

DOT1291

REPORT NOS. 208-TRC-89-003

212-TRC-89-003

301-TRC-89-003

VEHICLE SAFETY COMPLIANCE TESTING  
FOR OCCUPANT CRASH PROTECTION,  
WINDSHIELD MOUNTING, WINDSHIELD ZONE  
INTRUSION, AND FUEL SYSTEM INTEGRITY

CHRYSLER CORPORATION  
1989 DODGE DIPLOMAT  
4-DOOR SEDAN  
NHTSA NO. CK0304  
TRC TEST NO. 890313

THE TRANSPORTATION RESEARCH CENTER OF OHIO  
U.S. RT. 33, LOGAN COUNTY  
EAST LIBERTY, OHIO 43319



MARCH 29, 1989

FINAL REPORT

PREPARED FOR:  
U.S. DEPARTMENT OF TRANSPORTATION  
NATIONAL HIGHWAY TRAFFIC SAFETY ADMINISTRATION  
OFFICE OF VEHICLE SAFETY COMPLIANCE  
400 SEVENTH STREET, S.W.  
ROOM NO. 6115 (NEF-31)  
WASHINGTON, DC 20590

This Final Test Report was prepared for the U.S. Department of Transportation, National Highway Traffic Safety Administration, under Contract No. DTNH22-88-C-11038. This document is disseminated under the sponsorship of the U.S. Department of Transportation in the interest of information exchange. The United States Government assumes no liability for its contents or use thereof.

REPORT PREPARED BY:

Jeffery W. Sankey Date 3/18/89  
J.W. Sankey, Supervisor, Laboratory Engineering  
Transportation Research Center of Ohio

REPORT APPROVED BY:

Kay Latimer Date 3-28-89  
C.K. Latimer, Project Manager  
Transportation Research Center of Ohio

FINAL REPORT ACCEPTED BY:

Allen Brammer Date April 13, 89  
Contracting Officer's Technical Representative (COTR),  
NHTSA, Office of Vehicle Safety Compliance

1. Report No. 208-TRC-89-003 212-TRC-89-003 301-TRC-89-003		2. Government Accession No.		3. Recipient's Catalog No.	
4. Title and Subtitle FINAL REPORT OF FMVSS NOS. 208, 212, 219 (PARTIAL), AND 301 COMPLIANCE TESTING OF A 1989 DODGE DIPLOMAT 4-DOOR SEDAN, NHTSA NO. CK0304				5. Report Date MARCH 1989	
7. Author(s) J.W. Sankey, Supervisor, Laboratory Engineering, TRC				6. Performing Organization Code	
9. Performing Organization Name and Address Transportation Research Center of Ohio U.S. Rt. 33, Logan County East Liberty, Ohio 43319				8. Performing Organization Report No. 208-TRC-89-003, 212-TRC-89-003 301-TRC-89-003	
12. Sponsoring Agency Name and Address U.S. Department of Transportation National Highway Traffic Safety Administration Office of Vehicle Safety Compliance (NEF-31) 400 Seventh St., S.W., Washington, DC 20590				10. Work Unit No. (TRAIS)	
15. Supplementary Notes				11. Contract or Grant No. DTNH22-88-C-11038	
16. Abstract A 30 mph flat frontal barrier impact compliance test was conducted on a 1989 Dodge Diplomat 4-door sedan, VIN 1B3XM56PXXW326359, NHTSA No. CK0304, at the Transportation Research Center of Ohio on March 13, 1989. This test was conducted to determine compliance with Federal Motor Vehicle Safety Standards:  FMVSS No. 208, "Occupant Crash Protection" FMVSS No. 212, "Windshield Mounting" FMVSS No. 219, (Partial), "Windshield Zone Intrusion" FMVSS No. 301, "Fuel System Integrity"  The barrier impact velocity was 29.5 mph. The ambient temperature was 72° F. The vehicle appears to comply with the applicable requirements of FMVSS Nos. 208, 212, 219 (partial), and 301.				13. Type of Report and Period Covered FINAL REPORT MARCH 1989	
17. Key Words Frontal Impact 30 mph Vehicle Safety Compliance Testing: FMVSS 208, "Occupant Crash Protection" FMVSS 212, "Windshield Mounting" FMVSS 219, "Windshield Zone Intrusion" FMVSS 301, "Fuel System Integrity"				14. Sponsoring Agency Code DOT/NHTSA/NEF/OVSC	
19. Security Classif. (of this report) Unclassified		20. Security Classif. (of this page) Unclassified		21. No. of Pages 102	22. Price
18. Distribution Statement Available from: Technical Reference Division National Highway Traffic Safety Admin Nassif Building, Room 5108 400 Seventh Street, SW Washington, DC 20590					

# METRIC CONVERSION FACTORS

## Approximate Conversions to Metric Measures

Symbol	When You Know	Multiply by	To Find	Symbol
LENGTH				
in	inches	2.5	centimeters	cm
ft	feet	30	centimeters	cm
yd	yards	0.9	meters	m
mi	miles	1.6	kilometers	km
AREA				
in <sup>2</sup>	square inches	6.5	square centimeters	cm <sup>2</sup>
ft <sup>2</sup>	square feet	0.09	square meters	m <sup>2</sup>
yd <sup>2</sup>	square yards	0.8	square meters	m <sup>2</sup>
mi <sup>2</sup>	square miles	2.6	square kilometers	km <sup>2</sup>
	acres	0.4	hectares	ha
MASS (weight)				
oz	ounces	28	grams	g
lb	pounds	0.45	kilograms	kg
	short tons	0.9	metric ton	t
	(2000 lb)			
VOLUME				
tsp	teaspoons	5	milliliters	ml
Tbsp	tablespoons	15	milliliters	ml
in <sup>3</sup>	cubic inches	16	milliliters	ml
fl oz	fluid ounces	30	milliliters	ml
c	cups	0.24	liters	L
pt	pints	0.47	liters	L
qt	quarts	0.95	liters	L
gal	gallons	3.8	liters	L
ft <sup>3</sup>	cubic feet	0.03	cubic meters	m <sup>3</sup>
yd <sup>3</sup>	cubic yards	0.76	cubic meters	m <sup>3</sup>
TEMPERATURE (exact)				
°F	degrees Fahrenheit	5/9 (after subtracting 32)	degrees Celsius	°C

## Approximate Conversions from Metric Measures

Symbol	When You Know	Multiply by	To Find	Symbol
LENGTH				
mm	millimeters	0.04	inches	in
cm	centimeters	0.4	inches	in
m	meters	3.3	feet	ft
m	meters	1.1	yards	yd
km	kilometers	0.6	miles	mi
AREA				
cm <sup>2</sup>	square centimeters	0.16	square inches	in <sup>2</sup>
m <sup>2</sup>	square meters	1.2	square yards	yd <sup>2</sup>
km <sup>2</sup>	square kilometers	0.4	square miles	mi <sup>2</sup>
ha	hectares	2.5	acres	
	(10 000 m <sup>2</sup> )			
MASS (weight)				
g	grams	0.035	ounces	oz
kg	kilograms	2.2	pounds	lb
t	metric ton	1.1	short tons	
	(1000 kg)			
VOLUME				
ml	milliliters	0.03	fluid ounces	fl oz
ml	milliliters	0.06	cubic inches	in <sup>3</sup>
L	liters	2.1	pints	pt
L	liters	1.06	quarts	qt
L	liters	0.26	gallons	gal
m <sup>3</sup>	cubic meters	35	cubic feet	ft <sup>3</sup>
m <sup>3</sup>	cubic meters	1.3	cubic yards	yd <sup>3</sup>
TEMPERATURE (exact)				
°C	degrees Celsius	9/5 (then add 32)	degrees Fahrenheit	°F

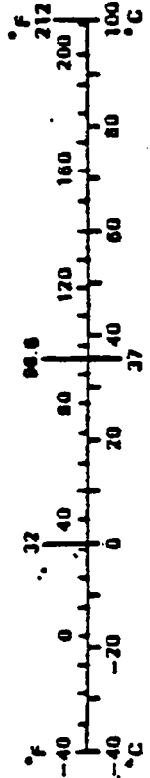


TABLE OF CONTENTS

<u>SECTION</u>	<u>DESCRIPTION</u>	<u>PAGE</u>
1.0	PURPOSE AND TEST SUMMARY	1-1
2.0	SUMMARY OF RESULTS FOR:	2-1
	FMVSS 208, "OCCUPANT CRASH PROTECTION"	
	FMVSS 212, "WINDSHIELD MOUNTING"	
	FMVSS 219, (PARTIAL), "WINDSHIELD ZONE INTRUSION"	
	FMVSS 301, "FUEL SYSTEM INTEGRITY"	
3.0	CAMERA INFORMATION	3-1
APPENDIX A	PHOTOGRAPHS	A-1
APPENDIX B	DATA PLOTS	B-1

LIST OF TABLES

<u>NUMBER</u>	<u>DESCRIPTION</u>	<u>PAGE</u>
1	CRASH TEST SUMMARY	1-5
2	TEST VEHICLE INFORMATION	1-6
3	TEST CONDITIONS	1-8
4	VEHICLE ACCELEROMETER LOCATIONS AND DATA SUMMARY	1-11
5	IMPACTED VEHICLE MEASUREMENTS	1-15
6	DUMMY INJURY CRITERIA	2-3
7	FMVSS 208 COMFORT AND CONVENIENCE DATA	2-10
8	FMVSS 208 SEAT BELT WARNING SYSTEM DATA	2-14
9	FMVSS 208 LABELING AND DRIVER'S MANUAL DATA	2-15
10	FMVSS 208 READINESS INDICATOR DATA	2-16
11	SUMMARY OF FMVSS 301 DATA	2-17
12	"FUEL SYSTEM INTEGRITY" POST-IMPACT TEST DATA	2-20
13	HIGH SPEED CAMERA LOCATIONS	3-4

LIST OF FIGURES

<u>NUMBER</u>	<u>DESCRIPTION</u>	<u>PAGE</u>
1	IMPACT VELOCITY MEASUREMENT SYSTEM	1-9
2	VEHICLE ACCELEROMETER LOCATIONS	1-10
3	ACCIDENT INVESTIGATION DIVISION DATA	1-13
4	PRE-TEST AND POST-TEST MEASUREMENT POINTS	1-14
5	VEHICLE TARGET LOCATIONS	1-16
6	DUMMY POSITIONING DATA	2-6
7	DUMMY IN-VEHICLE POSITION RECORDING SHEET	2-7
8	DRIVER DUMMY TO STEERING COLUMN ASSEMBLY	
	REFERENCE DIMENSIONS	2-8
9	SEAT BELT POSITIONING DATA	2-9
10	FMVSS NO. 212, "WINDSHIELD MOUNTING" DATA SHEET	2-18
11	FMVSS NO. 219, "WINDSHIELD INTRUSION" DATA SHEET	2-19
12	FMVSS NO. 301, "STATIC ROLLOVER" DATA SHEET	2-21
13	CAMERA POSITIONS	3-2

LIST OF PHOTOGRAPHS

<u>NUMBER</u>	<u>DESCRIPTION</u>	<u>PAGE</u>
1.	PRE-TEST FRONT VIEW	A-2
2.	POST-TEST FRONT VIEW	A-2
3.	PRE-TEST LEFT SIDE VIEW	A-3
4.	POST-TEST LEFT SIDE VIEW	A-3
5.	PRE-TEST RIGHT SIDE VIEW	A-4
6.	POST-TEST RIGHT SIDE VIEW	A-4
7.	PRE-TEST RIGHT FRONT THREE-QUARTER VIEW	A-5
8.	POST-TEST RIGHT FRONT THREE-QUARTER VIEW	A-5
9.	PRE-TEST LEFT REAR THREE-QUARTER VIEW	A-6
10.	POST-TEST LEFT REAR THREE-QUARTER VIEW	A-6
11.	PRE-TEST REAR VIEW	A-7
12.	POST-TEST REAR VIEW	A-7
13.	PRE-TEST WINDSHIELD VIEW	A-8
14.	POST-TEST WINDSHIELD VIEW	A-8
15.	PRE-TEST ENGINE COMPARTMENT VIEW	A-9
16.	POST-TEST ENGINE COMPARTMENT VIEW	A-9
17.	PRE-TEST FUEL FILLER CAP VIEW	A-10
18.	POST-TEST FUEL FILLER CAP VIEW	A-10
19.	PRE-TEST FRONT UNDERBODY VIEW	A-11
20.	POST-TEST FRONT UNDERBODY VIEW	A-11
21.	PRE-TEST REAR UNDERBODY VIEW	A-12
22.	POST-TEST REAR UNDERBODY VIEW	A-12
23.	PRE-TEST FUEL FILLER NECK VIEW	A-13
24.	PRE-TEST CARGO BALLAST VIEW	A-13
25.	PRE-TEST DRIVER DUMMY POSITION VIEW	A-14
26.	POST-TEST DRIVER DUMMY POSITION VIEW	A-14
27.	PRE-TEST PASSENGER DUMMY POSITION VIEW	A-15
28.	POST-TEST PASSENGER DUMMY POSITION VIEW	A-15
29.	PRE-TEST DRIVER DUMMY & VEHICLE INTERIOR - VIEW 1	A-16
30.	POST-TEST DRIVER DUMMY & VEHICLE INTERIOR - VIEW 1	A-16
31.	PRE-TEST DRIVER DUMMY & VEHICLE INTERIOR - VIEW 2	A-17
32.	POST-TEST DRIVER DUMMY & VEHICLE INTERIOR - VIEW 2	A-17

LIST OF PHOTOGRAPHS CONTINUED

<u>NUMBER</u>	<u>DESCRIPTION</u>	<u>PAGE</u>
33.	PRE-TEST PASSENGER DUMMY & VEHICLE INTERIOR	A-18
34.	POST-TEST PASSENGER DUMMY & VEHICLE INTERIOR - VIEW 1	A-18
35.	POST-TEST PASSENGER DUMMY & VEHICLE INTERIOR - VIEW 2	A-19
36.	POST-TEST DRIVER DUMMY HEAD CONTACT - VIEW 1	A-19
37.	POST-TEST DRIVER DUMMY HEAD CONTACT - VIEW 2	A-20
38.	POST-TEST DRIVER DUMMY KNEE CONTACT - VIEW 1	A-20
39.	POST-TEST DRIVER DUMMY KNEE CONTACT - VIEW 2	A-21
40.	POST-TEST PASSENGER DUMMY HEAD CONTACT VIEW	A-21
41.	POST-TEST PASSENGER DUMMY KNEE CONTACT - VIEW 1	A-22
42.	POST-TEST PASSENGER DUMMY KNEE CONTACT - VIEW 2	A-22
43.	PRE-TEST VEHICLE CERTIFICATION LABEL VIEW	A-23
44.	PRE-TEST VEHICLE TIRE LOAD LABEL VIEW	A-23
45.	POST-TEST VEHICLE ON STATIC ROLLOVER VIEW	A-24

SECTION 1.0

PURPOSE AND TEST SUMMARY

PURPOSE

This 30 mph frontal barrier impact test is part of the Federal Motor Vehicle Safety Standard (FMVSS) 208, 212, 219 (Partial), and 301 compliance test program conducted for the National Highway Traffic Safety Administration (NHTSA) by the Transportation Research Center of Ohio (TRC) under Contract No. DTNH22-88-C-11038. The purpose of this test was to determine if the subject vehicle, a 1989 Dodge Diplomat 4-door sedan, NHTSA No. CK0304, meets the performance requirements of FMVSS 208, "Occupant Crash Protection"; FMVSS 212, "Windshield Mounting"; FMVSS 219 (partial), "Windshield Zone Intrusion"; and FMVSS 301, "Fuel System Integrity." The test was conducted in accordance with the Office of Vehicle Safety Compliance (OVSC) Laboratory Test Procedure No. TP-208-07.

### TEST SUMMARY

The 1989 Dodge Diplomat 4-door sedan, NHTSA No. CK0304, was equipped with a 5.2 liter, inline engine, automatic transmission, power steering, and power brakes. The test weight of the vehicle was 4307 pounds. The test vehicle appeared to comply with the performance requirements of FMVSS test Nos. 208, 212, 219 (partial), and 301. The Head Injury Criteria (HIC) calculations were less than 1000, the resultant accelerations of the thorax did not exceed 60 g's and the compressive forces transmitted through the upper legs did not exceed 2,250 pounds as measured by Part 572 dummies seated in the driver's and right front passenger's seats. The thorax displacement did not exceed 3.0 inches as measured by the Part 572 E dummy. There was 100 percent windshield retention. There was no intrusion into the windshield. There was no fluid spillage from the fuel system following the impact or during the static rollover test.

One Part 572 E adult male anthropomorphic test device (ATD) was seated in the left front outboard designated seating position. The dummy was positioned according to the dummy placement procedures specified in Notice 45 of Federal Motor Vehicle Safety Standard No. 208.

One Part 572 B adult male anthropomorphic test device (ATD) was seated in the right front outboard designated seating position. The dummy was positioned according to the dummy placement procedures specified in Appendices B and C of Laboratory Procedure TP-208-07.

Both ATDs were instrumented with head and chest accelerometers oriented to measure accelerations in the longitudinal, lateral, and vertical directions, and with right and left femur load cells. The Part 572 E dummy's instrumentation also included a chest displacement potentiometer.

The vehicle was instrumented with eleven (11) accelerometers oriented to measure longitudinal axis acceleration.

The crash event was recorded by one (1) real-time panning camera and fourteen (14) high-speed motion picture cameras. One (1) real-time camera was used for pre-test and post-test documentation.

The twenty-eight (28) channels of data were multiplexed and recorded on a 14-track tape drive. The data was digitally sampled at 8000 samples per second and digitally processed per sections 12.8 and 12.9 of the Laboratory Procedure.

The vehicle was impacted into the rigid, flat frontal barrier at the Transportation Research Center of Ohio on March 13, 1989. The test vehicle's impact speed was 29.5 mph. The vehicle sustained 22.5 inches of static crush.

The FMVSS 208, 212, 219 (partial) and 301 compliance data is presented in Section 2.0. The camera information is presented in Section 3.0. Appendix A contains the still photographic prints. Appendix B contains the vehicle and dummy data plots.

TABLE 1 CRASH TEST SUMMARY

NHTSA NO.: CK0304 PROJECT: 208 Compliance  
DATE: 3/13/89 TIME: 1420 TEMP: 72° F  
VEHICLE: 1989 Dodge Diplomat 4-door sedan  
TEST WEIGHT (LBS): 4307  
IMPACT ANGLE (DEG)\*: 0  
IMPACT VELOCITY (MPH)\*\*: PRIMARY = 29.5 SECONDARY = 29.5  
MAXIMUM STATIC CRUSH (IN): 22.5  
VEHICLE REBOUND (IN): 10.0  
DUMMIES: Driver #229 Passenger #353  
TYPE: Part 572 E Part 572 B  
LOCATION: Left front Right front  
RESTRAINT: Airbag 3-point unbelt  
NUMBER OF DATA CHANNELS: 28  
NUMBER OF HIGH SPEED CAMERAS: HIGH-SPEED: 14 REAL-TIME: 1

\*With respect to tow track centerline.  
\*\*Speed trap measurement ( $\pm$  .05 mph accuracy)

TABLE 2 TEST VEHICLE INFORMATION

VEHICLE MANUFACTURER: Chrysler Corporation

MAKE/MODEL: Dodge Diplomat

VIN: 1B3XM56PXXW326359

BODY STYLE: 4-door sedan

MODEL YEAR: 1989

NHTSA NO.: CK0304

COLOR: brown

ENGINE DATA: TYPE: inline CYLINDERS: 8 DISPLACEMENT: 5.2 liter

TRANSMISSION DATA: 3 SPEED,    MANUAL, X AUTOMATIC,    FWD, X RWD,    4WD

DATE VEHICLE RECEIVED: 1/18/89

ODOMETER READING: 54.0

DEALER'S NAME AND ADDRESS: Northland Dodge, Inc.  
1889 Morse Rd.  
Columbus, OH 43229

ACCESSORIES:

POWER STEERING Yes  
POWER BRAKES Yes  
POWER SEATS Yes  
POWER WINDOWS Yes  
TINTED GLASS Yes  
RADIO Yes  
CLOCK Yes  
OTHER None

AUTOMATIC TRANSMISSION Yes  
AUTOMATIC SPEED CONTROL Yes  
TILTING STEERING WHEEL Yes  
TELESCOPING STEERING WHEEL Yes  
AIR CONDITIONING Yes  
ANTI-SKID BRAKE No  
REAR WINDOW DEFROSTER Yes

REMARKS:

1. IS THE VEHICLE STOCK THROUGHOUT? Yes
2. DOES VEHICLE SHOW EVIDENCE OF PRIOR ACCIDENT HISTORY? No
3. DOES VEHICLE SHOW ANY SIGNIFICANT CORROSION? No
4. CONDITION OF THE FRONT/REAR BUMPER AND FRAME: Good

DATA FROM CERTIFICATION LABEL ON LEFT DOOR FACE OR "B" POST:

VEHICLE MANUFACTURED BY: Chrysler Corporation

DATE OF MANUFACTURE: 12/88

GVWR: 4976 LBS

GAWR: FRONT 2521 LBS., REAR 2505 LBS.

TABLE 2 TEST VEHICLE INFORMATION CONT'D

DATA FROM "RECOMMENDED TIRE PRESSURE" LABEL ON DOOR, POST, GLOVEBOX, ETC.

VEHICLE LOAD (UP TO CAPACITY): FRONT 35 psi; REAR 35 psi

RECOMMENDED TIRE SIZE: P205/75R15 LOAD RANGE X B,      C,      D

TIRES ON VEHICLE (MFR., LINE, SIZE): Goodyear Arriva P205/75R15

IS SPARE TIRE A "SPACE SAVER": Yes

IS SPARE TIRE STANDARD EQUIPMENT: Yes

VEHICLE CAPACITY: TYPES OF SEATS: FRONT: Split bench  
REAR: Bench

TYPE OF FRONT SEAT BACKS: Adjustable

NUMBER OF OCCUPANTS 3 FRONT 3 REAR 6 TOTAL

CARGO LOAD 200 LBS. TOTAL 1100 LBS.

WEIGHT OF TEST VEHICLE AS RECEIVED FROM DEALER (WITH MAXIMUM FLUIDS):

RIGHT FRONT 1055 lbs. RIGHT REAR 833 lbs.

LEFT FRONT 1100 lbs. LEFT REAR 801 lbs.

TOTAL FRONT WEIGHT 2155 lbs. (56.9% OF TOTAL VEHICLE WEIGHT)

TOTAL REAR WEIGHT 1634 lbs. (43.1% OF TOTAL VEHICLE WEIGHT)

TOTAL DELIVERED WEIGHT 3789 lbs.

CALCULATION FOR TARGET TEST WEIGHT:

RCLW = RATED CARGO AND LUGGAGE WEIGHT

UDW = UNLOADED DELIVERED WEIGHT (3789 LBS)

VCW = VEHICLE CAPACITY WEIGHT (1100 LBS)

DSC = DESIGNATED SEATING CAPACITY (6)

RCLW = VCW - 150 (DCS) = 1100 - (150)(6) = 200 LBS

TARGET TEST WEIGHT = UDW + RCLW + (1 HII DUMMY X 164 LBS/DUMMY) + (1 HIII  
DUMMY X 167 LBS/DUMMY)

= 3789 + 200 + 331 LBS

TARGET TEST WEIGHT = 4320 LBS

TABLE 2 TEST VEHICLE INFORMATION CONT'D

WEIGHT OF TEST VEHICLE WITH REQUIRED DUMMIES AND 187 LBS. CARGO

RIGHT FRONT	1116 lbs.	RIGHT REAR	1022 lbs.
LEFT FRONT	1114 lbs.	LEFT REAR	1055 lbs.
TOTAL FRONT WEIGHT	2230 lbs.	(51.8% OF TOTAL VEHICLE WEIGHT)	
TOTAL REAR WEIGHT	2077 lbs.	(46.2% OF TOTAL VEHICLE WEIGHT)	
TOTAL TEST WEIGHT	4307 lbs.	(0.3% UNDER TARGET WEIGHT)	

WEIGHT OF BALLAST SECURED IN VEHICLE TRUNK AREA: 150 LBS.

COMPONENTS REMOVED TO MEET TARGET WEIGHT: None

VEHICLE ATTITUDE (ALL DIMENSIONS IN INCHES):

DELIVERED ATTITUDE: LF 27.9; RF 27.6; LR 27.6; RR 27.9

PRE-TEST ATTITUDE: LF 28.8; RF 28.2; LR 25.6; RR 25.3

POST-TEST ATTITUDE: LF 30.4; RF 27.8; LR 24.8; RR 24.6

WHEELBASE: 112.2 INCHES

CG = 54.1 INCHES REARWARD OF FRONT WHEEL CENTERLINE

TABLE 3 TEST CONDITIONS

TEST NUMBER: 890313

DATE OF TEST: 3/13/89

TIME OF TEST: 1420

TYPE OF TEST: Frontal barrier impact

IMPACT ANGLE: 0°

AMBIENT TEMPERATURE AT IMPACT AREA:

72° F

TEMPERATURE IN OCCUPANT COMPARTMENT:

71° F

IMPACT VELOCITY: PRIMARY = 29.5 MPH

SECONDARY = 29.5 MPH

(SPECIFIED RANGE = 28.9 TO 29.9 MPH)

VEHICLE REBOUND AND CRUSH (ALL DIMENSIONS IN INCHES):

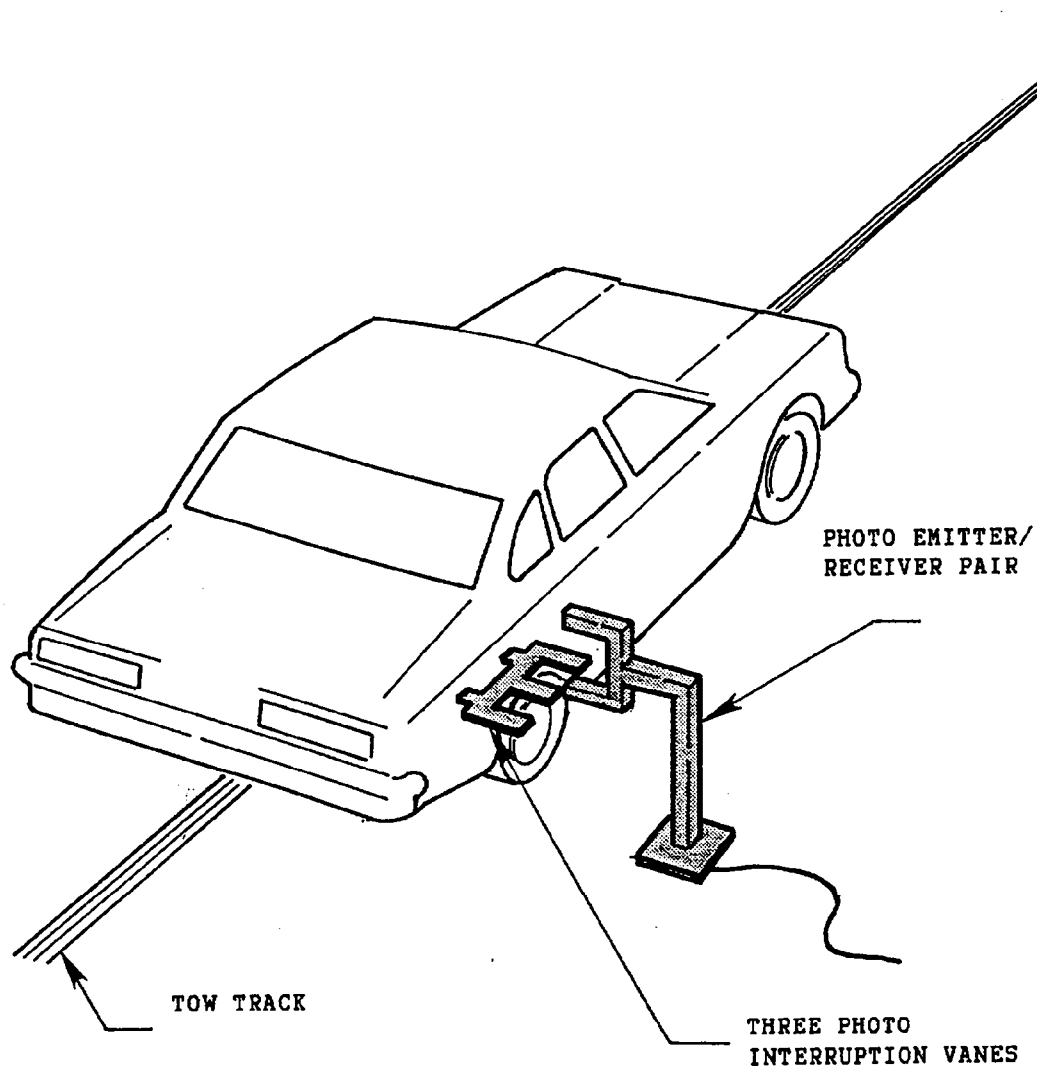
OVERALL LENGTH OF TEST VEHICLE: PRE-TEST: L 202.6; C 205.1; R 202.9

POST-TEST: L 181.0; C 182.8; R 181.6

TOTAL CRUSH: L 21.6; C 22.3; R 21.3

FOR FRONTAL IMPACTS, DISTANCE FROM FRONT OF TEST VEHICLE TO BARRIER AFTER IMPACT: L: 10.2; C: 9.6; R: 10.1; AVG: 10.0

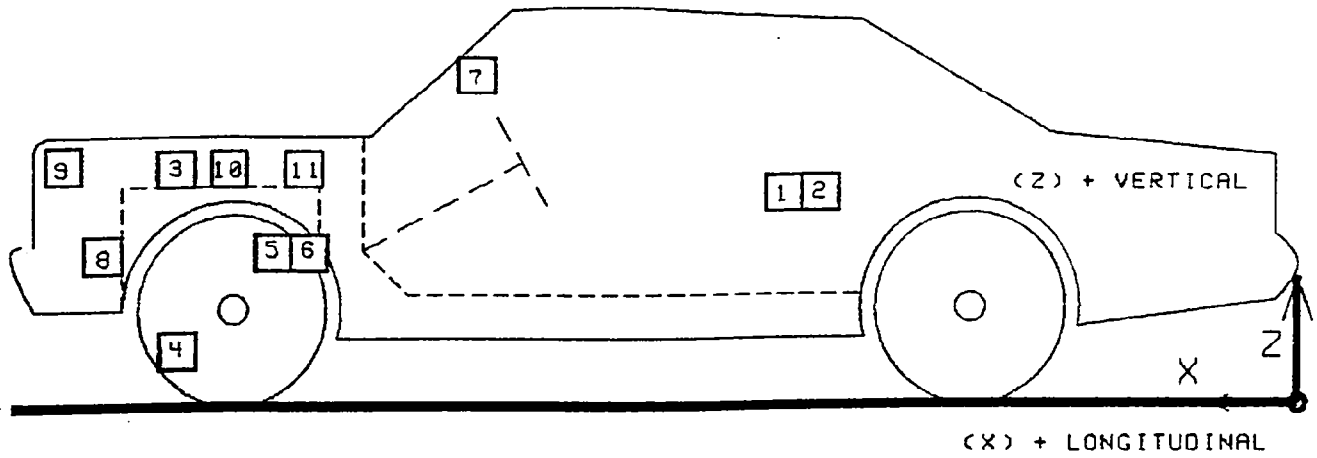
FIGURE 1 IMPACT VELOCITY MEASUREMENT SYSTEM



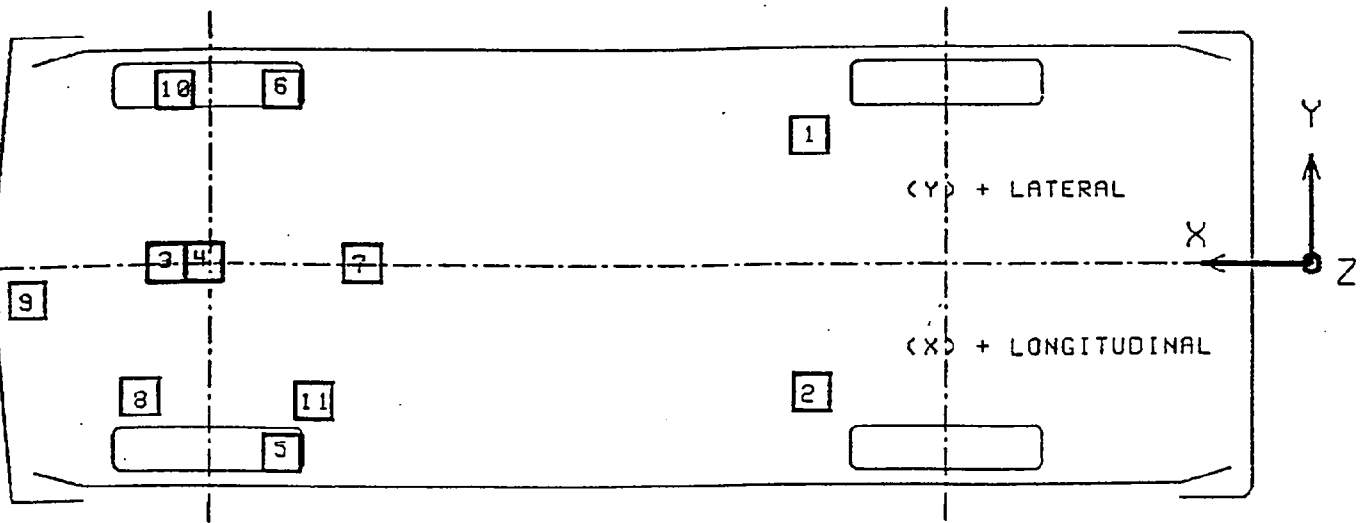
The final vane clears emitter/receiver two inches before impact.

The vanes have one foot spacing.

FIGURE 2  
VEHICLE ACCELEROMETER PLACEMENT



SIDE VIEW



BOTTOM VIEW

TABLE 4  
TEST NUMBER 890313

VEHICLE ACCELEROMETER LOCATIONS AND DATA SUMMARY

No.	LOCATION		X*	Y*	Z*	POSITIVE DIRECTION		NEGATIVE DIRECTION	
						MAX G	MSEC	MAX G	MSEC
1	REAR SEAT CROSSMEMBER AT LEFT SIDE LONGITUDINAL	PRE	83.6	22.1	12.8				
		POST	82.0	22.1	12.8	14.1	11.9	24.4	21.6
2	REAR SEAT CROSSMEMBER AT RIGHT SIDE LONGITUDINAL	PRE	83.2	-22.5	12.8				
		POST	83.0	-21.5	12.5	12.5	11.5	26.6	69.6
3	TOP OF ENGINE BLOCK LONGITUDINAL	PRE	166.1	-6.8	28.5				
		POST	155.4	-7.4	30.5	13.2	64.0	81.2	43.9
4	BOTTOM OF ENGINE BLOCK LONGITUDINAL	PRE	164.8	-1.1	7.9				
		POST	160.6	-1.6	9.0	---	---	Y 73.6	45.0
5	BRAKE CALIPER AT RIGHT SIDE LONGITUDINAL	PRE	161.9	-23.2	14.9				
		POST	156.6	-24.2	14.2	---	---	Y 74.4	36.4
6	BRAKE CALIPER AT LEFT SIDE LONGITUDINAL	PRE	161.8	23.2	14.8				
		POST	158.4	24.2	14.4	---	---	Y 84.0	39.0
7	DASH PANEL LONGITUDINAL	PRE	129.4	0.6	39.8				
		POST	130.2	0.6	42.1	24.0	45.4	50.5	21.3
8	FRONT FRAME RAIL LONGITUDINAL	PRE	180.6	-17.5	19.1				
		POST	171.9	-15.6	22.4	---	---	Y 82.6	33.1
9	FRONT FRAME CROSSMEMBER LONGITUDINAL	PRE	188.4	-1.0	33.8				
		POST	173.2	-1.0	36.5	131.4	39.1	225.4	22.9

TABLE 4 CONTINUED  
TEST NUMBER 890313

VEHICLE ACCELEROMETER LOCATIONS AND DATA SUMMARY CONTINUED

No. LOCATION	X*	Y*	Z*	POSITIVE DIRECTION		NEGATIVE DIRECTION	
				MAX G	MSEC	MAX G	MSEC
10 LEFT FENDER WELL INSIDE LONGITUDINAL	PRE 162.5	27.3	33.5				
	POST 160.9	24.2	29.6	70.6	67.0	115.8	58.9
11 RIGHT SHOCK TOWER LONGITUDINAL	PRE 161.4	-22.0	30.4				
	POST 159.4	-20.1	29.4	---	---	---	---

\* ALL MEASUREMENTS OF ACCELEROMETER LOCATIONS ARE IN INCHES.

