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Report No. (to be assigned by NHTSA)

**COUNTERMEASURES
FOR SIDE IMPACT -
FINAL REPORT
VOLUME IV - APPENDICES J - Q**

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Contract No. DOT-HS-9-02177

\$457,000

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Phoenix, Arizona 85027



August 1982

Final Report

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NATIONAL HIGHWAY TRAFFIC SAFETY ADMINISTRATION
400 SEVENTH STREET, S.W.
WASHINGTON, D.C. 20590**

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16. Abstract This report documents the results of vehicle crash tests, crash reconstruction studies, computer simulations, and sled tests performed under the Countermeasures for Side Impact Research Program. Four full-scale vehicle-to-vehicle front-to-side impact tests were conducted to provide baseline data for the sled test development effort. Reconstruction analyses of the vehicle tests were made, using the CRASH II and SMAC computer programs; these were reasonably successful in duplicating the actual initial test conditions. This contract resulted in the development of a unique bullet-target sled facility and test technique for simulating a front-to-side car-to-car collision. The sled tests were used to evaluate potential padding countermeasures using prototype Side Impact Dummies (HSRI SID). A major problem was encountered in the sled test program due to the excessive "fragility" of the prototype dummies. These problems, investigations, and repairs made are documented in detail to assist NHTSA in the final development of a side impact dummy suitable for compliance testing.			
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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 ²	square inches	6.5	square centimeters	cm ²
ft ²	square feet	0.09	square meters	m ²
yd ²	square yards	0.8	square meters	m ²
mi ²	square miles	2.6	square kilometers	km ²
	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 ³	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 ³	cubic feet	0.03	cubic meters	m ³
yd ³	cubic yards	0.76	cubic meters	m ³
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 ²	square centimeters	0.16	square inches	in ²
m ²	square meters	1.2	square yards	yd ²
km ²	square kilometers	0.4	square miles	mi ²
ha	hectares	2.5	acres	
	(10 000 m ²)			
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 ³
L	liters	2.1	pints	pt
L	liters	1.06	quarts	qt
L	liters	0.26	gallons	gal
m ³	cubic meters	35	cubic feet	ft ³
m ³	cubic meters	1.3	cubic yards	yd ³
TEMPERATURE (exact)				
°C	degrees Celsius	9/5 (then add 32)	degrees Fahrenheit	°F

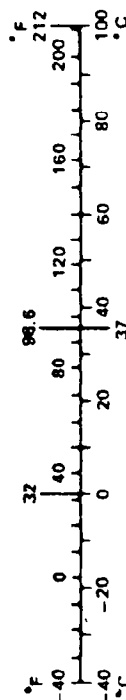


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APPENDIX J
TASK 3 SLED TESTS -
SIDE IMPACT DUMMY
RESPONSE SUMMARIES

TABLE J-1. SIDE IMPACT DUMMY RESPONSE SUMMARY (TEST T3-4)

TEST NO. T3-4

TEST DATE 1-8-80

TEST CONFIGURATION:

Target Vehicle	VW Body Buck	Speed	0 mph
Bullet Vehicle	Bullet Sled (Wt = 1690 lb)	Speed	24.8 mph
Impact Location	Right Side Door	Angle	90 deg
Dummy Model	HSRI SID 3 RIB		

HEAD RESPONSE:

Peak A_R	23.98	G	Impacted Object	-
HIC	197.1		Time	180 ms

CHEST RESPONSE:

DEFLECTION (IN.): LRDY N/A

Location	Pk A (G)	Pk A_R (G)	3ms Clip (G)	SI	ΔV_y (MPH)	Impact Time (ms)
Upper Sternum (X)				N/A	N/A	
Lower Sternum (X)	-21.0		-20.6	N/A	N/A	24
LUR (Y)	49.1		47.0	N/A	N/A	22
LLR (X)				N/A	N/A	
RUR (Y)	69.1		57.1	N/A	17.5	21.5
RLR (X)				N/A	N/A	
RLR (Y)				N/A		
Upper Thorax (T-1)		60.2	52.9	157.1	13.1	22
Lower Thorax (T-12)		78.4	62.6	283.9	16.3	21
PELVIS RESPONSE:		99.3		N/A	17.8	20

COMPUTED INJURY COEFFICIENTS:

Lower Sternum - Long
 $B = 5.707$ $Q = 109.03$ $V_{15} = .00313$ $V_{19} = .00750$ $RVS = 2.4000$

Left Upper Rib - Lat
 $B = 6.580$ $Q = 831.83$ $V_{15} = .00875$ $V_{19} = .01750$ $RVS = 2.0000$

Right Upper Rib - Lat
 $B = 6.701$ $Q = 650.72$ $V_{15} = .00875$ $V_{19} = .01313$ $RVS = 1.5000$

T-12 - Lat
 $B =$ $Q =$ $V_{15} =$ $V_{19} =$ $RVS =$

T-12 - Resultant, Lat and Long
 $B =$ $Q =$ $V_{15} =$ $V_{19} =$ $RVS =$

$AIS = 3.258$ $AIS (BRUR) = 3.0808$ $MAIS = 2.698$
 $AIS (AVP) =$ $AIS (RES) =$

COMMENTS:

N/A = Not Applicable

FORM DSI 23R (5/82)

TABLE J-2. SIDE IMPACT DUMMY RESPONSE SUMMARY (TEST T3-5)

TEST NO. T3-5

TEST DATE 1-9-80

TEST CONFIGURATION:

Target Vehicle	VW Body Buck	Speed	0 mph
Bullet Vehicle	Bullet Sled (Wt = 1690 lb)	Speed	38.51 mph
Impact Location	Right Side Door	Angle	90 deg
Dummy Model	HSRI SID 3 RIB		

HEAD RESPONSE:

Peak A_R	204.6	G	Impacted Object	-
HIC	2235.1		Time	61 ms

CHEST RESPONSE:

DEFLECTION (IN.): LRDY N/A

Location	Pk A (G)	Pk A_R (G)	3ms Clip (G)	SI	ΔV_y (MPH)	Impact Time (ms)
Upper Sternum (X)				N/A	N/A	
Lower Sternum (X)	98.6		78.8	N/A	N/A	16.3
LUR (Y)	250.6		182.0	N/A	16.44	17
LLR (X)				N/A	N/A	
RUR (Y)	507.6		507.6	N/A	172	16.5
RLR (X)				N/A	N/A	
RLR (Y)				N/A		
Upper Thorax (T-1)		309.6	242.4	6575.0	36.0	21/25
Lower Thorax (T-12)		246.7	161.0	3344.8	37.6	17
PELVIS RESPONSE:		167.7		N/A	32.2	18

COMPUTED INJURY COEFFICIENTS:

Lower Sternum - Long									
B =	7.310	Q =	701.74	V_{15} =	.00375	V_{19} =	.05125	RVS =	13.667
Left Upper Rib - Lat									
B =	7.470	Q =	624.59	V_{15} =	.00500	V_{19} =	.00687	RVS =	1.375
Right Upper Rib - Lat									
B =	9.126	Q =	+9056.76	V_{15} =	.01313	V_{19} =	.10063	RVS =	7.667
T-12 - Lat									
B =		Q =		V_{15} =		V_{19} =		RVS =	
T-12 - Resultant, Lat and Long									
B =		Q =		V_{15} =		V_{19} =		RVS =	
AIS =	22.03	AIS (BRUR) =	6.950	MAIS =	7.573				
AIS (AVP) =		AIS (RES) =							

COMMENTS: E.A. cable broke in event.

N/A = Not Applicable

FORM DSI 23R (5/82)

TABLE J-3. SIDE IMPACT DUMMY RESPONSE SUMMARY (TEST T3-6)

TEST NO. T3-6

TEST DATE 1-17-80

TEST CONFIGURATION:

Target Vehicle	VW Body Buck	Speed	0 mph
Bullet Vehicle	Bullet Sled (Wt = 1690 lb)	Speed	39.61 mph
Impact Location	Right Side Door	Angle	90 deg
Dummy Model	HSRI SID 3 RIB		

HEAD RESPONSE:

Peak A_R	127.7	G	Impacted Object	-
HIC	1022.3		Time	55 ms

CHEST RESPONSE:

DEFLECTION (IN.): LRDY N/A

Location	Pk A (G)	Pk A_R (G)	3ms Clip (G)	SI	ΔV_y (MPH)	Impact Time (ms)
Upper Sternum (X)				N/A	N/A	
Lower Sternum (X)	-116.4		-95.1	N/A	N/A	14
LUR (Y)	178.0		139.6	N/A	37.3	17.5
LLR (X)				N/A	N/A	
RUR (Y)	265.6		224.7	N/A	43.0	15
RLR (X)				N/A	N/A	
RLR (Y)				N/A	N/A	
Upper Thorax (T-1)		271.9	218.2	7914.8	62.8	21
Lower Thorax (T-12)		210.2	178.8	3776.0	21.4	17
PELVIS RESPONSE:		263.4		N/A	24.1	18

COMPUTED INJURY COEFFICIENTS:

Lower Sternum - Long

B = 7.023 Q = 483.49 V_{15} = .00313* V_{19} = .00562* RVS = 1.8000

Left Upper Rib - Lat

B = 7.635 Q = 1658.46 V_{15} = .00500 V_{19} = .01125 RVS = 2.2500

Right Upper Rib - Lat

B = 7.970 Q = 2772.90 V_{15} = .00500 V_{19} = .09000 RVS = 17.9999

T-12 - Lat

B = Q = V_{15} = V_{19} = RVS =

T-12 - Resultant, Lat and Long

B = Q = V_{15} = V_{19} = RVS =

AIS = 8.248* AIS (BRUR) = 5.105 MAIS = 5.249

AIS (AVP) = AIS (RES) =

COMMENTS: Considerable dummy damage; lost head, deformed chest, and broken femur.

*Questionable Lower Sternum data.

N/A = Not Applicable

FORM DSI 23R (5/82)

TABLE J-4. SIDE IMPACT DUMMY RESPONSE SUMMARY (TEST T3-7)

TEST NO. T3-7

TEST DATE 2-5-80

TEST CONFIGURATION:

Target Vehicle	VW Body Buck	Speed	0 mph
Bullet Vehicle	Bullet Sled (Wt = 3250 lb)	Speed	29.72 mph
Impact Location	Right Side Door	Angle	90 deg
Dummy Model	HSRI SID 3 RIB		

HEAD RESPONSE:

Peak A_R	127.2	G	Impacted Object	-
HIC	719.5		Time	73 ms

CHEST RESPONSE:

DEFLECTION (IN.): LRDY N/A

Location	Pk A (G)	Pk A_R (G)	3ms Clip (G)	SI	ΔV_y (MPH)	Impact Time (ms)
Upper Sternum (X)				N/A	N/A	
Lower Sternum (X)	113.3		88.5	N/A	N/A	19
LUR (Y)	80.7		70.0	N/A	23.9	20
LLR (X)				N/A	N/A	
RUR (Y)	274.7		194.7	N/A	30.17	18
RLR (X)				N/A	N/A	
RLR (Y)				N/A	N/A	
Upper Thorax (T-1)		122.9	104.9	1065.4	23.4	21
Lower Thorax (T-12)		232.9	170.9	3739.2	37.7	21
PELVIS RESPONSE:		239.9		N/A	29.4	20

COMPUTED INJURY COEFFICIENTS:

Lower Sternum - Long
 $B = 6.978$ $Q = 671.40$ $V_{15} = .00438$ $V_{19} = .00687$ $RVS = 1.57143$

Left Upper Rib - Lat
 $B = 6.838$ $Q = -1069.08$ $V_{15} = .00625$ $V_{19} = .02125$ $RVS = 3.4000$

Right Upper Rib - Lat
 $B = 7.699$ $Q = 1343.92$ $V_{15} = .00313$ $V_{19} = .00562$ $RVS = 1.8000$

T-12 - Lat
 $B =$ $Q =$ $V_{15} =$ $V_{19} =$ $RVS =$

T-12 - Resultant, Lat and Long
 $B =$ $Q =$ $V_{15} =$ $V_{19} =$ $RVS =$

$AIS = 4.438$ $AIS (BRUR) = 4.673$ $MAIS = 4.7045$
 $AIS (AVP) =$ $AIS (RES) =$

COMMENTS:

N/A = Not Applicable

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TABLE J-5. SIDE IMPACT DUMMY RESPONSE SUMMARY (TEST T3-8)

TEST NO. T3-8

TEST DATE 2-6-80

TEST CONFIGURATION:

Target Vehicle	VW Body Buck	Speed	0 mph
Bullet Vehicle	Bullet Sled (Wt = 2350 lb)	Speed	33.53 mph
Impact Location	Right Side Door	Angle	90 deg
Dummy Model	HSRI SID 3 RIB		

HEAD RESPONSE:

Peak A_R	134.4	G	Impacted Object	-
HIC	724.5		Time	72 ms

CHEST RESPONSE:

DEFLECTION (IN.): LRDY N/A

Location	Pk A (G)	Pk A_R (G)	3ms Clip (G)	SI	ΔV_y (MPH)	Impact Time (ms)
Upper Sternum (X)				N/A	N/A	
Lower Sternum (X)	84.6		63.9	N/A	N/A	17
LUR (Y)	68.0		45.2	N/A	16.93	18
LLR (X)				N/A	N/A	
RUR (Y)	206.8		157.7	N/A	32.72	18
RLR (X)				N/A	N/A	
RLR (Y)				N/A		
Upper Thorax (T-1)		190.5	124.0	1944.4	24.55	21/27
Lower Thorax (T-12)		211.9	147.5	2306.5	27.5	19
PELVIS RESPONSE:		234.1		N/A	30.5	17

COMPUTED INJURY COEFFICIENTS:

Lower Sternum - Long
 $B = 6.788$ $Q = 494.80$ $V_{15} = .00500$ $V_{19} = .00750$ $RVS = 1.5000$

Left Upper Rib - Lat
 $B = 6.589$ $Q = -754.31$ $V_{15} = .00937$ $V_{19} = .02000$ $RVS = 2.1333$

Right Upper Rib - Lat
 $B = 7.630$ $Q = 1384.87$ $V_{15} = .00438$ $V_{19} = .01375$ $RVS = 3.1429$

T-12 - Lat
 $B =$ $Q =$ $V_{15} =$ $V_{19} =$ $RVS =$

T-12 - Resultant, Lat and Long
 $B =$ $Q =$ $V_{15} =$ $V_{19} =$ $RVS =$

$AIS = 4.584$ $AIS (BRUR) = 4.563$ $MAIS = 4.565$
 $AIS (AVP) =$ $AIS (RES) =$

COMMENTS: Deep cut in left knee.

N/A = Not Applicable

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TABLE J-6. SIDE IMPACT DUMMY RESPONSE SUMMARY (TEST T3-9)

TEST NO. T3-9

TEST DATE 2-6-80

TEST CONFIGURATION:

Target Vehicle	VW Body Buck	Speed	0 mph
Bullet Vehicle	Bullet Sled (Wt = 2350 lb)	Speed	33.90 mph
Impact Location	Right Side Door	Angle	90 deg
Dummy Model	HSRI SID 3 RIB		

HEAD RESPONSE:

Peak A_R	87.8	G	Impacted Object	-
HIC	693.8		Time	82 ms

CHEST RESPONSE:

DEFLECTION (IN.): LRDY N/A

Location	Pk A (G)	Pk A_R (G)	3ms Clip (G)	SI	ΔV_y (MPH)	Impact Time (ms)
Upper Sternum (X)				N/A	N/A	
Lower Sternum (X)	117.0		92.9	N/A	N/A	18
LUR (Y)	83.9		75.0	N/A	23.4	20
LLR (X)				N/A	N/A	
RUR (Y)	211.8		157.5	N/A	27.05	21
RLR (X)				N/A	N/A	
RLR (Y)				N/A		
Upper Thorax (T-1)		142.9	105.5	1148.8	15.9	21/25
Lower Thorax (T-12)		335.9	179.5	4215.9	27.5	21
PELVIS RESPONSE:		234.5		N/A	27.4	19

COMPUTED INJURY COEFFICIENTS:

Lower Sternum - Long

B = 7.100 Q = 751.63 V_{15} = .00375 V_{19} = .00687 RVS = 1.8333

Left Upper Rib - Lat

B = 7.069 Q = -1028.09 V_{15} = .00562 V_{19} = .01188 RVS = 2.1111

Right Upper Rib - Lat

B = 7.459 Q = 1001.09 V_{15} = .00250 V_{19} = .00500 RVS = 2.0000

T-12 - Lat

B = _____ Q = _____ V_{15} = _____ V_{19} = _____ RVS = _____

T-12 - Resultant, Lat and Long

B = _____ Q = _____ V_{15} = _____ V_{19} = _____ RVS = _____

AIS = 4.368 AIS (BRUR) = 4.290 MAIS = 4.222

AIS (AVP) = _____ AIS (RES) = _____

COMMENTS: Upper thorax data suspect. Following Test T3-10, severe dummy damage was noted in thorax which may have gone unnoticed after this test.

N/A = Not Applicable

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TABLE J-7. SIDE IMPACT DUMMY RESPONSE SUMMARY (TEST T3-10)

TEST NO. T3-10

TEST DATE 2-7-80

TEST CONFIGURATION:

Target Vehicle	VW Body Buck	Speed	0 mph
Bullet Vehicle	Bullet Sled (Wt = 3250 lb)	Speed	30.32 mph
Impact Location	Right Side Door	Angle	90 deg
Dummy Model	HSRI SID 3 RIB		

HEAD RESPONSE:

Peak A_R	170.3	G	Impacted Object	-
HIC	855.6		Time	74 ms

CHEST RESPONSE:

DEFLECTION (IN.): LRDY N/A

Location	Pk A (G)	Pk A_R (G)	3ms Clip (G)	SI	ΔV_y (MPH)	Impact Time (ms)
Upper Sternum (X)				N/A	N/A	
Lower Sternum (X)	108.0		84.0	N/A	N/A	19
LUR (Y)	126.4		186.2	N/A	15.1	24
LLR (X)				N/A	N/A	
RUR (Y)	162.0		130.2	N/A	38.5	23
RLR (X)				N/A	N/A	
RLR (Y)				N/A	N/A	
Upper Thorax (T-1)		231.3	167.0	3088.8	28.59	25/30
Lower Thorax (T-12)		277.4	192.5	4424.1	27.60	21
PELVIS RESPONSE:		215.5		N/A	31.05	17

COMPUTED INJURY COEFFICIENTS:

Lower Sternum - Long

B = 7.0719 Q = 677.148 V_{15} = .00438 V_{19} = .00750 RVS = 1.7143

Left Upper Rib - Lat

B = 6.916 Q = 651.002 V_{15} = .00438 V_{19} = .00687 RVS = 1.5714

Right Upper Rib - Lat

B = 7.509 Q = 1405.83 V_{15} = .00375 V_{19} = .01063 RVS = 2.8333

T-12 - Lat

B = _____ Q = _____ V_{15} = _____ V_{19} = _____ RVS = _____

T-12 - Resultant, Lat and Long

B = _____ Q = _____ V_{15} = _____ V_{19} = _____ RVS = _____

AIS = 5.553 AIS (BRUR) = 4.370 MAIS = 4.322

AIS (AVP) = _____ AIS (RES) = _____

COMMENTS: Dummy damage observed after test: (1) Chest leather at back torn - both chests; (2) Damper piston pivot point broken; (3) Plastic sheet inside chest - deformed left side; (4) Right facial skin severely cut behind ear; (5) Left calf soft (will swap legs); (6) Abrasion right knee (repairable); (7) Chest skin zipper torn; (8) Cylinder pivot point on spine deflected down.

N/A = Not Applicable

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TABLE J-8. SIDE IMPACT DUMMY RESPONSE SUMMARY (TEST T3-11)

TEST NO. T3-11

TEST DATE 2-14-80

TEST CONFIGURATION:

Target Vehicle	VW Body Buck	Speed	0 mph
Bullet Vehicle	Bullet Sled (Wt = 2350 lb)	Speed	27.23 mph
Impact Location	Right Side Door	Angle	90 deg
Dummy Model	HSRI SID 3 RIB		

HEAD RESPONSE:

Peak A_R	93.4	G	Impacted Object	-
HIC	217.4		Time	74 ms

CHEST RESPONSE:

DEFLECTION (IN.): LRDY N/A

Location	Pk A (G)	Pk A_R (G)	3ms Clip (G)	SI	ΔV_y (MPH)	Impact Time (ms)
Upper Sternum (X)				N/A	N/A	
Lower Sternum (X)	-63.8		-51.4	N/A	N/A	20.5
LUR (Y)	97.8		73.5	N/A	24.2	24
LLR (X)				N/A	N/A	
RUR (Y)	140.5		116.2	N/A	30.1	19
RLR (X)				N/A	N/A	
RLR (Y)				N/A		
Upper Thorax (T-1)		103.5	72.2	507.3	17.1	23
Lower Thorax (T-12)		135.2	108.6	1021.1	23.8	20
PELVIS RESPONSE:		159.8		N/A	26.8	17

COMPUTED INJURY COEFFICIENTS:

Lower Sternum - Long
 $B = 6.510$ $Q = 509.28$ $V_{15} = .00562$ $V_{19} = .0100$ $RVS = 1.7778$

Left Upper Rib - Lat
 $B = 6.913$ $Q = -1120.06$ $V_{15} = .01125$ $V_{19} = .02000$ $RVS = 1.7778$

Right Upper Rib - Lat
 $B = 7.532$ $Q = 1280.97$ $V_{15} = .00438$ $V_{19} = .00875$ $RVS = 2.000$

T-12 - Lat
 $B =$ $Q =$ $V_{15} =$ $V_{19} =$ $RVS =$

T-12 - Resultant, Lat and Long
 $B =$ $Q =$ $V_{15} =$ $V_{19} =$ $RVS =$

$AIS = 4.334$ $AIS (BRUR) = 4.406$ $MAIS = 4.368$
 $AIS (AVP) =$ $AIS (RES) =$

COMMENTS:

N/A = Not Applicable

FORM DSI 23R (5/82)

TABLE J-9. SIDE IMPACT DUMMY RESPONSE SUMMARY (TEST T3-12)

TEST NO. T3-12TEST DATE 2-18-80

TEST CONFIGURATION:

Target Vehicle	<u>VW Body Buck</u>	Speed	<u>0 mph</u>
Bullet Vehicle	<u>Bullet Sled (Wt = 2350 lb)</u>	Speed	<u>27.42 mph</u>
Impact Location	<u>Right Side Door</u>	Angle	<u>90 deg</u>
Dummy Model	<u>HSRI SID 3 RIB</u>		

HEAD RESPONSE:

Peak A_R	<u>57.2</u>	G	Impacted Object	<u>-</u>
HIC	<u>209.5</u>		Time	<u>72</u> ms

CHEST RESPONSE:

DEFLECTION (IN.): LRDY N/A

Location	Pk A (G)	Pk A_R (G)	3ms Clip (G)	SI	ΔV_y (MPH)	Impact Time (ms)
Upper Sternum (X)				N/A	N/A	
Lower Sternum (X)	67		63.4	N/A	N/A	20
LUR (Y)	91.2		57.1	N/A	22.3	20
LLR (X)				N/A	N/A	
RUR (Y)	169.2		120.9	N/A	23.5	18
RLR (X)				N/A	N/A	
RLR (Y)				N/A	N/A	
Upper Thorax (T-1)		178.1	127.5	1826.0	25.1	20
Lower Thorax (T-12)		164.0	129.0	1459.9	25.6	19
PELVIS RESPONSE:		172.1		N/A	27.7	19

COMPUTED INJURY COEFFICIENTS:

Lower Sternum - Long

B = 6.704 Q = 588.19 V_{15} = .00562 V_{19} = .00937 RVS = 1.667

Left Upper Rib - Lat

B = 6.877 Q = -995.71 V_{15} = .01188 V_{19} = .02188 RVS = 1.8421

Right Upper Rib - Lat

B = 7.360 Q = 1012.67 V_{15} = .00438 V_{19} = .0075 RVS = 1.71429

T-12 - Lat

B = Q = V_{15} = V_{19} = RVS =

T-12 - Resultant, Lat and Long

B = Q = V_{15} = V_{19} = RVS = AIS = 3.629 AIS (BRUR) = 4.132 MAIS = 4.023AIS (AVP) = AIS (RES) =

COMMENTS:

N/A = Not Applicable

FORM DSI 23R (5/82)

TABLE J-10. SIDE IMPACT DUMMY RESPONSE SUMMARY (TEST T3-13)

TEST NO. T3-13

TEST DATE 2-25-80

TEST CONFIGURATION:

Target Vehicle VW Body Buck

Speed 0 mph

Bullet Vehicle Bullet Sled (Wt = 2357 lb)

Speed 21.40 mph

Impact Location Right Side Door

Angle 90 deg

Dummy Model HSRI SID 3 RIB

HEAD RESPONSE:

Peak A_R 15.78

G

Impacted Object -

HIC 18.4

Time

ms

CHEST RESPONSE:

DEFLECTION (IN.): LRDY

N/A

Location	Pk A (G)	Pk A_R (G)	3ms Clip (G)	SI	ΔV_y (MPH)	Impact Time (ms)
Upper Sternum (X)				N/A	N/A	
Lower Sternum (X)	36.1		31.6	N/A	N/A	25.5
LUR (Y)	36.4		32.6	N/A	16.7	25
LLR (X)				N/A	N/A	
RUR (Y)	90.5		73.6	N/A	15.4	23.5
RLR (X)				N/A	N/A	
RLR (Y)				N/A		
Upper Thorax (T-1)		32.61	27.6	72.5	11.7	32
Lower Thorax (T-12)		61.8	53.8	209	17.2	25
PELVIS RESPONSE:		78.4		313	17.9	24

COMPUTED INJURY COEFFICIENTS:

Lower Sternum - Long

B = 6.056 Q = 363.04 V_{15} = .00813 V_{19} = .01250 RVS = 1.53846

Left Upper Rib - Lat

B = 6.164 Q = -746.57 V_{15} = .01563 V_{19} = .02750 RVS = 1.7600

Right Upper Rib - Lat

B = 6.764 Q = 623.28 V_{15} = .00562 V_{19} = .00937 RVS = 1.6667

T-12 - Lat

B = Q = V_{15} = V_{19} = RVS =

T-12 - Resultant, Lat and Long

B = Q = V_{15} = V_{19} = RVS =

AIS = 2.299

AIS (BRUR) = 3.181

MAIS = 2.825

AIS (AVP) =

AIS (RES) =

COMMENTS:

N/A = Not Applicable

FORM DSI 23R (5/82)

TABLE J-11. SIDE IMPACT DUMMY RESPONSE SUMMARY (TEST T3-14)

TEST NO. T3-14

TEST DATE 2-25-80

TEST CONFIGURATION:

Target Vehicle VW Body Buck

Speed 0 mph

Bullet Vehicle Bullet Sled (Wt = 2357 lb)

Speed Approx. 18 mph

Impact Location Right Side Door

Angle 90 deg

Dummy Model HSRI SID 3 RIB

HEAD RESPONSE:

Peak A_R 15.62

G

Impacted Object

-

HIC 13.9

Time

ms

CHEST RESPONSE:

DEFLECTION (IN.): LRDY

N/A

Location	Pk A (G)	Pk A_R (G)	3ms Clip (G)	SI	ΔV_y (MPH)	Impact Time (ms)
Upper Sternum (X)				N/A	N/A	
Lower Sternum (X)	40.17		35.9	N/A	N/A	26
LUR (Y)	27.73		25.1	N/A	14.25	27
LLR (X)				N/A	N/A	
RUR (Y)	82.63		72.0	N/A	13.79	27
RLR (X)				N/A	N/A	
RLR (Y)				N/A	N/A	
Upper Thorax (T-1)		32.61	31.5	92.8	18.14	26
Lower Thorax (T-12)		47.93	43.8	12.1	12.97	27
PELVIS RESPONSE:		59.46		N/A	16.78	24

COMPUTED INJURY COEFFICIENTS:

Lower Sternum - Long

B = 6.176 Q = 404.28 V_{15} = .00875 V_{19} = .01313 RVS = 1.5000

Left Upper Rib - Lat

B = 5.976 Q = -636.01 V_{15} = .01500 V_{19} = .02688 RVS = 1.79167

Right Upper Rib - Lat

B = 6.775 Q = 615.203 V_{15} = .00438 V_{19} = .00813 RVS = 1.85714

T-12 - Lat

B = Q = V_{15} = V_{19} = RVS =

T-12 - Resultant, Lat and Long

B = Q = V_{15} = V_{19} = RVS =

AIS = 2.297 AIS (BRUR) = 3.198 MAIS = 2.846

AIS (AVP) = AIS (RES) =

COMMENTS: Dummy ribs showed some permanent deformation following test.

N/A = Not Applicable

FORM DSI 23R (5/82)

TABLE J-12. SIDE IMPACT DUMMY RESPONSE SUMMARY (TEST T3-15)

TEST NO. T3-15

TEST DATE 2-26-80

TEST CONFIGURATION:

Target Vehicle	VW Body Buck	Speed	0 mph
Bullet Vehicle	Bullet Sled	Speed	27.36 mph
Impact Location	Right Side Door	Angle	90 deg
Dummy Model	HSRI SID 3 RIB		

HEAD RESPONSE:

Peak A_R	95.3	G	Impacted Object	-
HIC	339		Time	ms

CHEST RESPONSE:

DEFLECTION (IN.): LRDY N/A

Location	Pk A (G)	Pk A_R (G)	3ms Clip (G)	SI	ΔV_y (MPH)	Impact Time (ms)
Upper Sternum (X)				N/A	N/A	
Lower Sternum (X)	91.5		77.4	N/A	N/A	16
LUR (Y)	81.6		72.3	N/A	22.18	16
LLR (X)				N/A	N/A	
RUR (Y)	131.7		117.7	N/A	22.96	16
RLR (X)				N/A	N/A	
RLR (Y)				N/A		
Upper Thorax (T-1)		321.9	126.0	3228	7.63	
Lower Thorax (T-12)		200.0	153.0	2507	26.63	16
PELVIS RESPONSE:		209.5		2366	27.37	16

COMPUTED INJURY COEFFICIENTS:

Lower Sternum - Long
 $B = 6.972$ $Q = 705.88$ $V_{15} = .00375$ $V_{19} = .00813$ $RVS = 2.1667$

Left Upper Rib - Lat
 $B = 6.744$ $Q = -990.277$ $V_{15} = .00813$ $V_{19} = .01938$ $RVS = 2.385$

Right Upper Rib - Lat
 $B = 7.360$ $Q = 1012.478$ $V_{15} = .00375$ $V_{19} = .00750$ $RVS = 2.0000$

T-12 - Lat
 $B =$ $Q =$ $V_{15} =$ $V_{19} =$ $RVS =$

T-12 - Resultant, Lat and Long
 $B =$ $Q =$ $V_{15} =$ $V_{19} =$ $RVS =$

AIS = 3.881 AIS (BRUR) = 4.132 MAIS = 4.023
AIS (AVP) = AIS (RES) =

COMMENTS: Door interior to dummy gap = 3.0 in.

