V1917

REPORT No. 301-MSE-93-105-TR93003-05 ISUZU MOTORS LIMITED JAPAN R93003-05

SAFETY COMPLIANCE TEST FOR

FMVSS 301-75R

FUEL SYSTEM INTEGRITY

1993 ISUZU TROOPER MPV

NHTSA No. CP5703

MOBILITY SYSTEMS AND EQUIPMENT COMPANY
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JUNE 10, 1993

FINAL REPORT

Prepared Under Contract No. DTNH22-93-C-01007

For:

U.S. DEPARTMENT OF TRANSPORTATION
NATIONAL HIGHWAY TRAFFIC SAFETY ADMINISTRATION
Office of Vehicle Safety Compliance
400 Seventh Street, S.W.
Washington, DC 20590

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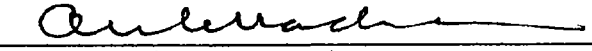
Approved by: 

Dr. Anil V. Khadilkar

Date: 10 June 1993

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16. Abstract

Tests were conducted on the subject 1993 Isuzu Trooper MPV in accordance with the specifications of the Office of Vehicle Safety Compliance Test Procedure TP-301-00, dated April 26, 1989, for the determination of FMVSS 301-75 Rear compliance.

Test failures identified were: None.

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SECTION 1

INTRODUCTION

This report presents information on tests conducted on a 1993 Isuzu Trooper MPV, NHTSA No. CP5703, to determine compliance with the requirements of FMVSS 301-75 Rear impact testing. All tests were conducted in accordance with the National Highway Traffic Safety Administration (NHTSA) Office of Vehicle Safety Compliance (OVSC) Laboratory Procedure TP-301-00 dated April 26, 1989 and the corresponding Mobility Systems and Equipment Company (MSE) Test Procedure MSE-TP-301-75/R-01 dated March 19, 1993, which is approved by NHTSA officials. The tests were conducted under contract No. DTNH22-93-C-01007.

Section 2 of this report describes the test procedure and presents the summary data. Section 3 of this report presents all the test results. Section 5 presents all the pertinent photographs. Section 6 presents all the time history data plots.

No test failures related to FMVSS 301-75 Rear were identified for the tested 1993 Isuzu Trooper MPV.

SECTION 2

TEST PROCEDURE AND SUMMARY DATA

The 1993 Isuzu Trooper MPV, NHTSA No. CP5703, was subjected to FMVSS 301-75 Rear testing on May 20, 1993. The vehicle is shown in pretest condition in Figures 5-1 to 5-4. The manufacturer's certification label and tire placard are shown in Figure 5-5.

The vehicle was inspected, measured, weighed, marked, photographed and tested in accordance with the procedure requirements. A partially instrumented part 572E Anthropomorphic Test Device (ATD) was positioned in the vehicle, in the driver position. ATD instrumentation consists of triaxial accelerometer mountings in the head, chest and pelvis and a six-axis neck transducer. Seven additional sensors were installed in the vehicle. The driver lap and shoulder belts were instrumented with load cells. A displacement transducer was installed to measure driver shoulder belt pullout. Primary and redundant X-axis accelerometers were placed at the approximate vehicle c.g. An angular rate sensor and an accelerometer were placed on the top frame rail of the driver seat. A non-instrumented part 572B ATD was positioned in the front passenger position for ballast.

High speed cameras were set up as required in the test procedure. The camera positions for the FMVSS 301-75 Rear test are as shown in Figure 2-1. Actual locations are presented in Table 2-1. All high speed cameras were set to run at a minimum of 500 frames per second. The onboard camera was set to run at a minimum of 1000 frames per second. Actual camera speeds are also presented in Table 2-1.

The test was conducted with a moving barrier impacting the rear of the stationary test vehicle. The center of the moving barrier was set to impact the longitudinal centerline of the vehicle. The test vehicle was checked for fuel system leaks for a thirty minute period after the initial impact and for successive 7 minute periods afterwards at 90, 180, 270 and 360 degree rollover attitudes.

The velocity of the impact sled was 29.51 mph. The 1993 Isuzu Trooper MPV, NHTSA No. CP5703 had no fuel system leaks. No test failures related to FMVSS 301-75 Rear were identified on the tested 1993 Isuzu Trooper MPV.

TABLE 2-1

SUMMARY OF RESULTS

VEHICLE YEAR/MAKE/MODEL/BODY STYLE: 1993/Isuzu/Trooper/MPV

VEHICLE NHTSA No.: CP5703 **TEST MODE:** Rear Moving Barrier

TEST DATE: 05/20/93 **TIME:** 12:30 pm **TEMPERATURE:** 67° F

VEHICLE TEST WEIGHT: 4823 lb **IMPACT VELOCITY:** 29.51 mph

STATIC CRUSH: Left Side = 3.7 in

Right Side = 4.2 in

Centerline = 10.7 in

AVERAGE CRUSH: 6.2 in

VEHICLE REBOUND: N/A in (Frontal impacts only)

TYPE OF FRONT OCCUPANT RESTRAINT INSTALLED IN TEST VEHICLE:

Driver DSP: 3 Point Continuous Webbing Active Belt

Outboard Front Passenger DSP: 3 Point Continuous Webbing Active Belt

VISIBLE ATD CONTACT POINTS:

Driver ATD: Top of head grazed the rear seatback.

Passenger ATD: N/A

VEHICLE DOOR OPENING INFORMATION:

Door	Opened	Jammed
Right Front	Yes	No
Left Front	Yes	No
Right Rear	Yes	No
Left Rear	Yes	No

LOSS OF WINDSHIELD RETENTION: N/A

PENETRATION OF WINDSHIELD ZONE TEMPLATE: N/A

STODDARD SOLVENT SPILLAGE FROM VEHICLE'S FUEL SYSTEM: No spillage

TABLE 2-2

CAMERA DATA

Camera Location	Coordinates (inches)			Angle (degrees)	Lens Size (mm)	Film Speed (fps)
	X	Y	Z			
1. Onboard	122	41	48	-1	16	1000
2. Overhead	-24	0	236	-90	16	510
3. Left Side View	30	-660	55	-2	28	600
4. Right Side View #1	-55	475	58	-2	13	590
5. Right Side View #2	50	1200	125	-12	15-70 Zoom	24
6. Underbody View #1	66	2	-64	67	16	480
7. Underbody View #2	114	0	-68	77	16	600
8. Underbody View #3	190	-1	-65	58	16	610

COORDINATE REFERENCE: X - Film plane to barrier face impact plane

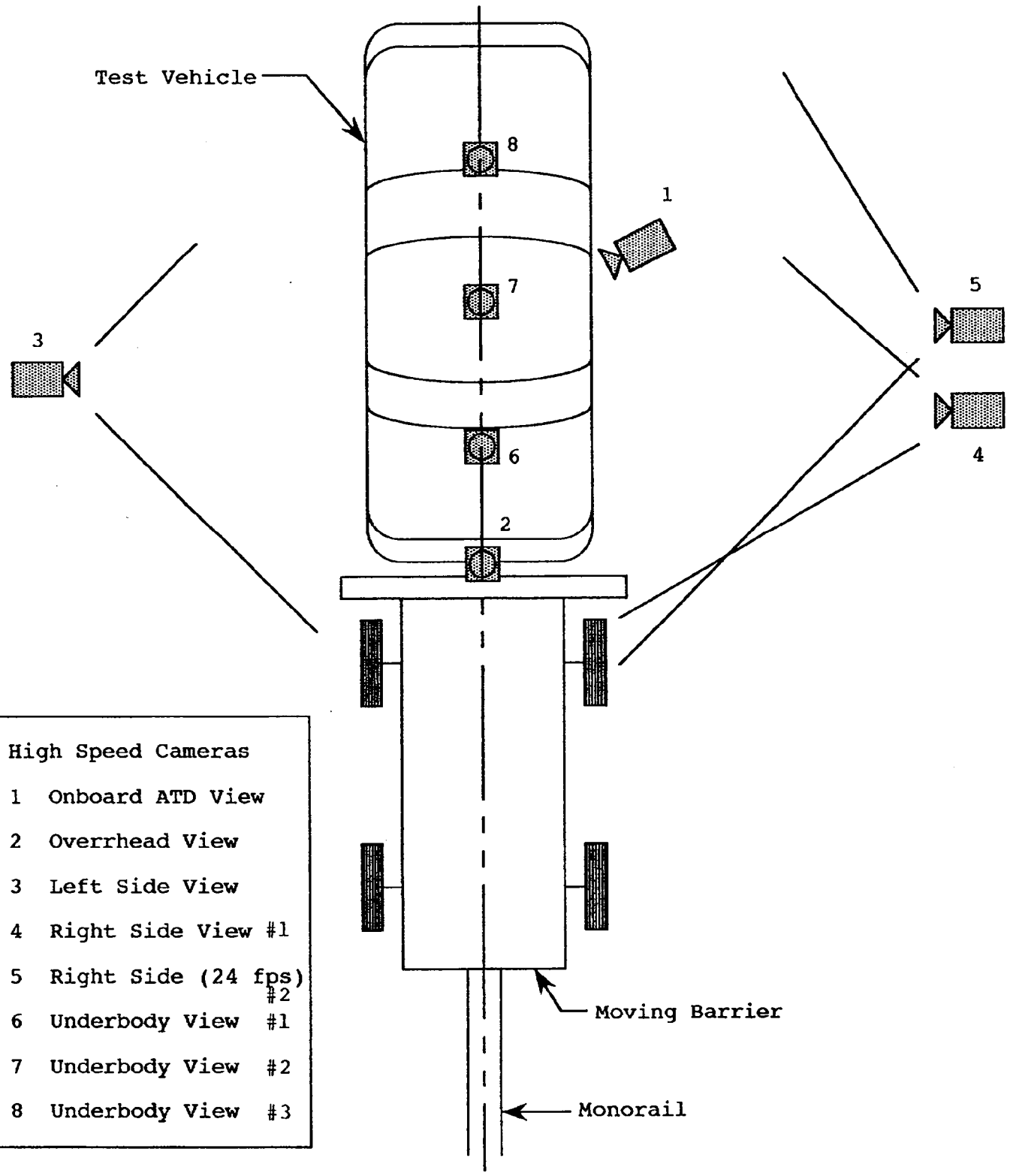
Y - Film plane to monorail centerline

Z - Film plane to ground

Angle - Degrees from horizontal plane
+ Upwards - Downwards

FIGURE 2-1

CAMERA POSITIONS



High Speed Cameras	
1	Onboard ATD View
2	Overrhead View
3	Left Side View
4	Right Side View #1
5	Right Side (24 fps) #2
6	Underbody View #1
7	Underbody View #2
8	Underbody View #3

SECTION 3

COMPLIANCE TEST RESULTS

The results of the FMVSS 301-75 Rear compliance tests on the tested 1993 Isuzu Trooper MPV, NHTSA No. CP5703, are presented in this section.

The test vehicle was inspected upon receipt. Vehicle pretest information, delivered weights and attitudes, test weights and attitudes, tire information and fuel system capacity were recorded and are presented in Table 3-1.

The velocity of the rear impact sled was 29.51 mph. Test velocity information and posttest crush details are given in Table 3-2. Posttest left side, front, right side and rear views of the test vehicle are given in Figures 5-6 to 5-9.

No solvent leaked from any part of the vehicle's fuel system during impact or for 30 minutes after the impact event. The vehicle was then placed on the static rollover machine and rotated to the 90, 180, 270 and 360 degree positions successively at the required time intervals. No fuel system leaks were detected at any of the rollover positions. The details of the rollover test sequence are presented in Table 3-3. Pretest and posttest views of the vehicle underbody are shown in Figures 5-10 to 5-12.

Upon impact the driver ATD moved rearward with its head grazing the rear seatback. The Head Injury Criteria (HIC) for the driver ATD was 103.1. The chest resultant (3 msec clip) was 13.0 g's. All driver ATD instrumentation results are presented in Table 3-4. Pretest measurements are shown in Tables 3-5 and 3-6. Pretest and posttest views of the Driver ATD position are shown in Figures 5-13 and 5-14.

No test failures related to FMVSS 301-75 Rear were identified for the tested 1993 Isuzu Trooper MPV.

TABLE 3-1

TEST VEHICLE DATA

VEHICLE YEAR/MAKE/MODEL/BODY STYLE: 1993/Isuzu/Trooper/MPV

VEHICLE NHTSA No.: C P 5 7 0 3 ; **VIN:** J A C D H 5 8 V 4 P 7 9 0 0 8 3 0

VEHICLE BODY COLOR: Blue ; **MONTH AND YEAR OF MANUFACTURE:** 09/92

ENGINE: 6 Cylinders; 193.1 cu in; 3.165 Liters; 3165 cc
X Gas; ___ Diesel; ___ Turbocharged
PLACEMENT: X Longitudinal; ___ Transverse (Lateral)

TRANSMISSION: 5 Speed; X Manual; ___ Automatic; ___ Overdrive

FINAL DRIVE: ___Front Wheel Drive; ___Rear Wheel Drive; X Four Wheel Drive

DATE VEHICLE AVAILABLE FOR TESTING: 03/02/93

ODOMETER READING: 65 mi; **OPTIONS:** ___ A/C; X P/S; ___ P/Window;
X Tilt Whl.; ___ Cruise Control

GVWR: 5510 lb **GAWR Front:** 2755 lb **GAWR Rear:** 3085 lb

DATA RECORD FROM VEHICLE'S TIRE PLACARD:

Location of Placard on Vehicle: Driver Side B-Pillar
Recommended Cold Tire Pressure: 30 psi Front; 35 psi Rear
Tire Pressure (at maximum capacity): 30 psi Front; 35 psi Rear
Recommended Tire Size: P245/70R16 Recommended Load Range: N/A
Tires on Vehicle: P245/70R16 Load Range: 4 Plies
Tire Manufacturer: Goodyear Type of Spare Tire: P245/70R16
Number of Occupants: 2 Front; 3 Rear; ___Third Seat; 5 TOTAL
Type of Front Seats: X Bucket; ___ Bench; ___ Split Bench
Type of Front Seat Back: ___ Fixed; X Adj. Lever; ___ Adj. Rotating Knob

Vehicle Maximum Capacity Loading: N/A lb
No. of Occupants x 150 lb: N/A lb
Cargo Capacity (Max - Occupants): 300 lb *

TEST VEHICLE DELIVERED WEIGHT WITH MAXIMUM FLUIDS:

Right Front:	1023 lb			
Left Front:	1085 lb	Total Front:	2108 lb	(50% of Total)
Right Rear:	1076 lb			
Left Rear:	1028 lb	Total Rear:	2104 lb	(50% of Total)
		Total Weight:	4212 lb	

CALCULATION OF TEST VEHICLE TARGET WEIGHT:

Total Test Vehicle Delivered Weight With Maximum Fluids:	4212 lb
Maximum Cargo Carrying Capacity of Test Vehicle:	300 lb *
Weight of Two Part 572 ATD's (2 * 164 lb):	328 lb
TEST VEHICLE TARGET WEIGHT:	4840 lb

* 300 lb for light trucks and MPV's

TABLE 3-1 (Cont.)

TEST VEHICLE DATA

ACTUAL WEIGHT OF TEST VEHICLE WITH 2 ATD's AND CARGO:

Right Front: 1156 lb
Left Front: 1194 lb Total Front: 2350 lb (49% of Total)
Right Rear: 1287 lb
Left Rear: 1186 lb Total Rear: 2473 lb (51% of Total)

Total Weight: 4823 lb (includes 165 lb of sandbag ballast secured in the cargo / luggage area)

VEHICLE COMPONENTS REMOVED TO MEET TARGET WEIGHT:

1. N/A 2. N/A

TEST VEHICLE ATTITUDE:

As Delivered -	Right Front:	34.5 in	Ready for Test -	Right Front:	33.6 in
	Left Front:	34.7 in		Left Front:	33.7 in
	Right Rear:	34.9 in		Right Rear:	33.2 in
	Left Rear:	34.7 in		Left Rear:	33.8 in

TEST VEHICLE DIMENSIONS:

Total Vehicle Length: 185.5 in

Wheelbase: 108.7 in

C. G. is 55.7 in rearward of front axle centerline.

FUEL SYSTEM DATA:

Fuel System Capacity Listed in Owner's Manual: 22.5 gallons
Usable Capacity Figure Furnished by COTR: 22.2 gallons
Test Volume Range (92% to 94% of Usable Capacity)
20.4 gallons to 20.9 gallons
ACTUAL TEST VOLUME: 20.7 gallons (with entire fuel system filled)

Test Fluid Type: Stoddard Solvent
Test Fluid Specific Gravity: 0.764
Test Fluid Kinematic Viscocity: as per ASTM Standard D484-71
Test Fluid Color: Red (Red is preferred)

Type of Vehicle Fuel Pump: Electric
Electric Fuel Pump Operation with Ignition ON and Engine OFF:
Electric fuel pump operates with ignition on and engine off

Details of Fuel System: Fuel tank is located aft of the rear axle, symmetric about the longitudinal centerline. The filler neck is aft of the right rear wheel with the hose running straight down and across to the side of the tank.

TABLE 3-2

POST IMPACT DATA

VEHICLE YEAR/MAKE/MODEL/BODY STYLE: 1993/Isuzu/Trooper/MPV

VEHICLE NHTSA No.: CP5703 **TEST MODE:** Rear Moving Barrier

TEST DATE: 05/20/93 **TIME:** 12:30 pm **TEMPERATURE:** 67° F

REQUIRED IMPACT VELOCITY RANGE: 28.9 to 29.9 mph

ACTUAL IMPACT VELOCITY: (speed traps located within 5 feet of impact plane)

Trap No. 1 = 29.51 mph Trap No. 2 = 29.36 mph

Average Impact Speed = 29.44 mph

VEHICLE STATIC CRUSH:

Location	Pretest (in)	Posttest (in)	Crush(in)
Left Side	176.4	172.7	3.7
Right Side	176.5	172.3	4.2
Centerline	185.5	174.8	10.7
32.0" Left of C.L.	176.4	172.7	3.7
19.2" Left of C.L.	179.0	171.4	7.6
6.4" Left of C.L.	178.8	172.8	6.0
6.4" Right of C.L.	178.8	172.9	5.9
19.2" Right of C.L.	179.0	172.2	6.8
32.0" Right of C.L.	176.5	172.3	4.2

Collision Deformation Classification (CDC) Code: B

Midpoint of Damage: Vehicle Longitudinal Centerline

Length of Damaged Area: 64.0 in

Vehicle Wheelbase: 108.7 in

TABLE No. 3-3

FMVSS No. 301-75 STATIC ROLLOVER DATA

VEHICLE YEAR/MAKE/MODEL/BODY STYLE: 1993/Isuzu/Trooper/MPV

VEH. NHTSA NO.: CP5703 **TEST DATE:** 05/20/93

USABLE CAPACITY OF VEHICLE'S FUEL TANK: 22.2 Gallons (furnished by Mfr.)

AMOUNT OF STODDARD SOLVENT ADDED TO THE VEHICLE'S FUEL TANK:

20.7 Gallons, which is 92.3% of the stated usable capacity

SOLVENT SPILLAGE MEASUREMENT AFTER 20 MPH MOVING BARRIER IMPACT TEST:

	Actual	Max. Allowed
From impact until vehicle motion ceases	0 oz.	1 oz.
For 5 min. period after vehicle motion ceases	0 oz.	5 oz.
For next 25 min. at barrier face	0 oz.	1 oz./min.

SOLVENT SPILLAGE DETAILS: None

STATIC ROLLOVER MACHINE ROTATION TIME INFORMATION: (Spec. range = 1 to 3 min)

Time reqd. for machine to rotate 90°	1 minutes, 20 seconds
FMVSS 301-75 position hold time	5 minutes, 00 seconds
Total	6 minutes, 20 seconds
Next whole minute interval	7 minutes

VEHICLE STATIC ROLLOVER DATA:

	1st 5 Min.	6th min.	7th min.	8th min.
Max allowable solvent spillage	5 oz.	1 oz.	1 oz.	1 oz.
0° to 90° (filler cap down)	0 oz.	0 oz.	0 oz.	N/A
90° to 180°	0 oz.	0 oz.	0 oz.	N/A
180° to 270°	0 oz.	0 oz.	0 oz.	N/A
270° to 360°	0 oz.	0 oz.	0 oz.	N/A

SOLVENT SPILLAGE LOCATIONS: None

STATIC ROLLOVER TEST DATA:

A. Test Phase = 0 to 90 degrees

Determination of Stoddard Solvent Collection Time Period:

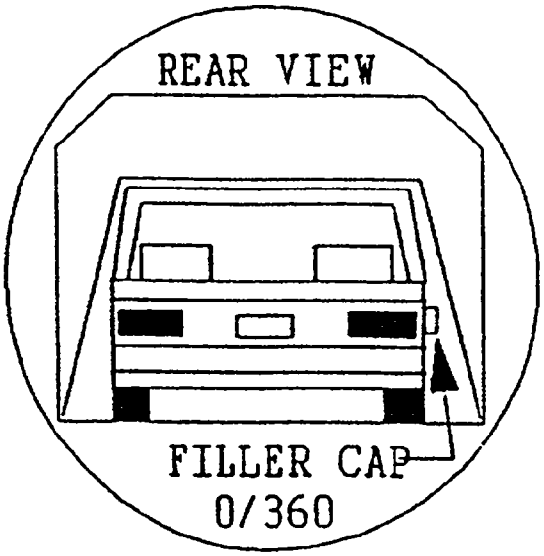
1. Rollover Fixture 90 degree Rotation Time = 1 minutes, 20 seconds

(Specified Range is 1 to 3 minutes)

2. FMVSS 301 Position Hold Time = 5 minutes, 0 seconds

3. TOTAL = 6 minutes, 20 seconds

4. NEXT WHOLE MINUTE INTERVAL = 7 minutes



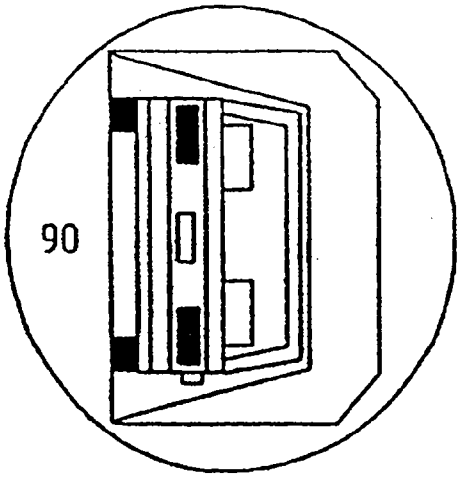
Actual Test Vehicle Stoddard Solvent Spillage:

1. First 5 minutes from onset of rotation = 0 oz. (5 oz. allowed)

2. 6th minute = 0 oz. (1 oz. allowed)

3. 7th minute = 0 oz. (1 oz. allowed)

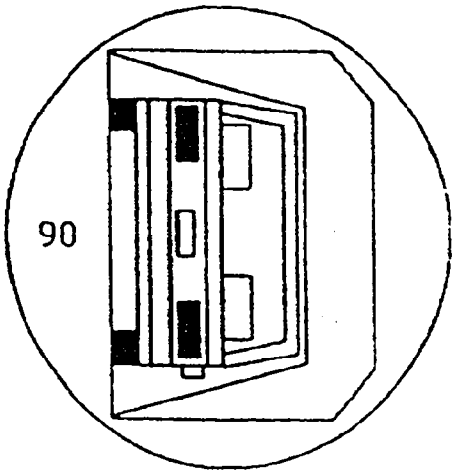
4. 8th minute (if required) = 0 oz. (1 oz. allowed)



Provide Details of Stoddard Solvent Spillage Locations--

N/A

B. Test Phase = 90 to 180 degrees



Determination of Stoddard Solvent Collection Time Period:

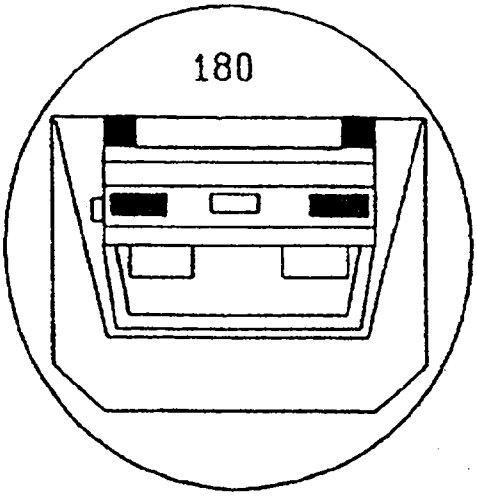
1. Rollover Fixture 90 degree Rotation Time = 1 minutes, 20 seconds

(Specified Range is 1 to 3 minutes)

2. FMVSS 301 Position Hold Time = 5 minutes, 0 seconds

3. TOTAL = 6 minutes, 20 seconds

4. NEXT WHOLE MINUTE INTERVAL = 7 minutes



Actual Test Vehicle Stoddard Solvent Spillage:

1. First 5 minutes from onset of rotation = 0 oz. (5 oz. allowed)

2. 6th minute = 0 oz. (1 oz. allowed)

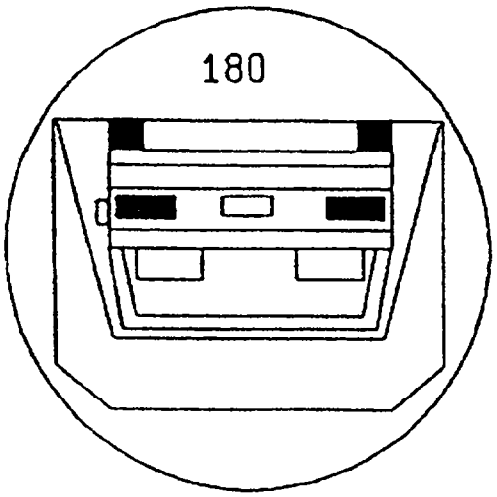
3. 7th minute = 0 oz. (1 oz. allowed)

4. 8th minute (if required) = 0 oz. (1 oz. allowed)

Provide Details of Stoddard Solvent Spillage Locations--

N/A

C. Test Phase = 180 to 270 degrees



Determination of Stoddard Solvent Collection Time Period:

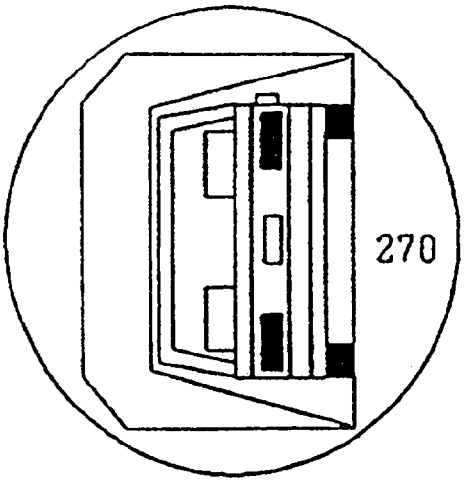
1. Rollover Fixture 90 degree Rotation Time = 1 minutes, 20 seconds