REFERENCE: X: + FORWARD FROM REAR BUMPER  
Y: + LEFTWARD FROM VEHICLE CENTERLINE  
Z: + UPWARD FROM GROUND LEVEL

Y See DATA ACQUISITION EXPLANATIONS

**FIGURE 3 ACCIDENT INVESTIGATION DIVISION DATA  
FOR 30 MPH FRONTAL BARRIER IMPACT**

VEHICLE MAKE/MODEL/BODY STYLE: Dodge/Diplomat/4-door sedan  
 VEH. NHTSA NO.: CK0304; VIN: 1B3XM56PKW326359  
 MODEL YEAR: 1989; BUILD DATE: 12/88; TEST DATE: 3/13/89  
 VEH. SIZE CATEGORY: Mid-size; TEST WEIGHT: 4307  
 VEH. WHEELBASE: 112.2  
 MAX. WIDTH: 74.2  
 FRONT OVERHANG: 39.7

COLLISION DEFORMATION  
 CLASSIFICATION (CDC) CODE: 12FDEW2

F (Frontal)  
 CRUSH DEPTH  
 DIMENSIONS:

- C1 = 21.6 inches
- C2 = 20.7 inches
- C3 = 22.3 inches
- C4 = 22.5 inches
- C5 = 21.3 inches
- C6 = 21.3 inches

MIDPOINT OF DAMAGE: D = Vehicle Centerline (Longitudinal)

LENGTH OF DAMAGED REGION: L = 66.0 inches

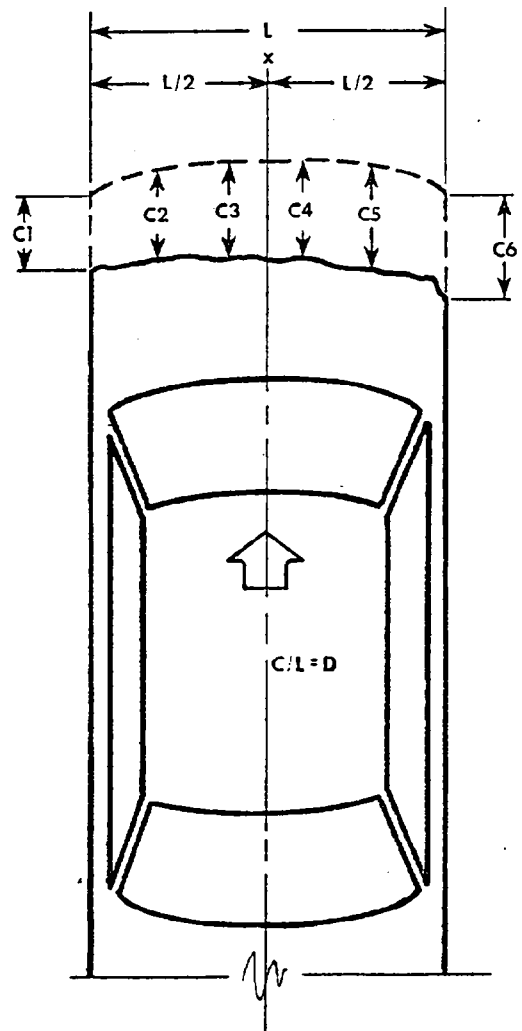


FIGURE 4

PRE-TEST AND POST-TEST MEASUREMENT POINTS

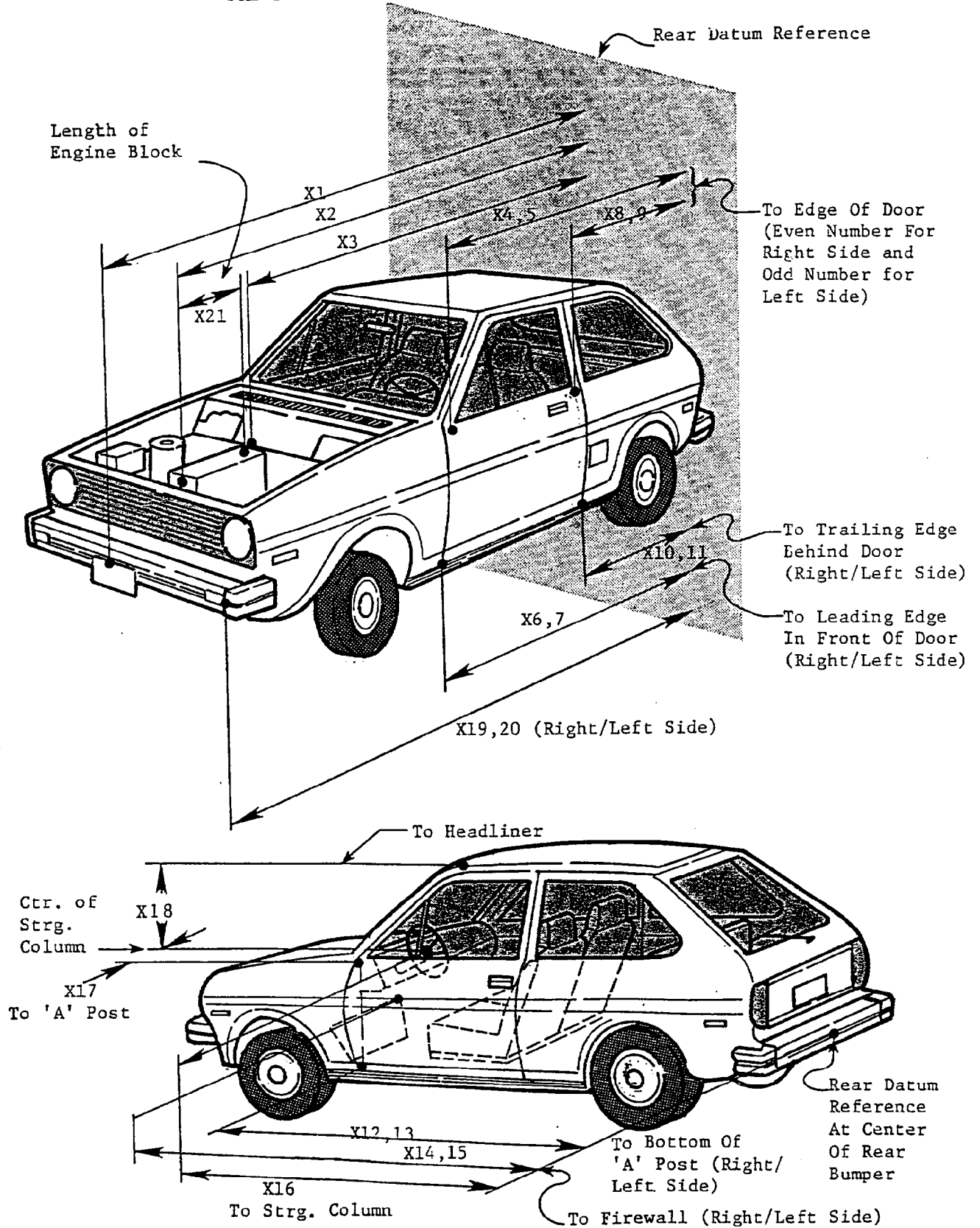
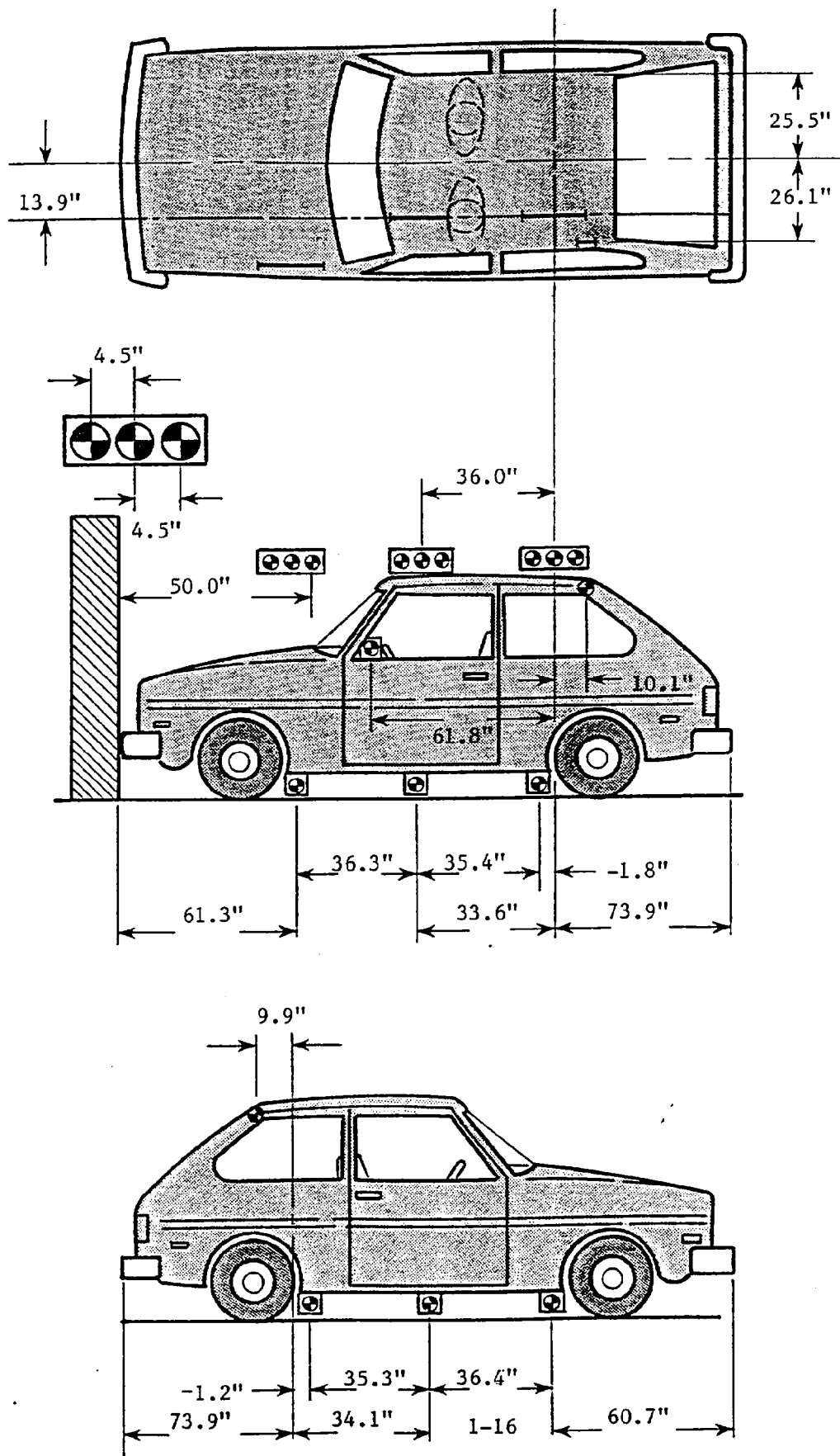


TABLE 5 IMPACTED VEHICLE MEASUREMENTS

VEHICLE MAKE/MODEL: Dodge Diplomat TEST NUMBER: 890313

NO.	TYPE OF MEASUREMENT	DIMENSIONS IN INCHES		
		PRE-TEST	POST-TEST	DIFF.
X1	TOTAL LENGTH OF VEHICLE AT CENTERLINE	205.1	182.8	22.3
X2	REAR SURFACE OF VEHICLE TO FRONT OF ENGINE BLOCK	178.0	169.6	8.4
X3	REAR SURFACE OF VEHICLE TO FIREWALL	150.0	145.0	5.0
X4	REAR SURFACE OF VEHICLE TO UPPER LEADING EDGE OF RIGHT DOOR	140.5	140.4	0.1
X5	REAR SURFACE OF VEHICLE TO UPPER LEADING EDGE OF LEFT DOOR	140.8	140.4	0.4
X6	REAR SURFACE OF VEHICLE TO LOWER LEADING EDGE OF RIGHT DOOR	136.9	138.4	-1.5
X7	REAR SURFACE OF VEHICLE TO LOWER LEADING EDGE OF LEFT DOOR	138.9	138.5	0.4
X8	REAR SURFACE OF VEHICLE TO UPPER TRAILING EDGE OF RIGHT DOOR	97.8	96.8	1.0
X9	REAR SURFACE OF VEHICLE TO UPPER TRAILING EDGE OF LEFT DOOR	97.9	97.5	0.4
X10	REAR SURFACE OF VEHICLE TO LOWER TRAILING EDGE OF RIGHT DOOR	97.2	97.8	-0.6
X11	REAR SURFACE OF VEHICLE TO LOWER TRAILING EDGE OF LEFT DOOR	97.2	97.0	0.2
X12	REAR SURFACE OF VEHICLE TO BOTTOM OF "A" POST ON RIGHT SIDE	137.4	136.1	1.3
X13	REAR SURFACE OF VEHICLE TO BOTTOM OF "A" POST ON LEFT SIDE	136.6	136.2	0.4
X14	REAR SURFACE OF VEHICLE TO FIREWALL - RIGHT SIDE	150.8	149.2	1.6
X15	REAR SURFACE OF VEHICLE TO FIREWALL - LEFT SIDE	151.1	150.6	0.5
X16	REAR SURFACE OF VEHICLE TO STEERING WHEEL CENTER	119.8	119.8	0.0
X17	CENTER OF STEERING COLUMN TO "A" POST	13.5	15.4	-1.9
X18	CENTER OF STEERING COLUMN TO HEADLINER	16.8	17.8	-1.0
X19	REAR SURFACE OF VEHICLE TO RIGHT SIDE OF FRONT BUMPER	202.9	181.6	21.3
X20	REAR SURFACE OF VEHICLE TO LEFT SIDE OF FRONT BUMPER	202.6	181.0	21.6
X21	LENGTH OF ENGINE BLOCK	24.5	24.5	0.0

FIGURE 5  
VEHICLE TARGET LOCATIONS



### DATA ACQUISITION EXPLANATIONS

One of the pair of umbilical cables carrying the multiplexed signals of seven data channels broke causing spikes on those seven data channels after 122 milliseconds. The data channels affected were:

CSTXD1, driver chest displacement  
LFMF2, right front passenger left femur force  
RFMF2, right front passenger right femur force  
ENGXG2, engine bottom X-axis acceleration  
BCRXG, right brake caliper X-axis acceleration  
BCLXG, left brake caliper X-axis acceleration  
FFRXG, front frame rail X-axis acceleration

The right shock tower X-axis accelerometer, FIRXG, lost data after 67 milliseconds due to the vehicle's crush cutting the accelerometer's cable.

SECTION 2.0

SUMMARY OF RESULTS FOR:

FMVSS 208, "Occupant Crash Protection"

FMVSS 212, "Windshield Mounting"

FMVSS 219, (Partial), "Windshield Zone Intrusion"

FMVSS 301, "Fuel System Integrity"

COMPLIANCE DATA SUMMARY

The test vehicle, a 1989 Dodge Diplomat 4-door sedan, NHTSA No. CK0304, appeared to comply with the requirements of FMVSS Nos. 208, 212, 219 (partial), and 301.

The driver's Head Injury Criteria (HIC) was 108. The driver's maximum chest deceleration over three milliseconds was 29.1 g. The driver's right and left compressive femur loads were 1341 pounds and 1366 pounds, respectively. The driver's maximum chest displacement was 1.0 inches. (See DATA ACQUISITION EXPLANATIONS.)

The right front passenger's Head Injury Criteria (HIC) was 460. The right front passenger's maximum chest deceleration over three milliseconds was 36.9 g. The right front passenger's right and left compressive femur loads were 115 pounds and 196 pounds, respectively. (See DATA ACQUISITION EXPLANATIONS.)

The vehicle's restraint system met the comfort and convenience requirements of FMVSS 208.

The windshield retention was 100 percent.

There was no intrusion into the inner surface of the windshield below the protected zone.

There was no Stoddard fluid spillage following the crash test event or during any phase of the post-test static rollover.

TABLE 6 DUMMY INJURY CRITERIA

MAXIMUM ACCELERATION ('G')

	HEAD				CHEST			
	X	Y	Z	R	X	Y	Z	R*
DRIVER	-30.9	12.5	35.1	36.6	-29.0	-6.2	11.6	29.1
PASSENGER	-42.4	-10.0	-48.6	51.9	-38.6	27.0	10.8	36.9

MAXIMUM FORCE-FEMUR LOAD (LBS)

	LEFT FEMUR	RIGHT FEMUR
DRIVER	1366	1341
PASSENGER	196 $\gamma$	115 $\gamma$

HEAD INJURY CRITERIA\*\*

	HIC	TIME $t_1$ (MSEC) <sup>1</sup>	TIME $t_2$ (MSEC) <sup>2</sup>
DRIVER	108	83.9	119.9
PASSENGER	460	85.0	121.0

\*Defined as exceeding 0.003 sec. duration

\*\*As defined in FMVSS No. 208

$\gamma$  See DATA ACQUISITION EXPLANATIONS

## DUMMY KINEMATIC SUMMARY

### DRIVER DUMMY

Upon impact, the driver dummy translated forward on the seat impacting both knees into the instrument panel. The dummy's head rotated rearward, as the dummy's head and chest were restrained by the driver's airbag. The dummy's head rotated forward and then rearward as the dummy rebounded into the seat back and head restraint. The dummy came to rest seated in the driver's seat.

### RIGHT FRONT PASSENGER DUMMY

Upon impact, the right front passenger dummy translated forward on the seat impacting both knees into the instrument panel. The dummy's head rotated forward contacting the dummy's chest, as the dummy's chest was restrained by the three-point unbelt. The dummy's head rotated rearward as the dummy rebounded into the seat back and head restraint. The dummy came to rest seated in the right front passenger's seat, restrained by the three-point unbelt.

VISIBLE DUMMY CONTACT POINTS:

	DRIVER #229	PASSENGER #353
Head	<u>Airbag</u>	<u>Chest</u>
Chest	<u>Airbag</u>	<u>None</u>
Abdomen	<u>None</u>	<u>None</u>
Left knee	<u>Instrument panel</u>	<u>Instrument panel</u>
Right knee	<u>Instrument panel</u>	<u>Instrument panel</u>

DOOR OPENING:

	LEFT	RIGHT
Front	<u>Tools required</u>	<u>Tools required</u>
Rear	<u>Easy</u>	<u>Easy</u>

SEAT MOVEMENT:

	SEAT BACK FAILURE	SEAT SHIFT
Front	<u>None</u>	<u>Driver's shifted .3 inch forward</u>
Rear	<u>NA</u>	<u>NA</u>

GLAZING DAMAGE:

The left side of the windshield was cracked upon  
impact.

OTHER NOTABLE IMPACT EFFECTS:

None

**FIGURE 6 DUMMY POSITIONING DATA FOR 30 MPH FRONTAL BARRIER IMPACT TEST**

**PRE-IMPACT DATA:**

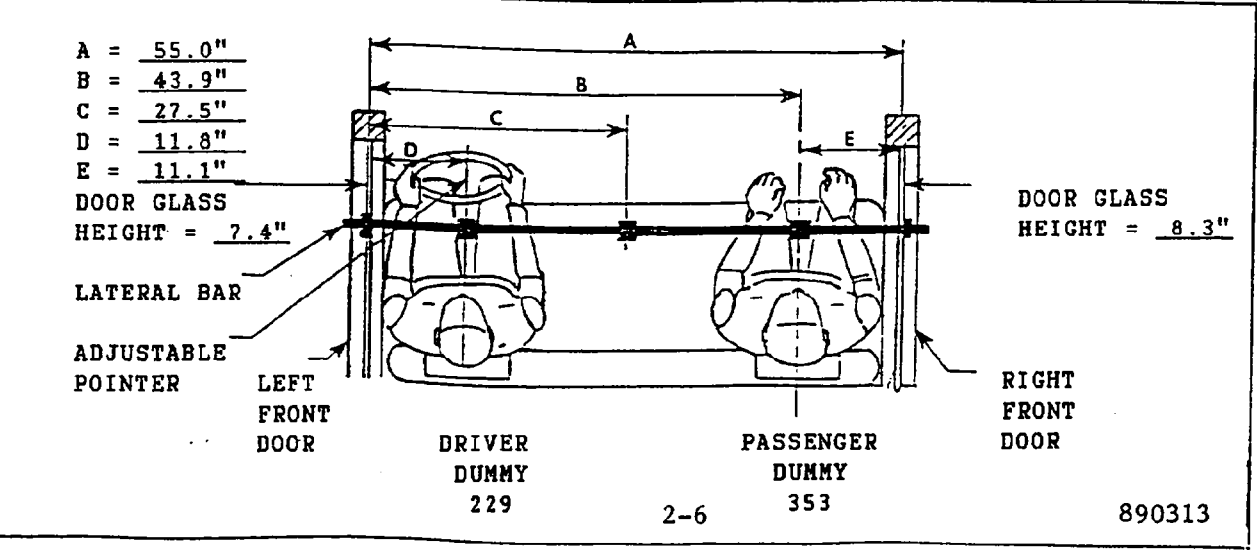
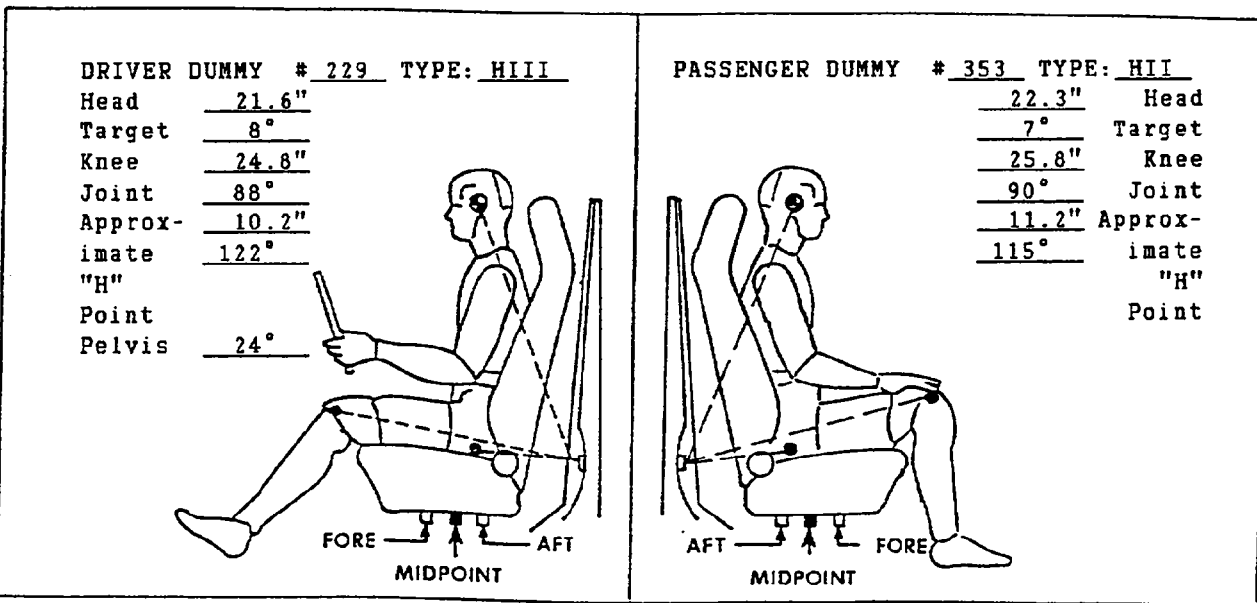
Make/Model: Dodge Diplomat  
 Body Style: 4-door sedan Model Year: 1989  
 NHTSA No.: CK0304 Color: Brown

**DATA FROM CERTIFICATION LABEL:**

Vehicle Manufacturer: Chrysler Corporation  
 Date of Manufacture: 12/88 VIN: 1B3XM56PXXW326359  
 GVWR: 4976 lb; GAWR: Front = 2521 lb; Rear = 2505 lb

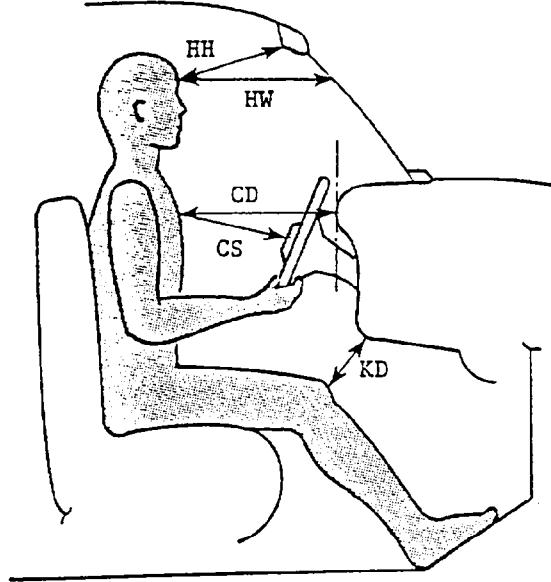
**POST-IMPACT DATA:**

Date of Test: 3/13/89 Time: 1420 Temperature: 72° F  
 Required Impact Velocity Range: 28.9 to 29.9 mph  
 Impact Velocity: Primary = 29.5 mph Secondary = 29.5 mph  
 Seat Type: Split bench Adjuster Type: Manual-Psnq, Power-Drvr  
 Bucket Seat Back Type: Manual-adjustable  
 Technicians: B. Crabtree, R. Cribley, S. Ericksen

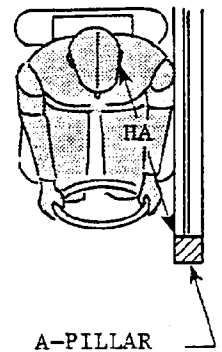
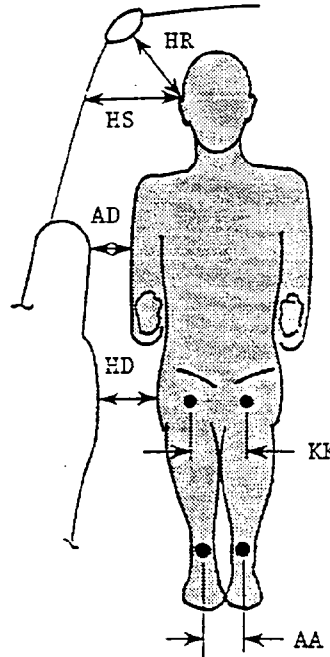


**FIGURE 7 DUMMY IN-VEHICLE POSITION RECORDING SHEET**

	DRIVER	PASSENGER
HH	13.2	12.1
HW	19.6	17.6
CD	18.4	18.6
CS	9.1	NA
KDL	3.7	5.2
KDR	3.6	5.5
TA	19°	19°
SA	26°	26°
HA	14.5	15.9



	DRIVER	PASSENGER
HR	7.6	6.4
HS	8.9	8.1
AD	3.2	2.9
HD	5.4	4.8
KK	8.5	7.9
AA	9.5	6.4



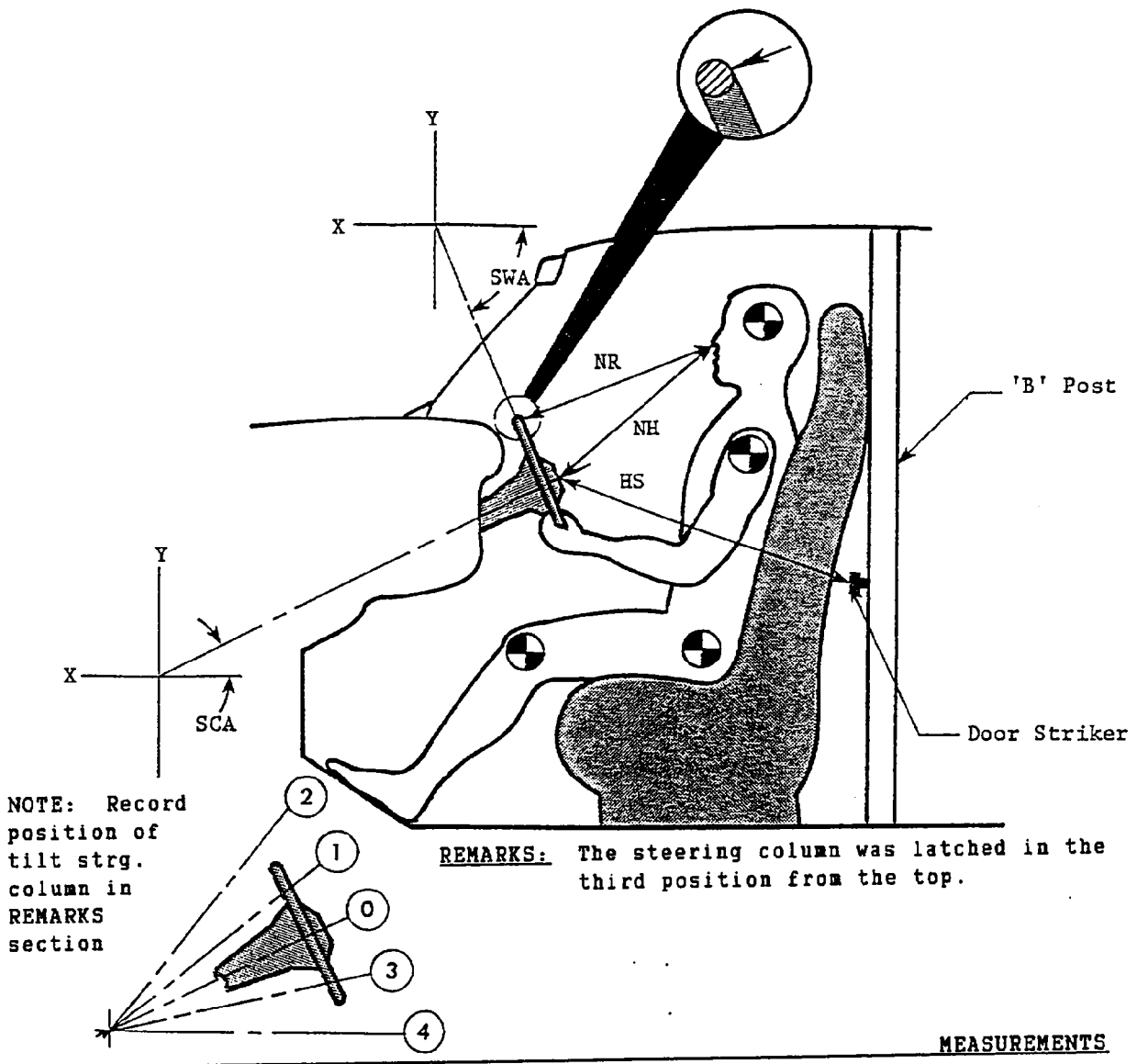
Knee outer clevis to outer clevis spacing:  
 Driver = 10.6  
 Knee outer bolt head to outer bolt head spacing:  
 Passenger = 11.8

- |                                |                          |
|--------------------------------|--------------------------|
| HH = Head to Windshield Header | HR = Head to Side Roof.  |
| HW = Head to Windshield        | HS = Head to Side Window |
| CD = Chest to Dash             | AD = Arm to Door         |
| CS = Chest to Steering Wheel   | HD = Hip to Door         |
| KD = Knee to Dash              | KK = Knee to Knee        |
| TA = Torso Angle               | AA = Ankle to Ankle      |
| SA = Seat Back Angle           | HA = Head to A-Pillar    |

Torso and seat back angles are relative to vertical.

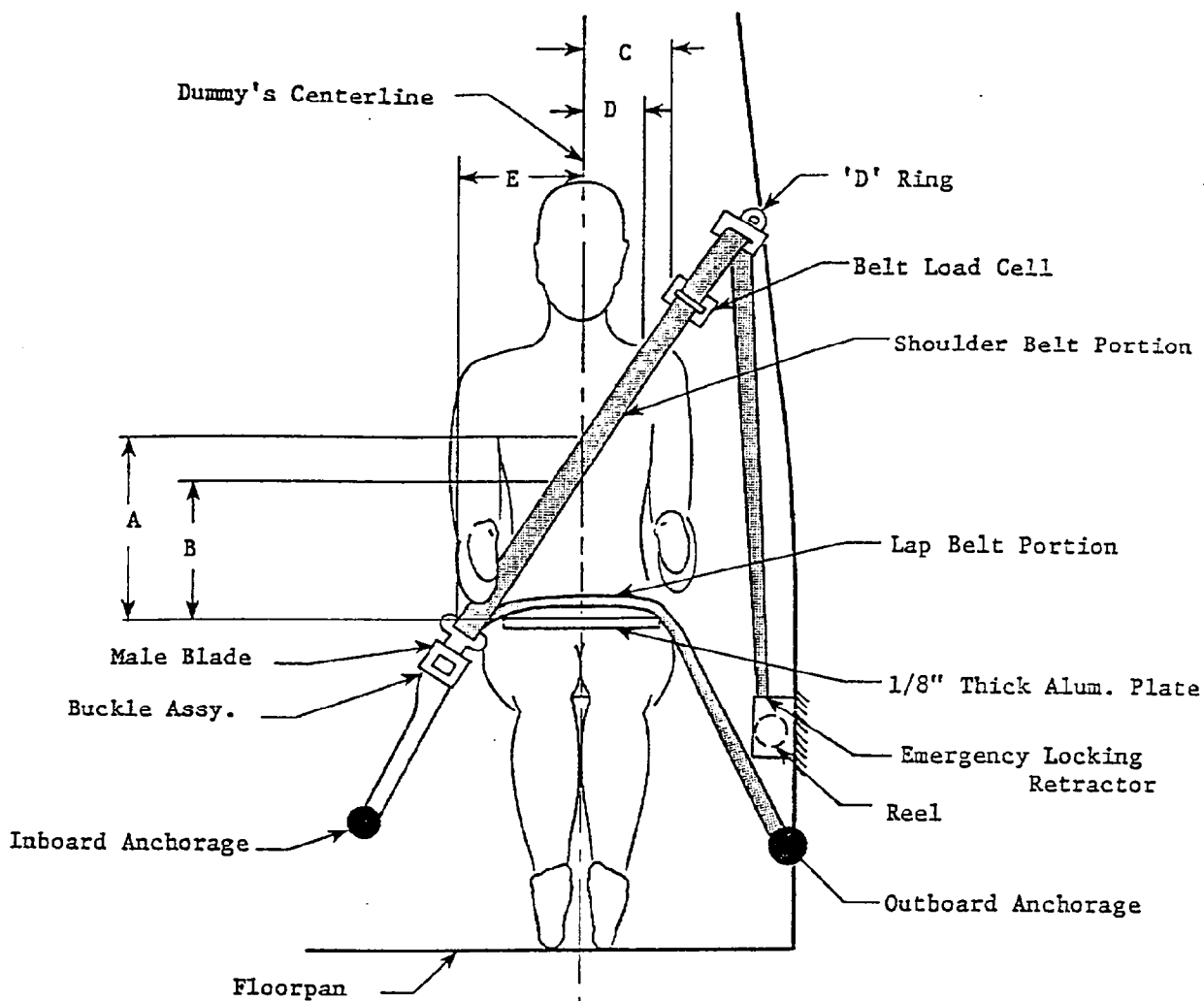
ALL DISTANCE MEASUREMENTS ARE IN INCHES.

**FIGURE 8 DRIVER DUMMY TO STEERING COLUMN/WHEEL ASSY. REFERENCE DIMENSIONS**



NR	- Distance from tip of dummy's nose to top rear surface of steering wheel rim. (in.)	12.8
NH	- Distance from tip of dummy's nose to center of steering column hub. (in.)	14.4
HS	- Distance from center of steering column hub to the forward surface of the door lock striker pin. (in.)	21.4
SCA	- Angle of steering column relative to the horizontal X axis	19°
SWA	- Angle of steering wheel relative to the horizontal X axis	71°

**FIGURE 9 SEAT BELT POSITIONING DATA**



	PASSENGER DUMMY
A - Top surface of alum. plate to belt upper edge (in)	15.0
B - Top surface of alum. plate to belt lower edge (in)	12.0
C - Dummy centerline to outer edge of belt at chest flesh top (in)	4.3
D - Dummy centerline to inner edge of belt at chest flesh top (in)	2.1
E - Dummy centerline to intersection of upper torso belt and lap belt (in)	11.5

TABLE 7 FMVSS 208 COMFORT AND CONVENIENCE DATA

VEHICLE VIN: 1B3XM56PXXW326359 NHTSA NO: CK0304  
MAKE: Dodge MODEL: Diplomat  
VEHICLE BUILD DATE: 12/88 VEHICLE TYPE: 4-door sedan  
FRONT OUTBOARD SEATING POSITIONS SEAT BELT TYPE:  
(check one):      Automatic belts  
  X   Type 2 lap/shoulder belts  
     Other

CONVENIENCE HOOKS:

DEVICE AUTOMATICALLY RELEASES WHEN IGNITION IS TURNED TO "ON" OR "START"  
AND (check one):

     Vehicle's drivetrain is engaged  
     Vehicle's parking brake is in the released mode  
  X   Not applicable, vehicle's restraint system does not  
include convenience hooks

WEBBING TENSION - RELIEVING DEVICE:

DO OUTBOARD SEATING POSITION BELTS HAVE TENSION-RELIEVING DEVICES?  
  Yes  

MAXIMUM SLACK RECOMMENDED IN OWNER'S MANUAL:   1.0   INCH.

DOES OWNER'S MANUAL WARN THAT INTRODUCING SLACK BEYOND THE AMOUNT  
SPECIFIED CAN SIGNIFICANTLY REDUCE THE EFFECTIVENESS OF THE SHOULDER  
BELT?   Yes  

IF NO, EXPLAIN:

AUTOMATIC BELTS: IS TENSION-RELIEVING DEVICE CANCELLED EACH TIME THE  
ADJACENT DOOR IS OPENED?   NA  

MANUAL BELTS: THE TENSION-RELIEVING DEVICE IS CANCELLED WHEN  
(check one):      The adjacent door is opened  
  X   The latchplate is released from the buckle

OPEN-BODY VEHICLE: DOES THE MANUAL MEANS TO CANCEL THE  
TENSION-RELIEVING DEVICE OPERATE PROPERLY?   NA  

IF NO, EXPLAIN:

TABLE 7 FMVSS 208 COMFORT AND CONVENIENCE DATA CONTINUED

VEHICLE VIN: 1B3XM56PXXW326359 NHTSA NO: CK0304

MAKE: Dodge MODEL: Diplomat

VEHICLE BUILD DATE: 12/88 VEHICLE TYPE: 4-door sedan

FRONT OUTBOARD SEATING POSITIONS SEAT BELT TYPE:

(check one):  Automatic belts  
 Type 2 lap/shoulder belts  
 Other

BELT CONTACT FORCE: NA, VEHICLE'S RESTRAINT SYSTEM INCLUDED A BELT TENSION-RELIEVING DEVICE.

LATCHPLATE ACCESS:

ARE SEATBELT LATCHPLATES WITHIN REACH ENVELOPE? Yes

DOES CLEARANCE TEST BLOCK MOVE UNHINDERED TO LATCHPLATE OR BUCKLE?

Yes

RETRACTION:

SEATBELT AUTOMATICALLY RETRACTS WHEN

(check one):  Adjacent vehicle door is open and seatbelt latchplate is released

Seatbelt latchplate is released

ARE THE STOWED WEBBING AND HARDWARE PINCHED WHEN THE DOOR IS CLOSED?