T-1 data is suspect

Dummy ribs showed excessive permanent deformation, with separation of lead damping material.

N/A = Not Applicable

FORM DSI 23R (5/82)

TABLE J-13. SIDE IMPACT DUMMY RESPONSE SUMMARY (TEST T3-16)

TEST NO. T3-16

TEST DATE 2-27-80

TEST CONFIGURATION:

Target Vehicle	VW Body Buck	Speed	0 mph
Bullet Vehicle	Bullet Sled (Wt = 2357 lb)	Speed	26.94 mph
Impact Location	Right Side Door	Angle	90 deg
Dummy Model	HSRI SID 3 RIB		

HEAD RESPONSE:

Peak A_R	84.92	G	Impacted Object	-
HIC	159.0		Time	ms

CHEST RESPONSE:

DEFLECTION (IN.): LRDY N/A

Location	Pk A (G)	Pk A_R (G)	3ms Clip (G)	SI	ΔV_y (MPH)	Impact Time (ms)
Upper Sternum (X)				N/A	N/A	
Lower Sternum (X)	65.6		52.2	N/A	N/A	23
LUR (Y)	64.5		56.2	N/A	24.1	24
LLR (X)				N/A	N/A	
RUR (Y)	146.0		117.5	N/A	18.95	26
RLR (X)				N/A	N/A	
RLR (Y)				N/A	N/A	
Upper Thorax (T-1)		143.5	86.5	712	14.79	27
Lower Thorax (T-12)		113.2	90.7	695.	16.97	25
PELVIS RESPONSE:		133.95		996	26.18	25

COMPUTED INJURY COEFFICIENTS:

Lower Sternum - Long
 $B = 6.418$ $Q = 368.70$ $V_{15} = .00375$ $V_{19} = .00625$ $RVS = 1.6667$

Left Upper Rib - Lat
 $B = 6.754$ $Q = -1076.64$ $V_{15} = .01125$ $V_{19} = .02125$ $RVS = 1.8889$

Right Upper Rib - Lat
 $B = 7.172$ $Q = 779.96$ $V_{15} = .00313$ $V_{19} = .00562$ $RVS = 1.80000$

T-12 - Lat
 $B =$ $Q =$ $V_{15} =$ $V_{19} =$ $RVS =$

T-12 - Resultant, Lat and Long
 $B =$ $Q =$ $V_{15} =$ $V_{19} =$ $RVS =$

$AIS = 3.253$ $AIS (BRUR) = 3.833$ $MAIS = 3.646$
 $AIS (AVP) =$ $AIS (RES) =$

COMMENTS: New dummy installed for this test. Dummy chest obtained from HSRI.
 Door interior to dummy gap = 9.0 in.
 T-1 data suspect

N/A = Not Applicable

FORM DSI 23R (5/82)

TABLE J-14. SIDE IMPACT DUMMY RESPONSE SUMMARY (TEST T3-17)

TEST NO. T3-17

TEST DATE 2-28-80

TEST CONFIGURATION:

Target Vehicle	VW Body Buck	Speed	0 mph
Bullet Vehicle	Bullet Sled (Wt = 2357 lb)	Speed	27.04 mph
Impact Location	Right Side Door	Angle	90 deg
Dummy Model	PART 572		

HEAD RESPONSE:

Peak A_R	51.4	G	Impacted Object	-
HIC	144.6		Time	ms

CHEST RESPONSE:

DEFLECTION (IN.): LRDY N/A

Location	Pk A (G)	Pk A_R (G)	3ms Clip (G)	SI	ΔV_y (MPH)	Impact Time (ms)
Upper Sternum (X)				N/A	N/A	
Lower Sternum (X)				N/A	N/A	
LUR (Y)				N/A		
LLR (X)				N/A	N/A	
RUR (Y)				N/A		
RLR (X)				N/A	N/A	
RLR (Y)				N/A		
Upper Thorax (T-1)		119.1	109.5	935.	21.7	21
Lower Thorax (T-12)						
PELVIS RESPONSE:		208.79		1765	26.06	19

COMPUTED INJURY COEFFICIENTS:

Lower Sternum - Long

B = _____ Q = _____ V_{15} = _____ V_{19} = _____ RVS = _____

Left Upper Rib - Lat

B = _____ Q = _____ V_{15} = _____ V_{19} = _____ RVS = _____

Right Upper Rib - Lat

B = _____ Q = _____ V_{15} = _____ V_{19} = _____ RVS = _____

T-12 - Lat

B = _____ Q = _____ V_{15} = _____ V_{19} = _____ RVS = _____

T-12 - Resultant, Lat and Long

B = _____ Q = _____ V_{15} = _____ V_{19} = _____ RVS = _____

AIS = _____ AIS (BRUR) = _____ MAIS = _____

AIS (AVP) = _____ AIS (RES) = _____

COMMENTS:

N/A = Not Applicable

FORM DSI 23R (5/82)

TABLE J-15. SIDE IMPACT DUMMY RESPONSE SUMMARY (TEST T3-18)

TEST NO. T3-18

TEST DATE 2-28-80

TEST CONFIGURATION:

Target Vehicle	VW Body Buck	Speed	0 mph
Bullet Vehicle	Bullet Sled (Wt = 2357 lb)	Speed	27.20 mph
Impact Location	Right Side Door	Angle	90 deg
Dummy Model	PART 572		

HEAD RESPONSE:

Peak A_R	58.72	G	Impacted Object	-
HIC	187.4		Time	ms

CHEST RESPONSE:

DEFLECTION (IN.): LRDY N/A

Location	Pk A (G)	Pk A_R (G)	3ms Clip (G)	SI	ΔV_y (MPH)	Impact Time (ms)
Upper Sternum (X)				N/A	N/A	
Lower Sternum (X)				N/A	N/A	
LUR (Y)				N/A		
LLR (X)				N/A	N/A	
RUR (Y)				N/A		
RLR (X)				N/A	N/A	
RLR (Y)				N/A		
Upper Thorax (T-1)		108.1	106.0	947.	22.62	19
Lower Thorax (T-12)						
PELVIS RESPONSE:		215.4		1847	25.1	18

COMPUTED INJURY COEFFICIENTS:

Lower Sternum - Long					
B =	Q =	V ₁₅ =	V ₁₉ =	RVS =	
Left Upper Rib - Lat					
B =	Q =	V ₁₅ =	V ₁₉ =	RVS =	
Right Upper Rib - Lat					
B =	Q =	V ₁₅ =	V ₁₉ =	RVS =	
T-12 - Lat					
B =	Q =	V ₁₅ =	V ₁₉ =	RVS =	
T-12 - Resultant, Lat and Long					
B =	Q =	V ₁₅ =	V ₁₉ =	RVS =	
AIS =					
AIS (AVP) =		AIS (BRUR) =		MAIS =	
AIS (RES) =					

COMMENTS:

N/A = Not Applicable

FORM DSI 23R (5/82)

TABLE J-16. SIDE IMPACT DUMMY RESPONSE SUMMARY (TEST T3-19)

TEST NO. T3-19

TEST DATE 2-28-80

TEST CONFIGURATION:

Target Vehicle VW Body Buck

Speed 0 mph

Bullet Vehicle Bullet Sled

Speed 19.64 mph

Impact Location Right Side Door

Angle 90 deg

Dummy Model PART 572

HEAD RESPONSE:

Peak A_R 24.85

G

Impacted Object -

HIC 27.3

Time ms

CHEST RESPONSE:

DEFLECTION (IN.): LRDY N/A

Location	Pk A (G)	Pk A_R (G)	3ms Clip (G)	SI	ΔV_y (MPH)	Impact Time (ms)
Upper Sternum (X)				N/A	N/A	
Lower Sternum (X)				N/A	N/A	
LUR (Y)				N/A		
LLR (X)				N/A	N/A	
RUR (Y)				N/A		
RLR (X)				N/A	N/A	
RLR (Y)				N/A		
Upper Thorax (T-1)		56.9	52.9	283	13.9	27
Lower Thorax (T-12)						
PELVIS RESPONSE:		56.55		222	16.93	26

COMPUTED INJURY COEFFICIENTS:

Lower Sternum - Long

B = Q = V_{15} = V_{19} = RVS =

Left Upper Rib - Lat

B = Q = V_{15} = V_{19} = RVS =

Right Upper Rib - Lat

B = Q = V_{15} = V_{19} = RVS =

T-12 - Lat

B = Q = V_{15} = V_{19} = RVS =

T-12 - Resultant, Lat and Long

B = Q = V_{15} = V_{19} = RVS =

AIS = AIS (BRUR) = MAIS =

AIS (AVP) = AIS (RES) =

COMMENTS:

N/A = Not Applicable

FORM DSI 23R (5/82)

TABLE J-17. SIDE IMPACT DUMMY RESPONSE SUMMARY (TEST T3-20)

TEST NO. T3-20

TEST DATE 2-27-80

TEST CONFIGURATION:

Target Vehicle	VW Body Buck	Speed	0 mph
Bullet Vehicle	Bullet Sled (Wt = 2357 lb)	Speed	27.47 mph
Impact Location	Right Side Door	Angle	90 deg
Dummy Model	HSRI SID 3 RIB		

HEAD RESPONSE:

Peak A_R	117.9	G	Impacted Object	-
HIC	302.1		Time	ms

CHEST RESPONSE:

DEFLECTION (IN.): LRDY N/A

Location	Pk A (G)	Pk A_R (G)	3ms Clip (G)	SI	ΔV_y (MPH)	Impact Time (ms)
Upper Sternum (X)				N/A	N/A	
Lower Sternum (X)	58.2		50.6	N/A	N/A	19.5
LUR (Y)	55.3		53.4	N/A	21.26	22
LLR (X)				N/A	N/A	
RUR (Y)	97.3		89.0	N/A	21.53	21
RLR (X)				N/A	N/A	
RLR (Y)				N/A	N/A	
Upper Thorax (T-1)		88.5	49.3	293	12.62	32
Lower Thorax (T-12)		128.3	121 9	1046.	23.28	21
PELVIS RESPONSE:		172.3		1715	24.96	19

COMPUTED INJURY COEFFICIENTS:

Lower Sternum - Long									
B =	6.499	Q =	399.34	$V_{15} =$	.00438	$V_{19} =$	.00813	RVS =	1.85714
Left Upper Rib - Lat									
B =	6.702	Q =	-947.93	$V_{15} =$	.00937	$V_{19} =$	.01938	RVS =	2.0667
Right Upper Rib - Lat									
B =	7.129	Q =	884.59	$V_{15} =$	.00438	$V_{19} =$	.00875	RVS =	2.0000
T-12 - Lat									
B =		Q =		$V_{15} =$		$V_{19} =$		RVS =	
T-12 - Resultant, Lat and Long									
B =		Q =		$V_{15} =$		$V_{19} =$		RVS =	
AIS =		3.579	AIS (BRUR) =		3.763	MAIS =		3.558	
AIS (AVP) =			AIS (RES) =						

COMMENTS: T-1 data suspect.

N/A = Not Applicable

FORM DSI 23R (5/82)

TABLE J-18. SIDE IMPACT DUMMY RESPONSE SUMMARY (TEST T3-21)

TEST NO. T3-21

TEST DATE 3-13-81

TEST CONFIGURATION:

Target Vehicle VW Body Buck

Speed 0 mph

Bullet Vehicle Bullet Sled

Speed 21.03 mph

Impact Location Right Side Door

Angle 90 deg

Dummy Model HSRI SID 5 RIB

HEAD RESPONSE:

Peak A_R 17.63 G @ 55 ms

G

Impacted Object

-

HIC 19.3

Time

35 - 123

ms

CHEST RESPONSE:

DEFLECTION (IN.): LRDY 1.6

Location	Pk A (G)	Pk A_R (G)	3ms Clip (G)	SI	ΔV_y (MPH)	Impact Time (ms)
Upper Sternum (X)	41.06		36.7	N/A	5.14	32
Lower Sternum (X)	23.62		21.7	N/A	4.32	32
LUR (Y)	42.55		40.3	N/A	13.14	31
LLR (X)	32.19		26.0	N/A	4.14	38
RUR (Y)	65.48		59.6	N/A	13.58	29
RLR (X)	23.12		20.0	N/A	3.58	26
RLR (Y)	62.93		56.4	N/A	14.96	25
Upper Thorax (T-1)	43.81	43.88	35.9	111.5	13.17	28
Lower Thorax (T-12)	61.29	61.32	57.6	240.7	16.73	27
PELVIS RESPONSE:		71.9	63.3	292	17.4	27

COMPUTED INJURY COEFFICIENTS:

Lower Sternum - Long

B = 5.622 Q = 194.109 V_{15} = .00562 V_{19} = .00937 RVS = 1.667

Left Lower Rib - Lat

B = 6.442 Q = -585.190 V_{15} = .00687 V_{19} = .01313 RVS = 1.90909

Right Upper Rib - Lat

B = 6.652 Q = 606.1655 V_{15} = .00687 V_{19} = .01063 RVS = 1.54545

T-12 - Lat

B = Q = V_{15} = V_{19} = RVS =

T-12 - Resultant, Lat and Long

B = Q = V_{15} = V_{19} = RVS =

AIS = 3.353 AIS (BRUR) = 3.231 MAIS = 2.600

AIS (AVP) = 3.319 AIS (RES) = 3.399

COMMENTS: SID 6 was positioned with 6.0 in. gap between door and the dummy H-Point.

N/A = Not Applicable

FORM DSI 23R (5/82)

TABLE J-19. SIDE IMPACT DUMMY RESPONSE SUMMARY (TEST T3-22)

TEST NO. T3-22

TEST DATE 3-13-81

TEST CONFIGURATION:

Target Vehicle	VW Body Buck	Speed	0 mph
Bullet Vehicle	Bullet Sled	Speed	21.3 mph
Impact Location	Right Side Door	Angle	90 deg
Dummy Model	HSRI SID 5 RIB		

HEAD RESPONSE:

Peak A _R	29.15 G @ 42 ms	G	Impacted Object	-
HIC	42.3		Time	30 - 104 ms

CHEST RESPONSE:

DEFLECTION (IN.): LRDY 1.3

Location	Pk A (G)	Pk A _R (G)	3ms Clip (G)	SI	ΔV _y (MPH)	Impact Time (ms)
Upper Sternum (X)	36.93		31.0	N/A	4.94	23
Lower Sternum (X)	35.88		31.6	N/A	5.08	23
LUR (Y)	46.19		44.4	N/A	14.76	23
LLR (X)	38.90		30.9	N/A	4.40	32
RUR (Y)	100.33		86.5	N/A	15.48	18
RLR (X)	29.33		21.8	N/A	2.82	25
RLR (Y)	52.16		47.1	N/A	17.69	21
Upper Thorax (T-1)	60.11	63.52	53.7	222	13.09	23
Lower Thorax (T-12)	77.26	76.14	72.1	365	17.61	24
		115.0	92.3	601	17.86	20

PELVIS RESPONSE:

COMPUTED INJURY COEFFICIENTS:

Lower Sternum - Long
 B = 5.945 Q = 227.075 V₁₅ = .00375 V₁₉ = .00687 RVS = 1.83333

Left Lower Rib - Lat
 B = 6.538 Q = -613.320 V₁₅ = .00687 V₁₉ = .01250 RVS = 1.81818

Right Upper Rib - Lat
 B = 6.925 Q = 691.247 V₁₅ = .00562 V₁₉ = .00875 RVS = 1.55556

T-12 - Lat
 B = Q = V₁₅ = V₁₉ = RVS =

T-12 - Resultant, Lat and Long
 B = Q = V₁₅ = V₁₉ = RVS =

AIS = 3.659 AIS (BRUR) = 3.639 MAIS = 3.148
 AIS (AVP) = 3.581 AIS (RES) = 3.804

COMMENTS: SID 6 was positioned so that a 3.0 inch gap was present between the door and the dummy H-Point.

N/A = Not Applicable

FORM DSI 23R (5/82)

TABLE J-20. SIDE IMPACT DUMMY RESPONSE SUMMARY (TEST T3-23)

TEST NO. T3-23

TEST DATE 4-12-82

TEST CONFIGURATION:

Target Vehicle	VW Body Buck	Speed	0 mph
Bullet Vehicle	Bullet Sled	Speed	20.9 mph
Impact Location	Right Side Door	Angle	90 deg
Dummy Model	HSRI SID 5 RIB		

HEAD RESPONSE:

Peak A_R	12.76 G @ 58 ms	G	Impacted Object	-
HIC	13.9		Time	0 - 200 ms

CHEST RESPONSE:

DEFLECTION (IN.): LRDY 1.1

Location	Pk A (G)	Pk A_R (G)	3ms Clip (G)	SI	ΔV_y (MPH)	Impact Time (ms)
Upper Sternum (X)	14.83		11.0	N/A	2.38	41
Lower Sternum (X)	12.18		10.3	N/A	2.46	43
LUR (Y)	32.68		31.5	N/A	10.28	41
LLR (X)	9.25		7.0	N/A	1.14	?
RUR (Y)	28.80		26.7	N/A	8.53	42
RLR (X)	8.88		7.6	N/A	0.49	42
RLR (Y)	28.43		26.8	N/A	7.60	36
Upper Thorax (T-1)	21.16	61.34	20.42	25.4	8.30	40
Lower Thorax (T-12)	29.40	30.17	27.6	63.8	13.71	37
PELVIS RESPONSE:		34.2	32.1	71.7	10.4	45

COMPUTED INJURY COEFFICIENTS:

Lower Sternum - Long

B = 4.99 Q = 128.68 $V_{15} = .00687$ $V_{19} = .05813$ RVS = 8.455

Left Lower Rib - Lat

B = 6.12 Q = -467.67 $V_{15} = .00750$ $V_{19} = .01625$ RVS = 2.167

Right Upper Rib - Lat

B = 5.95 Q = 336.77 $V_{15} = .00687$ $V_{19} = .0125$ RVS = 1.818

T-12 - Lat

B = _____ Q = _____ $V_{15} =$ _____ $V_{19} =$ _____ RVS = _____

T-12 - Resultant, Lat and Long

B = _____ Q = _____ $V_{15} =$ _____ $V_{19} =$ _____ RVS = _____

AIS = 2.51 AIS (BRUR) = 2.19 MAIS = 1.19

AIS (AVP) = 2.98 AIS (RES) = 2.81

COMMENTS: SID 6 was positioned so that a 9.0 inch gap was present between the dummy's H-Point and the door, and 8.0 inches between the shoulder and the door. No observable damage was sustained by the dummy.

N/A = Not Applicable

FORM DSI 23R (5/82)

TABLE J-21. SIDE IMPACT DUMMY RESPONSE SUMMARY (TEST T3-24)

TEST NO. T3-24

TEST DATE 3-16-81

TEST CONFIGURATION:

Target Vehicle	VW Body Buck	Speed	0 mph
Bullet Vehicle	Bullet Sled	Speed	28.0 mph
Impact Location	Right Side Door	Angle	90 deg
Dummy Model	HSRI SID 5 RIB		

HEAD RESPONSE:

Peak A_R	42.33 G @ 39.0 ms	G	Impacted Object	Door Window Sill
HIC	146.9		Time	30 - 101 ms

CHEST RESPONSE:

DEFLECTION (IN.): LRDY 1.9

Location	Pk A (G)	Pk A_R (G)	3ms Clip (G)	SI	ΔV_y (MPH)	Impact Time (ms)
Upper Sternum (X)	110.22		87.7	N/A	11.69	20
Lower Sternum (X)	108.87		89.8	N/A	13.67	18
LUR (Y)	104.32		84.9	N/A	24.52	20
LLR (X)	101.90		79.3	N/A	8.09	21
RUR (Y)	180.95		145.5	N/A	21.25	20
RLR (X)	44.96		34.8	N/A	4.90	20
RLR (Y)	180.05		148.0	N/A	19.73	18
Upper Thorax (T-1)	62.78	73.75	69.9	602	23.3	22
Lower Thorax (T-12)	193.79	226.37	140.0	2115	25.05	21
PELVIS RESPONSE:		169.07	115.6	1244	18.68	21

COMPUTED INJURY COEFFICIENTS:

Lower Sternum - Long

B = 7.012 Q = 607.048 V_{15} = .00375 V_{19} = .00625 RVS = 1.66667

Left Lower Rib - Lat

B = 7.084 Q = -1097.126 V_{15} = .00875 V_{19} = .01625 RVS = 1.85714

Right Upper Rib - Lat

B = 7.358 Q = 953.927 V_{15} = .00313 V_{19} = .00562 RVS = 1.80000

T-12 - Lat

B = _____ Q = _____ V_{15} = _____ V_{19} = _____ RVS = _____

T-12 - Resultant, Lat and Long

B = _____ Q = _____ V_{15} = _____ V_{19} = _____ RVS = _____

AIS = 3.968 AIS (BRUR) = 4.283 MAIS = 4.019

AIS (AVP) = 4.379 AIS (RES) = 5.139

COMMENTS: SID 6 was positioned with a 6.0 inch gap between the dummy's H-Point and the door. Umbilical cable was snagged between the two seats, possibly slowing the pelvis.

N/A = Not Applicable

FORM DSI 23R (5/82)

TABLE J-22. SIDE IMPACT DUMMY RESPONSE SUMMARY (TEST T3-25)

TEST NO. T3-22

TEST DATE 3-23-81

TEST CONFIGURATION:

Target Vehicle	VW Body Buck	Speed	0 mph
Bullet Vehicle	Bullet Sled	Speed	21.0 mph
Impact Location	Right Side Door	Angle	90 deg
Dummy Model	HSRI SID 5 RIB		

HEAD RESPONSE:

Peak A_R	22.19 G @ 68 ms	G	Impacted Object	None
HIC	36.06		Time	38 - 142 ms

CHEST RESPONSE:

DEFLECTION (IN.): LRDY 1.5

Location	Pk A (G)	Pk A_R (G)	3ms Clip (G)	SI	ΔV_y (MPH)	Impact Time (ms)
Upper Sternum (X)	30.86		27.9	N/A	3.73	37
Lower Sternum (X)	31.19		25.7	N/A	3.80	37
LUR (Y)	37.87		35.0	N/A	13.00	38
LLR (X)	36.83		31.6	N/A	3.61	33
RUR (Y)	54.19		46.4	N/A	12.20	37
RLR (X)	26.30		21.0	N/A	3.80	33
RLR (Y)	63.68		51.6	N/A	10.13	38
Upper Thorax (T-1)	45.05	45.47	42.5	157.5	17.67	26
Lower Thorax (T-12)	75.67	71.98	59.4	277	16.33	28
PELVIS RESPONSE:		91.98	62.6	358	15.99	27

COMPUTED INJURY COEFFICIENTS:

Lower Sternum - Long

B = 5.801 Q = 170.795 V_{15} = .00250 V_{19} = .00500 RVS = 2.00000

Left Lower Rib - Lat

B = 6.299 Q = -574.875 V_{15} = .00750 V_{19} = .01438 RVS = 1.91667

Right Upper Rib - Lat

B = 6.583 Q = 536.989 V_{15} = .00500 V_{19} = .00937 RVS = 1.87500

T-12 - Lat

B = _____ Q = _____ V_{15} = _____ V_{19} = _____ RVS = _____

T-12 - Resultant, Lat and Long

B = _____ Q = _____ V_{15} = _____ V_{19} = _____ RVS = _____

AIS = 3.254 AIS (BRUR) = 3.129 MAIS = 2.461

AIS (AVP) = 3.372 AIS (RES) = 3.497

COMMENTS: SID 4 was used in this test with a distance of 6.0 inches between the dummy's H-Point and the door.

N/A = Not Applicable

FORM DSI 23R (5/82)

TABLE J-23. SIDE IMPACT DUMMY RESPONSE SUMMARY (TEST T3-26)

TEST NO. T3-26

TEST DATE 3-23-82

TEST CONFIGURATION:

Target Vehicle VW Body Buck

Speed 0 mph

Bullet Vehicle Bullet Sled

Speed 28.2 mph

Impact Location Right Side Door

Angle 90 deg

Dummy Model HSRI SID 5 RIB

HEAD RESPONSE:

Peak A_R 81.32 G @ 80 ms G

Impacted Object Window

HIC 376.1

Time 51 - 92 ms

CHEST RESPONSE:

DEFLECTION (IN.): LRDY 1.5

Location	Pk A (G)	Pk A_R (G)	3ms Clip (G)	SI	ΔV_y (MPH)	Impact Time (ms)
Upper Sternum (X)	111.65		90.0	N/A	11.20	27
Lower Sternum (X)	111.94		93.8	N/A	13.42	21
LUR (Y)	101.88		79.0	N/A	25.44	21
LLR (X)	82.33		65.9	N/A	7.13	27
RUR (Y)	194.22		160.4	N/A	20.54	24
RLR (X)	43.46		36.2	N/A	4.91	25
RLR (Y)	190.22		160.7	N/A	22.64	22
Upper Thorax (T-1)	76.37	89.12	67	670	24.11	22
Lower Thorax (T-12)	176.23	307.43	153.0	4020	25.13	23
PELVIS RESPONSE:		235.12	156.0	2948	27.6	24

COMPUTED INJURY COEFFICIENTS:

Lower Sternum - Long

B = 7.227 Q = 602.372 V_{15} = .00313 V_{19} = .00562 RVS = 1.80000

Left Lower Rib - Lat

B = 7.108 Q = -1136.964 V_{15} = .01000 V_{19} = .01813 RVS = 1.81250

Right Upper Rib - Lat

B = 7.361 Q = 919.998 V_{15} = .00250 V_{19} = .00438 RVS = 1.75000

T-12 - Lat

B = Q = V_{15} = V_{19} = RVS =

T-12 - Resultant, Lat and Long

B = Q = V_{15} = V_{19} = RVS =

AIS = 3.794 AIS (BRUR) = 4.287 MAIS = 4.024

AIS (AVP) = 4.432 AIS (RES) = 6

COMMENTS: SID 4 was used with a 6 inch gap between the dummy's H-Point and the door.

N/A = Not Applicable

FORM DSI 23R (5/82)

TABLE J-24. SIDE IMPACT DUMMY RESPONSE SUMMARY (TEST T3-27)

TEST NO. T3-27

TEST DATE 3-16-81

TEST CONFIGURATION:

Target Vehicle	VW Body Buck	Speed	0 mph
Bullet Vehicle	Bullet Sled	Speed	27.81 mph
Impact Location	Right Side Door	Angle	90 deg
Dummy Model	HSRI SID 5 RIB		

HEAD RESPONSE:

Peak A_R	44.98	G	Impacted Object	Window Sill
HIC	161.7		Time	30 - 99 ms

CHEST RESPONSE:

DEFLECTION (IN.): LRDY 1.3

Location	Pk A (G)	Pk A_R (G)	3ms Clip (G)	SI	ΔV_y (MPH)	Impact Time (ms)
Upper Sternum (X)	122.61		97.3	N/A	13.63	24
Lower Sternum (X)	115.60		99.8	N/A	14.83	24
LUR (Y)	126.86		91.7	N/A	21.40	24
LLR (X)	113.09		91.1	N/A	12.33	30
RUR (Y)	164.74		140.9	N/A	19.56	20
RLR (X)	64.89		50.6	N/A	7.96	25
RLR (Y)	154.63		130.2	N/A	21.15	17
Upper Thorax (T-1)	105.27	105.38	73.2	683	23.24	24
Lower Thorax (T-12)	236.96	271.12	154.4	3918	27.84	24
PELVIS RESPONSE:		273.64	148.82	3103	25.99	23

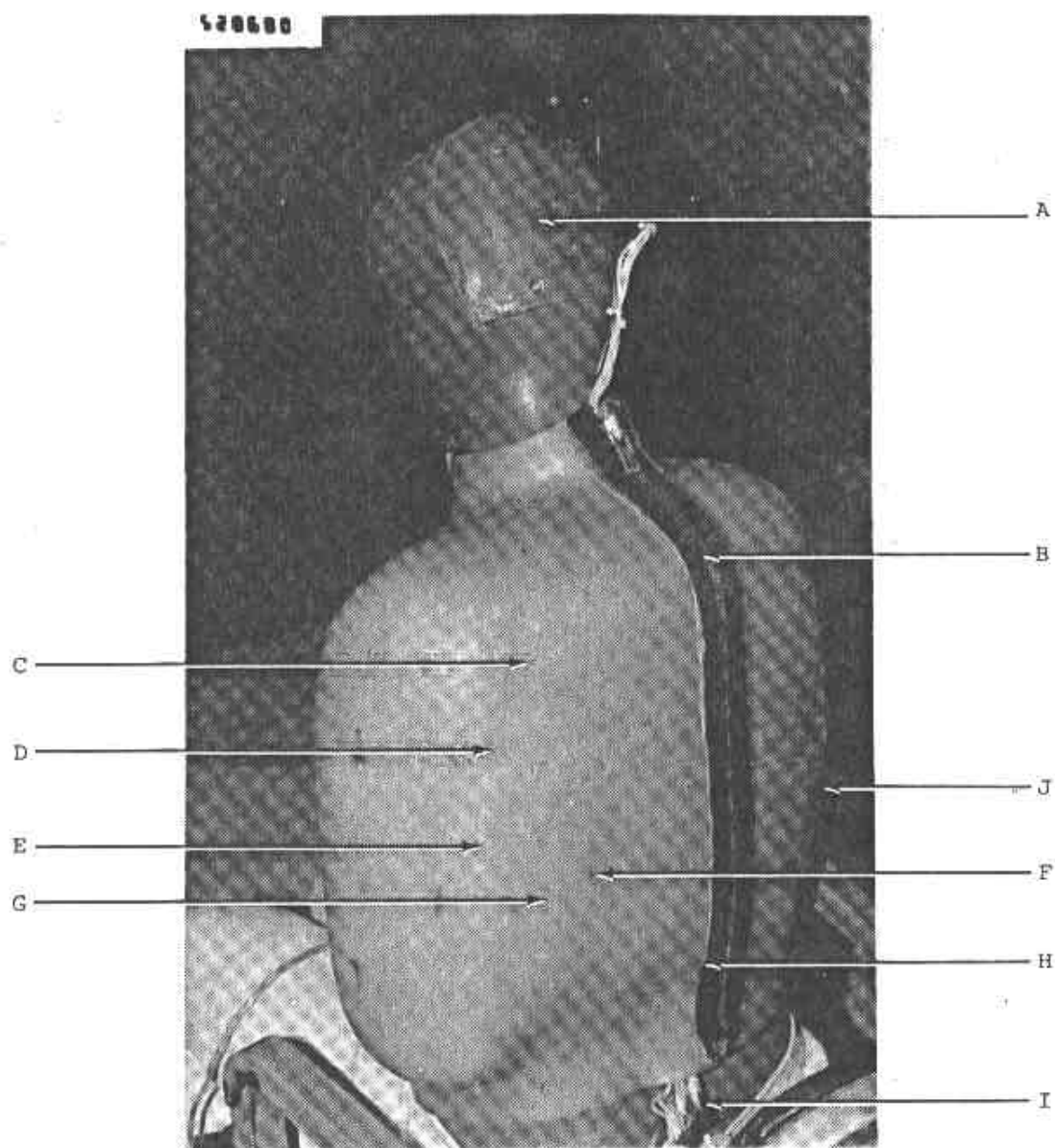
COMPUTED INJURY COEFFICIENTS:

Lower Sternum - Long									
B =	7.048	Q =	691.913	V_{15} =	.00313	V_{19} =	.00625	RVS =	2.00000
Left Lower Rib - Lat									
B =	7.204	Q =	-979.369	V_{15} =	.00813	V_{19} =	.01188	RVS =	1.46154
Right Upper Rib - Lat									
B =	7.254	Q =	872.852	V_{15} =	.00313	V_{19} =	.00562	RVS =	1.80000
T-12 - Lat									
B =		Q =		V_{15} =		V_{19} =		RVS =	
T-12 - Resultant, Lat and Long									
B =		Q =		V_{15} =		V_{19} =		RVS =	
AIS =		4.120	AIS (BRUR) =		4.129	MAIS =		3.8100	
AIS (AVP) =		5.670	AIS (RES) =		5.851				

COMMENTS: SID 6 was used with a 6.0 inch gap between the dummy's H-Point and the door.