(Specified Range is 1 to 3 minutes)

2. FMVSS 301 Position Hold Time = 5 minutes, 0 seconds

3. TOTAL = 6 minutes, 20 seconds

4. NEXT WHOLE MINUTE INTERVAL = 0 minutes



Actual Test Vehicle Stoddard Solvent Spillage:

1. First 5 minutes from onset of rotation = 0 oz. (5 oz. allowed)

2. 6th minute = 0 oz. (1 oz. allowed)

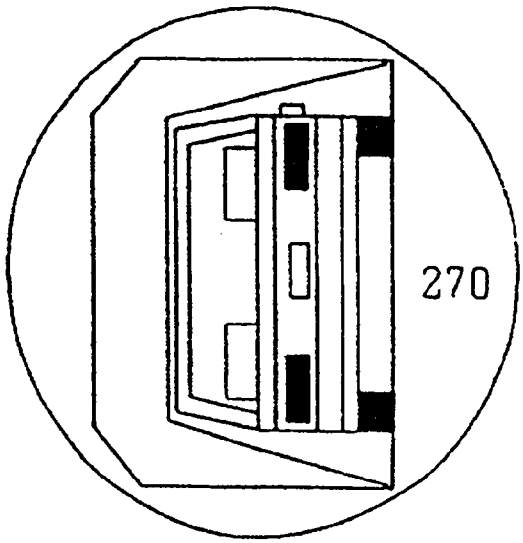
3. 7th minute = 0 oz. (1 oz. allowed)

4. 8th minute (if required) = 0 oz. (1 oz. allowed)

Provide Details of Stoddard Solvent Spillage Locations--

N/A

D. Test Phase = 270 to 360 degrees



Determination of Stoddard Solvent Collection Time Period:

1. Rollover Fixture 90 degree Rotation Time = 1 minutes, 20 seconds

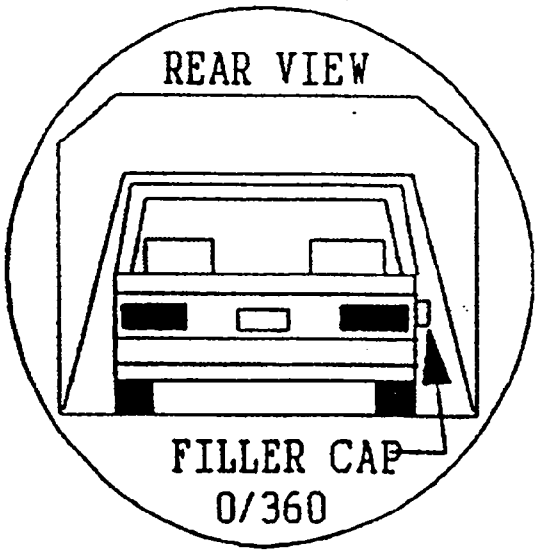
(Specified Range is 1 to 3 minutes)

2. FMVSS 301 Position Hold Time = 5 minutes, 0 seconds

3. TOTAL = 6 minutes, 20 seconds

4. NEXT WHOLE MINUTE INTERVAL = 7 minutes

Actual Test Vehicle Stoddard Solvent Spillage:



1. First 5 minutes from onset of rotation = 0 oz. (5 oz. allowed)

2. 6th minute = 0 oz. (1 oz. allowed)

3. 7th minute = 0 oz. (1 oz. allowed)

4. 8th minute (if required) = 0 oz. (1 oz. allowed)

Provide Details of Stoddard Solvent Spillage Locations– N/A

Recorded By: Brian O'Keefe Date: 05/20/93

Approved By: [signature] Date: 06/10/93

TABLE No. 3-4
FMVSS No. 208 OCCUPANT CRASH PROTECTION DATA SHEET

VEH. YEAR/MAKE/MODEL/BODY STYLE: 1993/Isuzu/Trooper/MPV

VEH. NHTSA NO.: CP5703 TEST DATE: 05/20/93

MAXIMUM ACCELERATION VALUES (g):	DRIVER ATD No. 339	PASSENGER ATD No. N/A
Head X	26.9	N/A
Head Y	-6.9	N/A
Head Z	22.8	N/A
HEAD RESULTANT	29.8	N/A
Chest X	12.7	N/A
Chest Y	-2.2	N/A
Chest Z	7.8	N/A
CHEST RESULTANT (3msec clip)	13.0	N/A
TIME INTERVAL (msec)	75.6 to 78.6	N/A
Pelvis X	29.2	N/A
Pelvis Y	7.9	N/A
Pelvis Z	10.9	N/A
PELVIS RESULTANT	30.8	N/A

6-AXIS NECK TRANSDUCER VALUES:

Neck X - Load (lbs)	47.3	N/A
Neck Y - Load (lbs)	22.0	N/A
Neck Z - Load (lbs)	344.9	N/A
NECK LOAD RESULTANT	346.9	N/A
Neck X - Moment (in-lbs)	97.1	N/A
Neck Y - Moment (in-lbs)	283.4	N/A
Neck Z - Moment (in-lbs)	-85.5	N/A
NECK MOMENT RESULTANT	286.6	N/A

HEAD INJURY CRITERIA (HIC) VALUES:

HIC	103.1	N/A
t^1 (msec)	111.1	N/A
t^2 (msec)	147.1	N/A
Avg. Acceleration t^1 to t^2 (g)	24.1	N/A

MAXIMUM SEAT BELT FORCES:

Lap Belt (lbs)	17.9	N/A
Shoulder Belt (lbs)	31.2	N/A

MAXIMUM SEAT BELT WEBBING SPOOLOUT (in):

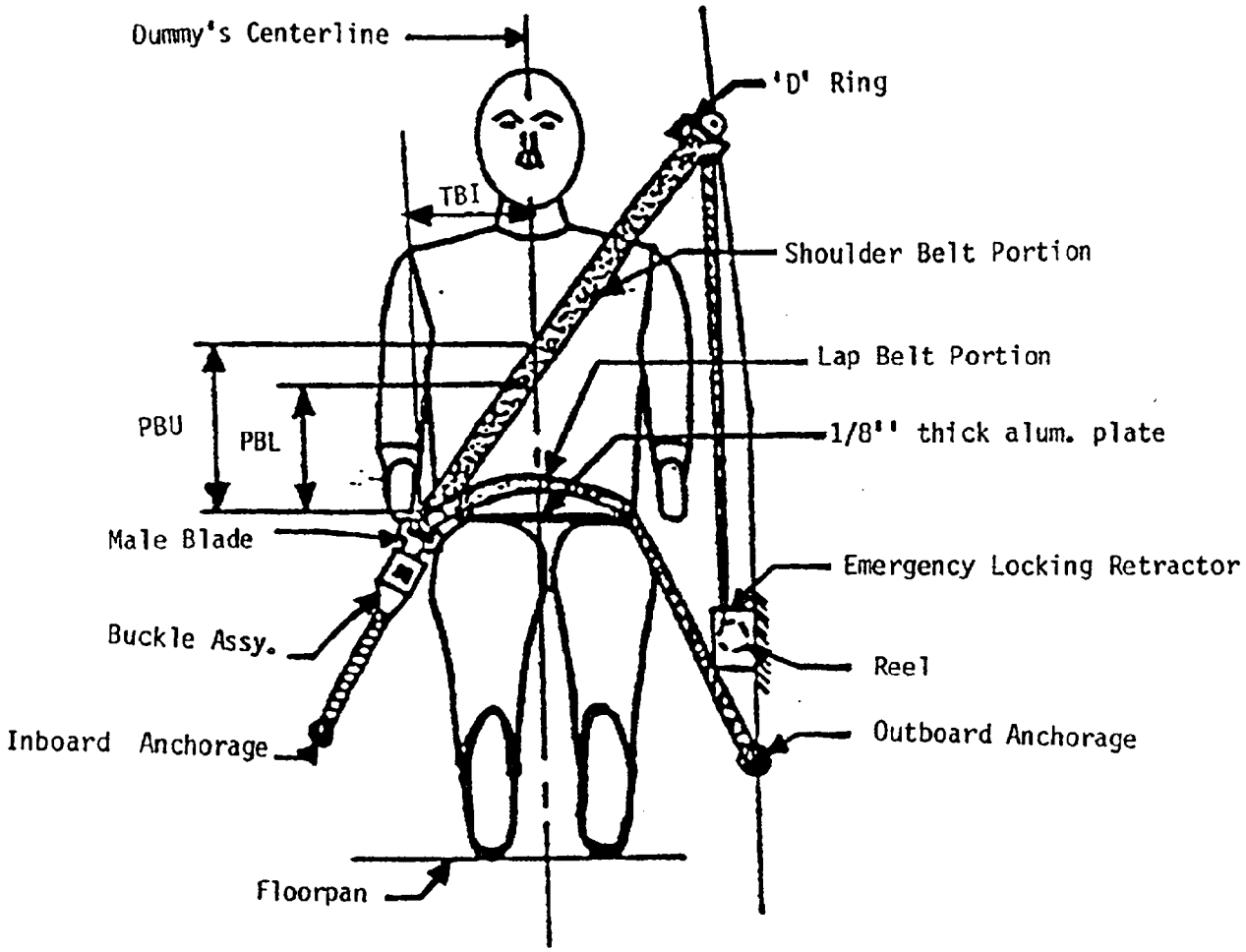
Lap/Shoulder Belt Combination	0.4	N/A

TABLE No. 3-5
TEST ATD POSITIONING DATA

Measurement	Driver (Serial No. 339)		Passenger (Serial No. N/A)	
	Length (in)	Angle (Degrees)	Length (in)	Angle (Degrees)
WA	---	40	---	---
SWA	---	61	---	---
SCA	---	29	---	---
SA	---	22	---	N/A
HZ	9.0	90	N/A	90
HH	16.3	---	N/A	---
HW	23.2	0	N/A	0
HR	11.7	---	N/A	---
NR	15.4	-16	---	---
CD	20.5	---	N/A	---
CS	12.2	0	---	---
RA	6.3	0	---	---
KDL	6.1	16	N/A	---
KDR	5.9	---	N/A	N/A
PA	---	23	---	N/A
TA	---	-49	---	N/A
KK	11.8	---	N/A	---
ST	25.5	79	N/A	N/A
SK	24.7	4	N/A	N/A
SH	8.5	-2	N/A	N/A
SHY	8.7	0	N/A	0
HS	14.7	0	N/A	0
HD	6.4	0	N/A	0
AD	4.8	0	N/A	0

TABLE No. 3-5 (Cont.)
TEST ATD POSITIONING DATA

TABLE No. 3-6
SEAT BELT POSITIONING DATA



FRONT VIEW OF DRIVER DUMMY

Measurement	Driver ATD	Passenger ATD
PBU - Top Surface of alum. plate to belt upper edge (in)	13.1	N/A
PBL - Top Surface of alum. plate to belt lower edge (in)	10.7	N/A
TBI - Vertical Centerline of ATD to belt intersection (in)	8.5	N/A
Lap Belt Tension (lbs)	N/D	N/A
Shoulder Belt Tension (lbs)	N/D	N/A

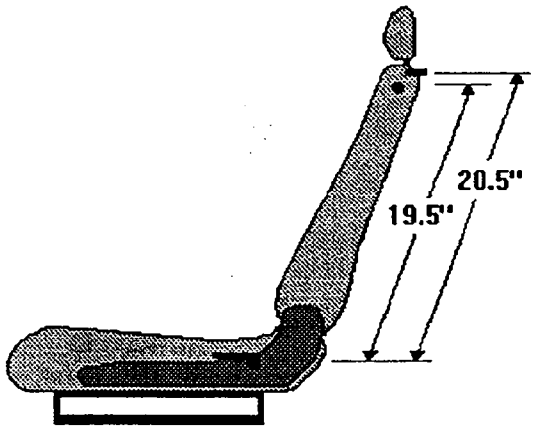
TABLE No. 3-7
VEHICLE TRANSDUCER LOCATION AND DATA SUMMARY

No.	Description	Location			Maximum Value *			
		X	Y	Z	-X	msec	+X	msec
1	Vehicle c.g. Primary	88	0	21	4.1	60.0	25.6	32.2
2	Vehicle c.g. Secondary	88	0	21	4.2	60.1	25.8	31.9
3	Top of driver seat Accelerometer	90	7	49	33.2	59.7	28.4	85.7
4	Top of driver seat Rate Sensor	90	7	48	0.4	263.9	15.8	73.2

REFERENCE: X - Rear bumper trailing edge
Y - Vehicle centerline (Right Pos., Left Neg.)
Z - Ground level

All dimensions in inches

* g's for accelerometers, radians per second for rate sensor



Rate sensor mounted 19.5 inches above seatback pivot point, on inboard edge. Seatback accel 20.5 inches above pivot point on inboard edge.

SECTION 4

LABORATORY NOTICE OF TEST FAILURE TO OVSC

FMVSS NO.: 301(R) TEST DATE:_____

LABORATORY: MOBILITY SYSTEMS AND EQUIPMENT CO.

