

SAFETY TEST  
VEHICLE CRASH TEST LETTER

PAGE 01

VC05926 30 MPH REAR BARRIER, ZJJ74, 5.2L MPI ITEM ZJ8219  
1997 MVSS DEVELOPMENT - 301.  
TEST DATE 05/09/96

TEST PURPOSE PRIMARY, 1997 USA 301 DEVELOPMENT.  
OBSERVE FUEL SYSTEM INTEGRITY.

IMPACT TYPE TARGET SPEED; 30.1 MPH  
DAMAGE LOCATION; REAR  
BARRIER TYPE; REAR TYPE IV  
BARRIER SURFACE; PLYWOOD

VEHICLE BODY CLASS; ZJ  
CAR LINE; J  
BODY; 74  
ENGINE; 5.2 LITRE  
ENGINE NOTE; ELECTRONIC FUEL INJECTION  
TRANSMISSION; 4 SPEED AUTO 4x4  
TRANS. NOTE;  
VIN AS TESTED; 1J4EZ78Y2TC128283 MOD.  
VIN AS BUILT; 1J4EZ78Y2TC128283 MOD.

TEST SPEED 30.1 MPH BY ELECTRONIC TRAP TIMER.

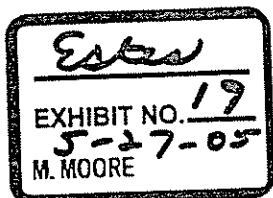
TEST WEIGHT (LBS) 4848 TOTAL, 2752 FRONT, 2096 REAR

OCCUPANTS LEFT FRONT, HYB II, BALLAST. AD-52  
RESTRAINT-BELTS ONLY.  
RIGHT FRONT, HYB II, BALLAST. AD-53  
RESTRAINT-BELTS ONLY.

BUILD CONDITION 1996 PRODUCTION ZJ MODIFIED TO REPRESENT 1997.  
5.2 LITRE (V8) ENGINE, 4 SPEED AUTO TRANS, 4X4,  
POWER STEERING, ABS BRAKES, AIR CONDITIONING.  
FULL CENTER CONSOLE AND OVERHEAD CONSOLE.  
SUNROOF AND FULL ROOF RACK.  
P225/70 R16 TIRES ON ALUMINUM RIMS & FULL SIZE  
SPARE.  
1997 FUEL SENDING UNIT AND 1997 FUEL TANK DESIGN.  
SKID PLATE ONLY, NO TRAILER HITCH BRACKET.

TARGET WEIGHT (LBS) 4185 TOTAL, 2336 FRONT, 1849 REAR, REP MAX OPT WT.  
NOT INCLUDING OCCUPANTS OR LUGGAGE BALLAST.

FUEL AND BALLAST 21.5 GALLONS OF STODDARD SOLVENT.  
300 LBS OF LUGGAGE BALLAST SECURED IN CARGO AREA.



DC 03166

SAFETY TEST  
VEHICLE CRASH TEST LETTER

PAGE 02

VC05926 30 MPH REAR BARRIER, ZJJ74, 5.2L MPI ITEM ZJ8219  
1997 MVSS DEVELOPMENT - 301.  
TEST DATE 05/09/96

POST TEST REMARKS      THERE WAS NO FUEL LEAKAGE DURING IMPACT, NOR DUR-  
ING THE SUBSEQUENT THIRTY MINUTES. THERE WAS NO  
FUEL LEAKAGE DURING THE STATIC ROLLOVER.

REPORT CODES            A = TRANSDUCER DATA            B = ALL FILM DATA  
                          C = HIGH SPEED FILM            D = ENGINEER'S REPORT  
                          E = DUMMY KINEMATICS           F = STEERING COLUMN  
                          G = UNDERBODY                   H = A-POST  
                          I = DYNAMIC CRUSH              J = ENGINE COMPARTMENT  
                          K = DOOR CRUSH                   L = FORCE/CRUSH/ENERGY  
                          M = SPECIAL                      N = CATALOG EDP DATA  
                          \* = REPORT REQUESTOR

DISTRIBUTION            M.T. STEBELETON                422-05-01 (AB)  
                          J.B. ESTES                        514-15-58 (AB)

DATE 05/10/96            TIME 11.14.56.

DC 03167

CHRYSLER MOTORS  
SAFETY TEST  
VEHICLE CRASH TEST REQUEST

ITEM ZJ8219 CHARGE NO. DISCOVER ISSUE DATE 05/01/96

VC 5926 30 MPH REAR BARRIER, ZJJ74, 5.2L MPI.  
1997 MVSS DEVELOPMENT - 301.

TEST DATE

SPEED 30.1 MPH

ENGINEER MARTIN  
SOURCE 301

TEST PURPOSE

PRIMARY, 1997 USA 301 DEVELOPMENT.  
OBSERVE FUEL SYSTEM INTEGRITY.

IMPACT TYPE

TARGET SPEED; 30.1 MPH  
DAMAGE LOCATION; REAR  
BARRIER TYPE; REAR TYPE IV  
BARRIER SURFACE; PLYWOOD

VEHICLE

BODY CLASS; ZJ  
CAR LINE; J  
BODY; 74  
ENGINE; 5.2 LITRE  
ENGINE NOTE; ELECTRONIC FUEL INJECTION  
TRANSMISSION; 4 SPEED AUTO 4x4  
TRANS. NOTE;  
VIN AS TESTED; 1J4EZ78Y2TC128283 MOD.  
VIN AS BUILT; 1J4EZ78Y2TC128283 MOD.

BUILD CONDITION

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FULL CENTER CONSOLE AND OVERHEAD CONSOLE.  
SUNROOF AND FULL ROOF RACK.  
P225/70 R16 TIRES ON ALUMINUM RIMS & FULL SIZE  
SPARE.  
1997 FUEL SENDING UNIT AND 1997 FUEL TANK DESIGN.  
SKID PLATE ONLY, NO TRAILER HITCH BRACKET.

TARGET WEIGHT (LBS) 4185 TOTAL, 2336 FRONT, 1849 REAR, REP MAX OPT WT.  
NOT INCLUDING OCCUPANTS OR LUGGAGE BALLAST.

TEST WEIGHT (LBS) \_\_\_\_\_ TOTAL, \_\_\_\_\_ FRONT, \_\_\_\_\_ REAR

FUEL BALLAST 21.5 GALLONS OF STODDARD SOLVENT.

LUGGAGE BALLAST 300 LBS OF LUGGAGE BALLAST SECURED IN CARGO AREA.

OTHER BALLAST \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

TEST REMARKS \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

CHRYSLER MOTORS  
SAFETY TEST  
VEHICLE CRASH TEST REQUEST

OCCUPANTS LEFT FRONT, HYB II, BALLAST. AD NO 52  
RESTRAINT-BELTS ONLY.  
RIGHT FRONT, HYB II, BALLAST. AD NO 53  
RESTRAINT-BELTS ONLY.

MECHANICAL REQ PLACE SEAT IN MID TRACK POSITION.  
REAR SEATS MUST REMAIN IN TEST VEHICLE.  
FUEL PUMP TO BE RUNNING DURING TEST.  
RUN FUEL PUMP PRE TEST TO CHECK CONNECTIONS.  
PRESSURE CHECK PRE AND POST TEST.  
STATIC ROLL POST TEST.  
NO STODDARD ADDED AT JTE FUEL TANK EMPTY.  
PAINT REAR DIFFERENTIAL AND GAS TANK FOR VIEWING.  
PAINT TANK AND TARGET AS PER 3RD SHEET 106.  
PAINT FILLER NECK AREA FOR VISIBILITY.

INSTRUMENTATION REQ SEE 3RD SHEET NO. 106 FOR ACCELEROMETER REQUIRE-  
MENTS AND LOCATIONS (THE 4 SILL ACCELEROMETERS  
ARE TO BE BI-AXIAL).  
TRIAxIAL ON AECM BRACKET.  
MONITOR AECM SQUIB, SAFING AND INT. ACCELEROMETER.  
ADD TRI-AXIAL ACCELEROMETERS LEFT AND RIGHT AT :  
FRONT SEAT RISER REARWARD FLANGE 6 IN. INBOARD  
FROM SILL. ( UNDER SEAT'S FRONT OUTER CORNER)  
ON B-PILLAR REARWARD OF RETRACTOR ON LOWER  
RADIUS OF B-PILAR TO FLOOR.  
ON B-PILLAR BETWEEN RETRACTOR & ACCESS HOLE AT  
THE APPROXIMATE HEIGHT OF THE STRIKER BRACKET.  
THESE LOCATIONS ARE MARKED APPROXIMATELY BY PEN  
ON THE VEHICLE. QUESTIONS CAN BE DIRECTED TO  
J.B. ESTES 733-2519 OR KUMAR SINGARAJAN 733-3615  
INSURE AIRBAGS DO NOT FIRE.

PHOTOGRAPHIC REQ 1-LEFT SIDE OVERALL CAMERA TO VIEW ENTIRE VEHICLE.  
1-RIGHT SIDE OVERALL CAMERA TO VIEW ENTIRE VEHICLE  
1-CATWALK CAMERA TO VIEW ENTIRE VEHICLE.  
2-PIT CAMERAS FOR ANALYSIS OF REAR UNDERBODY.  
1-PIT CAMERA CLOSE UP OF TRACK BAR BRACKET. :  
PRE AND POST TEST PHOTOS OVERALL AND UNDERBODY ON  
8 X 10 PAPER IN COLOR.  
1-VELOCITY CAMERA

FILM ANALYSIS VEHICLE VELOCITY, ONLY IF REQUESTED.  
DYNAMIC CRUSH.

REMARKS MAKE 1 FILM COPY AND 1 VHS COPY, SEND TO:  
J.B. ESTES 514-15-58  
PLEASE RETURN VEHICLE POST TEST TO JTE.  
ATTENTION PAM MORTON @ 733-8727

CHRYSLER MOTORS  
SAFETY TEST  
VEHICLE CRASH TEST REQUEST

T. E. REPORT

301 FUEL SYSTEMS REPORT REQUIRED.

REPORT CODES

A = TRANSDUCER DATA	B = ALL FILM DATA
C = HIGH SPEED FILM	D = ENGINEER'S REPORT
E = DUMMY KINEMATICS	F = STEERING COLUMN
G = UNDERBODY	H = A-POST
I = DYNAMIC CRUSH	J = ENGINE COMPARTMENT
K = DOOR CRUSH	L = FORCE/CRUSH/ENERGY
M = SPECIAL	N = CATALOG EDP DATA
* = REPORT REQUESTOR	

DISTRIBUTION

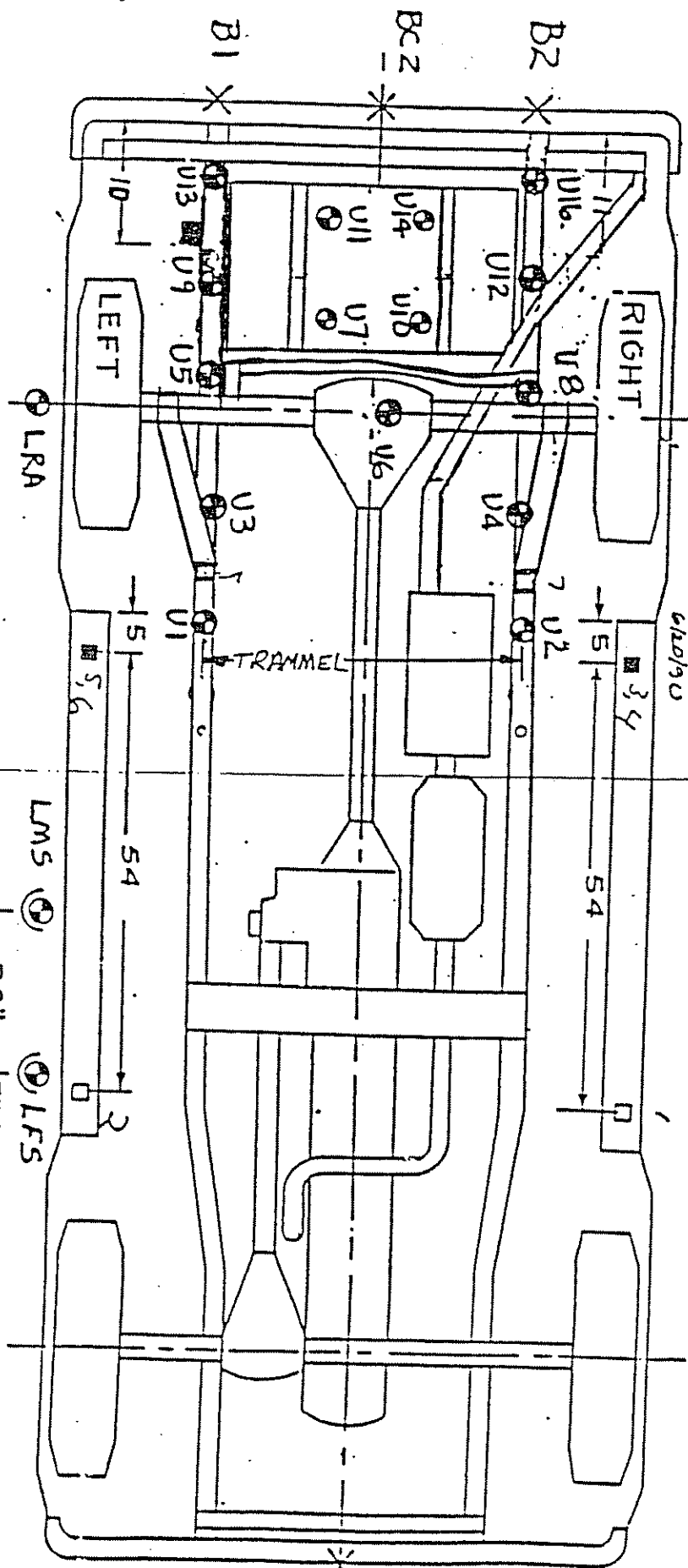
M.T. STEBELETON	422-05-01 (AB)
J.B. ESTES	514-15-58 (AB)

THIRD SHEET 106, ITEM #J 8219, VC 5926  
JEEP JT 4x4  
TARGET AND ACCELEROMETER LOCATIONS  
FOR REAR IMPACTS

ZENONS READ ON ROOF

ACCEL. LOCATIONS ARE XJ (REF. SHEET 102)  
ACTUAL LOCATIONS PER TRAMMEL

ELEC FUEL PUMP TO BE  
RUNNING DURING IMPAC



TARGETS

- X PUNCH POINT
- UNDERBODY
- ⊙ SIDE VIEW

NOTES -

1. PRE AND POST DIMENSIONS ARE REQUIRED PER BREITMOSER LETTER OF 01-04-88
2. NUMBERS ASSIGNED TO EACH TARGET ARE PERMANENT
3. TARGETS MAY BE DELETED BY NUMBER PER TRAMMEL

LEGEND

ACCELEROM - □ SINGLE AXIS X 4 ADDITIONAL TARGETS MAY BE DELETED BY NUMBER PER TRAMMEL

X, Y, Z DIMENSIONS

TEST NUMBER 5926  
ITEM NUMBER ZJ8219

TEST ENGINEER MARTIN  
V.I.N. \_\_\_\_\_

TEST TYPE: 30 MPH REAR TYPE IV IMPACT

LOCATION	X	Y	Z	LOCATION	X	Y	Z
BC1	0.0	0.0	XXXX	BC2	XXXX	0.0	XXXX
B1	176.6	15.9	XXXX	B2	176.2	16.1	XXXX
U1	111.5	17.4	13.7	U2	109.9	17.7	12.3
U3	132.0	17.5	19.8	U4	131.5	16.6	21.2
U5	141.9	16.8	19.2	U6	136.2	0.0	8.3
U7	148.1	5.9	10.3	U8	147.3	17.6	21.3
U9	153.5	18.0	21.7	U10	147.4	5.4	12.3
U11	161.0	5.7	14.8	U12	153.9	17.8	21.3
U13	167.4	18.2	21.8	U14	160.1	5.4	14.4
				U16	166.8	18.4	21.9
		44-	-			44-	
		44-	-			44-	

TRAMMEL DIMENSIONS;

~~PRE~~ PRE          POST         

U1 -U2 34.66

(DOCVCFORMS "MASTER"; DIM95.DAT)

X, Y, Z DIMENSIONS

TEST NUMBER VC5926

LOC.	X	Y	Z
LFS	60.8	-33.8	15.0
LMS	91.2	-33.9	15.4
LRA	136.6	-31.5	13.5
LAP	52.6	-33.7	38.0
LCP	135.4	-32.5	41.3
		-	

LOC.	X	Y	Z

TRAMMEL MEASUREMENTS:

LEFT SILL: PRE 29.99

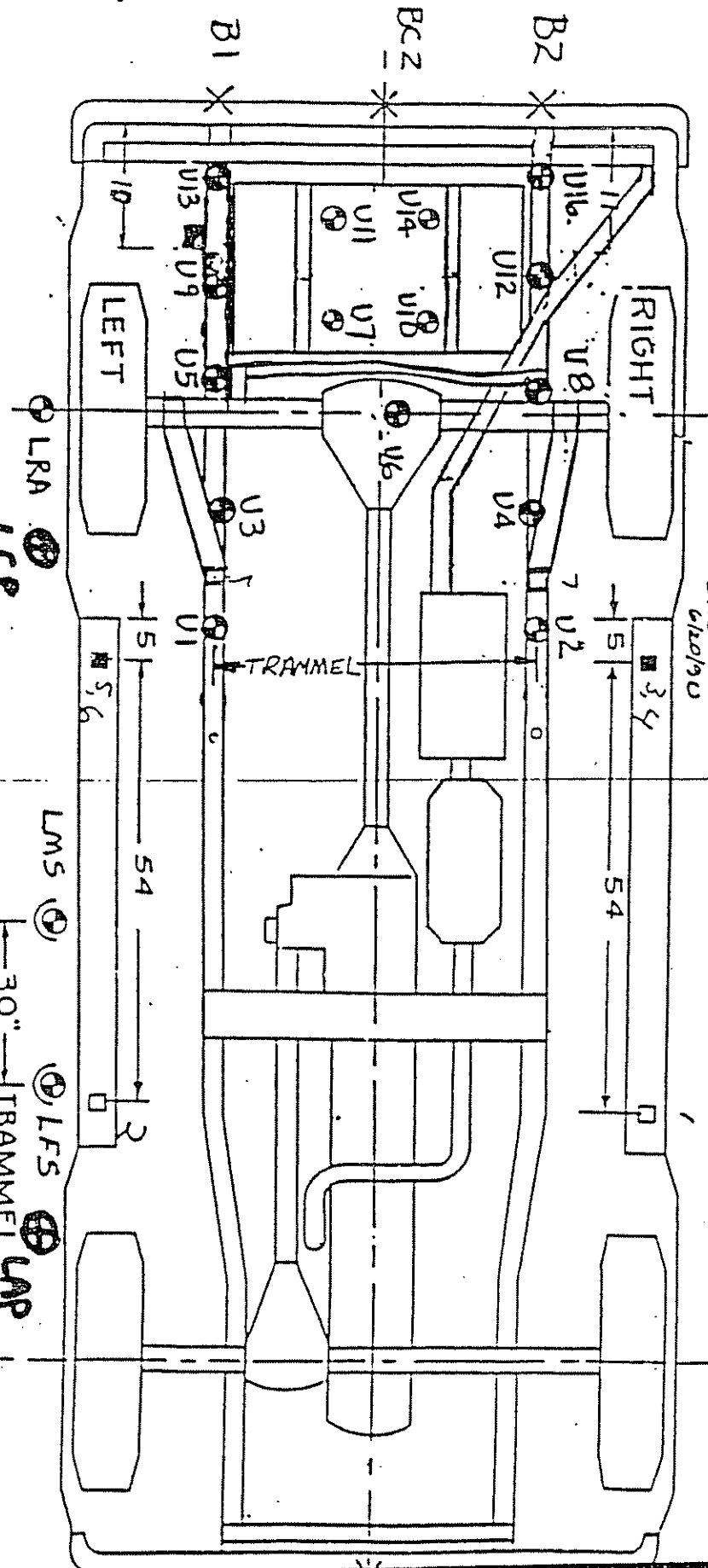


THIRD SHEET 106, ITEM <sup>25</sup> 8219, VC 5926  
 JEEP ZJ 4x4  
 TARGET AND ACCELEROMETER LOCATIONS  
 FOR REAR IMPACTS

ZENONS READ ON ROO

ACCEL. LOCATIONS ARE XJ (REF. SHEET 102)  
 ACTUAL LOCATIONS PER T. MAULE

ELEC FUEL PUMP TO BE  
 RUNNING DURING IMPACT



TARGETS

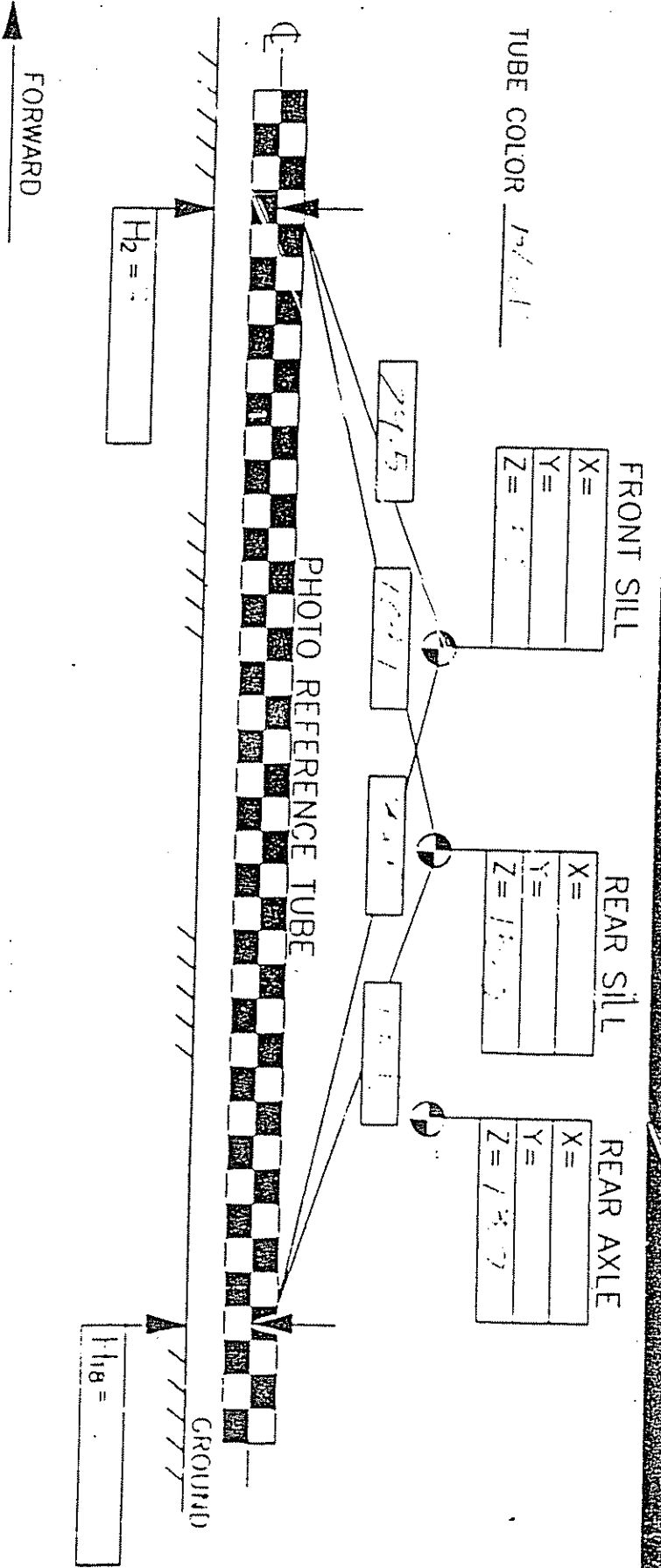
X PUNCH POINT  
 ⊙ UNDERBODY  
 ⊙ SIDE VIEW

NOTES -  
 1. PRE AND POST DIMENSIONS ARE REQUIRED  
 PER BREITMOSER LETTER OF 01-04-88  
 2. NUMBERS ASSIGNED TO EACH TARGET ARE PERMANENT  
 3. TARGETS MAY BE DELETED BY NUMBER PER TRAMMEL