No

OPEN-BODY VEHICLE: DOES BELT SYSTEM FULLY RETRACT WHEN THE TENSION-RELIEVING DEVICE IS MANUALLY DEACTIVATED? NA

TABLE 7 FMVSS 208 COMFORT AND CONVENIENCE DATA CONTINUED

VEHICLE VIN: 1B3XM56PXXW326359 NHTSA NO: CK0304

MAKE: Dodge MODEL: Diplomat

VEHICLE BUILD DATE: 12/88 VEHICLE TYPE: 4-door sedan

FRONT OUTBOARD SEATING POSITIONS SEAT BELT TYPE:

(check one):  Automatic belts  
 Type 2 lap/shoulder belts  
 Other

ACCESSIBILITY:

IS SEAT CUSHION REMOVABLE SO THE SEATBACK SERVES A FUNCTION OTHER THAN SEATING? No

IS SEAT REMOVABLE? No

IS SEAT MOVABLE SO THE SPACE CAN BE USED FOR A SECONDARY FUNCTION?  
No

IF WEBBING IS DESIGNED TO PASS THRU THE SEAT CUSHION OR BETWEEN THE CUSHION AND SEAT BACK ARE ONE OF THE FOLLOWING PARTS NORMALLY ON TOP OF OR ABOVE THE SEAT CUSHION: LATCHPLATE, BUCKLE, WEBBING? NA

ARE THE REMAINING TWO PARTS ACCESSIBLE UNDER NORMAL CONDITIONS?  
NA

DO THE LATCHPLATE AND BUCKLE PASS THRU THE GUIDES PROVIDED AND FALL BEHIND THE SEAT WHEN THE BELT IS COMPLETELY RETRACTED (OR UNATTACHED IF NONRETRACTABLE); THE SEAT IS MOVED TO ANY POSITION; AND THE SEATBACK, IF FOLDABLE, IS FOLDED FORWARD AS FAR AS POSSIBLE AND THEN MOVED BACKWARD INTO POSITION? No

IS THE INBOARD RECEPTACLE END ACCESSIBLE WITH THE CENTER ARM REST IN ANY POSITION TO WHICH IT CAN BE ADJUSTED WITHOUT MOVING THE ARMREST FOR ACCESS. Yes

TABLE 7 FMVSS 208 COMFORT AND CONVENIENCE DATA CONTINUED

VEHICLE VIN: 1B3XM56PXXW326359 NHTSA NO: CK0304

MAKE: Dodge MODEL: Diplomat

VEHICLE BUILD DATE: 12/88 VEHICLE TYPE: 4-door sedan

FRONT OUTBOARD SEATING POSITIONS SEAT BELT TYPE:

(check one):  Automatic belts  
 Type 2 lap/shoulder belts  
 Other

LATCH MECHANISM:

ARE LATCH MECHANISM COMPONENTS ACCESSIBLE TO A SEATED OCCUPANT IN THE  
STOWED AND OPERATIONAL POSITIONS? Yes

DOES LATCH MECHANISM RELEASE BOTH TORSO AND LAP BELTS SIMULTANEOUSLY?  
Yes

DOES LATCH MECHANISM RELEASE AT A SINGLE POINT BY A PUSH BUTTON ACTION?  
Yes

TABLE 8 FMVSS NO. 208 - SEAT BELT WARNING SYSTEM DATA

WITH OCCUPANT IN DRIVER'S POSITION AND 3-POINT UNIBELT IN STOWED POSITION  
AND IGNITION SWITCH PLACED IN "START/ON" POSITION:

Duration of audible warning signal = 7 sec.

Duration of reminder light operation = 7 sec.

WITH OCCUPANT IN DRIVER'S POSITION AND 3-POINT UNIBELT IN USE AND THE  
IGNITION SWITCH PLACED IN "START/ON" POSITION:

Duration of audible warning signal = 0 sec.

(NOTE: audible warning should not operate)

Duration of reminder light operation = 7 sec.

Wording of visual warning:

Fasten Seat Belt \_\_\_\_\_

Fasten Belt \_\_\_\_\_

Symbol 101-80 X

TABLE 9 FMVSS NO. 208 - LABELING AND DRIVER'S MANUAL DATA

DESCRIBE LOCATION OF LABEL WHICH DESCRIBES MANUFACTURER'S MAINTENANCE OR REPLACEMENT SCHEDULE FOR CRASH-DEPLOYED OCCUPANT PROTECTON SYSTEM:

THE LABEL IS LOCATED ON THE INSIDE EDGE OF THE GLOVE BOX DOOR.

THE MANUFACTURER'S RECOMMENDED SCHEDULE IS TO: (check one)

replace \_\_\_ or repair \_\_\_ or inspect X this system

a. by \_\_\_ month, \_\_\_ year

b. by 30,000 miles

c. or after a time interval of \_\_\_ months or 3 years.

WERE APPROPRIATE INSTRUCTIONS CONCERNING MAINTENANCE AND/OR REPLACEMENT OF THIS SYSTEM PROVIDED? Yes, in owner's manual

WAS A DESCRIPTION OF THE FUNCTIONAL OPERATION OF THE SYSTEM PROVIDED?  
Yes, in owner's manual

IS THERE A REFERENCE TO THE INSTRUCTIONS AND DESCRIPTION OF THE SYSTEM ON THE LABEL? Yes

WAS AN OWNER'S MANUAL PROVIDED? Yes

DID THE OWNER'S MANUAL CONTAIN APPROPRIATE INFORMATION CONCERNING MAINTENANCE AND/OR REPLACEMENT AND A DESCRIPTION OF THE FUNCTIONAL OPERATION OF THE SYSTEMS? Yes

TABLE 10 FMVSS NO. 208 - READINESS INDICATOR DATA

AN OCCUPANT RESTRAINT SYSTEM THAT DEPLOYS IN THE EVENT OF A CRASH SHALL HAVE A MONITORING SYSTEM WITH A READINESS INDICATOR. A TOTALLY MECHANICAL SYSTEM IS EXEMPT FROM THIS REQUIREMENT.

Is the system totally mechanical? No

IF NO:

Describe the location of the readiness indicator:

The readiness indicator is a light stating "AIRBAG" in the lower left light cluster on the instrument panel.

Is the readiness indicator clearly visible to the driver? Yes

Is a list of the elements in the occupant restraint system, being monitored by the readiness indicator, provided? Yes

TABLE 11 SUMMARY OF FMVSS 301 DATA

PRE-IMPACT DATA

MAKE/MODEL: Dodge/Diplomat

BODY STYLE: 4-door sedan

MODEL YEAR: 1989

NHTSA NO.: CK0304

COLOR: brown

DATA FROM CERTIFICATION LABEL

VEHICLE MANUFACTURER: Chrysler Corporation

DATE OF MANUFACTURE: 12/88

VIN: 1B3XM56PXXW326359

GVWR: 4976 LBS., GAWR: FRONT 2521 LBS., REAR 2505 LBS.

POST-IMPACT DATA

TYPE OF TEST: Frontal Barrier Impact

DATE OF TEST: 3/13/89

TIME: 1420

TEMP: 72° F

REQUIRED IMPACT VELOCITY RANGE: 28.9 MPH TO 29.9 MPH

IMPACT VELOCITY: PRIMARY = 29.5 MPH, SECONDARY = 29.5 MPH

TEST WEIGHT = 4307 LBS., STATIC CRUSH MAX. = 22.5 IN., REBOUND = 10.0 IN.

FUEL SYSTEM DATA

TEST FLUID TYPE: PURPLE SOLVENT #2; SPEC. GRAVITY: 0.764

KINEMATIC VISCOSITY: 0.99 CENTISTOKES

"USEABLE" CAPACITY\*: 18.0 GALLONS (FURNISHED BY COTR)

TEST VOLUME: 16.8 GALLONS (92-94% OF USEABLE)

FUEL SYSTEM CAPACITY (DATA FROM OWNERS MANUAL): 18.0 GALLONS

DETAILS OF FUEL SYSTEM: The fuel tank is located behind the rear axle.

The fuel filler neck is located on the left side. The fuel lines run

along the right sill to the front.

ELECTRIC FUEL PUMP: No

FUEL INJECTON: No

DOES ELECTRIC FUEL PUMP OPERATE WITH IGNITION SWITCH "ON" AND THE ENGINE NOT OPERATING? No

\*WITH ENTIRE FUEL SYSTEM FILLED.

FIGURE 10 FMVSS NO. 212, "WINDSHIELD MOUNTING", DATA SHEET

Details of windshield mounting such as retention method, trim type, etc.:

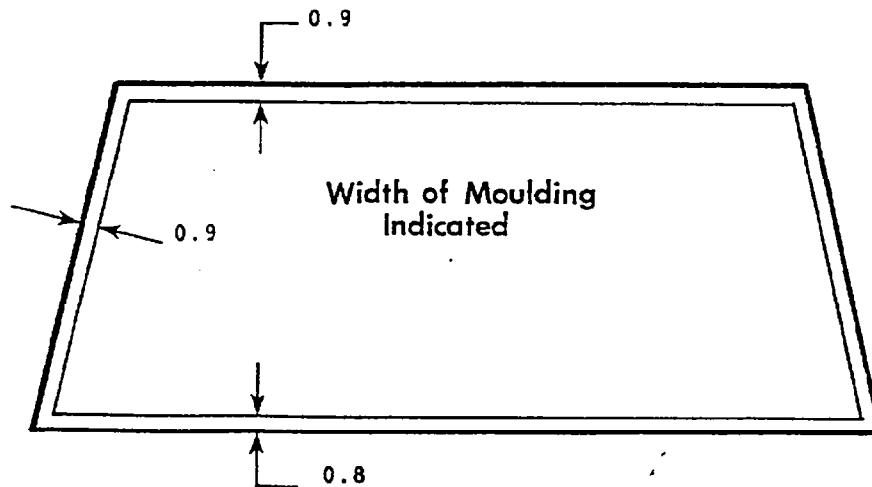
FMVSS 212 REQUIREMENTS: The post-test periphery retention amount must be at least 75% of the pre-test periphery measurement for vehicles NOT equipped with automatic restraints, and 50% for each side of windshield for vehicles equipped with automatic restraint systems for front occupants.

FMVSS 212 TEST DATA:

WINDSHIELD PERIPHERY

	PRE-TEST (in)	POST-TEST (in)	PERCENT RETENTION
RIGHT SIDE	80.0	80.0	100%
LEFT SIDE	80.0	80.0	100%
TOTAL	160.0	160.0	100%

AREA OF RETENTION FAILURE:



FAILURE DETAILS: None

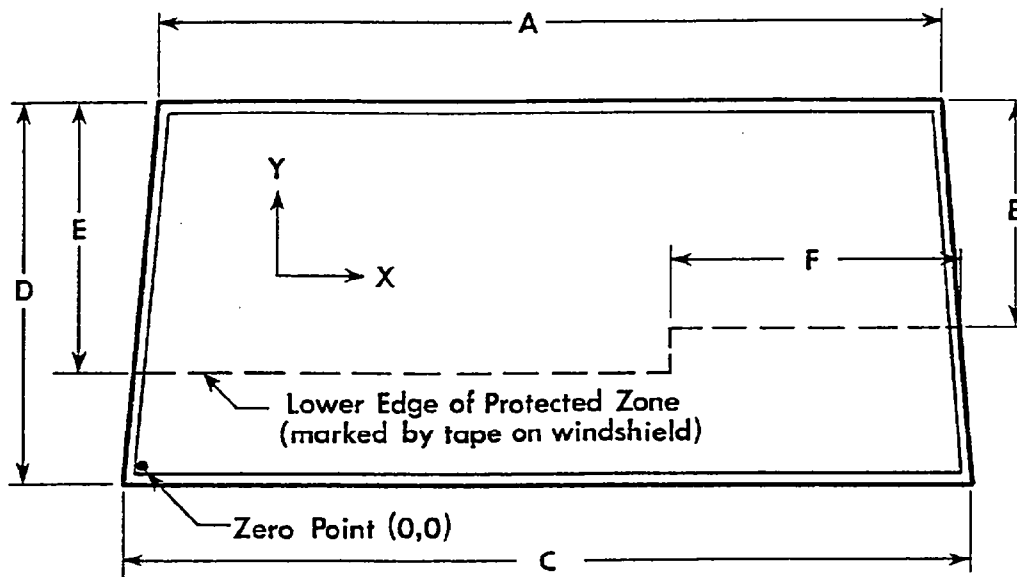
Windshield Temperature: 71° F

FIGURE 11 FMVSS NO. 219. "WINDSHIELD ZONE INTRUSION". DATA SHEET

PROTECTED ZONE LOWER EDGE REQUIREMENT:

The lower edge of the protected zone is determined by placing a 6.5" dia. rigid sphere weighing 15 pounds in a position such that it simultaneously contacts the inner surface of the windshield and the top surface of the instrument panel including padding. Draw the locus of points on the inner surface of the windshield contactable 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, and then draw a line on the inner surface of the windshield below and 1/2" from the locus line. The LOWER EDGE OF THE PROTECTED ZONE is the longitudinal projection onto the outer surface of the windshield of this line.

FMVSS 219 TEST DATA:



**FRONT VIEW**

A = <u>51.5</u>	C = <u>17.2</u>	E = <u>65.5</u>
B = <u>15.2</u>	D = <u>25.5</u>	F = <u>30.0</u>

<u>DETAILS OF WINDSHIELD GLASS PENETRATION GREATER THAN 1/4":</u> (Show location of penetration on above sketch)	<u>COORDINATES</u> <u>X Y</u>
---	----------------------------------

None

1.

2.

3.

ALL MEASUREMENTS ARE IN INCHES.

4.

TABLE 12 "FUEL SYSTEM INTEGRITY" POST-IMPACT

TEST DATA, FMVSS NO. 301

TEST VEHICLE NHTSA NO.: CK0304; TEST DATE: 3/13/89

VEH. MFR./MAKE/MODEL: Chrysler Corporation/Dodge/Diplomat

Test vehicle fuel tank filled to 92 to 94% of manufacturer's "useable" capacity and with electric fuel pump operating (if it will operate without engine operation). Part 572 test dummies located at each front designated seating position.

TEST VEHICLE IMPACT TYPE:

- Frontal (30 mph)
- Oblique (30 mph) with  barrier face  
first contacting  (driver/pass.) side.
- Rear Moving Barrier (30 mph)
- Lateral Moving Barrier (20 mph)

FUEL SPILLAGE MEASUREMENT:

	<u>ACTUAL</u>	<u>MAX. ALLOW.</u>
1. From impact until vehicle motion ceases - - -	0	1 oz.
2. For 5 min. period after veh. motion ceases - -	0	5 oz.
3. For next 25 minutes - - - - -	0	1 oz./1 min.

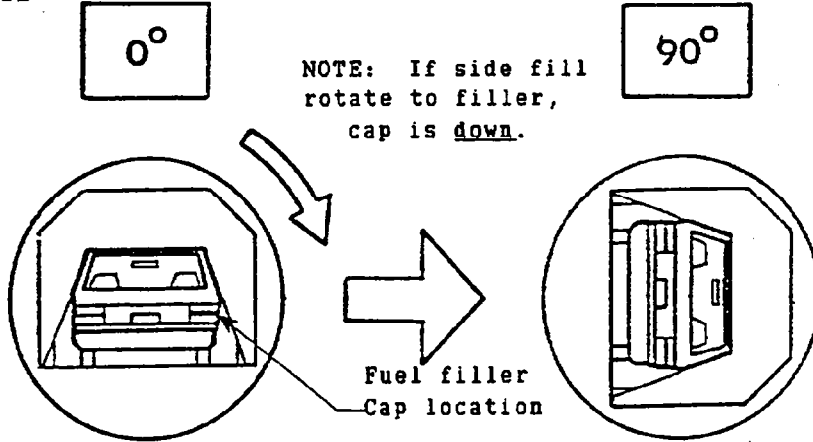
SOLVENT SPILLAGE DETAILS:

None

**FIGURE 12 FMVSS NO. 301 STATIC ROLLOVER DATA SHEET**

NHTSA NO.: CK0304

TEST PHASE



STATIC ROLLOVER MACHINE ROTATION TIME INFORMATION: (Spec. Range = 1-3 min.)

Time req. for machine to rotate 90° =  2  minutes,  00  seconds  
 FMVSS 301 position hold time =  5  minutes,  00  seconds  
 TOTAL - - - - - =  7  minutes,  00  seconds  
 Next whole minute interval - - - - =  7  minutes

FMVSS 301 REQUIREMENTS

	First 5 minutes FROM ONSET OF ROTATION	6th Minute	7th Minute
Maximum allowable solvent spillage - -	<u> 5 oz. </u>	<u> 1 oz. </u>	<u> 1 oz. </u>
0 to 90° (filler cap down) - - - - -	<u> 0 oz. </u>	<u> 0 oz. </u>	<u> 0 oz. </u>

SOLVENT SPILLAGE LOCATION(S)

None

---



---

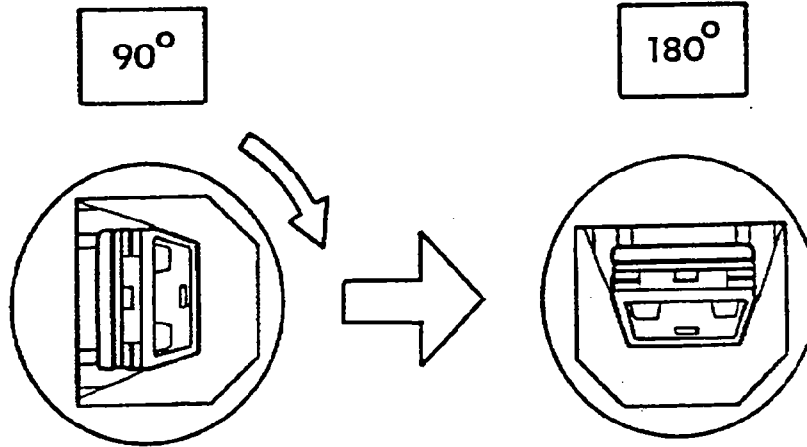


---

FIGURE 12 FMVSS NO. 301 STATIC ROLLOVER DATA SHEET CONT'D

NHTSA NO.: CK0304

TEST PHASE



STATIC ROLLOVER MACHINE ROTATION TIME INFORMATION: (Spec. Range = 1-3 min.)

Time req. for machine to rotate 90° =  2  minutes,  00  seconds

FMVSS 301 position hold time =  5  minutes,  00  seconds

TOTAL - - - - - =  7  minutes,  00  seconds

Next whole minute interval - - - - =  14  minutes

FMVSS 301 REQUIREMENTS

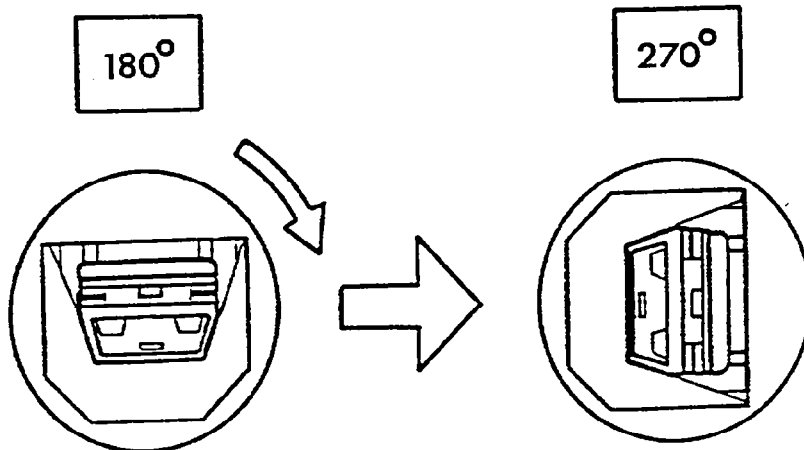
	First 5 minutes FROM ONSET OF ROTATION	6th Minute	7th Minute
Maximum allowable solvent spillage - -	<u> 5 oz. </u>	<u> 1 oz. </u>	<u> 1 oz. </u>
90° to 180° - - - - -	<u> 0 oz. </u>	<u> 0 oz. </u>	<u> 0 oz. </u>

SOLVENT SPILLAGE LOCATION(S)

None  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

FIGURE 12 FMVSS NO. 301 STATIC ROLLOVER DATA SHEET CONT'D

NHTSA NO.: CK0304  
TEST PHASE



STATIC ROLLOVER MACHINE ROTATION TIME INFORMATION: (Spec. Range = 1-3 min.)

Time req. for machine to rotate 90° =  2  minutes,  00  seconds  
 FMVSS 301 position hold time =  5  minutes,  00  seconds  
 TOTAL - - - - - =  7  minutes,  00  seconds  
 Next whole minute interval - - - - =  21  minutes

FMVSS 301 REQUIREMENTS

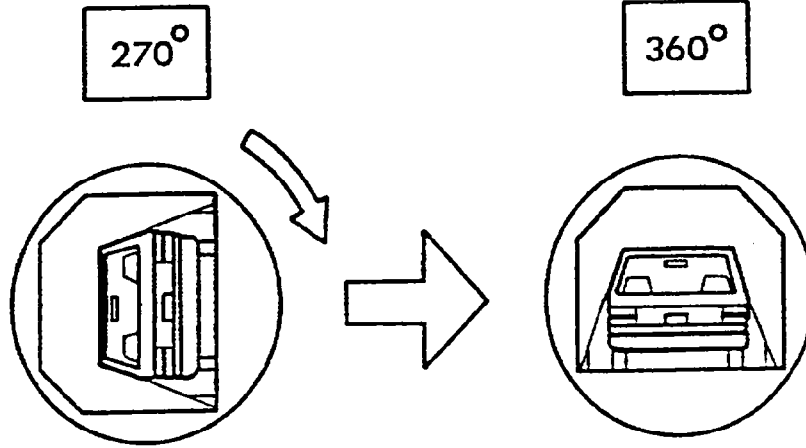
	First 5 minutes FROM ONSET OF ROTATION	6th Minute	7th Minute
Maximum allowable solvent spillage - -	<u> 5 oz. </u>	<u> 1 oz. </u>	<u> 1 oz. </u>
180° to 270° - - - - -	<u> 0 oz. </u>	<u> 0 oz. </u>	<u> 0 oz. </u>

SOLVENT SPILLAGE LOCATION(S)

None  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

FIGURE 12 FMVSS NO. 301 STATIC ROLLOVER DATA SHEET CONT'D

NHTSA NO.: CK0304  
TEST PHASE



STATIC ROLLOVER MACHINE ROTATION TIME INFORMATION: (Spec. Range = 1-3 min.)

Time req. for machine to rotate 90° =  2  minutes,  00  seconds  
 FMVSS 301 position hold time =  5  minutes,  00  seconds  
 TOTAL - - - - - =  7  minutes,  00  seconds  
 Next whole minute interval - - - - =  28  minutes

FMVSS 301 REQUIREMENTS

	First 5 minutes FROM ONSET OF ROTATION	6th Minute	7th Minute
Maximum allowable solvent spillage - -	<u> 5 oz. </u>	<u> 1 oz. </u>	<u> 1 oz. </u>
270° to 360° - - - - -	<u> 0 oz. </u>	<u> 0 oz. </u>	<u> 0 oz. </u>

SOLVENT SPILLAGE LOCATION(S)

None  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

SECTION 3.0

CAMERA INFORMATION

FIGURE 13 CAMERA POSITIONS

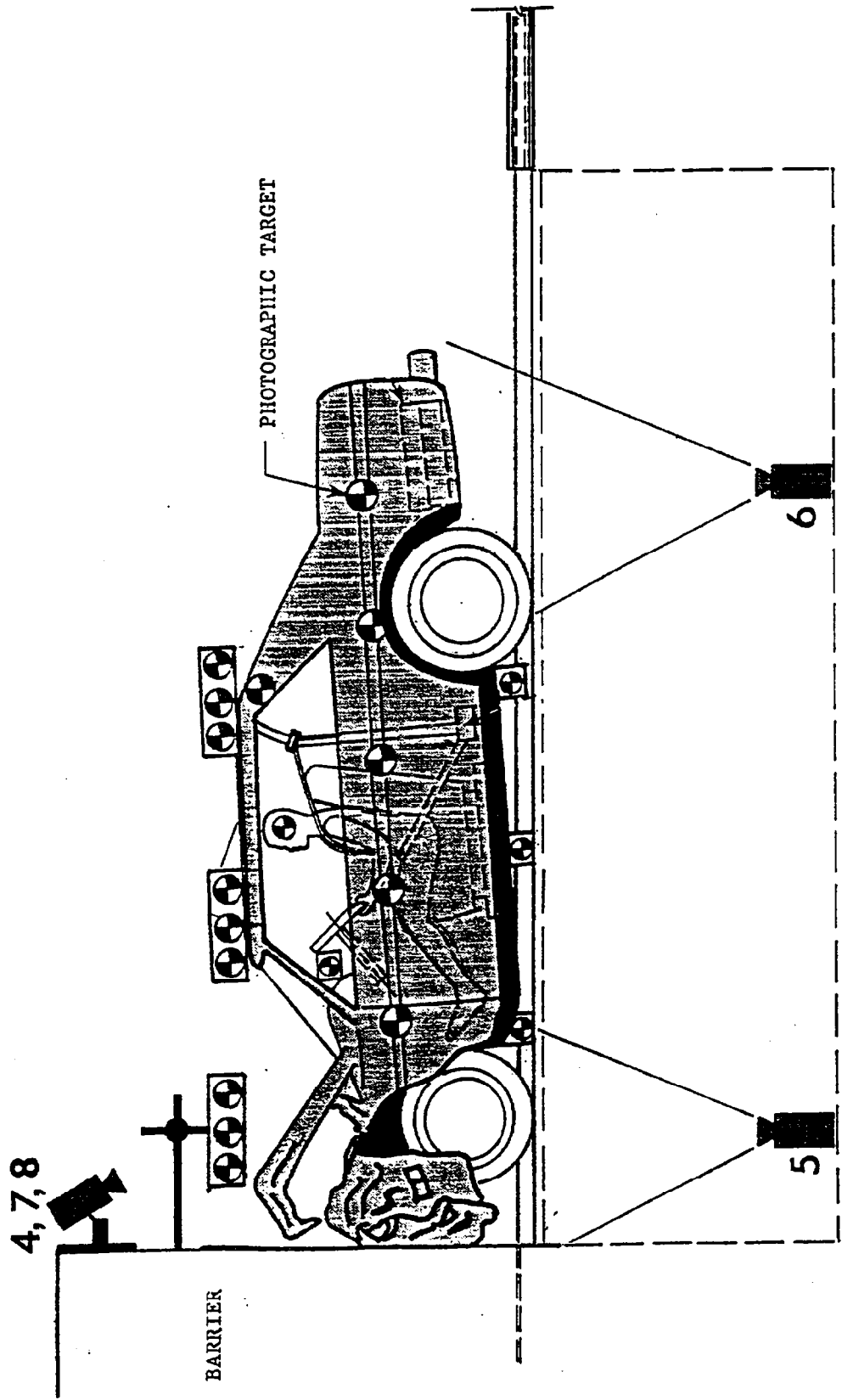


FIGURE 13 CAMERA POSITIONS CONTINUED

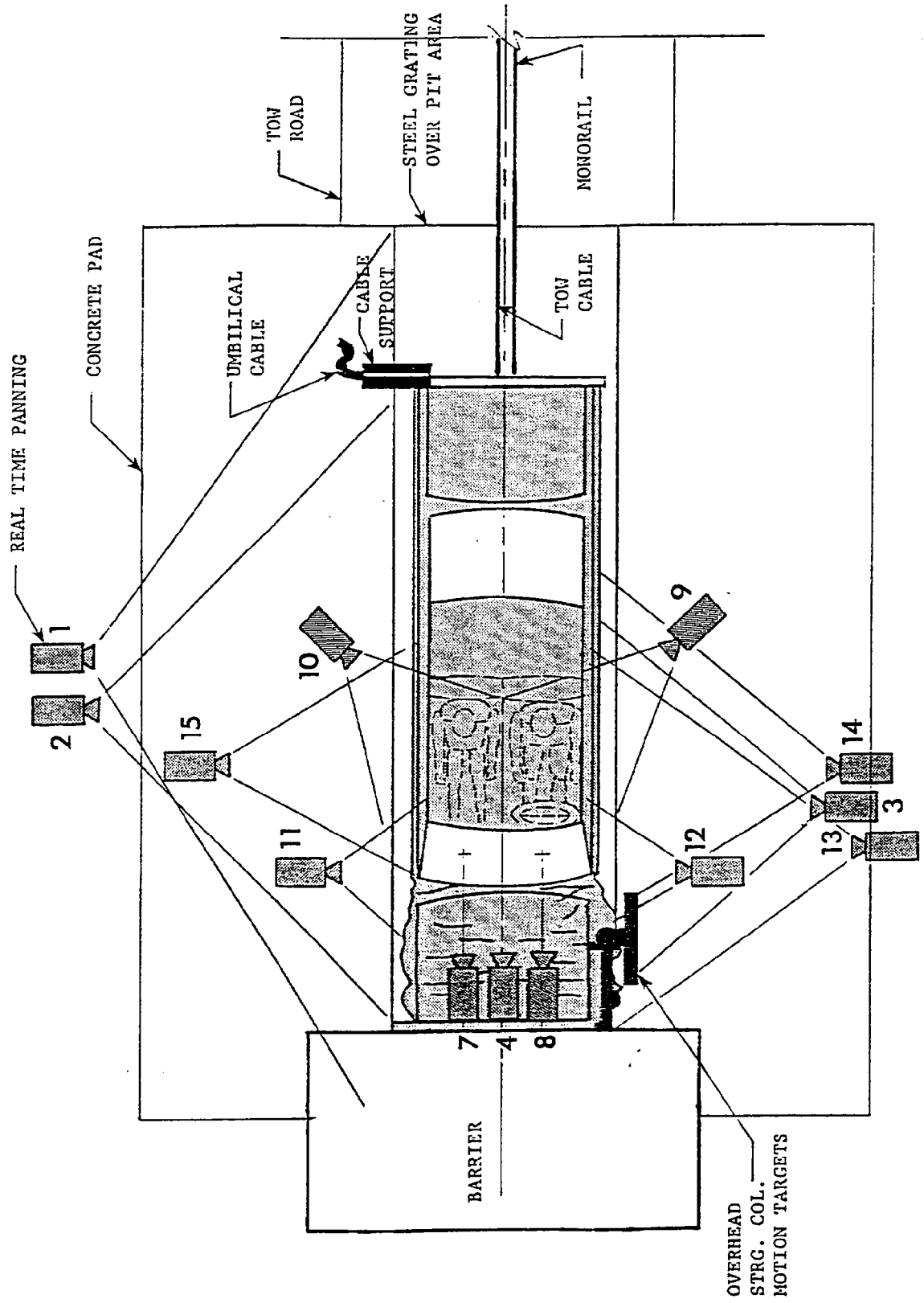


TABLE 13 HIGH SPEED CAMERA LOCATIONS

CAMERA NO.	VIEW	CAMERA POSITIONS (IN)*			ANGLE** (DEG)	FILM PLANE TO HEAD TARGET		SPEED (FPS)
		X	Y	Z		TO HEAD TARGET	LEN (MM)	
TEST NO.:	890313	VEHICLE: 1989 Dodge Diplomat 4-door sedan						
1	Real time panning	-142.0	-504.0	61.0	NA	NA	NA	24
2	Vehicle crush	-81.3	-266.4	37.1	-2	NA	NA	500
3	Dummy kinematics	-41.5	295.0	44.0	-4	240.0	25	495
4	Windshield damage	-6.0	0.0	89.0	-40	NA	8.5	498
5	Crush & fluid spillage	-50.5	0.0	-92.4	90	NA	13	1005
6	Fluid spillage	-99.3	0.0	-99.0	90	NA	13	998
7	Passenger kinematics	-4.5	-13.8	93.0	-50	NA	17	502
8	Driver kinematics	-6.8	14.5	93.0	-50	NA	17	493
9	Driver kinematics	-157.3	116.0	87.0	-27	107.0	25	500
10	Passenger kinematics	-152.1	-116.0	87.0	-26	101.0	25	495
11	Windshield intrusion	-38.1	-306.1	44.0	0	NA	50	498
12	Windshield intrusion	-53.0	309.4	42.3	0	NA	50	495
13	Column movement	-126.0	286.0	103.0	-14	NA	25	495
14	Column movement	-126.0	286.0	75.1	-9	NA	25	498
15	Passenger kinematics	-38.8	-293.0	45.3	-4	234.5	25	507