CONTRACT NO.: DTNH22-93-C-01007 DELV. ORDER NO.:_____

LABORATORY PROJECT ENGINEER'S NAME:_____

TEST SPECIMEN DESCRIPTION:_____

VEHICLE NHTSA NO.:_____ VIN:_____

MFR.:_____

TEST FAILURE DESCRIPTION:_____

N/A

FMVSS REQUIREMENT, PARAGRAPH S :_____

NOTIFICATION TO NHTSA (COTR):_____

DATE:_____; BY:_____

REMARKS:_____

SECTION 5

PHOTOGRAPHS

FIGURE 5-1 PRETEST LEFT SIDE VIEW

FIGURE 5-2 PRETEST FRONT VIEW

FIGURE 5-3 PRETEST RIGHT SIDE VIEW

FIGURE 5-4 PRETEST REAR VIEW

FIGURE 5-5 MANUFACTURER'S CERTIFICATION LABEL AND TIRE PLACARD

FIGURE 5-6 POSTTEST LEFT SIDE VIEW

FIGURE 5-7 POSTTEST FRONT VIEW

FIGURE 5-8 POSTTEST RIGHT SIDE VIEW

FIGURE 5-9 POSTTEST REAR VIEW

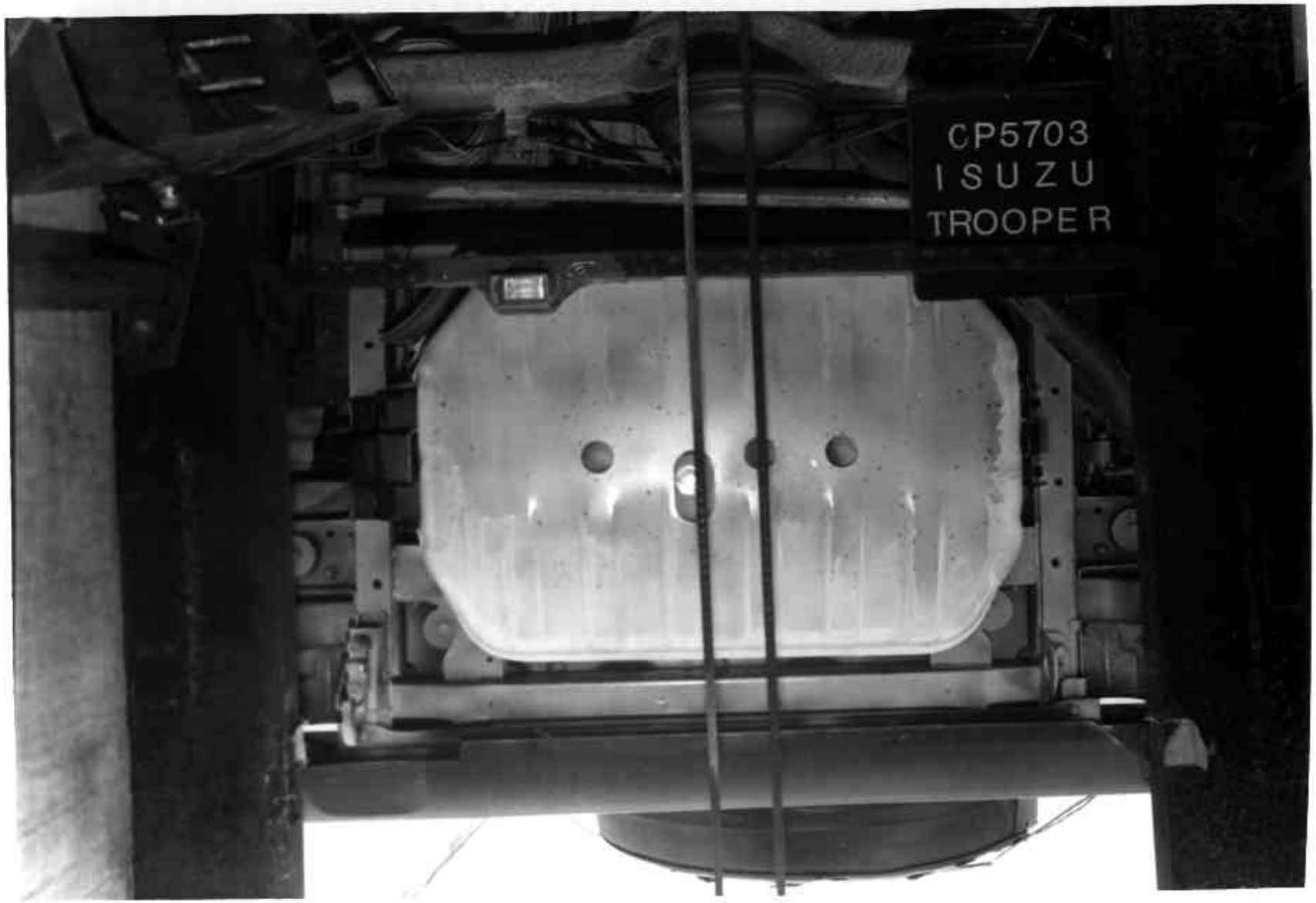


FIGURE 5-10 PRETEST FUEL TANK CLOSEUP VIEW

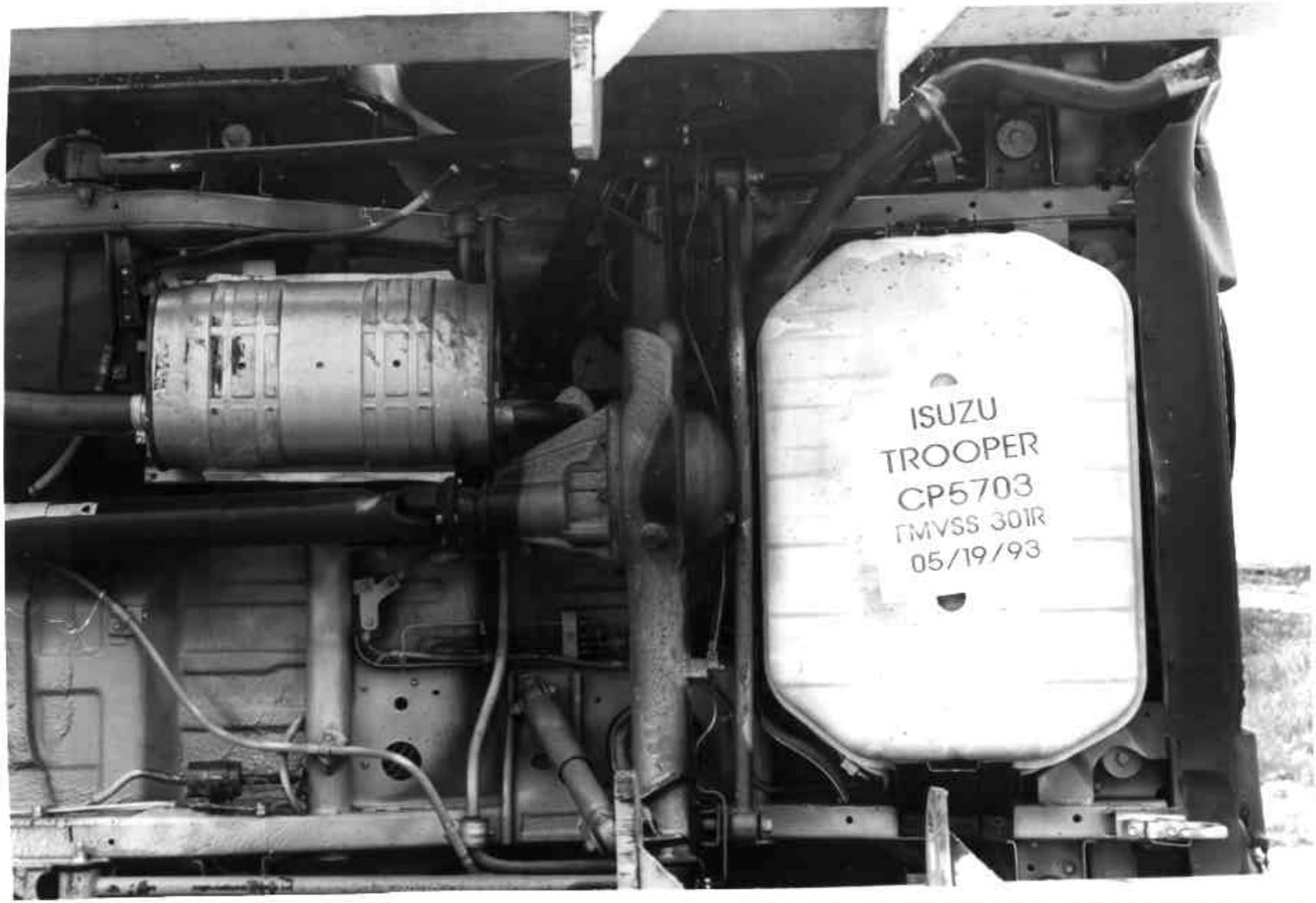


FIGURE 5-11 POSTTEST FUEL TANK CLOSEUP VIEW

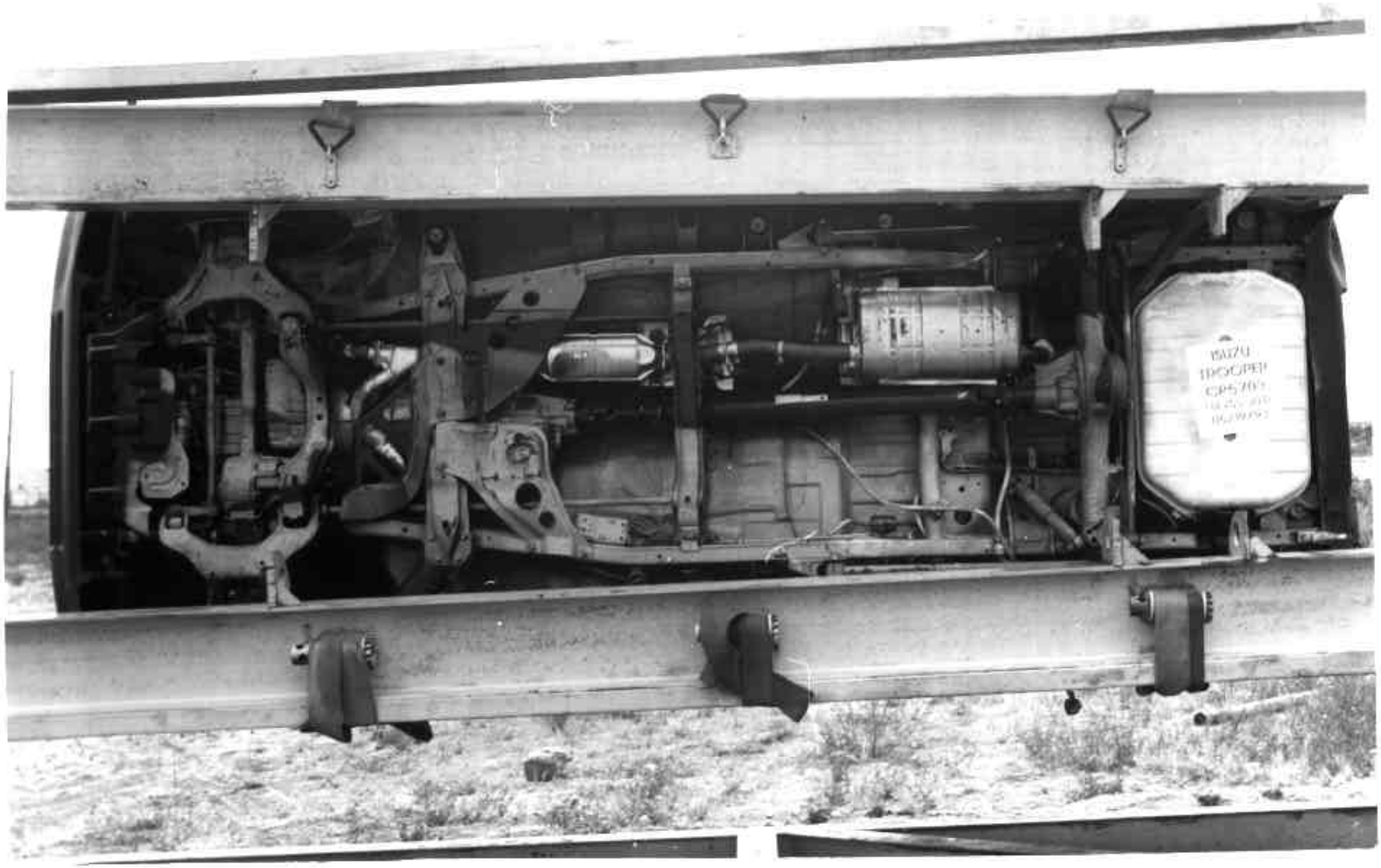


FIGURE 5-12 POSTTEST UNDERBODY VIEW

FIGURE 5-13 PRETEST DRIVER ATD POSITION

FIGURE 5-14 POSTTEST DRIVER ATD POSITION

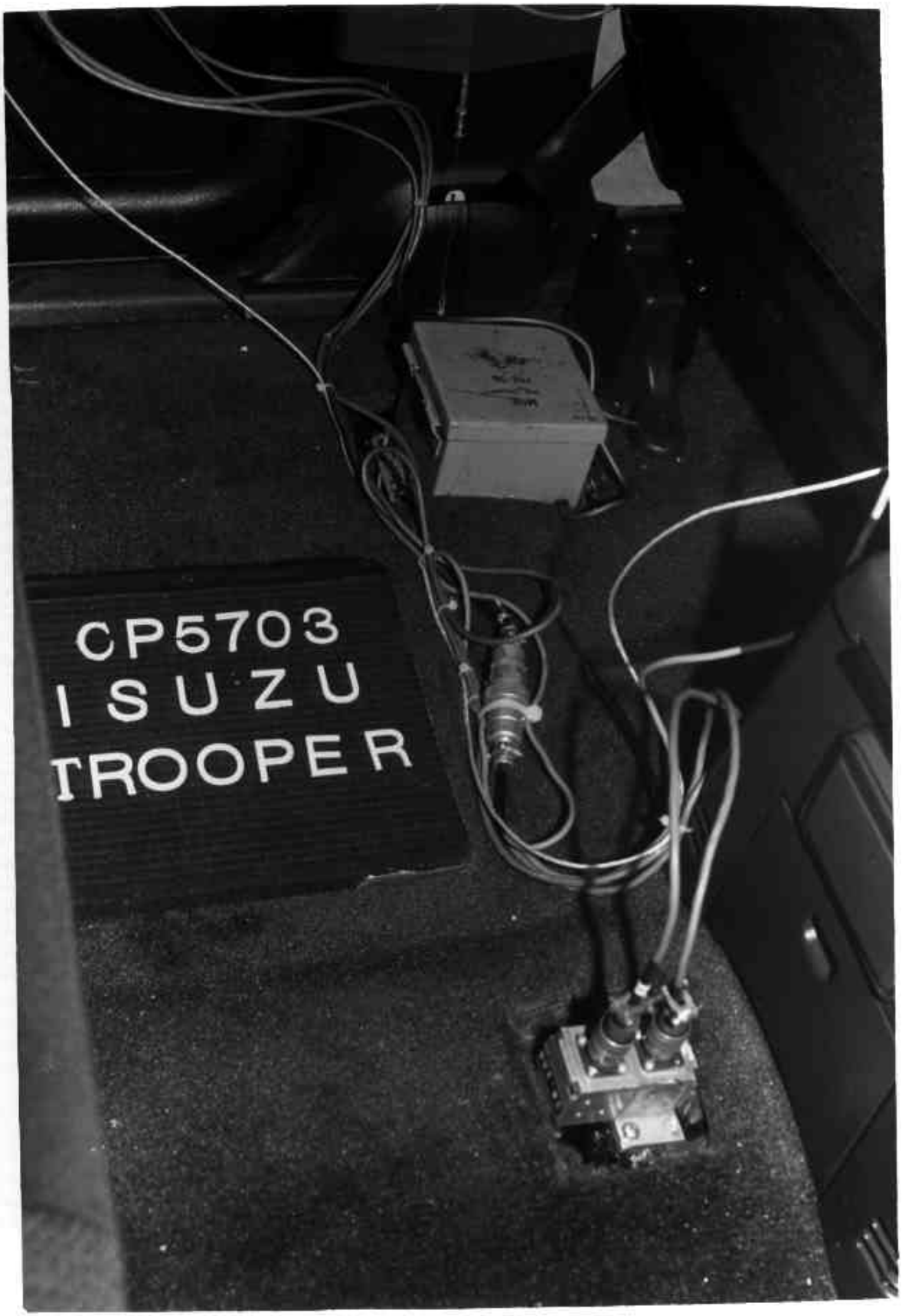


FIGURE 5-15 VEHICLE ACCELEROMETERS

FIGURE 5-16 SEAT FRAIE MOUNTED ACCELEROMETER AND MHD SENSOR

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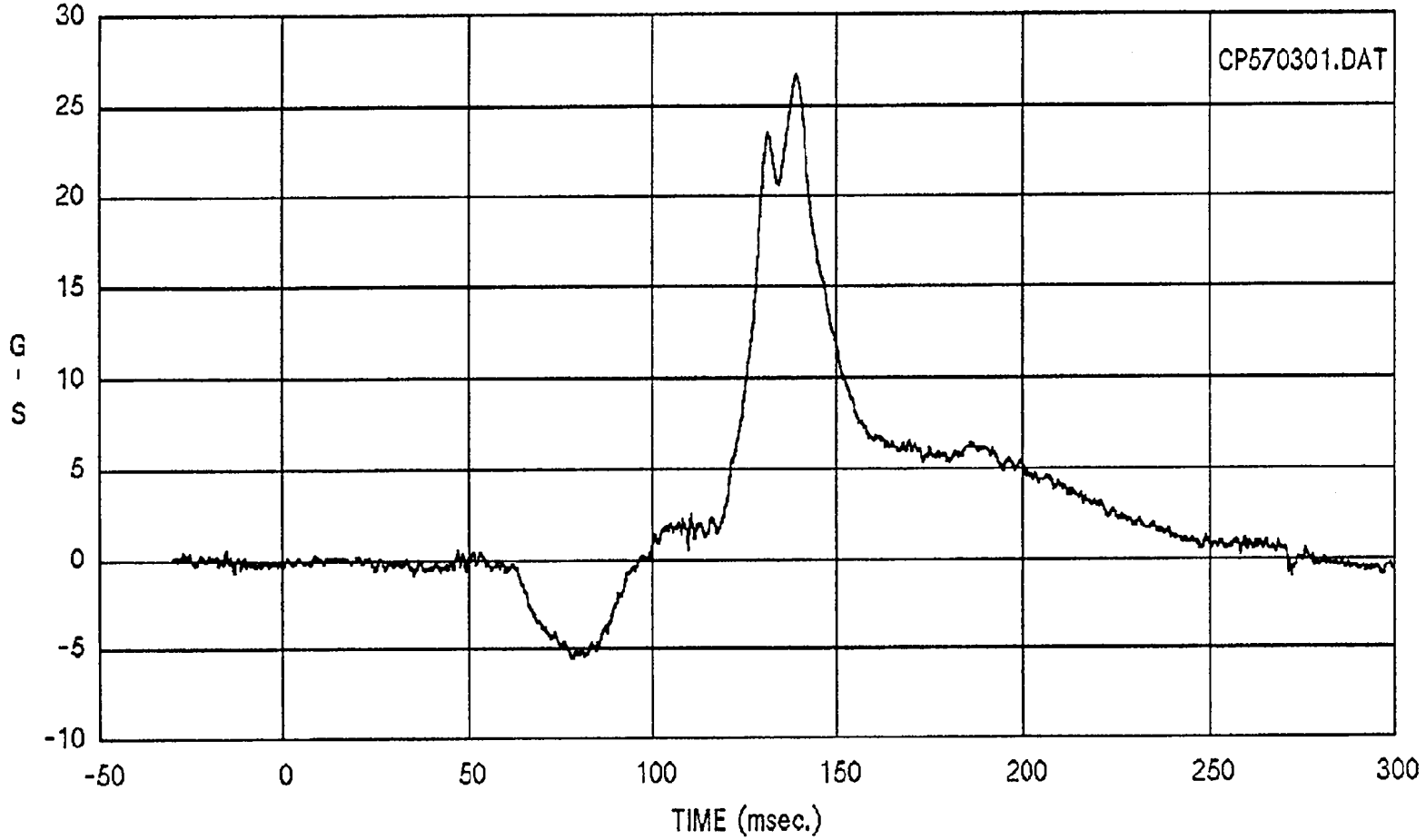
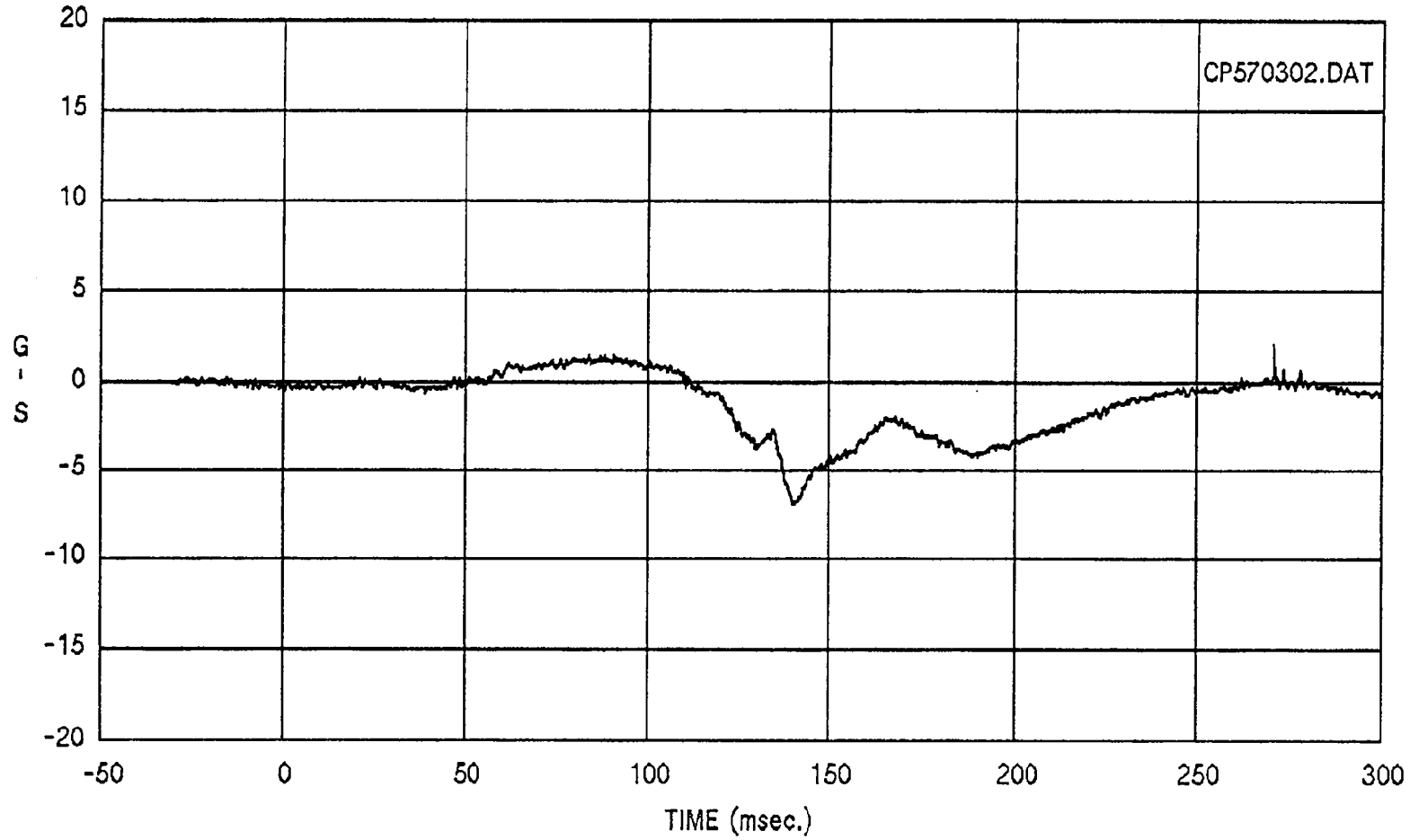
SECTION 6

TIME HISTORY DATA PLOTS



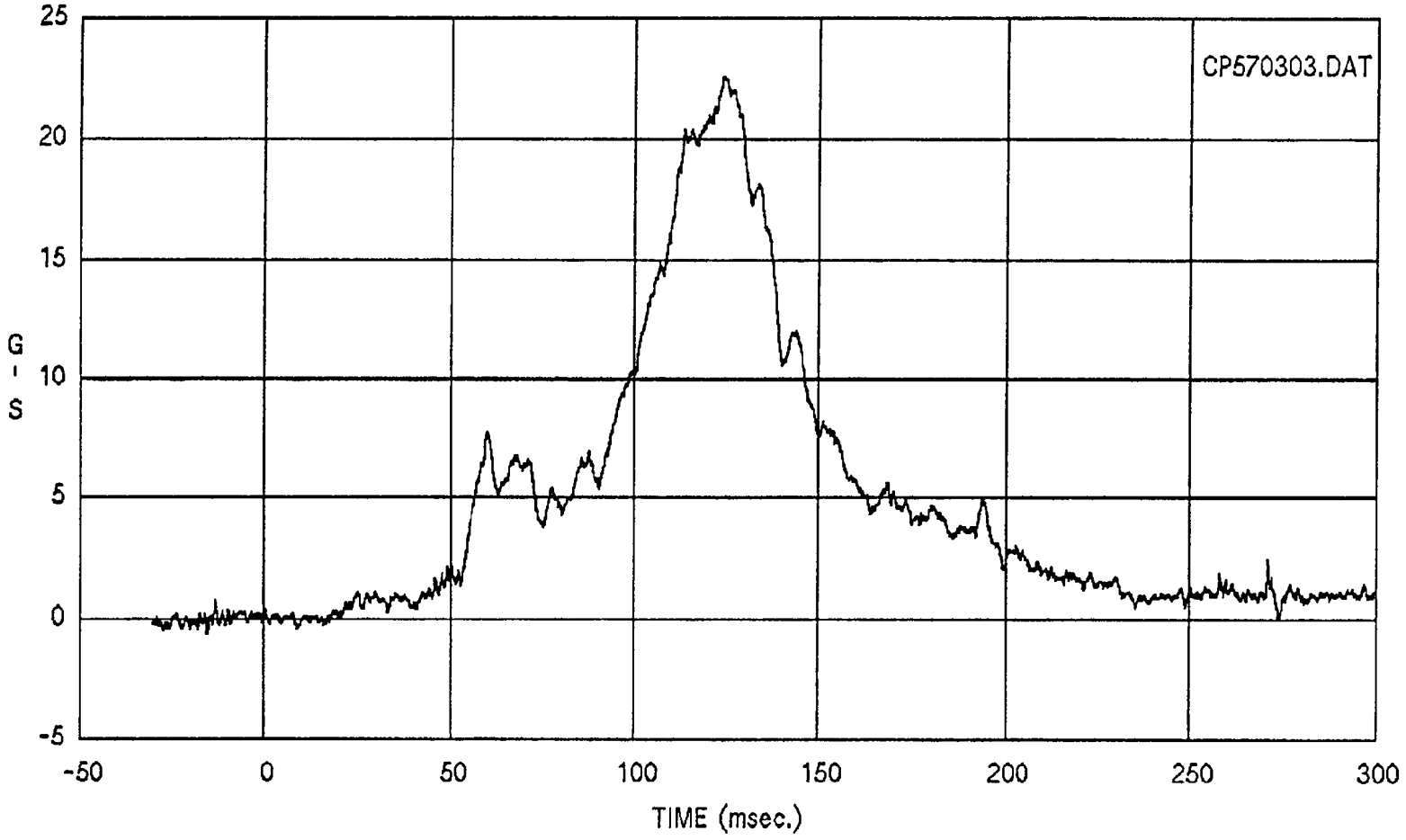
Curve: Driver head acceleration -- X axis Filter: SAE CLASS 1000 Max = 26.852 Min = -5.5454

MSE Date: 05/20/93 Program: 1993 FMVSS 301 Rear Vehicle: 1993 Isuzu Trooper



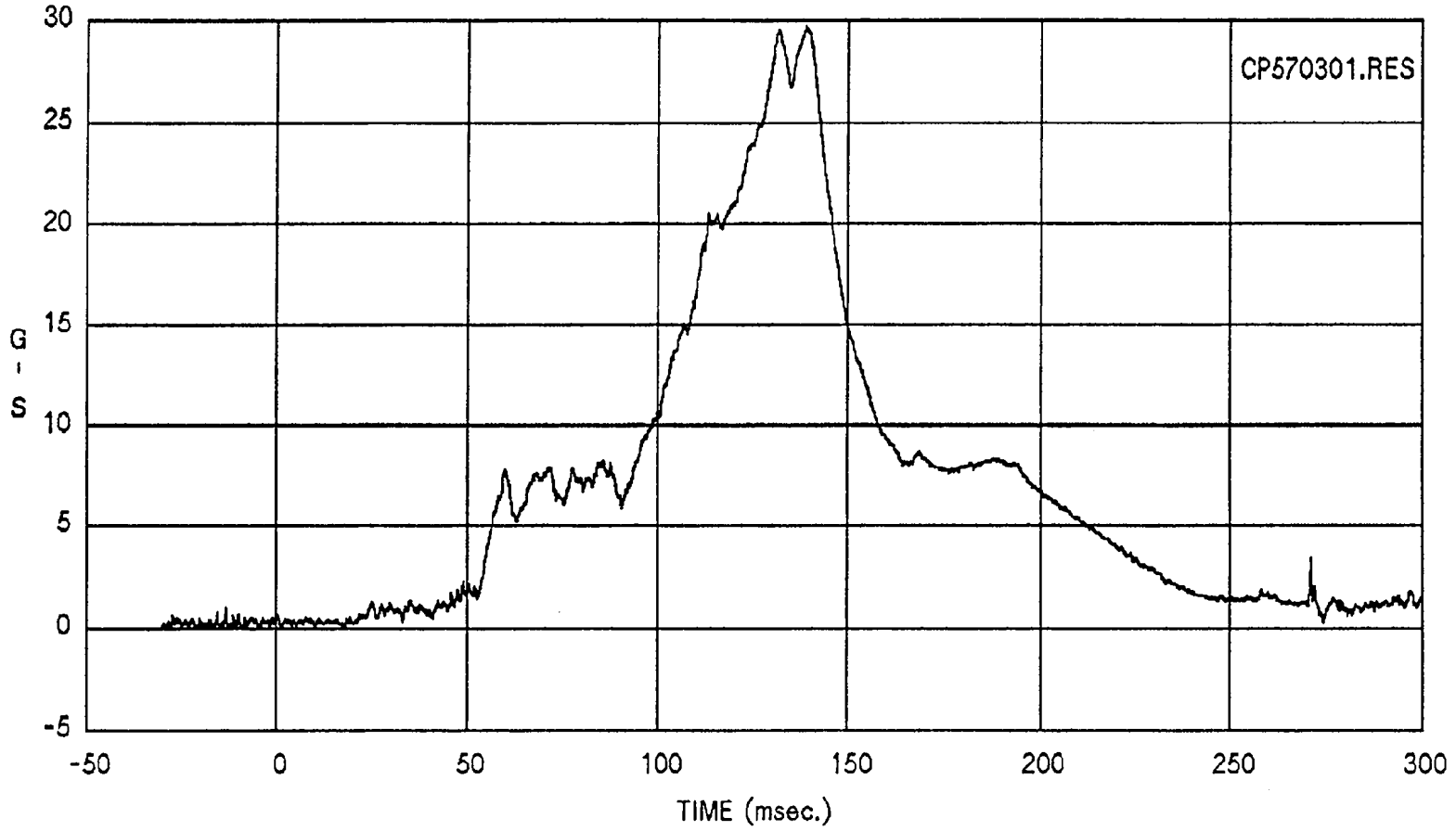
Curve: Driver head acceleration -- Y axis Filter: SAE CLASS 1000 Max = 2.1614 Min = -6.9046

MSE Date: 05/20/93 Program: 1993 FMVSS 301 Rear Vehicle: 1993 Isuzu Trooper



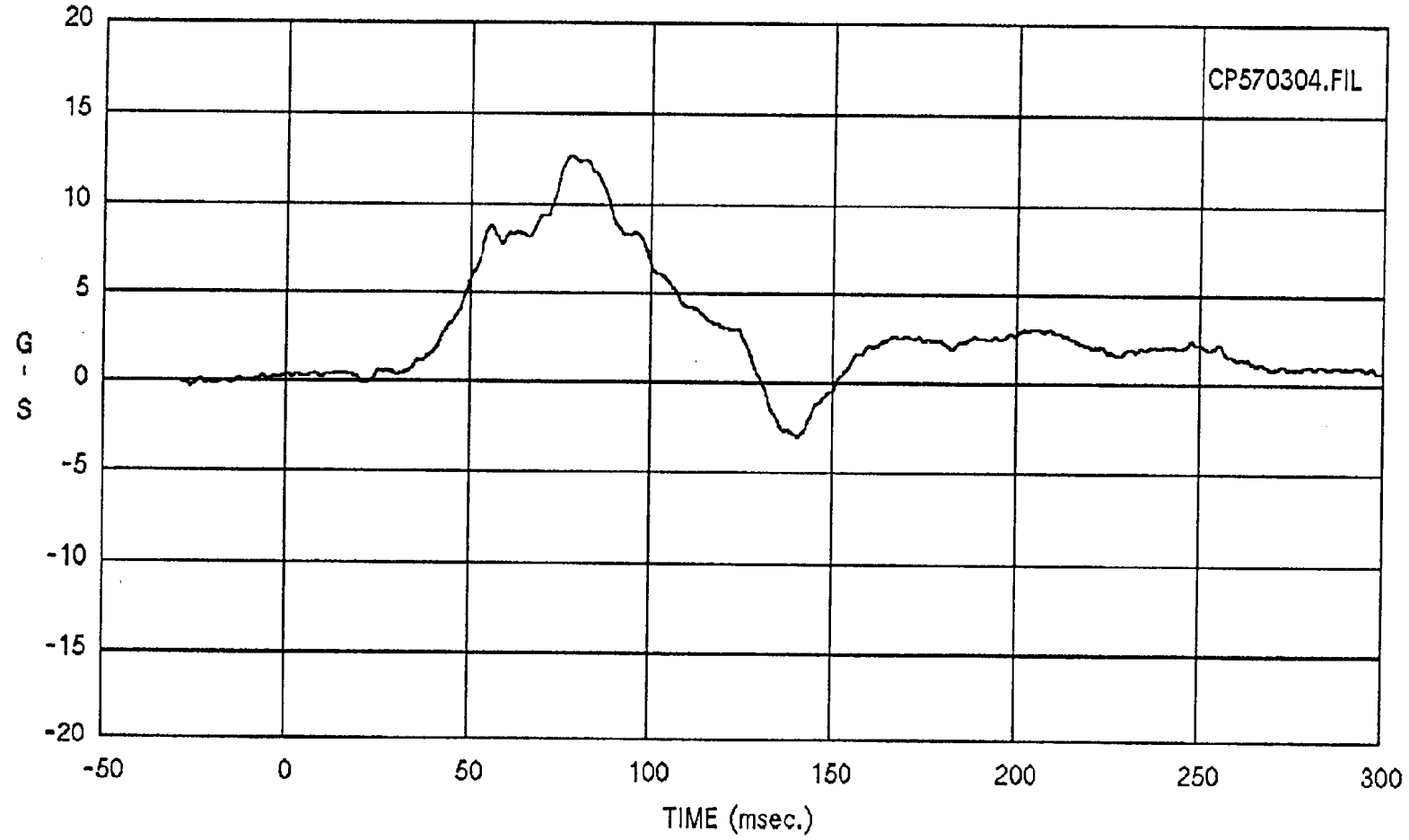
Curve: Driver head acceleration -- Z axis Filter: SAE CLASS 1000 Max = 22.814 Min = -.30913

MSE Date: 05/20/93 Program: 1993 FMVSS 301 Rear Vehicle: 1993 Isuzu Trooper



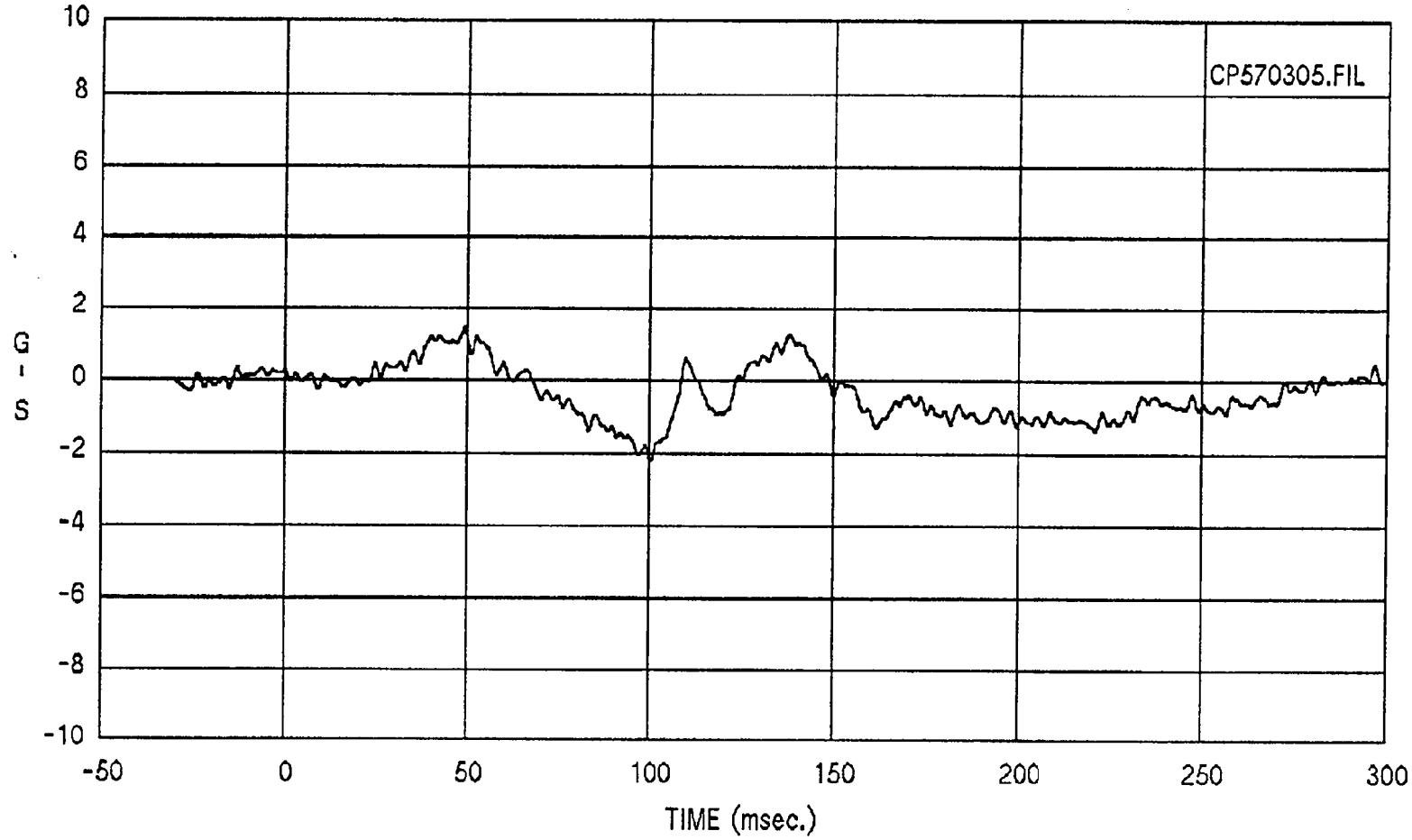
Curve: Driver head acceleration -- Resultant Filter: SAE CLASS 1000 01 Max = 29.822 Min = .85029E