LEGEND

ACCELEROM - □ SINGLE AXIS X 4 ADDITIONAL TARGETS MAY BE PROVIDED

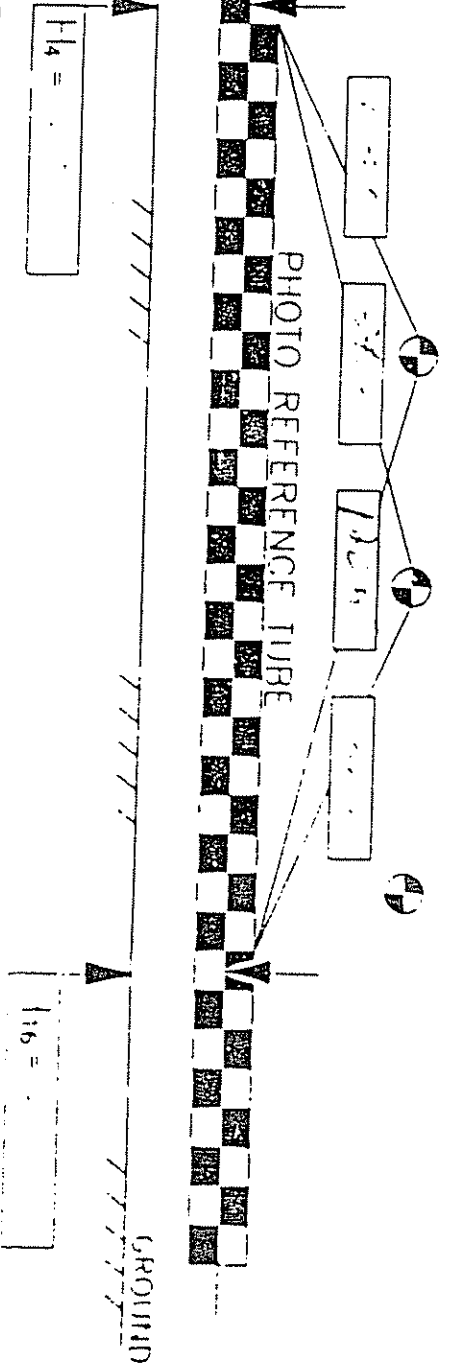
TUBE COLOR Red



DC 03175

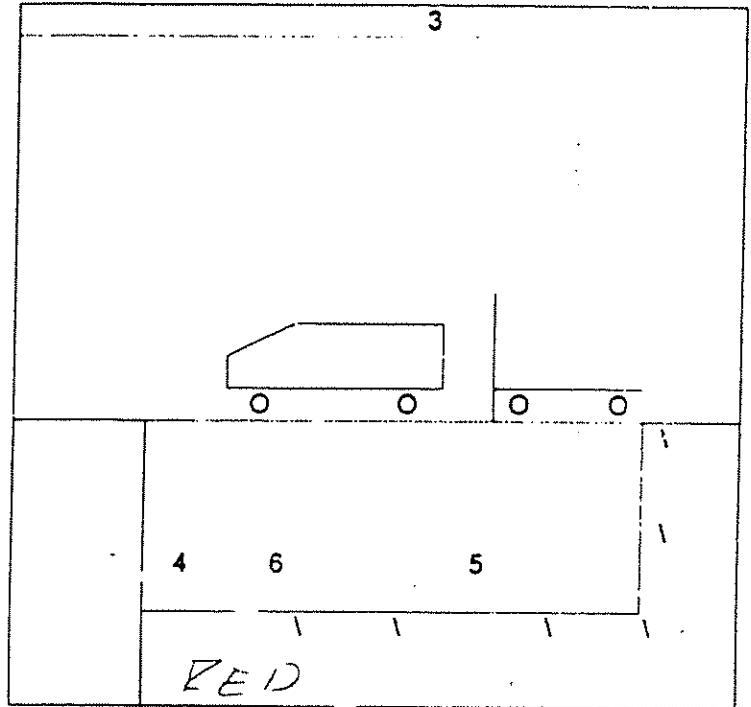
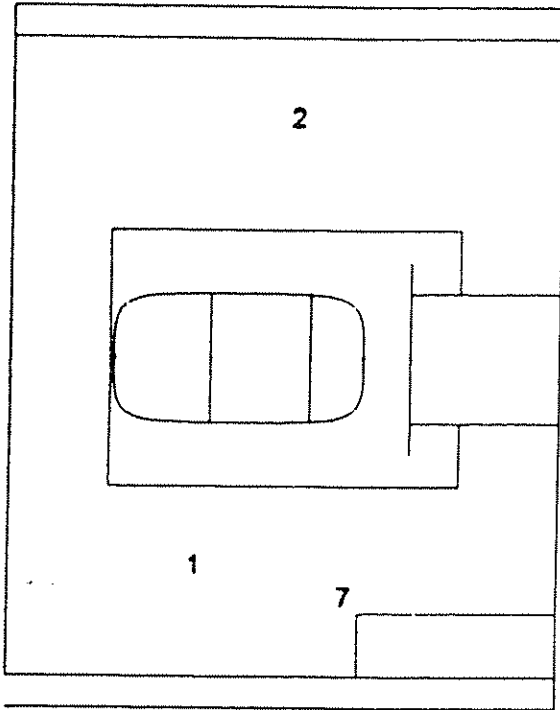
- NOTES:
1. THE Z DIMENSION FOR THE SILL TARGETS AND REAR AXLE MUST BE RETAKEN AT THE TEST SITE
  2. OTHER TUBE POINTS ARE USED, SO INDICATE

FOR REAR IMPACT TESTS - DIMENSIONING BETWEEN SILL TARGETS AND PHOTO REFERENCE TUBE TEST ENGR



PLAN VIEW

SIDE VIEW



TEST NUMBER:	VC5926	VEHICLE TYPE:	ZJ
TEST TYPE:	30 MPH REAR TYPE IV IMPACT	TEST ENGINEER:	MARTIN
REQUEST DATE:	05/02/96		

#	VIEW DESCRIPTION A=ANALYSIS	CAM S/N	LENS FL	LENS S/N	LENS MFG.	F- STP	PNE	SKT	CBL	CAM MFG
1	A LEFT SIDE OVERALL DYNAMIC CRUSH	426	25mm	110509	LIN					
2	RIGHT SIDE OVERALL	427	18mm	107230						
3	CATWALK VIEW VEHICLE AT IMPACT	277	18mm	116686						
4	A SOUTH PIT OVERALL	430	13mm	1	LOS					
5	A NORTH PIT OVERALL	431	13mm	3	LOS					
6	PIT TRACK BAR BRACKET	278	50mm	19688	LOS					
7	A VELOCITY	287	100mm	173187	WOL					

VC5926  
9

DC 03176

THURSDAY 11/11/96

FUEL SYSTEM AND STATIC ROLLOVER SUMMARY

TEST NUMBER VC5926 ITEM NUMBER ZJ8219 TEST ENGINEER MANNUEY

V.I.N. 1J4EZ78Y2TC128283, TEST DATE 5/19/90, ROLL DATE   /  /  

TEST TYPE; 30 MPH FRONT FLAT FIXED BARRIER IMPACT

FUEL; TYPE AND QUANTITY - .767 S.G. STODDARD SOLVENT, 21.5 GALLONS

TEST SPEED    MPH, TEST WEIGHT 4848 POUNDS.

POST TEST FUEL SYSTEM OBSERVATIONS \_\_\_\_\_

\_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

POST IMPACT LEAKAGE(OZ); AT IMPACT   0    
 1ST 5 MIN.   0    
 NEXT 25 MIN.   0  

POST TEST PRESSURE CHECK   N/A  

ELECTRIC FUEL PUMP RUN   N/A  

STATIC ROLL LEAKAGE WITH VEHICLE LEFT SIDE DOWN FIRST

		FUEL LEAKAGE LOCATIONS DURING STATIC ROLL				TOTAL
ROLL TIME						
0-90	1ST 5 MIN					0 *
	POST 5 MIN					0 **
90-180	1ST 5 MIN					0 *
	POST 5 MIN					0 **
180-270	1ST 5 MIN					0 *
	POST 5 MIN					0 **
270-360	1ST 5 MIN					0 *
	POST 5 MIN					0 **

\* OUNCES IN 5 MINUTES, \*\* OUNCES PER MINUTE

LAST FORM MODIFICATION 5/27/93 - GAB

DATE 05/10/96  
TIME 13.08.48.

ELECTRONIC DATA PROCESSING  
EDP TEST LETTER

VEHICLE CRASH ENGINEERING  
DEPT 5320

VC05926 ITEM ZJ8219  
VC05926 30 MPH REAR BARRIER, ZJJ74, 5.2L MPI ITEM ZJ8219  
1997 MVSS DEVELOPMENT - 301.  
TEST DATE 05/09/96

TEST PURPOSE PRIMARY, 1997 USA 301 DEVELOPMENT.  
OBSERVE FUEL SYSTEM INTEGRITY.

IMPACT TYPE TARGET SPEED; 30.1 MPH  
DAMAGE LOCATION; REAR  
BARRIER TYPE; REAR TYPE IV  
BARRIER SURFACE; PLYWOOD

VEHICLE BODY CLASS; ZJ  
CAR LINE; J  
BODY; 74  
ENGINE; 5.2 LITRE  
ENGINE NOTE; ELECTRONIC FUEL INJECTION  
TRANSMISSION; 4 SPEED AUTO 4x4  
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VIN AS TESTED; 1J4EZ78Y2TC128283 MOD.  
VIN AS BUILT; 1J4EZ78Y2TC128283 MOD.

TEST SPEED 30.1 MPH BY ELECTRONIC TRAP TIMER.

TEST WEIGHT (LBS) 4848 TOTAL, 2752 FRONT, 2096 REAR

OCCUPANTS LEFT FRONT, HYB II, BALLAST. AD-52  
RESTRAINT-BELTS ONLY.  
RIGHT FRONT, HYB II, BALLAST. AD-53  
RESTRAINT-BELTS ONLY.

BUILD CONDITION 1996 PRODUCTION ZJ MODIFIED TO REPRESENT 1997.  
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FUEL AND BALLAST 21.5 GALLONS OF STODDARD SOLVENT.  
300 LBS OF LUGGAGE BALLAST SECURED IN CARGO AREA.

POST TEST REMARKS THERE WAS NO FUEL LEAKAGE DURING IMPACT, NOR DUR-  
ING THE SUBSEQUENT THIRTY MINUTES. THERE WAS NO  
FUEL LEAKAGE DURING THE STATIC ROLLOVER.

DC 03178

DATE 05/10/96  
TIME 13.08.48.

ELECTRONIC DATA PROCESSING  
EDP TEST LETTER

VEHICLE CRASH ENGINEERING  
DEPT 5320

VC05926 ITEM ZJ8219  
VC05926 30 MPH REAR BARRIER, ZJJ74, 5.2L MPI ITEM ZJ8219  
1997 MVSS DEVELOPMENT - 301.  
TEST DATE 05/09/96

EDP TECHNICIAN S. MARCHENIA

No. of Pages 27  
CC

J. B. ESTES 514-15-58  
M. T. STEBELETON 422-05-01

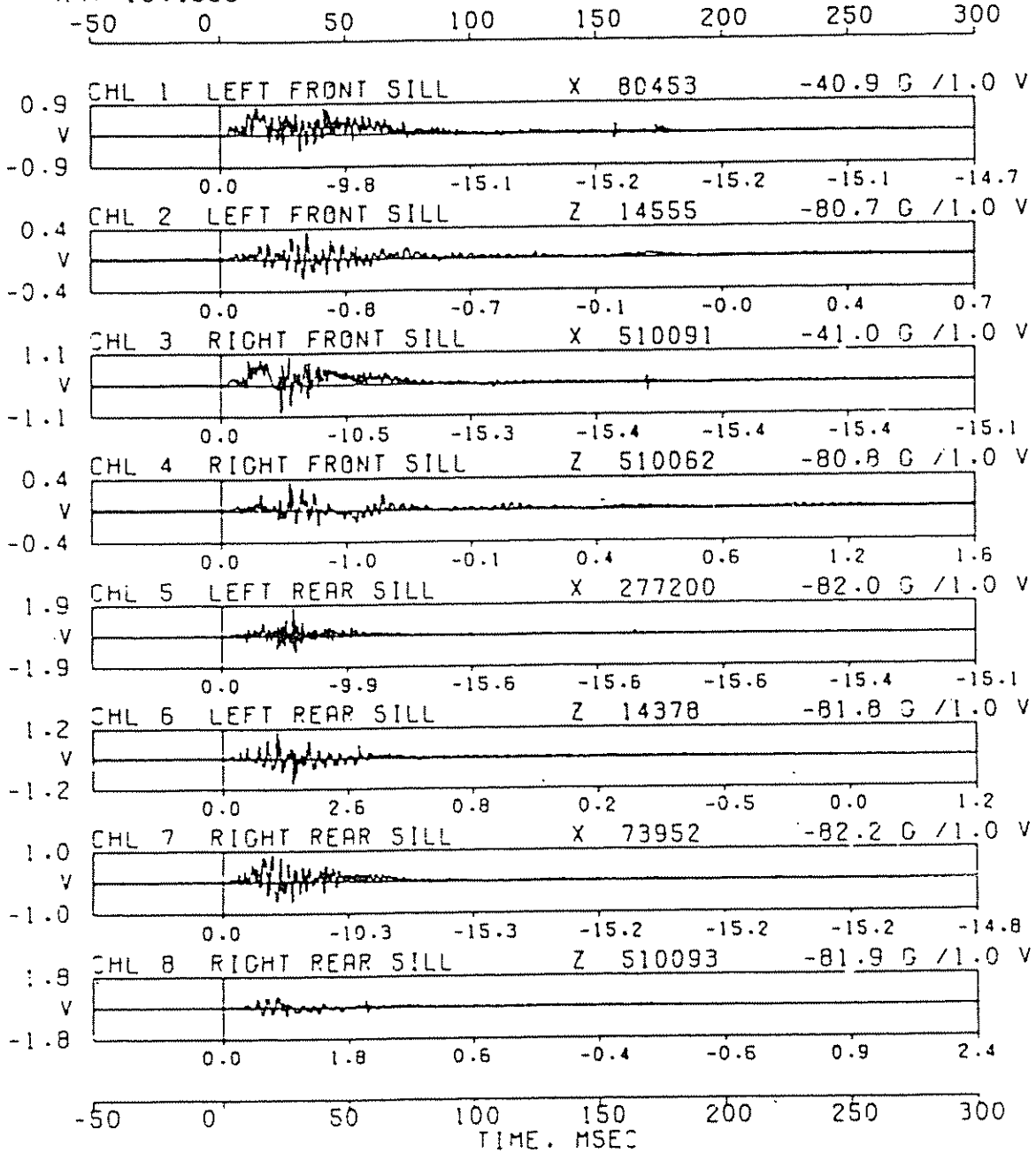
DC 03179

TITLE: Page Index of EDP plots	Pages	001 - 027	
***** VC05926A *****			Page I-01
TITLE: Transducer Summary Reports	Pages	001 - 002	
PAGE: 001 TSR Channels 001 - 008			
PAGE: 002 TSR Channels 009 - 014			
***** VC05926B *****			
TITLE: Vehicle Channels	Pages	003 - 023	
PAGE: 003 Average of Sill Chls 1, 3, 5, & 7			
PAGE: 004 Average of Rear Sill Chls 5 & 7			
PAGE: 005 LEFT FRONT SILL X, Chl 1			
PAGE: 006 LEFT FRONT SILL X, Chl 1, VD			
PAGE: 007 LEFT FRONT SILL Z, Chl 2			
PAGE: 008 RIGHT FRONT SILL X, Chl 3			
PAGE: 009 RIGHT FRONT SILL X, Chl 3, VD			
PAGE: 010 RIGHT FRONT SILL Z, Chl 4			
PAGE: 011 LEFT REAR SILL X, Chl 5			
PAGE: 012 LEFT REAR SILL X, Chl 5, VD			
PAGE: 013 LEFT REAR SILL Z, Chl 6			
PAGE: 014 RIGHT REAR SILL X, Chl 7			
PAGE: 015 RIGHT REAR SILL X, Chl 7, VD			
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PAGE: 017 LT RAIL TRAIL ARM PIV X, Chl 9			*C*
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PAGE: 019 RT RAIL TRAIL ARM PIV X, Chl 10			
PAGE: 020 RT RAIL TRAIL ARM PIV X, Chl 10, VD			
PAGE: 021 RT REAR RAIL MID TANK X, Chl 11			
PAGE: 022 RT REAR RAIL MID TANK X, Chl 11, VD			
PAGE: 023 RT REAR RAIL MID TANK Z, Chl 12			
***** VC05926C *****			
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PAGE: 025 LT RAIL MBAR MID X , Chl 13, VD			
PAGE: 026 RT RAIL MBAR MID X Chl 14			
PAGE: 027 RT RAIL MBAR MID X , Chl 14, VD			

TRANSDUCER SUMMARY REPORT

VC05926 30 MPH REAR BARRIER. ZJJ74. 5.2L MPI. ITEM ZJ8219  
 1997 MVSS DEVELOPMENT - 301.  
 IMPACT ANALYSIS DEPT. 5320  
 MAY 10.1996

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 DATA SET 05/09/96BI  
 ERRATA 1



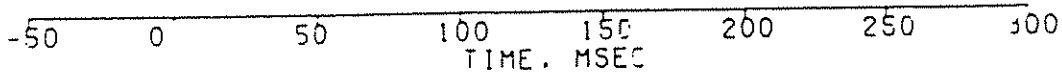
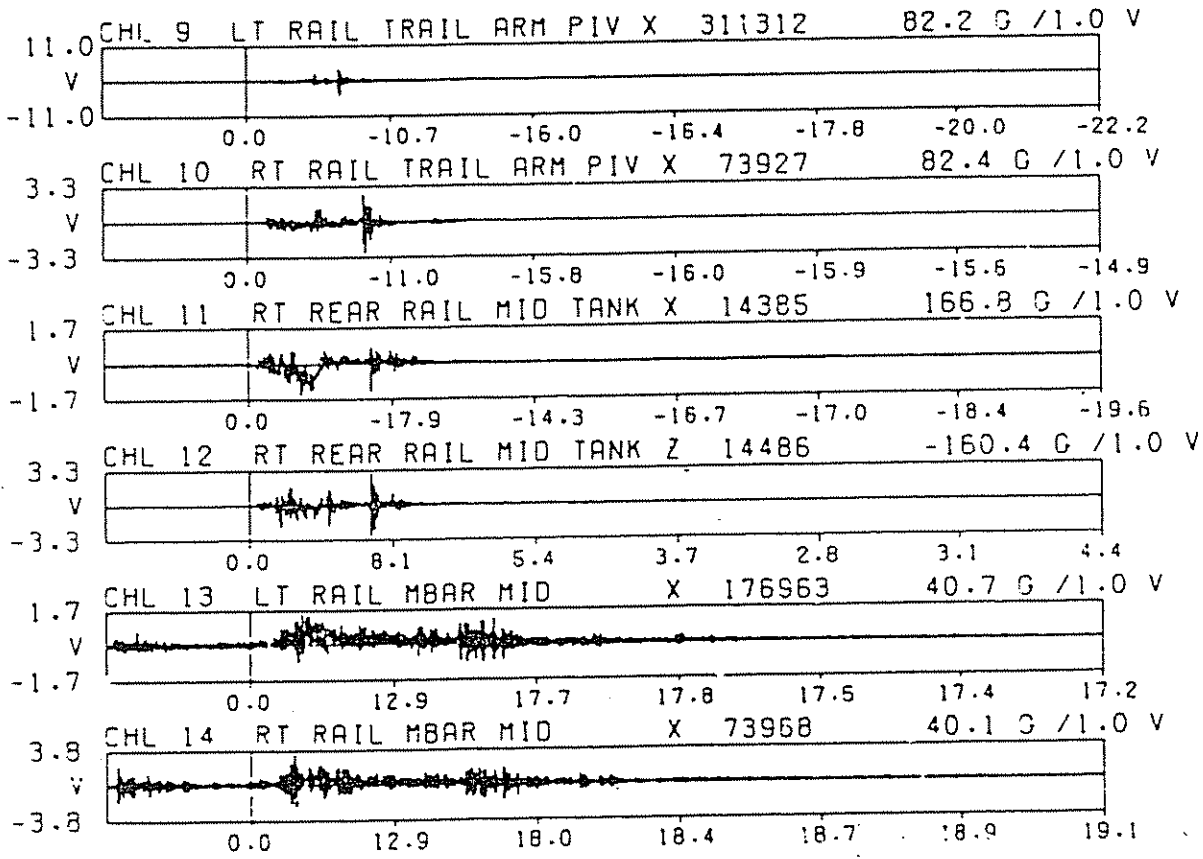
NOTE COMPUTED FIRST INTEGRAL VALUES ARE INDICATED BELOW EACH CHANNEL AND BRIDGED DATA IS INDICATED BY A -B-.



TRANSDUCER SUMMARY REPORT

VC05926 30 MPH REAR BARRIER, ZJJ74, 5.2L MPI, ITEM ZJB219  
 1997 MVSS DEVELOPMENT - 301.  
 IMPACT ANALYSIS DEPT. 5320  
 MAY 10, 1996

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 OF 027  
 DATA SET 05/09/95B1  
 ERRATA 1



NOTE COMPUTED FIRST INTEGRAL VALUES ARE INDICATED BELOW EACH CHANNEL AND BRIDGED DATA IS INDICATED BY A -B-.

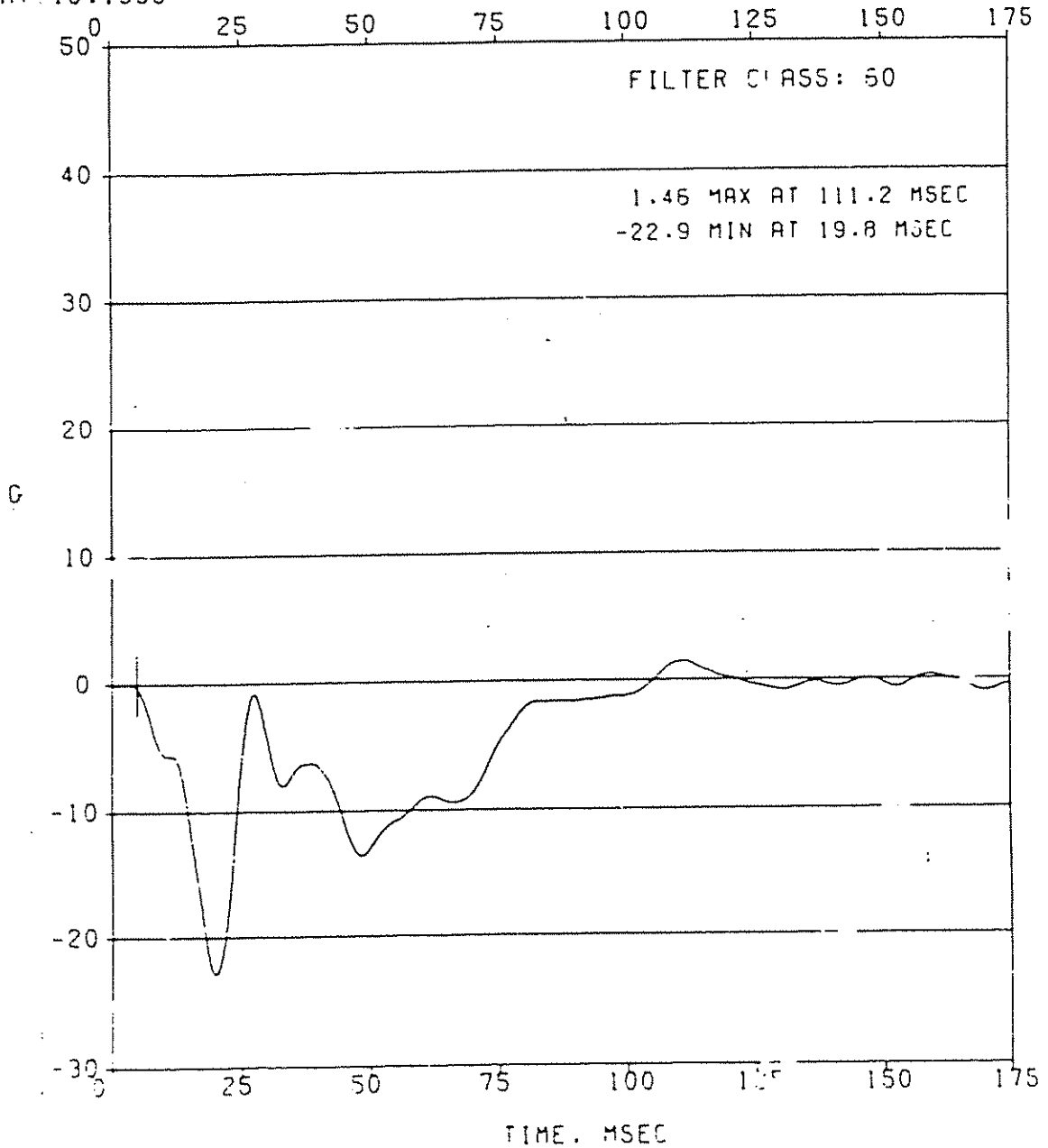
VC05926 30 MPH REAR BARRIER, ZJJ74, 5.2L MPI, ITEM ZJ8219  
1997 MVSS DEVELOPMENT - 301.  
AVERAGE OF

PAGE 003  
OF 027

CHANNEL 001 LEFT FRONT SILL	X	80453
CHANNEL 003 RIGHT FRONT SILL	X	510091
CHANNEL 005 LEFT REAR SILL	X	277200
CHANNEL 007 RIGHT REAR SILL	X	73952

FILTER TYPE: SAE J211B/80 DC C60(TPF-R) EFF 5/24/86  
IMPACT ANALYSIS DEPT. 5320  
MAY 10, 1996

DATA SET 05/09/96B1  
ERRATA 1



DC 03183

VC05926 30 MPH REAR BARRIER. ZJJ74. 5.2L MPI. ITEM ZJB219  
1997 MVSS DEVELOPMENT - 301.

