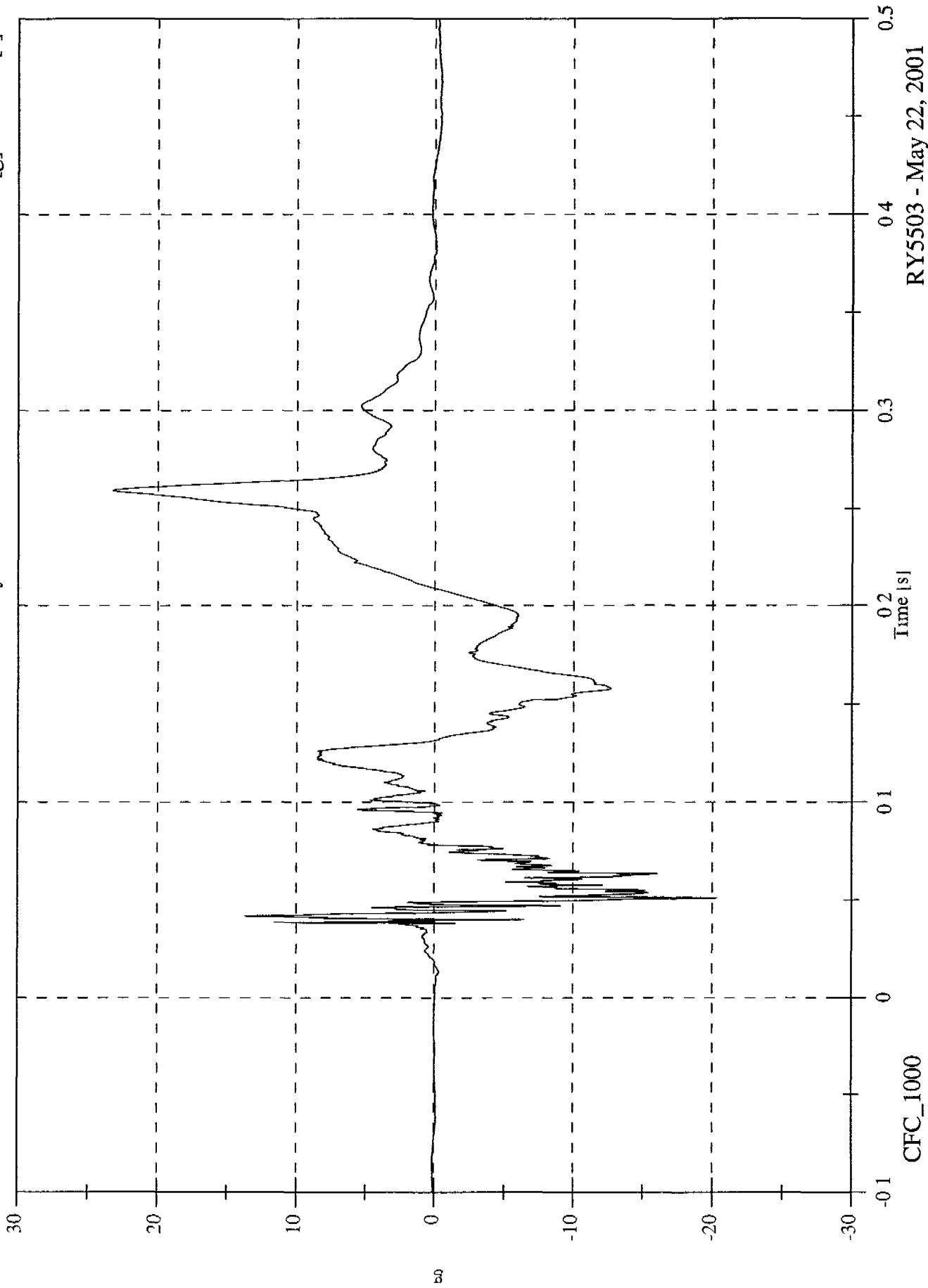


RY5503 - May 22, 2001

40% Frontal Offset Test # 6

P1 Head 9 Array X Arm Az

Max: 23.2 [g] at 0.259 [s]
Min: -20.3 [g] at 0.051 [s]

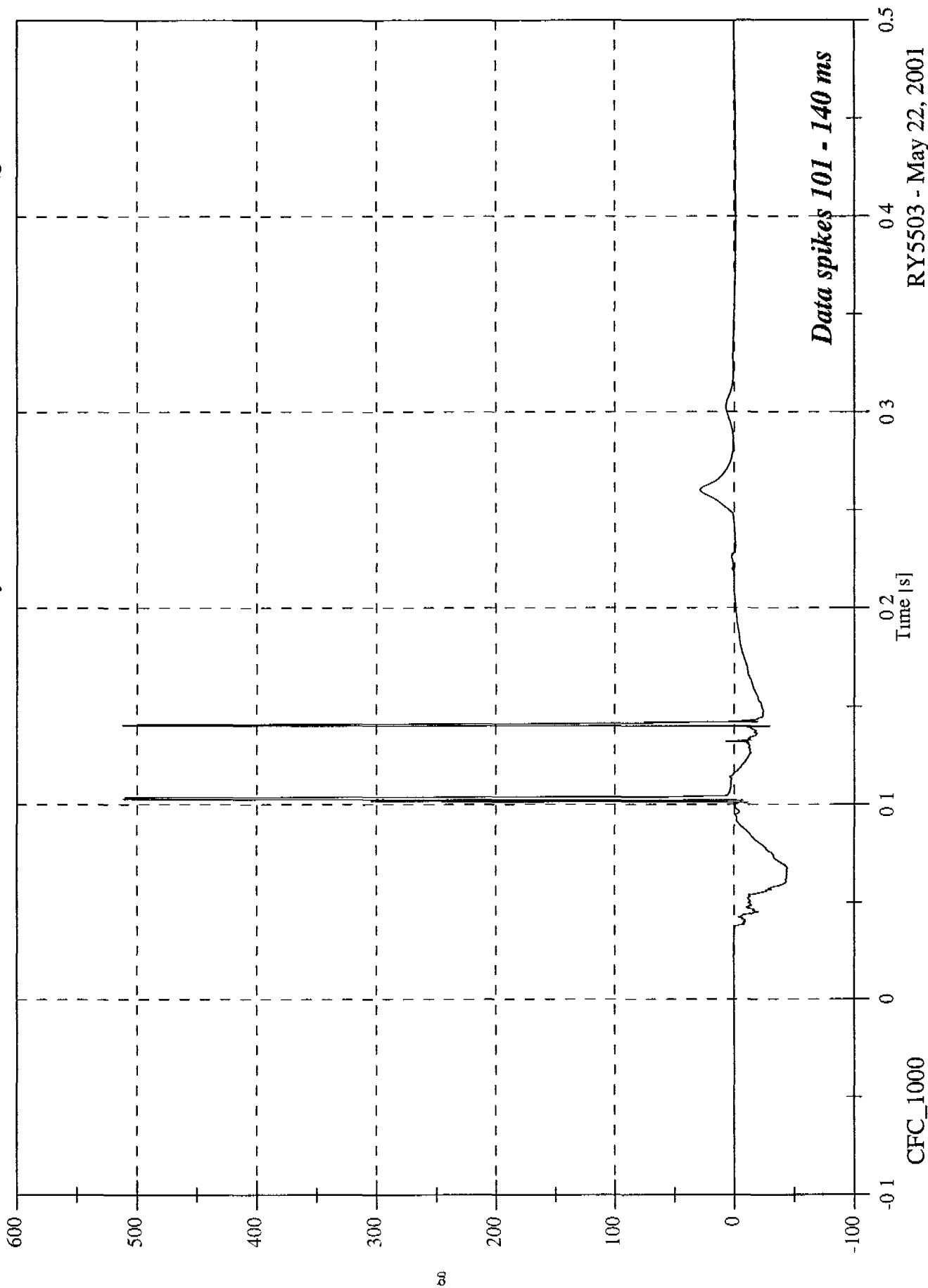


RY5503 - May 22, 2001

40% Frontal Offset Test # 6

P1 Head 9 Array Y Arm Ax

Max: 512.0 [g] at 0.141 [s]
Min: -44.4 [g] at 0.067 [s]



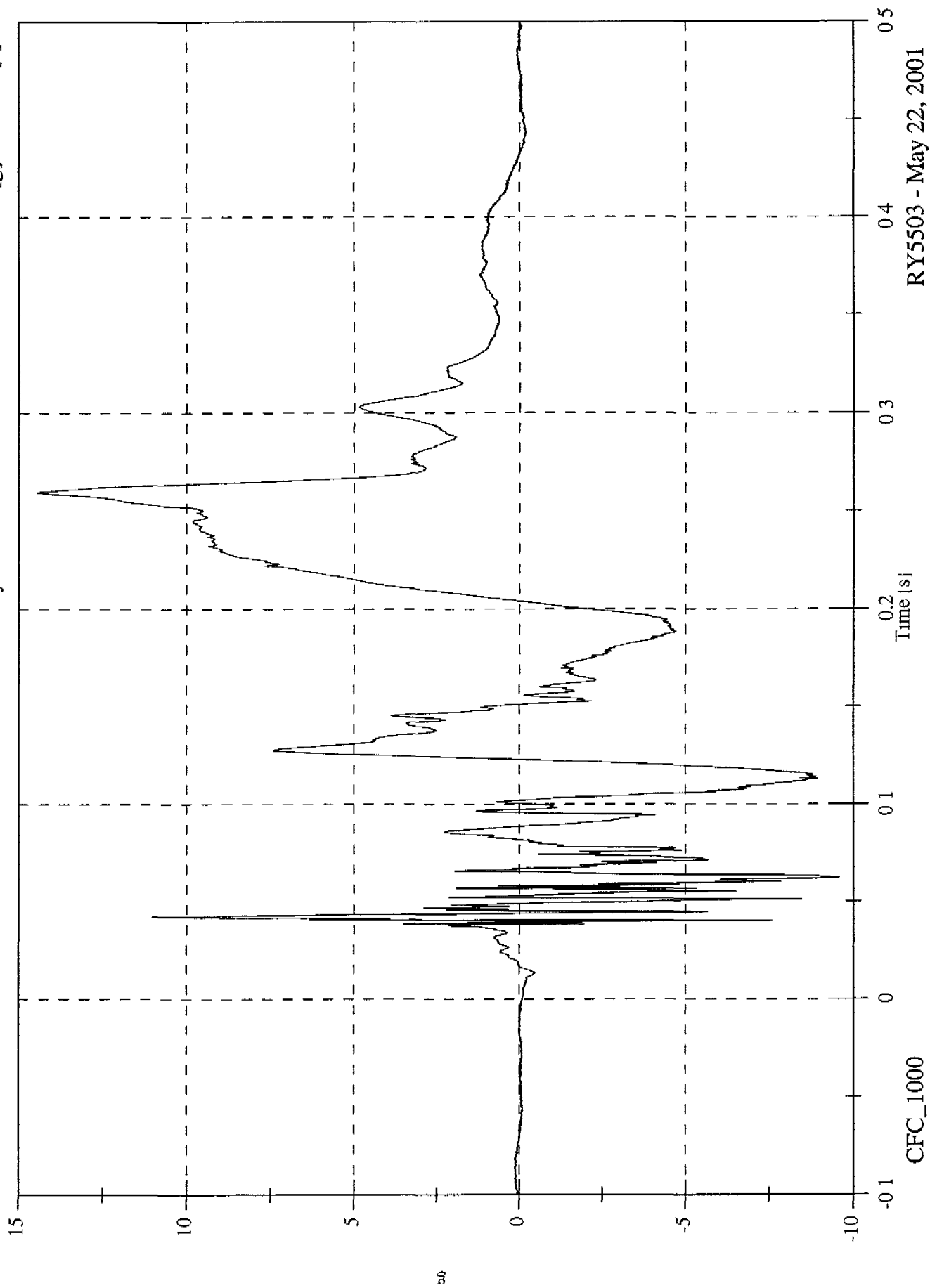
RY5503 - May 22, 2001

40% Frontal Offset Test # 6

P1 Head 9 Array Y Arm Az

Max: 14.5 [g] at 0.259 [s]

Min: -9.6 [g] at 0.062 [s]

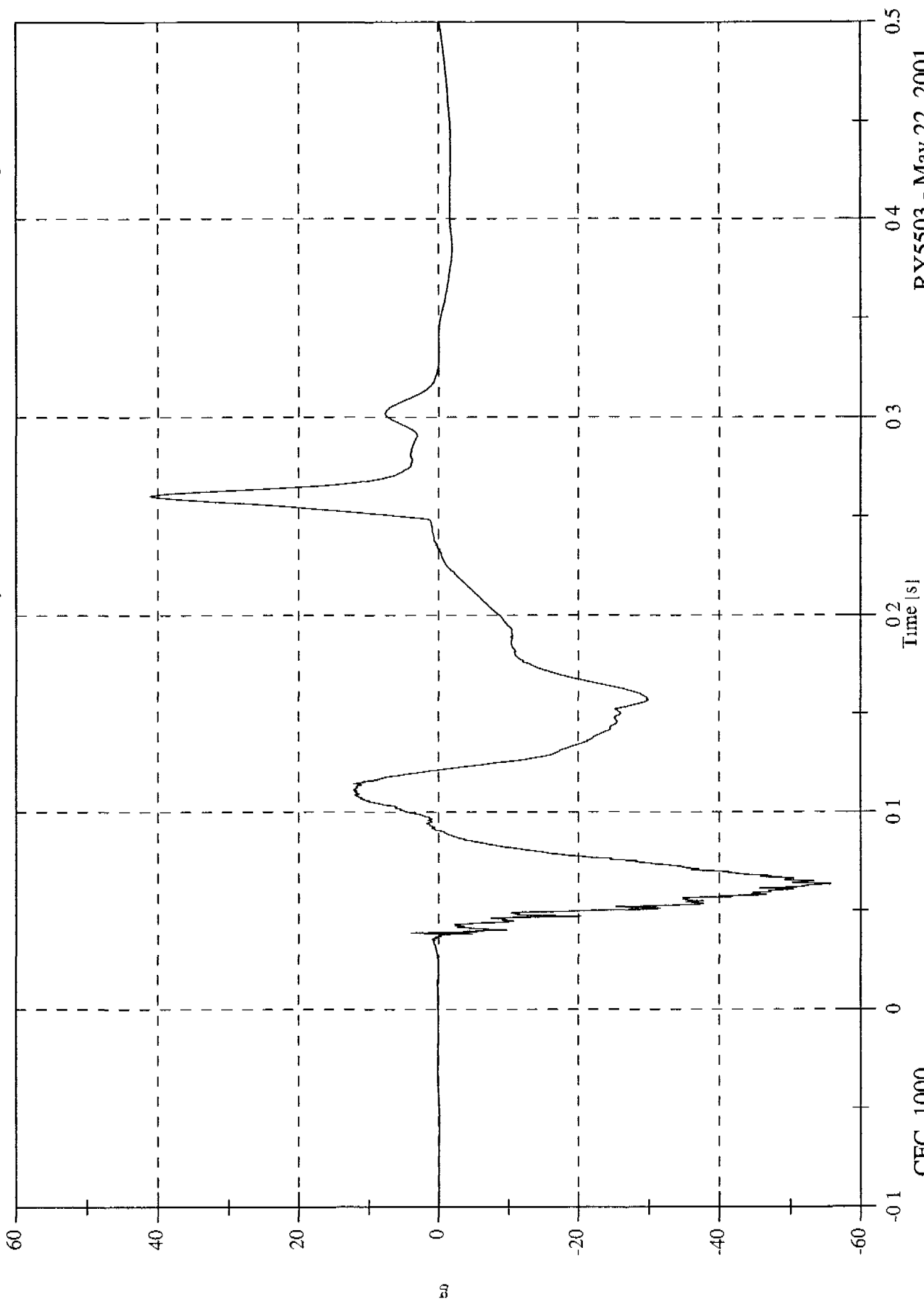


RY5503 - May 22, 2001

40% Frontal Offset Test # 6

Max: 41.0 [g] at 0.260 [s]
Min: -55.7 [g] at 0.063 [s]

P1 Head 9 Array Z Arm Ax

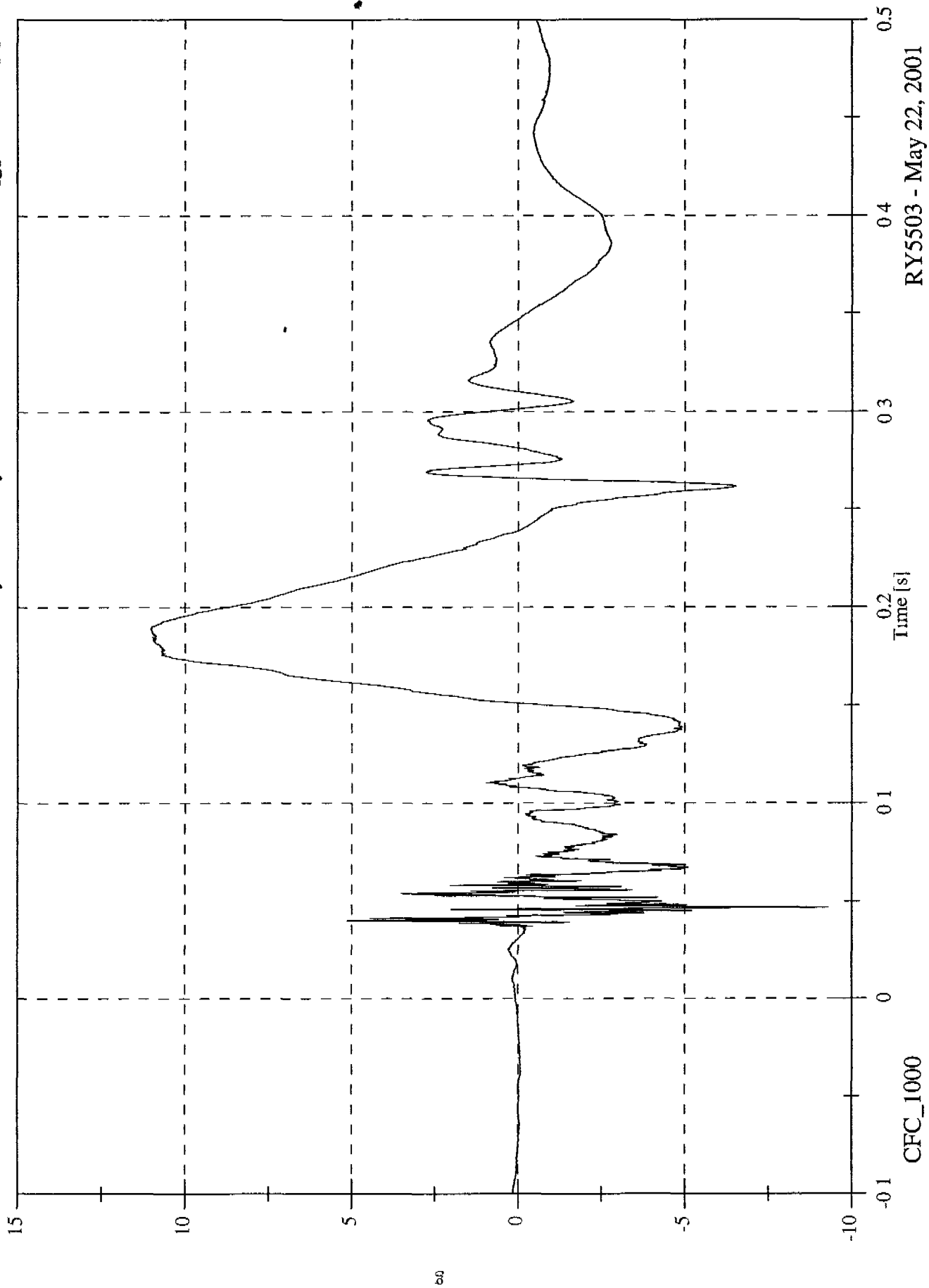


RY5503 - May 22, 2001

40% Frontal Offset Test # 6

P1 Head 9 Array Z Arm Ay

Max: 11.0 [g] at 0.189 [s]
Min: -9.3 [g] at 0.047 [s]

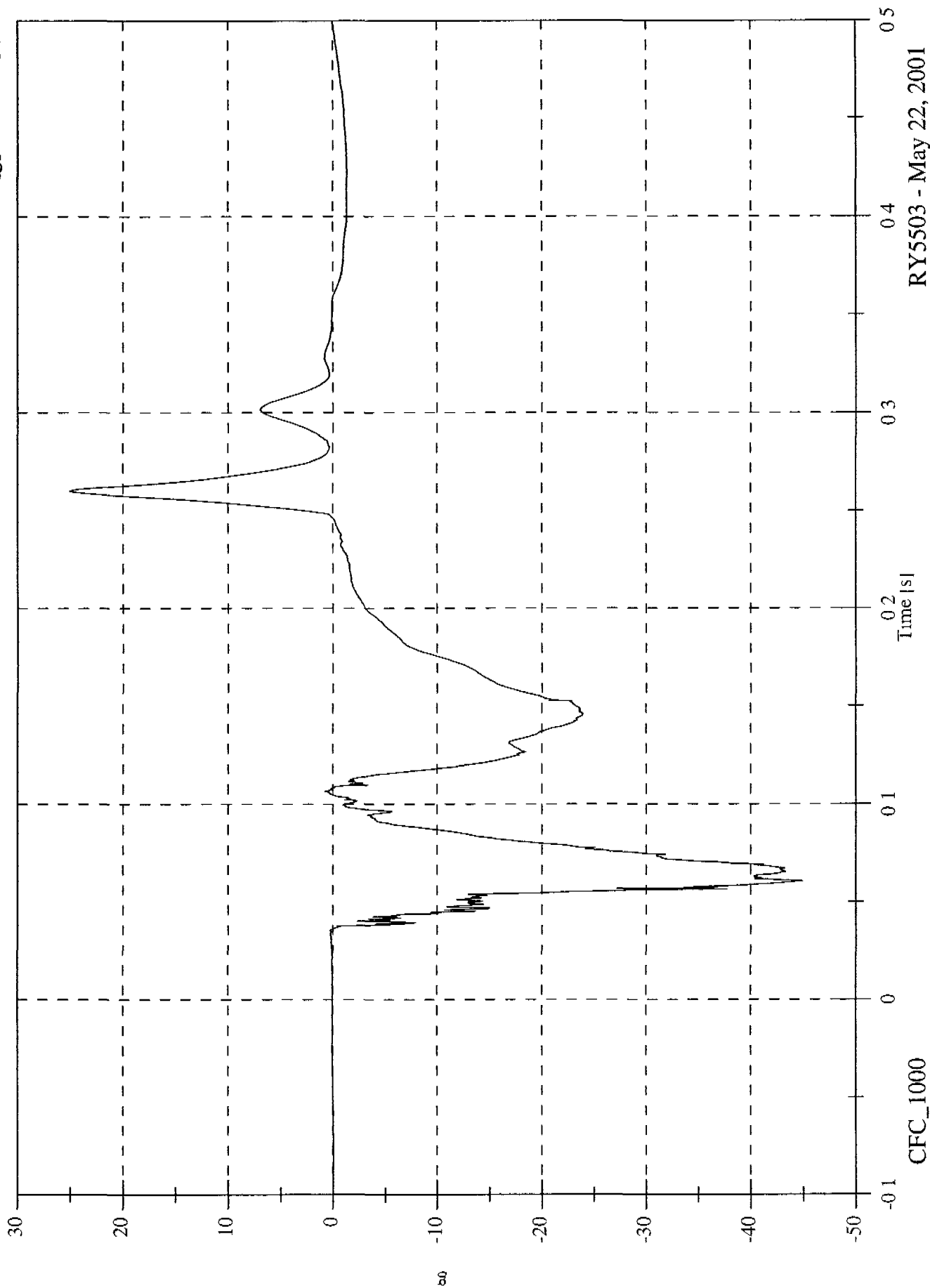


RY5503 - May 22, 2001

40% Frontal Offset Test # 6

P1 Head CG Ax

Max: 25.0 [g] at 0.260 [s]
Min: -44.9 [g] at 0.061 [s]

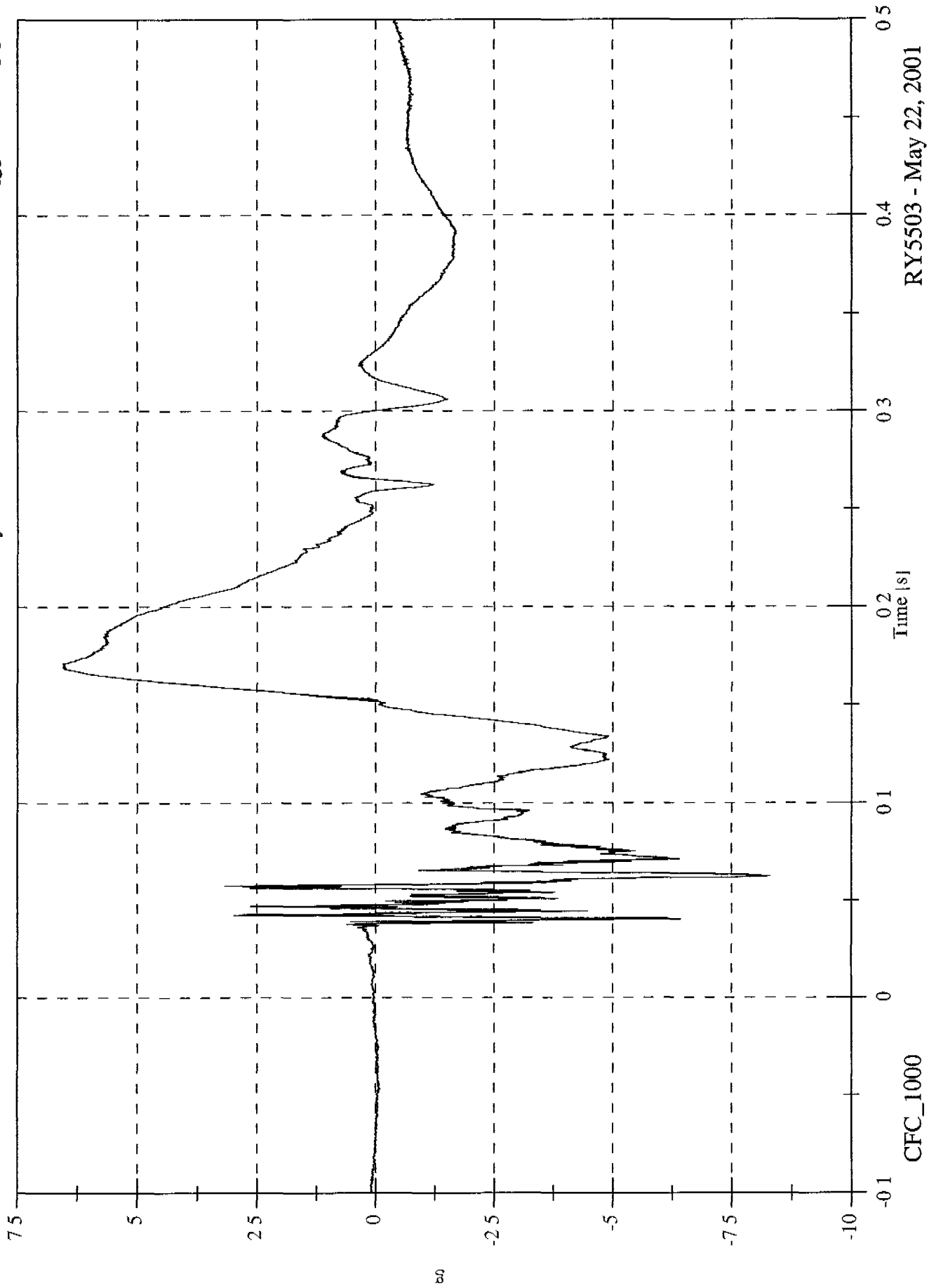


RY5503 - May 22, 2001

40% Frontal Offset Test # 6

Max: 6.6 [g] at 0.171 [s]
Min: -8.3 [g] at 0.062 [s]

P1 Head CG Ay

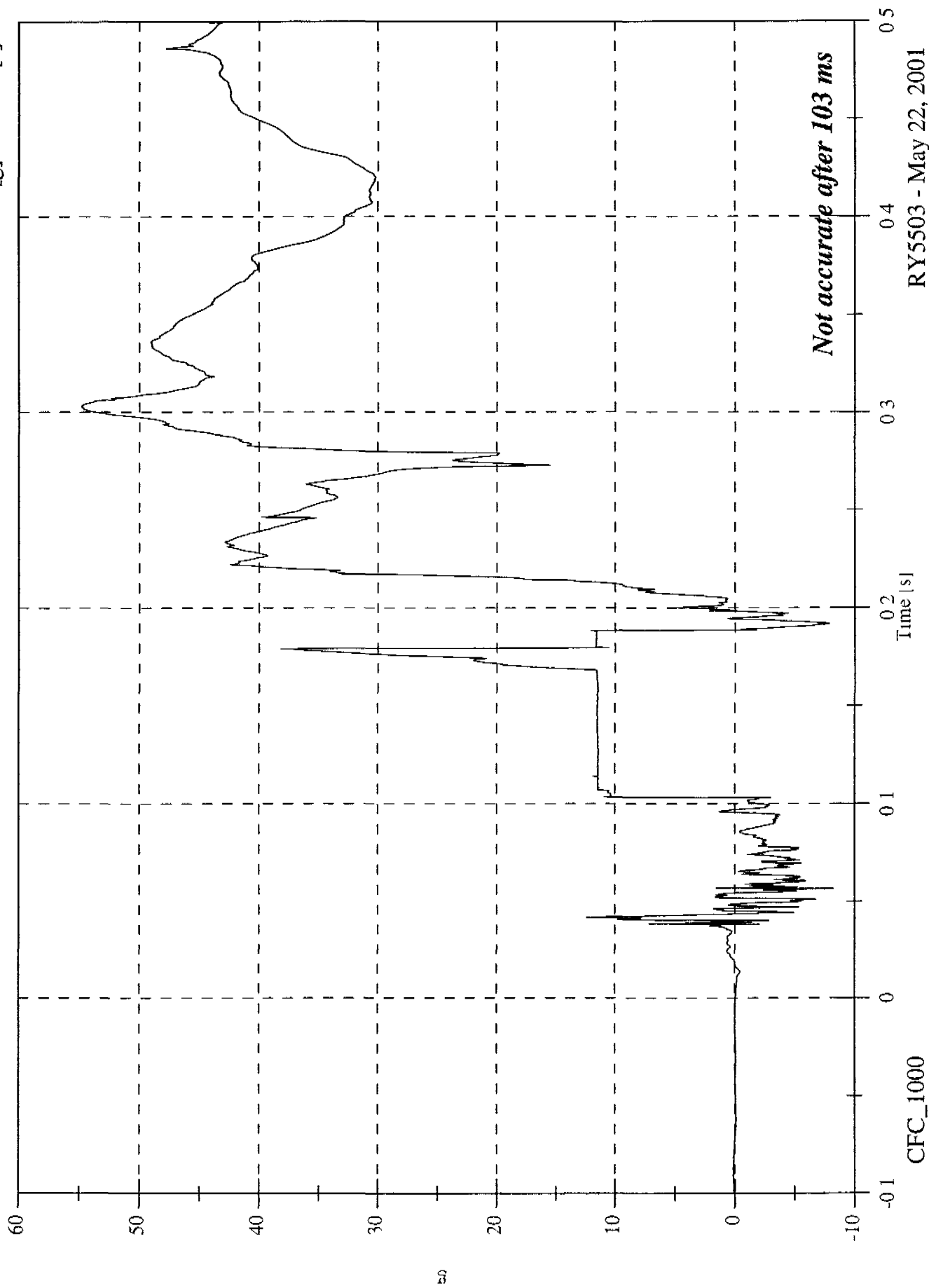


RY5503 - May 22, 2001

40% Frontal Offset Test # 6

Max: 54.8 [g] at 0.303 [s]
 Min: -8.2 [g] at 0.057 [s]

P1 Head CG Az



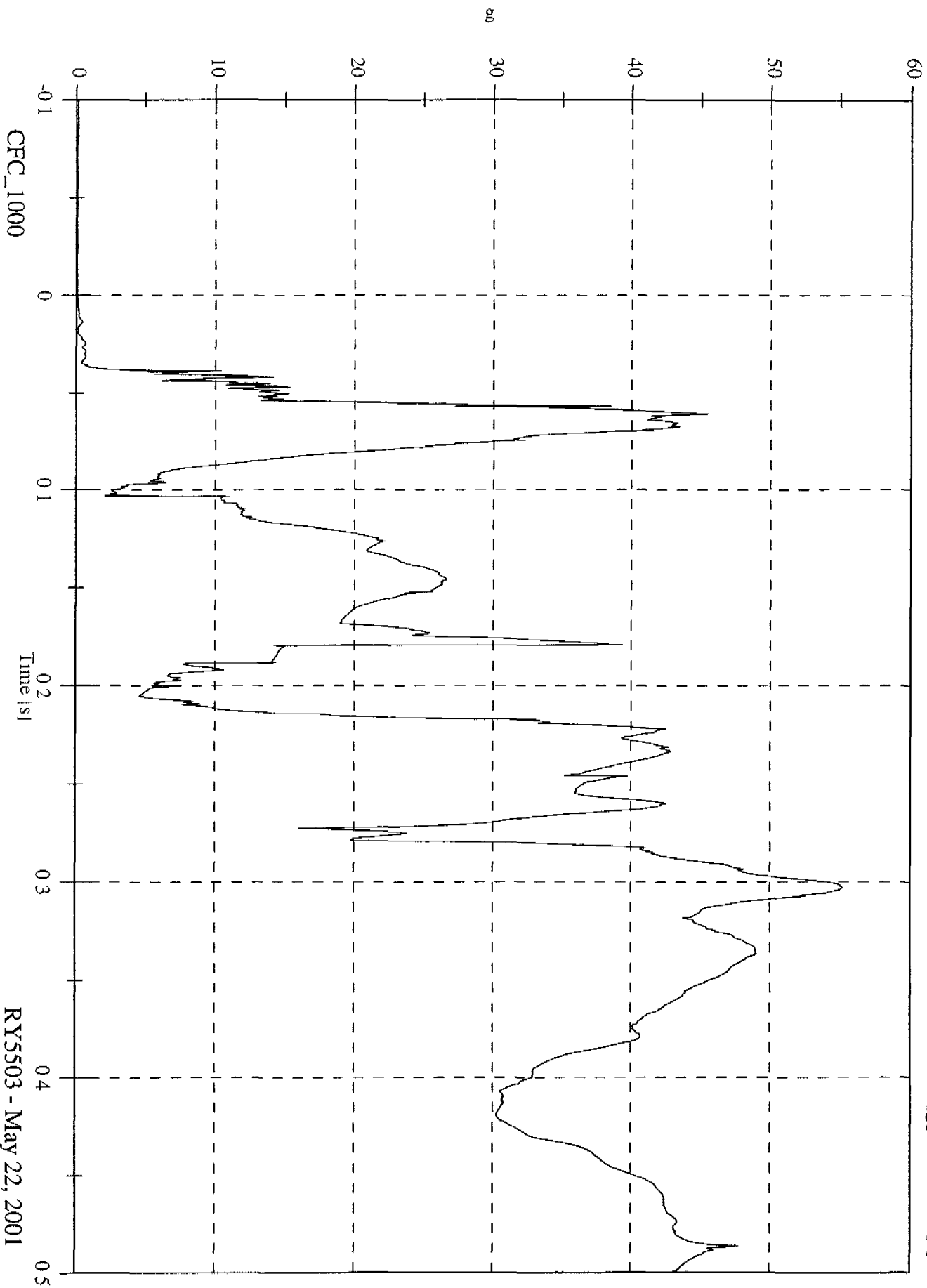
CFC_1000

RY5503 - May 22, 2001

40% Frontal Offset Test # 6

P1 Head CG A Resultant

Max: 55.2 [g] at 0.303 [s]
Min: 0.0 [g] at -0.100 [s]



B-17

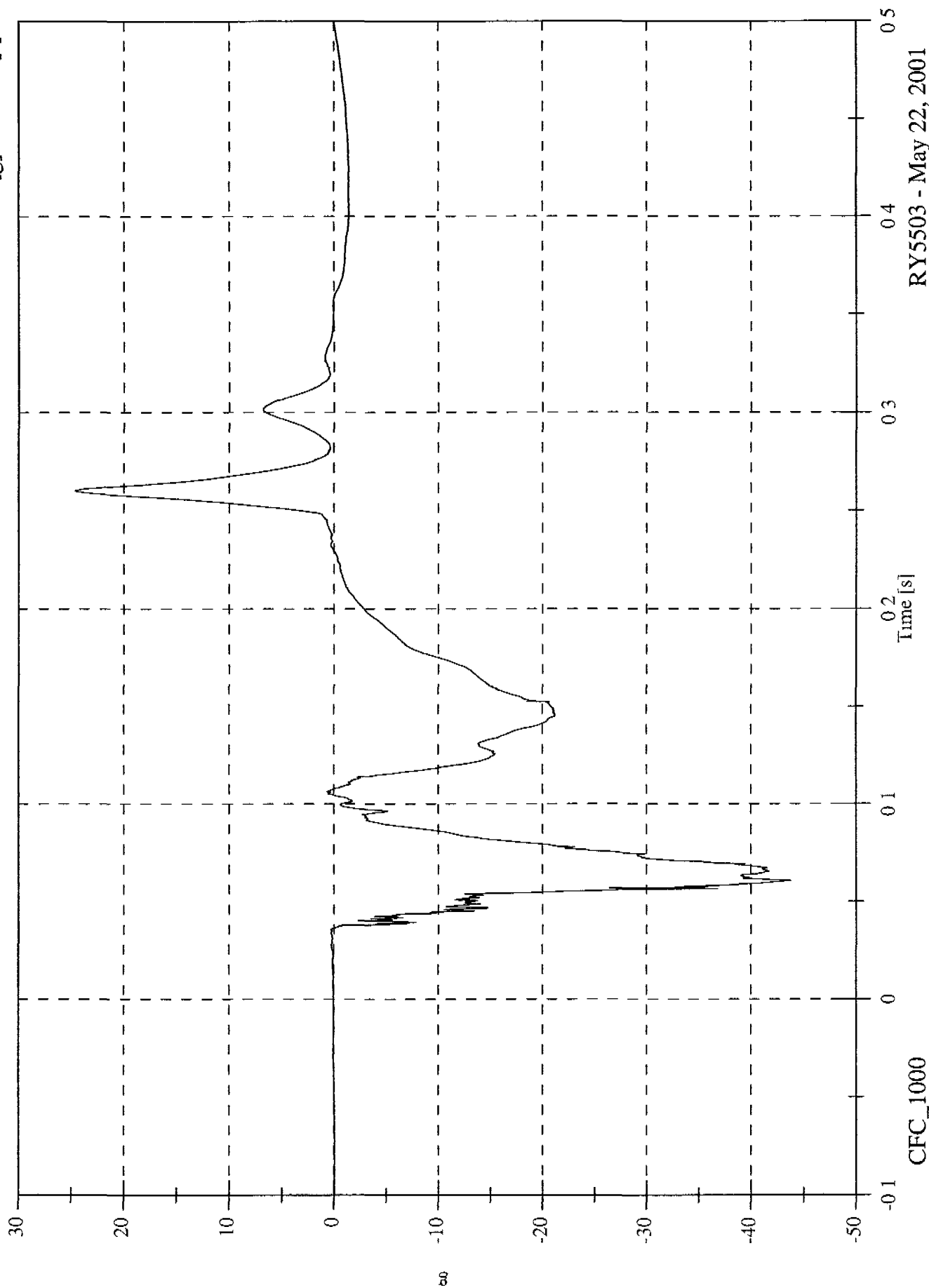
8413-62

RY5503 - May 22, 2001

40% Frontal Offset Test # 6

P1 Head CG Red Ax

Max: 24.6 [g] at 0.260 [s]
Min: -43.8 [g] at 0.061 [s]



CFC_1000

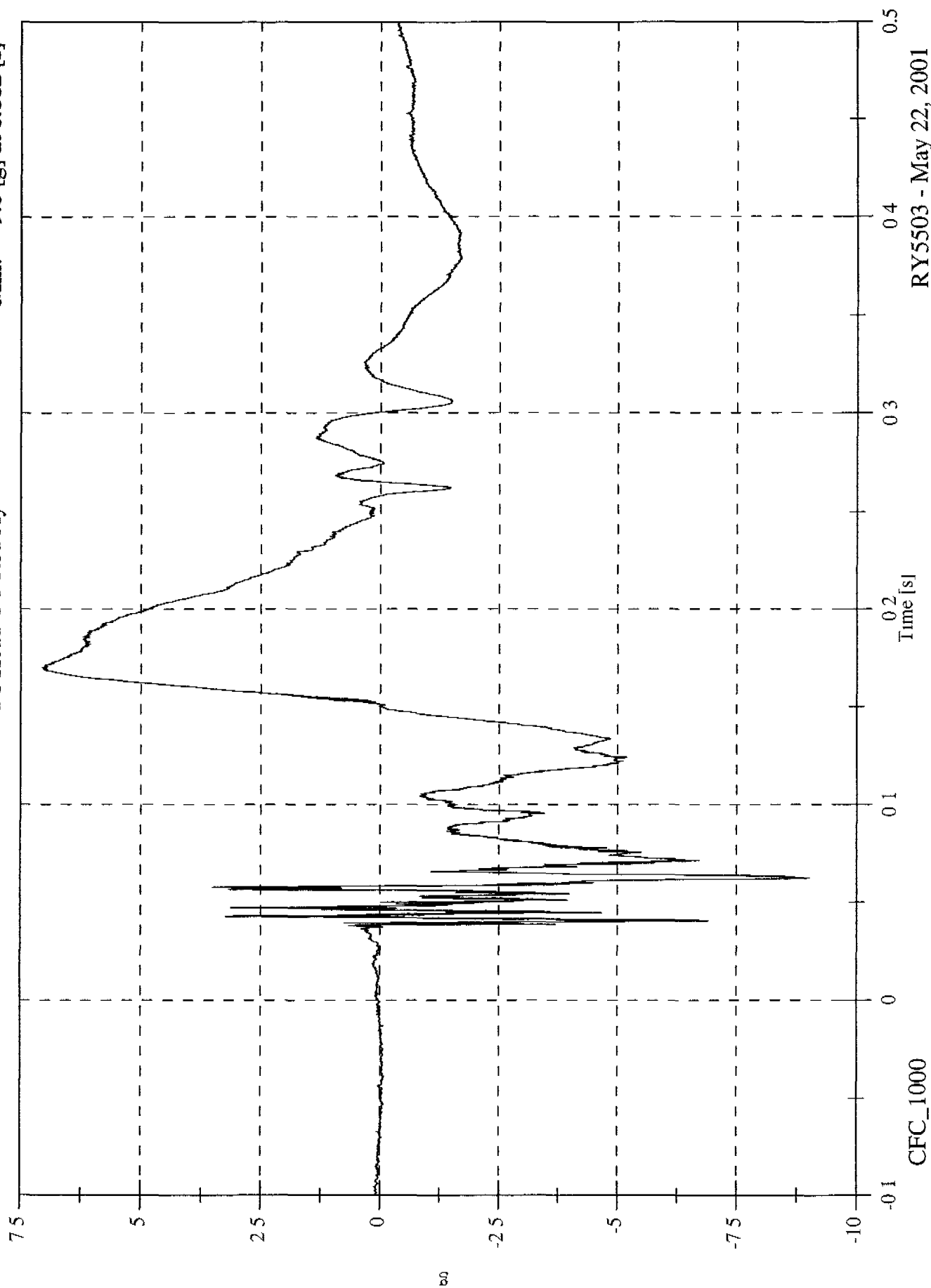
Time [s]

RY5503 - May 22, 2001

40% Frontal Offset Test # 6

Max: 7.1 [g] at 0.170 [s]
Min: -9.0 [g] at 0.062 [s]

P1 Head CG Red Ay



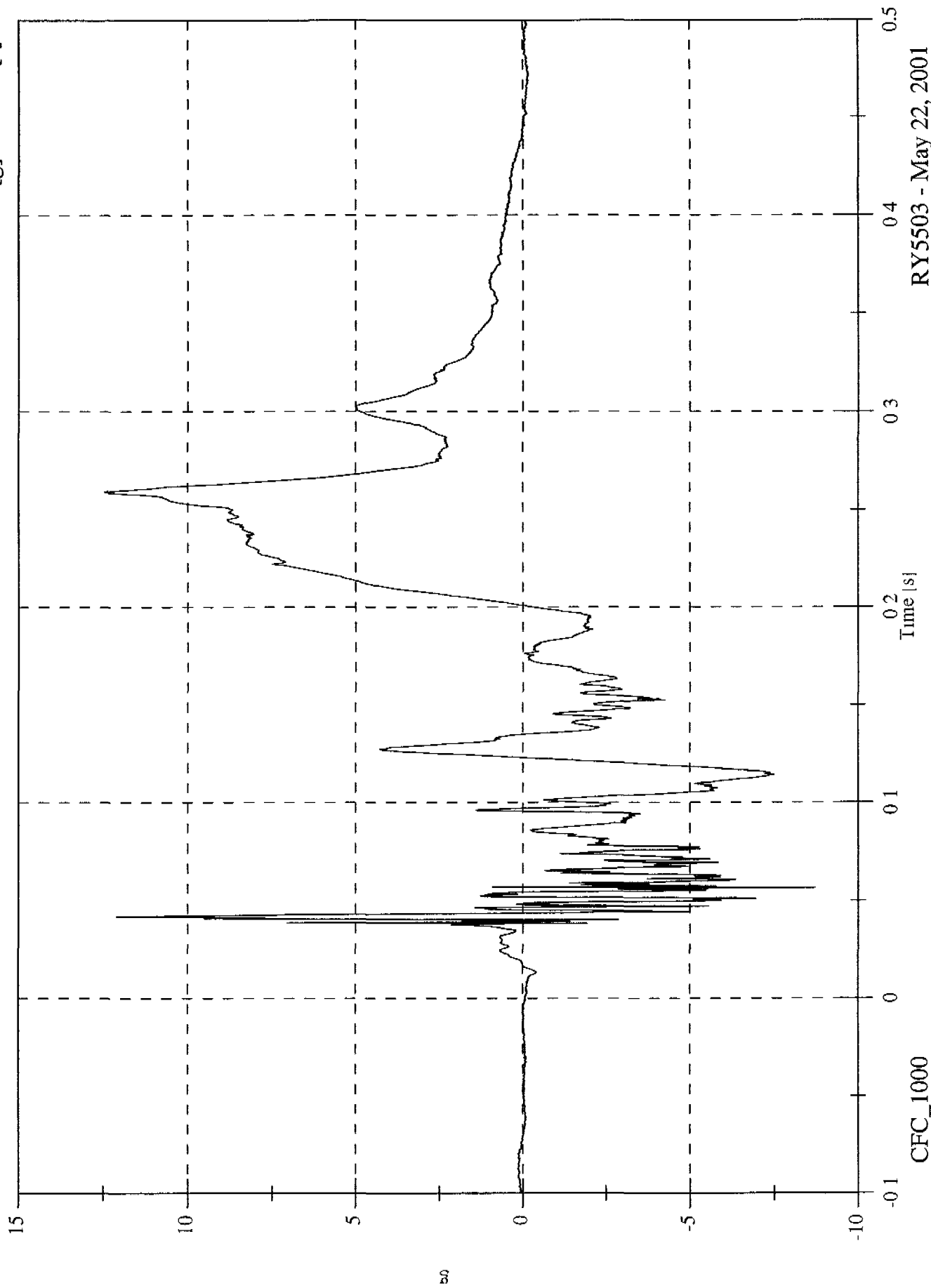
CFC_1000

RY5503 - May 22, 2001

40% Frontal Offset Test # 6

Max: 12.5 [g] at 0.259 [s]
Min: -8.7 [g] at 0.057 [s]

P1 Head CG Red Az



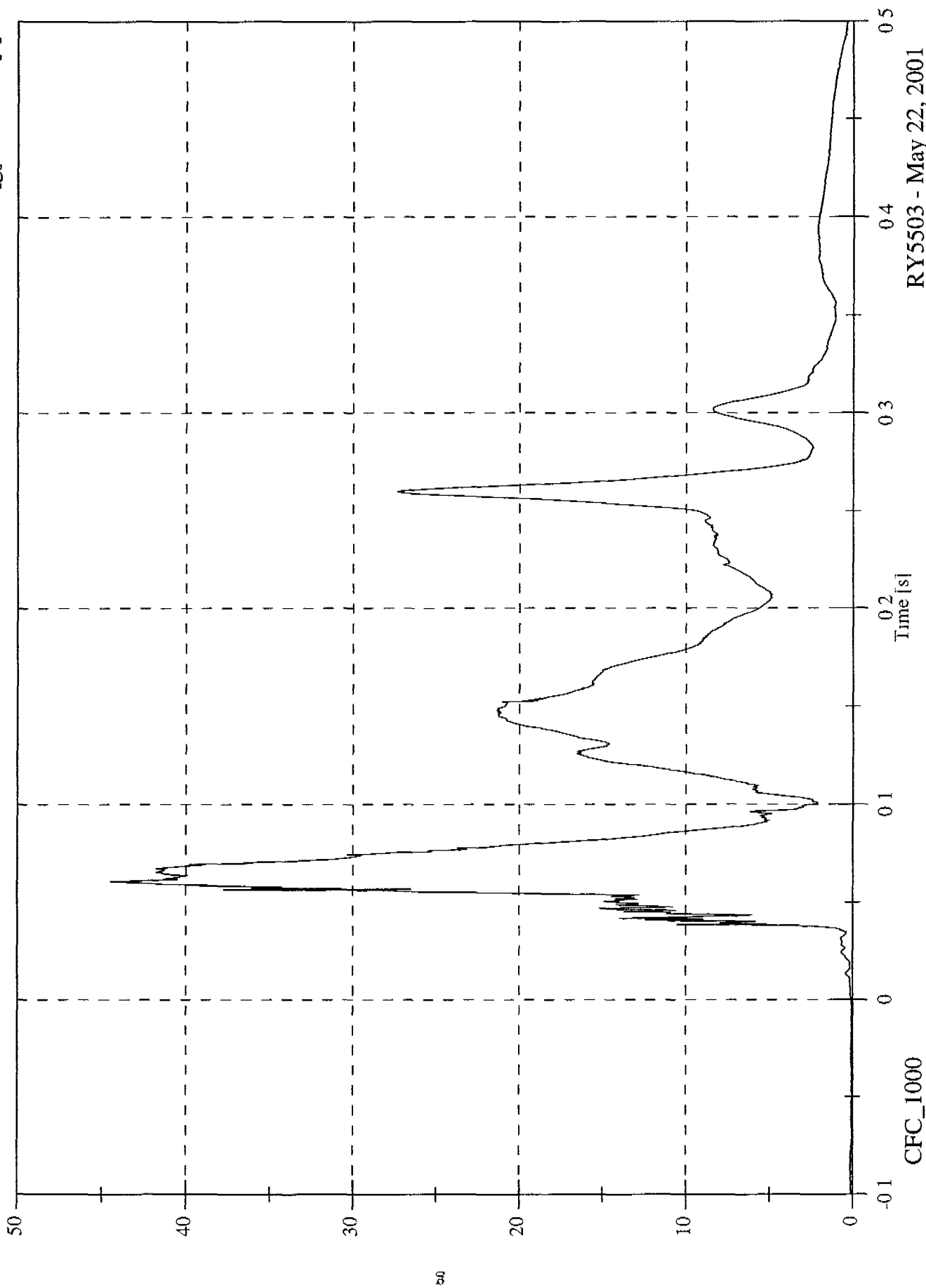
CFC_1000

RY5503 - May 22, 2001

40% Frontal Offset Test # 6

Max: 44.4 [g] at 0.061 [s]
Min: 0.0 [g] at -0.050 [s]

P1 Head CG Red A Resultant

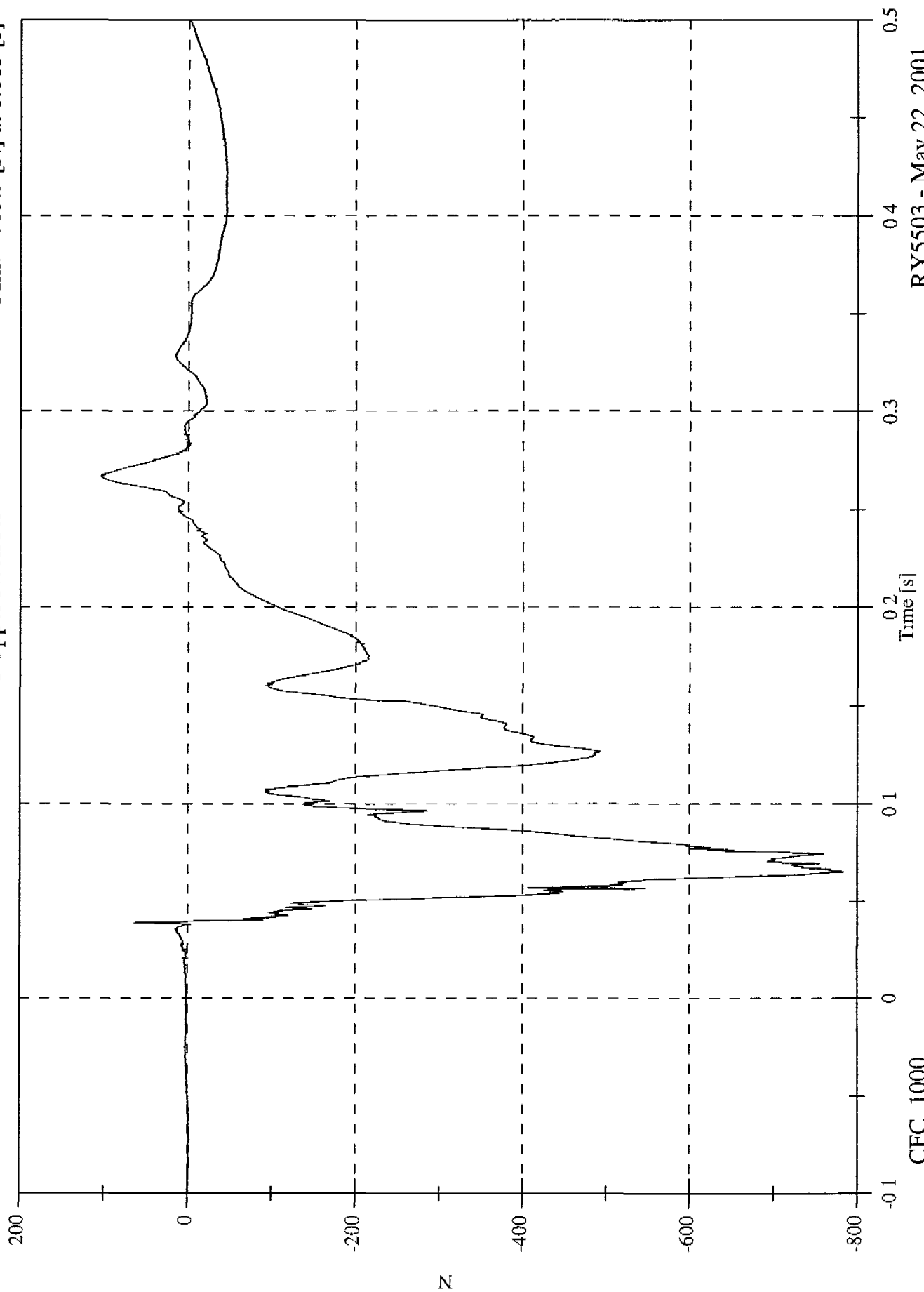


RY5503 - May 22, 2001

40% Frontal Offset Test # 6

P1 Upper Neck Fx

Max: 104.0 [N] at 0.267 [s]
Min: -783.3 [N] at 0.065 [s]



CFC_1000

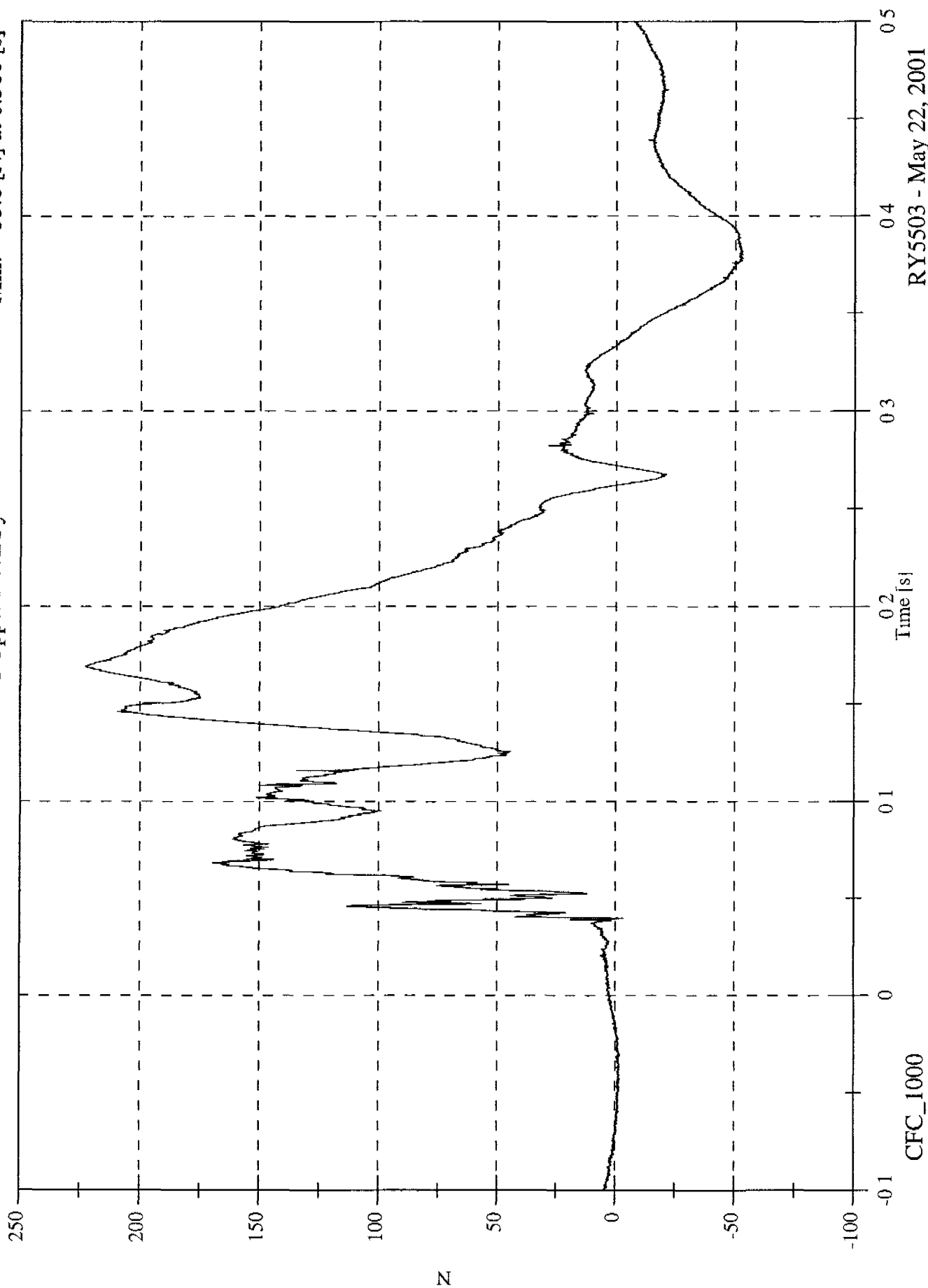
Time [s]

RY5503 - May 22, 2001

40% Frontal Offset Test # 6

Max: 222.8 [N] at 0.169 [s]
Min: -53.0 [N] at 0.380 [s]

P1 Upper Neck Fy



CFC_1000

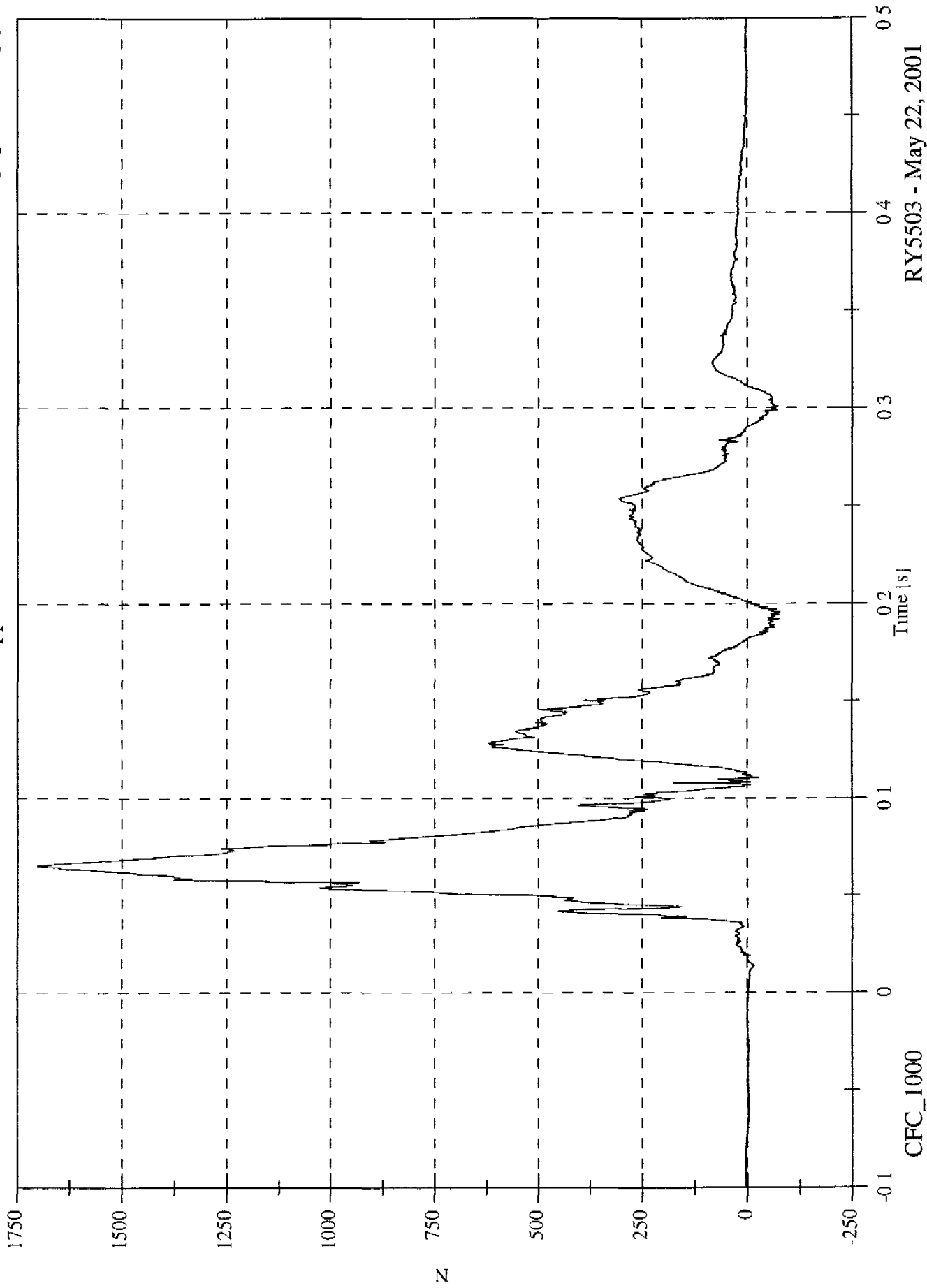
Time [s]

RY5503 - May 22, 2001

40% Frontal Offset Test # 6

Max: 1702.0 [N] at 0.065 [s]
 Min: -77.4 [N] at 0.195 [s]

P1 Upper Neck Fz



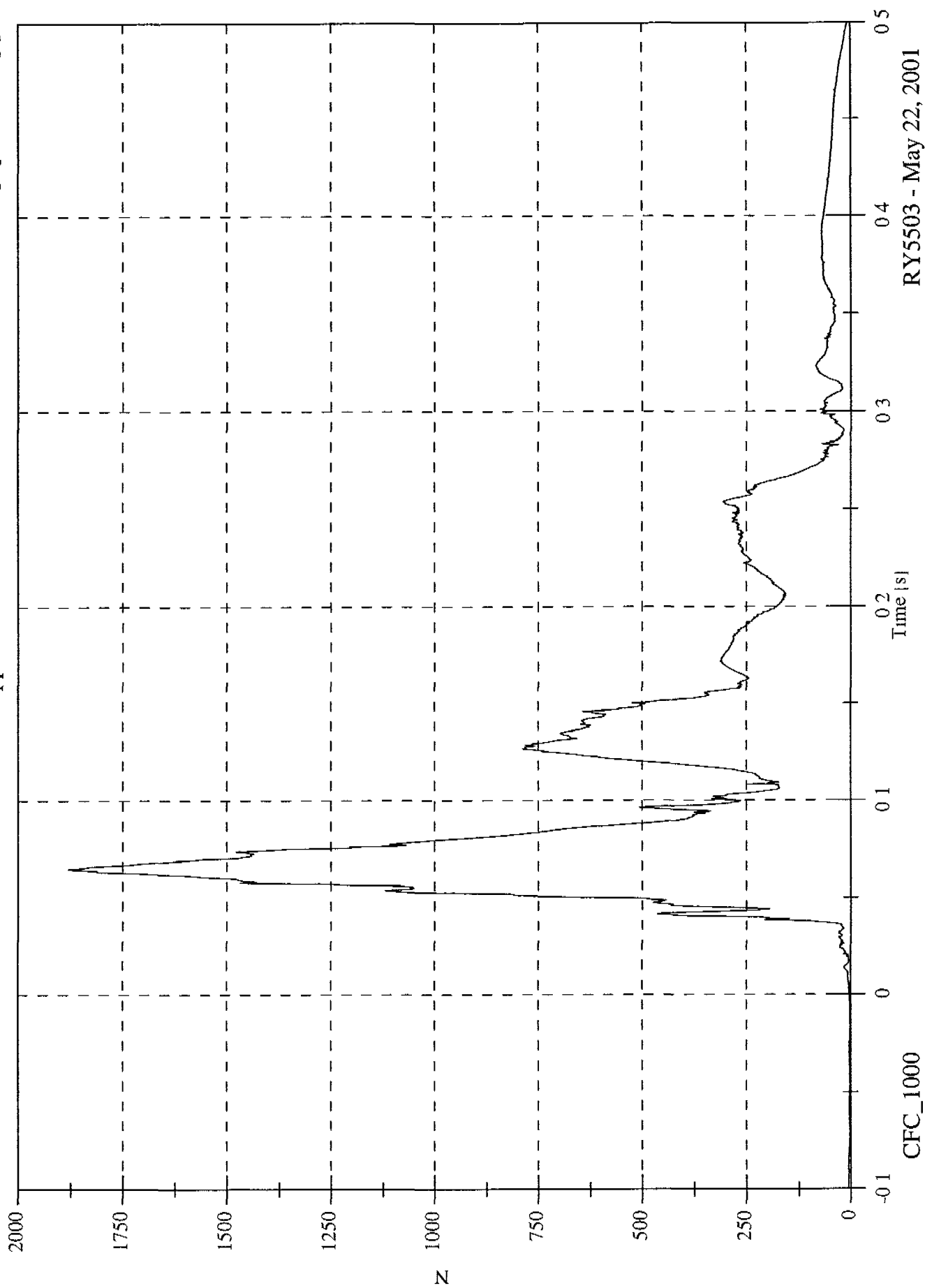
RY5503 - May 22, 2001

40% Frontal Offset Test # 6

Max: 1879.2 [N] at 0.065 [s]

Min: 1.0 [N] at -0.100 [s]

P1 Upper Neck F Resultant



CFC_1000

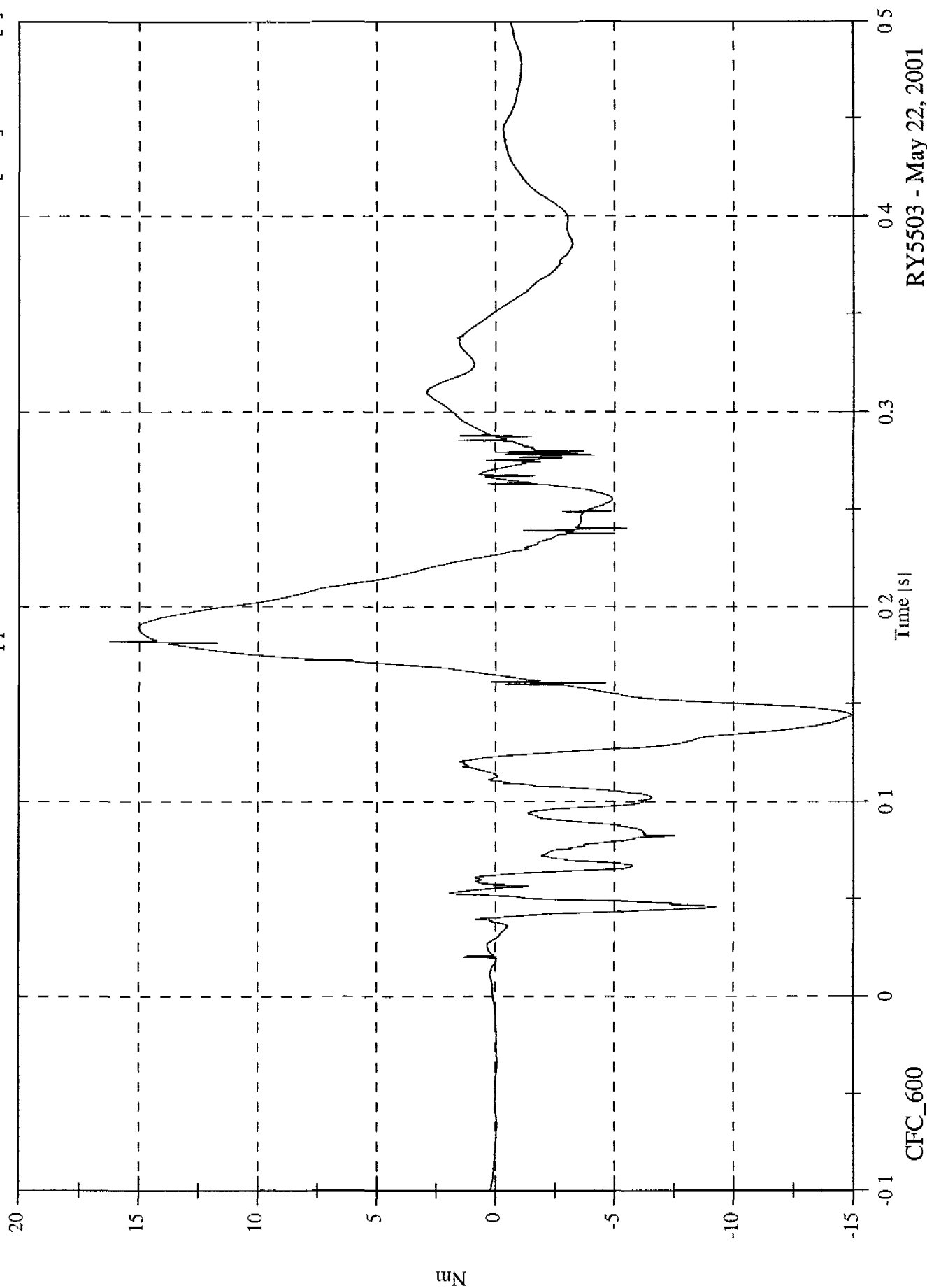
Time [s]

RY5503 - May 22, 2001

40% Frontal Offset Test # 6

P1 Upper Neck Mx

Max: 16.2 [Nm] at 0.182 [s]
Min: -14.9 [Nm] at 0.144 [s]

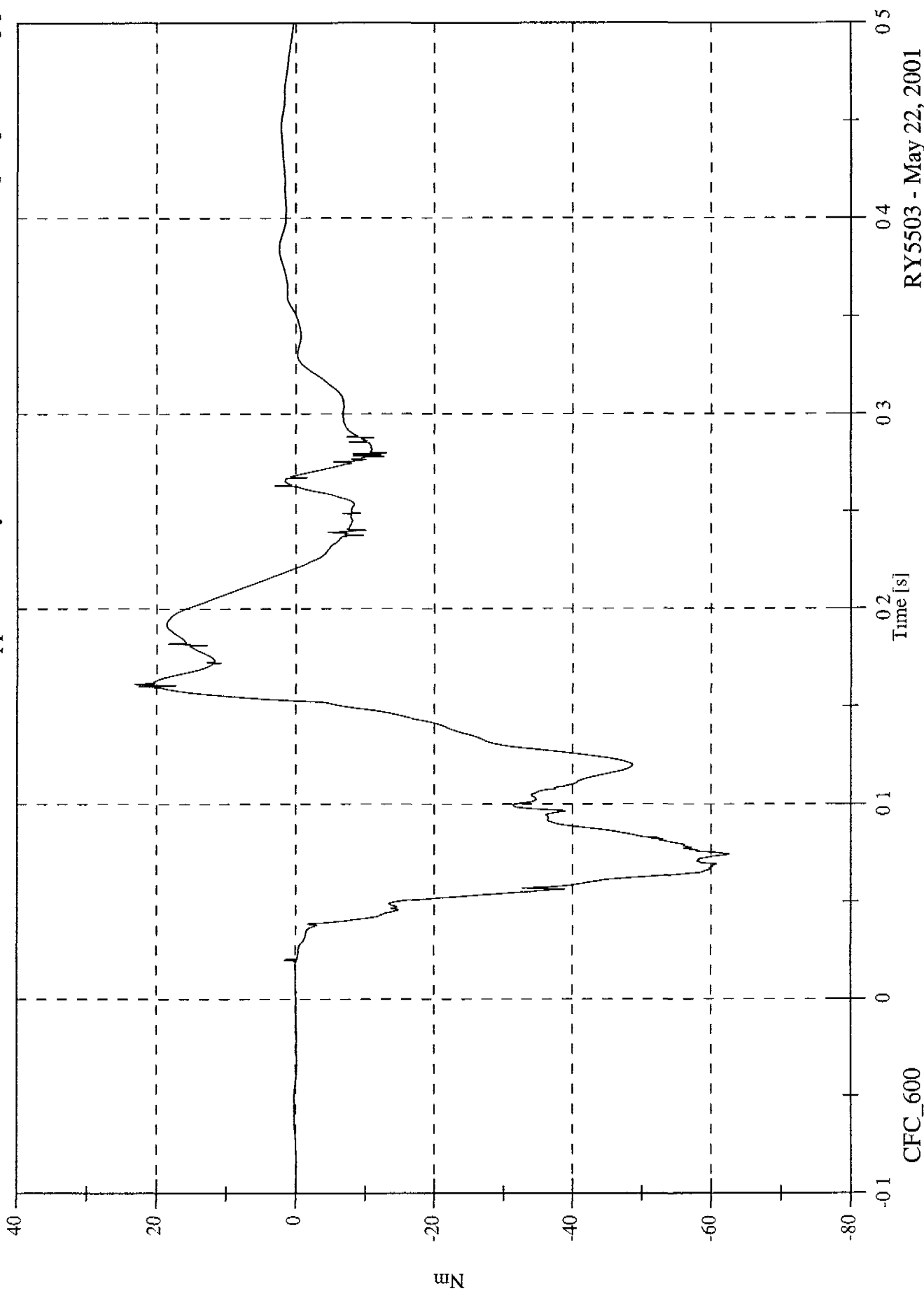


RY5503 - May 22, 2001

40% Frontal Offset Test # 6

Max: 23.1 [Nm] at 0.161 [s]
Min: -62.6 [Nm] at 0.074 [s]

P1 Upper Neck My

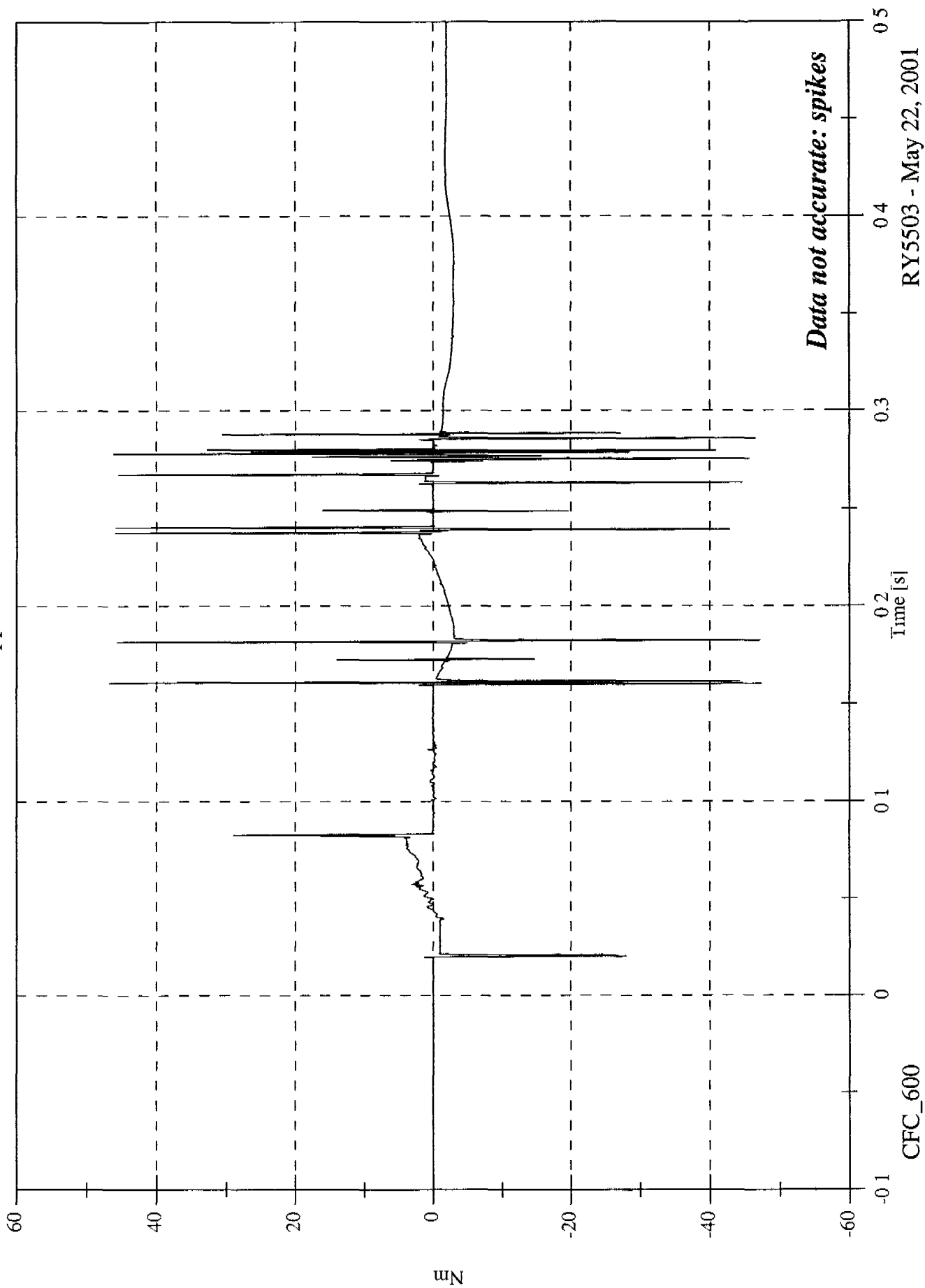


RY5503 - May 22, 2001

40% Frontal Offset Test # 6

P1 Upper Neck Mz

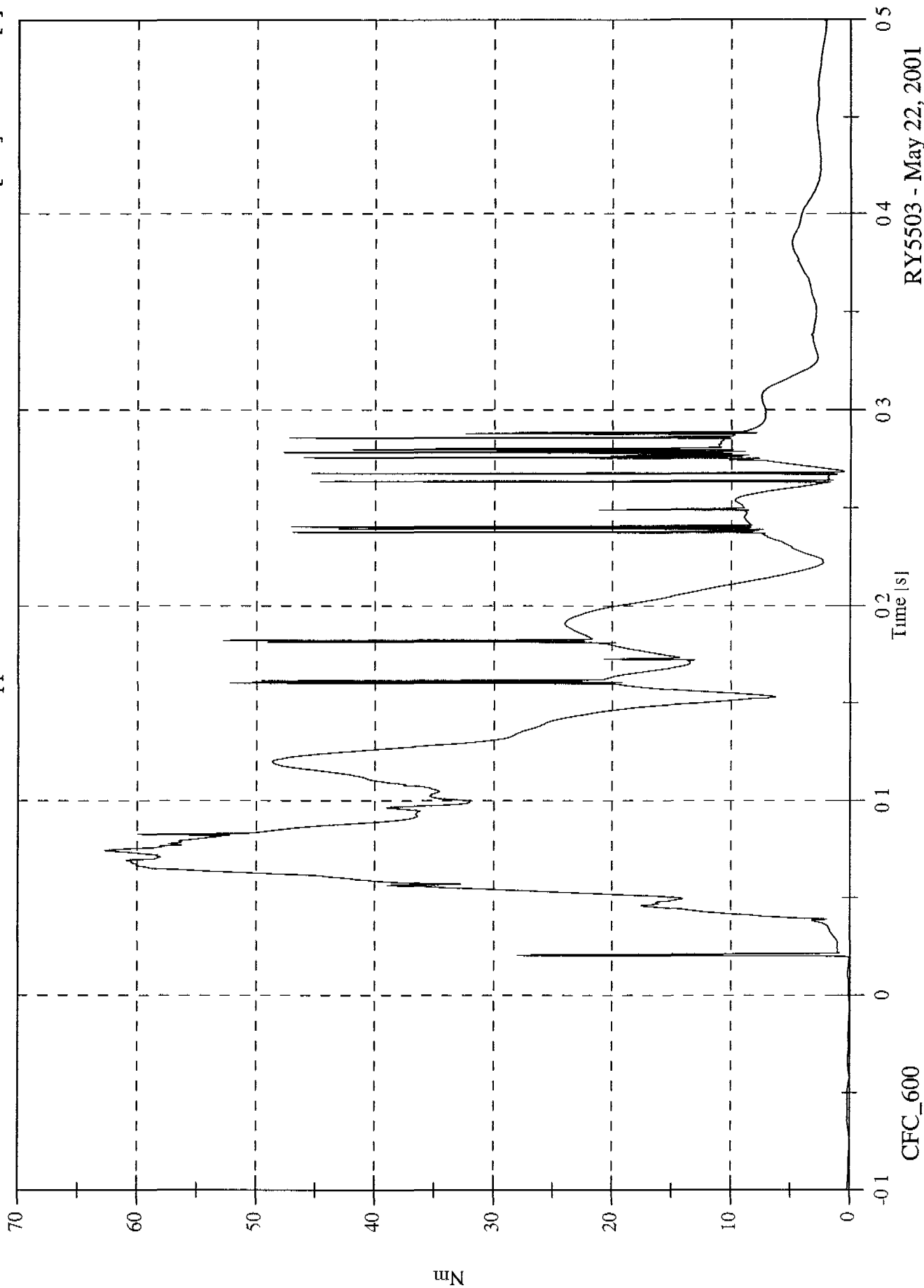
Max: 46.8 [Nm] at 0.161 [s]
Min: -47.3 [Nm] at 0.160 [s]



40% Frontal Offset Test # 6

Max: 62.7 [Nm] at 0.074 [s]
Min: 0.0 [Nm] at -0.076 [s]

P1 Upper Neck M Resultant

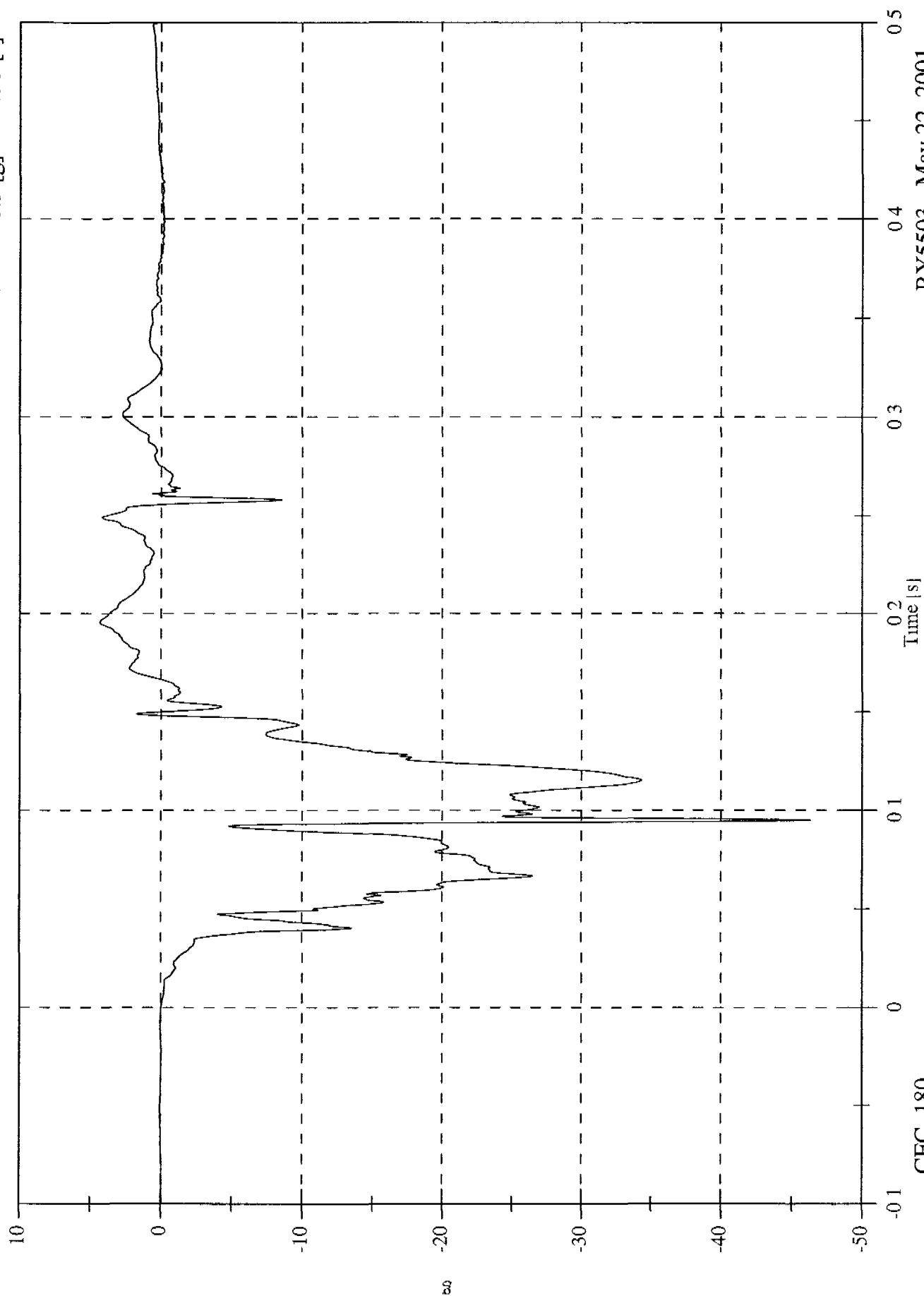


RY5503 - May 22, 2001

40% Frontal Offset Test # 6

Max: 4.3 [g] at 0.195 [s]
Min: -46.3 [g] at 0.095 [s]

P1 Chest Ax



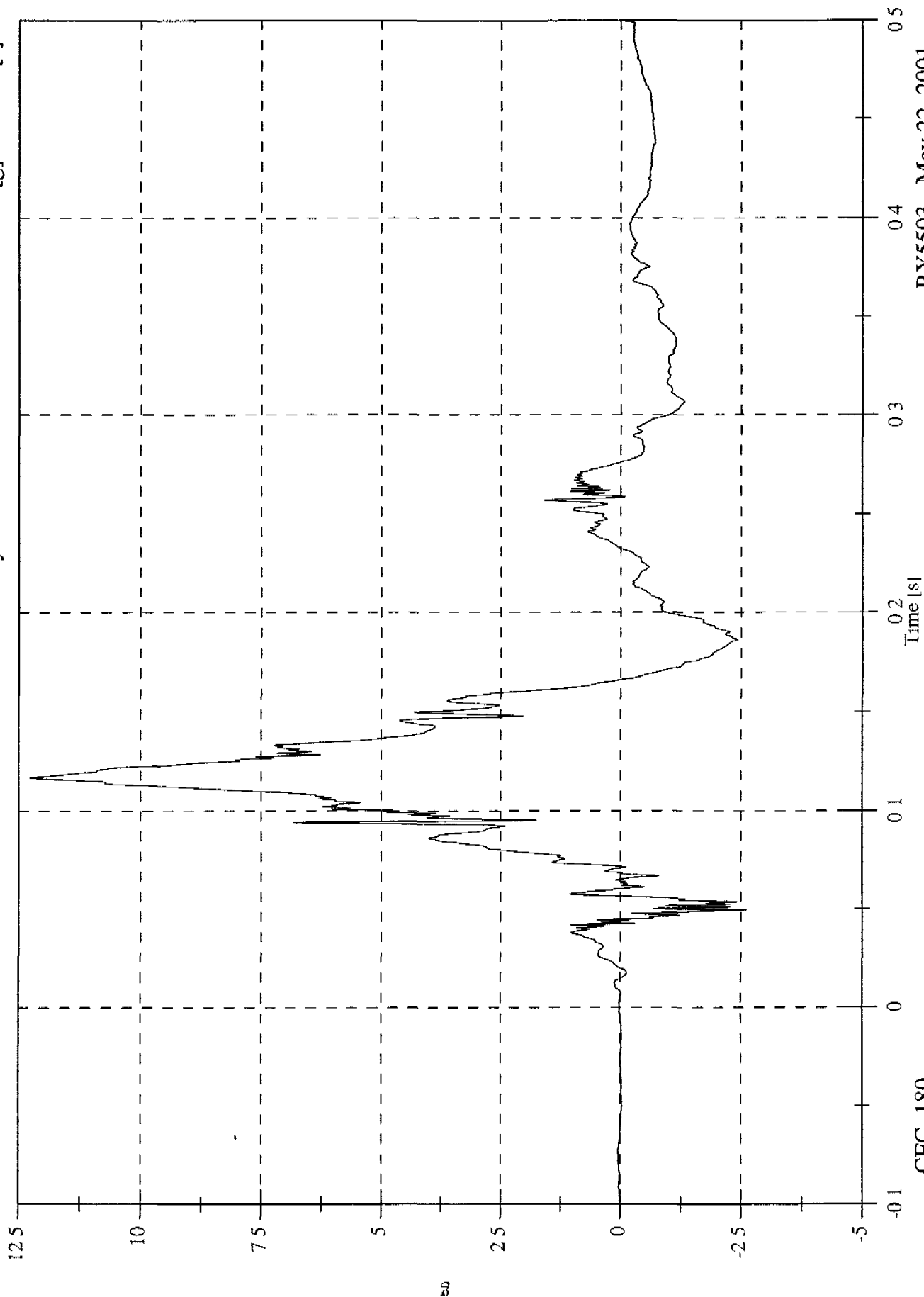
CFC_180

RY5503 - May 22, 2001

40% Frontal Offset Test # 6

Max: 12.3 [g] at 0.117 [s]
Min: -2.6 [g] at 0.049 [s]

P1 Chest Ay



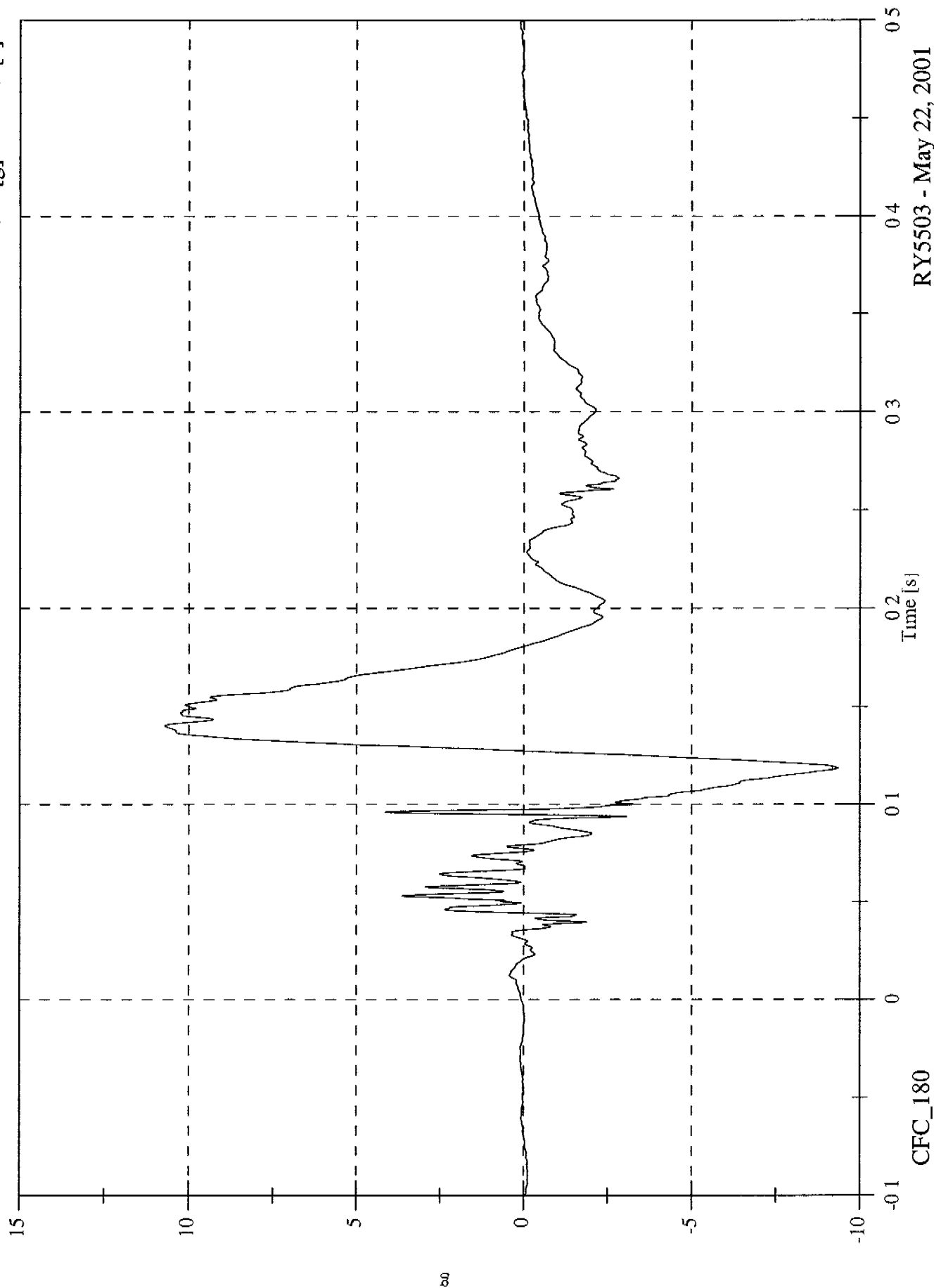
CFC_180

RY5503 - May 22, 2001

40% Frontal Offset Test # 6

Max: 10.7 [g] at 0.140 [s]
Min: -9.4 [g] at 0.119 [s]

P1 Chest Az

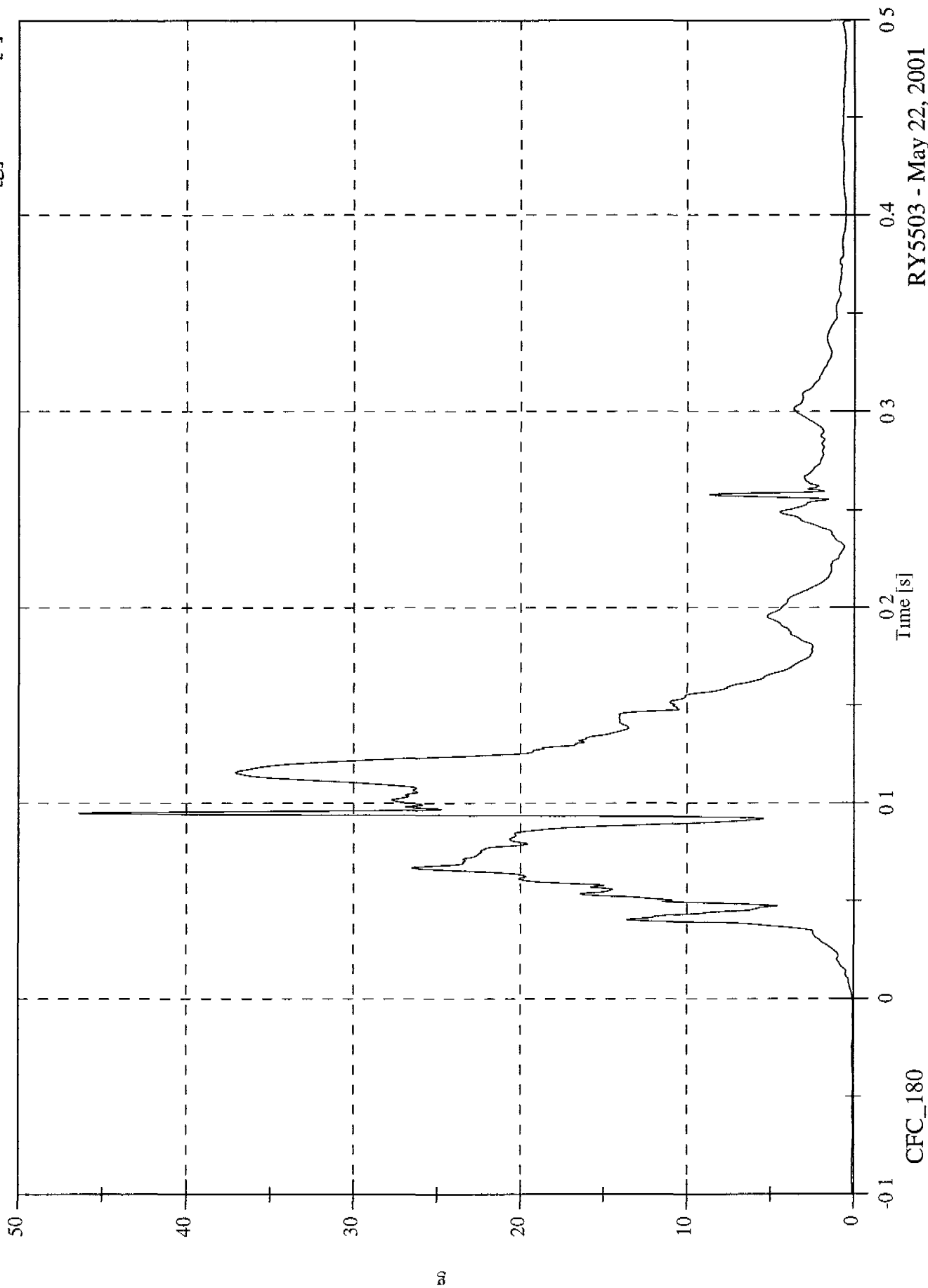


RY5503 - May 22, 2001

40% Frontal Offset Test # 6

Max: 46.4 [g] at 0.095 [s]
Min: 0.0 [g] at -0.100 [s]

P1 Chest A Resultant

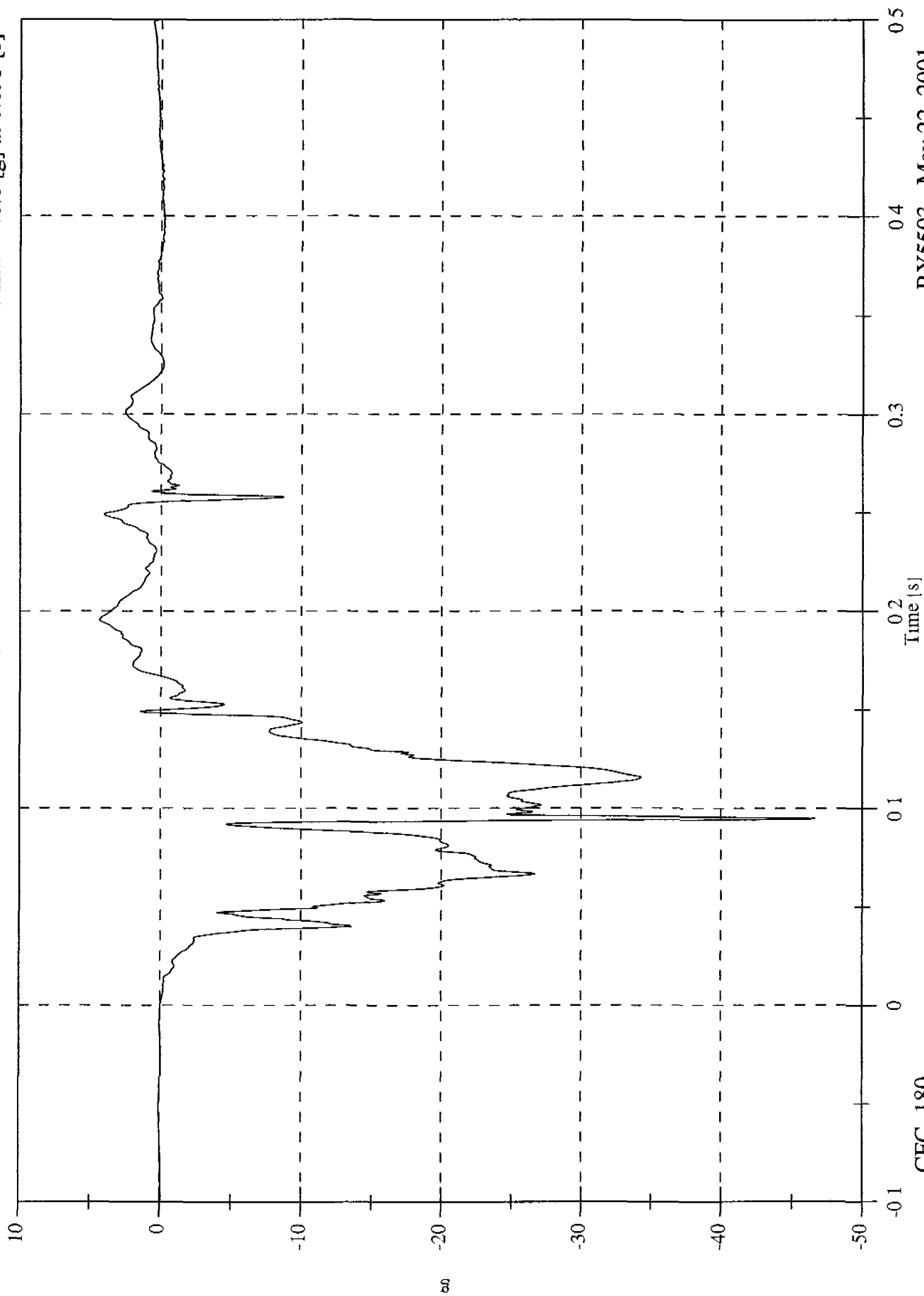


RY5503 - May 22, 2001

40% Frontal Offset Test # 6

Max: 4.4 [g] at 0.195 [s]
Min: -46.6 [g] at 0.095 [s]