N/A = Not Applicable

FORM DSI 23R (5/82)



- | | |
|---------------------------------|----------------------------------|
| A. HEAD TRIAXIAL | F. LOWER DISPLACEMENT TRANSDUCER |
| B. UPPER THORAX (T-1), TRIAXIAL | G. LEFT LOWER RIB, LONGITUDINAL |
| C. UPPER STERNUM, LONGITUDINAL | (ALSO ON RIGHT) |
| D. LEFT UPPER RIB, LATERAL | H. LOWER THORAX (T-12), TRIAXIAL |
| (ALSO ON RIGHT) | I. PELVIC, TRIAXIAL |
| E. LOWER STERNUM, LONGITUDINAL | J. RIGHT LOWER RIB, LATERAL |

NOTE: RIGHT LOWER RIB ACCELEROMETER IS MOUNTED OUTWARD POSITIVE.

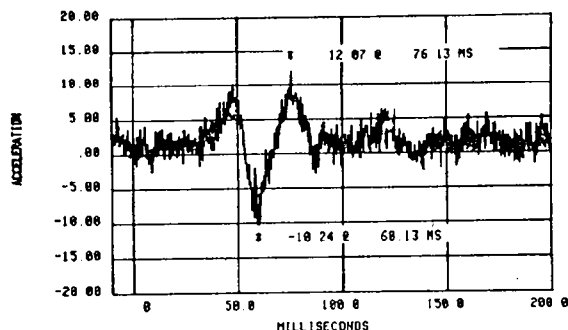
FIGURE J-1. LOCATIONS OF NINETEEN ACCELEROMETERS AND ONE DISPLACEMENT TRANSDUCER FOR THE NHTSA SIDE IMPACT DUMMY (FIVE RIB DESIGN) - RIGHT SIDE IMPACT.

APPENDIX K
GRAPHICAL DATA FOR
TASK 3 TESTS
(T3-21 THROUGH T3-27)

TASK 3 SLED TEST RESPONSE EVALUATION FOR SID DUMMIES (TESTS T3-21 THROUGH T3-27)								
Test No.	Test Date	Dummy No.	Sled Impact Velocity (mph)	Seating Position (GAP)*	Results of Test			
					HIC	Chest SI	AIS (BRUR)	AIS (AVG. POW)
T3-21	3/13/81	SID #6	21.0	Normal**	19	113	3.2	3.3
T3-22	3/13/81	SID #6	21.3	3 in GAP	42	222	3.6	3.6
T3-23	3/12/81	SID #6	20.9	9 in GAP	14	25	2.2	3.0
T3-24	3/16/81	SID #6	28.0	Normal	147	602	4.3	4.4
T3-25	3/23/81	SID #4	21.0	Normal	36	158	3.1	3.4
T3-26	3/23/81	SID #4	28.2	Normal	376	670	4.3	4.4
T3-27	3/16/81	SID #6	27.8	Normal	162	683	4.1	5.7

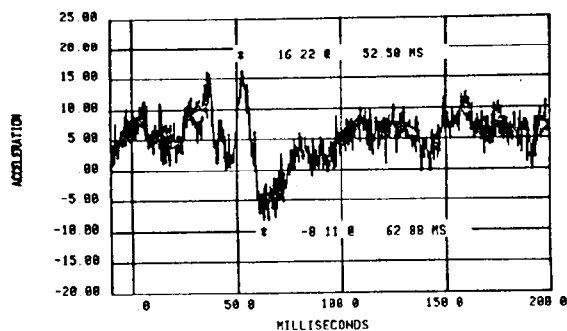
*GAP based on measurement at Hip level; Thorax GAP dependent upon new SID dummy configuration.
 **Normal GAP was 6 inches at Hip level.
 To obtain km/h, multiply mph by 1.609.

TRACK: 3 CHANNEL: 12 100% CAL = 215.64
TEST: S.I. SLED 02 T3-21 DATE: 3-16-81



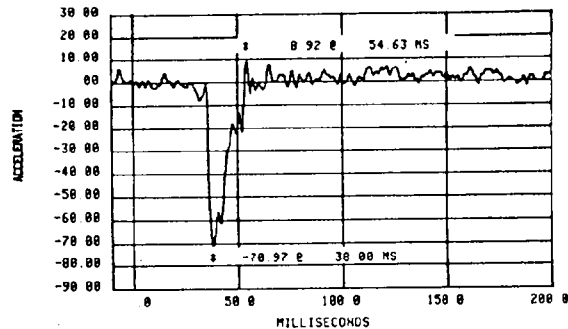
HEAD LONGITUDINAL ACCELERATION

TRACK: 3 CHANNEL: 14 100% CAL = 255.58
TEST: S.I. SLED 02 T3-21 DATE: 3-16-81



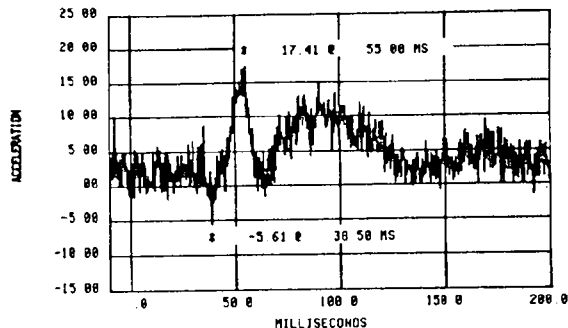
HEAD VERTICAL ACCELERATION

TRACK: 3 CHANNEL: 8 100% CAL = 334.97
TEST: S.I. SLED 02 T3-21 DATE: 3-16-81



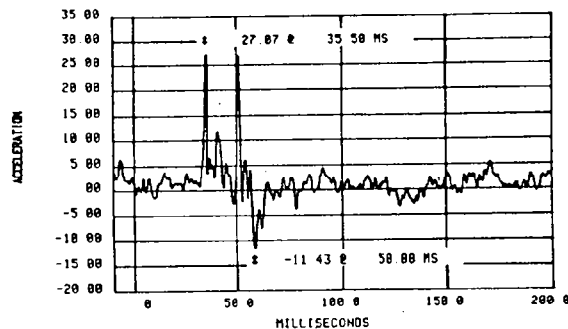
PELVIS LATERAL ACCELERATION

TRACK: 3 CHANNEL: 13 100% CAL = 242.01
TEST: S.I. SLED 02 T3-21 DATE: 3-16-81



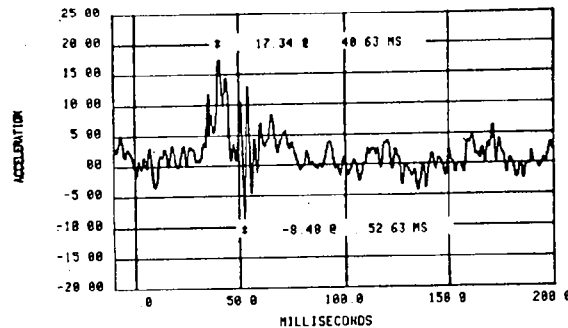
HEAD LATERAL ACCELERATION

TRACK: 3 CHANNEL: 7 100% CAL = 329.60
TEST: S.I. SLED 02 T3-21 DATE: 3-16-81



PELVIS LONGITUDINAL ACCELERATION

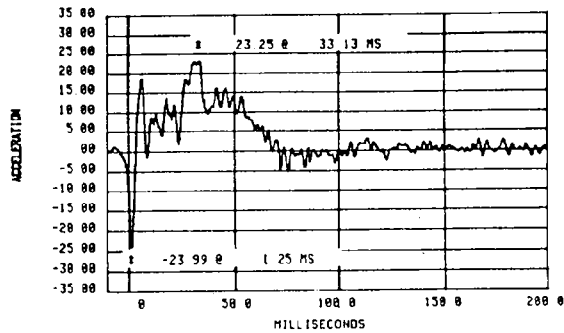
TRACK: 3 CHANNEL: 9 100% CAL = 317.18
TEST: S.I. SLED 02 T3-21 DATE: 3-16-81



PELVIS VERTICAL ACCELERATION

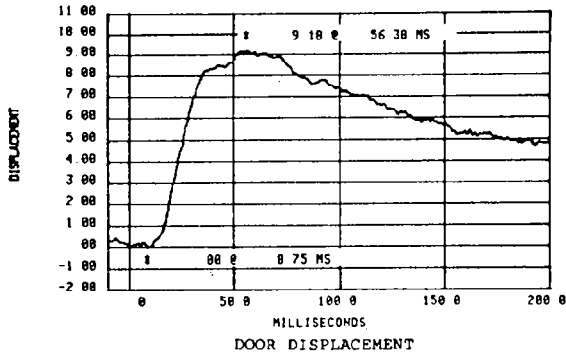
T3-21

TRACK: 3 CHANNEL: 4 100% CAL = 71.13
TEST S I SLED 02 T3-21 DATE: 3-16-81



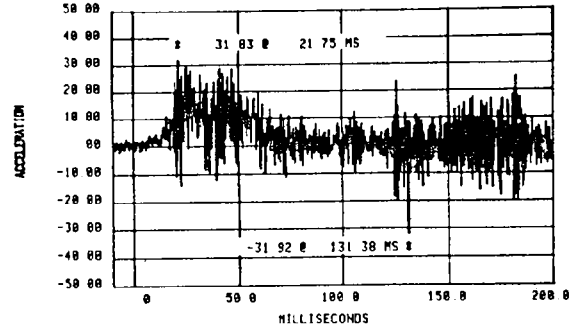
BULLET SLED LONGITUDINAL ACCELERATION

TRACK: 3 CHANNEL: 5 100% CAL = 22.50
TEST S I SLED 02 T3-21 DATE: 3-16-81



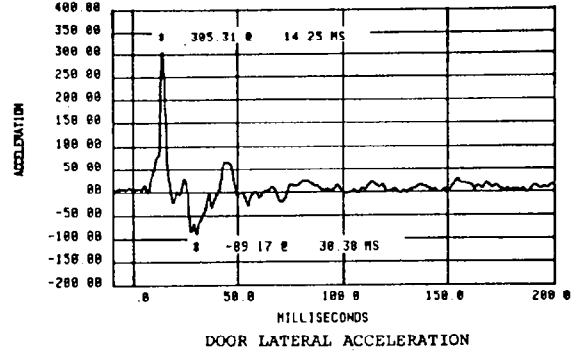
DOOR DISPLACEMENT

TRACK: 9 CHANNEL: 18 100% CAL = 154.73
TEST S I SLED 02 T3-21 DATE: 3-16-81



TARGET SLED LATERAL ACCELERATION

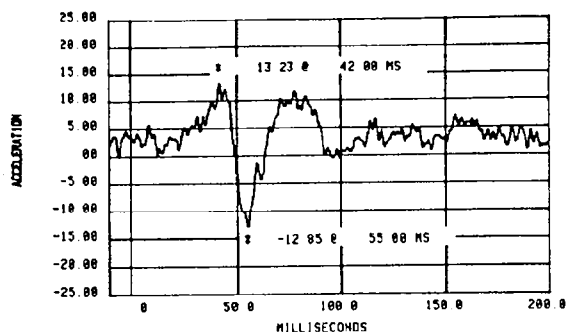
TRACK: 9 CHANNEL: 14 100% CAL = 596.81
TEST S I SLED 02 T3-21 DATE: 3-16-81



DOOR LATERAL ACCELERATION

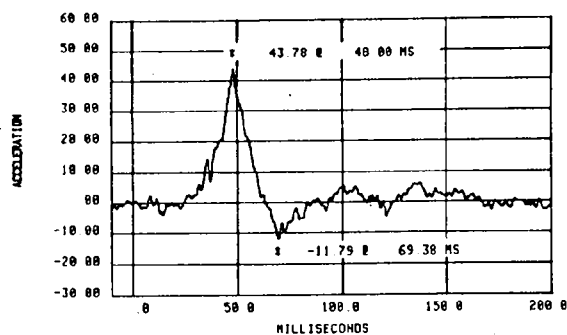
T3-21

TRACK: 9 CHANNEL: 7 100% CAL = 303.90
TEST: S.1 SLED #2 73-21 DATE: 3-16-81



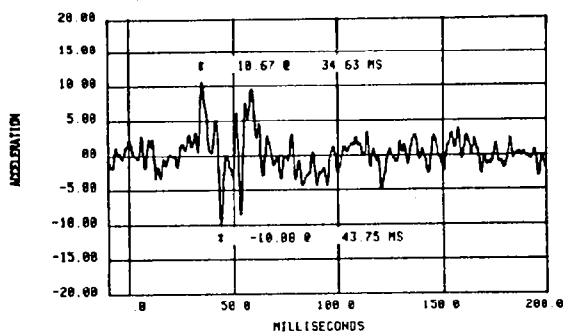
UPPER THORAX LONGITUDINAL ACCELERATION

TRACK: 9 CHANNEL: 8 100% CAL = 310.78
TEST: S.1 SLED #2 73-21 DATE: 3-16-81



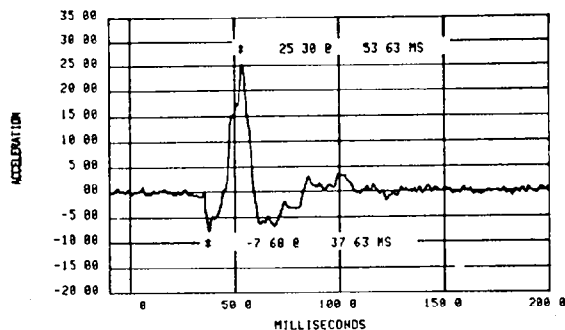
UPPER THORAX LATERAL ACCELERATION

TRACK: 9 CHANNEL: 9 100% CAL = 325.29
TEST: S.1 SLED #2 73-21 DATE: 3-16-81



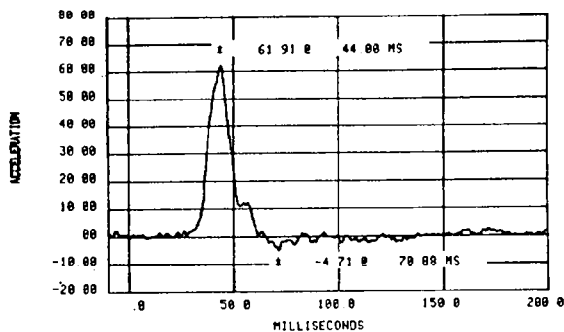
UPPER THORAX VERTICAL ACCELERATION

TRACK: 3 CHANNEL: 1 100% CAL = 371.76
TEST: S.1 SLED #2 73-21 DATE: 3-16-81



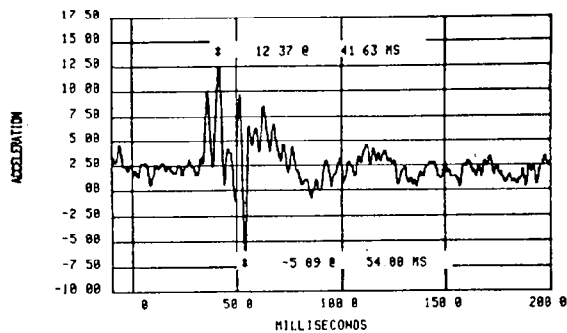
LOWER THORAX LONGITUDINAL ACCELERATION

TRACK: 3 CHANNEL: 2 100% CAL = 367.64
TEST: S.1 SLED #2 73-21 DATE: 3-16-81



LOWER THORAX LATERAL ACCELERATION

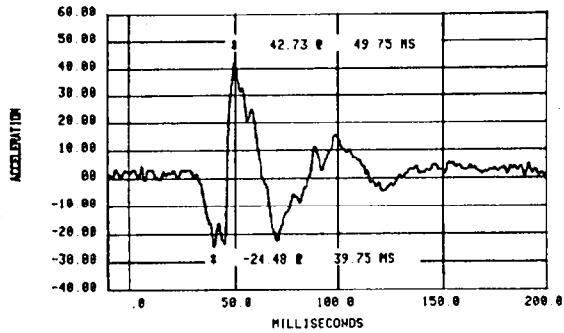
TRACK: 3 CHANNEL: 3 100% CAL = 323.12
TEST: S.1 SLED #2 73-21 DATE: 3-16-81



LOWER THORAX VERTICAL ACCELERATION

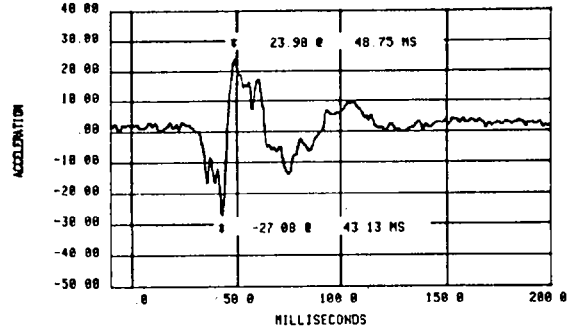
T3-21

TRACK: 9 CHANNEL: 4 100% CAL = 370.77
TEST: S. I. SLED 02 T3-21 DATE: 3-16-81



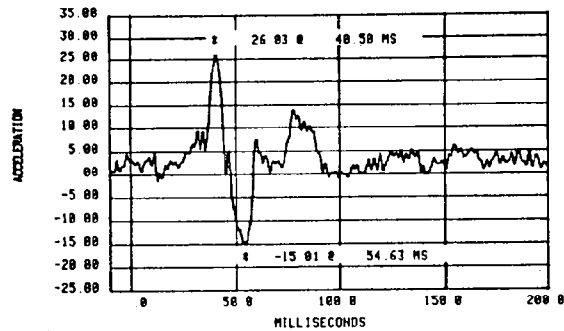
UPPER STERNUM LONGITUDINAL ACCELERATION

TRACK: 9 CHANNEL: 3 100% CAL = 316.99
TEST: S. I. SLED 02 T3-21 DATE: 3-16-81



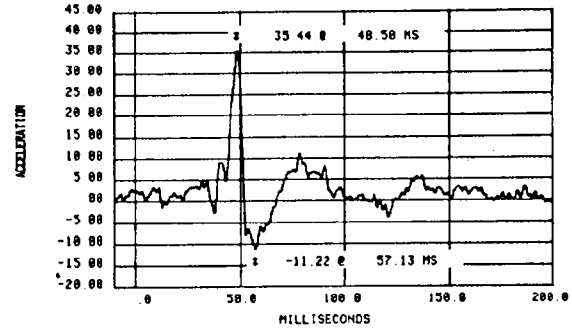
LOWER STERNUM LONGITUDINAL ACCELERATION

TRACK: 9 CHANNEL: 13 100% CAL = 307.14
TEST: S. I. SLED 02 T3-21 DATE: 3-16-81



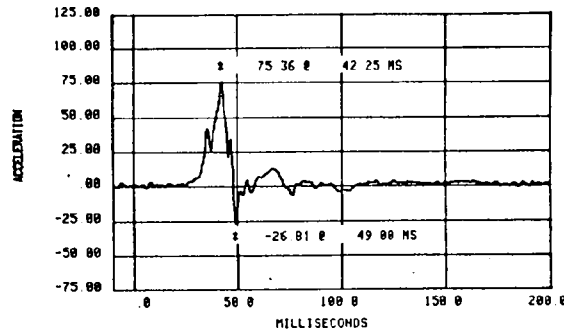
RIGHT LOWER RIB LONGITUDINAL ACCELERATION

TRACK: 9 CHANNEL: 11 100% CAL = 329.42
TEST: S. I. SLED 02 T3-21 DATE: 3-16-81



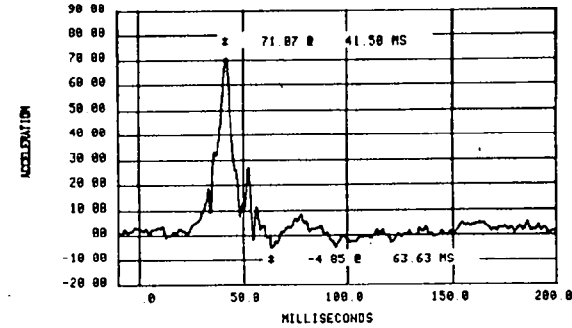
LEFT LOWER RIB LONGITUDINAL ACCELERATION

TRACK: 9 CHANNEL: 1 100% CAL = 334.15
TEST: S. I. SLED 02 T3-21 DATE: 3-16-81



RIGHT UPPER RIB LATERAL ACCELERATION

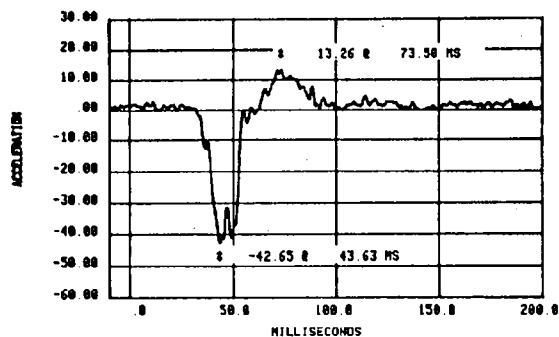
TRACK: 9 CHANNEL: 12 100% CAL = 319.03
TEST: S. I. SLED 02 T3-21 DATE: 3-16-81



RIGHT LOWER RIB LATERAL ACCELERATION

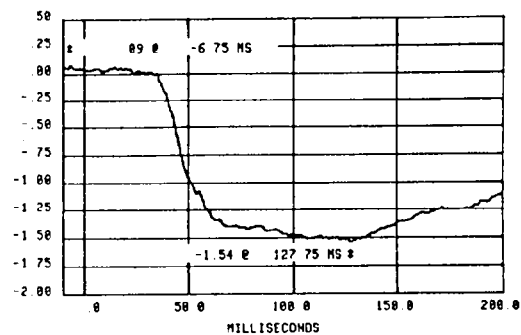
T3-21

TRACK: 9 CHANNEL: 2 100% CAL = 362.21
TEST: S.I. SLED 02 73-21 DATE: 3-16-81

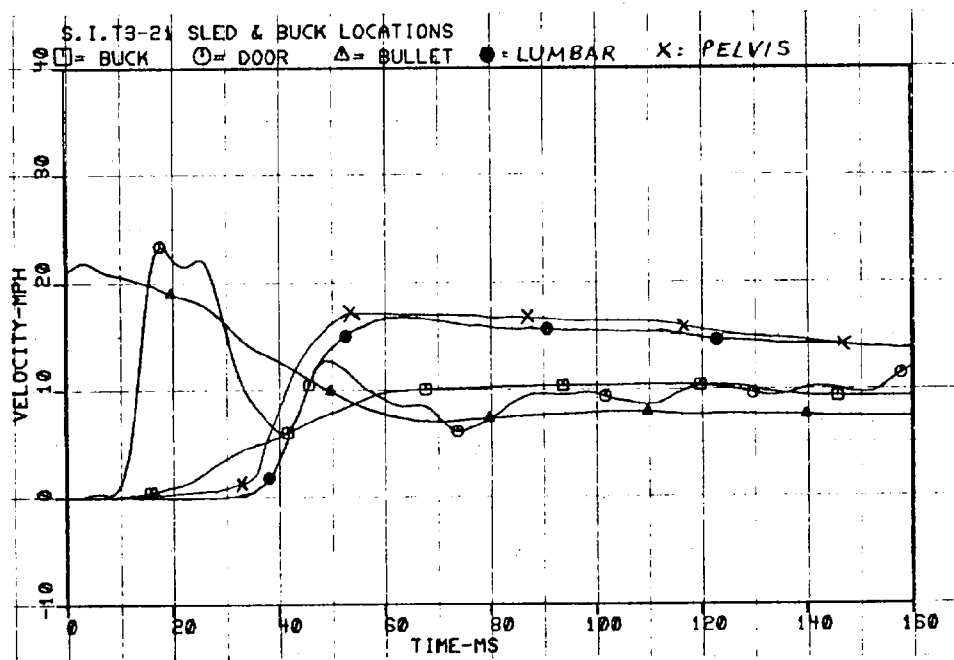


LEFT UPPER RIB LATERAL ACCELERATION

TRACK: 3 CHANNEL: 11 100% CAL = 2.85
TEST: S.I. SLED 02 73-21 DATE: 3-16-81

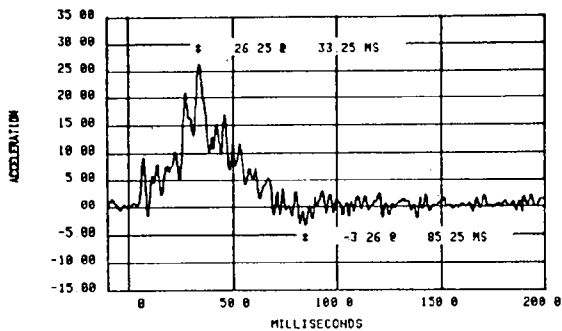


LOWER RIB DISPLACEMENT



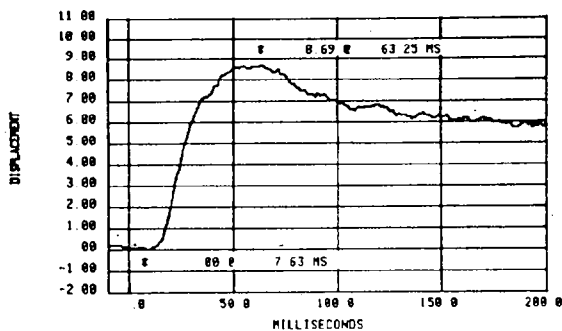
T3-21

TRACK: 11 CHANNEL: 4 100% CAL = 71.13
TEST S: 1 SLED #3 T3-22 DATE: 3-16-81



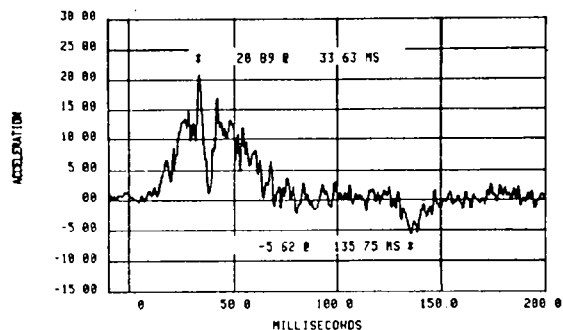
BULLET SLED LONGITUDINAL ACCELERATION

TRACK: 11 CHANNEL: 5 100% CAL = 22.50
TEST S: 1 SLED #3 T3-22 DATE: 3-16-81



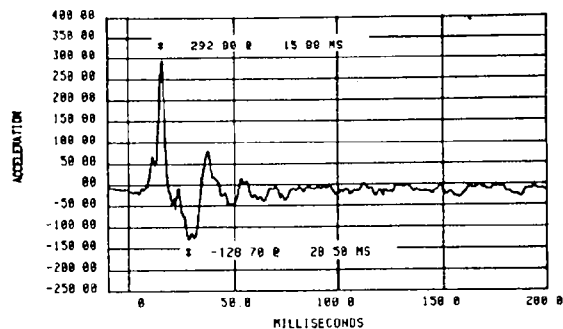
DOOR DISPLACEMENT

TRACK: 9 CHANNEL: 10 100% CAL = 154.73
TEST S: 1 SLED #3 T3-22 DATE: 3-16-81



TARGET SLED LATERAL ACCELERATION

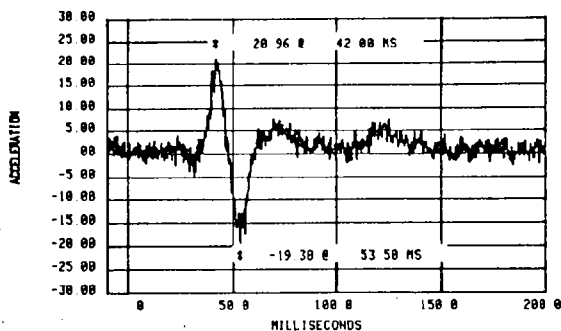
TRACK: 9 CHANNEL: 14 100% CAL = 696.81
TEST S: 1 SLED #3 T3-22 DATE: 3-16-81