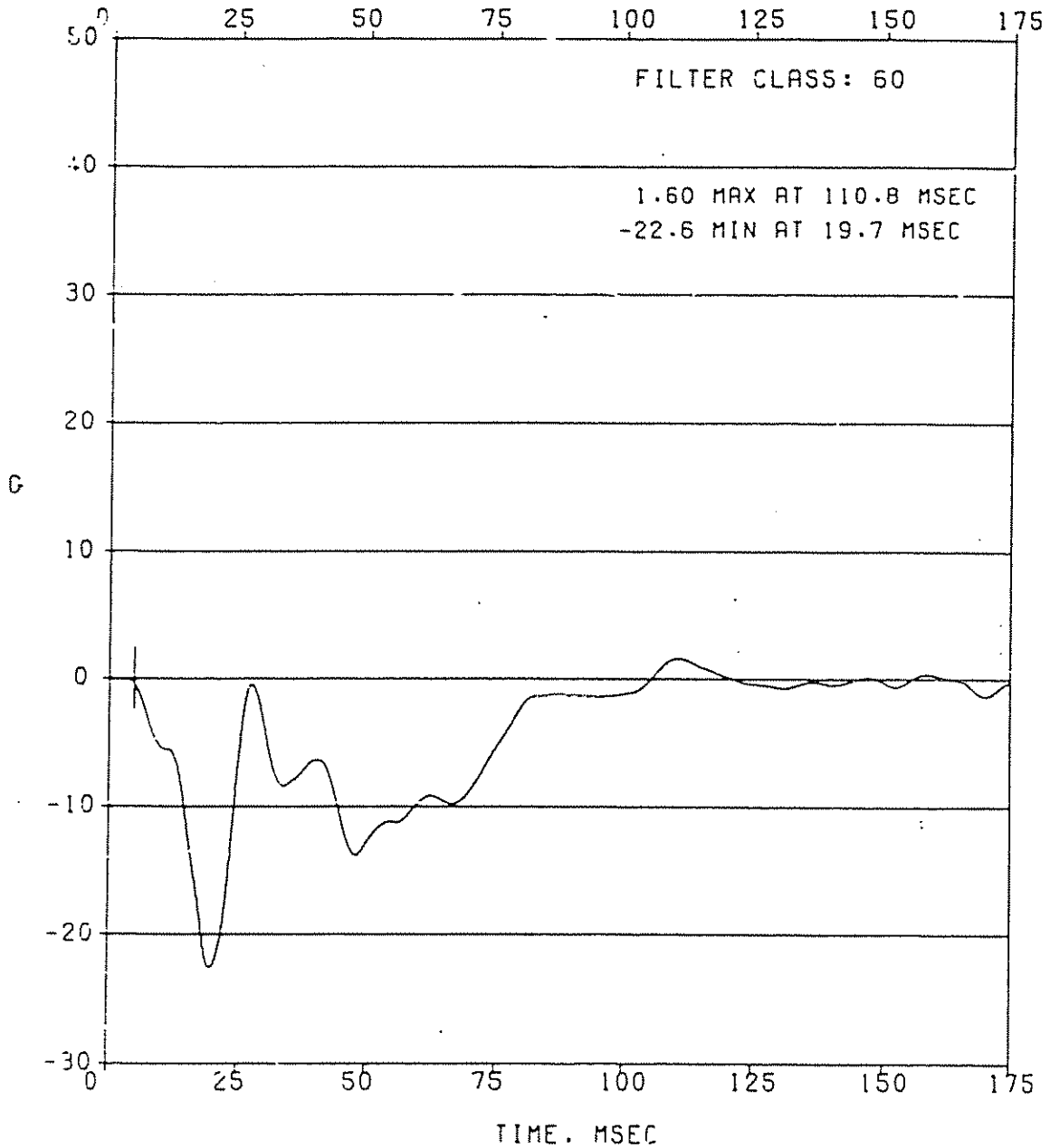
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AVERAGE OF

CHANNEL 005 LEFT REAR SILL X 277200  
CHANNEL 007 RIGHT REAR SILL X 73952

FILTER TYPE: SAE J211B/80 DC C60(TPF-R) EFF 3/24/86  
IMPACT ANALYSIS DEPT. 5320  
MAY 10, 1996

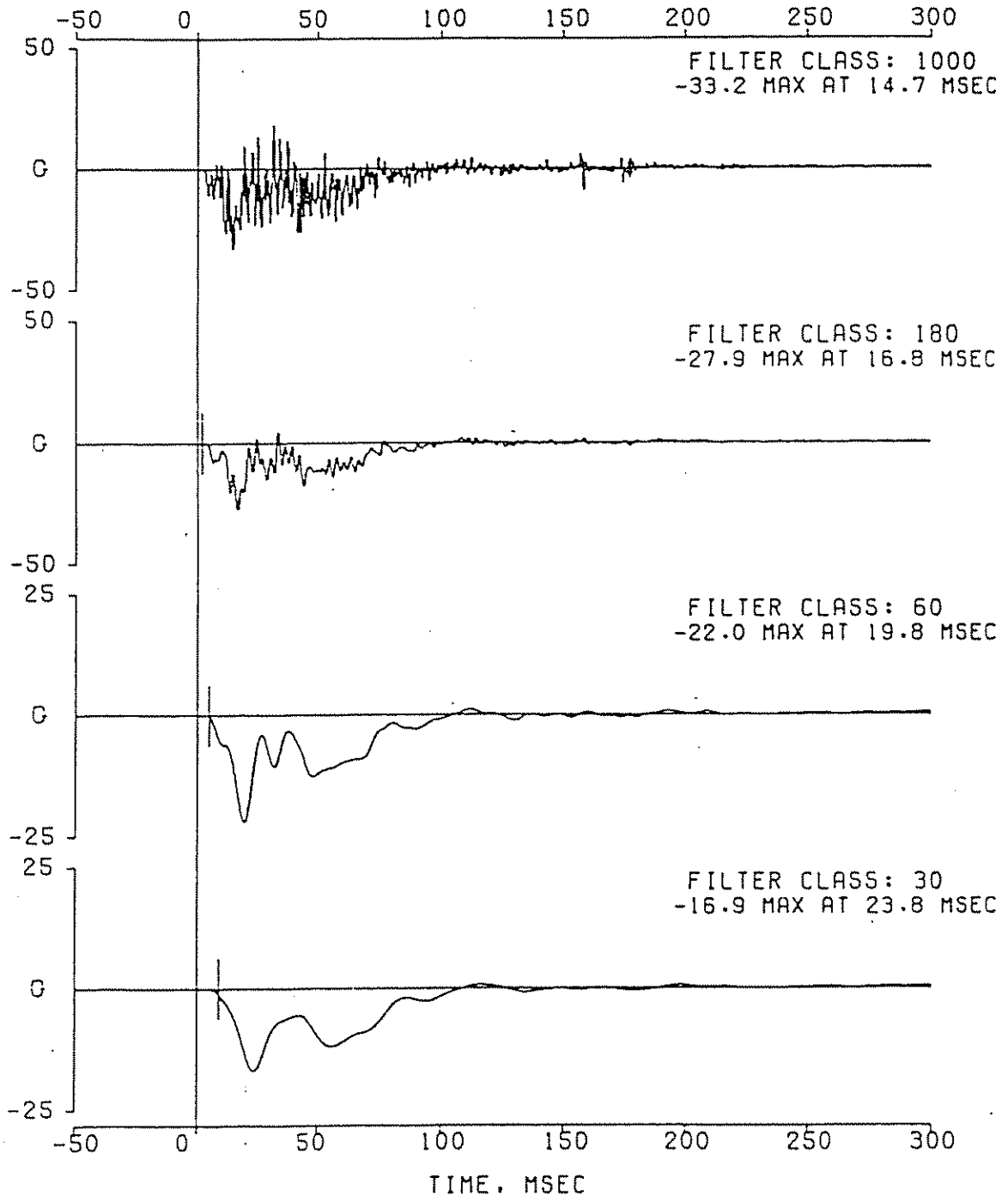
DATA SET 05/09/96B1  
ERRATA 1



DC 03184

VC05926 30 MPH REAR BARRIER, ZJJ74, 5.2L MPI. ITEM ZJ8219  
1997 MVSS DEVELOPMENT - 301.  
CHANNEL 001 LEFT FRONT SILL X 80453  
FILTER TYPE: 0BDAS-III RESPONSE CORRECTION, CLASS 1000 FILTER(1650)  
IMPACT ANALYSIS DEPT. 5320  
MAY 10, 1996

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DATA SET 05/09/96B1  
ERRATA 1



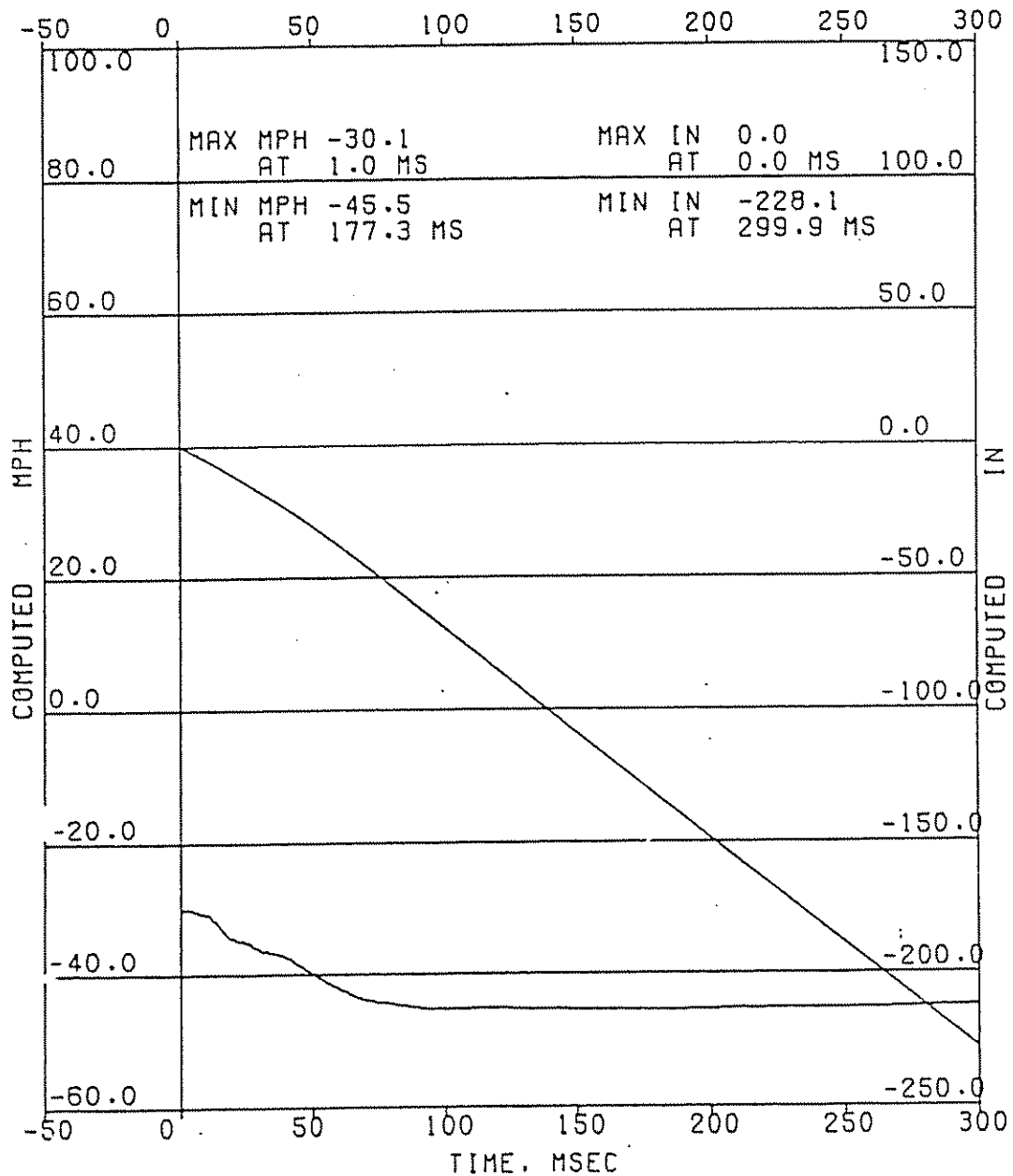
VC05926 30 MPH REAR BARRIER. ZJJ74. 5.2L MPI. ITEM ZJ8219  
1997 MVSS DEVELOPMENT - 301.  
CHANNEL 001 LEFT FRONT SILL X 80453

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OF 027

FILTER TYPE: 08DAS-III RESPONSE CORRECTION, CLASS 1000 FILTER(1650)  
FILTER CLASS: 1000

IMPACT ANALYSIS DEPT. 5320  
MAY 10.1996

DATA SET 05/09/96BI  
ERRATA 1



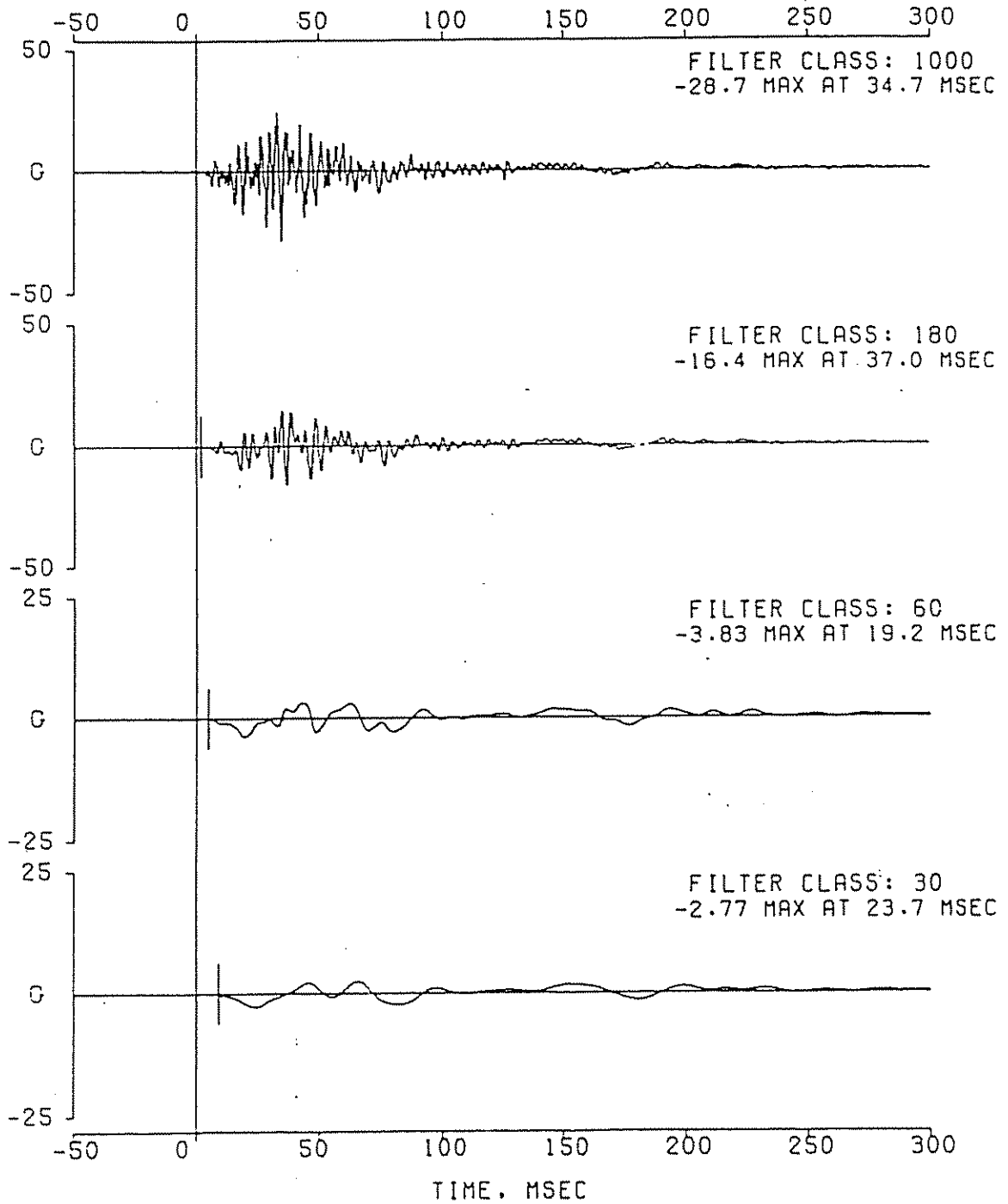
COMPUTED MPH  
COMPUTED IN

DC 03186

VC05926 30 MPH REAR BARRIER, ZJJ74, 5.2L MPI, ITEM ZJ8219  
1997 MVSS DEVELOPMENT - 301.  
CHANNEL 002 LEFT FRONT SILL Z 14555  
FILTER TYPE: OBDAS-III RESPONSE CORRECTION, CLASS 1000 FILTER(1650)  
IMPACT ANALYSIS DEPT. 5320  
MAY 10, 1996

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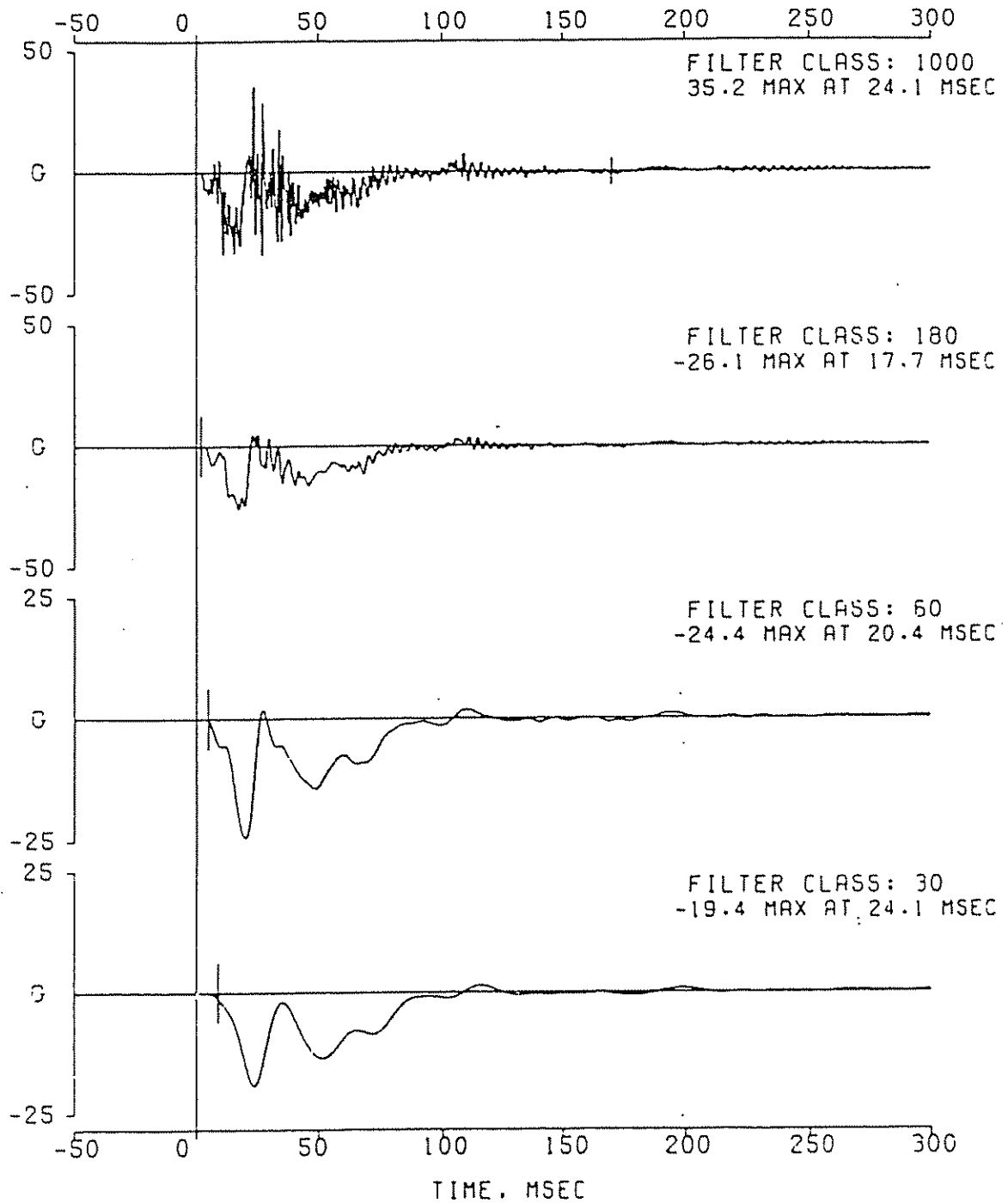
DATA SET 05/09/96B1  
ERRATA 1



DC 03187

VC05926 30 MPH REAR BARRIER. ZJJ74. 5.2L MPI. ITEM ZJ8219  
1997 MVSS DEVELOPMENT - 301.  
CHANNEL 003 RIGHT FRONT SILL X 510091  
FILTER TYPE: OBDAS-III RESPONSE CORRECTION. CLASS 1000 FILTER(1650)  
IMPACT ANALYSIS DEPT. 5320  
MAY 10.1996

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DATA SET 05/09/96B1  
ERRATA 1



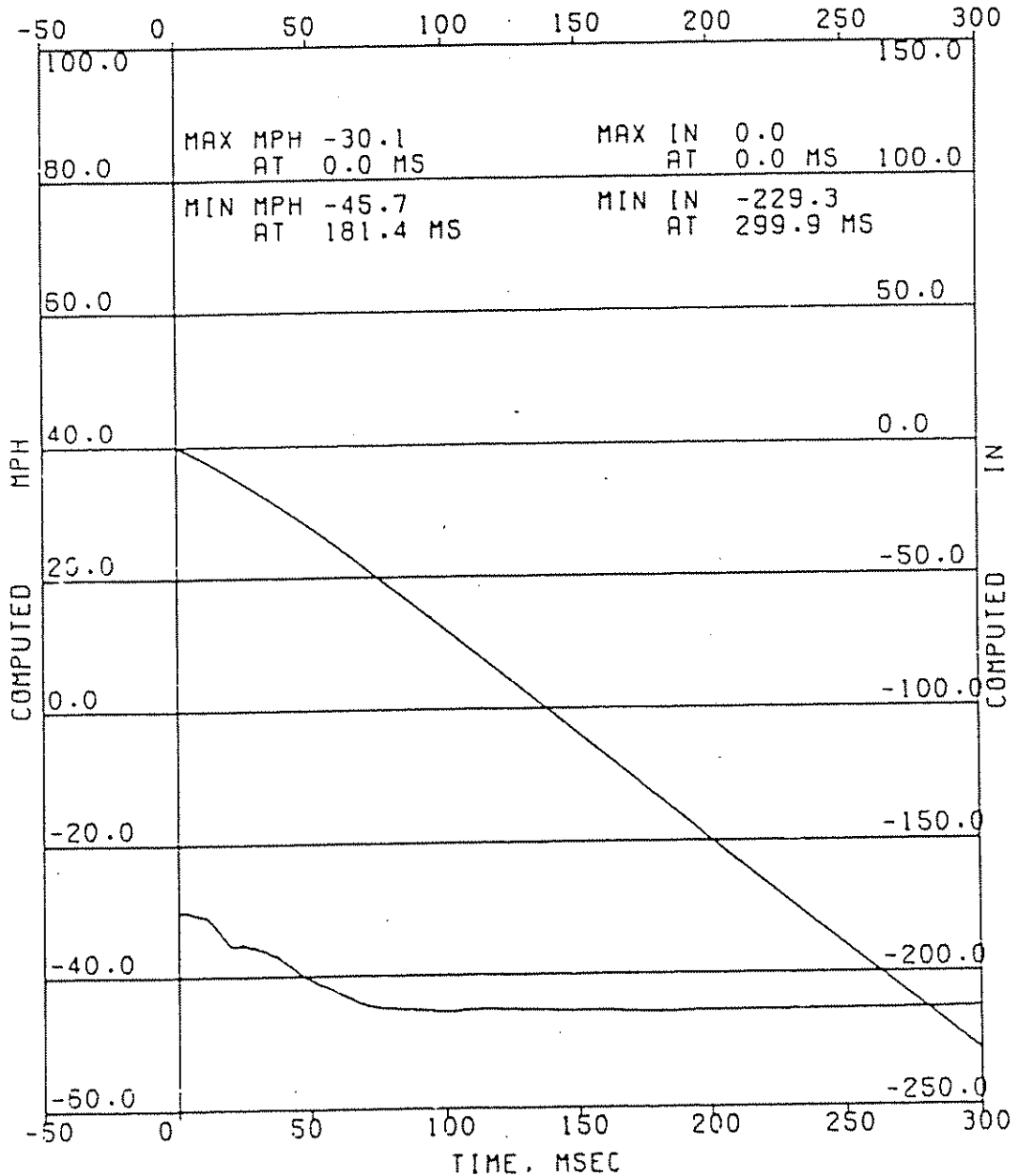
VC05926 30 MPH REAR BARRIER. ZJJ74. 5.2L MPI. ITEM ZJB219  
1997 MVSS DEVELOPMENT - 301.  
CHANNEL 003 RIGHT FRONT SILL X 510091

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OF 027

FILTER TYPE: 0BDAS-III RESPONSE CORRECTION. CLASS 1000 FILTER(1650)  
FILTER CLASS: 1000

IMPACT ANALYSIS DEPT. 5320  
MAY 10.1996

DATA SET 05/09/96B1  
ERRATA 1



COMPUTED MPH  
COMPUTED IN

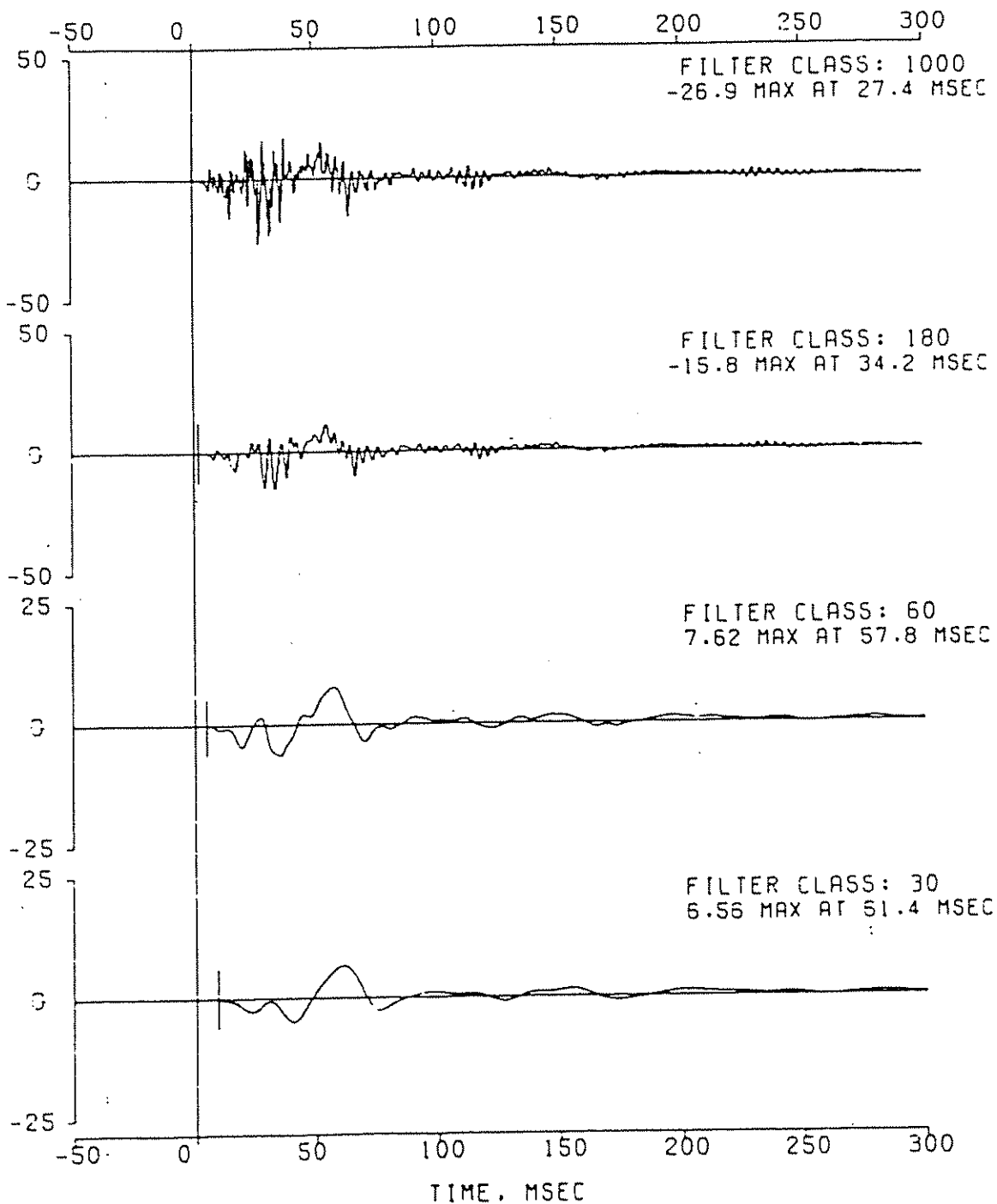
DC 03189



VC05926 30 MPH REAR BARRIER. ZJJ74. 5.2L MPI. ITEM ZJ8219  
1997 MVSS DEVELOPMENT - 301.  
CHANNEL 004 RIGHT FRONT SILL Z 510062  
FILTER TYPE: OBDAS-III RESPONSE CORRECTION, CLASS 1000 FILTER(1650)  
IMPACT ANALYSIS DEPT. 5320  
MAY 10.1996