P1 Chest Red Ax



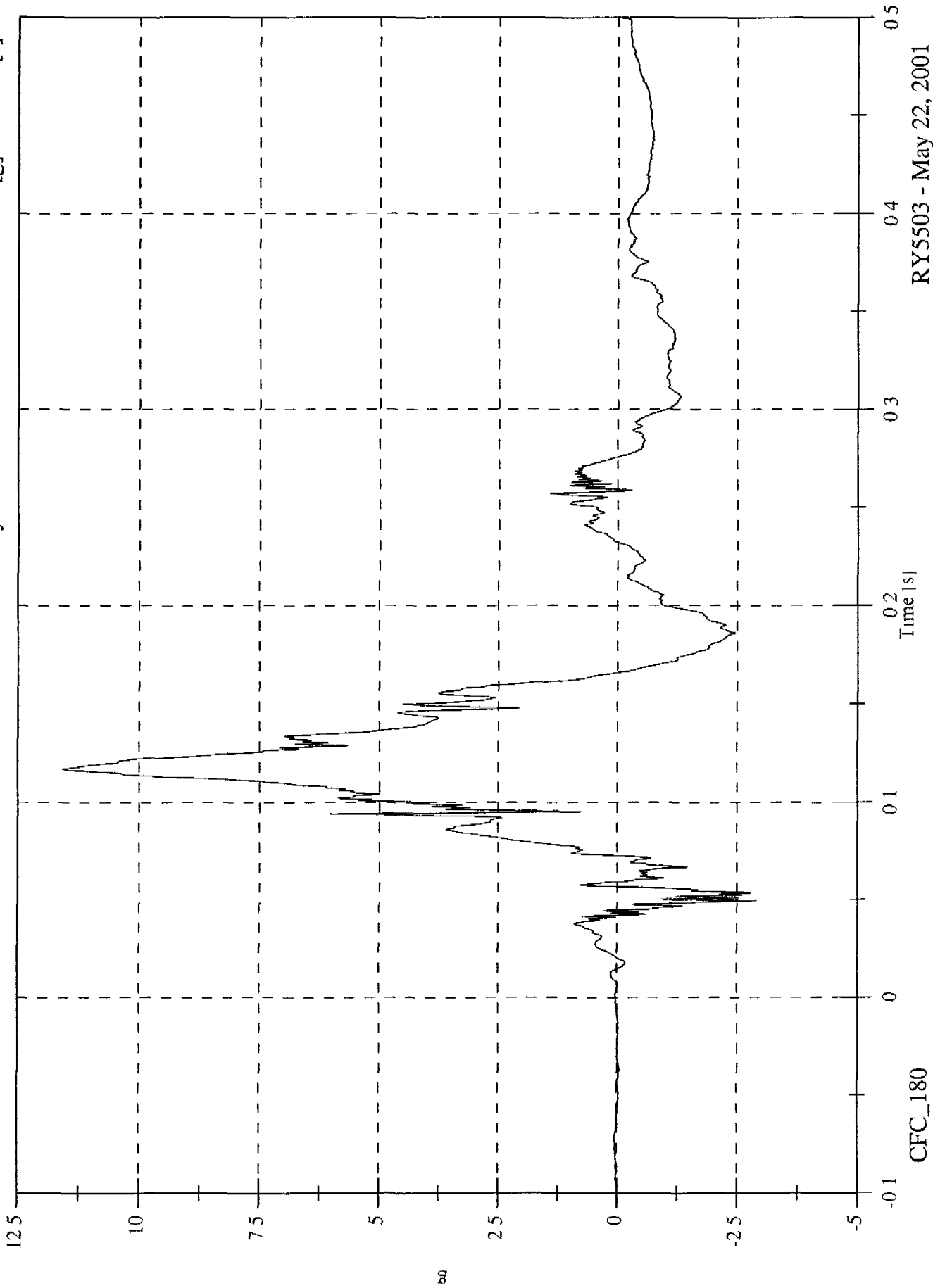
CFC_180

RY5503 - May 22, 2001

40% Frontal Offset Test # 6

Max: 11.6 [g] at 0.117 [s]
Min: -2.9 [g] at 0.049 [s]

P1 Chest Red Ay

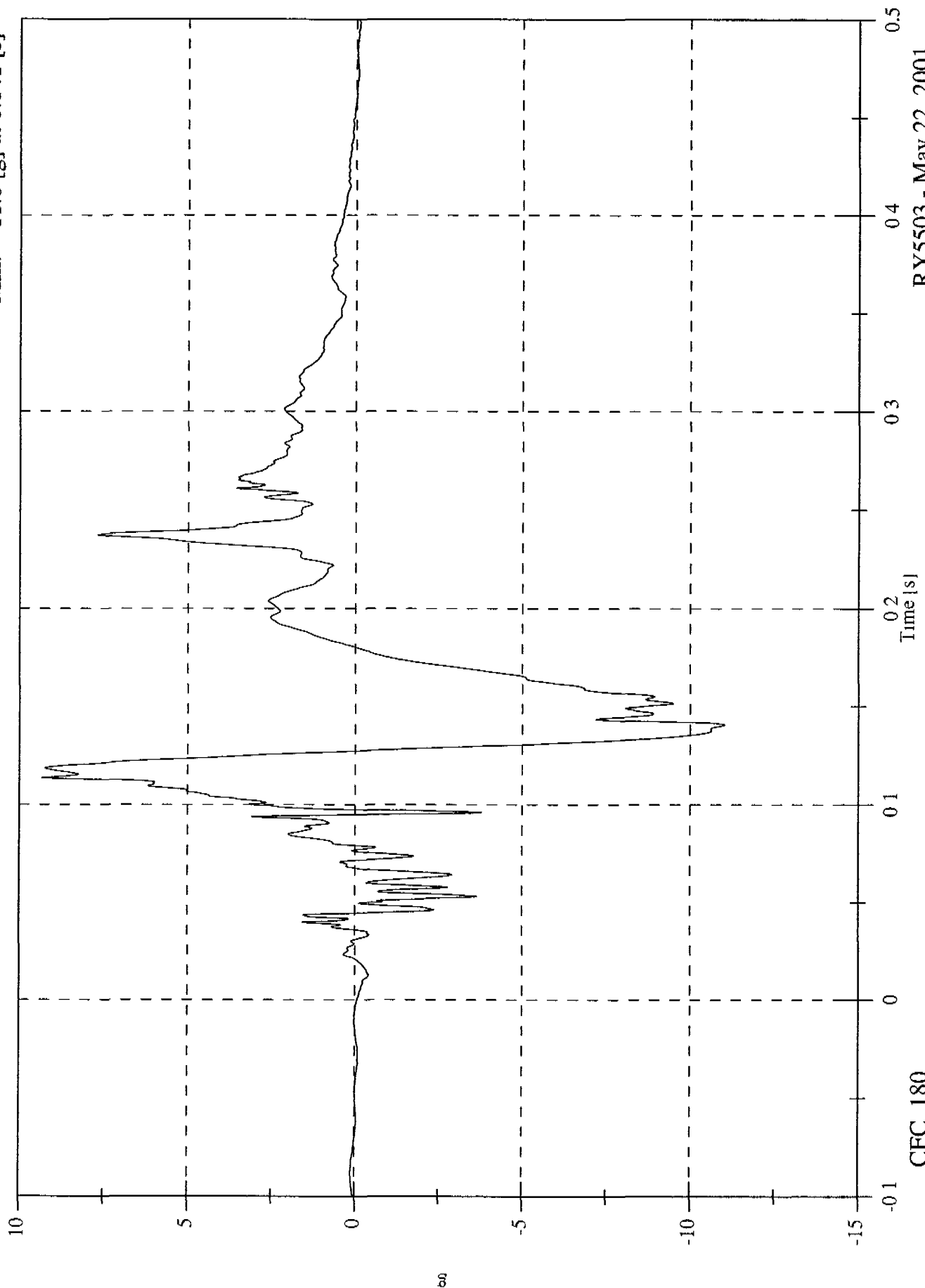


RY5503 - May 22, 2001

40% Frontal Offset Test # 6

P1 Chest Red Az

Max: 9.3 [g] at 0.114 [s]
Min: -11.0 [g] at 0.141 [s]

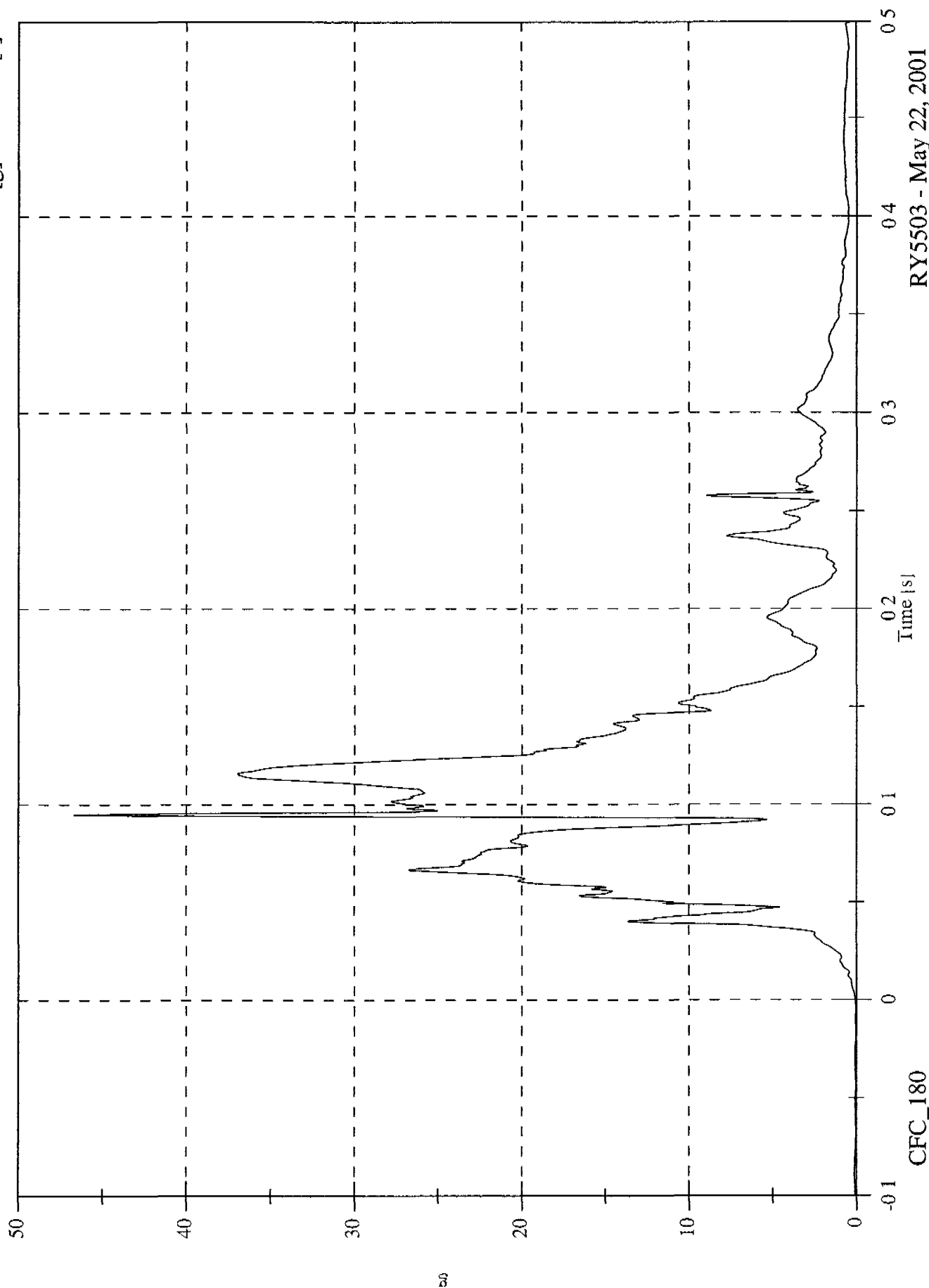


RY5503 - May 22, 2001

40% Frontal Offset Test # 6

Max: 46.7 [g] at 0.095 [s]
Min: 0.0 [g] at -0.100 [s]

P1 Chest Red A Resultant

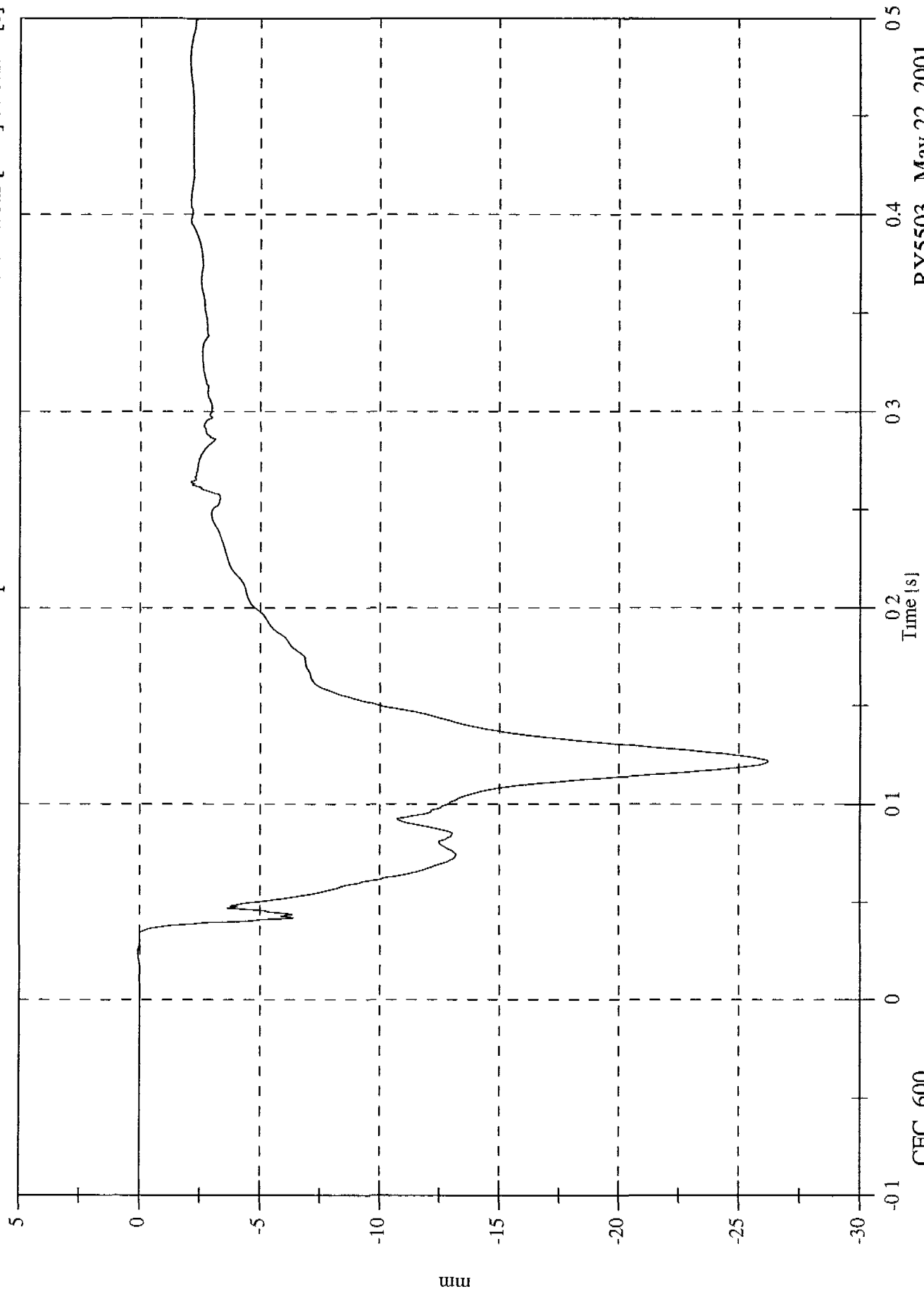


RY5503 - May 22, 2001

40% Frontal Offset Test # 6

Max: 0.1 [mm] at 0.024 [s]
Min: -26.2 [mm] at 0.121 [s]

P1 Chest Displacement



CFC_600

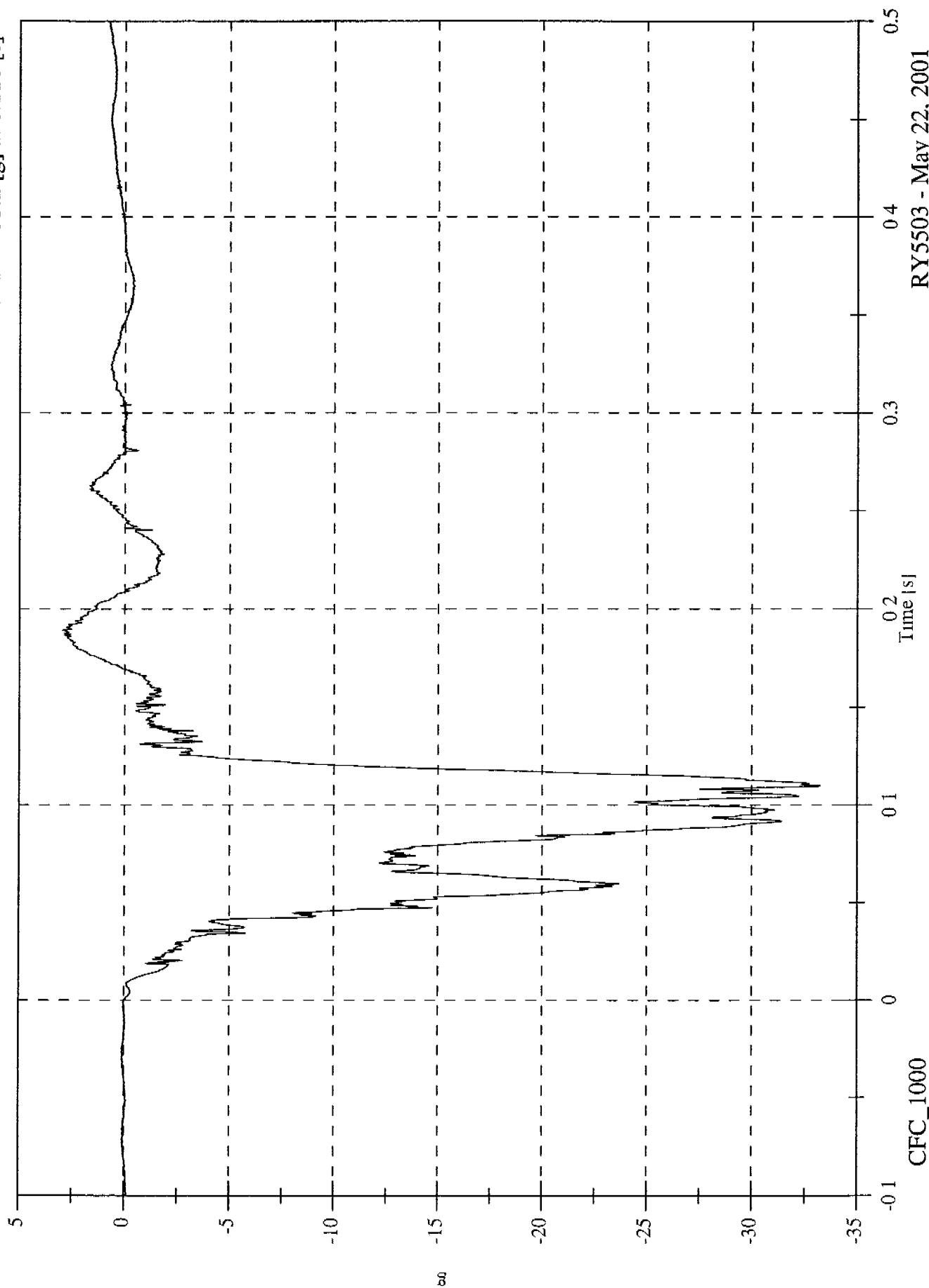
Time [s]

RY5503 - May 22, 2001

40% Frontal Offset Test # 6

Max: 2.9 [g] at 0.189 [s]
Min: -33.2 [g] at 0.110 [s]

P1 Pelvic Ax



CFC_1000

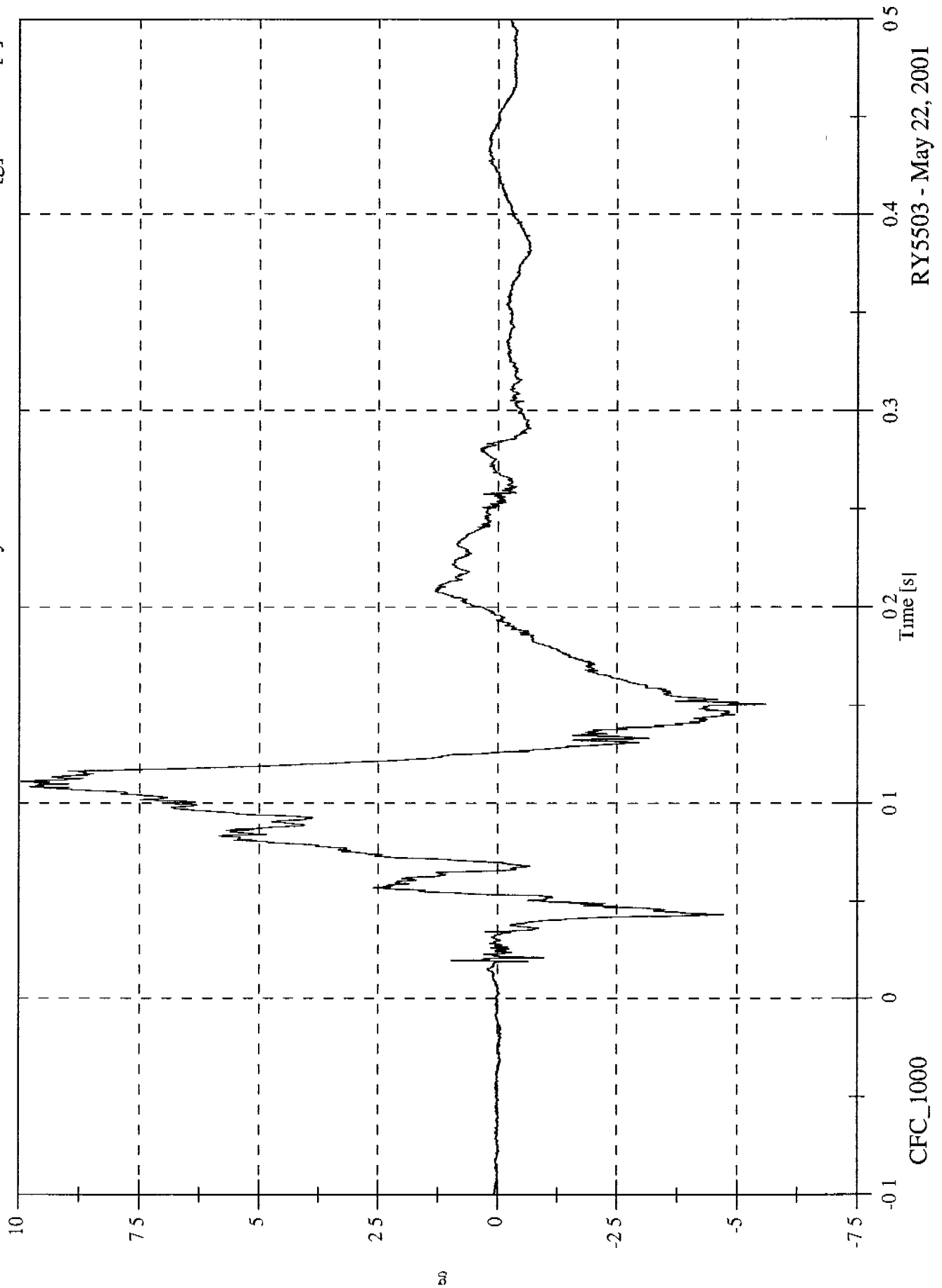
Time [s]

RY5503 - May 22, 2001

40% Frontal Offset Test # 6

Max: 10.0 [g] at 0.111 [s]
Min: -5.6 [g] at 0.151 [s]

P1 Pelvic Ay

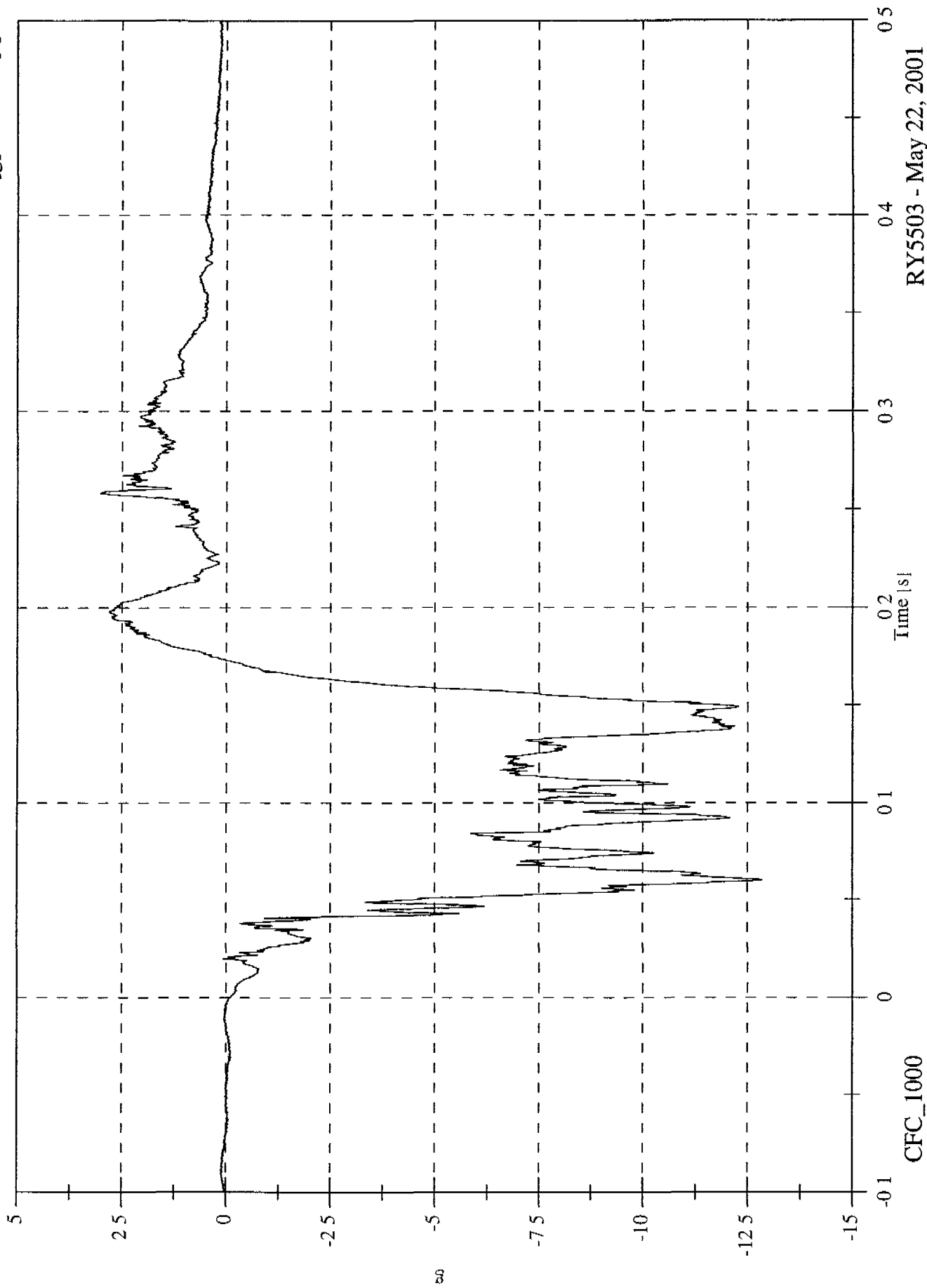


RY5503 - May 22, 2001

40% Frontal Offset Test # 6

Max: 3.0 [g] at 0.258 [s]
Min: -12.8 [g] at 0.060 [s]

P1 Pelvic Az



CFC_1000

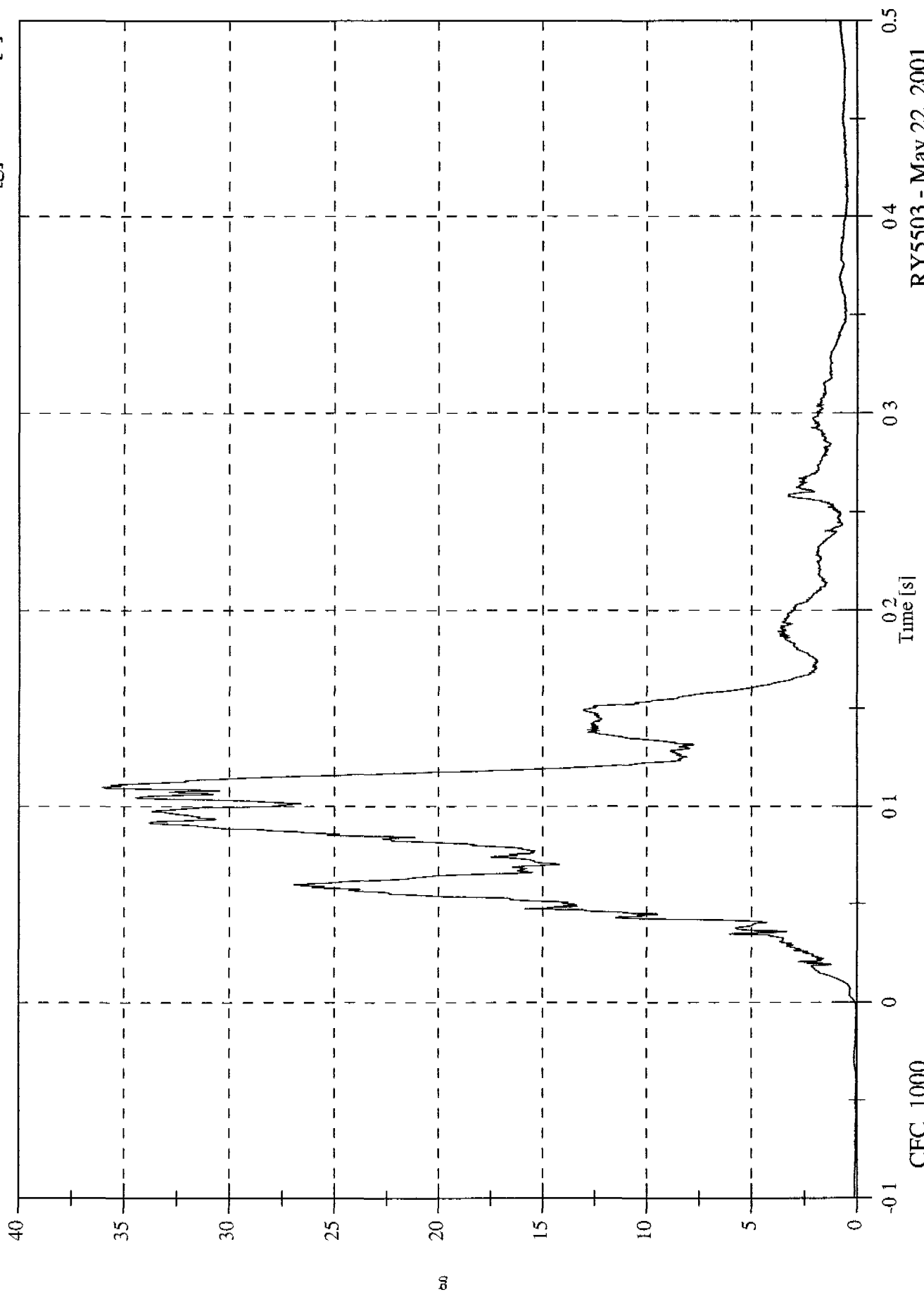
Time [s]

RY5503 - May 22, 2001

40% Frontal Offset Test # 6

Max: 36.0 [g] at 0.110 [s]
Min: 0.0 [g] at -0.005 [s]

P1 Pelvic A Resultant



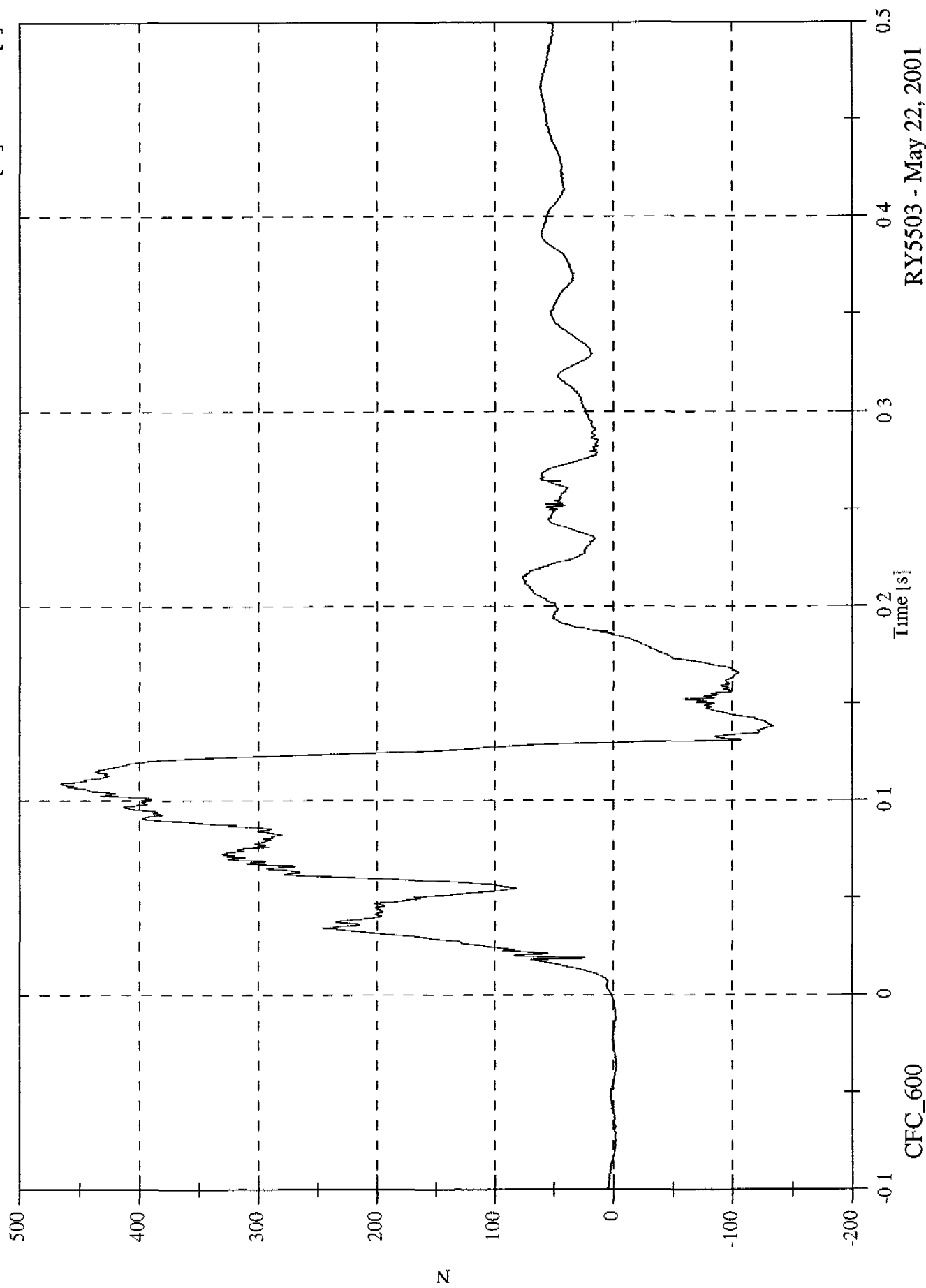
CFC_1000

RY5503 - May 22, 2001

40% Frontal Offset Test # 6

Max: 465.5 [N] at 0.109 [s]
Min: -134.7 [N] at 0.138 [s]

P1 Left Femur Fx

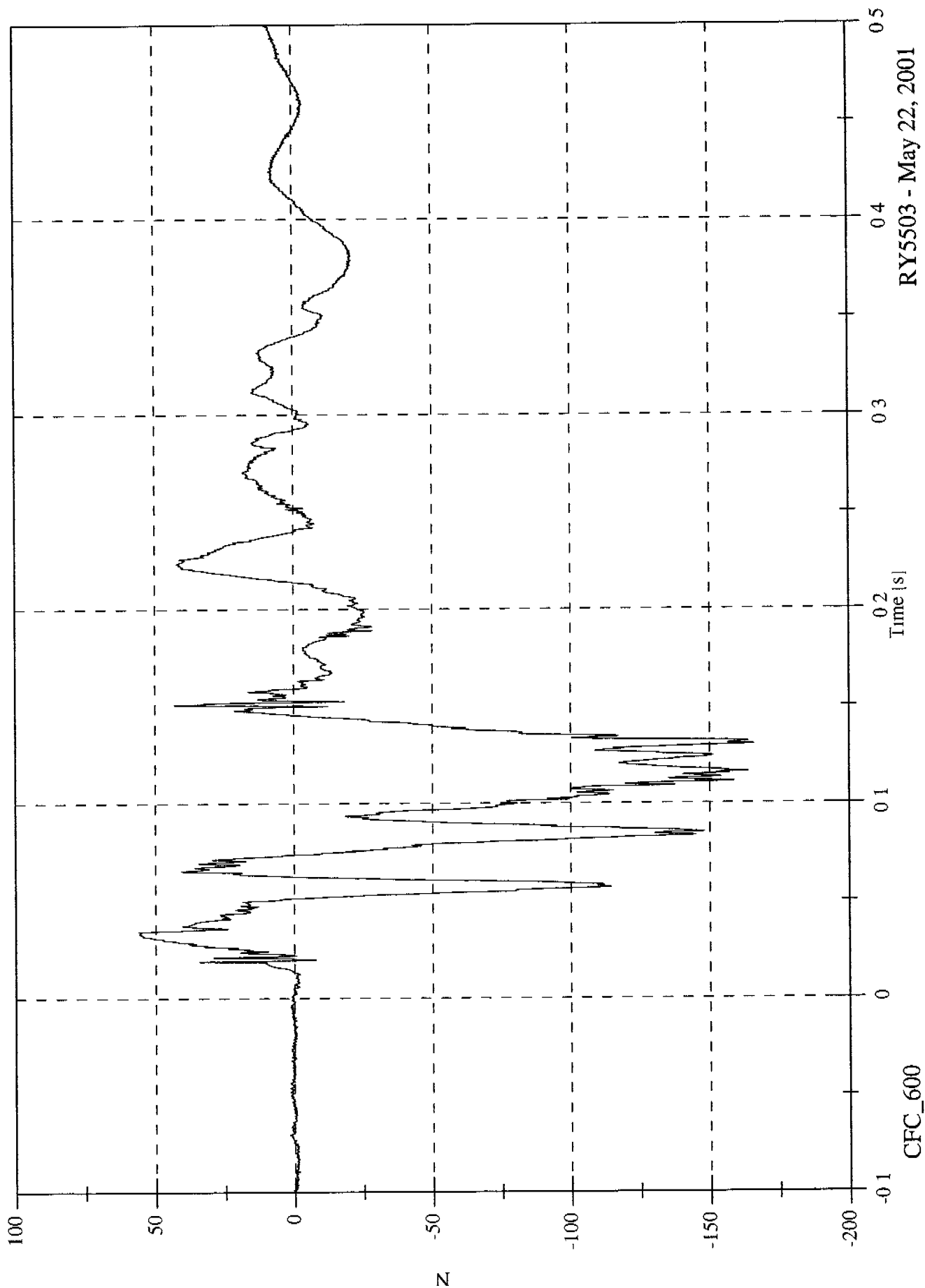


RY5503 - May 22, 2001

40% Frontal Offset Test # 6

P1 Left Femur Fy

Max: 56.0 [N] at 0.034 [s]
Min: -165.8 [N] at 0.130 [s]



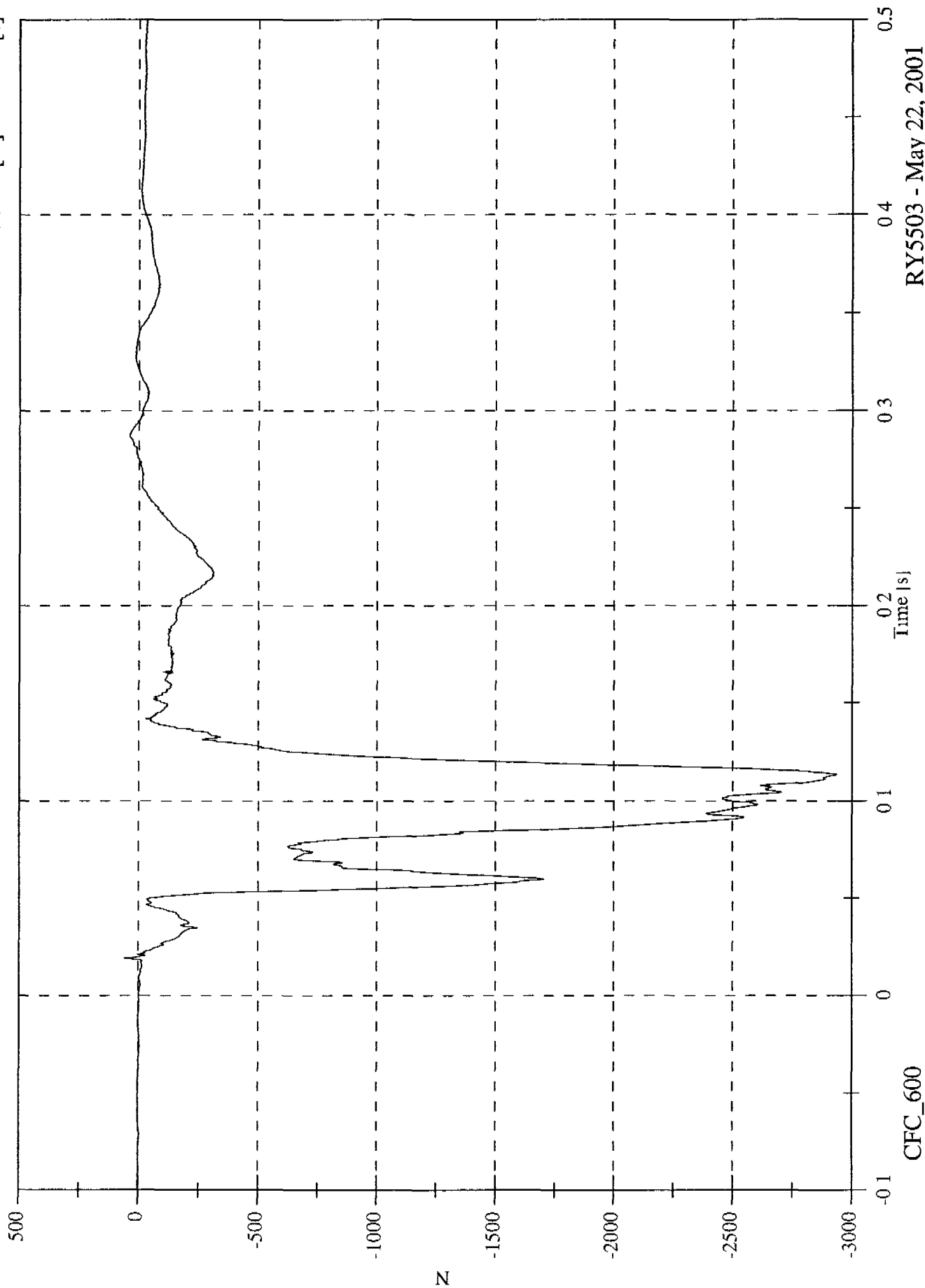
RY5503 - May 22, 2001

40% Frontal Offset Test # 6

Max: 57.1 [N] at 0.019 [s]

Min: -2935.6 [N] at 0.113 [s]

P1 Left Femur Fz

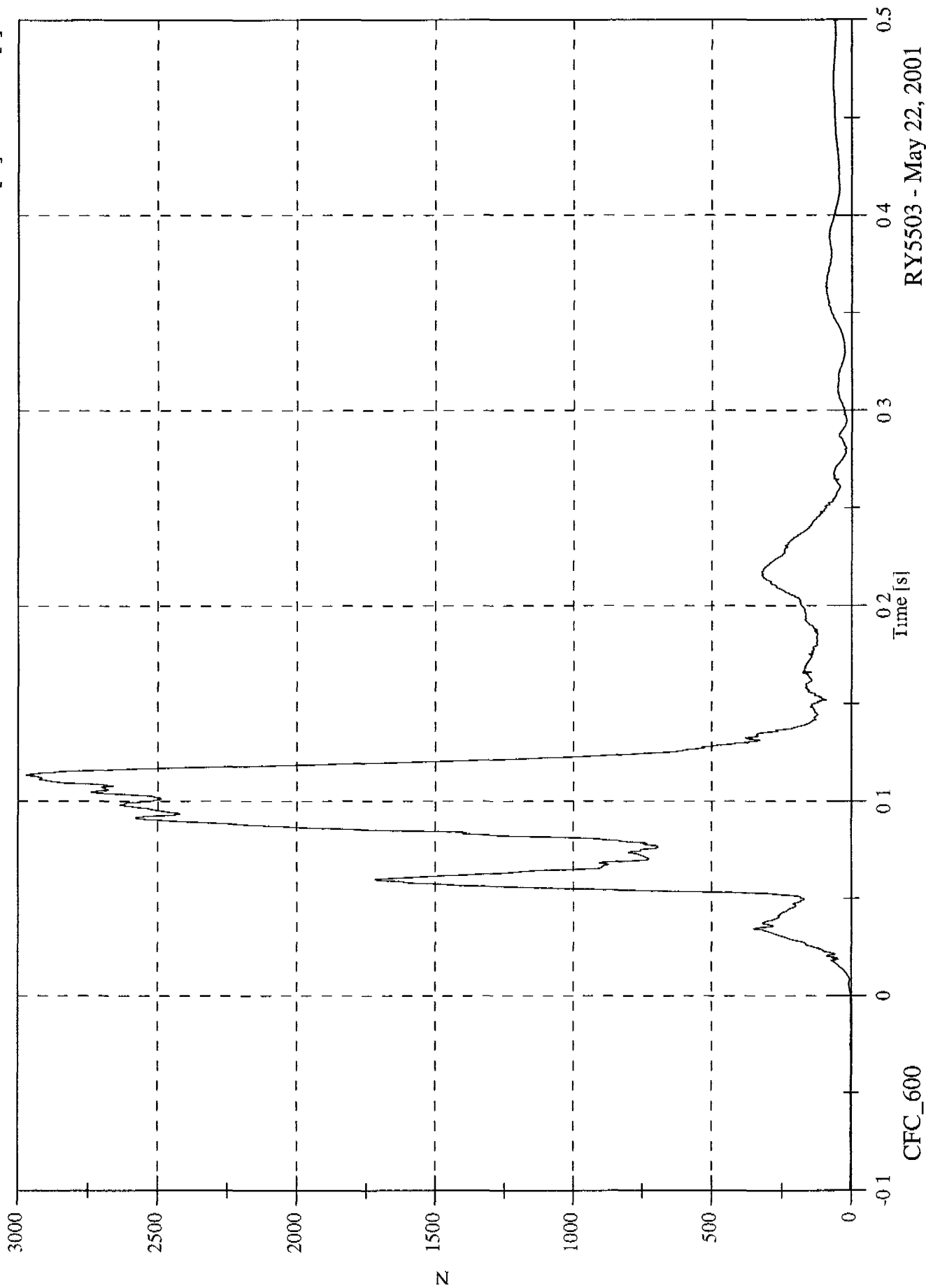


RY5503 - May 22, 2001

40% Frontal Offset Test # 6

P1 Left Femur F Resultant

Max: 2970.7 [N] at 0.113 [s]
Min: 0.3 [N] at -0.018 [s]

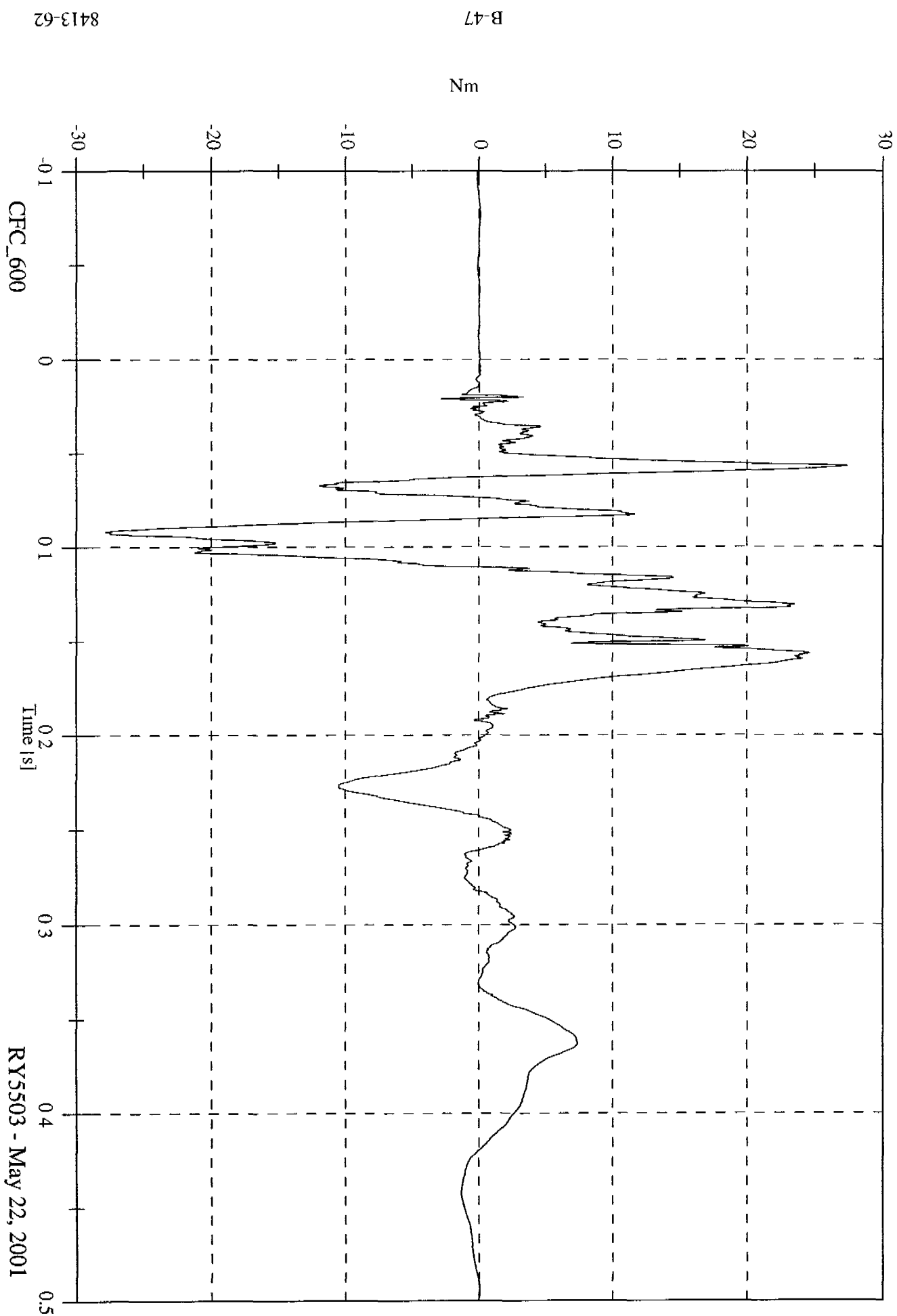


RY5503 - May 22, 2001

40% Frontal Offset Test # 6

P1 Left Femur Mx

Max: 27.3 [Nm] at 0.057 [s]
Min: -27.8 [Nm] at 0.092 [s]



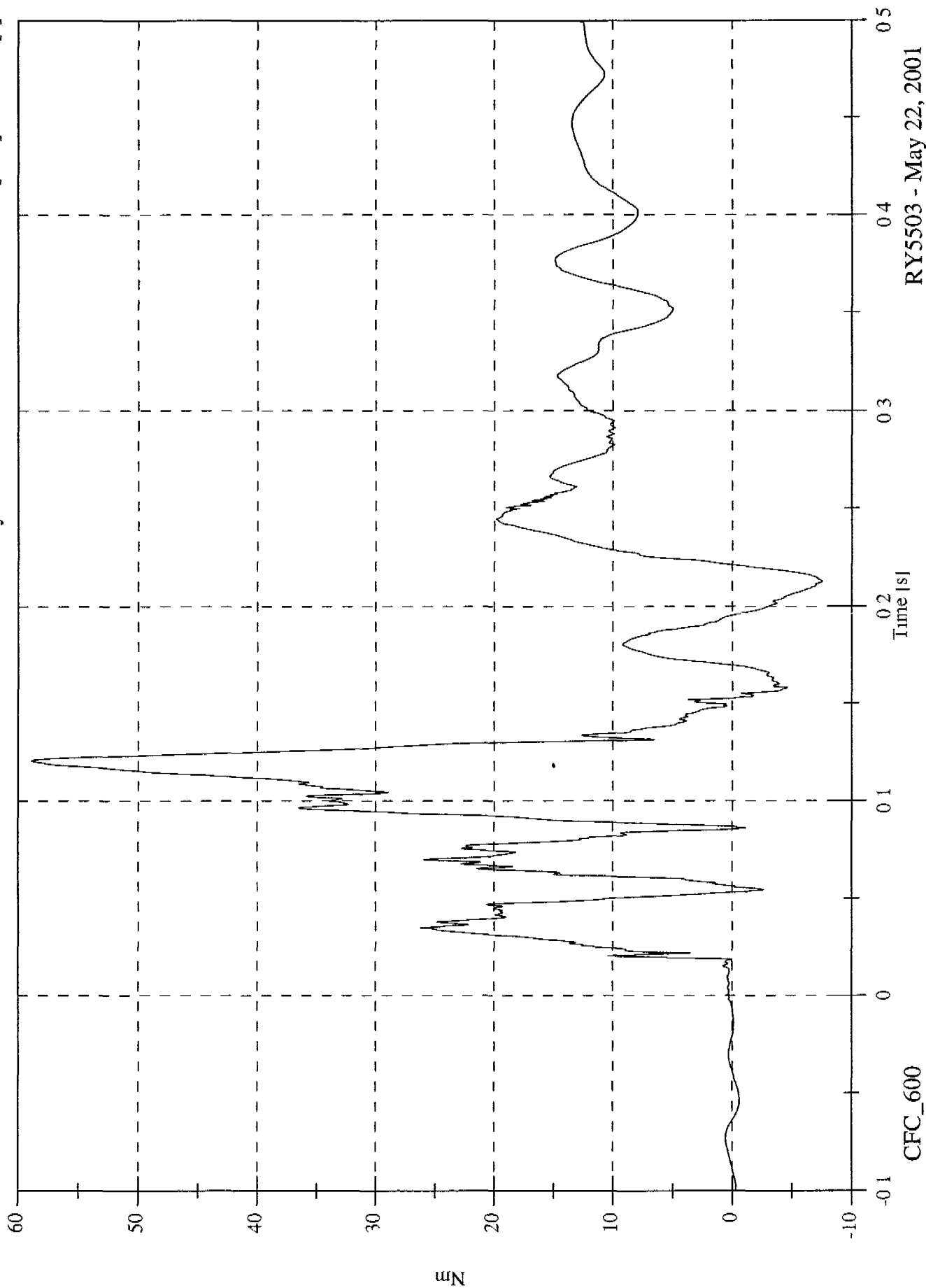
B-47

8413-62

40% Frontal Offset Test # 6

Max: 58.9 [Nm] at 0.120 [s]
Min: -7.5 [Nm] at 0.213 [s]

P1 Left Femur My



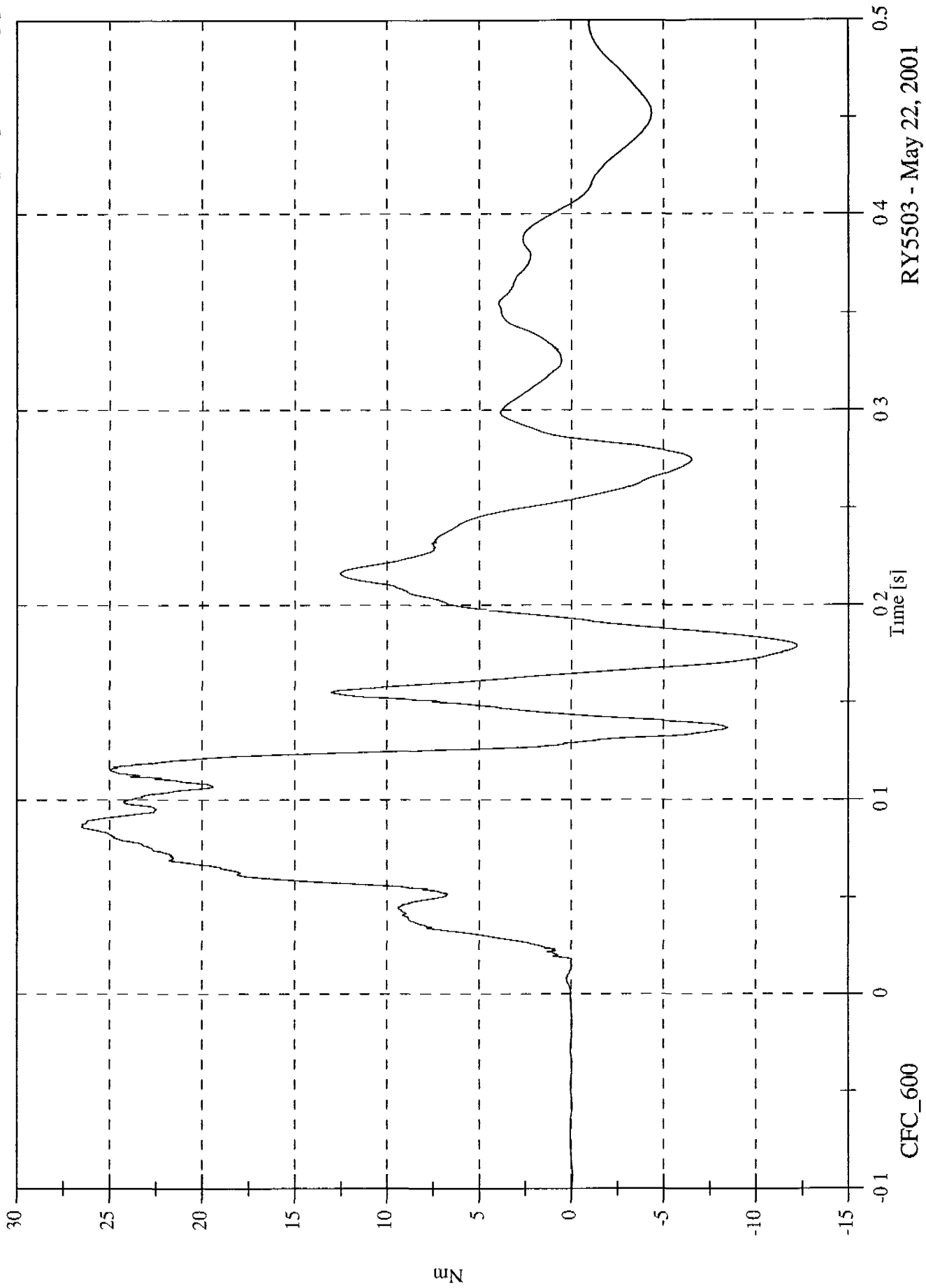
CFC_600

RY5503 - May 22, 2001

40% Frontal Offset Test # 6

Max: 26.5 [Nm] at 0.086 [s]
Min: -12.2 [Nm] at 0.179 [s]

P1 Left Femur Mz



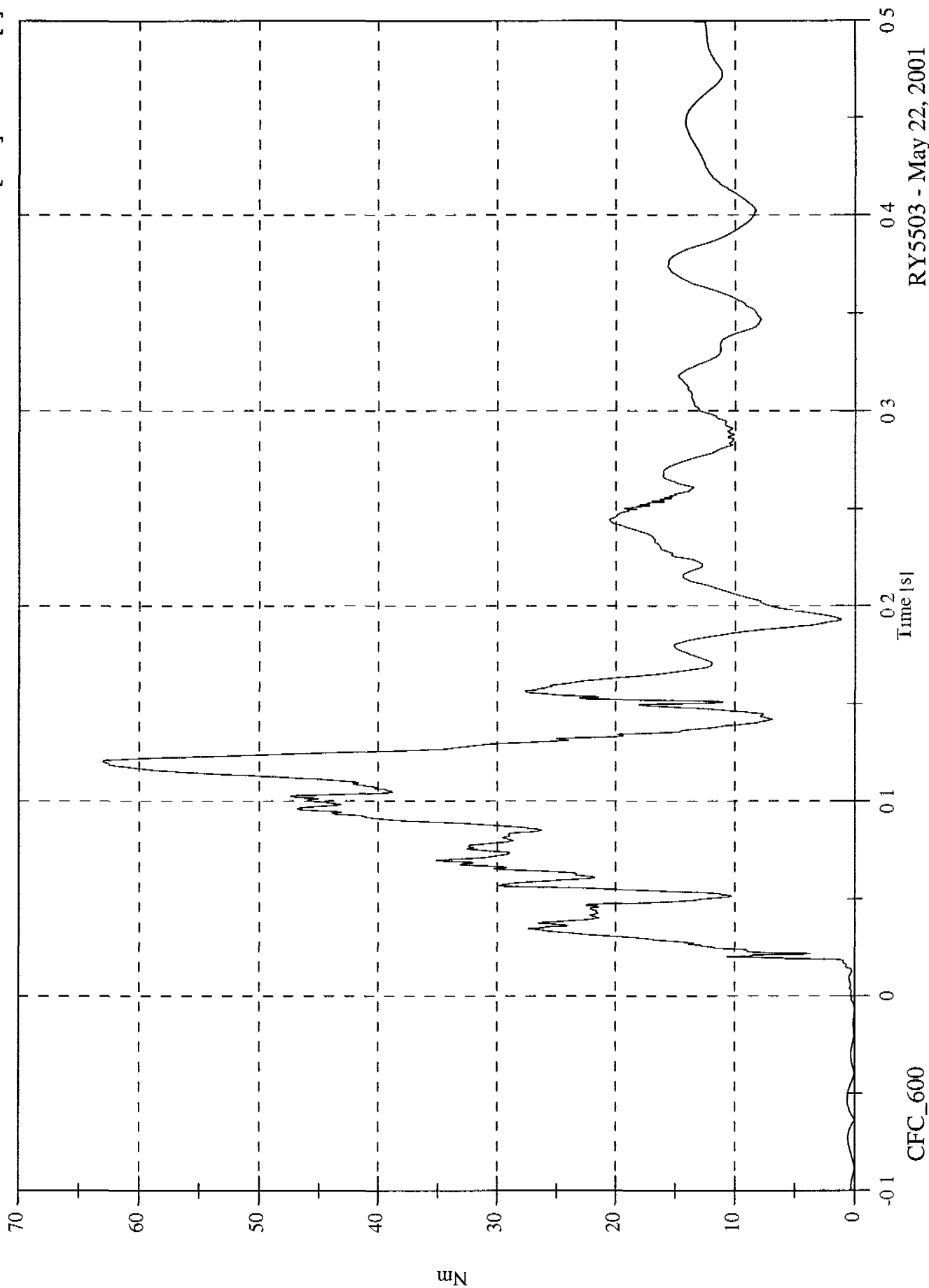
CFC_600

RY5503 - May 22, 2001

40% Frontal Offset Test # 6

P1 Left Femur M Resultant

Max: 63.0 [Nm] at 0.120 [s]
Min: 0.0 [Nm] at -0.007 [s]



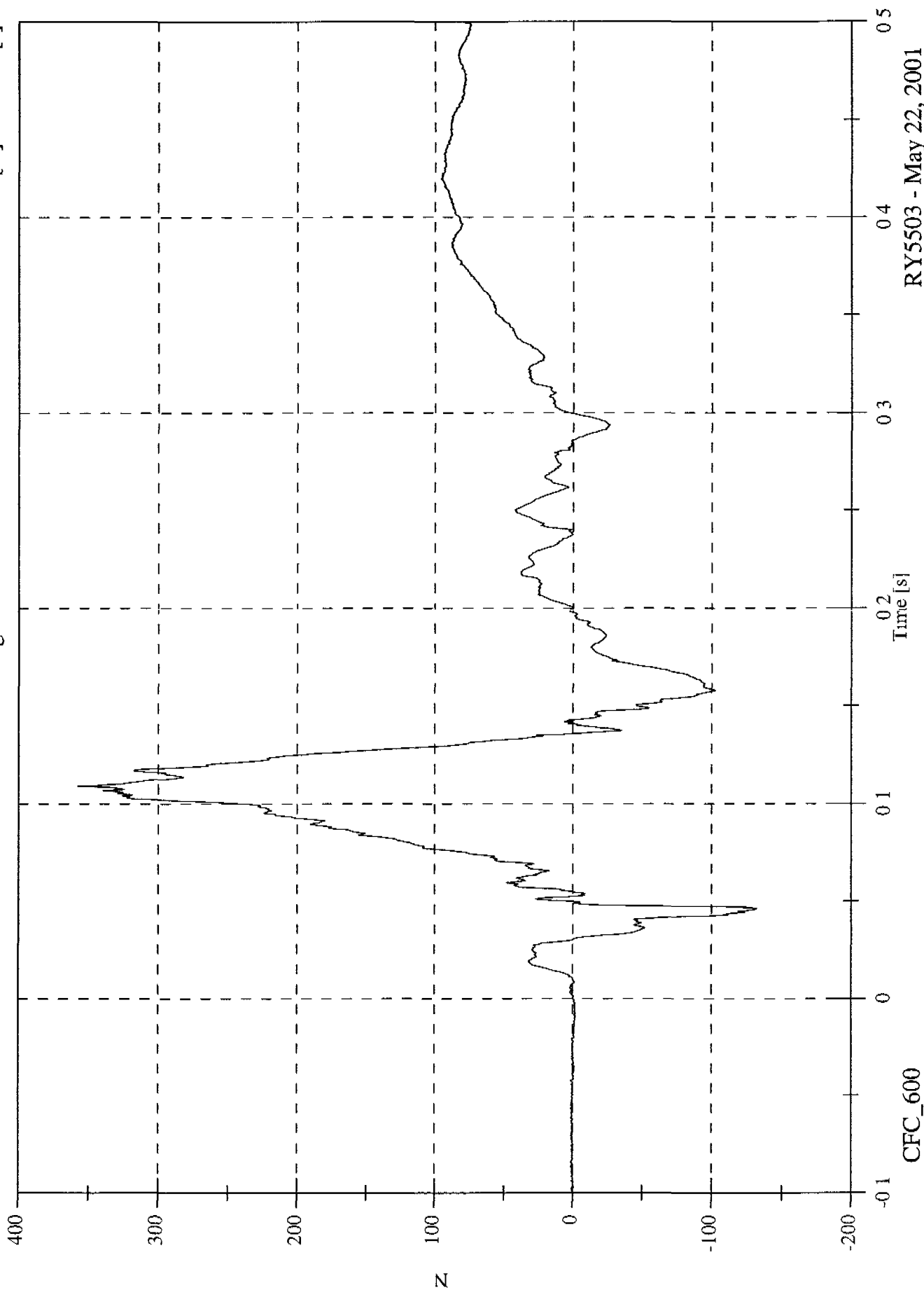
CFC_600

RY5503 - May 22, 2001

40% Frontal Offset Test # 6

Max: 357.8 [N] at 0.109 [s]
Min: -132.5 [N] at 0.046 [s]

P1 Right Femur Fx

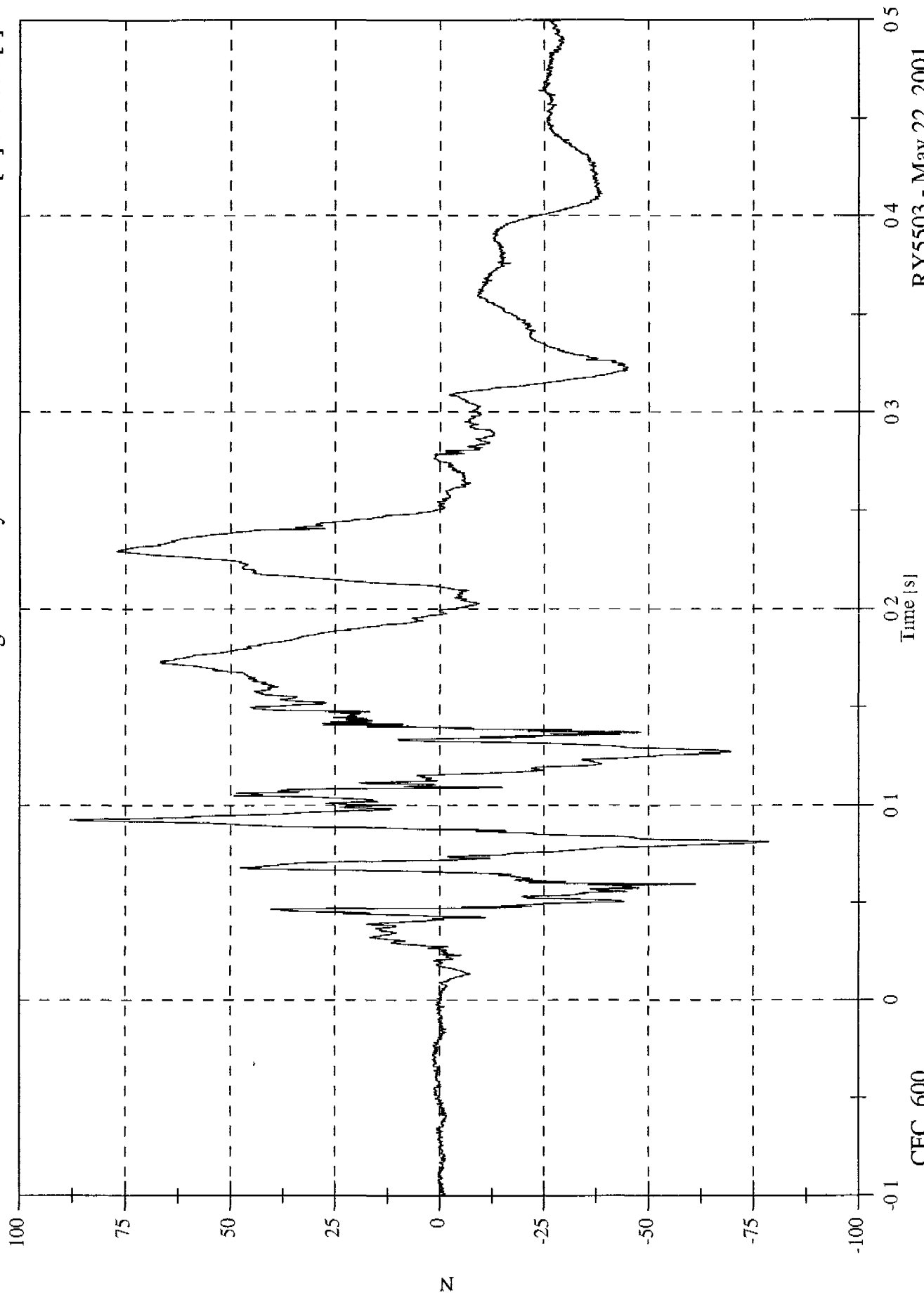


RY5503 - May 22, 2001

40% Frontal Offset Test # 6

Max: 88.0 [N] at 0.092 [s]
Min: -78.7 [N] at 0.081 [s]

P1 Right Femur Fy



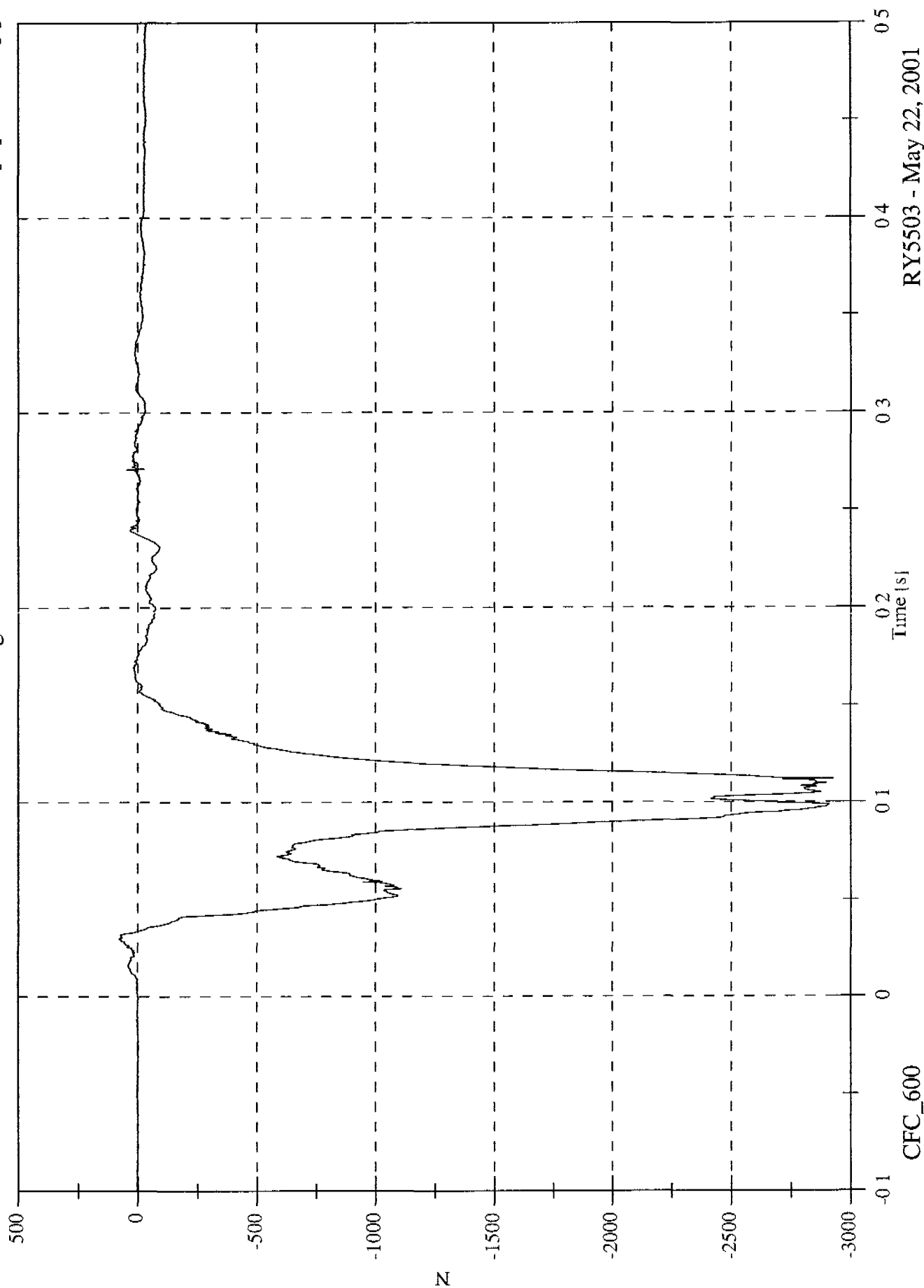
CFC_600

RY5503 - May 22, 2001

40% Frontal Offset Test # 6

Max: 77.6 [N] at 0.030 [s]
Min: -2926.1 [N] at 0.112 [s]

P1 Right Femur Fz

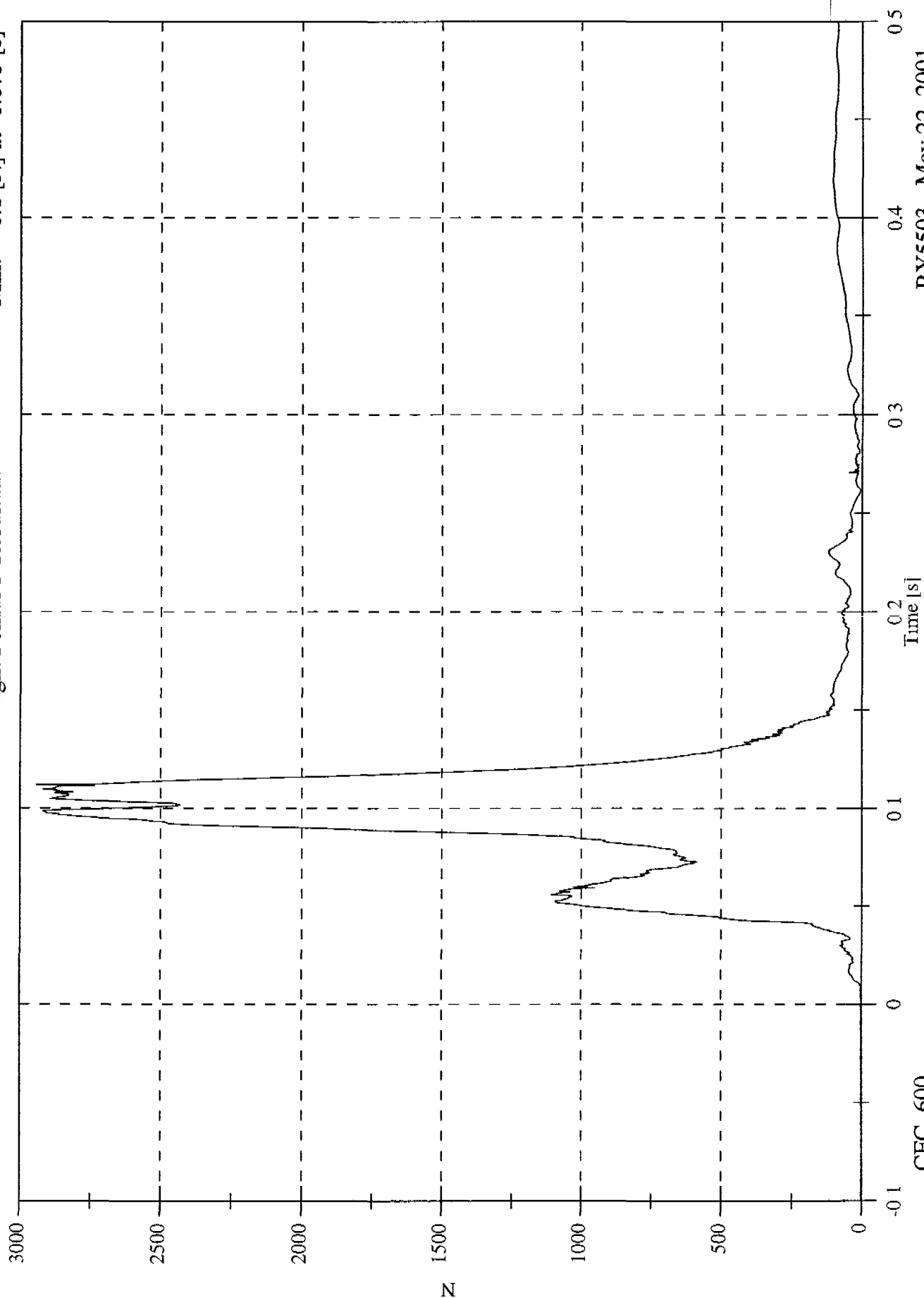


RY5503 - May 22, 2001

40% Frontal Offset Test # 6

P1 Right Femur F Resultant

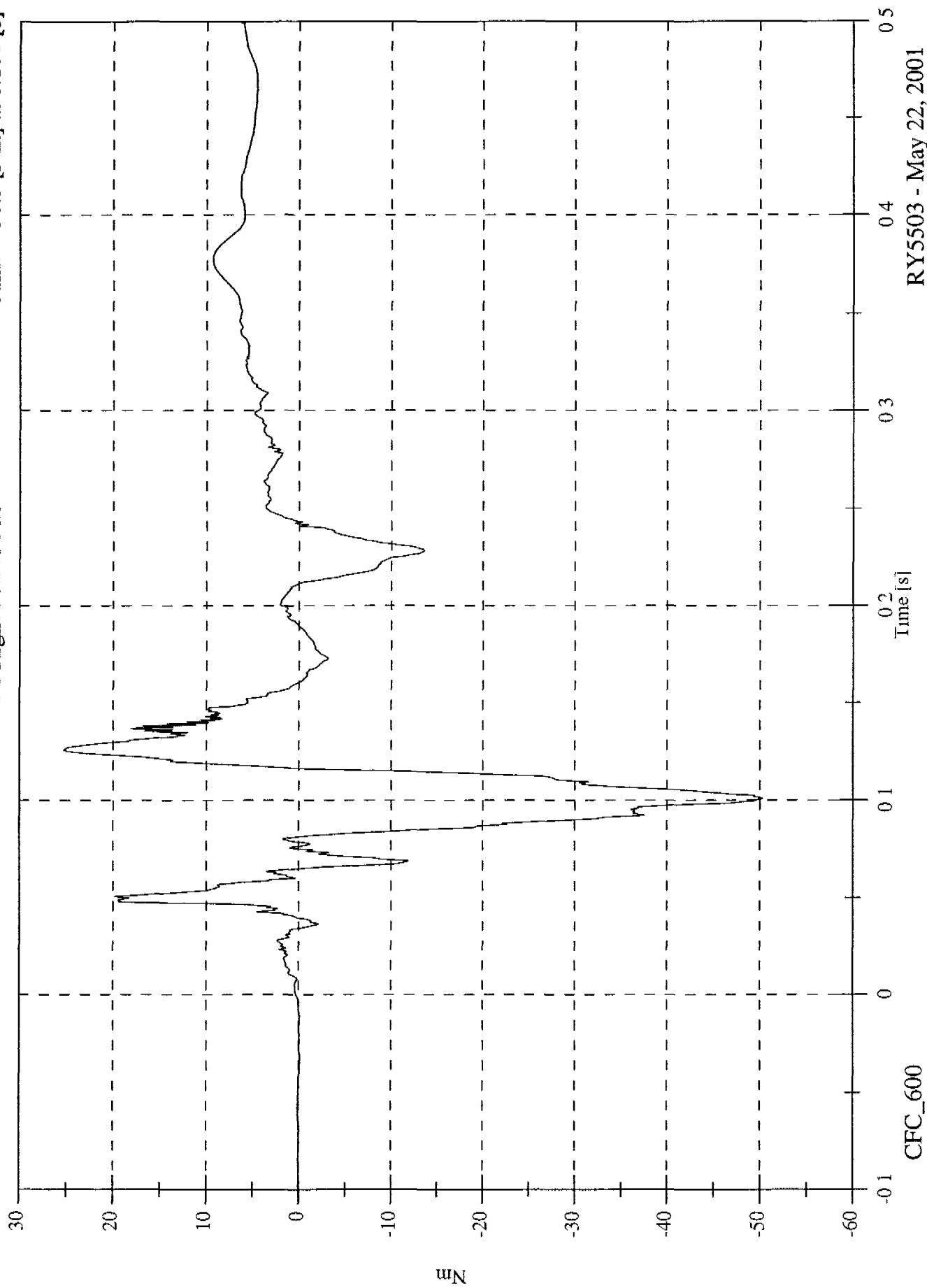
Max: 2942.6 [N] at 0.112 [s]
Min: 0.1 [N] at -0.075 [s]



RY5503 - May 22, 2001

Max: 25.3 [Nm] at 0.126 [s]
Min: -50.3 [Nm] at 0.101 [s]

P1 Right Femur Mx



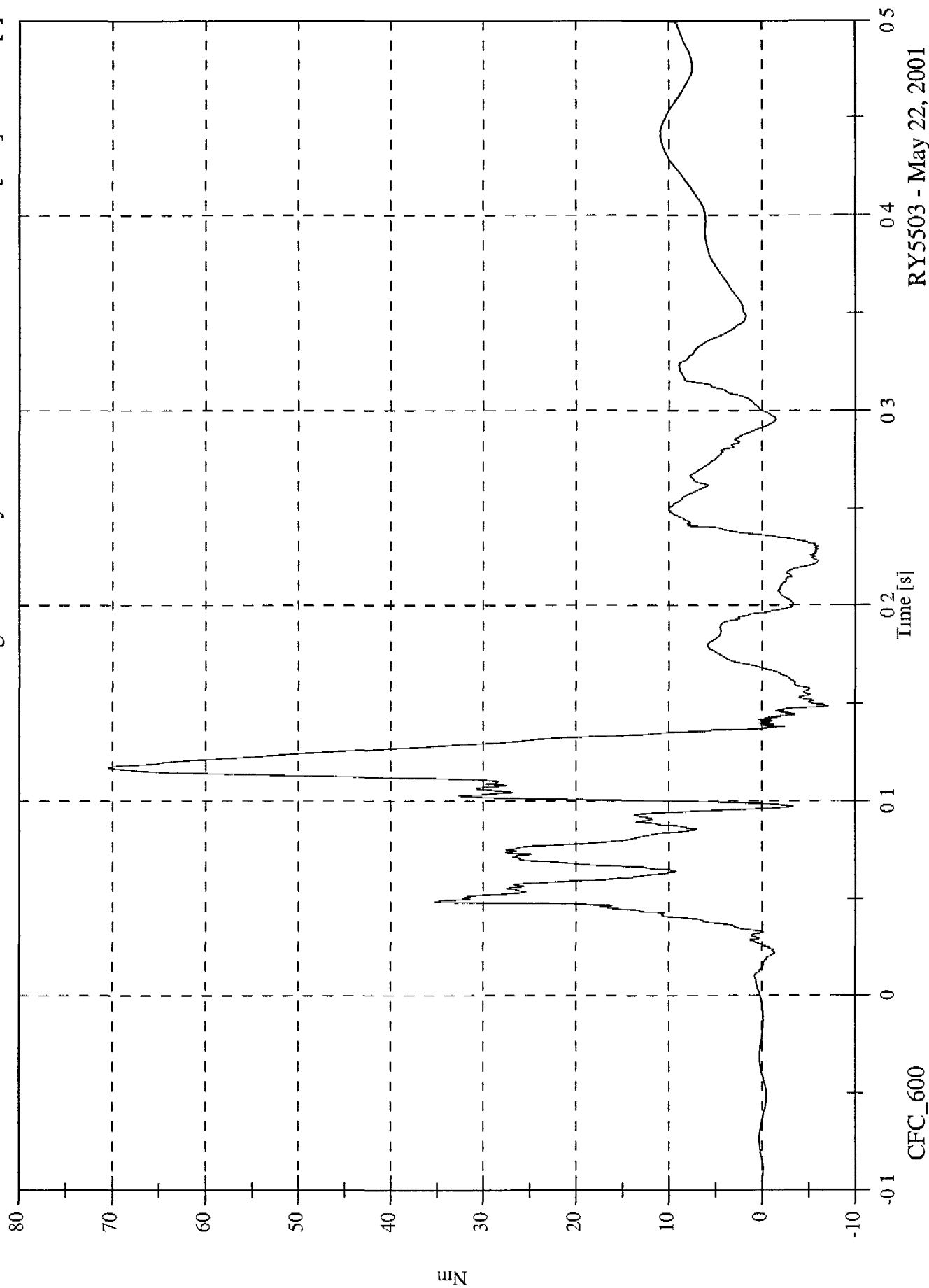
CFC_600

RY5503 - May 22, 2001

40% Frontal Offset Test # 6

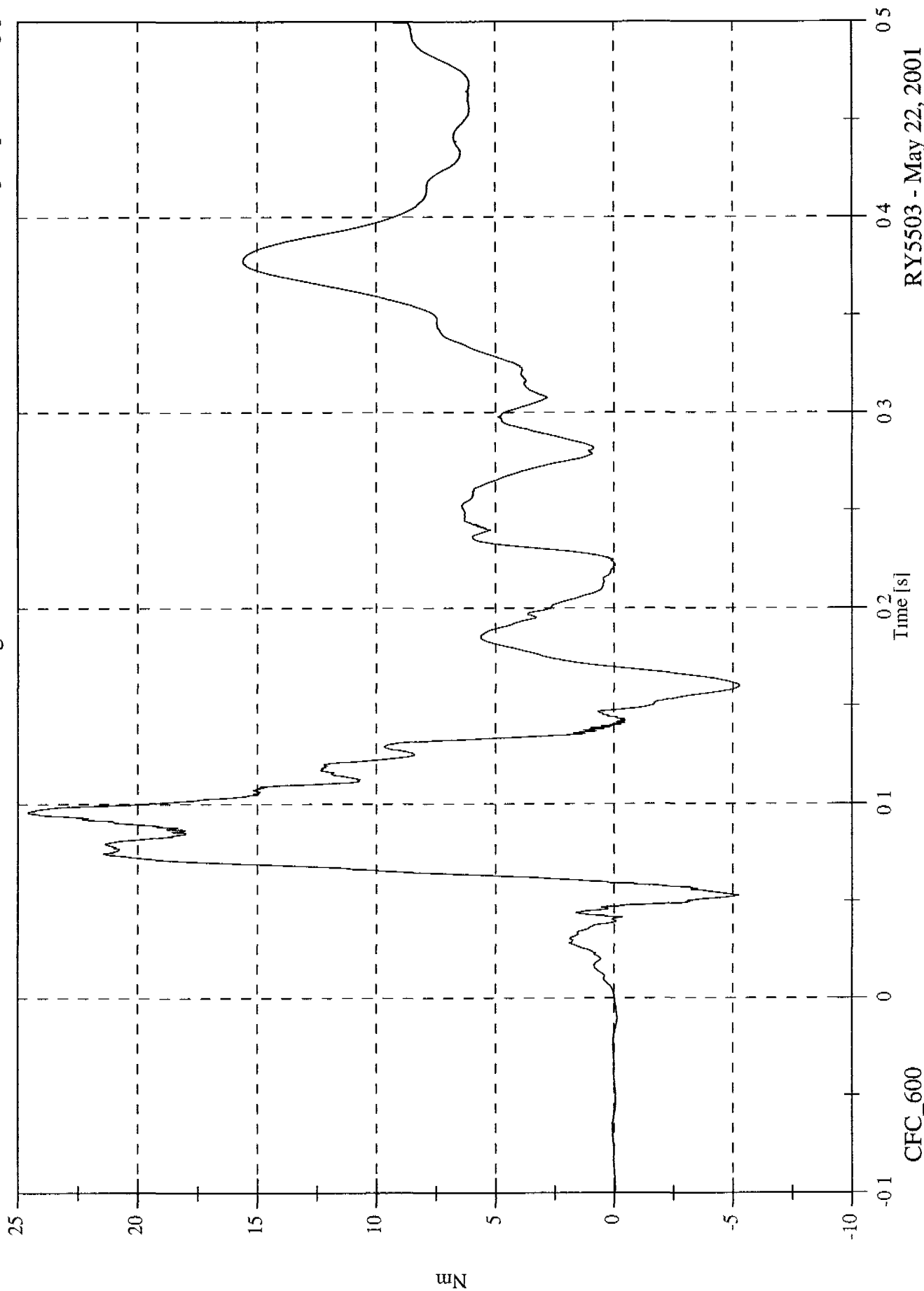
P1 Right Femur My

Max: 70.4 [Nm] at 0.117 [s]
Min: -7.1 [Nm] at 0.149 [s]



RY5503 - May 22, 2001

P1 Right Femur Mz



CFC_600

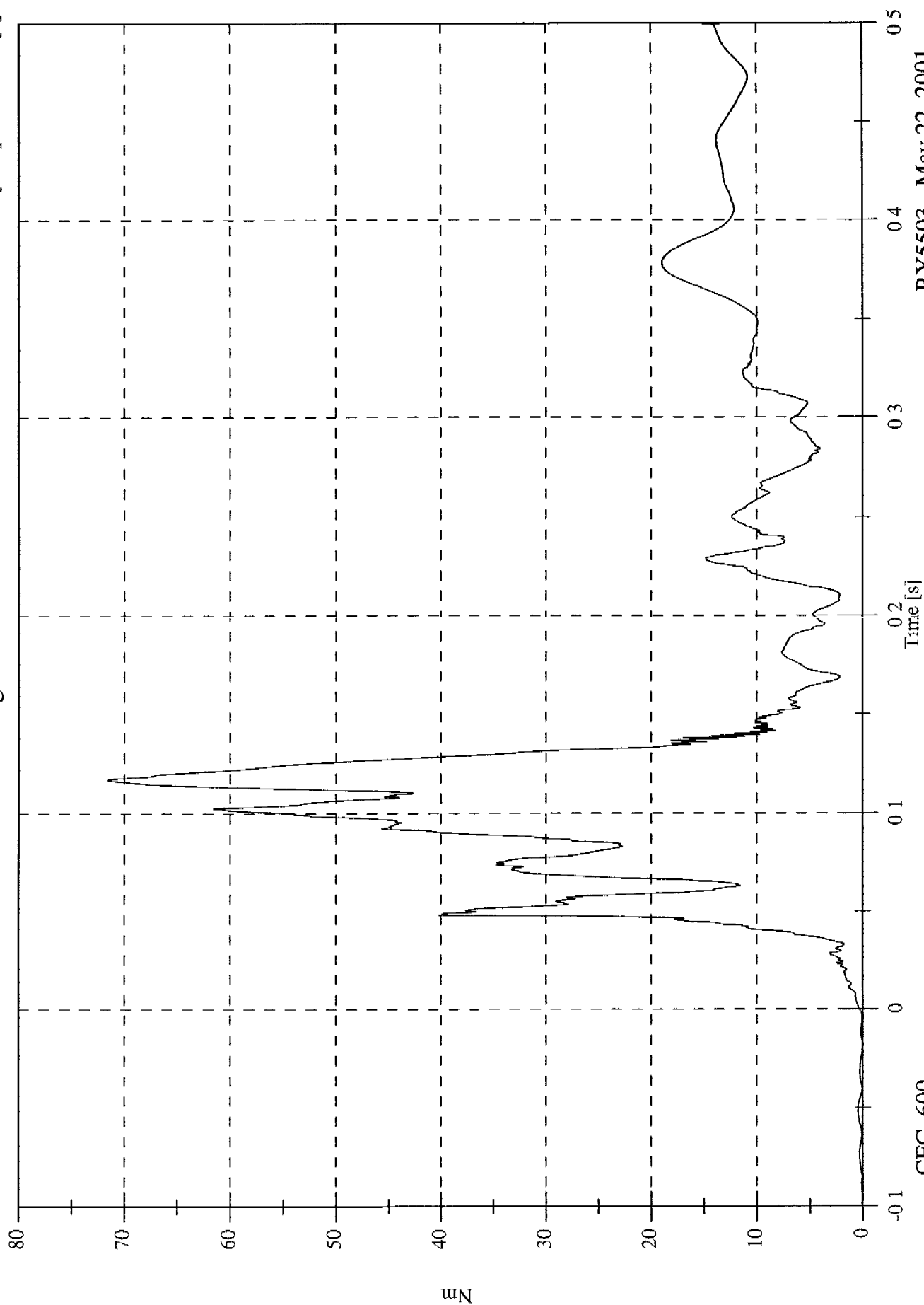
Time [s]

RY5503 - May 22, 2001

40% Frontal Offset Test # 6

Max: 71.6 [Nm] at 0.117 [s]
Min: 0.0 [Nm] at -0.100 [s]

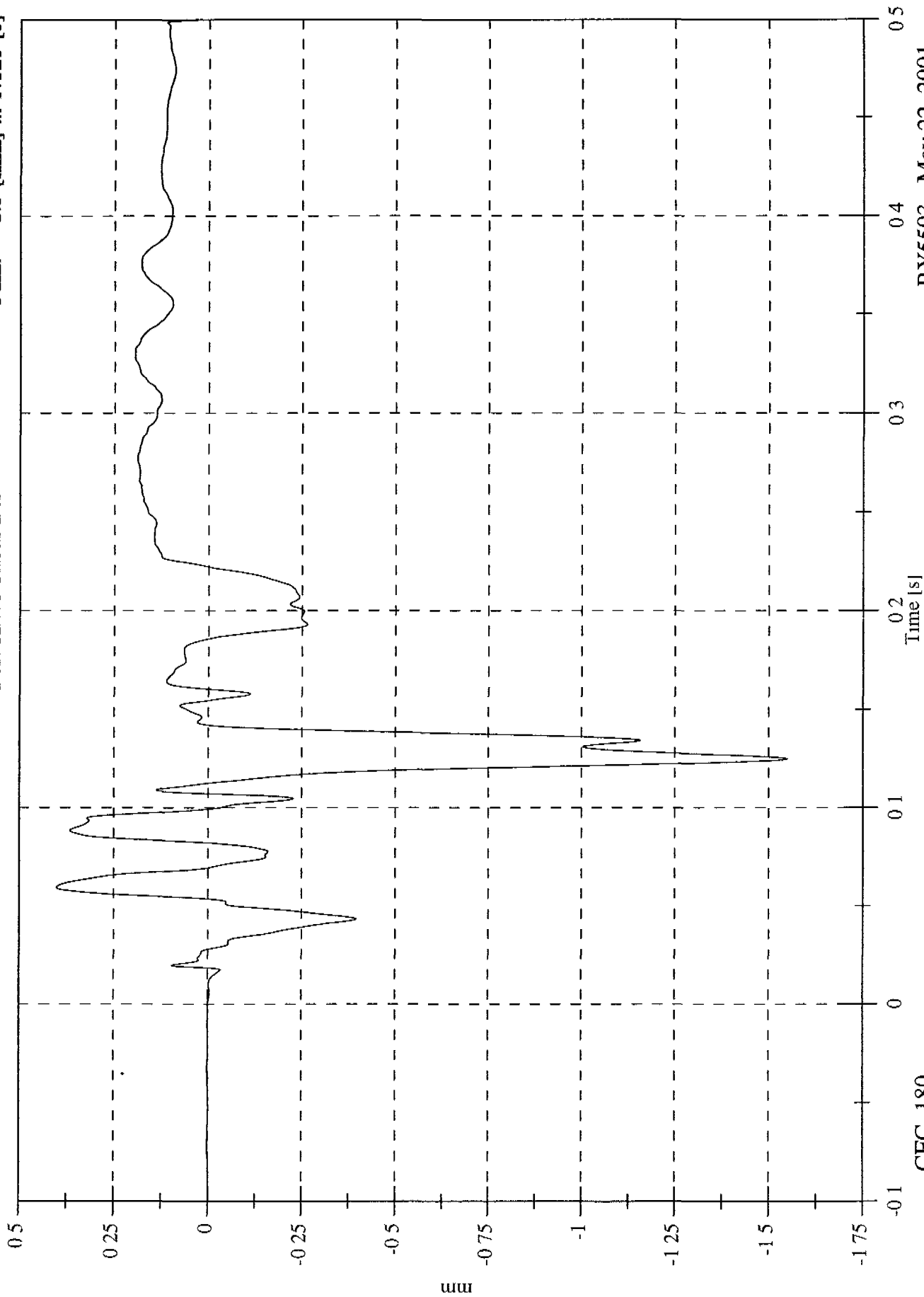
P1 Right Femur M Resultant



RY5503 - May 22, 2001

Max: 0.4 [mm] at 0.059 [s]
 Min: -1.5 [mm] at 0.125 [s]

P1 Left Knee Shear Dx



CFC_180

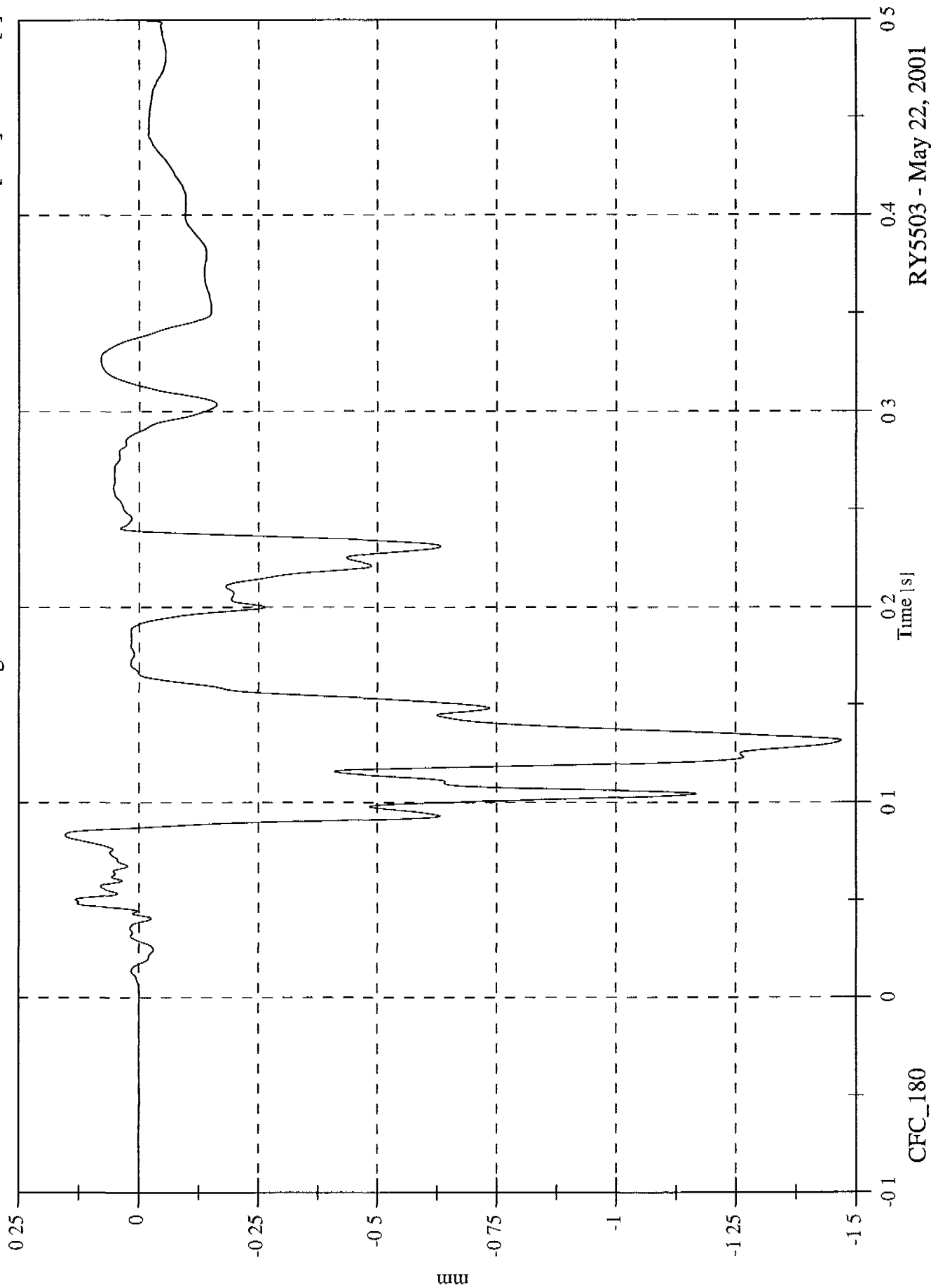
Time [s]

RY5503 - May 22, 2001

40% Frontal Offset Test # 6

P1 Right Knee Shear Dx

Max: 0.2 [mm] at 0.083 [s]
Min: -1.5 [mm] at 0.131 [s]

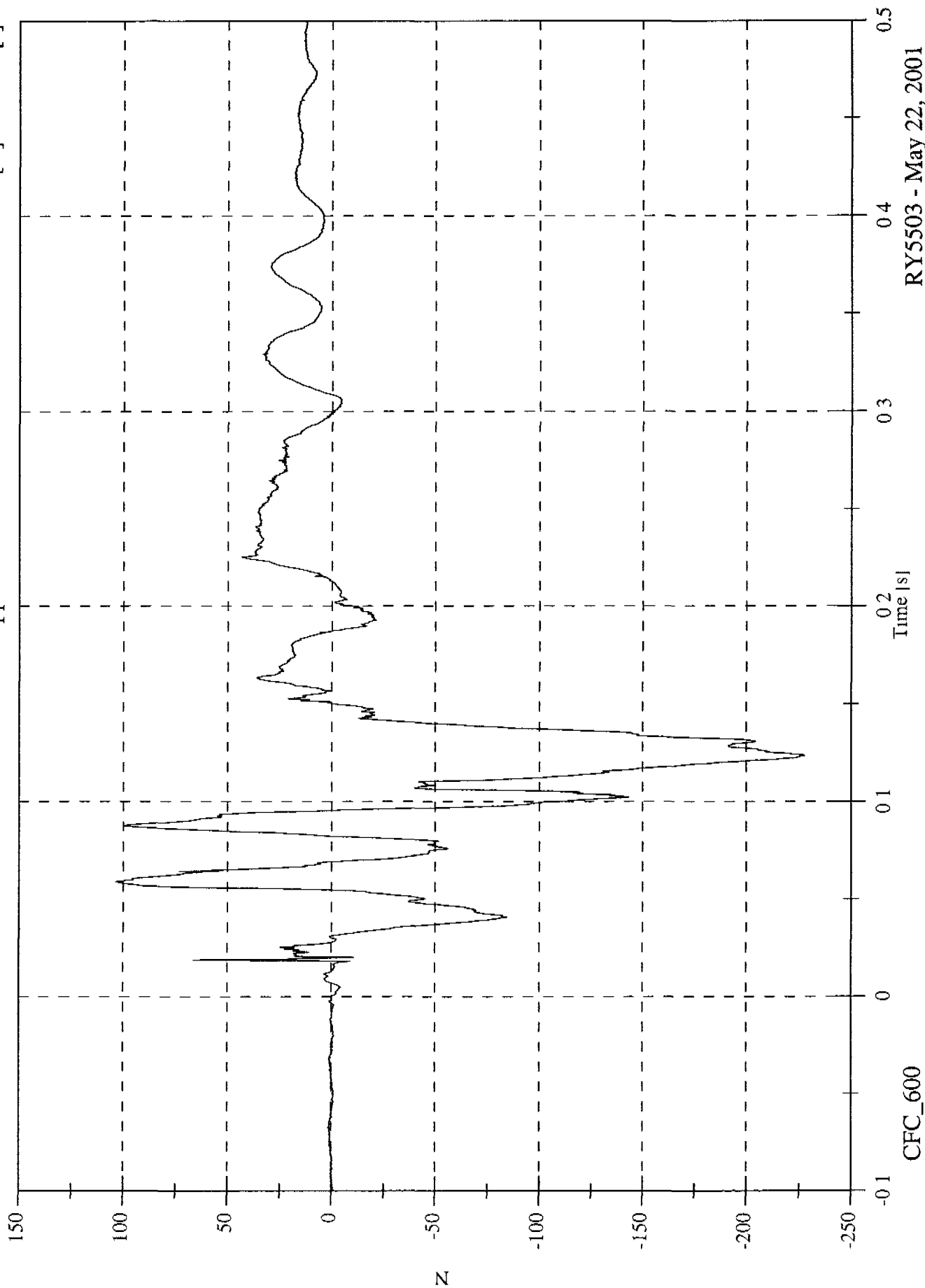


RY5503 - May 22, 2001

40% Frontal Offset Test # 6

Max: 103.6 [N] at 0.059 [s]
Min: -227.7 [N] at 0.123 [s]