\* +X = Film plane forward of barrier face

+Y = Film plane to left of monorail centerline

+Z = Film plane above ground level

\*\* +Angle = Film plane angled upward from horizontal plane

APPENDIX A

PHOTOGRAPHS



Figure A-1. PRE-TEST FRONT VIEW



Figure A-2. POST-TEST FRONT VIEW

A-2

890313



Figure A-3. PRE-TEST LEFT SIDE VIEW

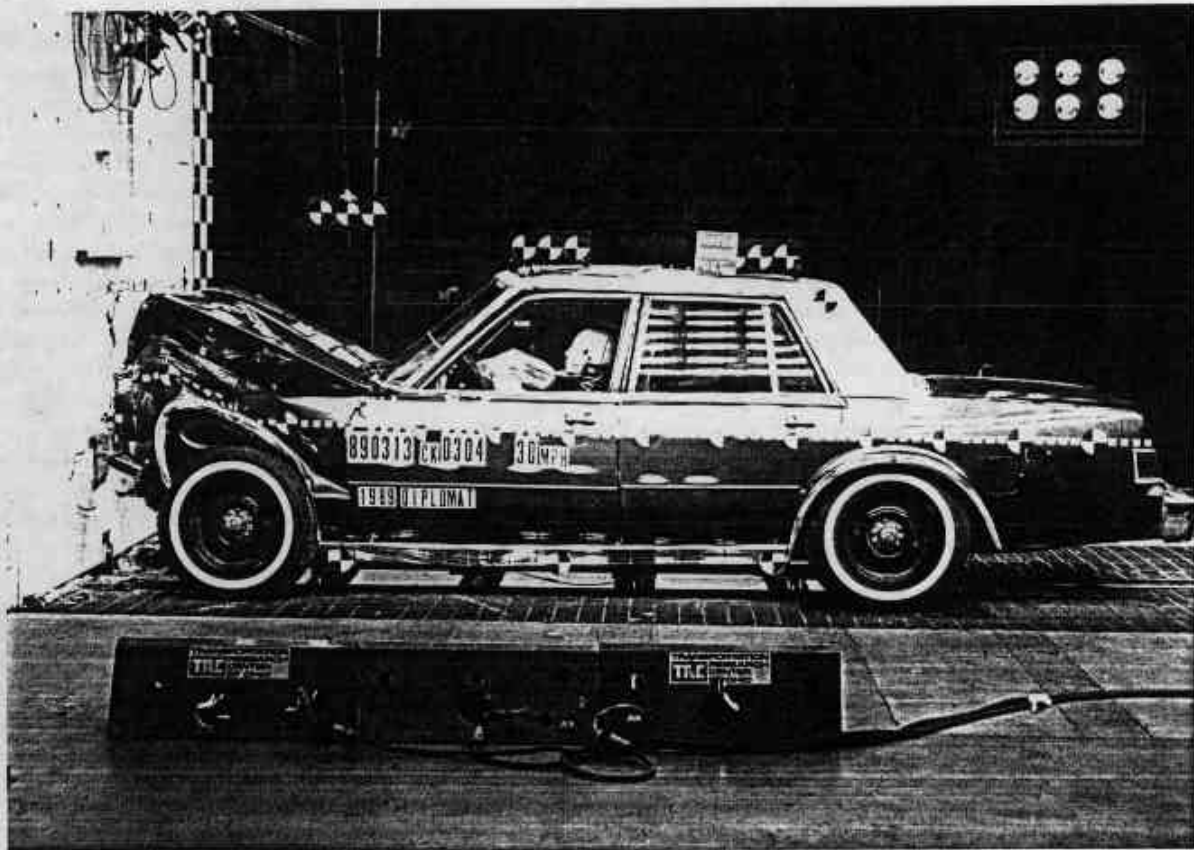


Figure A-4. POST-TEST LEFT SIDE VIEW  
A-3

890313



Figure A-5. PRE-TEST RIGHT SIDE VIEW

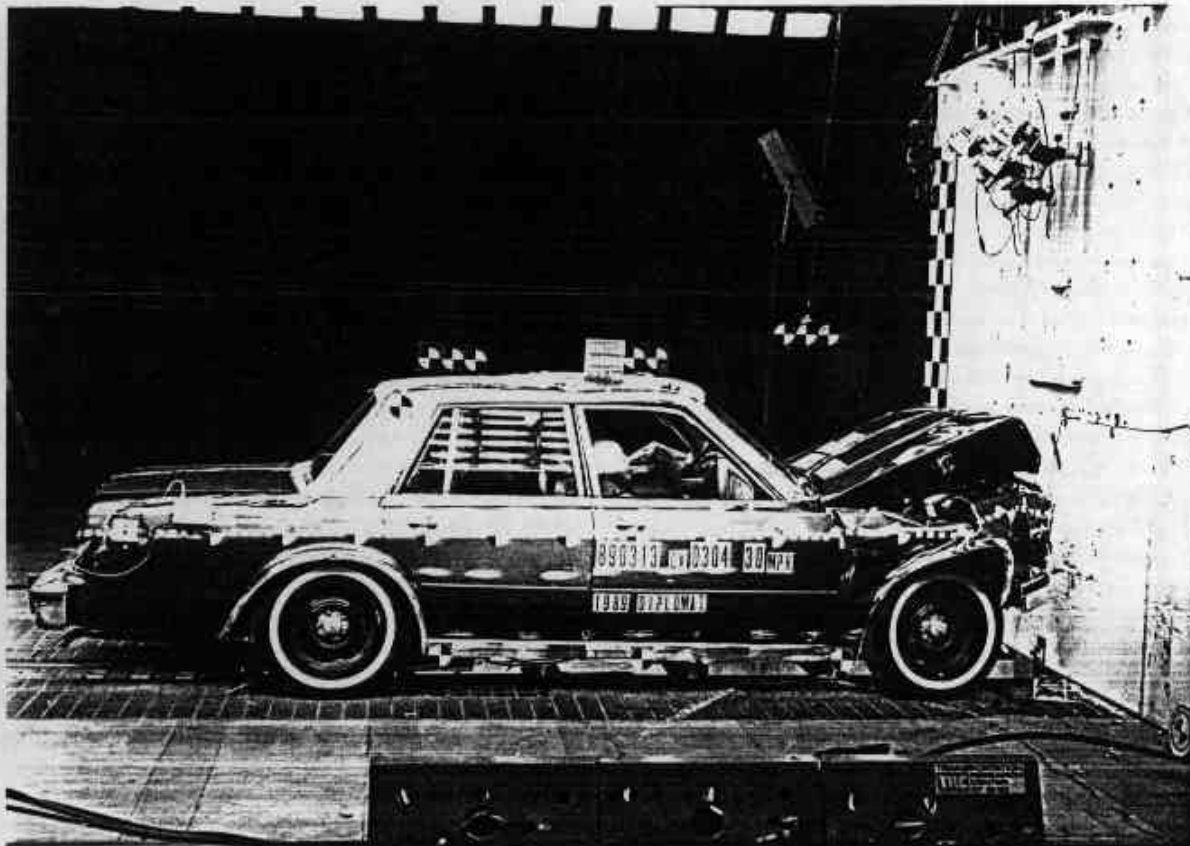


Figure A-6. POST-TEST RIGHT SIDE VIEW

A-4

890313



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

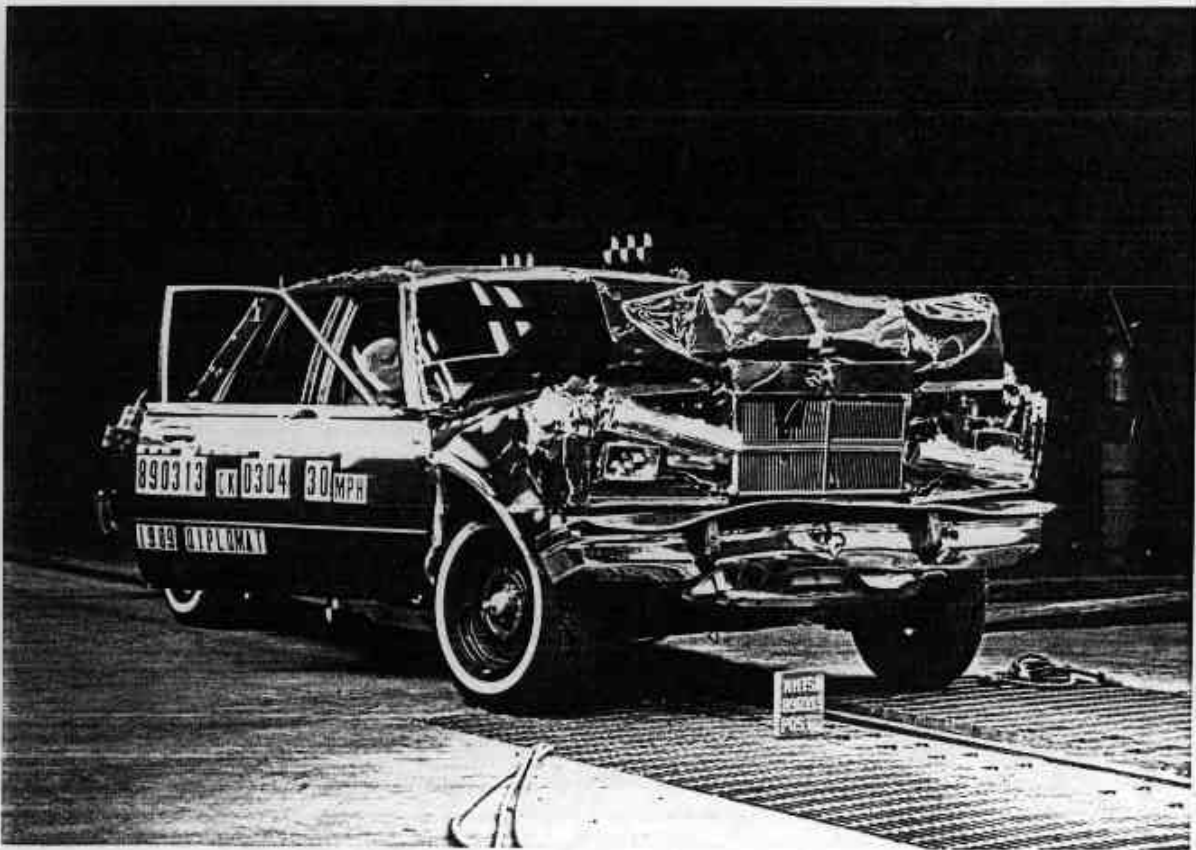


Figure A-8. POST-TEST RIGHT FRONT THREE-QUARTER VIEW  
A-5

890313



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



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

A-6

890313



Figure A-11. PRE-TEST REAR VIEW

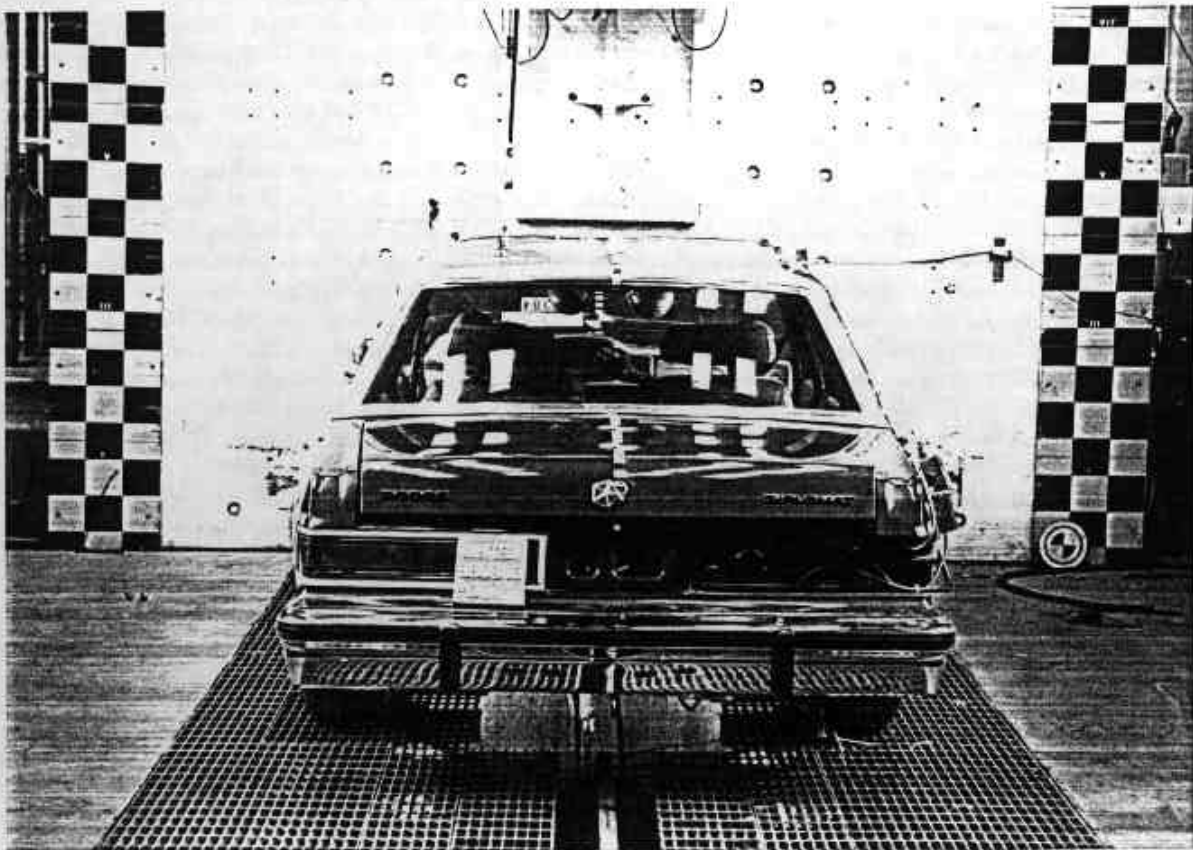


Figure A-12. POST-TEST REAR VIEW  
A-7

890313



Figure A-13. PRE-TEST WINDSHIELD VIEW



Figure A-14. POST-TEST WINDSHIELD VIEW

A-8

890313

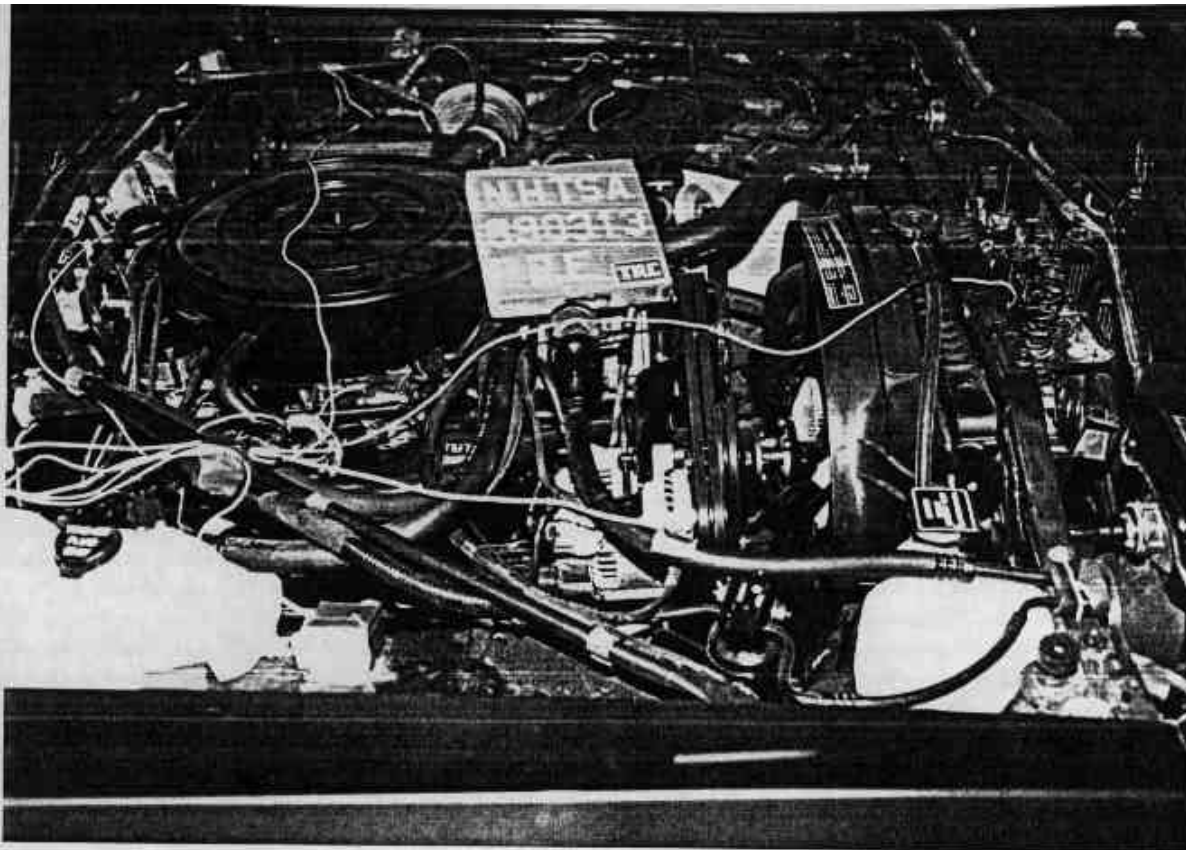


Figure A-15. PRE-TEST ENGINE COMPARTMENT VIEW

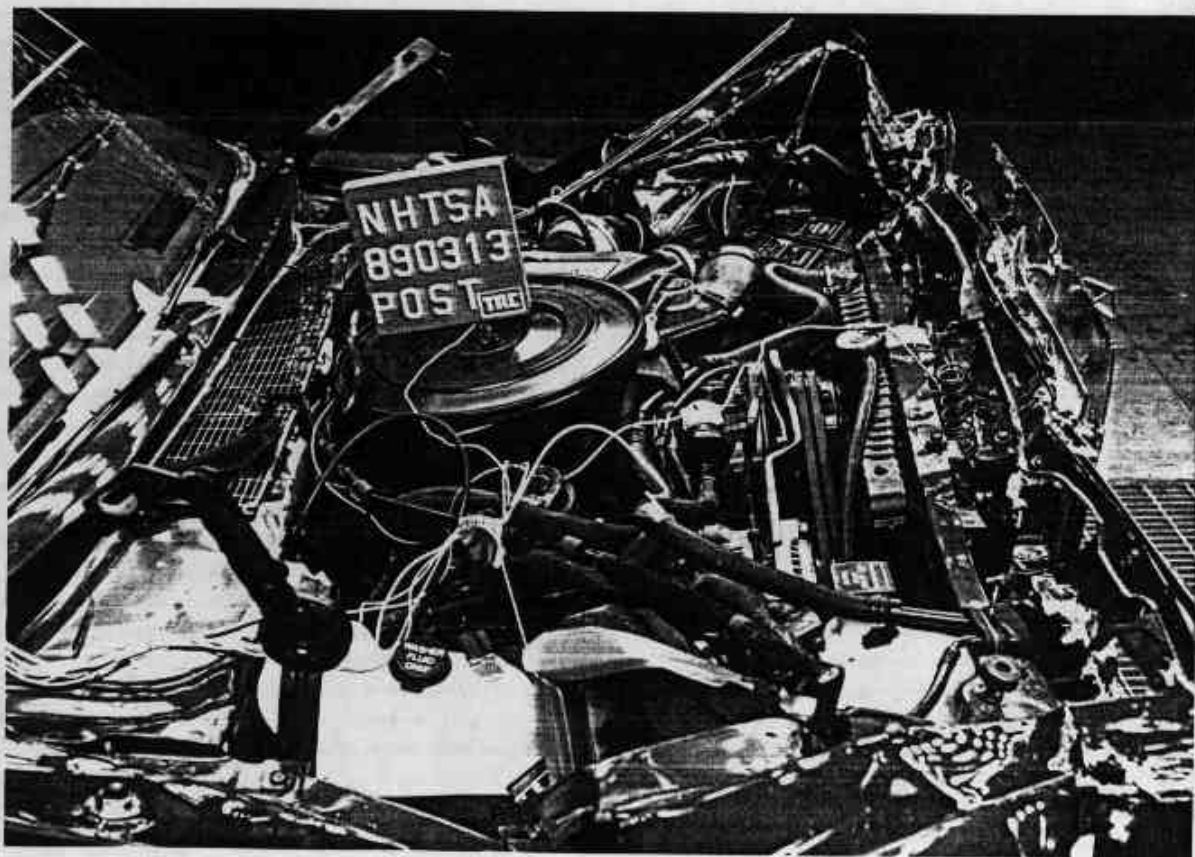


Figure A-16. POST-TEST ENGINE COMPARTMENT VIEW



Figure A-17. PRE-TEST FUEL FILLER CAP VIEW



Figure A-18. POST-TEST FUEL FILLER CAP VIEW

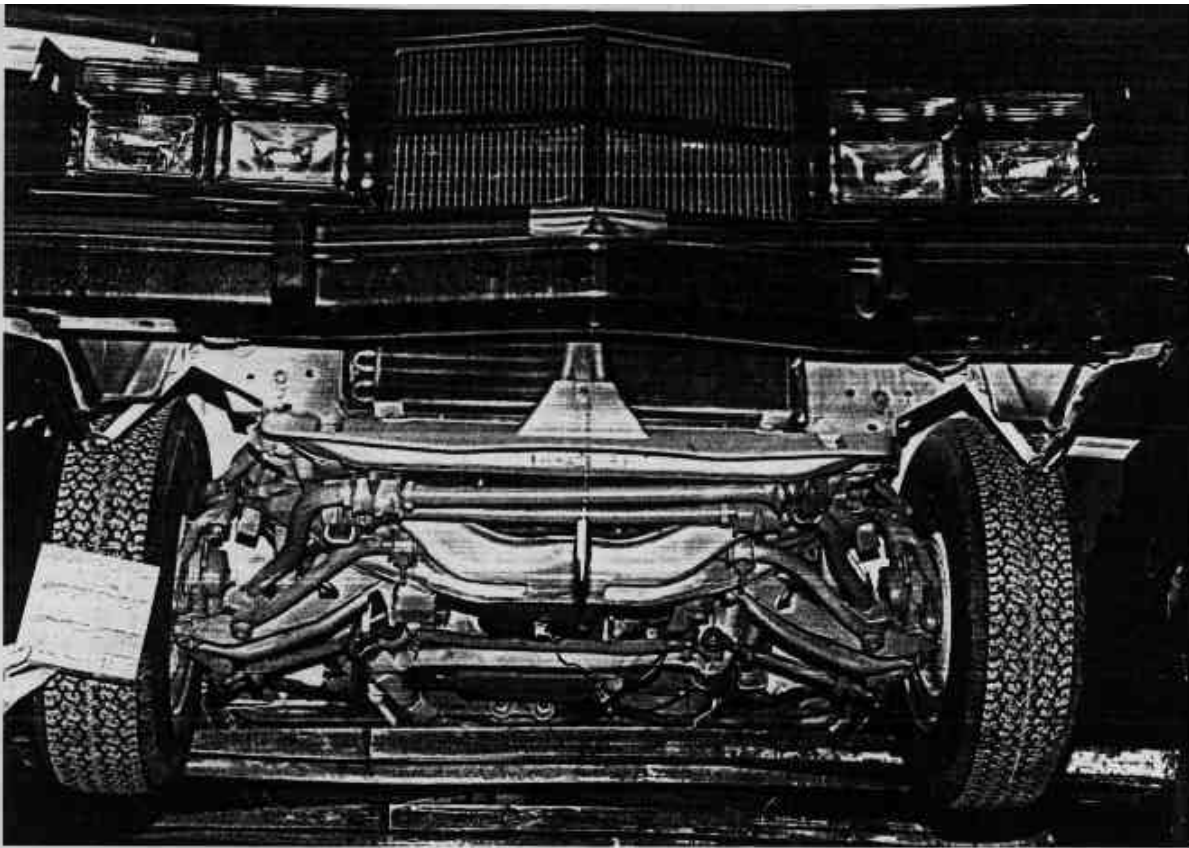


Figure A-19. PRE-TEST FRONT UNDERBODY VIEW

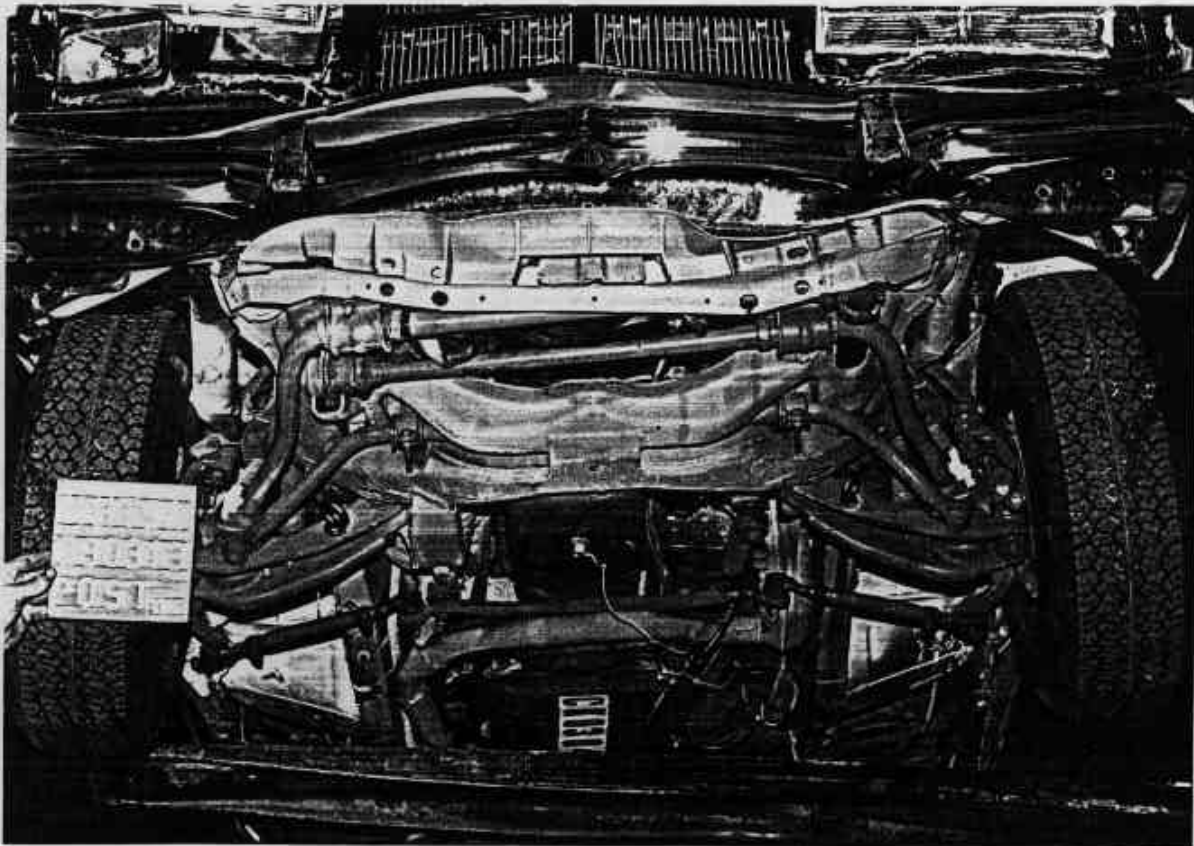


Figure A-20. POST-TEST FRONT UNDERBODY VIEW  
A-11

890313

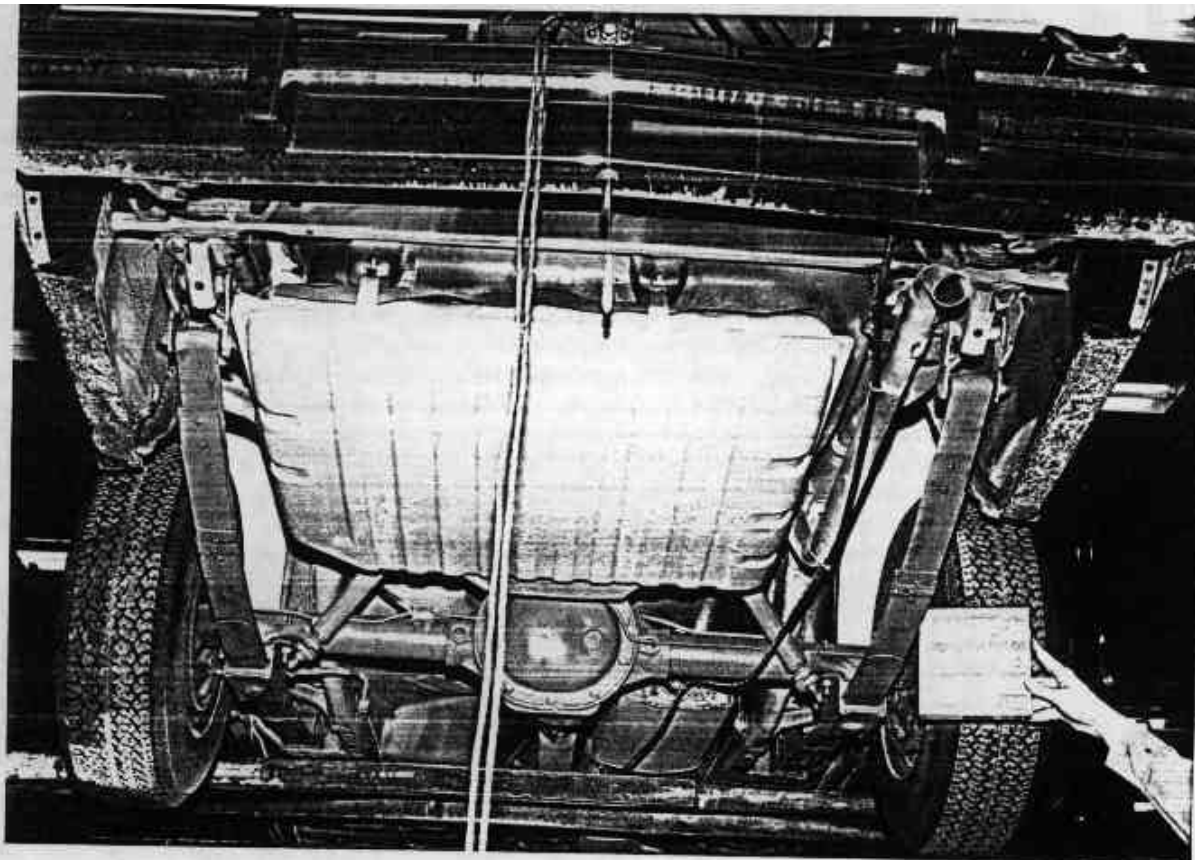


Figure A-21. PRE-TEST REAR UNDERBODY VIEW

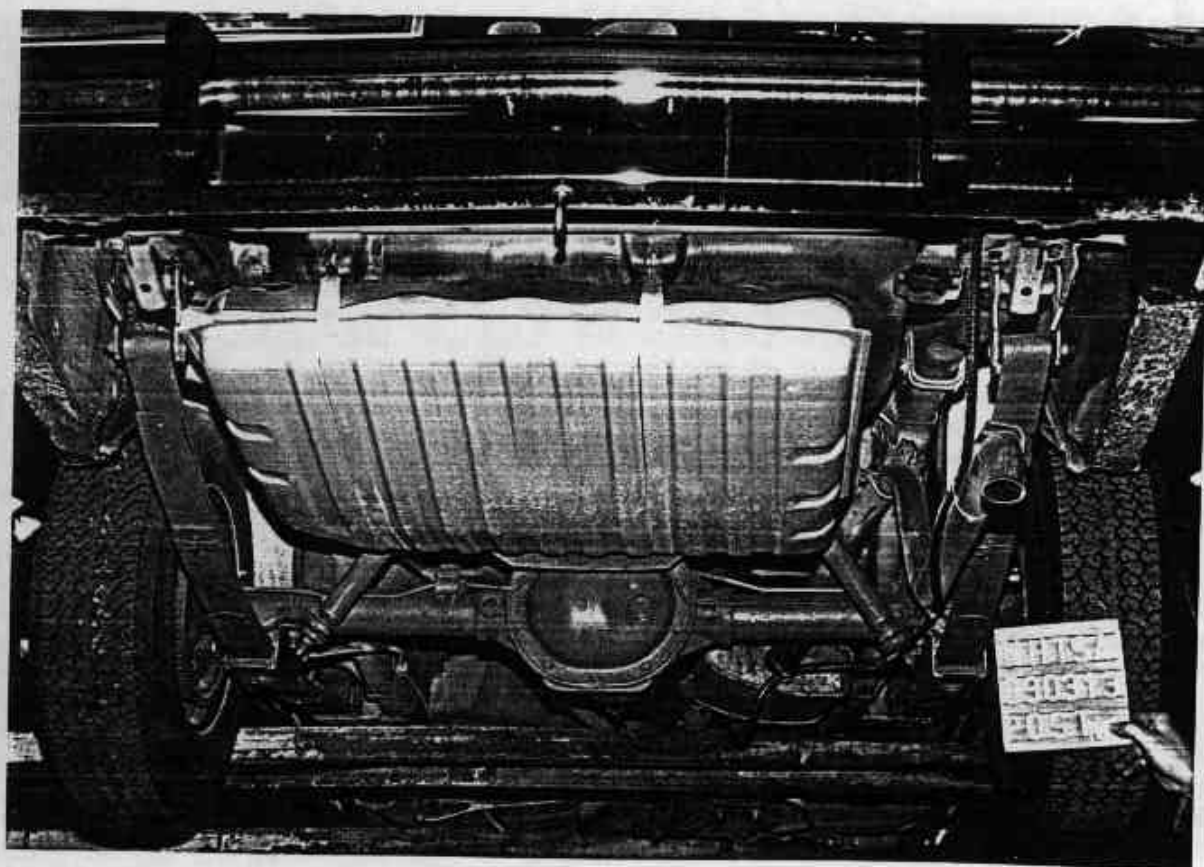


Figure A-22. POST-TEST REAR UNDERBODY VIEW  
A-12

890313



Figure A-23. PRE-TEST FUEL FILLER NECK VIEW

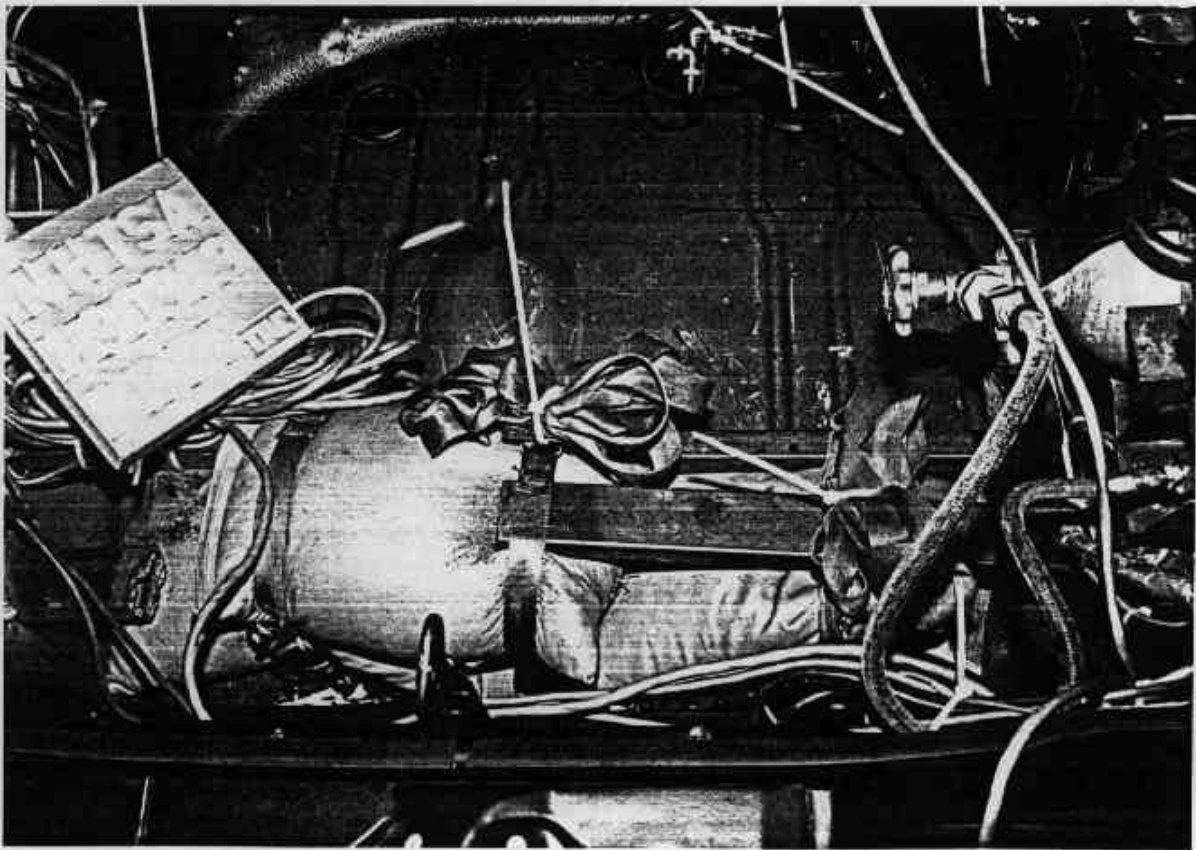


Figure A-24. PRE-TEST CARGO BALLAST VIEW  
A-13

890313



Figure A-25. PRE-TEST DRIVER DUMMY POSITION VIEW



Figure A-26. POST-TEST DRIVER DUMMY POSITION VIEW

A-14

890313

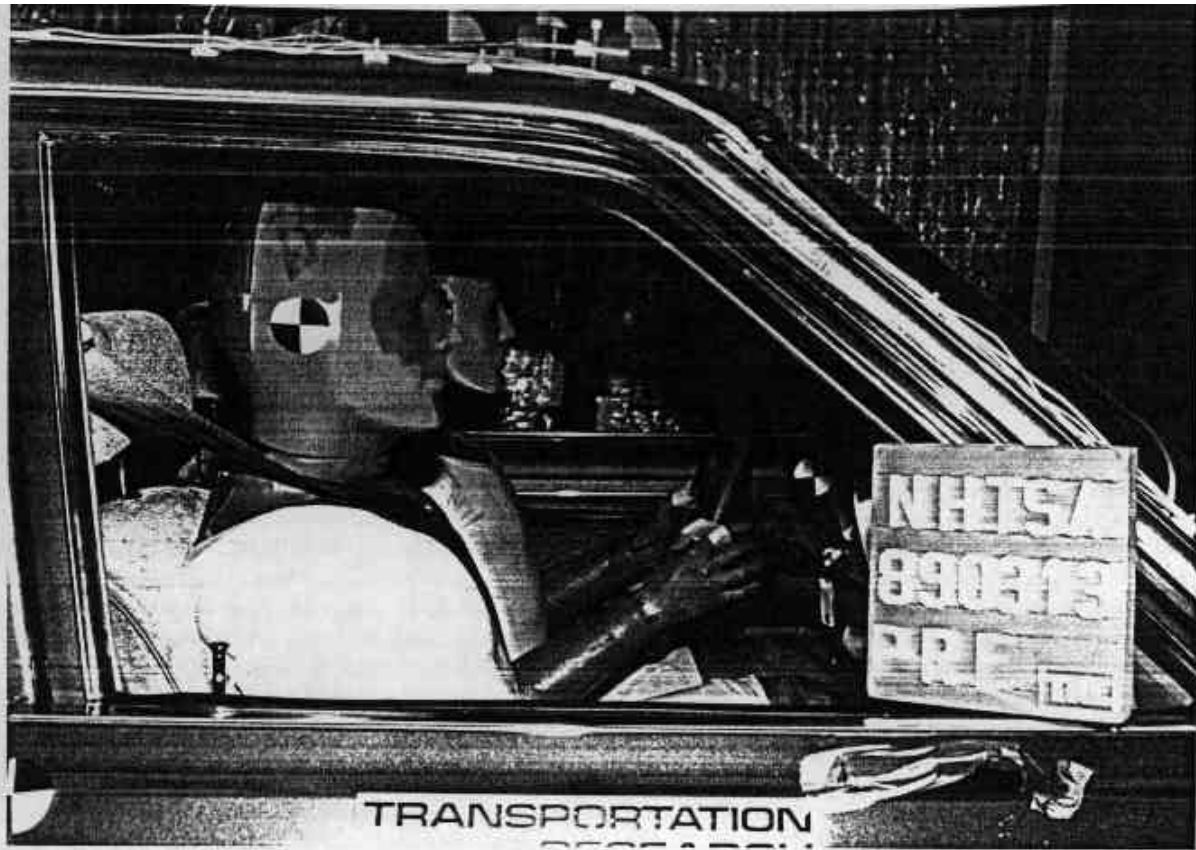


Figure A-27. PRE-TEST PASSENGER DUMMY POSITION VIEW



Figure A-28. POST-TEST PASSENGER DUMMY POSITION VIEW