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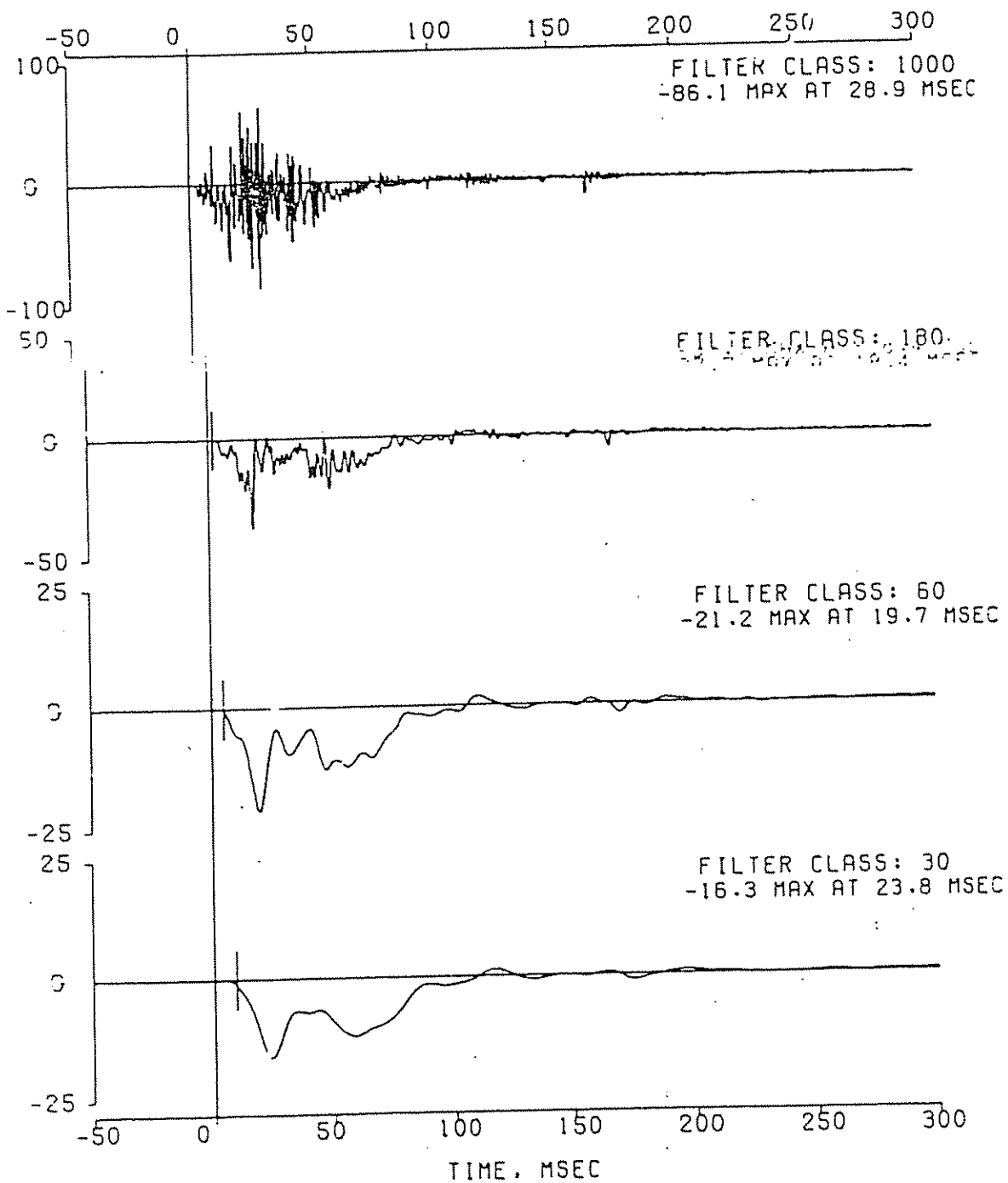
DATA SET 05/09/96B1  
ERRATA 1



DC 03190

VC05926 30 MPH REAR BARRIER. ZJJ74. 5.2L MPI. ITEM ZJ8219  
1997 MVSS DEVELOPMENT - 301.  
CHANNEL 005 LEFT REAR SILL X 277200  
FILTER TYPE: 080AS-III RESPONSE CORRECTION. CLASS 1000 FILTER(1650)  
IMPACT ANALYSIS DEPT. 5320 DATA SET 05/09/96BI  
MAY 10, 1996 ERRATA 1

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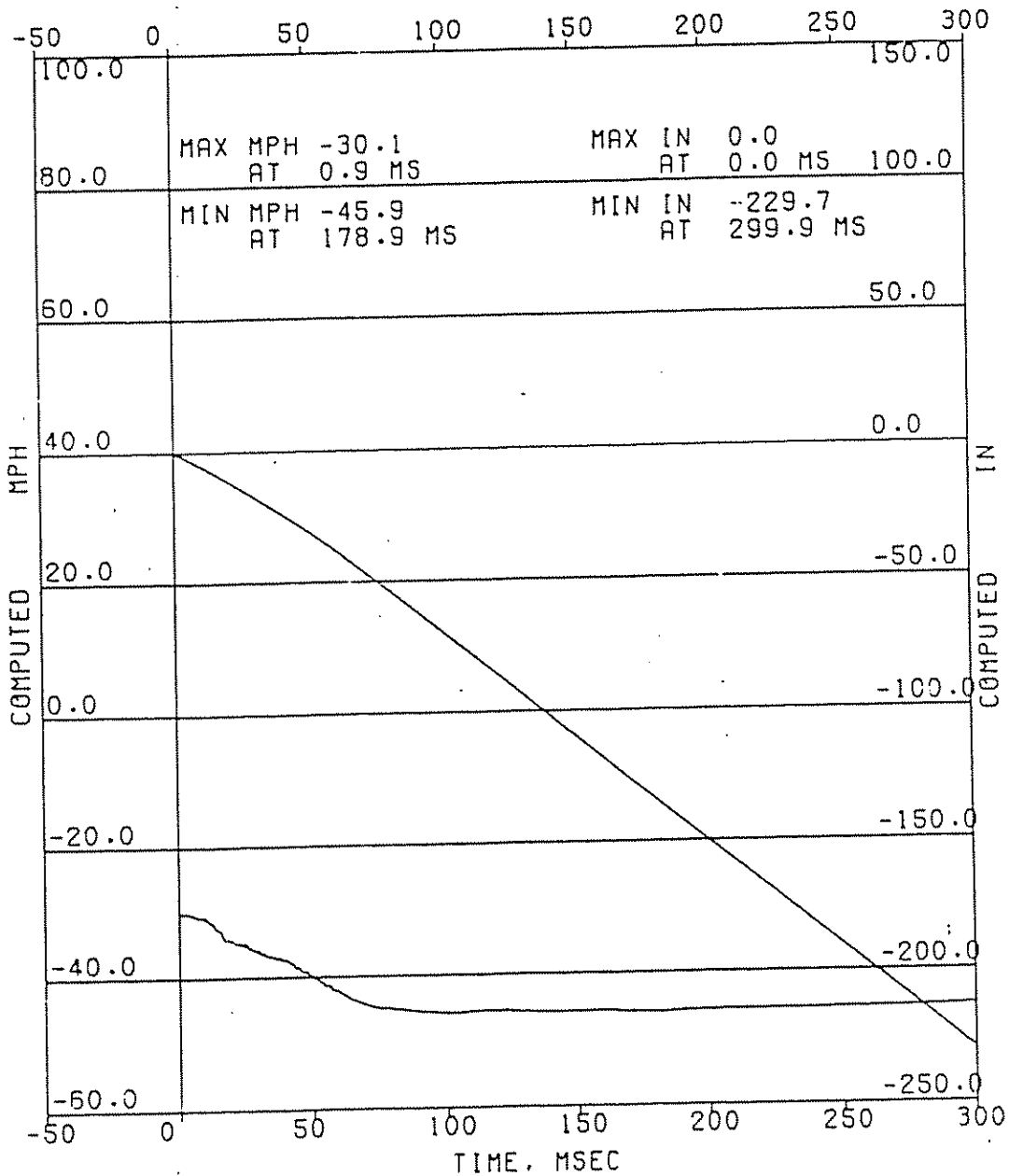
DC 03191

VC05926 30 MPH REAR BARRIER, ZJJ74, 5.2L MPI. ITEM ZJ8219  
 1997 MVSS DEVELOPMENT - 301.  
 CHANNEL 005 LEFT REAR SILL X 277200

FILTER TYPE: 08DAS-III RESPONSE CORRECTION, CLASS 1000 FILTER(1650)  
 FILTER CLASS: 1000

IMPACT ANALYSIS DEPT. 5320  
 MAY 10, 1996

DATA SET 05/09/96BI  
 ERRATA 1



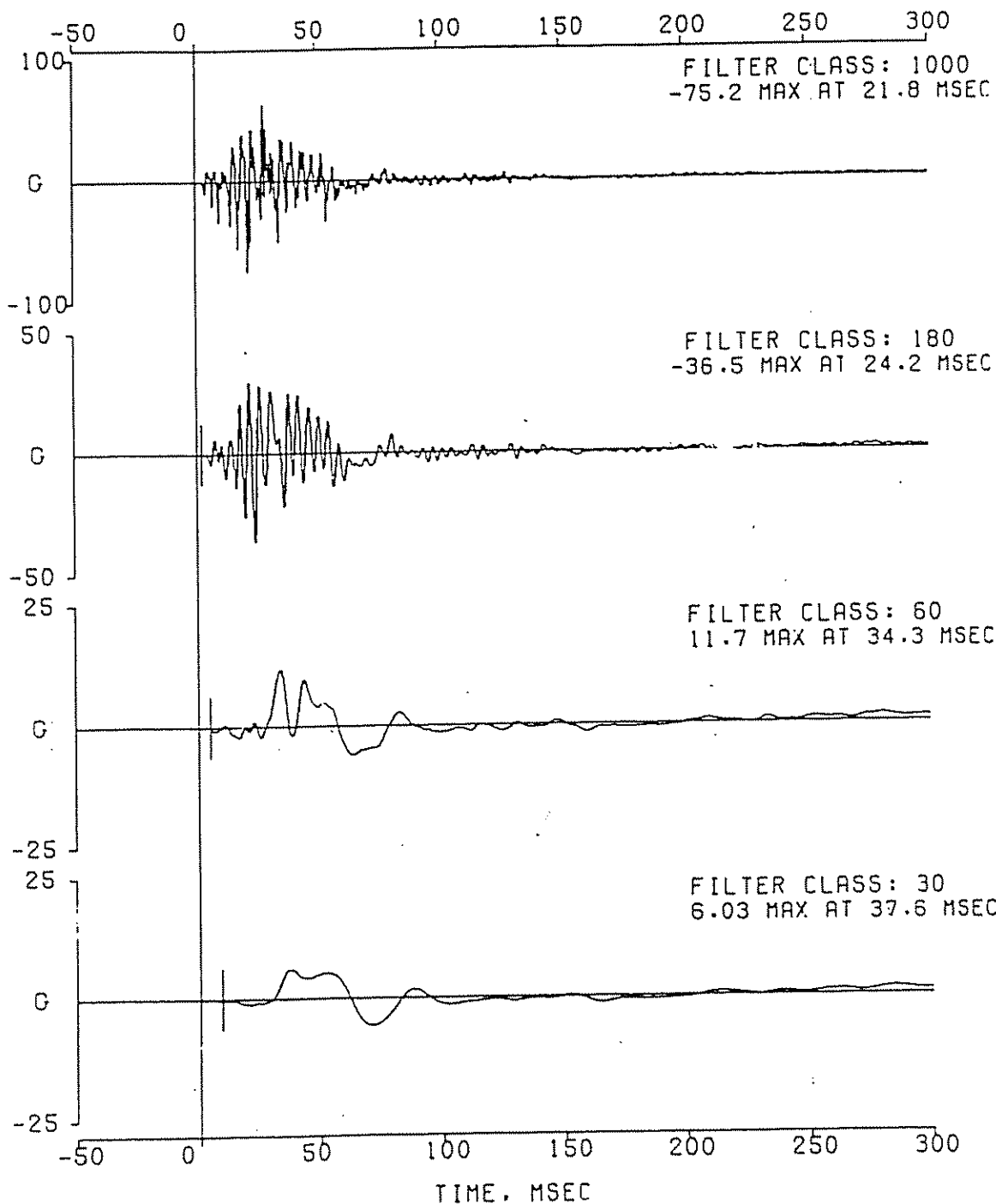
COMPUTED MPH  
 COMPUTED IN

DC 03192

VC05926 30 MPH REAR BARRIER. ZJJ74. 5.2L MPI. ITEM ZJB219  
1997 MVSS DEVELOPMENT - 301.  
CHANNEL 006 LEFT REAR SILL Z 14378  
FILTER TYPE: 08DAS-III RESPONSE CORRECTION, CLASS 1000 FILTER(1650)  
IMPACT ANALYSIS DEPT. 5320  
MAY 10.1996

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DATA SET 05/09/96BI  
ERRATA 1

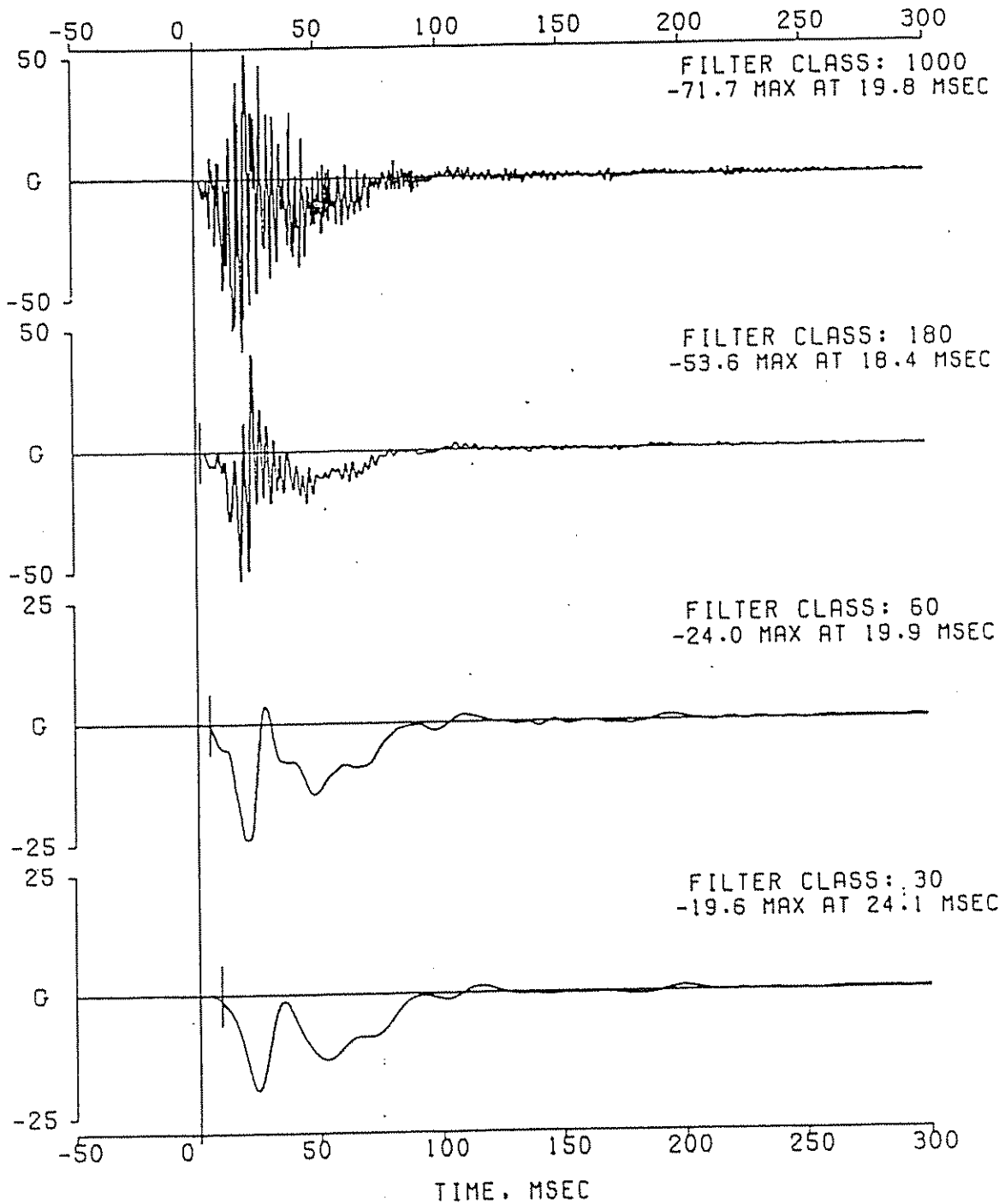


DC 03193

VC05926 30 MPH REAR BARRIER, ZJJ74, 5.2L MPI, ITEM ZJ8219  
1997 MVSS DEVELOPMENT - 301.  
CHANNEL 007 RIGHT REAR SILL X 73952  
FILTER TYPE: OBDAS-III RESPONSE CORRECTION, CLASS 1000 FILTER(1650)  
IMPACT ANALYSIS DEPT. 5320  
MAY 10, 1996

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DATA SET 05/09/96B1  
ERRATA 1



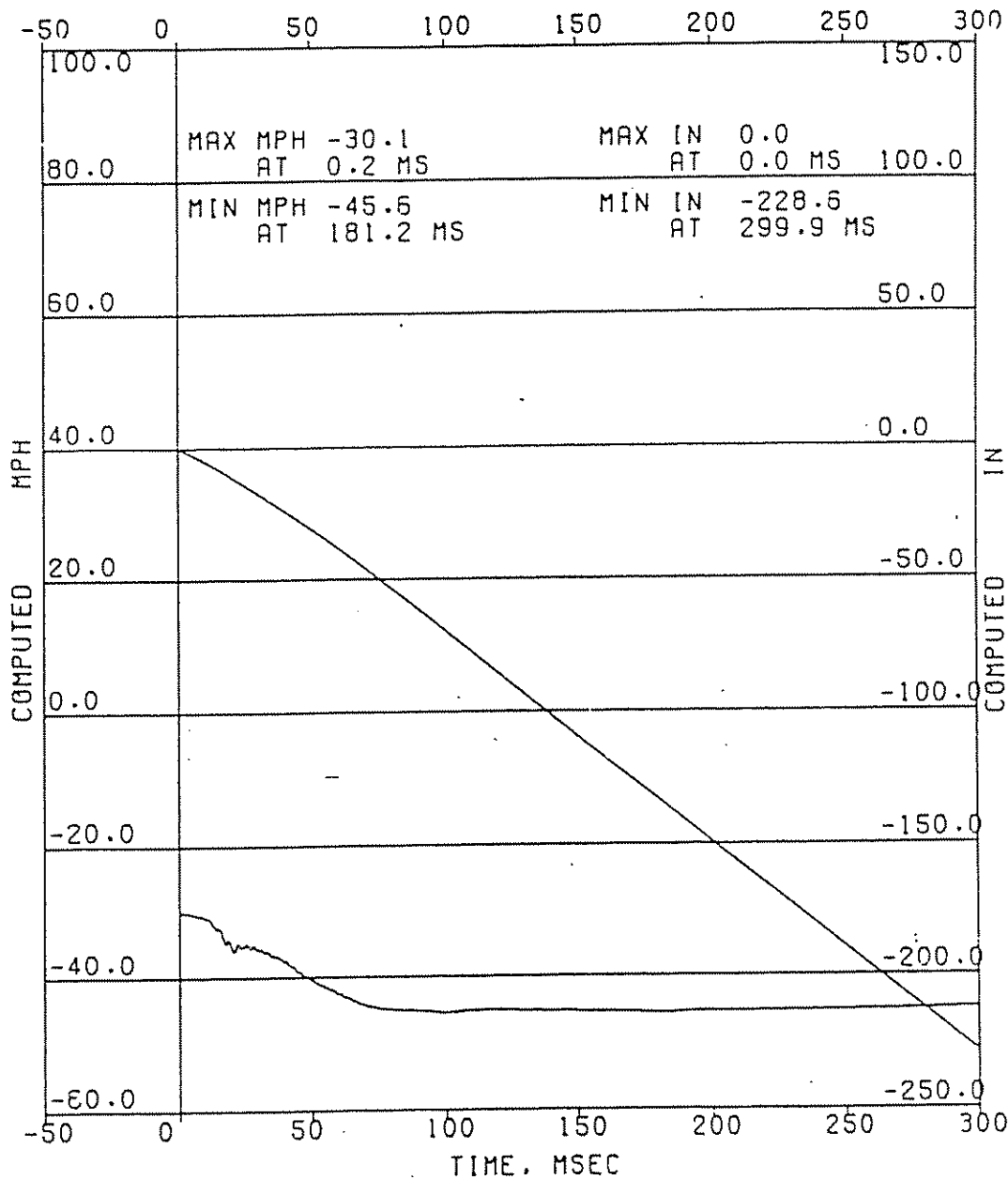
VC05926 30 MPH REAR BARRIER. ZJJ74. 5.2L MPI. ITEM ZJ8219  
 1997 MVSS DEVELOPMENT - 301.  
 CHANNEL 007 RIGHT REAR SILL X 73952

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FILTER TYPE: OBDAS-III RESPONSE CORRECTION. CLASS 1000 FILTER(1650)  
 FILTER CLASS: 1000

IMPACT ANALYSIS DEPT. 5320  
 MAY 10, 1996

DATA SET 05/09/96B1  
 ERRATA 1



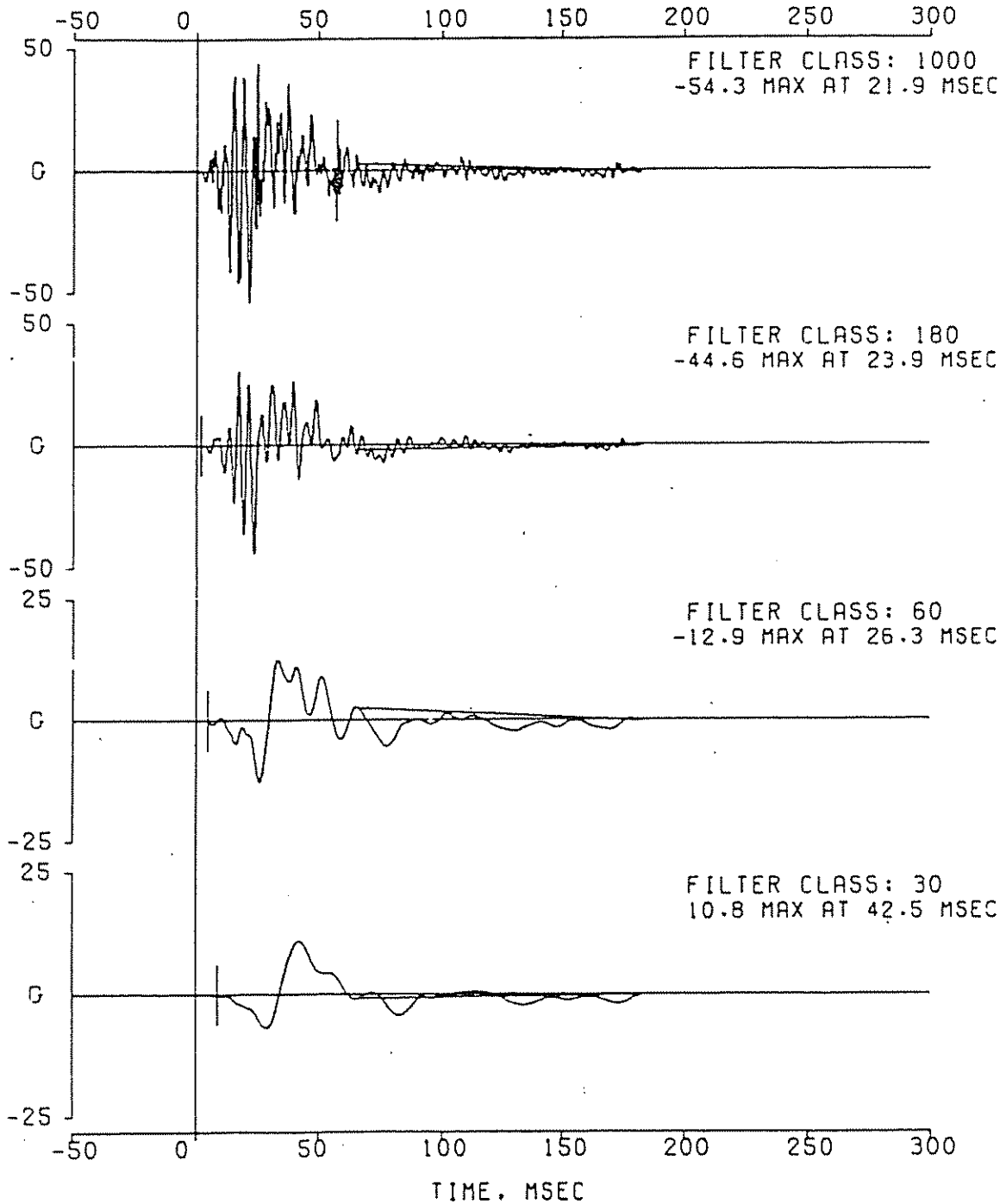
COMPUTED MPH  
 COMPUTED IN

DC 03195

VC05926 30 MPH REAR BARRIER. ZJJ74. 5.2L MPI. ITEM ZJ8219  
1997 MVSS DEVELOPMENT - 301.  
CHANNEL 008 RIGHT REAR SILL Z 510093  
FILTER TYPE: 08DAS-III RESPONSE CORRECTION. CLASS 1000 FILTER(1650)  
IMPACT ANALYSIS DEPT. 5320  
MAY 10.1996

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DATA SET 05/09/96BI  
ERRATA 1

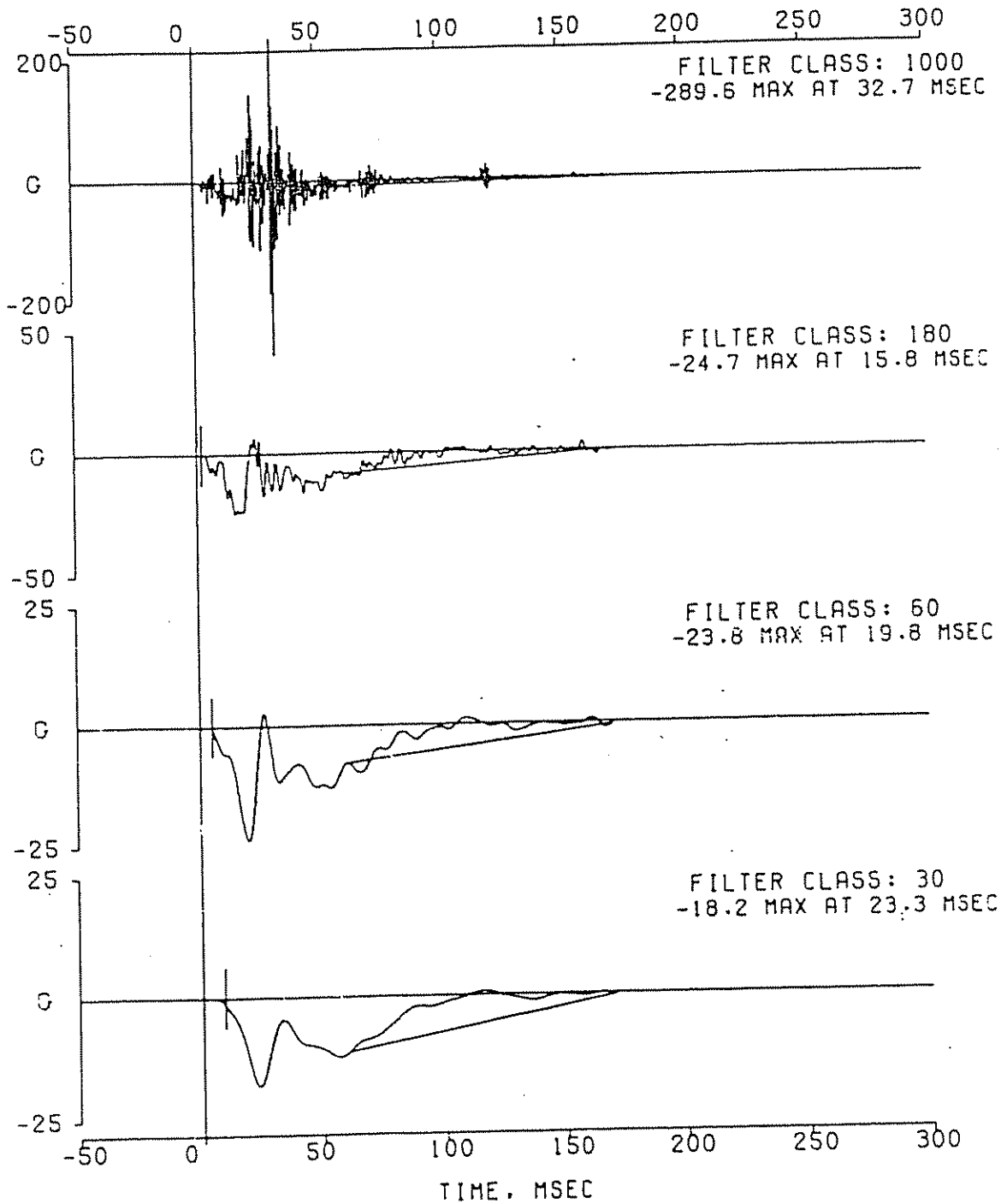


\*\*\*\*\* CAUTION \*\*\*\*\*  
\*\*\*\*\* INST. MALFUNCTION AFTER 183.0 MS \*\*\*\*\*

VC05926 30 MPH REAR BARRIER. ZJJ74. 5.2L MPI. ITEM ZJB219  
1997 MVSS DEVELOPMENT - 301.  
CHANNEL 009 LT RAIL TRAIL ARM PIV X 311312  
FILTER TYPE: OBDAS-III RESPONSE CORRECTION. CLASS 1000 FILTER(1650)  
IMPACT ANALYSIS DEPT. 5320  
MAY 10.1996

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OF 027

DATA SET 05/09/96B1  
ERRATA 1



..... CAUTION .....