P1 Left Upper Tibia Fx

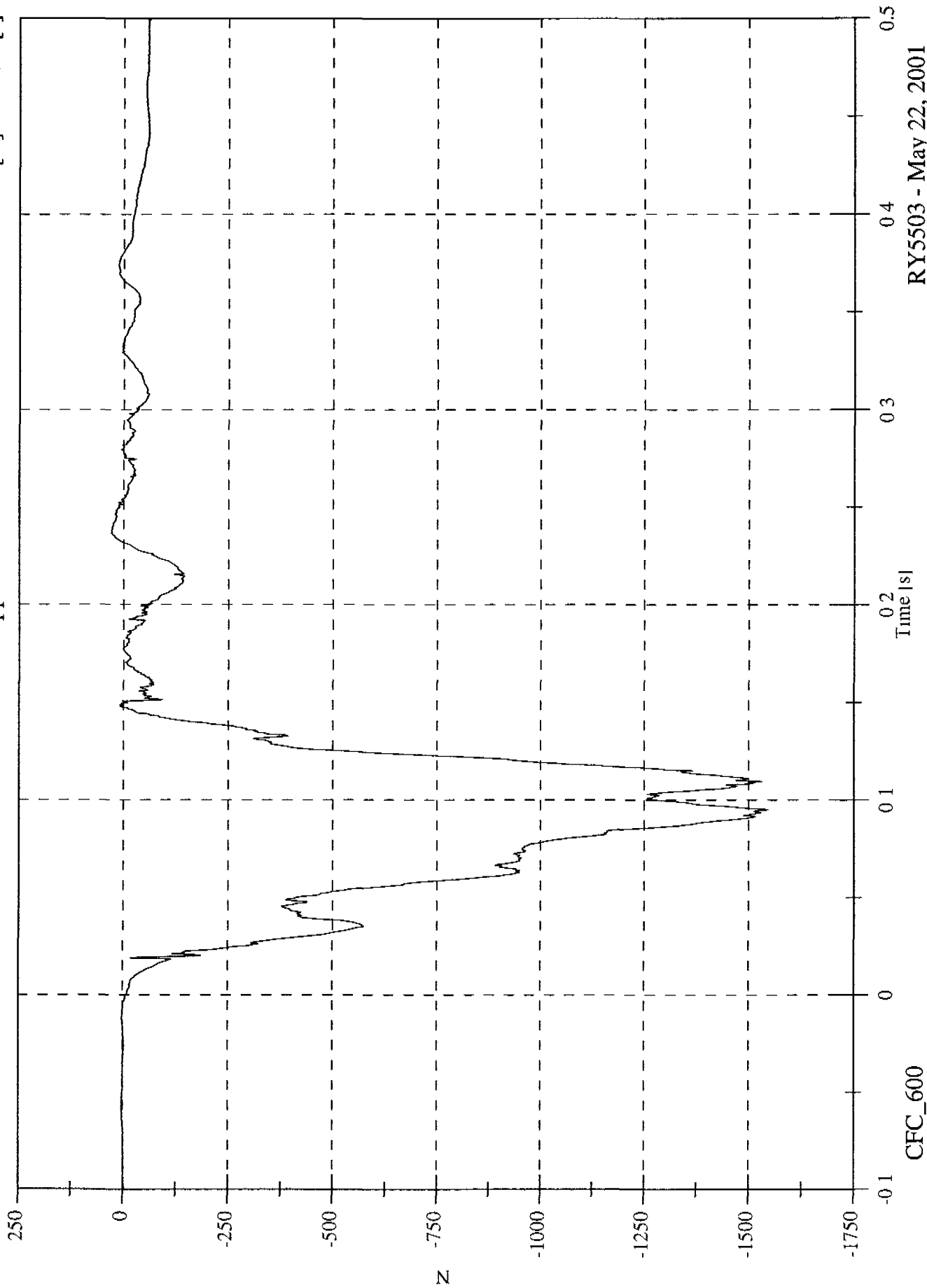


RY5503 - May 22, 2001

40% Frontal Offset Test # 6

Max: 29.7 [N] at 0.236 [s]
Min: -1545.8 [N] at 0.095 [s]

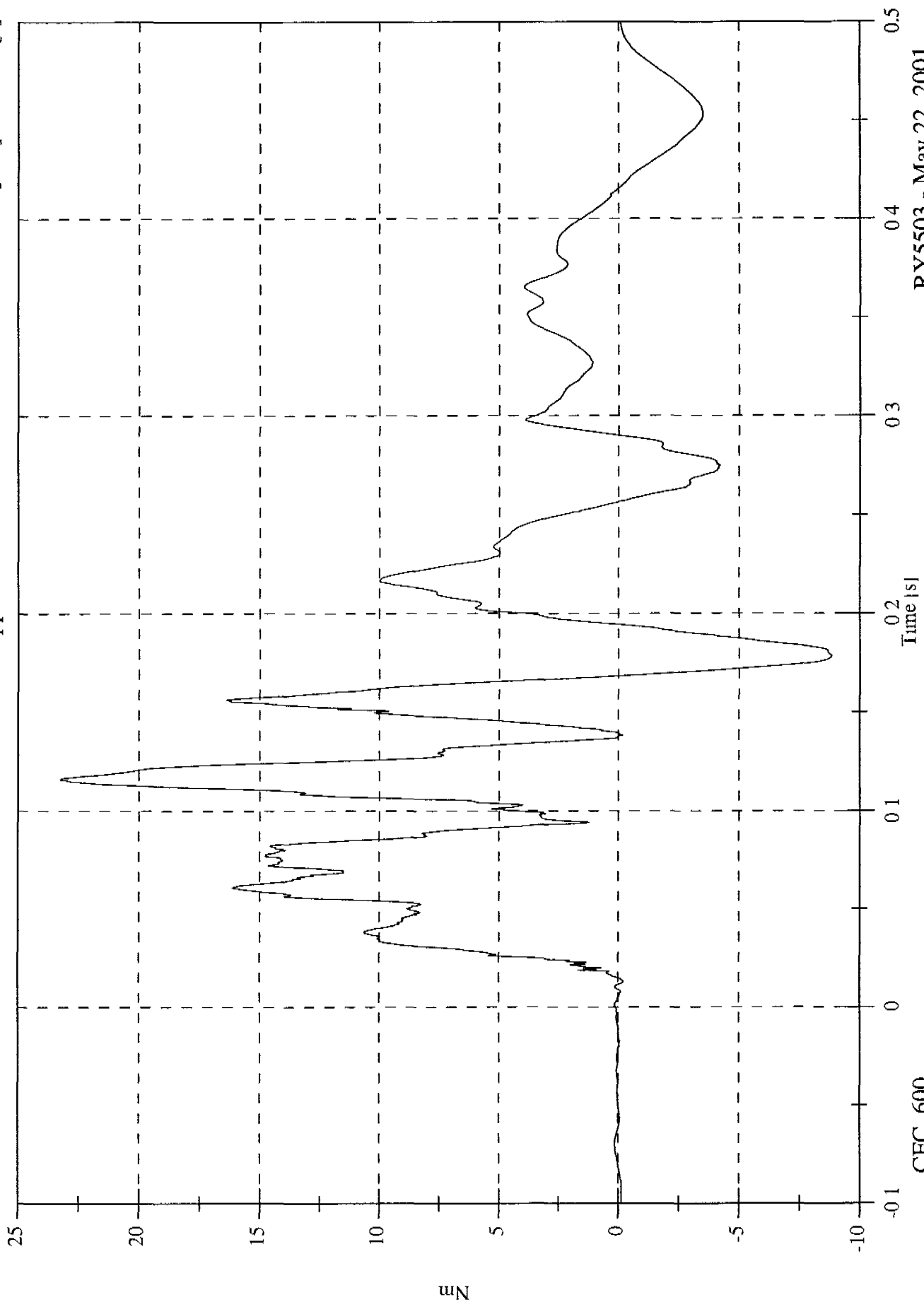
P1 Left Upper Tibia Fz



RY5503 - May 22, 2001

Max: 23.2 [Nm] at 0.116 [s]
 Min: -8.8 [Nm] at 0.178 [s]

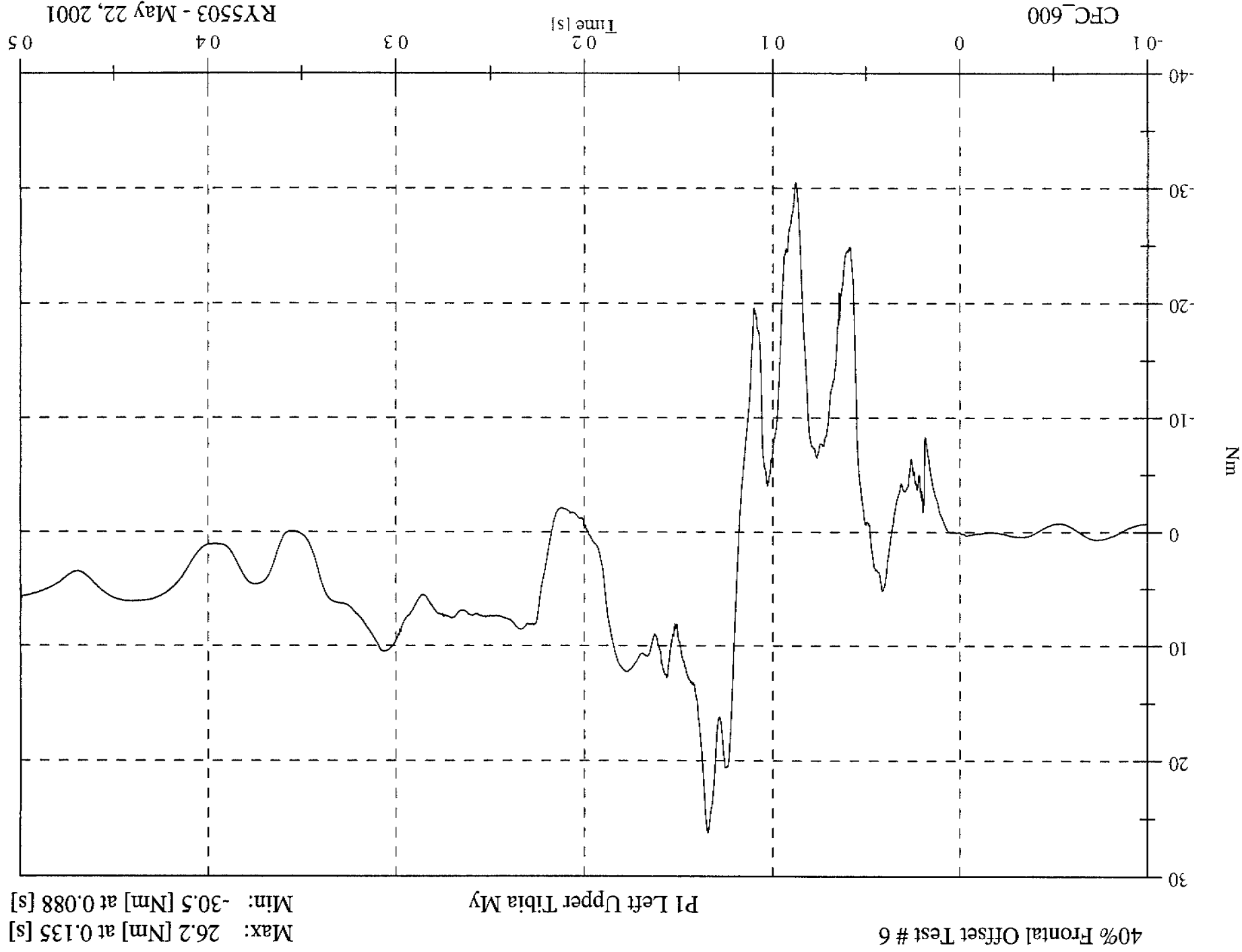
P1 Left Upper Tibia Mx



CFC_600

Time [s]

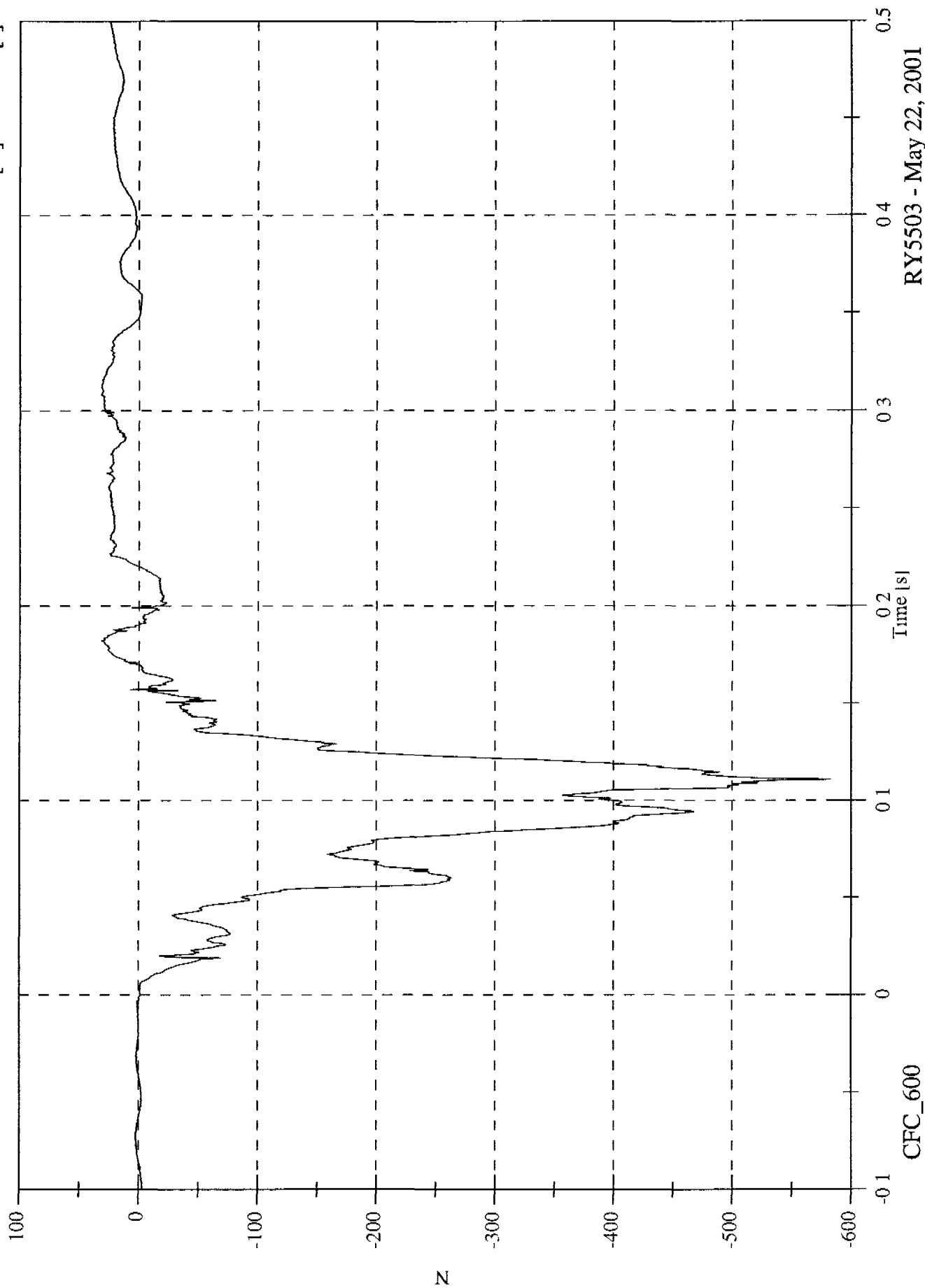
RY5503 - May 22, 2001



40% Frontal Offset Test # 6

Max: 32.0 [N] at 0.308 [s]
Min: -582.4 [N] at 0.111 [s]

P1 Left Lower Tibia Fx



CFC_600

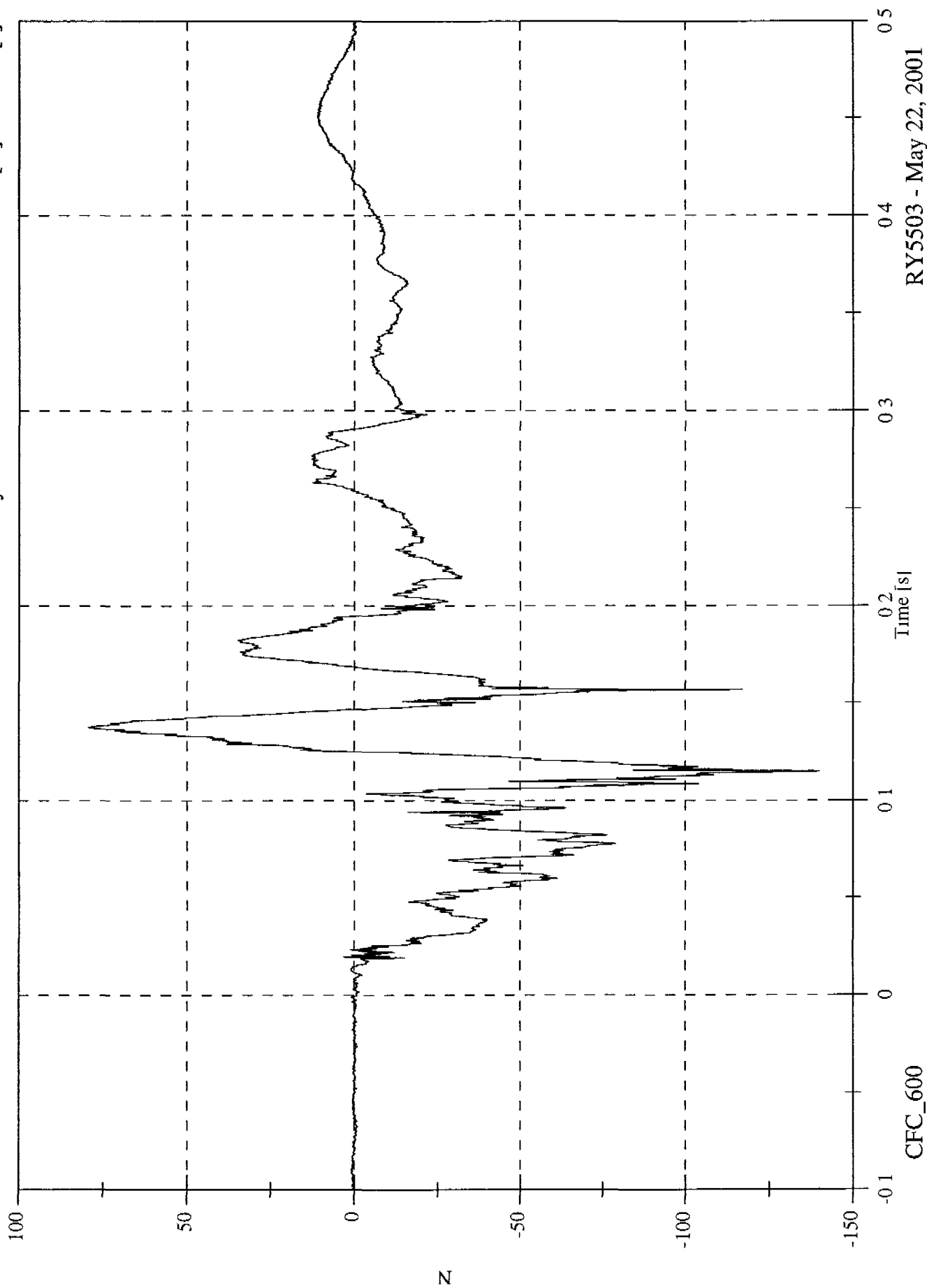
Time [s]

RY5503 - May 22, 2001

40% Frontal Offset Test # 6

Max: 79.2 [N] at 0.138 [s]
Min: -139.9 [N] at 0.115 [s]

P1 Left Lower Tibia Fy

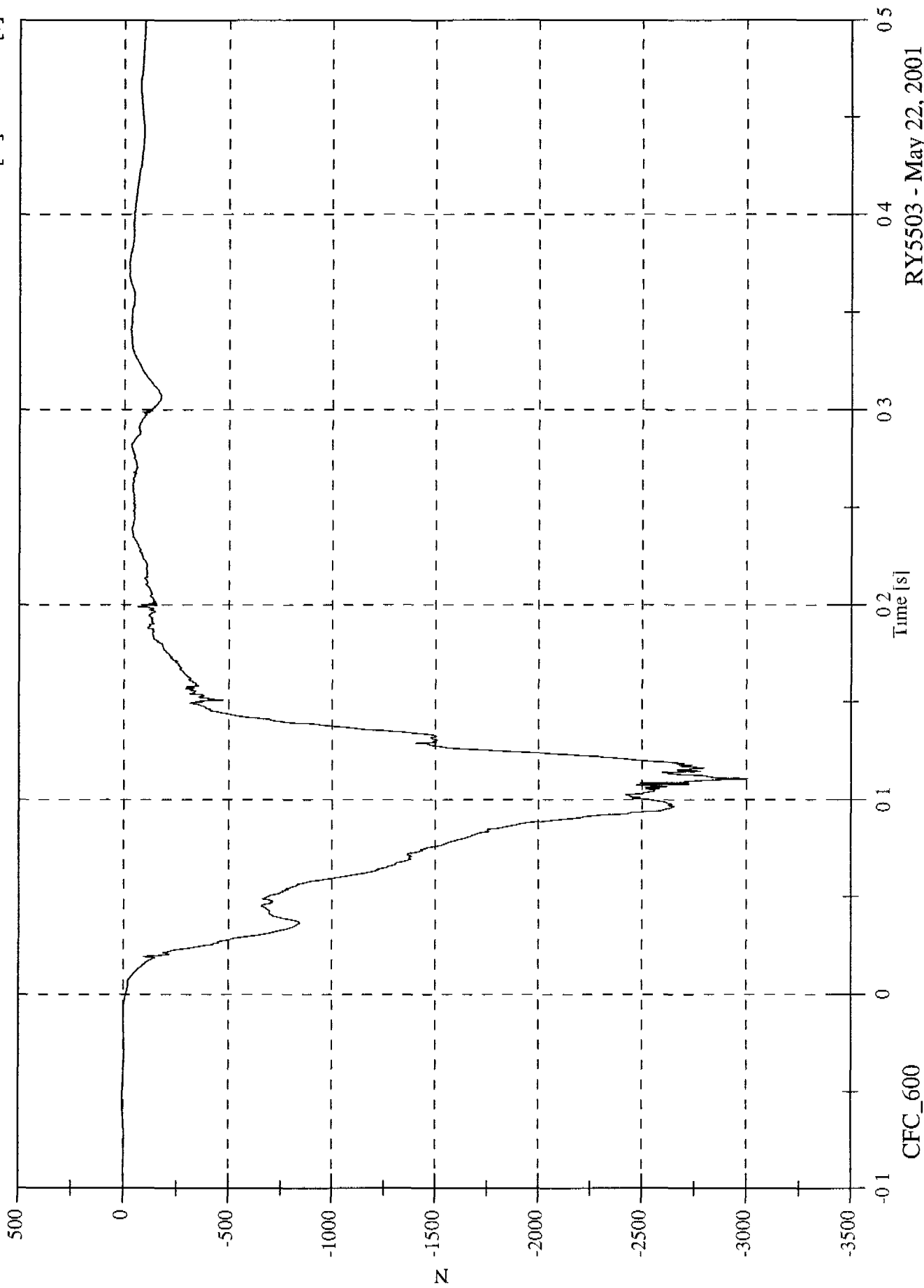


RY5503 - May 22, 2001

40% Frontal Offset Test # 6

Max: 5.4 [N] at -0.054 [s]
Min: -3006.4 [N] at 0.111 [s]

P1 Left Lower Tibia Fz



CFC_600

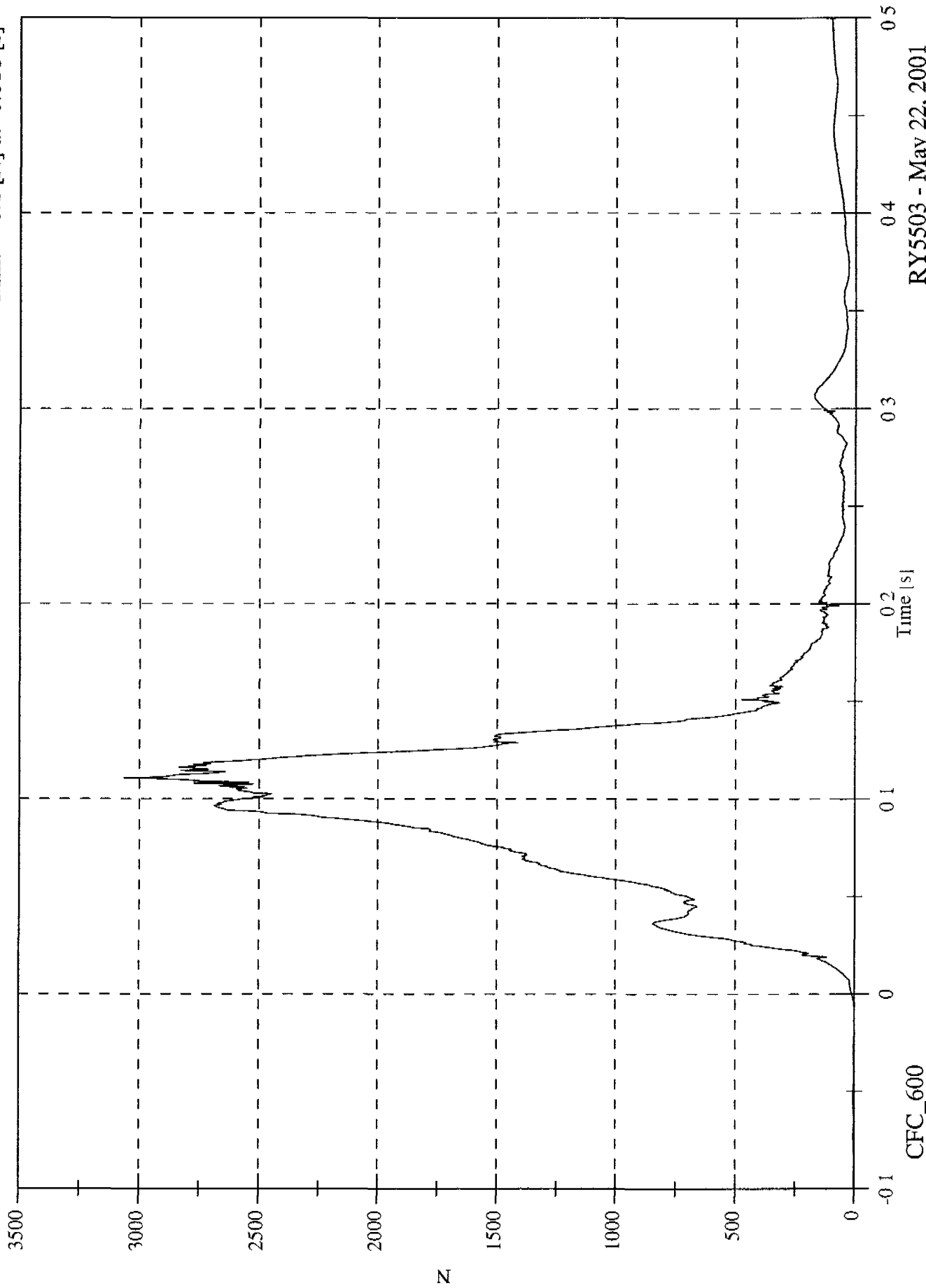
Time [s]

RY5503 - May 22, 2001

40% Frontal Offset Test # 6

Max: 3063.3 [N] at 0.111 [s]
 Min: 0.1 [N] at -0.016 [s]

P1 Left Lower Tibia F Resultant

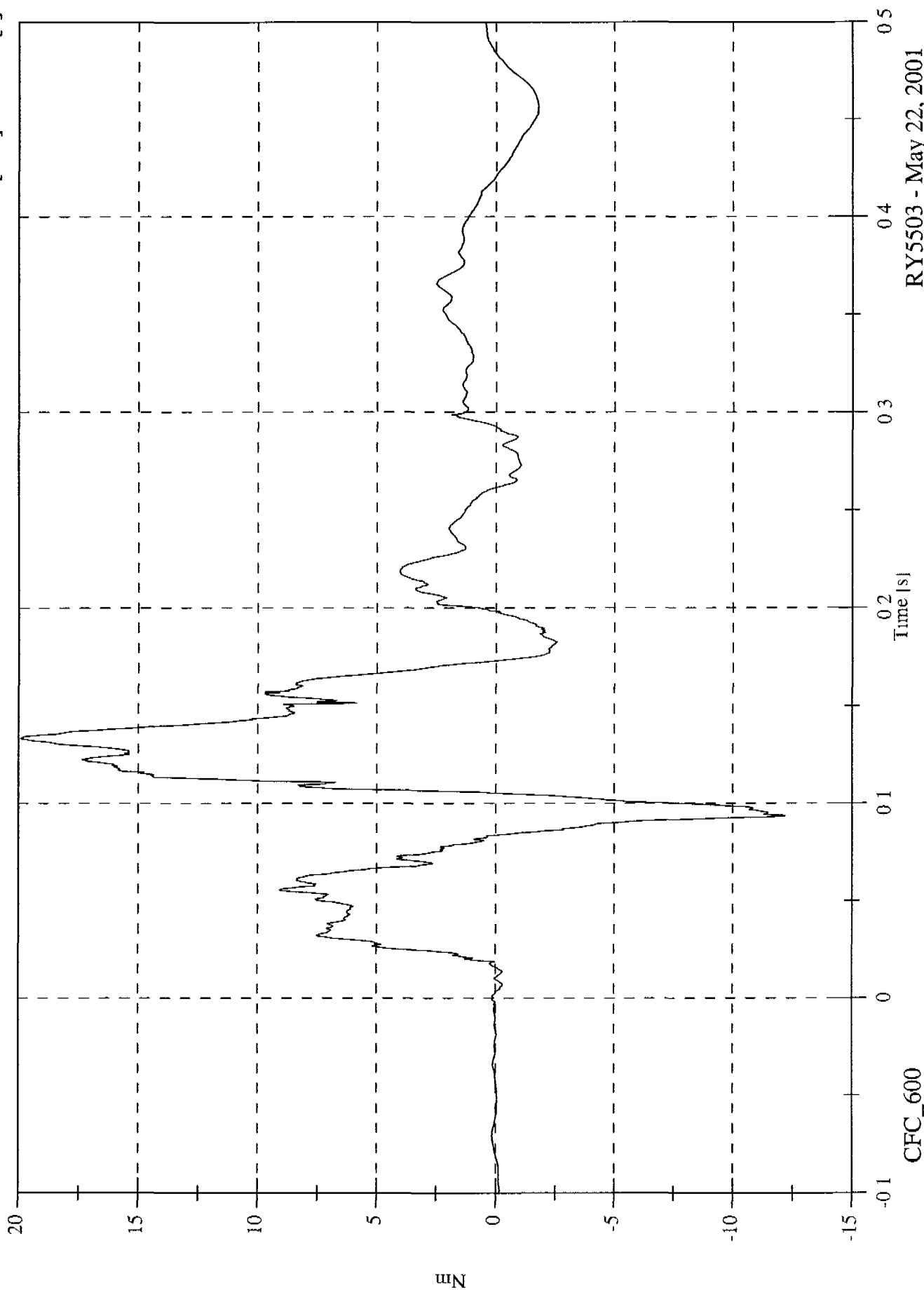


RY5503 - May 22, 2001

40% Frontal Offset Test # 6

Max: 19.9 [Nm] at 0.133 [s]
Min: -12.2 [Nm] at 0.093 [s]

P1 Left Lower Tibia Mx

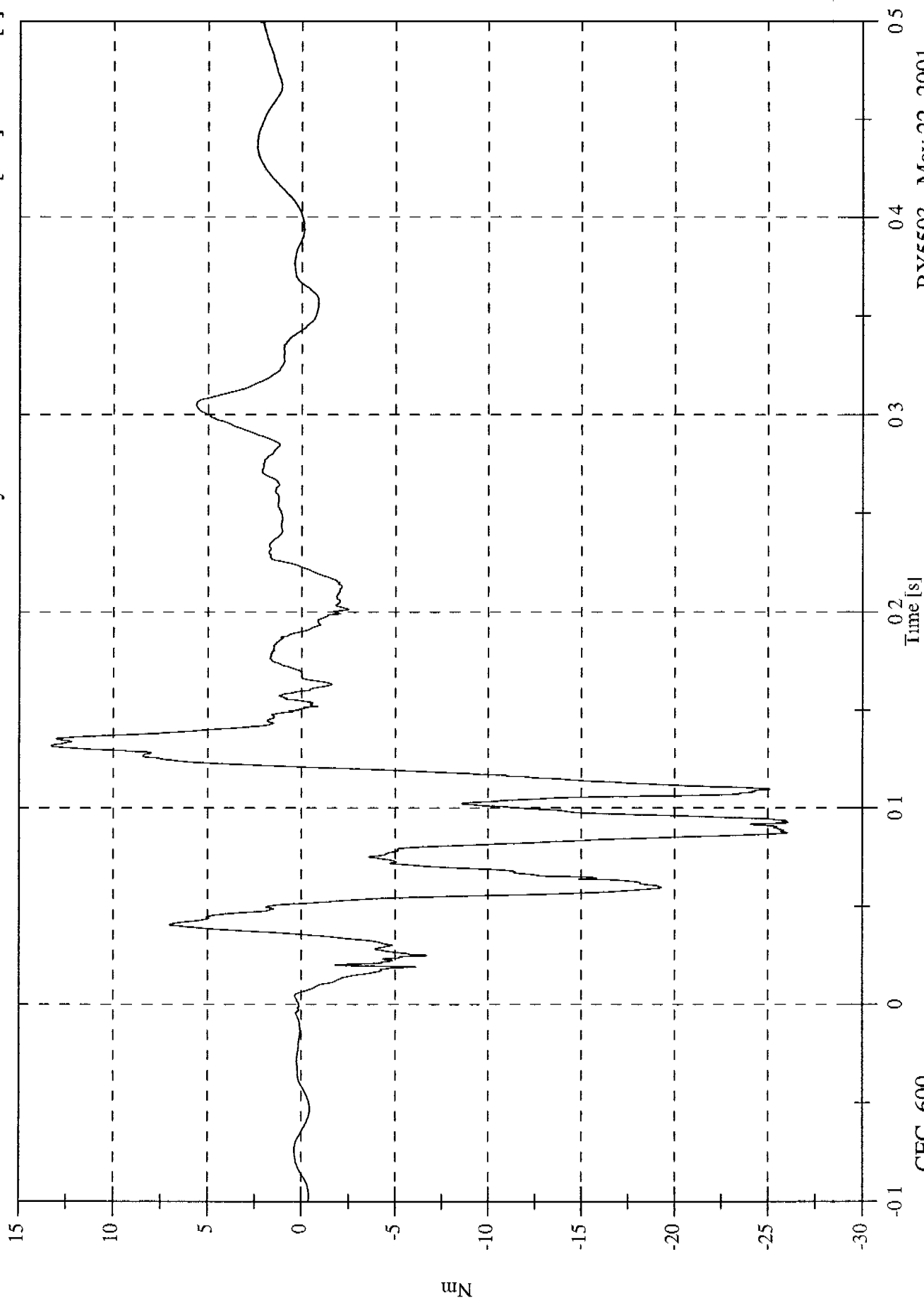


RY5503 - May 22, 2001

40% Frontal Offset Test # 6

Max: 13.3 [Nm] at 0.132 [s]
Min: -26.1 [Nm] at 0.093 [s]

P1 Left Lower Tibia My



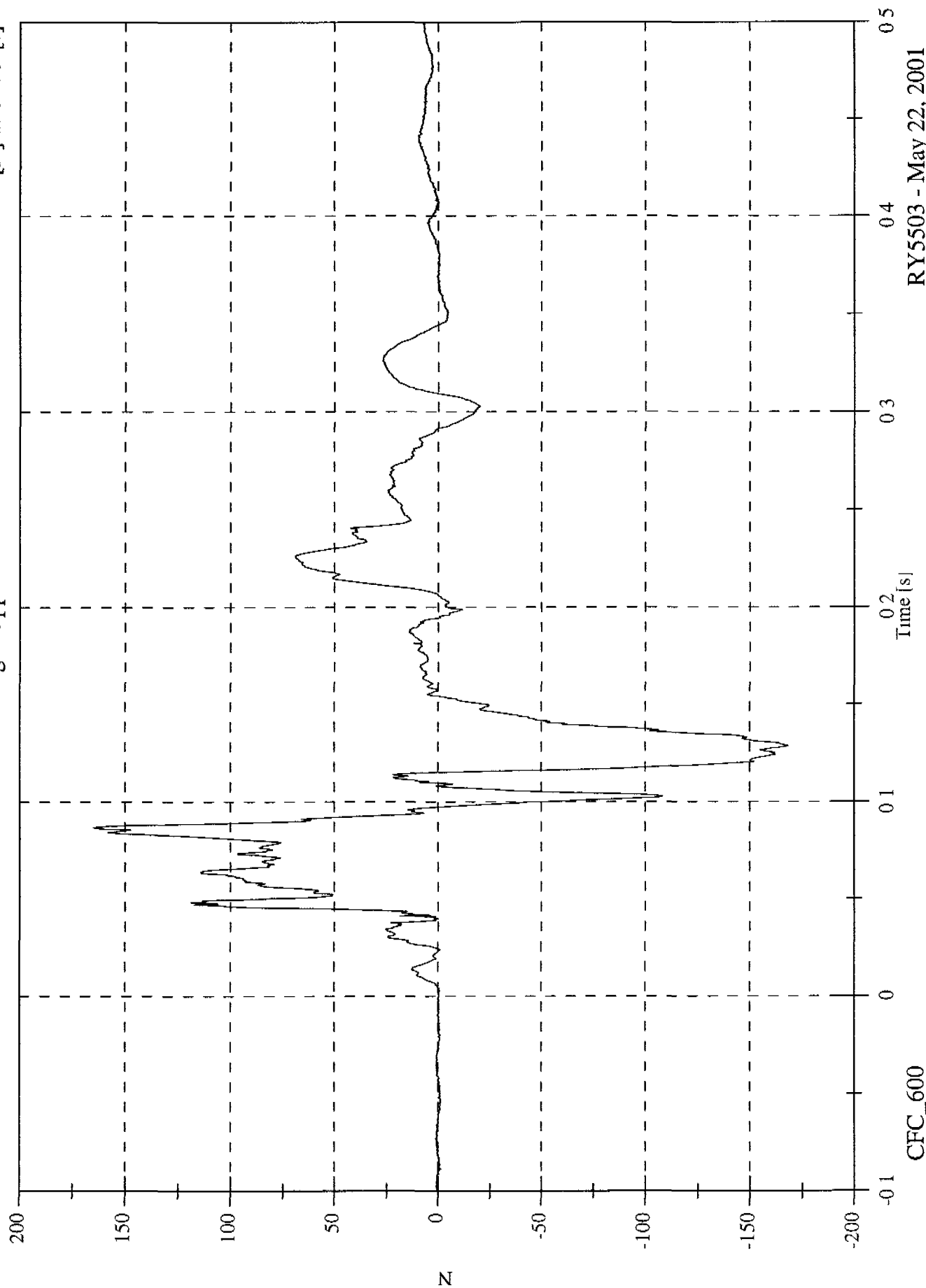
RY5503 - May 22, 2001

40% Frontal Offset Test # 6

Max: 164.8 [N] at 0.087 [s]

Min: -168.4 [N] at 0.129 [s]

P1 Right Upper Tibia Fx



CFC_600

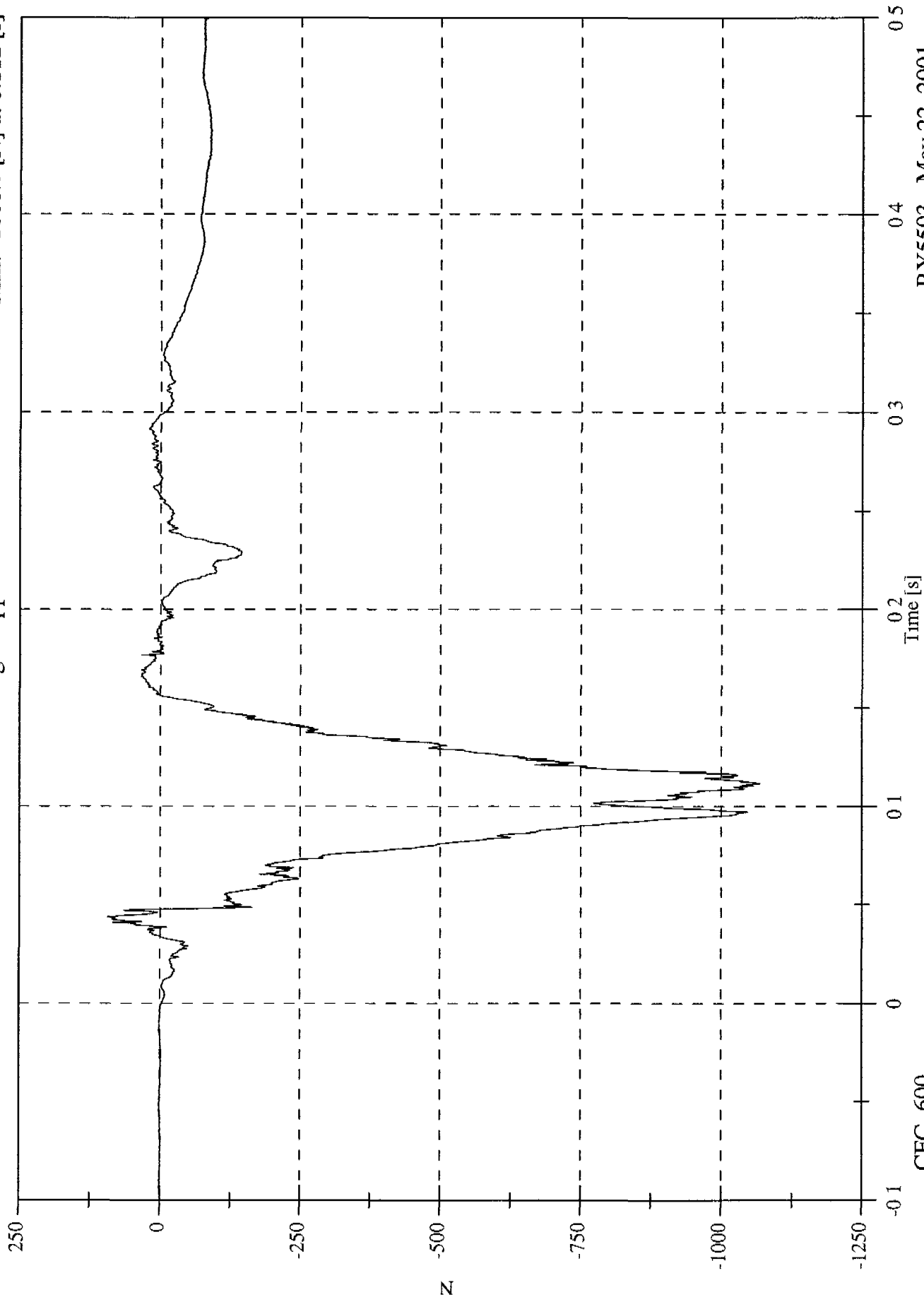
Time [s]

RY5503 - May 22, 2001

40% Frontal Offset Test # 6

Max: 93.1 [N] at 0.044 [s]
 Min: -1068.0 [N] at 0.112 [s]

P1 Right Upper Tibia Fz

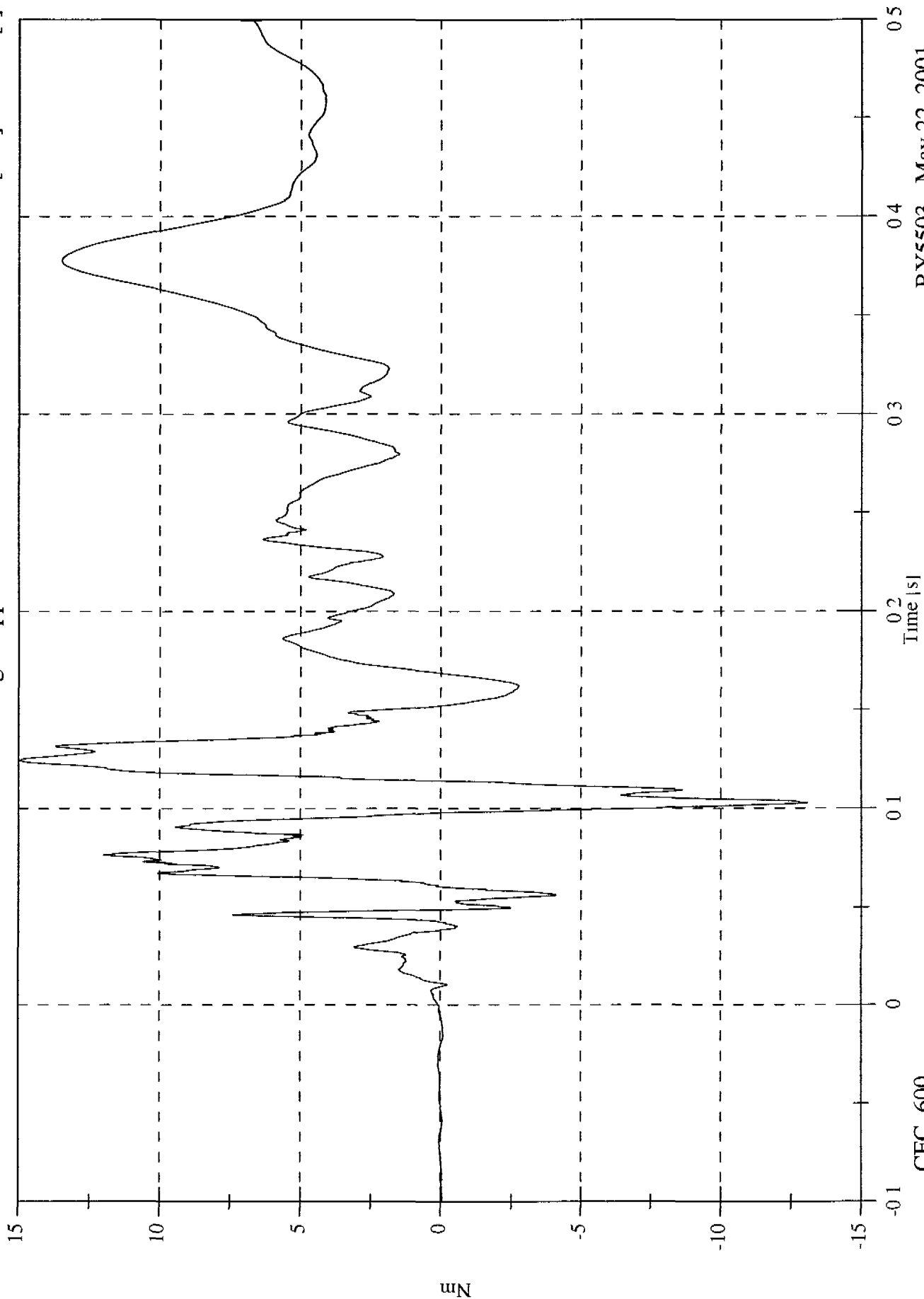


RY5503 - May 22, 2001

40% Frontal Offset Test # 6

Max: 15.0 [Nm] at 0.124 [s]
Min: -13.1 [Nm] at 0.103 [s]

P1 Right Upper Tibia Mx



CFC_600

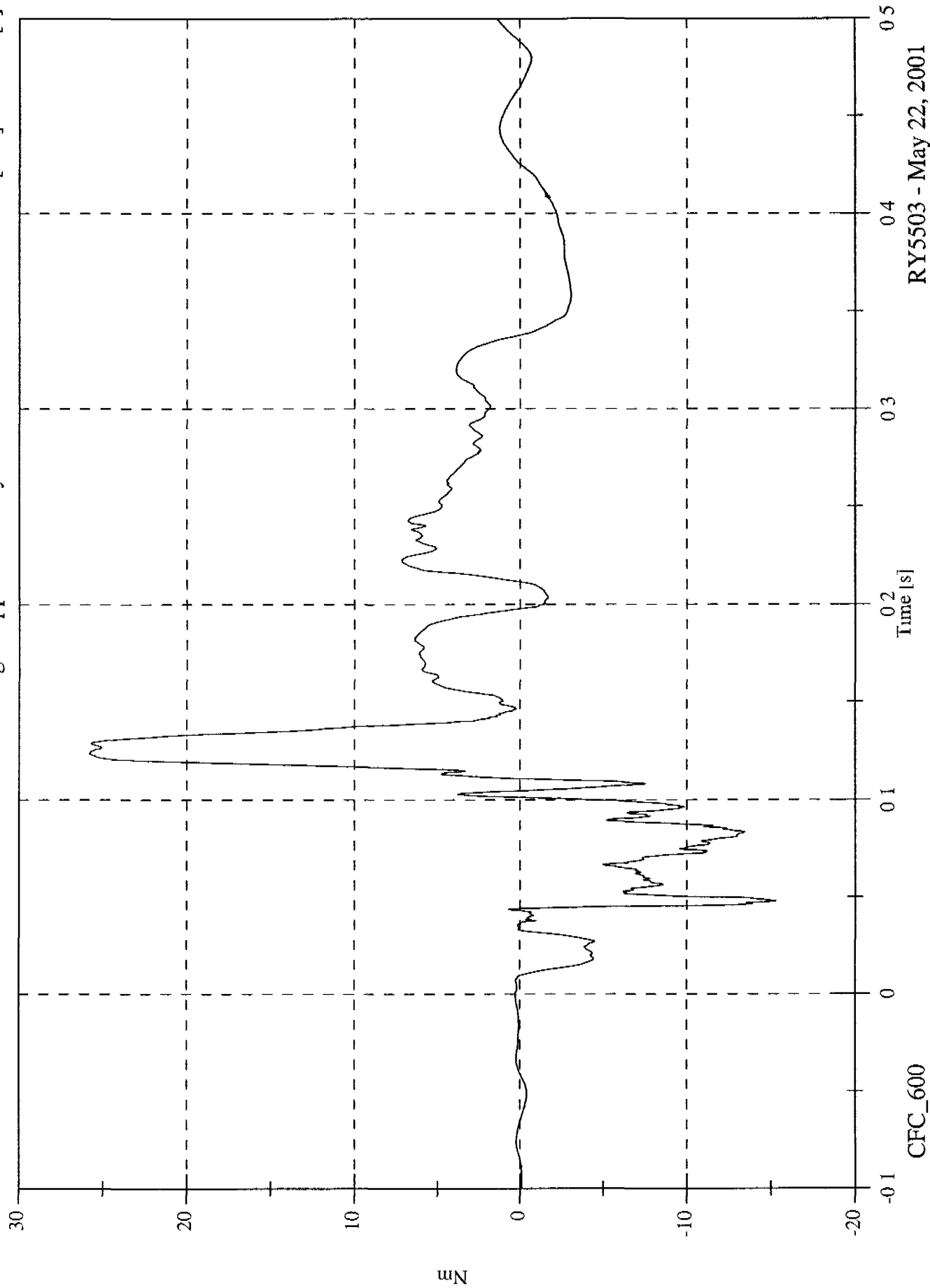
Time [s]

RY5503 - May 22, 2001

40% Frontal Offset Test # 6

Max: 25.8 [Nm] at 0.123 [s]
Min: -15.3 [Nm] at 0.048 [s]

P1 Right Upper Tibia My

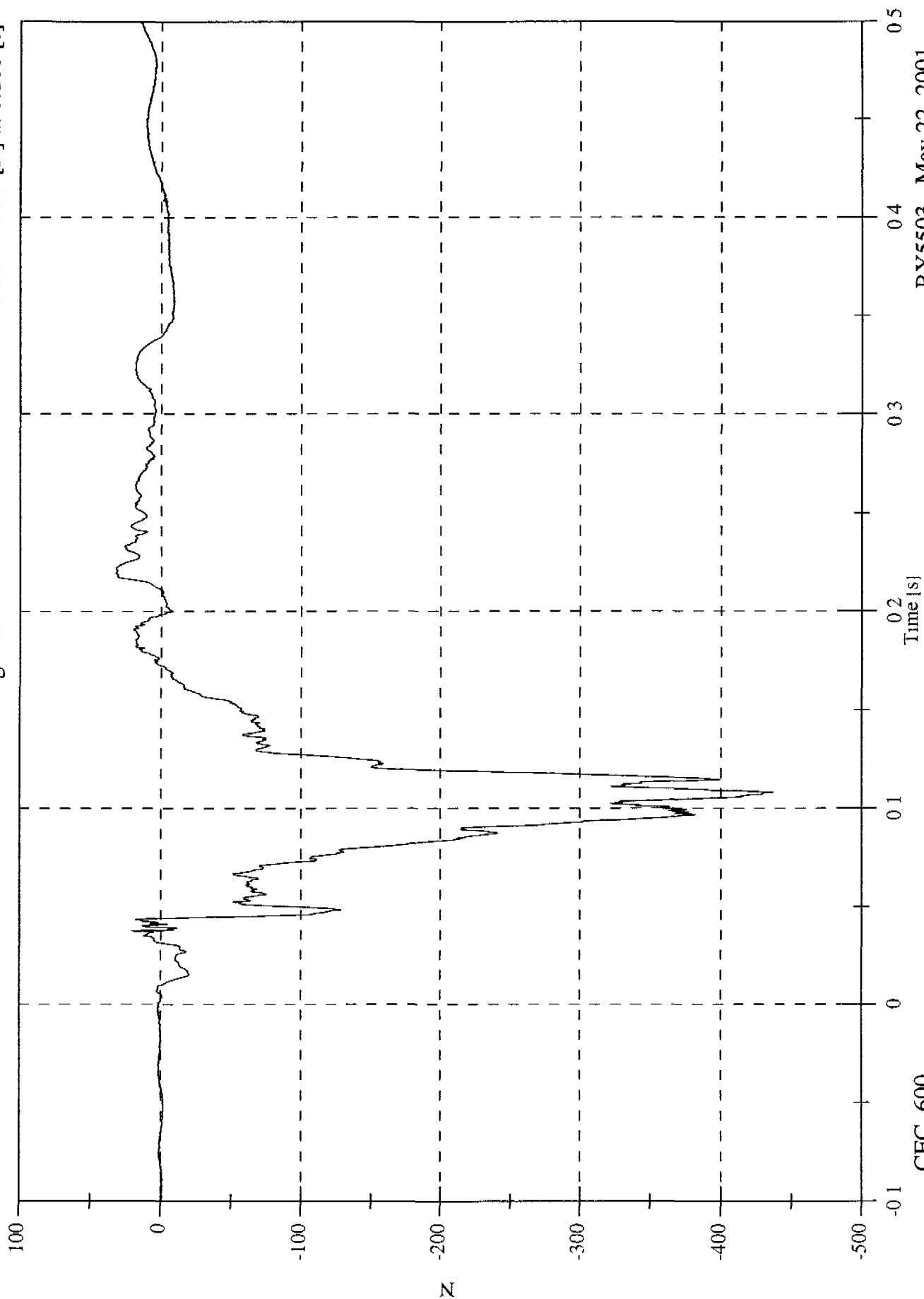


RY5503 - May 22, 2001

40% Frontal Offset Test # 6

Max: 32.1 [N] at 0.219 [s]
 Min: -436.9 [N] at 0.108 [s]

P1 Right Lower Tibia Fx



CFC_600

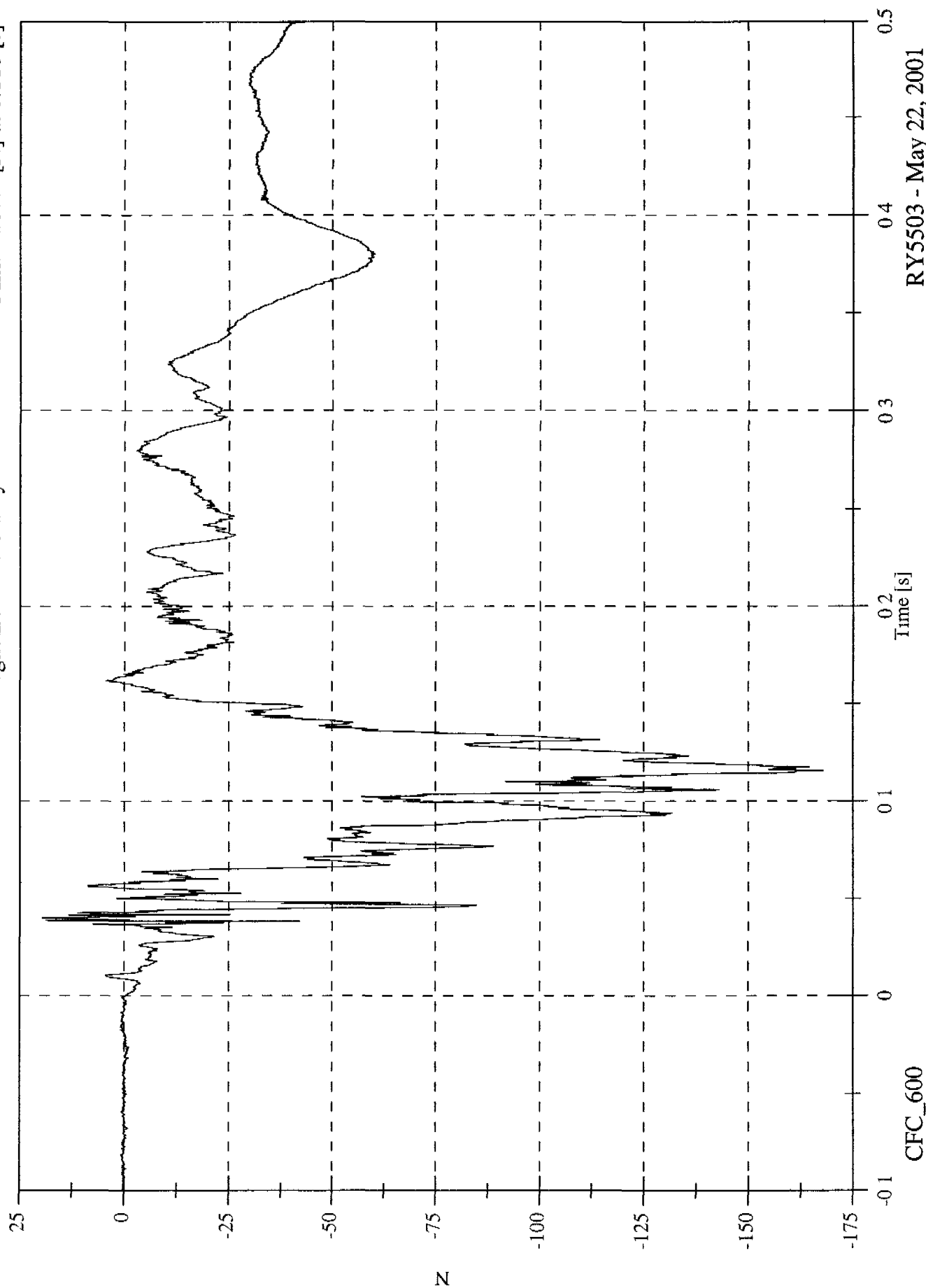
Time [s]

RY5503 - May 22, 2001

40% Frontal Offset Test # 6

P1 R1ght Lower Tibia Fy

Max: 19.7 [N] at 0.040 [s]
Min: -167.8 [N] at 0.116 [s]

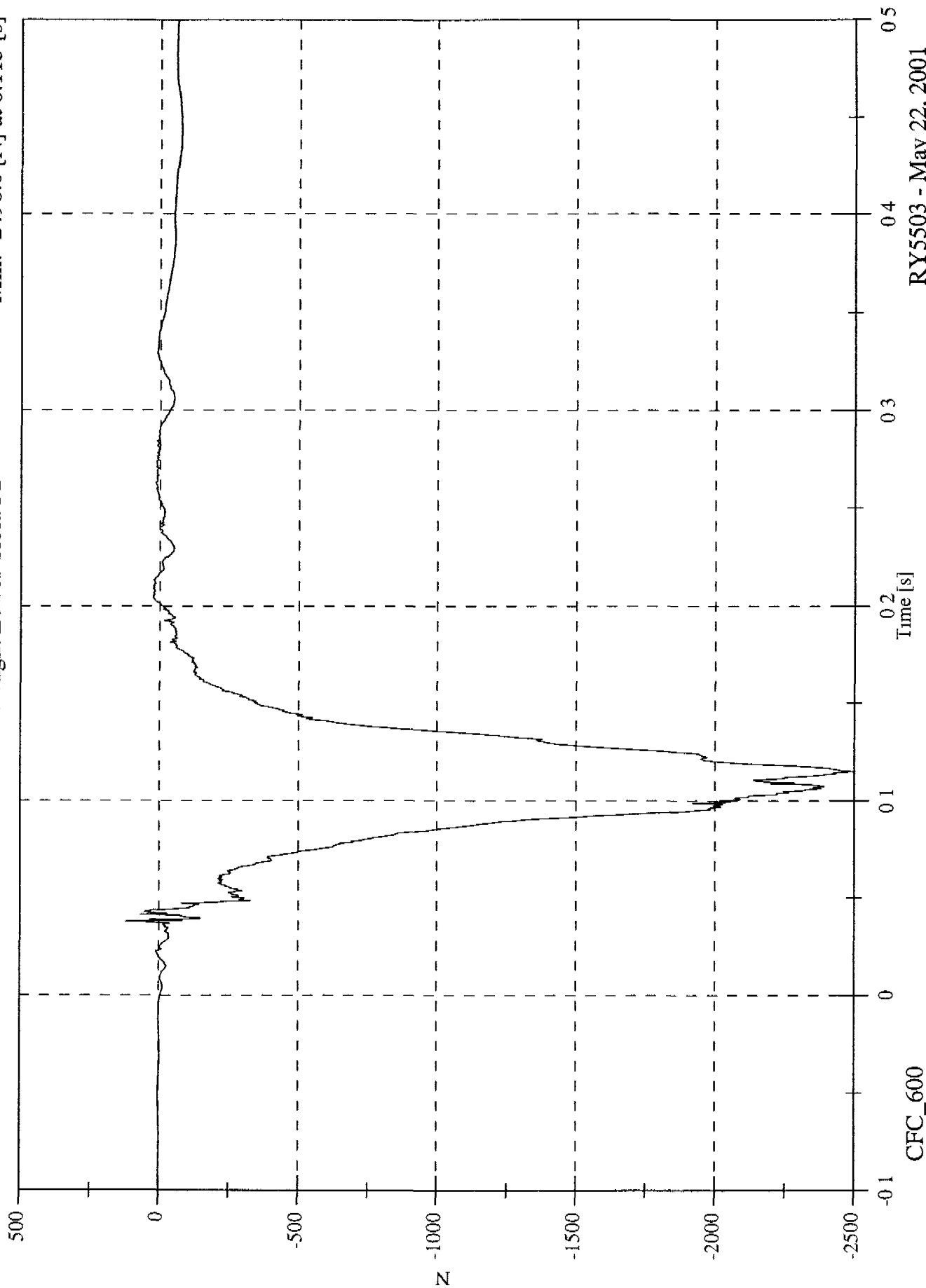


RY5503 - May 22, 2001

40% Frontal Offset Test # 6

Max: 117.9 [N] at 0.038 [s]
Min: -2498.0 [N] at 0.115 [s]

P1 Right Lower Tibia Fz



CFC_600

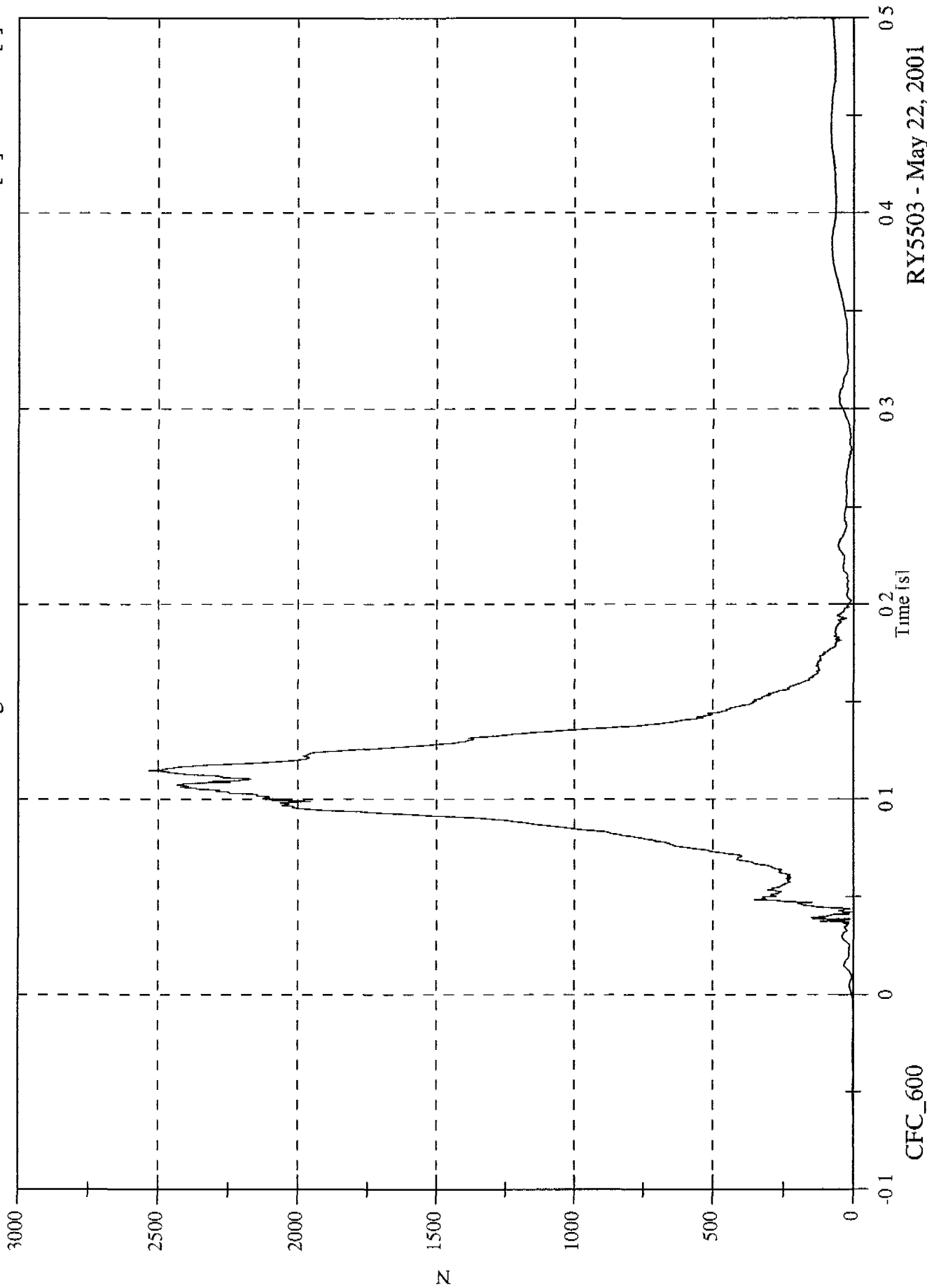
Time [s]

RY5503 - May 22, 2001

40% Frontal Offset Test # 6

P1 Right Lower Tibia F Resultant

Max: 2534.4 [N] at 0.115 [s]
Min: 0.1 [N] at -0.066 [s]

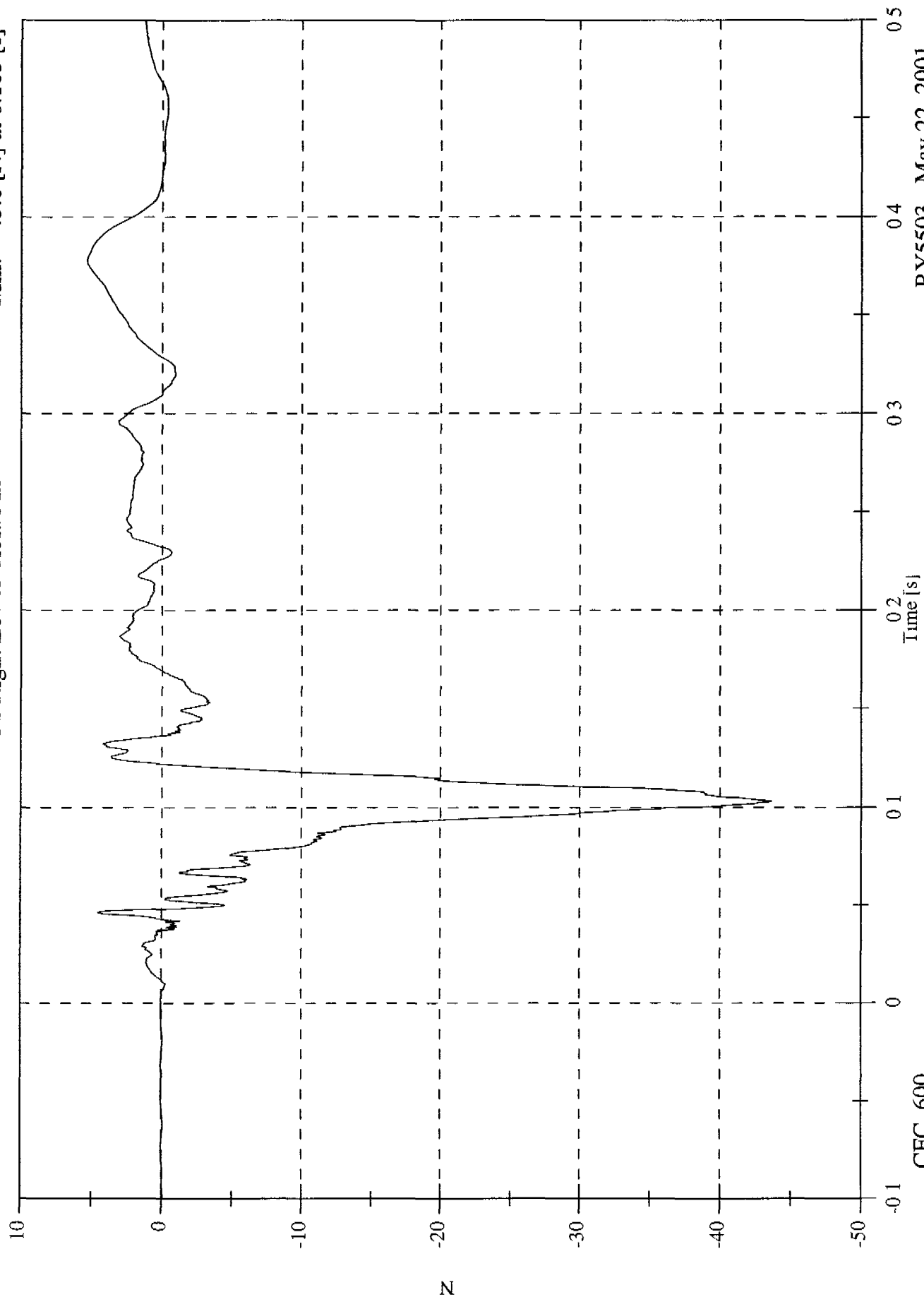


RY5503 - May 22, 2001

40% Frontal Offset Test # 6

Max: 5.3 [N] at 0.378 [s]
Min: -43.6 [N] at 0.103 [s]

P1 Right Lower Tibia Mx



CFC_600

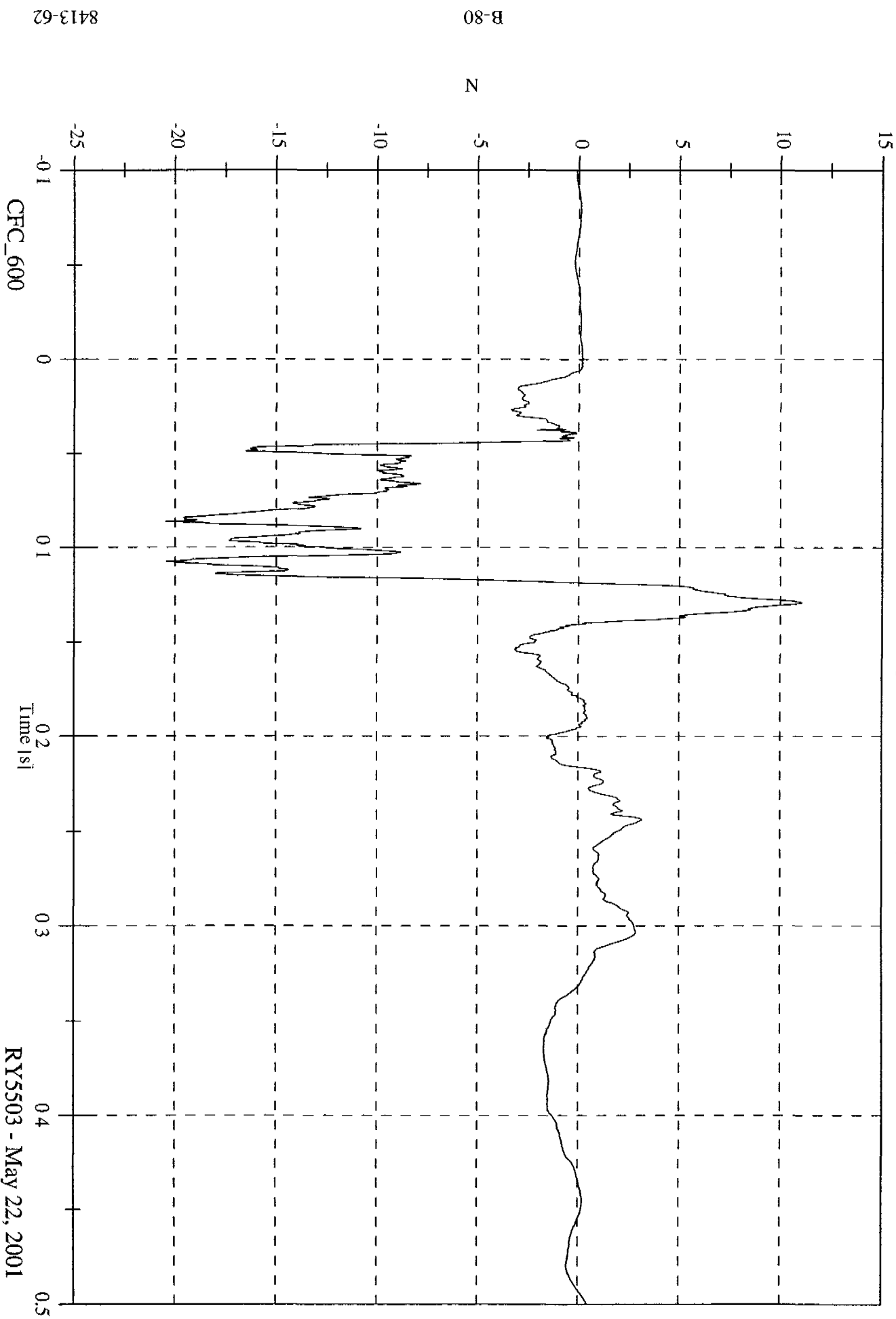
Time [s]

RY5503 - May 22, 2001

40% Frontal Offset Test # 6

P1 Right Lower Tibia My

Max: 11.1 [N] at 0.129 [s]
Min: -20.5 [N] at 0.086 [s]



B-80

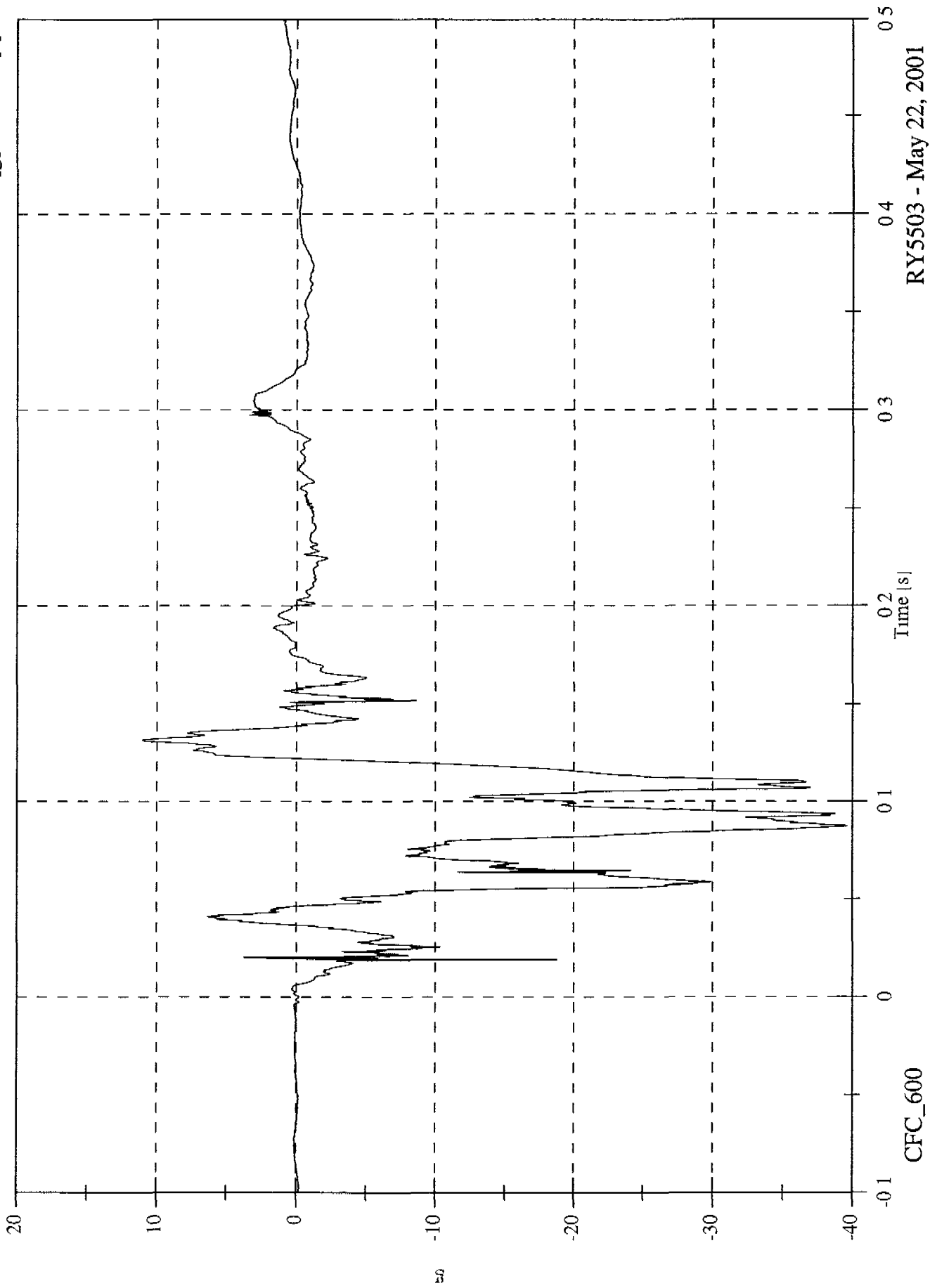
8413-62

RY5503 - May 22, 2001

40% Frontal Offset Test # 6

Max: 11.0 [g] at 0.131 [s]
Min: -39.6 [g] at 0.087 [s]

P1 Left Tibia Ax

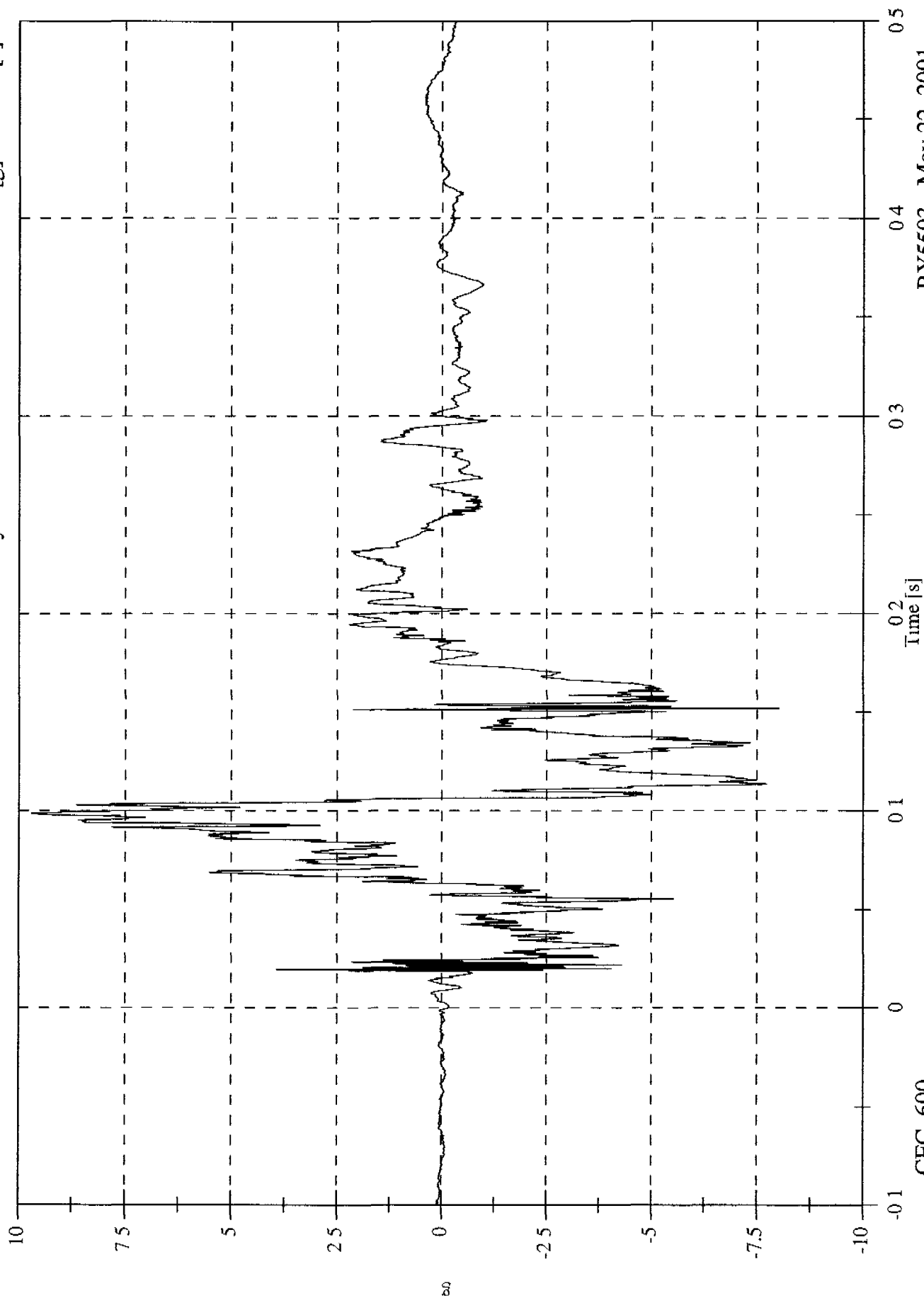


RY5503 - May 22, 2001

40% Frontal Offset Test # 6

Max: 9.7 [g] at 0.098 [s]
 Min: -8.0 [g] at 0.152 [s]

P1 Left Tibia Ay



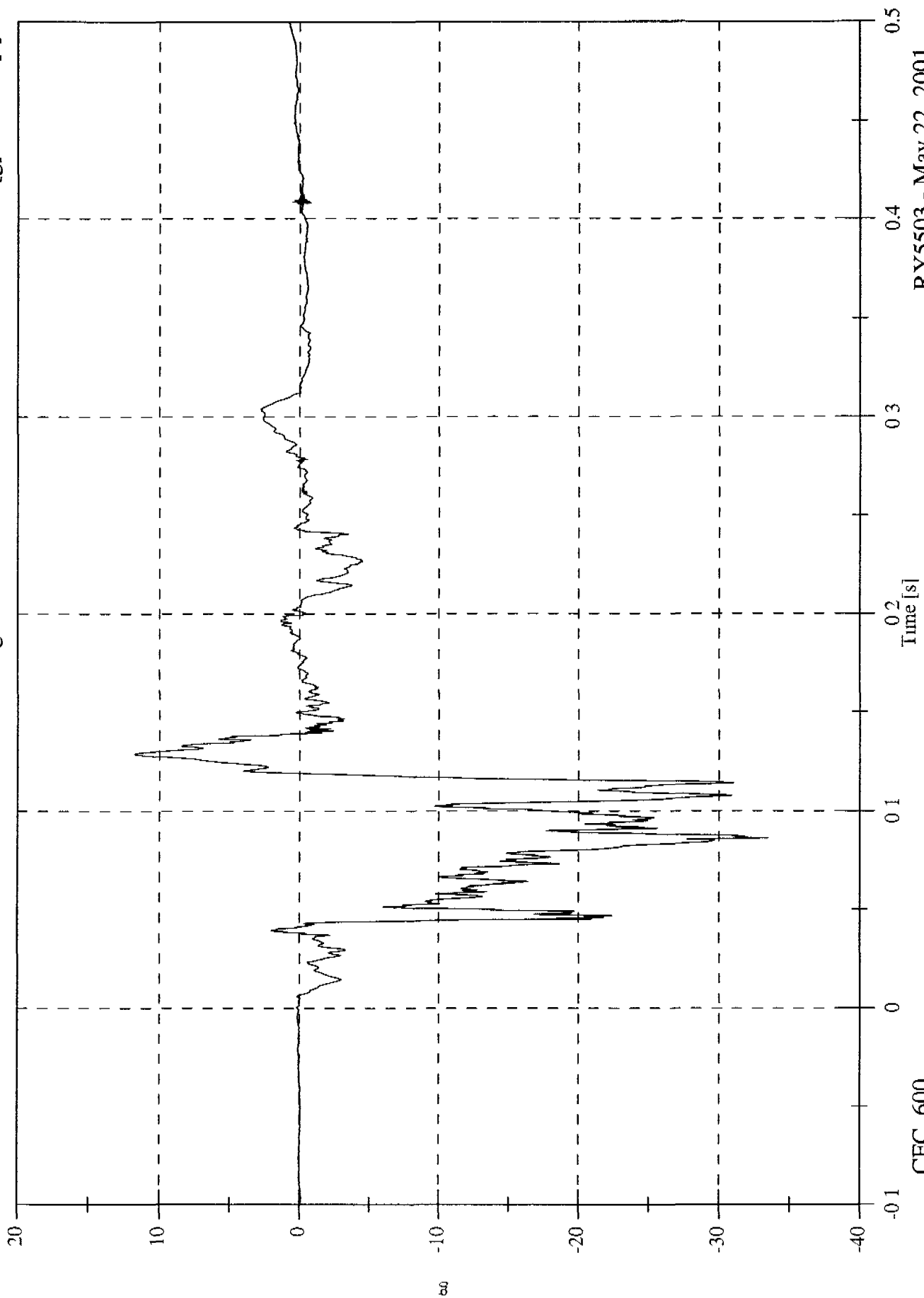
CFC_600

RY5503 - May 22, 2001

40% Frontal Offset Test # 6

Max: 11.7 [g] at 0.129 [s]
Min: -33.5 [g] at 0.086 [s]

P1 Right Tibia Ax



CFC_600

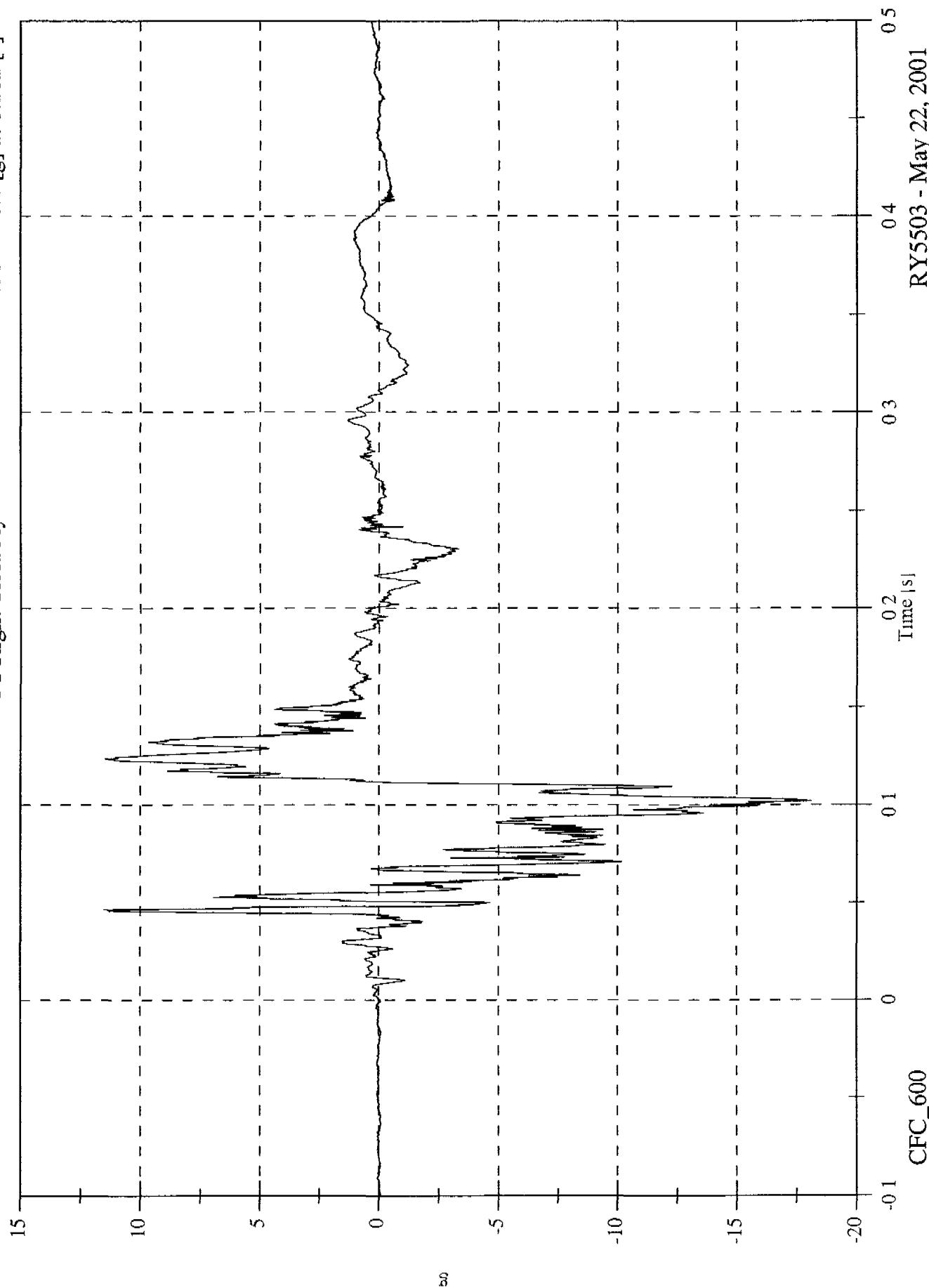
Time [s]

RY5503 - May 22, 2001

40% Frontal Offset Test # 6

P1 Right Tibia Ay

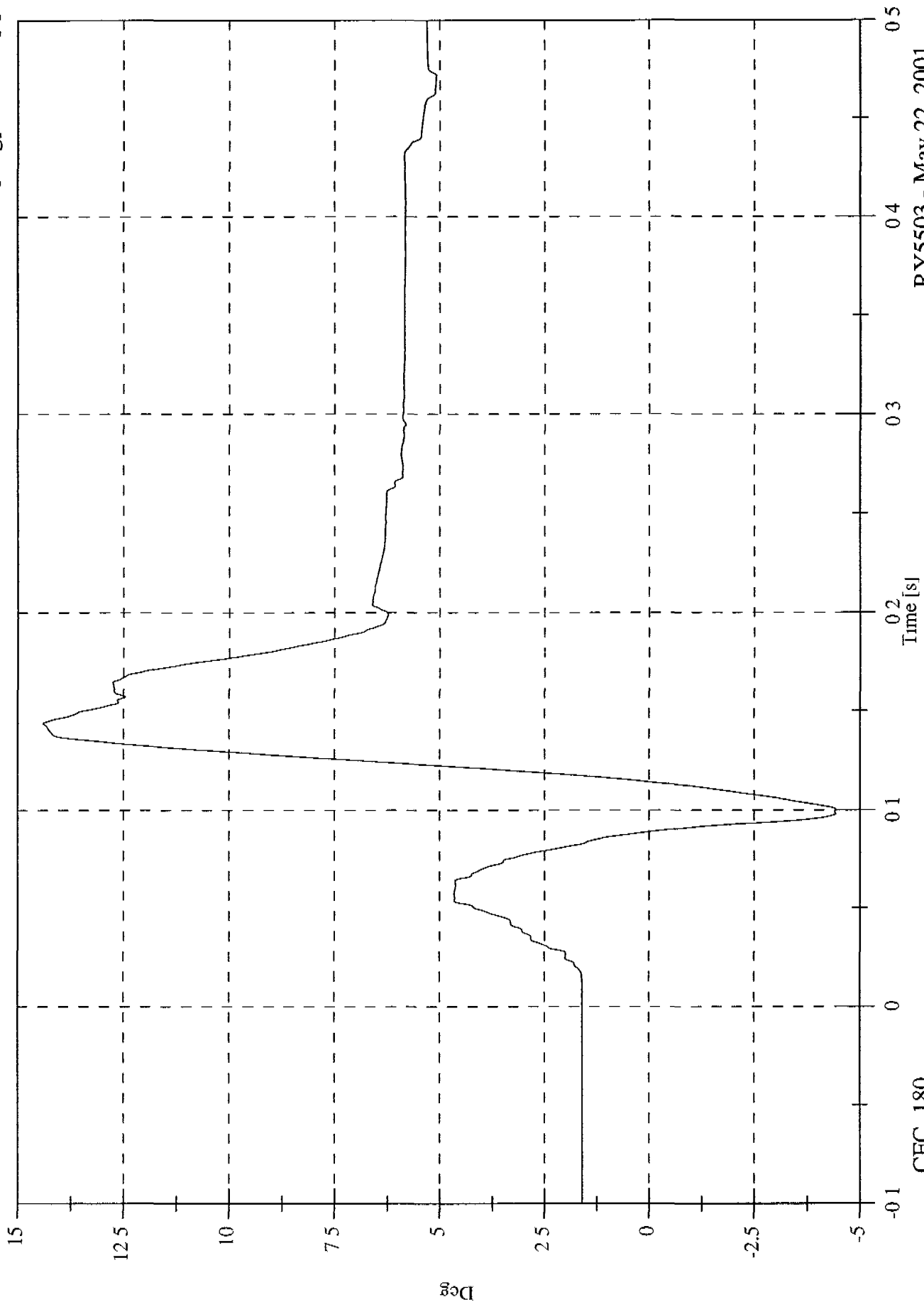
Max: 11.5 [g] at 0.047 [s]
Min: -18.1 [g] at 0.102 [s]



RY5503 - May 22, 2001

Max: 14.4 [Deg] at 0.144 [s]
 Min: -4.4 [Deg] at 0.100 [s]

P1 Left Ankle Rotation x



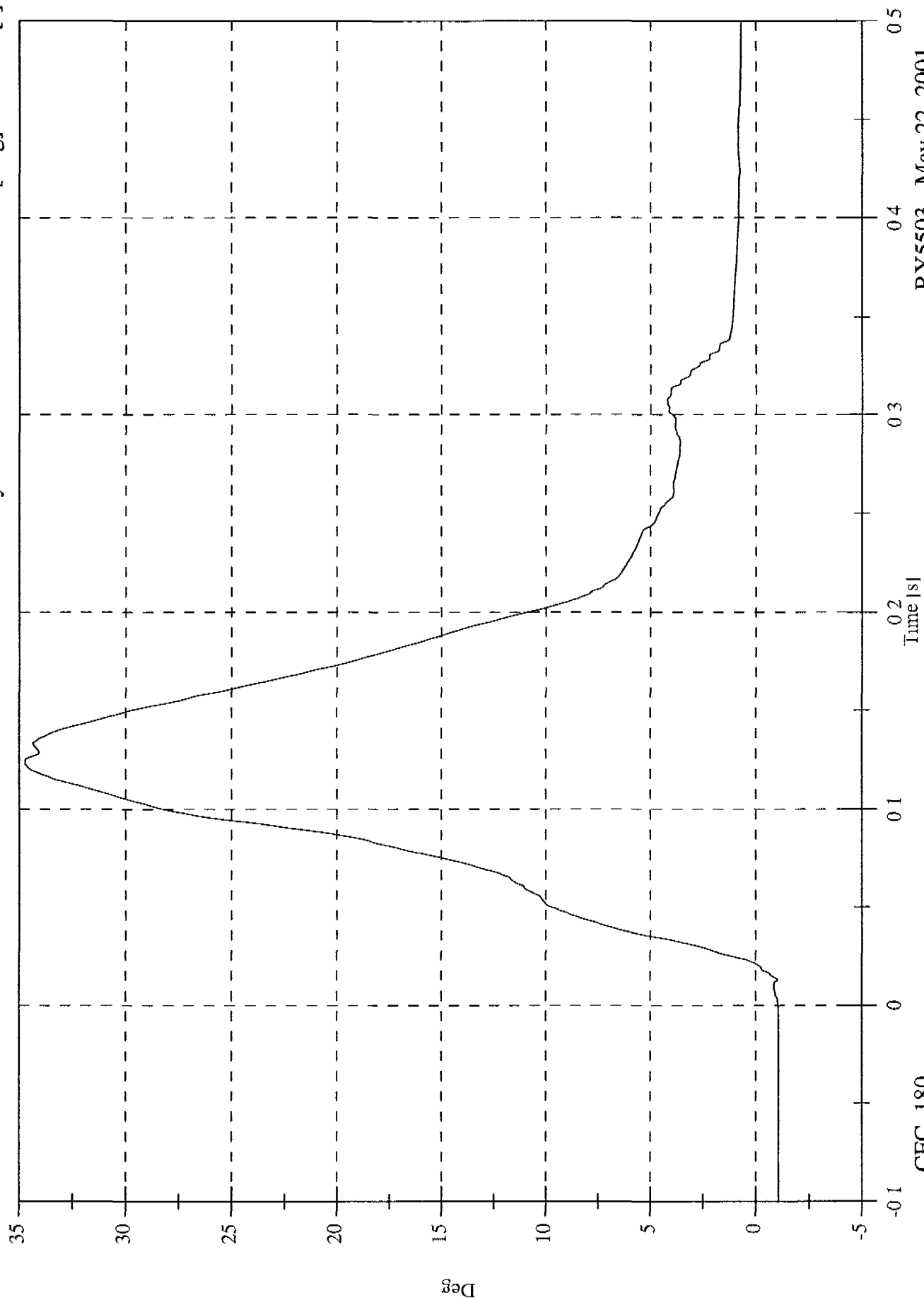
CFC_180

RY5503 - May 22, 2001

40% Frontal Offset Test # 6

Max: 34.7 [Deg] at 0.124 [s]
Min: -1.1 [Deg] at -0.100 [s]

P1 Left Ankle Rotation y

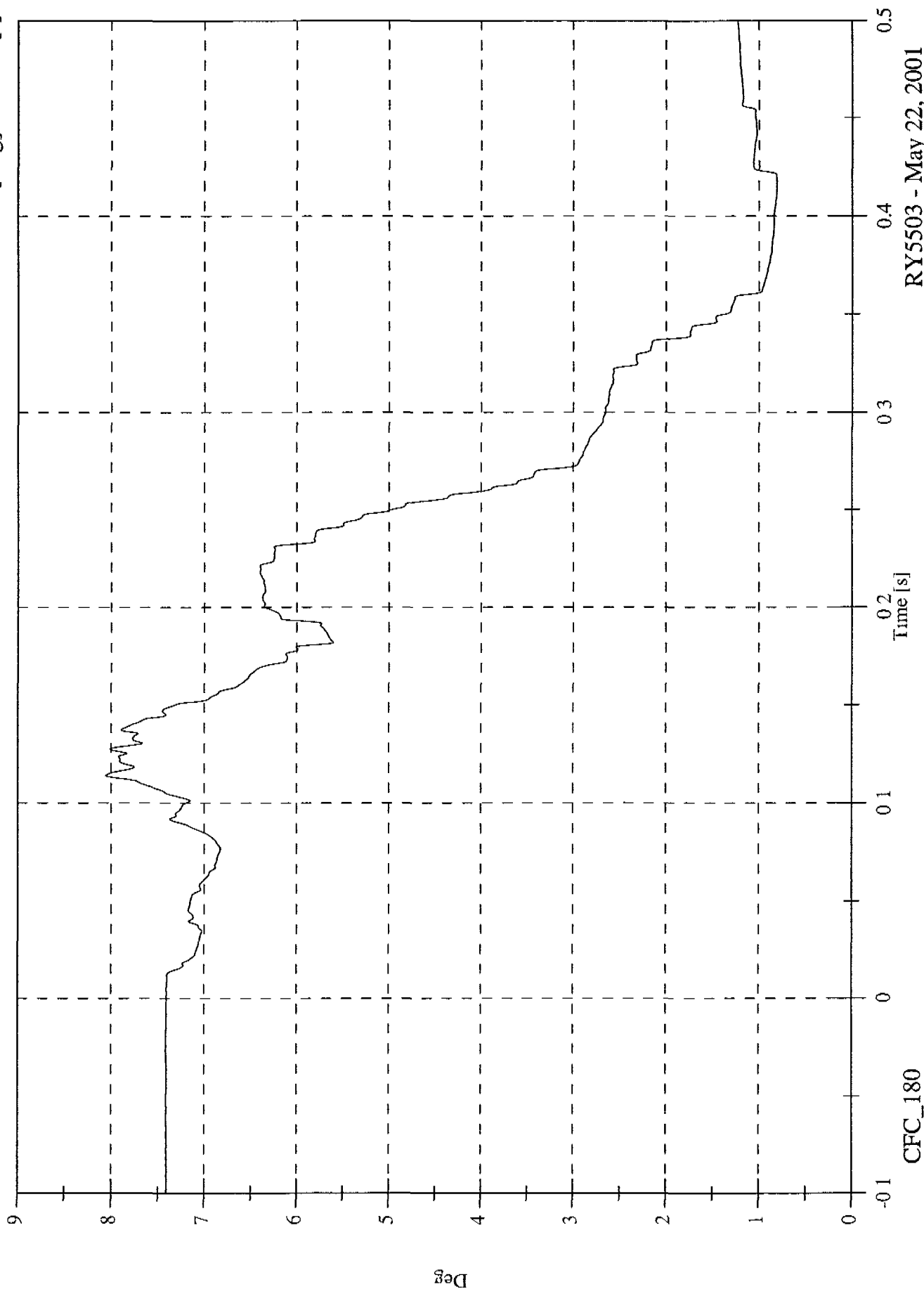


RY5503 - May 22, 2001

40% Frontal Offset Test # 6

Max: 8.1 [Deg] at 0.114 [s]
Min: 0.8 [Deg] at 0.418 [s]