Figure A-29. PRE-TEST DRIVER DUMMY & VEHICLE INTERIOR - VIEW 1

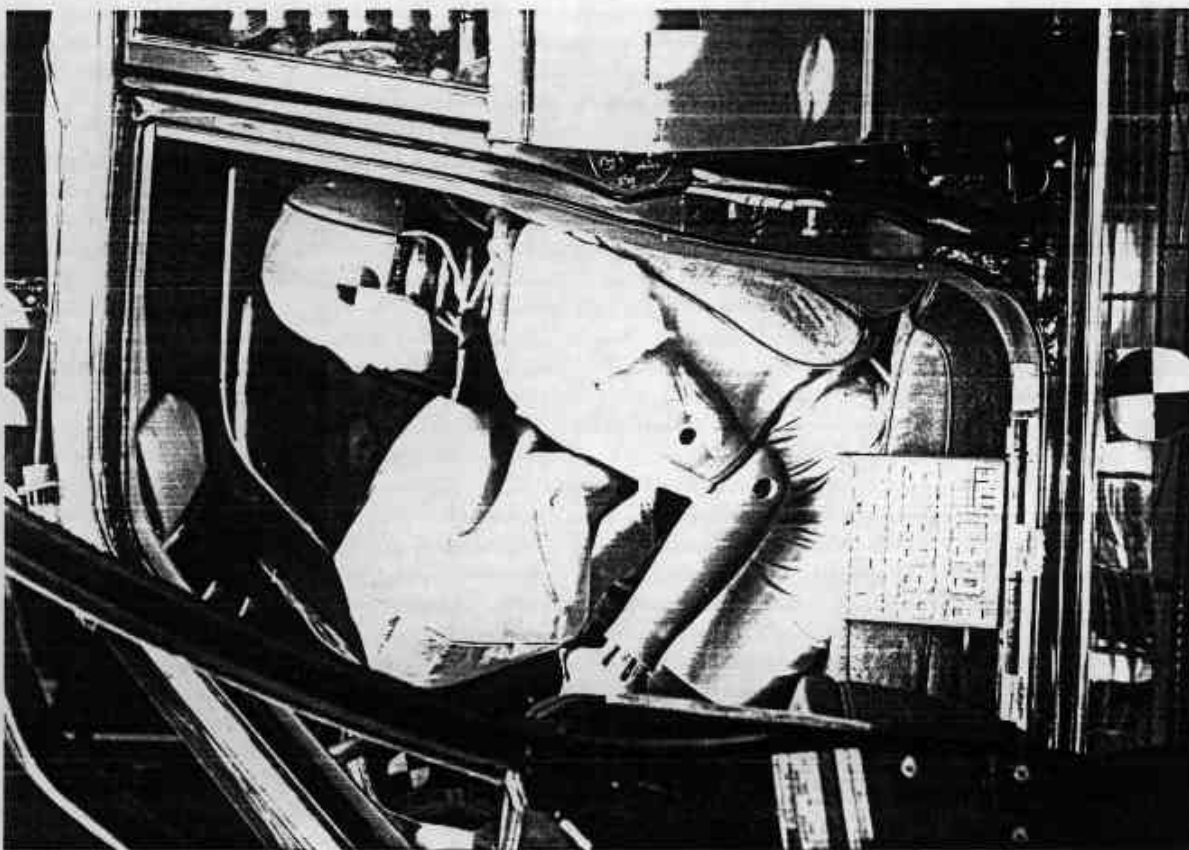


Figure A-30. POST-TEST DRIVER DUMMY & VEHICLE INTERIOR - VIEW 1



Figure A-31. PRE-TEST DRIVER DUMMY & VEHICLE INTERIOR - VIEW 2

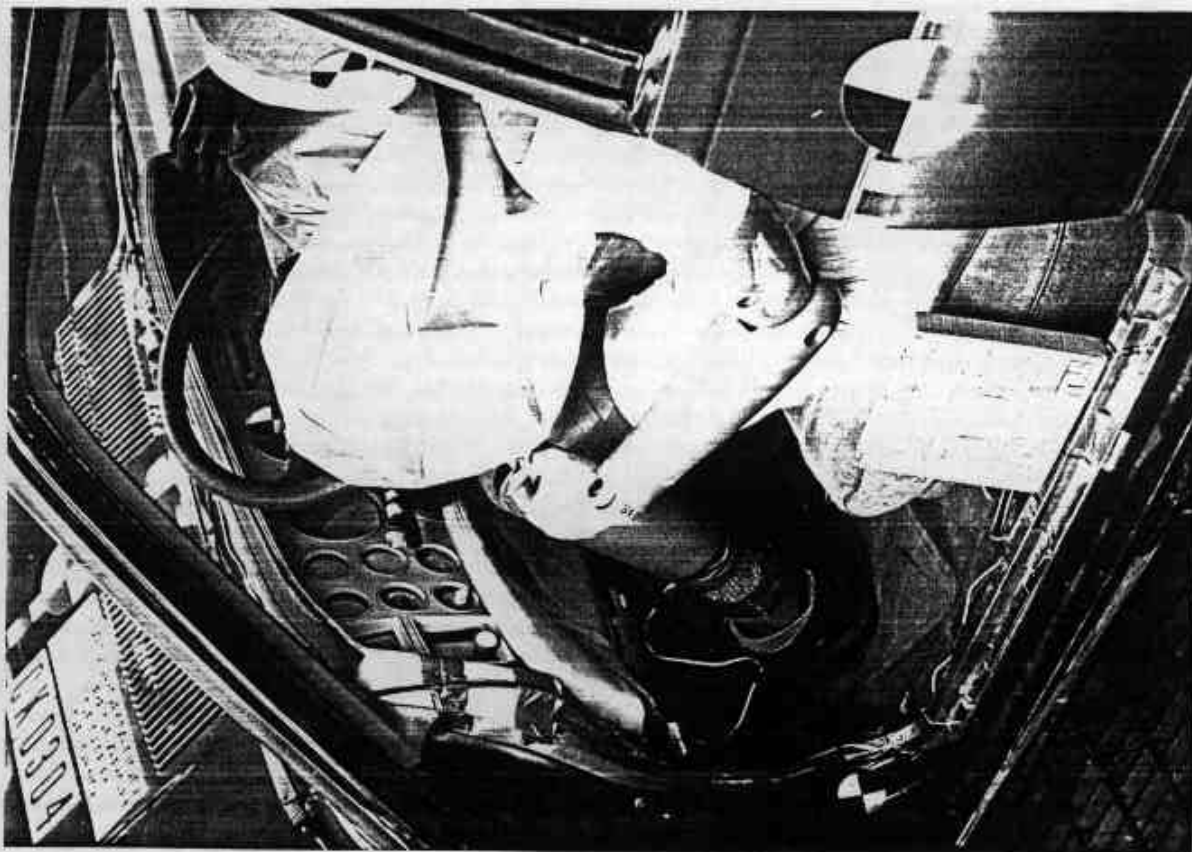


Figure A-32. POST-TEST DRIVER DUMMY & VEHICLE INTERIOR - VIEW 2  
A-17 890313



Figure A-33. PRE-TEST PASSENGER DUMMY & VEHICLE INTERIOR



Figure A-34. POST-TEST PASSENGER DUMMY & VEHICLE INTERIOR - VIEW 1  
A-18 890313

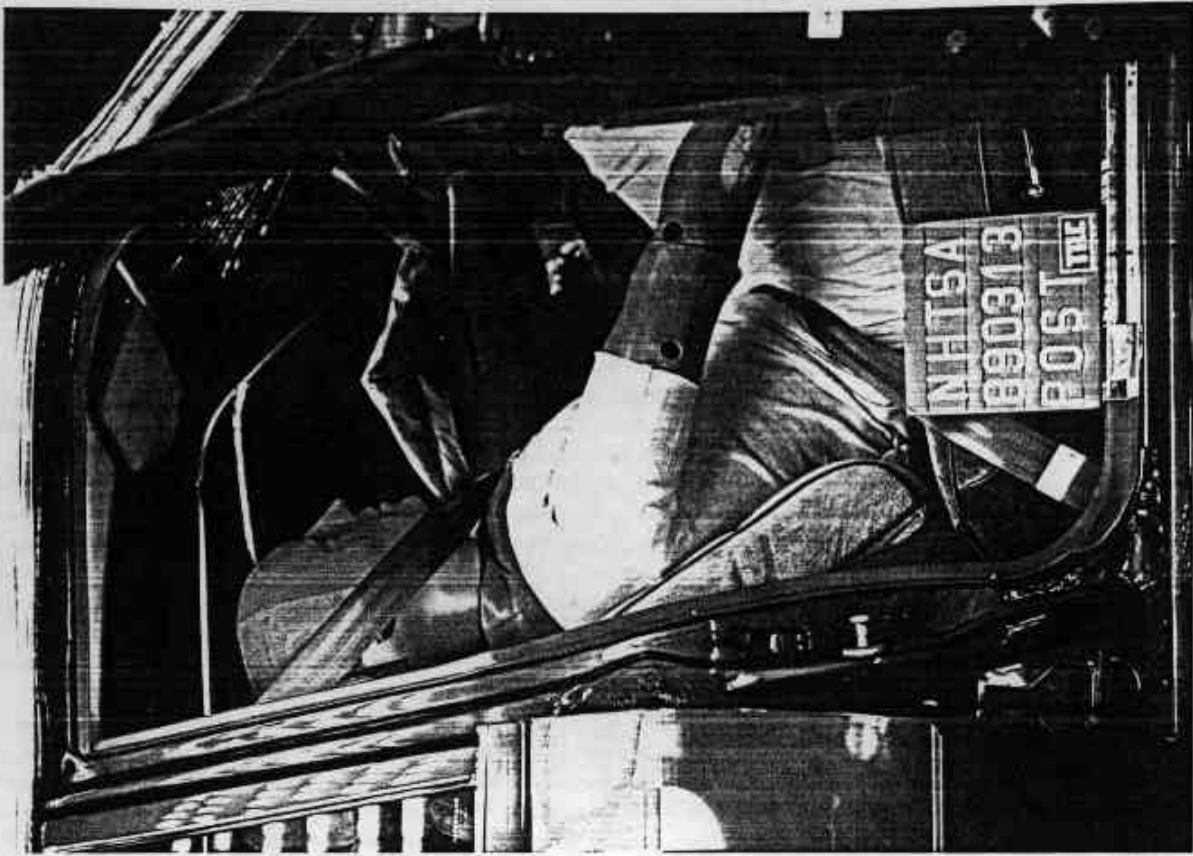


Figure A-35. POST-TEST PASSENGER DUMMY & VEHICLE INTERIOR - VIEW 2



Figure A-36. POST-TEST DRIVER DUMMY HEAD CONTACT - VIEW 1



Figure A-37. POST-TEST DRIVER DUMMY HEAD CONTACT - VIEW 2



Figure A-38. POST-TEST DRIVER DUMMY KNEE CONTACT - VIEW 1

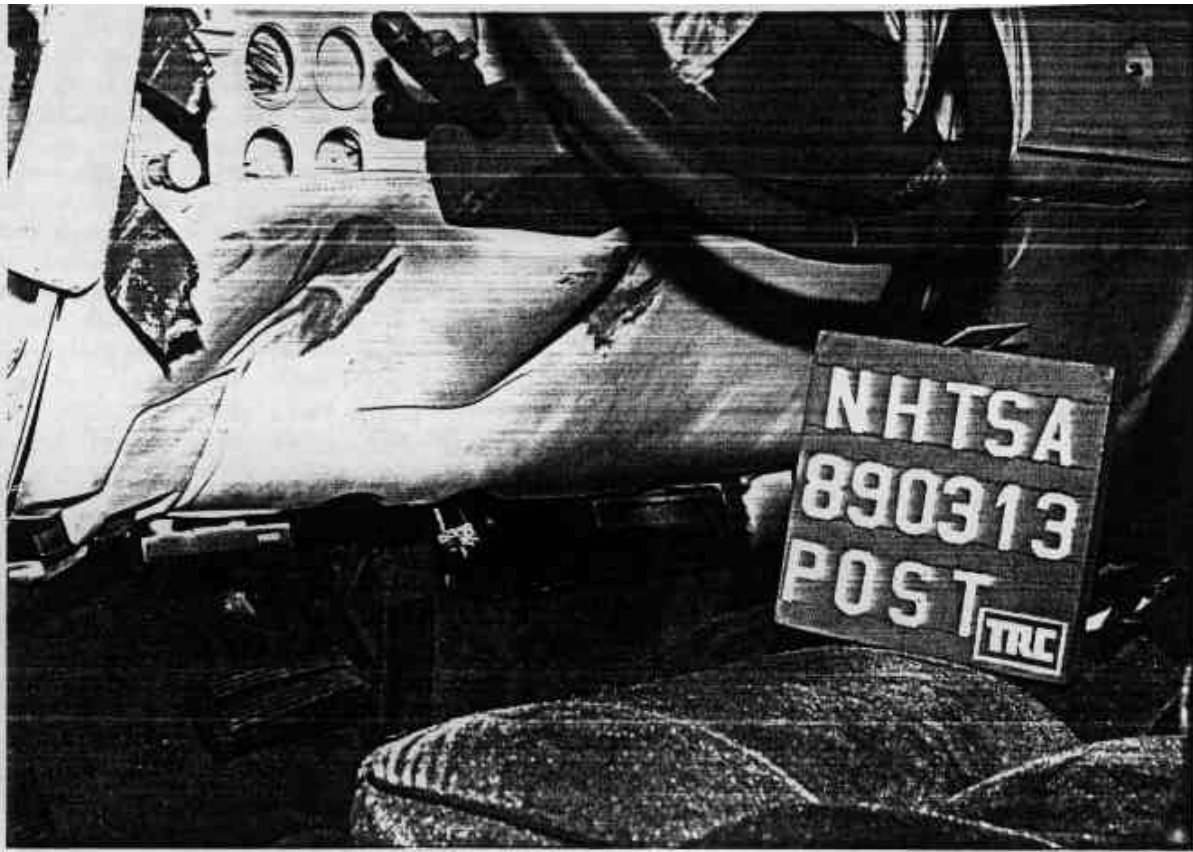


Figure A-39. POST-TEST DRIVER DUMMY KNEE CONTACT - VIEW 2



Figure A-40. POST-TEST PASSENGER DUMMY HEAD CONTACT VIEW



Figure A-41. POST-TEST PASSENGER DUMMY KNEE CONTACT - VIEW 1



Figure A-42. POST-TEST PASSENGER DUMMY KNEE CONTACT - VIEW 2



Figure A-43. PRE-TEST VEHICLE CERTIFICATION LABEL VIEW

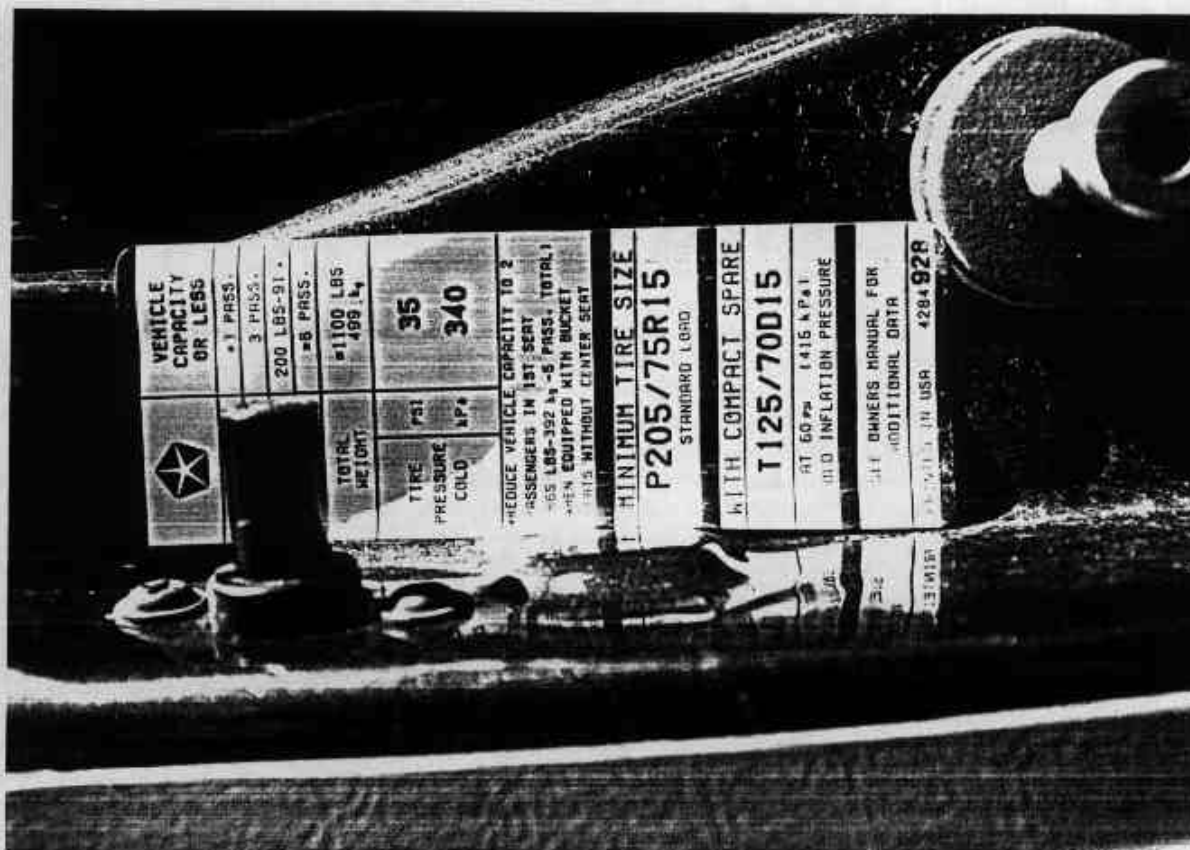


Figure 44. PRE-TEST VEHICLE TIRE LOAD LABEL VIEW

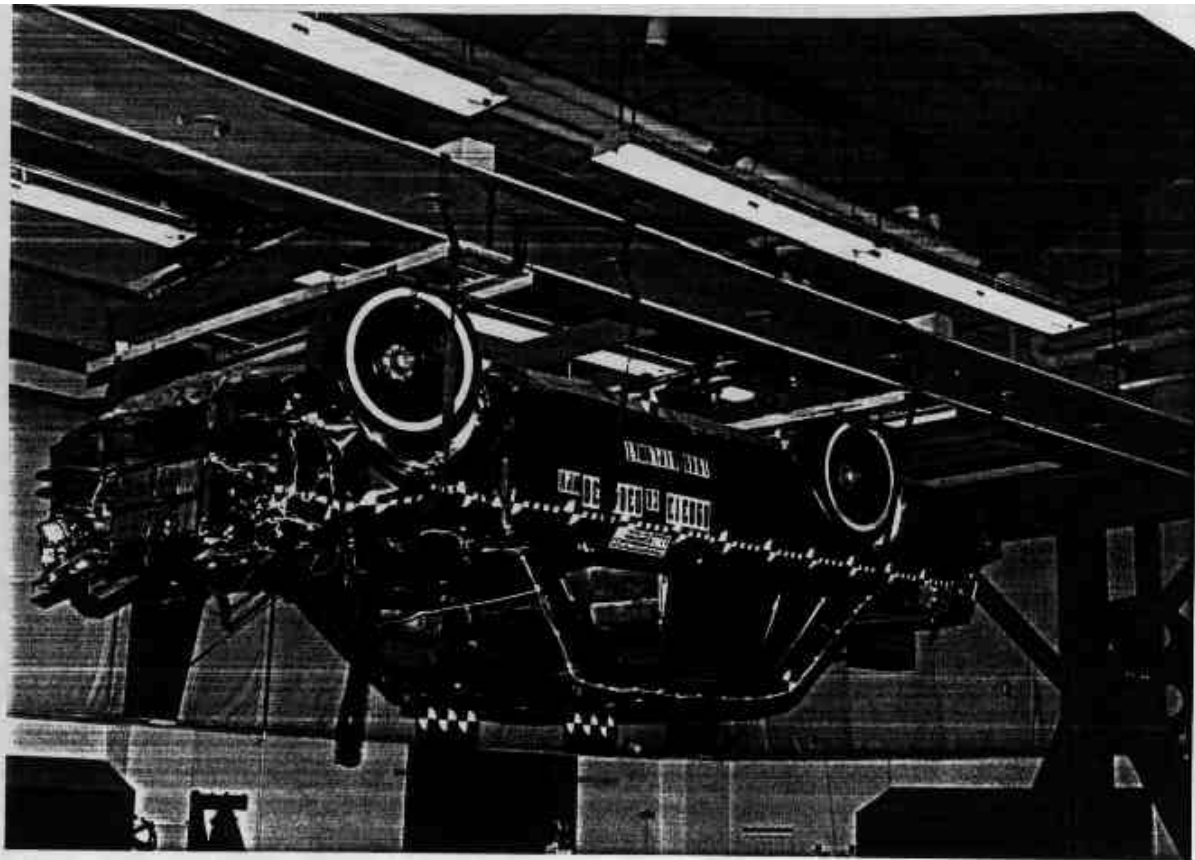


Figure A-45. POST-TEST VEHICLE ON STATIC ROLLOVER VIEW

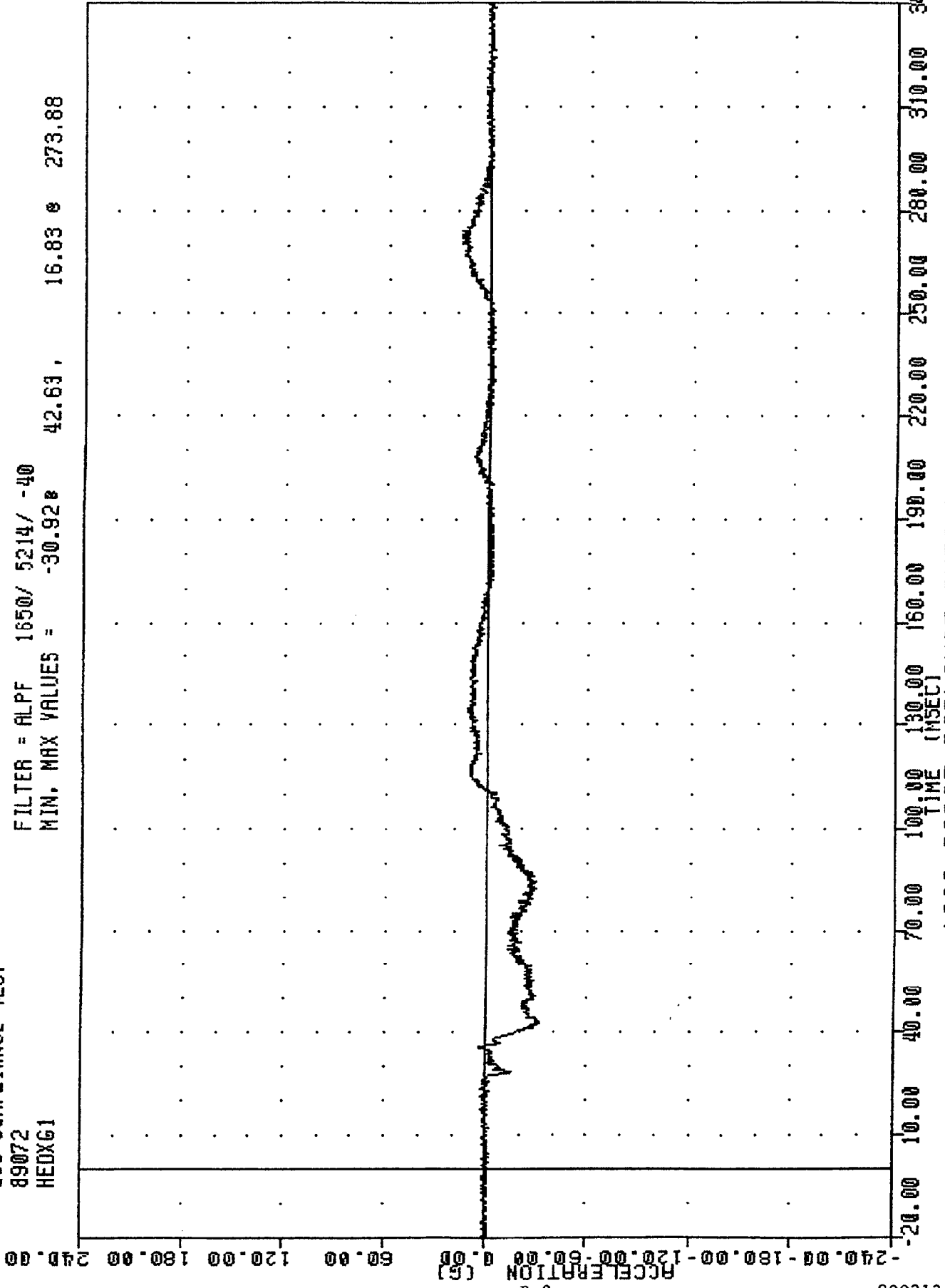
APPENDIX B

DATA PLOTS

DUMMY AND VEHICLE AXES: X: FRONT/REAR  
Y: LEFT/RIGHT  
Z: UP/DOWN

TRC 890313  
208 COMPLIANCE TEST  
89072  
HEDXG1

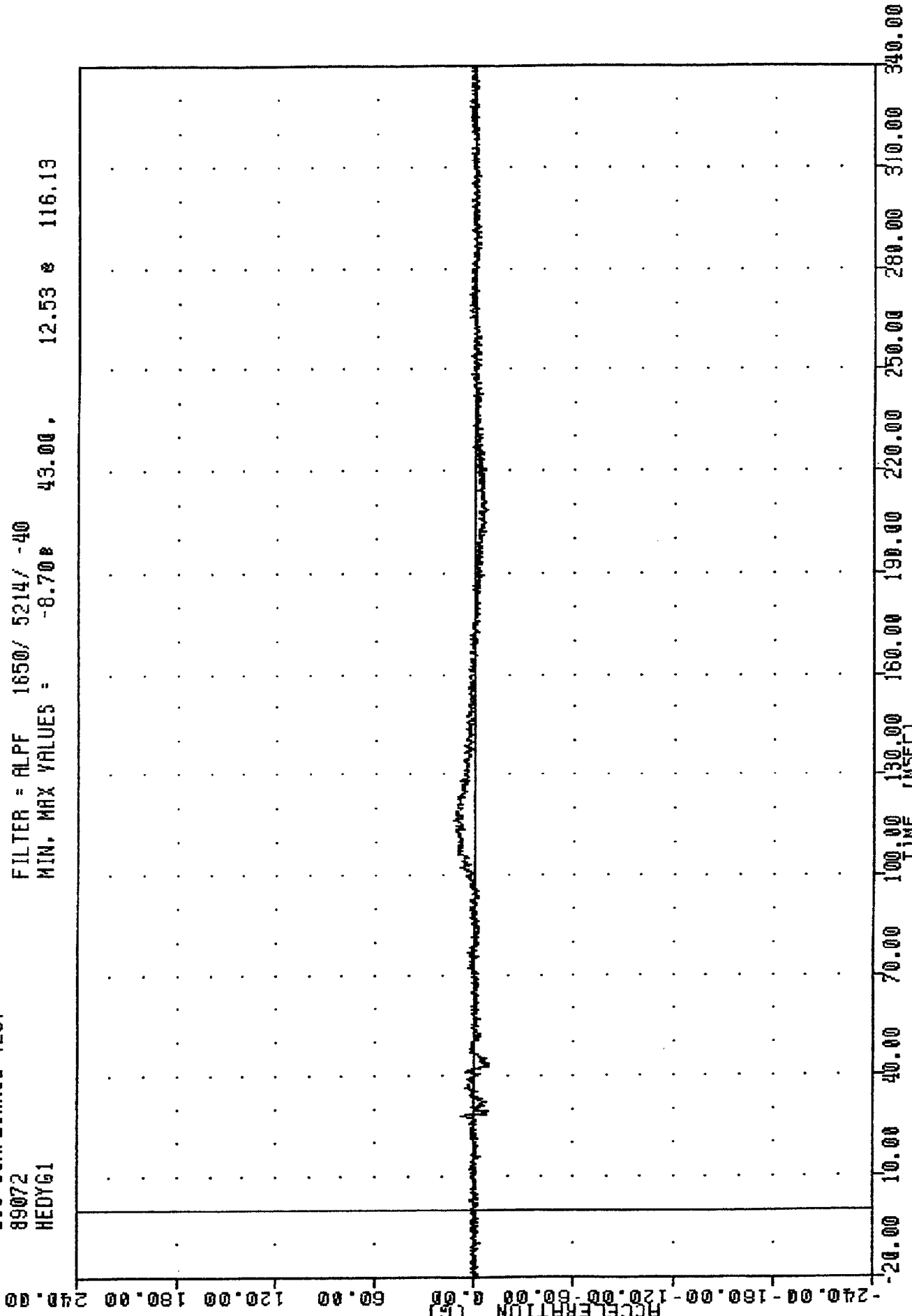
FILTER = ALPF 1650/ 5214/ -40  
MIN. MAX VALUES = -30.928 42.63 , 16.83 e 273.88



1989 DODGE DIPLOMAT INTO FRONTAL BARRIER  
DRIVER HEAD X AXIS ACCELERATION

TRC  
208 COMPLIANCE TEST  
89072  
MEDYG1

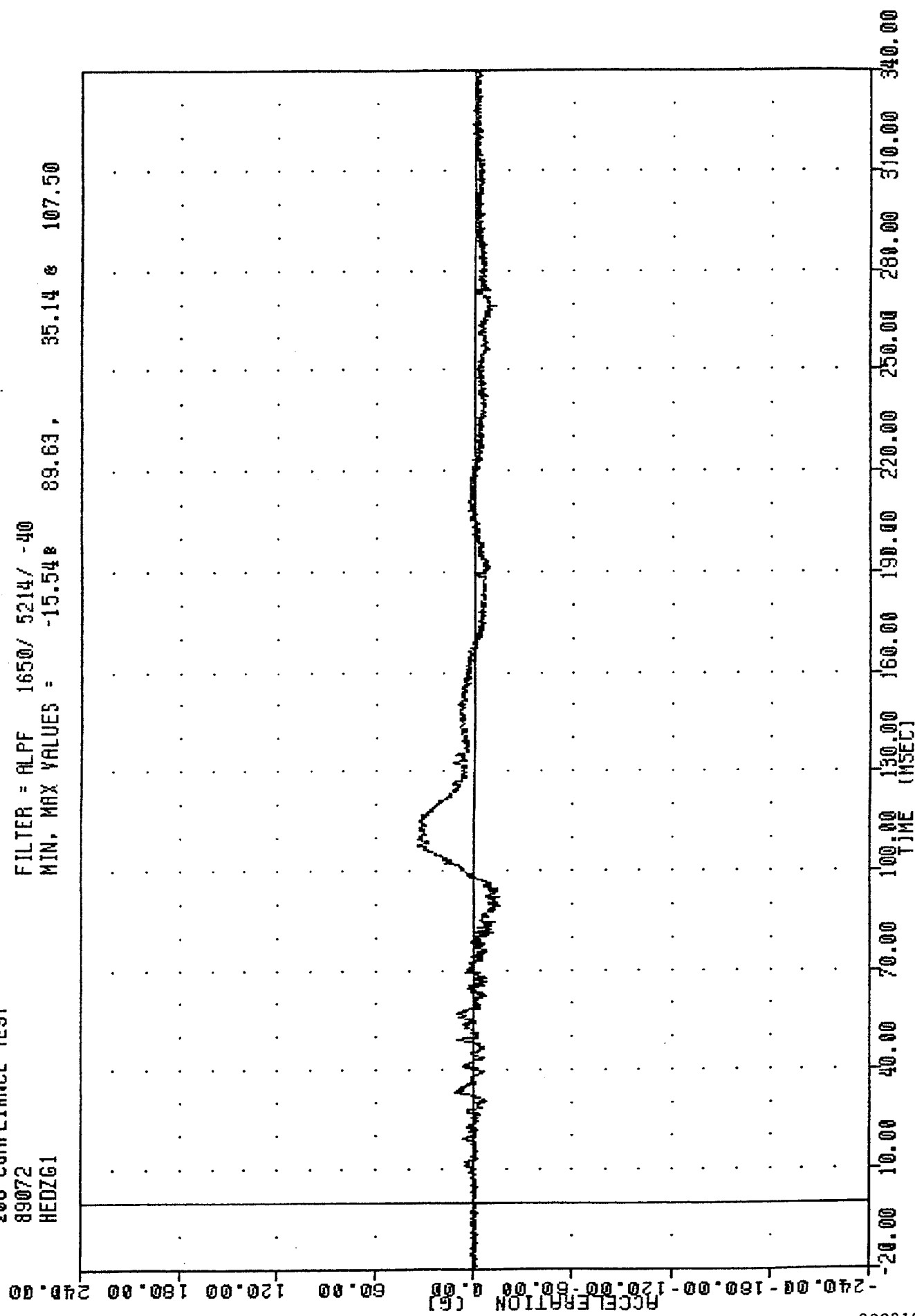
FILTER = ALPF 1650/ 5214/ -40  
MIN. MAX VALUES = -8.70e 43.00. 12.53 e 116.13



1989 DODGE DIPLOMAT INTO FRONTAL BARRIER  
DRIVER HEAD Y AXIS ACCELERATION

TRC  
208 COMPLIANCE TEST  
89072  
HEDZG1

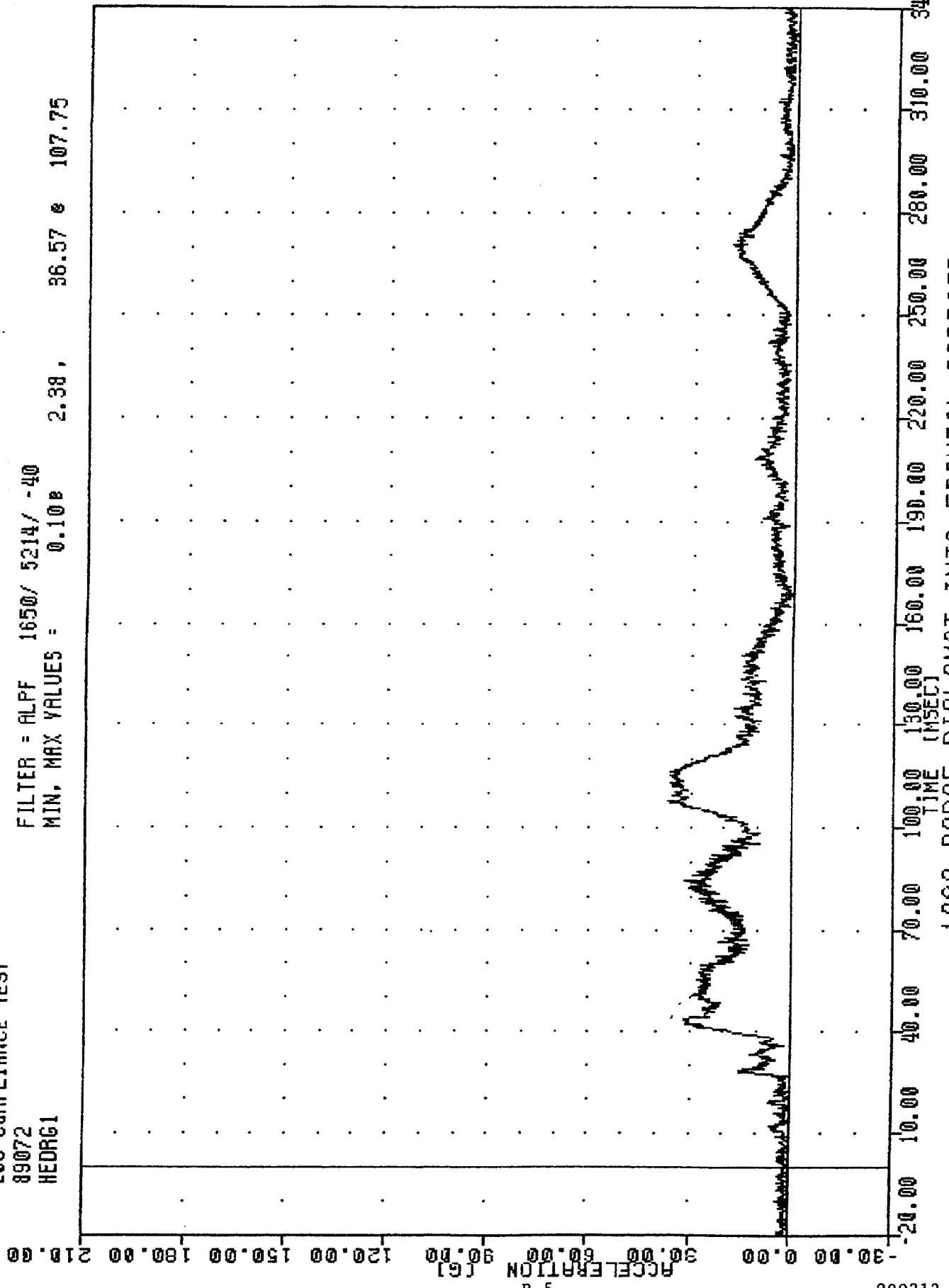
FILTER = ALPF 1650/ 5214/ -40  
MIN, MAX VALUES = -15.54 89.63, 35.14 & 107.50