..... INST. MALFUNCTION AFTER 171.0 MS .....



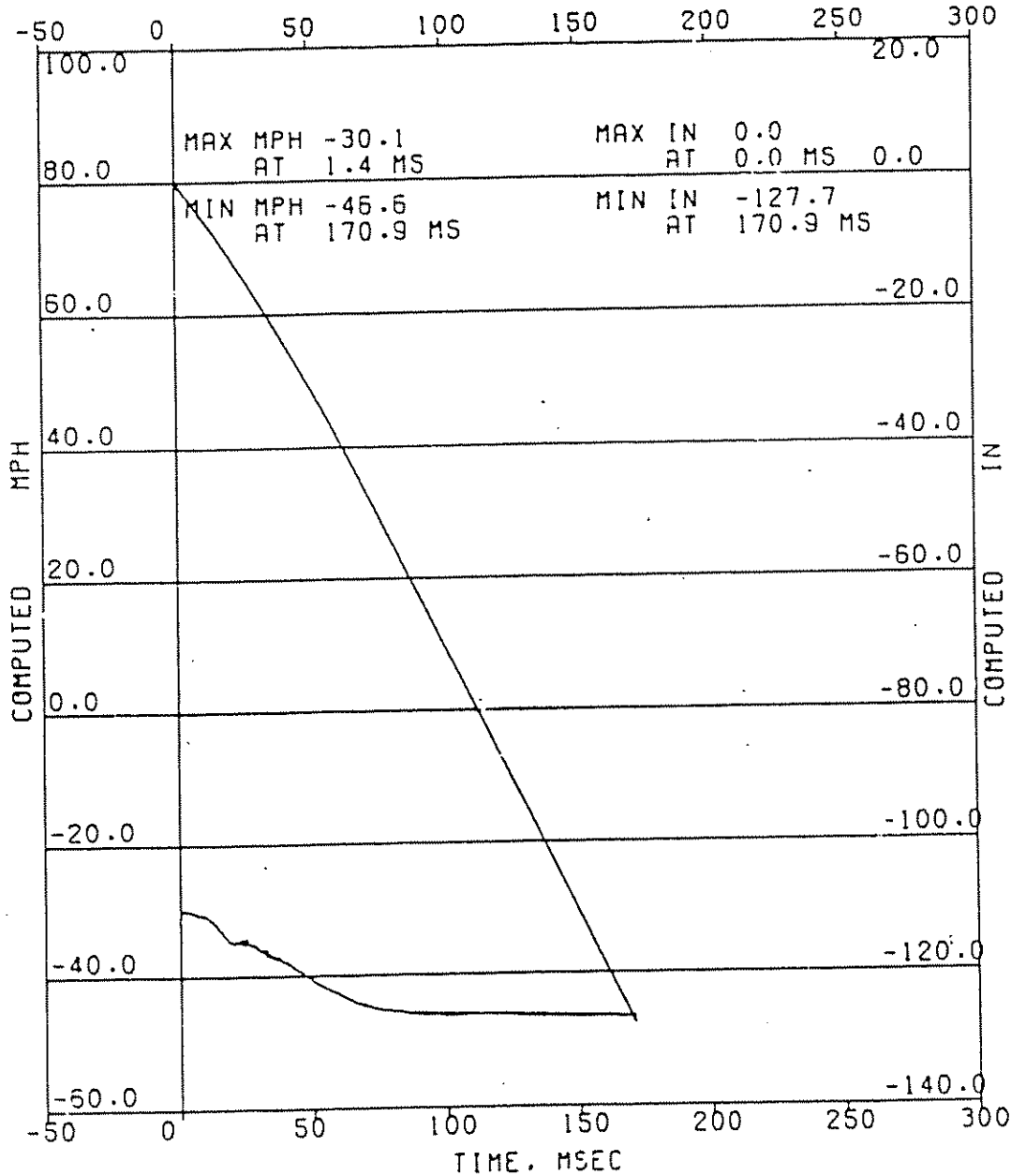
VC05926 30 MPH REAR BARRIER. ZJJ74. 5.2L MPI. ITEM ZJ8219  
1997 MVSS DEVELOPMENT - 301.  
CHANNEL 009 LT RAIL TRAIL ARM PIV X 311312

PAGE 018  
OF 027

FILTER TYPE: 0BDAS-III RESPONSE CORRECTION. CLASS 1000 FILTER(1650).  
FILTER CLASS: 1000

IMPACT ANALYSIS DEPT. 5320  
MAY 10.1996

DATA SET 05/09/96BI  
ERRATA 1



..... CAUTION .....  
..... INST. MALFUNCTION AFTER 171.0 MS .....  
.....

COMPUTED MPH  
COMPUTED IN

DC 03198

VC05926 30 MPH REAR BARRIER. ZJJ74. 5.2L MPI. ITEM ZJ8219

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1997 MVSS DEVELOPMENT - 301.

OF 027

CHANNEL 010 RT RAIL TRAIL ARM PIV X 73927

FILTER TYPE: OBDAS-III RESPONSE CORRECTION. CLASS 1000 FILTER(1650)

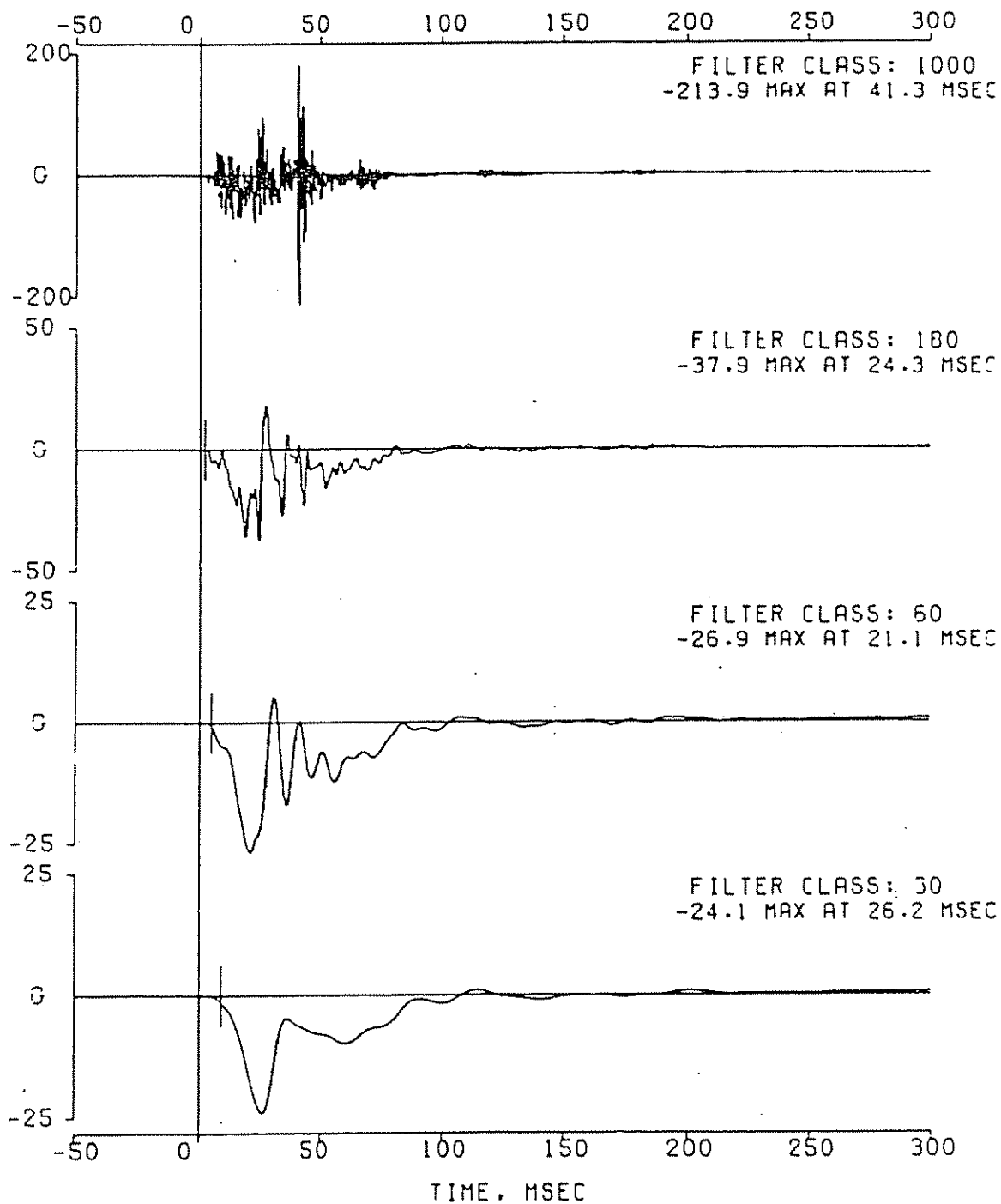
IMPACT ANALYSIS DEPT. 5320

DATA SET 05/09/96B1

MAY 10.1996

ERRATA

1



DC 03199

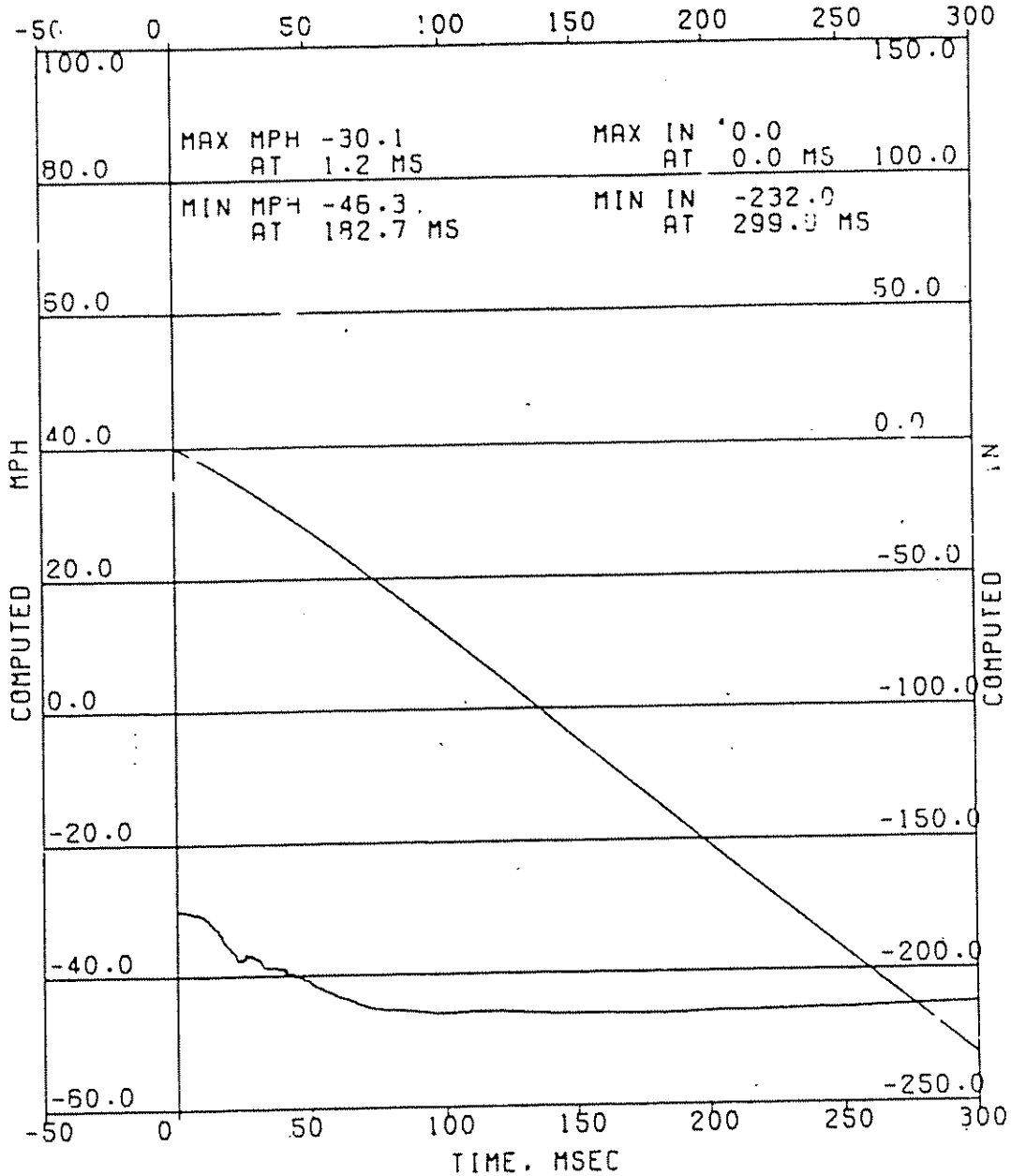
VC05926 30 MPH REAR BARRIER. ZJJ74. 5.2L MPI. ITEM ZJ8219  
1997 HVSS DEVELOPMENT - 301.  
CHANNEL 010 RT RAIL TRAIL ARM PIV X 73927

PAGE 020  
OF 027

FILTER TYPE: OBDAS-III RESPONSE CORRECTION. CLASS 1000 FILTER(1650)  
FILTER CLASS: 1000

IMPACT ANALYSIS DEPT. 5320  
MAY 10, 1996

DATA SET 05/09/96B1  
ERRATA 1



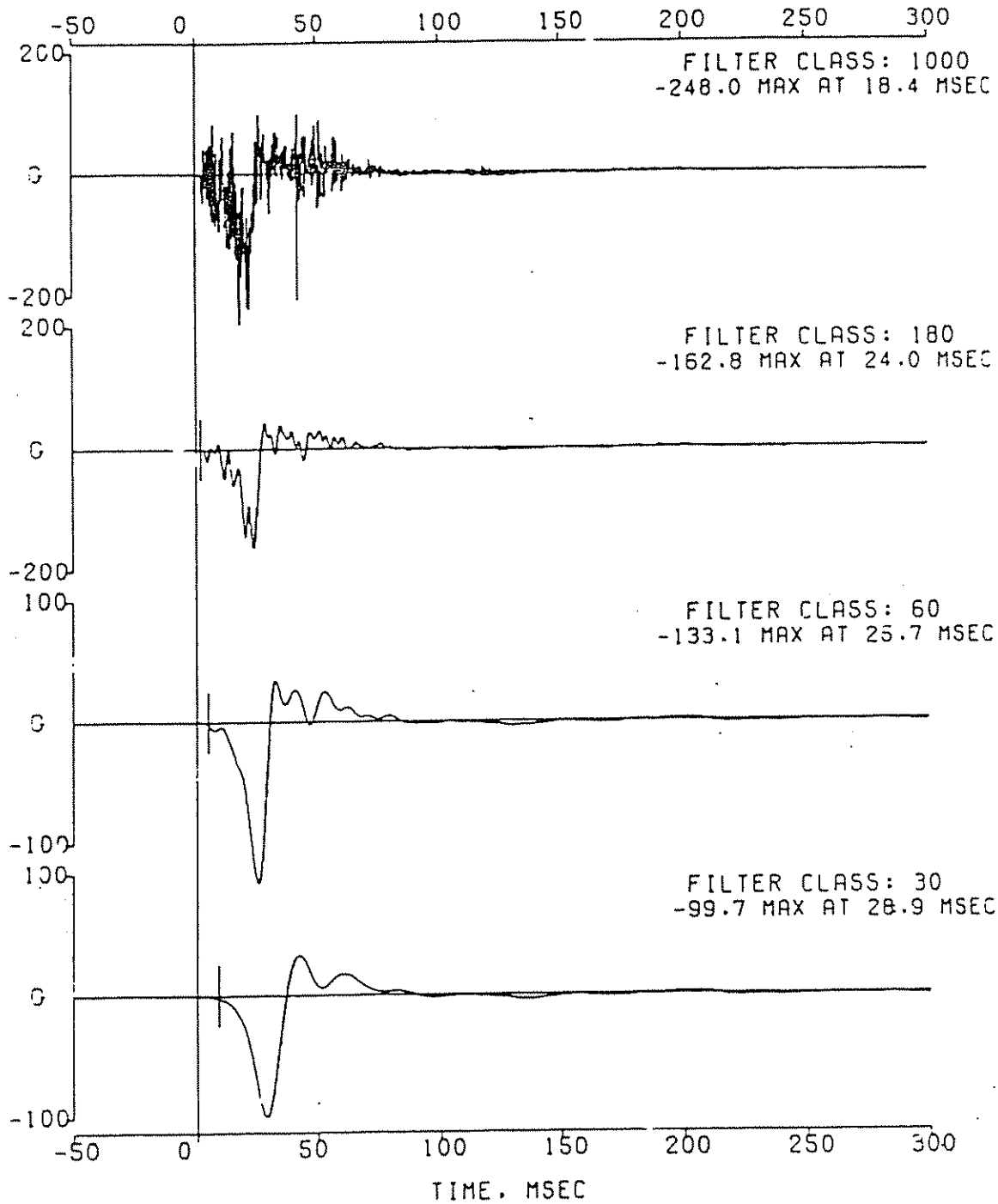
COMPUTED MPH  
COMPUTED IN

DC 03200

VC05926 30 MPH REAR BARRIER. ZJJ74. 5.2L MPI. ITEM ZJB219  
1997 MVSS DEVELOPMENT - 301.  
CHANNEL 011 RT REAR RAIL MID TANK X 14385  
FILTER TYPE: OBDAS-III RESPONSE CORRECTION. CLASS 1000 FILTER(1650)  
IMPACT ANALYSIS DEPT. 5320  
MAY 10.1996

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OF 027

DATA SET 05/09/96BI  
ERRATA 1



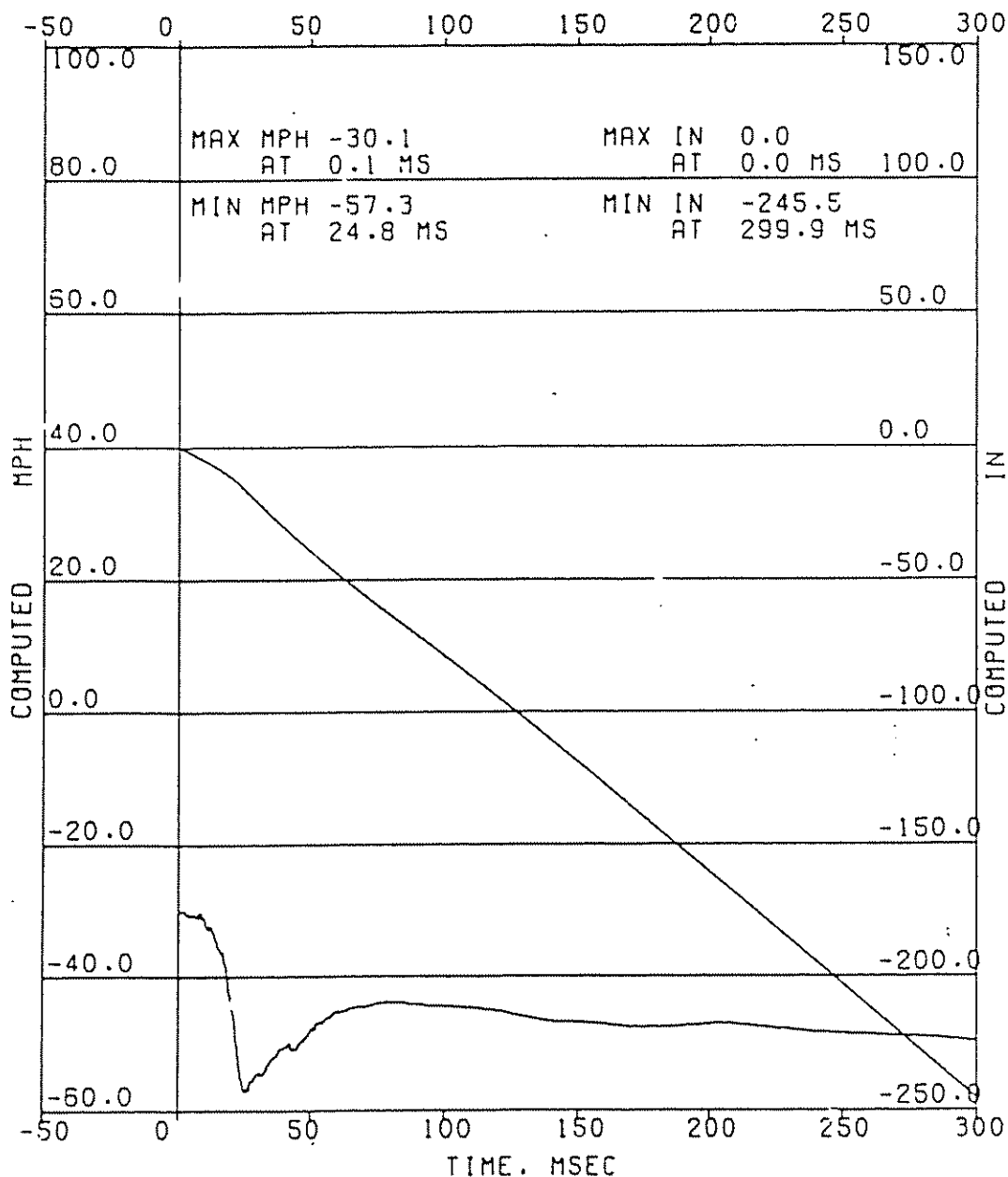
VC05926 30 MPH REAR BARRIER. ZJJ74. 5.2L MPI. ITEM ZJB219  
 1997 MVSS DEVELOPMENT - 301.  
 CHANNEL 011 RT REAR RAIL MID TANK X 14385

PAGE 022  
 OF 027

FILTER TYPE: 0BDAS-III RESPONSE CORRECTION. CLASS 1000 FILTER(1650)  
 FILTER CLASS: 1000

IMPACT ANALYSIS DEPT. 5320  
 MAY 10.1996

DATA SET 05/09/96BI  
 ERRATA 1



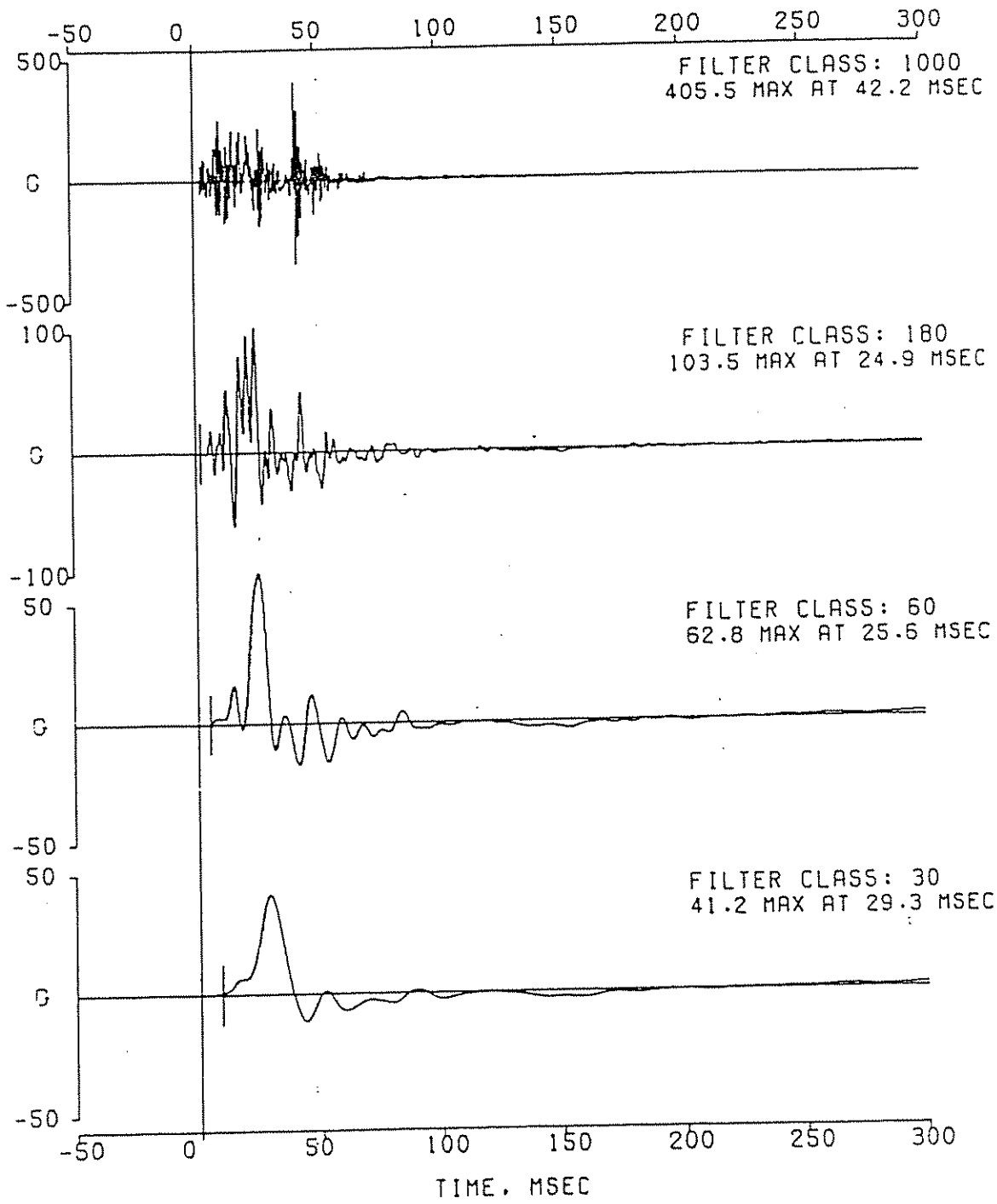
COMPUTED MPH  
 COMPUTED IN

DC 03202

VC05926 30 MPH REAR BARRIER, ZJJ74, 5.2L MPI, ITEM ZJ8219  
1997 MVSS DEVELOPMENT - 301.  
CHANNEL 012 RT REAR RAIL MID TANK Z 14486  
FILTER TYPE: OBDAS-III RESPONSE CORRECTION, CLASS 1000 FILTER(1650)  
IMPACT ANALYSIS DEPT. 5320  
MAY 10, 1996