P1 Left Ankle Rotation z



CFC_180

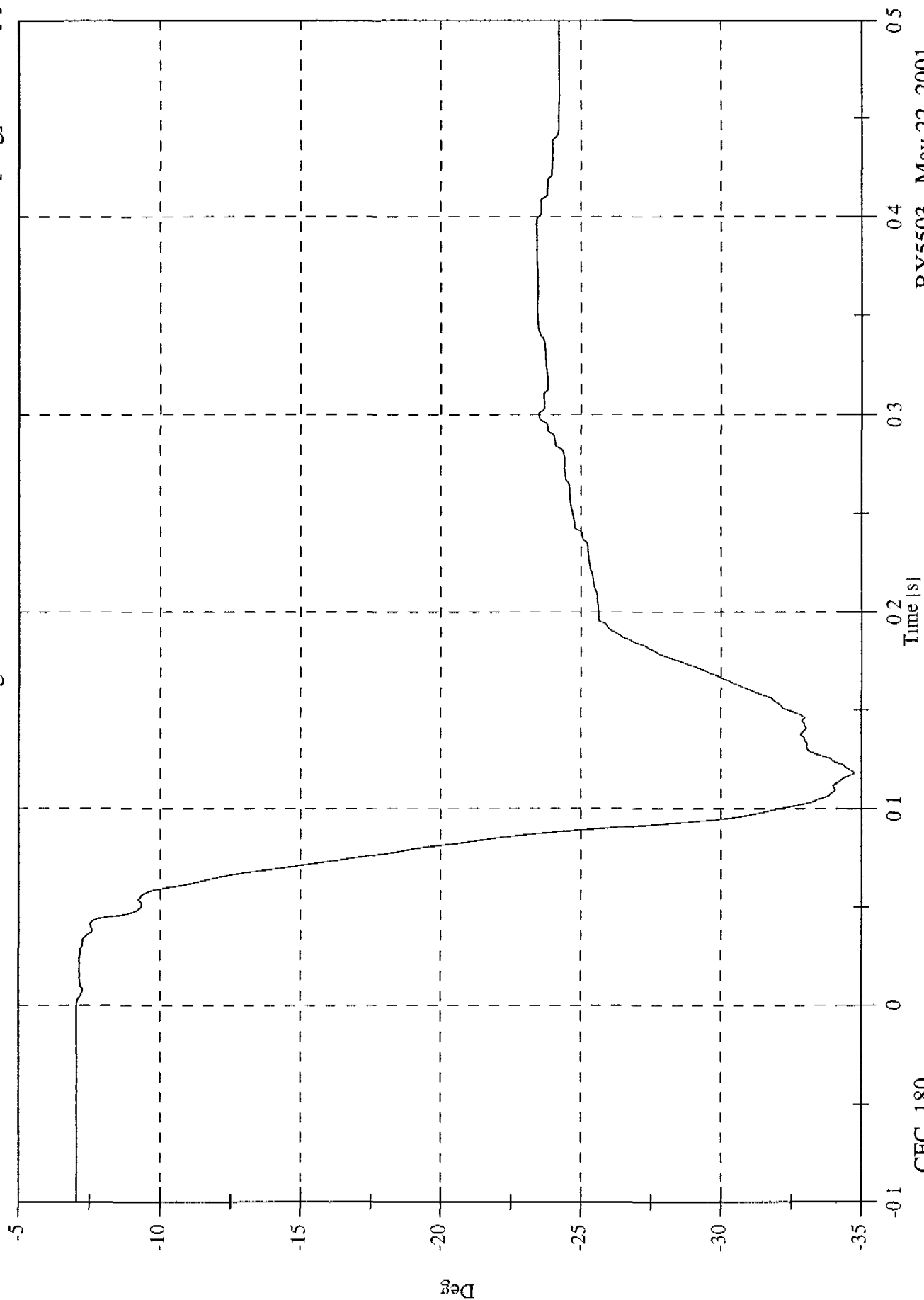
Time [s]

RY5503 - May 22, 2001

40% Frontal Offset Test # 6

Max: -7.1 [Deg] at -0.089 [s]
Min: -34.7 [Deg] at 0.118 [s]

P1 Right Ankle Rotation x



CFC_180

Time [s]

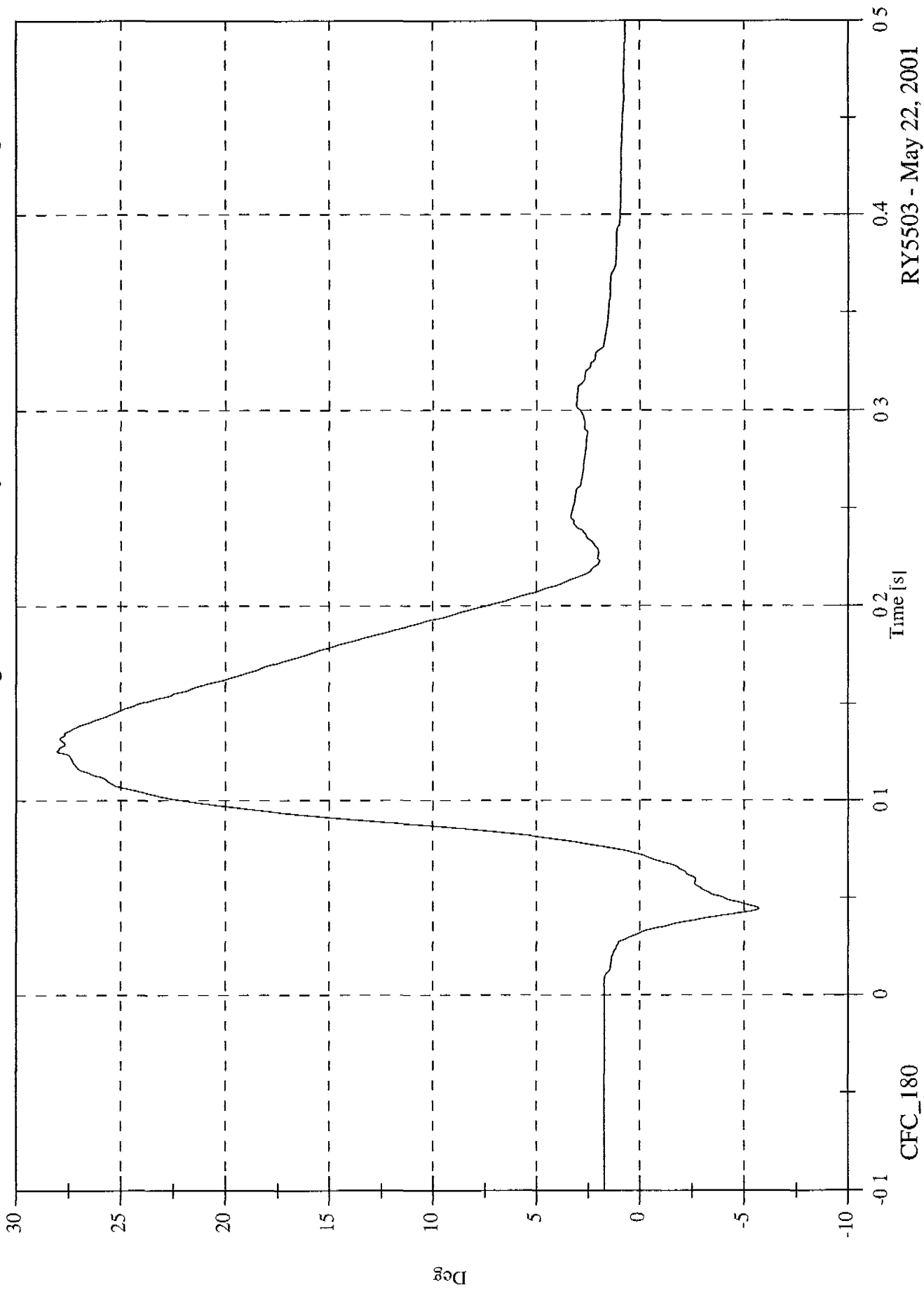
RY5503 - May 22, 2001

40% Frontal Offset Test # 6

Max: 28.0 [Deg] at 0.125 [s]

Min: -5.7 [Deg] at 0.045 [s]

P1 Right Ankle Rotation y



CFC_180

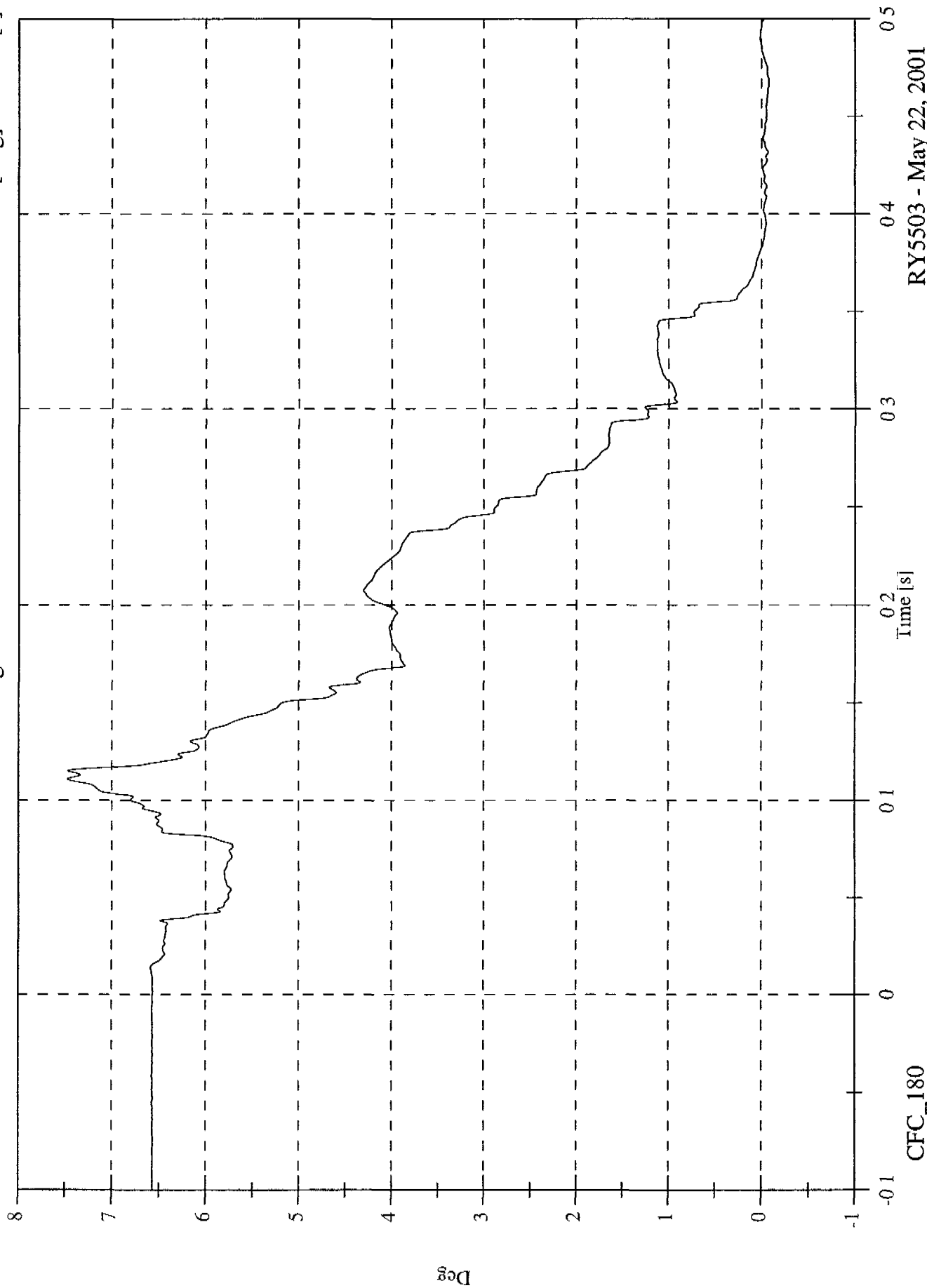
Time [s]

RY5503 - May 22, 2001

40% Frontal Offset Test # 6

Max: 7.5 [Deg] at 0.111 [s]
Min: -0.1 [Deg] at 0.468 [s]

P1 Right Ankle Rotation z

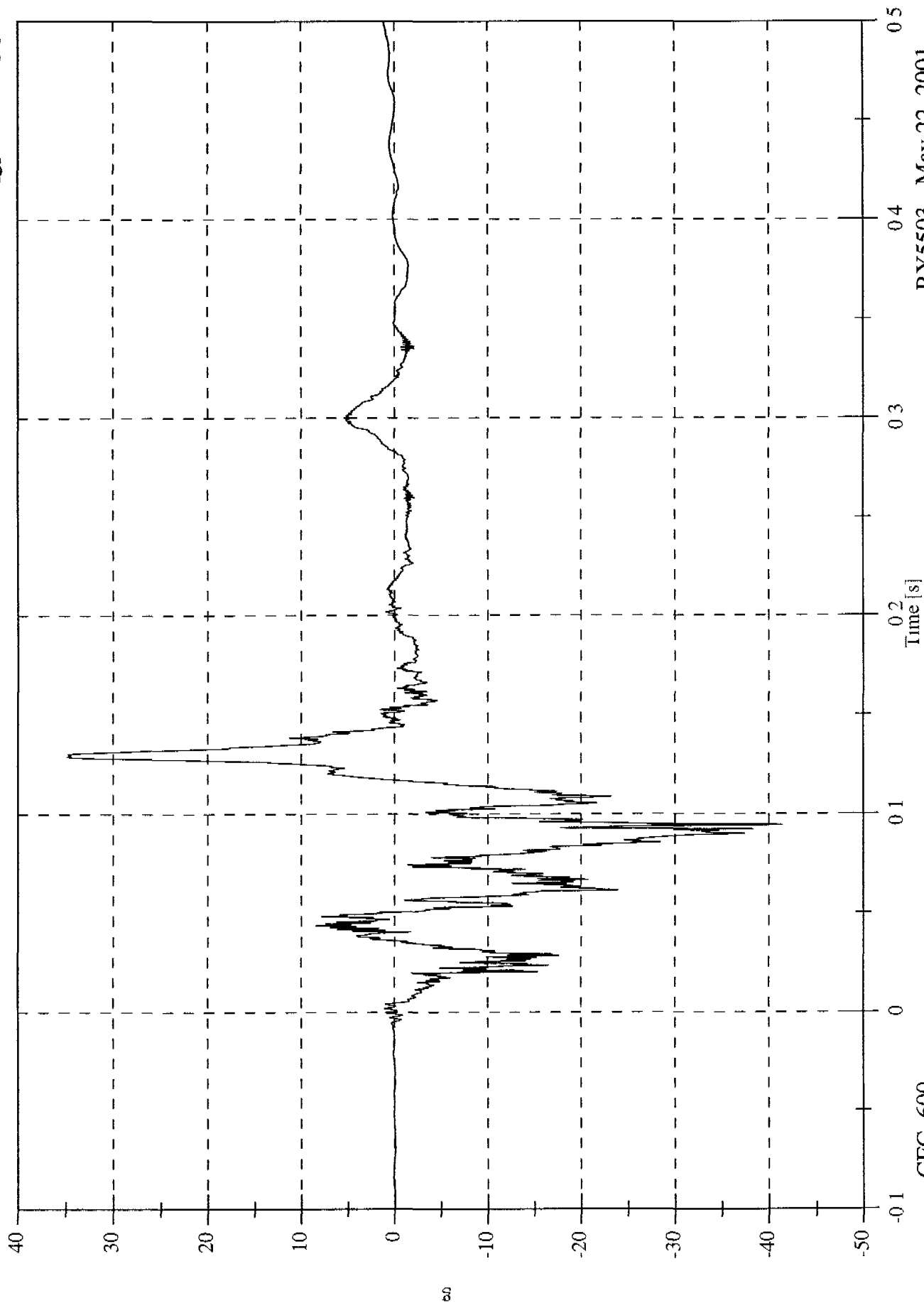


RY5503 - May 22, 2001

40% Frontal Offset Test # 6

Max: 34.8 [g] at 0.129 [s]
 Min: -41.4 [g] at 0.094 [s]

P1 Left Foot Ax

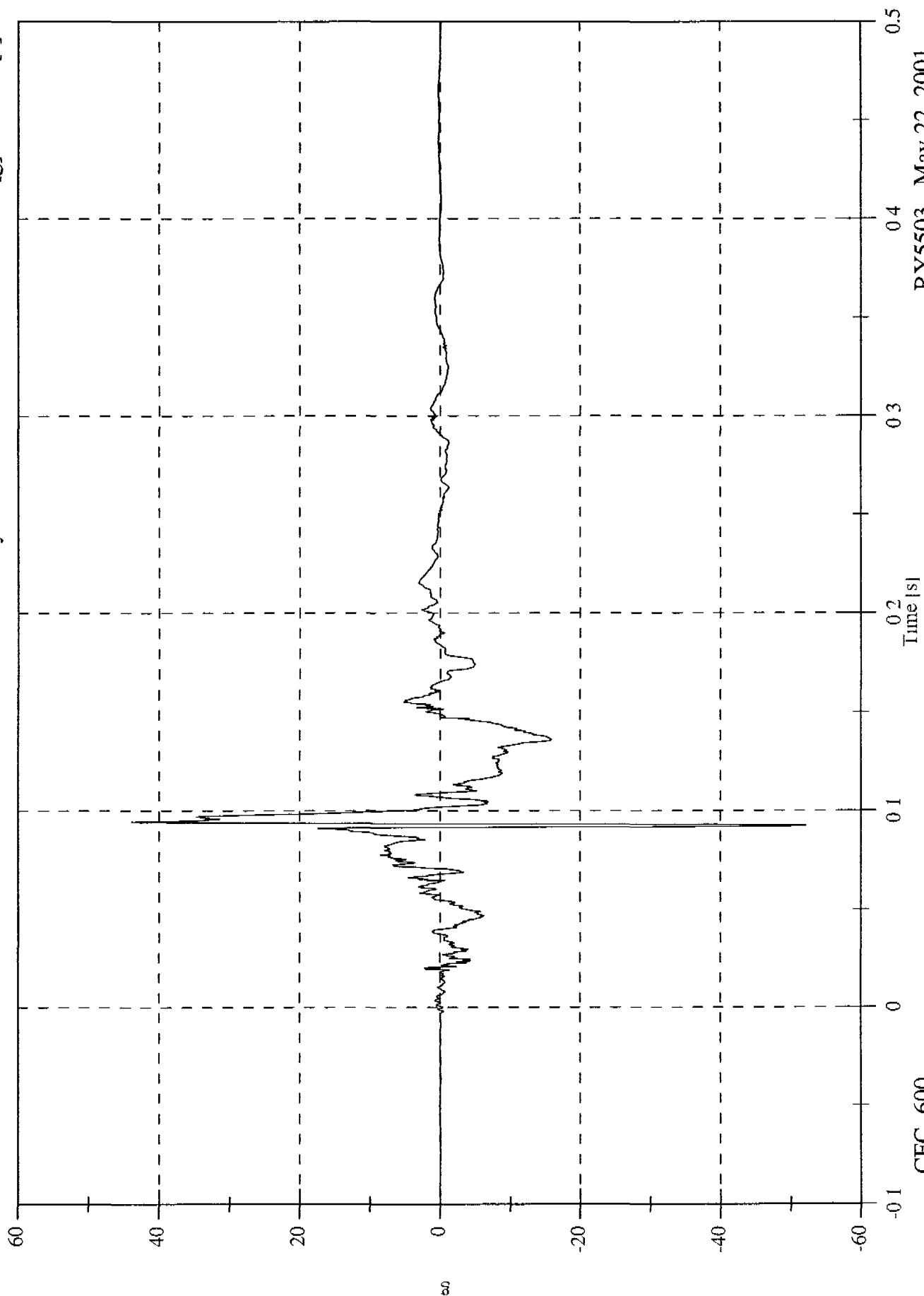


RY5503 - May 22, 2001

40% Frontal Offset Test # 6

Max: 43.9 [g] at 0.094 [s]
Min: -52.1 [g] at 0.092 [s]

P1 Left Foot Ay



CFC_600

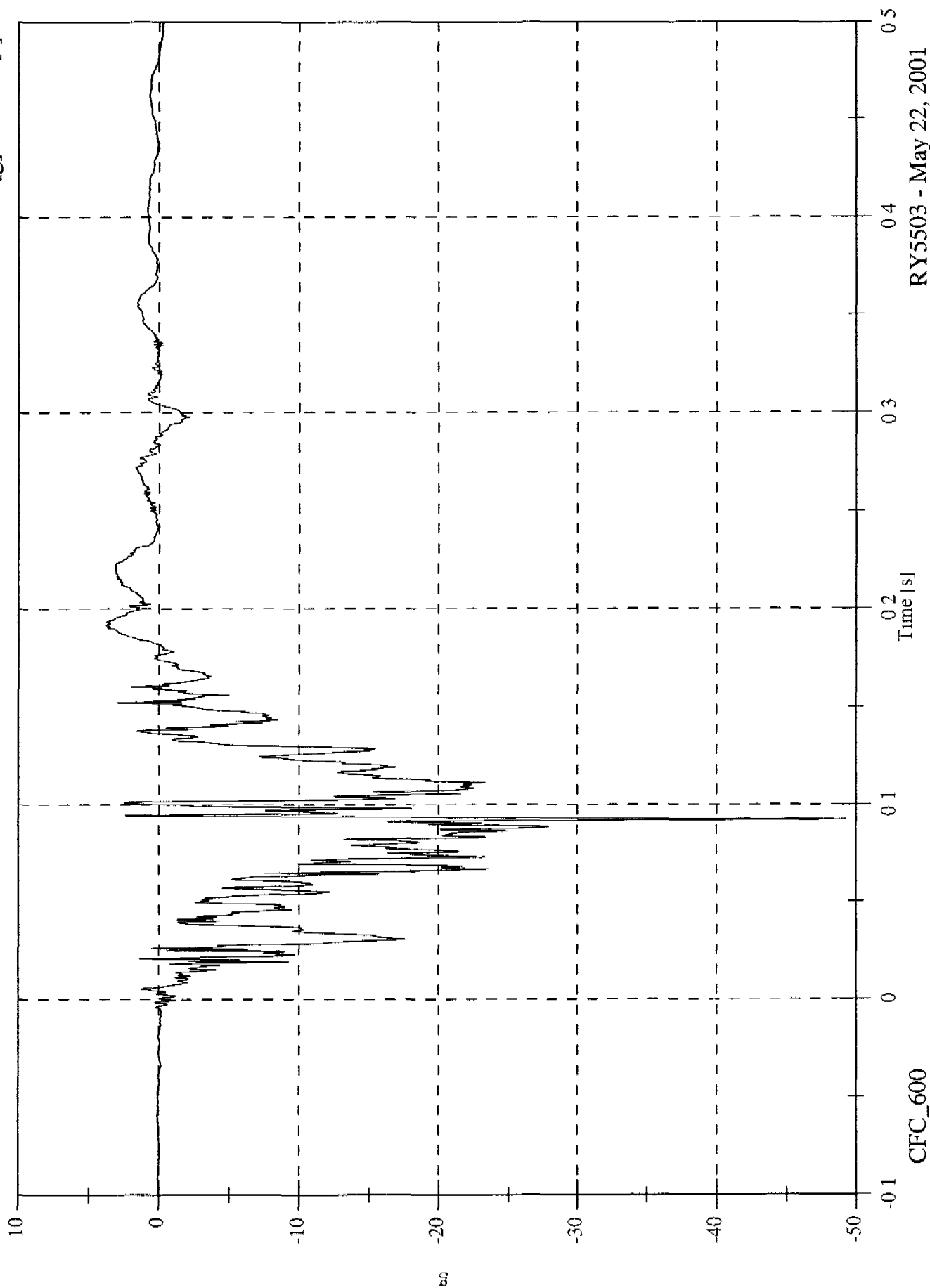
Time [s]

RY5503 - May 22, 2001

40% Frontal Offset Test # 6

Max: 3.7 [g] at 0.192 [s]
Min: -49.2 [g] at 0.092 [s]

P1 Left Foot Az

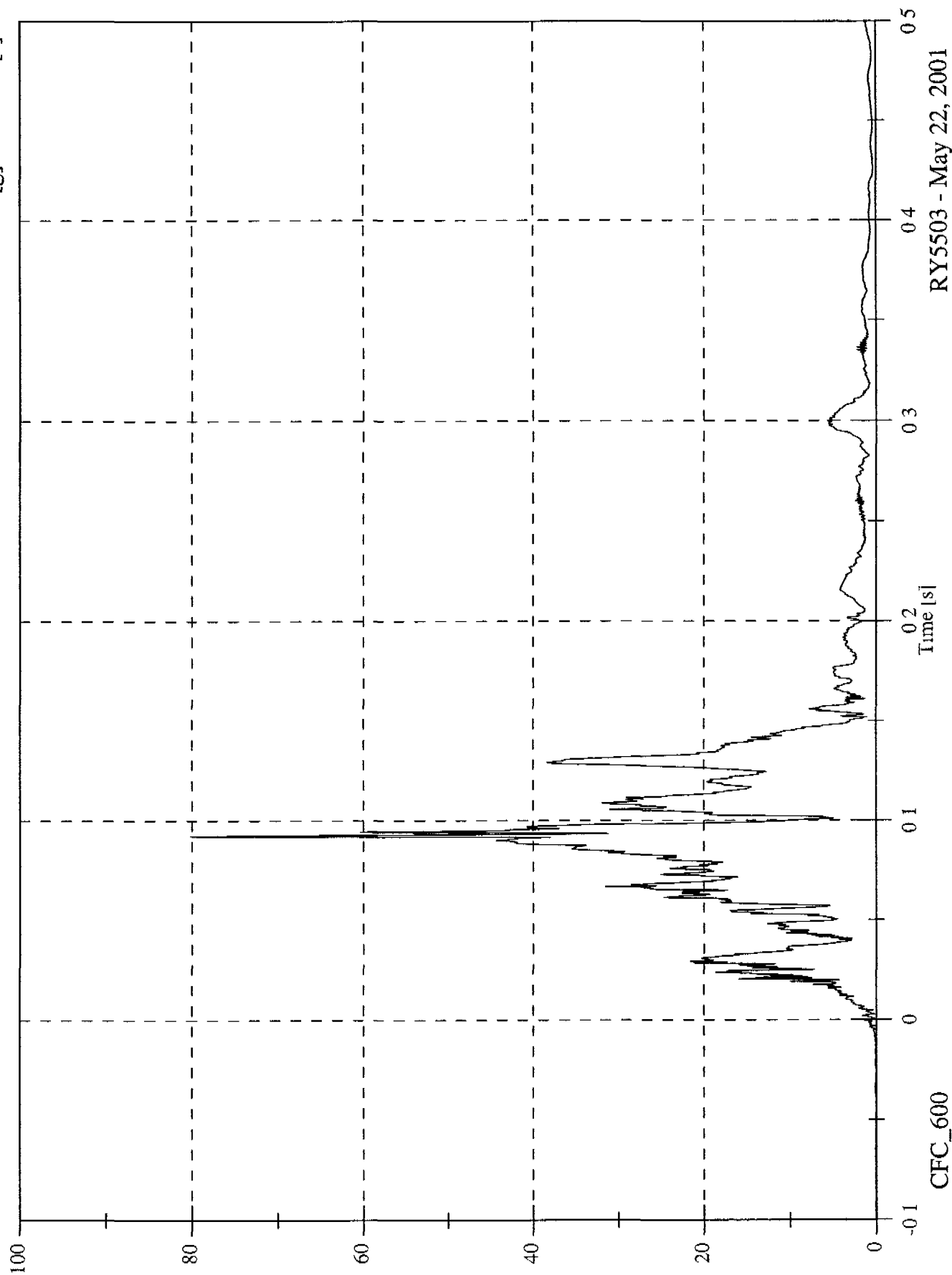


RY5503 - May 22, 2001

40% Frontal Offset Test # 6

Max: 80.2 [g] at 0.092 [s]
 Min: 0.0 [g] at -0.100 [s]

P1 Left Foot A Resultant

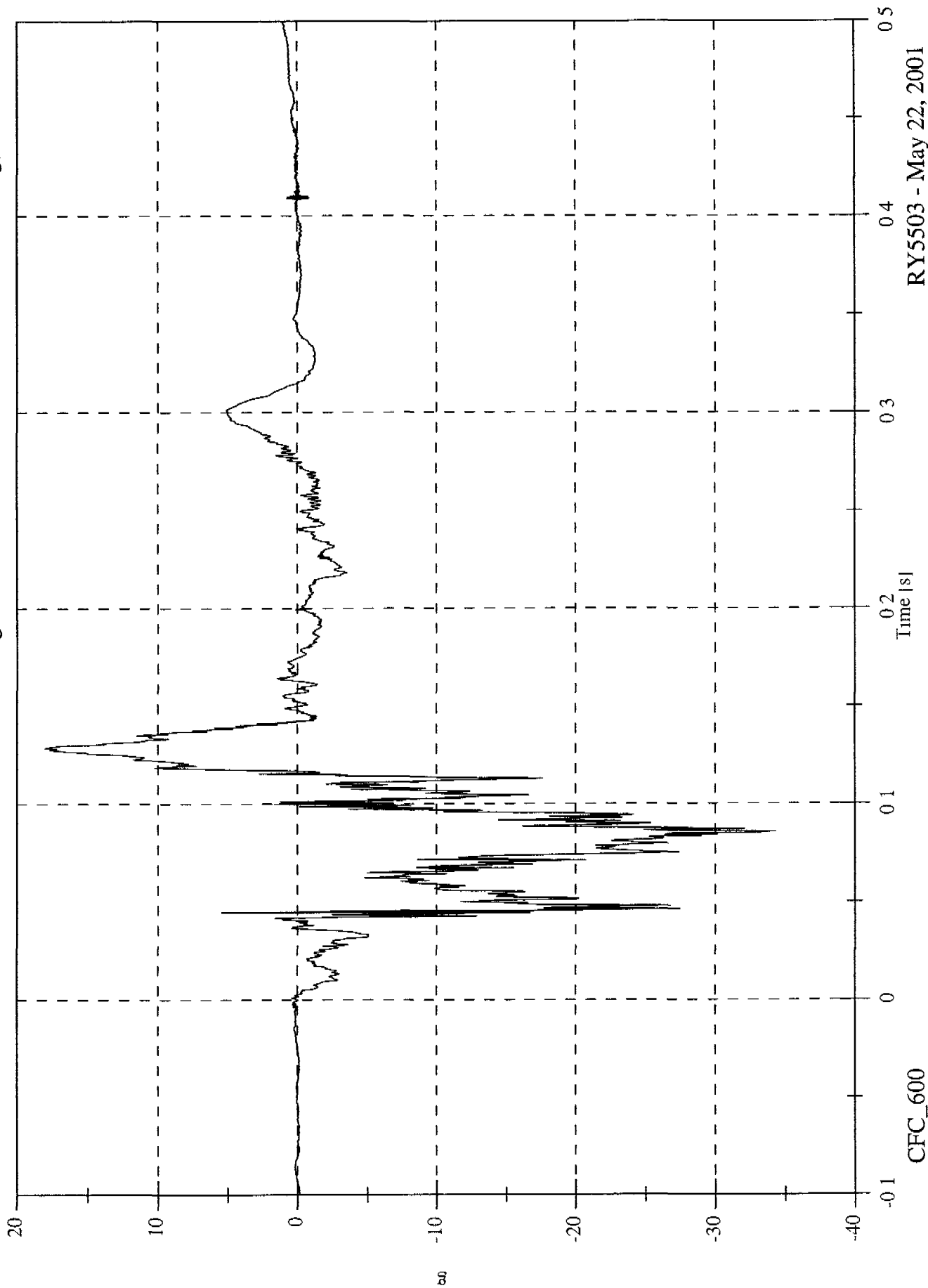


RY5503 - May 22, 2001

40% Frontal Offset Test # 6

Max: 18.0 [g] at 0.129 [s]
Min: -34.3 [g] at 0.086 [s]

P1 Right Foot Ax



CFC_600

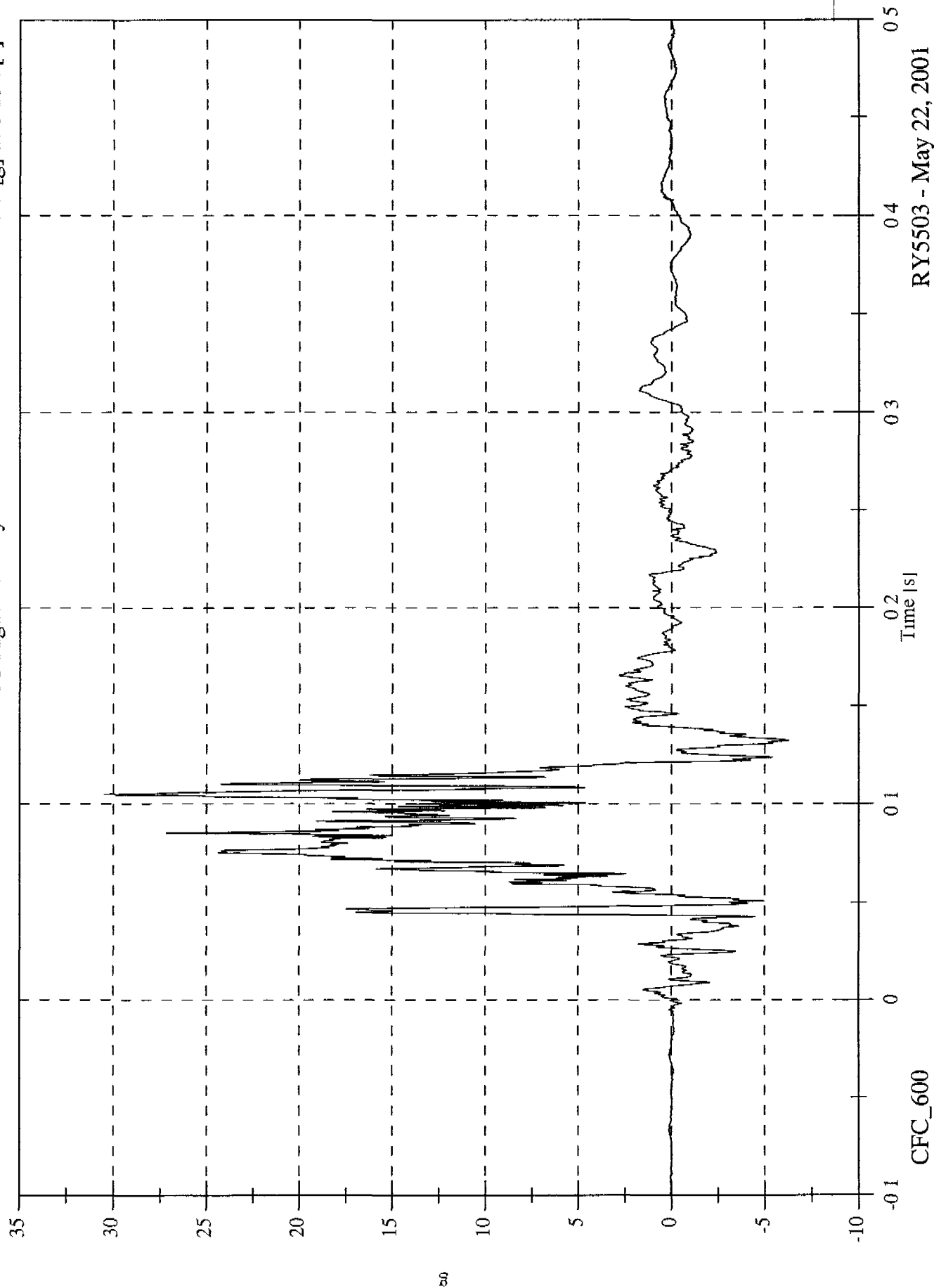
Time [s]

RY5503 - May 22, 2001

40% Frontal Offset Test # 6

Max: 30.5 [g] at 0.105 [s]
 Min: -6.3 [g] at 0.132 [s]

P1 Right Foot Ay



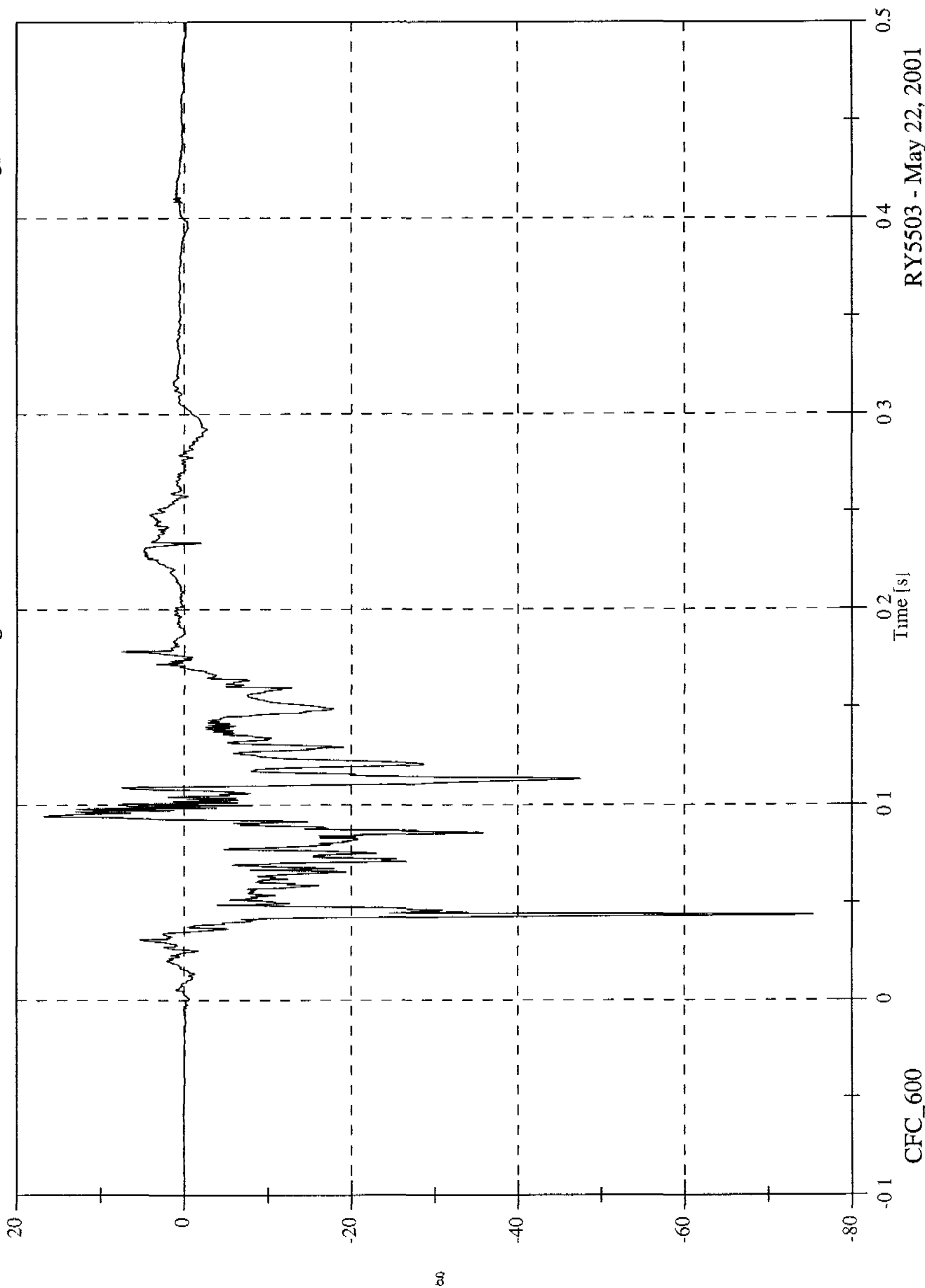
CFC_600

RY5503 - May 22, 2001

40% Frontal Offset Test # 6

Max: 16.7 [g] at 0.094 [s]
Min: -75.3 [g] at 0.044 [s]

P1 Right Foot Az

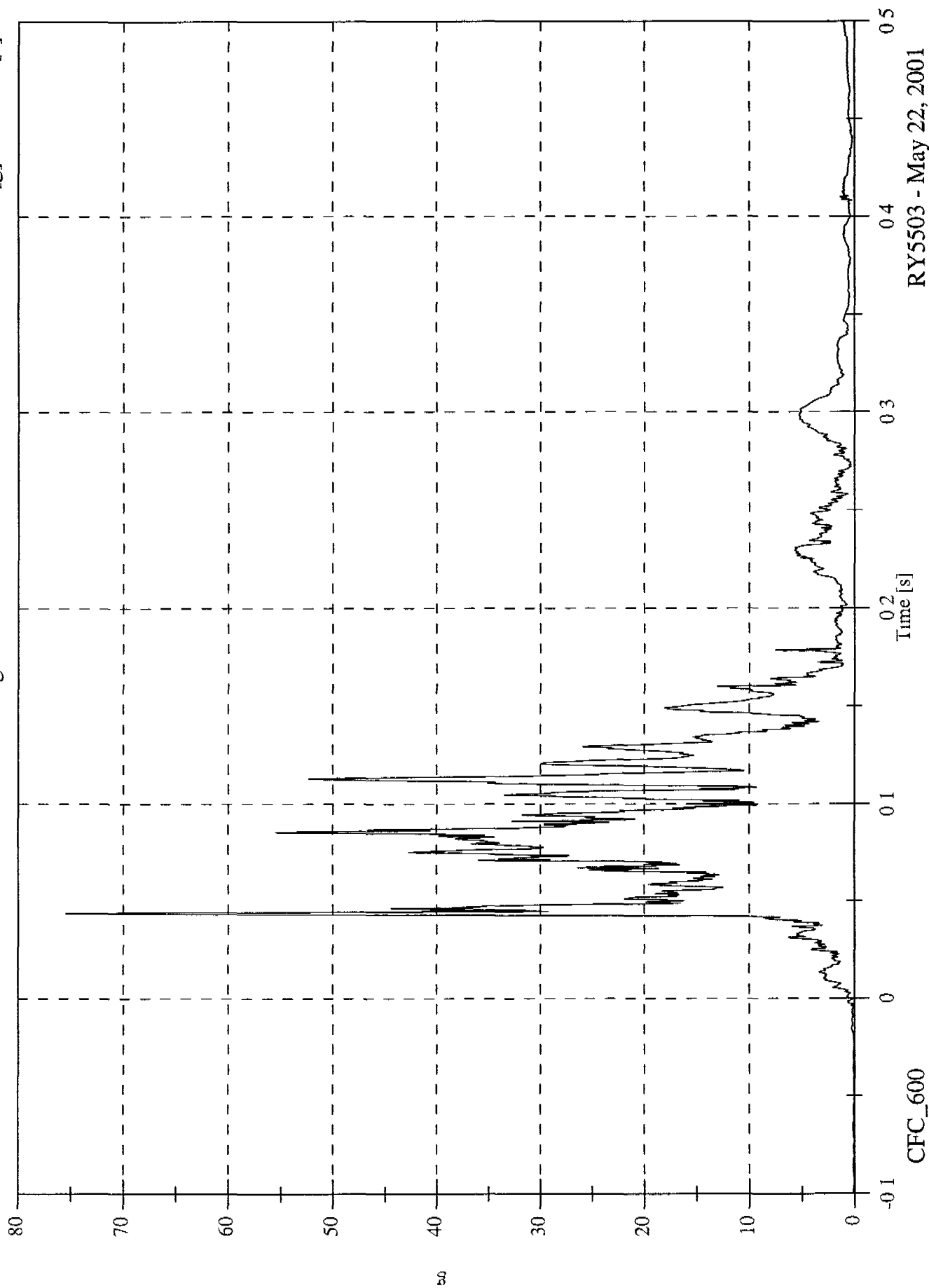


RY5503 - May 22, 2001

40% Frontal Offset Test # 6

P1 Right Foot A Resultant

Max: 75.5 [g] at 0.044 [s]
Min: 0.0 [g] at -0.100 [s]



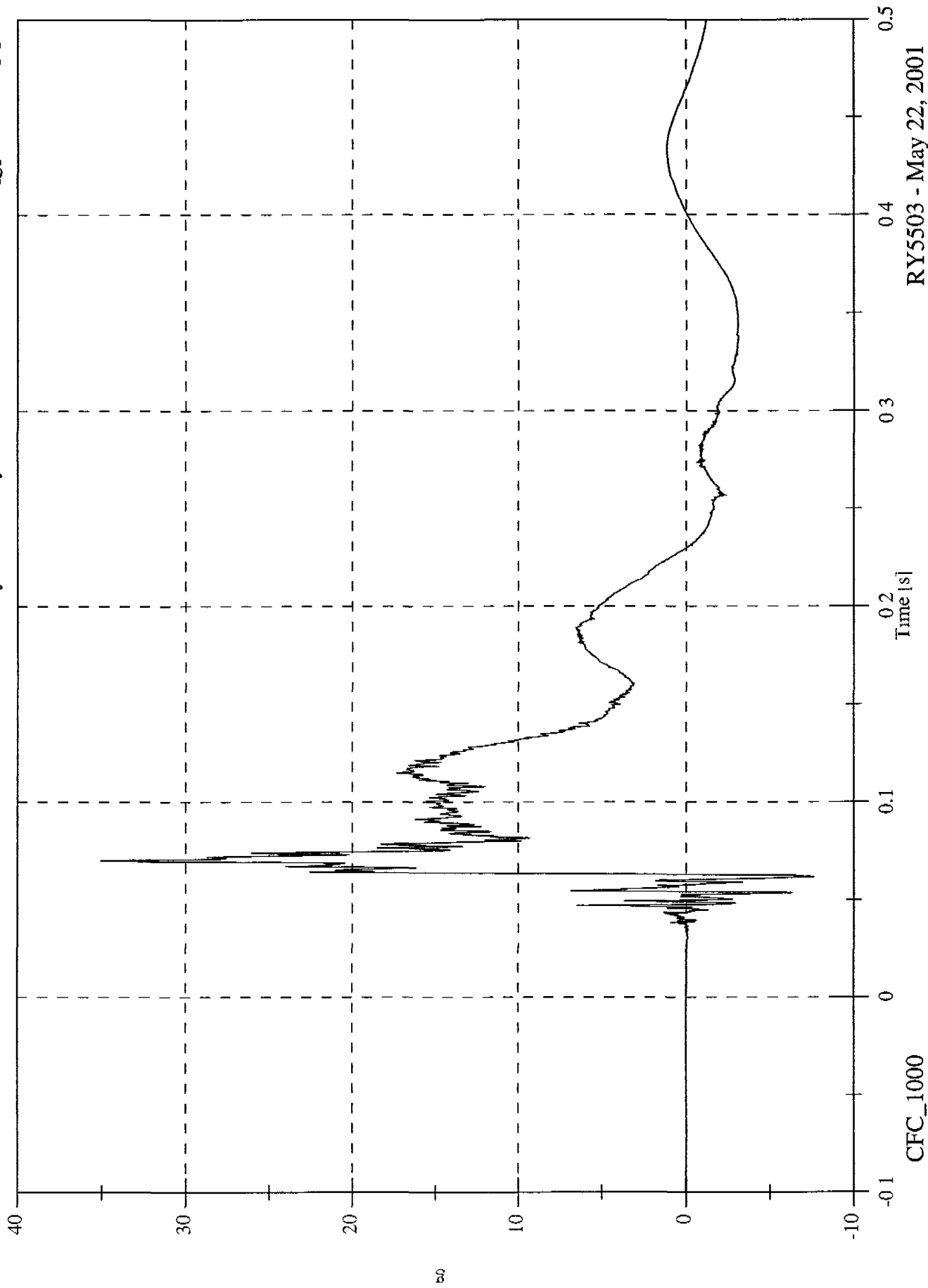
CFC_600

RY5503 - May 22, 2001

40% Frontal Offset Test # 6

P2 Head 9 Array X Arm Ay

Max: 35.1 [g] at 0.070 [s]
Min: -7.6 [g] at 0.062 [s]



CFC_1000

Time [s]

RY5503 - May 22, 2001

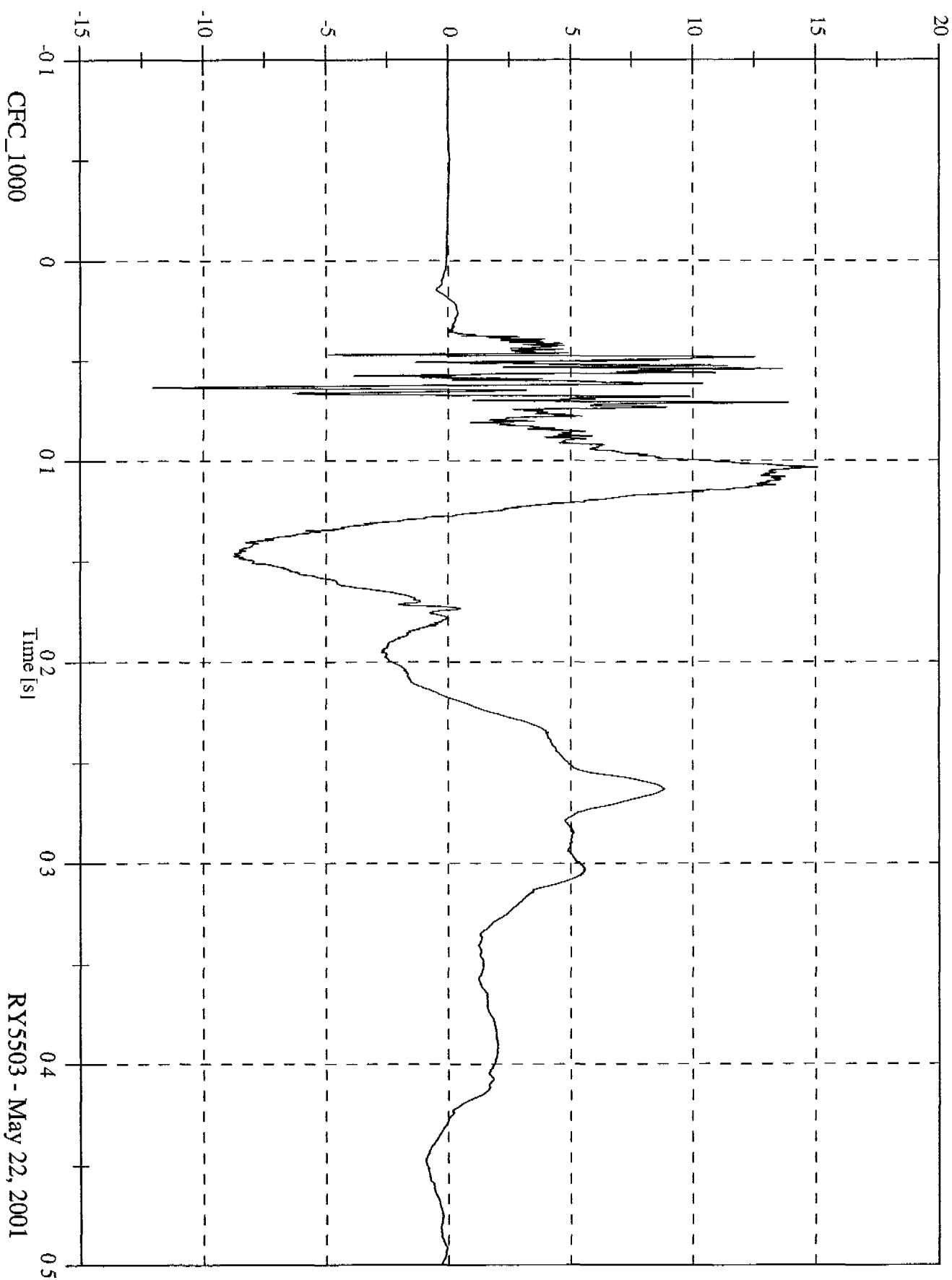
40% Frontal Offset Test # 6

P2 Head 9 Array X Arm Az

Max: 15.1 [g] at 0.103 [s]
Min: -12.0 [g] at 0.064 [s]

B-100

g



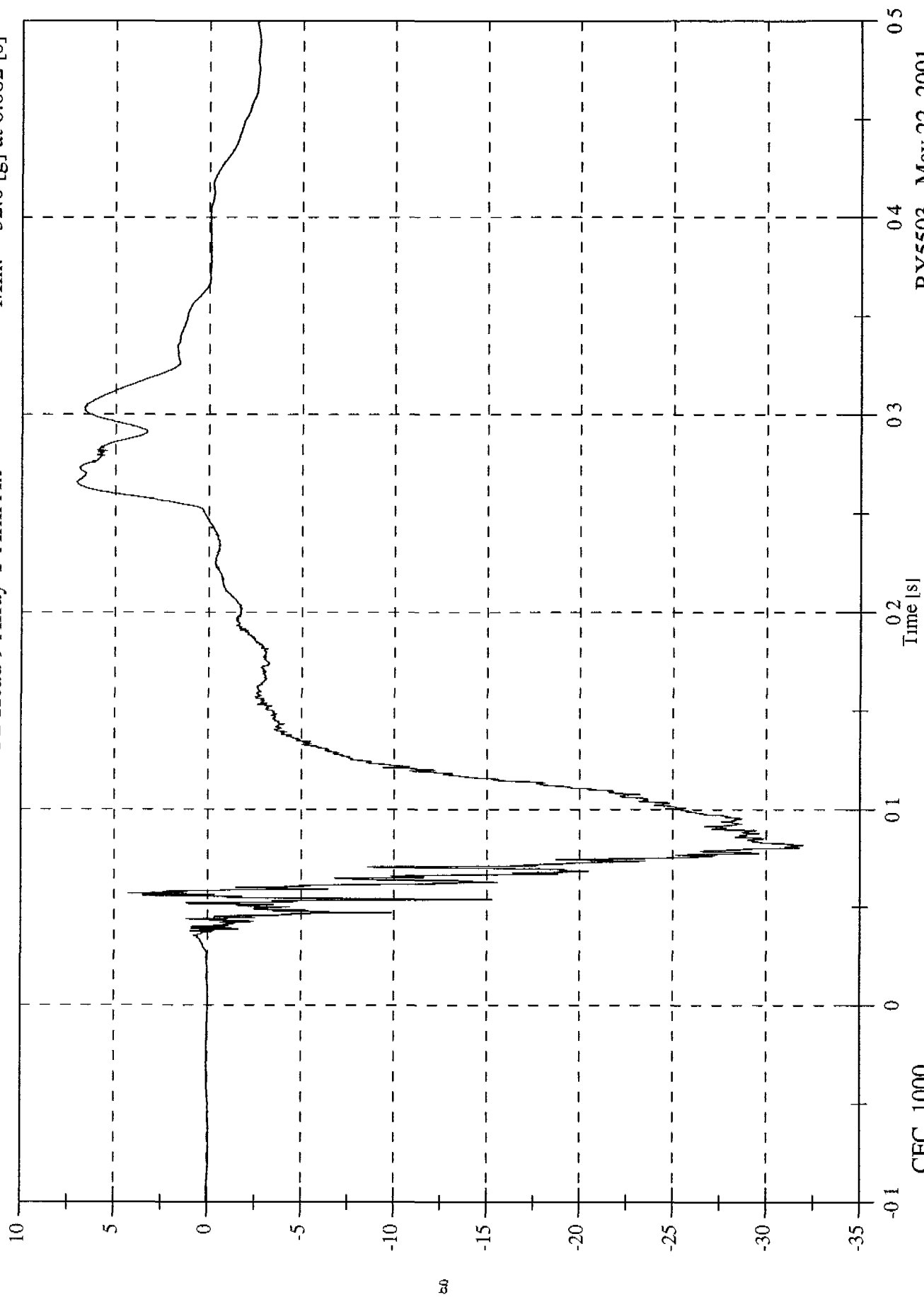
8413-62

RY5503 - May 22, 2001

40% Frontal Offset Test # 6

P2 Head 9 Array Y Arm Ax

Max*: 7.1 [g] at 0.266 [s]
Min*: -32.0 [g] at 0.082 [s]



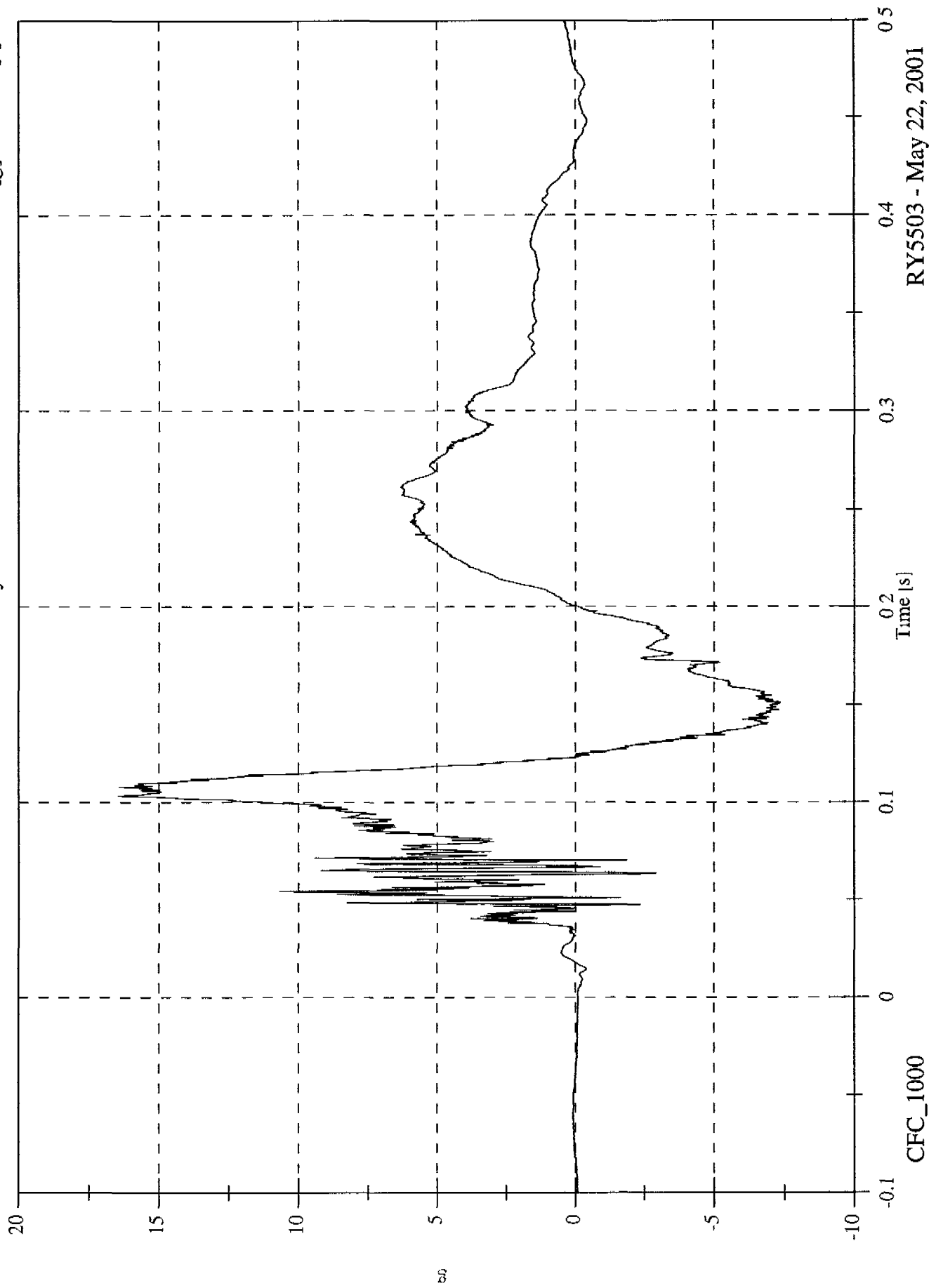
CFC_1000

RY5503 - May 22, 2001

40% Frontal Offset Test # 6

P2 Head 9 Array Y Arm Az

Max: 16.5 [g] at 0.103 [s]
Min: -7.4 [g] at 0.151 [s]

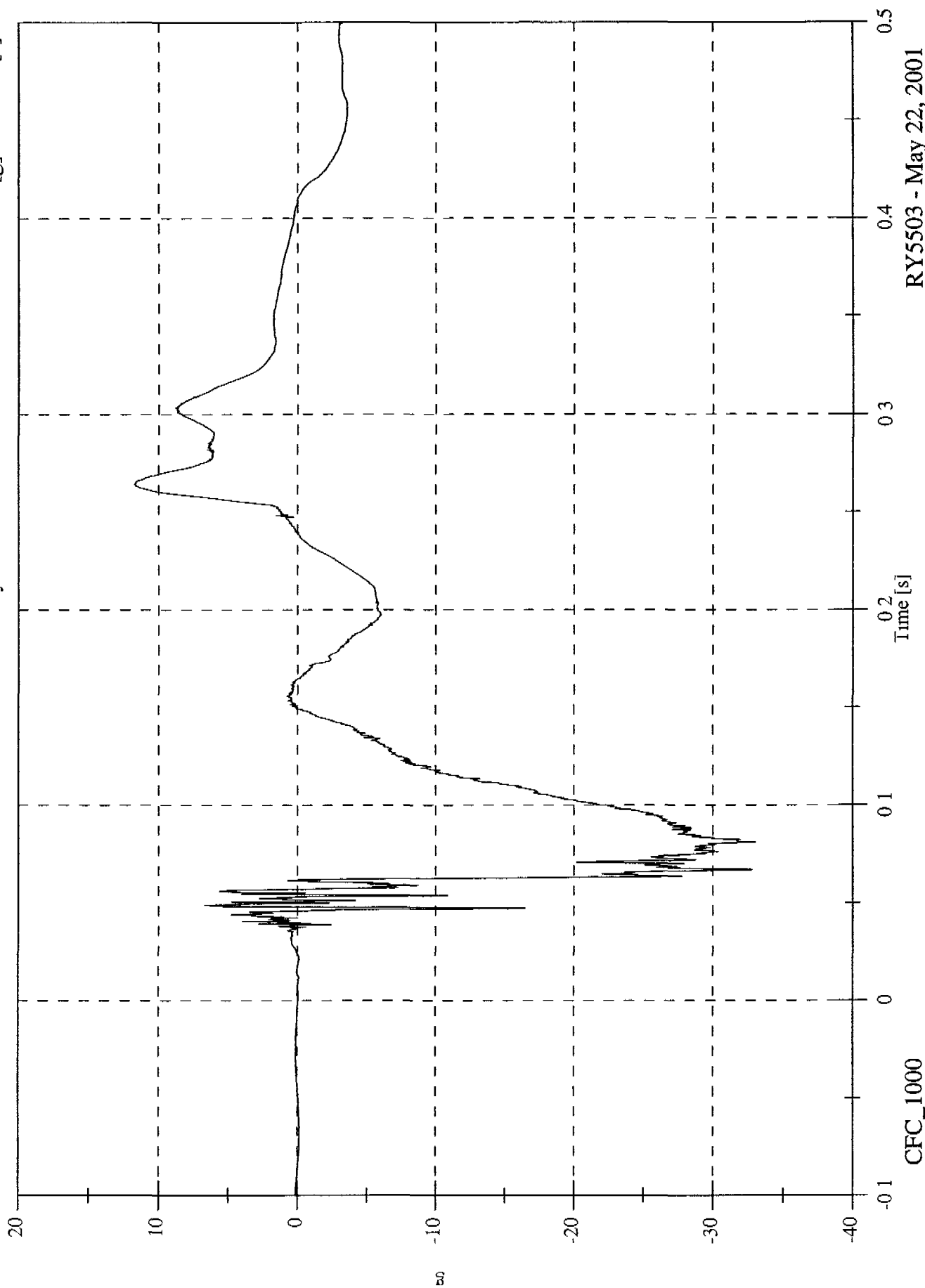


RY5503 - May 22, 2001

40% Frontal Offset Test # 6

P2 Head 9 Array Z Arm Ax

Max: 11.7 [g] at 0.264 [s]
Min: -33.0 [g] at 0.081 [s]

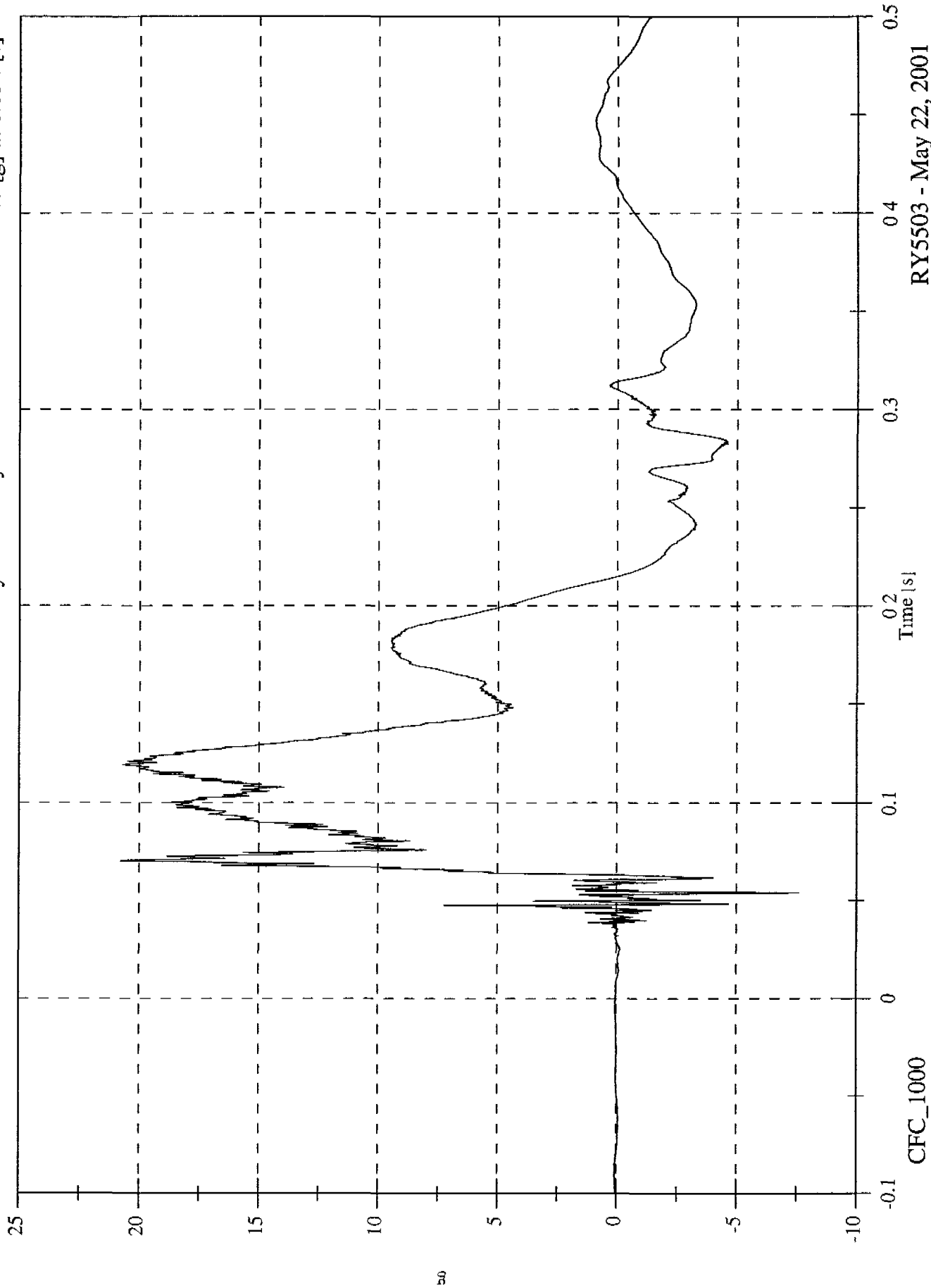


RY5503 - May 22, 2001

40% Frontal Offset Test # 6

P2 Head 9 Array Z Arm Ay

Max: 20.8 [g] at 0.070 [s]
Min: -7.6 [g] at 0.054 [s]

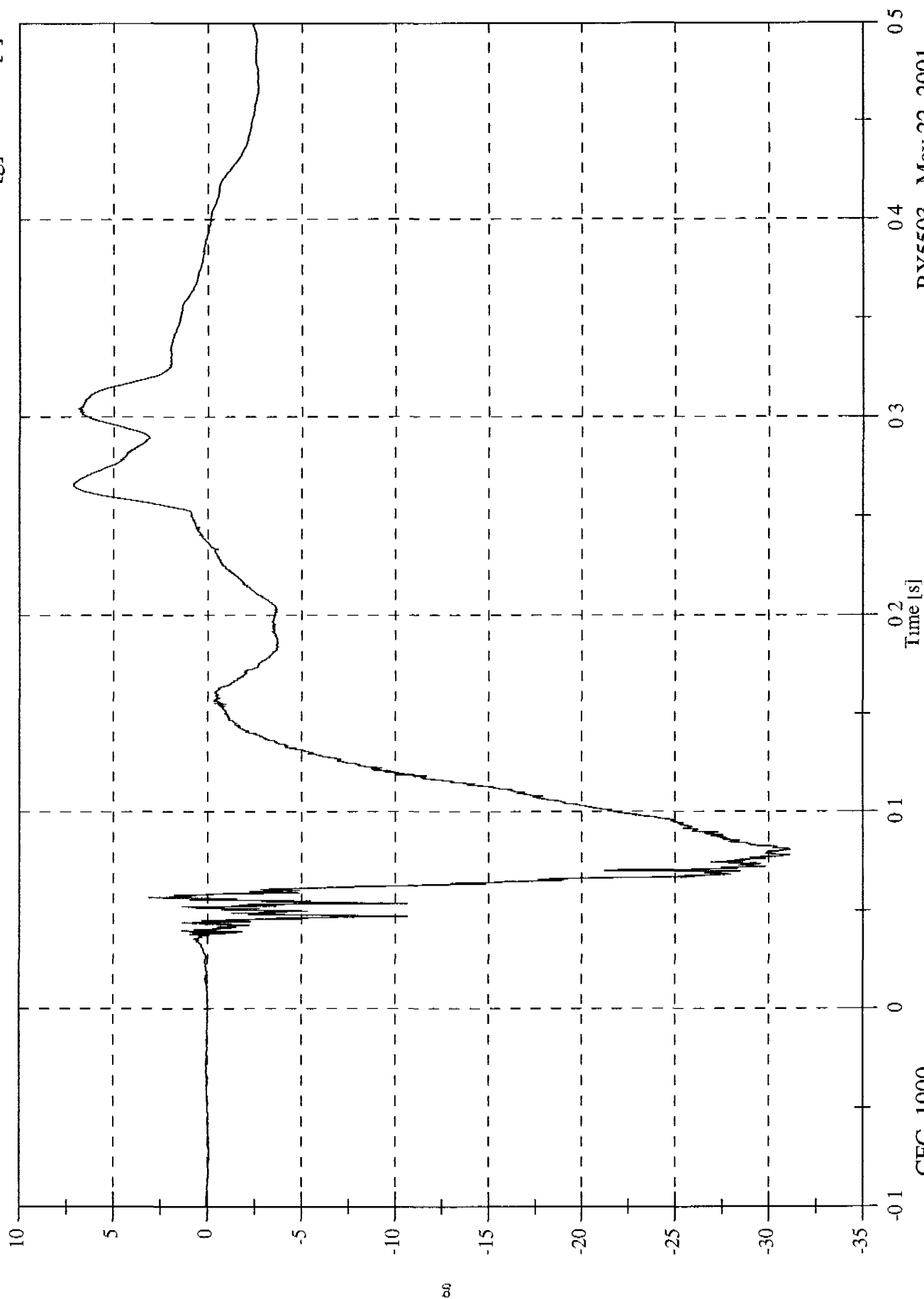


RY5503 - May 22, 2001

40% Frontal Offset Test # 6

Max: 7.1 [g] at 0.266 [s]
Min: -31.1 [g] at 0.081 [s]

P2 Head CG Ax



CFC_1000

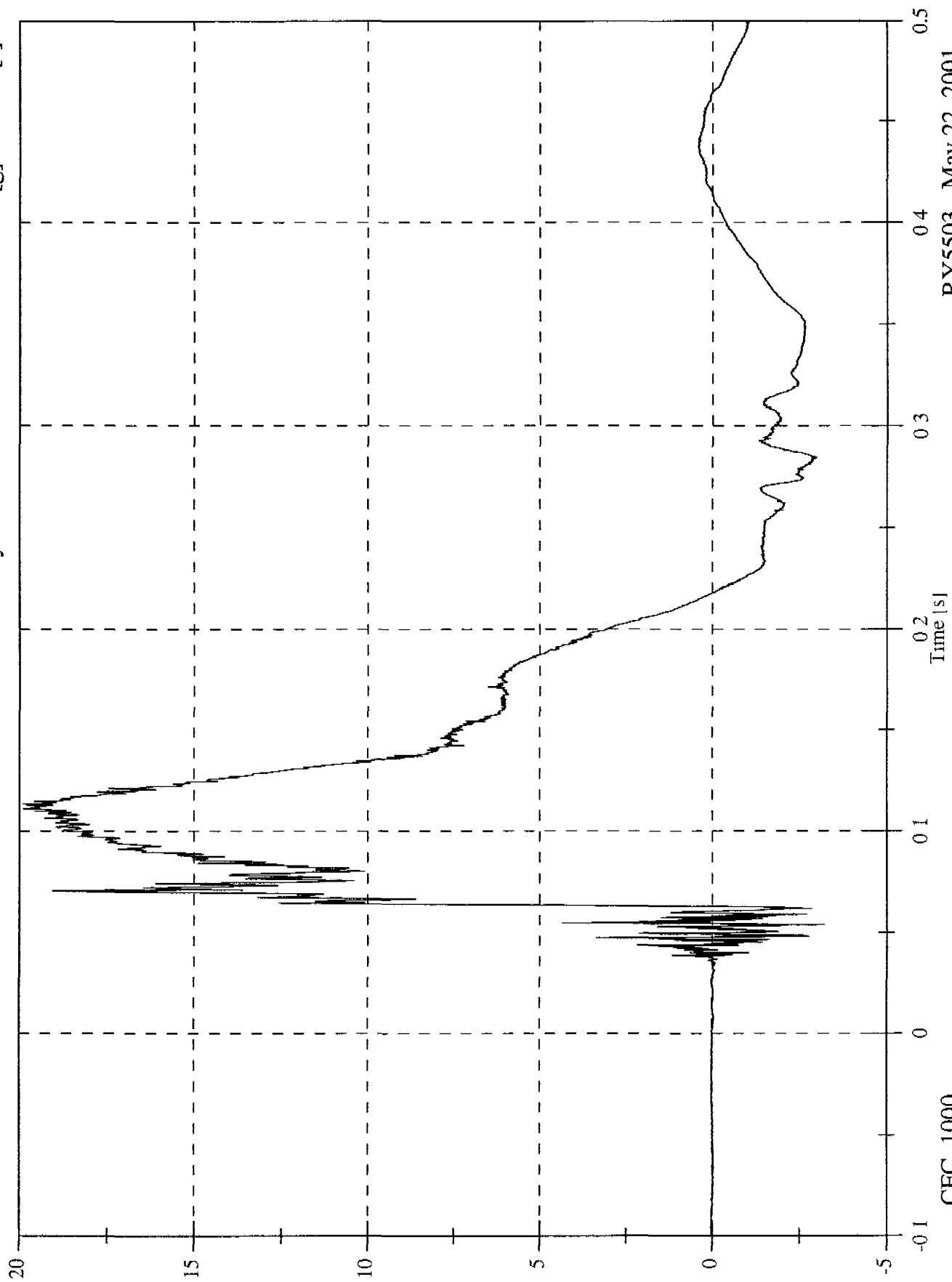
Time [s]

RY5503 - May 22, 2001

40% Frontal Offset Test # 6

Max: 19.9 [g] at 0.113 [s]
Min: -3.2 [g] at 0.054 [s]

P2 Head CG Ay



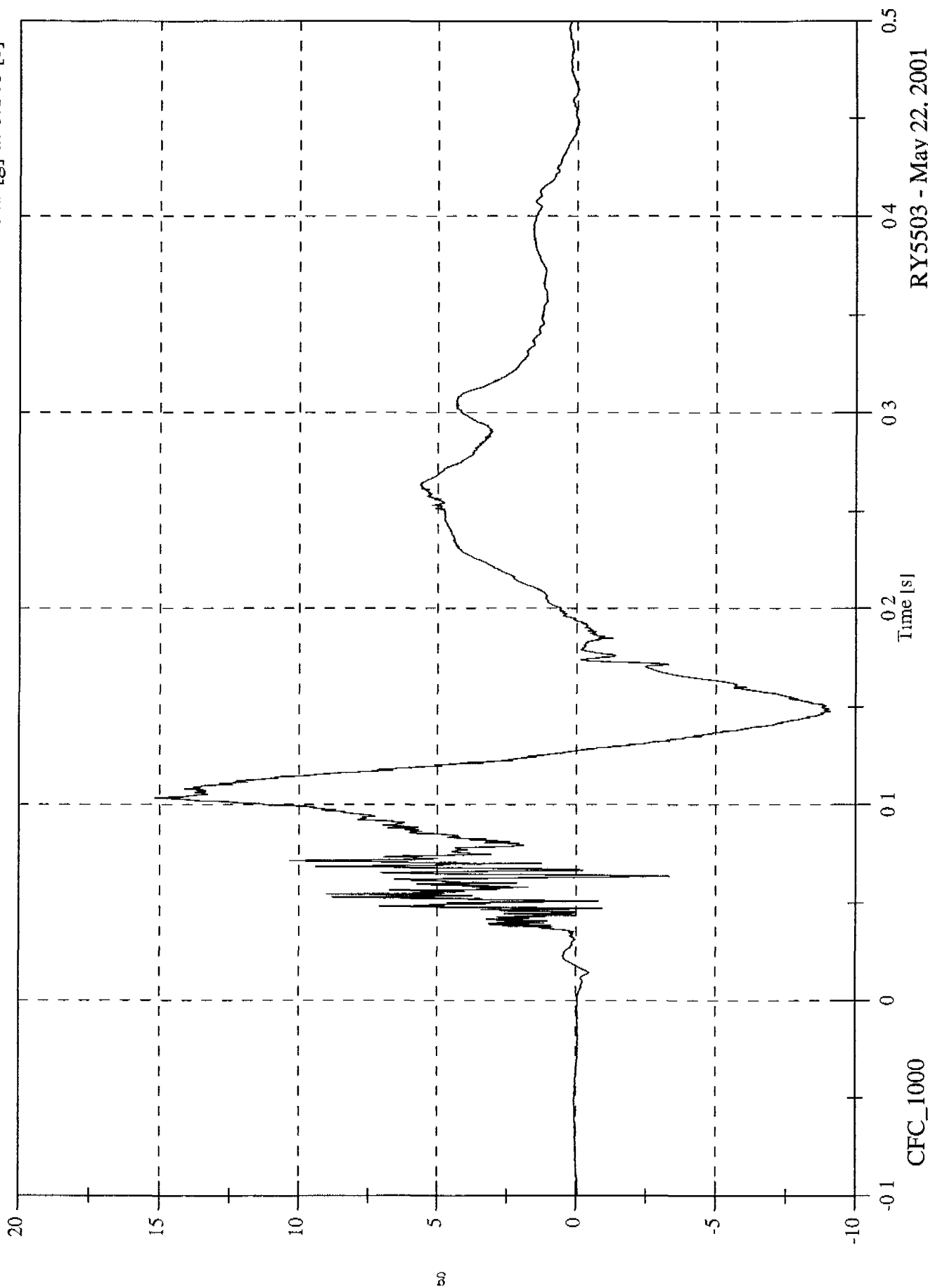
CFC_1000

RY5503 - May 22, 2001

40% Frontal Offset Test # 6

Max: 15.2 [g] at 0.103 [s]
Min: -9.1 [g] at 0.148 [s]

P2 Head CG Az

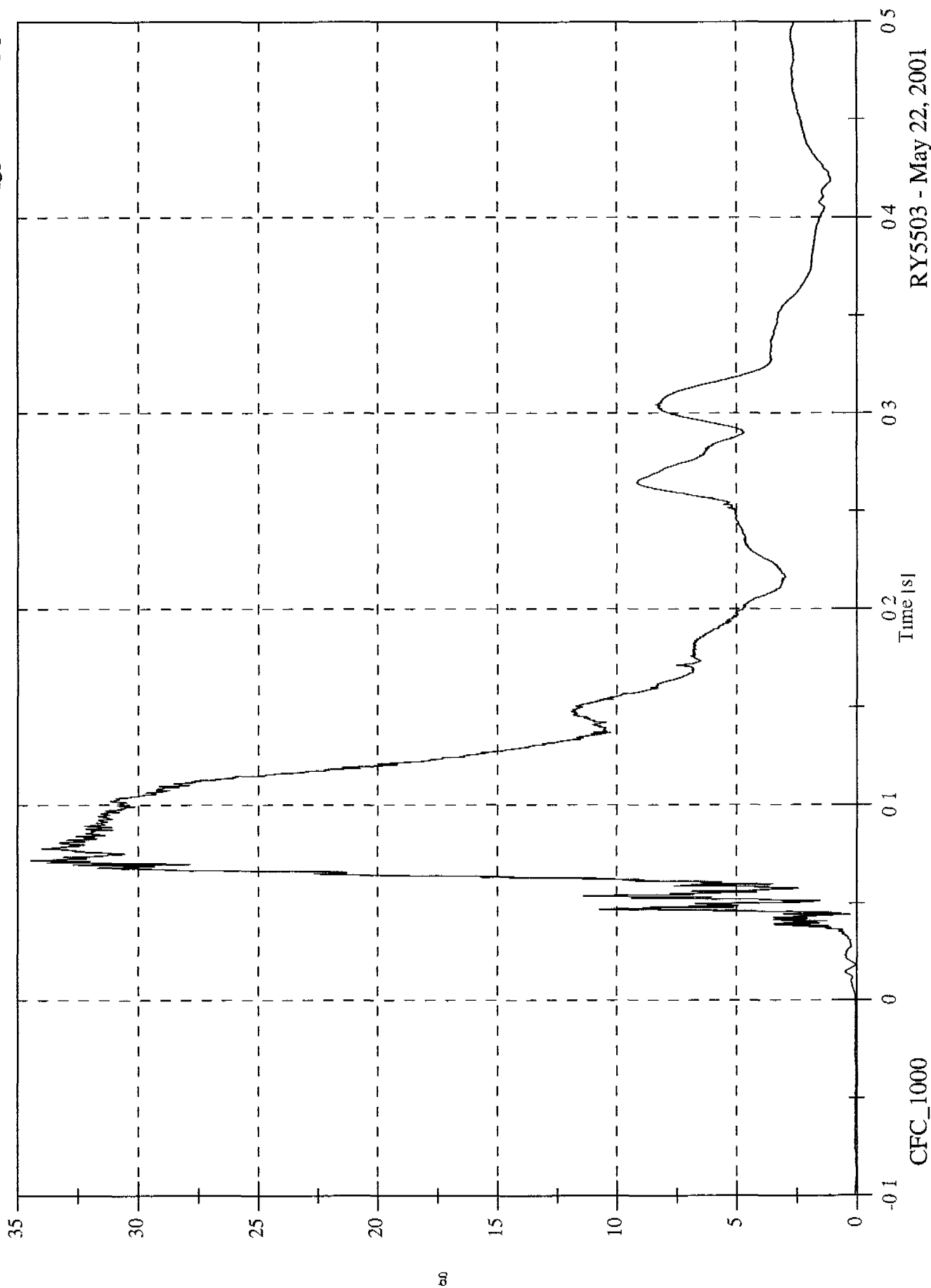


RY5503 - May 22, 2001

40% Frontal Offset Test # 6

P2 Head CG A Resultant

Max: 34.4 [g] at 0.072 [s]
Min: 0.0 [g] at -0.086 [s]

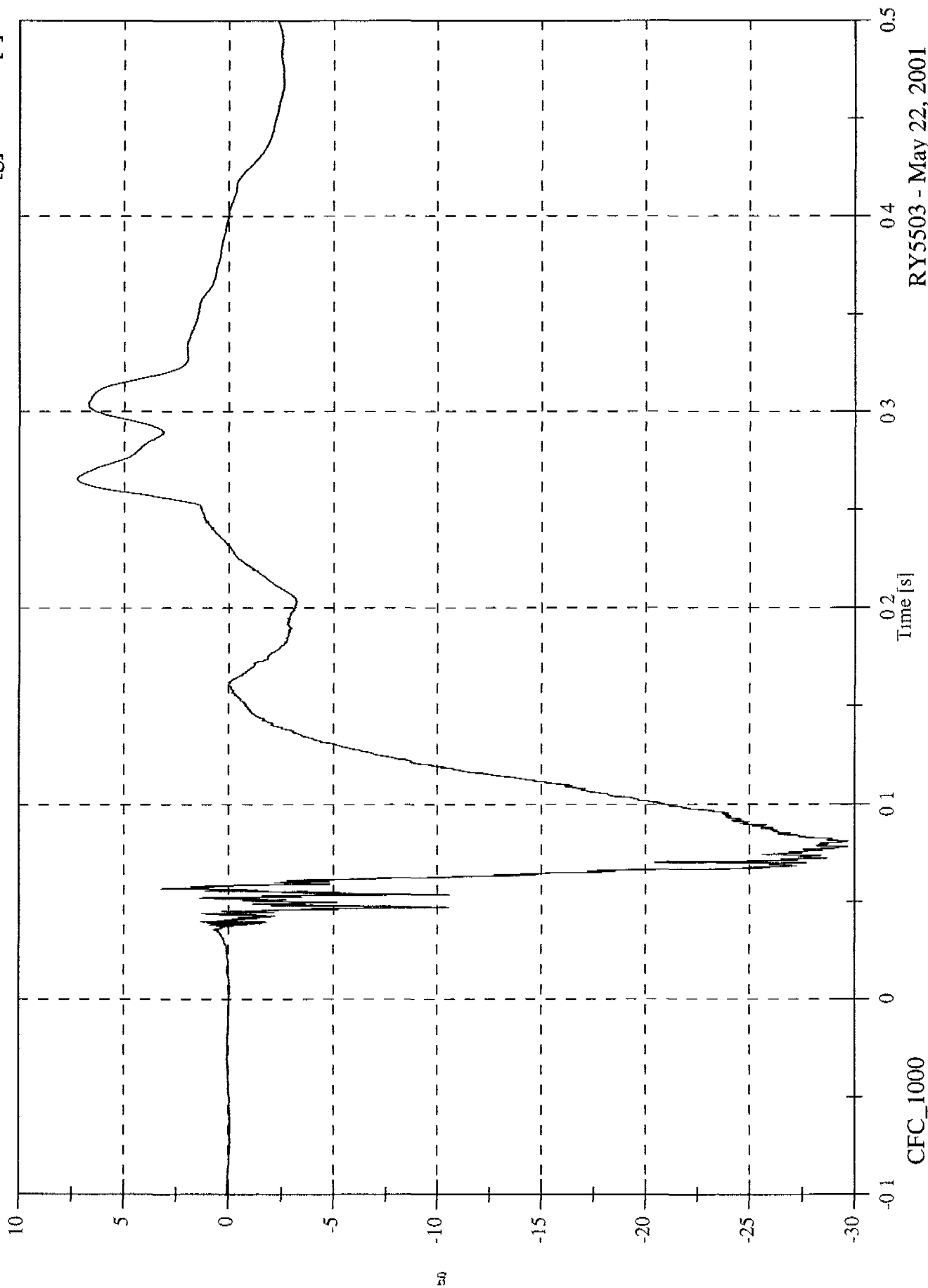


RY5503 - May 22, 2001

40% Frontal Offset Test # 6

Max: 7.3 [g] at 0.266 [s]
Min: -29.7 [g] at 0.081 [s]

P2 Head CG Red Ax

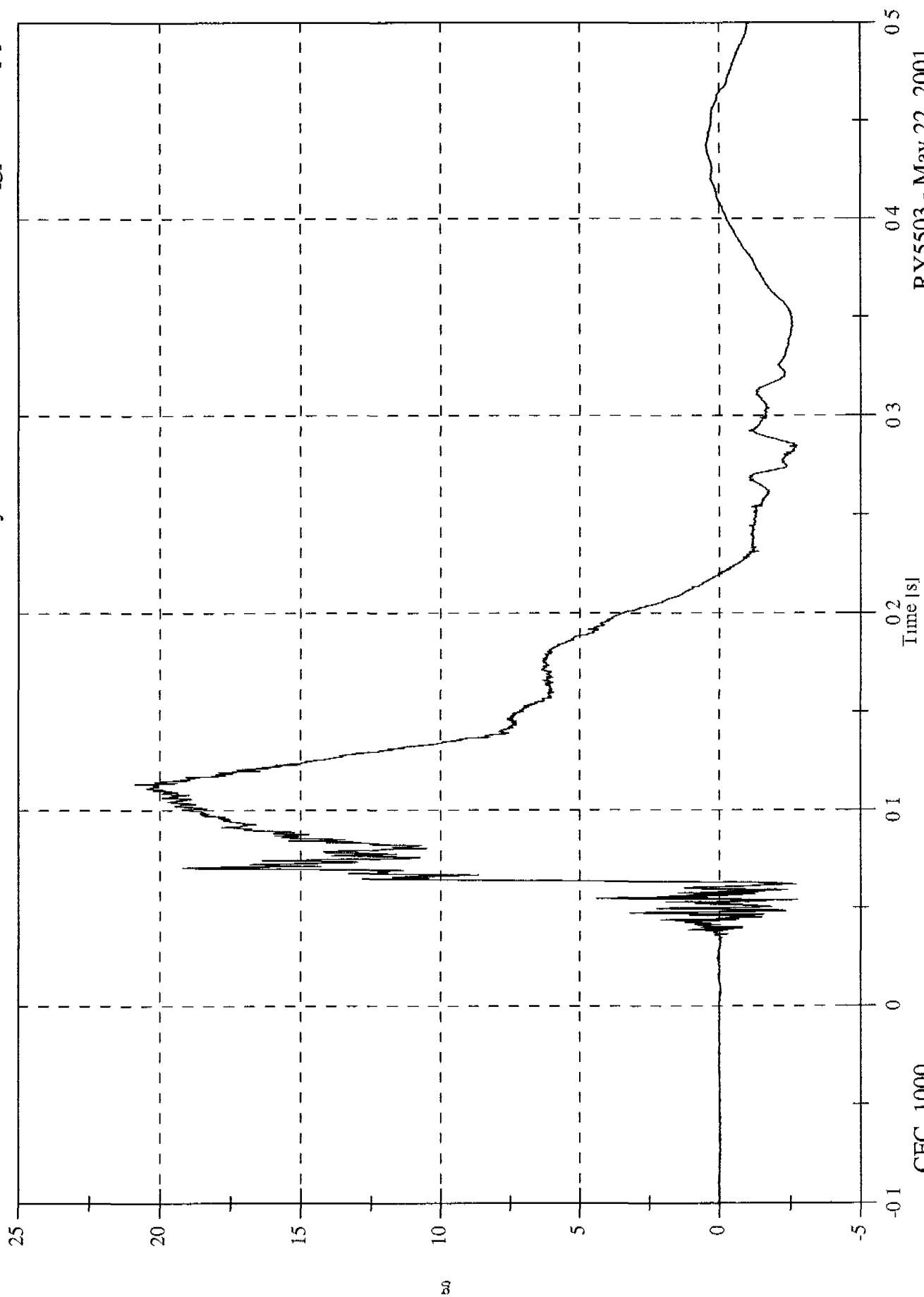


RY5503 - May 22, 2001

40% Frontal Offset Test # 6

Max: 20.9 [g] at 0.113 [s]
Min: -2.8 [g] at 0.054 [s]

P2 Head CG Red Ay



CFC_1000

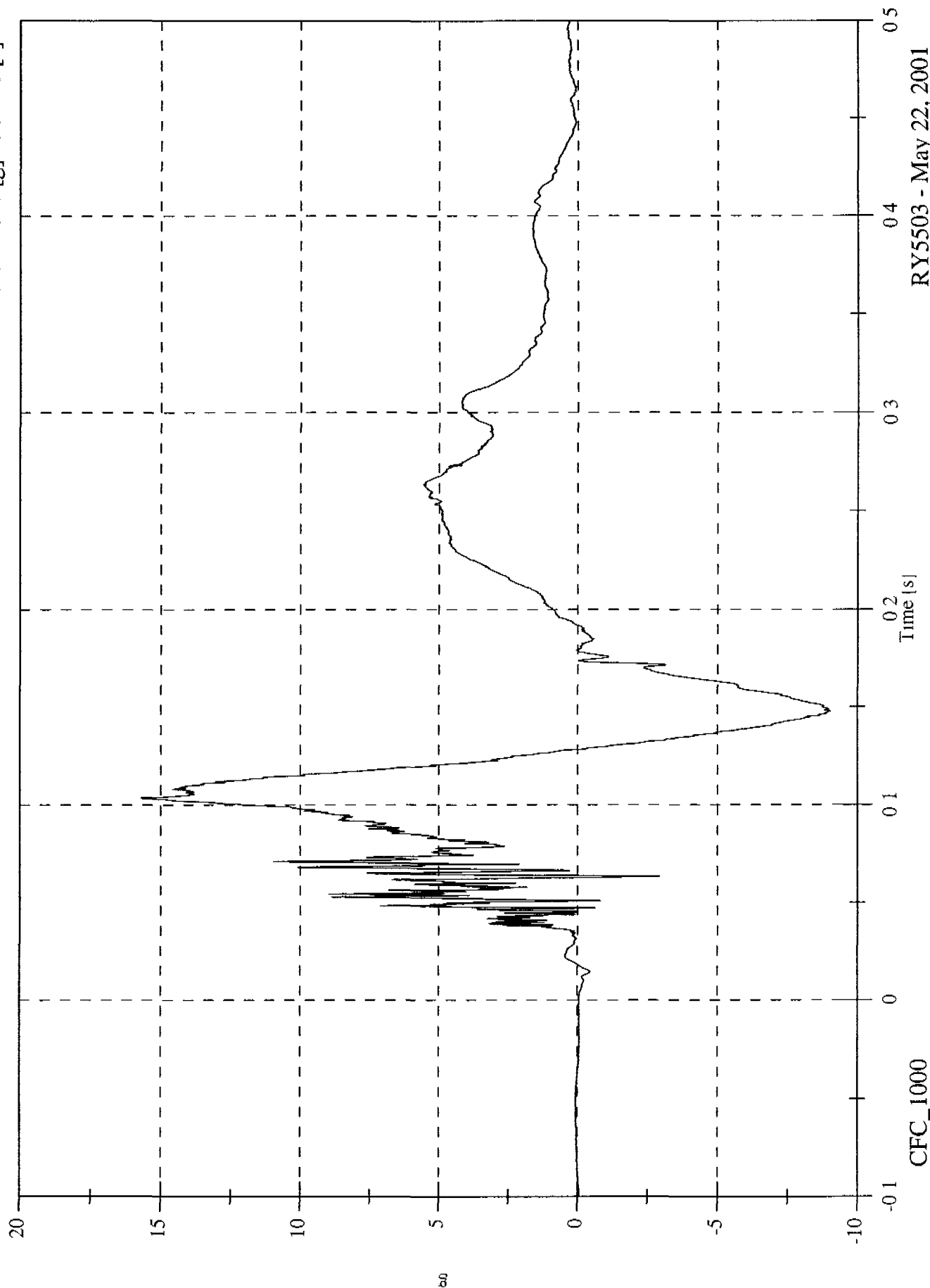
Time [s]

RY5503 - May 22, 2001

40% Frontal Offset Test # 6

Max: 15.7 [g] at 0.103 [s]
Min: -9.0 [g] at 0.148 [s]

P2 Head CG Red Az

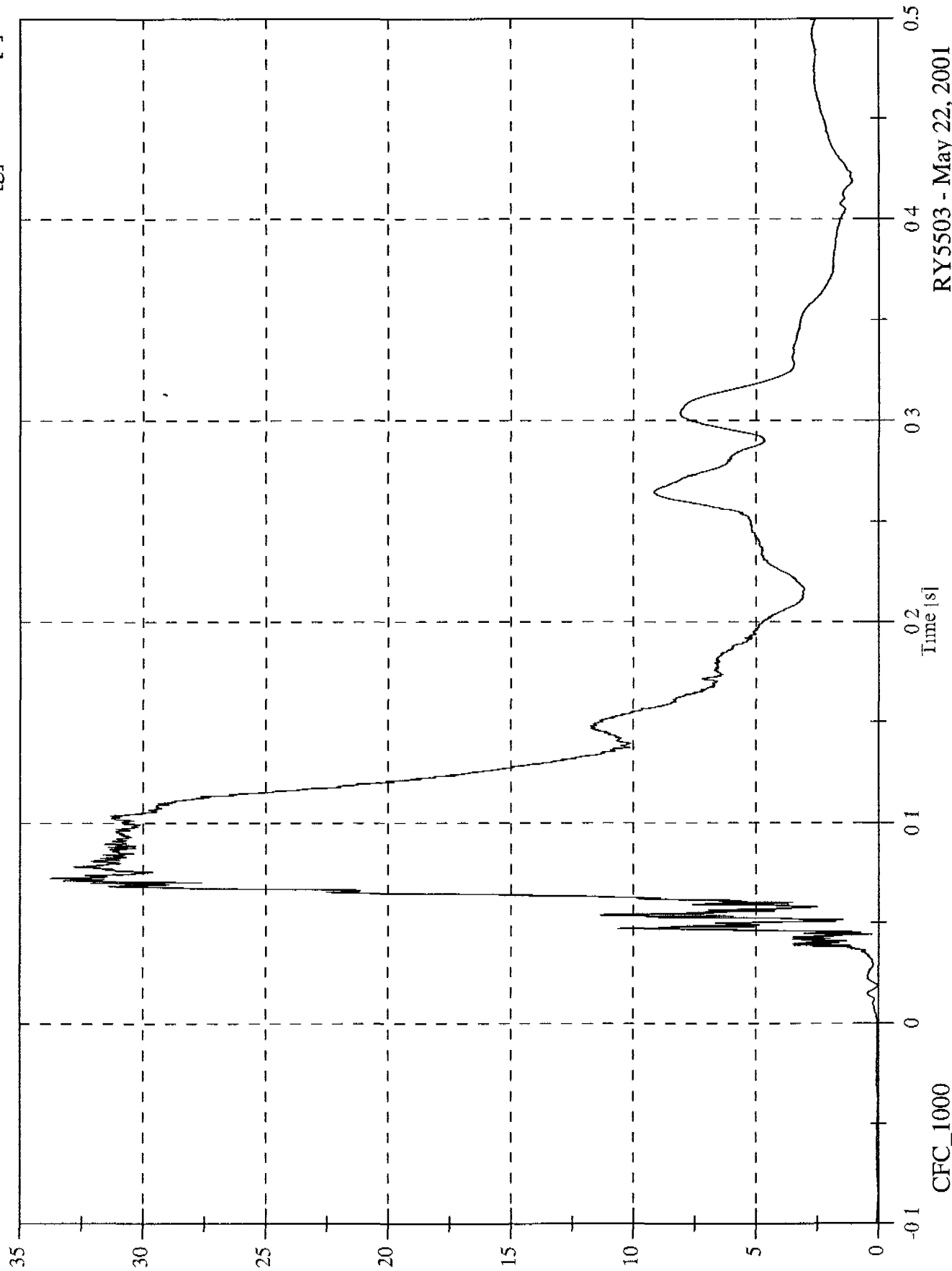


RY5503 - May 22, 2001

40% Frontal Offset Test # 6

Max: 33.8 [g] at 0.072 [s]
 Min: 0.0 [g] at -0.085 [s]

P2 Head CG Red A Resultant



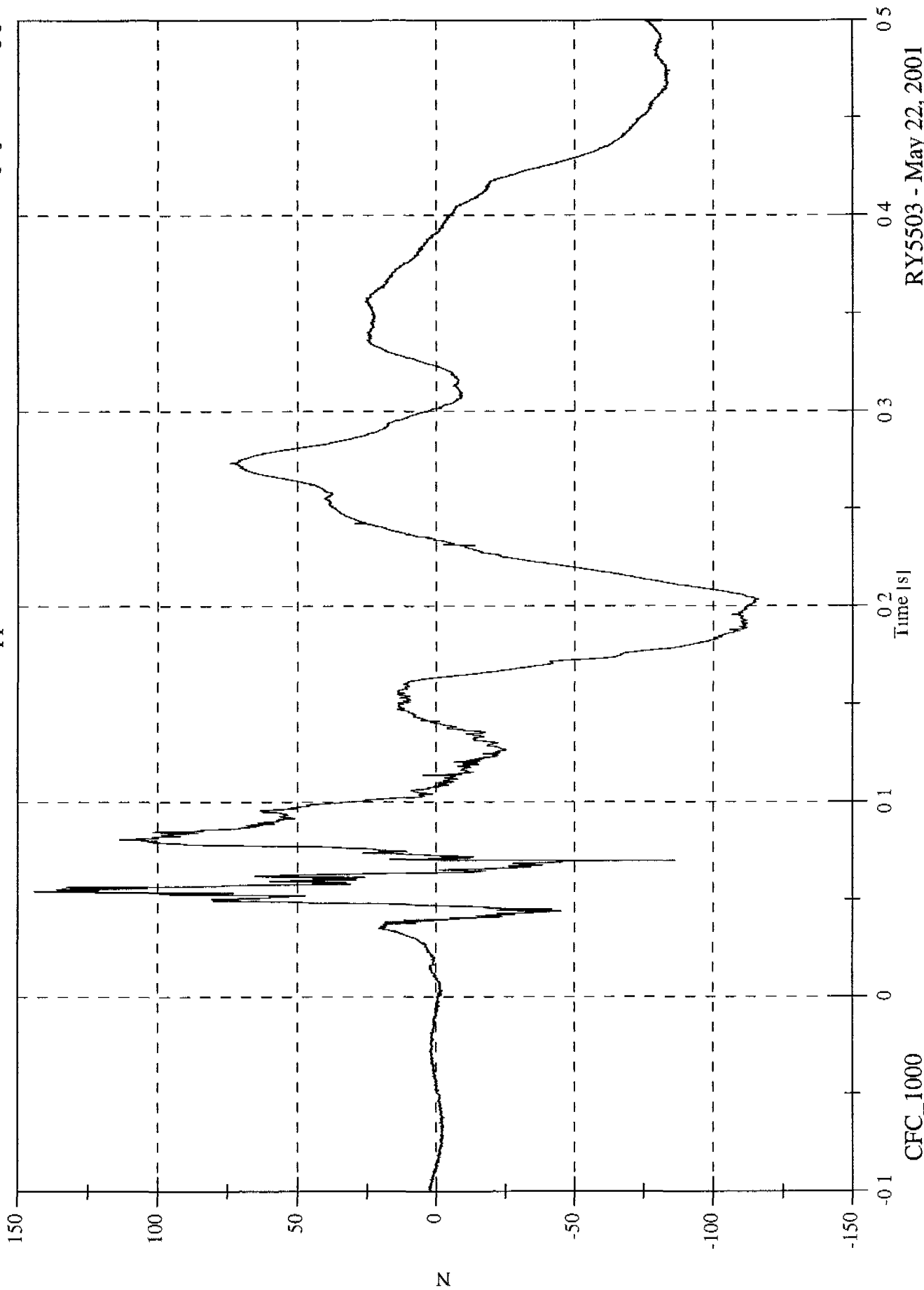
CFC_1000

RY5503 - May 22, 2001

40% Frontal Offset Test # 6

Max: 144.1 [N] at 0.054 [s]
Min: -116.3 [N] at 0.203 [s]

P2 Upper Neck Fx



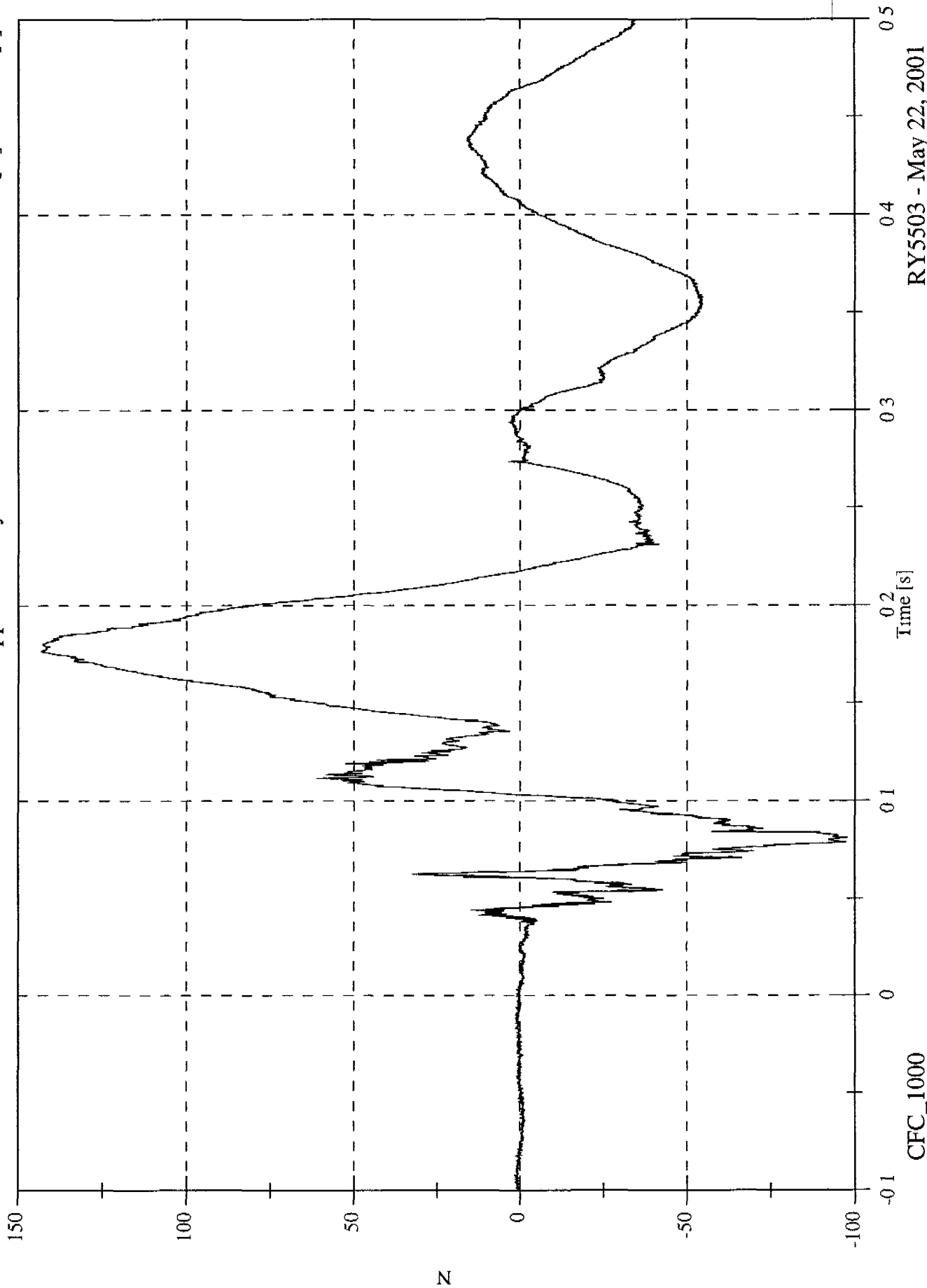
CFC_1000

RY5503 - May 22, 2001

40% Frontal Offset Test # 6

Max: 143.2 [N] at 0.177 [s]
Min: -97.8 [N] at 0.081 [s]