DOOR LATERAL ACCELERATION

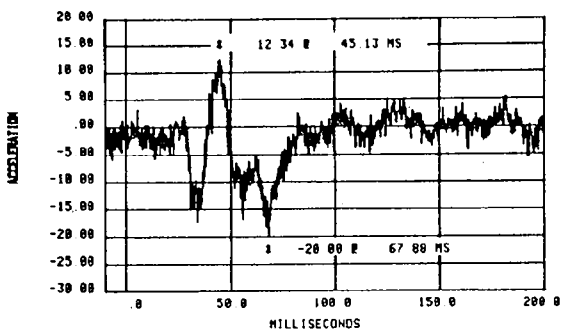
T3-22

TRACK:11 CHANNEL:12 100% CAL = 215.64
TEST:S.I. SLED #3 T3-22 DATE: 3-16-81



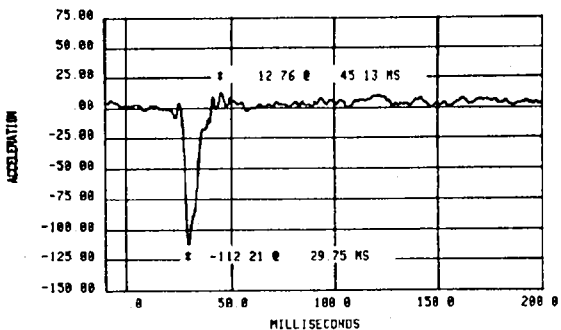
HEAD LONGITUDINAL ACCELERATION

TRACK:11 CHANNEL:14 100% CAL = 255.30
TEST:S.I. SLED #3 T3-22 DATE: 3-16-81



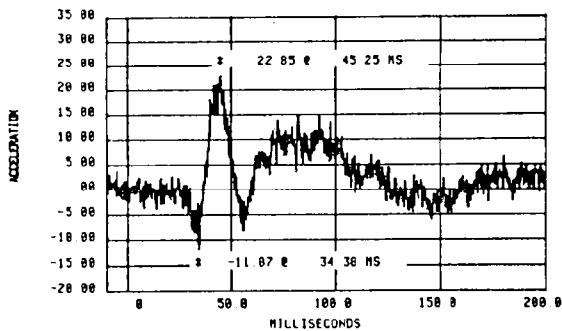
HEAD VERTICAL ACCELERATION

TRACK:11 CHANNEL:8 100% CAL = 334.97
TEST:S.I. SLED #3 T3-22 DATE: 3-16-81



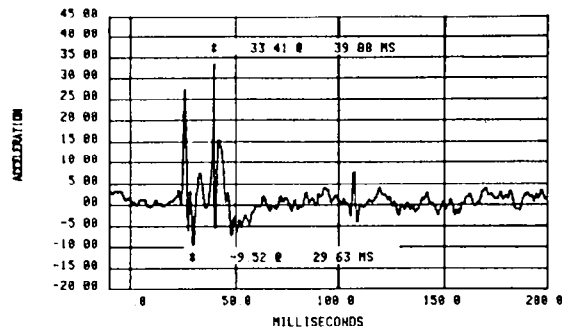
PELVIS LATERAL ACCELERATION

TRACK:11 CHANNEL:13 100% CAL = 242.01
TEST:S.I. SLED #3 T3-22 DATE: 3-16-81



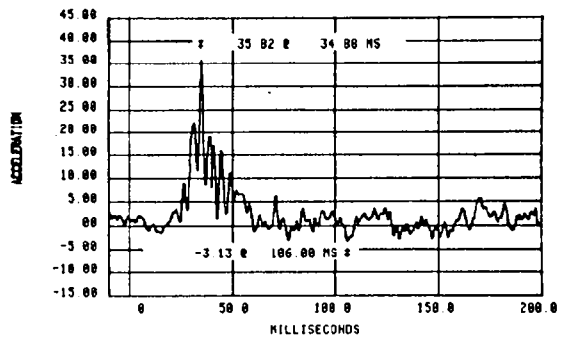
HEAD LATERAL ACCELERATION

TRACK:11 CHANNEL:7 100% CAL = 329.60
TEST:S.I. SLED #3 T3-22 DATE: 3-16-81



PELVIS LONGITUDINAL ACCELERATION

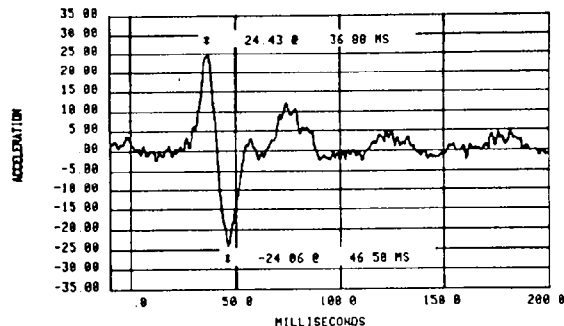
TRACK:11 CHANNEL:9 100% CAL = 317.10
TEST:S.I. SLED #3 T3-22 DATE: 3-16-81



PELVIS VERTICAL ACCELERATION

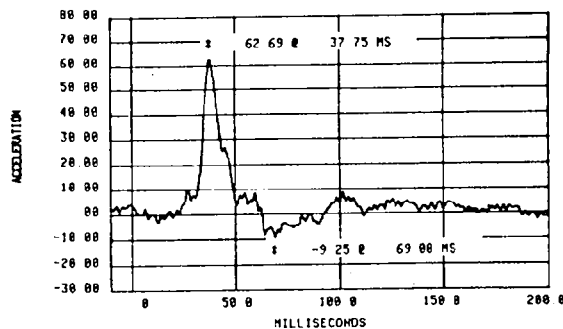
T3-22

TRACK: 9 CHANNEL: 7 100% CAL = 305.90
TEST: S.I. SLED #3 T3-22 DATE: 3-16-81



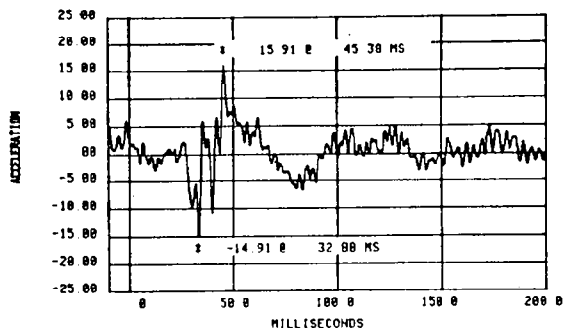
UPPER THORAX LONGITUDINAL ACCELERATION

TRACK: 9 CHANNEL: 8 100% CAL = 310.70
TEST: S.I. SLED #3 T3-22 DATE: 3-16-81



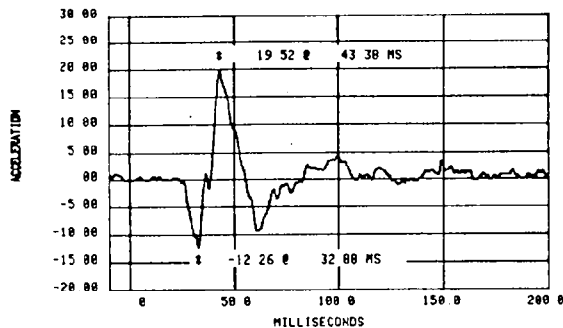
UPPER THORAX LATERAL ACCELERATION

TRACK: 9 CHANNEL: 9 100% CAL = 325.29
TEST: S.I. SLED #3 T3-22 DATE: 3-16-81



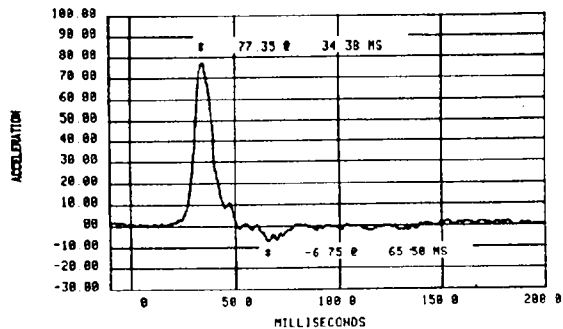
UPPER THORAX VERTICAL ACCELERATION

TRACK: 11 CHANNEL: 1 100% CAL = 371.76
TEST: S.I. SLED #3 T3-22 DATE: 3-16-81



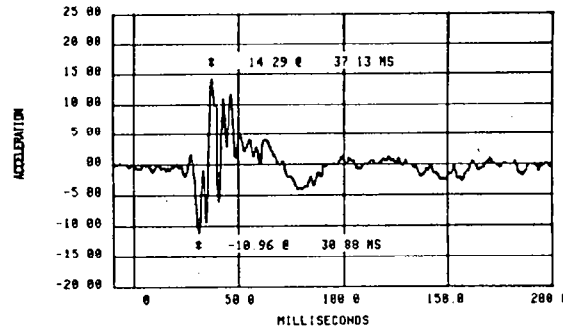
LOWER THORAX LONGITUDINAL ACCELERATION

TRACK: 11 CHANNEL: 2 100% CAL = 367.64
TEST: S.I. SLED #3 T3-22 DATE: 3-16-81



LOWER THORAX LATERAL ACCELERATION

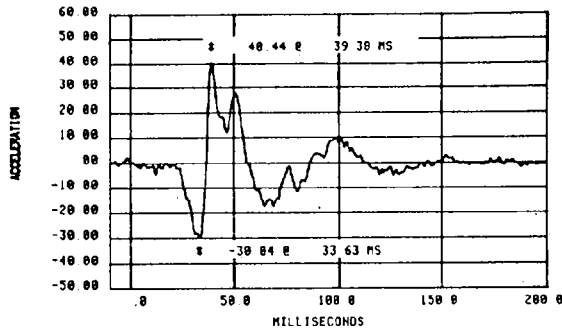
TRACK: 11 CHANNEL: 3 100% CAL = 323.12
TEST: S.I. SLED #3 T3-22 DATE: 3-16-81



LOWER THORAX VERTICAL ACCELERATION

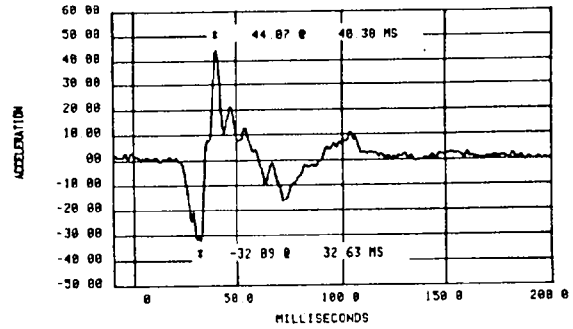
T3-22

TRACK: 9 CHANNEL: 4 100% CAL = 378.77
TEST: S.1 SLED 03 T3-22 DATE: 3-16-81



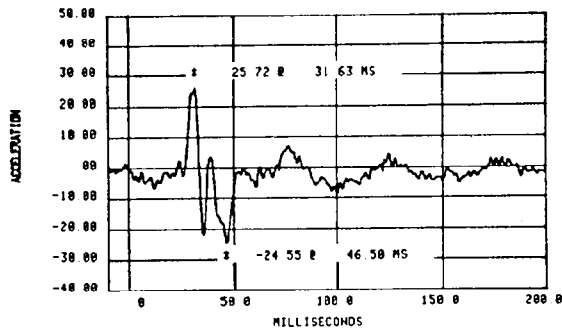
UPPER STERNUM LONGITUDINAL ACCELERATION

TRACK: 9 CHANNEL: 3 100% CAL = 316.99
TEST: S.1 SLED 03 T3-22 DATE: 3-16-81



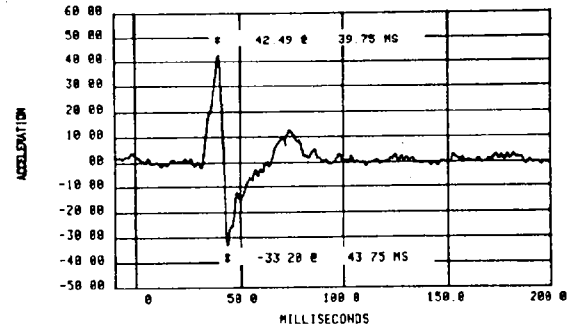
LOWER STERNUM LONGITUDINAL ACCELERATION

TRACK: 9 CHANNEL: 13 100% CAL = 387.14
TEST: S.1 SLED 03 T3-22 DATE: 3-16-81



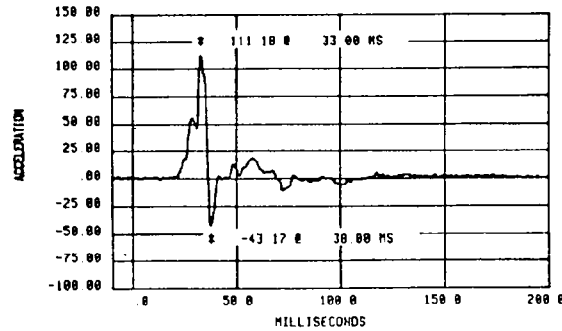
RIGHT LOWER RIB LONGITUDINAL ACCELERATION

TRACK: 9 CHANNEL: 11 100% CAL = 329.42
TEST: S.1 SLED 03 T3-22 DATE: 3-16-81



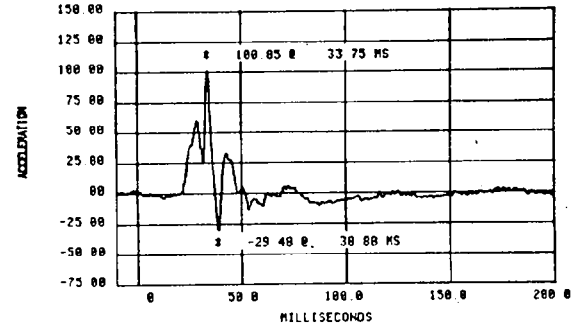
LEFT LOWER RIB LONGITUDINAL ACCELERATION

TRACK: 9 CHANNEL: 1 100% CAL = 334.15
TEST: S.1 SLED 03 T3-22 DATE: 3-16-81



RIGHT UPPER RIB LATERAL ACCELERATION

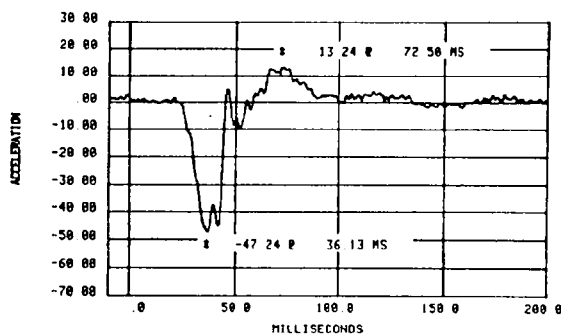
TRACK: 9 CHANNEL: 12 100% CAL = 319.03
TEST: S.1 SLED 03 T3-22 DATE: 3-16-81



RIGHT LOWER RIB LATERAL ACCELERATION

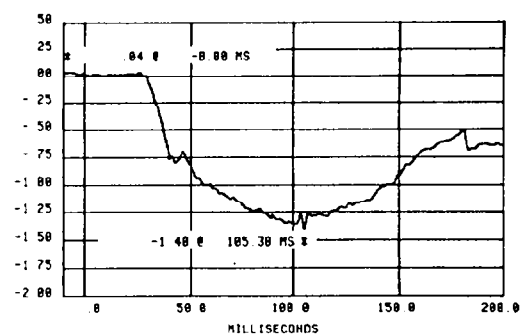
T3-22

TRACK: 9 CHANNEL: 2 100% CAL = 362 21
TEST: S.I. SLED #3 T3-22 DATE 3-16-81

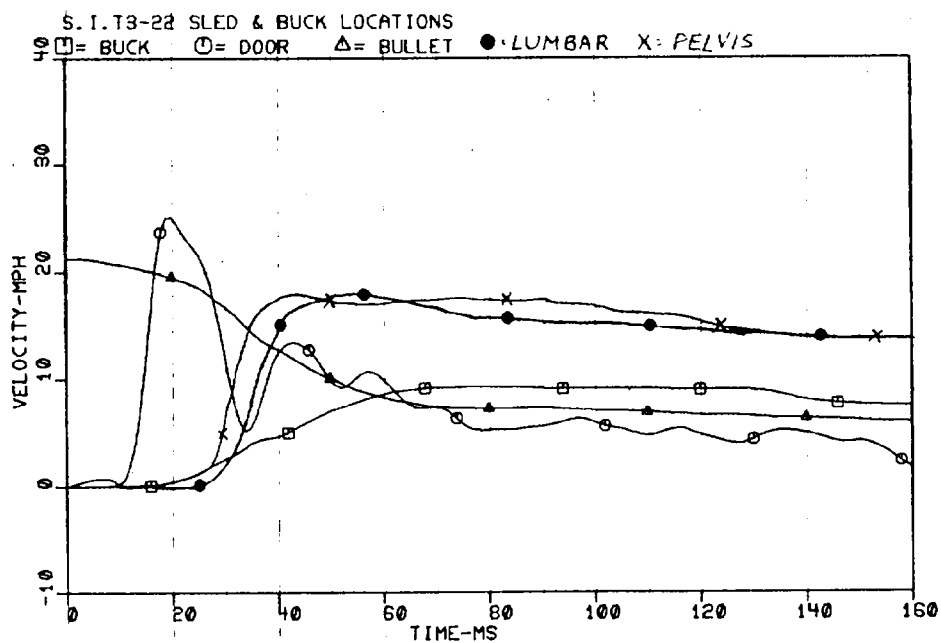


LEFT UPPER RIB LATERAL ACCELERATION

TRACK: 11 CHANNEL: 11 100% CAL = 2 85
TEST: S.I. SLED #3 T3-22 DATE 3-16-81

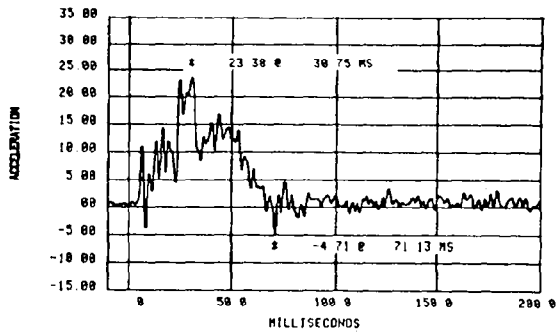


LOWER RIB DISPLACEMENT



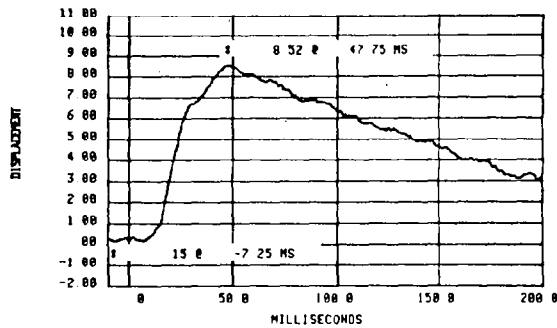
T3-22

TRACK: 11 CHANNEL: 4 100% CAL = 71.13
TEST: S.1 SLED #1 T1-23 DATE: 3-13-81



BULLET SLED LONGITUDINAL ACCELERATION

TRACK: 11 CHANNEL: 5 100% CAL = 22.50
TEST: S.1 SLED #1 T1-23 DATE: 3-13-81

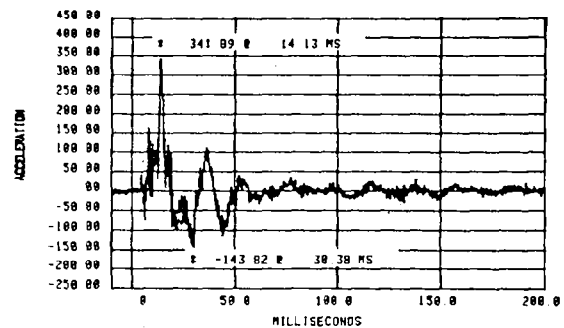


DOOR DISPLACEMENT

DATA NOT AVAILABLE

TARGET SLED LATERAL ACCELERATION

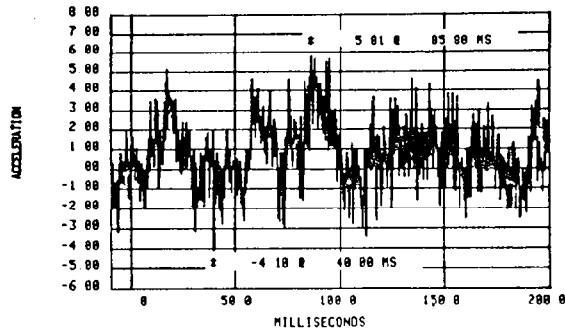
TRACK: 9 CHANNEL: 14 100% CAL = 696.81
TEST: S.1 SLED #1 T1-23 DATE: 3-13-81



DOOR LATERAL ACCELERATION

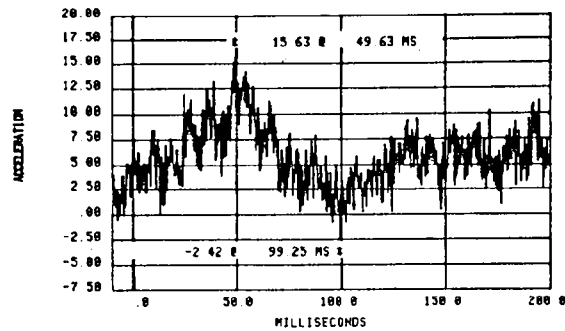
T3-23

TRACK 11 CHANNEL 12 100% CAL = 215.64
TEST S 1 SLED 01 T3-23 DATE 3-13-81



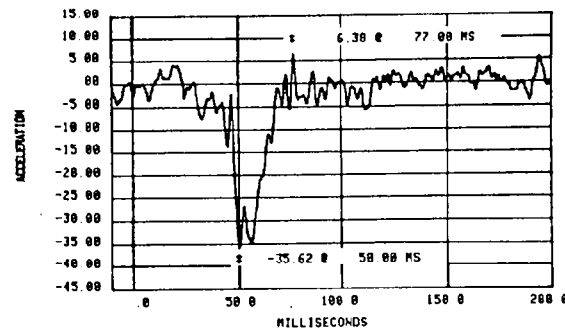
HEAD LONGITUDINAL ACCELERATION

TRACK 11 CHANNEL 14 100% CAL = 255.58
TEST S 1 SLED 01 T3-23 DATE 3-13-81



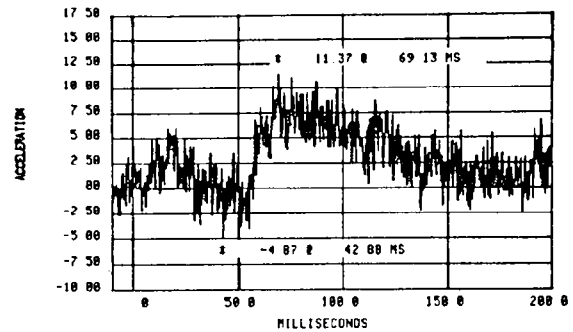
HEAD VERTICAL ACCELERATION

TRACK 11 CHANNEL 8 100% CAL = 334.97
TEST S 1 SLED 01 T3-23 DATE 3-13-81



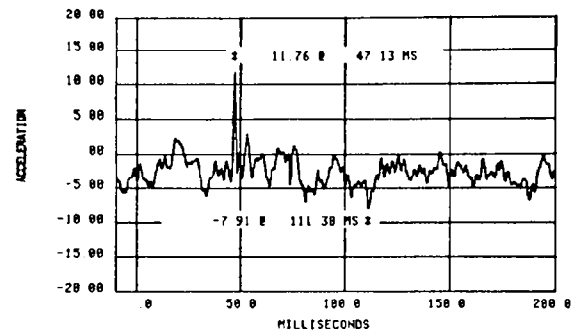
PELVIS LATERAL ACCELERATION

TRACK 11 CHANNEL 13 100% CAL = 242.01
TEST S 1 SLED 01 T3-23 DATE 3-13-81



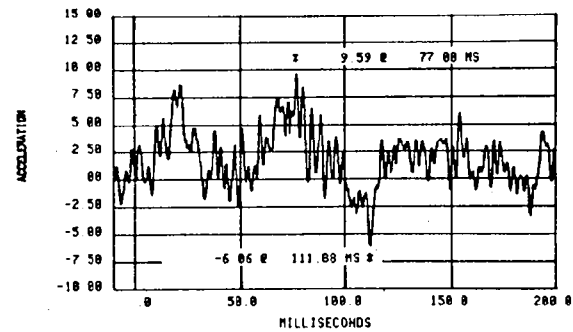
HEAD LATERAL ACCELERATION

TRACK 11 CHANNEL 7 100% CAL = 329.68
TEST S 1 SLED 01 T3-23 DATE 3-13-81



PELVIS LONGITUDINAL ACCELERATION

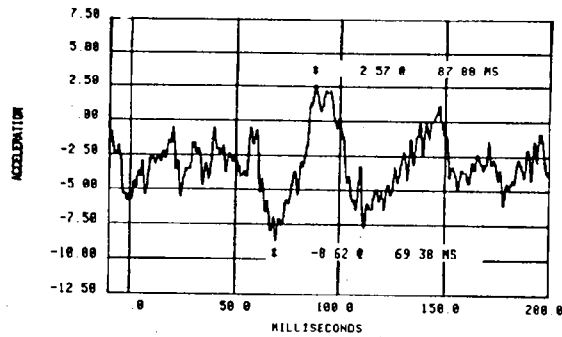
TRACK 11 CHANNEL 9 100% CAL = 317.10
TEST S 1 SLED 01 T3-23 DATE 3-13-81



PELVIS VERTICAL ACCELERATION

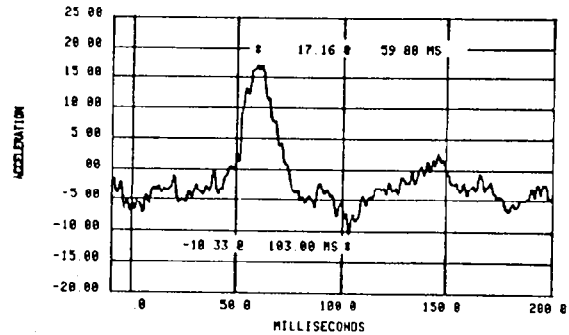
T3-23

TRACK: 9 CHANNEL: 7 100% CAL = 305.90
TEST: S.1 SLED #1 (1-2) DATE: 3-13-81



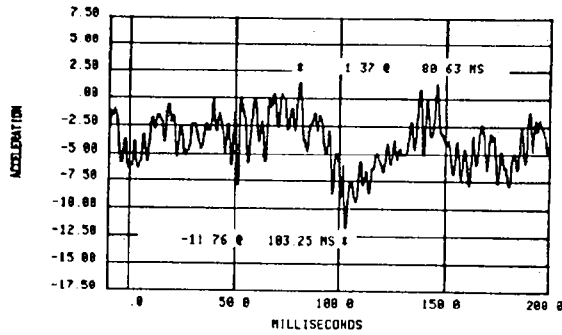
UPPER THORAX LONGITUDINAL ACCELERATION

TRACK: 9 CHANNEL: 8 100% CAL = 310.78
TEST: S.1 SLED #1 (1-2) DATE: 3-13-81



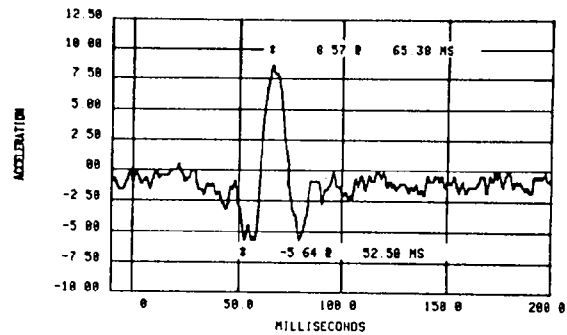
UPPER THORAX LATERAL ACCELERATION

TRACK: 9 CHANNEL: 9 100% CAL = 325.29
TEST: S.1 SLED #1 (1-2) DATE: 3-13-81



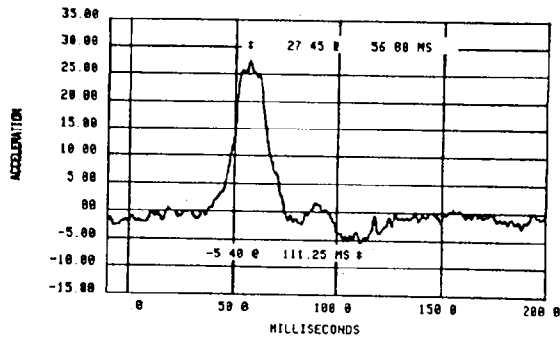
UPPER THORAX VERTICAL ACCELERATION

TRACK: 11 CHANNEL: 1 100% CAL = 371.76
TEST: S.1 SLED #1 (1-2) DATE: 3-13-81



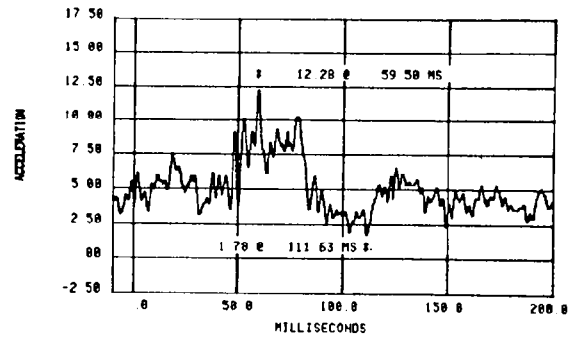
LOWER THORAX LONGITUDINAL ACCELERATION

TRACK: 11 CHANNEL: 2 100% CAL = 367.64
TEST: S.1 SLED #1 (1-2) DATE: 3-13-81



LOWER THORAX LATERAL ACCELERATION

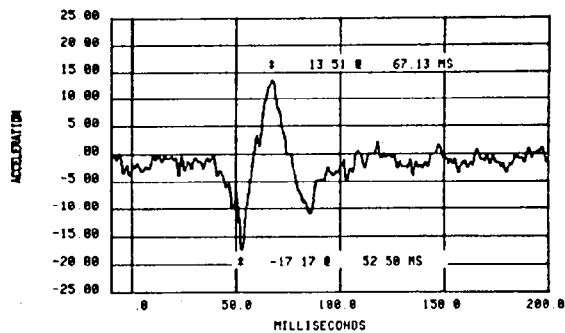
TRACK: 11 CHANNEL: 3 100% CAL = 323.12
TEST: S.1 SLED #1 (1-2) DATE: 3-13-81