MSE Date: 05/20/93 Program: 1993 FMVSS 301 Rear Vehicle: 1993 Isuzu Trooper



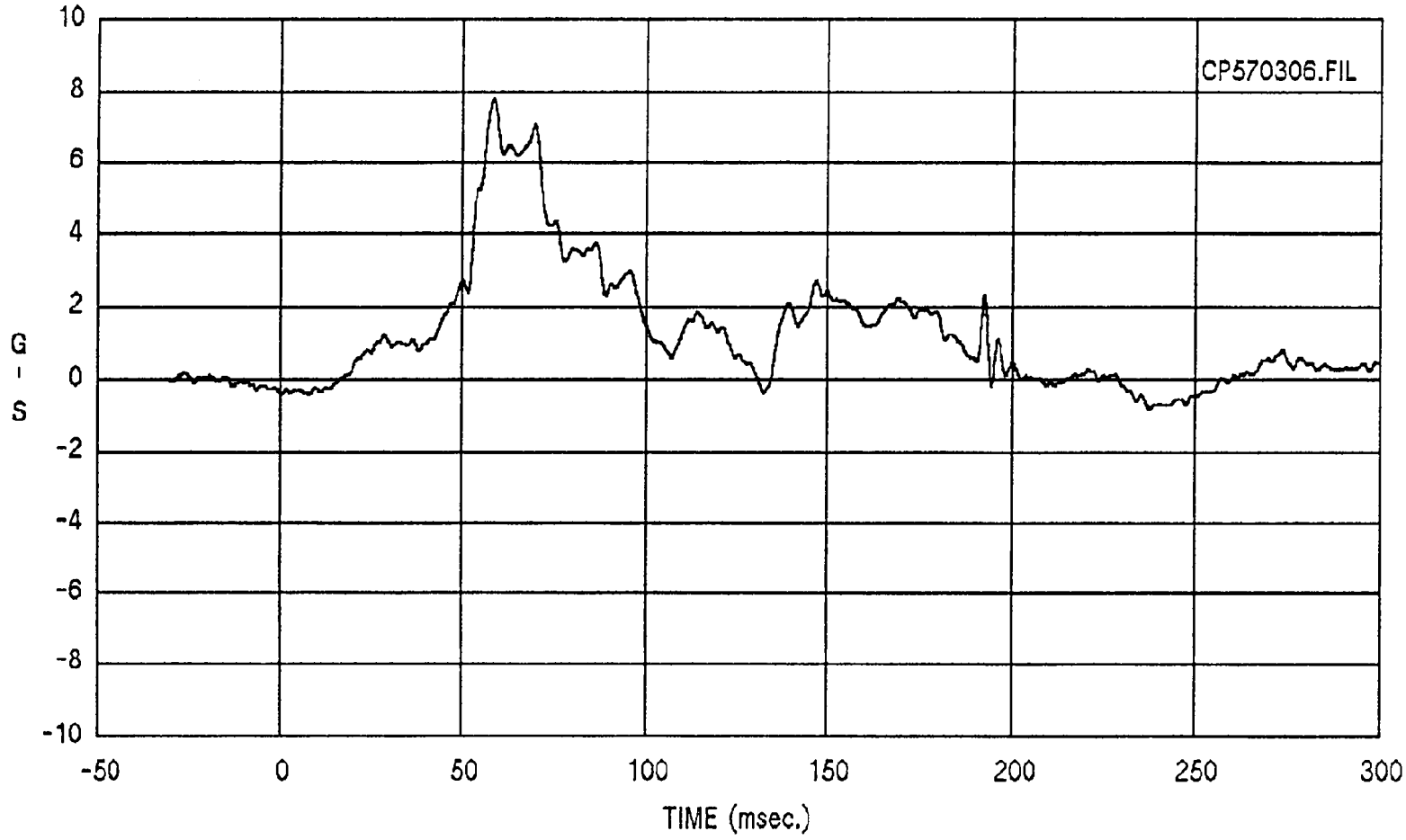
Curve: Driver chest acceleration -- X axis Filter: SAE CLASS 180 Max = 12.713 Min = -2.9584

MSE Date: 05/20/93 Program: 1993 FMVSS 301 Rear Vehicle: 1993 Isuzu Trooper



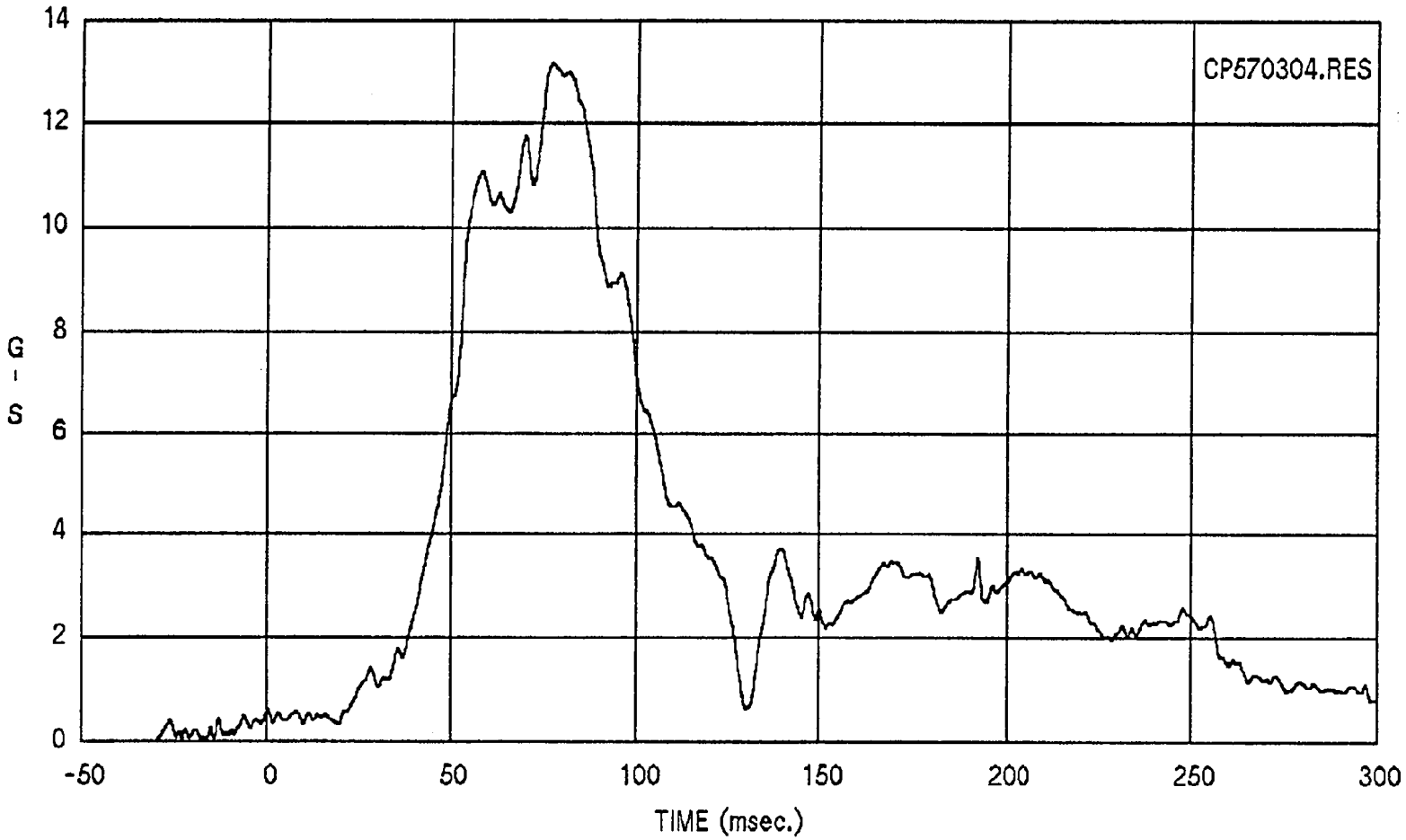
Curve: Driver chest acceleration -- Y axis Filter: SAE CLASS 180 Max = 1.4783 Min = -2.2125

MSE Date: 05/20/93 Program: 1993 FMVSS 301 Rear Vehicle: 1993 Isuzu Trooper



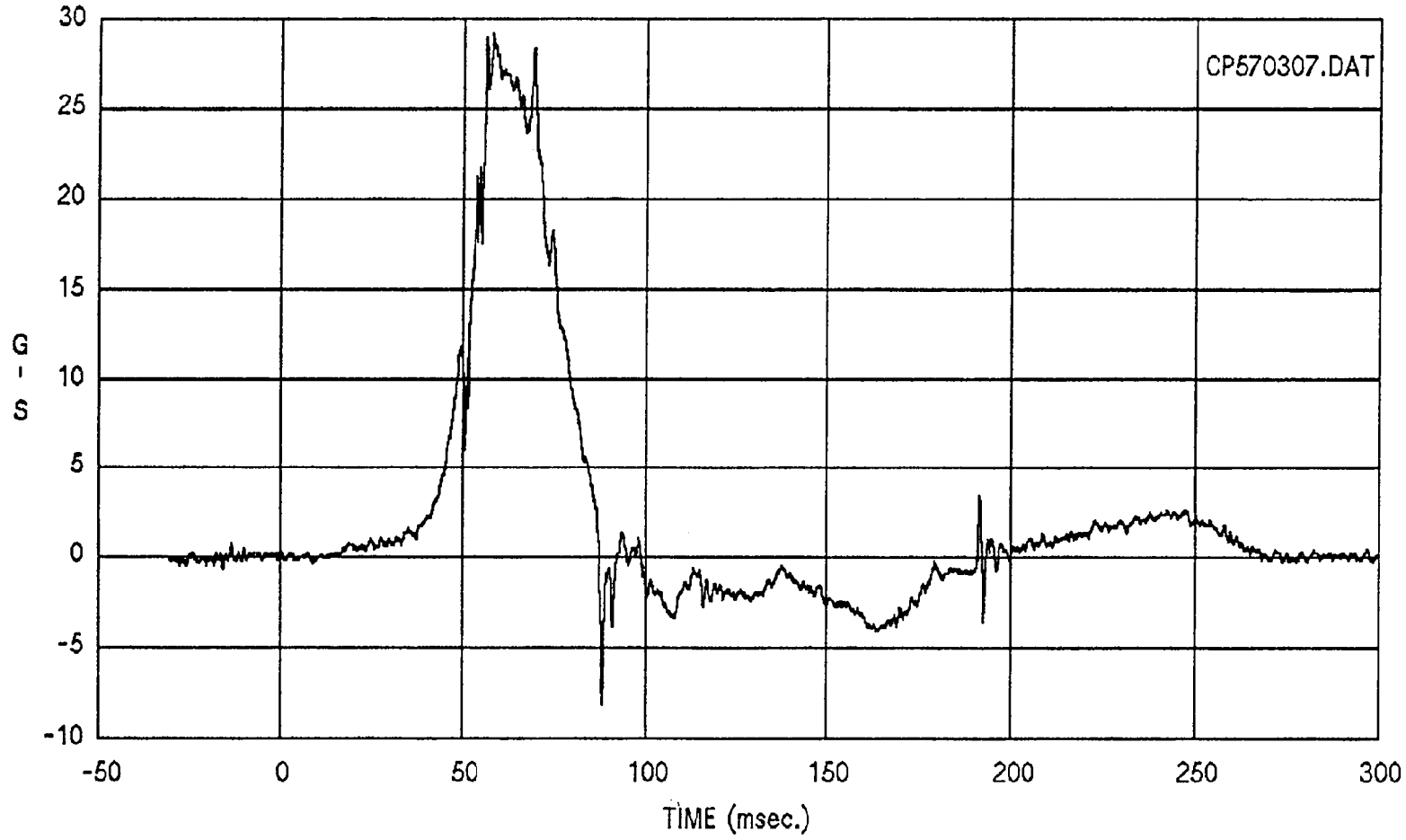
Curve: Driver chest acceleration -- Z axis Filter: SAE CLASS 180 Max = 7.8023 Min = -.81237

MSE Date: 05/20/93 Program: 1993 FMVSS 301 Rear Vehicle: 1993 Isuzu Trooper



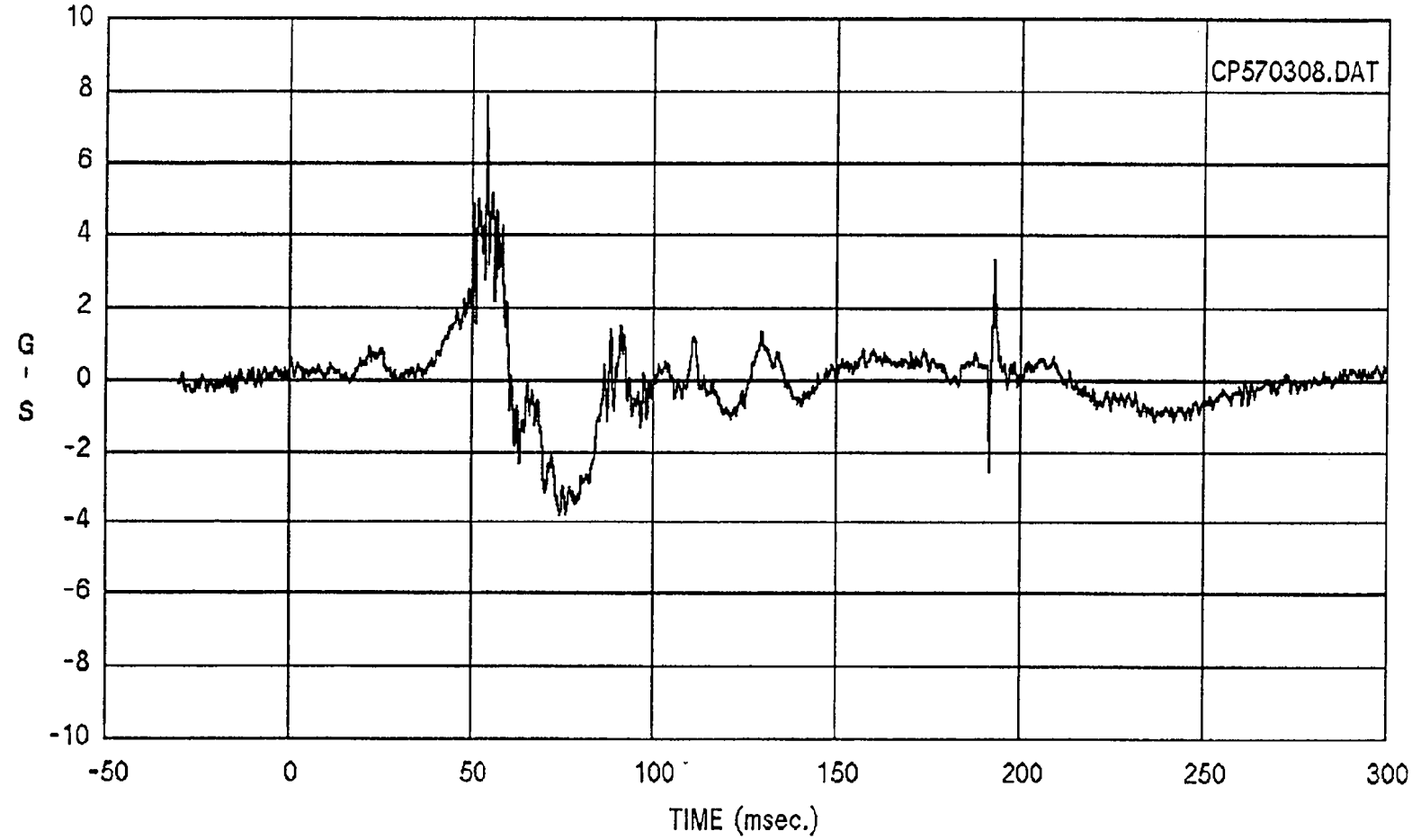
Curve: Driver chest acceleration -- Resultant Filter: SAE CLASS 180 Max = 13.175 Min = .34171

MSE Date: 05/20/93 Program: 1993 FMVSS 301 Rear Vehicle: 1993 Isuzu Trooper



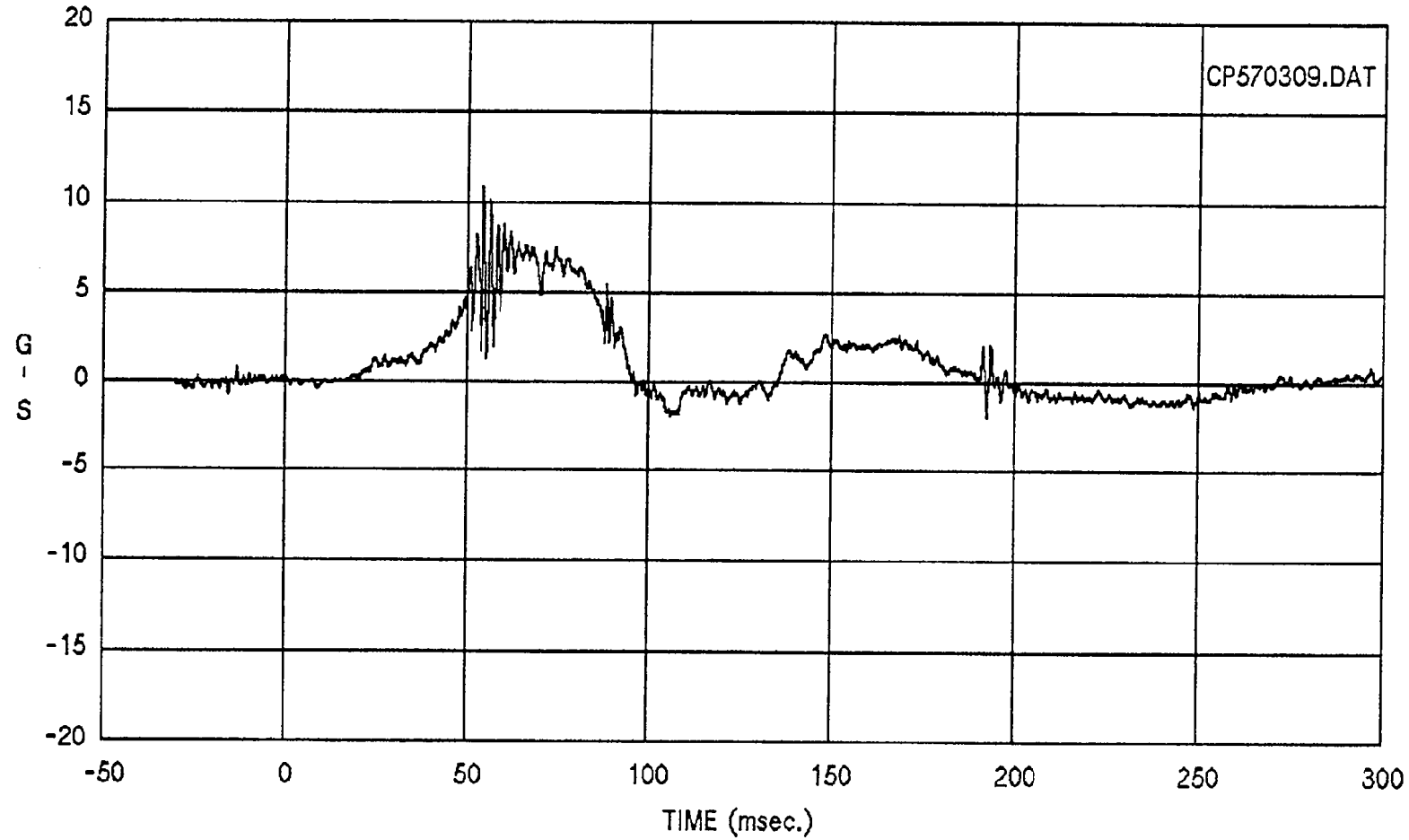
Curve: Driver pelvis acceleration -- X axis Filter: SAE CLASS 1000 Max = 29.215 Min = -8.8020

MSE Date: 05/20/93 Program: 1993 FMVSS 301 Rear Vehicle: 1993 Isuzu Trooper



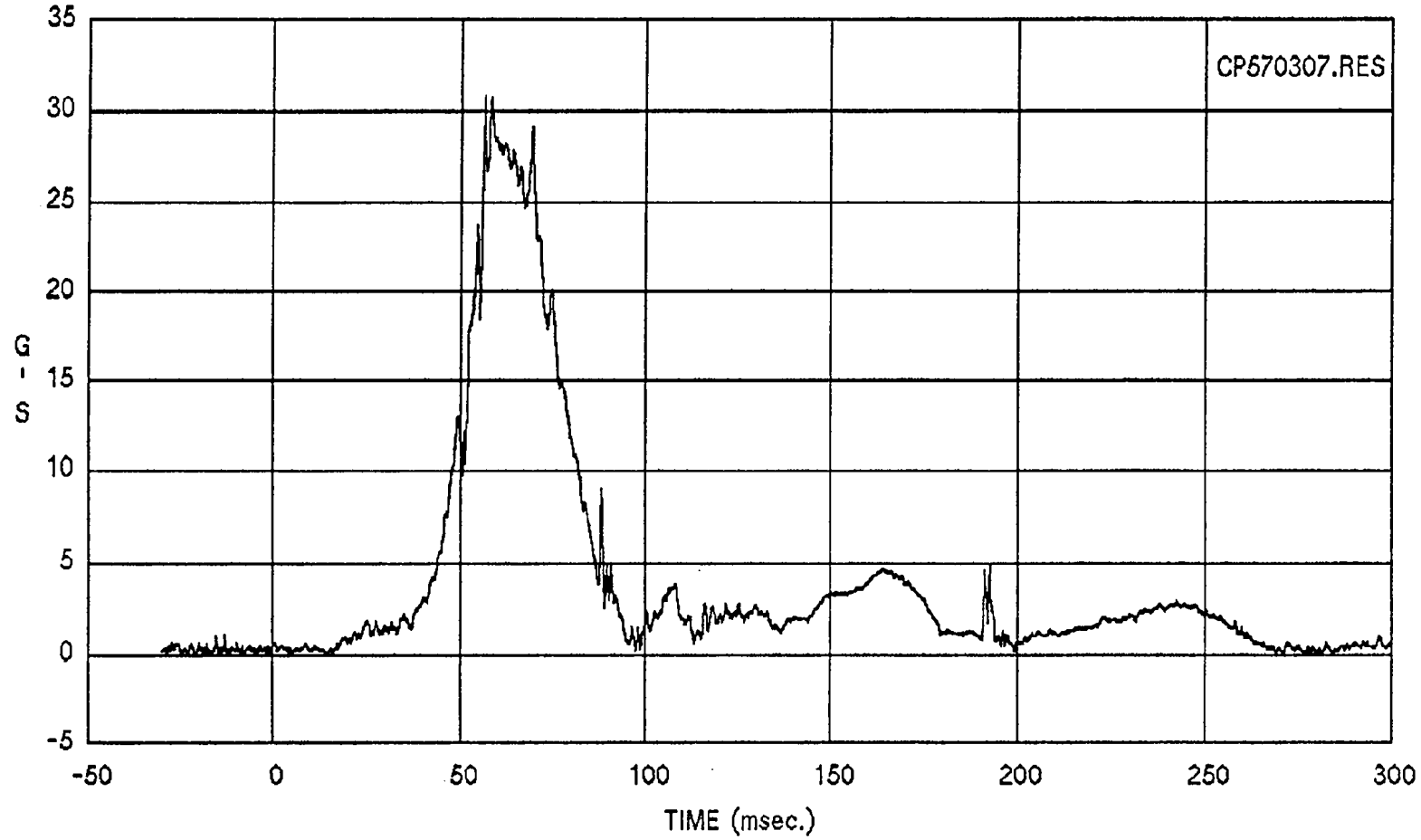
Curve: Driver pelvis acceleration -- Y axis Filter: SAE CLASS 1000 Max = 7.9107 Min = -3.9553

MSE Date: 05/20/93 Program: 1993 FMVSS 301 Rear Vehicle: 1993 Isuzu Trooper



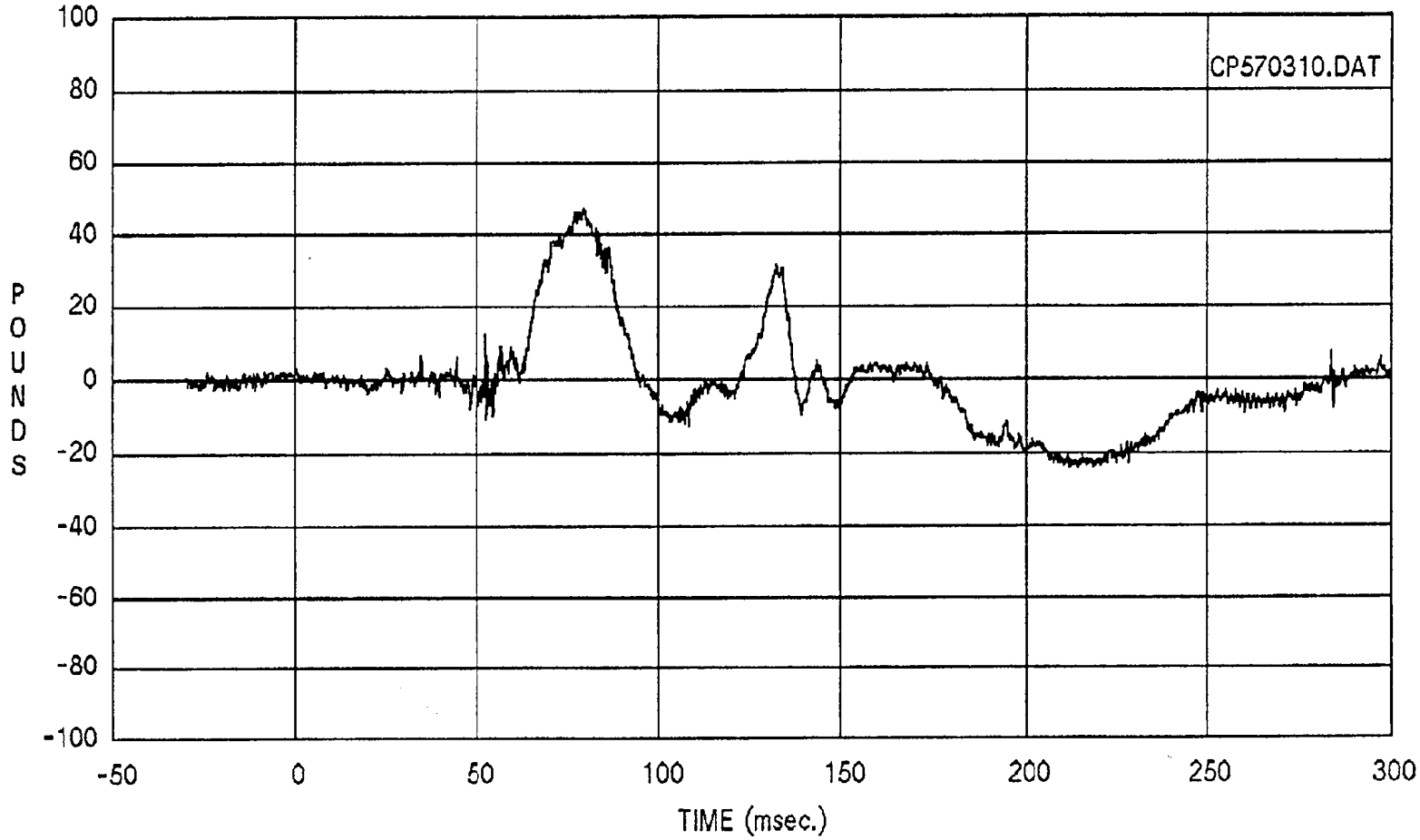
Curve: Driver pelvis acceleration -- Z axis Filter: SAE CLASS 1000 Max = 10.874 Min = -1.8887