P2 Upper Neck Fy

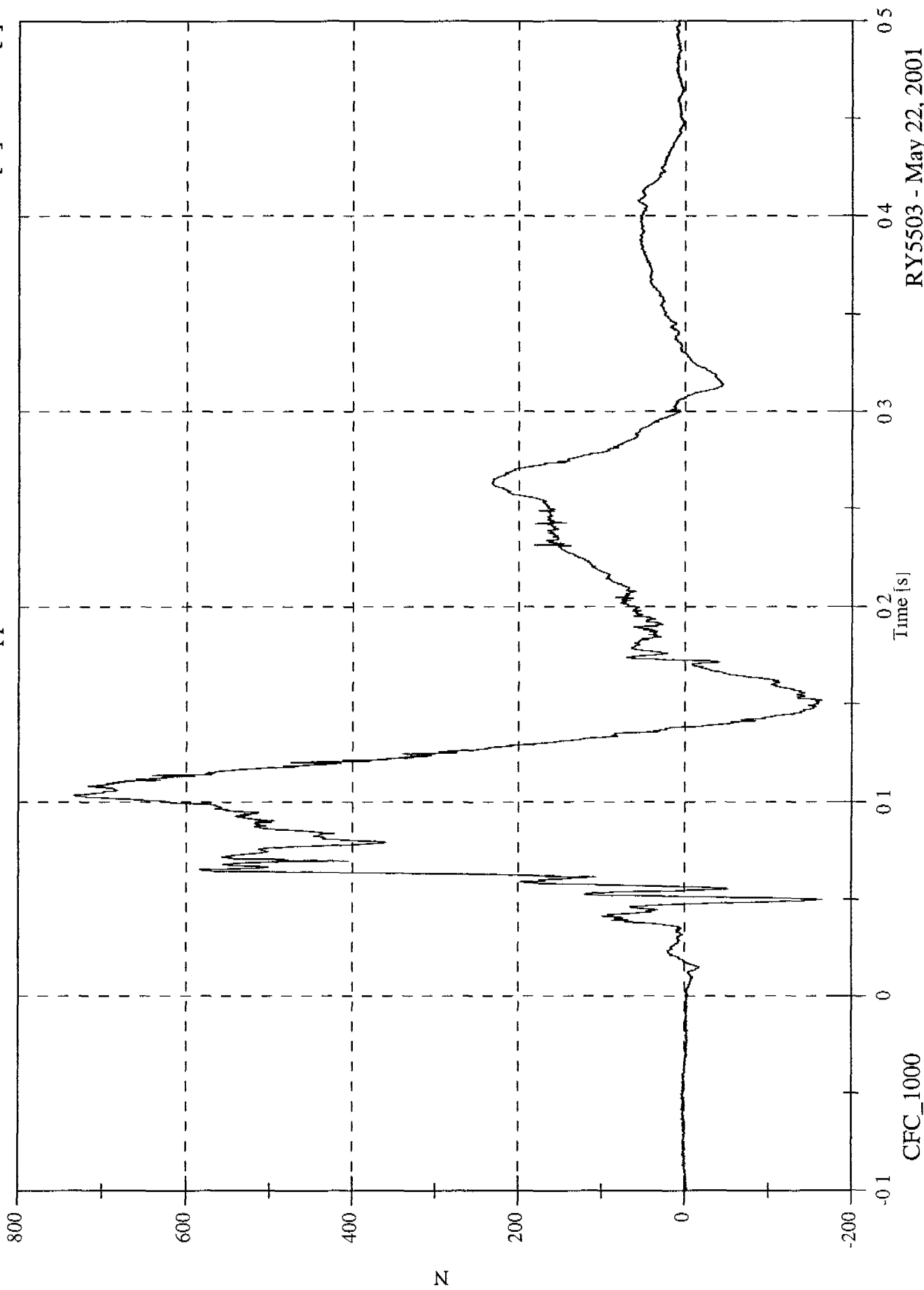


RY5503 - May 22, 2001

40% Frontal Offset Test # 6

Max: 733.7 [N] at 0.103 [s]
Min: -164.7 [N] at 0.050 [s]

P2 Upper Neck Fz

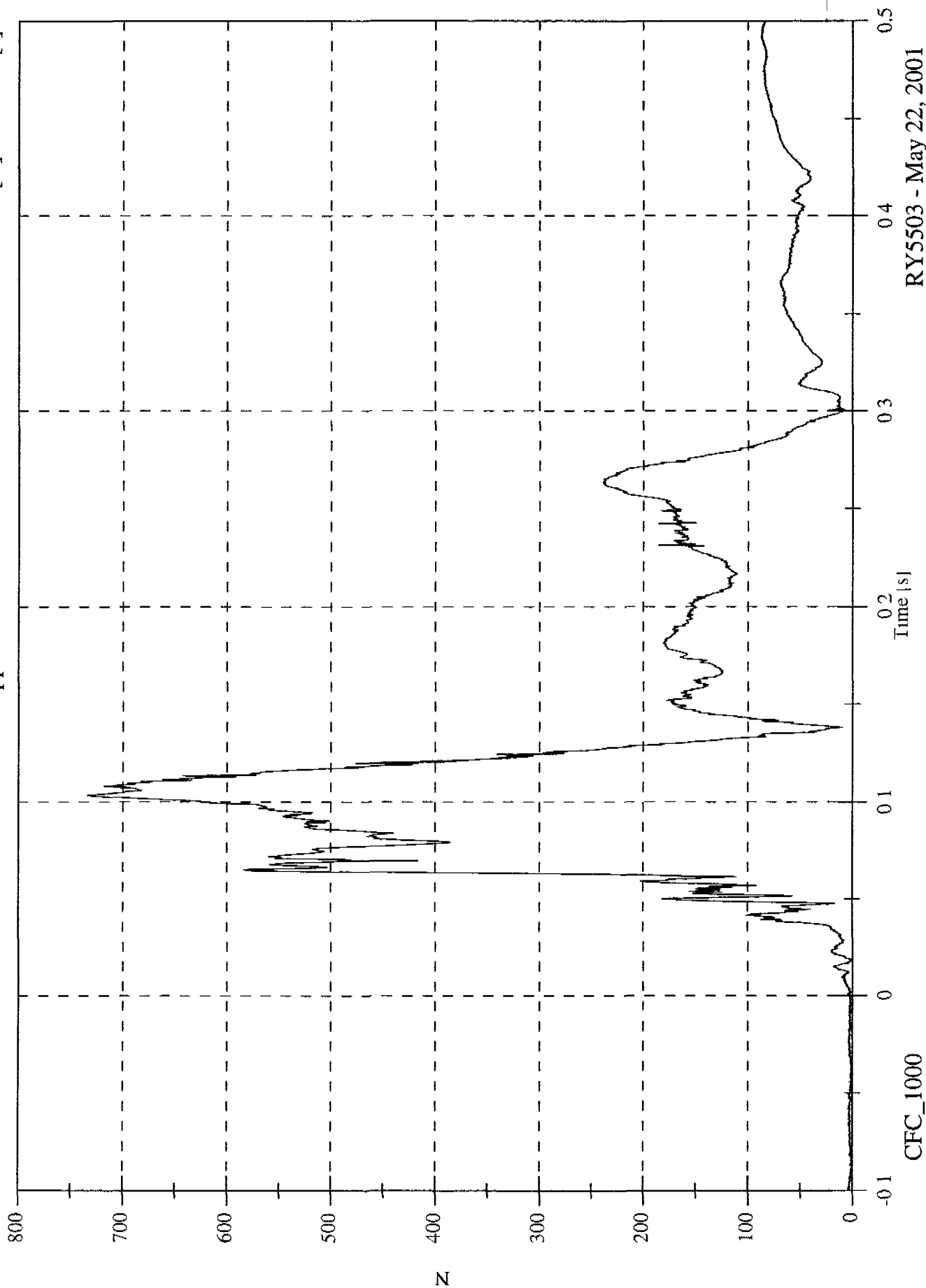


RY5503 - May 22, 2001

40% Frontal Offset Test # 6

Max: 733.7 [N] at 0.103 [s]
Min: 0.1 [N] at -0.085 [s]

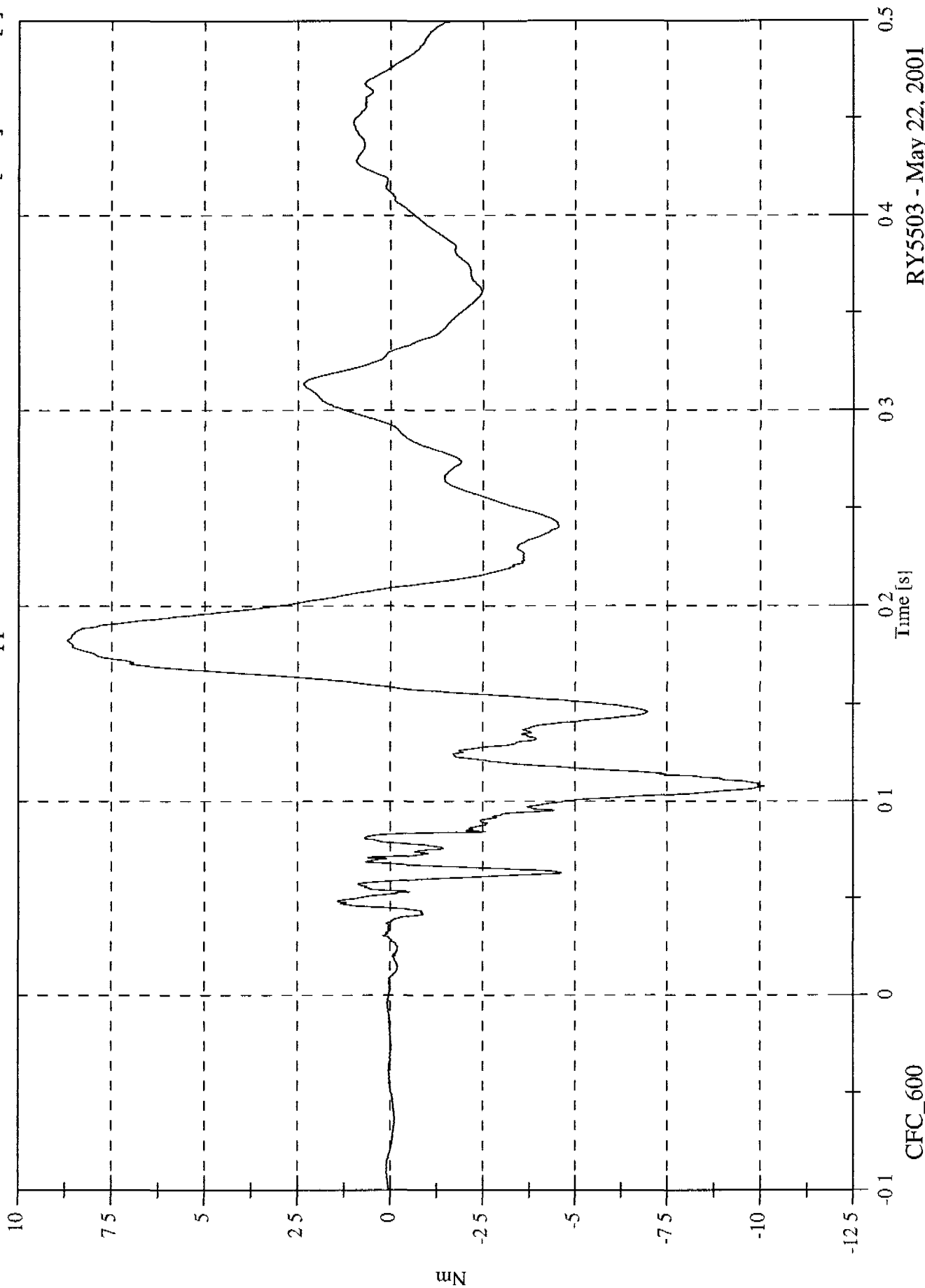
P2 Upper Neck F Resultant



RY5503 - May 22, 2001

Max: 8.7 [Nm] at 0.183 [s]
 Min: -10.1 [Nm] at 0.108 [s]

P2 Upper Neck Mx



CFC_600

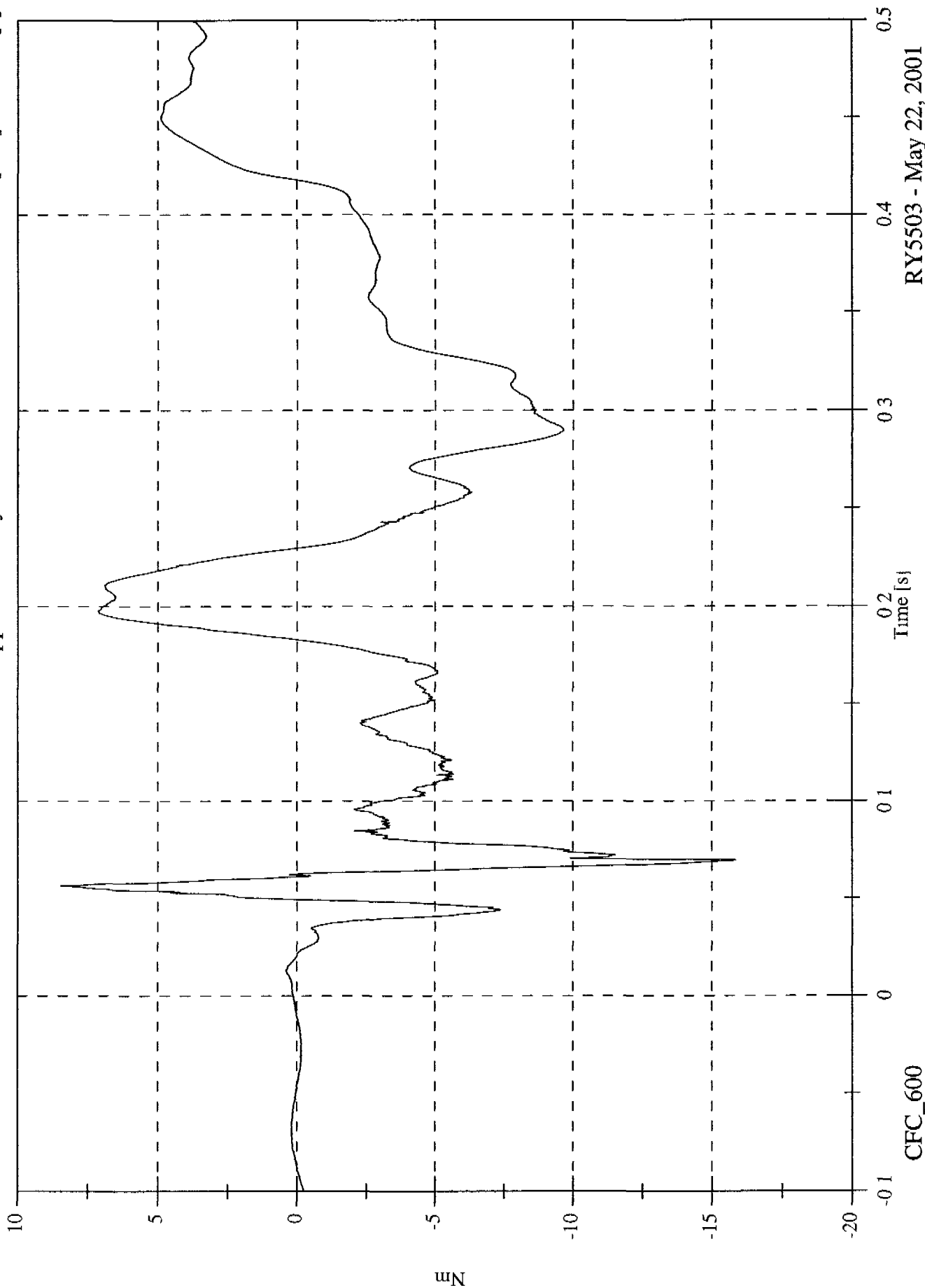
Time [s]

RY5503 - May 22, 2001

40% Frontal Offset Test # 6

P2 Upper Neck My

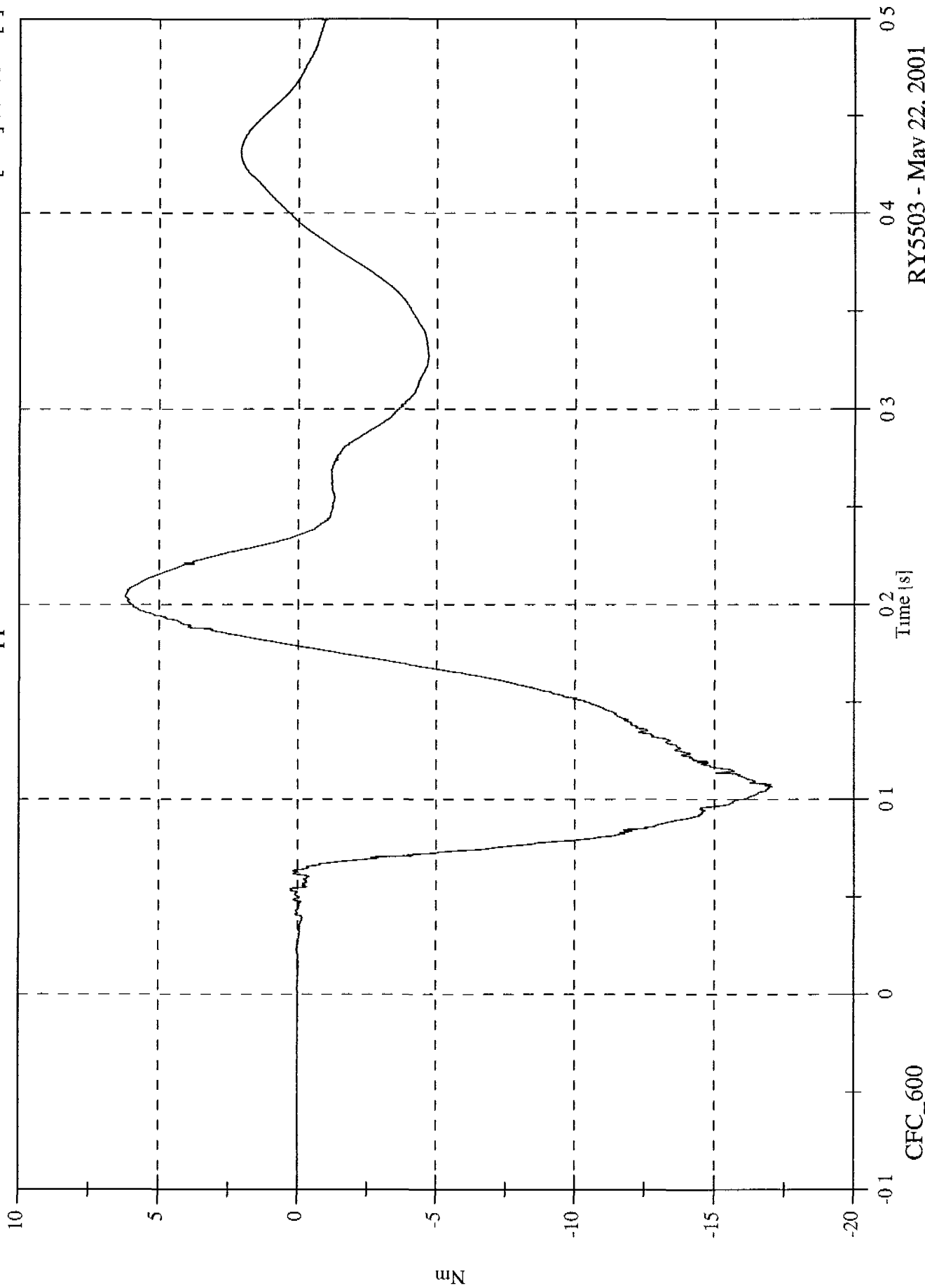
Max: 8.4 [Nm] at 0.057 [s]
Min: -15.9 [Nm] at 0.069 [s]



RY5503 - May 22, 2001

Max: 6.2 [Nm] at 0.204 [s]
Min: -17.1 [Nm] at 0.106 [s]

P2 Upper Neck Mz



CFC_600

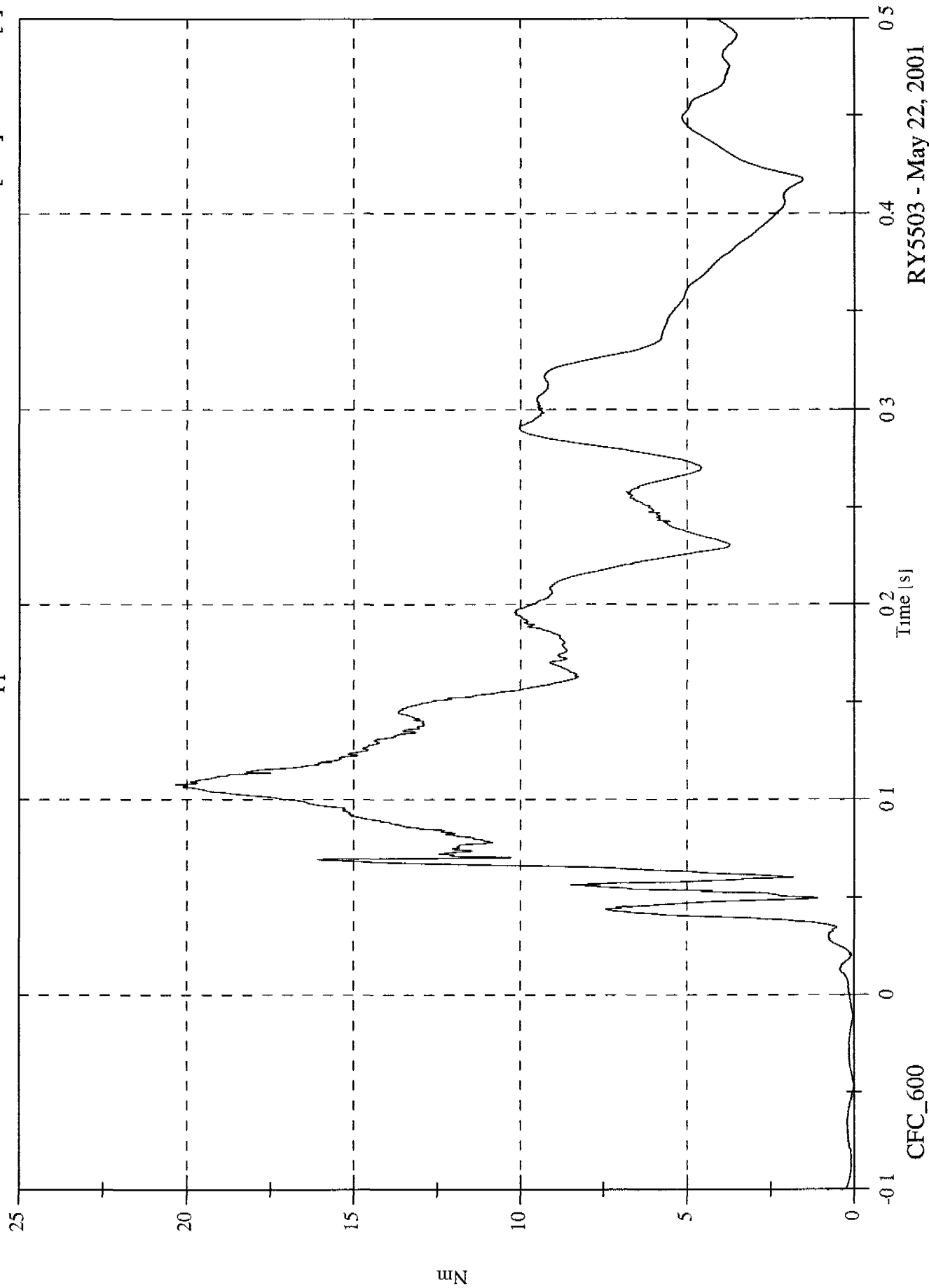
RY5503 - May 22, 2001

40% Frontal Offset Test # 6

Max: 20.3 [Nm] at 0.108 [s]

P2 Upper Neck M Resultant

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



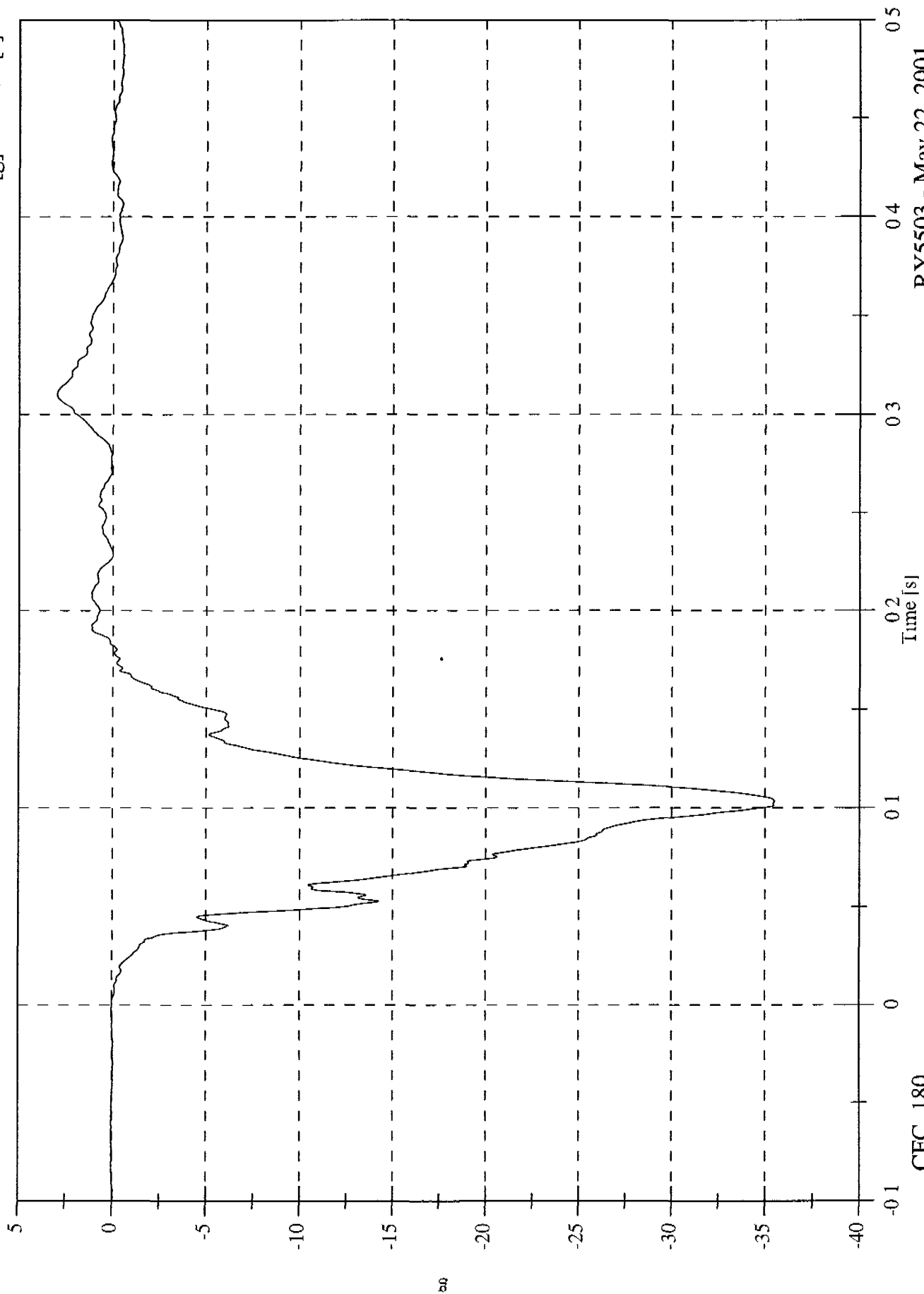
CFC_600

RY5503 - May 22, 2001

40% Frontal Offset Test # 6

Max: 3.0 [g] at 0.310 [s]
Min: -35.5 [g] at 0.103 [s]

P2 Chest Ax



CFC_180

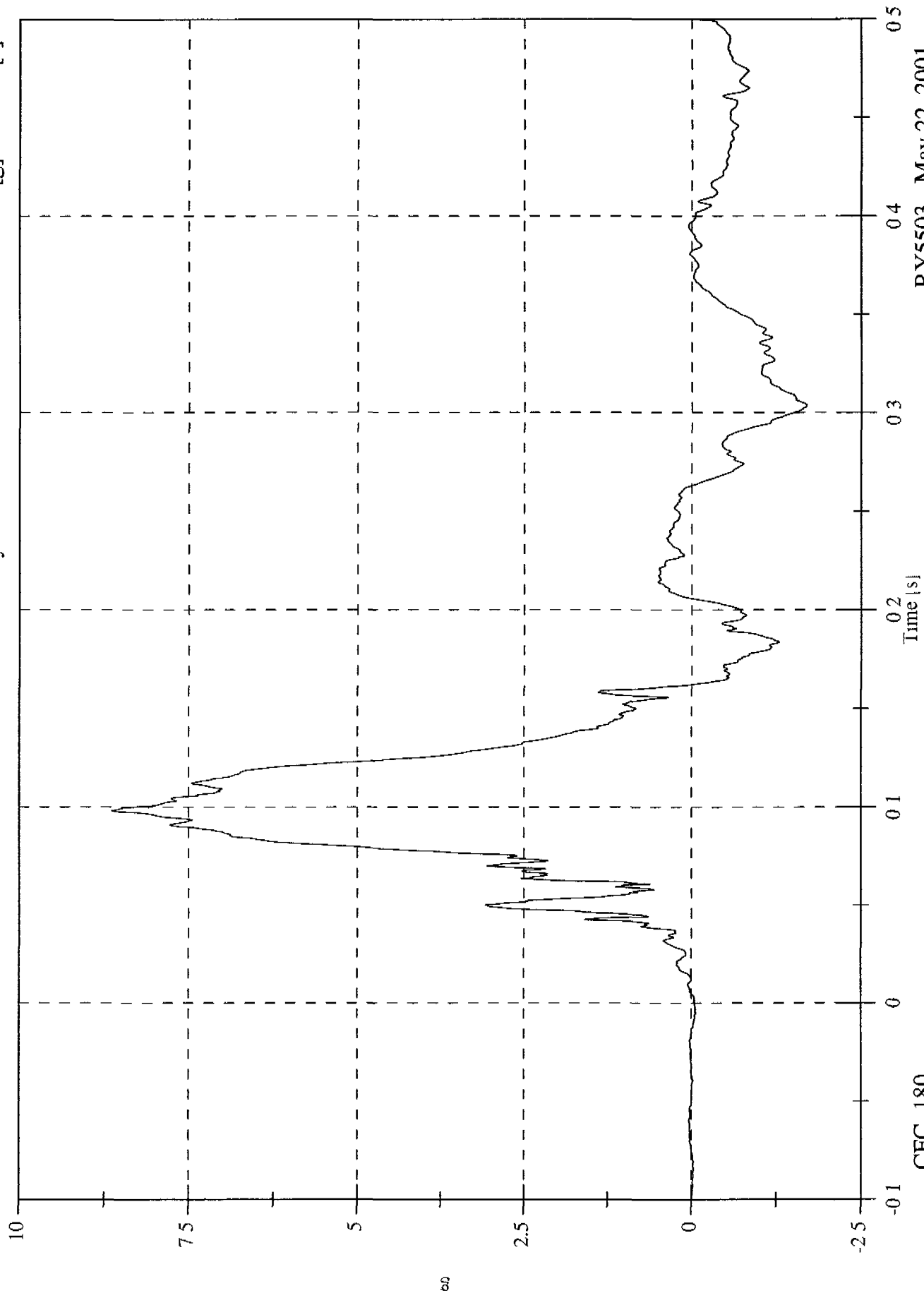
Time [s]

RY5503 - May 22, 2001

40% Frontal Offset Test # 6

Max: 8.6 [g] at 0.098 [s]
 Min: -1.7 [g] at 0.304 [s]

P2 Chest Ay



CFC_180

Time [s]

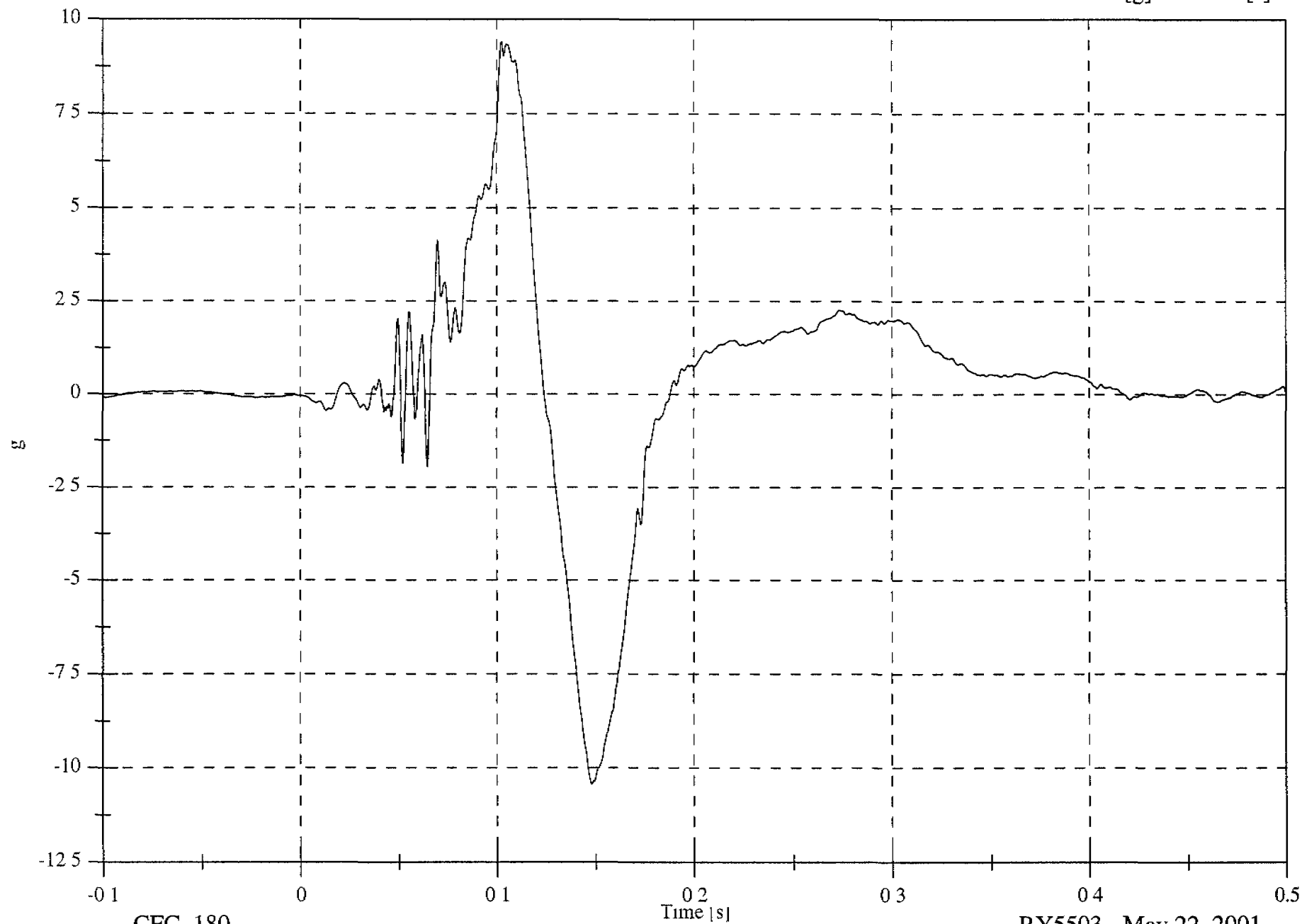
RY5503 - May 22, 2001

40% Frontal Offset Test # 6

Max: 9.4 [g] at 0.102 [s]

Min: -10.4 [g] at 0.148 [s]

P2 Chest Az



CFC_180

RY5503 - May 22, 2001

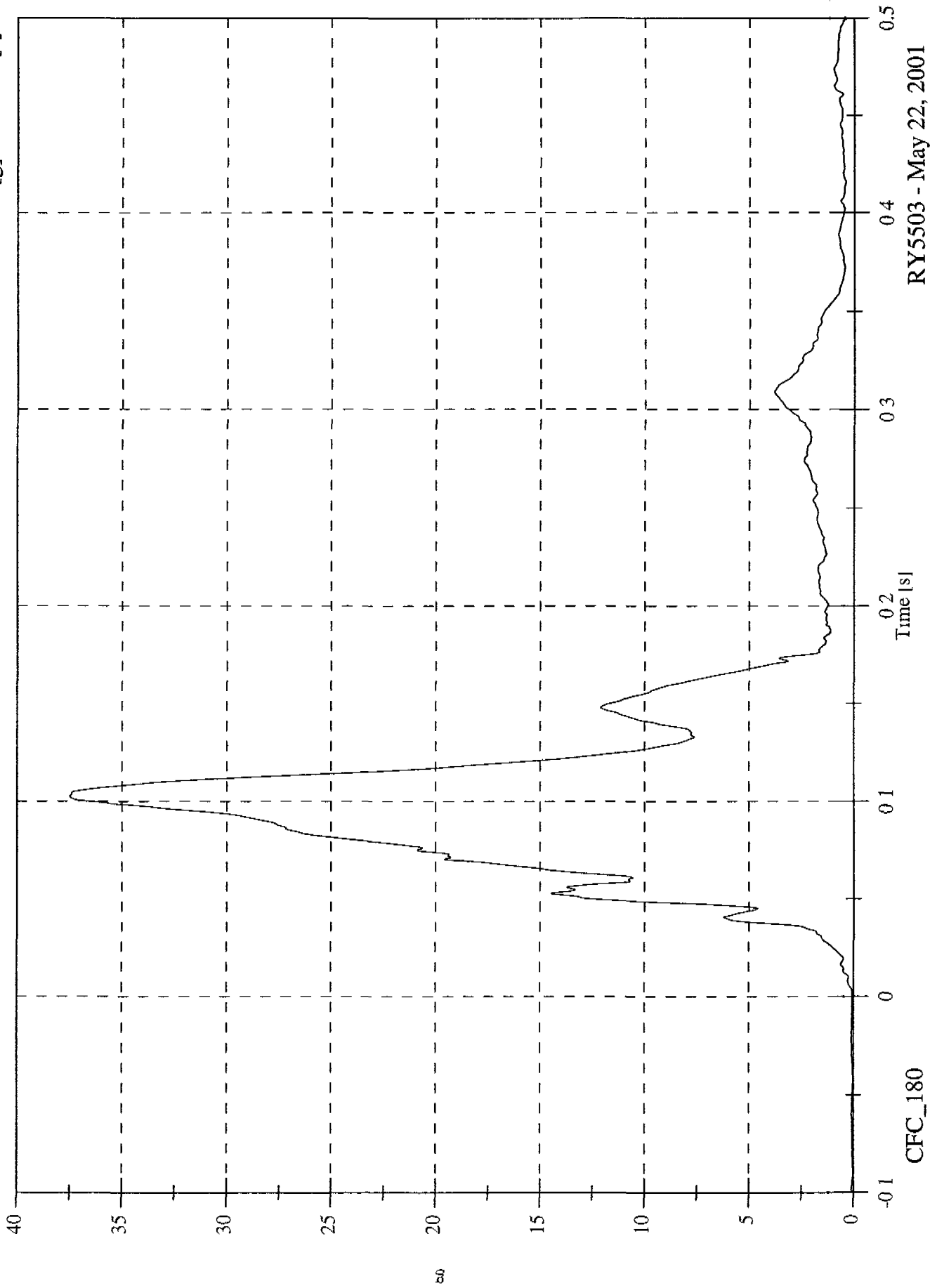
B-123

8413-62

40% Frontal Offset Test # 6

P2 Chest A Resultant

Max: 37.5 [g] at 0.102 [s]
Min: 0.0 [g] at -0.100 [s]

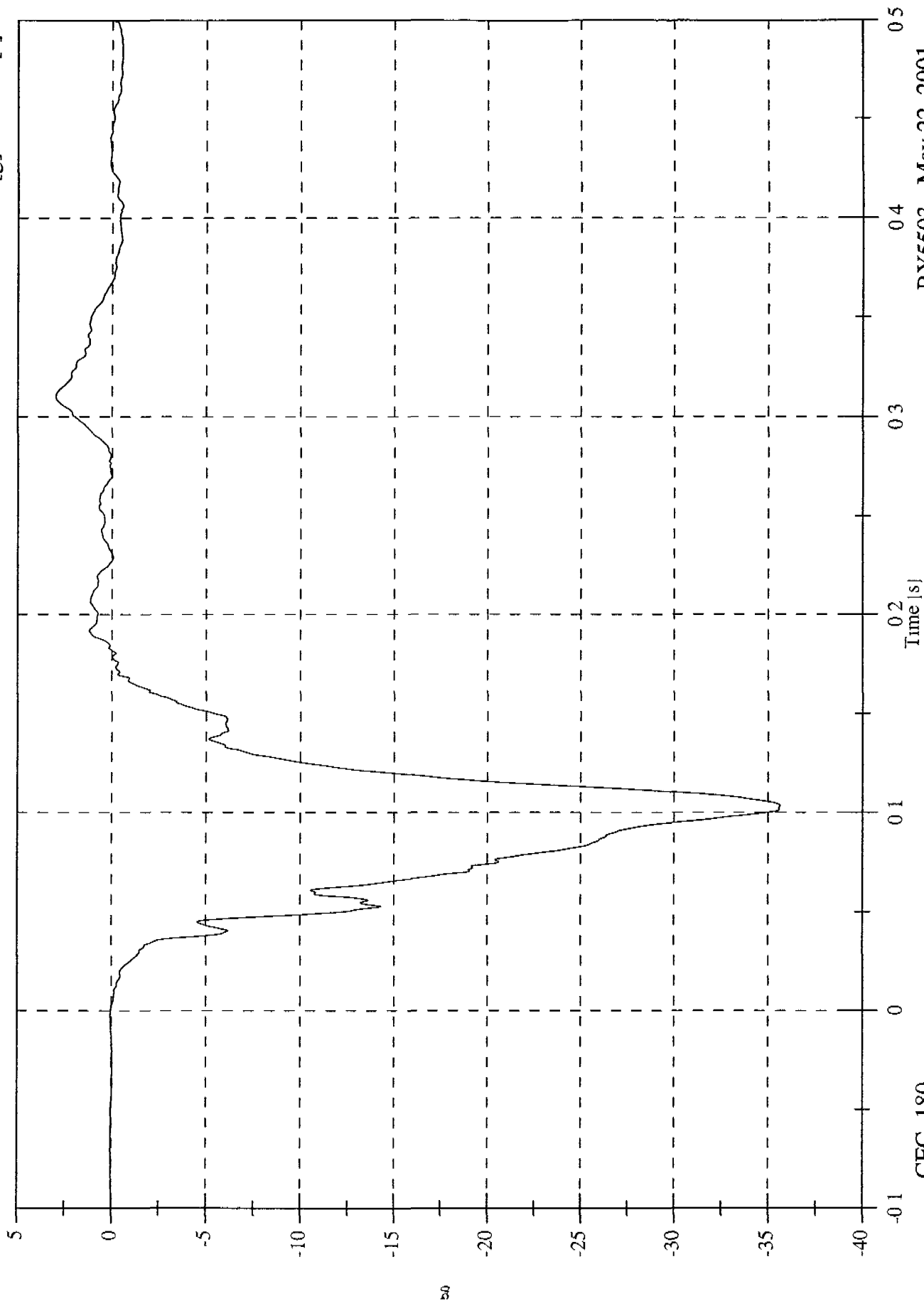


RY5503 - May 22, 2001

40% Frontal Offset Test # 6

Max: 3.0 [g] at 0.310 [s]
Min: -35.6 [g] at 0.103 [s]

P2 Chest Red Ax



CFC_180

Time [s]

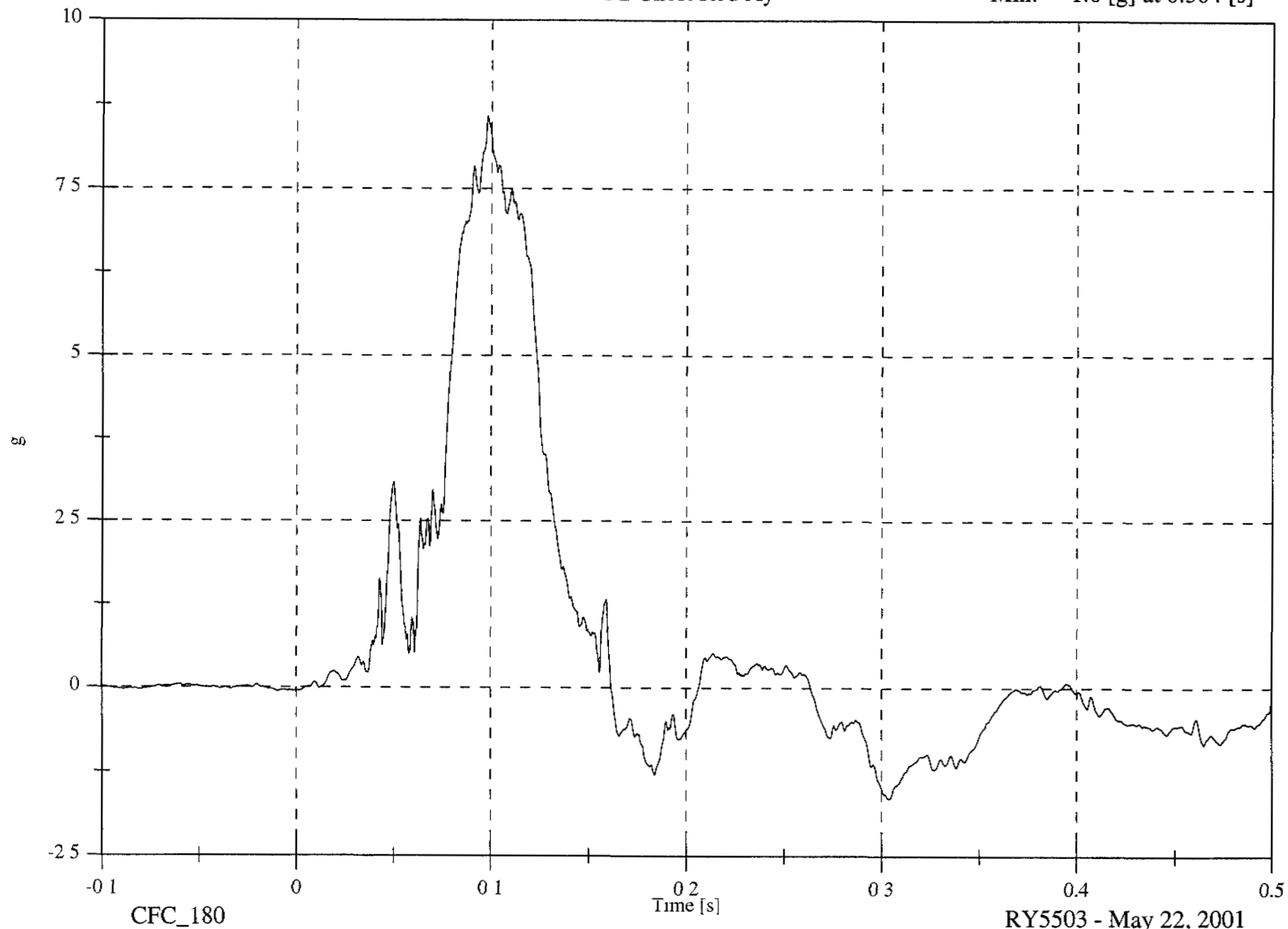
RY5503 - May 22, 2001

40% Frontal Offset Test # 6

P2 Chest Red Ay

Max: 8.6 [g] at 0.098 [s]

Min: -1.6 [g] at 0.304 [s]

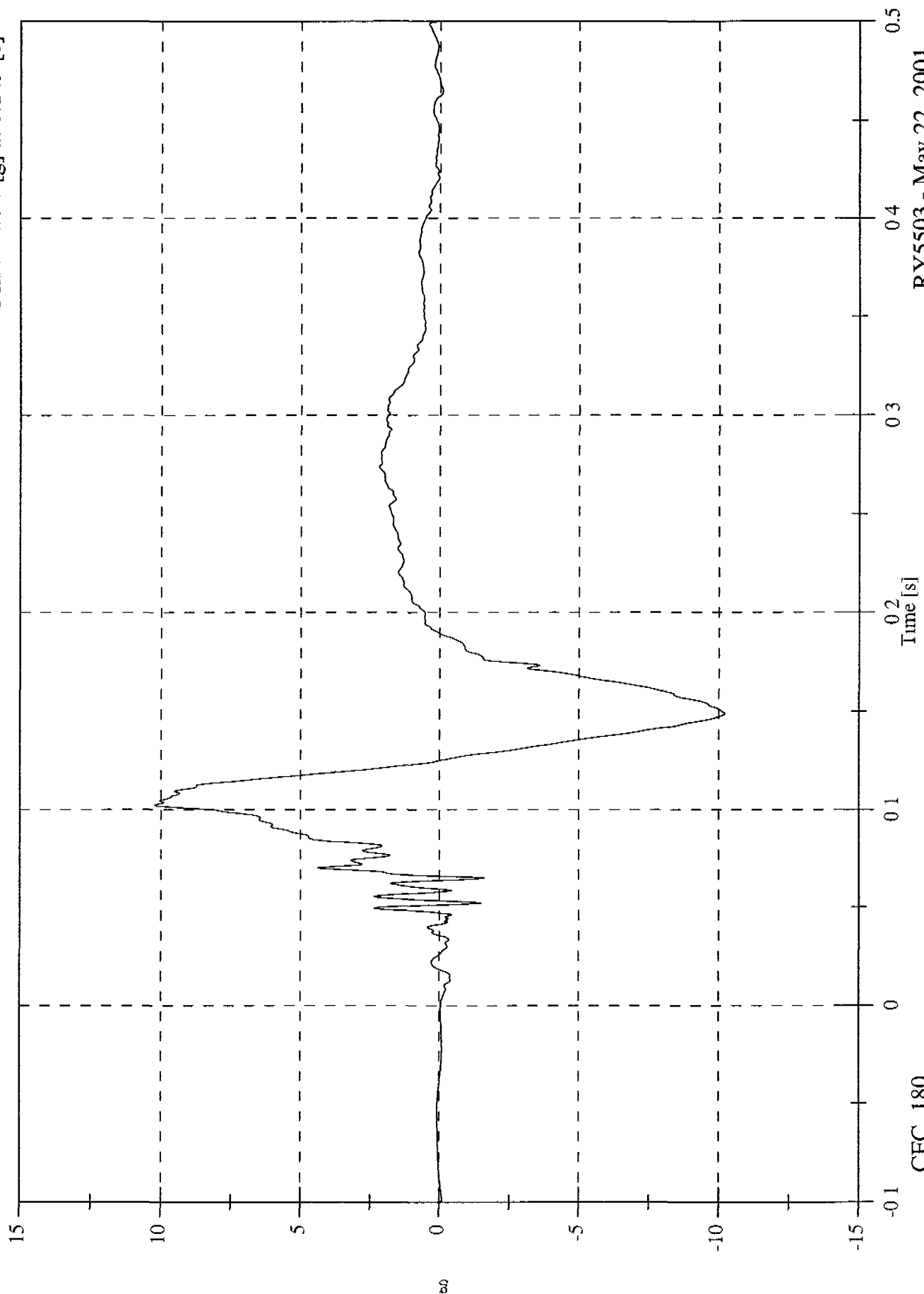


40% Frontal Offset Test # 6

Max: 10.2 [g] at 0.102 [s]

Min: -10.2 [g] at 0.149 [s]

P2 Chest Red Az



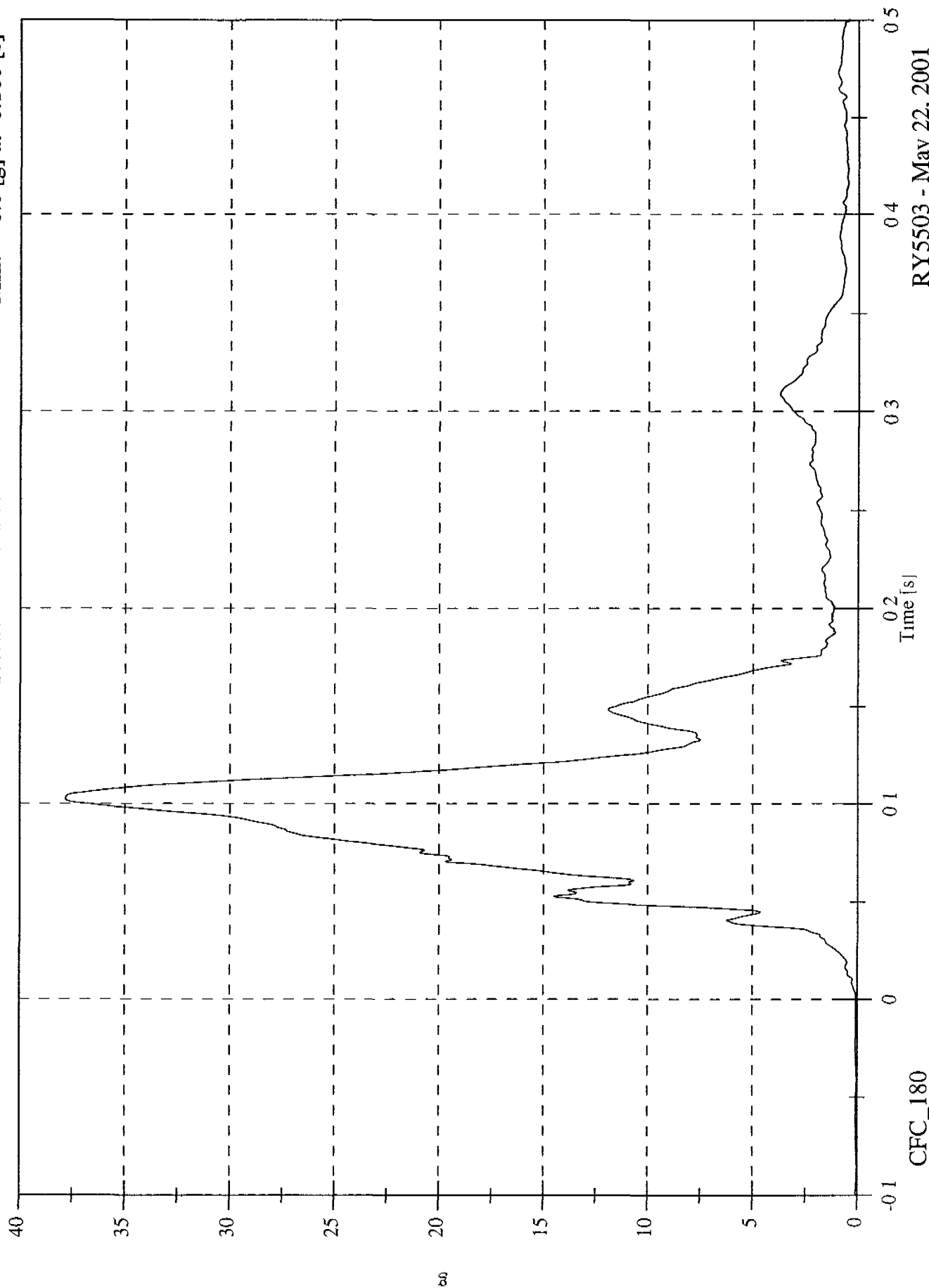
CFC_180

RY5503 - May 22, 2001

40% Frontal Offset Test # 6

P2 Chest Red A Resultant

Max: 37.8 [g] at 0.102 [s]
Min: 0.0 [g] at -0.100 [s]



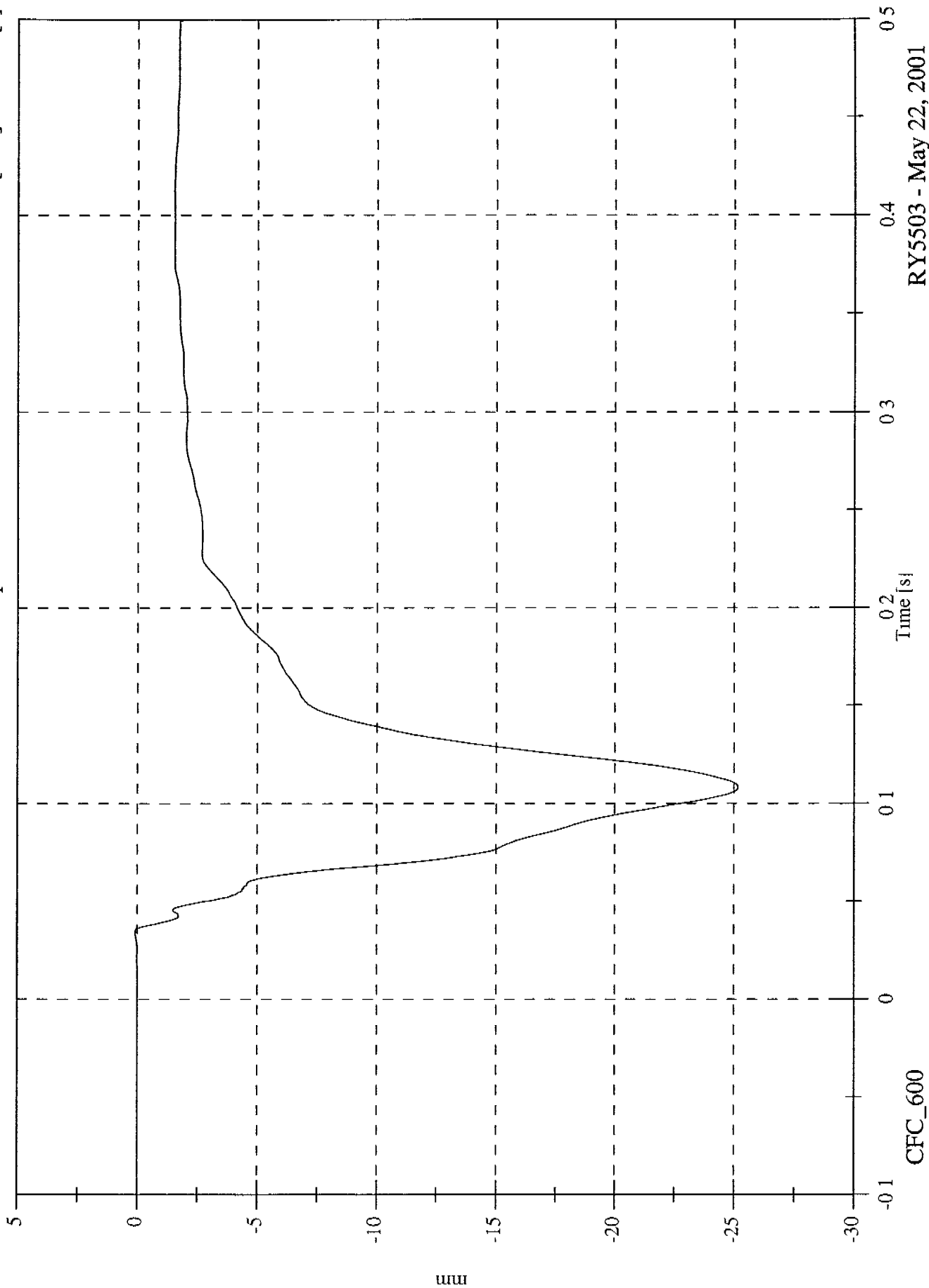
CFC_180

RY5503 - May 22, 2001

40% Frontal Offset Test # 6

Max: 0.1 [mm] at 0.034 [s]
Min: -25.2 [mm] at 0.108 [s]

P2 Chest Displacement



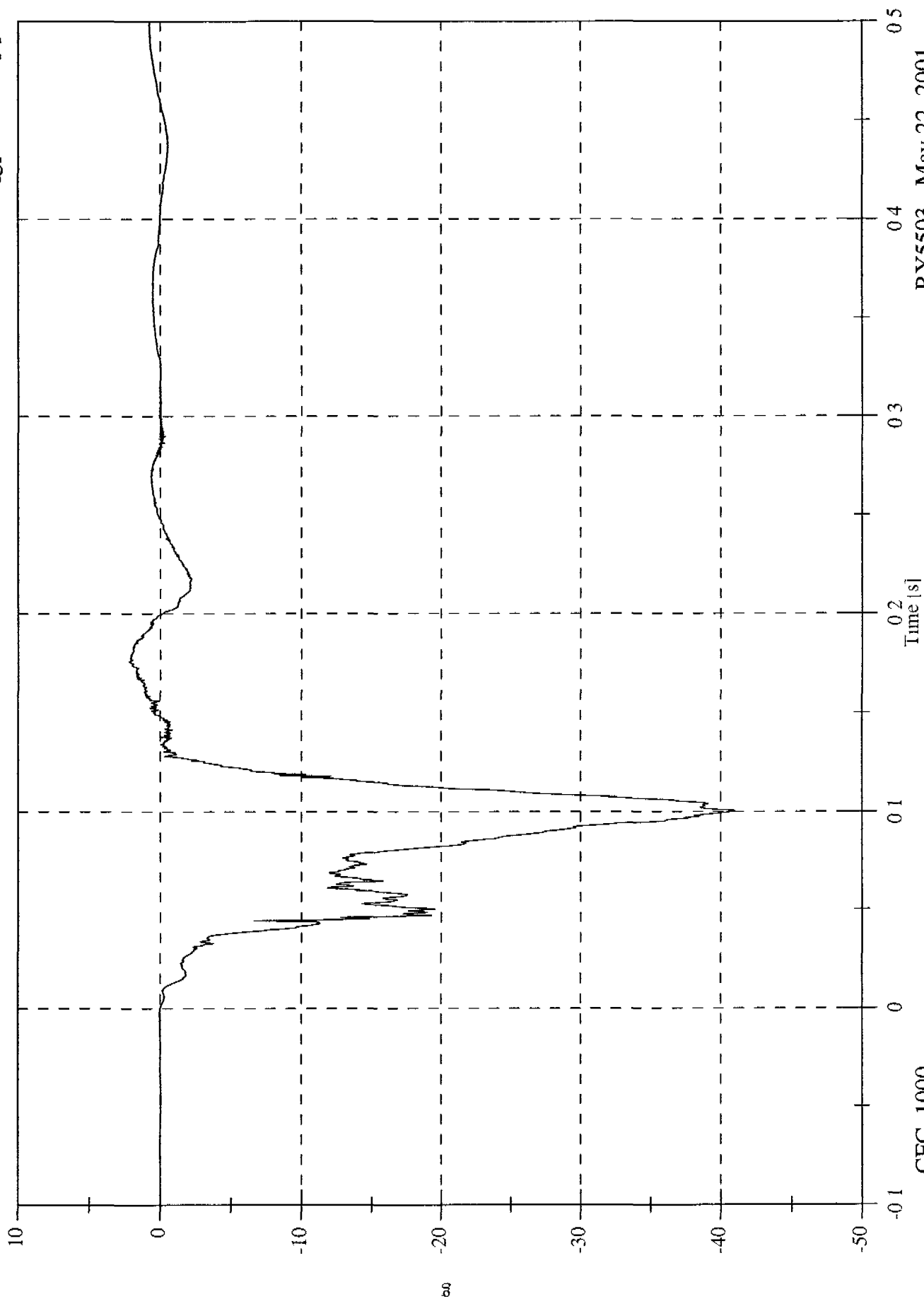
CFC_600

RY5503 - May 22, 2001

40% Frontal Offset Test # 6

Max: 2.2 [g] at 0.176 [s]
 Min: -41.0 [g] at 0.100 [s]

P2 Pelvic Ax

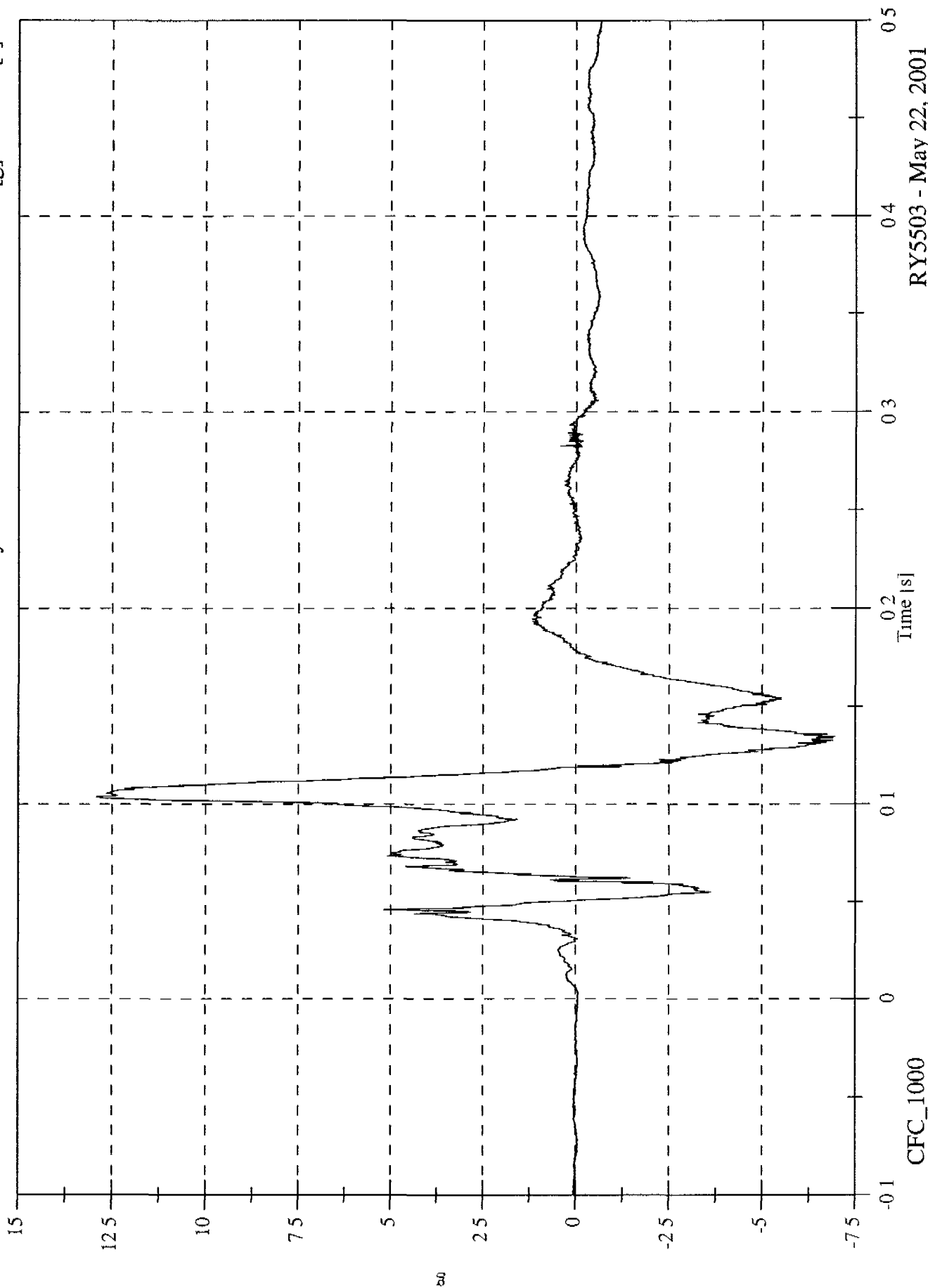


RY5503 - May 22, 2001

40% Frontal Offset Test # 6

Max: 12.9 [g] at 0.103 [s]
Min: -7.0 [g] at 0.134 [s]

P2 Pelvic Ay

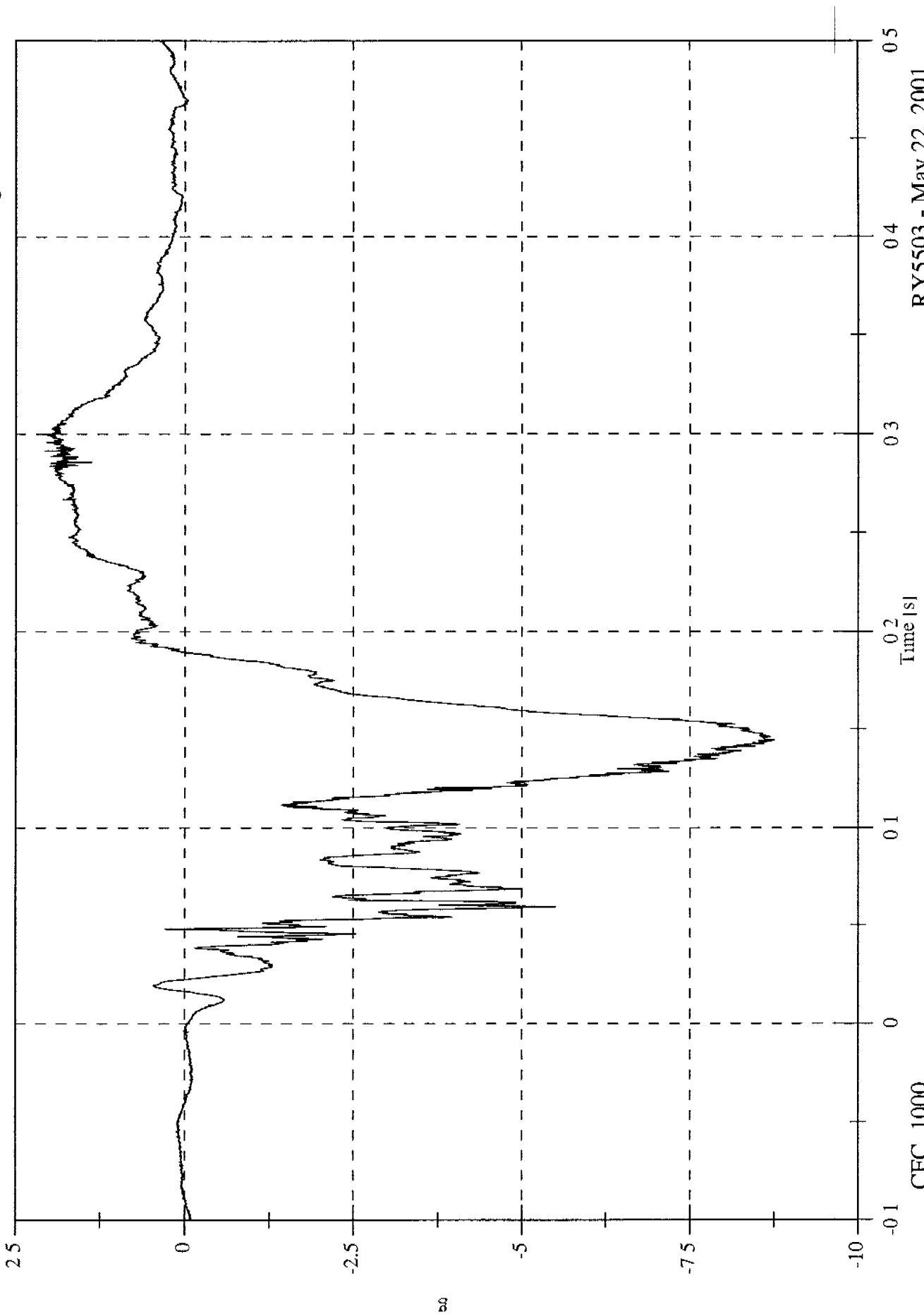


RY5503 - May 22, 2001

40% Frontal Offset Test # 6

Max: 2.1 [g] at 0.300 [s]
 Min: -8.8 [g] at 0.144 [s]

P2 Pelvic Az



CFC_1000

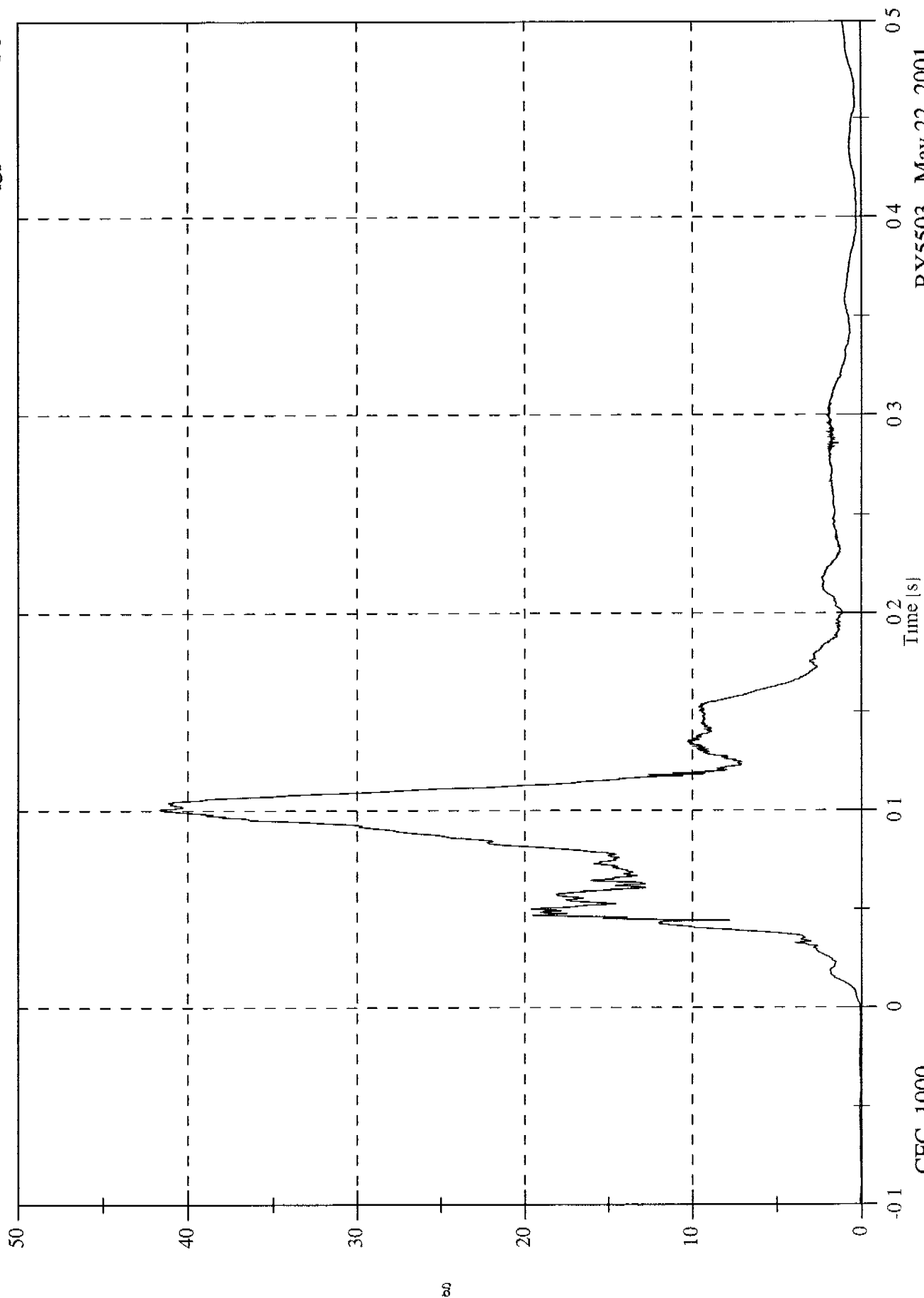
Time [s]

RY5503 - May 22, 2001

40% Frontal Offset Test # 6

Max: 41.7 [g] at 0.101 [s]
Min: 0.0 [g] at -0.089 [s]

P2 Pelvic A Resultant



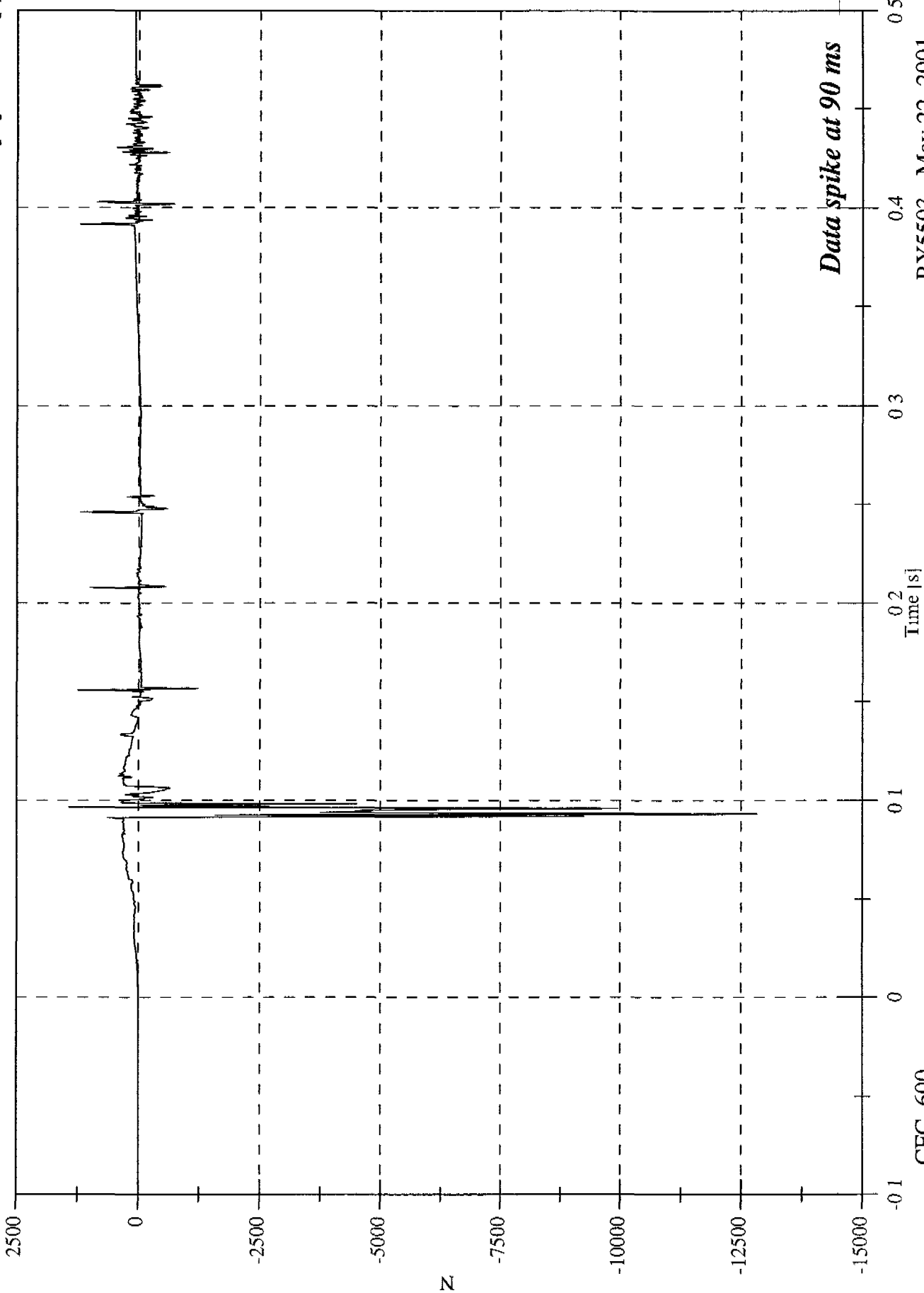
CFC_1000

RY5503 - May 22, 2001

40% Frontal Offset Test # 6

Max: 1420.7 [N] at 0.097 [s]
 Min: -12813.6 [N] at 0.093 [s]

P2 Left Femur Fx



CFC_600

Data spike at 90 ms

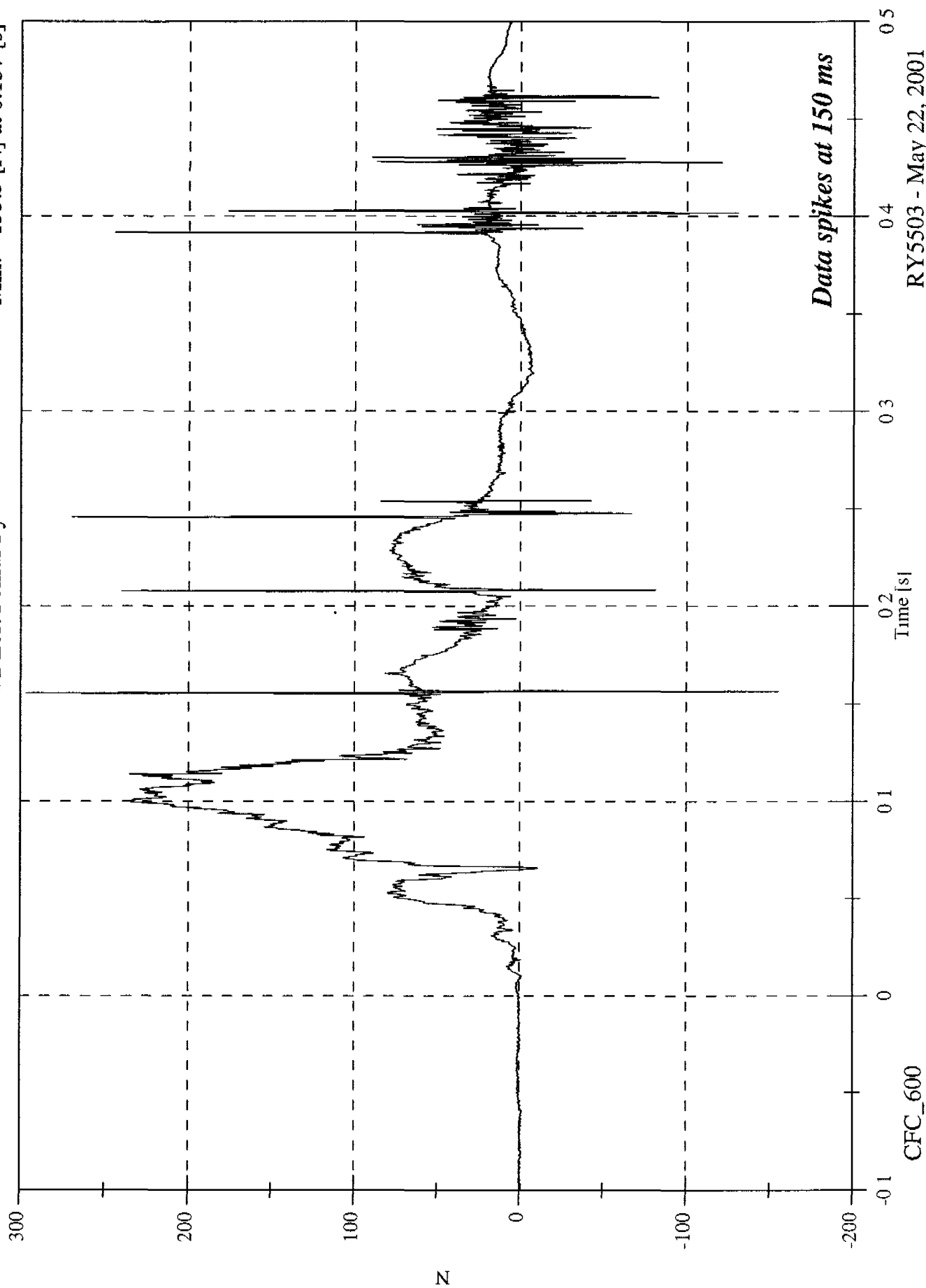
Time [s]

RY5503 - May 22, 2001

40% Frontal Offset Test # 6

Max: 296.4 [N] at 0.156 [s]
Min: -155.3 [N] at 0.157 [s]

P2 Left Femur Fy



CFC_600

Time [s]

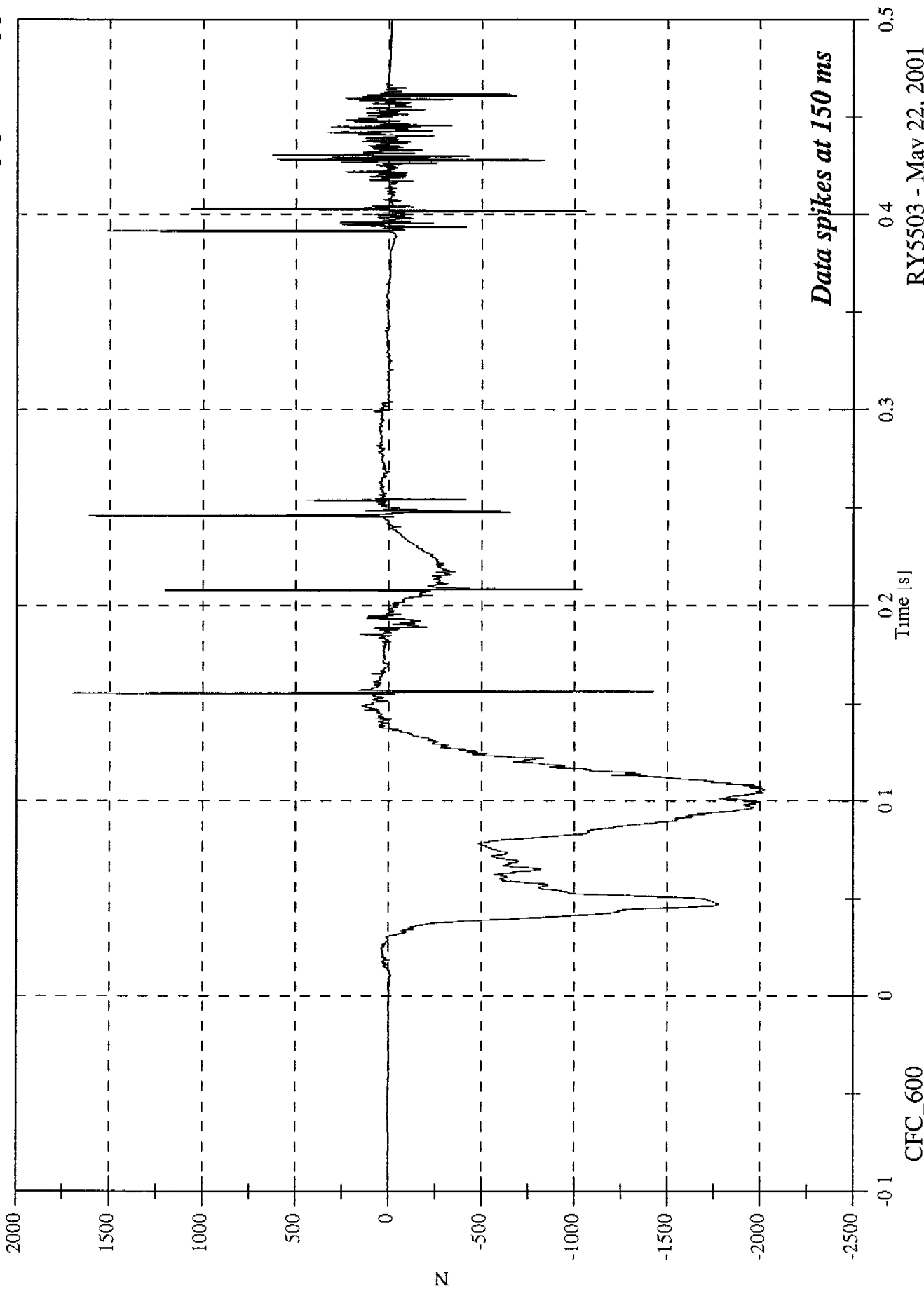
Data spikes at 150 ms

RY5503 - May 22, 2001

40% Frontal Offset Test # 6

Max: 1696.0 [N] at 0.156 [s]
Min: -2023.8 [N] at 0.106 [s]

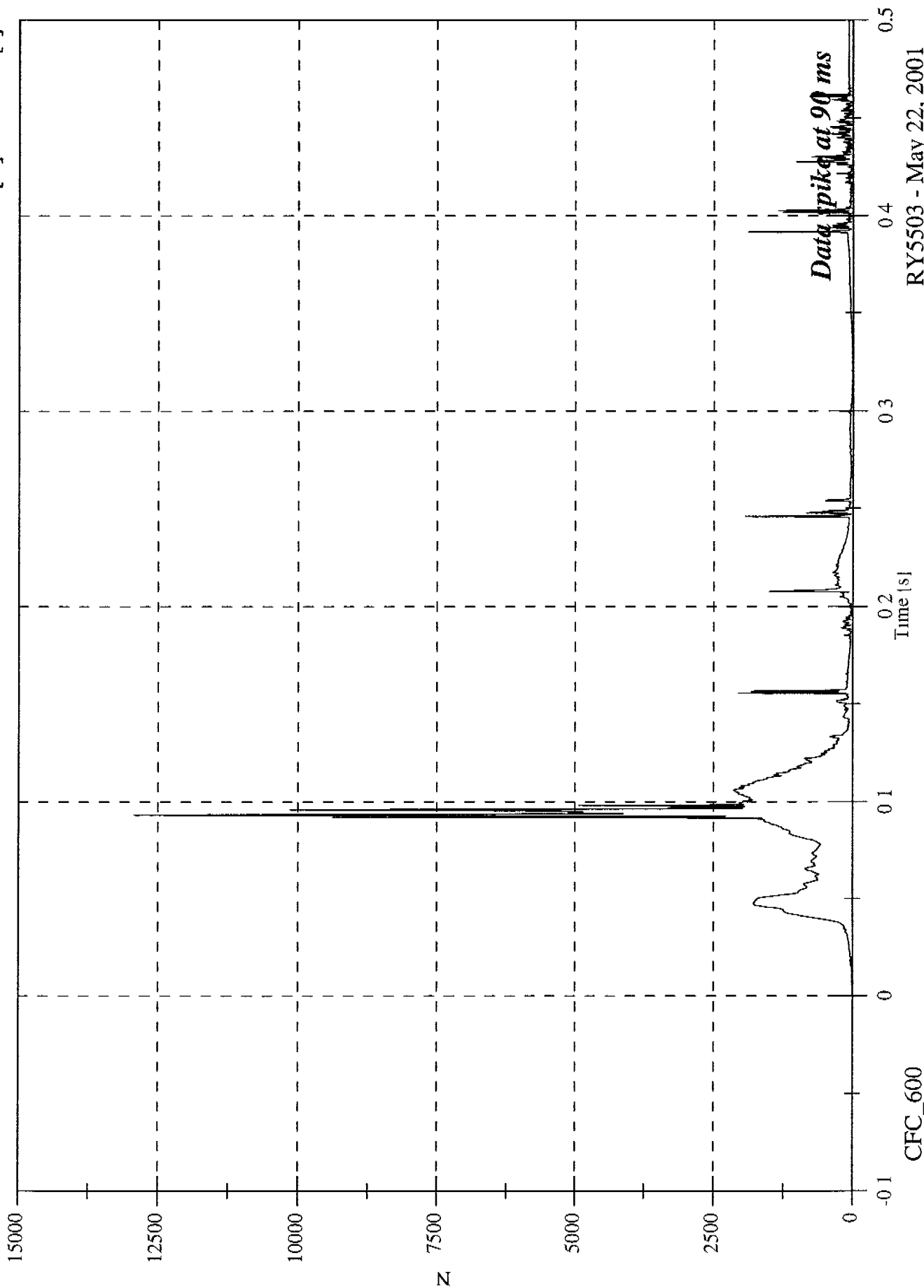
P2 Left Femur Fz



RY5503 - May 22, 2001

Max: 12926.1 [N] at 0.093 [s]
Min: 0.2 [N] at -0.013 [s]

P2 Left Femur F Resultant



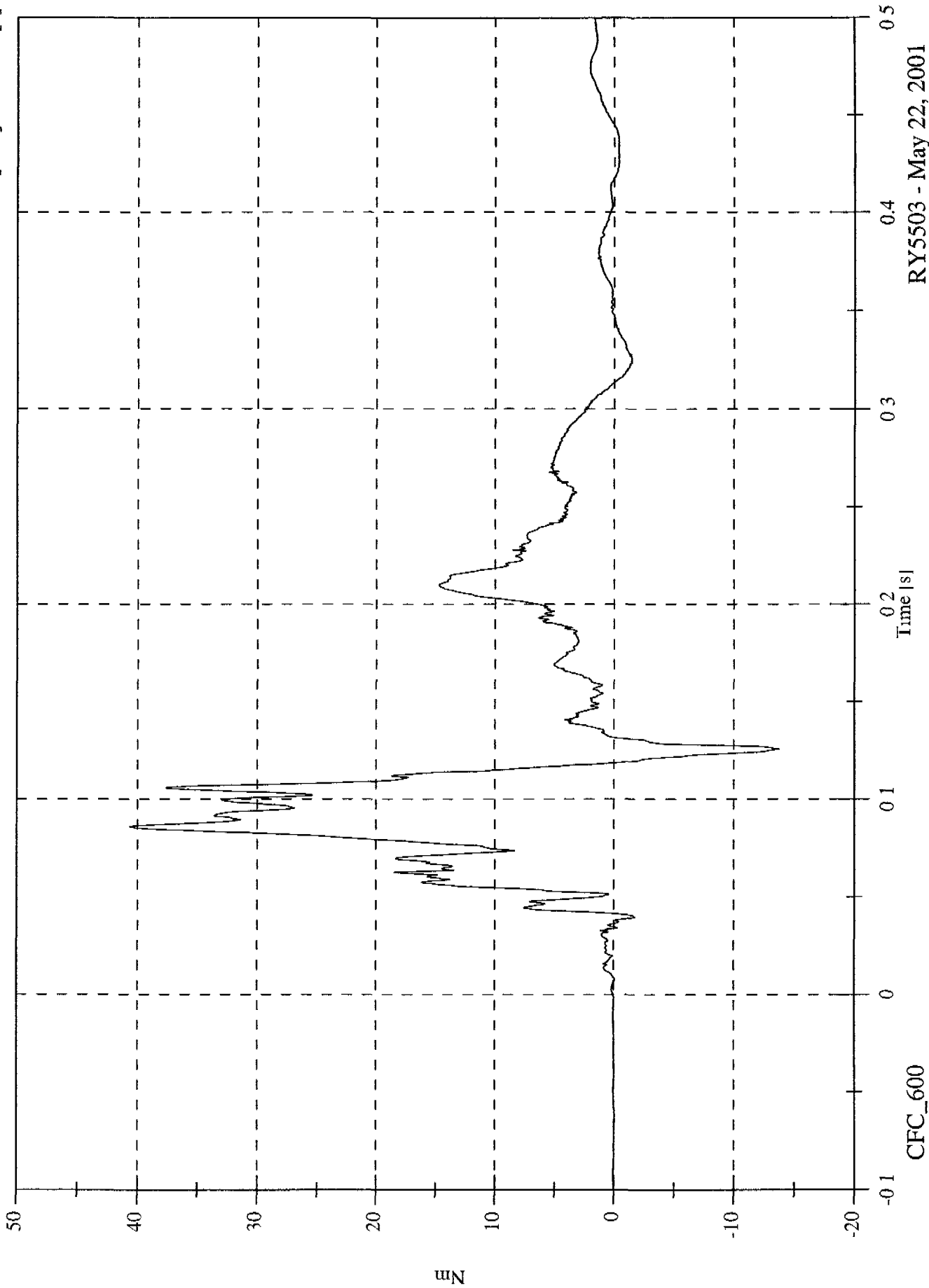
CFC_600

RY5503 - May 22, 2001

40% Frontal Offset Test # 6

Max: 40.6 [Nm] at 0.086 [s]
Min: -13.7 [Nm] at 0.126 [s]

P2 Left Femur Mx

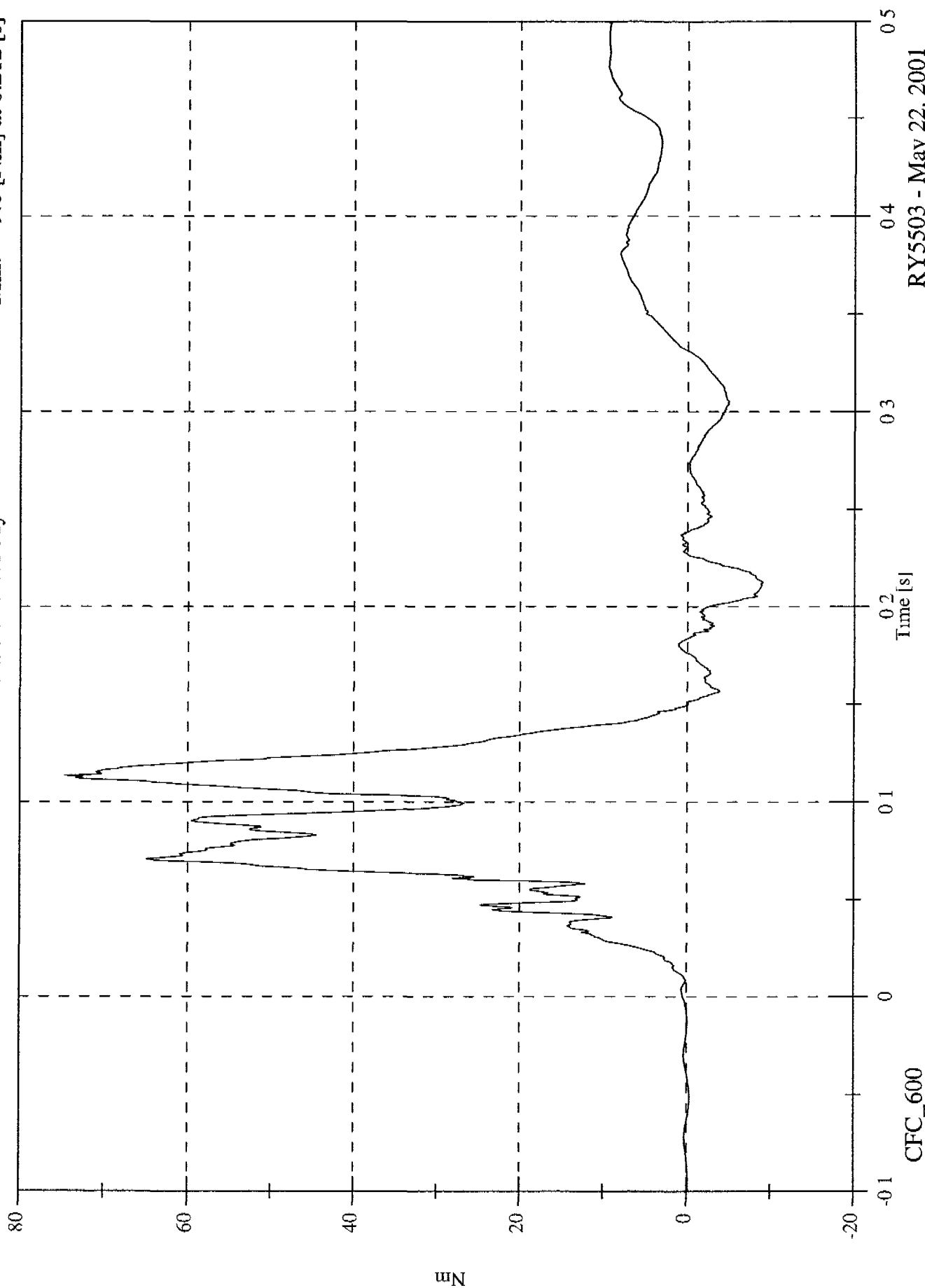


RY5503 - May 22, 2001

40% Frontal Offset Test # 6

Max: 74.6 [Nm] at 0.113 [s]
Min: -9.0 [Nm] at 0.212 [s]

P2 Left Femur My

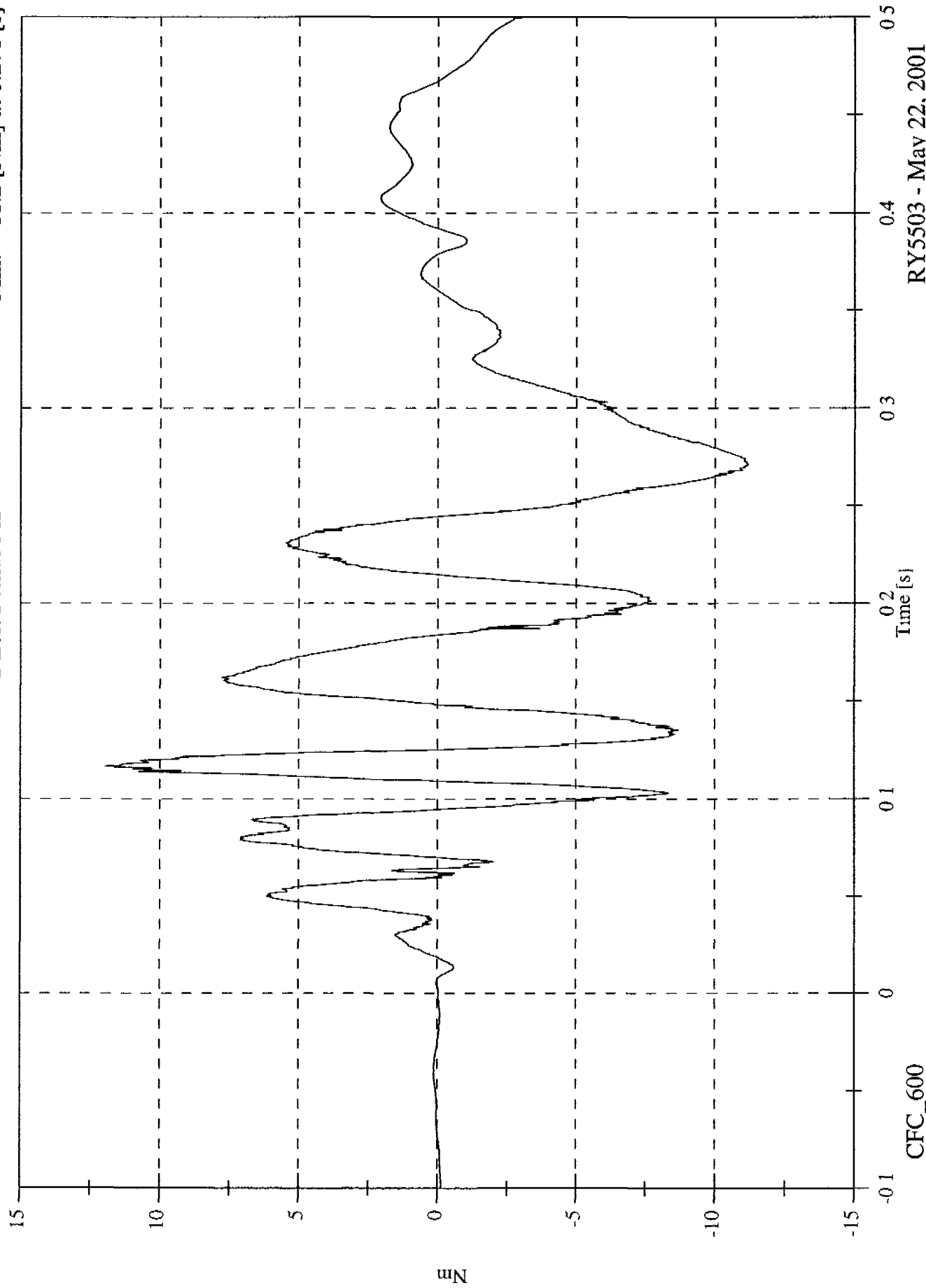


RY5503 - May 22, 2001

40% Frontal Offset Test # 6

Max: 12.0 [Nm] at 0.117 [s]
Min: -11.2 [Nm] at 0.271 [s]