LOWER THORAX VERTICAL ACCELERATION

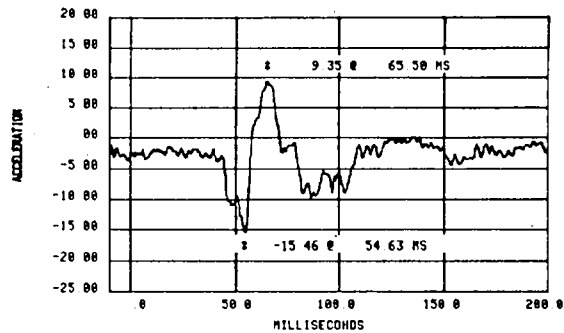
T3-23

TRACK: 9 CHANNEL: 4 100% CAL = 378.77
TEST: S.I. SLED #1 (T-2) DATE: 3-13-81



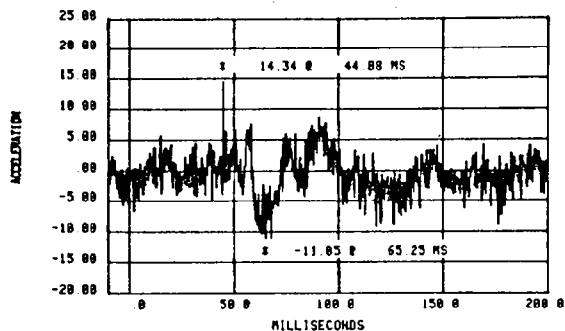
UPPER STERNUM LONGITUDINAL ACCELERATION

TRACK: 9 CHANNEL: 3 100% CAL = 316.99
TEST: S.I. SLED #1 (T-2) DATE: 3-13-81



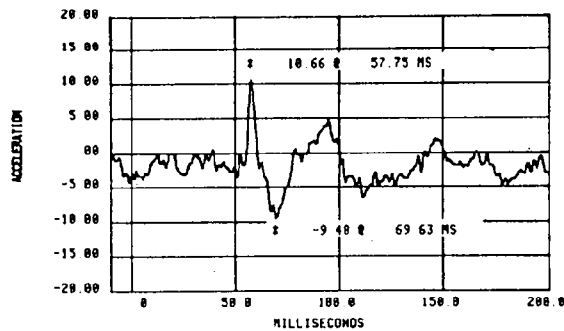
LOWER STERNUM LONGITUDINAL ACCELERATION

TRACK: 9 CHANNEL: 13 100% CAL = 397.14
TEST: S.I. SLED #1 (T-2) DATE: 3-13-81



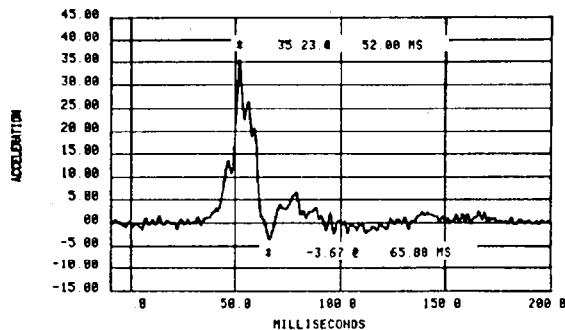
RIGHT LOWER RIB LONGITUDINAL ACCELERATION

TRACK: 9 CHANNEL: 11 100% CAL = 329.42
TEST: S.I. SLED #1 (T-2) DATE: 3-13-81



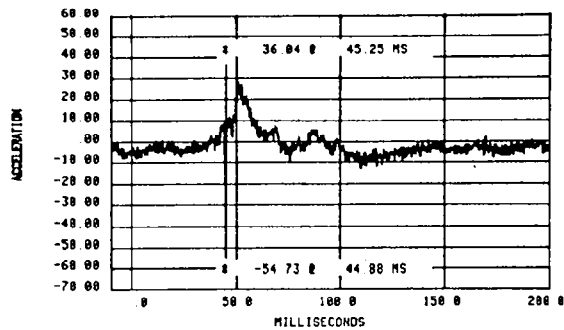
LEFT LOWER RIB LONGITUDINAL ACCELERATION

TRACK: 9 CHANNEL: 1 100% CAL = 334.15
TEST: S.I. SLED #1 (T-2) DATE: 3-13-81



RIGHT UPPER RIB LATERAL ACCELERATION

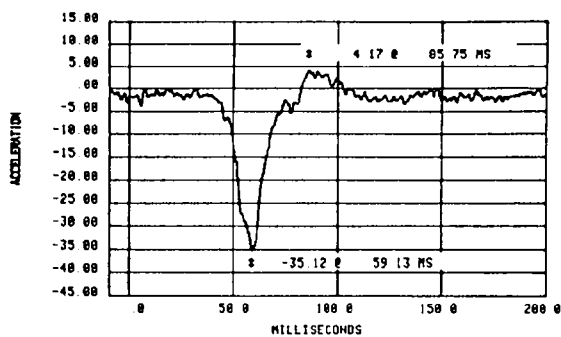
TRACK: 9 CHANNEL: 12 100% CAL = 319.03
TEST: S.I. SLED #1 (T-2) DATE: 3-13-81



RIGHT LOWER RIB LATERAL ACCELERATION

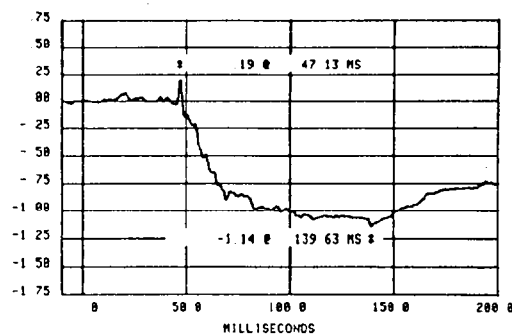
T3-23

TRACK: 9 CHANNEL: 2 100% CAL = 362.21
TEST: S.I. SLED 01-11-21 DATE: 3-13-81



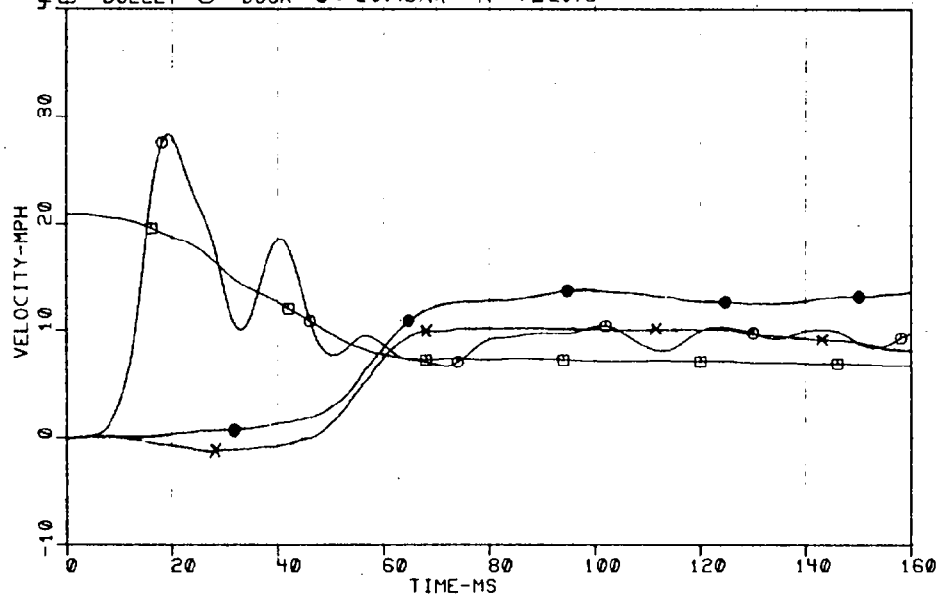
LEFT UPPER RIB LATERAL ACCELERATION

TRACK: 11 CHANNEL: 11 100% CAL = 2.05
TEST: S.I. SLED 01-11-21 DATE: 3-13-81



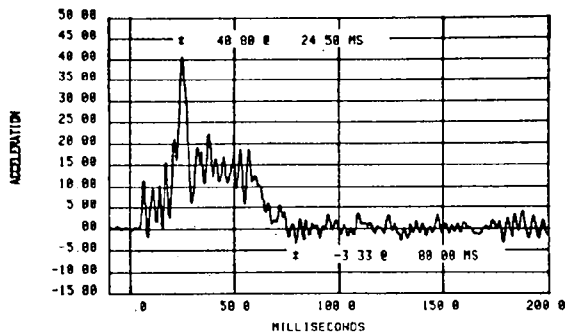
LOWER RIB DISPLACEMENT

S.I.T3-23 SLED & BUCK LOCATIONS
□ = BULLET ○ = DOOR ● = LUMBAR X = PELVIS



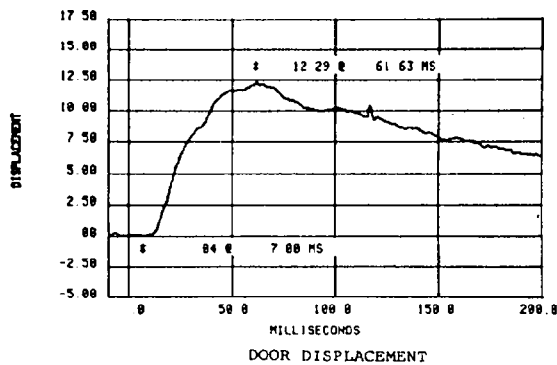
T3-23

TRACK: 11 CHANNEL: 4 100% CAL = 71.13
TEST: S.I. SLED #4 T3-24 DATE: 3-18-81



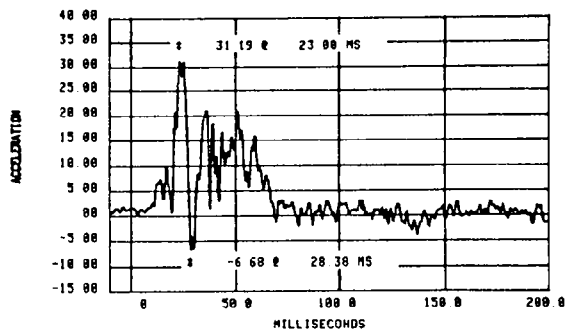
BULLET SLED LONGITUDINAL ACCELERATION

TRACK: 11 CHANNEL: 5 100% CAL = 22.50
TEST: S.I. SLED #4 T3-24 DATE: 3-18-81



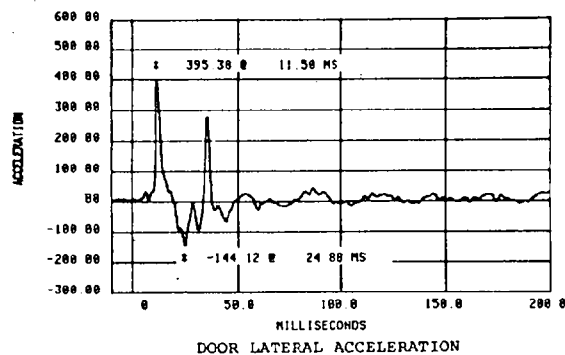
DOOR DISPLACEMENT

TRACK: 9 CHANNEL: 10 100% CAL = 154.75
TEST: S.I. SLED #4 T3-24 DATE: 3-18-81



TARGET SLED LATERAL ACCELERATION

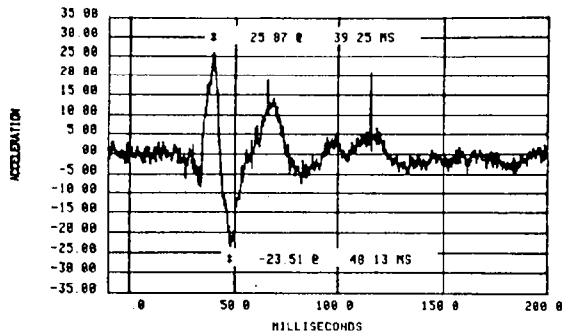
TRACK: 9 CHANNEL: 14 100% CAL = 696.81
TEST: S.I. SLED #4 T3-24 DATE: 3-18-81



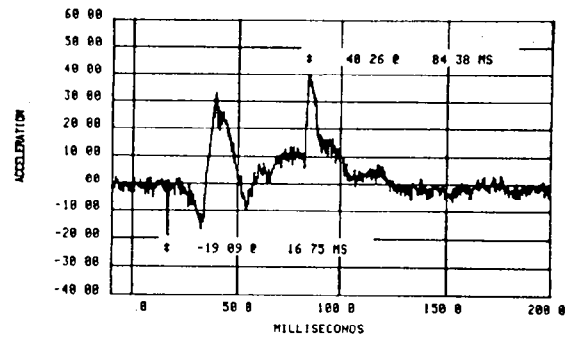
DOOR LATERAL ACCELERATION

T3-24

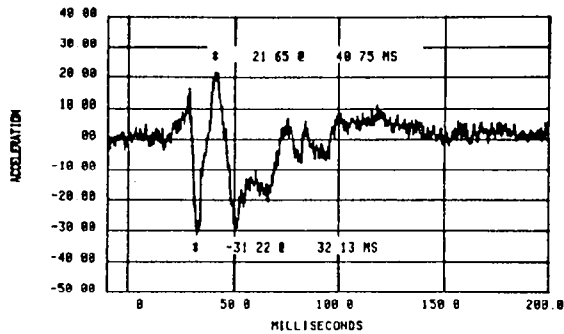
TRACK 11 CHANNEL 12 100% CAL = 215.64
TEST S.I. SLED #4 T3-24 DATE 3-18-81



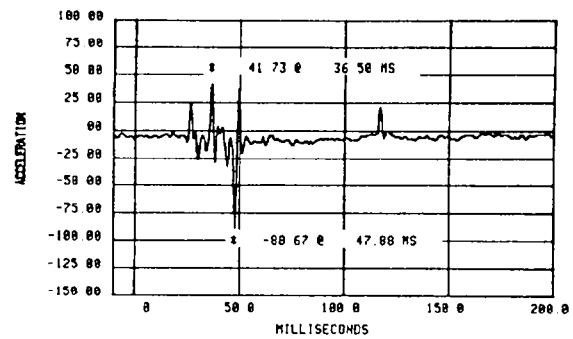
TRACK 11 CHANNEL 13 100% CAL = 242.01
TEST S.I. SLED #4 T3-24 DATE 3-18-81



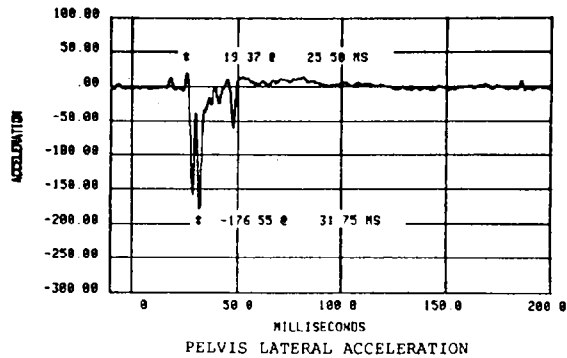
TRACK 11 CHANNEL 14 100% CAL = 235.58
TEST S.I. SLED #4 T3-24 DATE 3-18-81



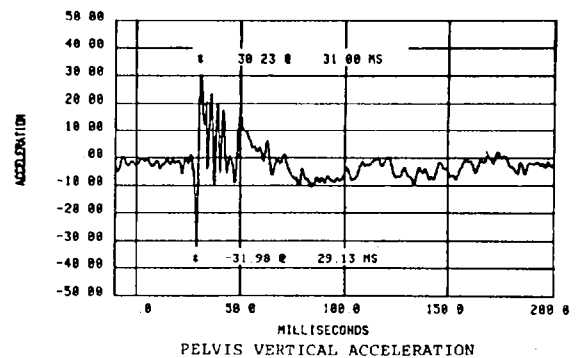
TRACK 11 CHANNEL 7 100% CAL = 329.60
TEST S.I. SLED #4 T3-24 DATE 3-18-81



TRACK 11 CHANNEL 8 100% CAL = 334.97
TEST S.I. SLED #4 T3-24 DATE 3-18-81

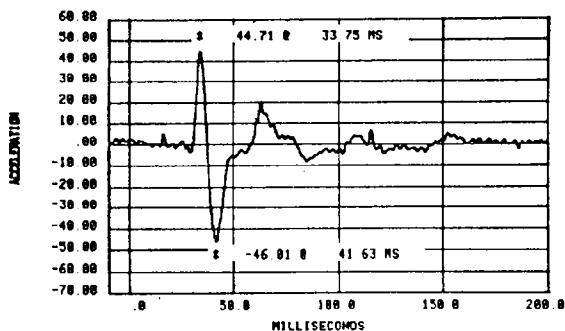


TRACK 11 CHANNEL 9 100% CAL = 317.18
TEST S.I. SLED #4 T3-24 DATE 3-18-81



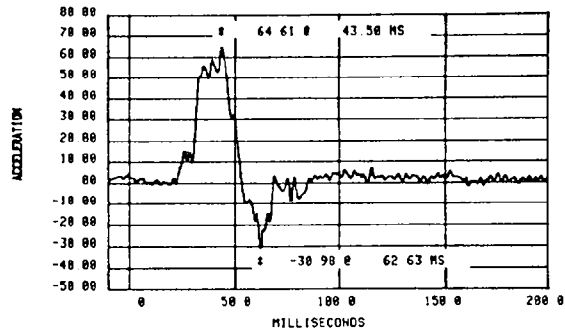
T3-24

TRACK: 9 CHANNEL: 7 100% CAL = 385.98
TEST: S.I. SLED #4 73-24 DATE: 3-18-81



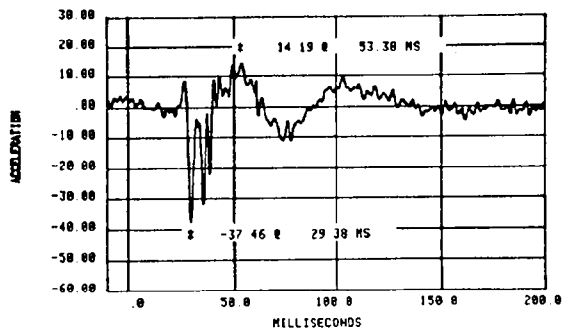
UPPER THORAX LONGITUDINAL ACCELERATION

TRACK: 9 CHANNEL: 8 100% CAL = 310.78
TEST: S.I. SLED #4 73-24 DATE: 3-18-81



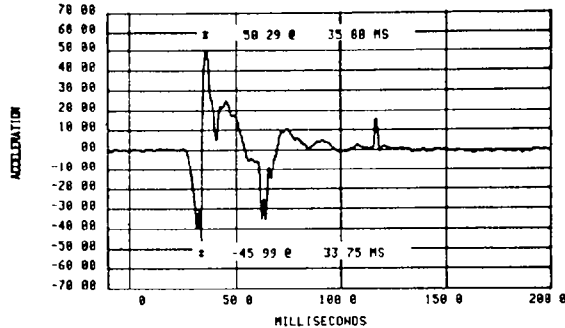
UPPER THORAX LATERAL ACCELERATION

TRACK: 9 CHANNEL: 9 100% CAL = 325.29
TEST: S.I. SLED #4 73-24 DATE: 3-18-81



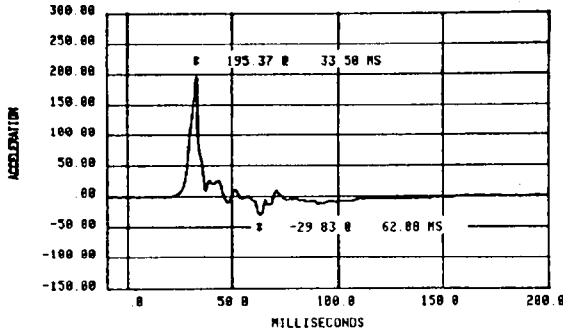
UPPER THORAX VERTICAL ACCELERATION

TRACK: 11 CHANNEL: 1 100% CAL = 371.76
TEST: S.I. SLED #4 73-24 DATE: 3-18-81



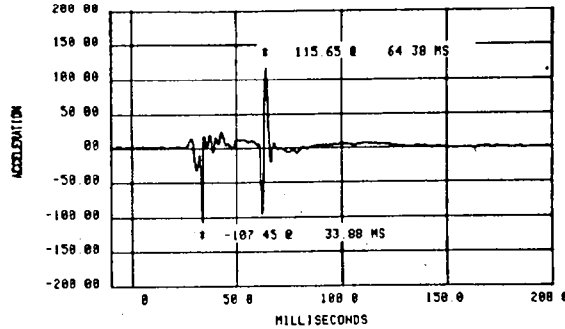
LOWER THORAX LONGITUDINAL ACCELERATION

TRACK: 11 CHANNEL: 2 100% CAL = 367.64
TEST: S.I. SLED #4 73-24 DATE: 3-18-81



LOWER THORAX LATERAL ACCELERATION

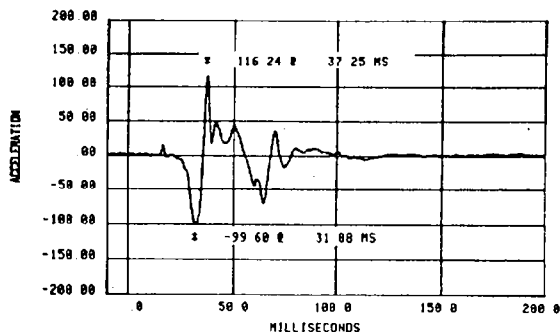
TRACK: 11 CHANNEL: 3 100% CAL = 323.12
TEST: S.I. SLED #4 73-24 DATE: 3-18-81



LOWER THORAX VERTICAL ACCELERATION

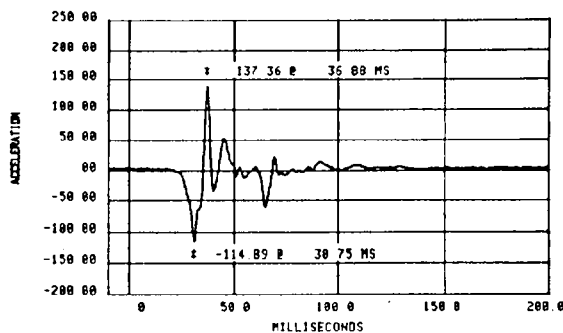
T3-24

TRACK: 9 CHANNEL: 4 100% CAL = 378.77
TEST: S I SLED #4 73-74 DATE: 3-18-81



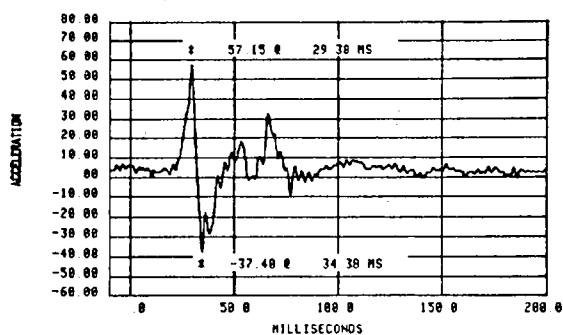
UPPER STERNUM LONGITUDINAL ACCELERATION

TRACK: 9 CHANNEL: 3 100% CAL = 316.99
TEST: S I SLED #4 73-74 DATE: 3-18-81



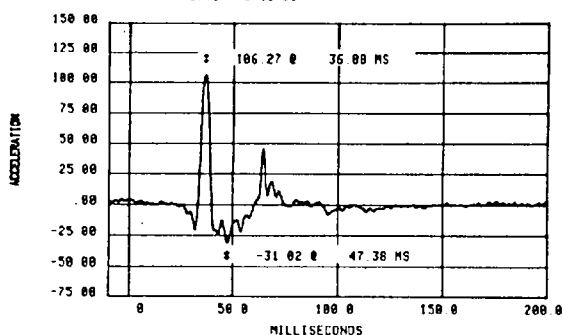
LOWER STERNUM LONGITUDINAL ACCELERATION

TRACK: 9 CHANNEL: 13 100% CAL = 387.14
TEST: S I SLED #4 73-74 DATE: 3-18-81



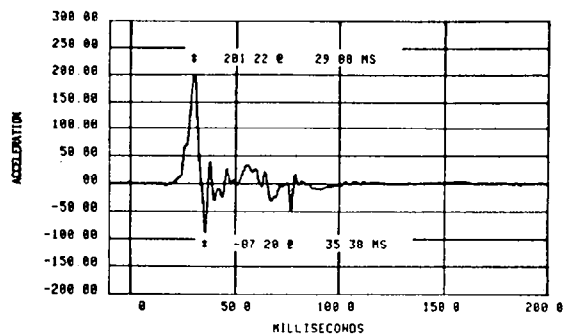
RIGHT LOWER RIB LONGITUDINAL ACCELERATION

TRACK: 9 CHANNEL: 11 100% CAL = 329.42
TEST: S I SLED #4 73-74 DATE: 3-18-81



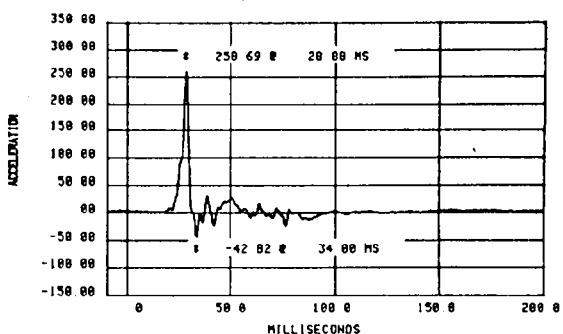
LEFT LOWER RIB LONGITUDINAL ACCELERATION

TRACK: 9 CHANNEL: 1 100% CAL = 334.15
TEST: S I SLED #4 73-74 DATE: 3-18-81



RIGHT UPPER RIB LATERAL ACCELERATION

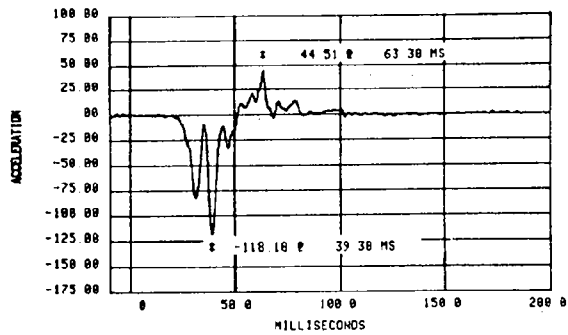
TRACK: 9 CHANNEL: 12 100% CAL = 319.03
TEST: S I SLED #4 73-74 DATE: 3-18-81