MSE Date: 05/20/93 Program: 1993 FMVSS 301 Rear Vehicle: 1993 Isuzu Trooper



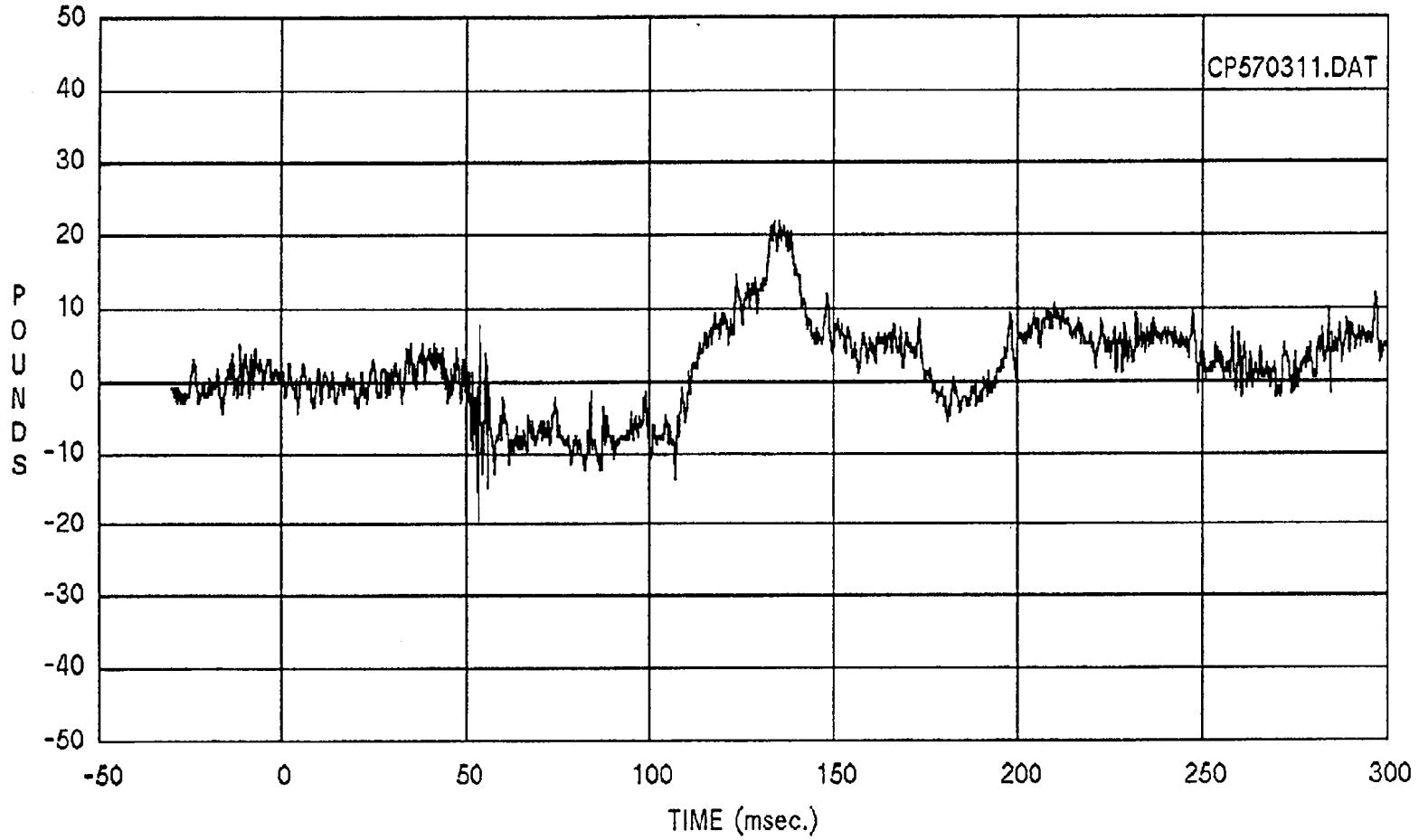
Curve: Driver pelvis acceleration -- Resultant Filter: SAE CLASS 1000 Max = 30.843 Min = .00000

MSE Date: 05/20/93 Program: 1993 FMVSS 301 Rear Vehicle: 1993 Isuzu Trooper



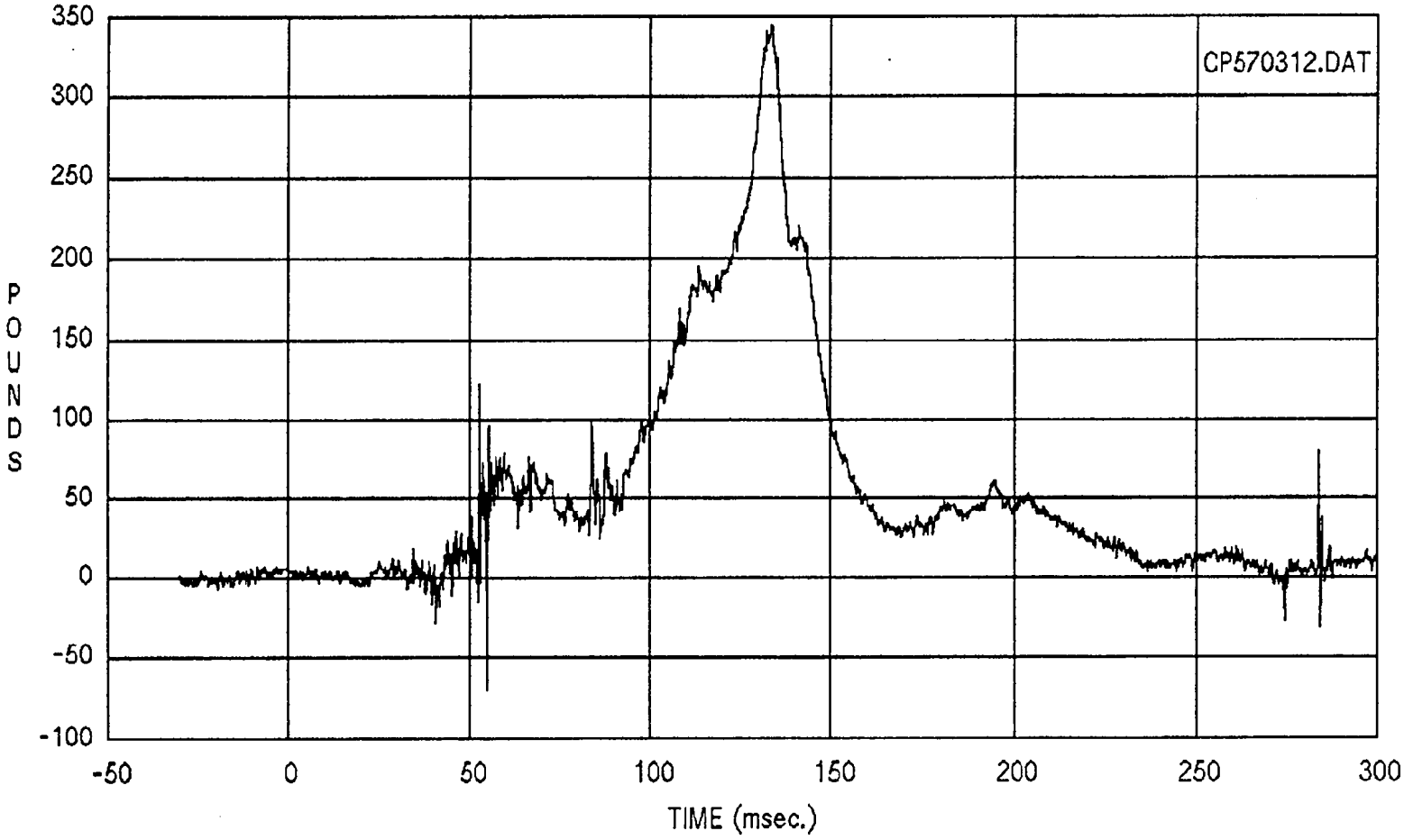
Curve: Driver neck force -- X axis Filter: SAE CLASS 1000 Max = 47.314 Min = -24.603

MSE Date: 05/20/93 Program: 1993 FMVSS 301 Rear Vehicle: 1993 Isuzu Trooper



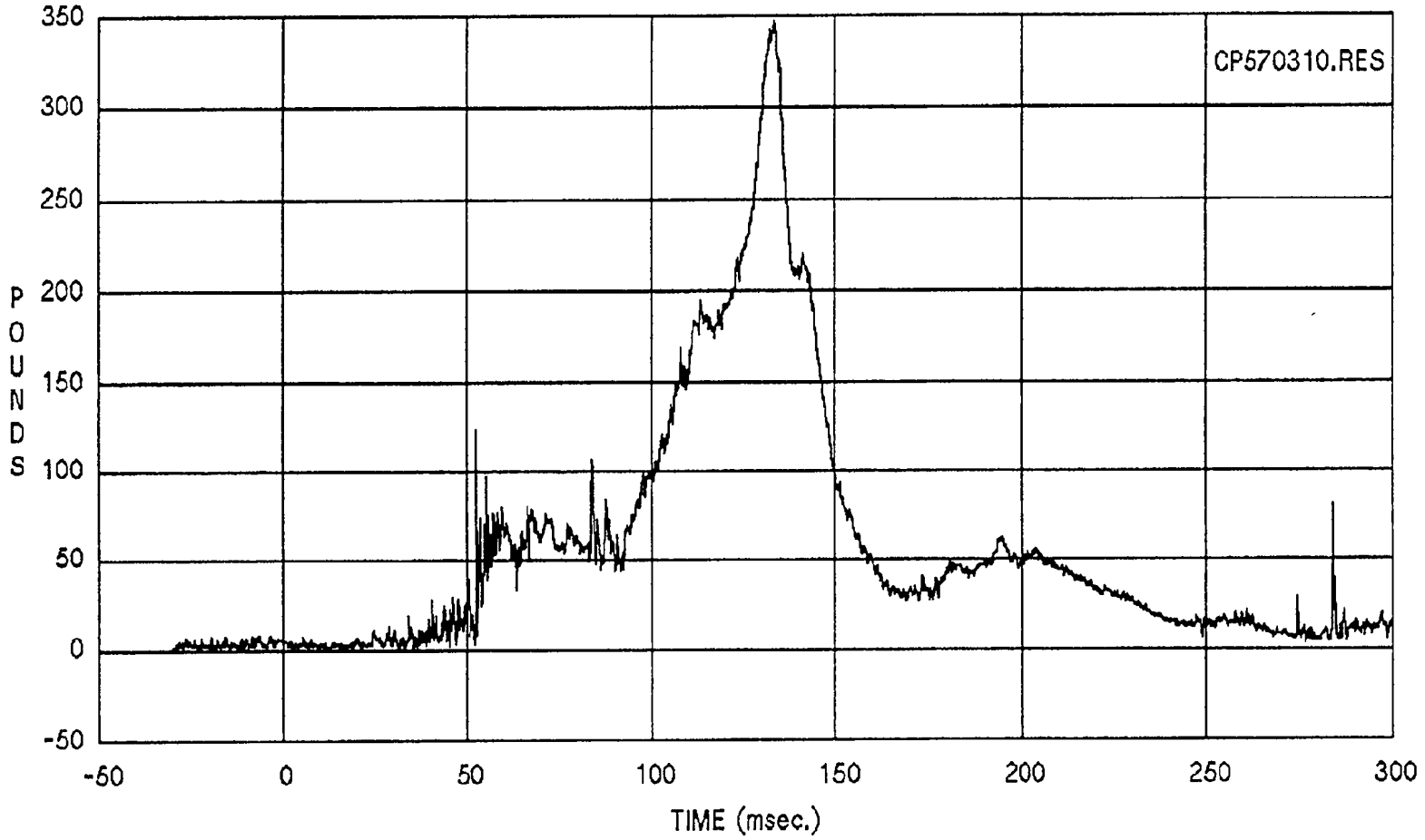
Curve: Driver neck force -- Y axis Filter: SAE CLASS 1000 Max = 22.030 Min = -19.359

MSE Date: 05/20/93 Program: 1993 FMVSS 301 Rear Vehicle: 1993 Isuzu Trooper



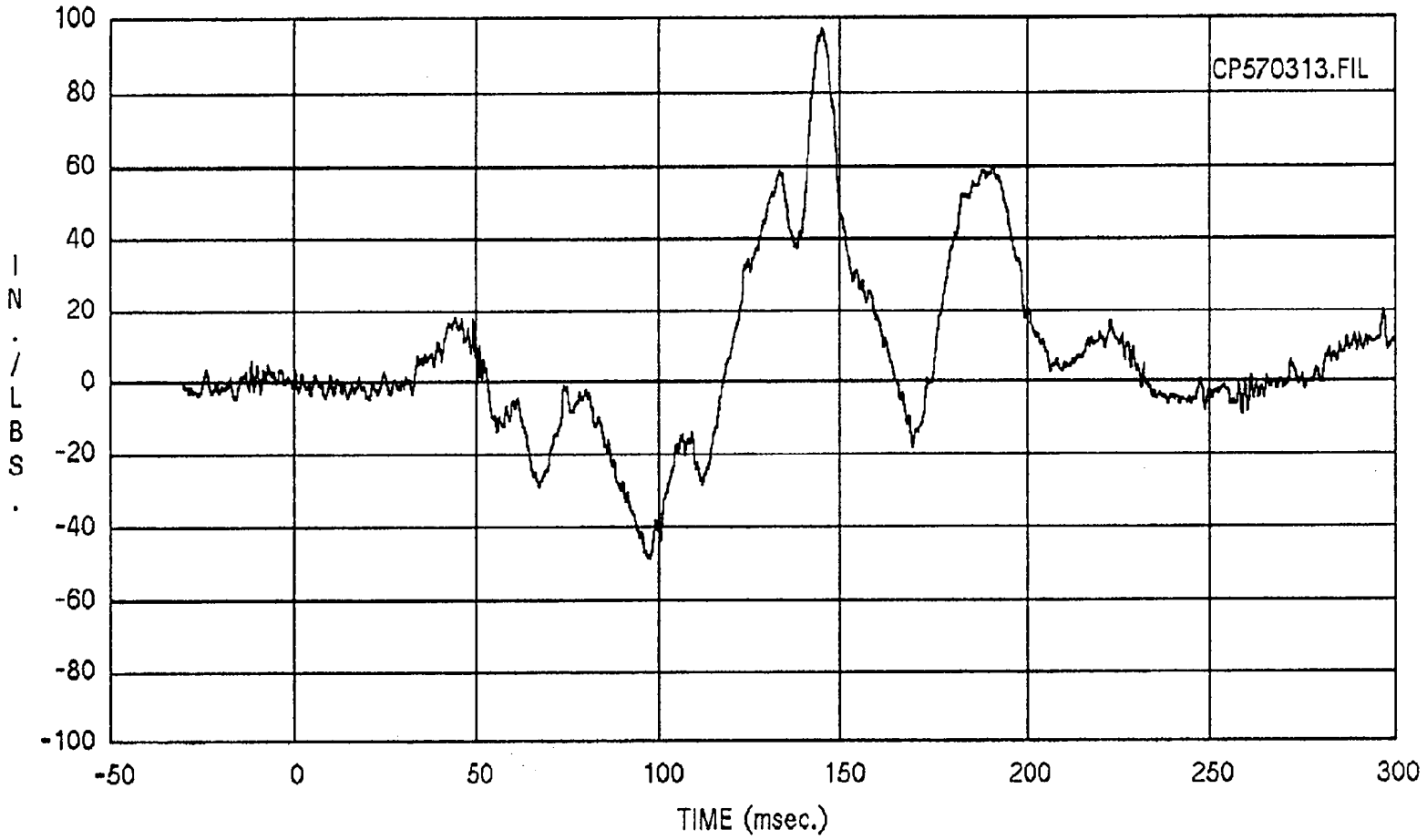
Curve: Driver neck force -- Z axis Filter: SAE CLASS 1000 Max = 344.91 Min = -81.726

MSE Date: 05/20/93 Program: 1993 FMVSS 301 Rear Vehicle: 1993 Isuzu Trooper



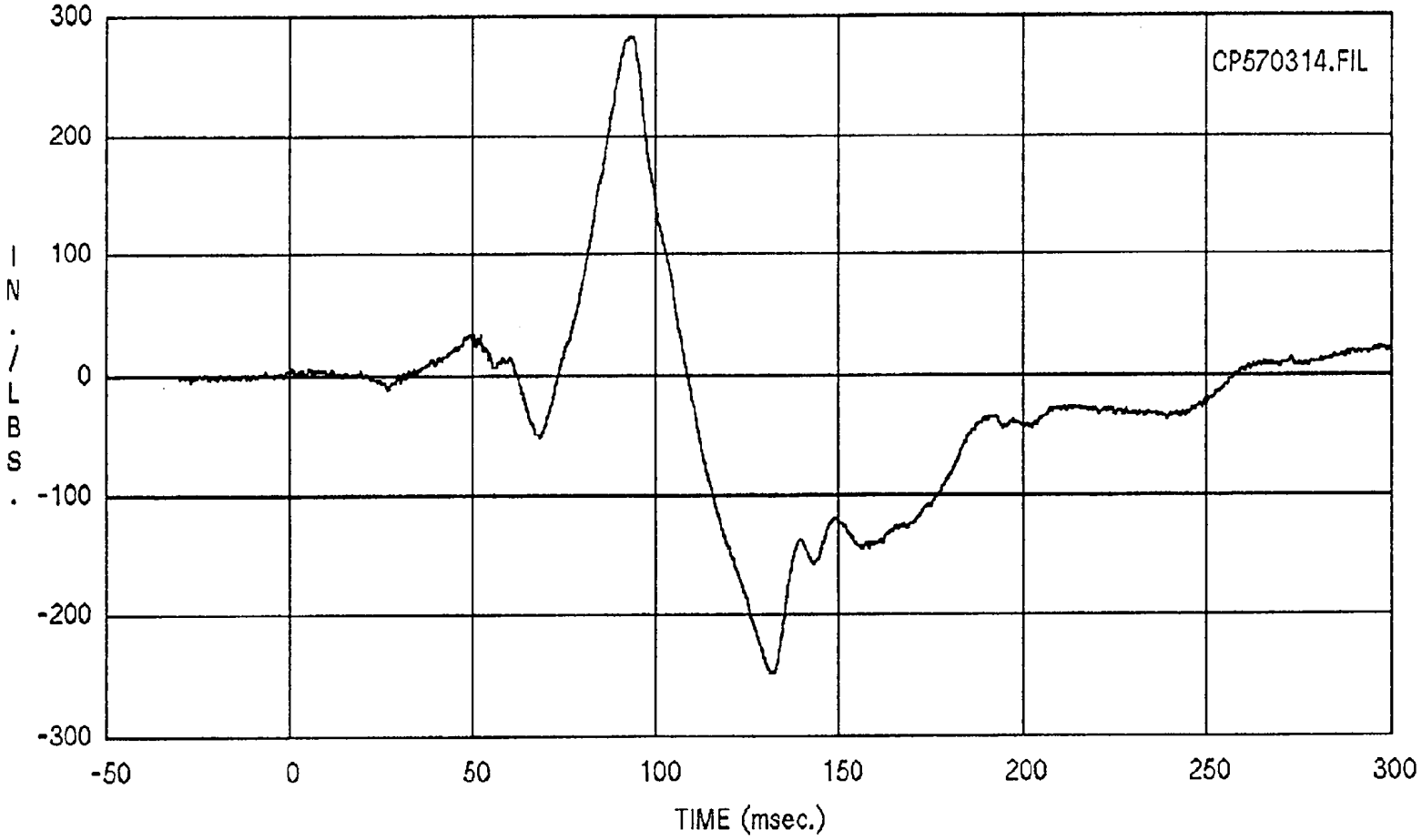
Curve: Driver neck force -- Resultant Filter: SAE CLASS 1000 Max = 346.91 Min = .61783E-

MSE Date: 05/20/93 Program: 1993 FMVSS 301 Rear Vehicle: 1993 Isuzu Trooper



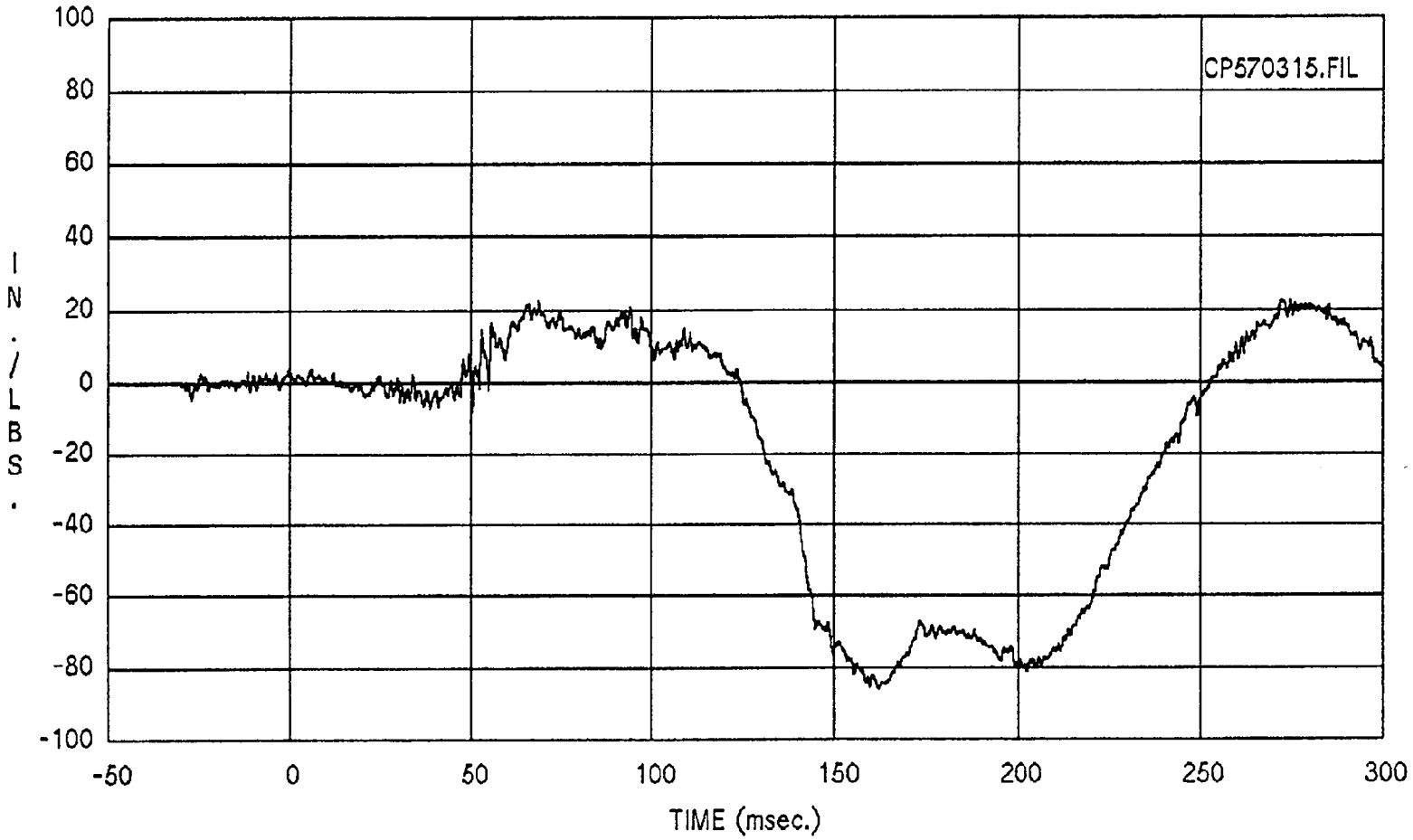
Curve: Driver neck moment -- X axis Filter: SAE CLASS 600 Max = 97.069 Min = -48.248