P2 Left Femur Mz

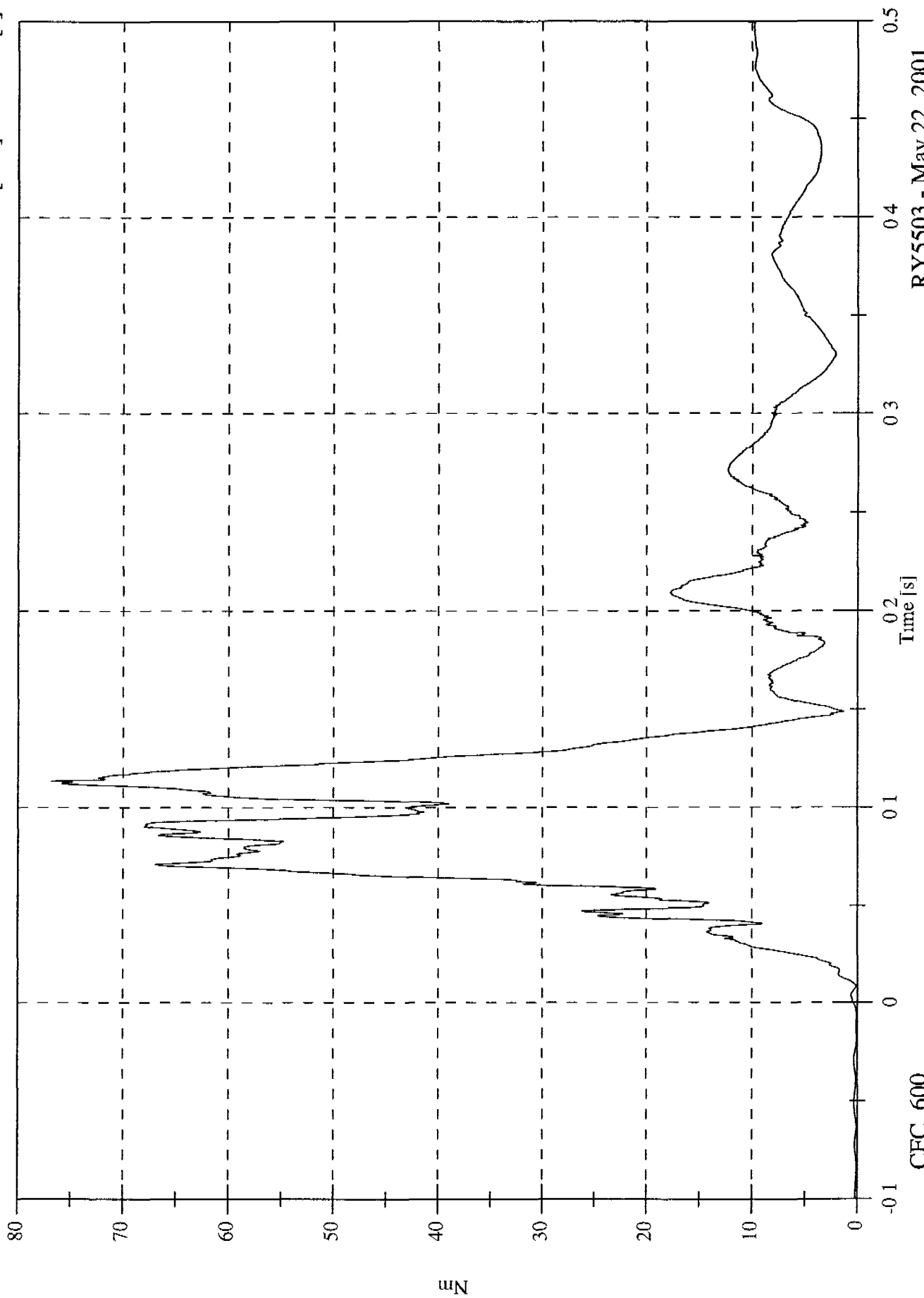


RY5503 - May 22, 2001

40% Frontal Offset Test # 6

Max: 76.8 [Nm] at 0.113 [s]
Min: 0.0 [Nm] at -0.100 [s]

P2 Left Femur M Resultant



CFC_600

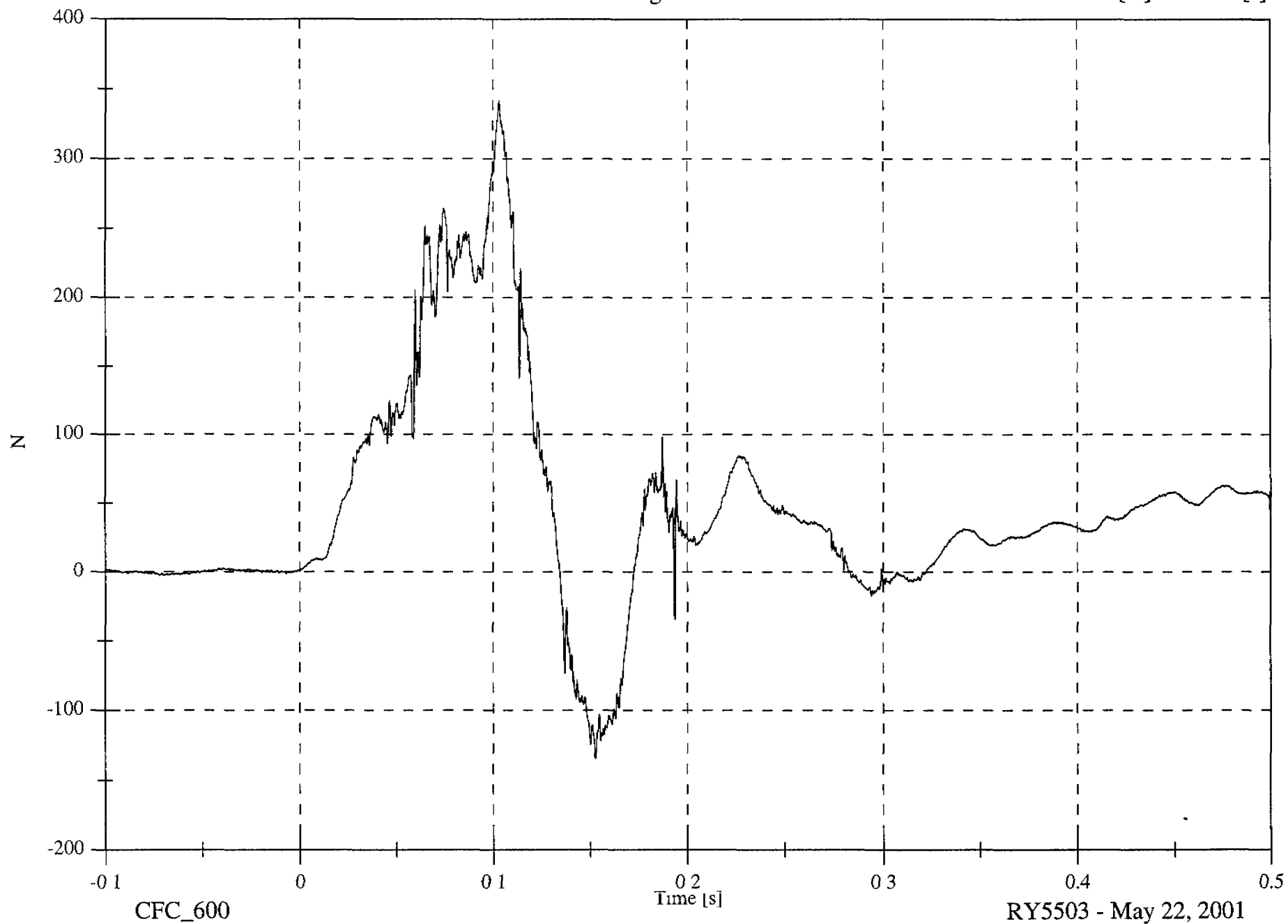
RY5503 - May 22, 2001

40% Frontal Offset Test # 6

P2 Right Femur Fx

Max: 341.4 [N] at 0.103 [s]

Min: -134.7 [N] at 0.153 [s]



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8413-62

CFC_600

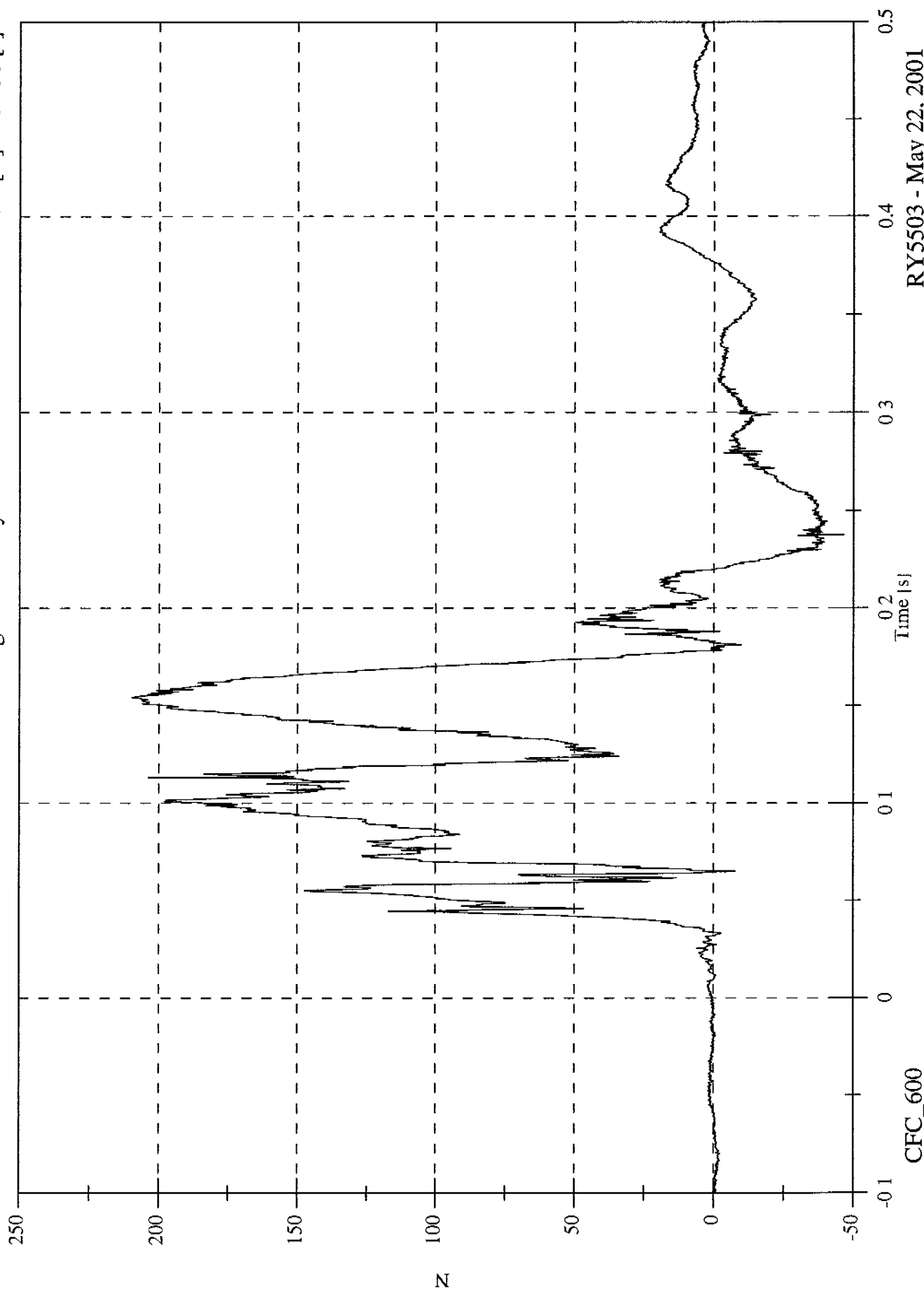
Time [s]

RY5503 - May 22, 2001

40% Frontal Offset Test # 6

Max: 209.8 [N] at 0.154 [s]
Min: -46.6 [N] at 0.238 [s]

P2 Right Femur Fy

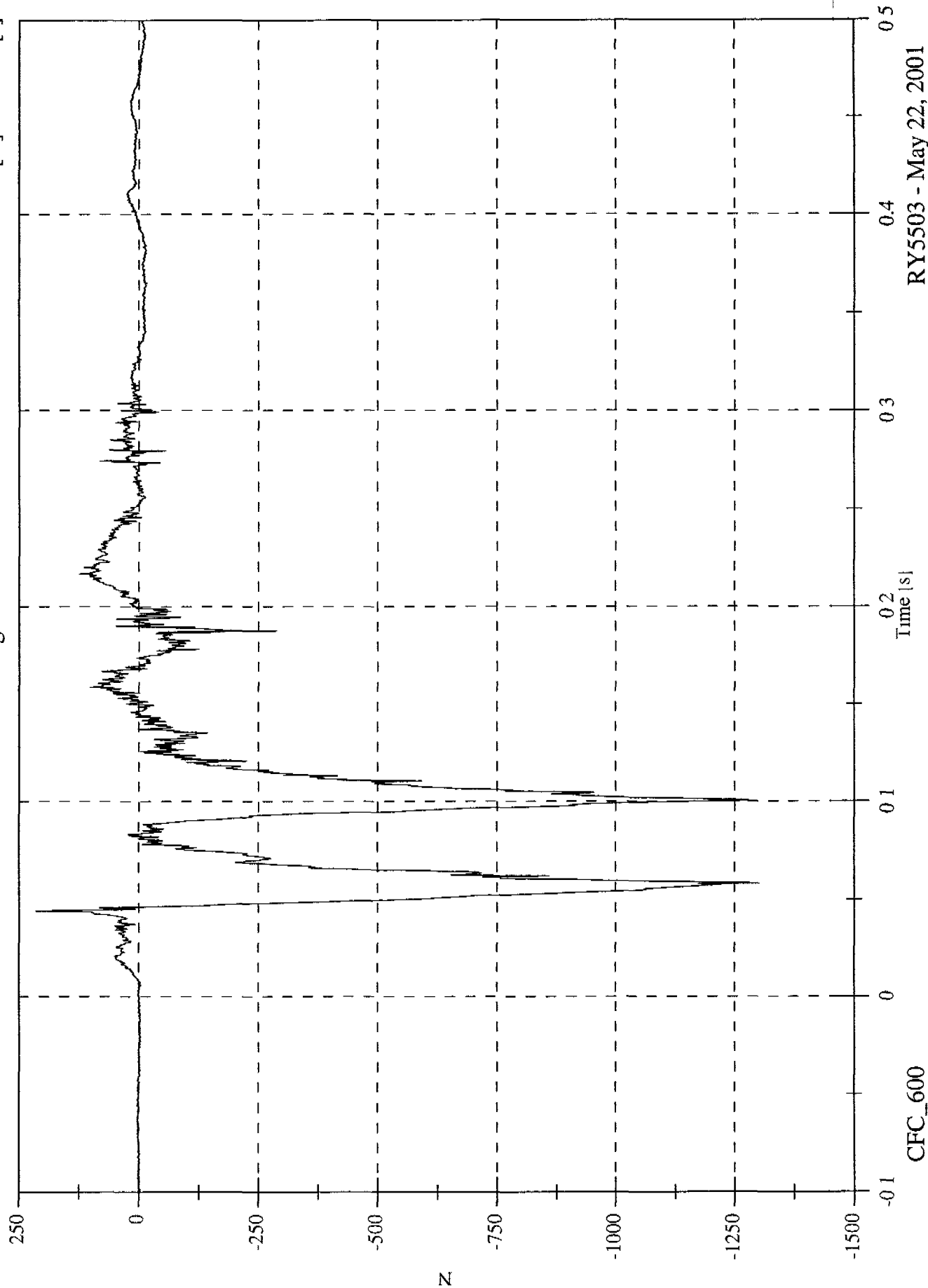


RY5503 - May 22, 2001

40% Frontal Offset Test # 6

Max: 215.1 [N] at 0.044 [s]
Min: -1300.9 [N] at 0.058 [s]

P2 Right Femur Fz



CFC_600

Time [s]

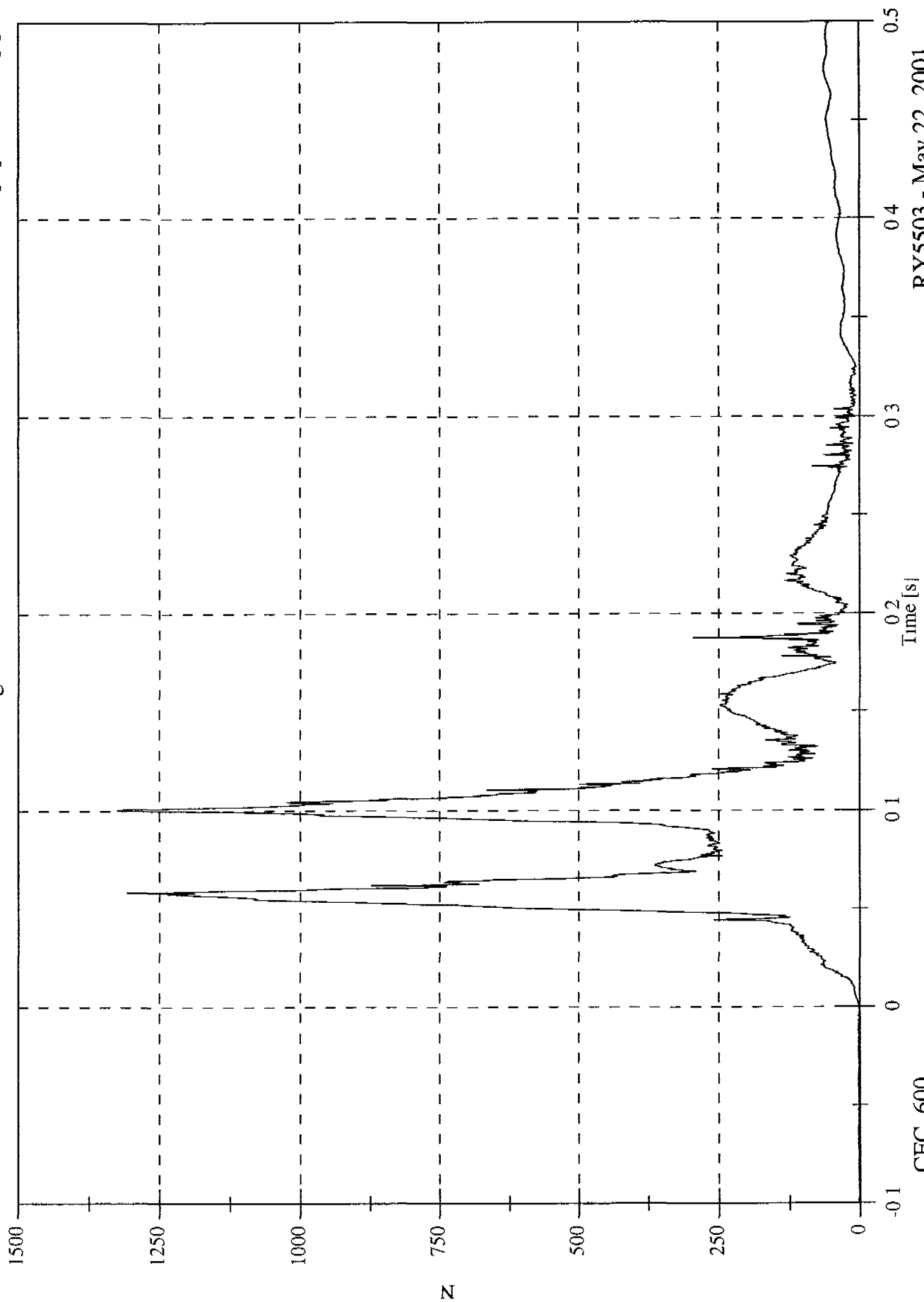
RY5503 - May 22, 2001

40% Frontal Offset Test # 6

Max: 1324.3 [N] at 0.100 [s]

Min: 0.2 [N] at -0.002 [s]

P2 Right Femur F Resultant



CFC_600

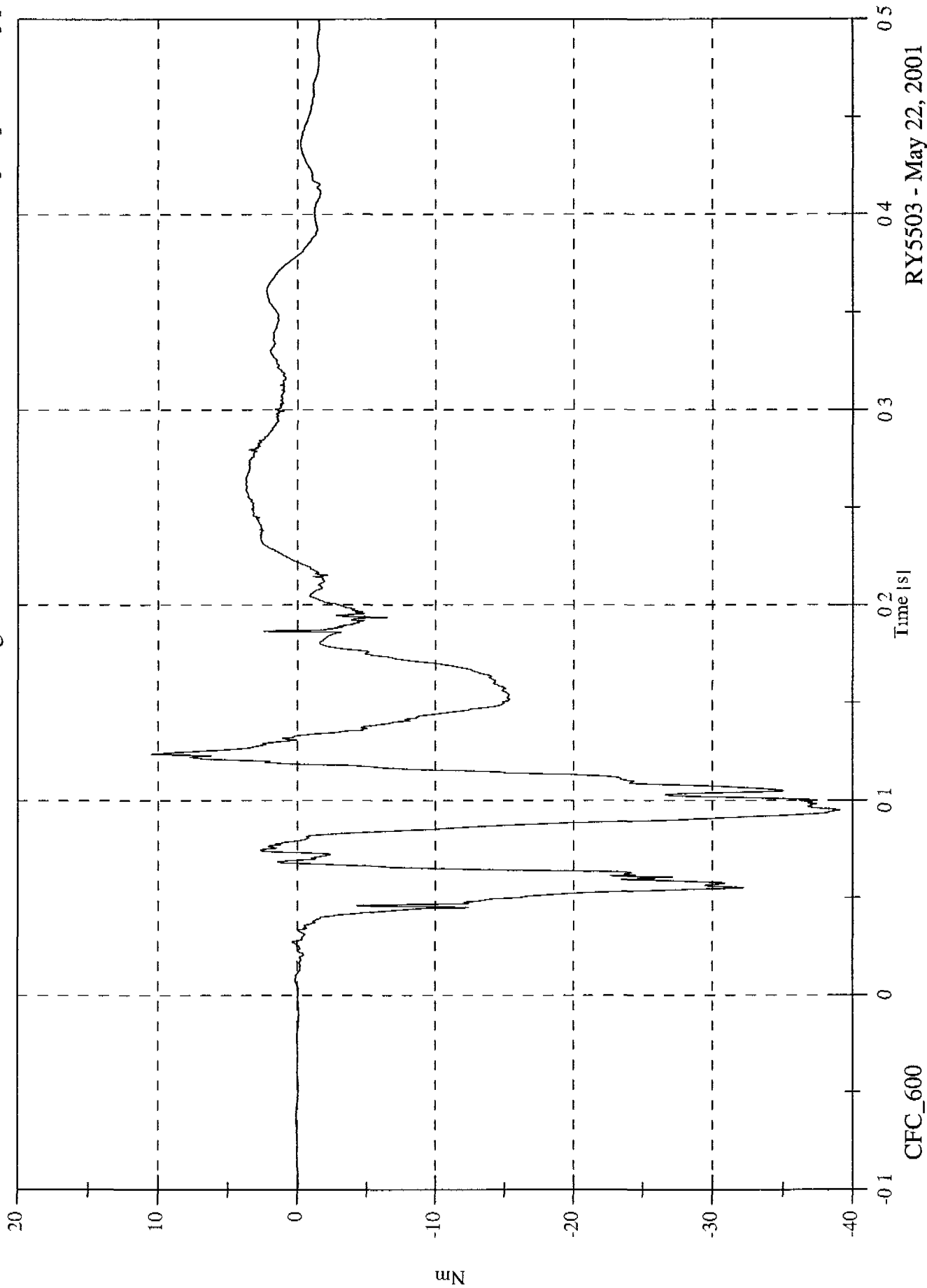
Time [s]

RY5503 - May 22, 2001

40% Frontal Offset Test # 6

Max: 10.5 [Nm] at 0.124 [s]
Min: -39.1 [Nm] at 0.095 [s]

P2 Right Femur Mx



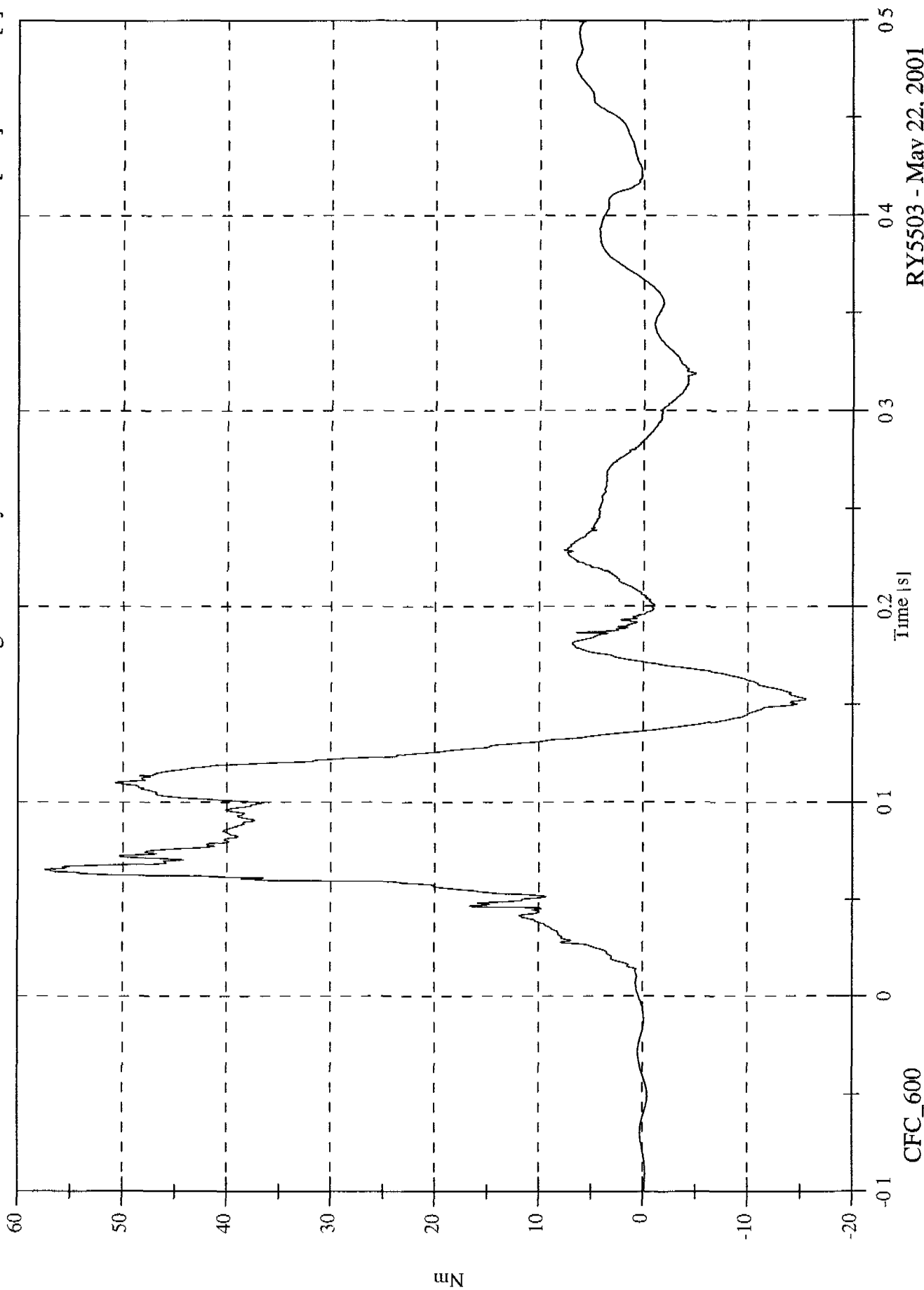
RY5503 - May 22, 2001

40% Frontal Offset Test # 6

Max: 57.4 [Nm] at 0.065 [s]

Min: -15.5 [Nm] at 0.153 [s]

P2 Right Femur My



CFC_600

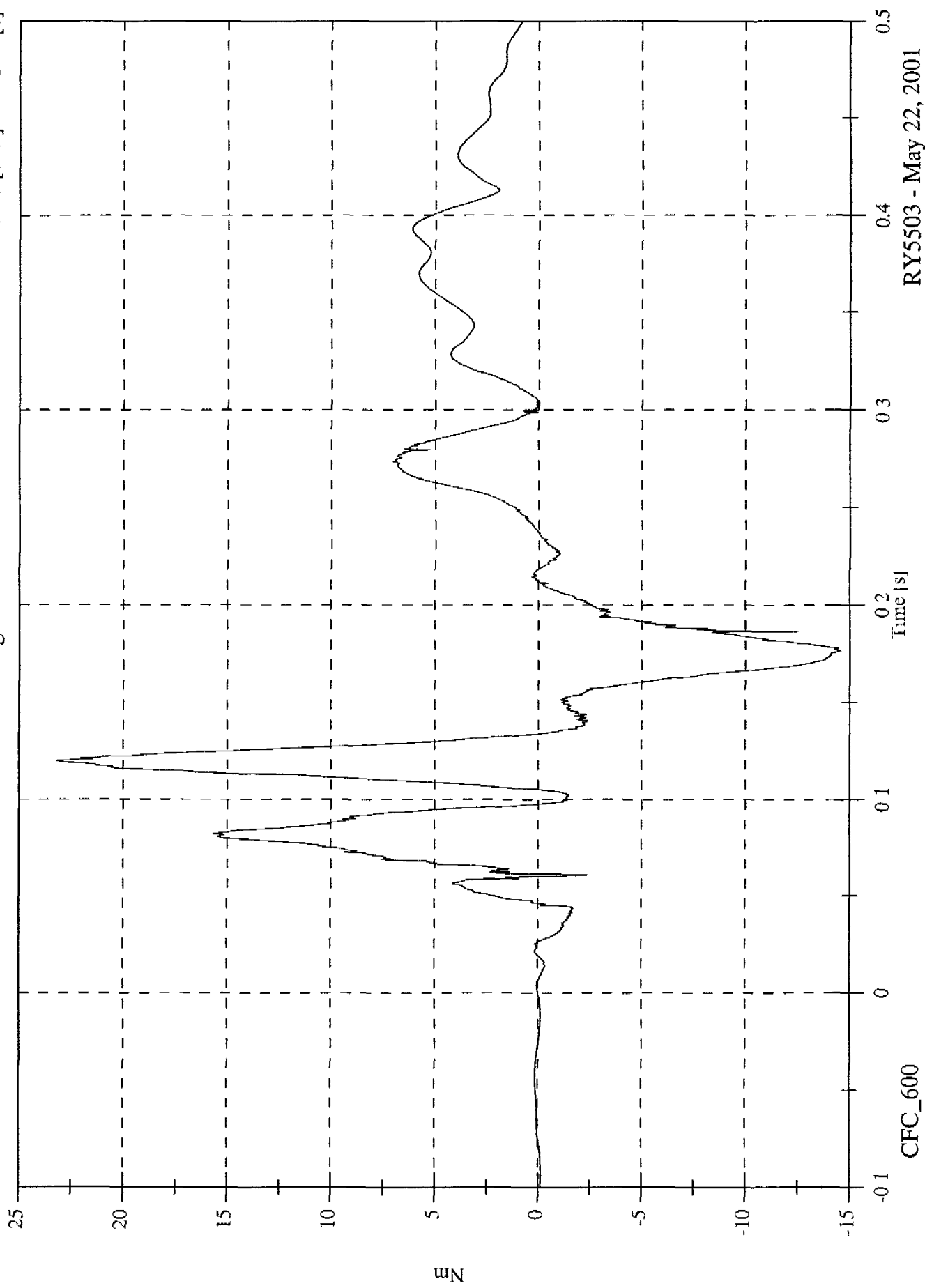
Time [s]

RY5503 - May 22, 2001

40% Frontal Offset Test # 6

Max: 23.2 [Nm] at 0.120 [s]
Min: -14.6 [Nm] at 0.176 [s]

P2 Right Femur Mz

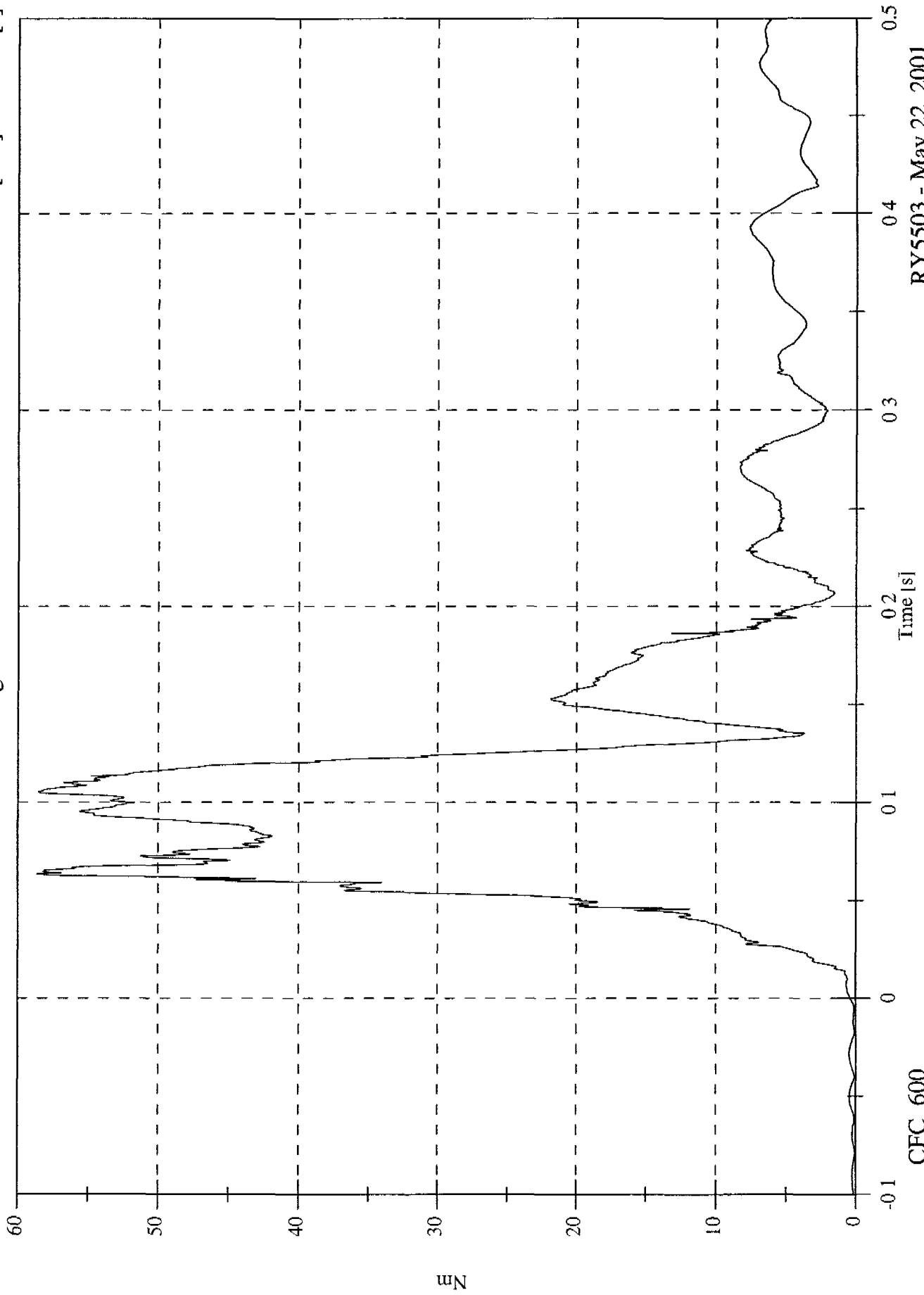


RY5503 - May 22, 2001

Max: 58.6 [Nm] at 0.063 [s]

Min: 0.0 [Nm] at -0.100 [s]

P2 Right Femur M Resultant

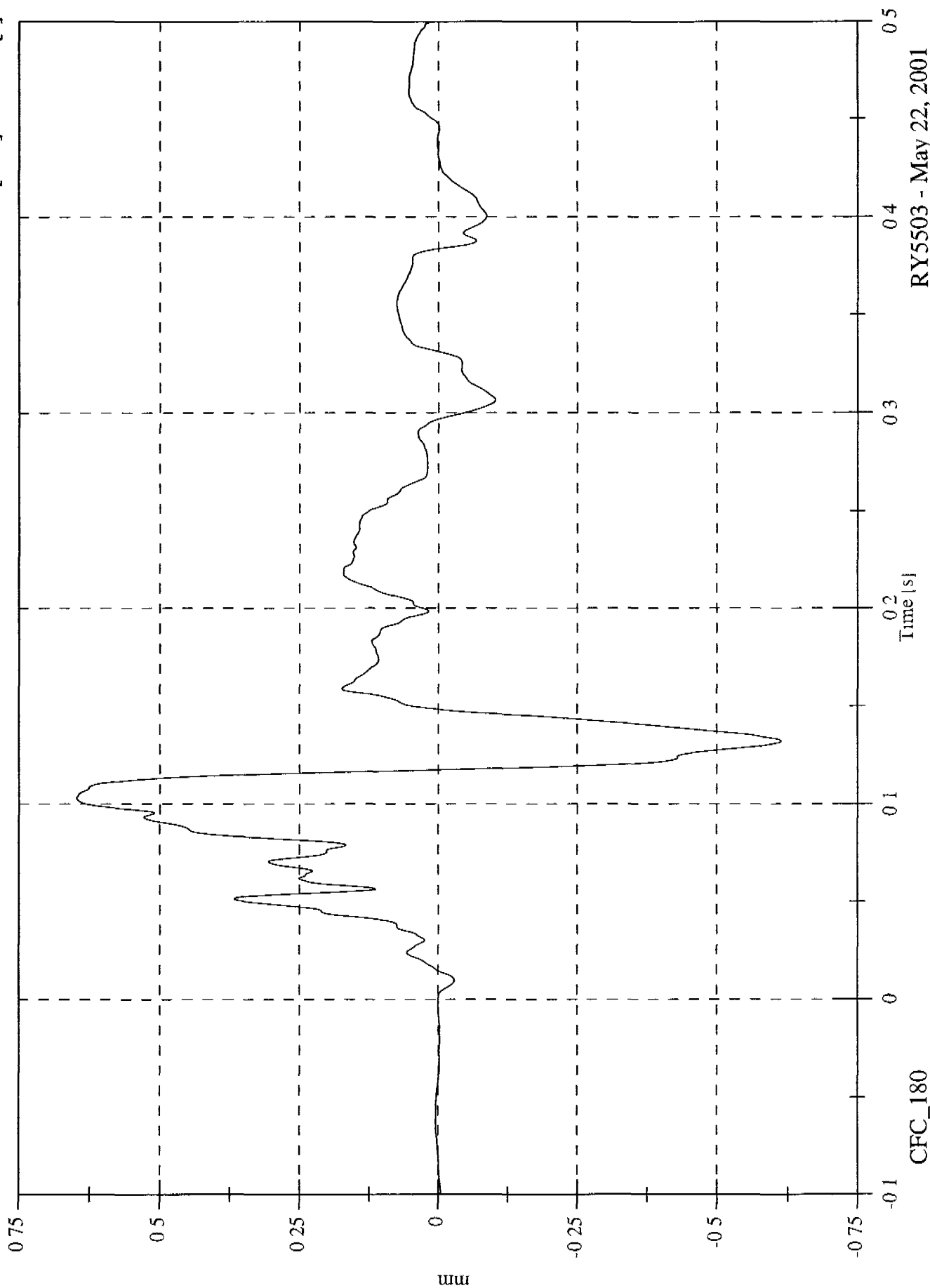


RY5503 - May 22, 2001

40% Frontal Offset Test # 6

Max: 0.6 [mm] at 0.103 [s]
Min: -0.6 [mm] at 0.132 [s]

P2 Left Knee Shear Dx



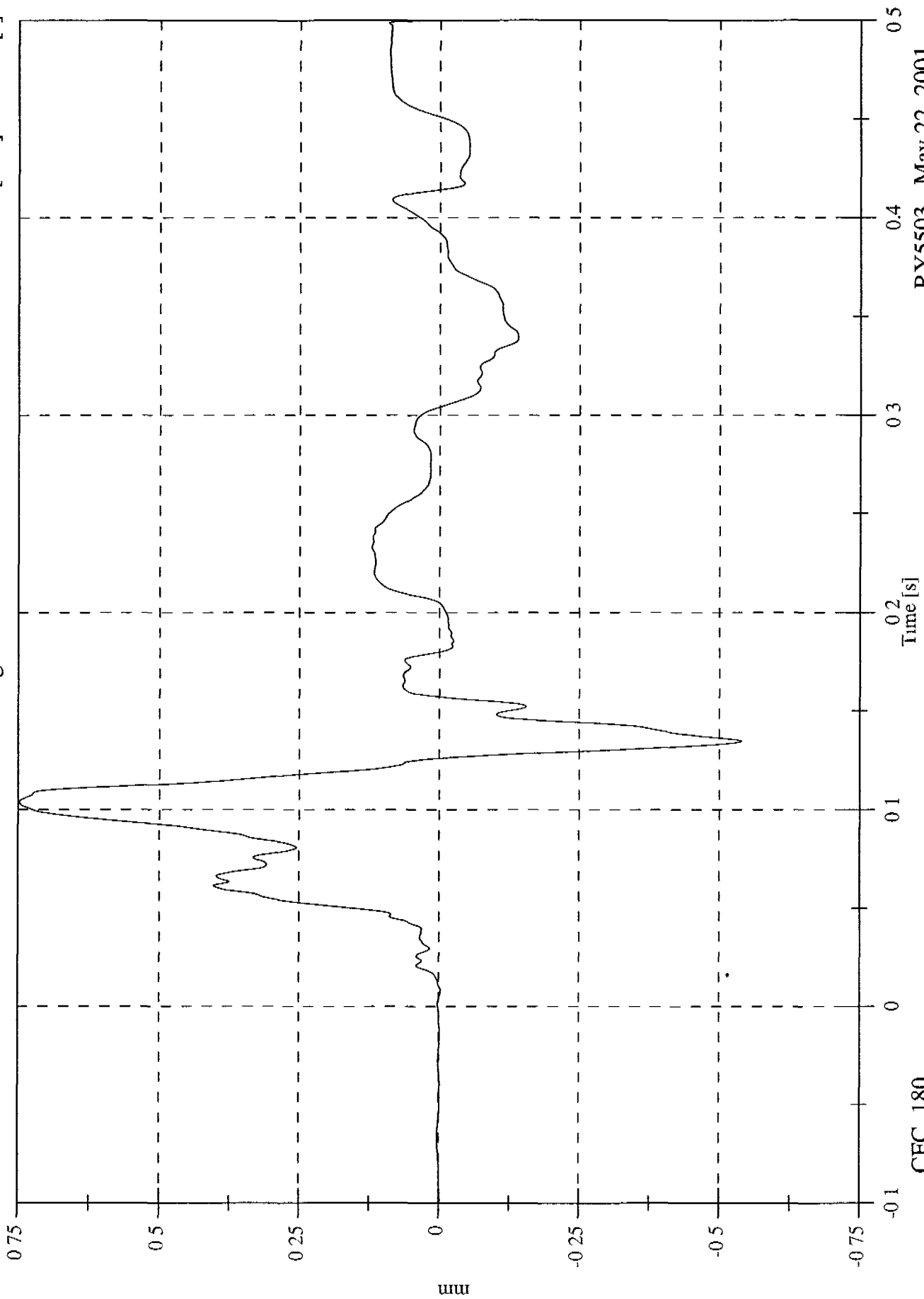
CFC_180

RY5503 - May 22, 2001

Max: 0.7 [mm] at 0.104 [s]

Min: -0.5 [mm] at 0.135 [s]

P2 Right Knee Shear Dx



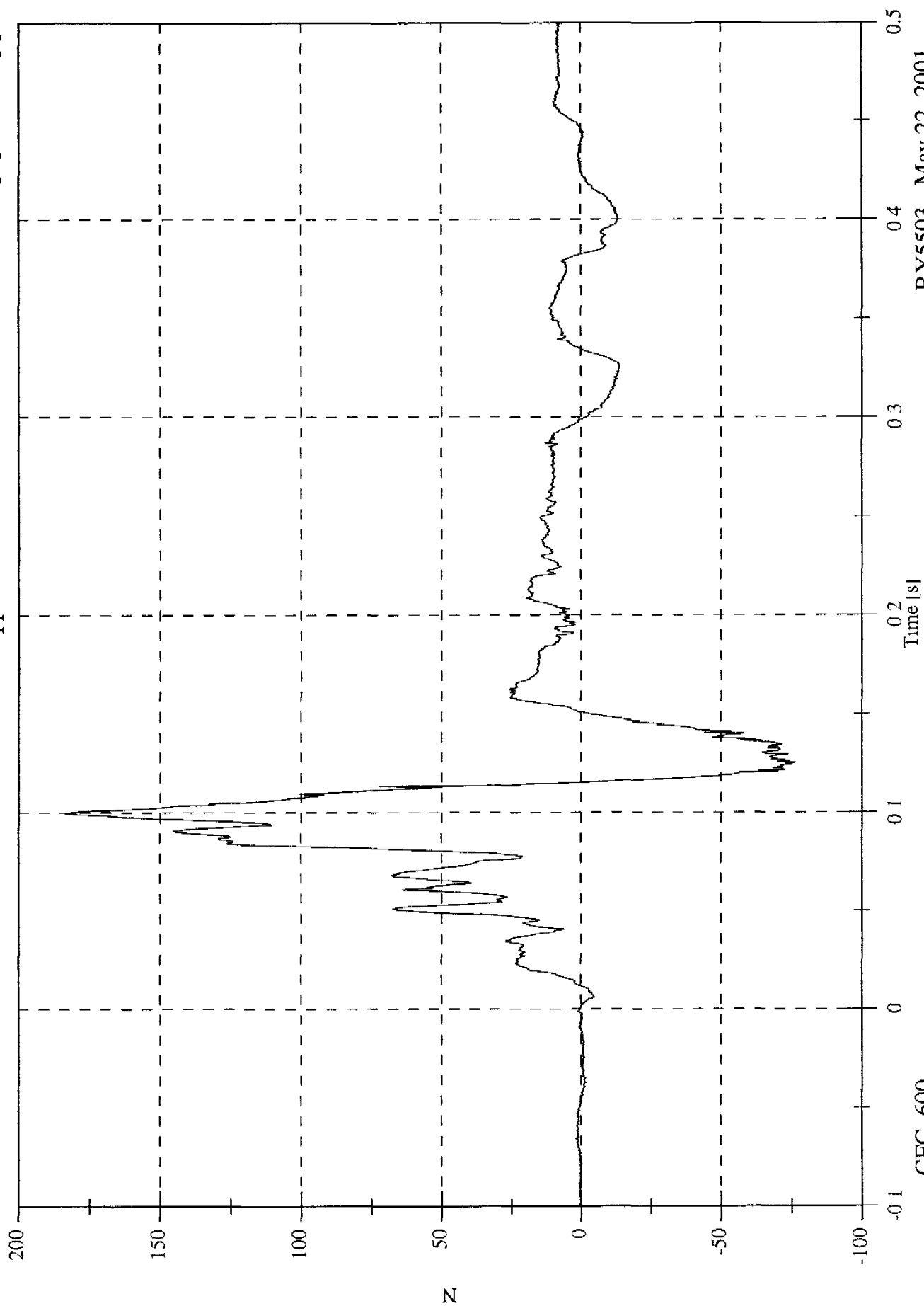
CFC_180

RY5503 - May 22, 2001

40% Frontal Offset Test # 6

Max: 183.5 [N] at 0.100 [s]
Min: -76.3 [N] at 0.125 [s]

P2 Left Upper Tibia Fx



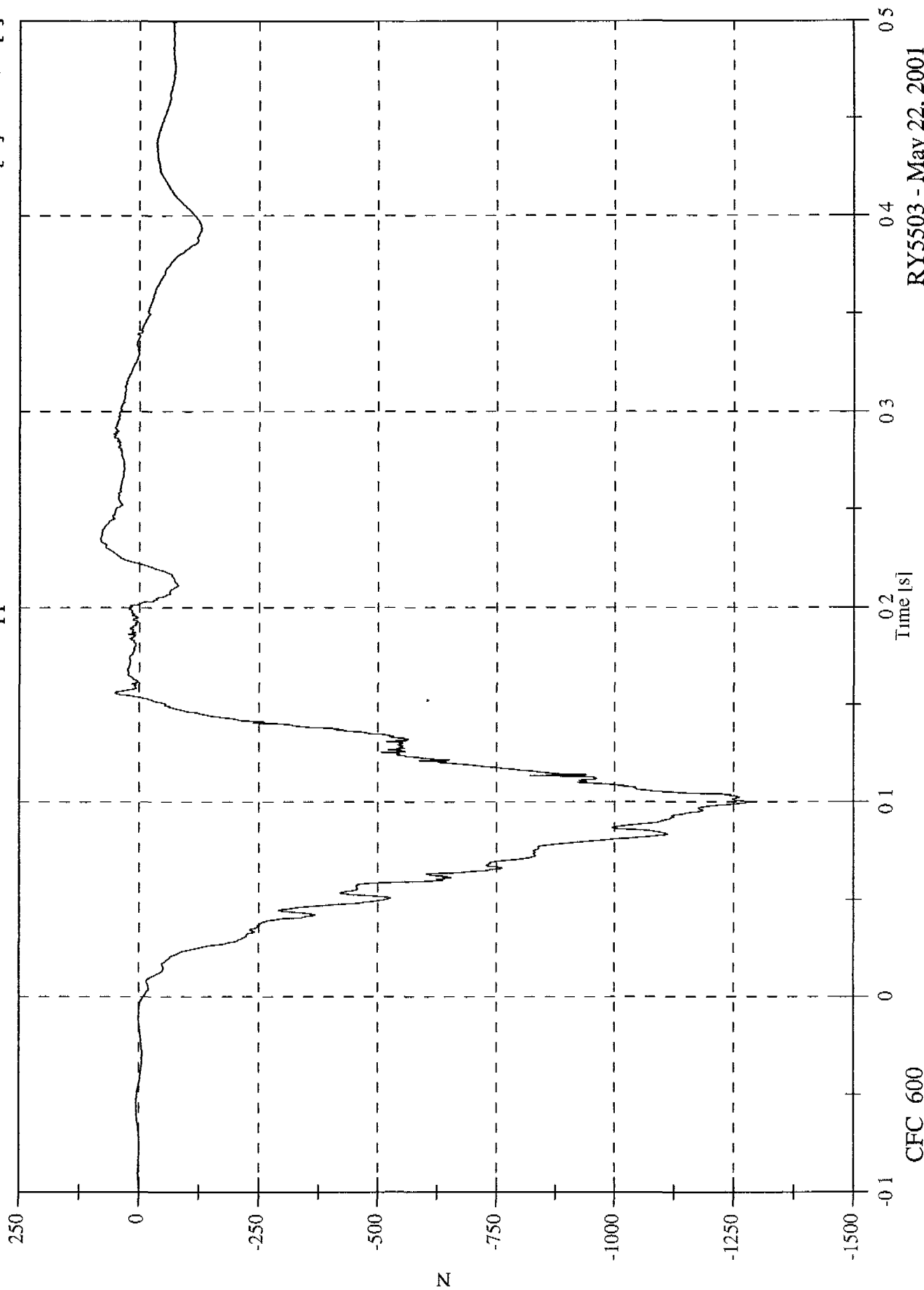
CFC_600

RY5503 - May 22, 2001

40% Frontal Offset Test # 6

Max: 81.3 [N] at 0.235 [s]
Min: -1275.6 [N] at 0.099 [s]

P2 Left Upper Tibia Fz



CFC_600

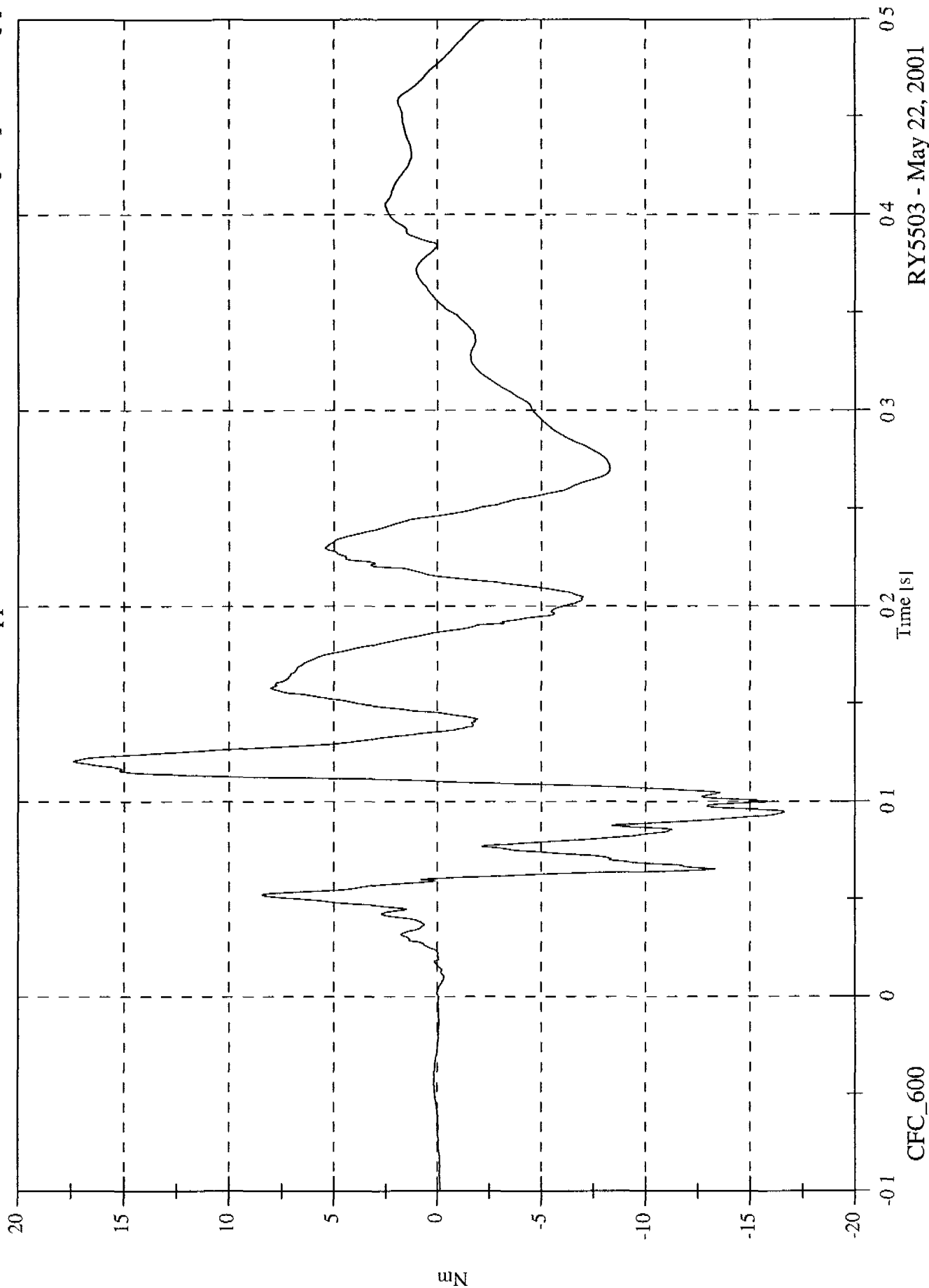
Time [s]

RY5503 - May 22, 2001

40% Frontal Offset Test # 6

Max: 17.4 [Nm] at 0.120 [s]
Min: -16.6 [Nm] at 0.095 [s]

P2 Left Upper Tibia Mx

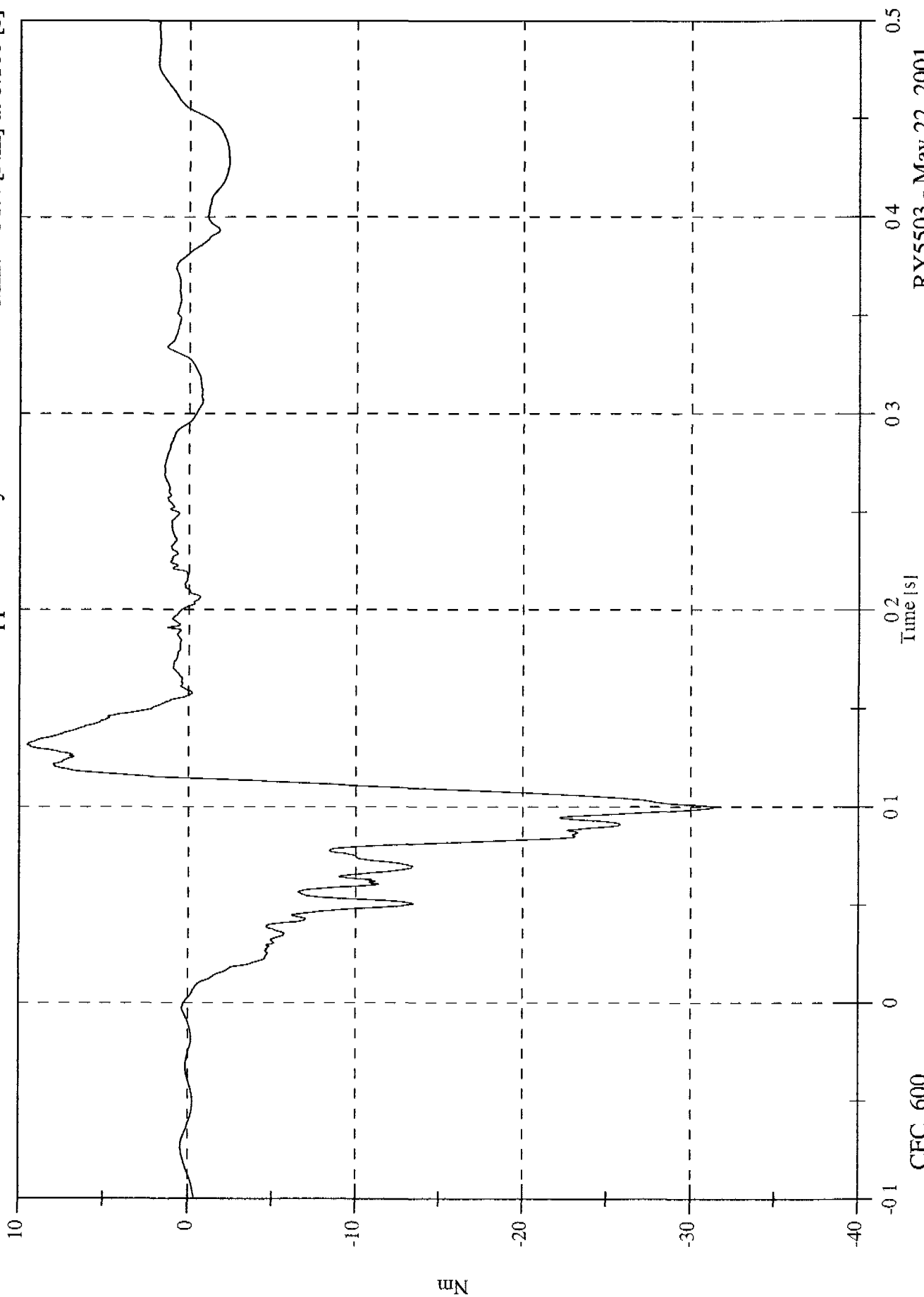


RY5503 - May 22, 2001

40% Frontal Offset Test # 6

Max: 9.5 [Nm] at 0.131 [s]
Min: -31.4 [Nm] at 0.100 [s]

P2 Left Upper Tibia My



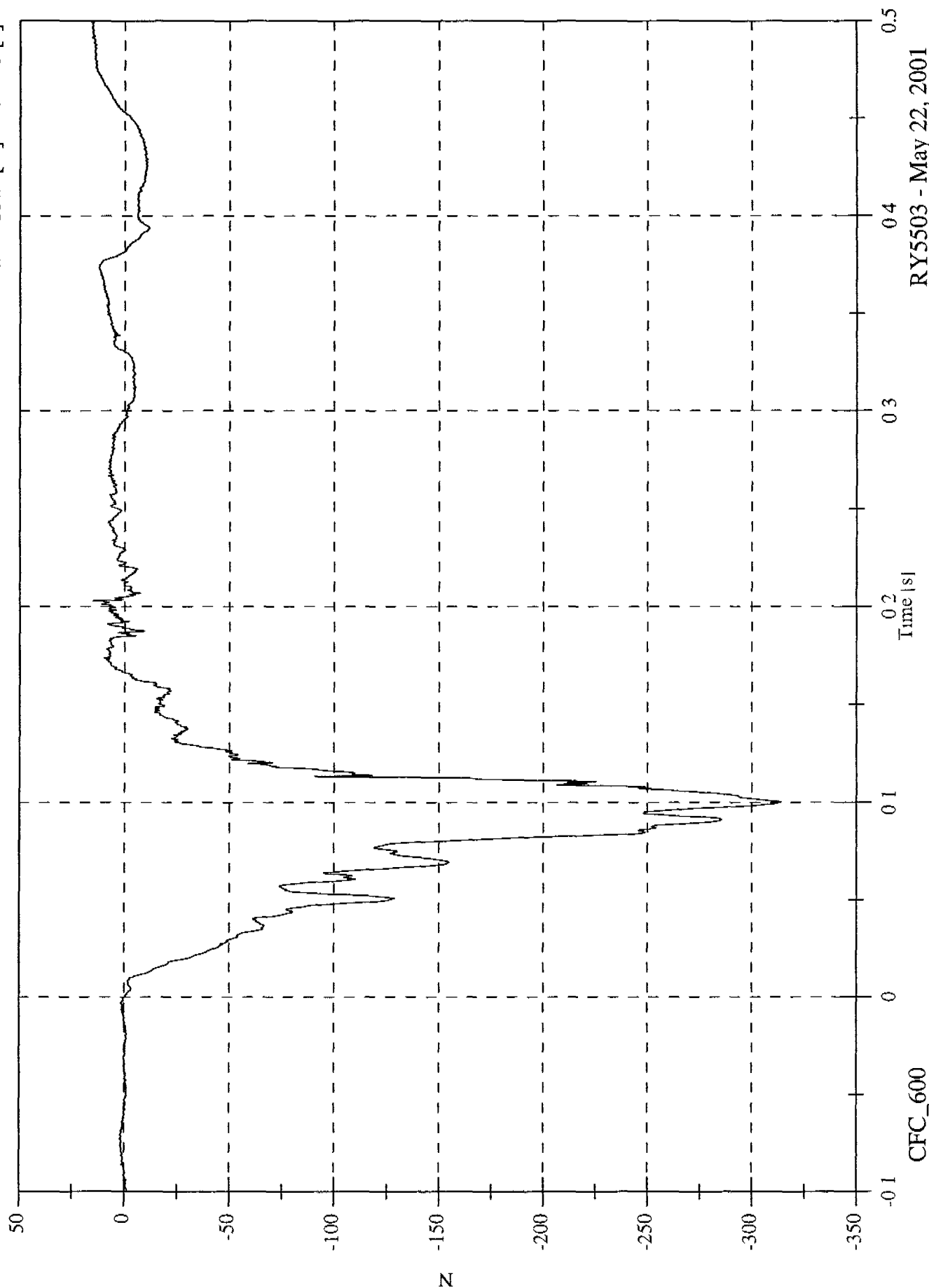
CFC_600

RY5503 - May 22, 2001

40% Frontal Offset Test # 6

Max: 16.0 [N] at 0.500 [s]
 Min: -313.9 [N] at 0.100 [s]

P2 Left Lower Tibia Fx

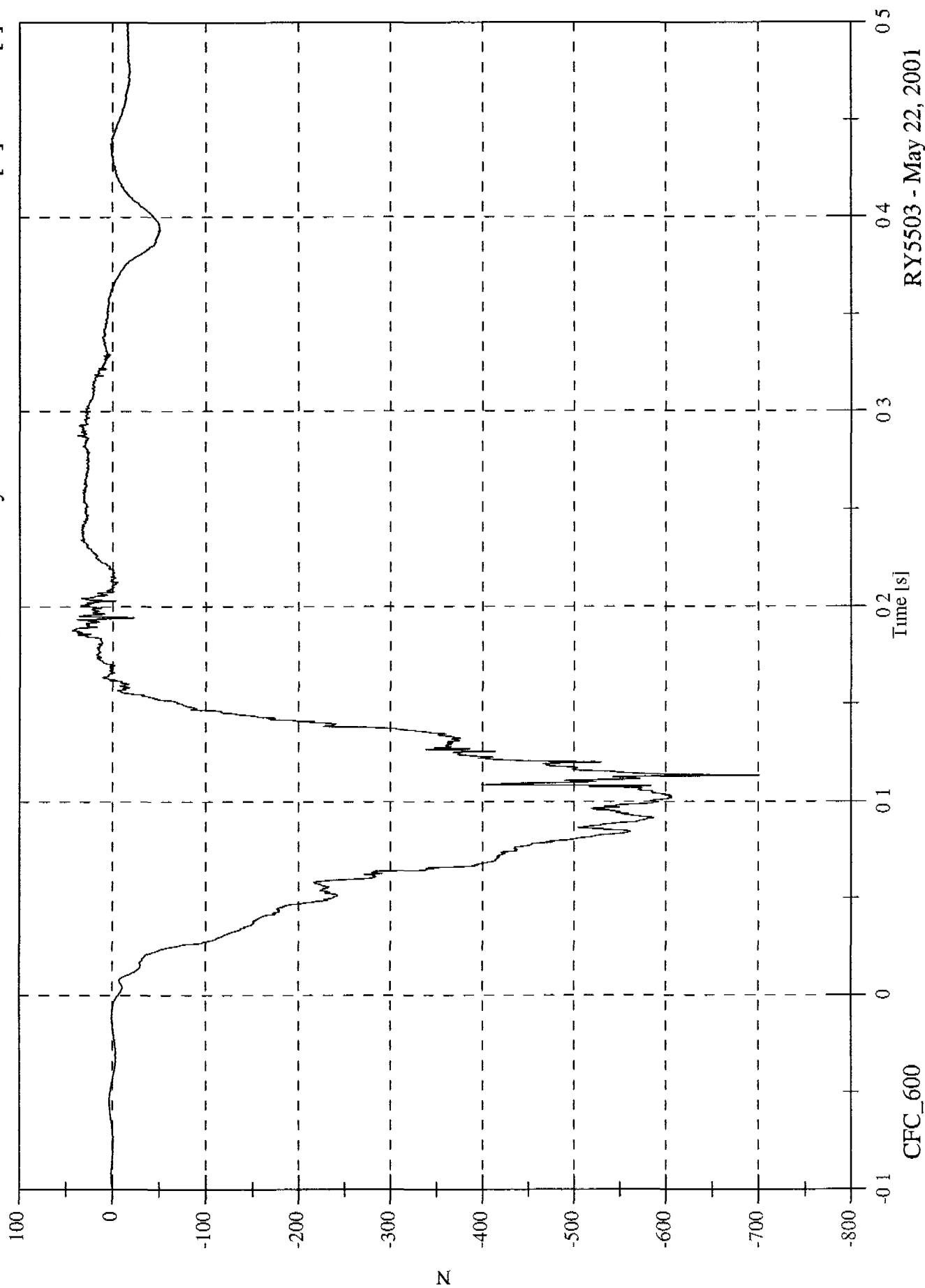


RY5503 - May 22, 2001

40% Frontal Offset Test # 6

Max: 43.5 [N] at 0.187 [s]
Min: -701.0 [N] at 0.113 [s]

P2 Left Lower Tibia Fy



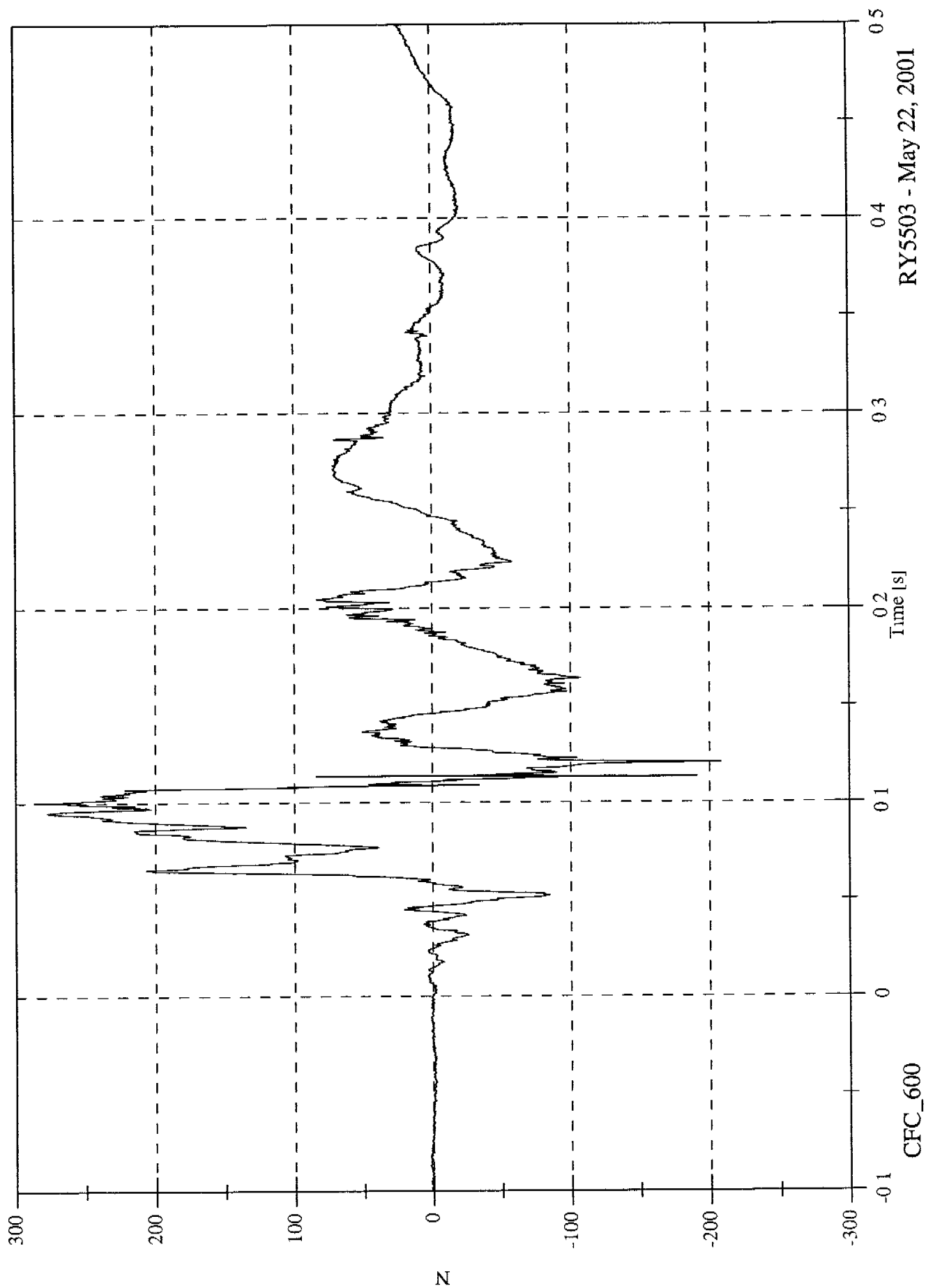
CFC_600

RY5503 - May 22, 2001

40% Frontal Offset Test # 6

Max: 286.8 [N] at 0.100 [s]
Min: -208.0 [N] at 0.121 [s]

P2 Left Lower Tibia Fz

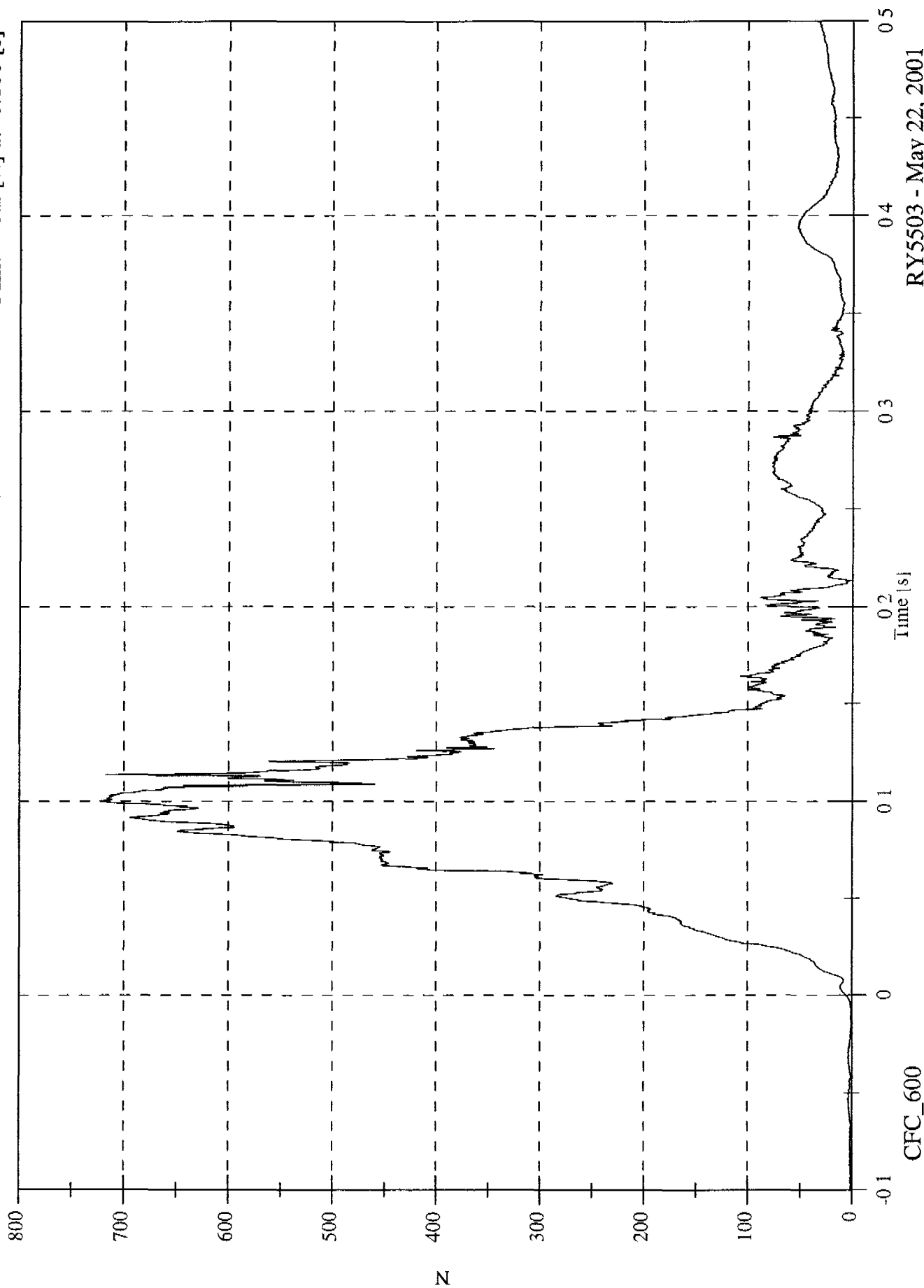


RY5503 - May 22, 2001

40% Frontal Offset Test # 6

Max: 723.0 [N] at 0.100 [s]
Min: 0.2 [N] at -0.100 [s]

P2 Left Lower Tibia F Resultant

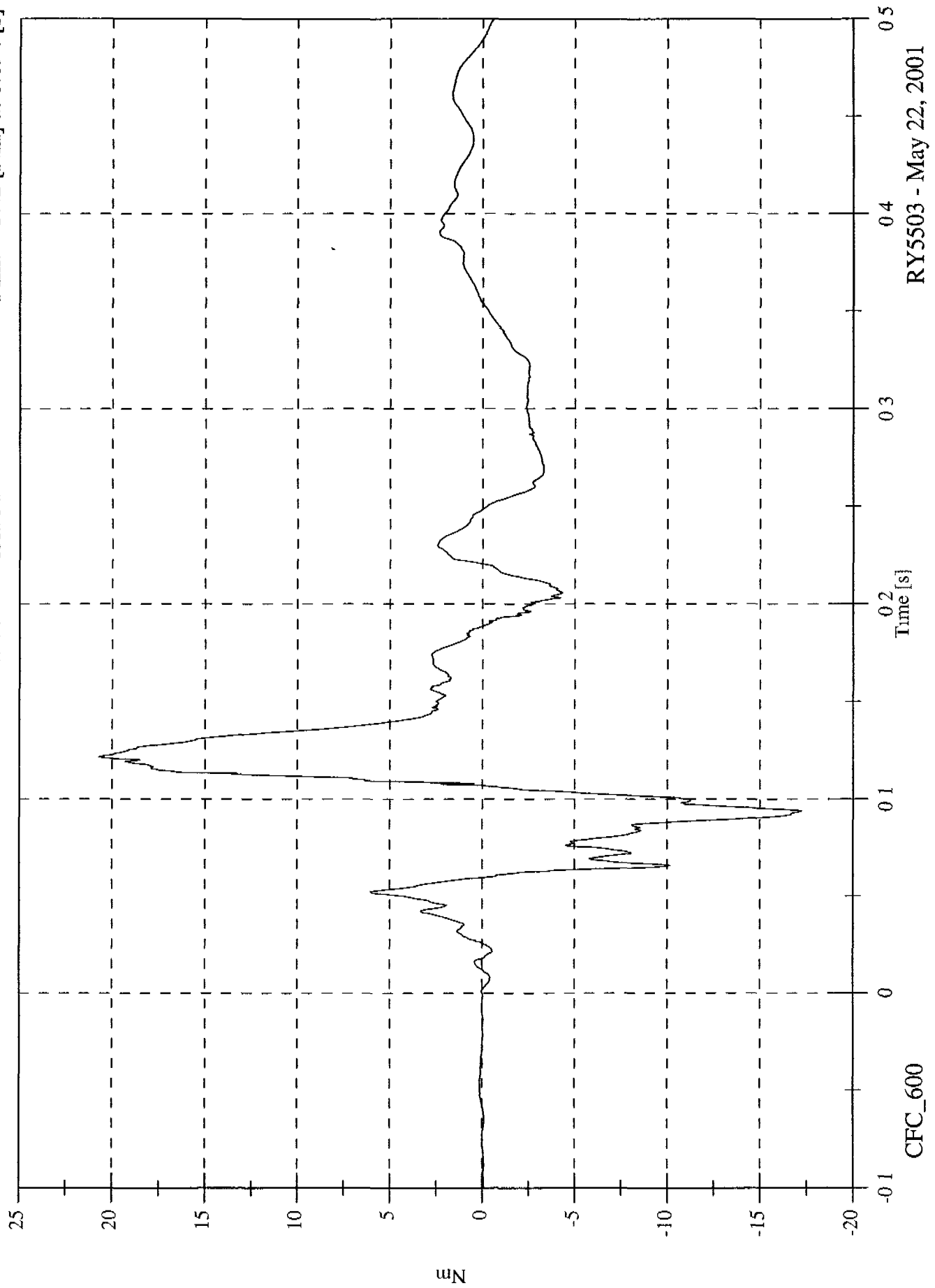


RY5503 - May 22, 2001

40% Frontal Offset Test # 6

Max: 20.7 [Nm] at 0.122 [s]
Min: -17.2 [Nm] at 0.094 [s]

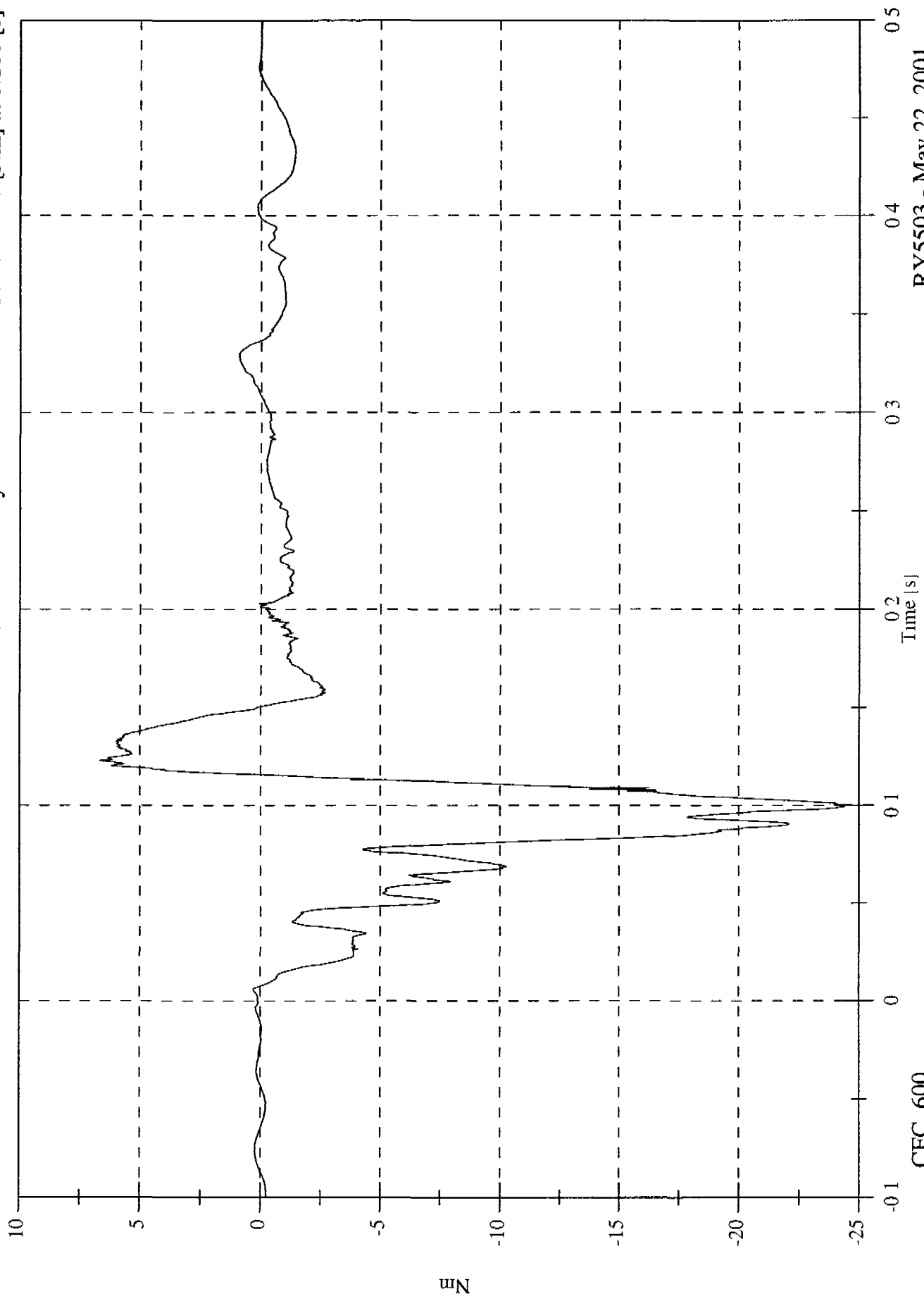
P2 Left Lower Tibia Mx



RY5503 - May 22, 2001

Max: 6.6 [Nm] at 0.123 [s]
 Min: -24.7 [Nm] at 0.100 [s]

P2 Left Lower Tibia My



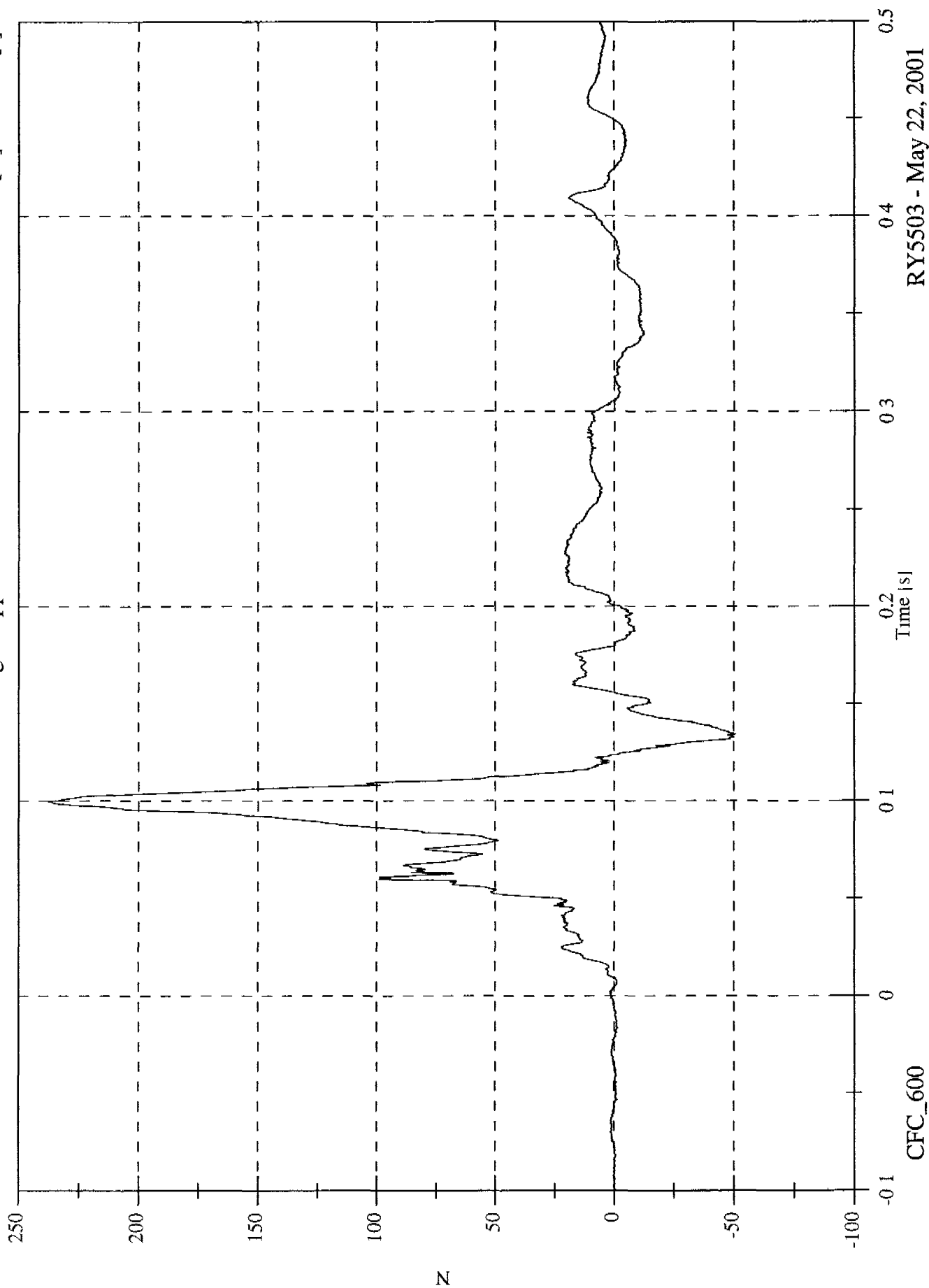
CFC_600

RY5503 - May 22, 2001

40% Frontal Offset Test # 6

Max: 237.6 [N] at 0.100 [s]
Min: -50.6 [N] at 0.134 [s]

P2 Right Upper Tibia Fx



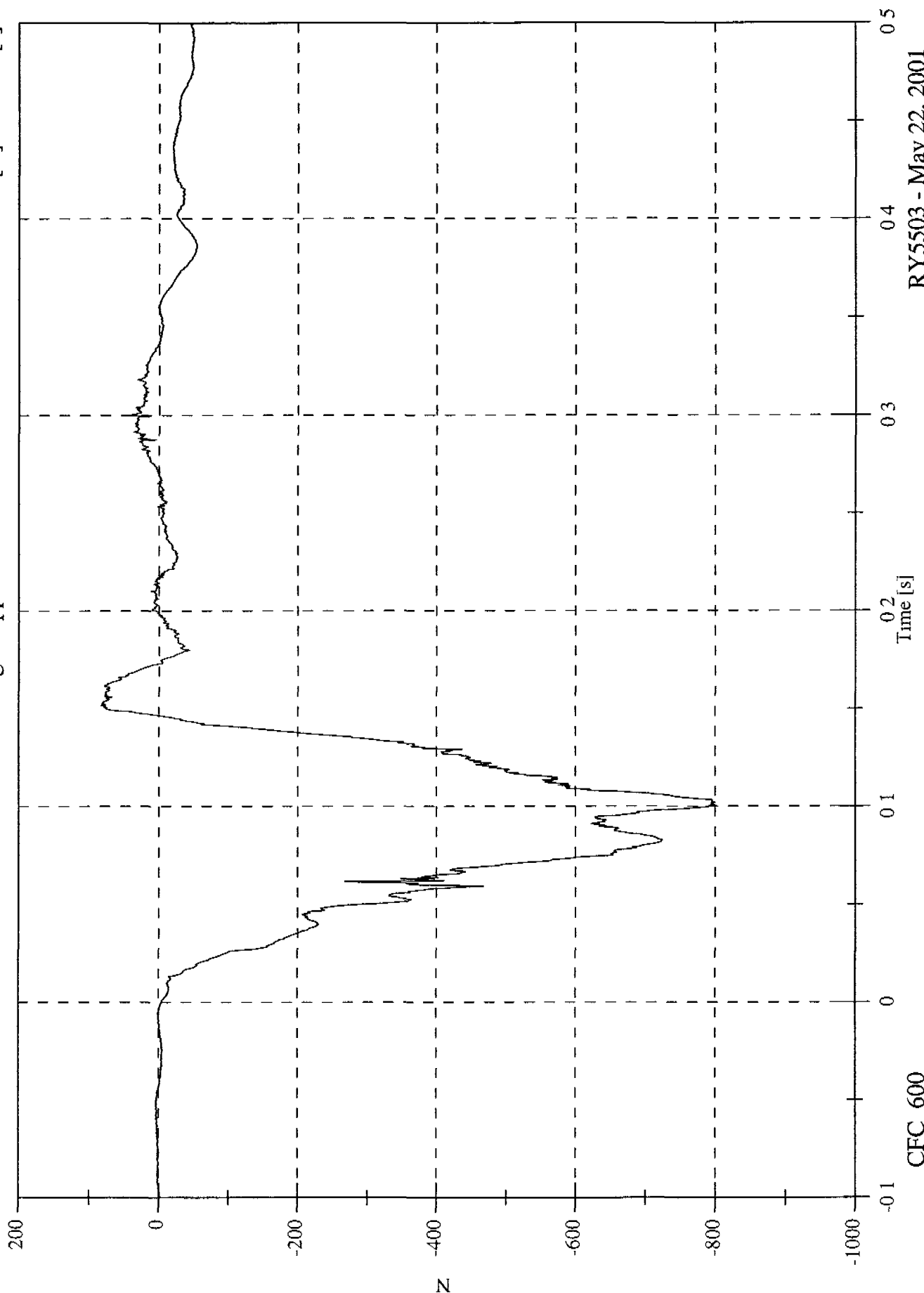
CFC_600

RY5503 - May 22, 2001

40% Frontal Offset Test # 6

Max: 82.3 [N] at 0.152 [s]
Min: -800.8 [N] at 0.100 [s]

P2 Right Upper Tibia Fz



CFC_600

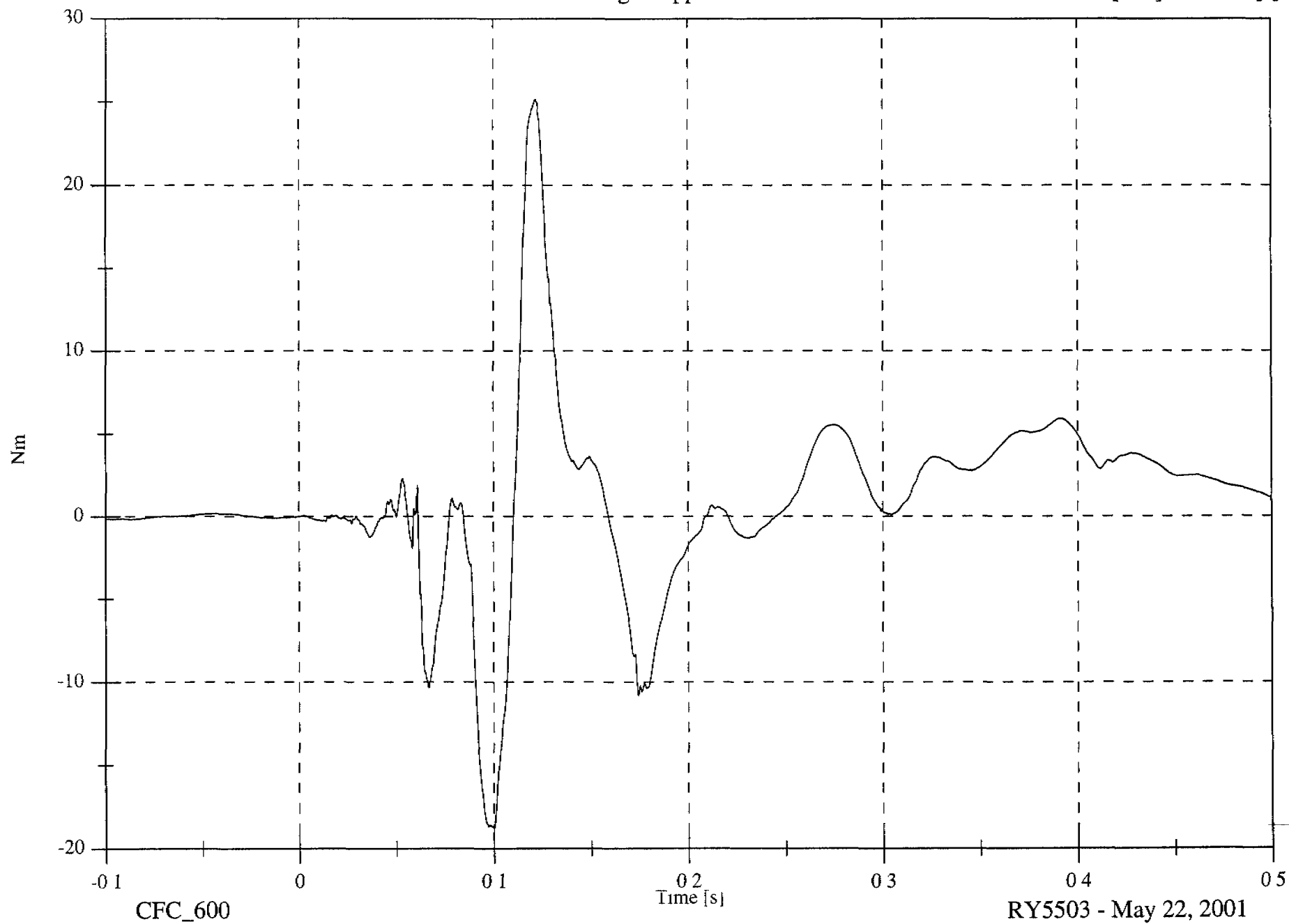
RY5503 - May 22, 2001

40% Frontal Offset Test # 6

P2 Right Upper Tibia Mx

Max: 25.1 [Nm] at 0.122 [s]

Min: -18.8 [Nm] at 0.100 [s]



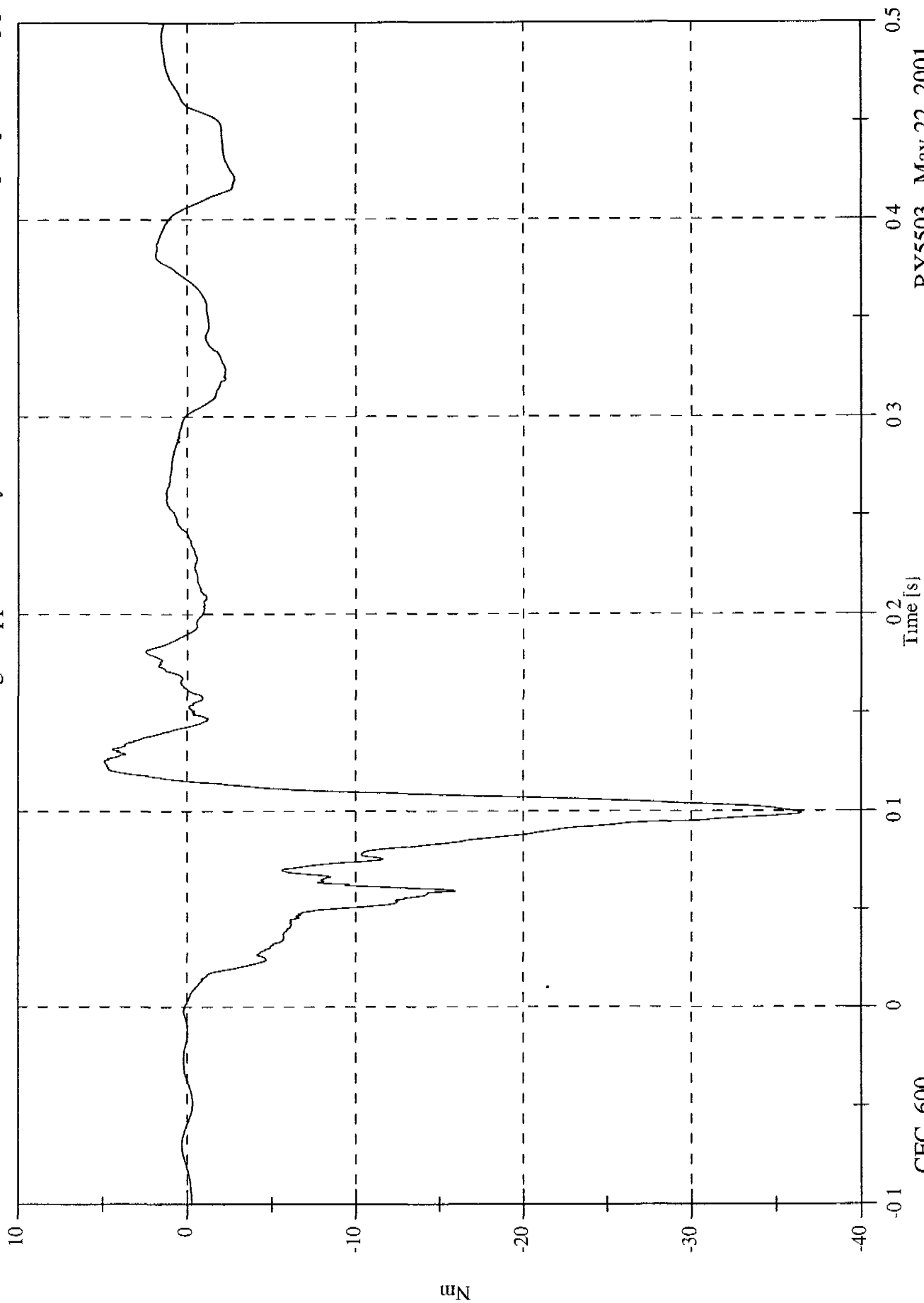
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8413-62

40% Frontal Offset Test # 6

Max: 4.9 [Nm] at 0.125 [s]
Min: -36.5 [Nm] at 0.099 [s]

P2 Right Upper Tibia My



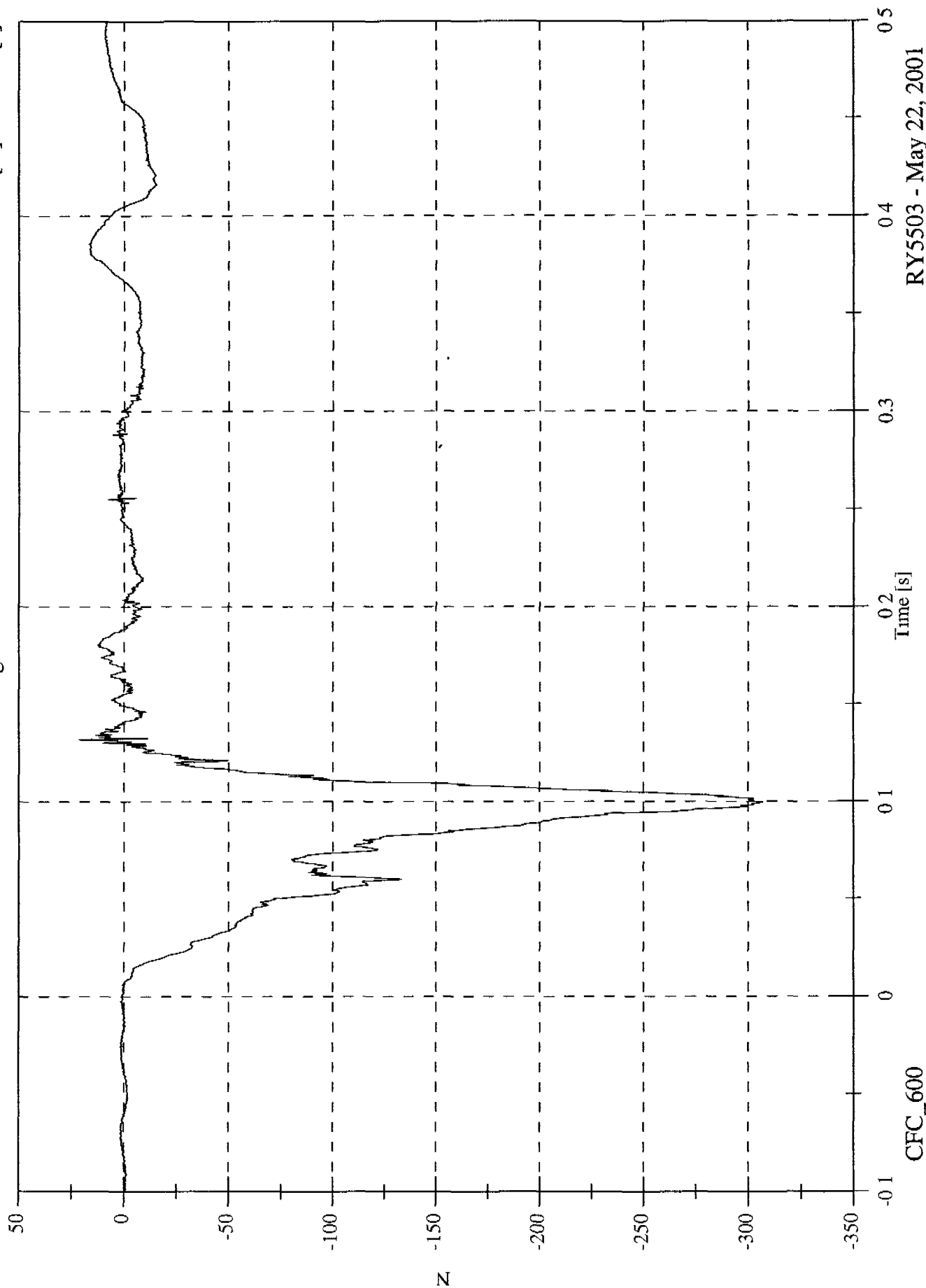
CFC_600

RY5503 - May 22, 2001

40% Frontal Offset Test # 6

Max: 21.3 [N] at 0.132 [s]
 Min: -306.8 [N] at 0.100 [s]

P2 Right Lower Tibia Fx

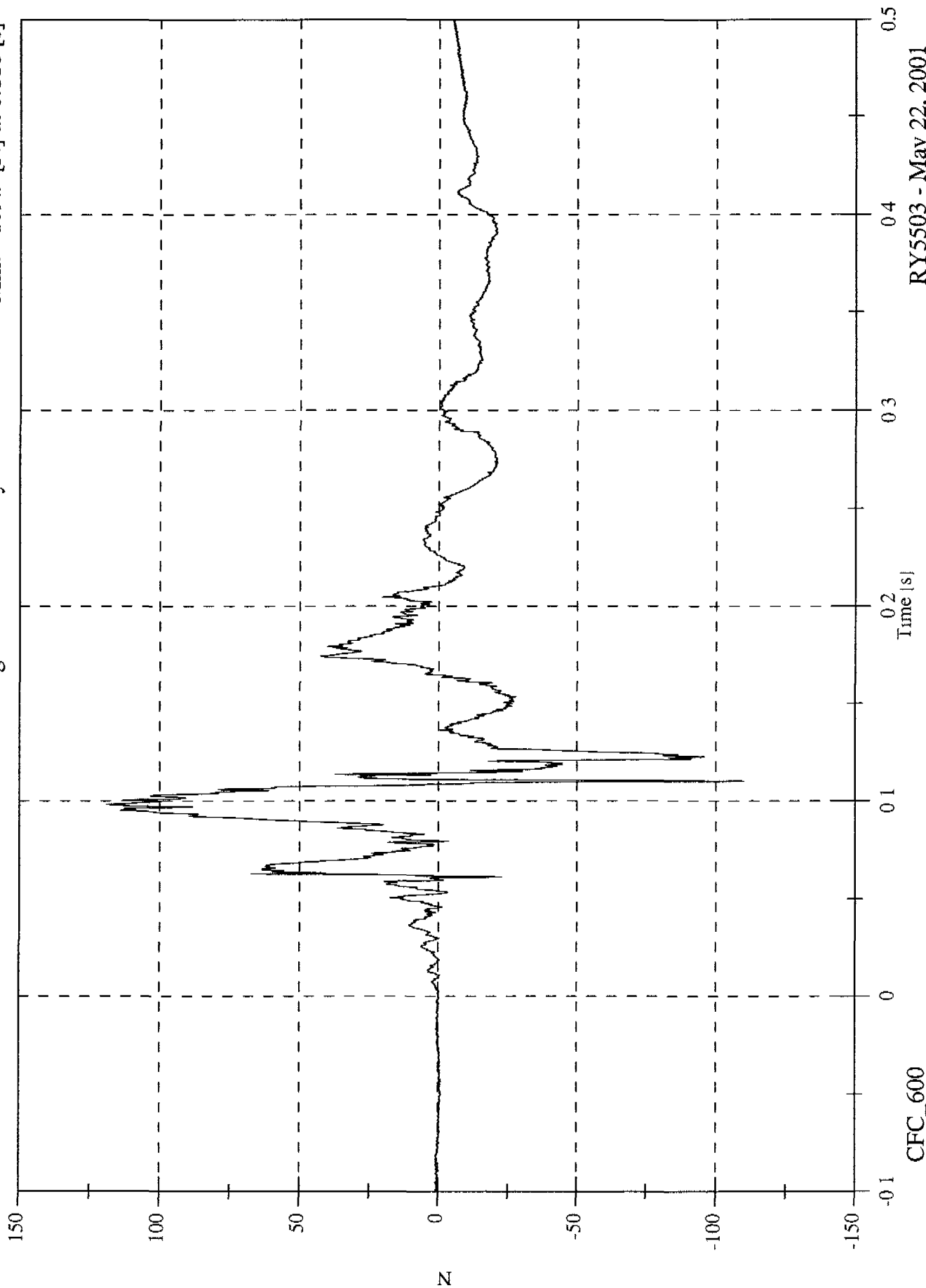


RY5503 - May 22, 2001

40% Frontal Offset Test # 6

Max: 119.1 [N] at 0.098 [s]
Min: -109.9 [N] at 0.110 [s]