PAGE 023  
OF 027

DATA SET 05/09/96B1  
ERRATA 1

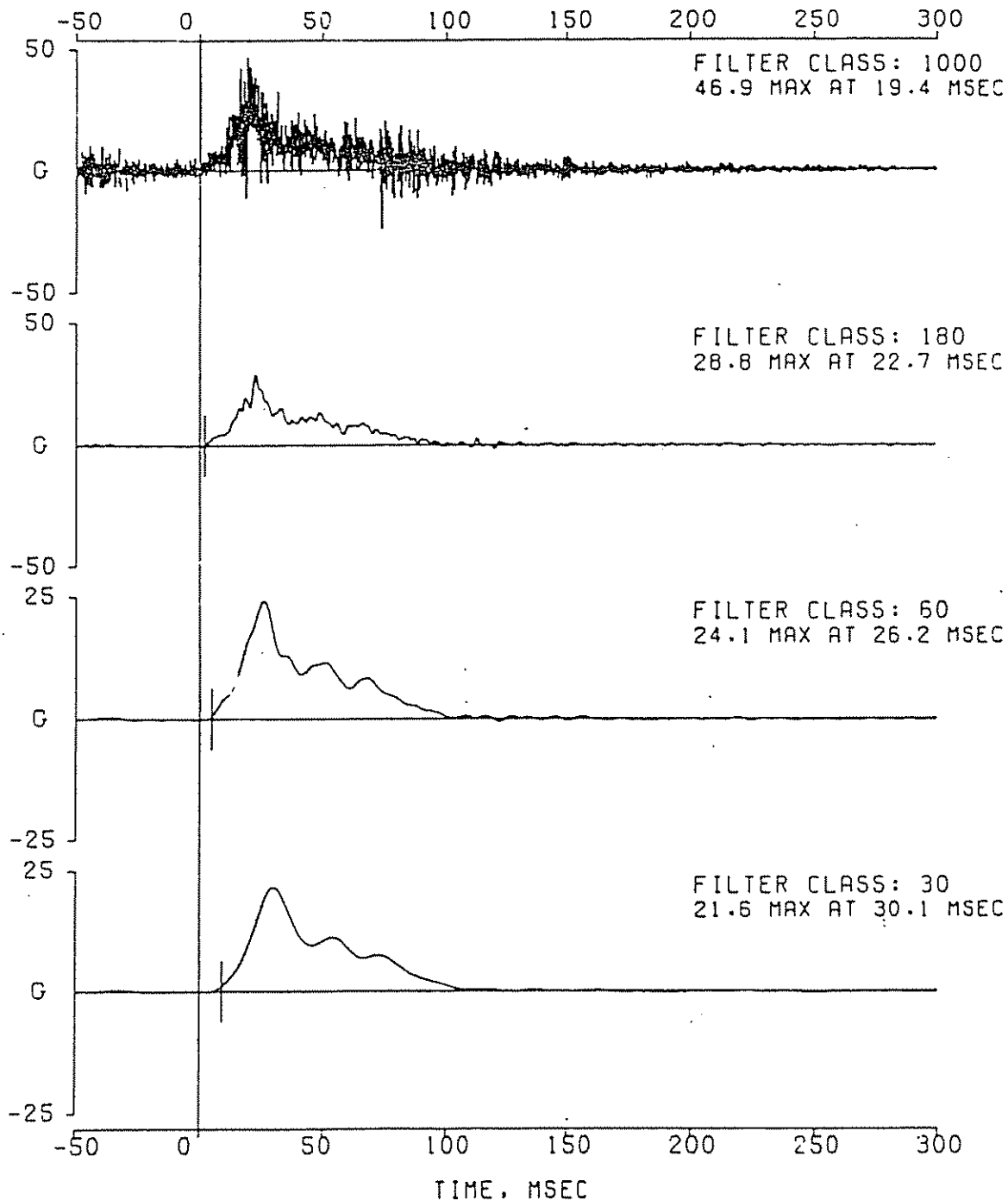


DC 03203

VC05926 30 MPH REAR BARRIER. ZJJ74. 5.2L MPI. ITEM ZJB219  
1997 MVSS DEVELOPMENT - 301.  
CHANNEL 013 LT RAIL MBAR MID X 176963  
FILTER TYPE: OBDAS-III RESPONSE CORRECTION. CLASS 1000 FILTER(1650)  
IMPACT ANALYSIS DEPT. S-20  
MAY 10, 1996

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OF 027

DATA SET 05/09/96B1  
ERRATA 1



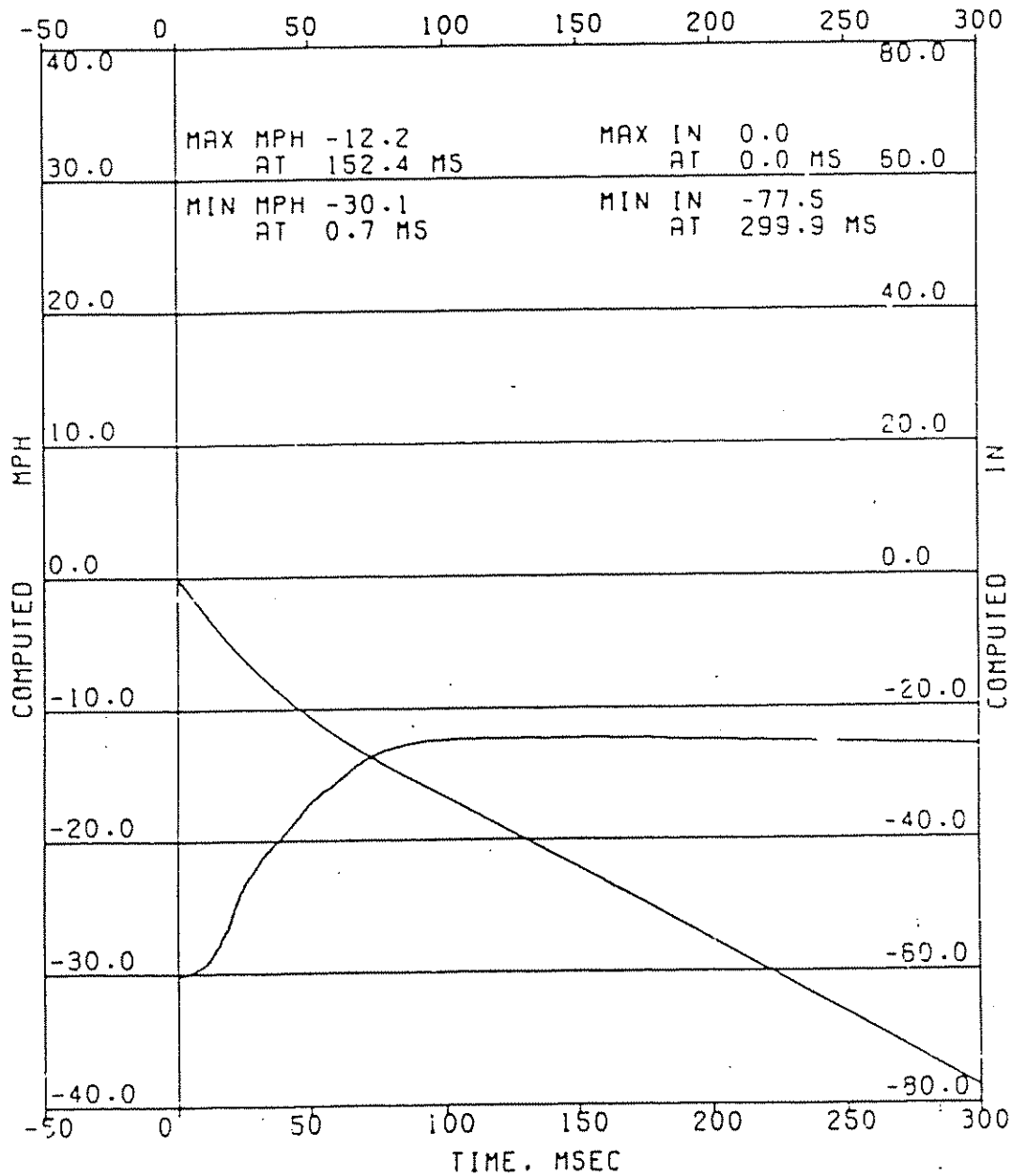
VCOS926 30 MPH REAR BARRIER. ZJJ74. 5.2L MPI. ITEM ZJB219  
 1997 MVSS DEVELOPMENT - 301.  
 CHANNEL 013 LT RAIL MBAR MID X 176963

PAGE 025  
 CF 027

FILTER TYPE: OBDAS-III RESPONSE CORRECTION. CLASS 1000 FILTER(1650)  
 FILTER CLASS: 1000

IMPACT ANALYSIS DEPT. 5320  
 MAY 10, 1996

DATA SET 05/09/9681  
 ERRATA 1



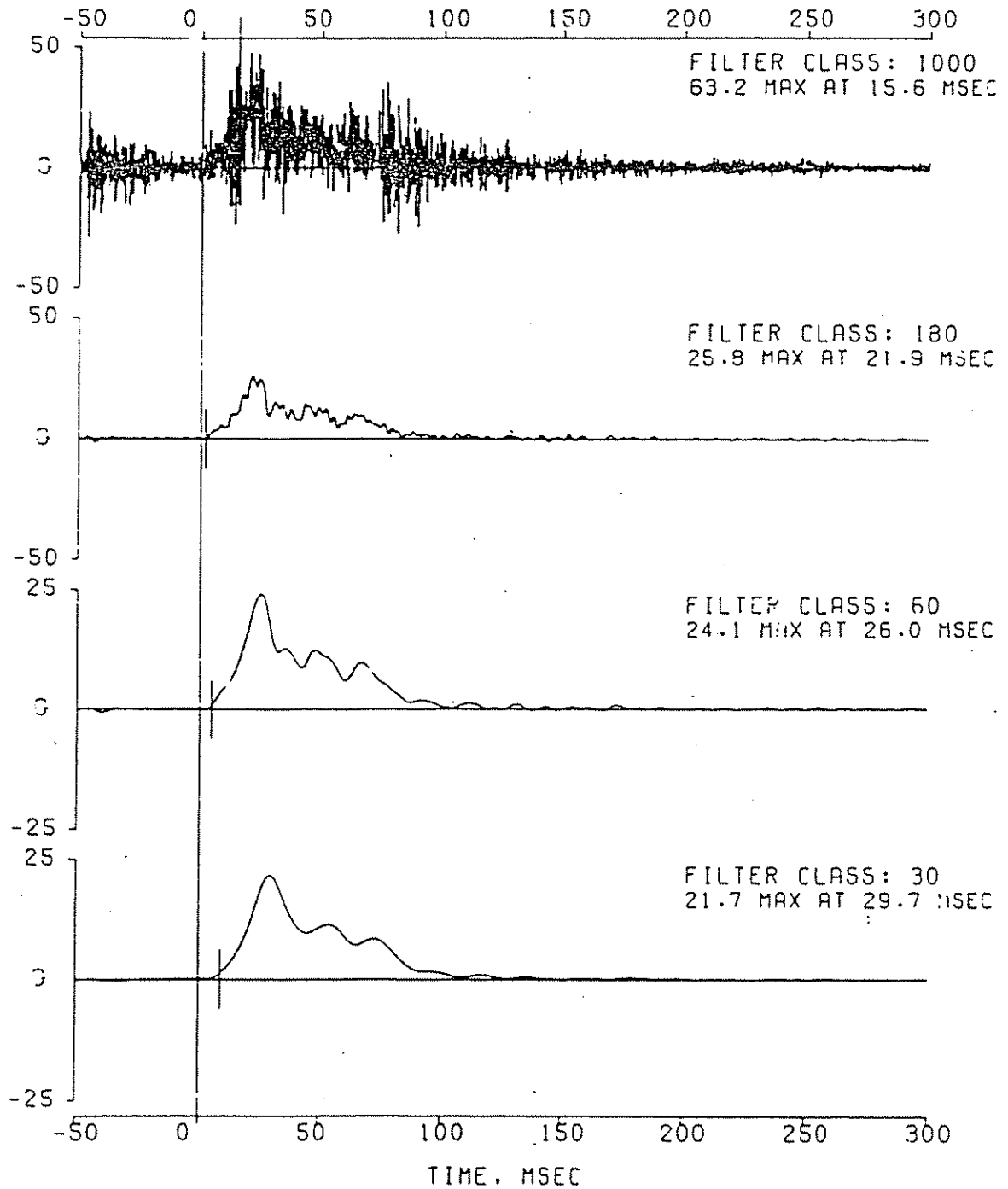
COMPUTED MPH  
 COMPUTED IN

DC 03205



VC05926 30 MPH REAR BARRIER. ZJJ74. 5.2L MPI. ITEM ZJ8219  
1997 MVSS DEVELOPMENT - 301.  
CHANNEL 014 RT RAIL MBAR MID X 73968  
FILTER TYPE: 080AS-III RESPONSE CORRECTION, CLASS 1000 FILTER(1650)  
IMPACT ANALYSIS DEPT. 5320  
MAY 10.1996

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OF 027  
DATA SET 05/09/96BI  
ERRATA 1



DC 03206

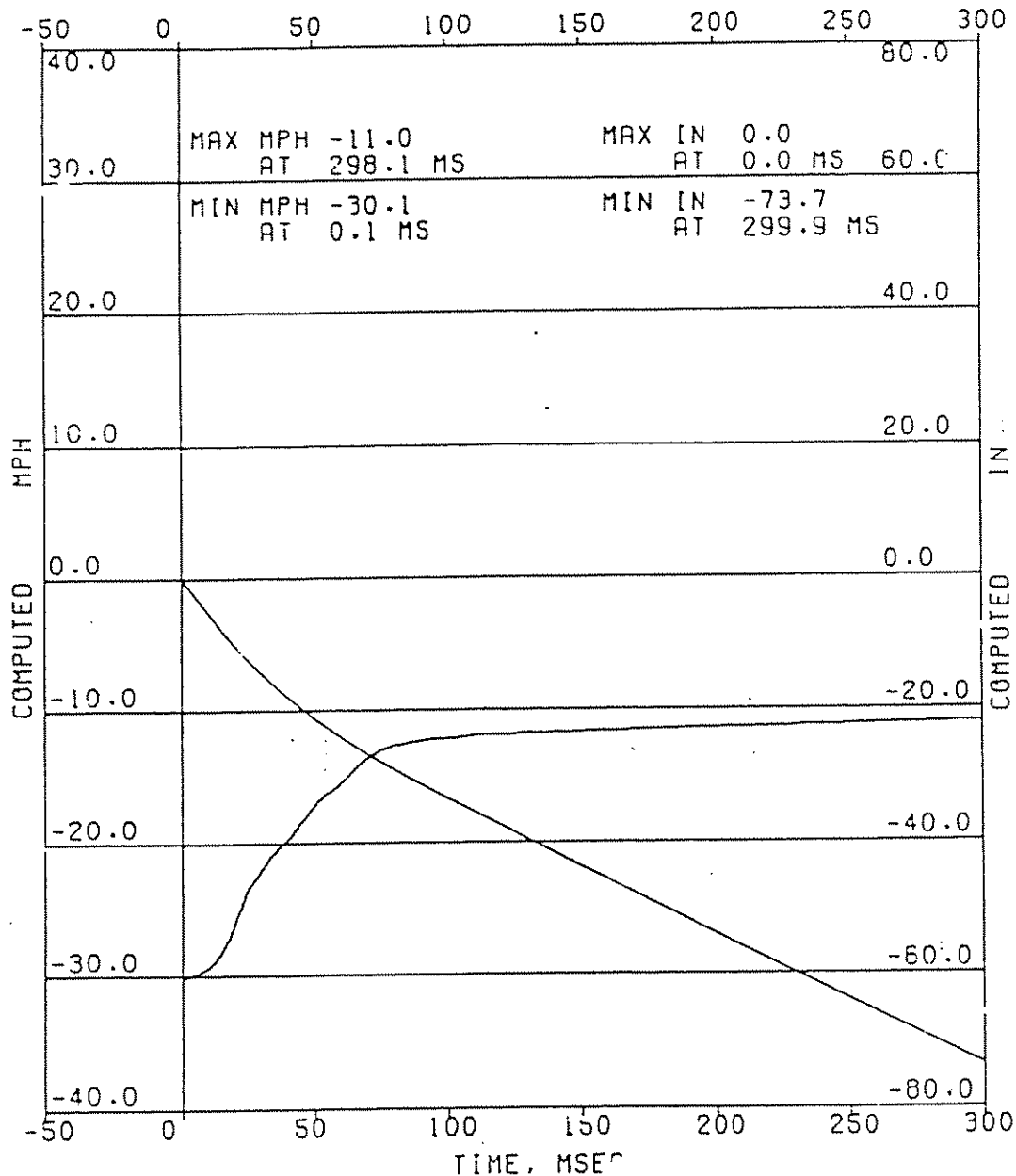
VC05926 30 MPH REAR BARRIER. ZJJ74. 5.2L MPI. ITEM ZJ8219  
 1997 MISS DEVELOPMENT - 301.  
 CHANNEL 014 RT RAIL MBAR MID X 73968

PAGE 027  
 OF 027

FILTER TYPE: 08DAS-III RESPONSE CORRECTION, CLASS 1000 FILTER(1650)  
 FILTER CLASS: 1000

IMPACT ANALYSIS DEPT. 5320  
 MAY 10, 1996

DATA SET 05/09/96B1  
 ERRATA 1



COMPUTED MPH  
 COMPUTED IN

DC 03207

INTER COMPANY CORRESPONDENCE

DATE 05/23/96

TO  
DISTRIBUTION

FROM  
B. D. CAPLISLE

DEPARTMENT -- PLANT/OFFICE  
5320 CTC

CIMS NUMBER  
481-00-27

SUBJECT:

REAR DYNAMIC CRUSH ANALYSIS  
VC05926 30 MPH REAR BARRIER, ZJJ74, 5.2L MPI ITEM ZJ8219  
1997 MVSS DEVELOPMENT - 301.  
TEST DATE 05/09/96

TEST PURPOSE PRIMARY, 1997 USA 301 DEVELOPMENT.  
OBSERVE FUEL SYSTEM INTEGRITY.

IMPACT TYPE TARGET SPEED: 30.1 MPH  
DAMAGE LOCATION: REAR  
BARRIER TYPE: REAR TYPE IV  
BARRIER SURFACE: PLYWOOD

VEHICLE BODY CLASS: ZJ  
CAR LINE: J  
BODY: 74  
ENGINE: 5.2 LITRE  
ENGINE NOTE: ELECTRONIC FUEL INJECTION  
TRANSMISSION: 4 SPEED AUTO 4x4  
TRANS. NOTE:  
VIN AS TESTED: 1J4EZ78Y2TC128283 MOD.  
VIN AS BUILT: 1J4EZ78Y2TC128283 MOD.

TEST SPEED 30.1 MPH BY ELECTRONIC TRAP TIMER.

TEST WEIGHT (LBS) 4848 TOTAL, 2752 FRONT, 2096 REAR

OCCUPANTS LEFT FRONT, HYB II, BALLAST. AD-52  
RESTRAINT-BELTS ONLY.  
RIGHT FRONT, HYB II, BALLAST. AD-53  
RESTRAINT-BELTS ONLY.

BUILD CONDITION 1996 PRODUCTION ZJ MODIFIED TO REPRESENT 1997.  
5.2 LITRE (V8) ENGINE, 4 SPEED AUTO TRANS. 4X4.  
POWER STEERING, ABS BRAKES, AIR CONDITIONING.  
FULL CENTER CONSOLE AND OVERHEAD CONSOLE.  
SUNROOF AND FULL ROOF RACK.  
P225/70 R16 TIRES ON ALUMINUM RIMS & FULL SIZE  
SPARE.  
1997 FUEL SENDING UNIT AND 1997 FUEL TANK DESIGN.  
SKID PLATE ONLY, NO TRAILER HITCH BRACKET.

TARGET WEIGHT (LBS) 4185 TOTAL, 2336 FRONT, 1849 REAR, REP MAX OPT WT.  
NOT INCLUDING OCCUPANTS OR LUGGAGE BALLAST.

FUEL AND BALLAST 21.5 GALLONS OF STANDARD SOLVENT.  
300 LBS OF LUGGAGE BALLAST SECURED IN CARGO AREA.


TEST VC05926 05/23/96 16.08 PAGE 1 OF 2

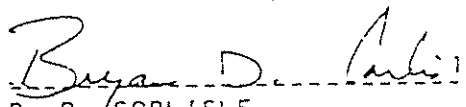
DC 03208

POST TEST REMARKS THERE WAS NO FUEL LEAKAGE DURING IMPACT, NOR DURING THE SUBSEQUENT THIRTY MINUTES. THERE WAS NO FUEL LEAKAGE DURING THE STATIC ROLLOVER.

DYNAMIC CRUSH, PITCH, AND REAR WHEEL MOTION RELATIVE TO THE FRONT SILL HAVE BEEN DETERMINED BY FILM ANALYSIS. TIME WAS BA'D ON CAMERA TIMING DATA.

DYNAMIC CRUSH 18.1 +OR- 1 INCH AT 71. +OR- 5 MSEC.

  
-----  
L. G. PLATA

  
-----  
B. D. CARLISLE

GRAPHS - 4

G L O S S A R Y   O F   T E R M S

U S E D   I N   S T A N D A R D   R E P O R T S

AD	ANTHROPOMORPHIC DEVICE
ADT	ANTHROPOMORPHIC TEST DEVICE
BASE COORD	BASE COORDINATE SYSTEM
C/L	CENTERLINE
CAR COORD	CAR COORDINATE SYSTEM
CCW	COUNTER CLOCKWISE
CORR-IN	SEPARATION IN INCHES (MINUS INITIAL LENGTH)
CORR-MM	SEPARATION IN MM (MINUS INITIAL LENGTH)
CORR-P	CORRECTED (ZEROED) PITCH
CORR-R	CORRECTED (ZEROED) ROLL
CORR-Y	CORRECTED (ZEROED) YAW
CW	CLOCKWISE
EFI	ELECTRONIC FUEL INJECTOR
ENG	ENGINE
ENGPY	ENGINE PITCH AND YAW
FESH	FRONT END SHEET METAL
FIDUCIAL	REFERENCE POINT OR TARGET
FS	FRONT SILL TARGET
FWD	FORWARD
IP	INSTRUMENT PANEL TARGET
LBS	POUNDS
LCP.LQP	LEFT C-POST & QUARTER PANEL TARGETS
LFS.LMS.LRL	LEFT FRONT SILL, MID SILL, & REAR SILL TARGETS
LT	LEFT
MS	MID SILL TARGET
NORMALIZE	PUT ON A COMMON BASIS
NOSE-DOWN	LEADING END BELOW TRAILING
NOSE-UP	LEADING END ABOVE TRAILING
PERF	PERFORMANCE
REF	REFERENCE
REL	RELATIVE TO (ONE-DIMENSIONAL)
RCP.RQP	RIGHT C-POST & QUARTER PANEL TARGETS
RFS.RMS.RPS	RIGHT FRONT, MID, & REAR SILL TARGETS
ROLL-LEFT	LEFT SIDE LOWER THAN RIGHT
ROLL-RIGHT	RIGHT SIDE LOWER THAN LEFT
RS	REAR SILL TARGET
RT	RIGHT
SEP	SEPARATION OF (THREE-DIMENSIONAL)
SYS	SYSTEM
TBI	THROTTLE BODY INJECTOR
TIME.MS	TIME IN MILLISECONDS
U/O	UNDER OODY
VS	VERSUS
X	LONGITUDINAL AXIS (INCREASING TOWARD TRAILING EDGE)
XF	X-FILTERED
Y	LATERAL AXIS (INCREASING TO THE RIGHT)
YAW-LEFT	LEADING EDGE TO LEFT
YAW-RIGHT	LEADING EDGE TO RIGHT
Z	VERTICAL AXIS (INCREASING UPWARD)
ZERGED	SHIFTED TO START AT ZERO
ZERGD-IN	ZERGED INCHES
ZERD-MM	ZERGED MILLIMETERS

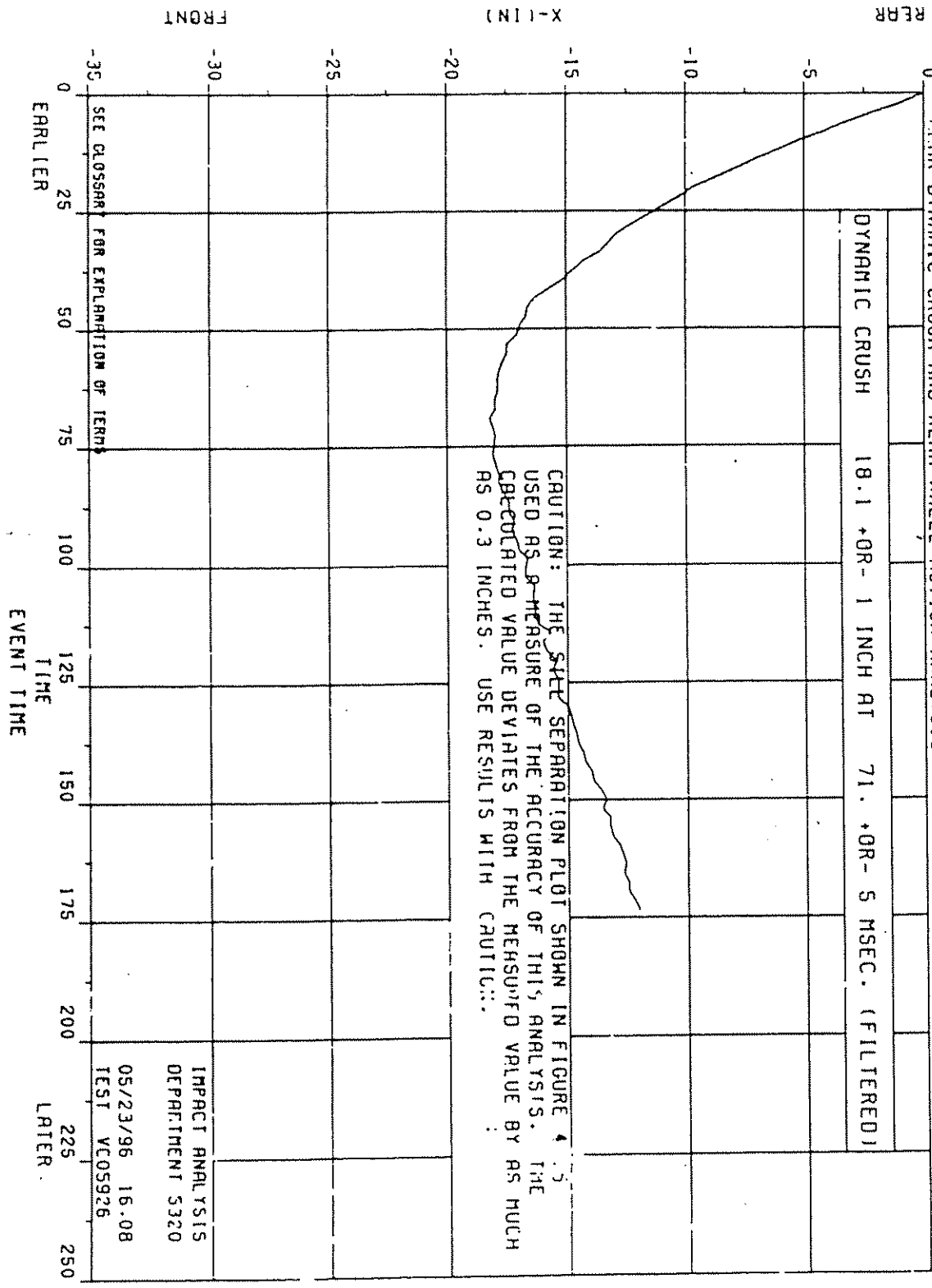
IMPACT ANALYSIS  
DEPARTMENT 5320  
05/23/96 16.08  
TEST VC05925

DC 03210

VC05926 30 MPH REAR BARRIER, ZJ74, S.2L MPI ITEM ZJ8219  
 1997 HVSS DEVELOPMENT - 301.