1989 DODGE DIPLOMAT INTO FRONTAL BARRIER  
DRIVER HEAD Z AXIS ACCELERATION

TRC , 890313  
208 COMPLIANCE TEST  
89072  
HEDRG1

FILTER = ALPF 1650/ 5214/ -40  
MIN, MAX VALUES = 0.108 2.38, 36.57 e 107.75



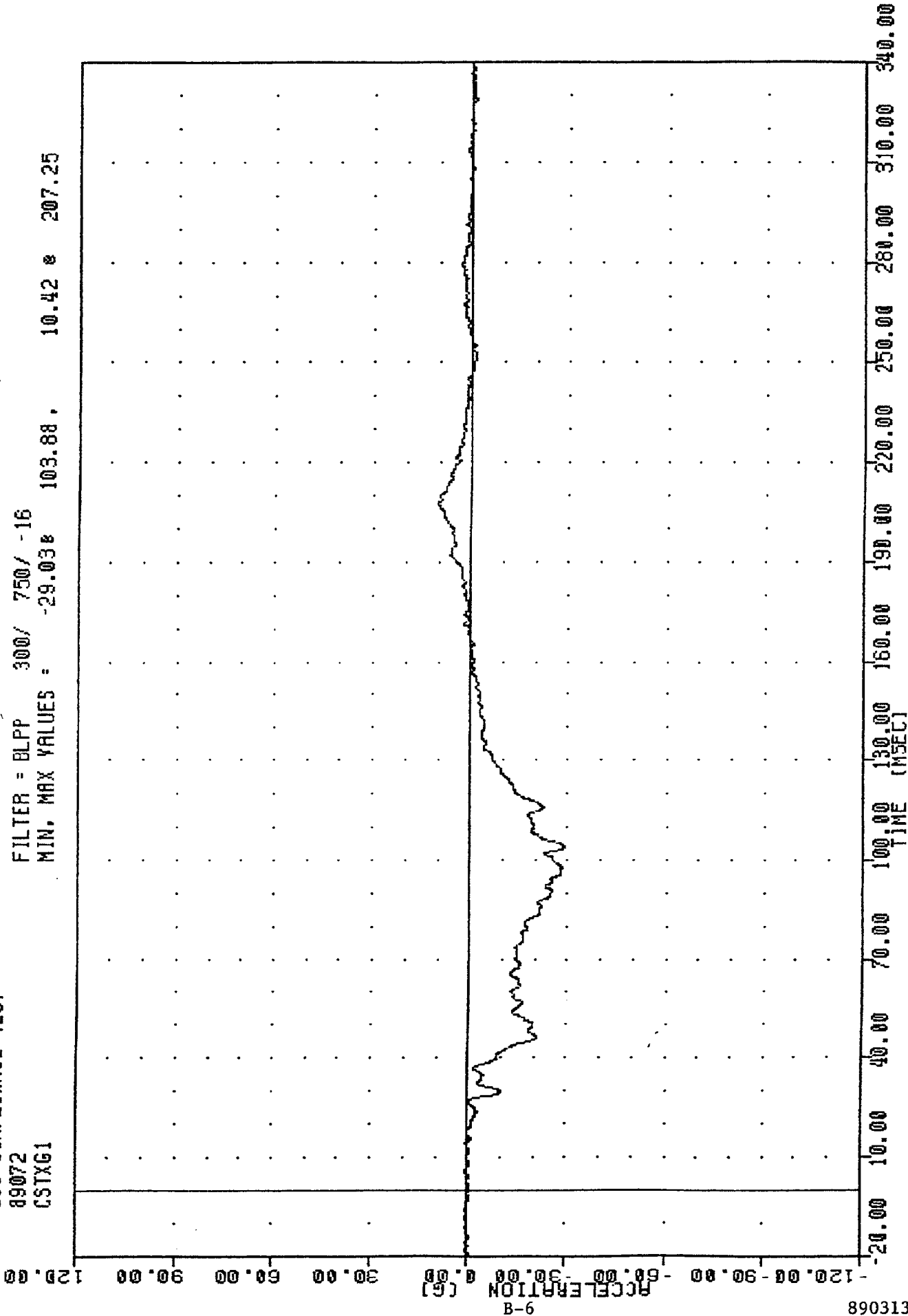
890313

B-5

1989 DODGE DIPLOMAT INTO FRONTAL BARRIER  
DRIVER HEAD RESULTANT ACCELERATION

TRC , 890313  
208 COMPLIANCE TEST  
89072  
CSTXG1

FILTER = BLPP 300/ 750/ -16  
MIN. MAX VALUES = -29.036 103.88, 10.42 & 207.25



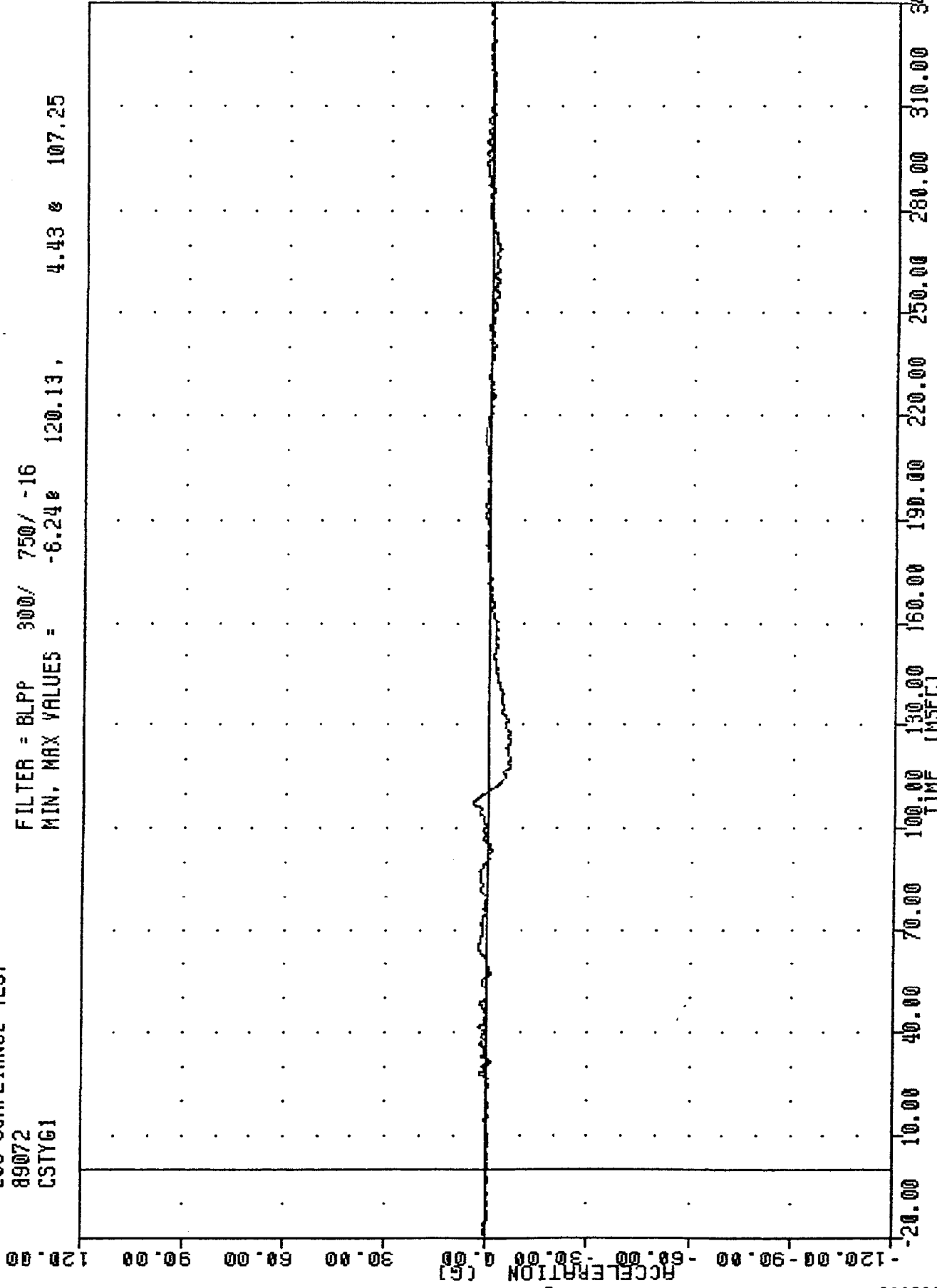
890313

B-9

1989 DODGE DIPLOMAT INTO FRONTAL BARRIER  
DRIVER CHEST X AXIS ACCELERATION

TRC 890313  
 208 COMPLIANCE TEST  
 89072  
 CSTY61

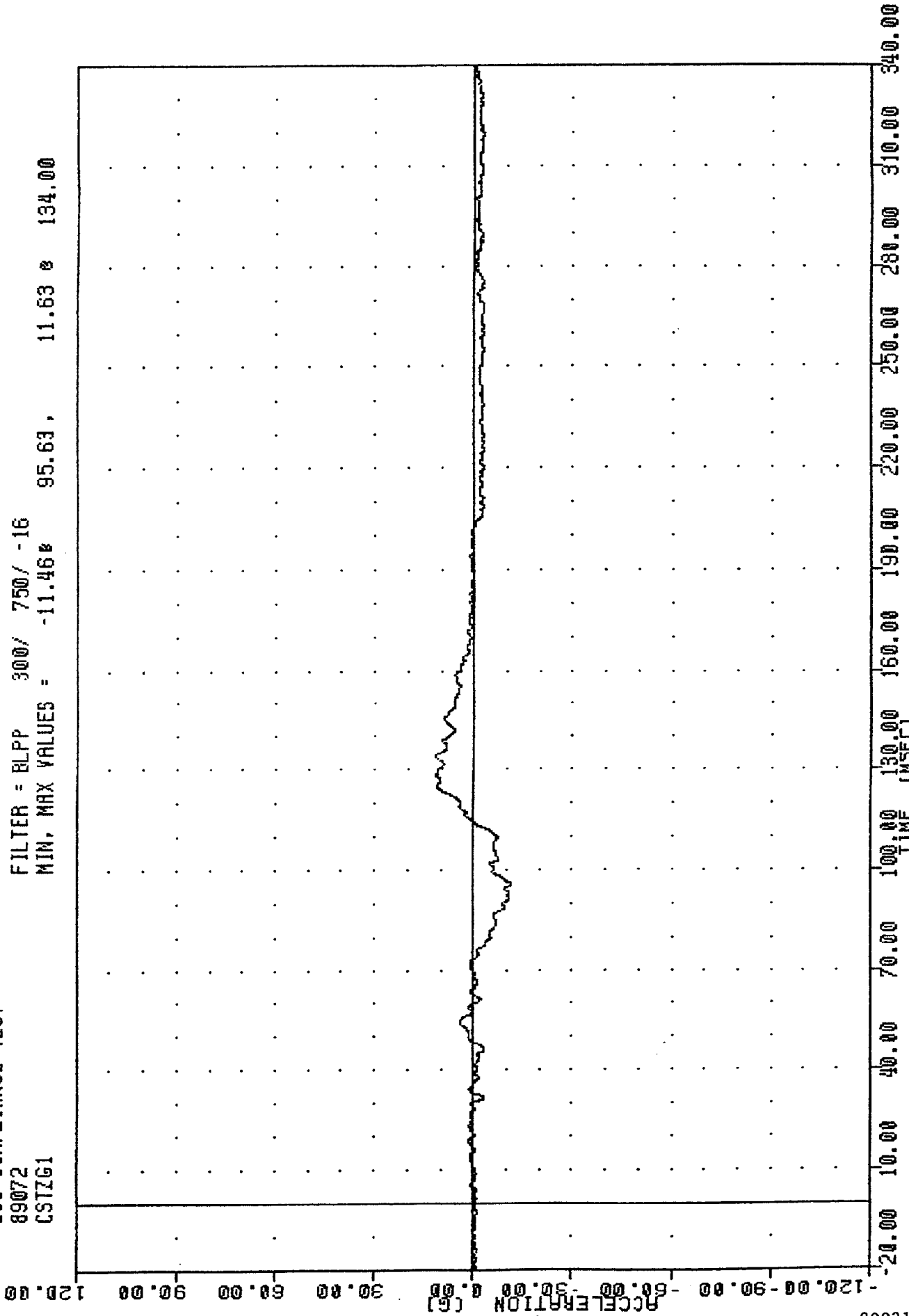
FILTER = BLPP 300/ 750/ -16  
 MIN. MAX VALUES = -6.24e 120.13, 4.43 e 107.25



1989 DODGE DIPLOMAT INTO FRONTAL BARRIER  
 DRIVER CHEST Y AXIS ACCELERATION

TRC 890313  
208 COMPLIANCE TEST  
89072  
CSTIG1

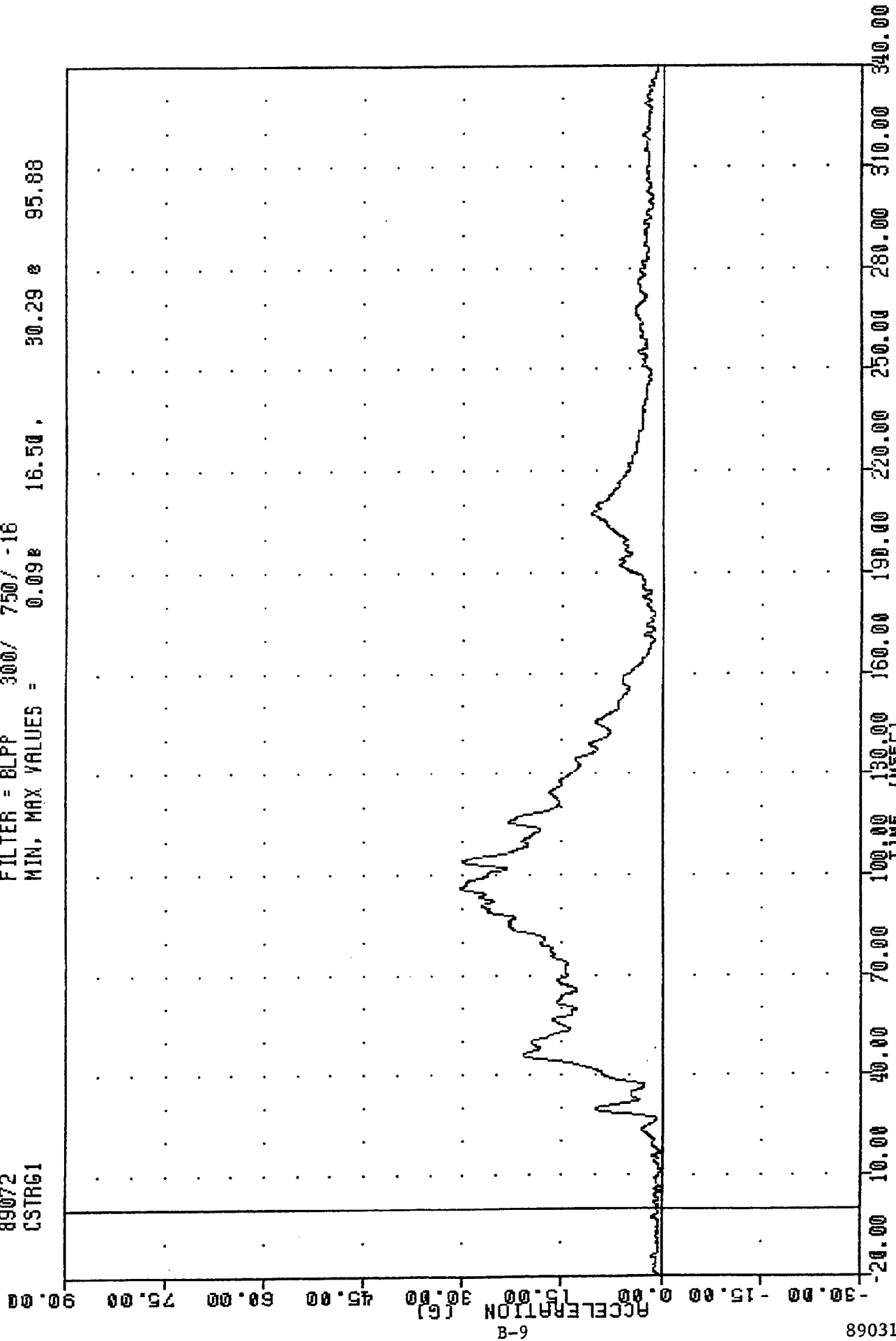
FILTER = BLPP 300/ 750/ -16  
MIN, MAX VALUES = -11.46 95.63, 11.63 134.00



1989 DODGE DIPLOMAT INTO FRONTAL BARRIER  
DRIVER CHEST Z AXIS ACCELERATION

TRC 890313  
208 COMPLIANCE TEST  
89072  
CSTR61

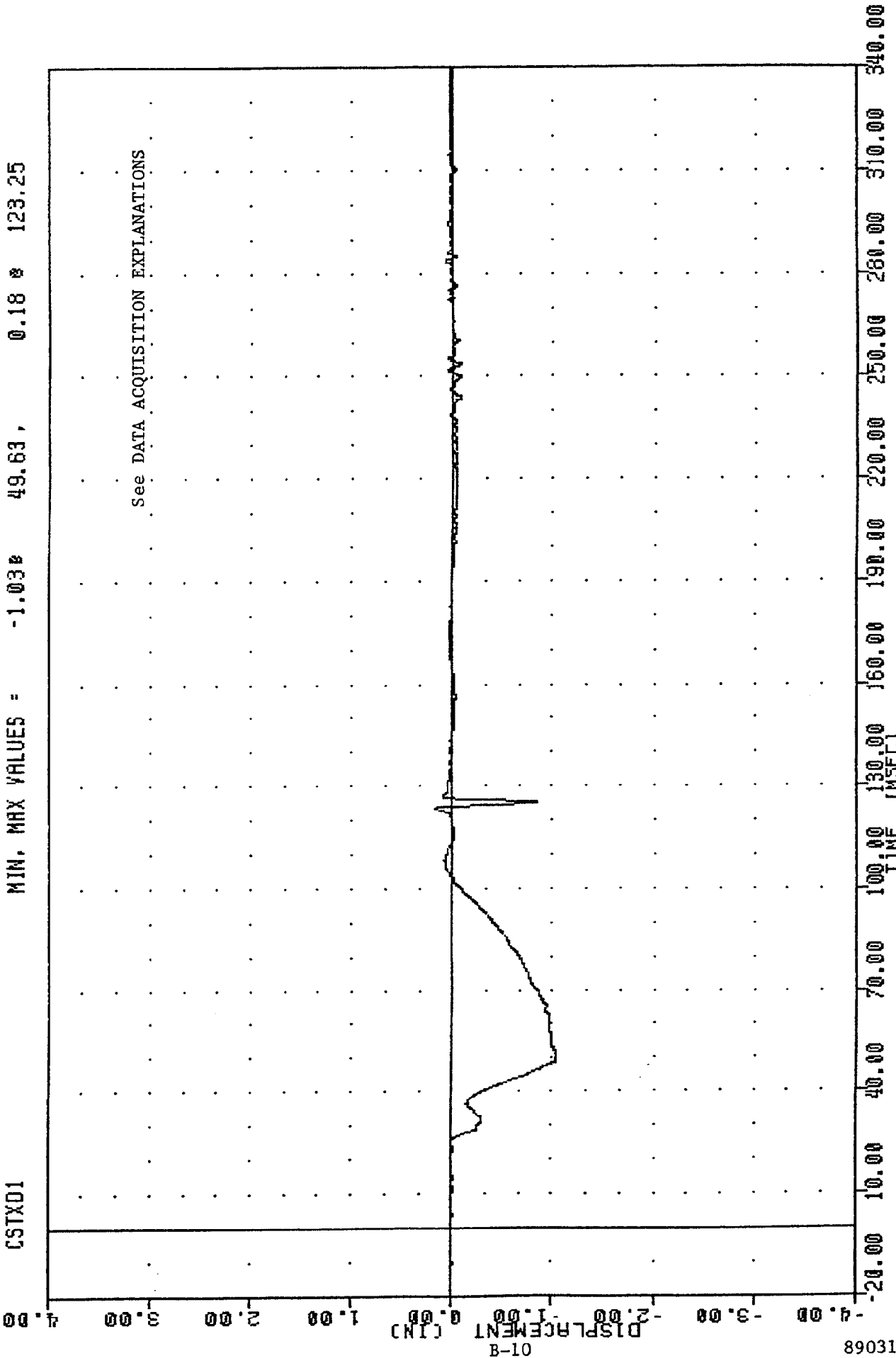
FILTER = BLPP 300/ 750/ -18  
MIN. MAX VALUES = 0.09e 16.50 . 30.29 e 95.88



1989 DODGE DIPLOMAT INTO FRONTAL BARRIER  
DRIVER CHEST RESULTANT ACCELERATION

TRC , 890313  
208 COMPLIANCE TEST  
89072  
CSTXD1

FILTER = BLPP 300/ 750/ -16  
MIN. MAX VALUES = -1.03# 49.63, 0.18 # 123.25

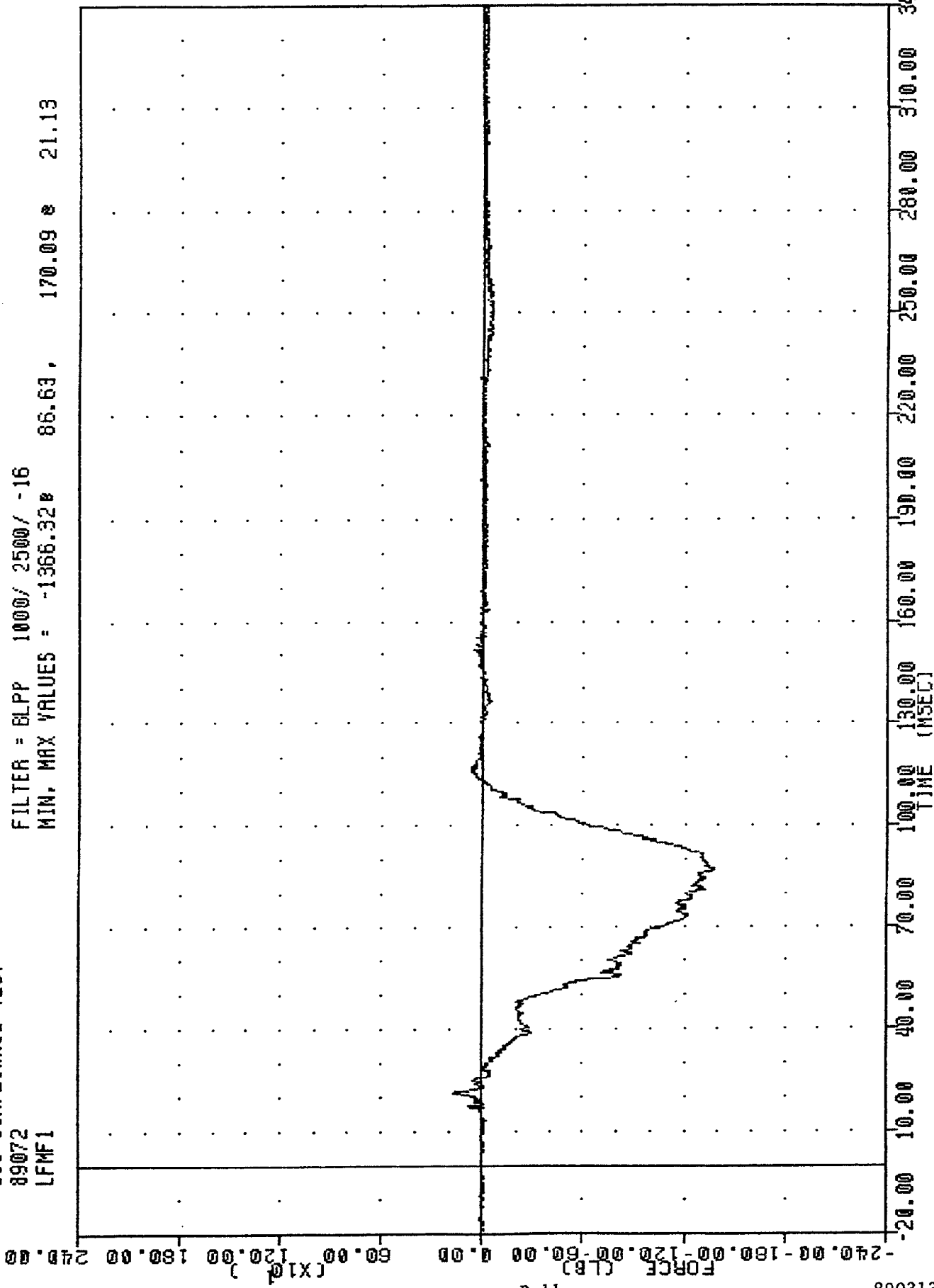


890313

1989 DODGE DIPLOMAT INTO FRONTAL BARRIER  
DRIVER CHEST DISPLACEMENT

TAC , 890313  
308 COMPLIANCE TEST  
89072  
LFMF1

FILTER = BLPP 1000/ 2500/ -16  
MIN, MAX VALUES = -1366.32 86.63, 170.09 21.13



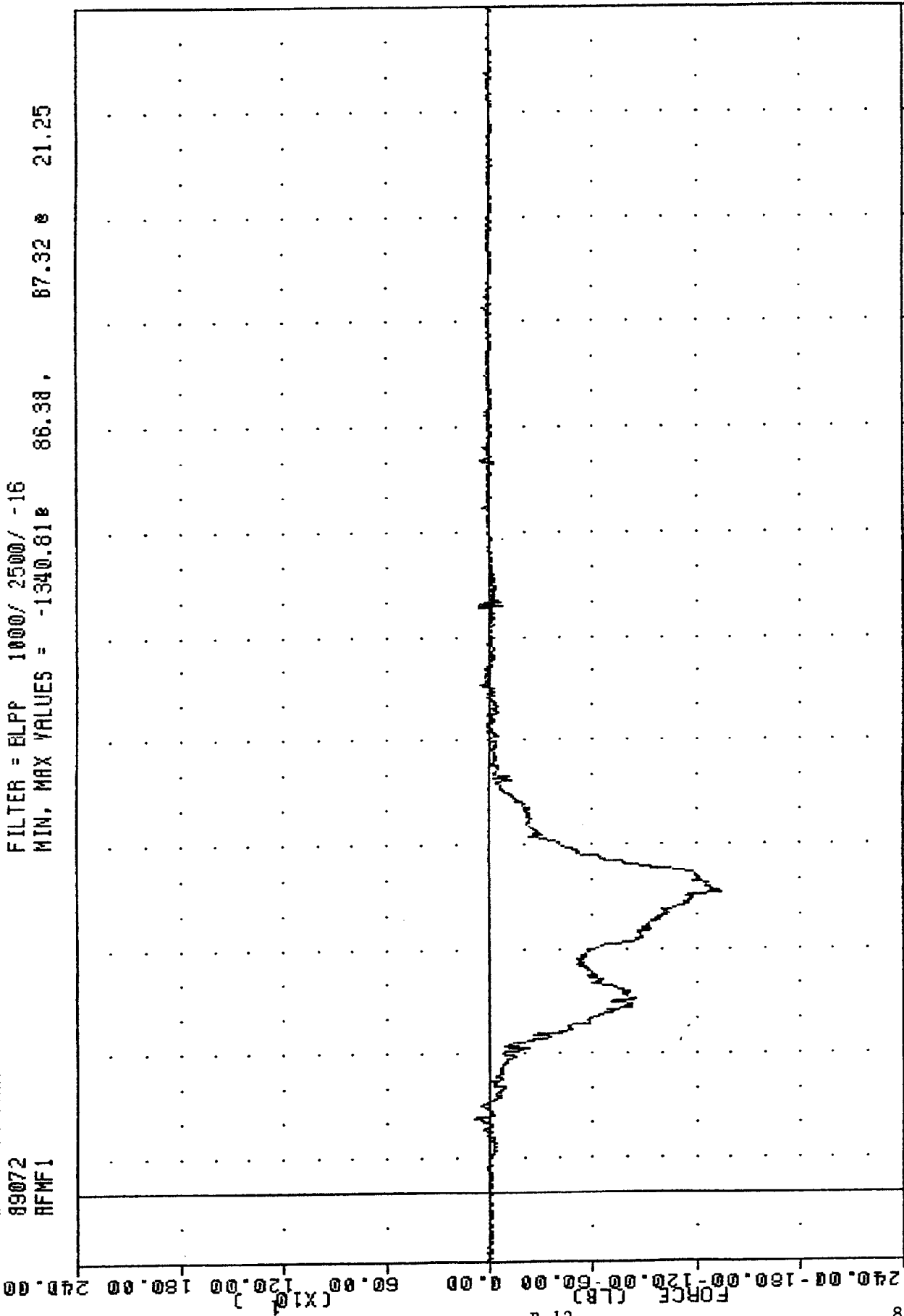
11-B

890313

1989 DODGE DIPLOMAT INTO FRONTAL BARRIER  
DRIVER LEFT FEMUR FORCE

TRC 890313  
208 COMPLIANCE TEST  
89072  
RFMF1

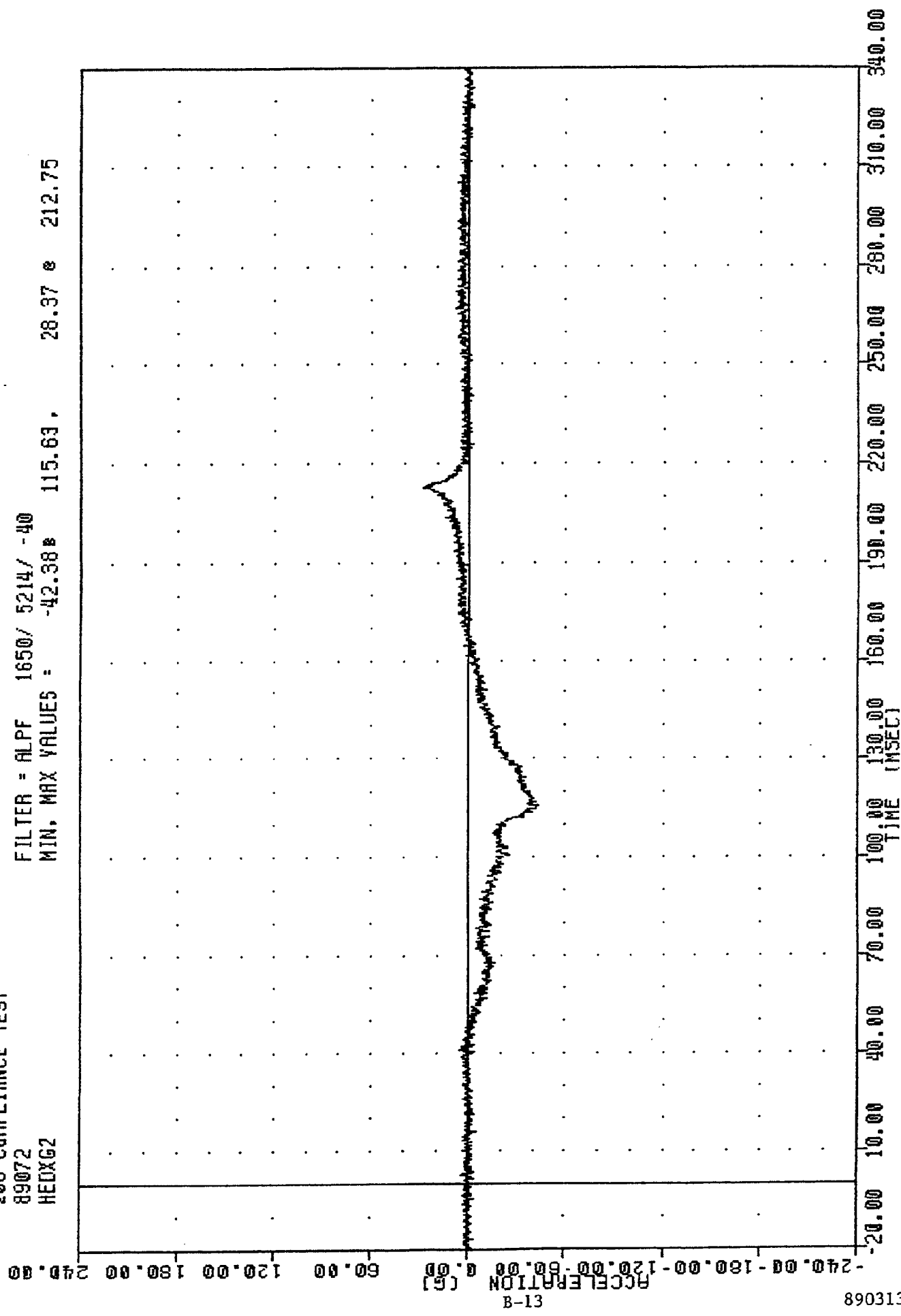
FILTER = BLPP 1000/ 2500/ -16  
MIN, MAX VALUES = -1340.81e 86.38, 87.32 e 21.25



890313  
B-12  
1989 DODGE DIPLOMAT INTO FRONTAL BARRIER  
DRIVER RIGHT FEMUR FORCE

TRC 890313  
208 COMPLIANCE TEST  
89072  
HEDXG2

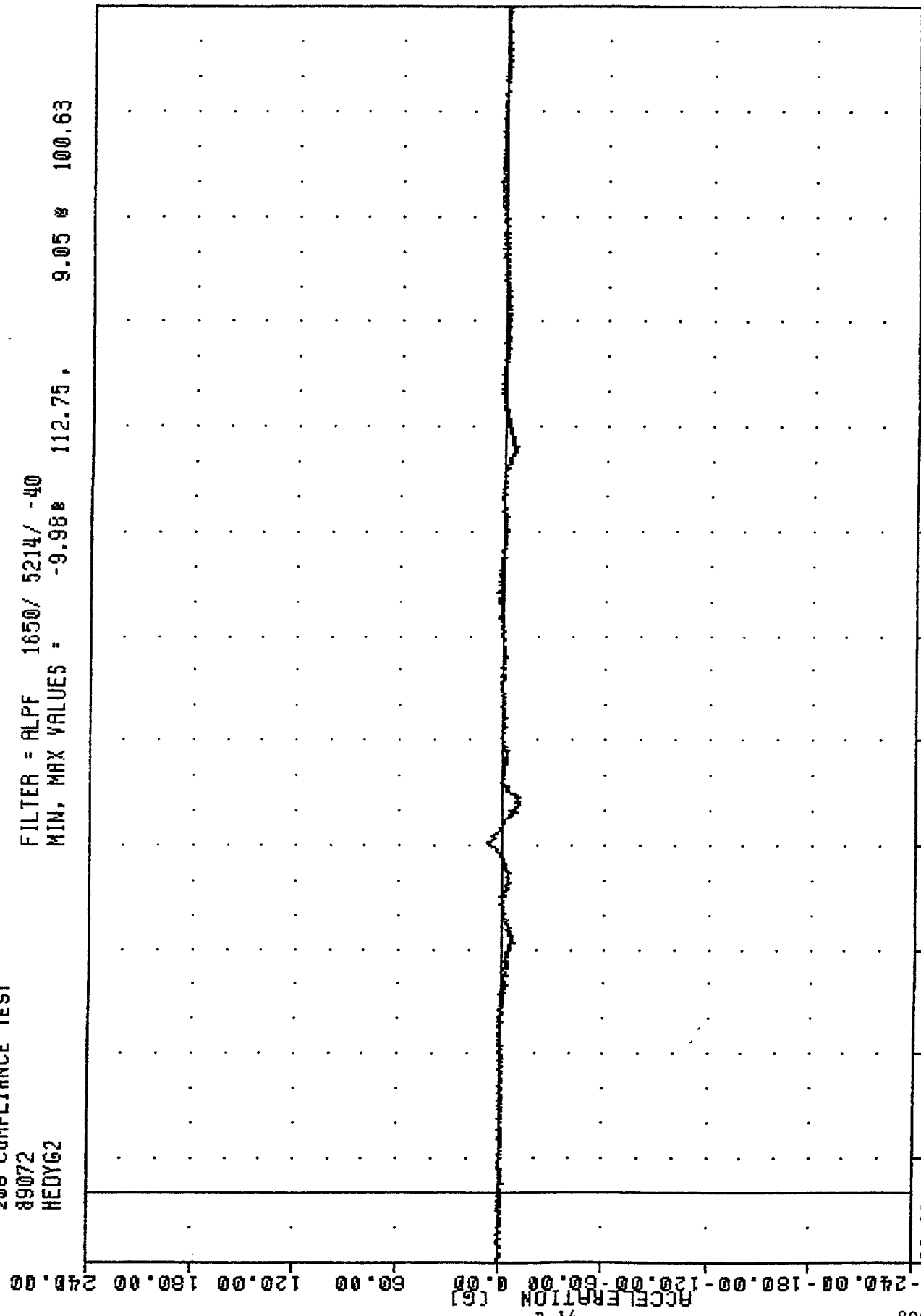
FILTER = ALPF 1650/ 5214/ -40  
MIN. MAX VALUES = -42.38 115.63 28.37 212.75



1989 DODGE DIPLOMAT INTO FRONTAL BARRIER  
RIGHT FRONT PASSENGER HEAD X AXIS ACCELERATION

TRC 890313  
208 COMPLIANCE TEST  
89072  
HEDYG2

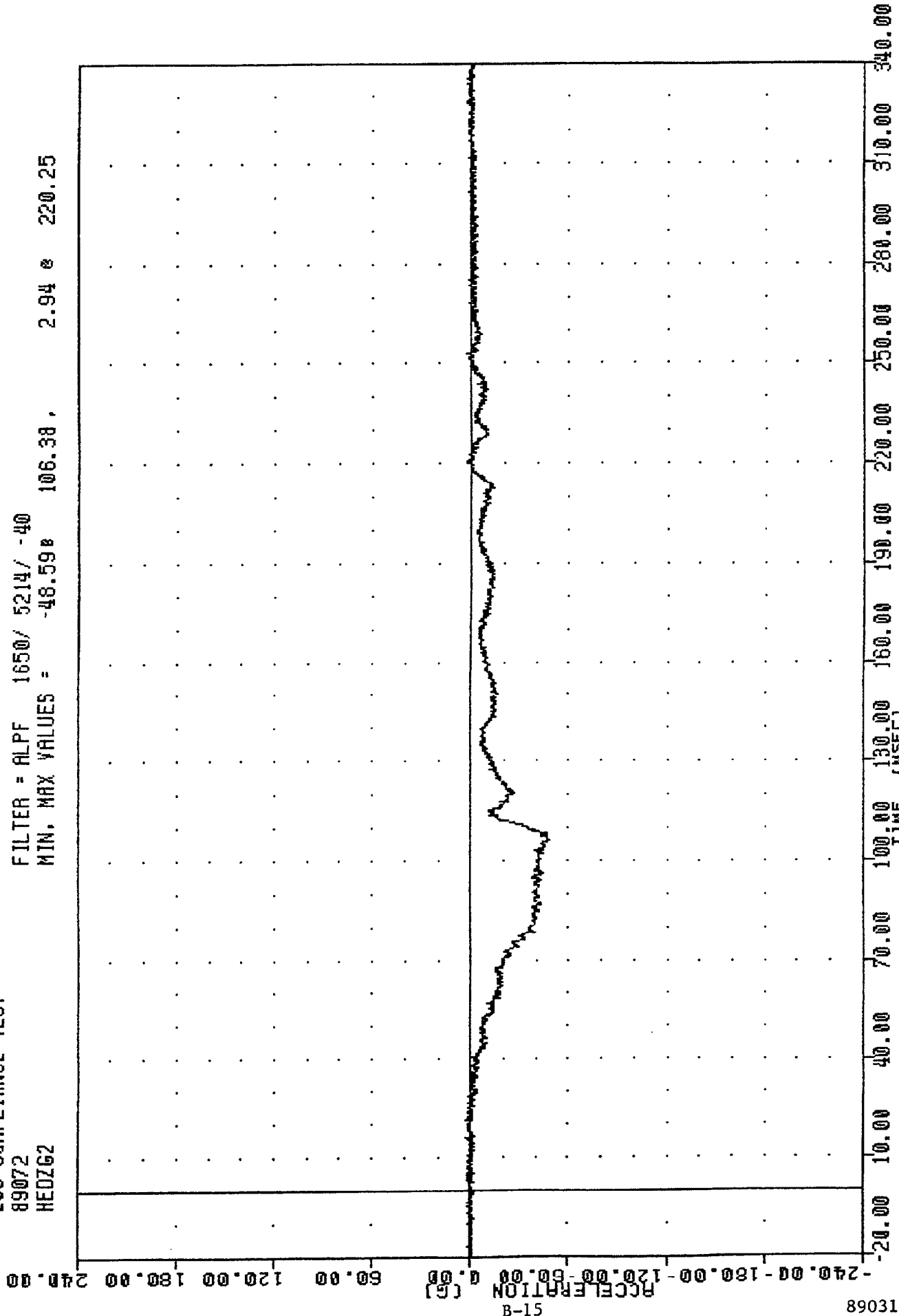
FILTER = ALPF 1650/ 5214/ -40  
MIN. MAX VALUES = -9.98g 112.75, 9.05 g 100.63