P2 Right Lower Tibia Fy



CFC_600

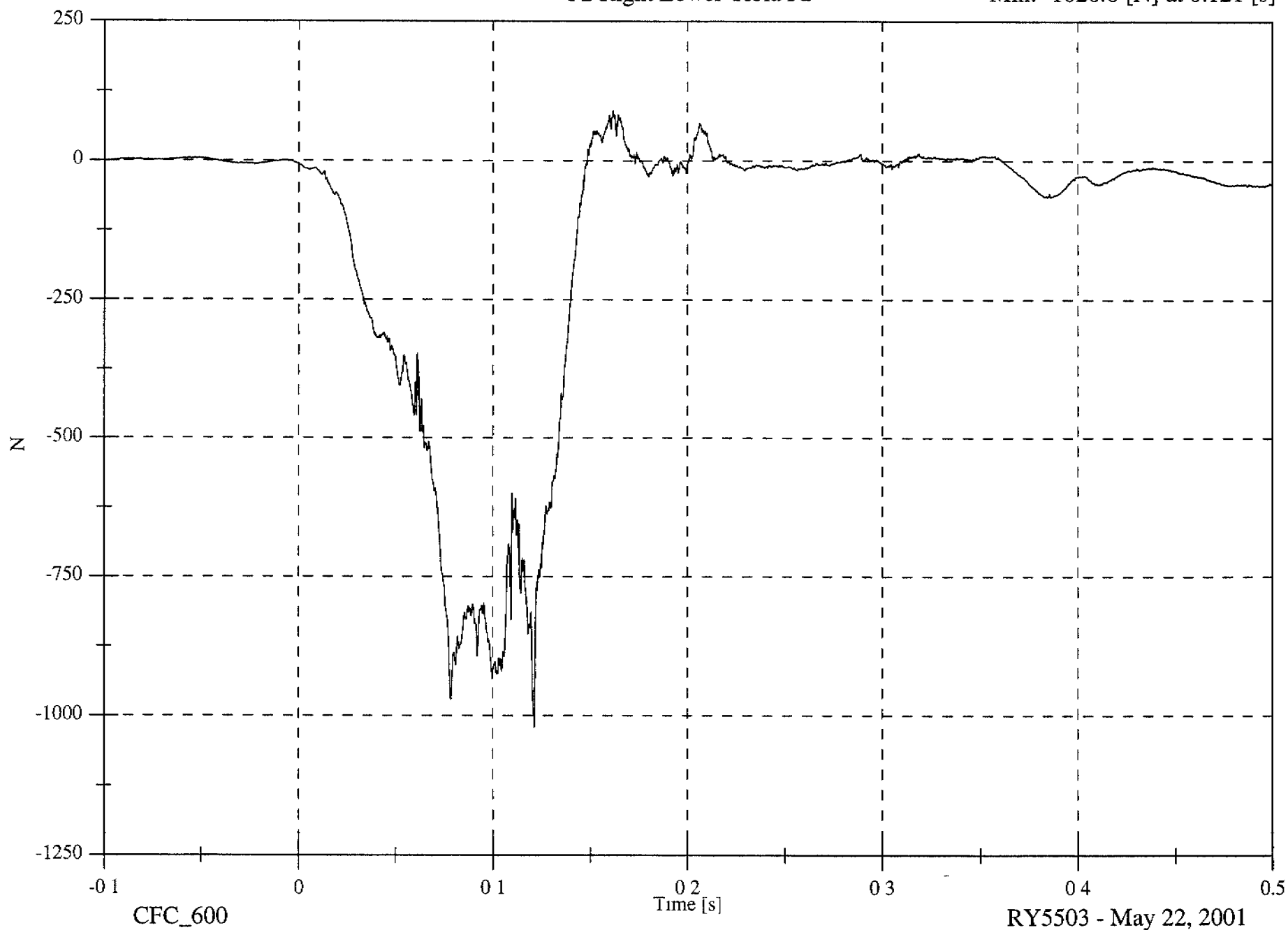
Time [s]

RY5503 - May 22, 2001

40% Frontal Offset Test # 6

P2 Right Lower Tibia Fz

Max: 89.4 [N] at 0.162 [s]
Min: -1020.8 [N] at 0.121 [s]



B-168

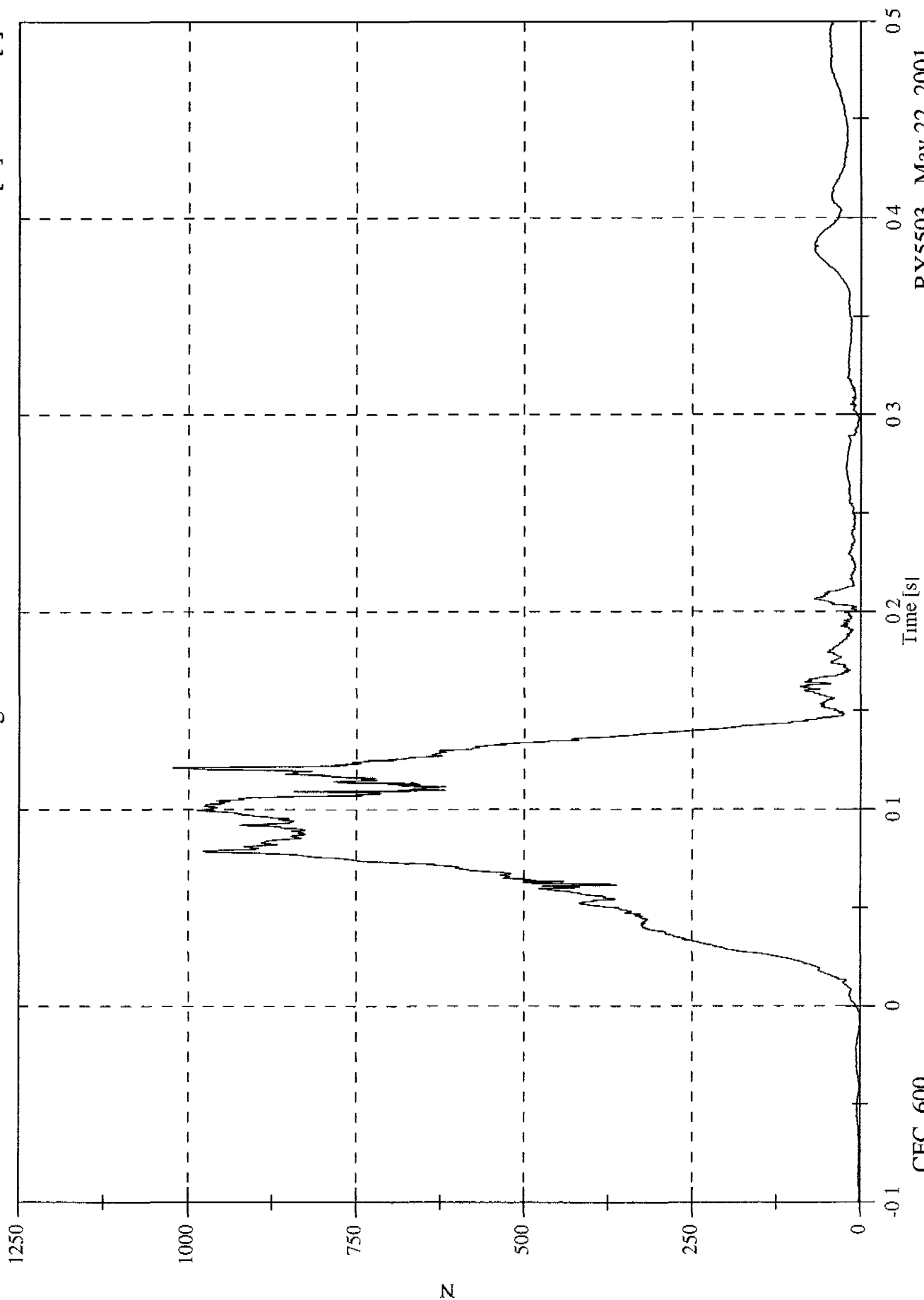
8413-62

RY5503 - May 22, 2001

40% Frontal Offset Test # 6

Max: 1023.6 [N] at 0.121 [s]
Min: 0.1 [N] at -0.009 [s]

P2 Right Lower Tibia F Resultant



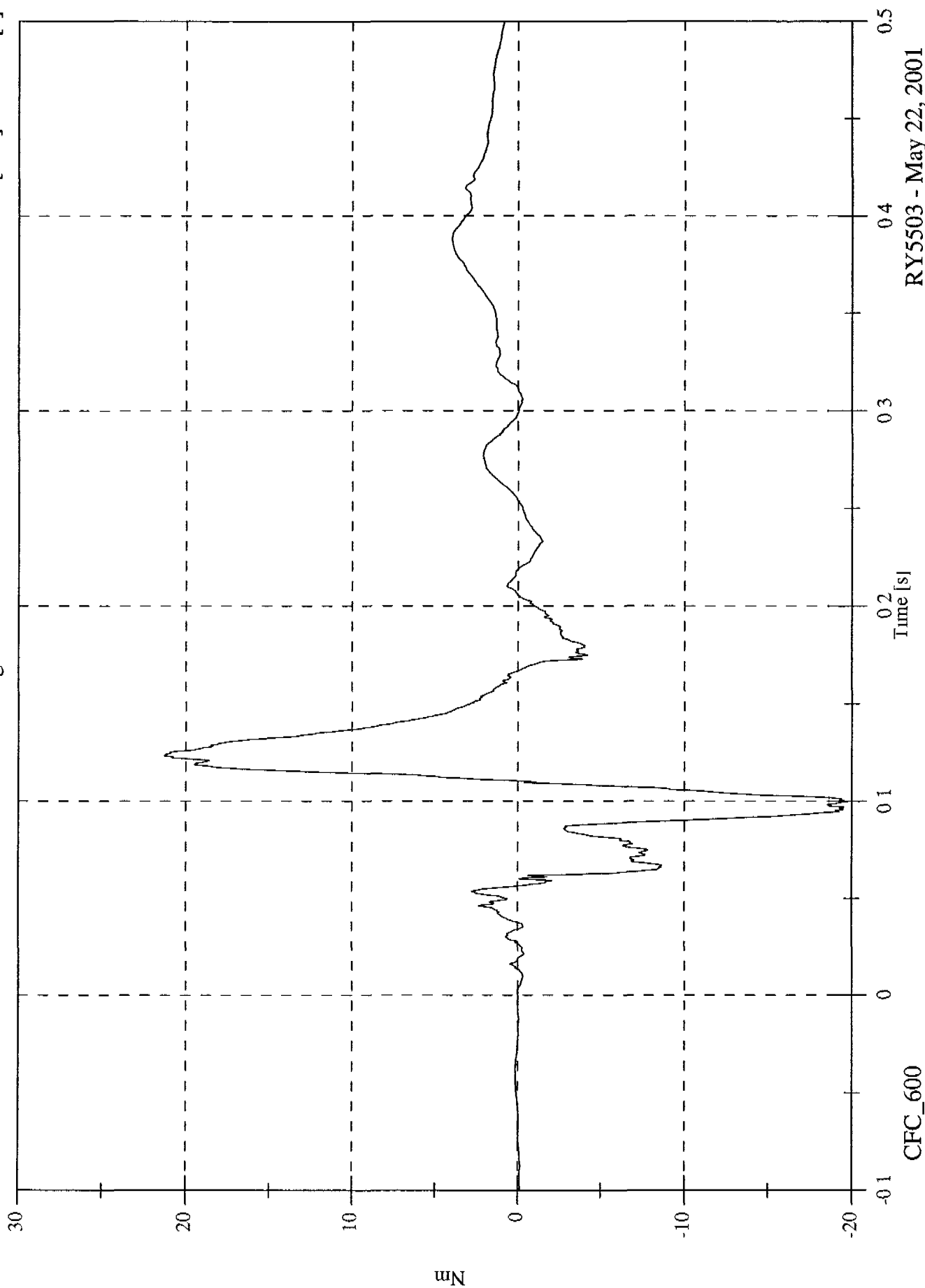
CFC_600

RY5503 - May 22, 2001

40% Frontal Offset Test # 6

Max: 21.3 [Nm] at 0.123 [s]
Min: -19.7 [Nm] at 0.100 [s]

P2 Right Lower Tibia Mx



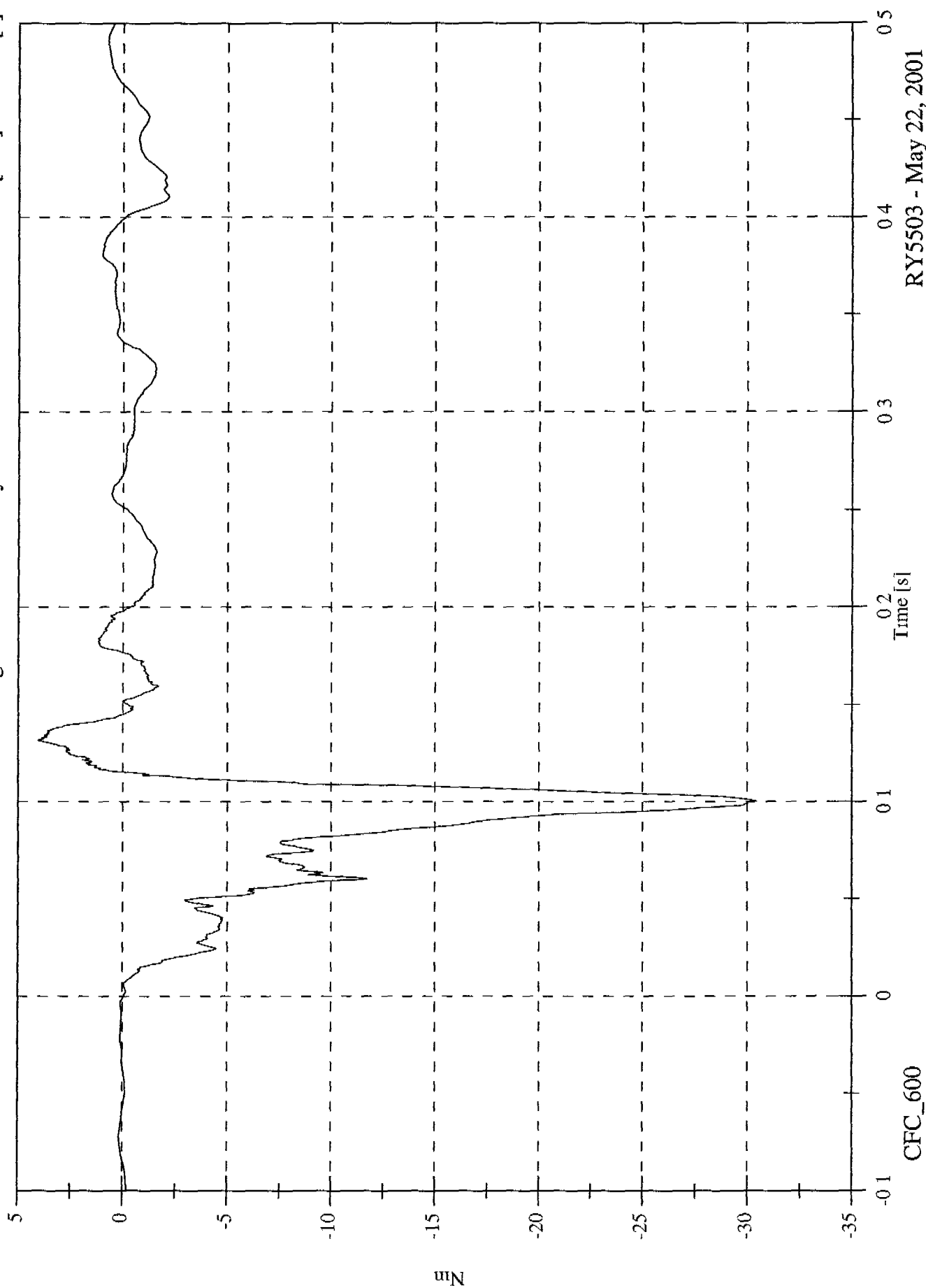
CFC_600

RY5503 - May 22, 2001

40% Frontal Offset Test # 6

Max: 4.0 [Nm] at 0.132 [s]
Min: -30.4 [Nm] at 0.100 [s]

P2 Right Lower Tibia My

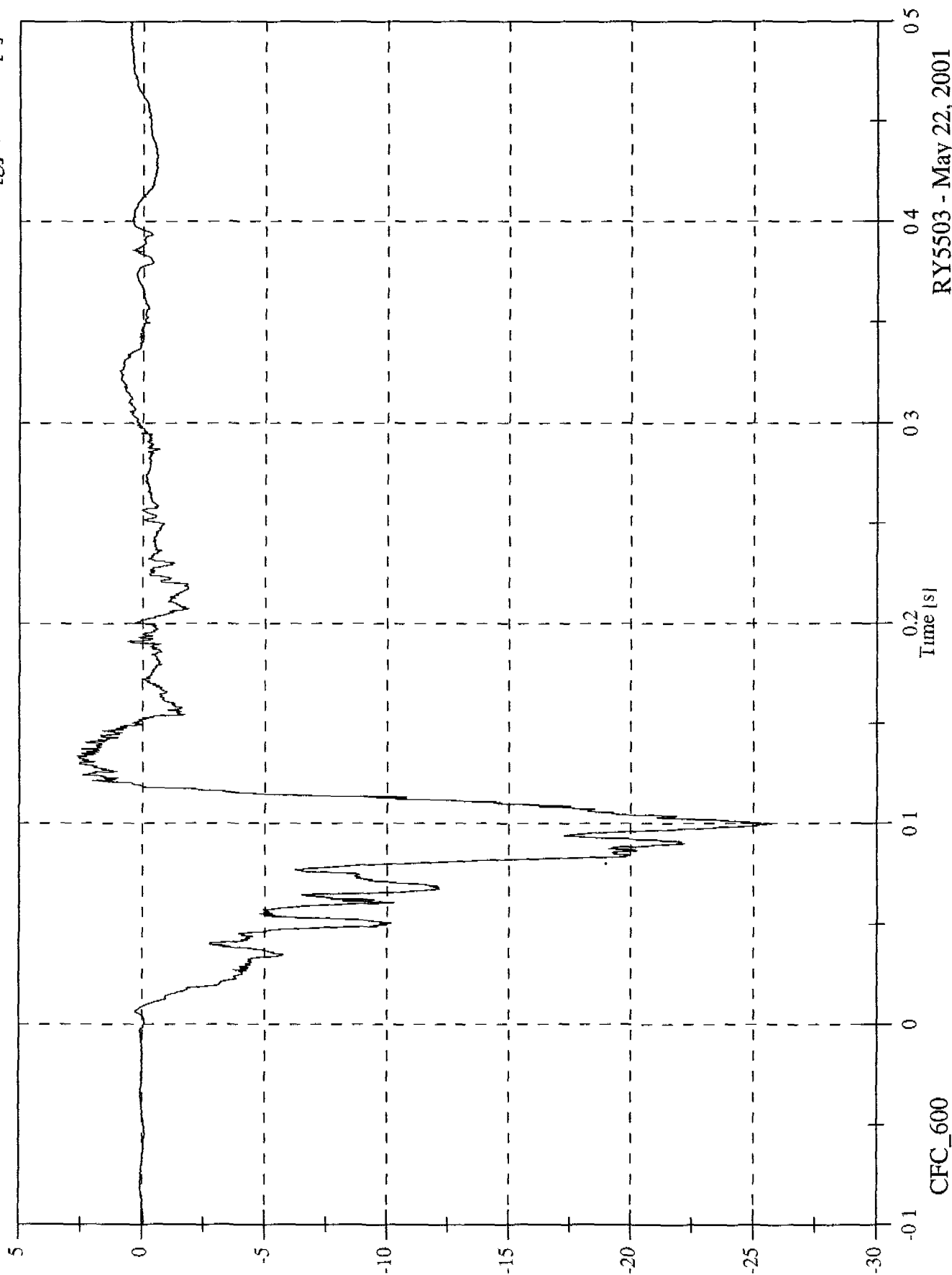


RY5503 - May 22, 2001

40% Frontal Offset Test # 6

Max: 2.6 [g] at 0.134 [s]
Min: -25.7 [g] at 0.100 [s]

P2 Left Tibia Ax



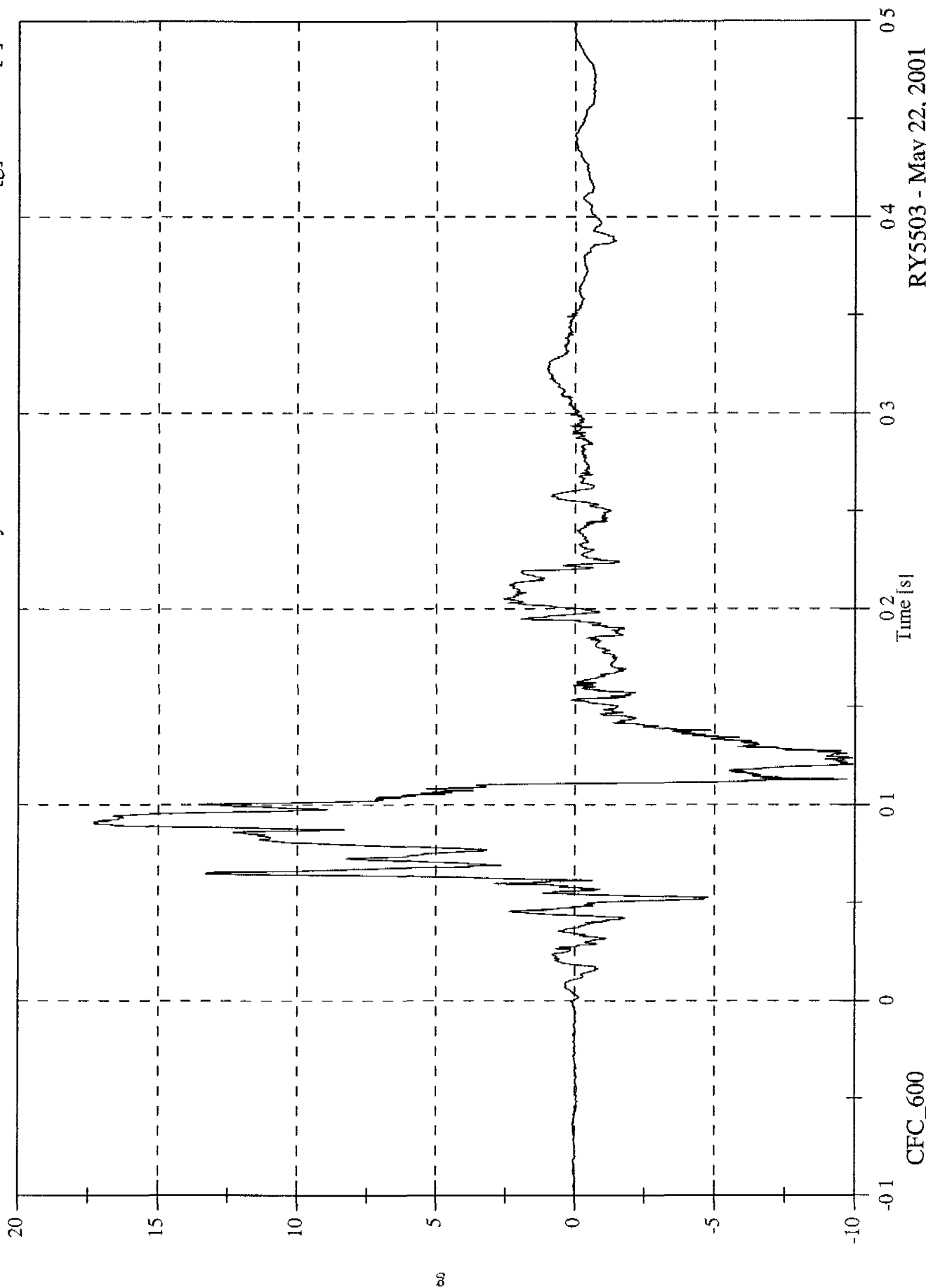
CFC_600

RY5503 - May 22, 2001

40% Frontal Offset Test # 6

Max: 17.3 [g] at 0.091 [s]
Min: -9.9 [g] at 0.121 [s]

P2 Left Tibia Ay

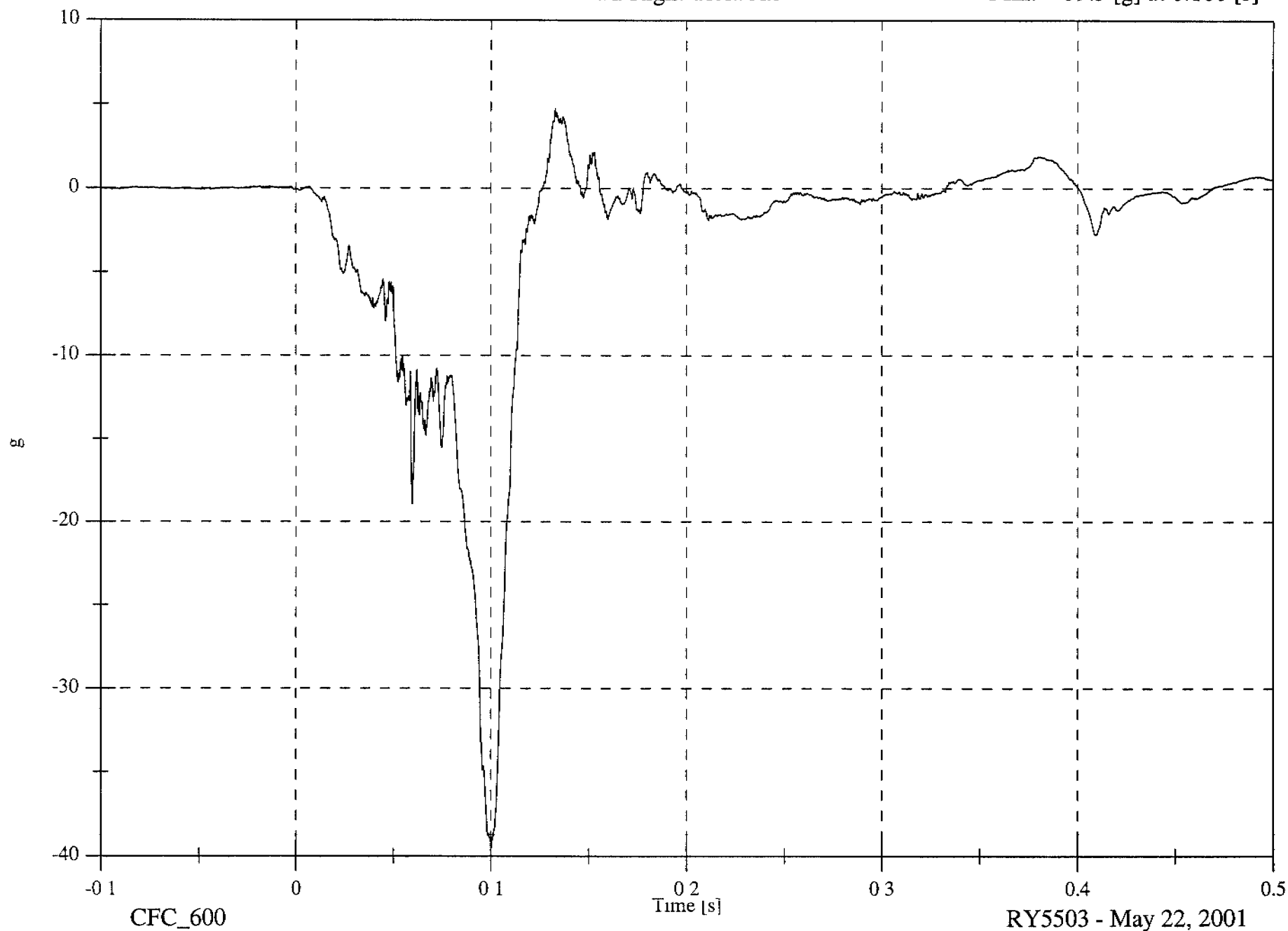


RY5503 - May 22, 2001

40% Frontal Offset Test # 6

P2 Right Tibia Ax

Max: 4.8 [g] at 0.133 [s]
Min: -39.5 [g] at 0.100 [s]



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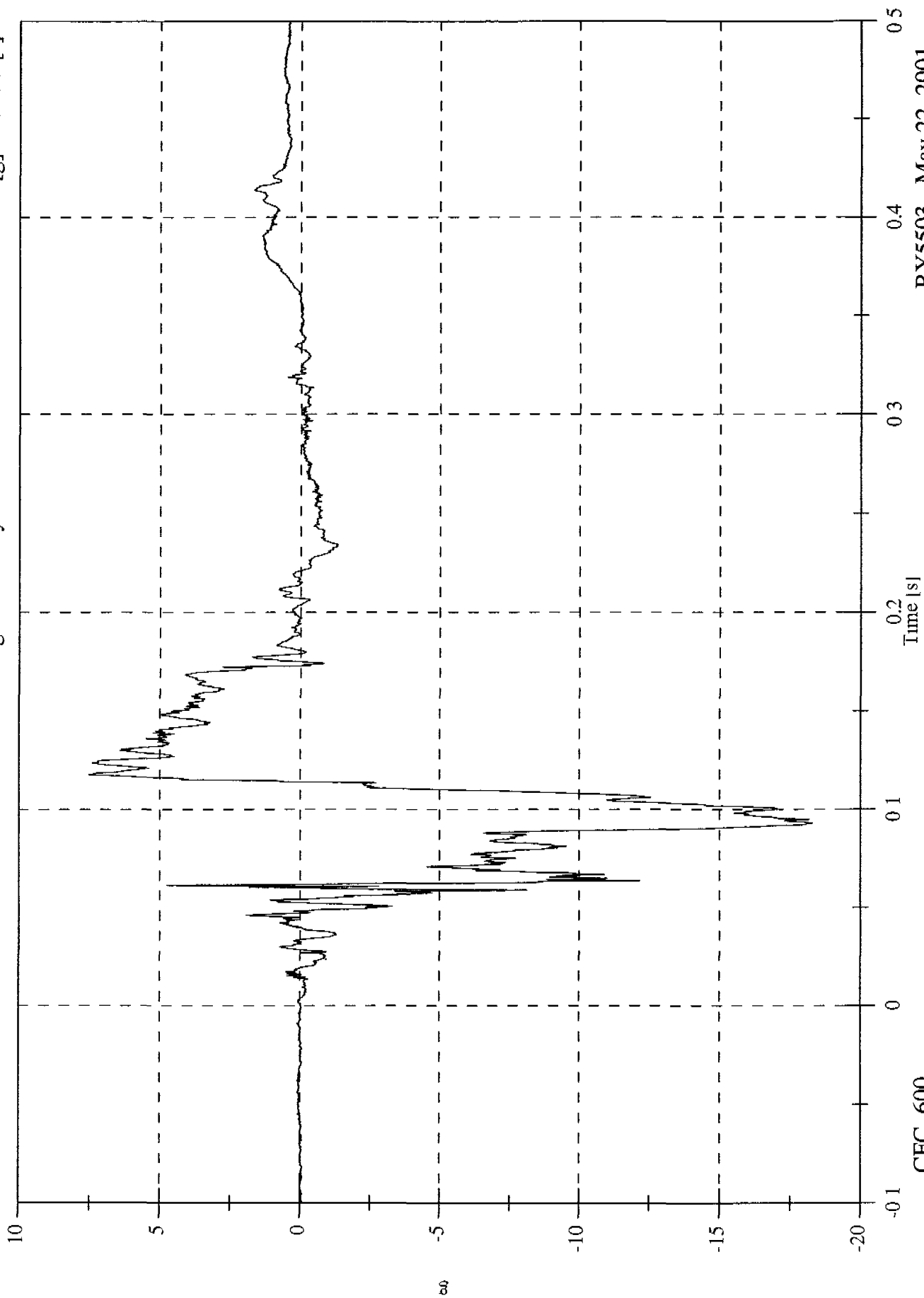
8413-62

RY5503 - May 22, 2001

40% Frontal Offset Test # 6

Max: 7.5 [g] at 0.118 [s]
Min: -18.3 [g] at 0.093 [s]

P2 Right Tibia Ay



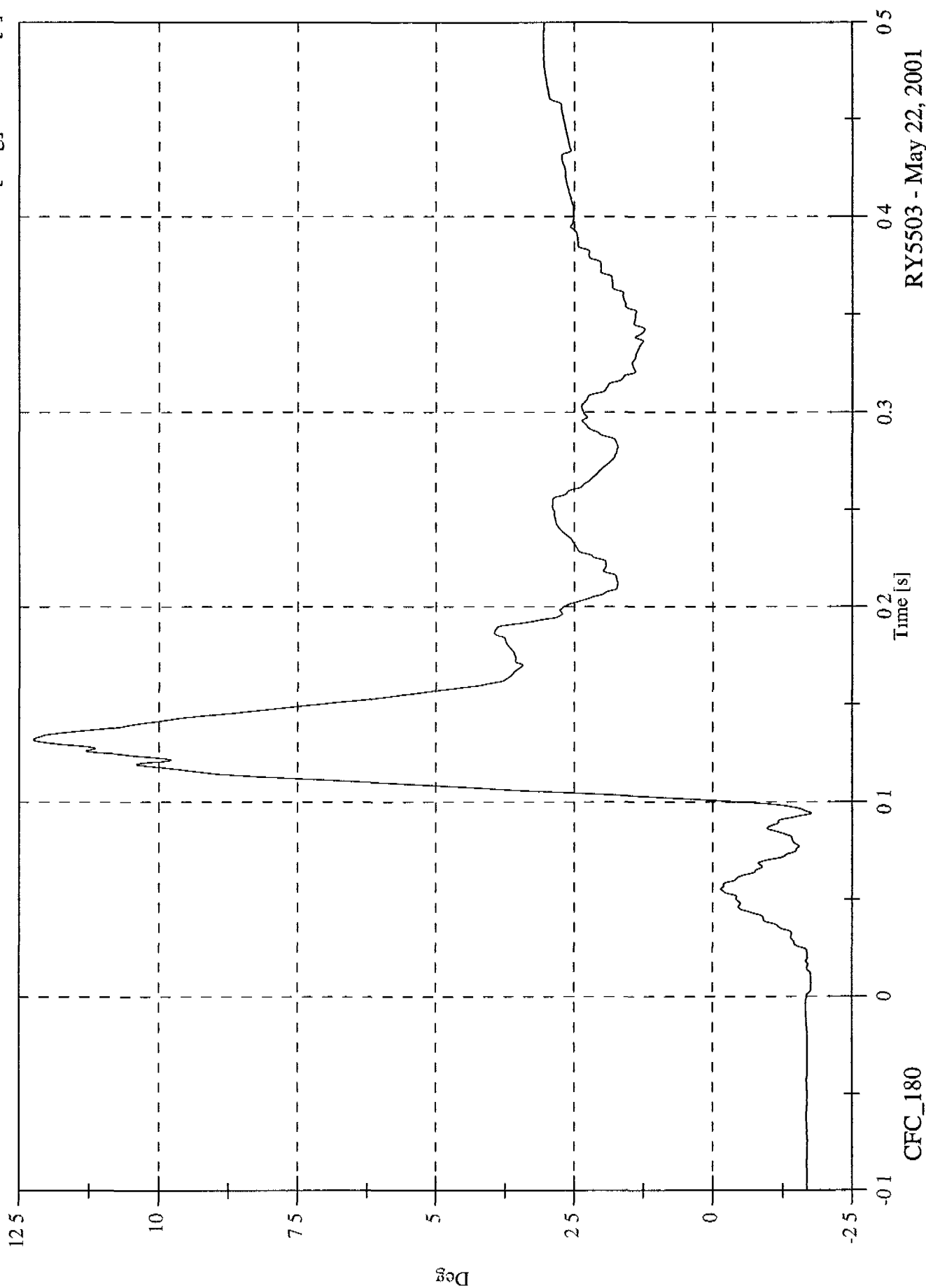
CFC_600

RY5503 - May 22, 2001

40% Frontal Offset Test # 6

Max: 12.2 [Deg] at 0.132 [s]
Min: -1.8 [Deg] at 0.007 [s]

P2 Left Ankle Rotation x



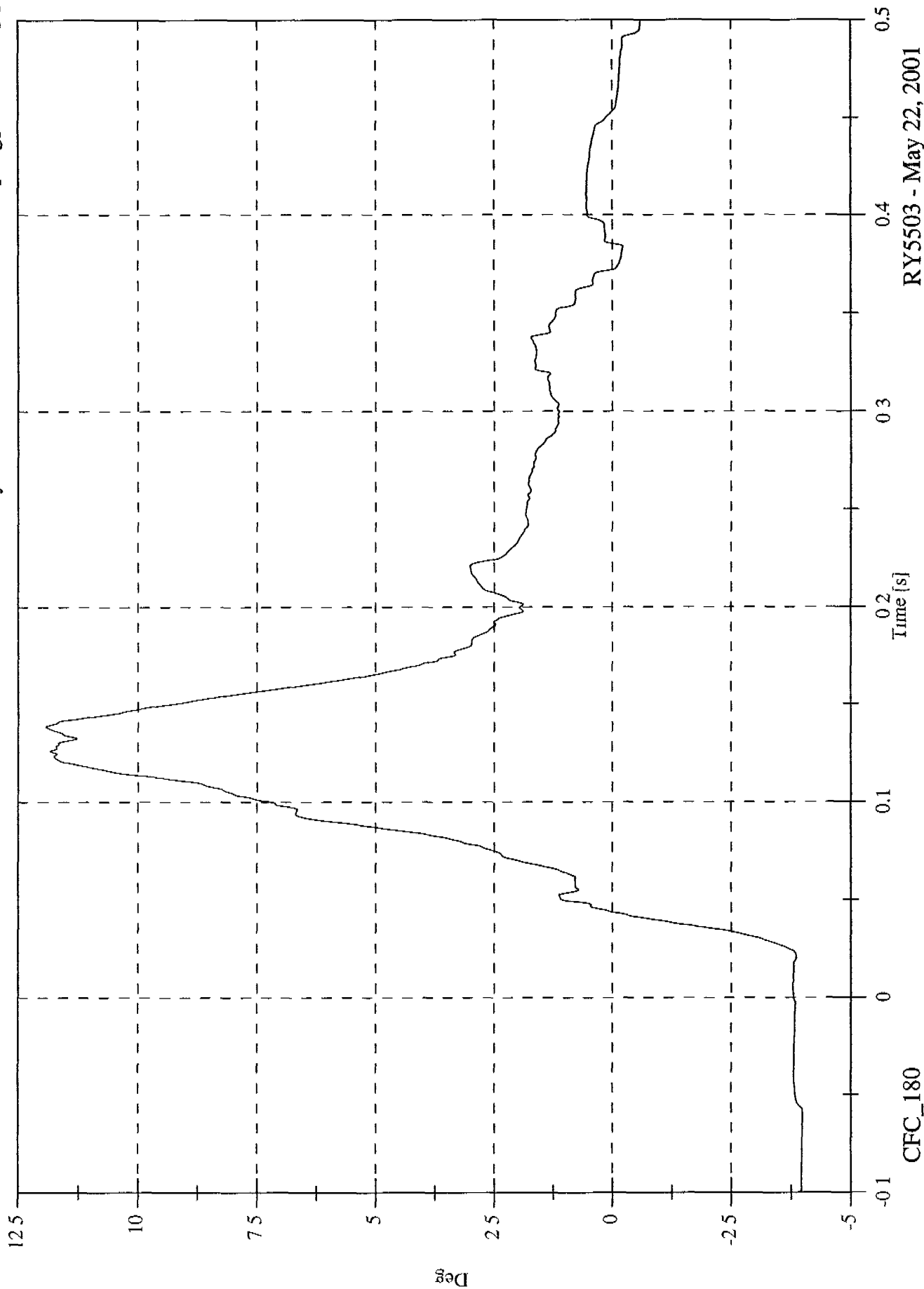
CFC_180

RY5503 - May 22, 2001

40% Frontal Offset Test # 6

Max: 11.9 [Deg] at 0.139 [s]
Min: -4.0 [Deg] at -0.063 [s]

P2 Left Ankle Rotation y



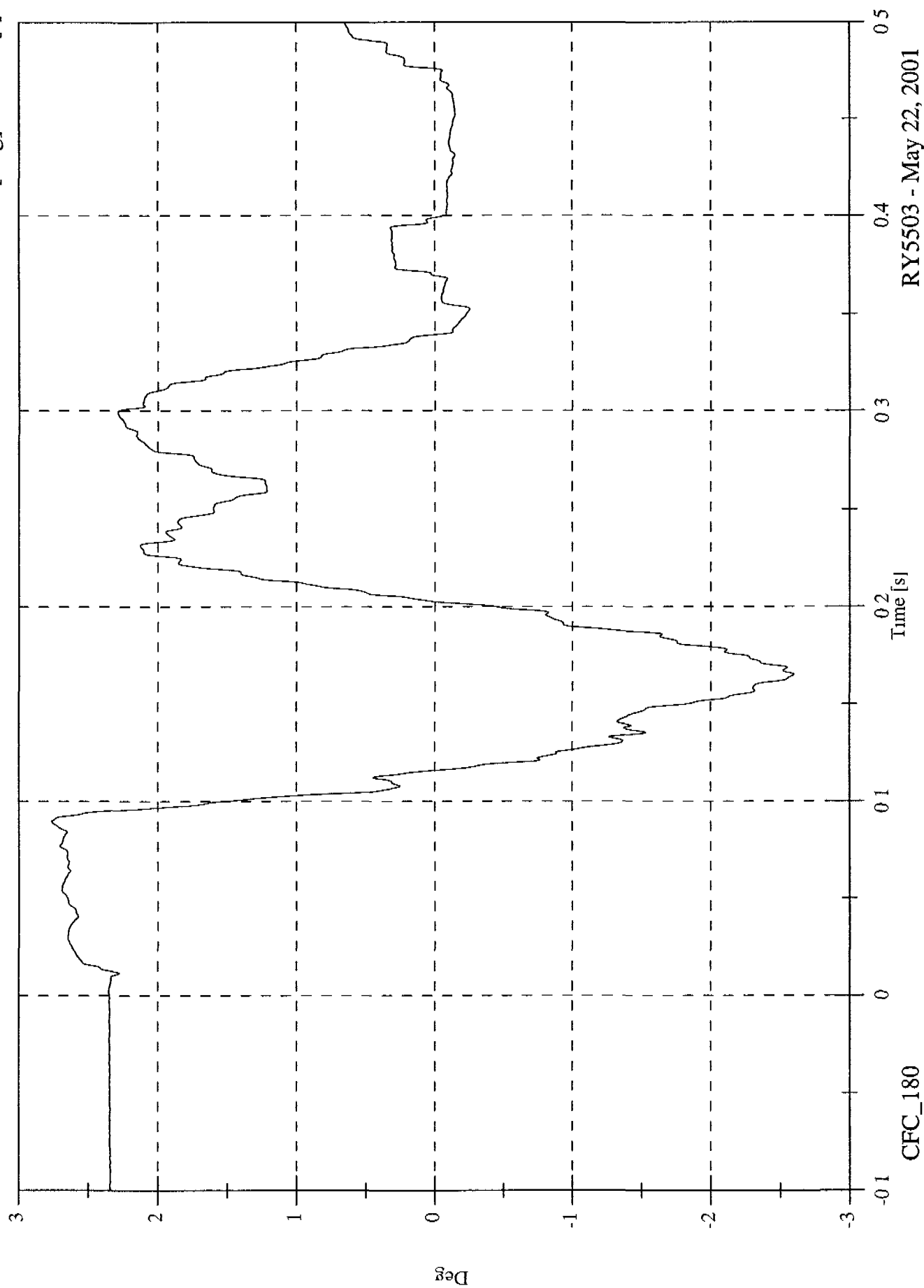
CFC_180

RY5503 - May 22, 2001

40% Frontal Offset Test # 6

Max: 2.8 [Deg] at 0.090 [s]
Min: -2.6 [Deg] at 0.165 [s]

P2 Left ankle Rotation z



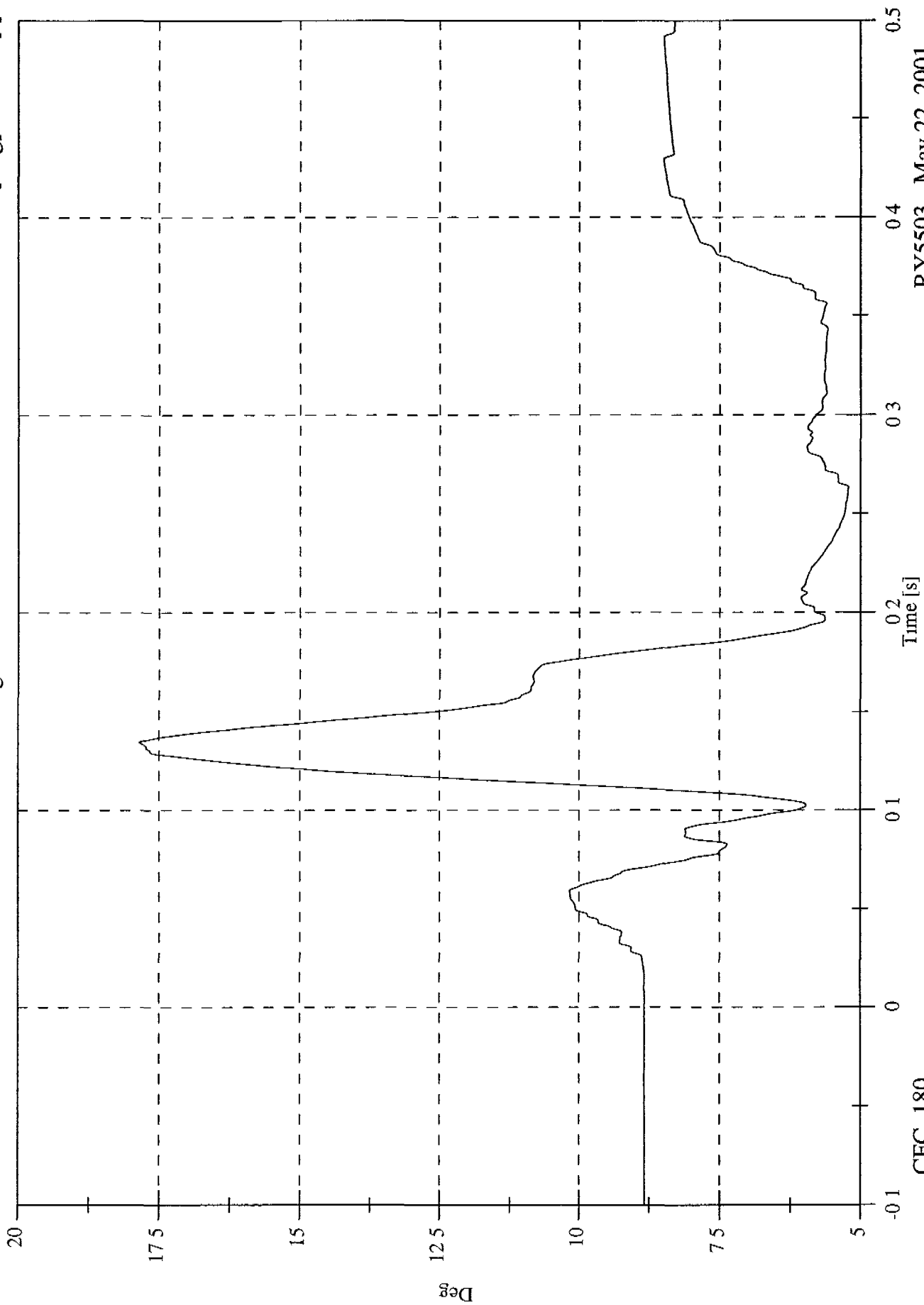
CFC_180

RY5503 - May 22, 2001

40% Frontal Offset Test # 6

Max: 17.8 [Deg] at 0.135 [s]
Min: 5.2 [Deg] at 0.263 [s]

P2 Right Ankle Rotation x



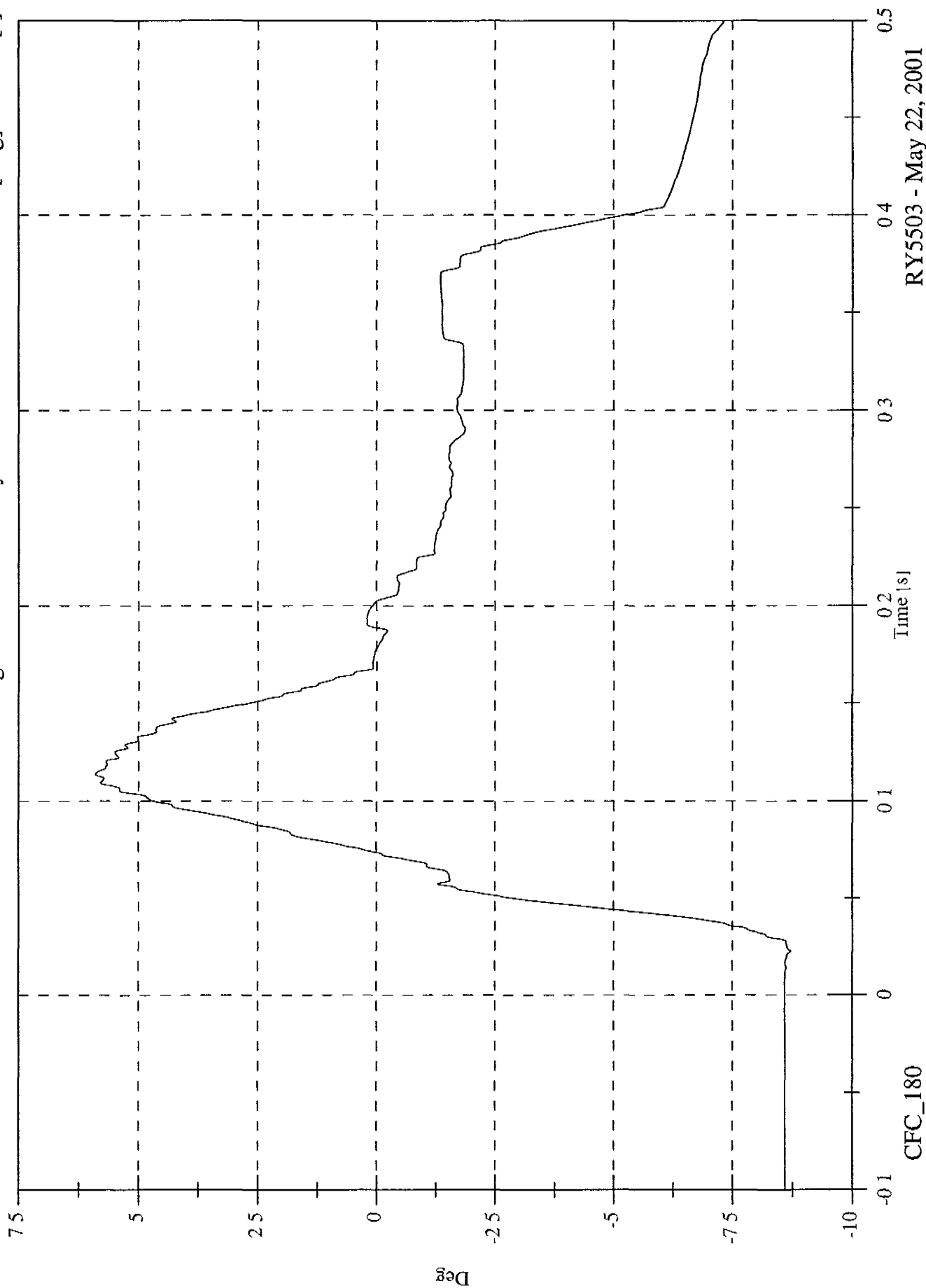
CFC_180

RY5503 - May 22, 2001

40% Frontal Offset Test # 6

Max: 5.9 [Deg] at 0.114 [s]
Min: -8.7 [Deg] at 0.022 [s]

P2 Right Ankle Rotation y



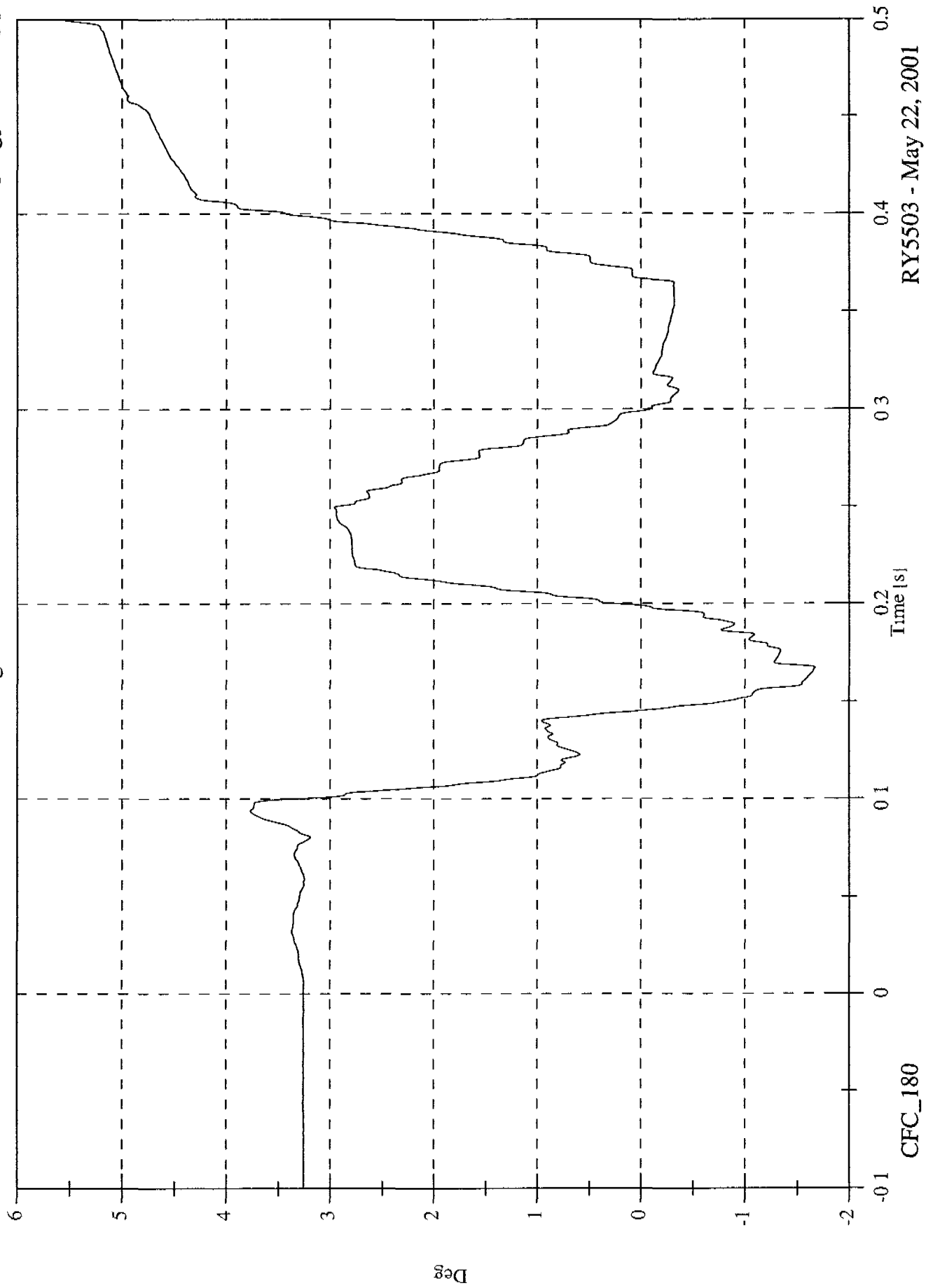
CFC_180

RY5503 - May 22, 2001

40% Frontal Offset Test # 6

Max: 5.6 [Deg] at 0.500 [s]
Min: -1.7 [Deg] at 0.167 [s]

P2 Right Ankle Rotation z



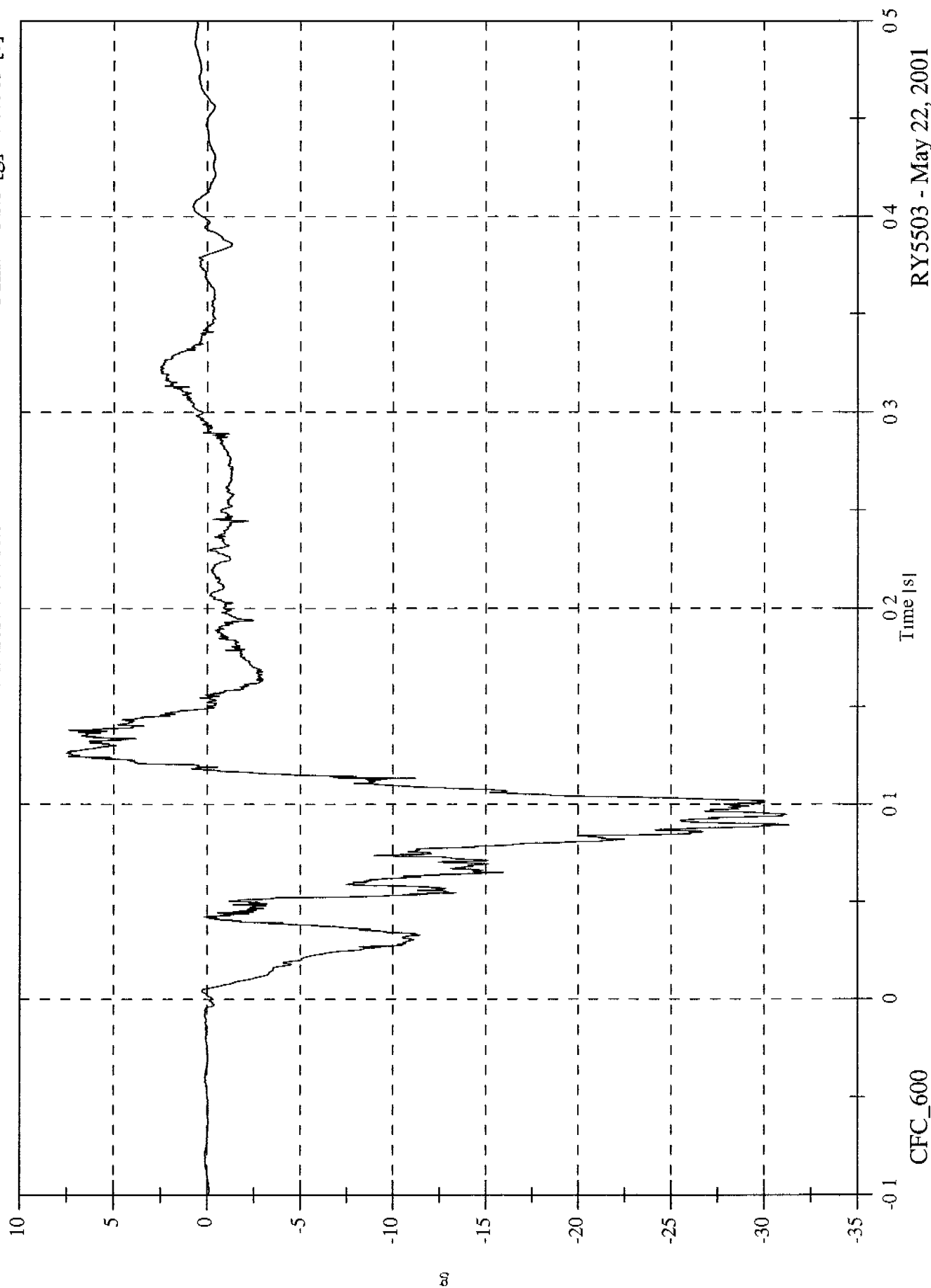
CFC_180

RY5503 - May 22, 2001

40% Frontal Offset Test # 6

Max: 7.5 [g] at 0.126 [s]
Min: -31.3 [g] at 0.089 [s]

P2 Left Foot Ax

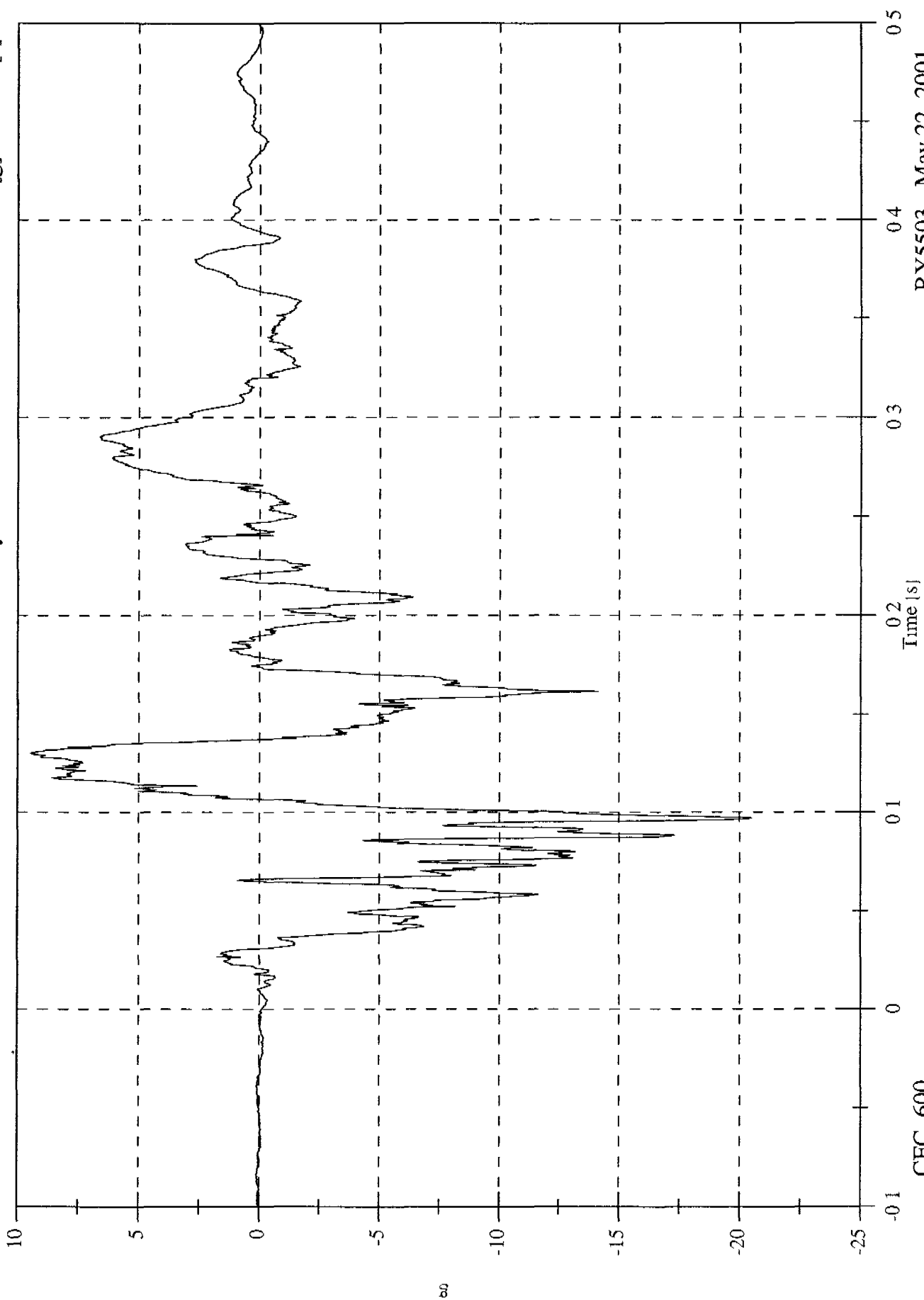


RY5503 - May 22, 2001

40% Frontal Offset Test # 6

Max: 9.5 [g] at 0.130 [s]
Min: -20.5 [g] at 0.097 [s]

P2 Left Foot Ay



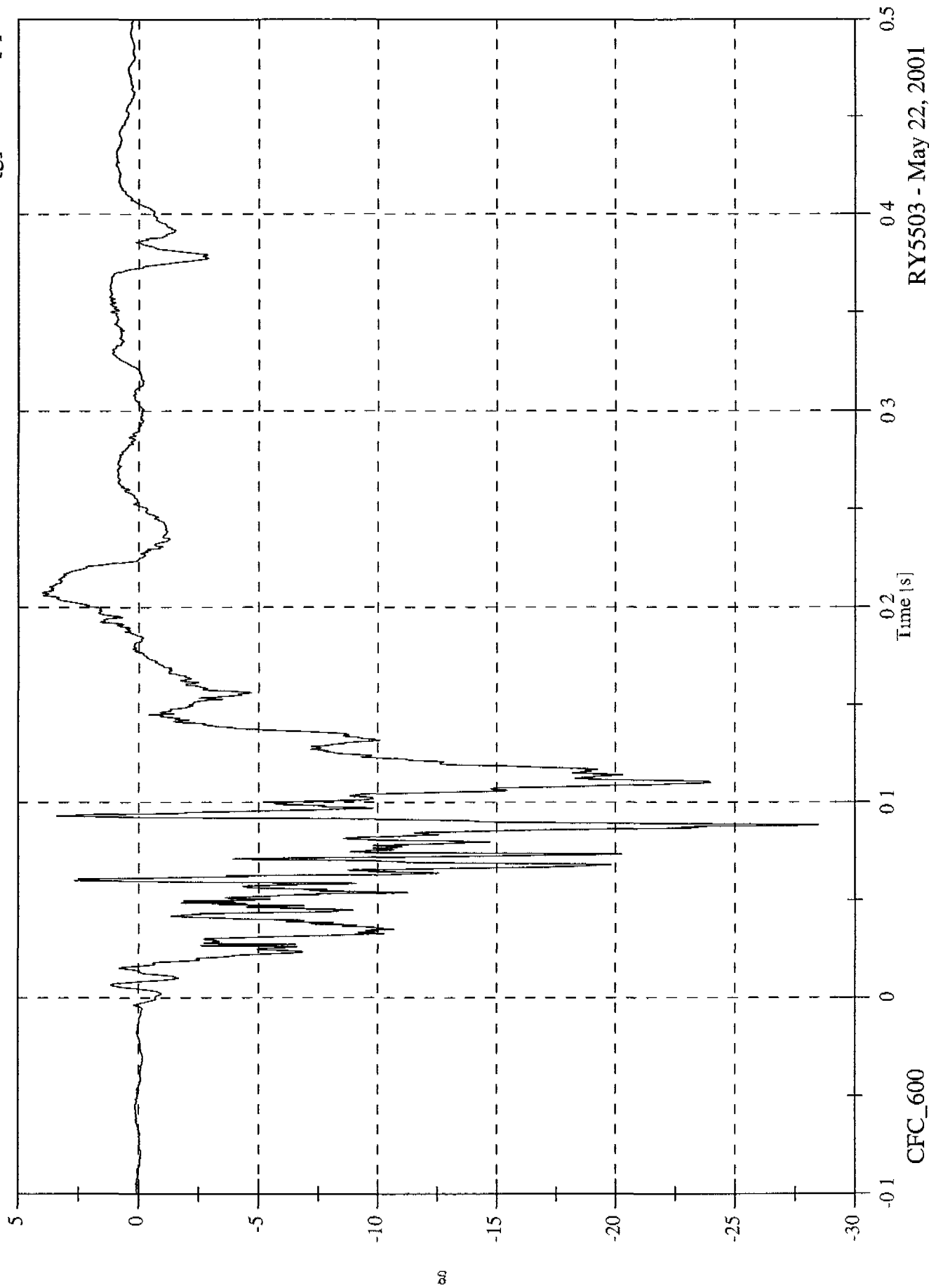
CFC_600

RY5503 - May 22, 2001

40% Frontal Offset Test # 6

Max: 4.0 [g] at 0.207 [s]
Min: -28.5 [g] at 0.088 [s]

P2 Left Foot Az

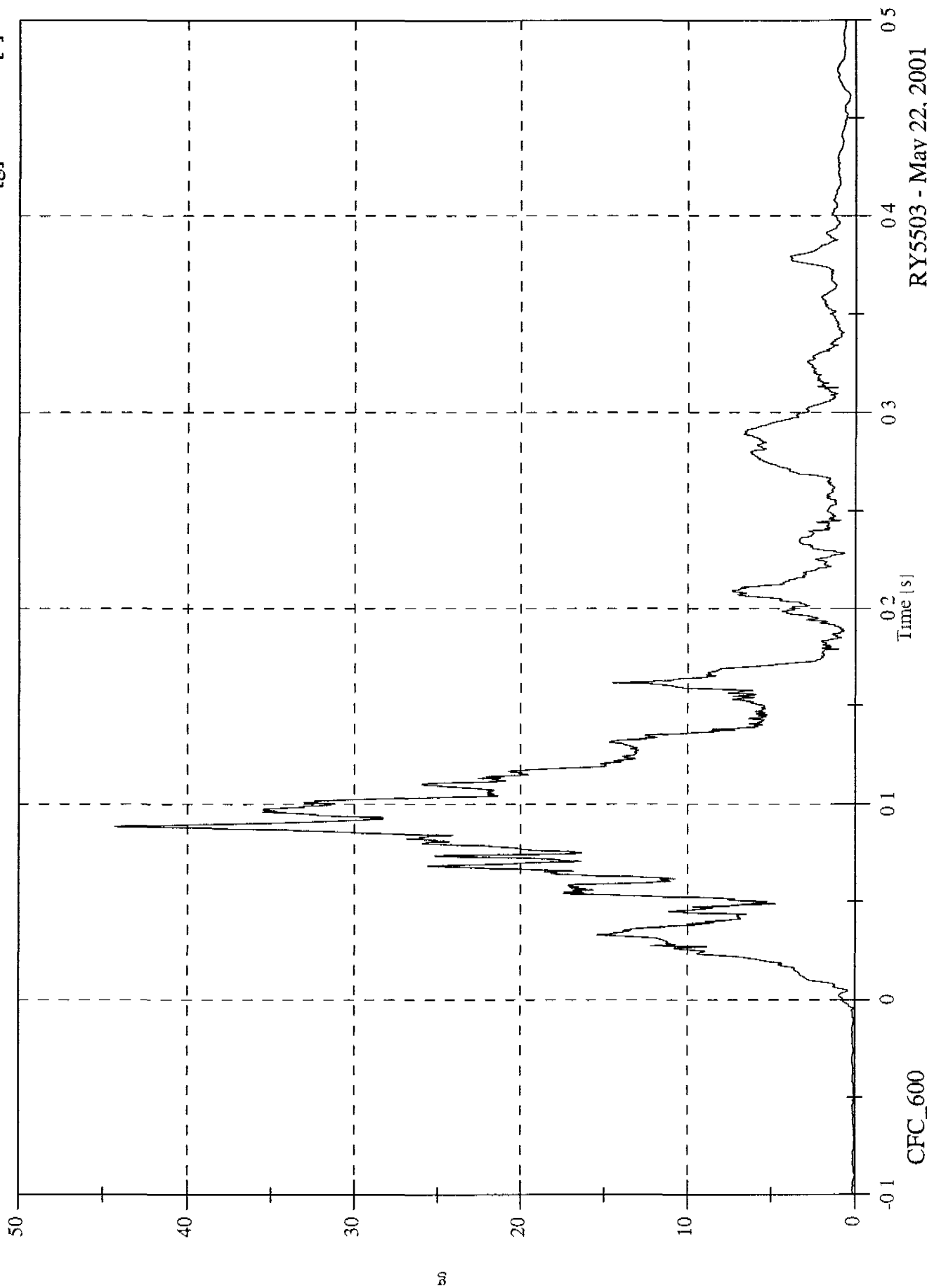


RY5503 - May 22, 2001

40% Frontal Offset Test # 6

Max: 44.3 [g] at 0.088 [s]
Min: 0.0 [g] at -0.100 [s]

P2 Left Foot A Resultant



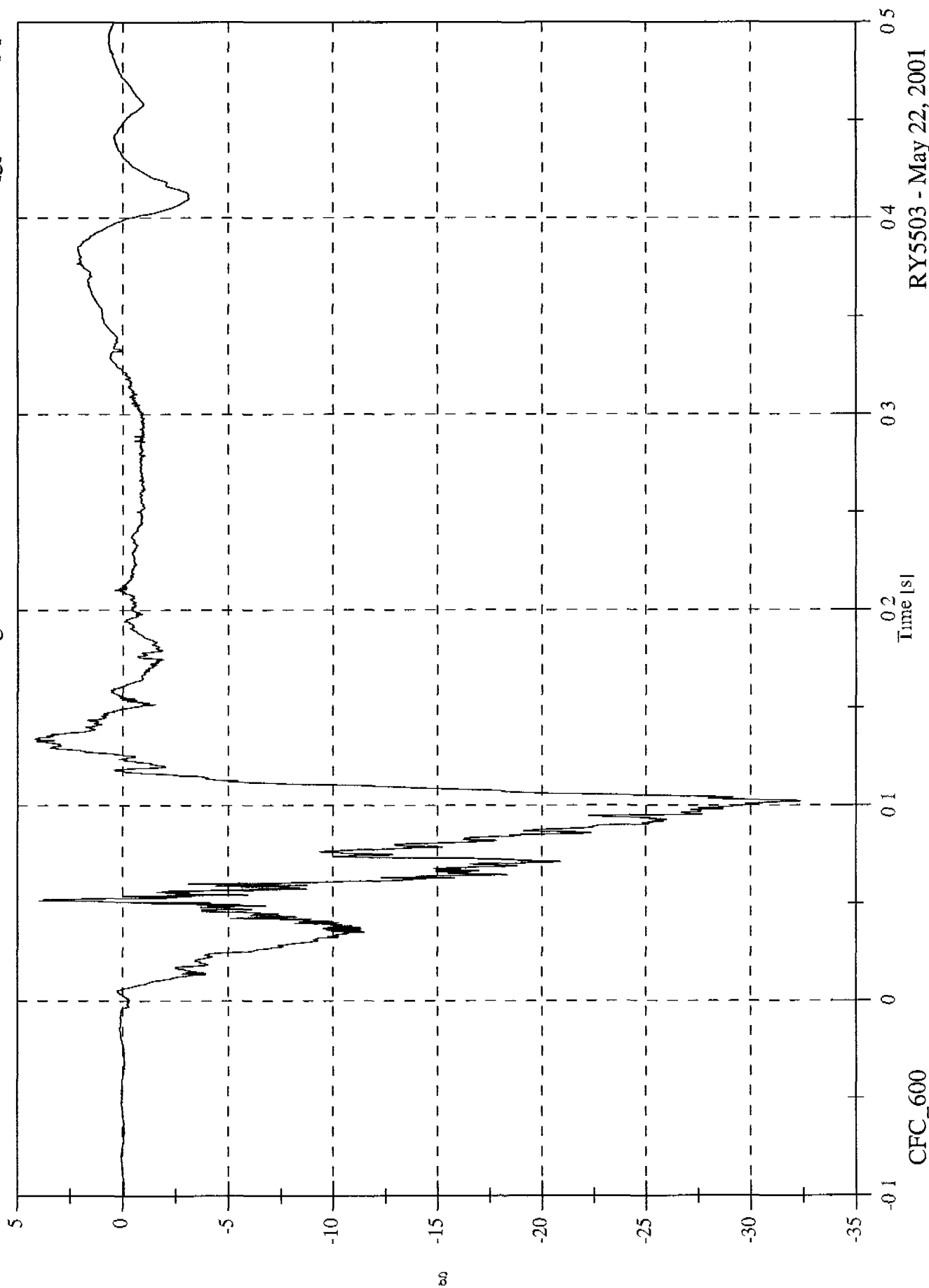
CFC_600

RY5503 - May 22, 2001

40% Frontal Offset Test # 6

Max: 4.2 [g] at 0.134 [s]
Min: -32.4 [g] at 0.102 [s]

P2 Right Foot Ax



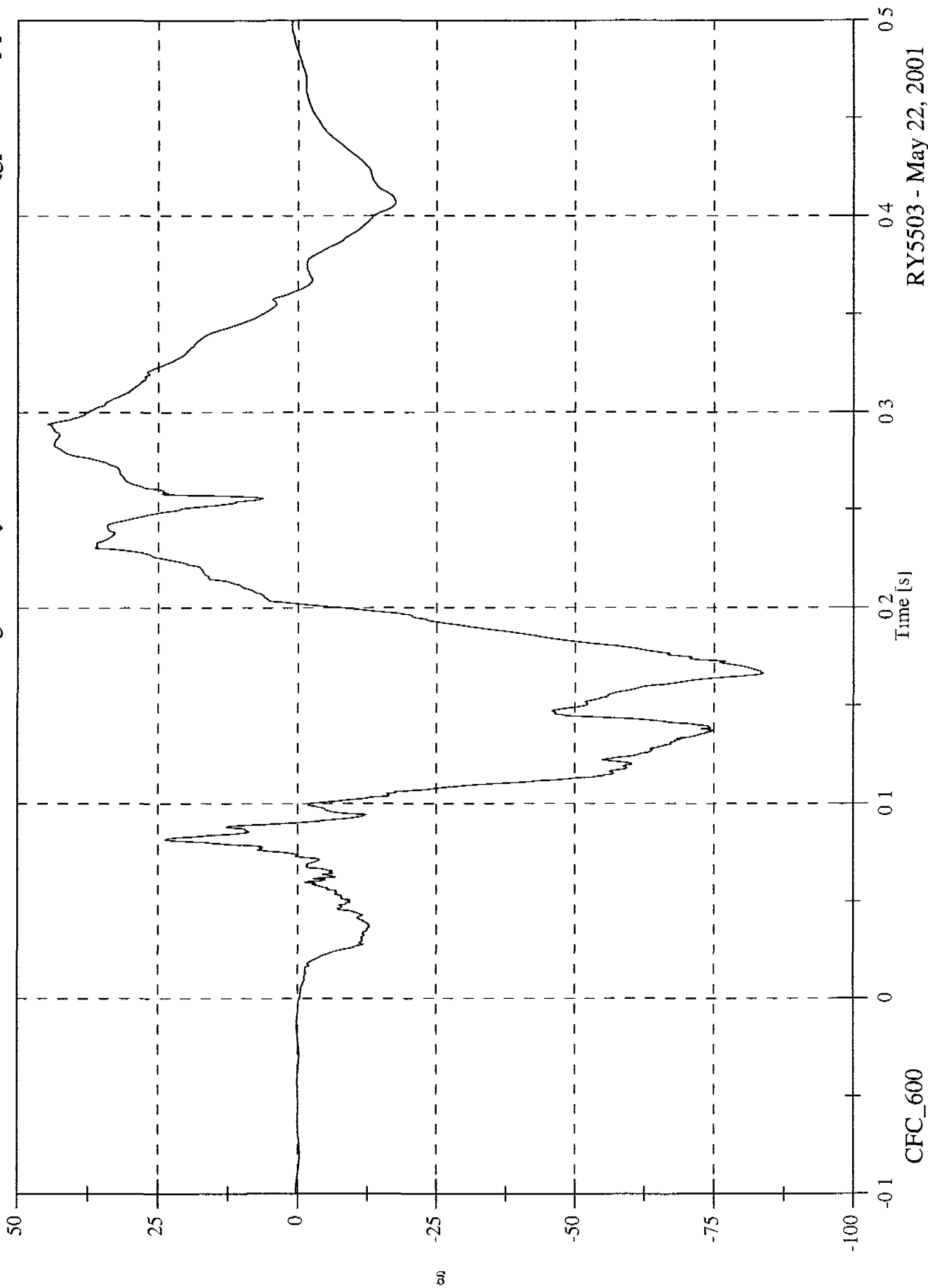
RY5503 - May 22, 2001

40% Frontal Offset Test # 6

Max: 44.6 [g] at 0.294 [s]

Min: -83.8 [g] at 0.166 [s]

P2 Right Foot Ay



CFC_600

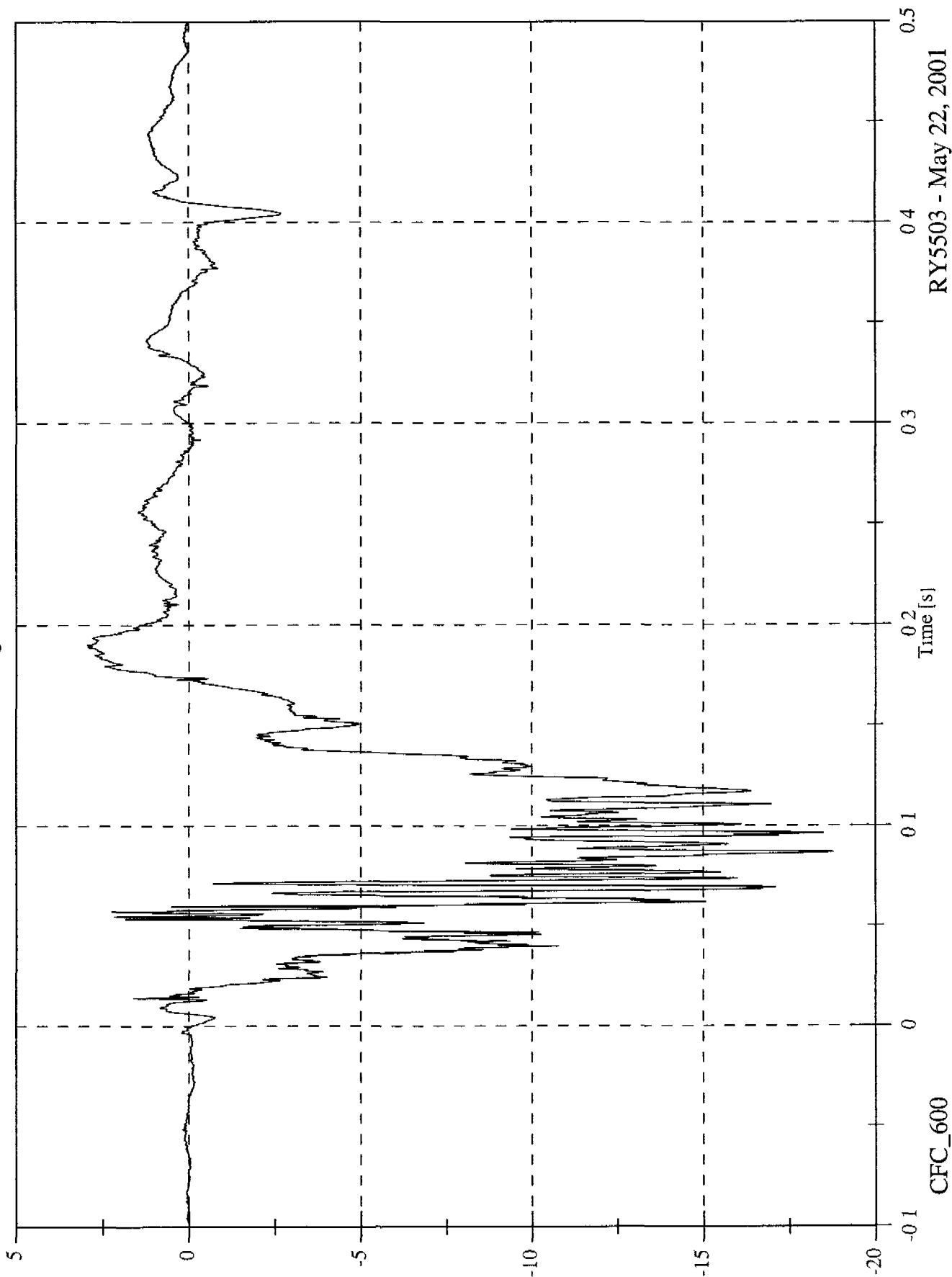
Time [s]

RY5503 - May 22, 2001

40% Frontal Offset Test # 6

Max: 3.0 [g] at 0.190 [s]
Min: -18.8 [g] at 0.087 [s]

P2 Right foot Az



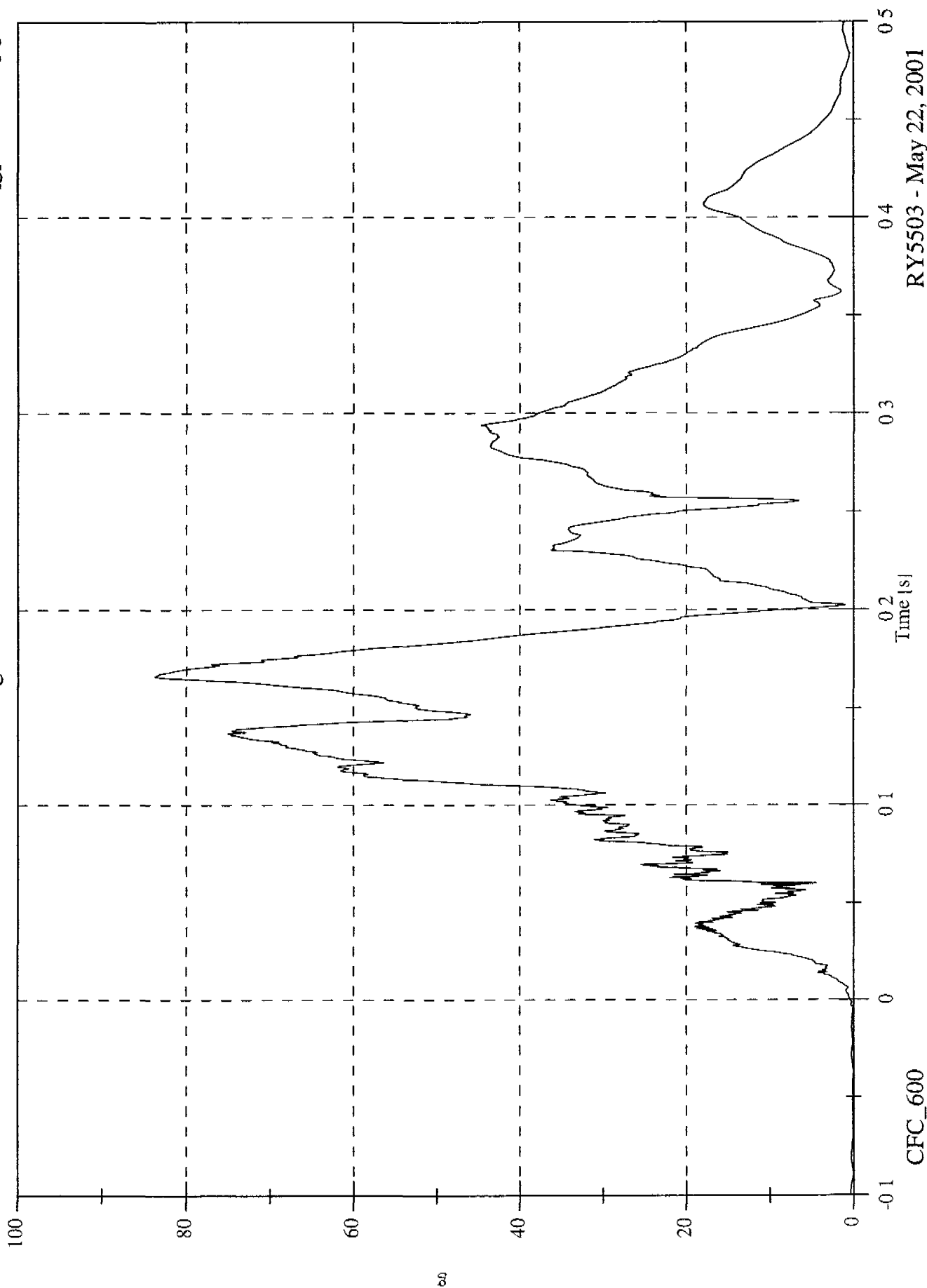
CFC_600

RY5503 - May 22, 2001

40% Frontal Offset Test # 6

Max: 83.8 [g] at 0.166 [s]
Min: 0.0 [g] at -0.089 [s]

P2 Right Foot A Resultant



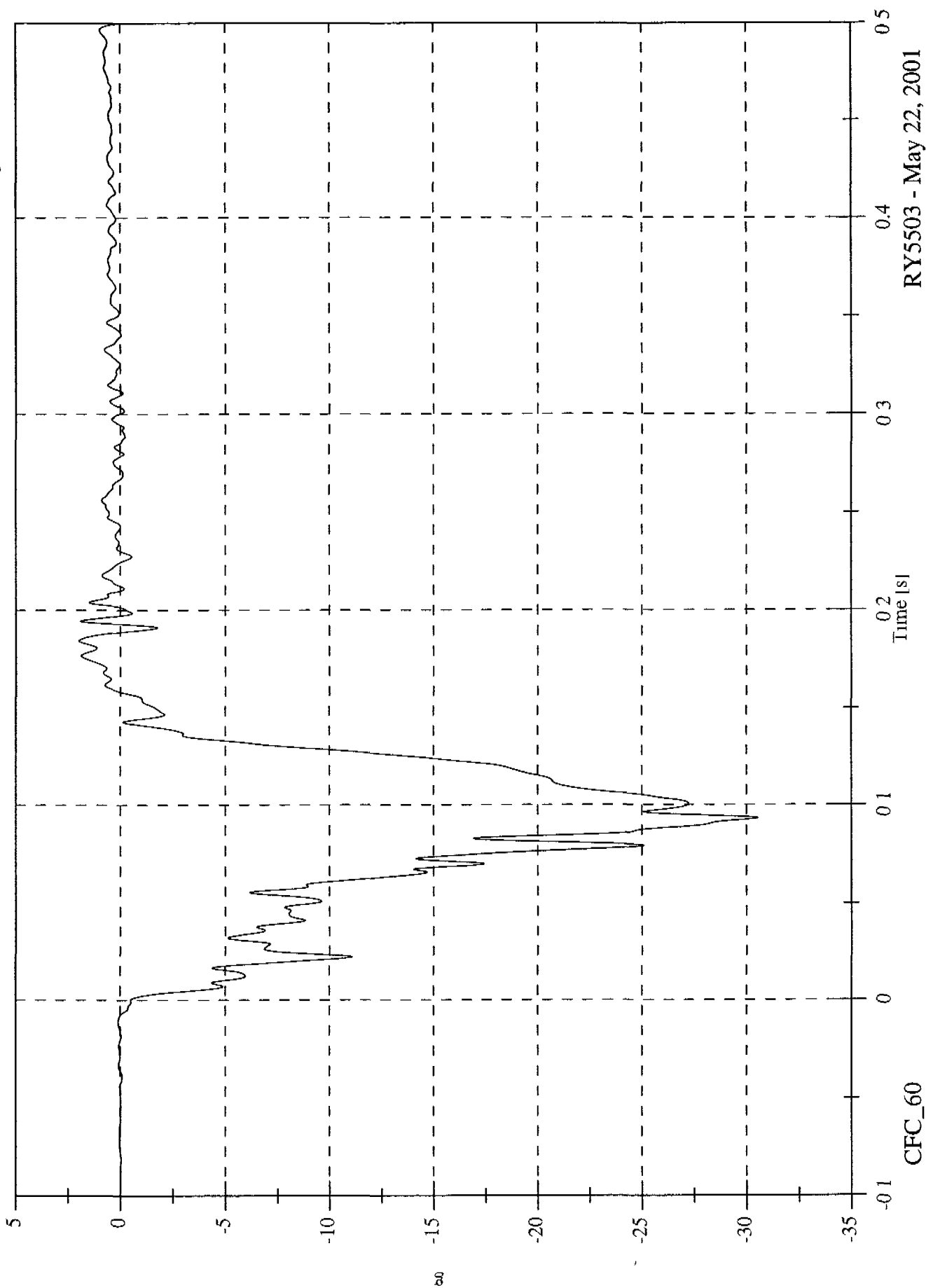
CFC_600

RY5503 - May 22, 2001

40% Frontal Offset Test # 6

Max: 2.0 [g] at 0.185 [s]
Min: -30.5 [g] at 0.093 [s]

Acc 1 Rear XMBR Left X



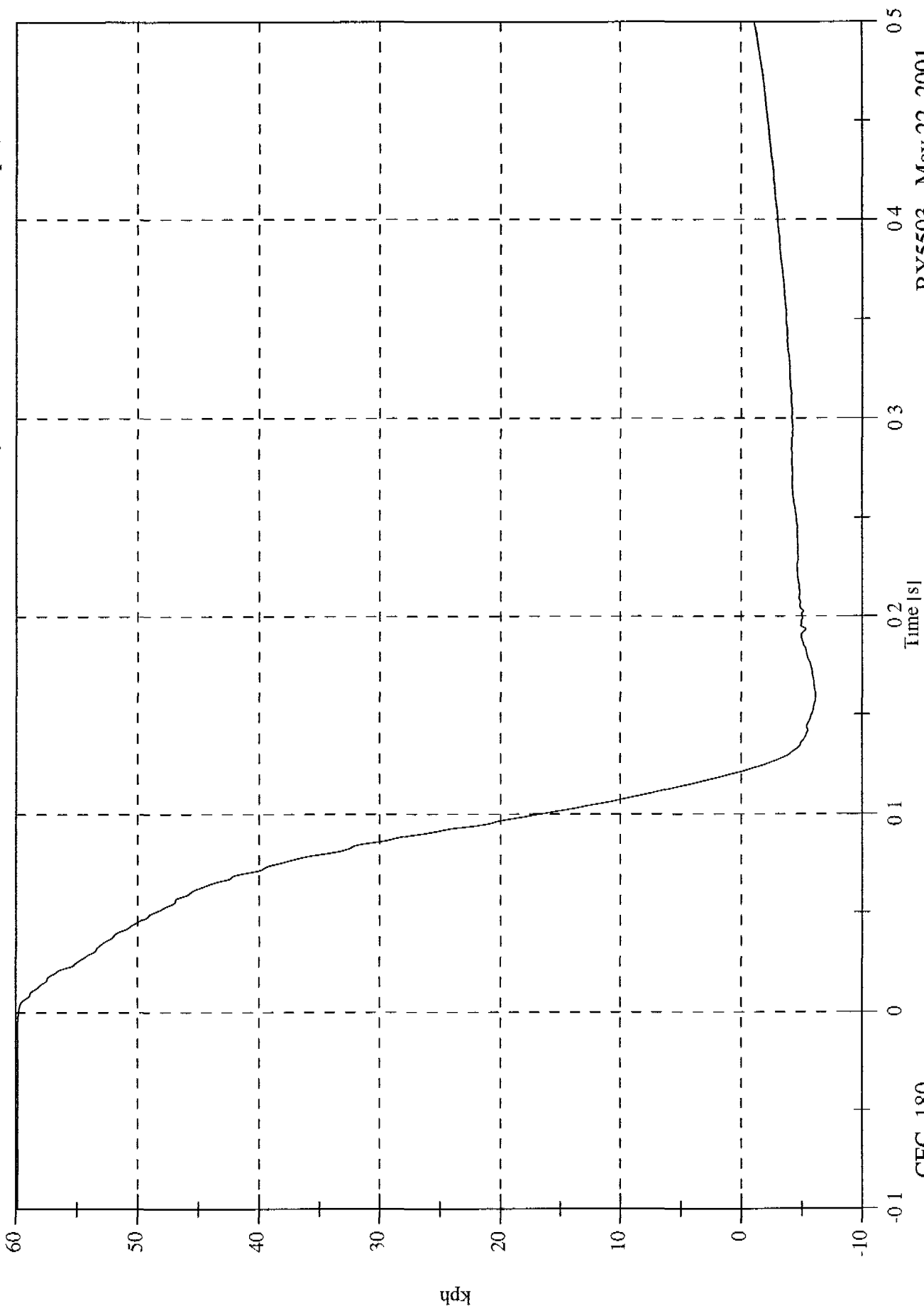
RY5503 - May 22, 2001

40% Frontal Offset Test # 6

Max: 59.9 [kph] at -0.006 [s]

Min: -6.1 [kph] at 0.158 [s]

Acc 1 Rear XMBR Left X Velocity



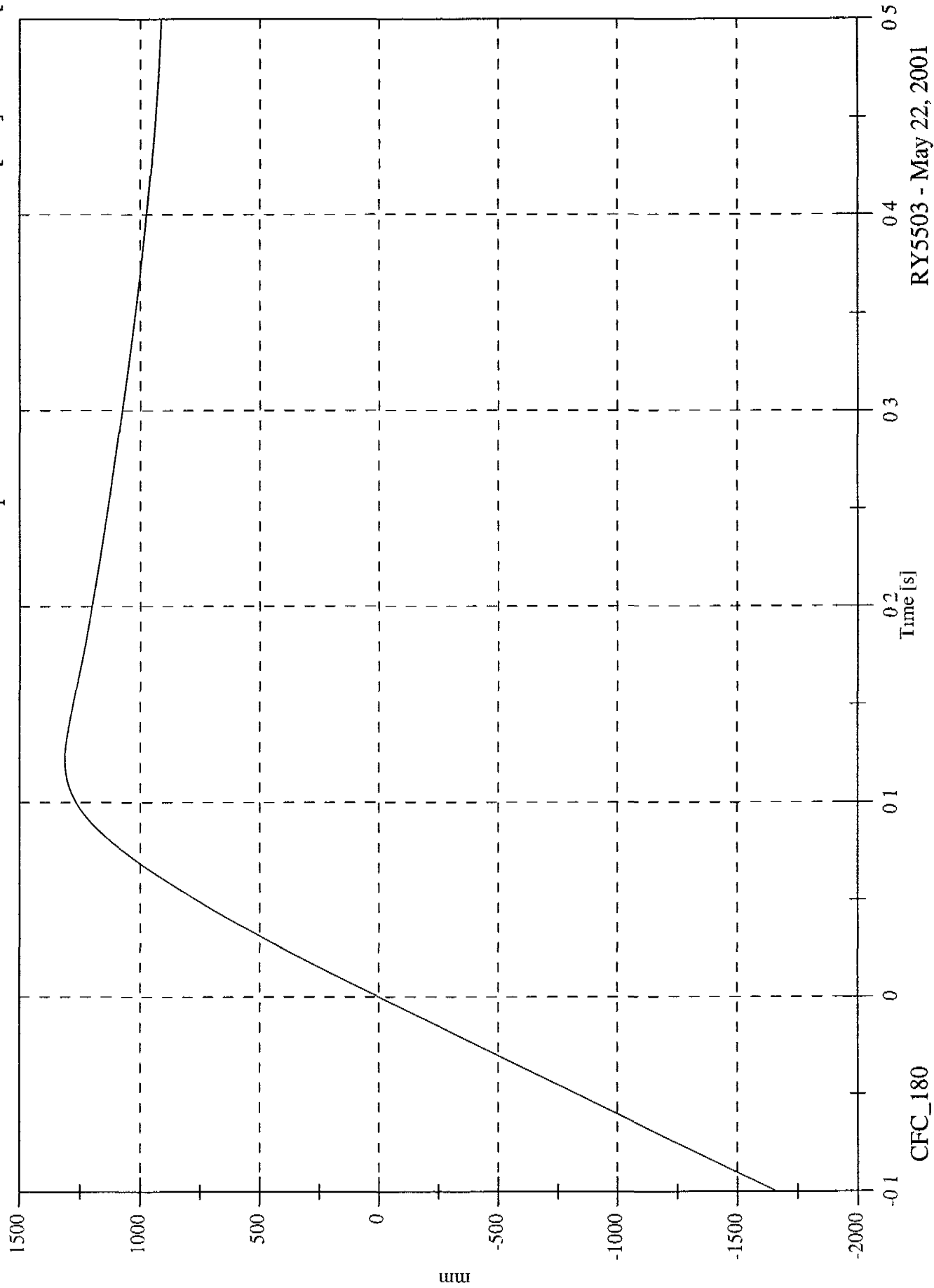
CFC_180

RY5503 - May 22, 2001

40% Frontal Offset Test # 6

Max: 1311.9 [mm] at 0.121 [s]
Min: -1662.6 [mm] at -0.100 [s]

Acc 1 Rear XMBR Left X Displacement



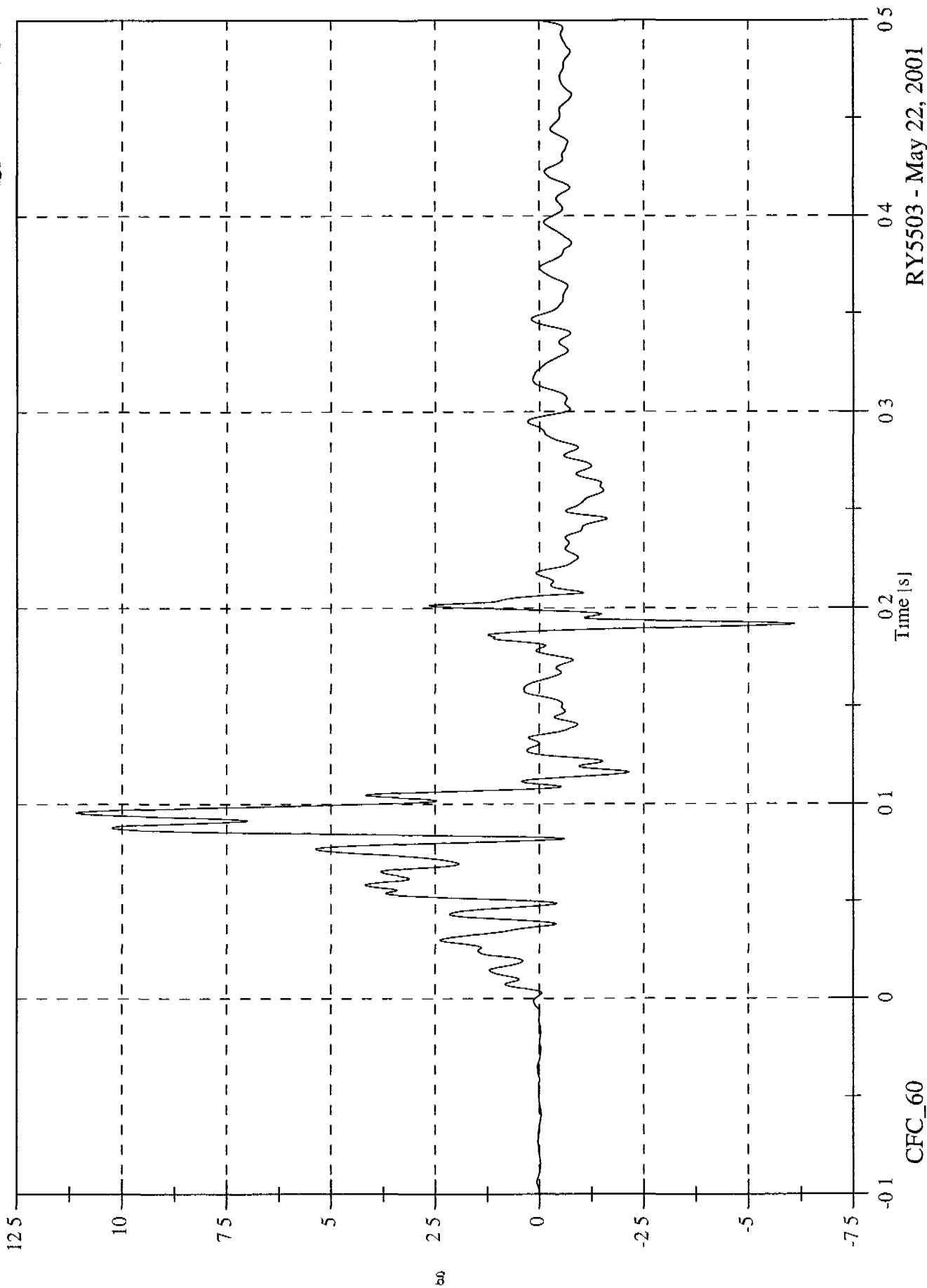
CFC_180

RY5503 - May 22, 2001

40% Frontal Offset Test # 6

Max: 11.1 [g] at 0.096 [s]
Min: -6.1 [g] at 0.192 [s]