ZERGED X MOTION OF F3 REL TO LFS IN BASE COORD SYS  
 VERSUS TIME IN MILLISEC

REAR DYNAMIC CRUSH AND REAR WHEEL MOTION ANALYSIS



IMPACT ANALYSIS  
 DEPARTMENT 5320  
 05/23/96 16.08  
 TEST VC05926

SEE GLOSSARY FOR EXPLANATION OF TERMS  
 EARLIER  
 LATER

FIGURE 1

ZERGED LONGITUDINAL MOTION

WC055225 30 MPH REAR BARRIER. ZJ074. S-2L MPI ITEM ZJ8219  
 1997 MVSS DEVELOPMENT - 301.

ZEROED Z OF WHEEL RELATIVE TO LFS IN CAR COORD  
 VERSUS ZEROED X OF WHEEL RELATIVE TO LFS IN CAR COORD  
 REAR DYNAMIC CRUSH AND REAR WHEEL MOTION ANALYSIS

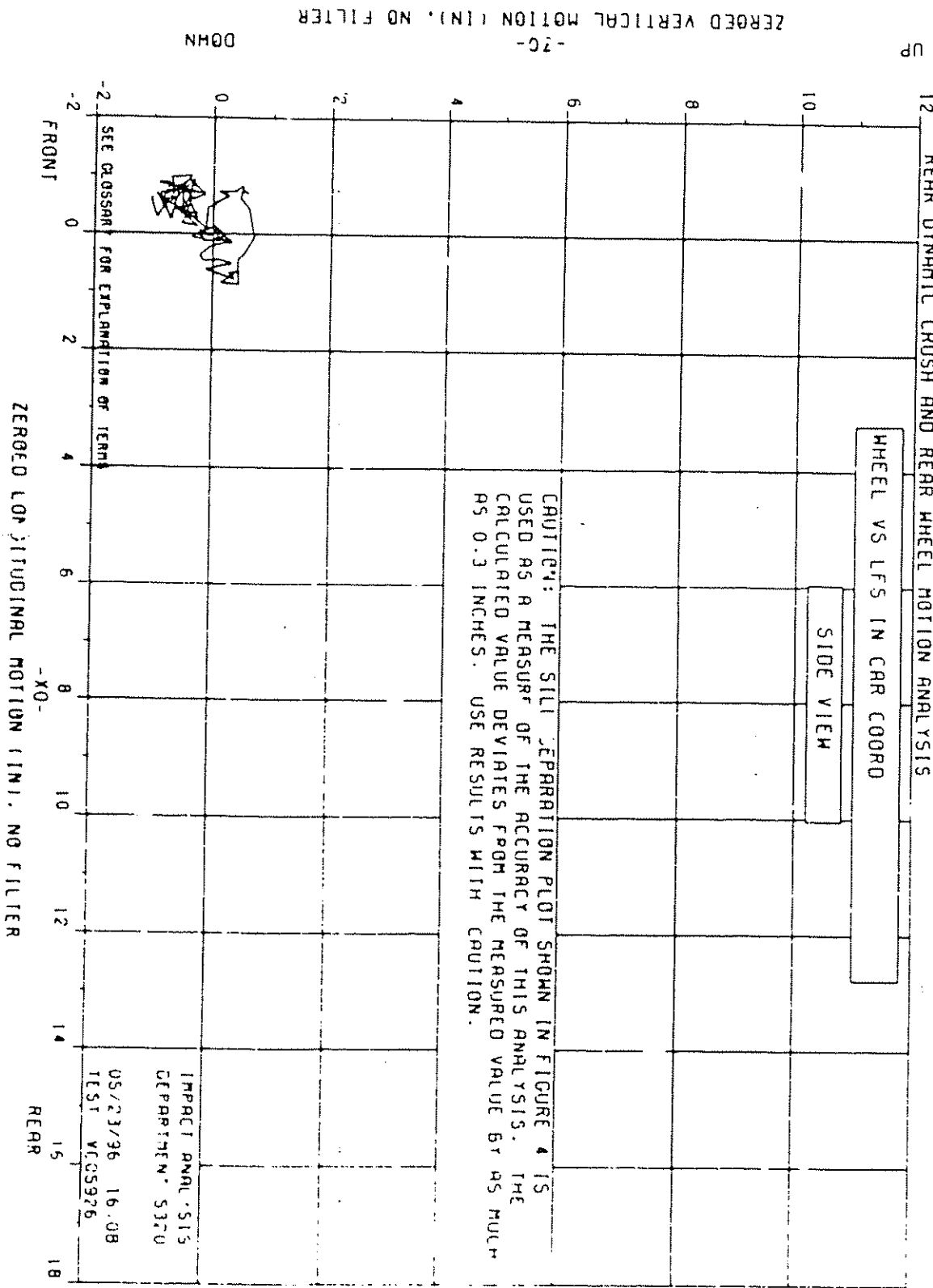


FIGURE 2

VC05926 20 MPH REAR BARRIER. ZJ774. 5.2L MPI ITEM ZJ8219  
 1997 HVSS DEVELOPMENT - 301.

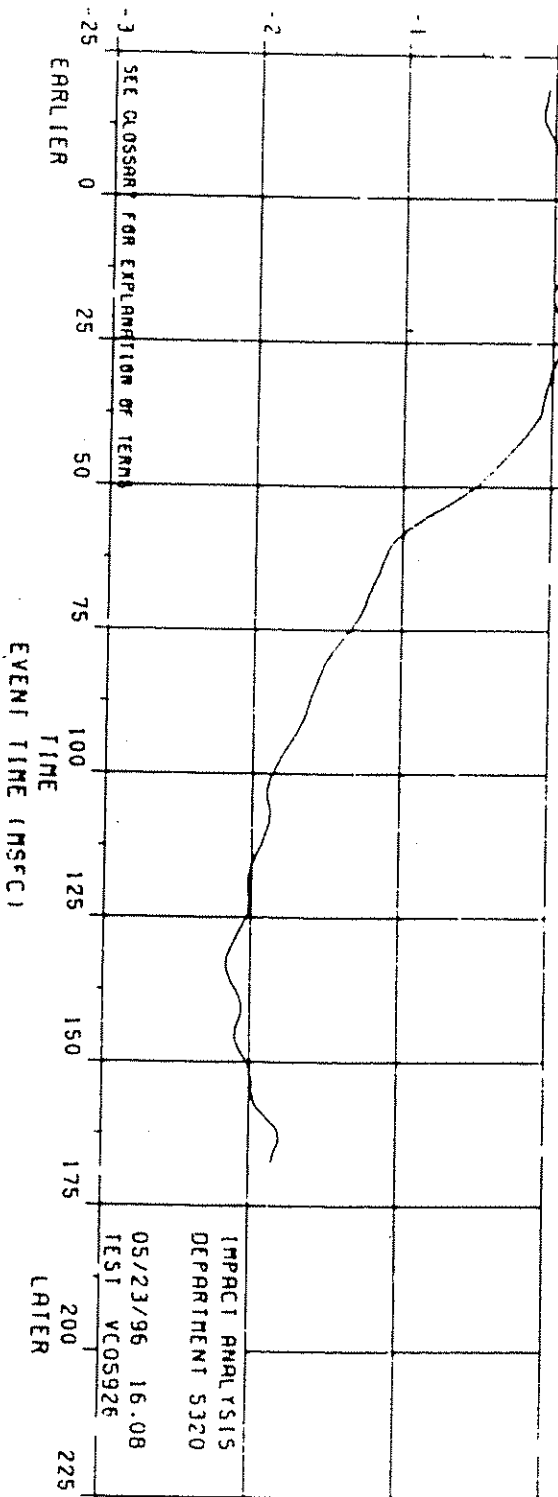
ZERGED PITCH OF LMS TO LFS IN BASE COORD SYSTEM  
 VERSUS TIME IN MILLISECOND

REAR DYNAMIC CRUSH AND REAR WHEEL MOTION ANALYSIS

LMS TO LFS ANGLES IN BASE COORD

PITCH. VS TIME

CAUTION: THE SILL SEPARATION PLOT SHOWN IN FIGURE 4 IS  
 USED AS A MEASURE OF THE ACCURACY OF THIS ANALYSIS. THE  
 CALCULATED VALUE DEVIATES FROM THE MEASURED VALUE BY AS MUCH  
 AS 0.3 INCHES. USE RESULTS WITH CAUTION.



IMPACT ANALYSIS  
 DEPARTMENT 5320  
 05/23/96 16:08  
 TEST VC05926

EVENT TIME (MSEC)

LATER

225

200

175

150

125

100

75

50

25

0

-25

-3

EARLIER

NOSE-UP  
 CORR-P  
 DEGREES CCM AROUND Y RELATIVE TO X (RT SIDE VIEW) SOHZ FILTER

FIGURE 3



VC05926 30 MPH REAR BARRIER. ZJJ74. 5.2L MPI ITEM ZJ8219  
 1997 MVSS DEVELOPMENT - 301.

LMS 10 LFS DISTANCE -29.99 INCHES (INITIAL DIST) (IN)  
 VERSUS TIME IN MILLISECANDS

REAR DYNAMIC CRUSH AND REAR WHEEL MOTION ANALYSIS

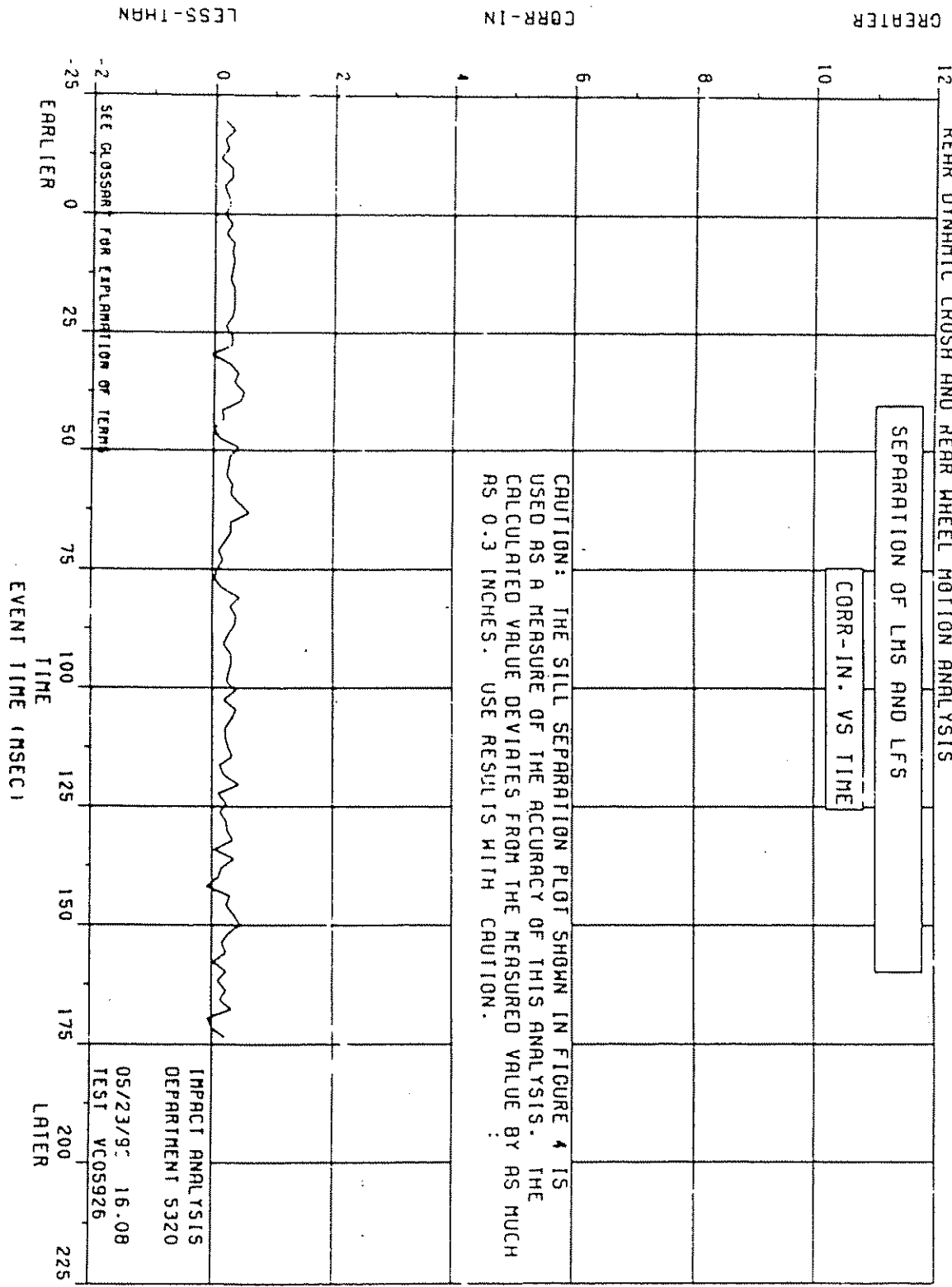
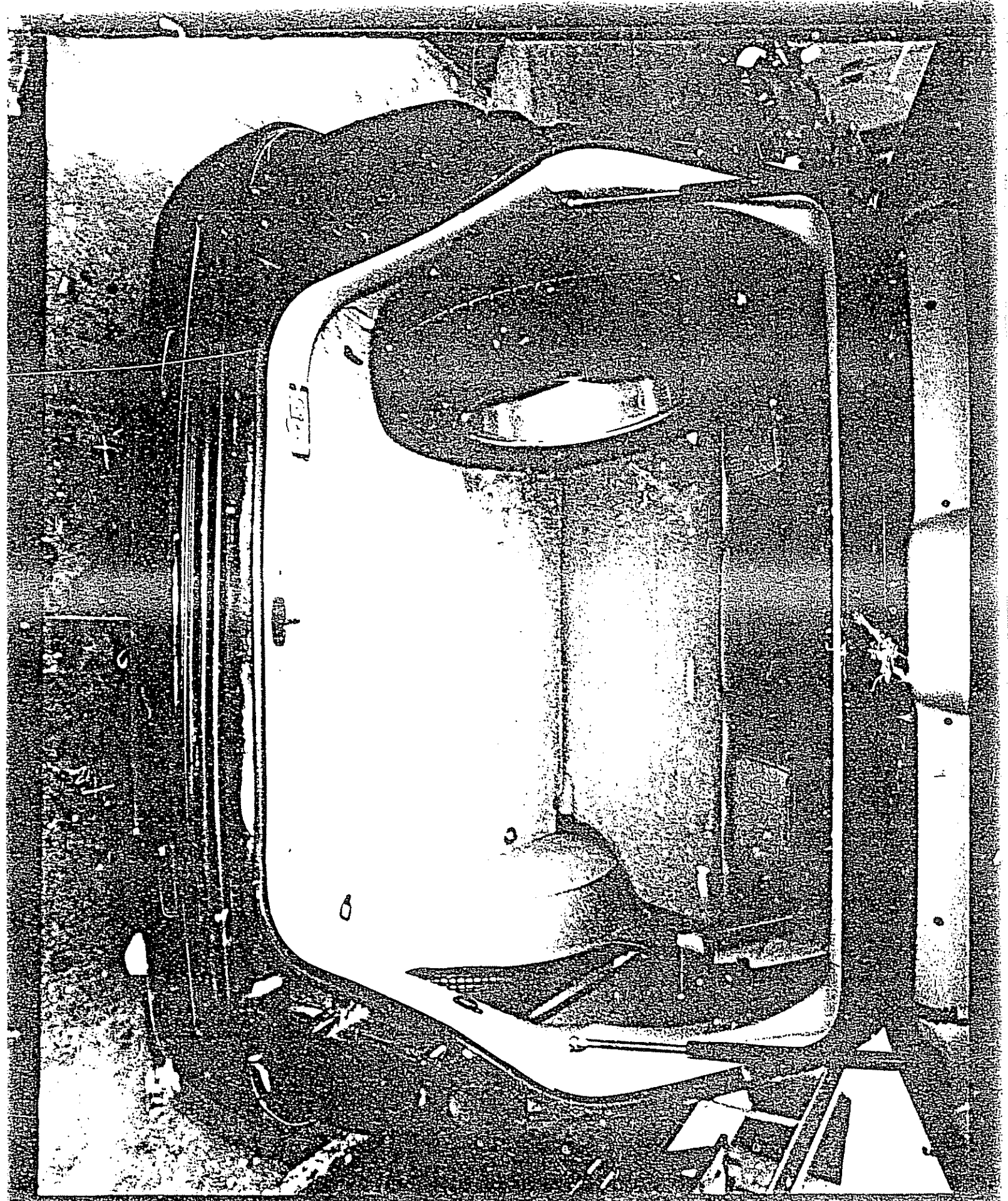
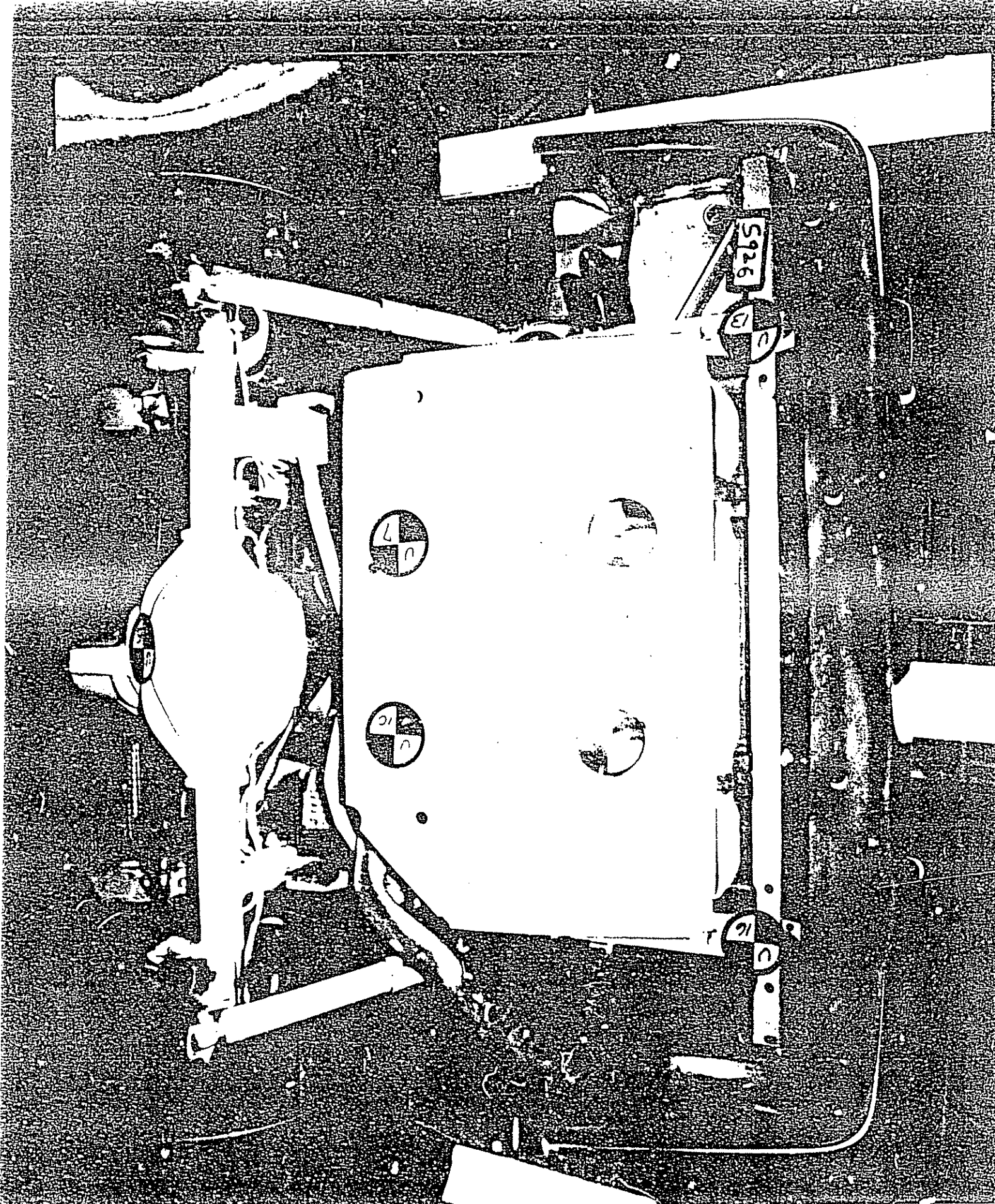


FIGURE 4  
 CORR-IN  
 SEPARATION (IN)