MSE Date: 05/20/93 Program: 1993 FMVSS 301 Rear Vehicle: 1993 Isuzu Trooper



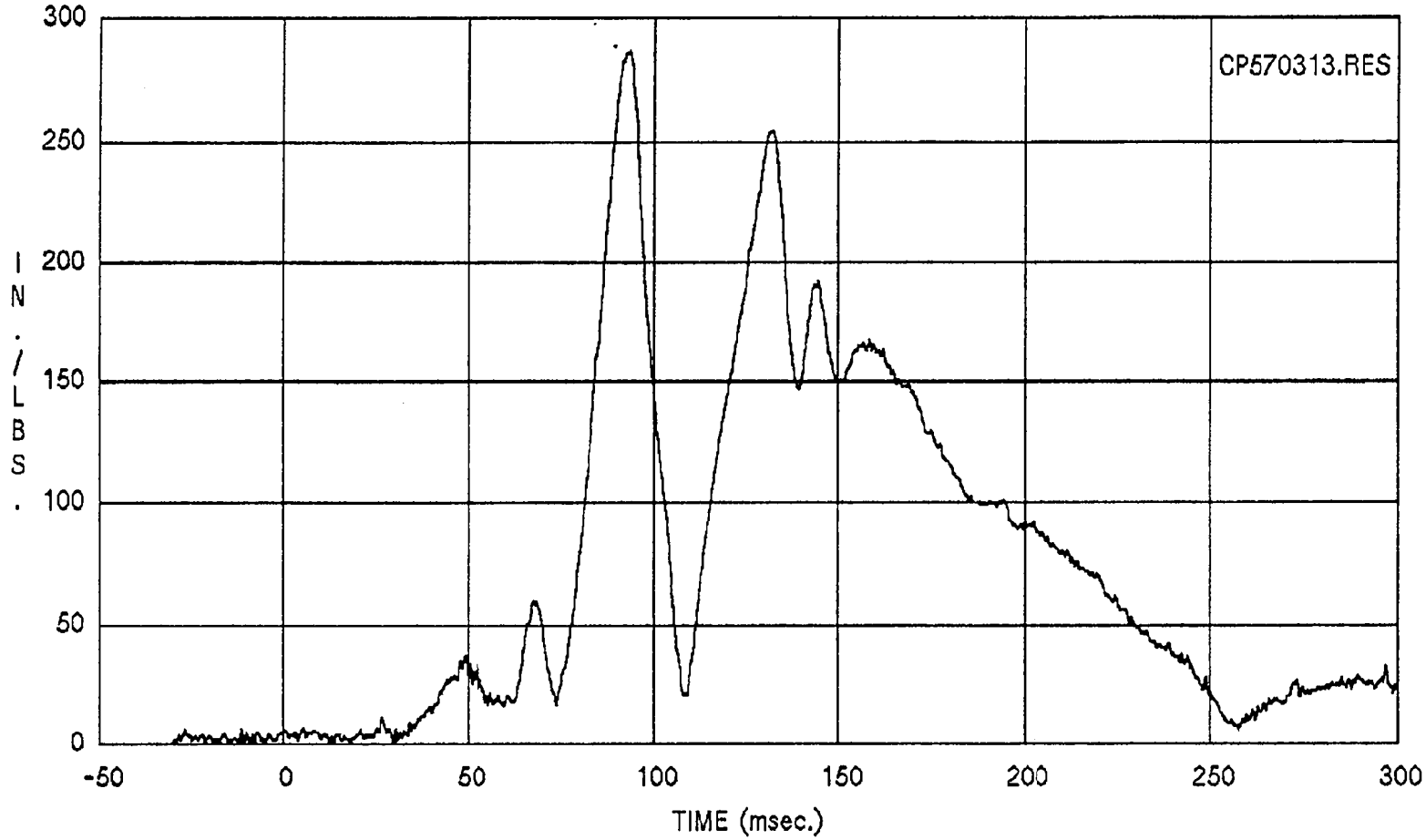
Curve: Driver neck moment -- Y axis Filter: SAE CLASS 600 Max = 283.42 Min = -247.98

MSE Date: 05/20/93 Program: 1993 FMVSS 301 Rear Vehicle: 1993 Isuzu Trooper



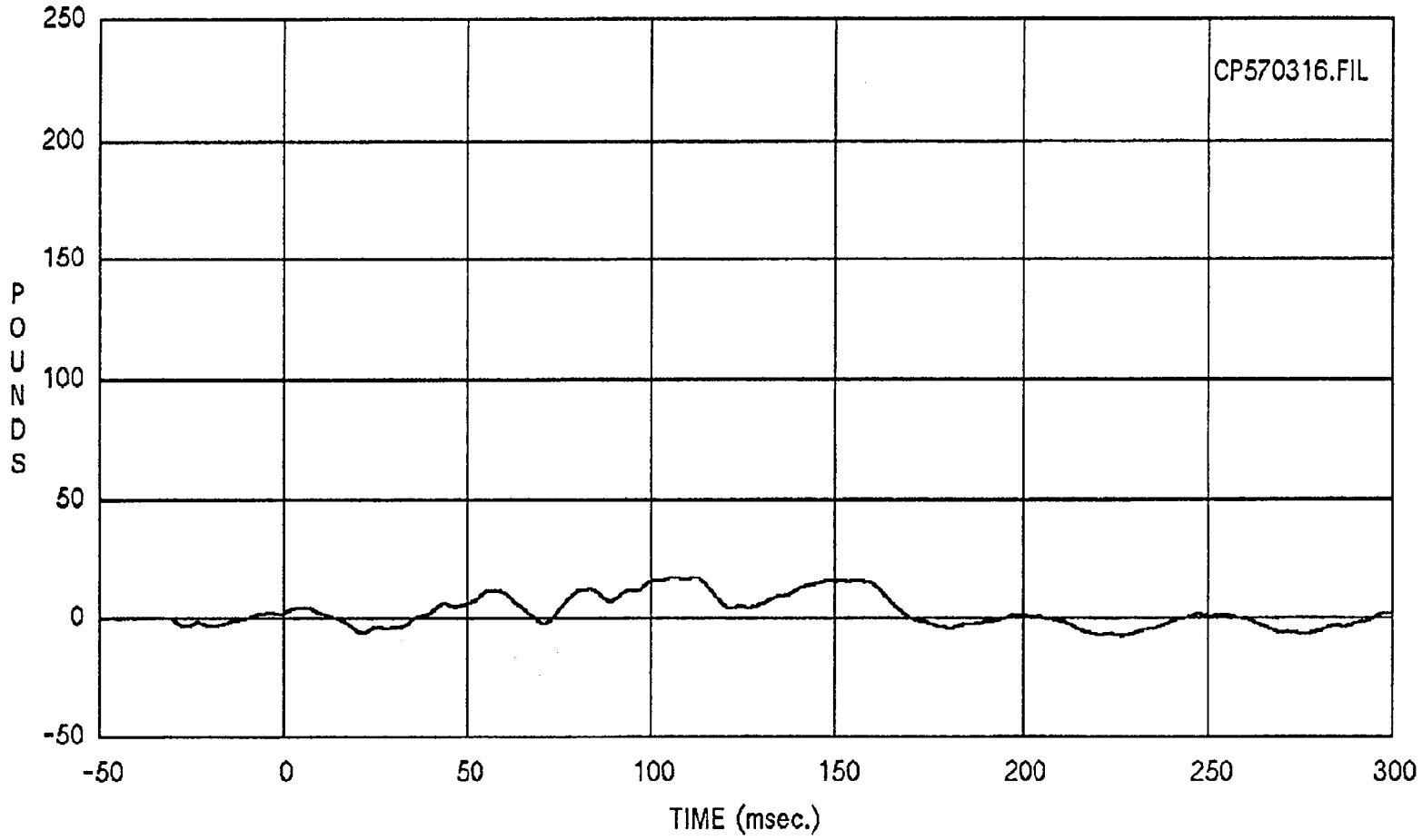
Curve: Driver neck moment -- Z axis Filter: SAE CLASS 600 Max = 22.629 Min = -85.462

MSE Date: 05/20/93 Program: 1993 FMVSS 301 Rear Vehicle: 1993 Isuzu Trooper



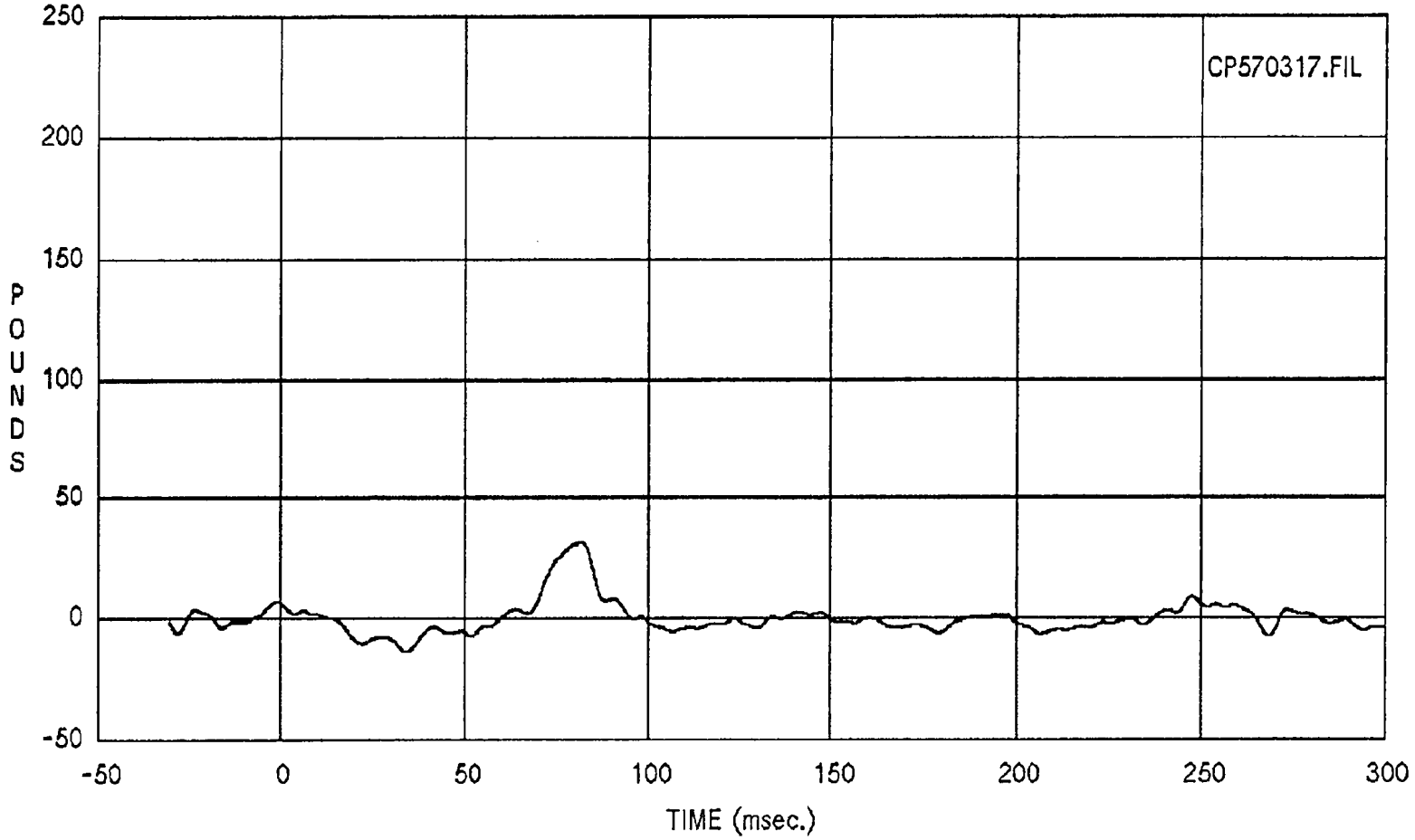
Curve: Driver neck moment -- Resultant Filter: SAE CLASS 600 Max = 286.56 Min = .62153

MSE Date: 05/20/93 Program: 1993 FMVSS 301 Rear Vehicle: 1993 Isuzu Trooper



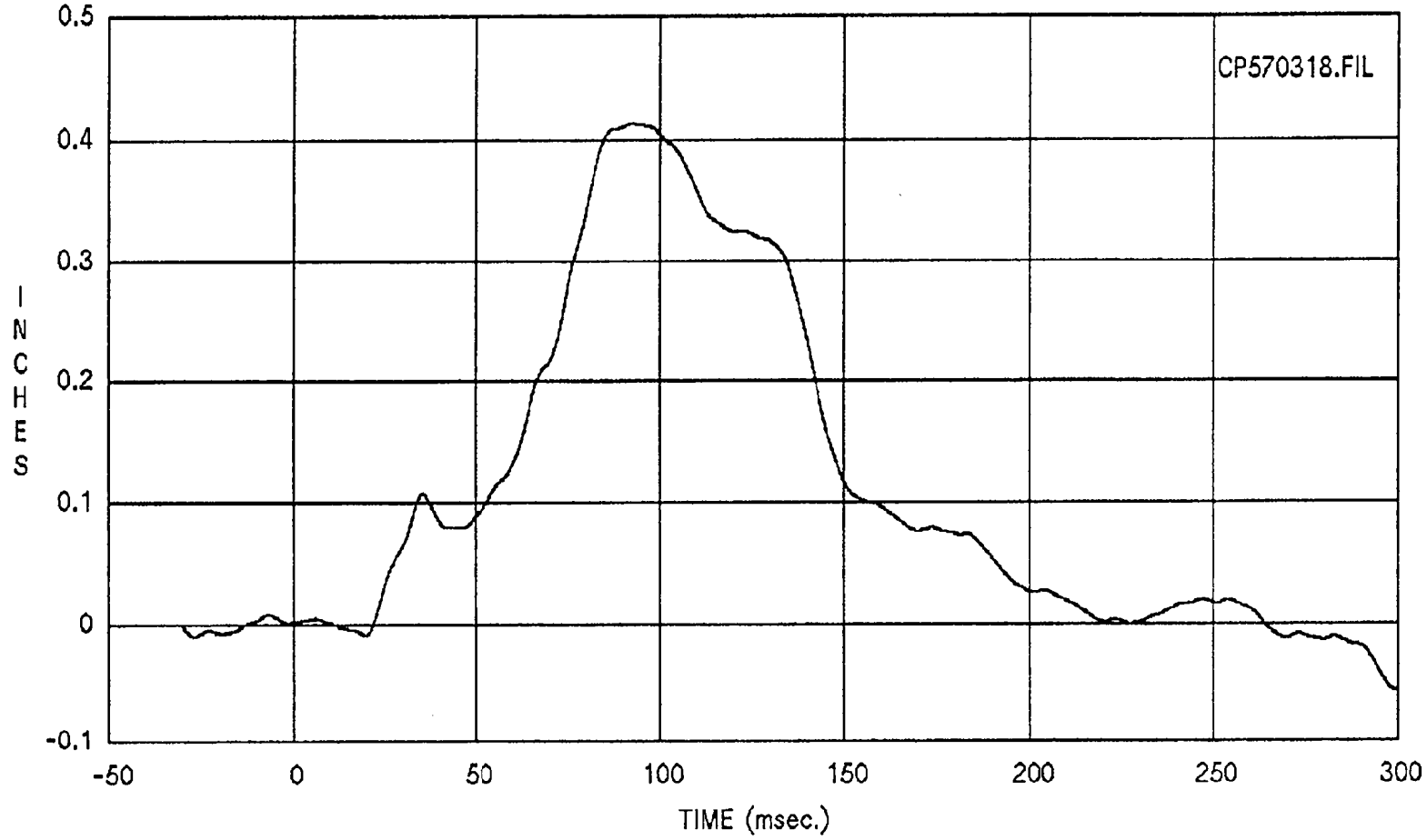
Curve: Driver lap belt load Filter: SAE CLASS 60 Max = 17.884 Min = -7.3626

MSE Date: 05/20/93 Program: 1993 FMVSS 301 Rear Vehicle: 1993 Isuzu Trooper



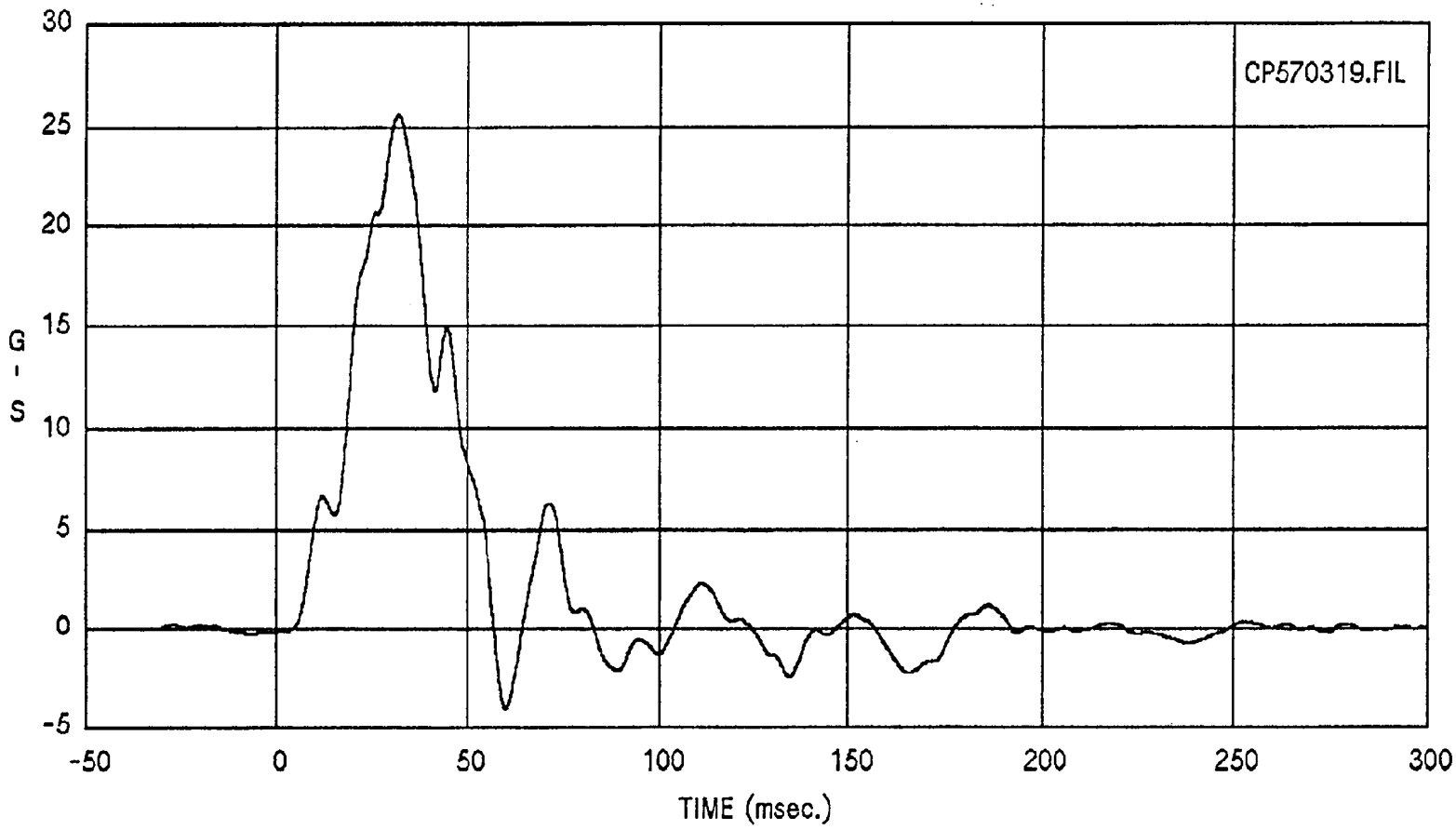
Curve: Driver shoulder belt load Filter: SAE CLASS 60 Max = 31.224 Min = -13.335

MSE Date: 05/20/93 Program: 1993 FMVSS 301 Rear Vehicle: 1993 Isuzu Trooper



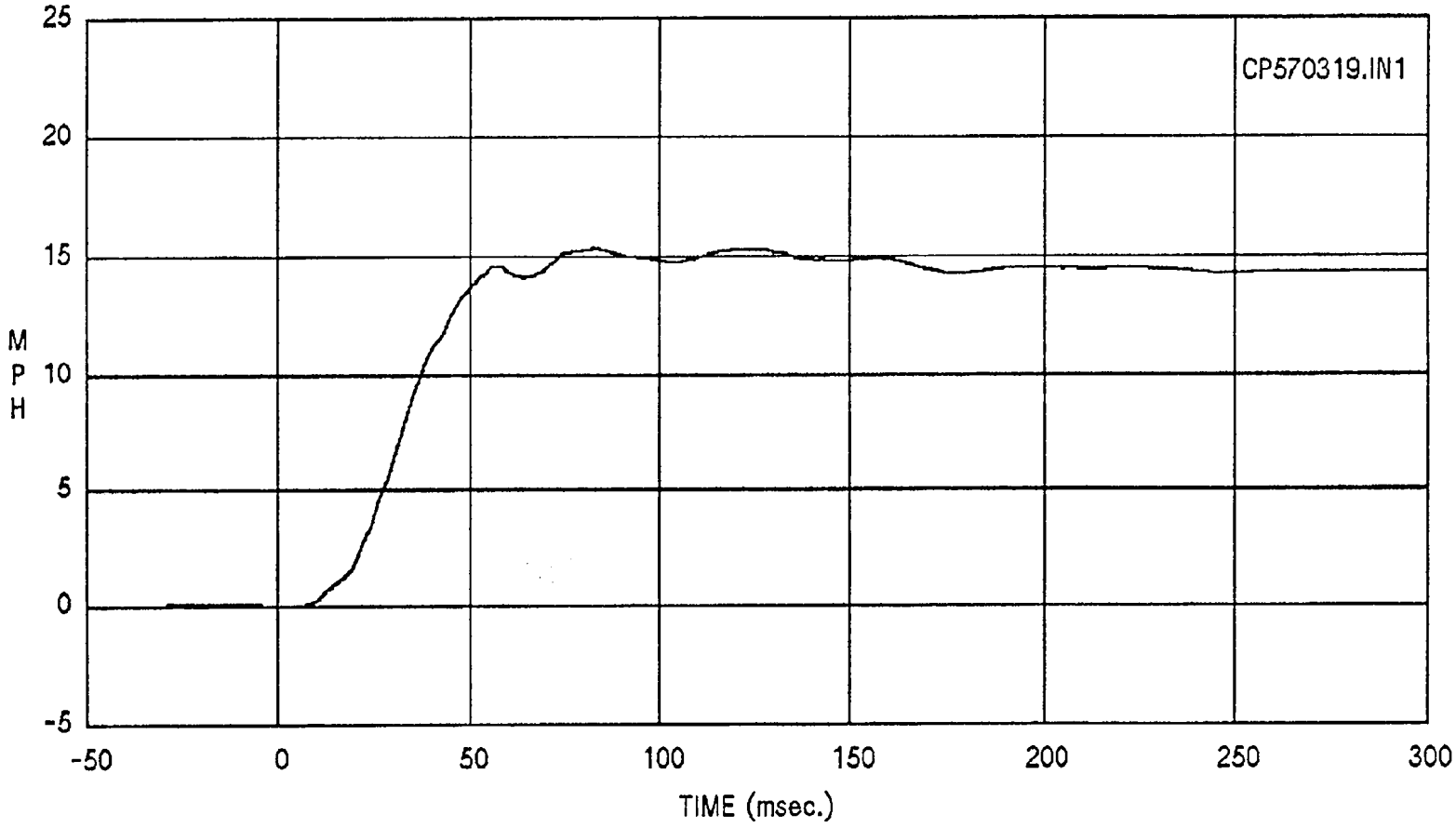
Curve: Driver seat belt pullout Filter: SAE CLASS 60 Max = .41375 Min = -.55695E-0

MSE Date: 05/20/93 Program: 1993 FMVSS 301 Rear Vehicle: 1993 Isuzu Trooper



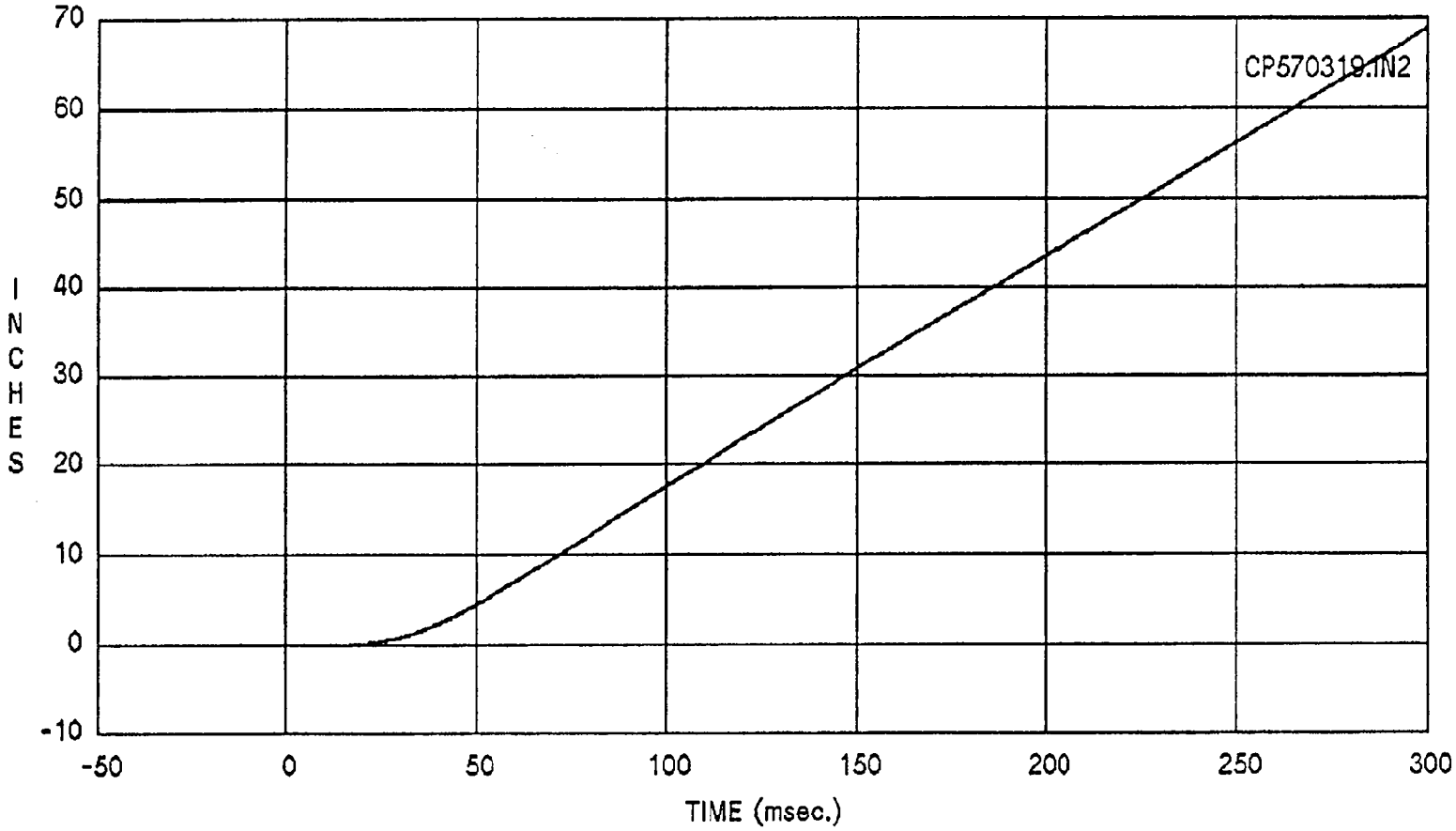
Curve: Vehicle C.G. acceleration -- X axis (Primary) Filter: SAE CLASS 60 Max = 25.605 Min = -4.0725