Acc 2 Rear XMBR Left Y

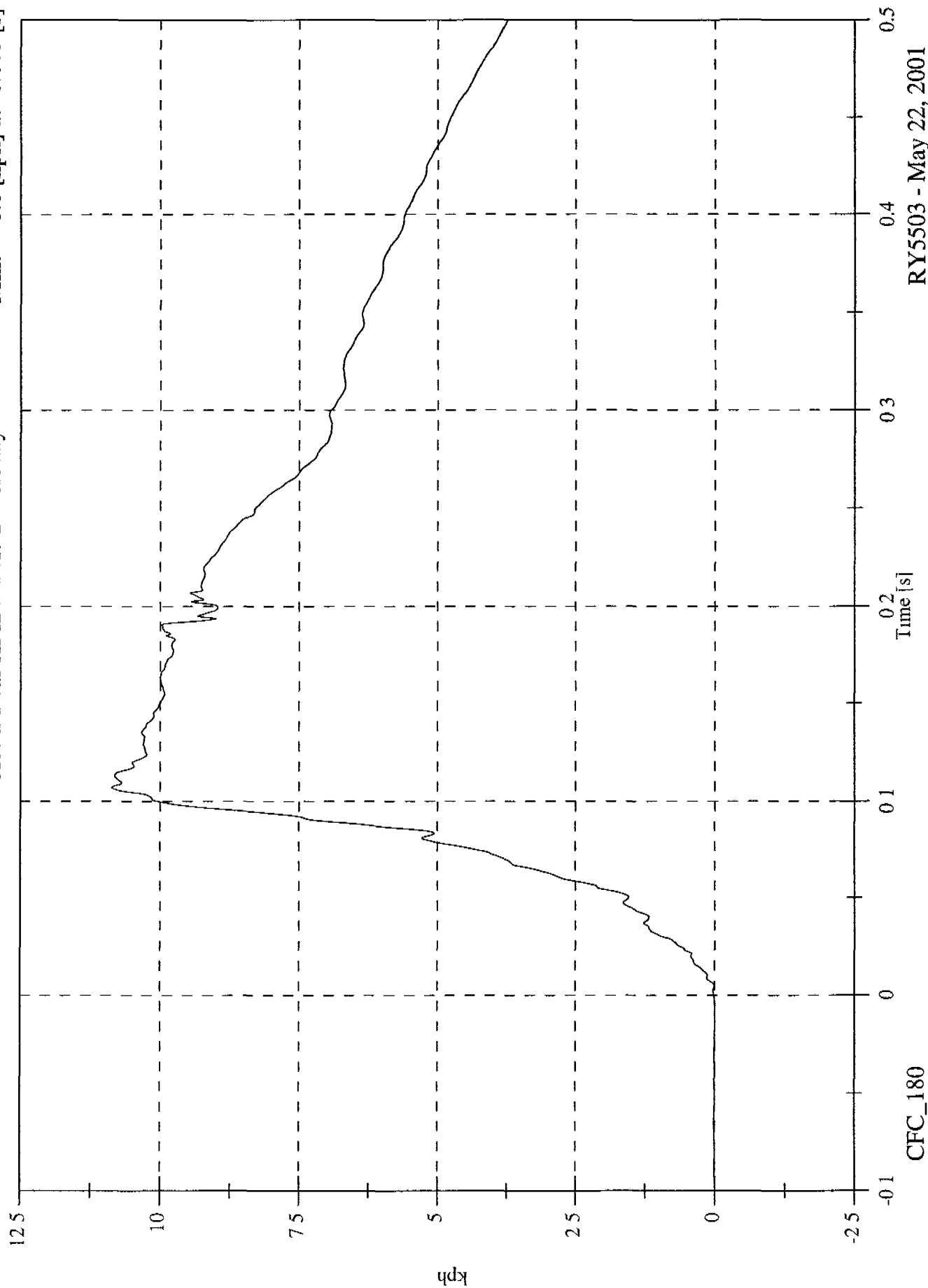


RY5503 - May 22, 2001

40% Frontal Offset Test # 6

Max: 10.9 [kph] at 0.107 [s]
Min: -0.0 [kph] at -0.005 [s]

Acc 2 Rear XMBR Left Y Velocity



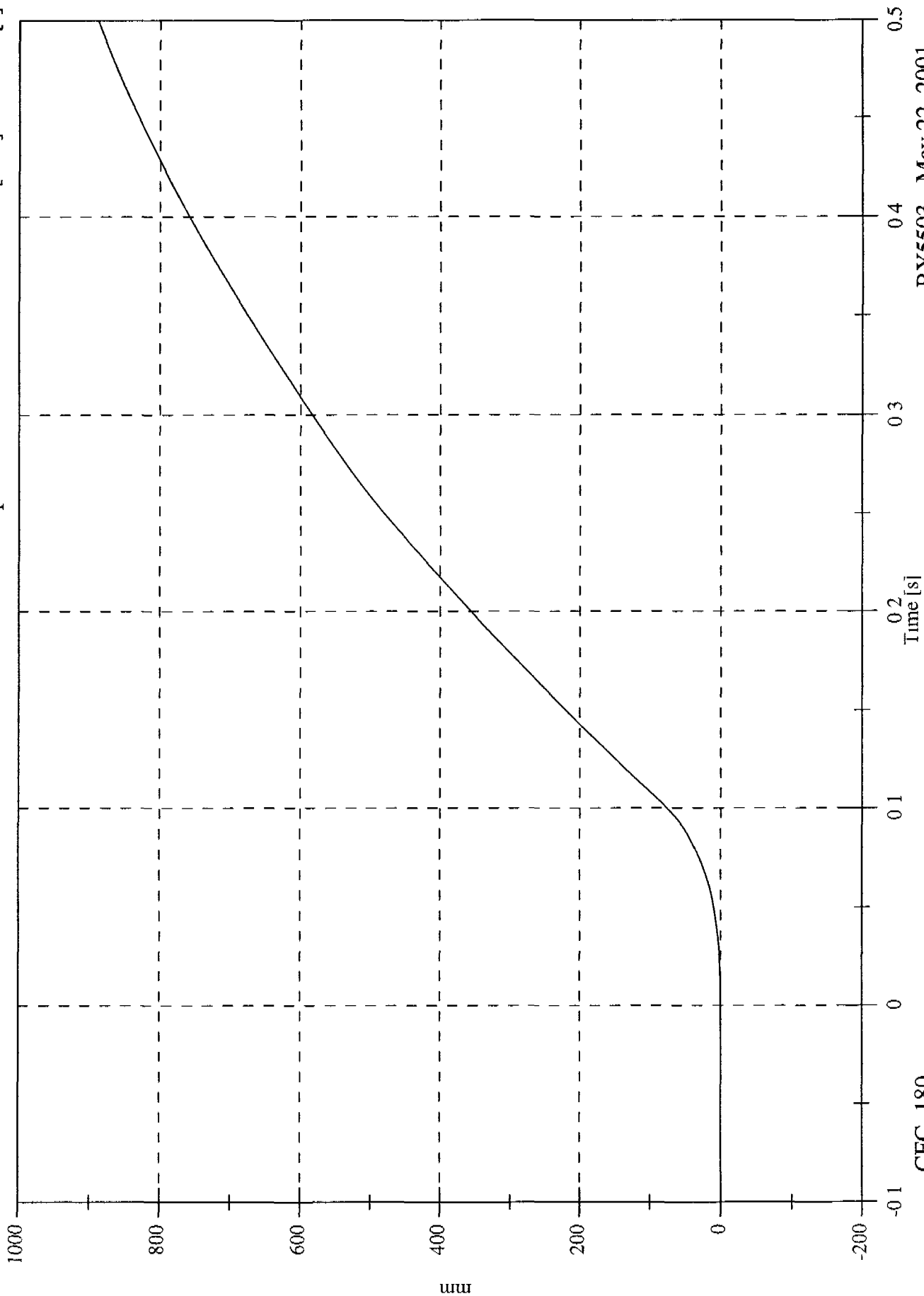
CFC_180

RY5503 - May 22, 2001

40% Frontal Offset Test # 6

Max: 888.5 [mm] at 0.500 [s]
Min: -0.2 [mm] at -0.097 [s]

Acc 2 Rear XMBR Left Y Displacement



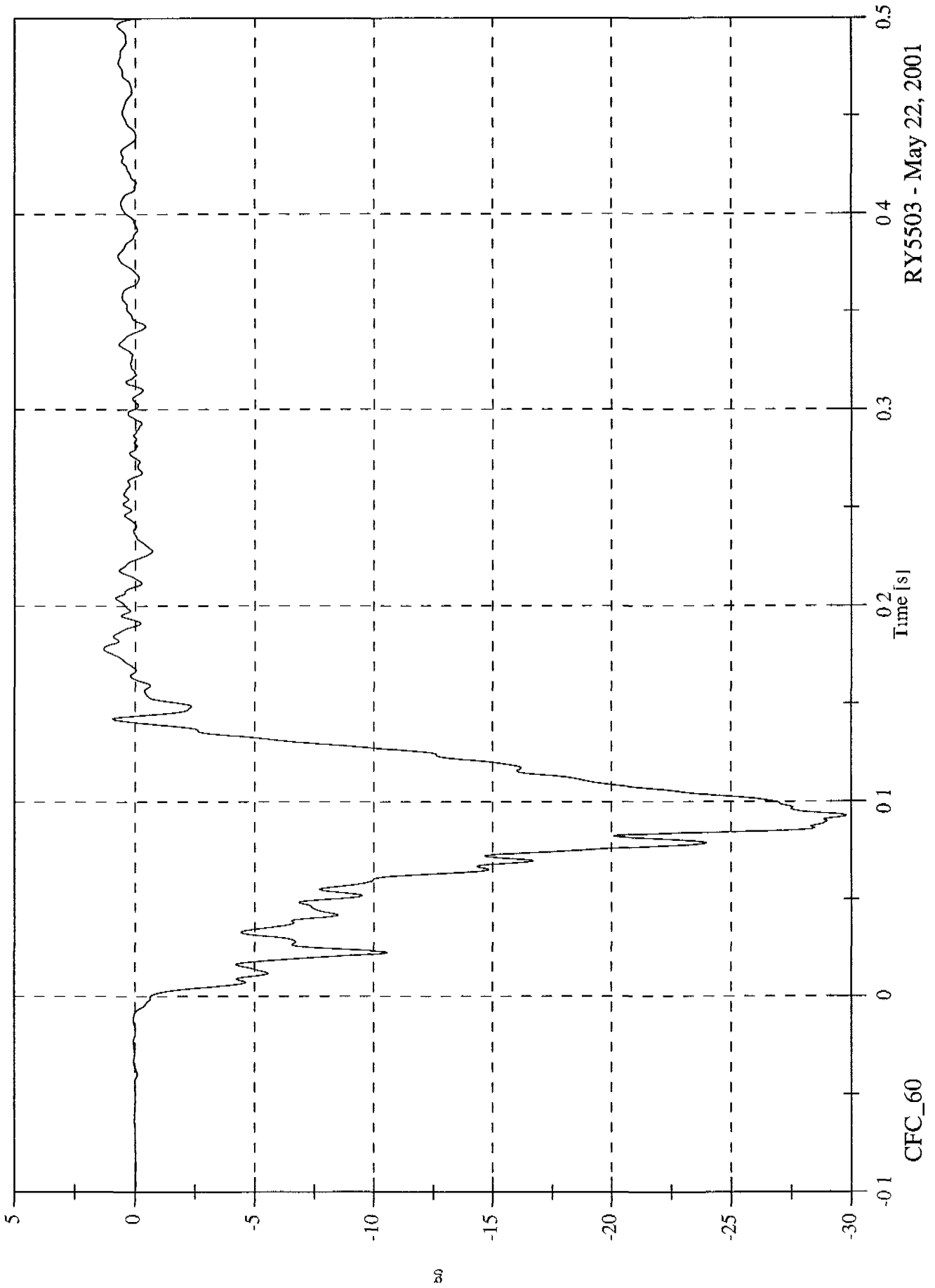
CFC_180

RY5503 - May 22, 2001

40% Frontal Offset Test # 6

Max: 1.3 [g] at 0.178 [s]
Min: -29.8 [g] at 0.093 [s]

Acc 3 Rear XMBR Right X

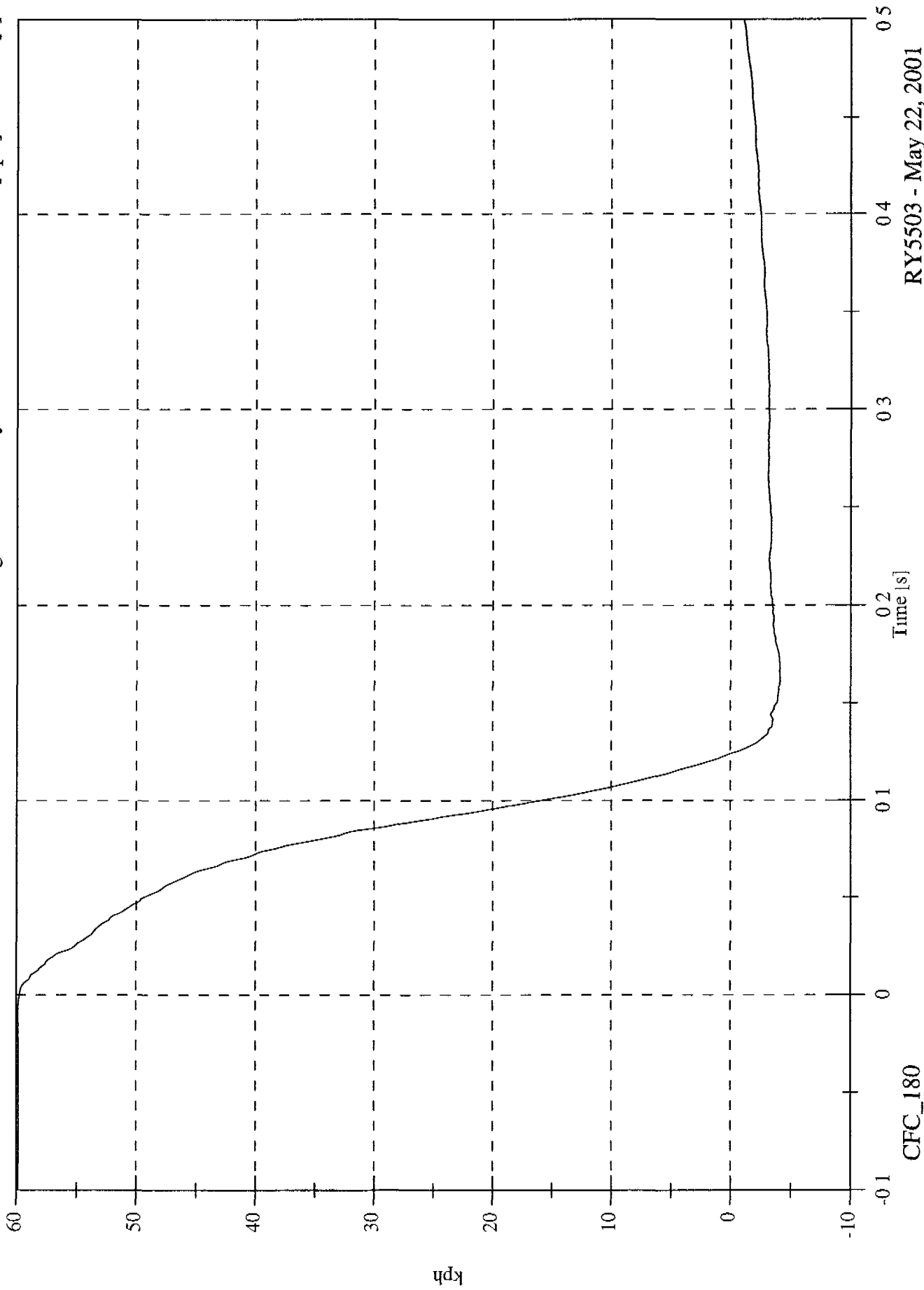


RY5503 - May 22, 2001

40% Frontal Offset Test # 6

Max: 59.9 [kph] at -0.006 [s]
Min: -4.1 [kph] at 0.161 [s]

Acc 3 Rear XMBR Right X Velocity



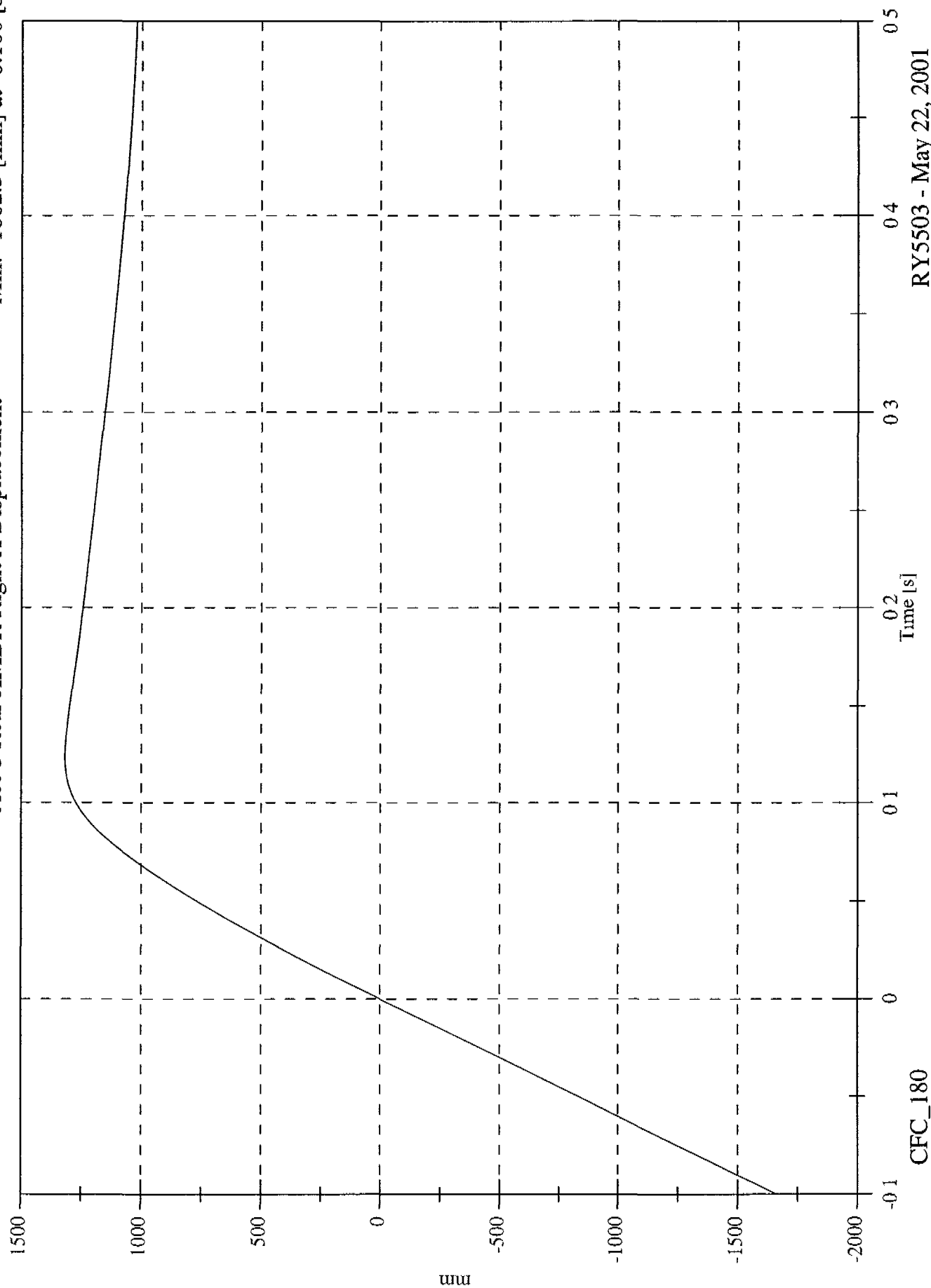
CFC_180

RY5503 - May 22, 2001

40% Frontal Offset Test # 6

Acc 3 Rear XMBR Right X Displacement

Max: 1317.7 [mm] at 0.124 [s]
Min: -1662.5 [mm] at -0.100 [s]



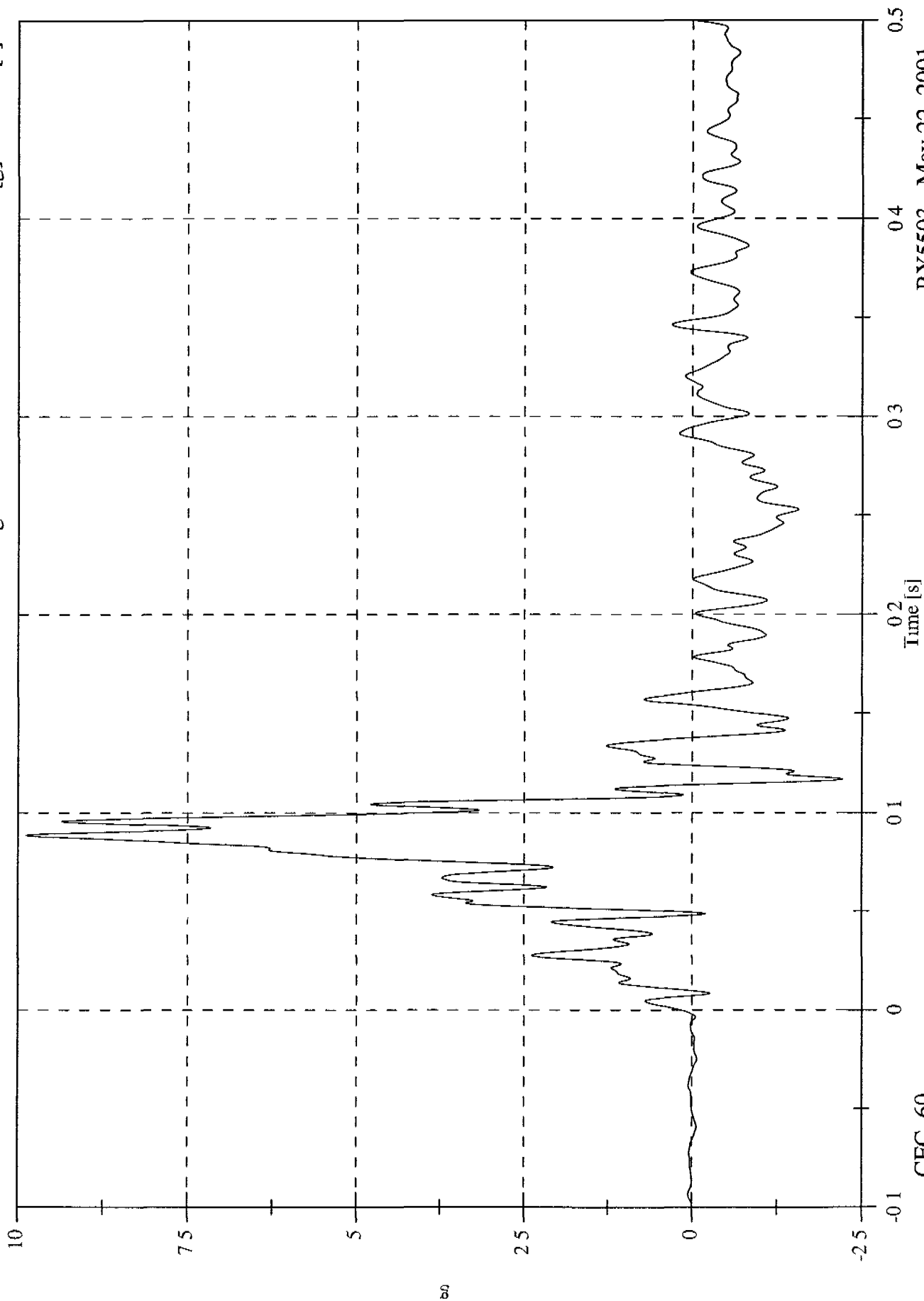
CFC_180

RY5503 - May 22, 2001

40% Frontal Offset Test # 6

Max: 9.9 [g] at 0.089 [s]
Min: -2.2 [g] at 0.117 [s]

Acc 4 Rear XMBR Right Y



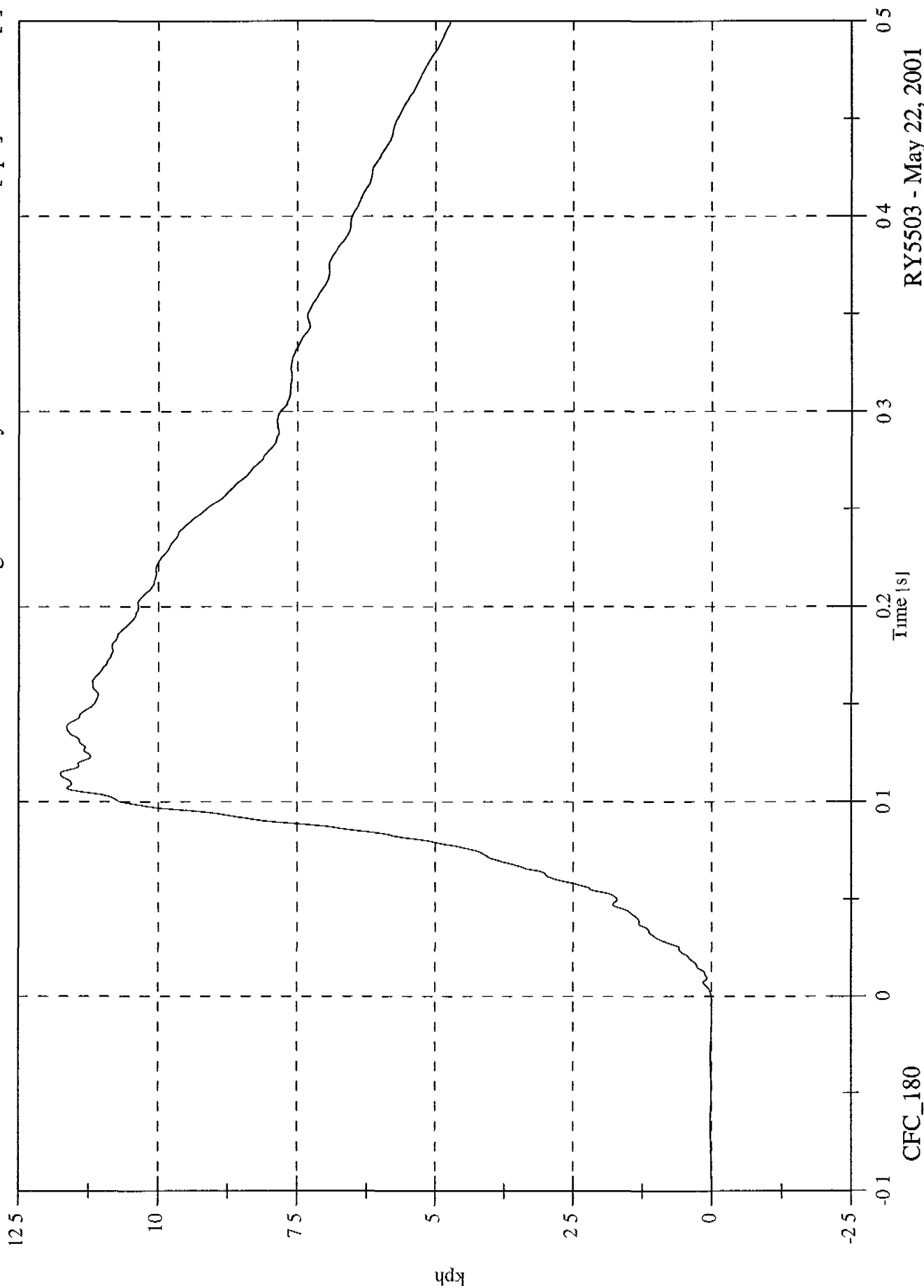
CFC_60

RY5503 - May 22, 2001

40% Frontal Offset Test # 6

Max: 11.8 [kph] at 0.115 [s]
Min: -0.0 [kph] at -0.003 [s]

Acc 4 Rear XMBR Right Y Velocity



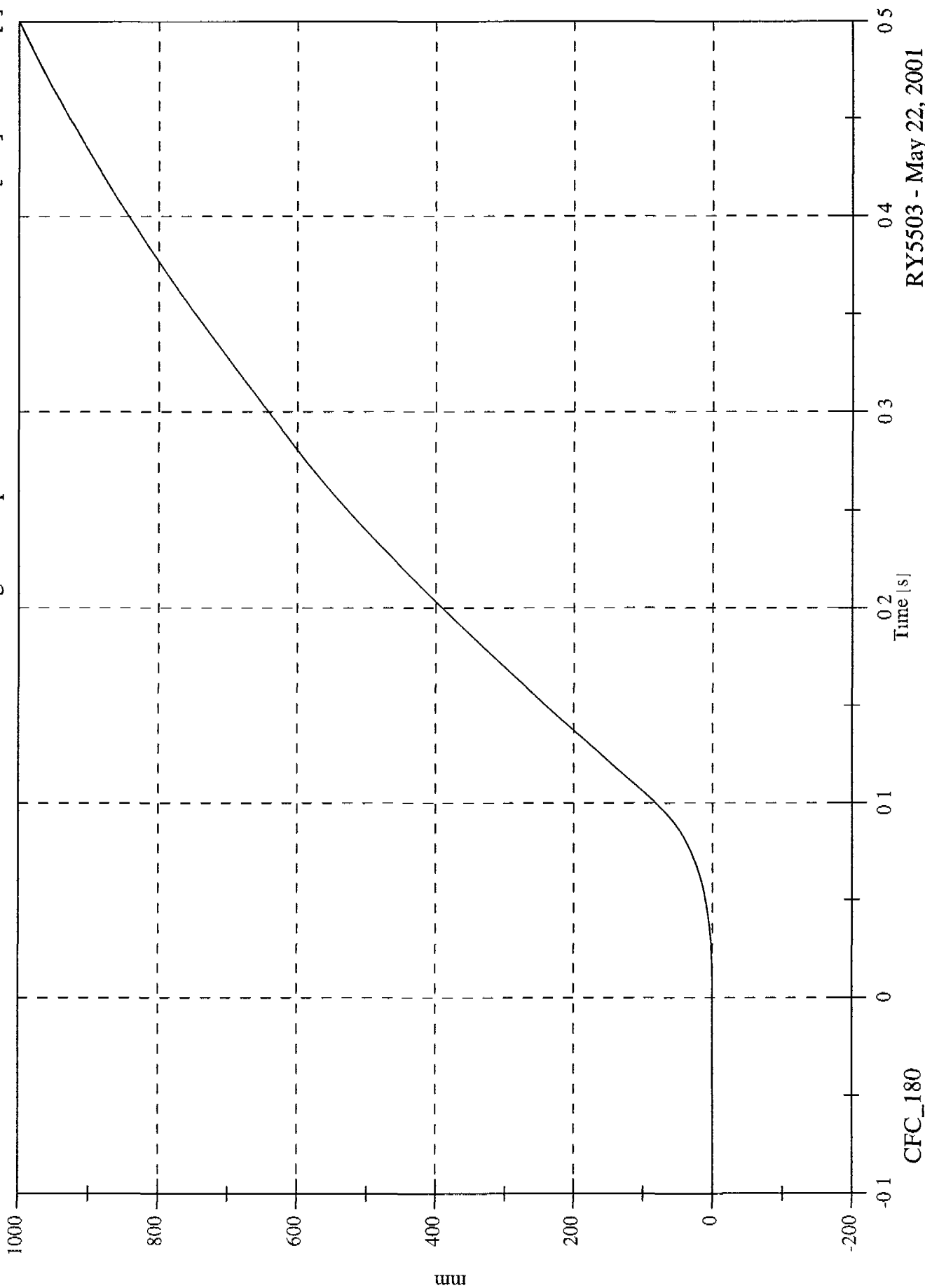
CFC_180

RY5503 - May 22, 2001

40% Frontal Offset Test # 6

Max: 999.6 [mm] at 0.500 [s]
Min: -0.3 [mm] at -0.096 [s]

Acc 4 Rear XMBR Right Y Displacement



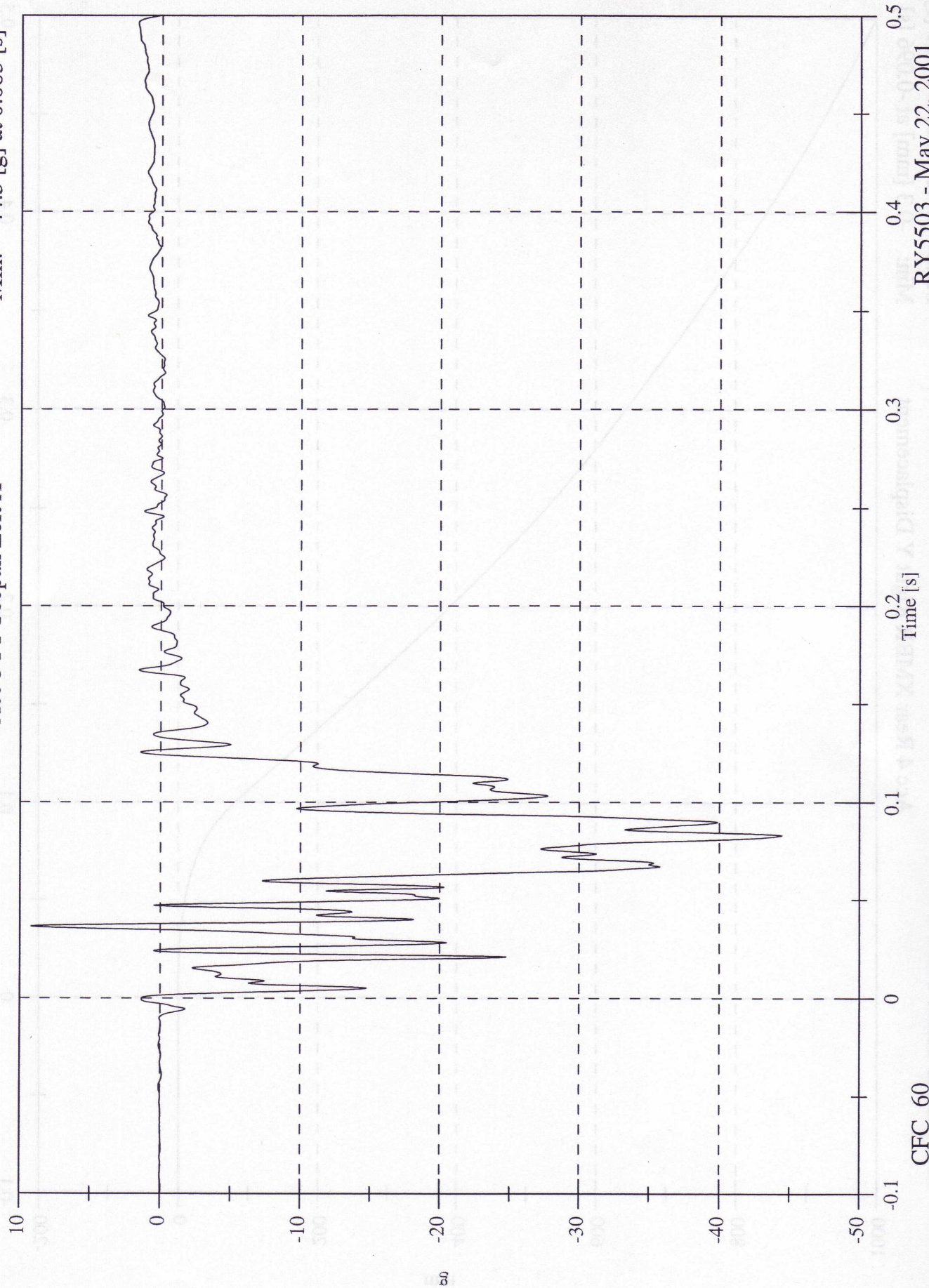
CFC_180

RY5503 - May 22, 2001

40% Frontal Offset Test # 6

Acc 5 P1 Toe pan Left X

Max: 9.2 [g] at 0.037 [s]
Min: -44.5 [g] at 0.083 [s]

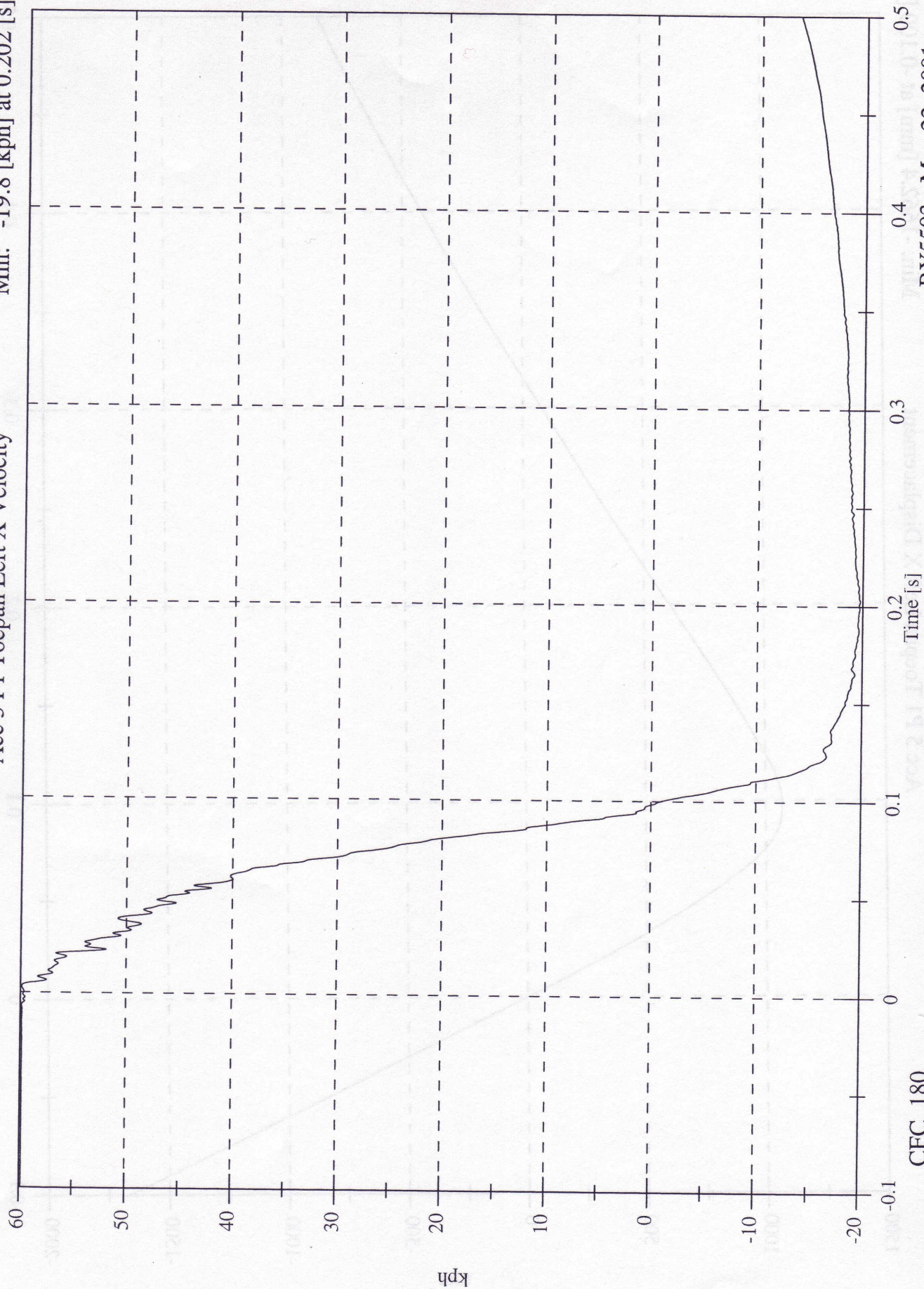


RY5503 - May 22, 2001

40% Frontal Offset Test # 6

Max: 59.9 [kph] at -0.007 [s]
Min: -19.8 [kph] at 0.202 [s]

Acc 5 P1 Toe Pan Left X Velocity



CFC_180

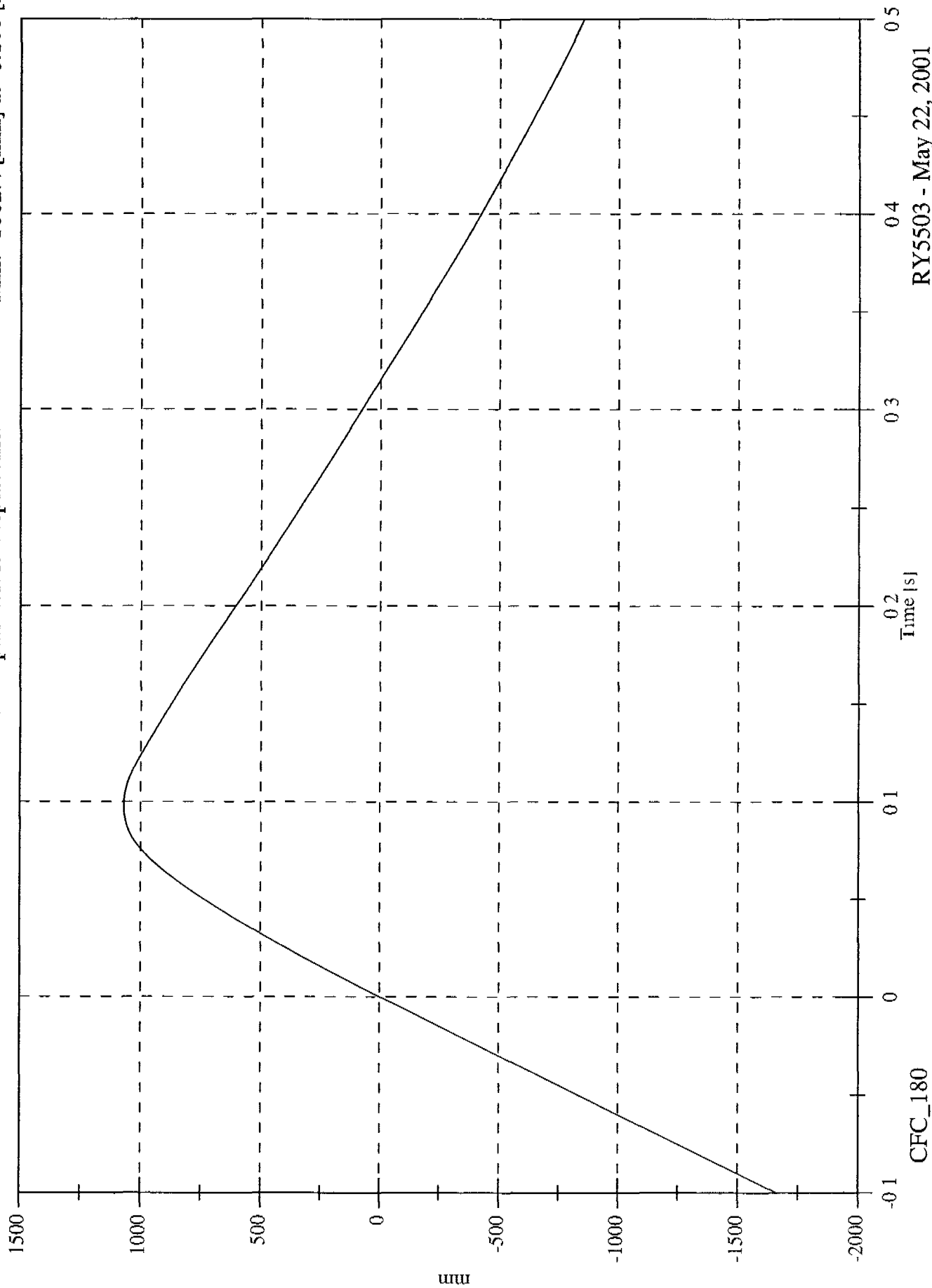
Time [s]

RY5503 - May 22, 2001

40% Frontal Offset Test # 6

Max: 1068.4 [mm] at 0.098 [s]
 Min: -1662.4 [mm] at -0.100 [s]

Acc 5 P1 Toe pan Left X Displacement



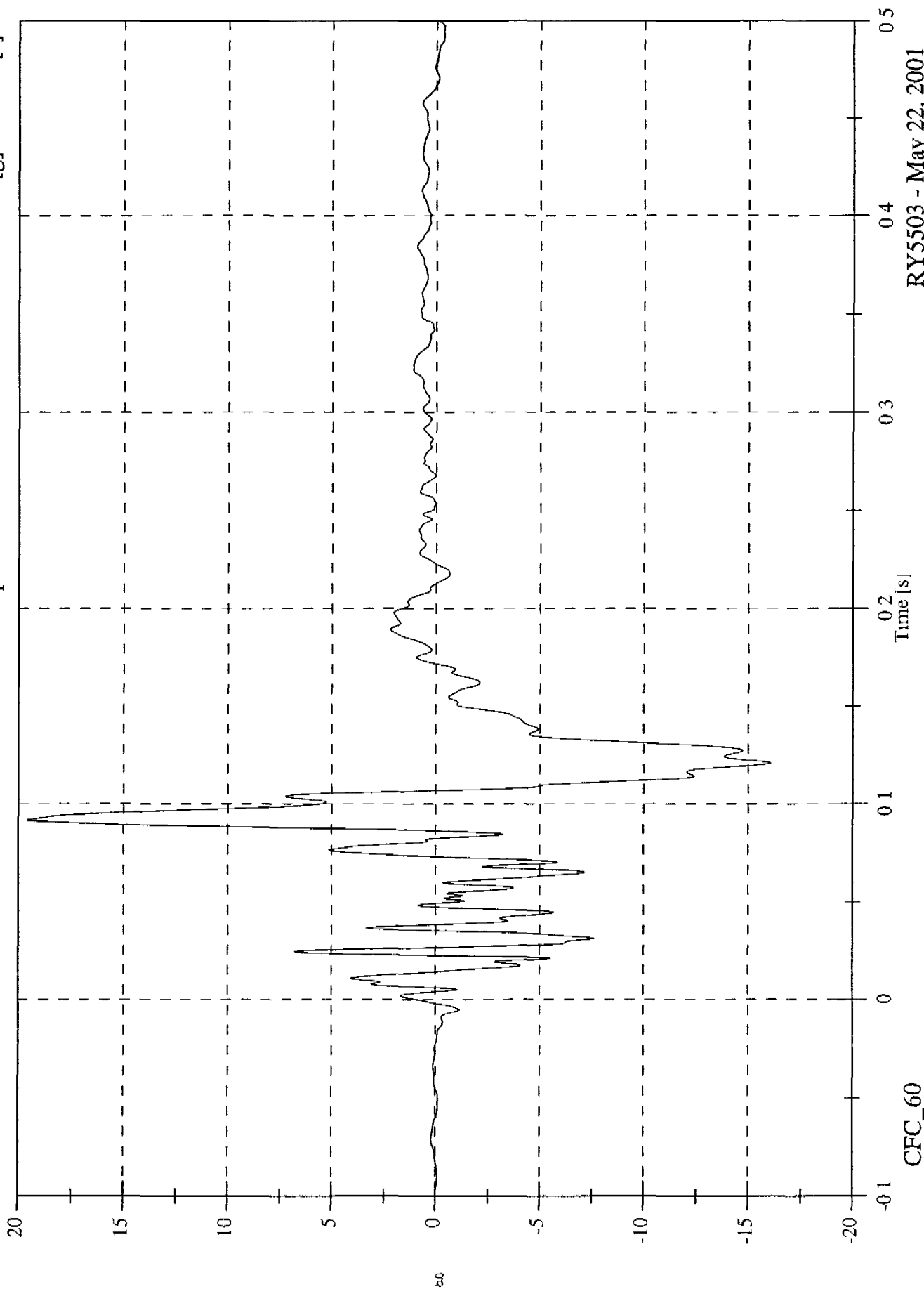
CFC_180

RY5503 - May 22, 2001

40% Frontal Offset Test # 6

Max: 19.6 [g] at 0.092 [s]
Min: -16.1 [g] at 0.121 [s]

Acc 6 P1 Toe Pan Left Z

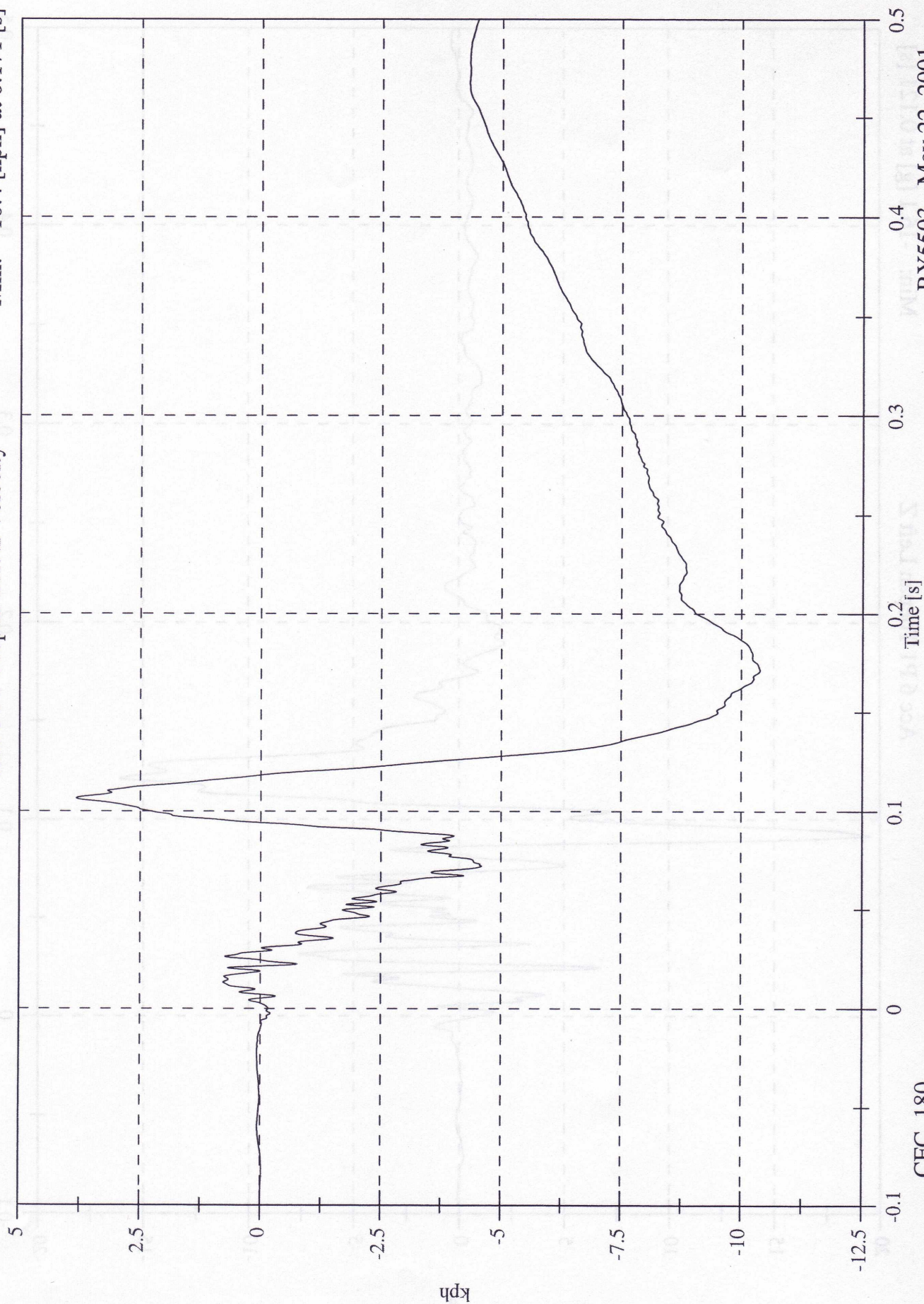


RY5503 - May 22, 2001

40% Frontal Offset Test # 6

Max: 3.8 [kph] at 0.106 [s]
Min: -10.4 [kph] at 0.171 [s]

Acc 6 P1 Toe Pan Left Z Velocity



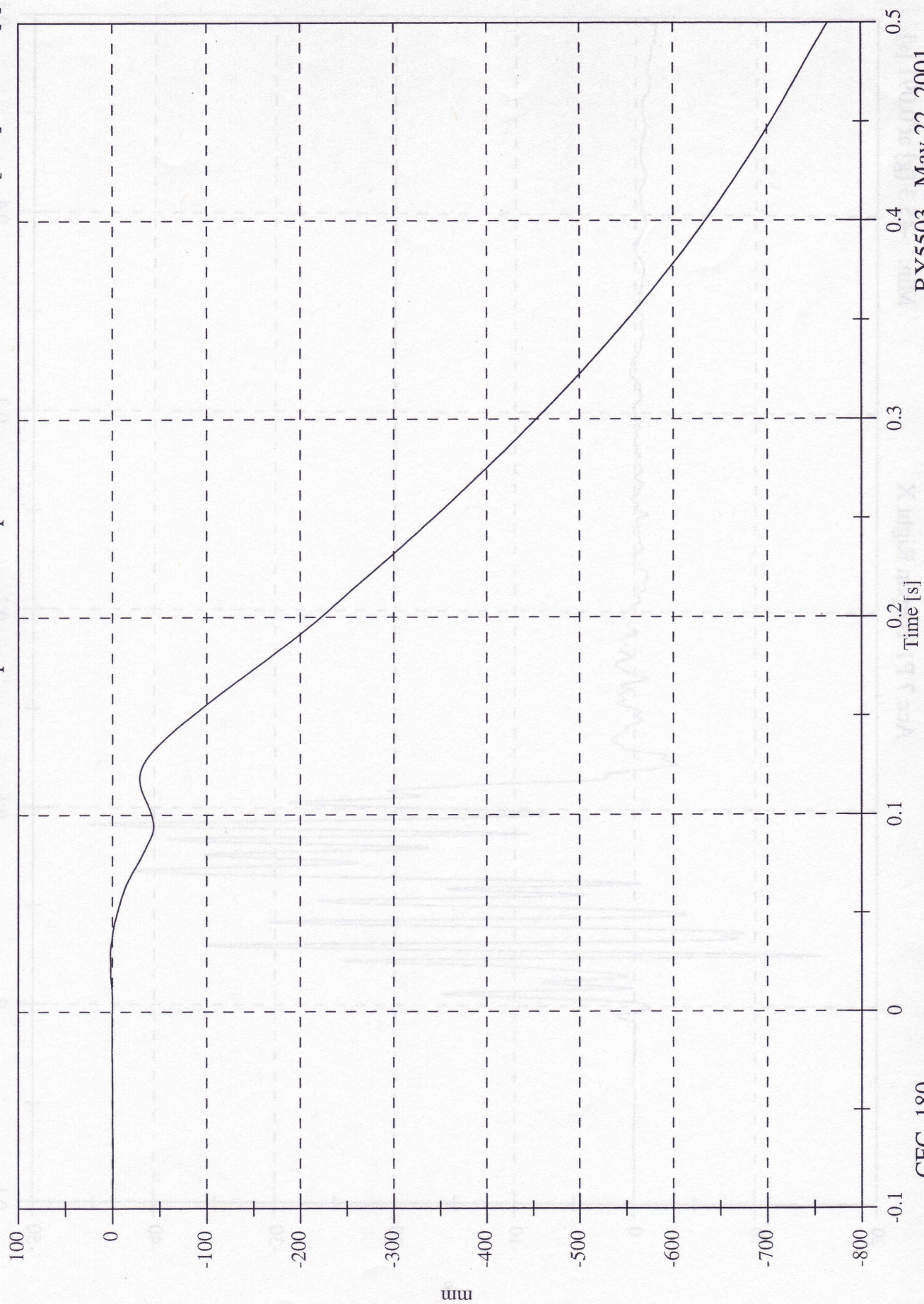
CFC_180

RY5503 - May 22, 2001

40% Frontal Offset Test # 6

Acc 6 P1 Toe pan Left Z Displacement

Max: 1.9 [mm] at 0.029 [s]
Min: -764.8 [mm] at 0.500 [s]

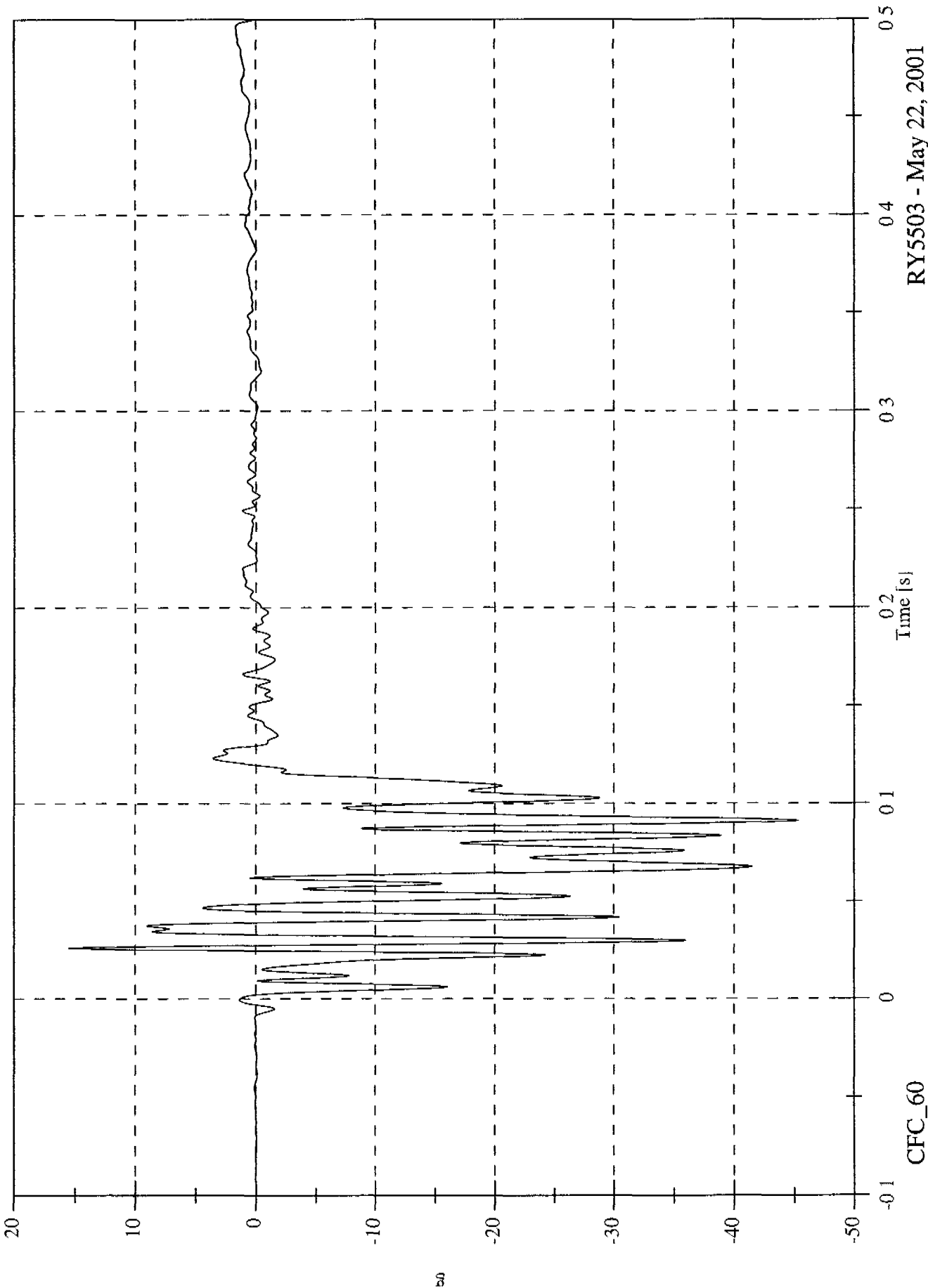


RY5503 - May 22, 2001

40% Frontal Offset Test # 6

Max: 15.4 [g] at 0.026 [s]
 Min: -45.3 [g] at 0.091 [s]

Acc 7 P1 Toe pan Right X



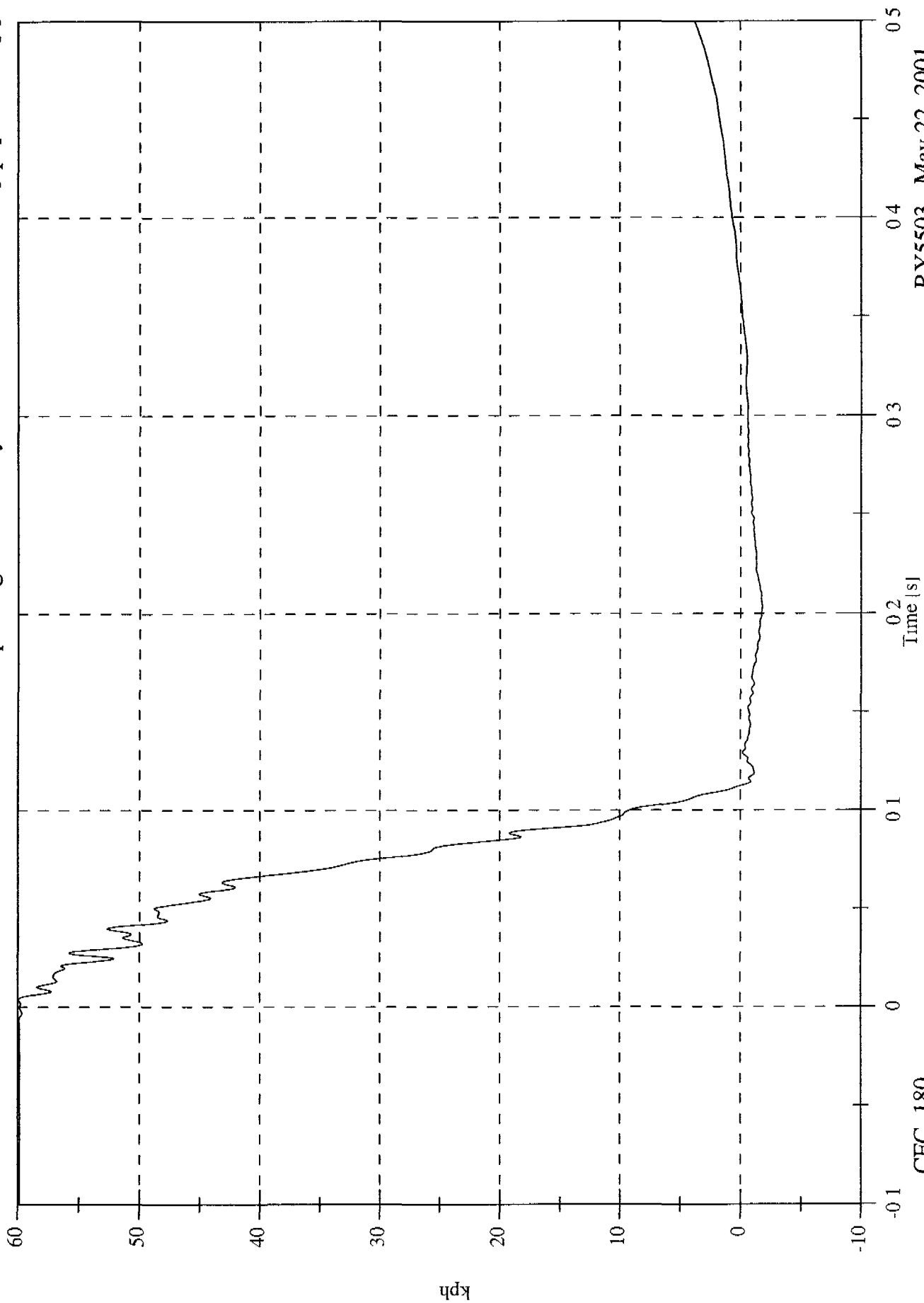
RY5503 - May 22, 2001

40% Frontal Offset Test # 6

Max: 60.0 [kph] at 0.004 [s]

Min: -1.8 [kph] at 0.203 [s]

Acc 7 P1 Toe pan Right X Velocity



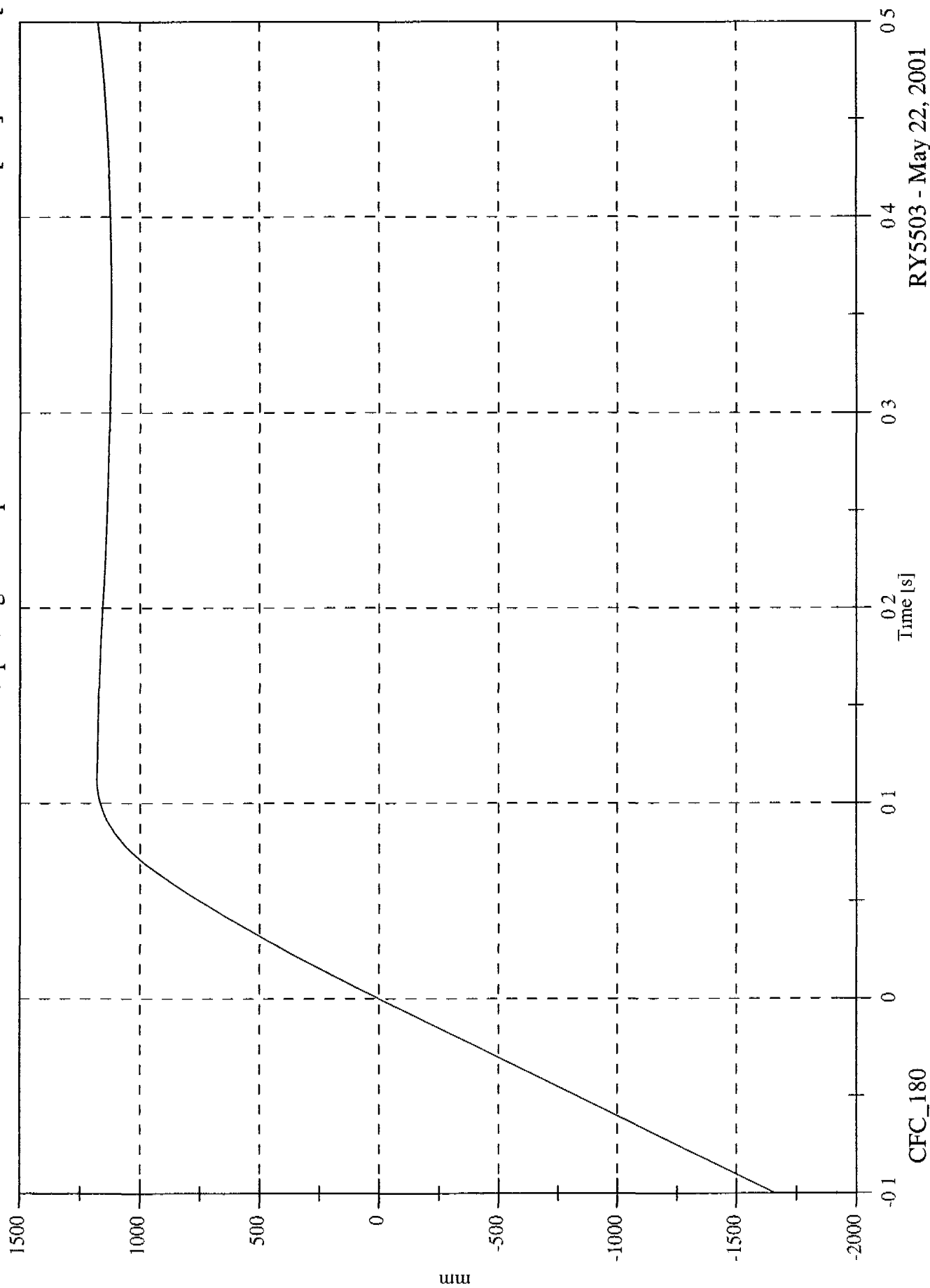
CFC_180

RY5503 - May 22, 2001

40% Frontal Offset Test # 6

Max: 1179.2 [mm] at 0.112 [s]
Min: -1662.6 [mm] at -0.100 [s]

Acc 7 P1 Toe Pan Right X Displacement



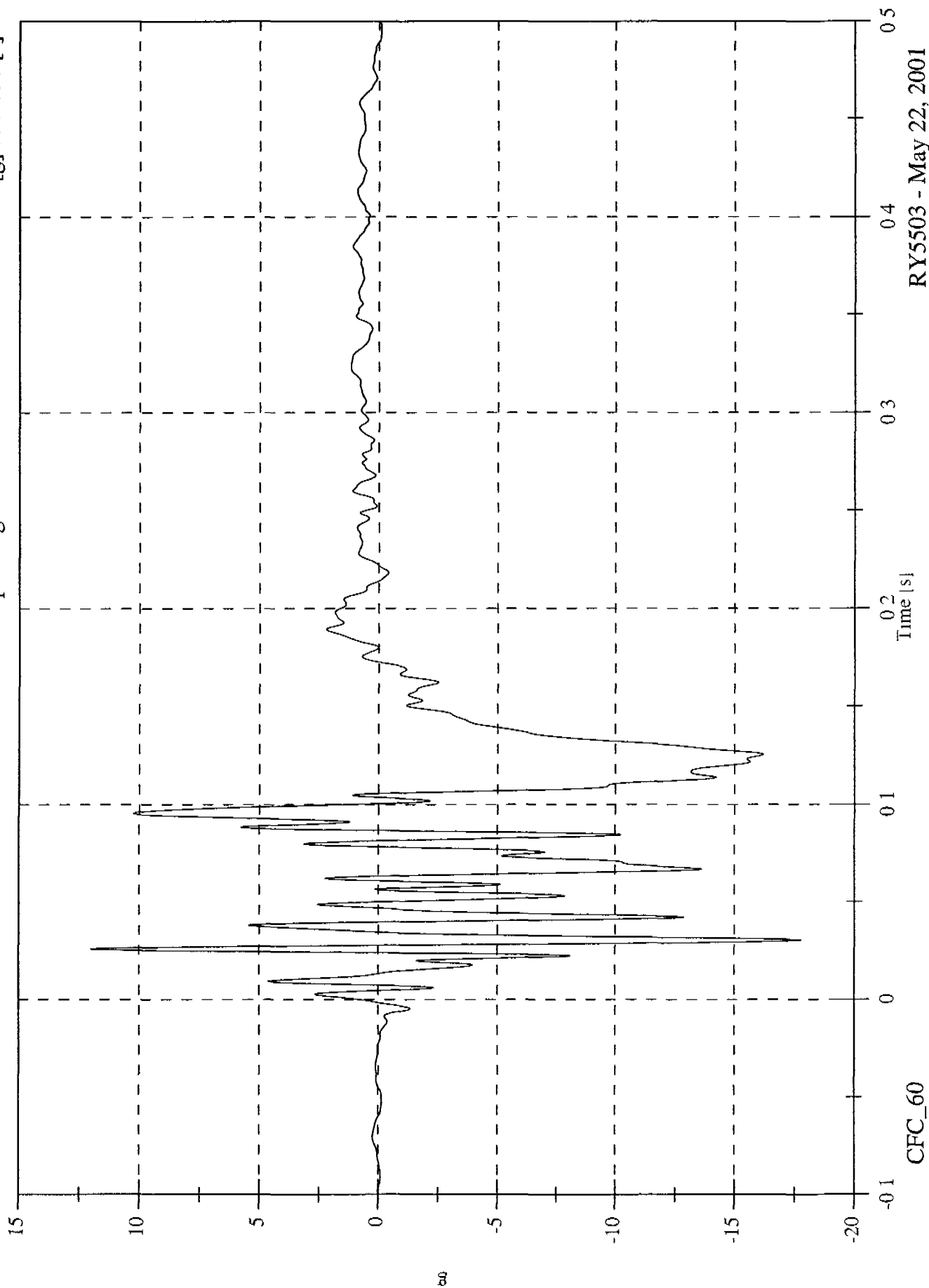
CFC_180

RY5503 - May 22, 2001

40% Frontal Offset Test # 6

Max: 12.0 [g] at 0.026 [s]
Min: -17.8 [g] at 0.030 [s]

Acc 8 P1 Toe pan Right Z



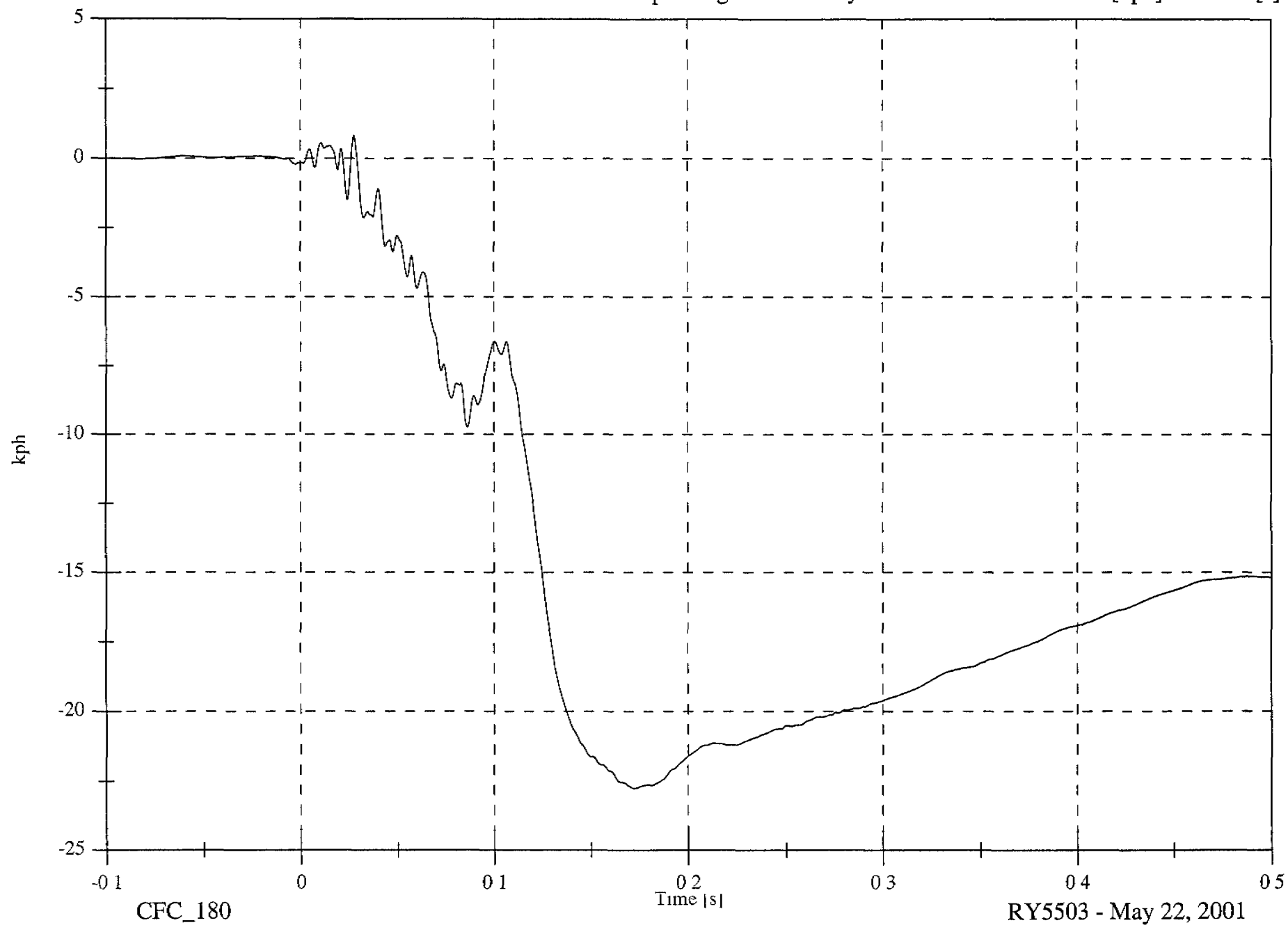
RY5503 - May 22, 2001

40% Frontal Offset Test # 6

Acc 8 P1 Toepan Right Z Velocity

Max: 0.8 [kph] at 0.028 [s]

Min: -22.8 [kph] at 0.172 [s]



B-212

8413-62

CFC_180

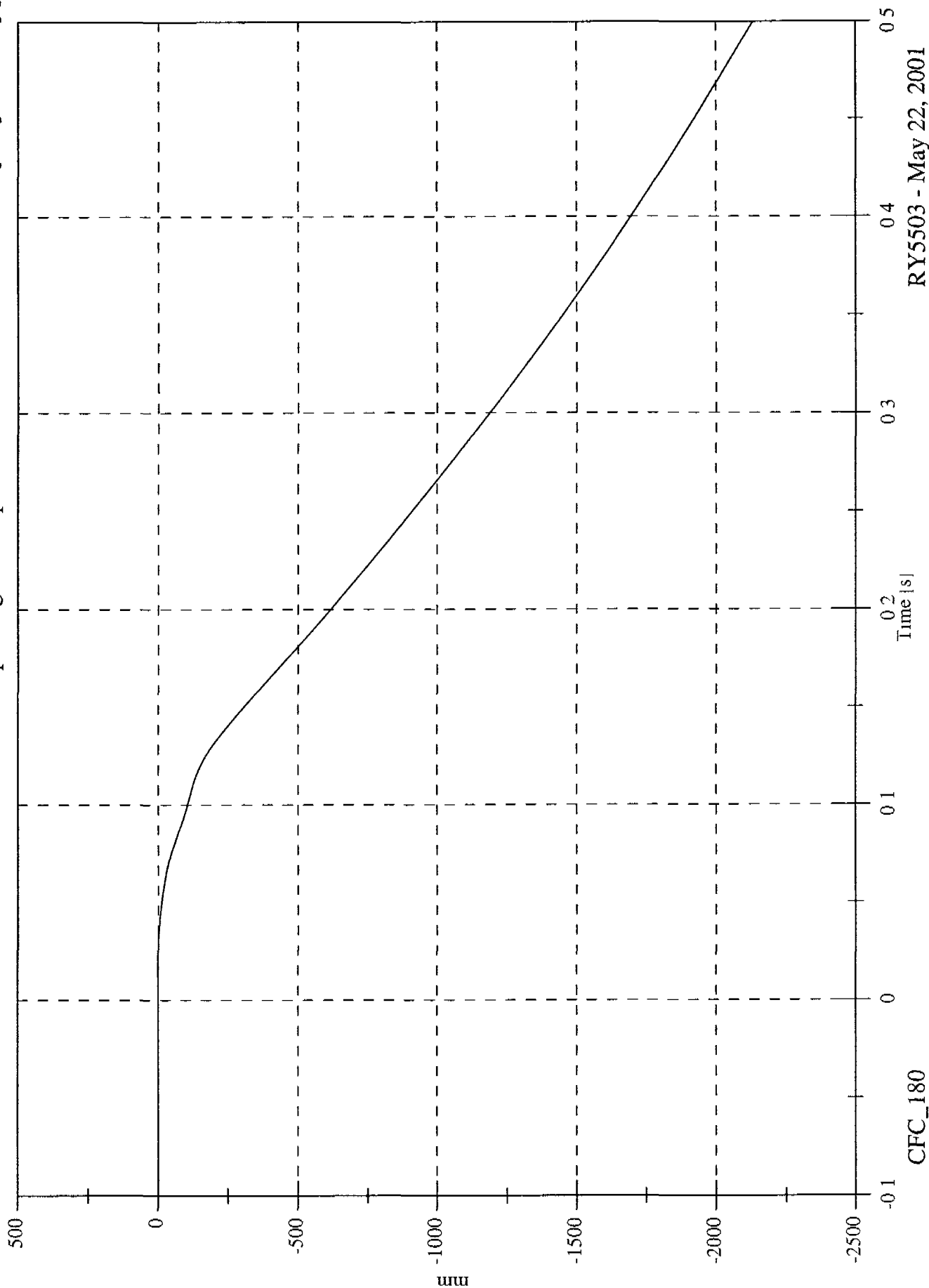
Time [s]

RY5503 - May 22, 2001

40% Frontal Offset Test # 6

Max: 0.9 [mm] at 0.018 [s]
 Min: -2133.8 [mm] at 0.500 [s]

Acc 8 P1 Toe pan Right Z Displacement



CFC_180

RY5503 - May 22, 2001

APPENDIX C

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

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

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

Dummy serial numbers and certification dates are

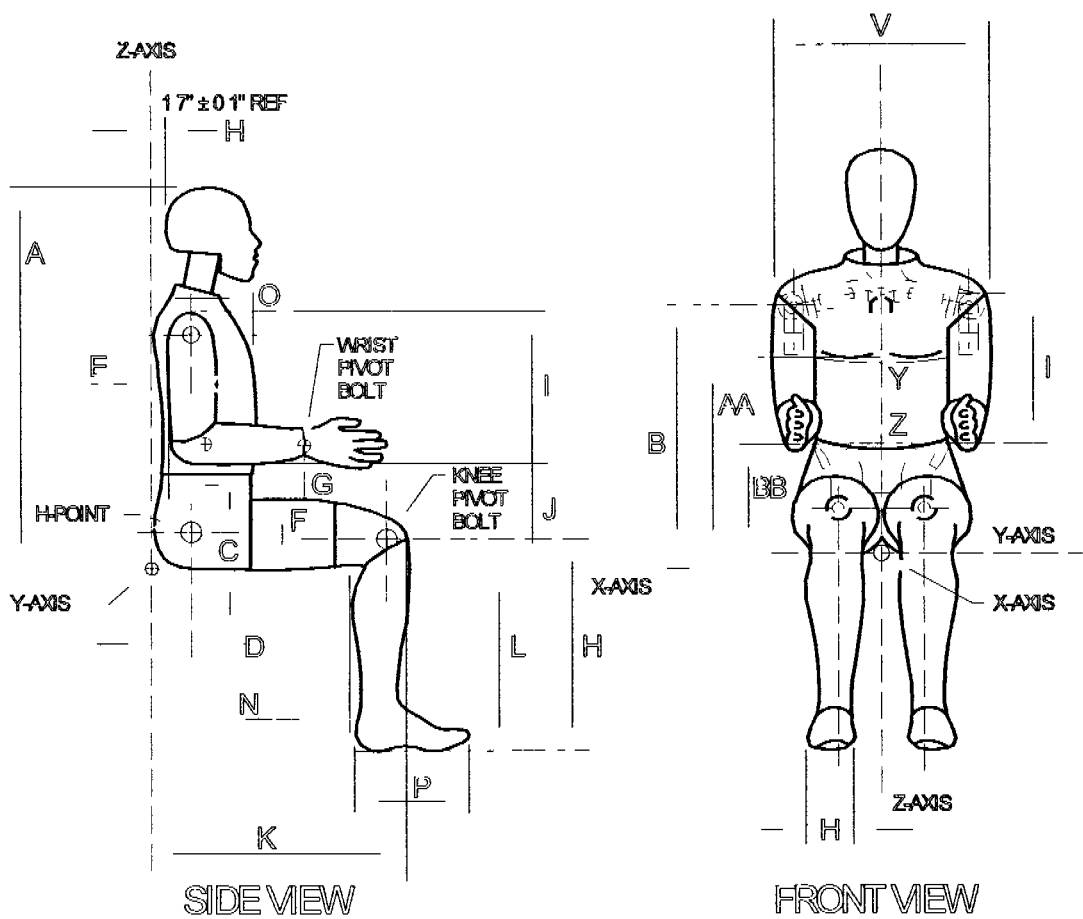
<u>Position No /Location</u>	<u>Serial No</u>	<u>Completion Date</u>
#1/Driver	288	5/8/2001
#2/Right Front Passenger	421	5/8/2001

Electronic Test Equipment

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

DUMMY CONFIGURATION DIMENSIONS

EXTERNAL DIMENSIONS SPECIFICATIONS



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

PART 5720
HEAD DROP TEST

Dummy Serial Number 288
Sequential Test Number 1
Date May 2, 2001
Workfile 288101 hdp

TEST PARAMETER	SPECIFICATION	TEST RESULTS
Temperature	66-78 Deg F	72
Relative Humidity	10% - 70%	32
Peak Resultant Acceleration	250-300 G's	257.57
Peak Lateral Acceleration	15 G's Max	2.75
Is Acceleration Curve Unimodal?	YES	YES

Remarks

Laboratory Technician B. Swiecicki

PART 572O
NECK FLEXION TEST

Dummy Serial Number 288
Sequential Test Number 1
Date May 3, 2001
Workfile Ac0100a raw

6 Axis Neck Transducer

TEST PARAMETER		SPECIFICATION	TEST RESULTS
Temperature		69-72 Deg F	70
Relative Humidity		10% - 70%	32
Impact Velocity		22.6 - 23.4 Ft/s	23.00
Pendulum Deceleration	10 ms	6.9 - 8.2 ft/s	7.99
	20 ms	13.1 - 16.4 ft/s	13.94
	30 ms	19.0 - 23.0 ft/s	19.03
D Plane Rotation	Max	77 - 91 Deg	88.08
Moment About Occipital Condyle	Max	51.0 - 61.0 Ft-Lbs	57.88
Occipital Moment - Curve Decay Time to 7.38 ft-lbf		80 - 100 ms	87.04

Remarks

Laboratory Technician B Swiecicki

PART 5720
NECK EXTENSION TEST

Dummy Serial Number	288	
Sequential Test Number	1	
Date	May 3, 2001	6 Axis Neck Transducer
Workfile	Ab0104a raw	

TEST PARAMETER		SPECIFICATION	TEST RESULTS
Temperature		69-72 Deg F	70 0
Relative Humidity		10% - 70%	32 0
Impact Velocity		19 50 - 20 30 Ft/s	19 58
Pendulum Deceleration	10 ms	4 9 - 6 2 ft/s	5 62
	20 ms	10 2 - 12 8 ft/s	11 39
	30 ms	15 1 - 18 4 ft/s	16 43
D Plane Rotation	Max	99 - 113 Deg	112 14
Moment About Occipital Condyle	Max	-50 2 - -38 4 Ft-Lbs	-41 19
Occipital Moment - Curve Decay Time to -7 38 ft-lbf		94 - 114 ms	104 52

Remarks

Laboratory Technician B Swiecicki

PART 572O
THORAX IMPACT TEST

Dummy Serial Number 288
Sequential Test Number 1
Date May 8, 2001
Workfile D10002a raw

TEST PARAMETER	SPECIFICATION	TEST RESULTS
Temperature	69-72 Deg F	70 0
Relative Humidity	10% - 70%	32 0
Pendulum Velocity	21 6 - 22 4 Ft/s	22 0
Maximum Deflection	1 90 - 2 20 in	2 12
Maximum Resistive Force	876 - 989 Lbs	924 20
Internal Hysteresis	69 - 85 %	75 57

Remarks

Laboratory Technician B Swiecicki

PART 5720
HEAD DROP TEST

Dummy Serial Number 421
Sequential Test Number 1
Date May 2, 2001
Workfile 421101 hdp

TEST PARAMETER	SPECIFICATION	TEST RESULTS
Temperature	66-78 Deg F	72
Relative Humidity	10% - 70%	31
Peak Resultant Acceleration	250-300 G's	276 57
Peak Lateral Acceleration	15 G's Max	5 65
Is Acceleration Curve Unimodal?	YES	YES

Remarks:

Laboratory Technician B Swiecicki

PART 572O
NECK FLEXION TEST

Dummy Serial Number 421
Sequential Test Number 1
Date May 3, 2001
Workfile Ad0100a raw

6 Axis Neck Transducer

TEST PARAMETER		SPECIFICATION	TEST RESULTS
Temperature		69-72 Deg F	71 0
Relative Humidity		10% - 70%	32 0
Impact Velocity		22 6 - 23 4 Ft/s	23 32
Pendulum Deceleration	10 ms	6 9 - 8 2 ft/s	7 98
	20 ms	13 1 - 16 4 ft/s	14 17
	30 ms	19 0 - 23 0 ft/s	19 28
D Plane Rotation	Max	77 - 91 Deg	77 86
Moment About Occipital Condyle	Max	51 0 - 61 0 Ft-Lbs	59 55
Occipital Moment - Curve Decay Time to 7 38 ft-lbf		80 - 100 ms	82 60

Remarks

Laboratory Technician B Swiecicki

PART 572O
NECK EXTENSION TEST

Dummy Serial Number	421	
Sequential Test Number	1	
Date	May 3, 2001	6 Axis Neck Transducer
Workfile	Ae0100a raw	

TEST PARAMETER		SPECIFICATION	TEST RESULTS
Temperature		69-72 Deg F	71 0
Relative Humidity		10% - 70%	32 0
Impact Velocity		19 50 - 20 30 Ft/s	19.67
Pendulum Deceleration	10 ms	4 9 - 6 2 ft/s	5 29
	20 ms	10 2 - 12.8 ft/s	10 95
	30 ms	15 1 - 18 4 ft/s	16 12
D Plane Rotation	Max	99 - 113 Deg	109 47
Moment About Occipital Condyle	Max	-50 2 - -38 4 Ft-Lbs	-41 50
Occipital Moment - Curve Decay Time to -7 38 ft-lbf		94 - 114 ms	100 20

Remarks

Laboratory Technician B Swiecicki

PART 572O
THORAX IMPACT TEST

Dummy Serial Number 421
Sequential Test Number 1
Date May 7, 2001
Workfile D10001a raw

TEST PARAMETER	SPECIFICATION	TEST RESULTS
Temperature	69-72 Deg F	72 0
Relative Humidity	10% - 70%	32 0
Pendulum Velocity	21 6 - 22 4 Ft/s	22 0
Maximum Deflection	1 90 - 2 20 in	1 97
Maximum Resistive Force	876 - 989 Lbs	881 44
Internal Hysteresis	69 - 85 %	72 18

Remarks

Laboratory Technician B Swiecicki

APPENDIX D

DUMMY, VEHICLE AND LABORATORY INSTRUMENT CALIBRATION

INSTRUMENT CALIBRATION FOR PASSENGER DUMMY
(6 Month Calibration Minimum)

DRIVER DUMMY (S/N 288)		Manufacturer	Serial #	Calibration	
				Last	Next
Head X Arm	Y	ENTRAN	AC-98H10-F01	12-Apr-01	12-Oct-01
	Z	ENTRAN	AC-99102-F08	12-Apr-01	12-Oct-01
Head Y Arm	X	ENTRAN	AC-99102-F10	11-Apr-01	11-Oct-01
	Z	ENDEVCO	AC-P15341	11-Apr-01	11-Oct-01
Head Z Arm	X	ENTRAN	AC-99102-F13	12-Apr-01	12-Oct-01
	Y	ENTRAN	AC-99108-F27	11-Apr-01	11-Oct-01
Head	X	ENTRAN	AC-99H12-F12	12-Apr-01	12-Oct-01
	Y	ENTRAN	AC-00L13-F13	18-Jan-01	18-Jul-01
	Z	ENTRAN	AC-99108-F25	12-Apr-01	12-Oct-01
Head	X (R)	ENTRAN	AC-99D15-N08	12-Apr-01	12-Oct-01
	Y (R)	ENTRAN	AC-00L20-A12	18-Jan-01	18-Jul-01
	Z (R)	ENTRAN	AC-00L13-F72	02-Mar-01	02-Sep-01
Neck Load Cell	X	DENTON	LC-851Fx	28-Dec-00	28-Jun-01
	Y	DENTON	LC-851Fy	28-Dec-00	28-Jun-01
	Z	DENTON	LC-851Fz	28-Dec-00	28-Jun-01
Neck Moment	X	DENTON	LC-851Mx	28-Dec-00	28-Jun-01
	Y	DENTON	LC-851My	28-Dec-00	28-Jun-01
	Z	DENTON	LC-851Mz	28-Dec-00	28-Jun-01
Chest	X	ENTRAN	AC-99H12-F18	17-Apr-01	17-Oct-01
	Y	ENTRAN	AC-99H12-F29	17-Apr-01	17-Oct-01
	Z	ENTRAN	AC-98H13-F15	17-Apr-01	17-Oct-01
Chest	X (R)	ENTRAN	AC-99H12-F14	17-Apr-01	17-Oct-01
	Y (R)	ENTRAN	AC-99H12-F23	17-Apr-01	17-Oct-01
	Z (R)	ENTRAN	AC-99H12-F11	17-Apr-01	17-Oct-01
Chest Deflection Gauge		SERVO	DS-288	04-May-01	04-Nov-01
Pelvic	X	ENDEVCO	AC-P16225	17-Apr-01	17-Oct-01
	Y	ENDEVCO	AC-P16171	17-Apr-01	17-Oct-01
	Z	ENDEVCO	AC-P16945	17-Apr-01	17-Oct-01

INSTRUMENT CALIBRATION FOR PASSENGER DUMMY
(6 Month Calibration Minimum)

DRIVER DUMMY (S/N 288)		Manufacturer	Serial #	Calibration	
				Last	Next
Left Femur Load	X	DENTON	LC-257Fx	28-Dec-00	28-Jun-01
	Y	DENTON	LC-257Fy	28-Dec-00	28-Jun-01
	Z	DENTON	LC-257Fz	28-Dec-00	28-Jun-01
L Femur Moment	X	DENTON	LC-257Mx	28-Dec-00	28-Jun-01
	Y	DENTON	LC-257My	28-Dec-00	28-Jun-01
	Z	DENTON	LC-257Mz	28-Dec-00	28-Jun-01
Right Femur Load	X	DENTON	LC-259Fx	29-Dec-00	29-Jun-01
	Y	DENTON	LC-259Fy	29-Dec-00	29-Jun-01
	Z	DENTON	LC-259Fz	29-Dec-00	29-Jun-01
R Femur Moment	X	DENTON	LC-259Mx	29-Dec-00	29-Jun-01
	Y	DENTON	LC-259My	29-Dec-00	29-Jun-01
	Z	DENTON	LC-259Mz	29-Dec-00	29-Jun-01
Left Knee Shear Dx		ASTC	FLX-102-LTKN	04-Apr-01	04-Oct-01
Right Knee Shear Dx		ASTC	FLX-101-RTKN	04-Apr-01	04-Oct-01
Left Upper Tibia	Fx	Denton	FLX-102-UTLFX	08-Nov-00	08-May-01
	Fz	Denton	FLX-102-UTLFZ	08-Nov-00	08-May-01
	Mx	Denton	FLX-102-UTLMX	08-Nov-00	08-May-01
	My	Denton	FLX-102-UTLMY	08-Nov-00	08-May-01
Left Lower Tibia	Fx	Denton	FLX-102-LTLFX	15-Nov-00	15-May-01
	Fy	Denton	FLX-102-LTLFY	15-Nov-00	15-May-01
	Fz	Denton	FLX-102-LTLFZ	15-Nov-00	15-May-01
	Mx	Denton	FLX-102-LTLMX	15-Nov-00	15-May-01
	My	Denton	FLX-102-LTLMY	15-Nov-00	15-May-01
Right Upper Tibia	Fx	Denton	FLX-101-UTRFX	08-Nov-00	08-May-01
	Fz	Denton	FLX-101-UTRFZ	08-Nov-00	08-May-01
	Mx	Denton	FLX-101-UTRMX	08-Nov-00	08-May-01
	My	Denton	FLX-101-UTRMY	08-Nov-00	08-May-01

INSTRUMENT CALIBRATION FOR PASSENGER DUMMY
(6 Month Calibration Minimum)

DRIVER DUMMY (S/N 288)		Manufacturer	Serial #	Calibration	
				Last	Next
Right Lower Tibia	Fx	Denton	FLX-101-LTRFX	09-Nov-00	09-May-01
	Fy	Denton	FLX-101-LTRFY	09-Nov-00	09-May-01
	Fz	Denton	FLX-101-LTRFZ	09-Nov-00	09-May-01
	Mx	Denton	FLX-101-LTRMX	09-Nov-00	09-May-01
	My	Denton	FLX-101-LTRMY	09-Nov-00	09-May-01
Left Tibia	X	ENTRAN	AC-00L20-A13	18-Jan-01	18-Jul-01
	Y	ENTRAN	AC-00L20-A08	18-Jan-01	18-Jul-01
Right Tibia	X	ENTRAN	AC-00L13-F14	18-Jan-01	18-Jul-01
	Y	ENTRAN	AC-00L20-A07	18-Jan-01	18-Jul-01
Left Ankle	Rx	Contelec	FLX-102-AXLRP	26-Sep-00	26-Mar-01
	Ry	Contelec	FLX-102-AYLRP	26-Sep-00	26-Mar-01
	Rz	Contelec	FLX-102-AZLRP	26-Sep-00	26-Mar-01
Right Ankle	Rx	Contelec	FLX-101-AXRRP	26-Sep-00	26-Mar-01
	Ry	Contelec	FLX-101-AYRRP	26-Sep-00	26-Mar-01
	Rz	Contelec	FLX-101-AZRRP	26-Sep-00	26-Mar-01
Left Foot	Ax	ENTRAN	AC-00L13-F32	06-Feb-01	06-Aug-01
	Ay	ENTRAN	AC-00L13-F16	18-Jan-01	18-Jul-01
	Az	ENTRAN	AC-00L13-F06	18-Jan-01	18-Jul-01
Right Foot	Ax	ENTRAN	AC-00L20-A14	18-Jan-01	18-Jul-01
	Ay	ENTRAN	AC-00L20-A15	18-Jan-01	18-Jul-01
	Az	ENTRAN	AC-00L13-F10	18-Jan-01	18-Jul-01

INSTRUMENT CALIBRATION FOR PASSENGER DUMMY
(6 Month Calibration Minimum)

PASSENGER DUMMY (S/N 421)		Manufacturer	Serial #	Calibration	
				Last	Next
Head X Arm	Y	ENTRAN	AC-99102-F15	12-Apr-01	12-Oct-01
	Z	ENTRAN	AC-99108-F29	11-Apr-01	11-Oct-01
Head Y Arm	X	ENTRAN	AC-99102-F12	12-Apr-01	12-Oct-01
	Z	ENTRAN	AC-99102-F06	12-Apr-01	12-Oct-01
Head Z Arm	X	ENTRAN	AC-99H30-Z03	11-Apr-01	11-Oct-01
	Y	ENTRAN	AC-99108-F28	12-Apr-01	12-Oct-01
Head	X	ENTRAN	AC-99G18-F18	12-Apr-01	12-Oct-01
	Y	ENTRAN	AC-99H30-Z05	12-Apr-01	12-Oct-01
	Z	ENTRAN	AC-99102-F09	12-Apr-01	12-Oct-01
Head	X (R)	ENTRAN	AC-00L13-I03	12-Apr-01	12-Oct-01
	Y (R)	ENTRAN	AC-99H30-Z08	12-Apr-01	12-Oct-01
	Z (R)	ENTRAN	AC-99H30-Z04	12-Apr-01	12-Oct-01
Neck Load Cell	X	DENTON	LC-852FX	01-Mar-01	01-Sep-01
	Y	DENTON	LC-852FY	01-Mar-01	01-Sep-01
	Z	DENTON	LC-852FZ	01-Mar-01	01-Sep-01
Neck Moment	X	DENTON	LC-852MX	01-Mar-01	01-Sep-01
	Y	DENTON	LC-852MY	01-Mar-01	01-Sep-01
	Z	DENTON	LC-852MZ	01-Mar-01	01-Sep-01
Chest	X	ENTRAN	AC-98H14-K02	12-Apr-01	12-Oct-01
	Y	ENDEVCO	AC-P15321	11-Apr-01	11-Oct-01
	Z	ENDEVCO	AC-P17743	11-Apr-01	11-Oct-01
Chest	X (R)	ENTRAN	AC-99H30-Z07	12-Apr-01	12-Oct-01
	Y (R)	ENDEVCO	AC-P15334	11-Apr-01	11-Oct-01
	Z (R)	ENTRAN	AC-99G29-Q13	12-Apr-01	12-Oct-01
Chest Deflection Gauge		SERVO	DS-421	04-May-01	04-Nov-01
Pelvic	X	ENTRAN	AC-99108-F26	12-Apr-01	12-Oct-01
	Y	ENTRAN	AC-99H30-Z02	12-Apr-01	12-Oct-01
	Z	ENTRAN	AC-99108-F30	12-Apr-01	12-Oct-01

INSTRUMENT CALIBRATION FOR PASSENGER DUMMY
(6 Month Calibration Minimum)

PASSENGER DUMMY (S/N 421)		Manufacturer	Serial #	Calibration	
				Last	Next
Left Femur Load	X	DENTON	LC-260Fx	28-Dec-00	28-Jun-01
	Y	DENTON	LC-260Fy	28-Dec-00	28-Jun-01
	Z	DENTON	LC-260Fz	28-Dec-00	28-Jun-01
L Femur Moment	X	DENTON	LC-260Mx	28-Dec-00	28-Jun-01
	Y	DENTON	LC-260My	28-Dec-00	28-Jun-01
	Z	DENTON	LC-260Mz	28-Dec-00	28-Jun-01
Right Femur Load	X	DENTON	LC-261Fx	28-Dec-00	28-Jun-01
	Y	DENTON	LC-261Fy	28-Dec-00	28-Jun-01
	Z	DENTON	LC-261Fz	28-Dec-00	28-Jun-01
R Femur Moment	X	DENTON	LC-261Mx	28-Dec-00	28-Jun-01
	Y	DENTON	LC-261My	28-Dec-00	28-Jun-01
	Z	DENTON	LC-261Mz	28-Dec-00	28-Jun-01
Left Knee Shear Dx		ASTC	FLX-104-LTKN	25-Apr-01	25-Oct-01
Right Knce Shear Dx		ASTC	FLX-103-RTKN	26-Apr-01	26-Oct-01
Left Upper Tibia	Fx	Denton	FLX-103-UTLFX	29-Nov-00	29-May-01
	Fz	Denton	FLX-103-UTLFZ	29-Nov-00	29-May-01
	Mx	Denton	FLX-103-UTLMX'	29-Nov-00	29-May-01
	My	Denton	FLX-103-UTLMY	29-Nov-00	29-May-01
Left Lower Tibia	Fx	Denton	FLX-103-LTLFX	09-Nov-00	09-May-01
	Fy	Denton	FLX-103-LTLFY	09-Nov-00	09-May-01
	Fz	Denton	FLX-103-LTLFZ	09-Nov-00	09-May-01
	Mx	Denton	FLX-103-LTLMX	09-Nov-00	09-May-01
	My	Denton	FLX-103-LTLMY	09-Nov-00	09-May-01
Right Upper Tibia	Fx	Denton	FLX-104-UTRFX	08-Nov-00	08-May-01
	Fz	Denton	FLX-104-UTRFZ	08-Nov-00	08-May-01
	Mx	Denton	FLX-104-UTRMX	08-Nov-00	08-May-01
	My	Denton	FLX-104-UTRMY	08-Nov-00	08-May-01

INSTRUMENT CALIBRATION FOR PASSENGER DUMMY
(6 Month Calibration Minimum)

PASSENGER DUMMY (S/N 421)		Manufacturer	Serial #	Calibration	
				Last	Next
Right Lower Tibia	Fx	Denton	FLX-104-LTRFX	09-Nov-00	09-May-01
	Fy	Denton	FLX-104-LTRFY	09-Nov-00	09-May-01
	Fz	Denton	FLX-104-LTRFZ	09-Nov-00	09-May-01
	Mx	Denton	FLX-104-LTRMX	09-Nov-00	09-May-01
	My	Denton	FLX-104-LTRMY	09-Nov-00	09-May-01
Left Tibia	X	ENDEVCO	AC-AGAC4	17-Apr-01	17-Oct-01
	Y	ENDEVCO	AC-J20064	17-Apr-01	17-Oct-01
Right Tibia	X	ENDEVCO	AC-P15319	17-Apr-01	17-Oct-01
	Y	ENDEVCO	AC-P17833	17-Apr-01	17-Oct-01
Left Ankle	Rx	Contelec	FLX-103-AXRRP	26-Sep-00	26-Mar-01
	Ry	Contelec	FLX-103-AYRRP	26-Sep-00	26-Mar-01
	Rz	Contelec	FLX-103-AZRRP	26-Sep-00	26-Mar-01
Right Ankle	Rx	Contelec	FLX-104-AXRRP	26-Sep-00	26-Mar-01
	Ry	Contelec	FLX-104-AYRRP	26-Sep-00	26-Mar-01
	Rz	Contelec	FLX-104-AZRRP	26-Sep-00	26-Mar-01
Left Foot	Ax	ENDEVCO	AC-J18059	17-Apr-01	17-Oct-01
	Ay	ENDEVCO	AC-J23804	17-Apr-01	17-Oct-01
	Az	ENDEVCO	AC-BF65J	17-Apr-01	17-Oct-01
Right Foot	Ax	ENDEVCO	AC-P17365	17-Apr-01	17-Oct-01
	Ay	ENDEVCO	AC-AJ4Y5	17-Apr-01	17-Oct-01
	Az	ENDEVCO	AC-P15975	17-Apr-01	17-Oct-01

INSTRUMENT CALIBRATION FOR VEHICLE ACCELEROMETERS
(6 Month Calibration Minimum)

	Manufacturer	Serial #	Calibration	
			Last	Next
Left Seat Rear Crossmember X	ICS	AC-D88	18-Apr-01	18-Oct-01
Left Seat Rear Crossmember Y	ICS	AC-D36	18-Apr-01	18-Oct-01
Right Seat Rear Crossmember X	ICS	AC-D86	18-Apr-01	18-Oct-01
Right Rear Seat Crossmember Y	ICS	AC-X92	02-Apr-01	02-Oct-01
Driver Left Side Toepan X	ENDEVCO	AC-B10481	23-Feb-01	23-Aug-01
Driver Left Side Toepan Z	ENDEVCO	AC-A14433	15-Feb-01	15-Aug-01
Driver Right Side Toepan X	ENDEVCO	AC-P16583	06-Dec-00	06-Jun-01
Driver Right Side Toepan Z	ENDEVCO	AC-P19343	21-Feb-01	21-Aug-01