1989 DODGE DIPLOMAT INTO FRONTAL BARRIER  
RIGHT FRONT PASSENGER HEAD Y AXIS ACCELERATION

TRC , 890313  
208 COMPLIANCE TEST  
89072  
HEDZG2

FILTER = ALPF 1650/ 5214/ -40  
MIN. MAX VALUES = -46.598 106.38 , 2.94 e 220.25

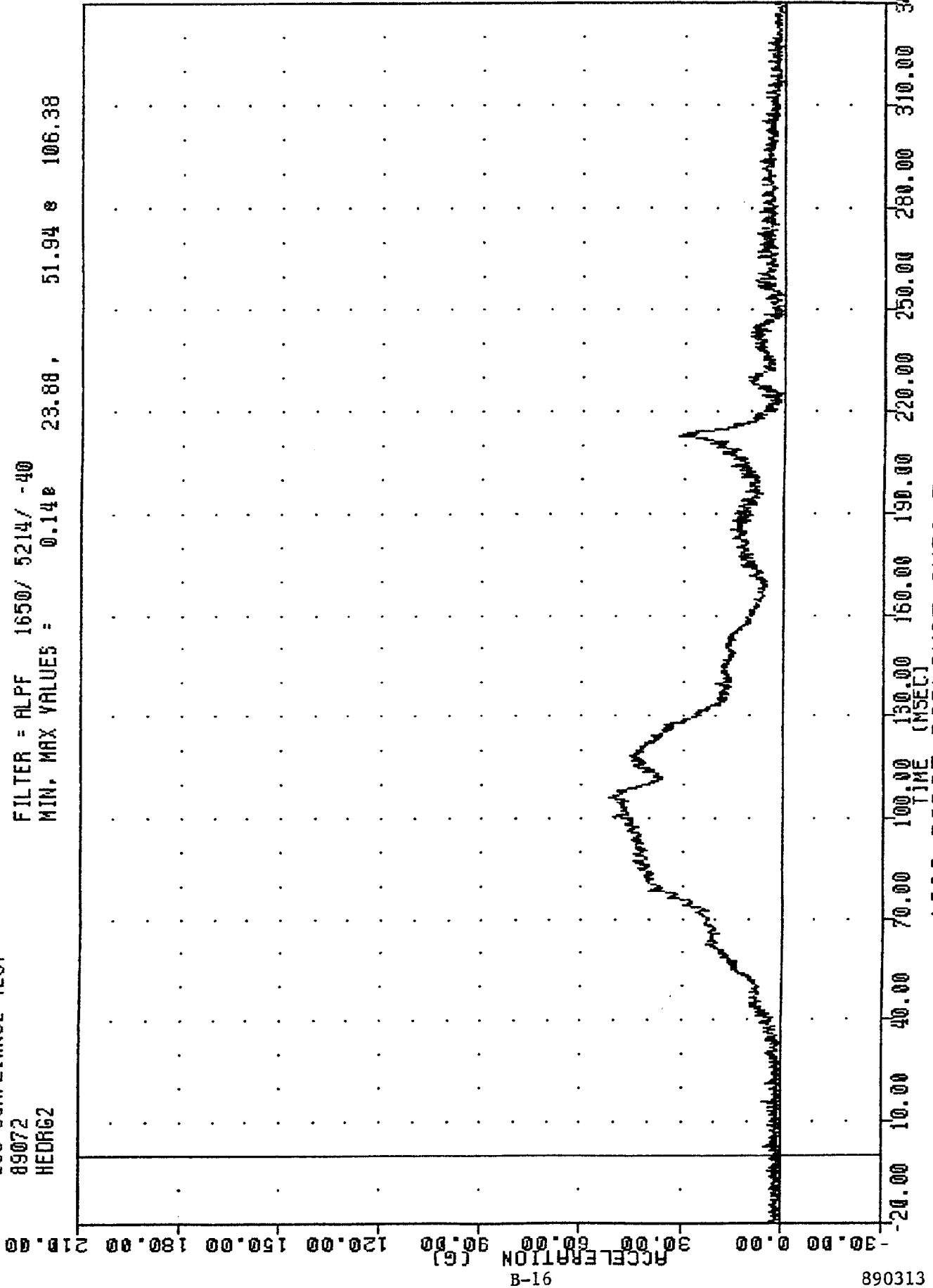


890313

1989 DODGE DIPLOMAT INTO FRONTAL BARRIER  
RIGHT FRONT PASSENGER HEAD Z AXIS ACCELERATION

TRC , 890313  
208 COMPLIANCE TEST  
89072  
HEDRG2

FILTER = ALPF 1650/ 5214/ -40  
MIN. MAX VALUES = 0.14e 23.88 , 51.94 e 106.38



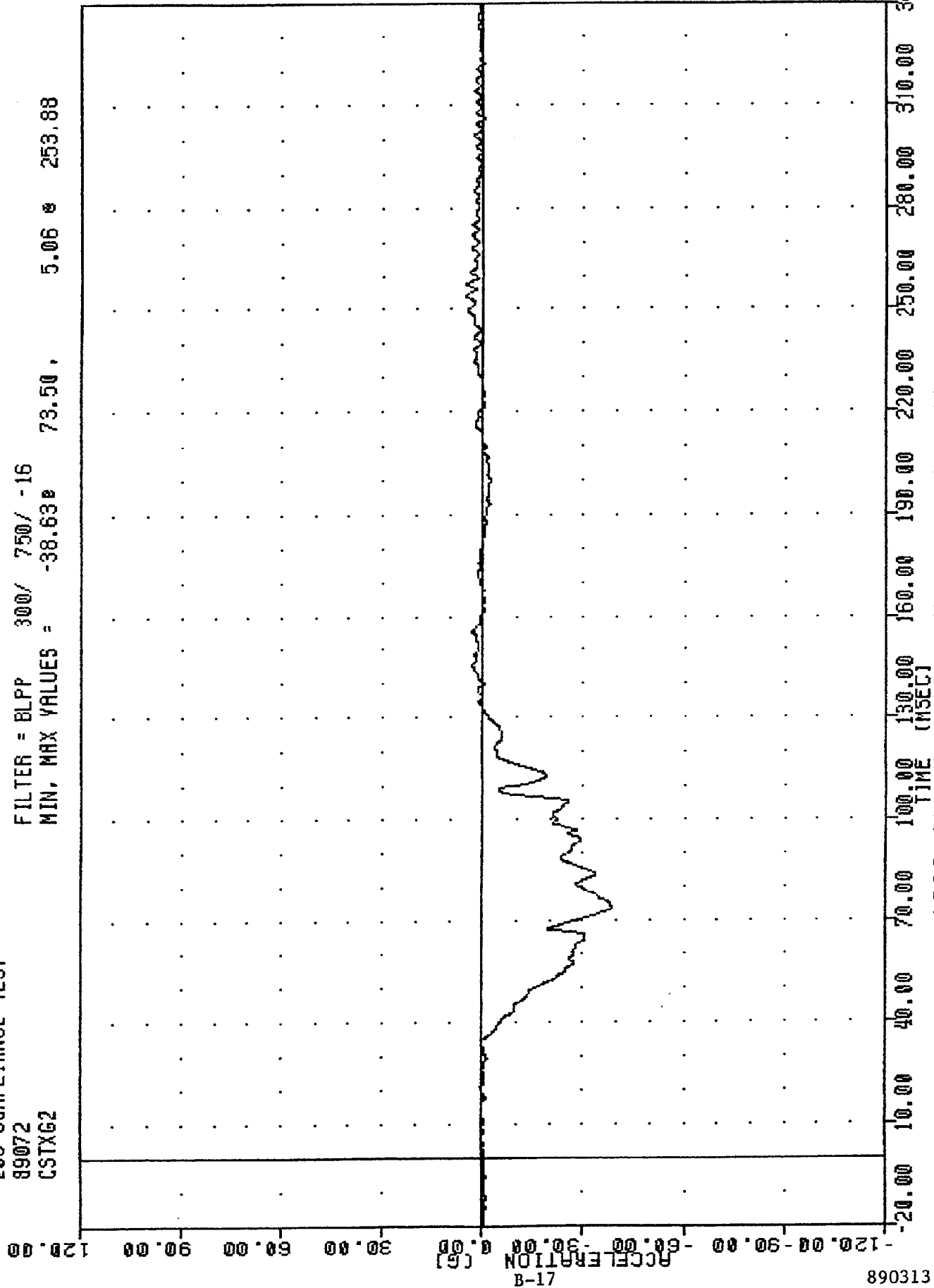
B-16

890313

1989 DODGE DIPLOMAT INTO FRONTAL BARRIER  
RIGHT FRONT PASSENGER HEAD RESULTANT ACCELERATION

TRC 890313  
208 COMPLIANCE TEST  
89072  
CSTX62

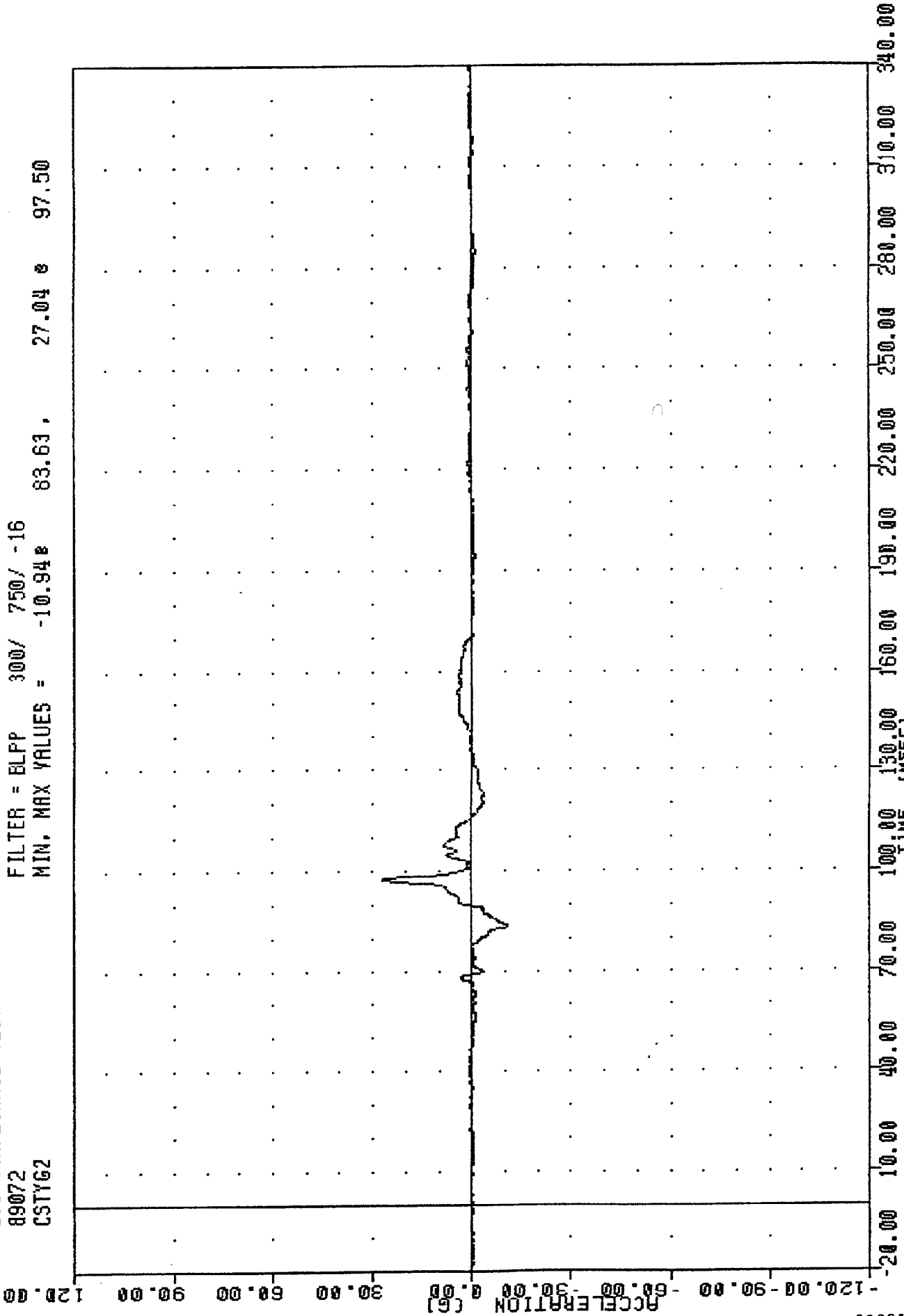
FILTER = BLPP 300/ 750/ -16  
MIN, MAX VALUES = -38.63e 73.50, 5.06 e 253.88



1989 DODGE DIPLOMAT INTO FRONTAL BARRIER  
RIGHT FRONT PASSENGER CHEST X AXIS ACCELERATION

TRC , 890313  
208 COMPLIANCE TEST  
89072  
CSTY62

FILTER = BLFP 300/ 750/ -16  
MIN. MAX VALUES = -10.94 83.63 , 27.04 97.50



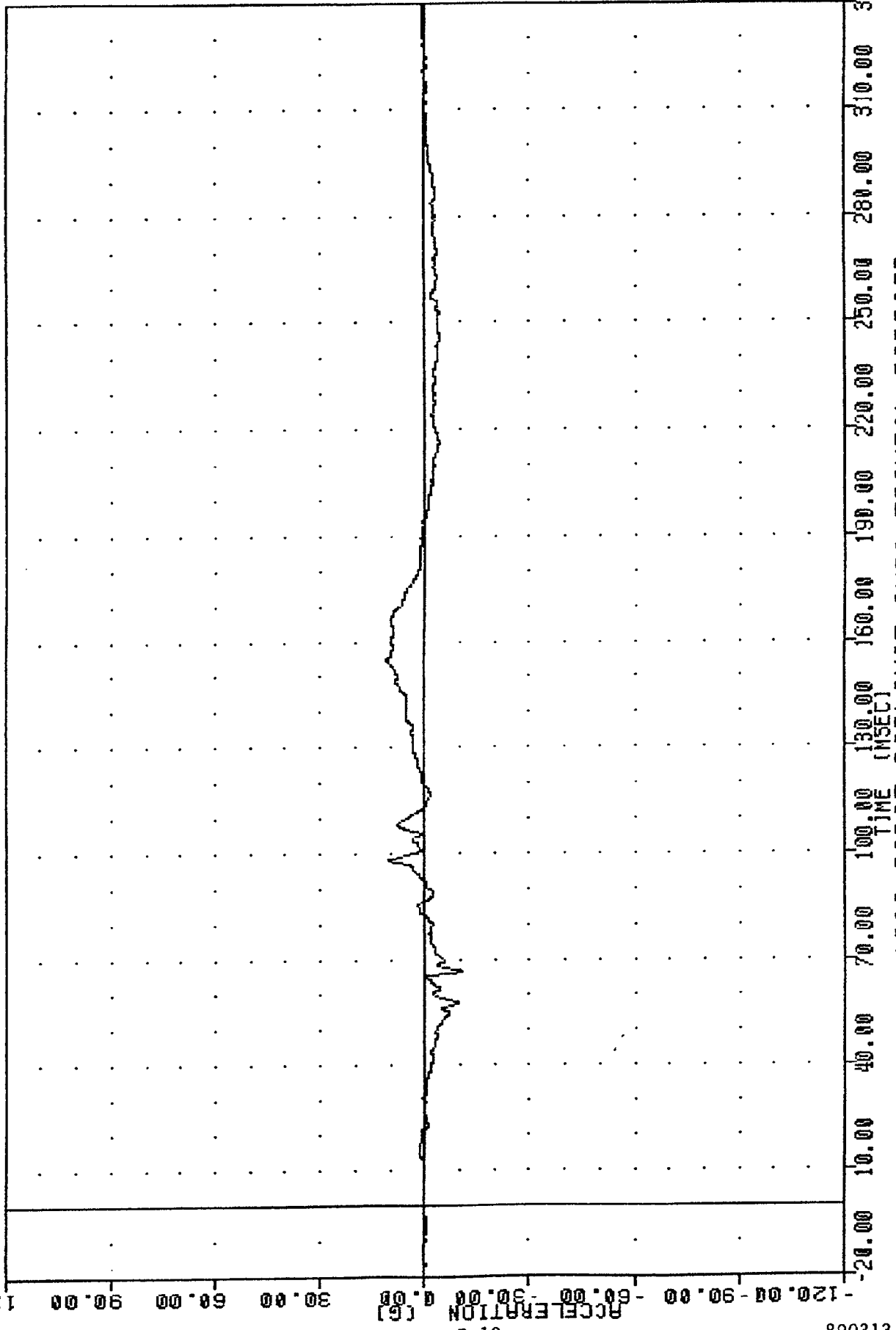
B-18

890313

1989 DODGE DIPLOMAT INTO FRONTAL BARRIER  
RIGHT FRONT PASSENGER CHEST Y AXIS ACCELERATION

TRC 890313  
208 COMPLIANCE TEST  
89072  
CSTZ62

FILTER = BLPP 300/ 750/ -16  
MIN, MAX VALUES = -10.47e 66.75, 10.77 e 154.88

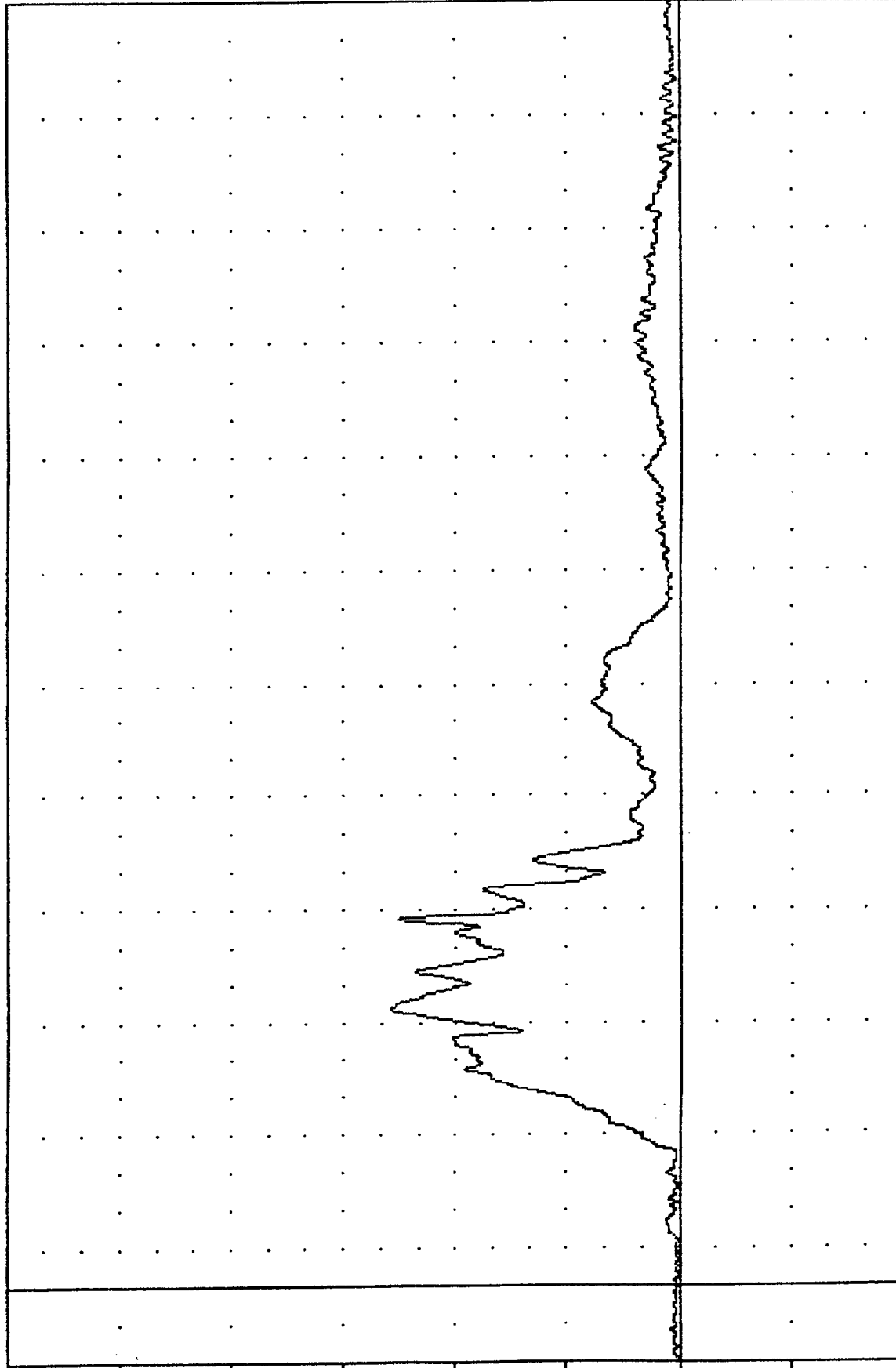


1989 DODGE DIPLOMAT INTO FRONTAL BARRIER  
RIGHT FRONT PASSENGER CHEST Z AXIS ACCELERATION

TRC  
208 COMPLIANCE TEST  
89072  
CSTRG2

FILTER = BLPP 300/ 750/ -16  
MIN. MAX VALUES = 0.048 -20.00 , 38.74 8 73.50

90.00



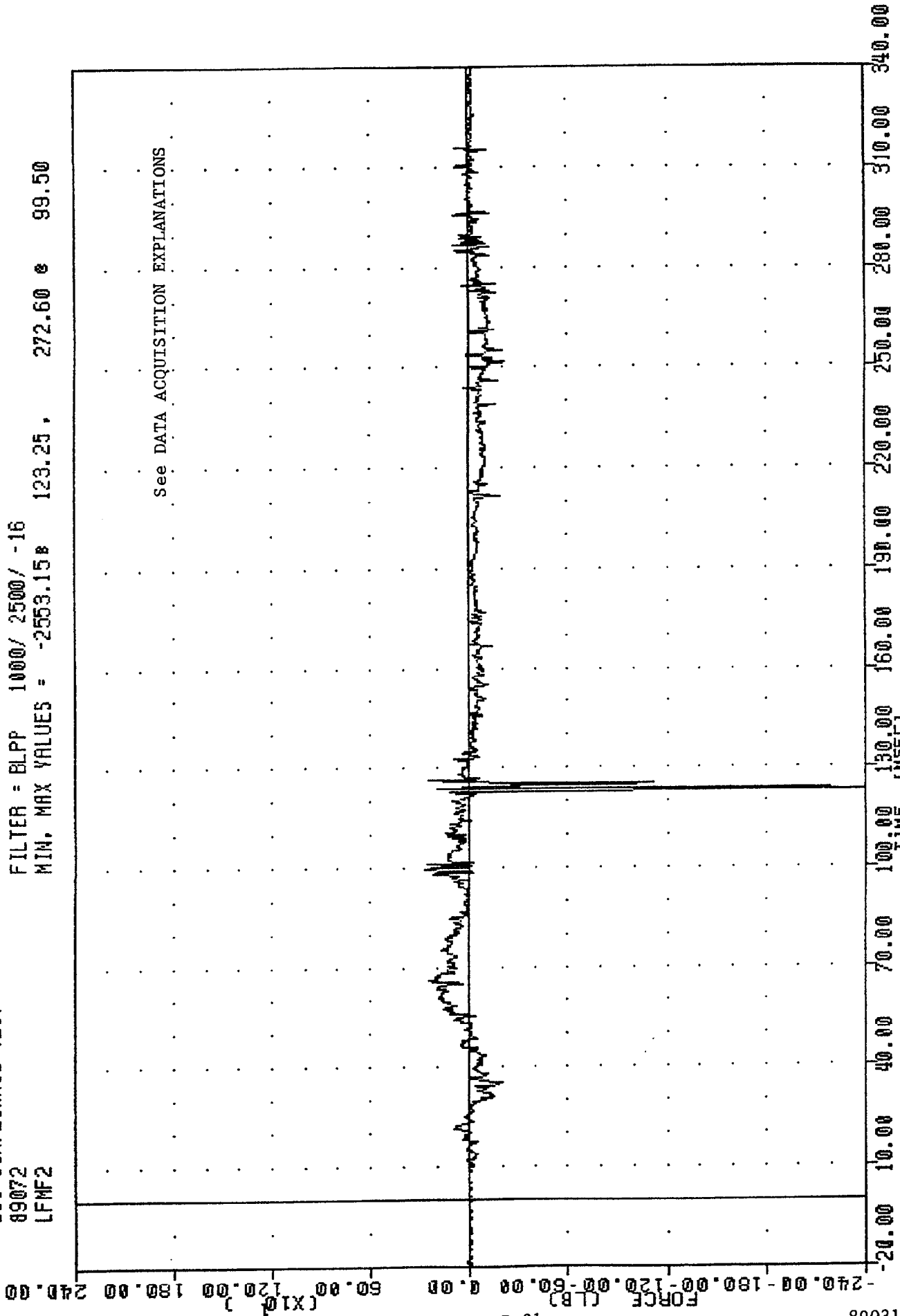
B-20

890313

1989 DODGE DIPLOMAT INTO FRONTAL BARRIER  
RIGHT FRONT PASSENGER CHEST RESULTANT ACCELERATION

TRC  
 208 COMPLIANCE TEST  
 89072  
 LFMF2

FILTER = BLPP 1000/ 2500/ -16  
 MIN. MAX VALUES = -2553.15 272.60 e 99.50



B-21

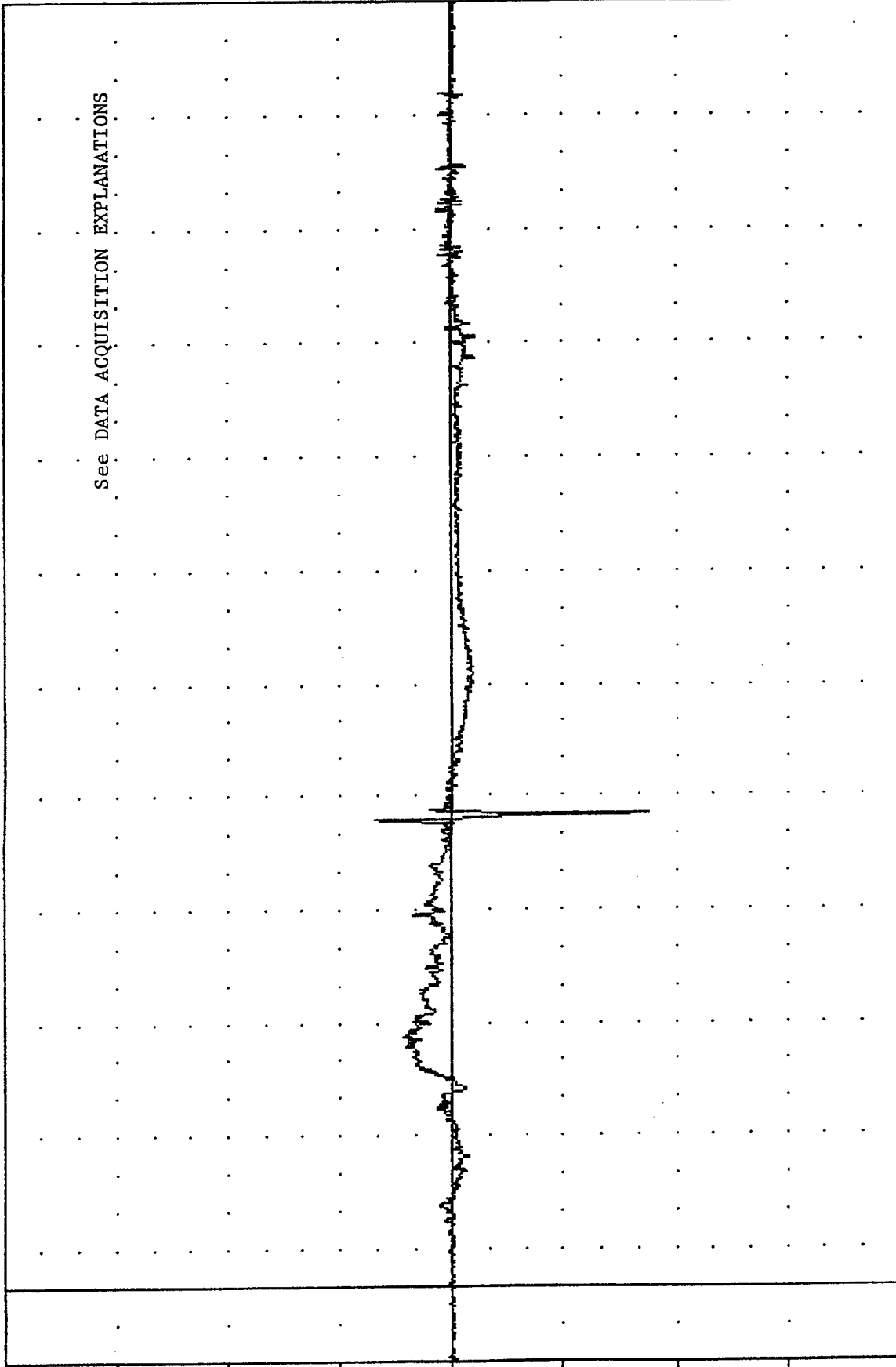
890313

1989 DODGE DIPLOMAT INTO FRONTAL BARRIER  
 RIGHT FRONT PASSENGER LEFT FEMUR FORCE

TRC 890313  
208 COMPLIANCE TEST  
89072  
RFMF2

FILTER = BLPP 1000/ 2500/ -16  
MIN. MAX VALUES = -1054.39# 125.25, 406.33 e 123.50

(X10<sup>3</sup>)  
240.00  
180.00  
120.00  
60.00  
0.00  
-60.00  
-120.00  
-180.00  
-240.00



890313

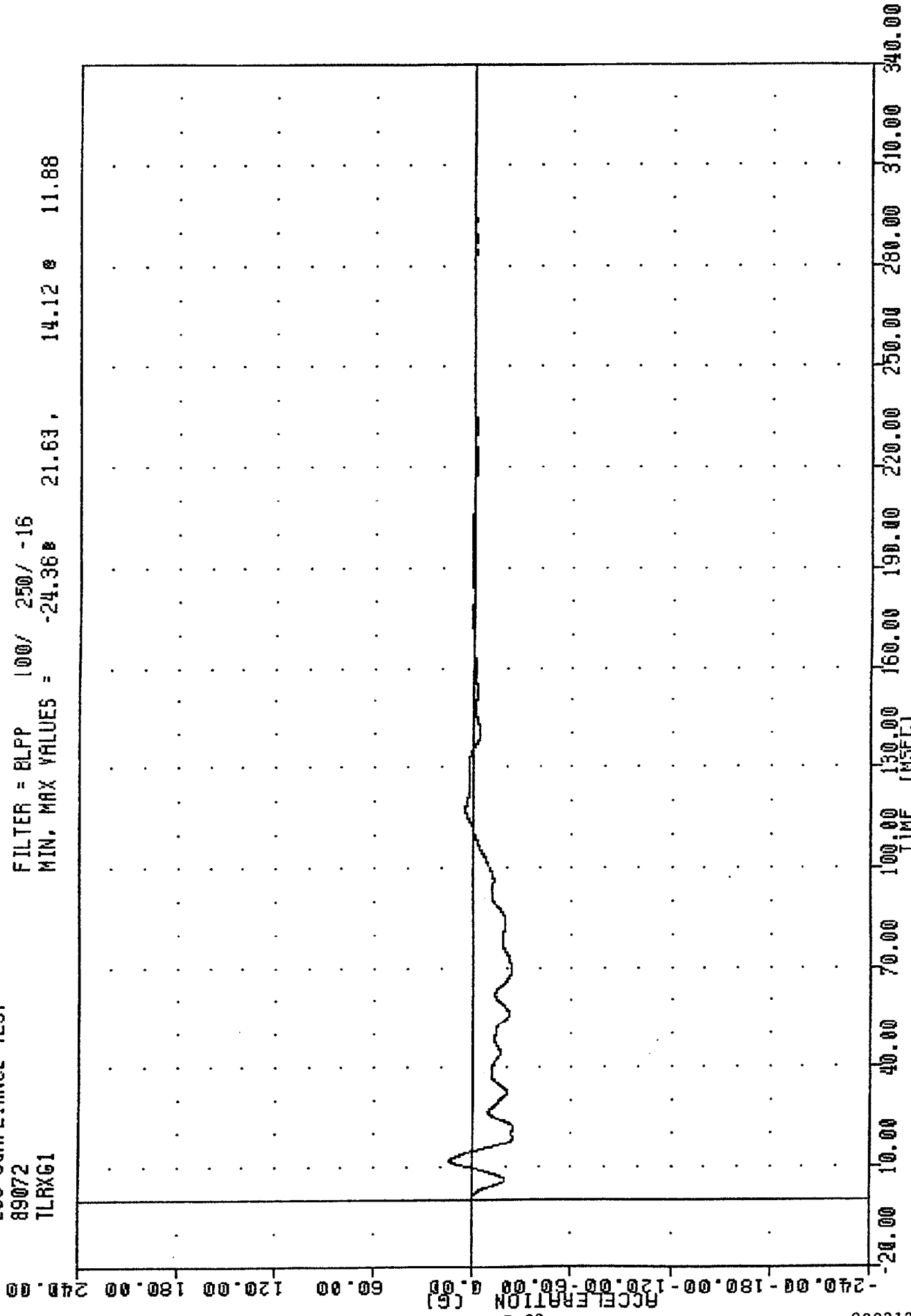
B-22

1989 DODGE DIPLOMAT INTO FRONTAL BARRIER  
RIGHT FRONT PASSENGER RIGHT FEMUR FORCE

-20.00 10.00 40.00 70.00 100.00 130.00 160.00 190.00 220.00 250.00 280.00 310.00 340.00

TRC 890313  
208 COMPLIANCE TEST  
89072  
TLRXG1

FILTER = BLPP 100/ 250/ -16  
MIN. MAX VALUES = 21.63, 14.12 @ 11.88



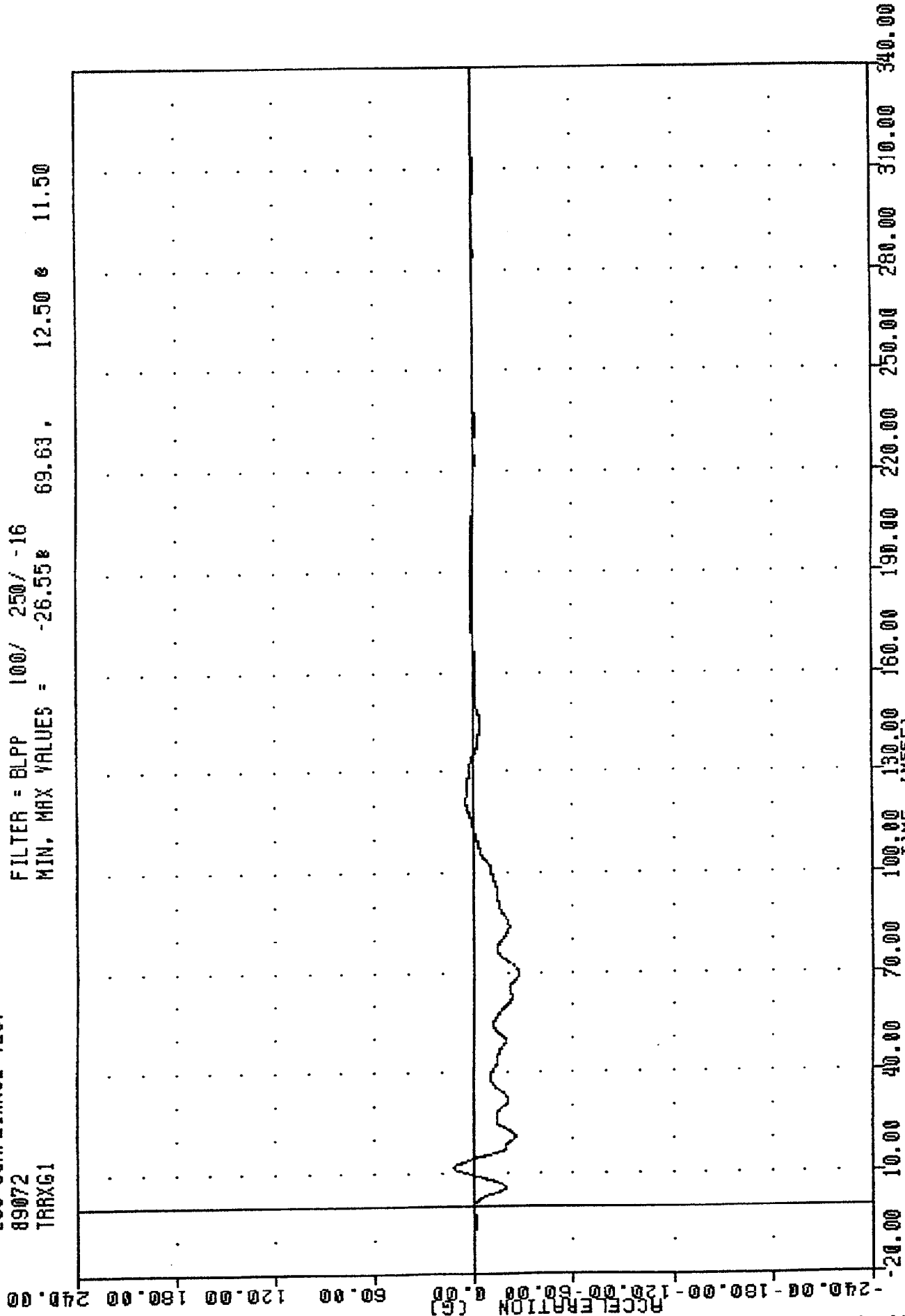
890313

B-23

1989 DODGE DIPLOMAT INTO FRONTAL BARRIER  
LEFT REAR SEAT X AXIS ACCELERATION

TRC 890313  
208 COMPLIANCE TEST  
89072  
TRRXG1

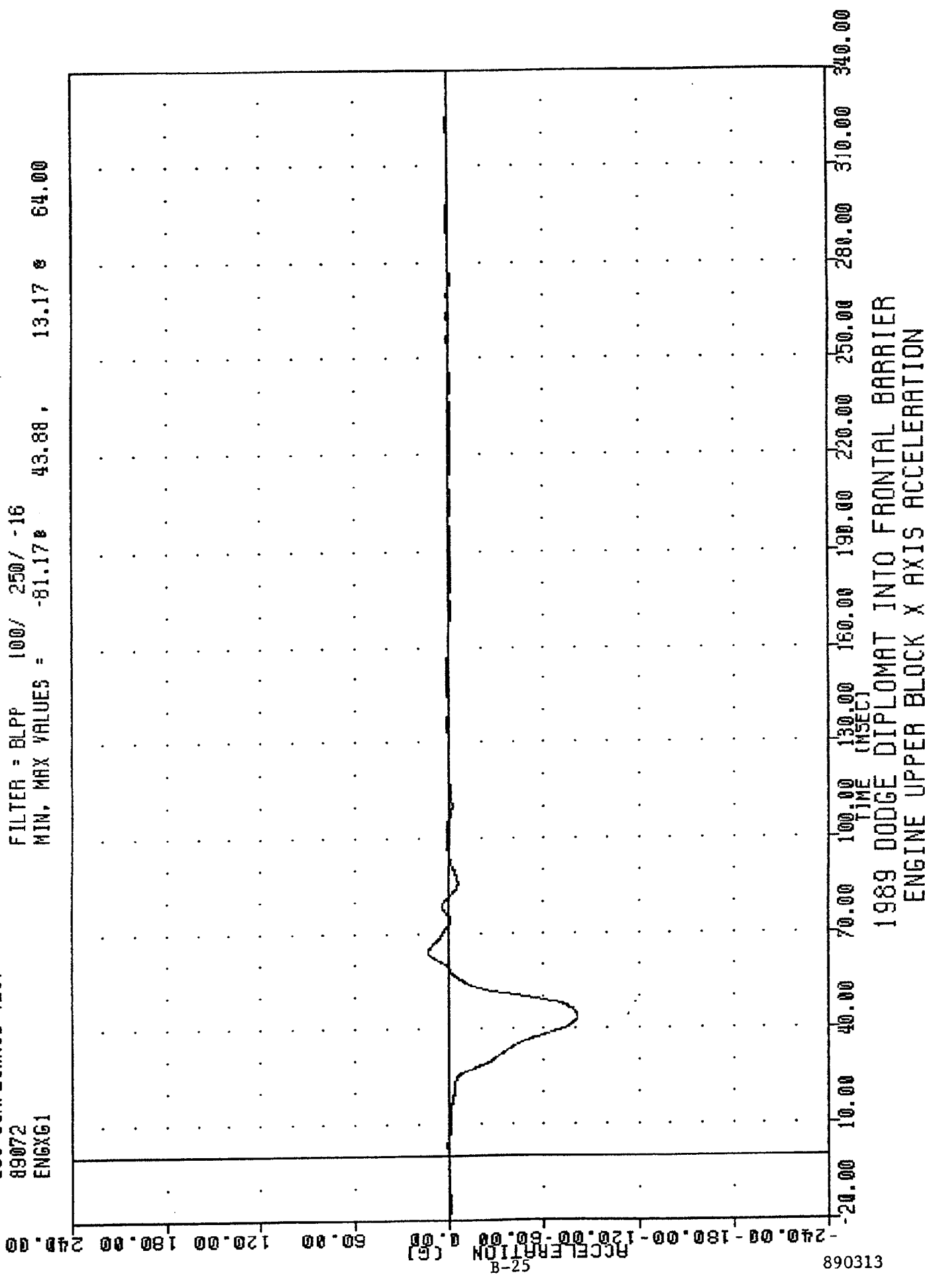
FILTER = BLPP 100/ 250/ -16  
MIN. MAX VALUES = -26.55 69.63 12.50 11.50