MSE Date: 05/20/93 Program: 1993 FMVSS 301 Rear Vehicle: 1993 Isuzu Trooper



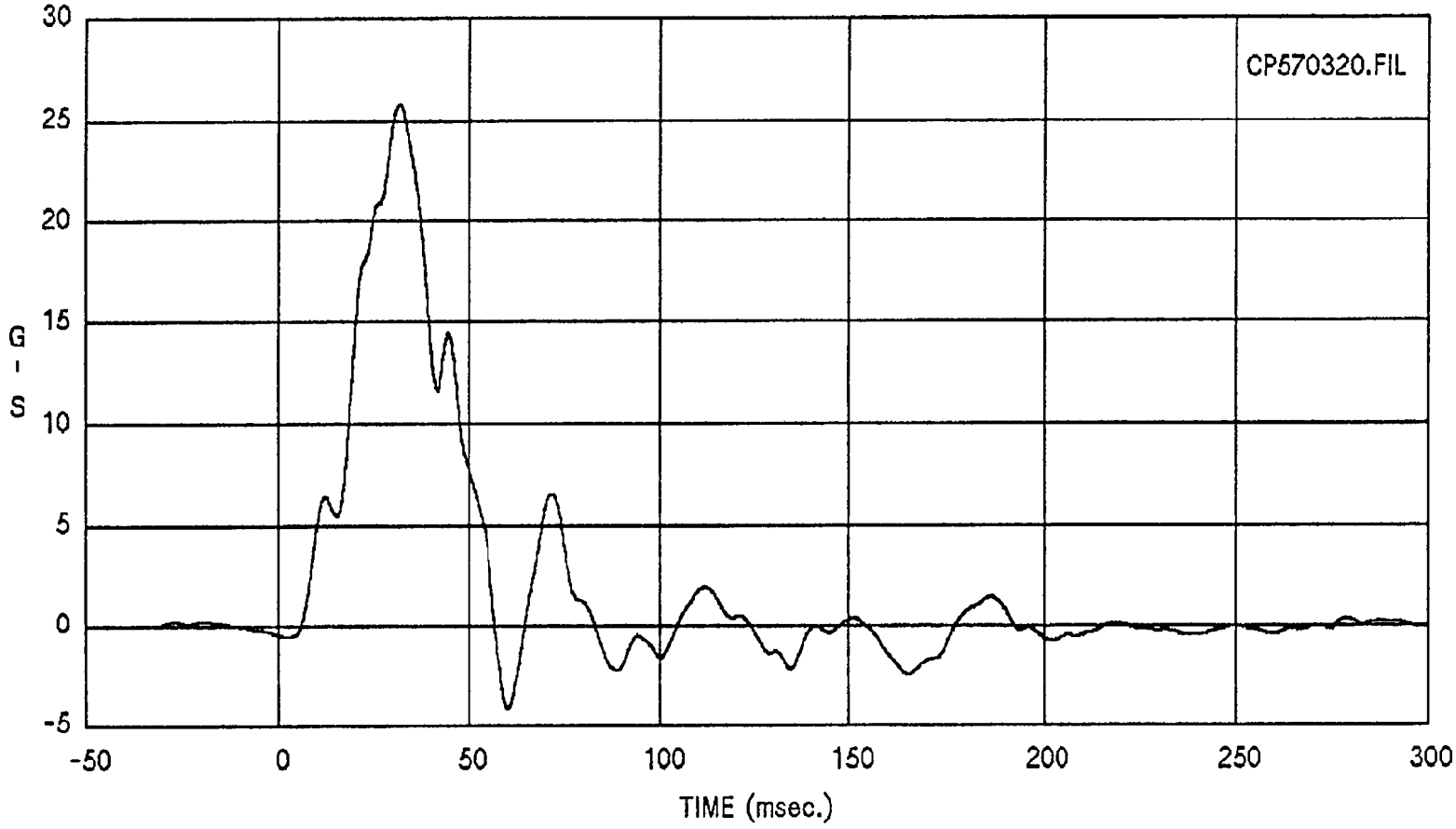
Curve: Vehicle C.G. delta V -- X axis (Primary) Filter: SAE CLASS 180 02 Max = 15.324 Min = -.70920E

MSE Date: 05/20/93 Program: 1993 FMVSS 301 Rear Vehicle: 1993 Isuzu Trooper



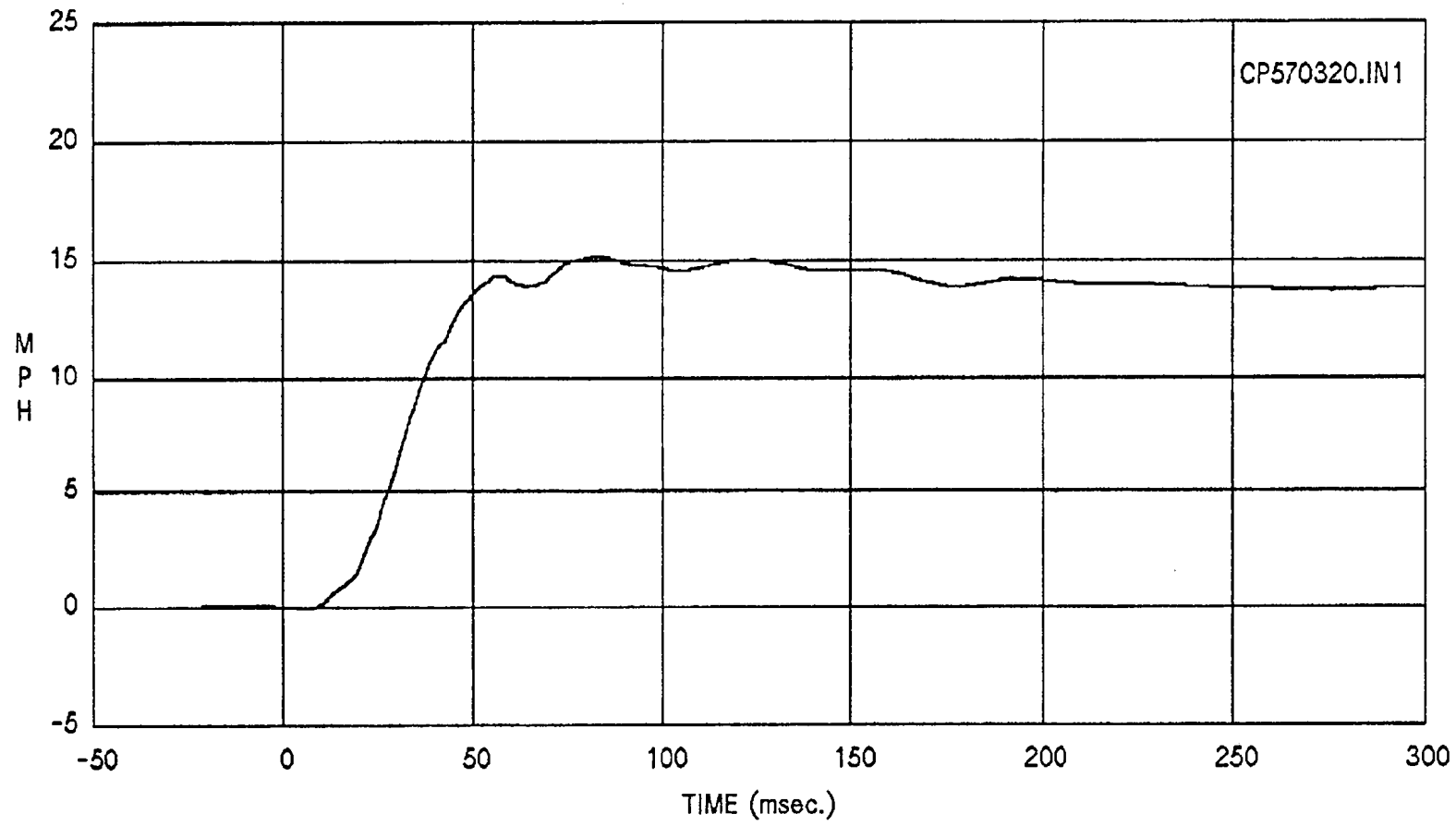
Curve: Vehicle C.G. displacement -- X axis (Primary) Filter: SAE CLASS 180 Max = 68.921 Min = -.35266E-03

MSE Date: 05/20/93 Program: 1993 FMVSS 301 Rear Vehicle: 1993 Isuzu Trooper



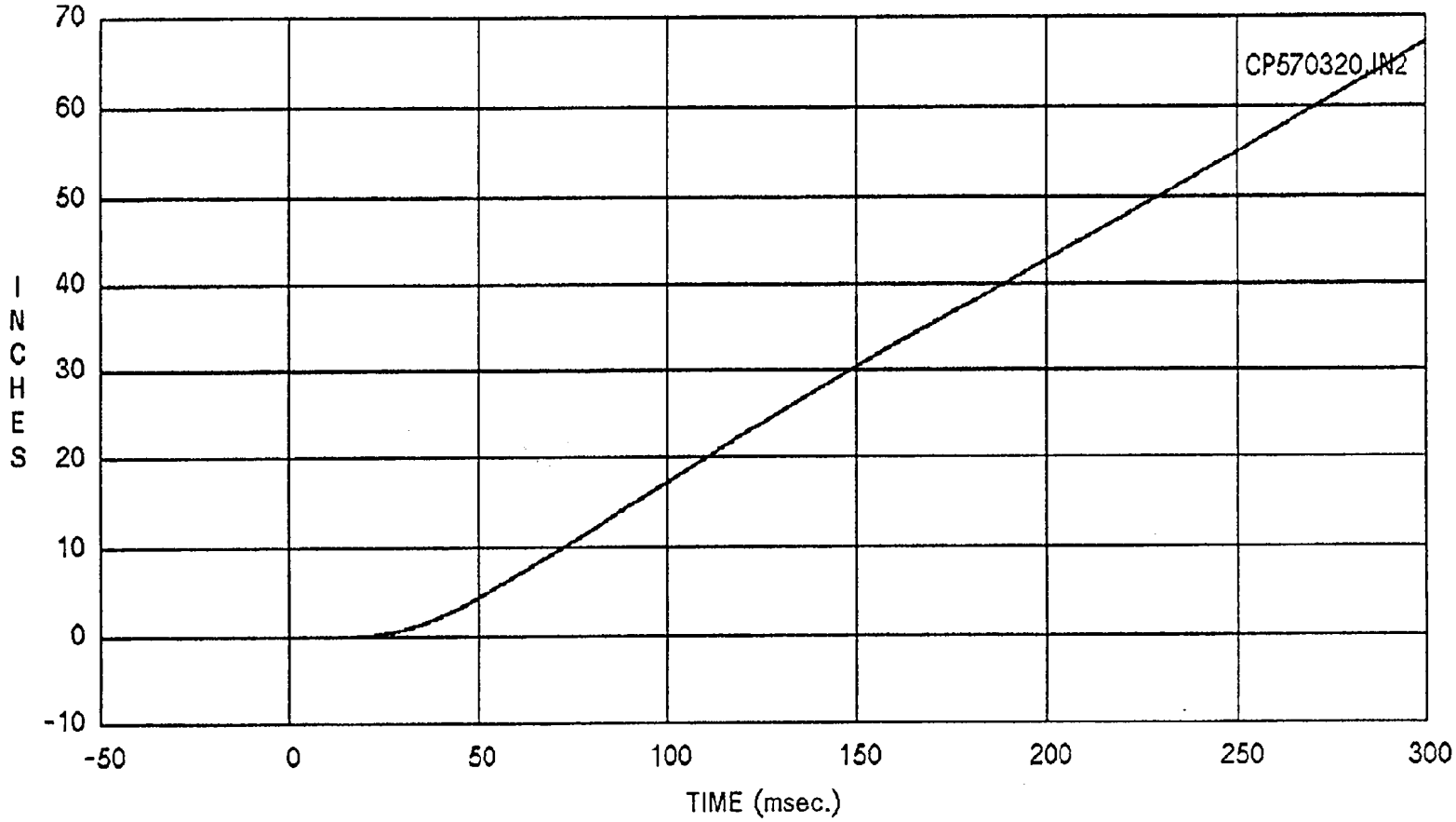
Curve: Vehicle C.G. acceleration -- X axis (Secondary) Filter: SAE CLASS 60 Max = 25.831 Min = -4.171

MSE Date: 05/20/93 Program: 1993 FMVSS 301 Rear Vehicle: 1993 Isuzu Trooper



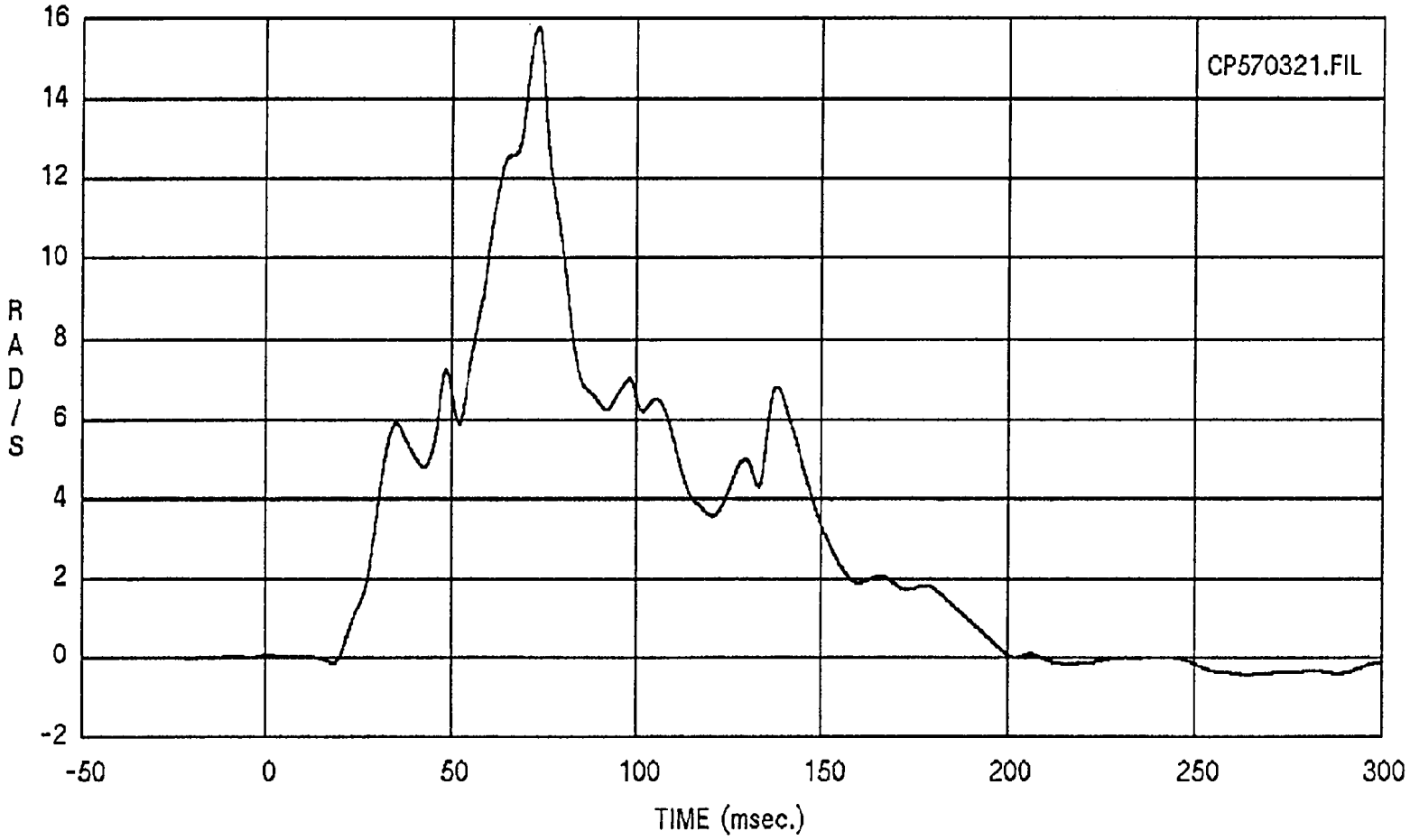
Curve: Vehicle C.G. delta V -- X axis (Secondary) Filter: SAE CLASS 180 Max = 15.163 Min = -.56147E-01

MSE Date: 05/20/93 Program: 1993 FMVSS 301 Rear Vehicle: 1993 Isuzu Trooper



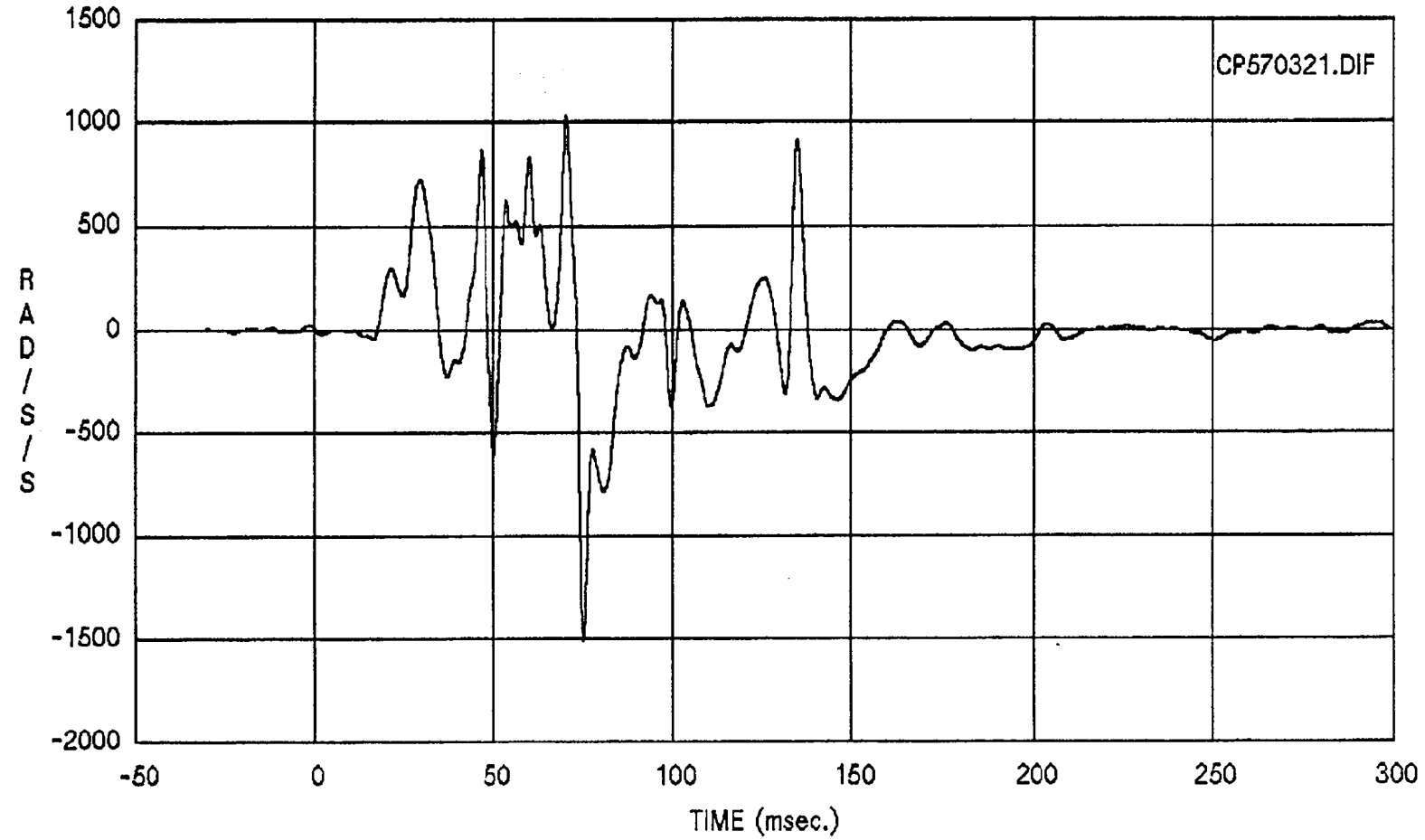
Curve: Vehicle C.G. displacement -- X axis(Secondary) Filter: SAE CLASS 180 Max = 67.223 Min = -.51054E-02

MSE Date: 05/20/93 Program: 1993 FMVSS 301 Rear Vehicle: 1993 Isuzu Trooper



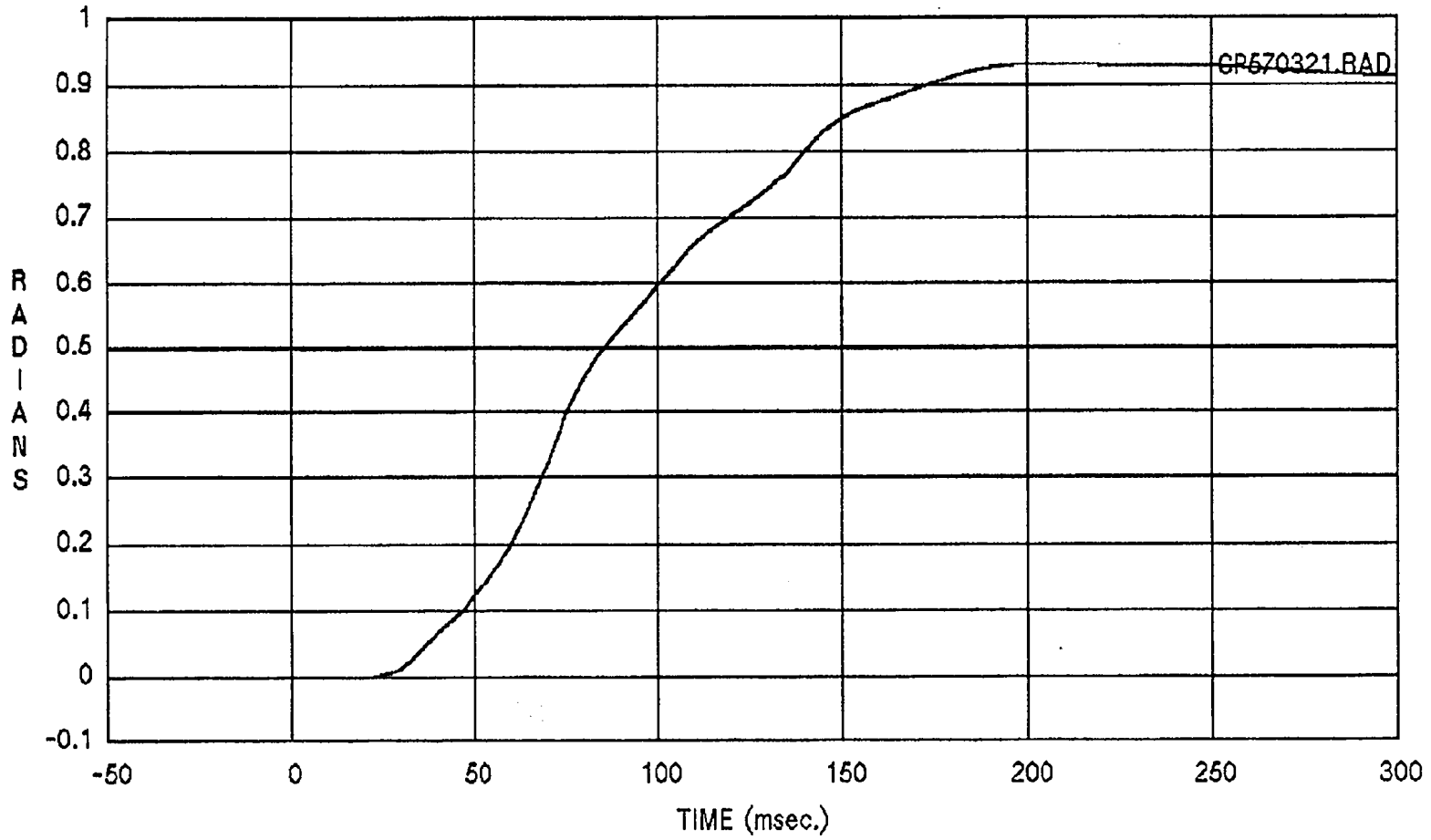
Curve: Driver seatback angular rate -- X axis Filter: SAE CLASS 60 Max = 15.791 Min = -.42820

MSE Date: 05/20/93 Program: 1993 FMVSS 301 Rear Vehicle: 1993 Isuzu Trooper



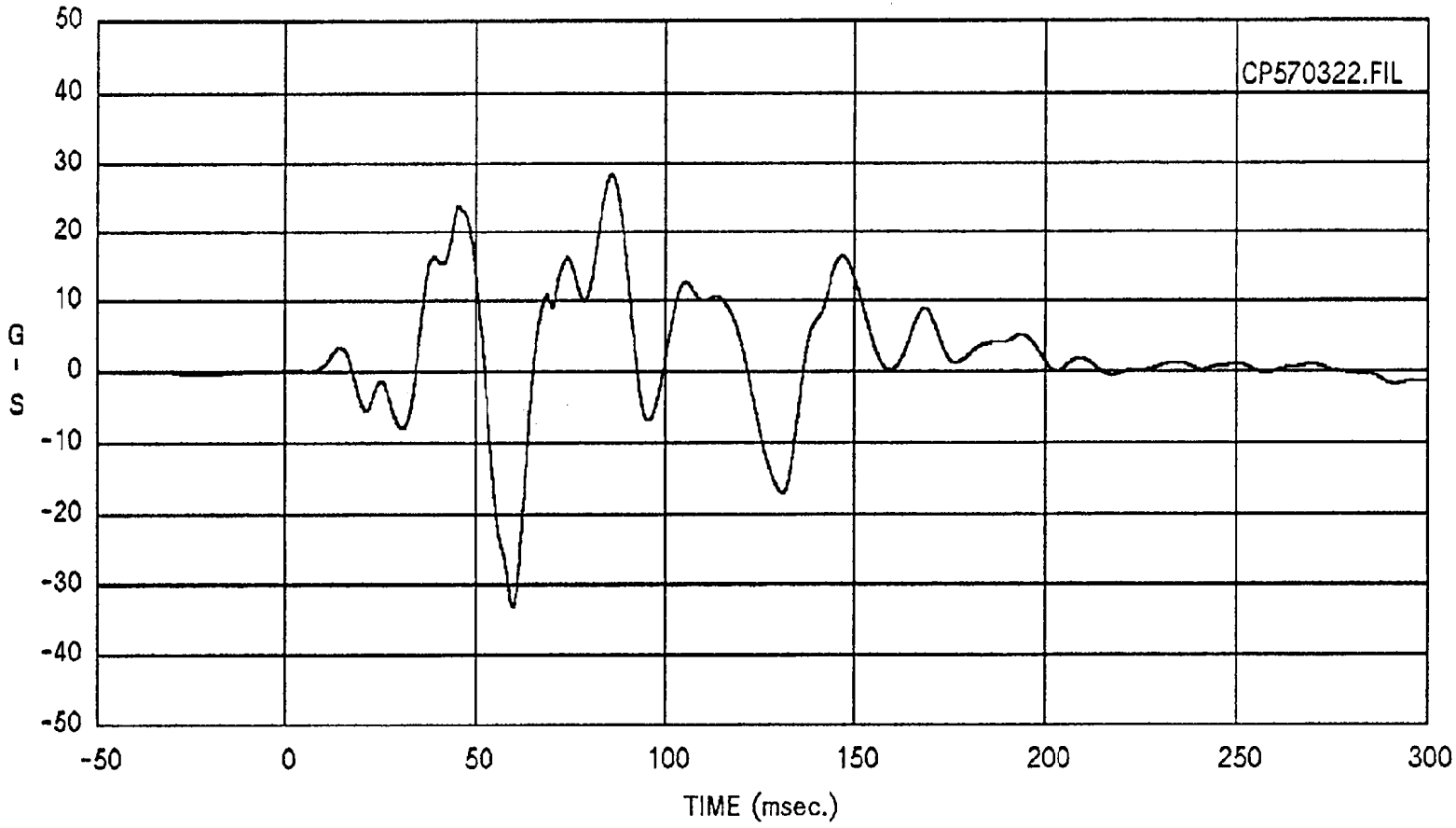
Curve: Driver seatback angular acceleration Filter: SAE CLASS 60 Max = 1032.3 Min = -1505.1