RIGHT LOWER RIB LATERAL ACCELERATION

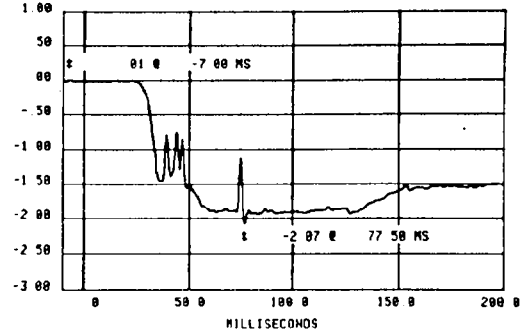
T3-24

TRACK: 9 CHANNEL: 2 100% CAL = 362.21
TEST: S.I. SLED #4 73-74 DATE: 3-18-81

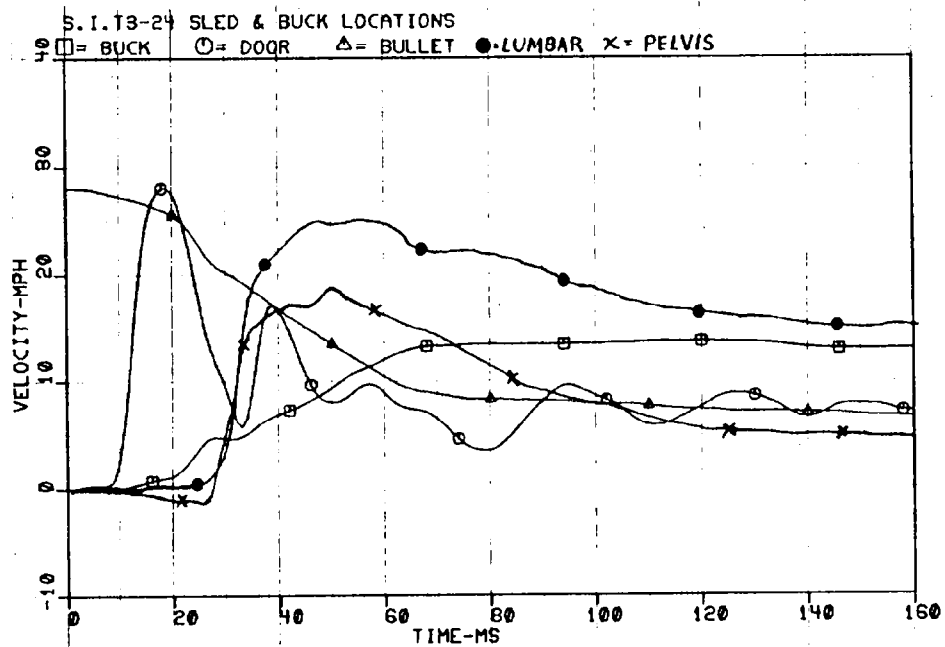


LEFT UPPER RIB LATERAL ACCELERATION

TRACK: 11 CHANNEL: 11 100% CAL = 2.85
TEST: S.I. SLED #4 73-74 DATE: 3-18-81



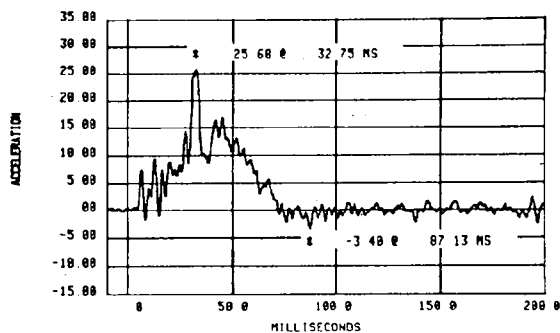
LOWER RIB DISPLACEMENT



T3-24

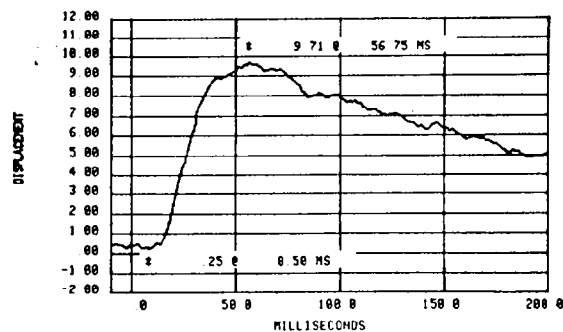
K-21

TRACK 11 CHANNEL 4 100% CAL = 71.13
TEST T3-25 S I 06 DATE 3-25-81



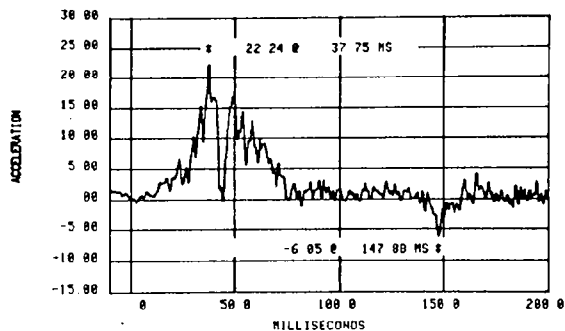
BULLET SLED LONGITUDINAL ACCELERATION

TRACK 11 CHANNEL 5 100% CAL = 22.50
TEST T3-25 S I 06 DATE 3-25-81



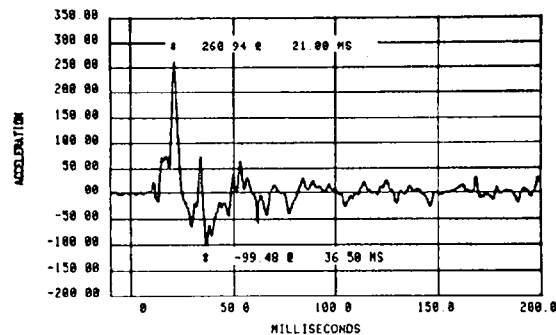
DOOR DISPLACEMENT

TRACK 9 CHANNEL 10 100% CAL = 154.73
TEST T3-25 S I 06 DATE 3-25-81



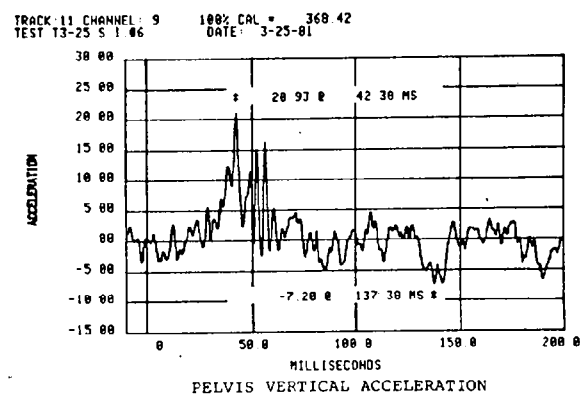
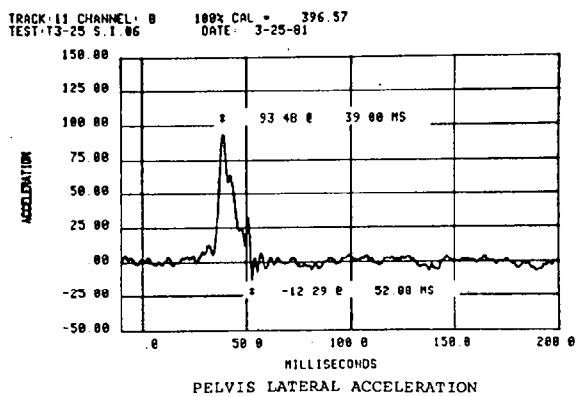
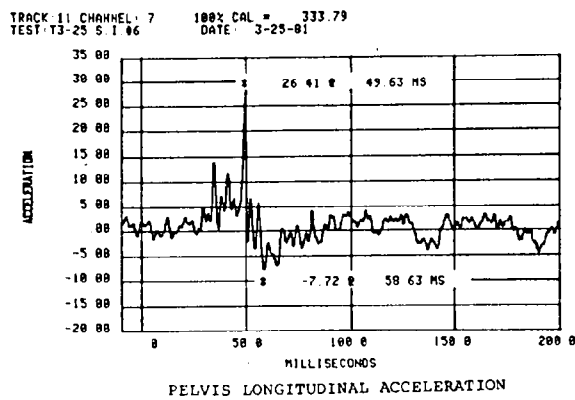
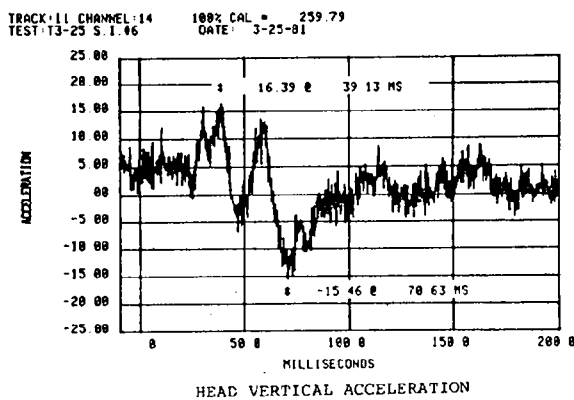
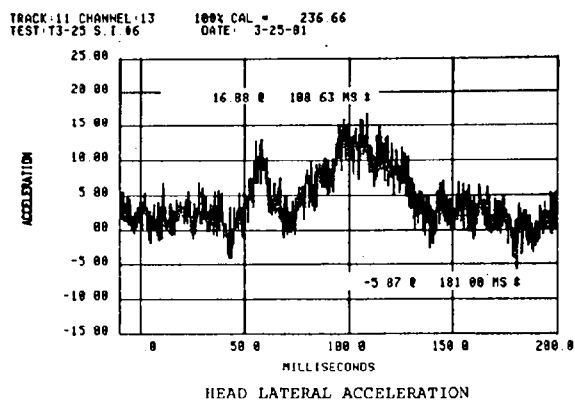
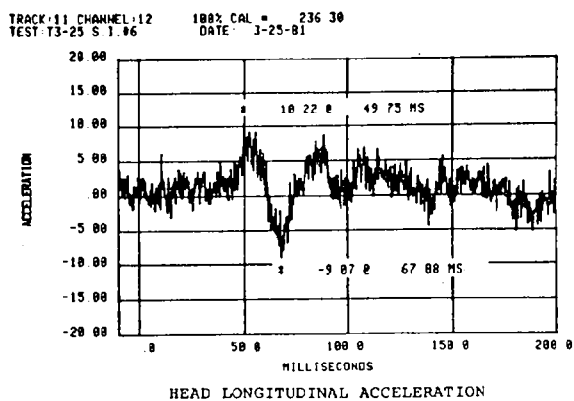
TARGET SLED LATERAL ACCELERATION

TRACK 9 CHANNEL 14 100% CAL = 696.81
TEST T3-25 S I 06 DATE 3-25-81



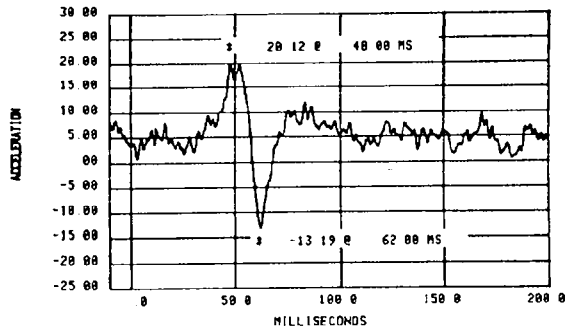
DOOR LATERAL ACCELERATION

T3-25



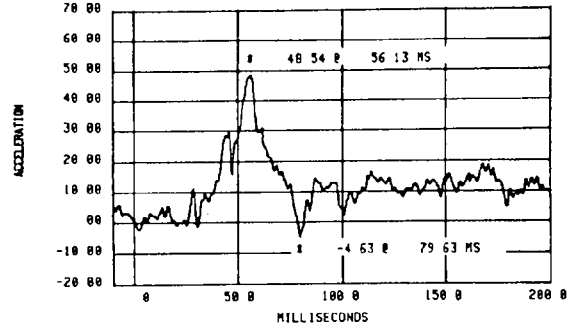
T3-25

TRACK: 9 CHANNEL: 7 100% CAL = 379.83
TEST: T3-25 S.1 06 DATE: 3-25-81



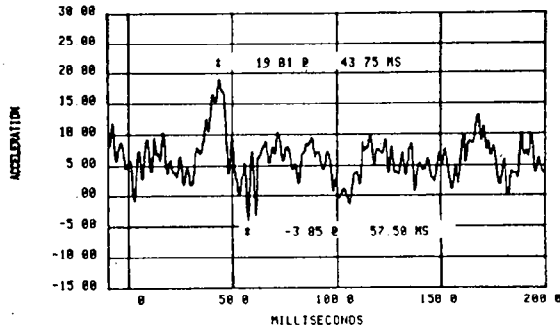
UPPER THORAX LONGITUDINAL ACCELERATION

TRACK: 9 CHANNEL: 8 100% CAL = 400.27
TEST: T3-25 S.1 06 DATE: 3-25-81



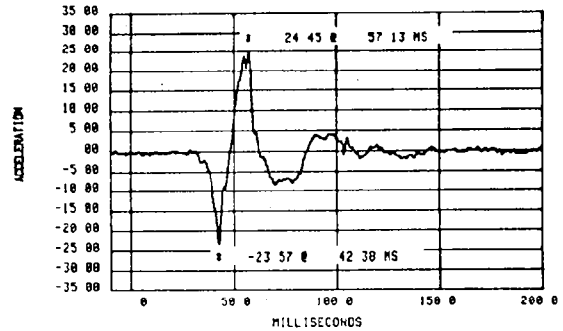
UPPER THORAX LATERAL ACCELERATION

TRACK: 9 CHANNEL: 9 100% CAL = 421.24
TEST: T3-25 S.1 06 DATE: 3-25-81



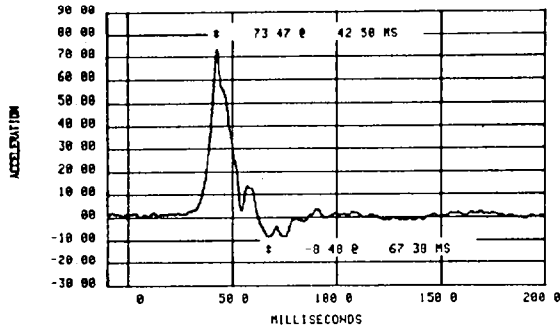
UPPER THORAX VERTICAL ACCELERATION

TRACK: 11 CHANNEL: 1 100% CAL = 362.55
TEST: T3-25 S.1 06 DATE: 3-25-81



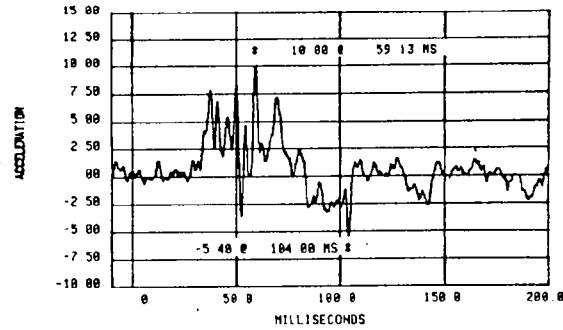
LOWER THORAX LONGITUDINAL ACCELERATION

TRACK: 11 CHANNEL: 2 100% CAL = 357.34
TEST: T3-25 S.1 06 DATE: 3-25-81



LOWER THORAX LATERAL ACCELERATION

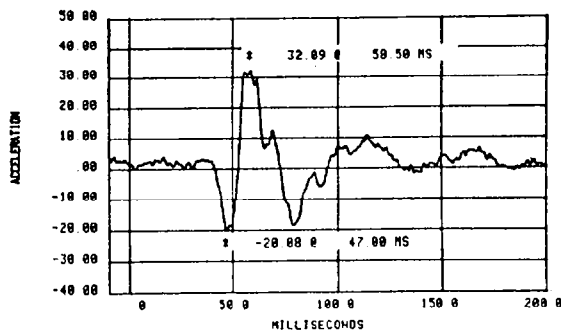
TRACK: 11 CHANNEL: 3 100% CAL = 329.25
TEST: T3-25 S.1 06 DATE: 3-25-81



LOWER THORAX VERTICAL ACCELERATION

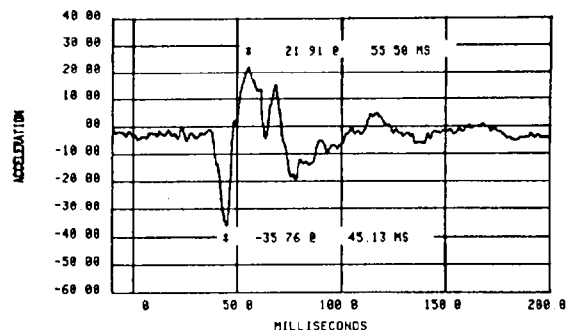
T3-25

TRACK: 9 CHANNEL: 4 100% CAL = 343.06
TEST: T3-25 S.I. 06 DATE: 3-25-81



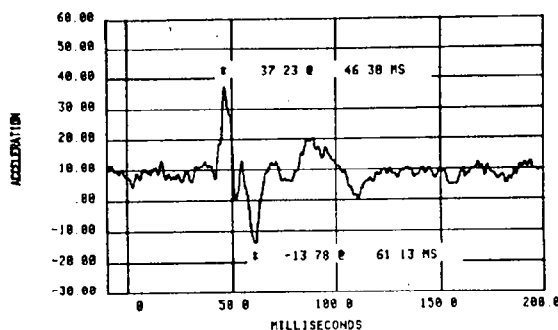
UPPER STERNUM LONGITUDINAL ACCELERATION

TRACK: 9 CHANNEL: 3 100% CAL = 339.86
TEST: T3-25 S.I. 06 DATE: 3-25-81



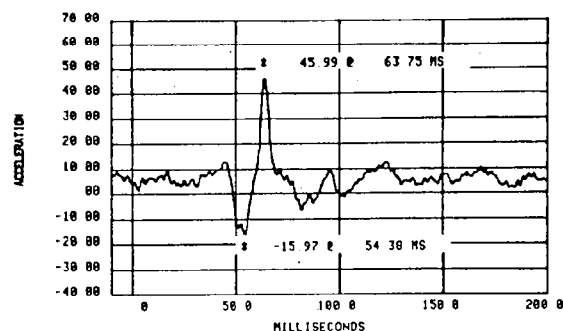
LOWER STERNUM LONGITUDINAL ACCELERATION

TRACK: 9 CHANNEL: 13 100% CAL = 397.91
TEST: T3-25 S.I. 06 DATE: 3-25-81



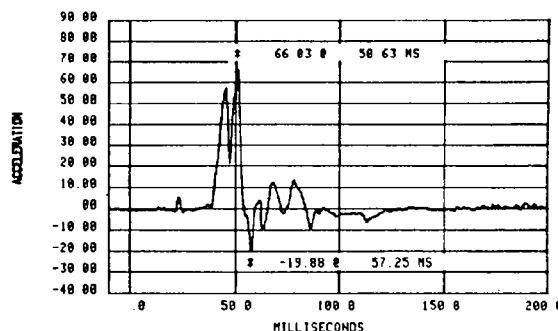
RIGHT LOWER RIB LONGITUDINAL ACCELERATION

TRACK: 9 CHANNEL: 11 100% CAL = 399.16
TEST: T3-25 S.I. 06 DATE: 3-25-81



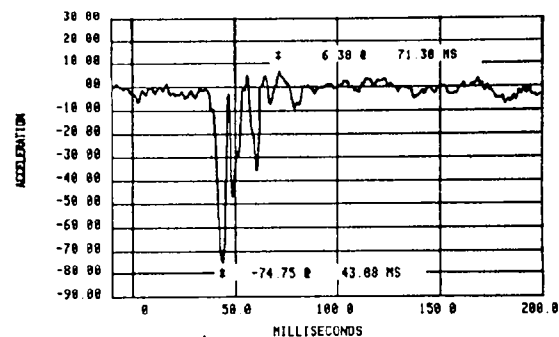
LEFT LOWER RIB LONGITUDINAL ACCELERATION

TRACK: 9 CHANNEL: 1 100% CAL = 363.74
TEST: T3-25 S.I. 06 DATE: 3-25-81



RIGHT UPPER RIB LATERAL ACCELERATION

TRACK: 9 CHANNEL: 12 100% CAL = 421.71
TEST: T3-25 S.I. 06 DATE: 3-25-81

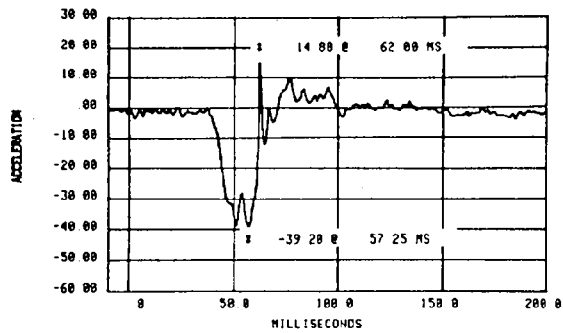


RIGHT LOWER RIB LATERAL ACCELERATION

T3-25

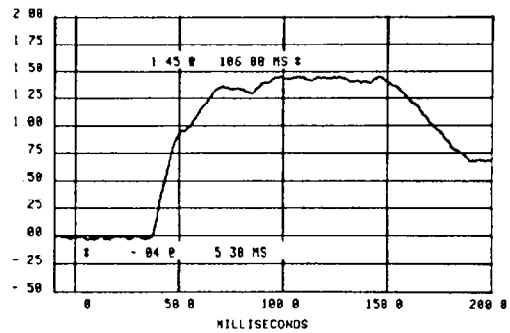
K-25

TRACK: 9 CHANNEL: 2 100% CAL = 346.27
TEST: T3-25 S I 06 DATE: 3-25-81

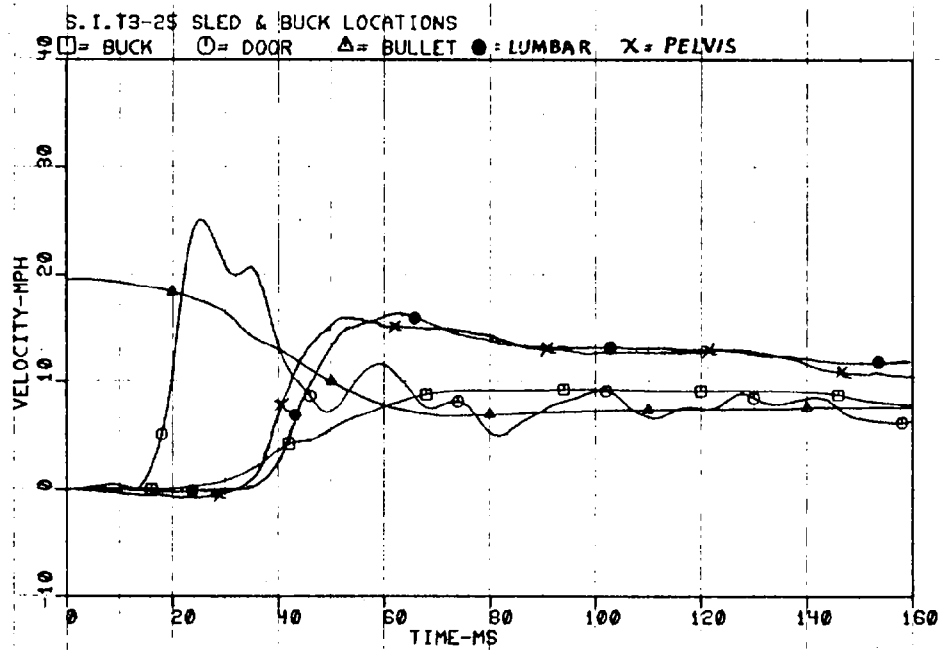


LEFT UPPER RIB LATERAL ACCELERATION

TRACK: 11 CHANNEL: 11 100% CAL = 2.77
TEST: T3-25 S I 06 DATE: 3-25-81

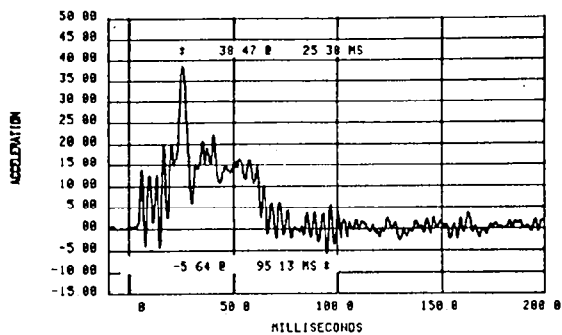


LOWER RIB DISPLACEMENT



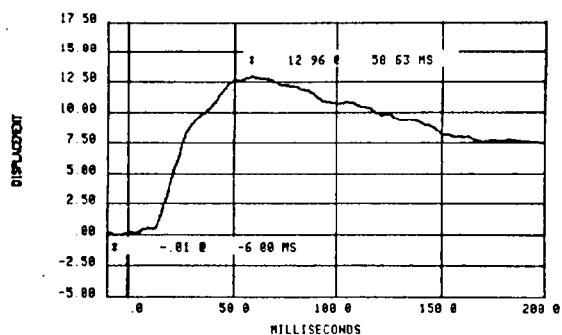
T3-25

TRACK: 11 CHANNEL: 4 100% CAL = 71.13
TEST: T3-26 S I 07 DATE: 3-24-81



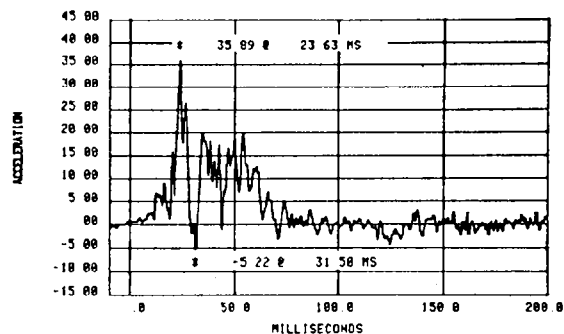
BULLET SLED LONGITUDINAL ACCELERATION

TRACK: 11 CHANNEL: 5 100% CAL = 22.50
TEST: T3-26 S I 07 DATE: 3-24-81



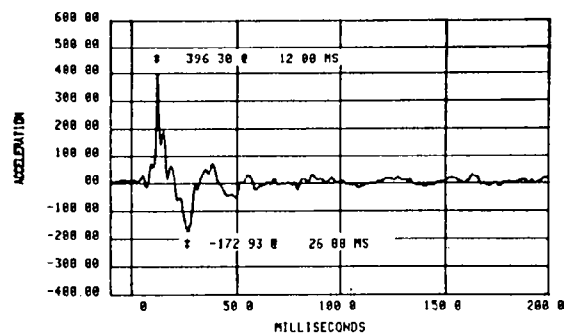
DOOR DISPLACEMENT

TRACK: 9 CHANNEL: 10 100% CAL = 154.75
TEST: T3-26 S I 07 DATE: 3-24-81



TARGET SLED LATERAL ACCELERATION

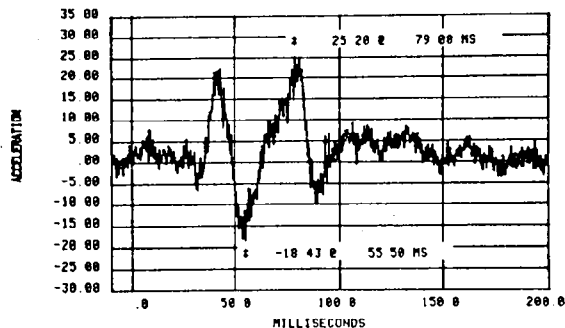
TRACK: 9 CHANNEL: 14 100% CAL = 696.01
TEST: T3-26 S I 07 DATE: 3-24-81



DOOR LATERAL ACCELERATION

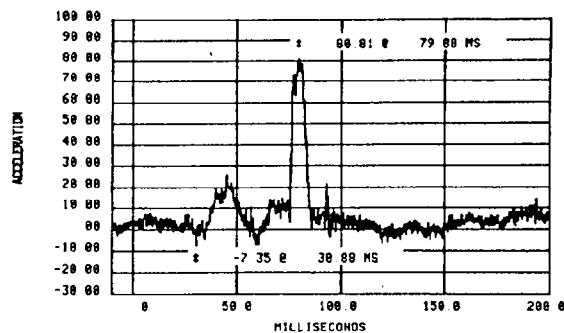
T3-26

TRACK:11 CHANNEL:12 100% CAL = 236.30
TEST:13-26 S.I. 07 DATE: 3-24-81



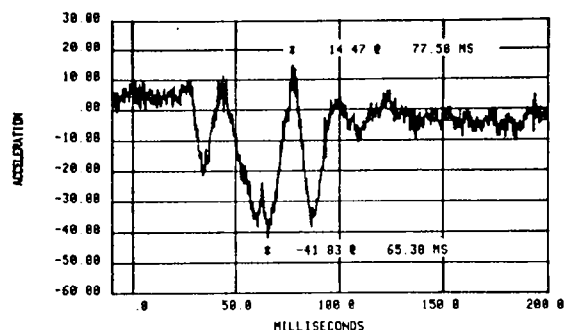
HEAD LONGITUDINAL ACCELERATION

TRACK:11 CHANNEL:13 100% CAL = 236.66
TEST:13-26 S.I. 07 DATE: 3-24-81



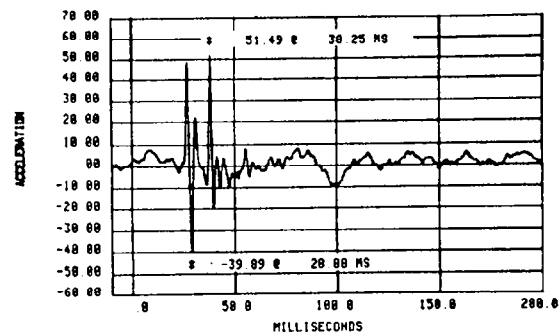
HEAD LATERAL ACCELERATION

TRACK:11 CHANNEL:14 100% CAL = 259.79
TEST:13-26 S.I. 07 DATE: 3-24-81



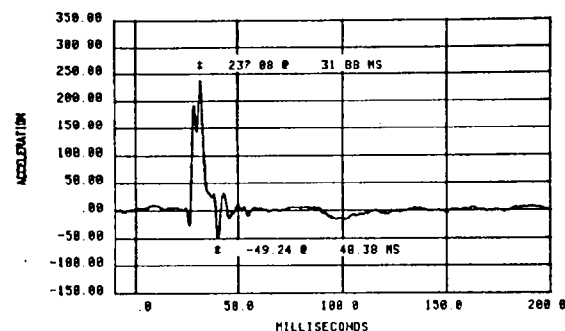
HEAD VERTICAL ACCELERATION

TRACK:11 CHANNEL: 7 100% CAL = 333.79
TEST:13-26 S.I. 07 DATE: 3-24-81



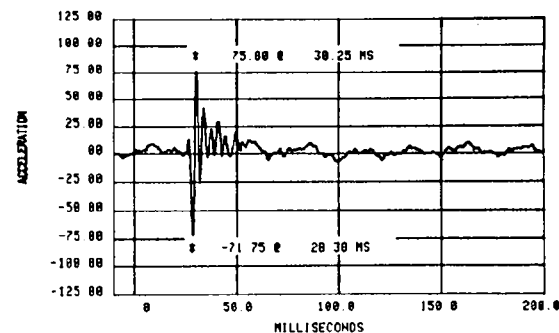
PELVIS LONGITUDINAL ACCELERATION

TRACK:11 CHANNEL: 8 100% CAL = 396.97
TEST:13-26 S.I. 07 DATE: 3-24-81



PELVIS LATERAL ACCELERATION

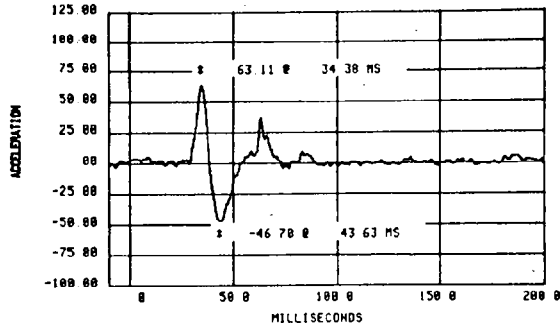
TRACK:11 CHANNEL: 9 100% CAL = 360.42
TEST:13-26 S.I. 07 DATE: 3-24-81