1989 DODGE DIPLOMAT INTO FRONTAL BARRIER  
RIGHT REAR SEAT X AXIS ACCELERATION

TRC  
208 COMPLIANCE TEST  
89072  
ENGXG1

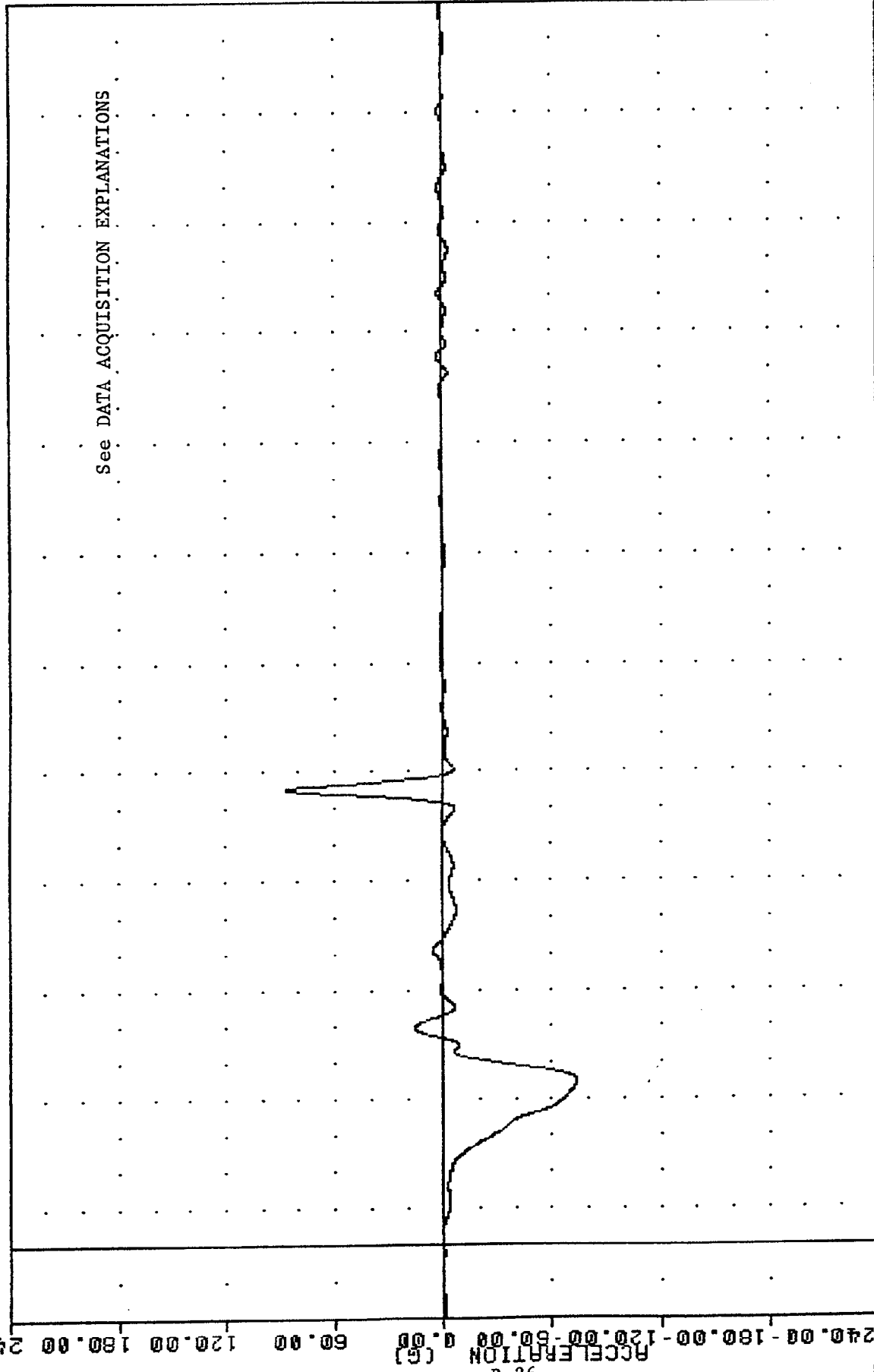
FILTER = BLPP 100/ 250/ -16  
MIN. MAX VALUES = -81.17e 43.88 , 13.17 e 64.00



1989 DODGE DIPLOMAT INTO FRONTAL BARRIER  
ENGINE UPPER BLOCK X AXIS ACCELERATION

TRC 89013  
208 COMPLIANCE TEST  
89072  
ENGXG2

FILTER = BLPP 100/ 250/ -16  
MIN. MAX VALUES = -73.64 45.00, 86.63 125.00

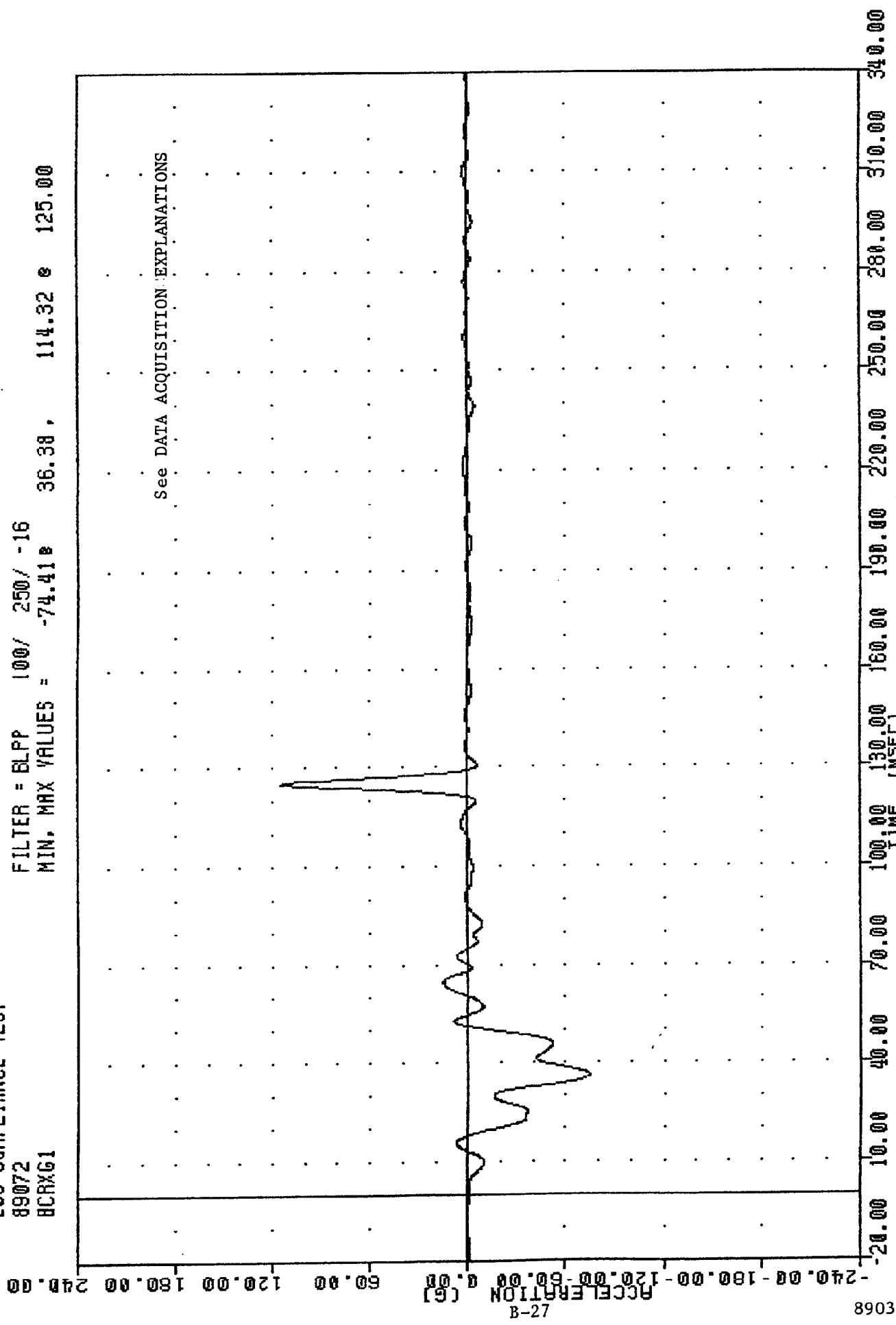


See DATA ACQUISITION EXPLANATIONS

89013  
-240.00 -180.00 -120.00 -60.00 0.00 60.00 120.00 180.00 240.00  
ACCELERATION (G)  
-20.00 10.00 40.00 70.00 100.00 130.00 160.00 190.00 220.00 250.00 280.00 310.00 340.00  
TIME (MSEC)  
1989 DODGE DIPLOMAT INTO FRONTAL BARRIER  
ENGINE BOTTOM BLOCK X AXIS ACCELERATION

TRC 890313  
208 COMPLIANCE TEST  
89072  
BCRXG1

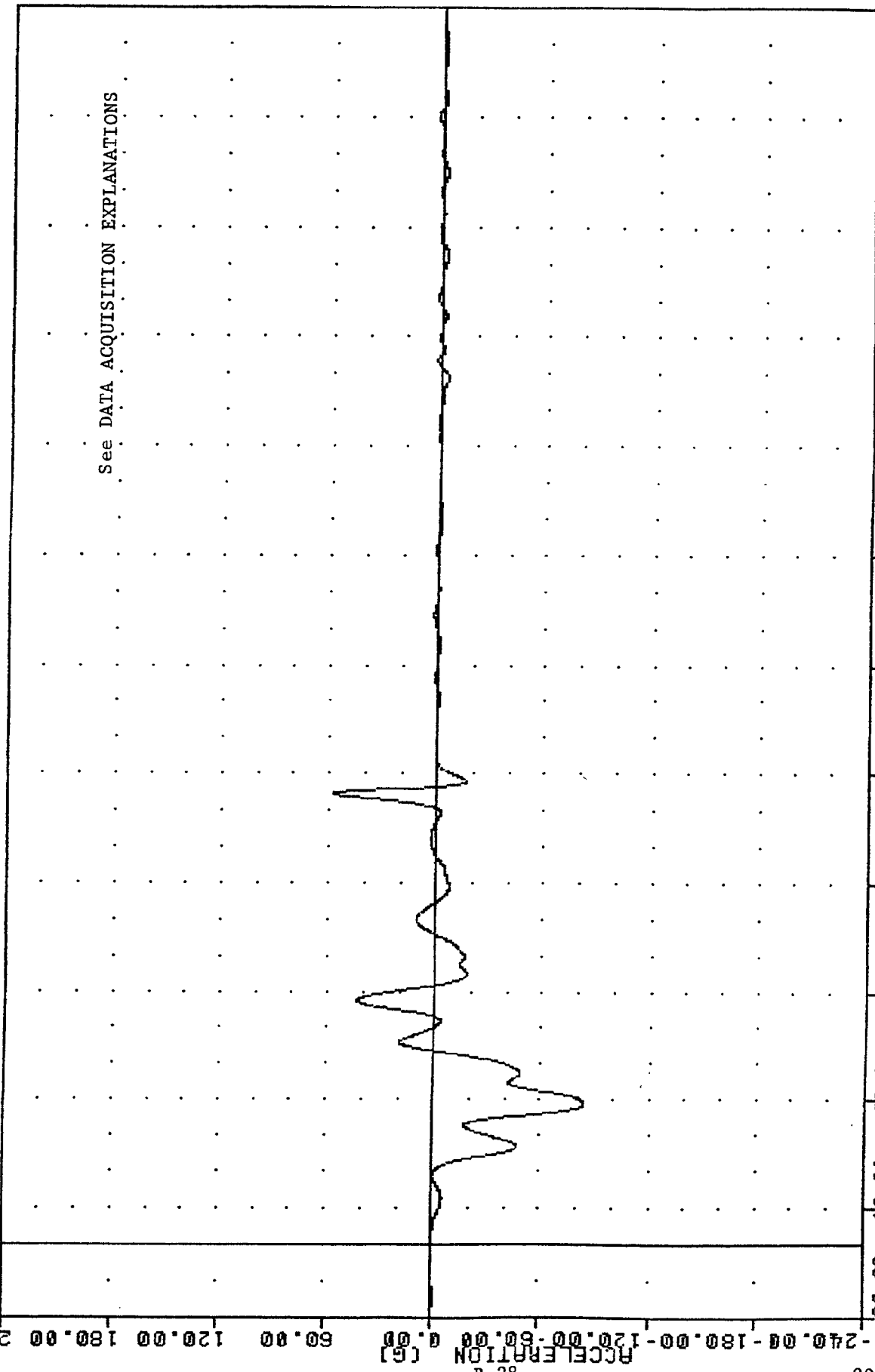
FILTER = BLPP 100/ 250/ -16  
MIN. MAX VALUES = -74.41g 36.38g 114.32g 125.00



1989 DODGE DIPLOMAT INTO FRONTAL BARRIER  
RIGHT BRAKE CALIPER X AXIS ACCELERATION

TR 89072  
 209 COMPLIANCE TEST  
 89072  
 BCLXG1

FILTER = BLPP 100/ 250/ -16  
 MIN. MAX VALUES = -83.97e 39.00, 57.97 e 124.50



See DATA ACQUISITION EXPLANATIONS

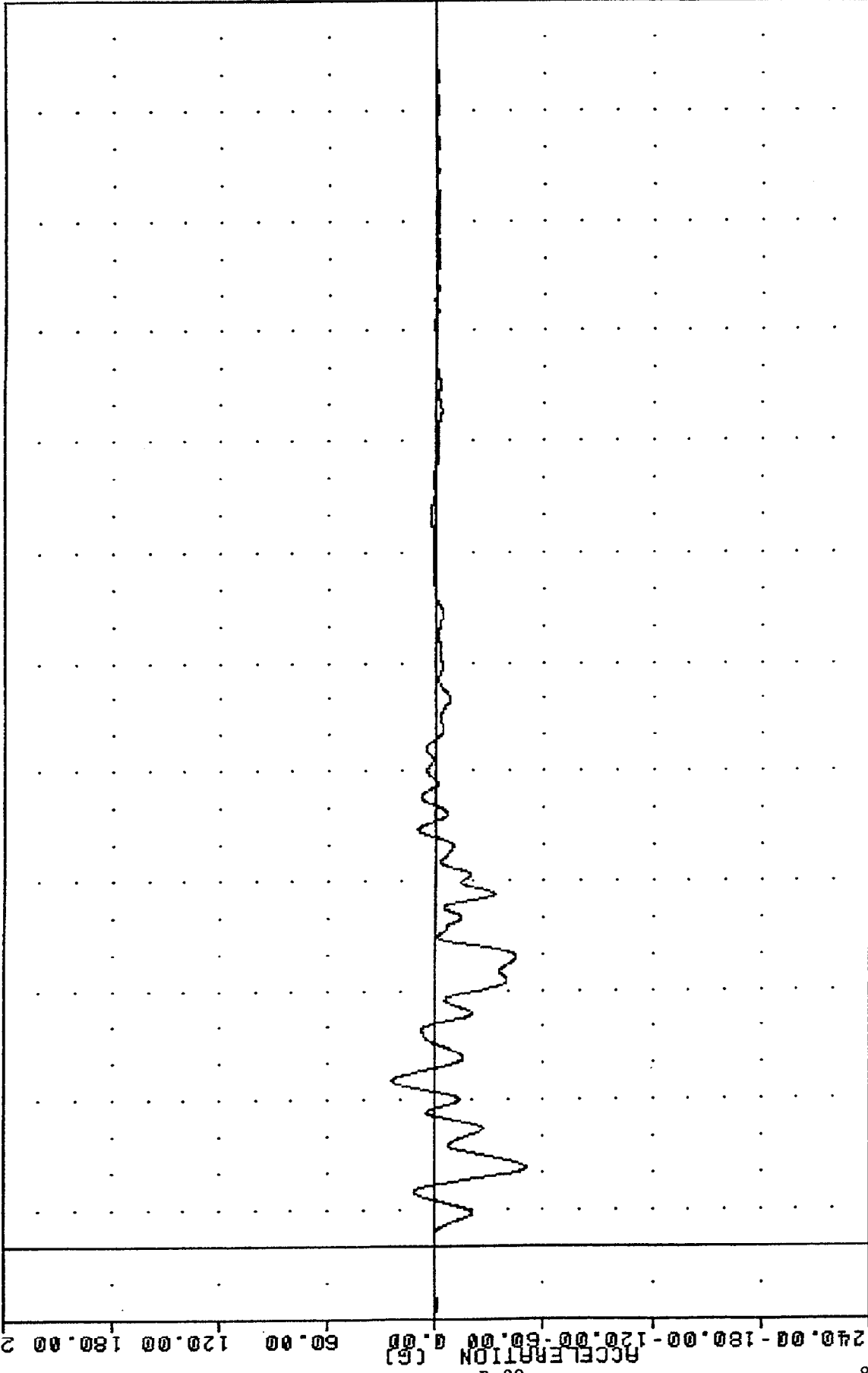
890313

1989 DODGE DIPLOMAT INTO FRONTAL BARRIER  
 LEFT BRAKE CALIPER X AXIS ACCELERATION

TRC 89072  
 208 COMPLIANCE TEST  
 89072  
 DPCXG1

FILTER = BLPP 100/ 250/ -16  
 MIN, MAX VALUES = -50.52 21.25, 24.00 45.38

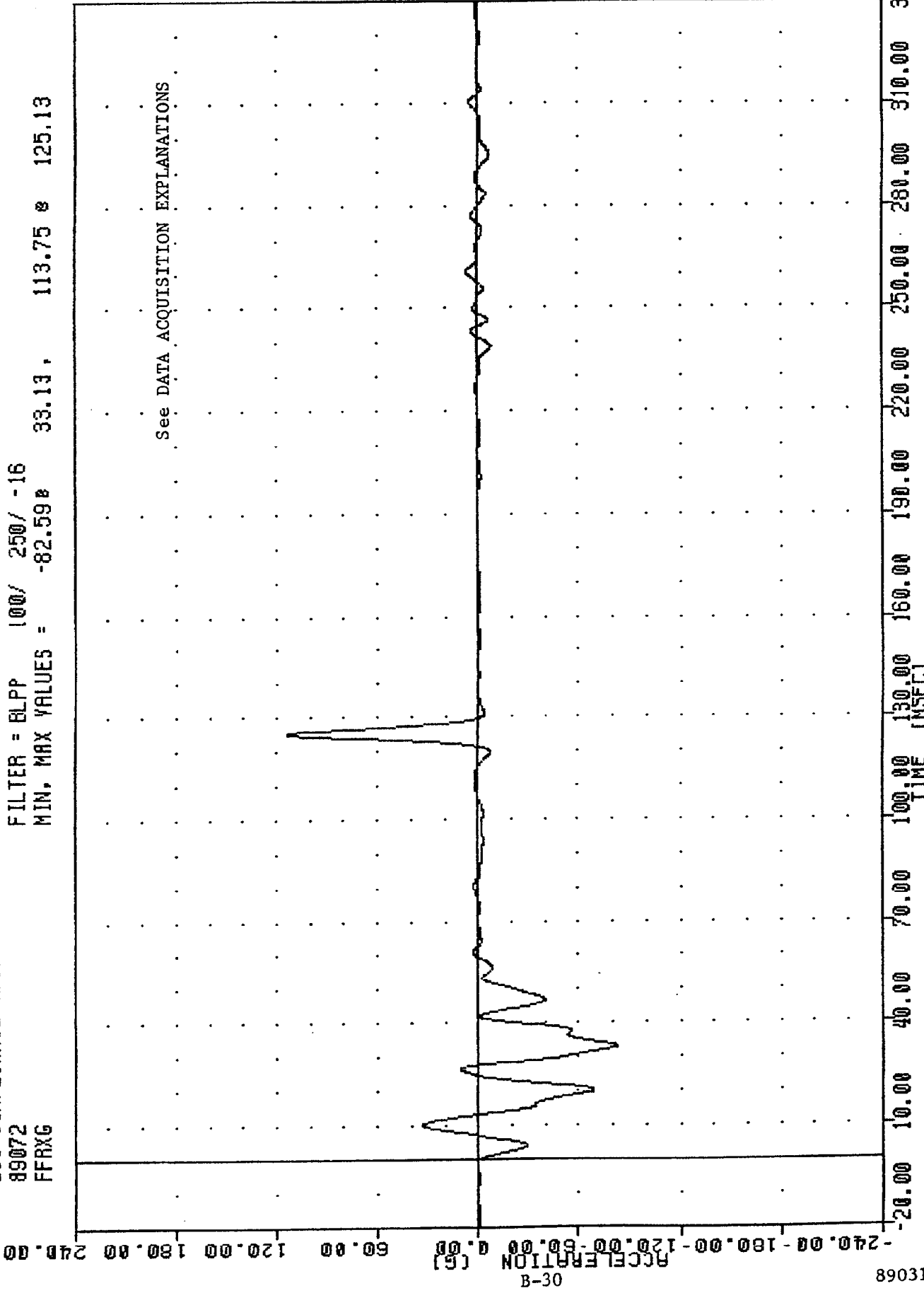
89072 208 COMPLIANCE TEST 89072 DPCXG1 FILTER = BLPP 100/ 250/ -16 MIN, MAX VALUES = -50.52 21.25, 24.00 45.38



89072 208 COMPLIANCE TEST 89072 DPCXG1 FILTER = BLPP 100/ 250/ -16 MIN, MAX VALUES = -50.52 21.25, 24.00 45.38  
 1989 DODGE DIPLOMAT INTO FRONTAL BARRIER  
 DASH PANEL CENTER X AXIS ACCELERATION

TRC 890313  
208 COMPLIANCE TEST  
89072  
FFRXG

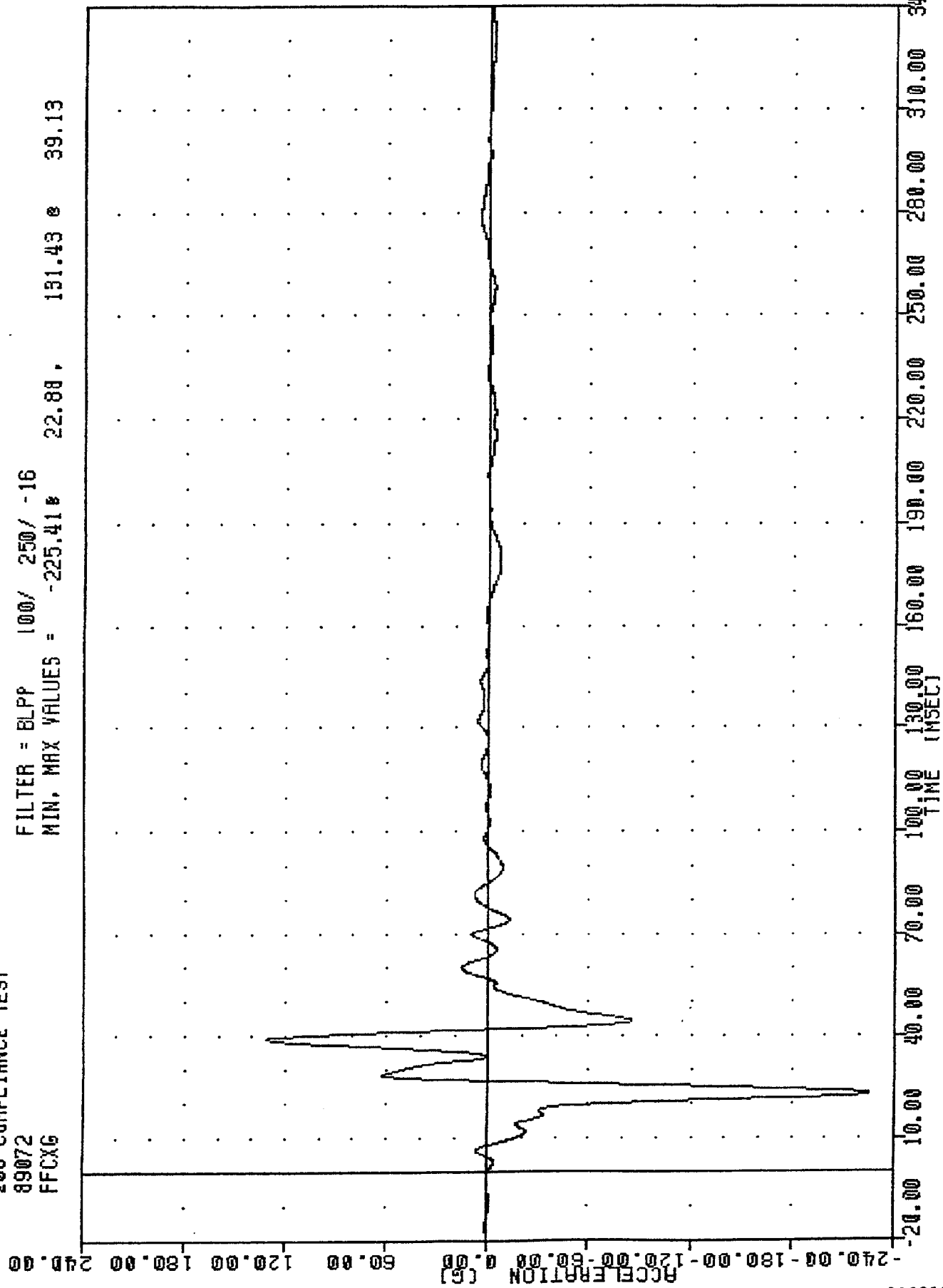
FILTER = BLPP 100/ 250/ -16  
MIN. MAX VALUES = -82.59 33.13 113.75 125.13



1989 DODGE DIPLOMAT INTO FRONTAL BARRIER  
FRONT FRAME RAIL X AXIS ACCELERATION

TRC 89072, 89072  
 209 COMPLIANCE TEST  
 89072  
 FFCXG

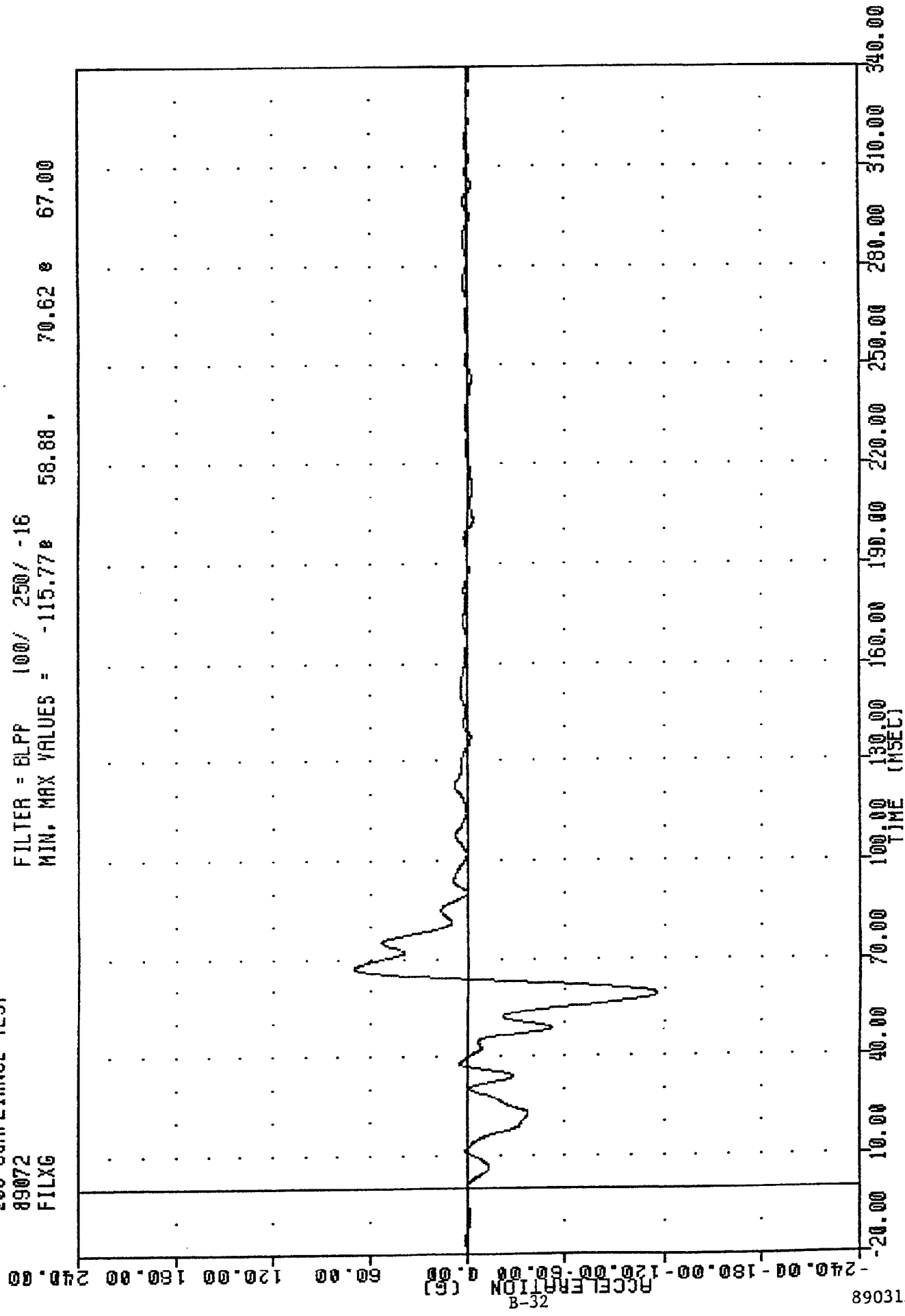
FILTER = BLPP 100/ 250/ -16  
 MIN. MAX VALUES = -225.41e 22.88, 191.43 e 39.13



1989 DODGE DIPLOMAT INTO FRONTAL BARRIER  
 FRONT FRAME CROSSMEMBER X AXIS ACCELERATION

TRC 890313  
208 COMPLIANCE TEST  
89072  
FILXG

FILTER = BLPP 100/ 250/ -16  
MIN. MAX VALUES = -115.77e 58.88 . 70.62 e 67.00

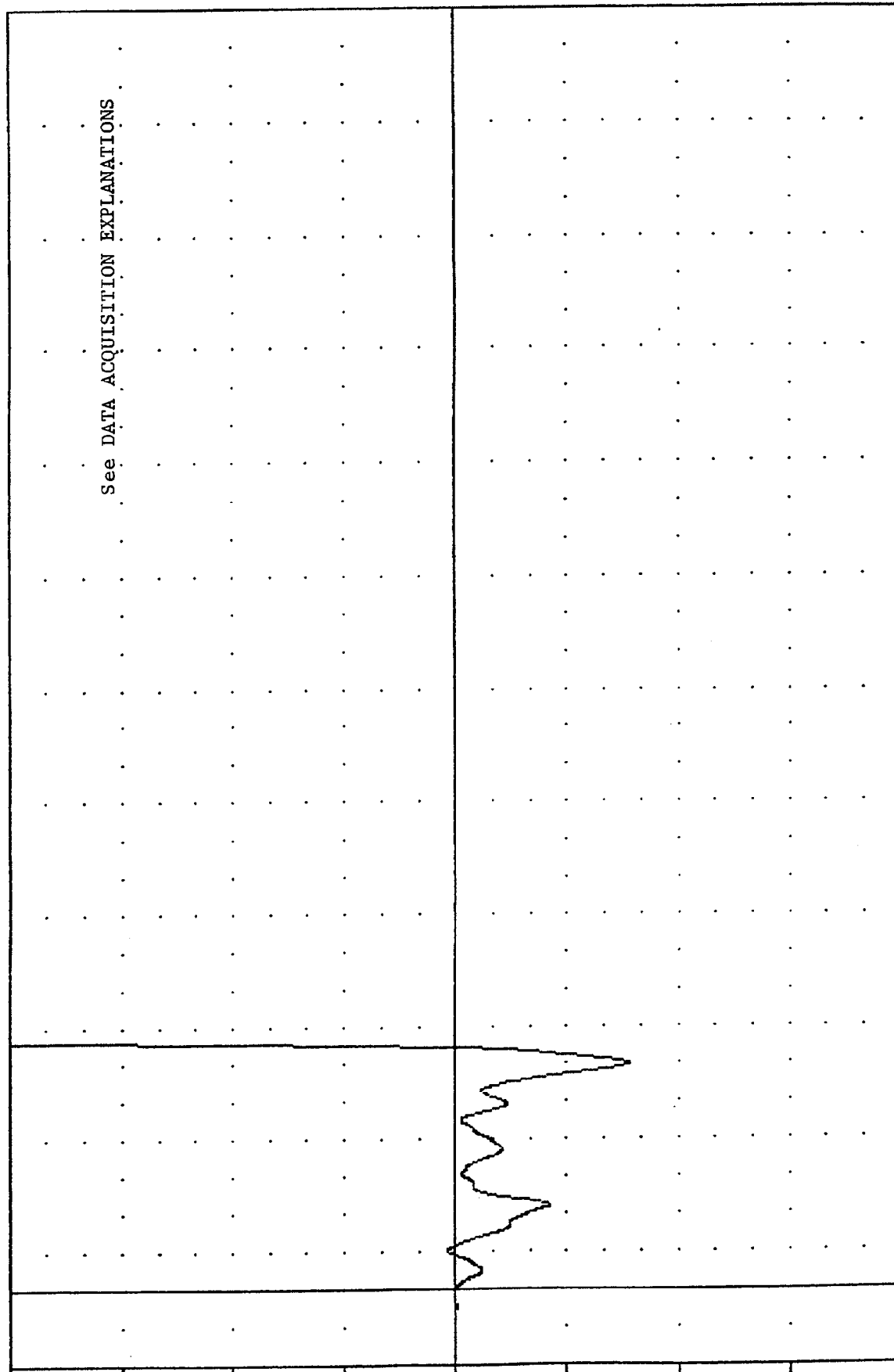


1989 DODGE DIPLOMAT INTO FRONTAL BARRIER  
LEFT FENDER WELL INSIDE X AXIS ACCELERATION

TRC  
 200 COMPLIANCE TEST  
 89072  
 FIRXG

FILTER = BLPP 100/ 250/ -16  
 MIN. MAX VALUES = -93.41# 60.00 , 1164.59 e 71.50

249.00



-240.00 -180.00 -120.00 -60.00 0.00 60.00 120.00 180.00 240.00  
 -20.00 10.00 40.00 70.00 100.00 130.00 160.00 190.00 220.00 250.00 280.00 310.00 340.00

1989 DODGE DIPLOMAT INTO FRONTAL BARRIER  
 RIGHT SHOCK TOWER X AXIS ACCELERATION