MSE Date: 05/20/93 Program: 1993 FMVSS 301 Rear Vehicle: 1993 Isuzu Trooper



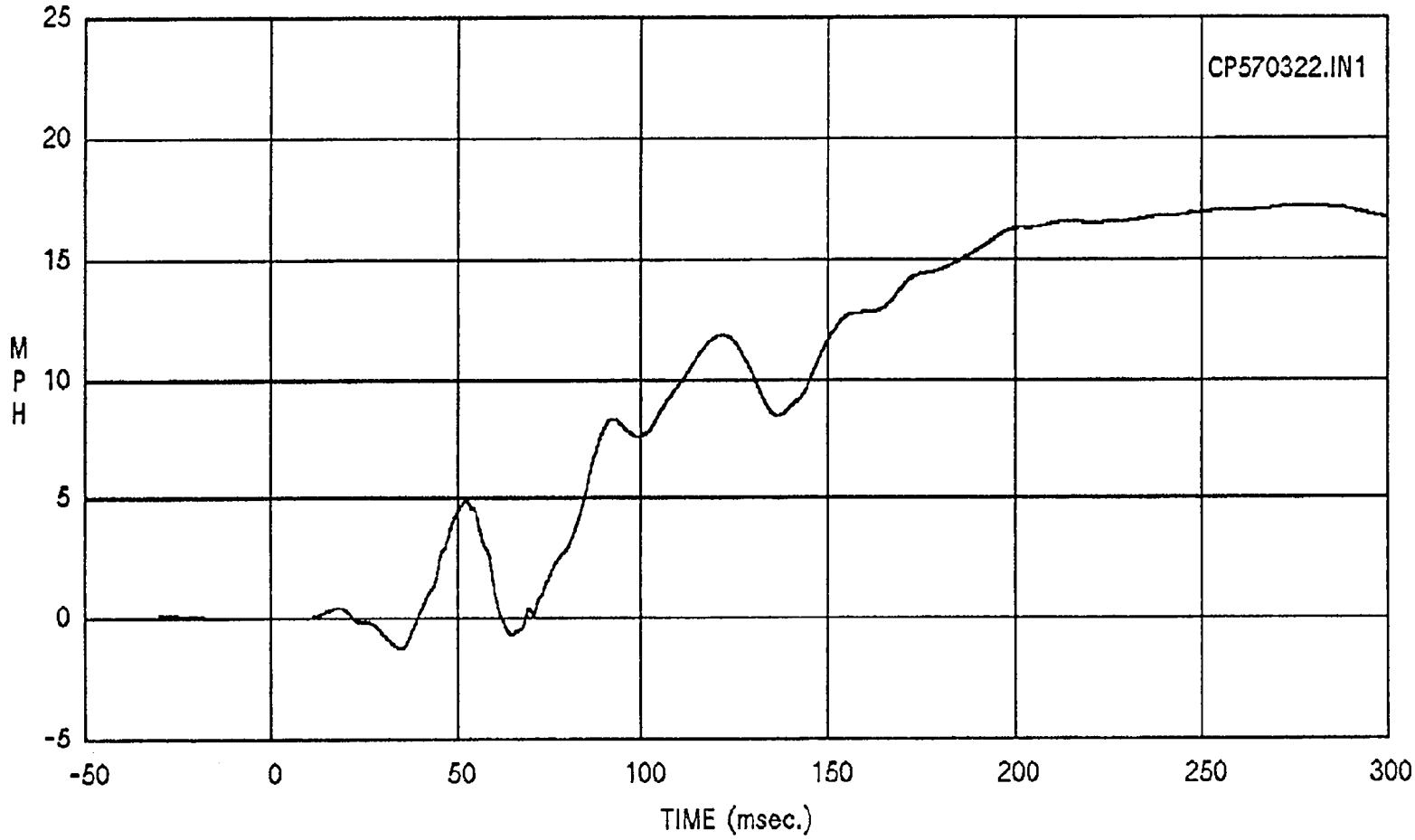
Curve: Driver seatback angular rotation Filter: SAE CLASS 180 Max = .93074 Min = -.78586E-

MSE Date: 05/20/93 Program: 1993 FMVSS 301 Rear Vehicle: 1993 Isuzu Trooper



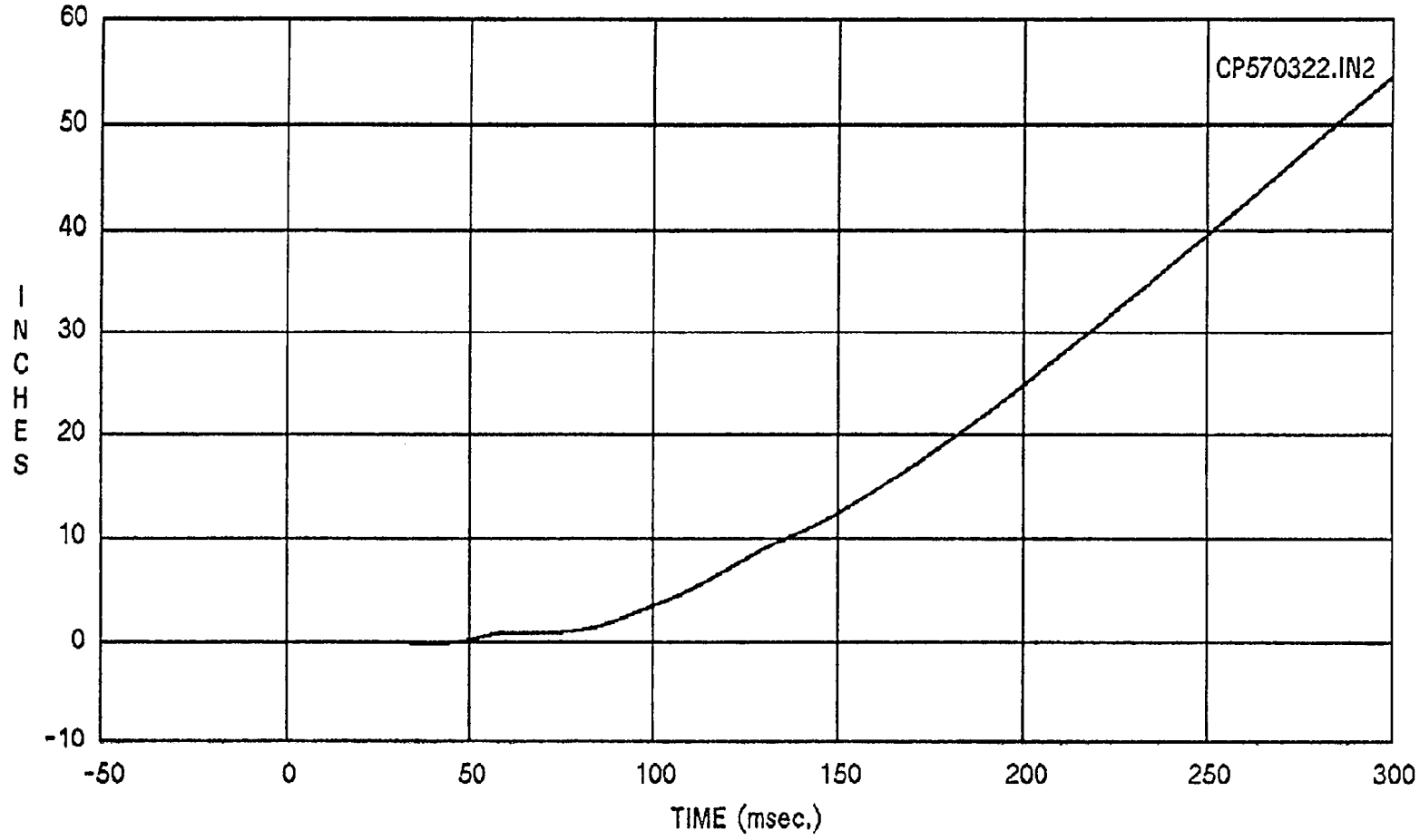
Curve: Driver seatback acceleration -- X axis Filter: SAE CLASS 60 Max = 28.384 Min = -33.231

MSE Date: 05/20/93 Program: 1993 FMVSS 301 Rear Vehicle: 1993 Isuzu Trooper



Curve: Driver seatback delta V -- X axis Filter: SAE CLASS 180 Max = 17.230 Min = -1.2335

MSE Date: 05/20/93 Program: 1993 FMVSS 301 Rear Vehicle: 1993 Isuzu Trooper



Curve: Driver seatback displacement Filter: SAE CLASS 180 Max = 54.549 Min = -.11906

MSE Date: 05/20/93 Program: 1993 FMVSS 301 Rear Vehicle: 1993 Isuzu Trooper

SECTION 7

INSTRUMENTATION AND CALIBRATION DATA

General Test Information

VERSNO: V2 TGID: 1
TITLE: 1993 FMVSS 301-75 REAR COMPLIANCE
TSTOBJ: DETERMINE COMPLIANCE TO 301-75 REAR/ACQUIRE DRIVER DUMMY DATA

TSTDAT: 20/MAY/93	TSTPRF: MSE	CONNO: DTNH22-93-C-01007	
TSTREF: CP5703	TSTTYP: COM	TSTCFN: ITV	
TKSURF: CON	TKCOND: DRY	TEMP: 67	RECTYP: FMT
LINK: UMB	CLSSPD: 29.5	IMPANG: 180	OFFSET: 0.0
IMPPNT: 9999.9	MEASUR: ENG	TOTCRV: 22	

TSTCOM: NO COMMENTS

Vehicle Information

VGID: 2 VEHNO: 1 MAKE: 32 MODEL: 06 YEAR: 99 BODY: NA
VIN: 99999999999999999999 ENGINE: NAPP ENGDSP: 999999999999 TRANSM: NA
VEHTWT: 3986 WHLBAS: 102.0 VEHLEN: 139.0 VEHWID: 72.5
VEHCG: 51.0 STRSEP: NA COLMEC: NAP MODIND: R
MODDSC: FLAT IMPACTOR, MOVING
BX
1:9999.9
2:9999.9
3:9999.9
4:9999.9
5:9999.9
6:9999.9
7:9999.9
8:9999.9
9:9999.9
10:9999.9
11:9999.9
12:9999.9
13:9999.9
14:9999.9
15:9999.9
16:9999.9
17:9999.9
18:9999.9
19:9999.9
20:9999.9
21:9999.9
VEHSPD: 29.5 CRBANG: 0 PDOF: 0 BMPENG: NA
SILENG: NA APLENG: NA
DPD
1: 0.0
2: 0.0
3: 0.0
4: 0.0
5: 0.0
6: 0.0
VDI: 9999999 LENCNT: 9999.9 DAMDST: 999.9 CRHDST: 999.9
AX
1:9999.9
2:9999.9
3:9999.9
4:9999.9
5:9999.9
6:9999.9
7:9999.9
8:9999.9
9:9999.9
10:9999.9
11:9999.9
12:9999.9
13:9999.9
14:9999.9
15:9999.9
16:9999.9
17:9999.9
18:9999.9
19:9999.9
20:9999.9
21:9999.9
CARANG: 999 VEHOR: 999
VEHCOM: NO COMMENTS

Vehicle Information

VGID: 2 VEHNO: 2 MAKE: 42 MODEL: 04 YEAR: 93 BODY: UV
VIN: JACDH58V4P7900830 ENGINE: V6IF ENGDSP: 3.2 LITERS TRANSM: MR
VEHTWT: 4823 WHLBAS: 108.7 VEHLEN: 185.5 VEHWID: 68.7
VEHCG: 55.7 STRSEP: NO COLMEC: CON MODIND: P
MODDSC: UNMODIFIED
BX
1:9999.9
2:9999.9
3:9999.9
4:9999.9
5:9999.9
6:9999.9
7:9999.9
8:9999.9
9:9999.9
10:9999.9
11:9999.9
12:9999.9
13:9999.9
14:9999.9
15:9999.9
16:9999.9
17:9999.9
18:9999.9
19:9999.9
20:9999.9
21:9999.9
VEHSPD: 0.0 CRBANG: 0 PDOF: 180 BMPENG: DE
SILENG: NA APLENG: NA
DPD
1: 3.7
2: 7.6
3: 6.0
4: 5.9
5: 6.8
6: 4.2
VDI: 06BDAW6 LENCNT: 64.0 DAMDST: 0.0 CRHDST: 10.7
AX
1:9999.9
2:9999.9
3:9999.9
4:9999.9
5:9999.9
6:9999.9
7:9999.9
8:9999.9
9:9999.9
10:9999.9
11:9999.9
12:9999.9
13:9999.9
14:9999.9
15:9999.9
16:9999.9
17:9999.9
18:9999.9
19:9999.9
20:9999.9
21:9999.9
CARANG: 999 VEHOR: 999
VEHCOM: NO COMMENT

Occupant Information

Occupant Group ID: 4 VEHNO: 2
OCCLOC: 01 OCCTYP: H3 OCCAGE: 99 OCCSEX: M OCCHT: 999 OCCWT: 999
MTHCAL: H3 DUMSIZ: 50
DUMMAN: MFG: FIRST TECHNOLOGY SAFETY SYSTEMS, S/N: 339
DUMMOD: UNMODIFIED
DUMDSC: NO COMMENT
HH: 16.3 HW: 23.2 HR: 11.7 HS: 14.7 CD: 20.5 CS: 12.2 AD: 4.8 HD: 6.4
KD: 5.9 HB:999.9 NB:999.9 CB:999.9 KB:999.9
RESTR1: 3PT RESTR2: SWE
RESTXT: NO COMMENTS
SEPOSN: CN AIRDEP: NA
CNTRH1: OT CNTRH2: NO CNTRC1: NO CNTRC2: NO CNTRL1: NO CNTRL2: NO
HIC: 103. T1: 111.100 T2: 147.100
CLIP3M: 13.0 LFEM: 9999. RFEM: 9999. CSI: 23. LBELT: 18. SBELT: 31.
OCCCOM: CNTRH1: HEAD CONTACTED DRIVER SEAT HEADREST AND REAR SEAT

Instrumentation Information

Inst. Group ID: 5 VEHNO: 2 CURNO: 001
SENTYP: AC SENLOC: 01 SENATT: HDCG
AXIS: XL UNITS: G'S PREFIL: 1650
INSMAN: MFG: ENDEVCO, MODEL: 7264-200, S/N: BF83H
CALDAT: 01/APR/93 INSRAT: 200 CHLMAX: 13 INIVEL: 0.0
NFP: -300 NLP: 2999 DELT: 100 DASTAT: AM
INSCOM: NO COMMENT

Instrumentation Information

Inst. Group ID: 5 VEHNO: 2 CURNO: 002
SENTYP: AC SENLOC: 01 SENATT: HDCG
AXIS: YL UNITS: G'S PREFIL: 1650
INSMAN: MFG: ENDEVCO, MODEL: 7264-200, S/N: BJ15H
CALDAT: 01/APR/93 INSRAT: 200 CHLMAX: 3 INIVEL: 0.0
NFP: -300 NLP: 2999 DELT: 100 DASTAT: AM
INSCOM: NO COMMENT

Instrumentation Information

Inst. Group ID: 5 VEHNO: 2 CURNO: 003
SENTYP: AC SENLOC: 01 SENATT: HDCG
AXIS: ZL UNITS: G'S PREFIL: 1650
INSMAN: MFG: ENDEVCO, MODEL: 7264-200, S/N: BG29H
CALDAT: 01/APR/93 INSRAT: 200 CHLMAX: 11 INIVEL: 0.0
NFP: -300 NLP: 2999 DELT: 100 DASTAT: AM
INSCOM: NO COMMENT

Instrumentation Information

Inst. Group ID: 5 VEHNO: 2 CURNO: 004
SENTYP: AC SENLOC: 01 SENATT: CHST
AXIS: XL UNITS: G'S PREFIL: 1650
INSMAN: MFG: ENDEVCO, MODEL: 7264-200, S/N: BJ61H
CALDAT: 01/APR/93 INSRAT: 200 CHLMAX: 6 INIVEL: 0.0
NFP: -300 NLP: 2999 DELT: 100 DASTAT: AM
INSCOM: NO COMMENT

Instrumentation Information

Inst. Group ID: 5 VEHNO: 2 CURNO: 005
SENTYP: AC SENLOC: 01 SENATT: CHST
AXIS: YL UNITS: G'S PREFIL: 1650
INSMAN: MFG: ENDEVCO, MODEL: 7264-200, S/N: BG95H
CALDAT: 01/APR/93 INSRAT: 200 CHLMAX: 1 INIVEL: 0.0
NFP: -300 NLP: 2999 DELT: 100 DASTAT: AM
INSCOM: NO COMMENT

Instrumentation Information

Inst. Group ID: 5 VEHNO: 2 CURNO: 006
SENTYP: AC SENLOC: 01 SENATT: CHST
AXIS: ZL UNITS: G'S PREFIL: 1650
INSMAN: MFG: ENDEVCO, MODEL: 7264-200, S/N: BJ54H
CALDAT: 01/APR/93 INSRAT: 200 CHLMAX: 4 INIVEL: 0.0
NFP: -300 NLP: 2999 DELT: 100 DASTAT: AM
INSCOM: NO COMMENT

Instrumentation Information

Inst. Group ID: 5 VEHNO: 2 CURNO: 007
SENTYP: LC SENLOC: 01 SENATT: PVCN
AXIS: XL UNITS: G'S PREFIL: 1650
INSMAN: MFG: ENDEVCO, MODEL: 7264-200, S/N: AE09
CALDAT: 01/APR/93 INSRAT: 200 CHLMAX: 15 INIVEL: 0.0
NFP: -300 NLP: 2999 DELT: 100 DASTAT: AM
INSCOM: NO COMMENT

Instrumentation Information

Inst. Group ID: 5 VEHNO: 2 CURNO: 008
SENTYP: LC SENLOC: 01 SENATT: PVCN
AXIS: YL UNITS: G'S PREFIL: 1650
INSMAN: MFG: ENDEVCO, MODEL: 7264-200, S/N: AD61
CALDAT: 01/APR/93 INSRAT: 200 CHLMAX: 4 INIVEL: 0.0
NFP: -300 NLP: 2999 DELT: 100 DASTAT: AM
INSCOM: NO COMMENT

Instrumentation Information

Inst. Group ID: 5 VEHNO: 2 CURNO: 009
SENTYP: AC SENLOC: 01 SENATT: PVCN
AXIS: ZL UNITS: G'S PREFIL: 1650
INSMAN: MFG: ENDEVCO, MODEL: 7264-200, S/N: AD98
CALDAT: 01/APR/93 INSRAT: 200 CHLMAX: 5 INIVEL: 0.0
NFP: -300 NLP: 2999 DELT: 100 DASTAT: AM
INSCOM: NO COMMENT

Instrumentation Information

Inst. Group ID: 5 VEHNO: 2 CURNO: 010
SENTYP: LC SENLOC: 01 SENATT: NECU
AXIS: XL UNITS: LBS PREFIL: 1650
INSMAN: MFG: R. A. DENTON, MODEL: 1716A, S/N: 0441 FX
CALDAT: 02/NOV/92 INSRAT: 2000 CHLMAX: 2 INIVEL: 0.0
NFP: -300 NLP: 2999 DELT: 100 DASTAT: AM
INSCOM: NO COMMENT

Instrumentation Information

Inst. Group ID: 5 VEHNO: 2 CURNO: 011
SENTYP: LC SENLOC: 01 SENATT: NECU
AXIS: YL UNITS: LBS PREFIL: 1650
INSMAN: MFG: R. A. DENTON, MODEL: 1716A, S/N: 0441 FY
CALDAT: 02/NOV/92 INSRAT: 2000 CHLMAX: 1 INIVEL: 0.0
NFP: -300 NLP: 2999 DELT: 100 DASTAT: AM
INSCOM: NO COMMENT

Instrumentation Information

Inst. Group ID: 5 VEHNO: 2 CURNO: 012
SENTYP: LC SENLOC: 01 SENATT: NECU
AXIS: ZL UNITS: LBS PREFIL: 1650
INSMAN: MFG: R. A. DENTON, MODEL: 1716A, S/N: 0441 FZ
CALDAT: 02/NOV/92 INSRAT: 3000 CHLMAX: 11 INIVEL: 0.0
NFP: -300 NLP: 2999 DELT: 100 DASTAT: AM
INSCOM: NO COMMENT

Instrumentation Information

Inst. Group ID: 5 VEHNO: 2 CURNO: 013
SENTYP: LC SENLOC: 01 SENATT: NECU
AXIS: XL UNITS: OTH PREFIL: 1650
INSMAN: MFG: R. A. DENTON, MODEL: 1716A, S/N: 0441 MX
CALDAT: 02/NOV/92 INSRAT: 2500 CHLMAX: 4 INIVEL: 0.0
NFP: -300 NLP: 2999 DELT: 100 DASTAT: AM
INSCOM: UNITS: IN.-LBS.

Instrumentation Information

Inst. Group ID: 5 VEHNO: 2 CURNO: 014
SENTYP: LC SENLOC: 01 SENATT: NECU
AXIS: YL UNITS: OTH PREFIL: 1650
INSMAN: MFG: R. A. DENTON, MODEL: 1716A, S/N: 0441 MY
CALDAT: 02/NOV/92 INSRAT: 2500 CHLMAX: 11 INIVEL: 0.0
NFP: -300 NLP: 2999 DELT: 100 DASTAT: AM
INSCOM: UNITS: IN.-LBS.

Instrumentation Information

Inst. Group ID: 5 VEHNO: 2 CURNO: 015
SENTYP: LC SENLOC: 01 SENATT: NECU
AXIS: ZL UNITS: OTH PREFIL: 1650
INSMAN: MFG: R. A. DENTON, MODEL: 1716A, S/N: 0441 MZ
CALDAT: 02/NOV/92 INSRAT: 2500 CHLMAX: 3 INIVEL: 0.0
NFP: -300 NLP: 2999 DELT: 100 DASTAT: AM
INSCOM: UNITS: IN.-LBS.

Instrumentation Information

Inst. Group ID: 5 VEHNO: 2 CURNO: 016
SENTYP: LC SENLOC: NA SENATT: LBPO
AXIS: NA UNITS: LBS PREFIL: 1650
INSMAN: MFG: LEBOW, MODEL: 3371, S/N: 330
CALDAT: 05/APR/93 INSRAT: 3500 CHLMAX: 1 INIVEL: 0.0
NFP: -300 NLP: 2999 DELT: 100 DASTAT: AM
INSCOM: NO COMMENT

Instrumentation Information

Inst. Group ID: 5 VEHNO: 2 CURNO: 017
SENTYP: LC SENLOC: NA SENATT: SHBT
AXIS: NA UNITS: LBS PREFIL: 1650
INSMAN: MFG: LEBOW, MODEL: 3371, S/N: 308
CALDAT: 05/APR/93 INSRAT: 3500 CHLMAX: 1 INIVEL: 0.0
NFP: -300 NLP: 2999 DELT: 100 DASTAT: AM
INSCOM: NO COMMENT

Instrumentation Information

Inst. Group ID: 5 VEHNO: 2 CURNO: 018
SENTYP: LC SENLOC: NA SENATT: SHBT
AXIS: NA UNITS: INS PREFIL: 1650
INSMAN: MFG: MSE, MODEL: 101-24, S/N: 001
CALDAT: 30/APR/93 INSRAT: 24 CHLMAX: 2 INIVEL: 0.0
NFP: -300 NLP: 2999 DELT: 100 DASTAT: AM
INSCOM: NO COMMENT

Instrumentation Information

Inst. Group ID: 5 VEHNO: 2 CURNO: 019
SENTYP: AC SENLOC: NA SENATT: VECG
AXIS: XG UNITS: G'S PREFIL: 1650
INSMAN: MFG: I.C. SENSOR, MODEL: 3031-200, S/N: 23-200
CALDAT: 30/MAR/93 INSRAT: 200 CHLMAX: 20 INIVEL: 0.0
NFP: -300 NLP: 2999 DELT: 100 DASTAT: AM
INSCOM: NO COMMENT

Instrumentation Information

Inst. Group ID: 5 VEHNO: 2 CURNO: 020
SENTYP: AC SENLOC: NA SENATT: VECG
AXIS: XG UNITS: G'S PREFIL: 1650
INSMAN: MFG: I.C. SENSOR, MODEL: 3031-200, S/N: 26-200
CALDAT: 30/MAR/93 INSRAT: 200 CHLMAX: 20 INIVEL: 0.0
NFP: -300 NLP: 2999 DELT: 100 DASTAT: AM
INSCOM: NO COMMENT

Instrumentation Information

Inst. Group ID: 5 VEHNO: 2 CURNO: 021
SENTYP: AV SENLOC: NA SENATT: SELF
AXIS: XG UNITS: RPS PREFIL: 1650
INSMAN: MFG: ATA, MODEL: ARS-01, S/N: 185
CALDAT: 26/APR/93 INSRAT: 200 CHLMAX: 12 INIVEL: 0.0
NFP: -300 NLP: 2999 DELT: 100 DASTAT: AM
INSCOM: NO COMMENT

Instrumentation Information

Inst. Group ID: 5 VEHNO: 2 CURNO: 022
SENTYP: AC SENLOC: NA SENATT: SELF
AXIS: XG UNITS: G'S PREFIL: 1650
INSMAN: MFG: I.C. SENSOR, MODEL: 3031-200, S/N: HDIMP
CALDAT: 30/MAR/93 INSRAT: 200 CHLMAX: 112 INIVEL: 0.0
NFP: -300 NLP: 2999 DELT: 100 DASTAT: AM
INSCOM: NO COMMENT