PELVIS VERTICAL ACCELERATION

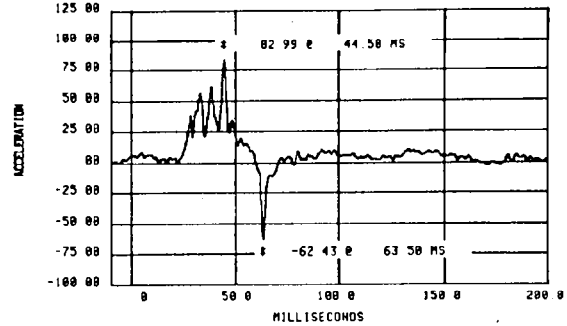
T3-26

TRACK: 9 CHANNEL: 7 100% CAL = 379.83
TEST: T3-26 S.1.07 DATE: 3-24-81



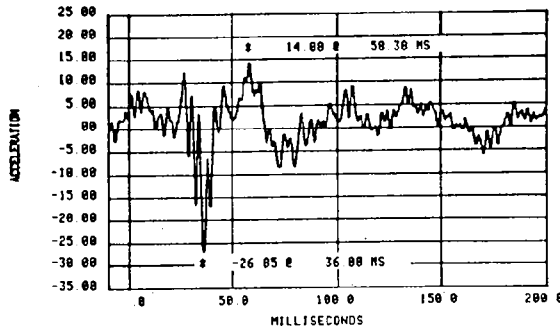
UPPER THORAX LONGITUDINAL ACCELERATION

TRACK: 9 CHANNEL: 8 100% CAL = 400.27
TEST: T3-26 S.1.07 DATE: 3-24-81



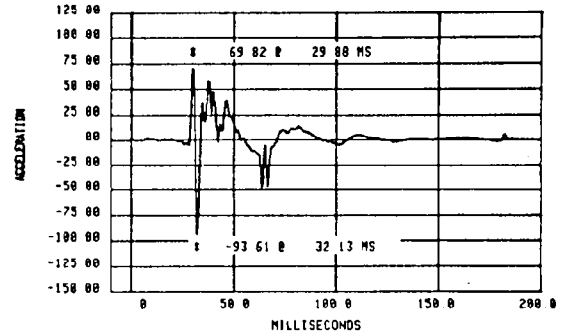
UPPER THORAX LATERAL ACCELERATION

TRACK: 9 CHANNEL: 9 100% CAL = 421.24
TEST: T3-26 S.1.07 DATE: 3-24-81



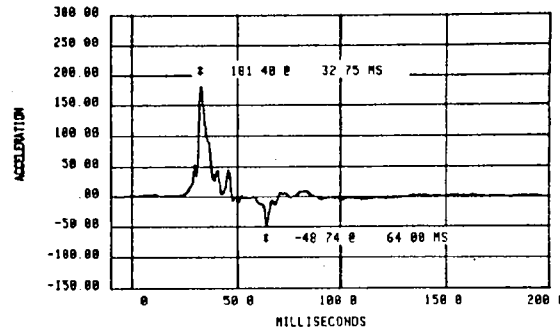
UPPER THORAX VERTICAL ACCELERATION

TRACK: 11 CHANNEL: 1 100% CAL = 362.55
TEST: T3-26 S.1.07 DATE: 3-24-81



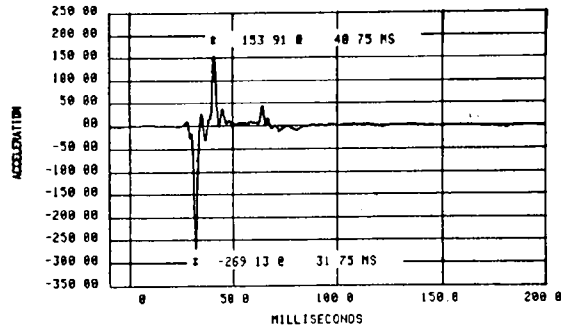
LOWER THORAX LONGITUDINAL ACCELERATION

TRACK: 11 CHANNEL: 2 100% CAL = 357.34
TEST: T3-26 S.1.07 DATE: 3-24-81



LOWER THORAX LATERAL ACCELERATION

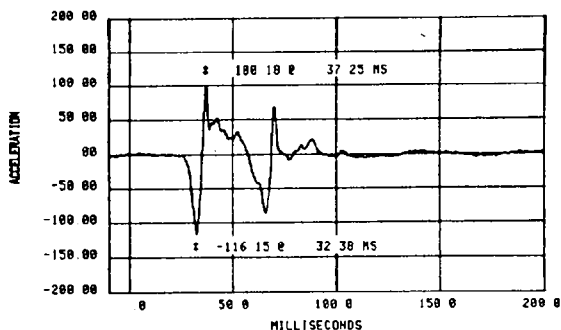
TRACK: 11 CHANNEL: 3 100% CAL = 329.25
TEST: T3-26 S.1.07 DATE: 3-24-81



LOWER THORAX VERTICAL ACCELERATION

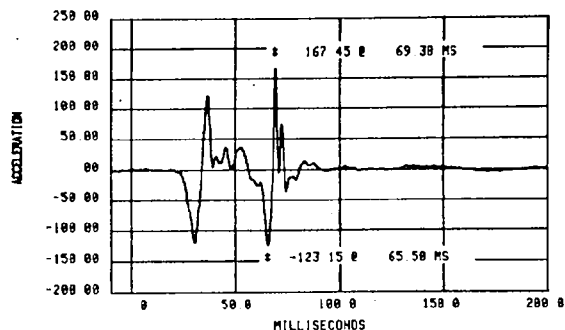
T3-26

TRACK: 9 CHANNEL: 4 100% CAL = 343.06
TEST: T3-26 S 1.07 DATE: 3-24-81



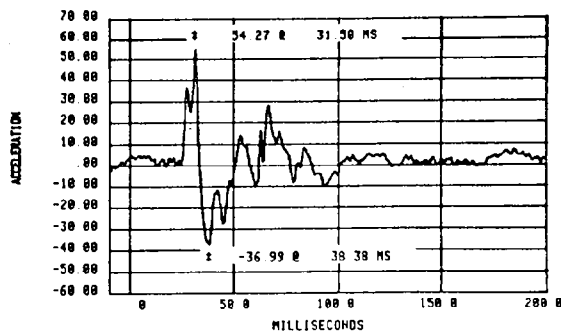
UPPER STERNUM LONGITUDINAL ACCELERATION

TRACK: 9 CHANNEL: 3 100% CAL = 339.06
TEST: T3-26 S 1.07 DATE: 3-24-81



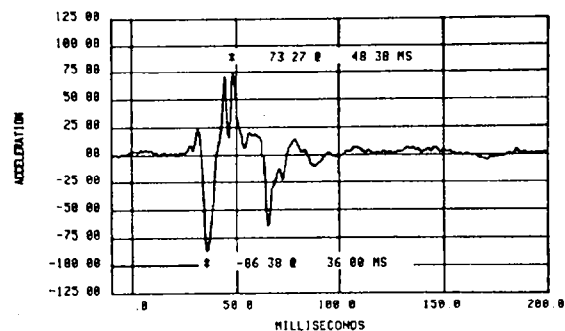
LOWER STERNUM LONGITUDINAL ACCELERATION

TRACK: 9 CHANNEL: 13 100% CAL = 397.91
TEST: T3-26 S 1.07 DATE: 3-24-81



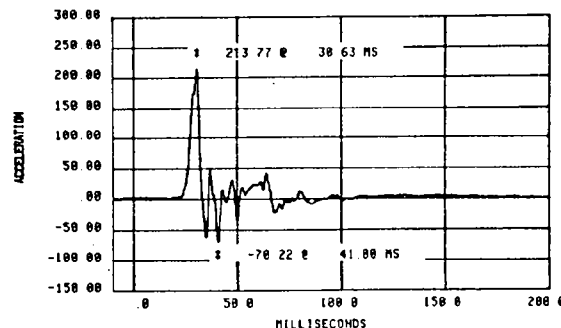
RIGHT LOWER RIB LONGITUDINAL ACCELERATION

TRACK: 9 CHANNEL: 11 100% CAL = 390.16
TEST: T3-26 S 1.07 DATE: 3-24-81



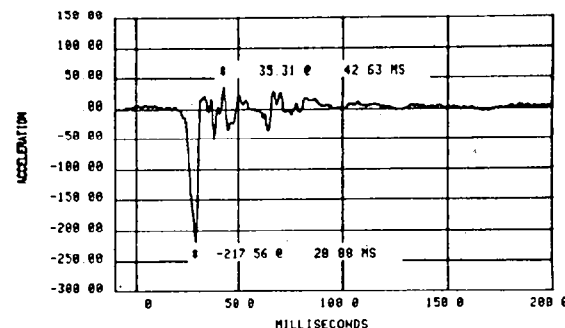
LEFT LOWER RIB LONGITUDINAL ACCELERATION

TRACK: 9 CHANNEL: 1 100% CAL = 363.74
TEST: T3-26 S 1.07 DATE: 3-24-81



RIGHT UPPER RIB LATERAL ACCELERATION

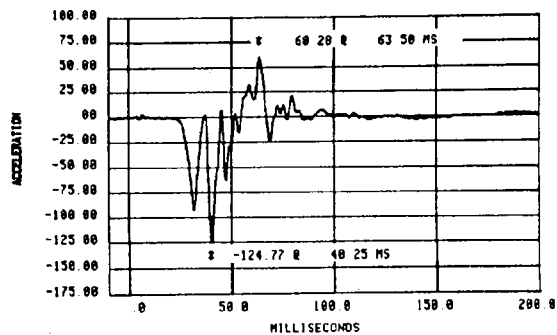
TRACK: 9 CHANNEL: 12 100% CAL = 421.71
TEST: T3-26 S 1.07 DATE: 3-24-81



RIGHT LOWER RIB LATERAL ACCELERATION

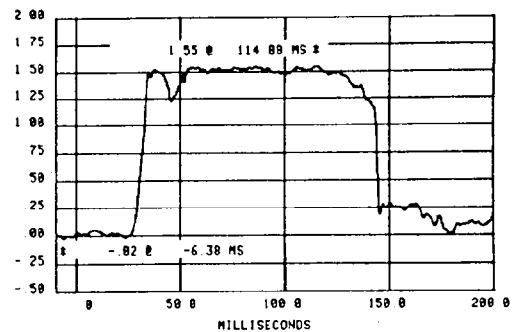
T3-26

TRACK: 9 CHANNEL: 2 100% CAL = 346 27
TEST: T3-26 S I 07 DATE: 3-24-81

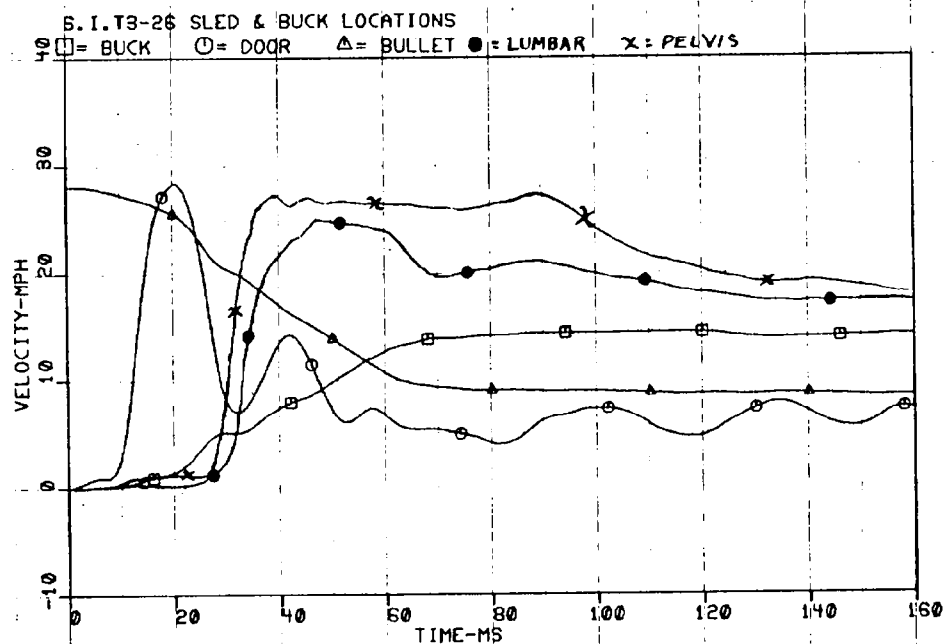


LEFT UPPER RIB LATERAL ACCELERATION

TRACK: 11 CHANNEL: 11 100% CAL = 2 77
TEST: T3-26 S I 07 DATE: 3-24-81

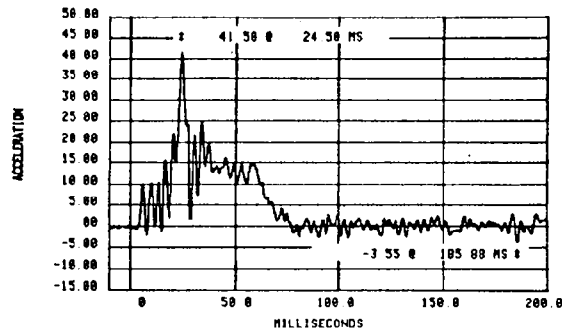


LOWER RIB DISPLACEMENT



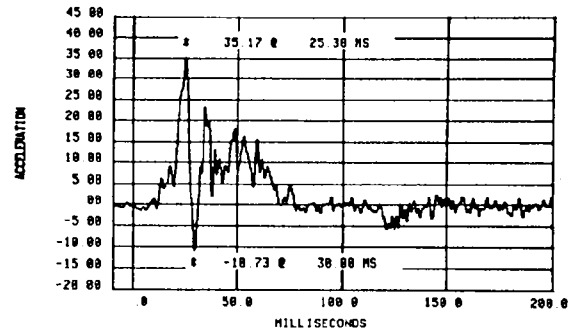
T3-26

TRACK: 11 CHANNEL: 4 100% CAL = 71.13
TEST: S. I. SLED 05 T3-27 DATE: 3-10-81



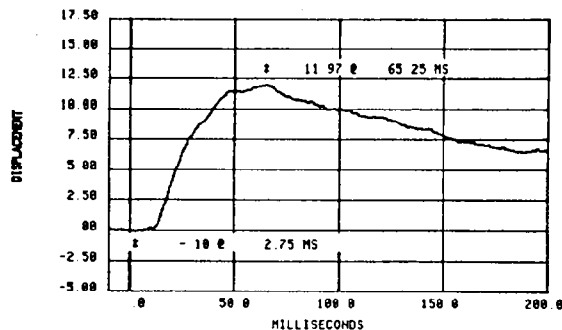
BULLET SLED LONGITUDINAL ACCELERATION

TRACK: 9 CHANNEL: 10 100% CAL = 154.75
TEST: S. I. SLED 05 T3-27 DATE: 3-10-81



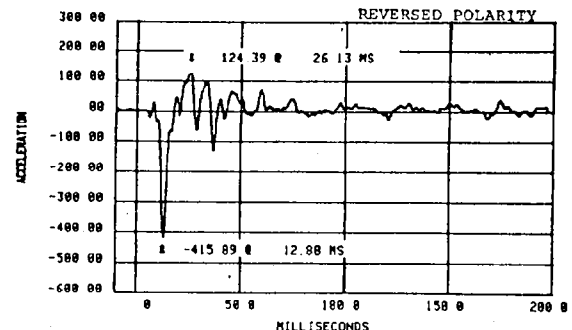
TARGET SLED LATERAL ACCELERATION

TRACK: 11 CHANNEL: 5 100% CAL = 22.30
TEST: S. I. SLED 05 T3-27 DATE: 3-10-81



DOOR DISPLACEMENT

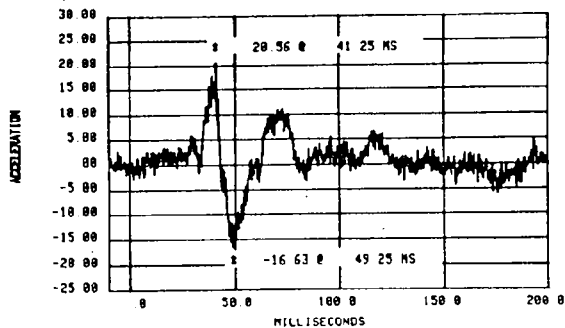
TRACK: 9 CHANNEL: 14 100% CAL = 696.81
TEST: S. I. SLED 05 T3-27 DATE: 3-10-81



DOOR LATERAL ACCELERATION

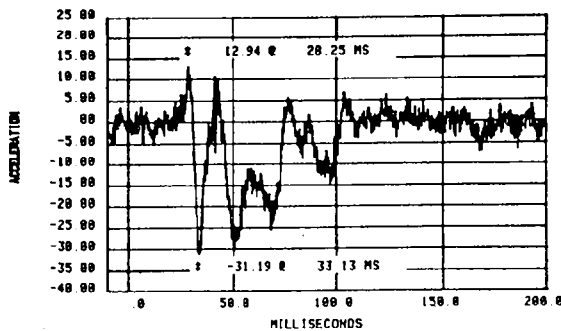
T3-27

TRACK 11 CHANNEL 12 100% CAL = 215.64
TEST S.I. SLED 05 T3-27 DATE: 3-18-81



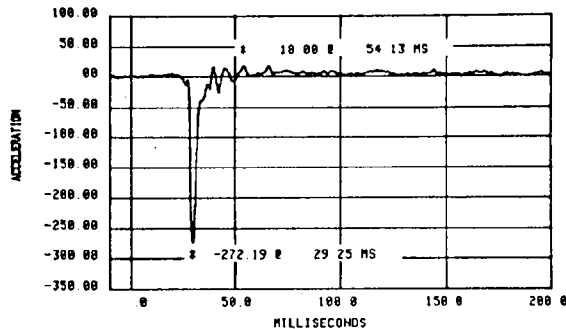
HEAD LONGITUDINAL ACCELERATION

TRACK 11 CHANNEL 14 100% CAL = 255.50
TEST S.I. SLED 05 T3-27 DATE: 3-18-81



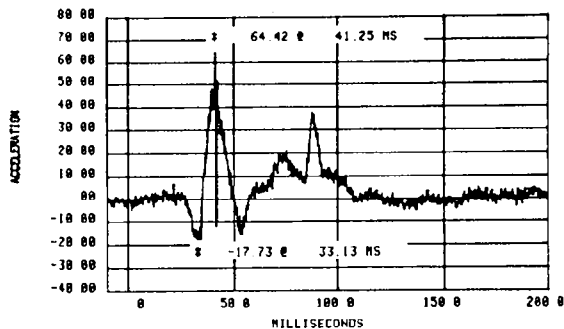
HEAD VERTICAL ACCELERATION

TRACK 11 CHANNEL 8 100% CAL = 334.97
TEST S.I. SLED 05 T3-27 DATE: 3-18-81



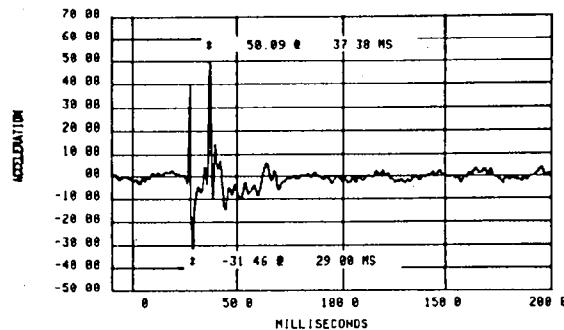
PELVIS LATERAL ACCELERATION

TRACK 11 CHANNEL 13 100% CAL = 242.01
TEST S.I. SLED 05 T3-27 DATE: 3-18-81



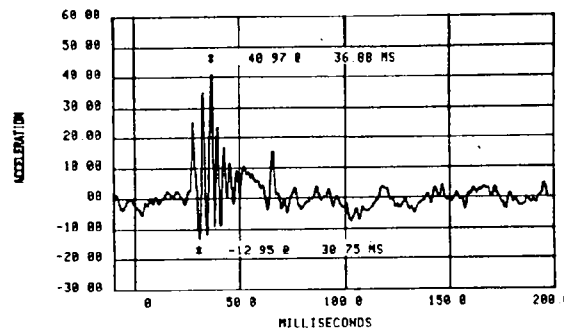
HEAD LATERAL ACCELERATION

TRACK 11 CHANNEL 7 100% CAL = 329.60
TEST S.I. SLED 05 T3-27 DATE: 3-18-81



PELVIS LONGITUDINAL ACCELERATION

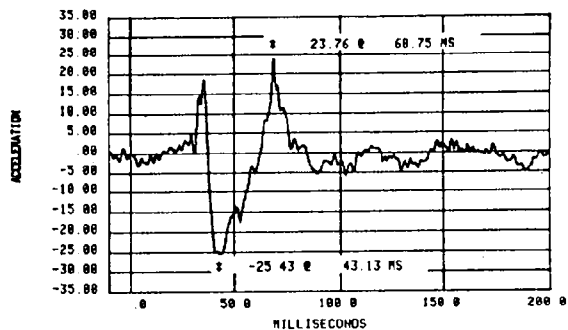
TRACK 11 CHANNEL 9 100% CAL = 317.10
TEST S.I. SLED 05 T3-27 DATE: 3-18-81



PELVIS VERTICAL ACCELERATION

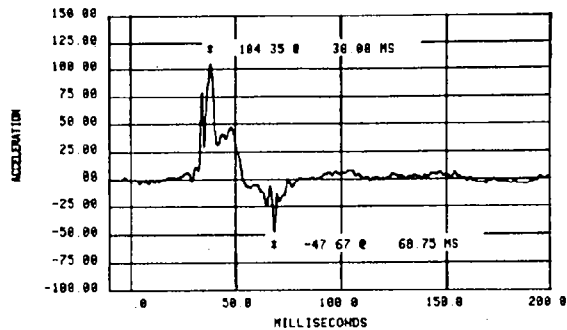
T3-27

TRACK: 9 CHANNEL: 7 100% CAL = 385.90
TEST: S. I. SLED #3 T3-27 DATE: 3-10-81



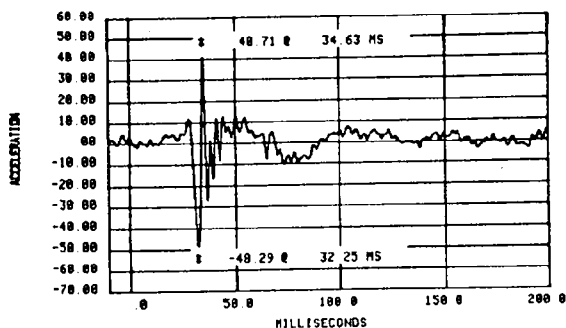
UPPER THORAX LONGITUDINAL ACCELERATION

TRACK: 9 CHANNEL: 8 100% CAL = 310.78
TEST: S. I. SLED #3 T3-27 DATE: 3-10-81



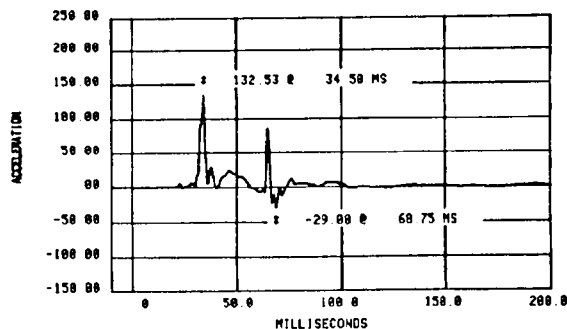
UPPER THORAX LATERAL ACCELERATION

TRACK: 9 CHANNEL: 9 100% CAL = 325.29
TEST: S. I. SLED #3 T3-27 DATE: 3-10-81



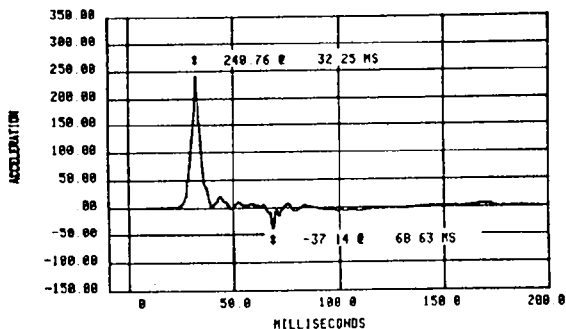
UPPER THORAX VERTICAL ACCELERATION

TRACK: 11 CHANNEL: 1 100% CAL = 371.76
TEST: S. I. SLED #3 T3-27 DATE: 3-10-81



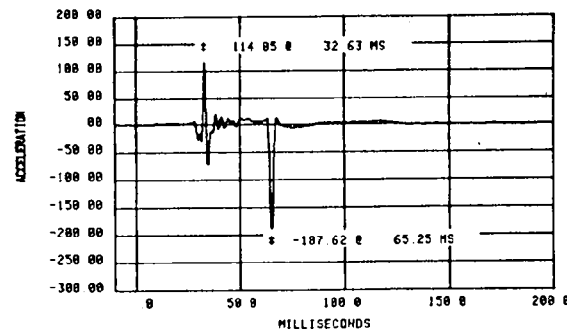
LOWER THORAX LONGITUDINAL ACCELERATION

TRACK: 11 CHANNEL: 2 100% CAL = 367.64
TEST: S. I. SLED #3 T3-27 DATE: 3-10-81



LOWER THORAX LATERAL ACCELERATION

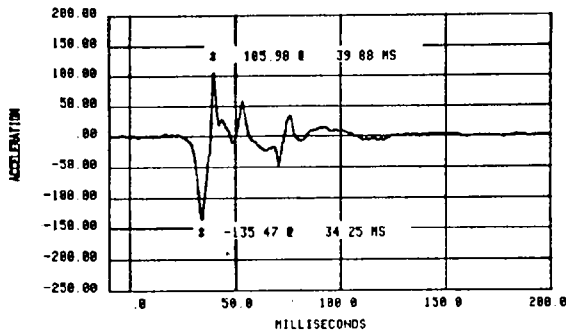
TRACK: 11 CHANNEL: 3 100% CAL = 323.12
TEST: S. I. SLED #3 T3-27 DATE: 3-10-81



LOWER THORAX VERTICAL ACCELERATION

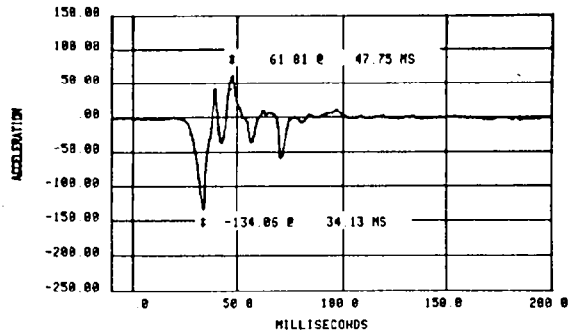
T3-27

TRACK: 9 CHANNEL: 4 100% CAL = 378.77
TEST: S.I. SLED 05 T3-27 DATE: 3-18-81



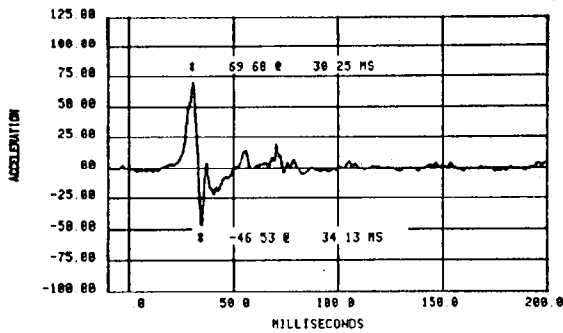
UPPER STERNUM LONGITUDINAL ACCELERATION

TRACK: 9 CHANNEL: 3 100% CAL = 316.99
TEST: S.I. SLED 05 T3-27 DATE: 3-18-81



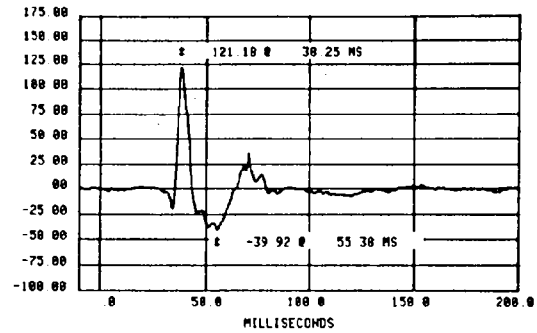
LOWER STERNUM LONGITUDINAL ACCELERATION

TRACK: 9 CHANNEL: 13 100% CAL = 387.14
TEST: S.I. SLED 05 T3-27 DATE: 3-18-81



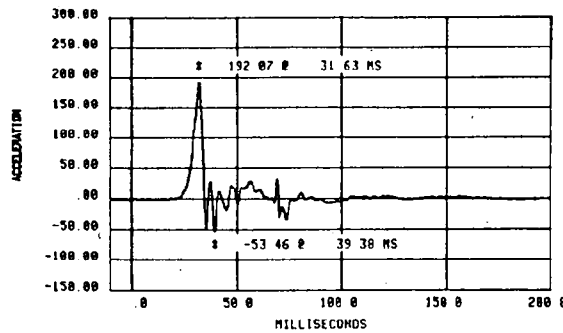
RIGHT LOWER RIB LONGITUDINAL ACCELERATION

TRACK: 9 CHANNEL: 11 100% CAL = 329.42
TEST: S.I. SLED 05 T3-27 DATE: 3-18-81



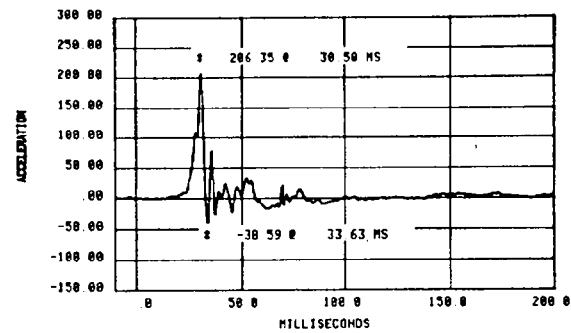
LEFT LOWER RIB LONGITUDINAL ACCELERATION

TRACK: 9 CHANNEL: 1 100% CAL = 334.15
TEST: S.I. SLED 05 T3-27 DATE: 3-18-81



RIGHT UPPER RIB LATERAL ACCELERATION

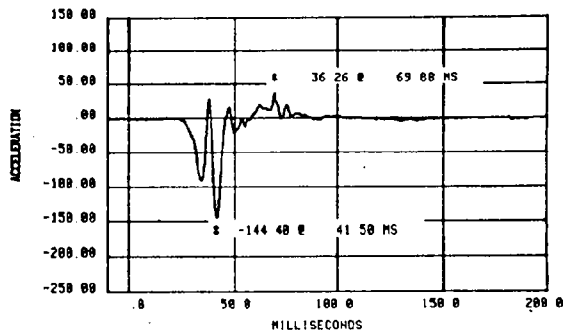
TRACK: 9 CHANNEL: 12 100% CAL = 319.03
TEST: S.I. SLED 05 T3-27 DATE: 3-18-81



RIGHT LOWER RIB LATERAL ACCELERATION

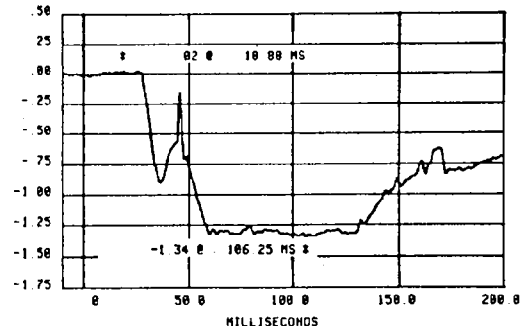
T3-27

TRACK: 9 CHANNEL: 2 100% CAL = 362.21
TEST: S.I. SLED #5 T3-27 DATE: 3-18-81

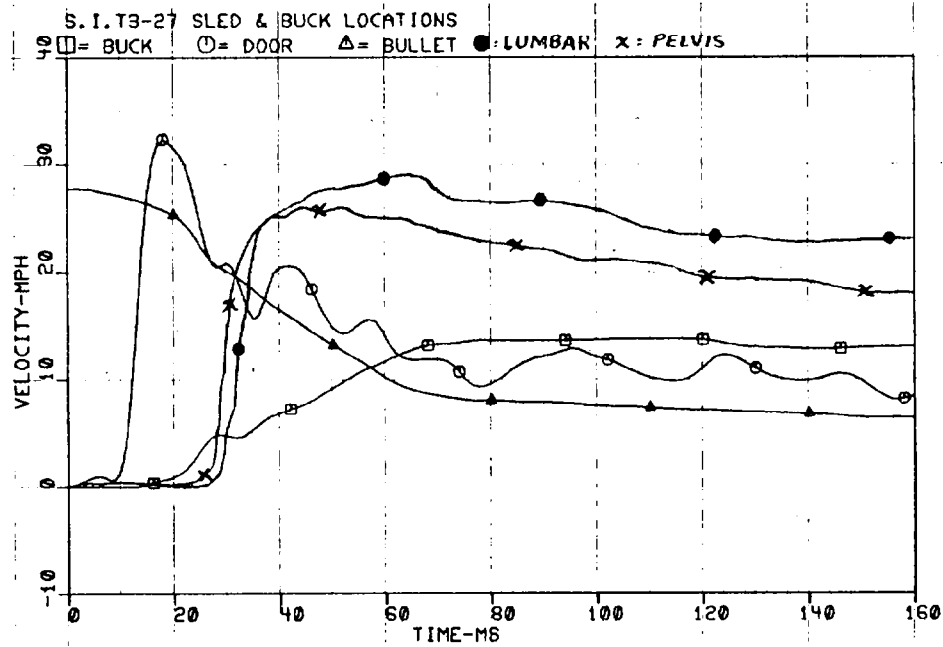


LEFT UPPER RIB LATERAL ACCELERATION

TRACK: 11 CHANNEL: 11 100% CAL = 2.05
TEST: S.I. SLED #5 T3-27 DATE: 3-18-81



LOWER RIB DISPLACEMENT



T3-27

APPENDIX L

TASK 4 SLED TESTS -
SIDE IMPACT DUMMY
RESPONSE SUMMARIES

TABLE L-1. SIDE IMPACT DUMMY RESPONSE SUMMARY (TEST T4-2)

TEST NO. T4-2

TEST DATE 3-17-80

TEST CONFIGURATION:

Target Vehicle	VW Body Buck	Speed	0 mph
Bullet Vehicle	Bullet Sled (Wt = 2357 lb)	Speed	27.21 mph
Impact Location	Right Side Door	Angle	90 deg
Dummy Model	HSRI SID 3 RIB		

HEAD RESPONSE:

Peak A _R	101.8	G	Impacted Object	-
HIC	Not Calculated		Time	70 ms

CHEST RESPONSE:

DEFLECTION (IN.): LRDY N/A

Location	Pk A (G)	Pk A _R (G)	3ms Clip (G)	SI	ΔV _y (MPH)	Impact Time (ms)
Upper Sternum (X)	22.8		20.1	N/A	N/A	14
Lower Sternum (X)	29.2		25.3	N/A	N/A	12.5
LUR (Y)	58.1		51.7	N/A	27.89	12.0
LLR (X)				N/A	N/A	
RUR (Y)	71.3		70.3	N/A	30.09	12.5
RLR (X)				N/A	N/A	
RLR (Y)				N/A		
Upper Thorax (T-1)		214.1	136.0	2040	26.48	14
Lower Thorax (T-12)		106.4	46.0	451	26.46	13
PELVIS RESPONSE:		122.05		774	29.90	10

COMPUTED INJURY COEFFICIENTS:

Lower Sternum - Long									
B =	5.765	Q =	139	V ₁₅ =	.00313	V ₁₉ =	.07250	RVS =	23.2000
Left Upper Rib - Lat									
B =	6.680	Q =	-1246	V ₁₅ =	.01438	V ₁₉ =	.02500	RVS =	1.73913
Right Upper Rib - Lat									
B =	6.962	Q =	1348	V ₁₅ =	.01125	V ₁₉ =	.03000	RVS =	2.667
T-12 - Lat									
B =		Q =		V ₁₅ =		V ₁₉ =		RVS =	
T-12 - Resultant, Lat and Long									
B =		Q =		V ₁₅ =		V ₁₉ =		RVS =	
AIS = 4.245						AIS (BRUR) = 3.497		MAIS = 3.223	
AIS (AVP) =						AIS (RES) =			

COMMENTS: Slight indentation noted on the dummy's right upper rib. The dummy also incurred a severe (1 inch long) cut in the right temporal region. This test was conducted with the A. S. air pad pressurized to 10 PSI. Air pad was positioned to interact primarily with the dummy only, little seat engagement.