DC 03215

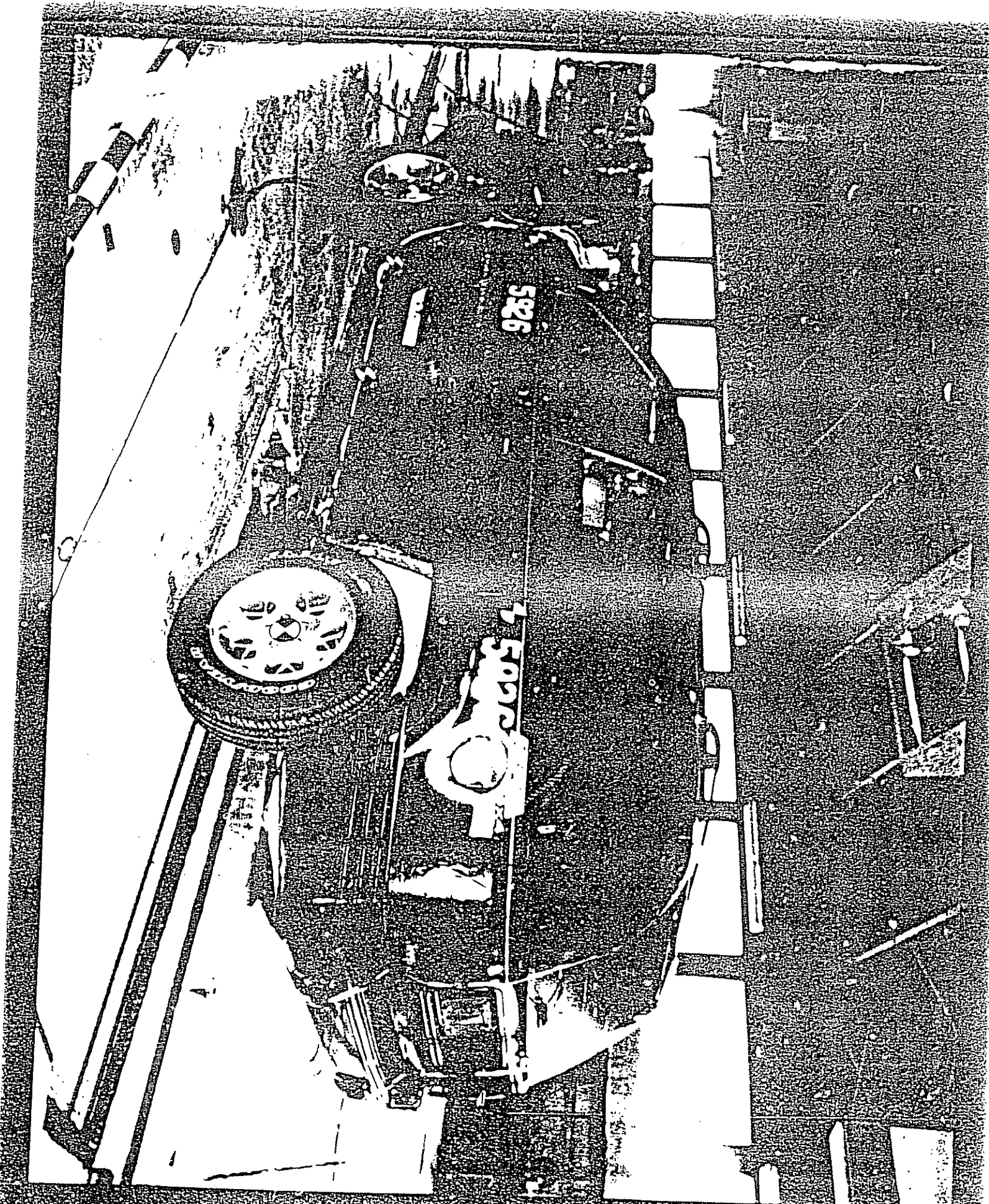


5926

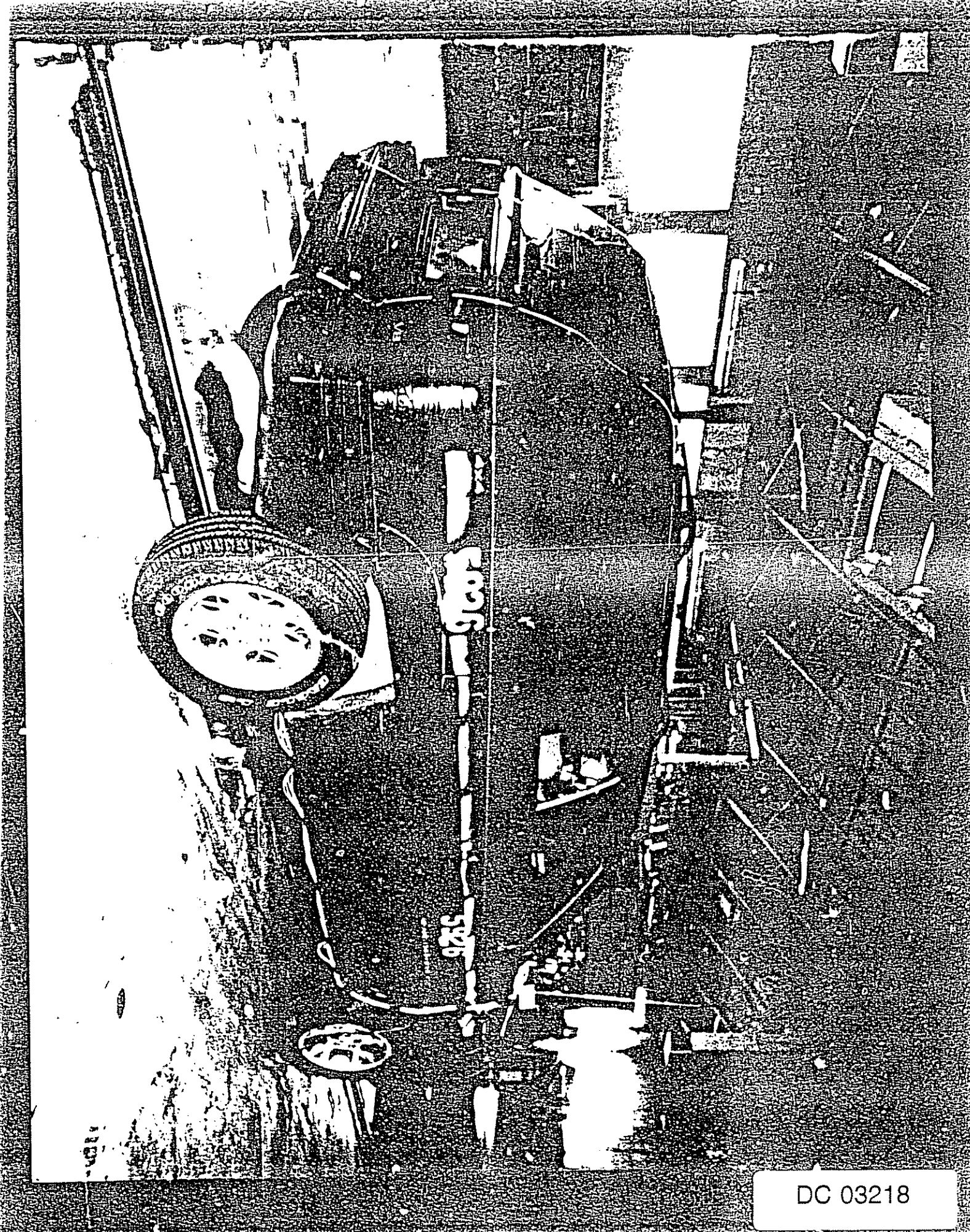


DC 03216



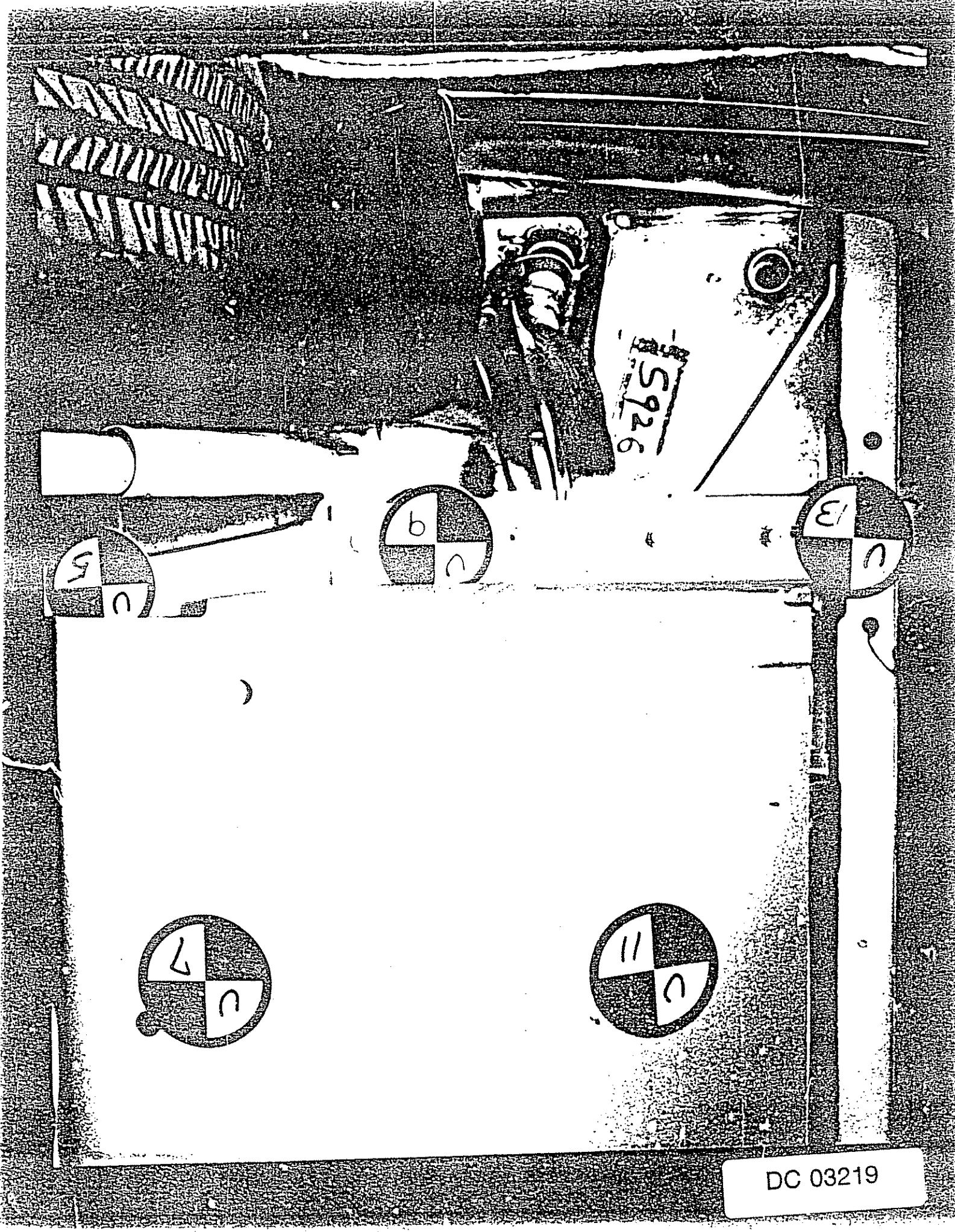


DC 03217



DC 03218





5926

5  
0

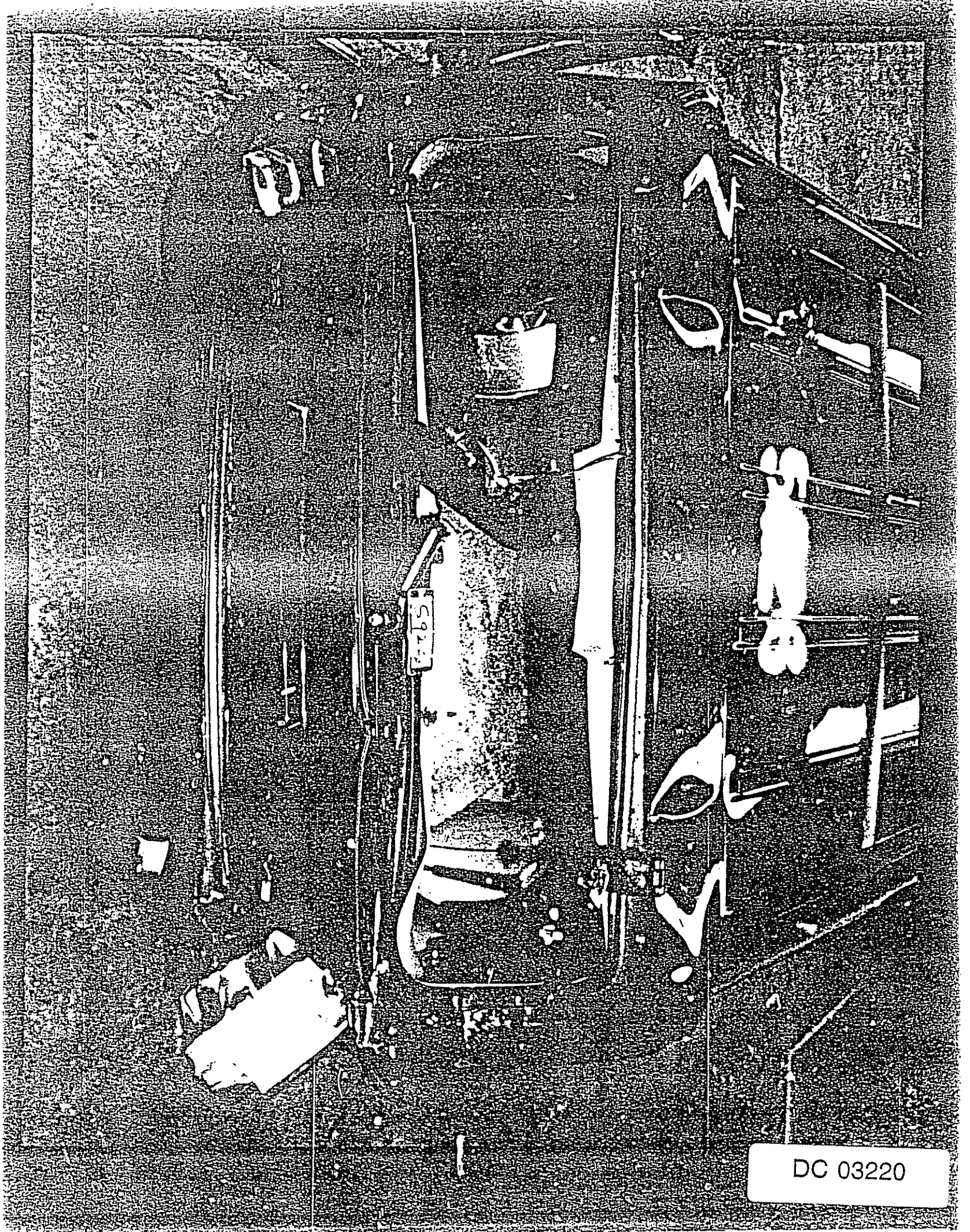
9  
0

B  
0

7  
0

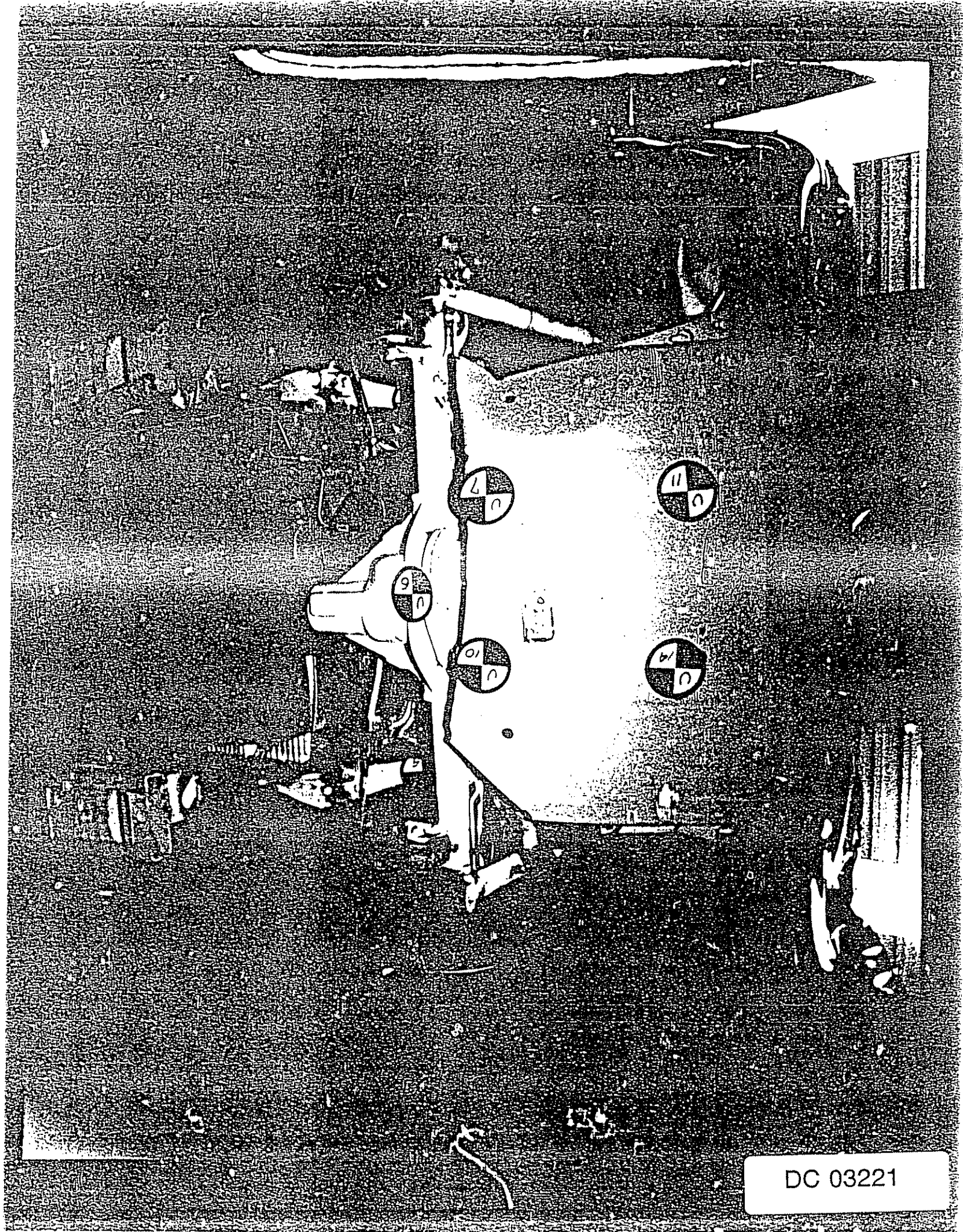
11  
0

DC 03219



DC 03220





7  
C

8  
C

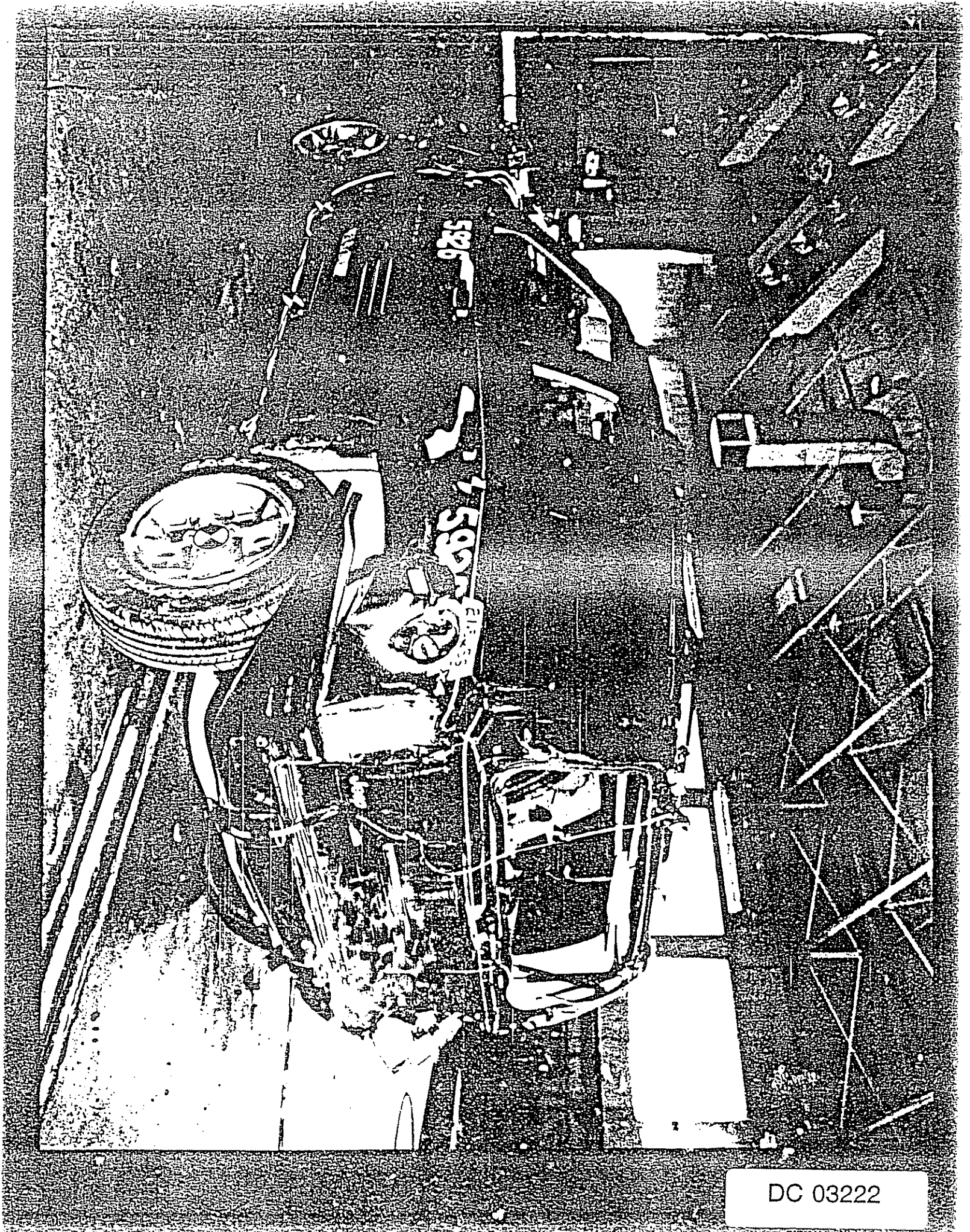
9  
C

10  
C

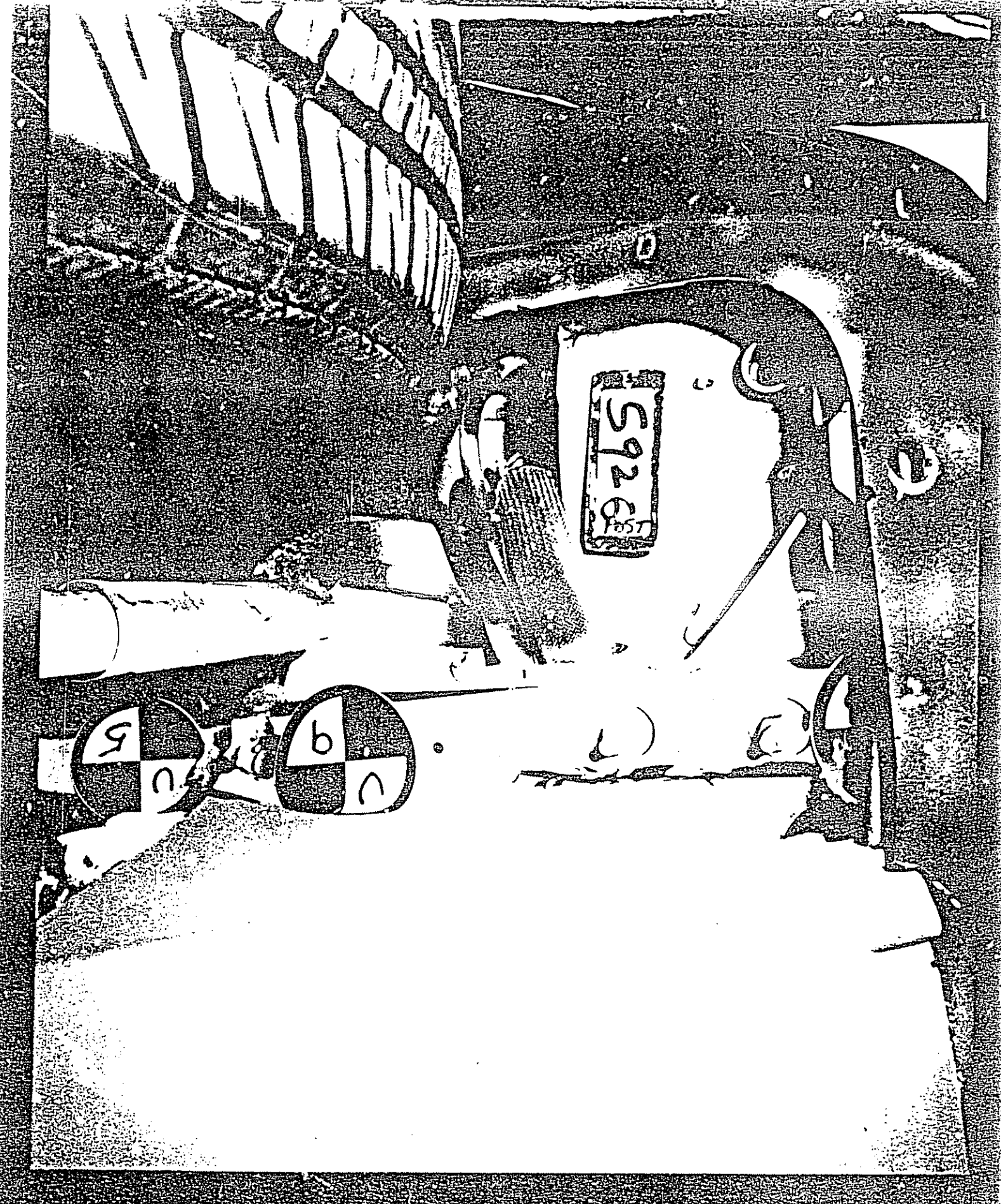
11  
C

DC 03221





DC 03222

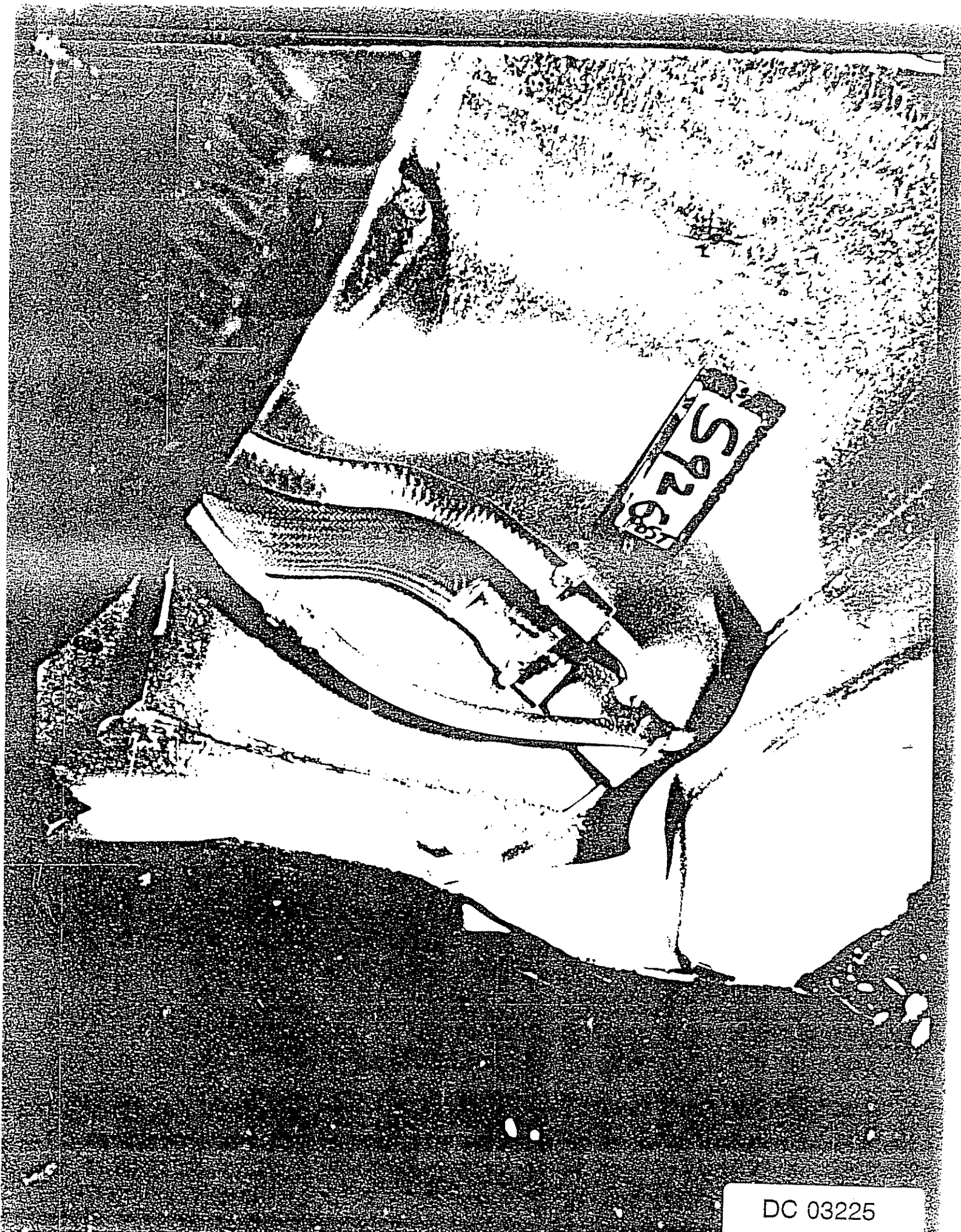


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5	U
U	5

DC 03224





DC 03225