N/A = Not Applicable

FORM DSI 23R (5/82)

TABLE L-2. SIDE IMPACT DUMMY RESPONSE SUMMARY (TEST T4-3)

TEST NO. T4-3

TEST DATE 3-18-80

TEST CONFIGURATION:

Target Vehicle	VW Body Buck	Speed	0 mph
Bullet Vehicle	Bullet Sled (Wt = 2357 lb)	Speed	27.58 mph
Impact Location	Right Side Door	Angle	90 deg
Dummy Model	HSRI SID 3 RIB		

HEAD RESPONSE:

Peak A_R	Bad Data	G	Impacted Object	-
HIC	Not Calculated		Time	- ms

CHEST RESPONSE:

DEFLECTION (IN.): LRDY N/A

Location	Pk A (G)	Pk A_R (G)	3ms Clip (G)	SI	ΔV_y (MPH)	Impact Time (ms)
Upper Sternum (X)	-37.1		31.6	N/A	N/A	7.5
Lower Sternum (X)	40.8		35.2	N/A	N/A	6.3
LUR (Y)	79.1		67.8	N/A	30.42	8.75
LLR (X)				N/A	N/A	
RUR (Y)	87.7		73.9	N/A	27.63	6.88
RLR (X)				N/A	N/A	
RLR (Y)				N/A		
Upper Thorax (T-1)		125.6	88	878	20.21	10
Lower Thorax (T-12)		230.5	97	2310	34.51	6.0
PELVIS RESPONSE:		119.8		1193	33.67	9.0

COMPUTED INJURY COEFFICIENTS:

Lower Sternum - Long					
B = 6.134	Q = 225	$V_{15} = .0025$	$V_{19} = .005$	RVS = 2.000	
Left Upper Rib - Lat					
B = 6.866	Q = -1360	$V_{15} = .0125$	$V_{19} = .0225$	RVS = 1.8000	
Right Upper Rib - Lat					
B = 7.052	Q = 1232	$V_{15} = .00937$	$V_{19} = .01625$	RVS = 1.7333	
T-12 - Lat					
B =	Q =	$V_{15} =$	$V_{19} =$	RVS =	
T-12 - Resultant, Lat and Long					
B =	Q =	$V_{15} =$	$V_{19} =$	RVS =	
AIS = 4.194 AIS (BRUR) = 3.640 MAIS = 3.403					
AIS (AVP) = AIS (RES) =					

COMMENTS: This test was conducted with the A. S. air pad pressurized to 20 PSI. Air pad was positioned identical to test T4-2.
 Dummy broke right knee joint. Dummy head cut on right side.

N/A = Not Applicable

FORM DSI 23R (5/82)

TABLE L-3. SIDE IMPACT DUMMY RESPONSE SUMMARY (TEST T4-4)

TEST NO. T4-4

TEST DATE 3-19-80

TEST CONFIGURATION:

Target Vehicle	VW Body Buck	Speed	0 mph
Bullet Vehicle	Bullet Sled (Wt = 2357 lb)	Speed	27.28 mph
Impact Location	Right Side Door	Angle	90 deg
Dummy Model	HSRI SID 3 RIB		

HEAD RESPONSE:

Peak A_R	39.7	G	Impacted Object	-
HIC	135		Time	20 - 96 ms

CHEST RESPONSE:

DEFLECTION (IN.): LRDY N/A

Location	Pk A (G)	Pk A_R (G)	3ms Clip (G)	SI	ΔV_y (MPH)	Impact Time (ms)
Upper Sternum (X)	-55.36		49.2	N/A	N/A	12
Lower Sternum (X)	86.38		72.0	N/A	N/A	11
LUR (Y)	97.0		89.5	N/A	29.71	10
LLR (X)				N/A	N/A	
RUR (Y)	115		94.0	N/A	26.36	11
RLR (X)				N/A	N/A	
RLR (Y)				N/A		
Upper Thorax (T-1)		149.9	112.0	1803	39.56	11
Lower Thorax (T-12)		183.2	94.0	1342	28.28	11
PELVIS RESPONSE:		117.1		602	25.91	9

COMPUTED INJURY COEFFICIENTS:

Lower Sternum - Long
 $B = 6.845$ $Q = 348$ $V_{15} = .00313$ $V_{19} = .00625$ $RVS = 2.000$

Left Upper Rib - Lat
 $B = 7.088$ $Q = -1330$ $V_{15} = .01375$ $V_{19} = .02063$ $RVS = 1.50000$

Right Upper Rib - Lat
 $B = 7.175$ $Q = 1008$ $V_{15} = .00375$ $V_{19} = .01188$ $RVS = 3.1667$

T-12 - Lat
 $B =$ $Q =$ $V_{15} =$ $V_{19} =$ $RVS =$

T-12 - Resultant, Lat and Long
 $B =$ $Q =$ $V_{15} =$ $V_{19} =$ $RVS =$

$AIS = 3.813$ $AIS (BRUR) = 3.837$ $MAIS = 3.651$
 $AIS (AVP) =$ $AIS (RES) =$

COMMENTS: This test was conducted with 5 inches of 2 lb/ft³ polyurethane foam padding wrapped with vinyl.

N/A = Not Applicable

FORM DSI 23R (5/82)

TABLE L-4. SIDE IMPACT DUMMY RESPONSE SUMMARY (TEST T4-5)

TEST NO. T4-5

TEST DATE 3-19-82

TEST CONFIGURATION:

Target Vehicle	VW Body Buck	Speed	0 mph
Bullet Vehicle	Bullet Sled	Speed	27.34 mph
Impact Location	Right Side Door	Angle	90 deg
Dummy Model	HSRI SID 3 RIB		

HEAD RESPONSE:

Peak A_R	44.6	G	Impacted Object	-
HIC	137		Time	18 - 88 ms

CHEST RESPONSE:

DEFLECTION (IN.): LRDY N/A

Location	Pk A (G)	Pk A_R (G)	3ms Clip (G)	SI	ΔV_y (MPH)	Impact Time (ms)
Upper Sternum (+X)	36.8		34.3	N/A	N/A	10
Lower Sternum (X)	51.8		44.1	N/A	N/A	10
LUR (Y)	82.9		71.0	N/A	26.60	11
LLR (X)				N/A	N/A	
RUR (Y)	89.4		75.0	N/A	24.22	9
RLR (X)				N/A	N/A	
RLR (Y)				N/A		
Upper Thorax (T-1)		151.12	100.5	9.4	15.69	11
Lower Thorax (T-12)		96.6	71.5	654	24.35	11
PELVIS RESPONSE:		130.3		764	26.23	10

COMPUTED INJURY COEFFICIENTS:

Lower Sternum - Long
 $B = 6.325$ $Q = 255$ $V_{15} = .0025$ $V_{19} = .00562$ $RVS = 2.2500$

Left Upper Rib - Lat
 $B = 6.875$ $Q = -1181$ $V_{15} = .0125$ $V_{19} = .0206$ $RVS = 1.6500$

Right Upper Rib - Lat
 $B = 7.021$ $Q = 995$ $V_{15} = .00562$ $V_{19} = .01375$ $RVS = 2.444$

T-12 - Lat
 $B =$ $Q =$ $V_{15} =$ $V_{19} =$ $RVS =$

T-12 - Resultant, Lat and Long
 $B =$ $Q =$ $V_{15} =$ $V_{19} =$ $RVS =$

$AIS = 3.813$ $AIS (BRUR) = 3.590$ $MAIS = 3.340$
 $AIS (AVP) =$ $AIS (RES) =$

COMMENTS: Test was conducted with 5 inches of 2 lb/ft³ polyurethane foam wrapped in vinyl.

N/A = Not Applicable

FORM DSI 23R (5/82)

TABLE L-5. SIDE IMPACT DUMMY RESPONSE SUMMARY (TEST T4-6)

TEST NO. T4-6

TEST DATE 4-10-80

TEST CONFIGURATION:

Target Vehicle	VW Body Buck	Speed	0 mph
Bullet Vehicle	Bullet Sled	Speed	27.48 mph
Impact Location	Right Side Door	Angle	90 deg
Dummy Model	HSRI SID 3 RIB		

HEAD RESPONSE:

Peak A_R	136.8	G	Impacted Object	Door Window Sill
HIC	267		Time	72 - 77 ms

CHEST RESPONSE:

DEFLECTION (IN.): LRDY N/A

Location	Pk A (G)	Pk A_R (G)	3ms Clip (G)	SI	ΔV_y (MPH)	Impact Time (ms)
Upper Sternum (X)	39.6		37.6	N/A	N/A	14
Lower Sternum (X)	57.6		53	N/A	N/A	13
LUR (Y)	85.1		79	N/A	26.64	14
LLR (X)				N/A	N/A	
RUR (Y)	92.4		83	N/A	24.51	14
RLR (X)				N/A	N/A	
RLR (Y)				N/A	N/A	
Upper Thorax (T-1)		128.1	112	1074	25.47	15
Lower Thorax (T-12)		211.97	74.5	1499	25.39	14
PELVIS RESPONSE:		132.10	80	725	29.09	14

COMPUTED INJURY COEFFICIENTS:

Lower Sternum - Long						
B =	6.387	Q =	289	V_{15} =	.00375	V_{19} = .00687 RVS = 1.833
Left Upper Rib - Lat						
B =	6.925	Q =	-1200	V_{15} =	.01188	V_{19} = .02063 RVS = 1.737
Right Upper Rib - Lat						
B =	7.056	Q =	984	V_{15} =	.00625	V_{19} = .01375 RVS = 2.200
T-12 - Lat						
B =		Q =		V_{15} =		V_{19} = RVS =
T-12 - Resultant, Lat and Long						
B =		Q =		V_{15} =		V_{19} = RVS =
AIS = 3.374 AIS (BRUR) = 3.647 MAIS = 3.412						
AIS (AVP) = AIS (RES) =						

COMMENTS: Load spike to pelvis affects dramatically the chest acceleration following the spike. For T-12 the A(X) peak was +180 G. This does not appear to be realistic for human simulation. Test run with P. U. Mod 1.

N/A = Not Applicable

TABLE L-6. SIDE IMPACT DUMMY RESPONSE SUMMARY (TEST T4-7)

TEST NO. T4-7

TEST DATE 4-10-80

TEST CONFIGURATION:

Target Vehicle	VW Body Buck	Speed	0 mph
Bullet Vehicle	Bullet Sled	Speed	27.34 mph
Impact Location	Right Side Door	Angle	90 deg
Dummy Model	HSRI SID 3 RIB		

HEAD RESPONSE:

Peak A_R	157.4	G	Impacted Object	-
HIC	695		Time	71 - 75 ms

CHEST RESPONSE:

DEFLECTION (IN.): LRDY N/A

Location	Pk A (G)	Pk A_R (G)	3ms Clip (G)	SI	ΔV_y (MPH)	Impact Time (ms)
Upper Sternum (X)	-26.7		27.2	N/A	N/A	13
Lower Sternum (X)	50.5		47.5	N/A	N/A	15
LUR (Y)	60.8		55.5	N/A	27.25	15
LLR (X)				N/A	N/A	
RUR (Y)	88.1		76.0	N/A	24.16	13
RLR (X)				N/A	N/A	
RLR (Y)				N/A		
Upper Thorax (T-1)		206.8	105.0	1574	20.0	16
Lower Thorax (T-12)		96.8	60.0	526	21.64	13
PELVIS RESPONSE:		145	74.5	785	27.99	12

COMPUTED INJURY COEFFICIENTS:

Lower Sternum - Long
 $B = 6.459$ $Q = -231$ $V_{15} = .00250$ $V_{19} = .00562$ $RVS = 2.2500$

Left Upper Rib - Lat
 $B = 6.679$ $Q = -1213$ $V_{15} = .01375$ $V_{19} = .02563$ $RVS = 1.8636$

Right Upper Rib - Lat
 $B = 6.969$ $Q = 1056$ $V_{15} = .00937$ $V_{19} = .01563$ $RVS = 1.667$

T-12 - Lat
 $B =$ $Q =$ $V_{15} =$ $V_{19} =$ $RVS =$

T-12 - Resultant, Lat and Long
 $B =$ $Q =$ $V_{15} =$ $V_{19} =$ $RVS =$

$AIS = 3.601$ $AIS (BRUR) = 3.509$ $MAIS = 3.237$
 $AIS (AVP) =$ $AIS (RES) =$

COMMENTS: Test run with polyethylene thorax padding and 2 lb/ft³ density polyurethane pelvis padding. Upper rib on dummy was noted to be deformed following test and replaced prior to next test.

N/A = Not Applicable

FORM DSI 23R (5/82)

TABLE L-7. SIDE IMPACT DUMMY RESPONSE SUMMARY (TEST T4-8)

TEST NO. T4-8

TEST DATE 4-16-80

TEST CONFIGURATION:

Target Vehicle	VW Body Buck	Speed	0 mph
Bullet Vehicle	Bullet Sled	Speed	27.33 mph
Impact Location	Right Side Door	Angle	90 deg
Dummy Model	HSRI SID 3 RIB		

HEAD RESPONSE:

Peak A_R	104.9	G	Impacted Object	Sill
HIC	278		Time	38 - 86 ms

CHEST RESPONSE:

DEFLECTION (IN.): LRDY N/A

Location	Pk A (G)	Pk A_R (G)	3ms Clip (G)	SI	ΔV_y (MPH)	Impact Time (ms)
Upper Sternum (X)	-33.7		31.3	N/A	N/A	14
Lower Sternum (X)	47.1		40.5	N/A	N/A	12.5
LUR (Y)	67.7		57.0	N/A	27.15	14.5
LLR (X)				N/A	N/A	
RUR (Y)	102.1		91.0	N/A	25.50	14.0
RLR (X)				N/A	N/A	
RLR (Y)				N/A		
Upper Thorax (T-1)		189.4	132.0	1580	29.13	13
Lower Thorax (T-12)		184.0	122.0	1626	31.60	14
PELVIS RESPONSE:		126.60	87.5	818	30.30	13

COMPUTED INJURY COEFFICIENTS:

Lower Sternum - Long						
B =	6.261	Q =	255	V_{15} =	.00562	V_{19} = .01688 RVS = 3.000
Left Upper Rib - Lat						
B =	6.774	Q =	-1207	V_{15} =	.01125	V_{19} = .02500 RVS = 2.222
Right Upper Rib - Lat						
B =	7.117	Q =	1063	V_{15} =	.00937	V_{19} = .01438 RVS = 1.5333
T-12 - Lat						
B =		Q =		V_{15} =		V_{19} = RVS =
T-12 - Resultant, Lat and Long						
B =		Q =		V_{15} =		V_{19} = RVS =
AIS = 3.523 AIS (BRUR) = 3.745 MAIS = 3.535						
AIS (AVP) = AIS (RES) =						

COMMENTS: Padding polyethylene for both thorax and pelvis, 2.2 lb/ft³ density.

N/A = Not Applicable

FORM DSI 23R (5/82)

TABLE L-8. SIDE IMPACT DUMMY RESPONSE SUMMARY (TEST T4-9)

TEST NO. T4-9

TEST DATE 4-17-80

TEST CONFIGURATION:

Target Vehicle	VW Body Buck	Speed	0 mph
Bullet Vehicle	Bullet Sled	Speed	27.44 mph
Impact Location	Right Side Door	Angle	90 deg
Dummy Model	HSRI SID 3 RIB		

HEAD RESPONSE:

Peak A_R	101.0	G	Impacted Object	-
HIC	322		Time	67 - 72 ms

CHEST RESPONSE:

DEFLECTION (IN.): LRDY N/A

Location	Pk A (G)	Pk A_R (G)	3ms Clip (G)	SI	ΔV_y (MPH)	Impact Time (ms)
Upper Sternum (X)	-29.9		27.6	N/A	N/A	14
Lower Sternum (X)	51.9		45.0	N/A	N/A	14
LUR (Y)	69.5		63.0	N/A	26.73	15
LLR (X)				N/A	N/A	
RUR (Y)	104.4		93.0	N/A	25.66	14
RLR (X)				N/A	N/A	
RLR (Y)				N/A		
Upper Thorax (T-1)		147.5	95.5	873	16.7	13
Lower Thorax (T-12)		289.1	119.0	2772	29.31	14
PELVIS RESPONSE:		164.6		993	26.99	12

COMPUTED INJURY COEFFICIENTS:

Lower Sternum - Long
 $B = 6.329$ $Q = 216$ $V_{15} = .00313$ $V_{19} = .00813$ $RVS = 2.6000$

Left Upper Rib - Lat
 $B = 6.854$ $Q = -1169$ $V_{15} = .0100$ $V_{19} = .0200$ $RVS = 2.000$

Right Upper Rib - Lat
 $B = 7.114$ $Q = 1037$ $V_{15} = .00875$ $V_{19} = .01375$ $RVS = 1.5714$

T-12 - Lat
 $B =$ $Q =$ $V_{15} =$ $V_{19} =$ $RVS =$

T-12 - Resultant, Lat and Long
 $B =$ $Q =$ $V_{15} =$ $V_{19} =$ $RVS =$

$AIS = 3.918$ $AIS (BRUR) = 3.740$ $MAIS = 3.529$
 $AIS (AVP) =$ $AIS (RES) =$

COMMENTS: Both thorax and pelvis padding were Polyurethane Mod 2.

N/A = Not Applicable

TABLE L-9. SIDE IMPACT DUMMY RESPONSE SUMMARY (TEST T4-10)

TEST NO. T4-10

TEST DATE 4-17-80

TEST CONFIGURATION:

Target Vehicle	VW Body Buck	Speed	0 mph
Bullet Vehicle	Bullet Sled	Speed	27.52 mph
Impact Location	Right Side Door	Angle	90 deg
Dummy Model	HSRI SID 3 RIB		

HEAD RESPONSE:

Peak A_R	141.9	G	Impacted Object	-
HIC	295		Time	69 - 77 ms

CHEST RESPONSE:

DEFLECTION (IN.): LRDY N/A

Location	Pk A (G)	Pk A_R (G)	3ms Clip (G)	SI	ΔV_y (MPH)	Impact Time (ms)
Upper Sternum (X)	-37.9		35.6	N/A	N/A	16
Lower Sternum (X)	66.8		54.0	N/A	N/A	13.5
LUR (Y)	71.4		64.5	N/A	28.05	15.5
LLR (X)				N/A	N/A	
RUR (Y)	94.8		80.5	N/A	28.50	15.0
RLR (X)				N/A	N/A	
RLR (Y)				N/A		
Upper Thorax (T-1)		162.6	120.0	1367	9.14	17
Lower Thorax (T-12)		165.1	88.5	1063	22.42	15
PELVIS RESPONSE:		120.86	85.0	774	28.73	11

COMPUTED INJURY COEFFICIENTS:

Lower Sternum - Long
 $B = 6.450$ $Q = -402$ $V_{15} = .00250$ $V_{19} = .00813$ $RVS = 3.2500$

Left Upper Rib - Lat
 $B = 6.843$ $Q = -1247$ $V_{15} = .01500$ $V_{19} = .02313$ $RVS = 1.5417$

Right Upper Rib - Lat
 $B = 7.049$ $Q = 1027$ $V_{15} = .00750$ $V_{19} = .01313$ $RVS = 1.750$

T-12 - Lat
 $B =$ $Q =$ $V_{15} =$ $V_{19} =$ $RVS =$

T-12 - Resultant, Lat and Long
 $B =$ $Q =$ $V_{15} =$ $V_{19} =$ $RVS =$

AIS = 3.710 AIS (BRUR) = 3.636 MAIS = 3.397
 AIS (AVP) = AIS (RES) =

COMMENTS: Thorax pad was Ensolute 3.5 inches thick supplied by Mike Monk (SRL). Pelvis pad was Polyethylene. T-1 data suspect.

N/A = Not Applicable

TABLE L-10. SIDE IMPACT DUMMY RESPONSE SUMMARY (TEST T4-11)

TEST NO. T4-11

TEST DATE 4-17-80

TEST CONFIGURATION:

Target Vehicle	VW Body Buck	Speed	0 mph
Bullet Vehicle	Bullet Sled	Speed	27.53 mph
Impact Location	Right Side Door	Angle	90 deg
Dummy Model	HSRI SID 3 RIB		

HEAD RESPONSE:

Peak A_R _____ G Impacted Object _____
HIC _____ Time _____ ms

CHEST RESPONSE:

DEFLECTION (IN.): LRDY _____

Location	Pk A (G)	Pk A_R (G)	3ms Clip (G)	SI	ΔV_y (MPH)	Impact Time (ms)
Upper Sternum (X)						
Lower Sternum (X)						
LUR (Y)						
LLR (X)						
RUR (Y)						
RLR (X)						
RLR (Y)						
Upper Thorax (T-1)						
Lower Thorax (T-12)						

PELVIS RESPONSE:

COMPUTED INJURY COEFFICIENTS:

Lower Sternum - Long
B = _____ Q = _____ V_{15} = _____ V_{19} = _____ RVS = _____

Left Upper Rib - Lat
B = _____ Q = _____ V_{15} = _____ V_{19} = _____ RVS = _____

Right Upper Rib - Lat
B = _____ Q = _____ V_{15} = _____ V_{19} = _____ RVS = _____

T-12 - Lat
B = _____ Q = _____ V_{15} = _____ V_{19} = _____ RVS = _____

T-12 - Resultant, Lat and Long
B = _____ Q = _____ V_{15} = _____ V_{19} = _____ RVS = _____

AIS = _____ AIS (BRUR) = _____ MAIS = _____
AIS (AVP) = _____ AIS (RES) = _____

COMMENTS: Pelvis pad was Ensolite (AAC and BCR) pad. Thorax pad was Volara pad.
Data lost.

N/A = Not Applicable

TABLE L-11. SIDE IMPACT DUMMY RESPONSE SUMMARY (TEST T4-12)

TEST NO. T4-12

TEST DATE 3-25-82

TEST CONFIGURATION:

Target Vehicle	VW Body Buck	Speed	0 mph
Bullet Vehicle	Bullet Sled	Speed	28.23 mph
Impact Location	Right Side Door	Angle	90 deg
Dummy Model	HSRI SID 5 RIB		

HEAD RESPONSE:

Peak A_R	43.1	G	Impacted Object	-
HIC	132.5		Time	30 - 93 ms

CHEST RESPONSE:

DEFLECTION (IN.): LRDY 1.8

Location	Pk A (G)	Pk A_R (G)	3ms Clip (G)	SI	ΔV_y (MPH)	Impact Time (ms)
Upper Sternum (X)	62.4		49.1	N/A	N/A	17
Lower Sternum (X)	50.4		39.8	N/A	N/A	17
LUR (Y)	73.8		67.1	N/A	24.8	17
LLR (X)	49.7		38.7	N/A	N/A	17
RUR (Y)	76.6		71.0	N/A	18.3	15
RLR (X)	43.3		40.0	N/A	N/A	15
RLR (Y)	101.3		74.6	N/A	22.2	15
Upper Thorax (T-1)	78.3	78.6	68.4	446	23.6	17
Lower Thorax (T-12)	94.2	96.8	83.8	825	29.0	13
PELVIS RESPONSE:		87.4	72.0	615	27.6	15

COMPUTED INJURY COEFFICIENTS:

Lower Sternum - Long
 $B = 6.395$ $Q = 197$ $V_{15} = .00188$ $V_{19} = .00375$ $RVS = 2.00000$

Left Upper Rib - Lat
 $B = 6.852$ $Q = -1111$ $V_{15} = .00813$ $V_{19} = .01750$ $RVS = 2.15385$

Right Upper Rib - Lat
 $B = 6.870$ $Q = 709$ $V_{15} = .00635$ $V_{19} = .01125$ $RVS = 1.80000$

T-12 - Lat
 $B =$ $Q =$ $V_{15} =$ $V_{19} =$ $RVS =$

T-12 - Resultant, Lat and Long
 $B =$ $Q =$ $V_{15} =$ $V_{19} =$ $RVS =$

$AIS = 3.438$ $AIS (BRUR) = 3.557$ $MAIS = 3.038$
 $AIS (AVP) = 4.113$ $AIS (RES) = 4.809$

COMMENTS: SID 4 with 6.0 inch gap between door and H-Point. Four inch thick Ensolite Type BCR was placed on door in pelvis and thorax region.

N/A = Not Applicable

FORM DSI 23R (5/82)

TABLE L-12. SIDE IMPACT DUMMY RESPONSE SUMMARY (TEST T4-13)

TEST NO. T4-13

TEST DATE 3-26-81

TEST CONFIGURATION:

Target Vehicle	VW Body Buck	Speed	0 mph
Bullet Vehicle	Bullet Sled	Speed	27.57 mph
Impact Location	Right Side Door	Angle	90 deg
Dummy Model	HSRI SID 5 RIB		

HEAD RESPONSE:

Peak A_R	47.2	G	Impacted Object	-
HIC	233		Time	36 - 90 ms

CHEST RESPONSE:

DEFLECTION (IN.): LRDY 2.1

Location	Pk A (G)	Pk A_R (G)	3ms Clip (G)	SI	ΔV_y (MPH)	Impact Time (ms)
Upper Sternum (X)	36.3		28.1	N/A	N/A	17
Lower Sternum (X)	57.1		43.9	N/A	N/A	17
LUR (Y)	81.6		73.0	N/A	25.5	17
LLR (X)	46.0		39.7	N/A	N/A	18
RUR (Y)	76.6		62.2	N/A	23.8	16
RLR (X)	25.2		20.9	N/A	N/A	16
RLR (Y)	75.9		66.4	N/A	26.7	17
Upper Thorax (T-1)	79.1	82.2	62.7	407	23.5	17
Lower Thorax (T-12)	89.2	90.1	84.4	694	28.7	15
PELVIS RESPONSE:		90.2	84.8	694	26.7	15

COMPUTED INJURY COEFFICIENTS:

Lower Sternum - Long
 $B = 6.345$ $Q = 375$ $V_{15} = .01063$ $V_{19} = .01375$ $RVS = 1.29412$

Left Upper Rib - Lat
 $B = 6.955$ $Q = -1143$ $V_{15} = .00937$ $V_{19} = .01688$ $RVS = 1.80000$

Right Upper Rib - Lat
 $B = 6.811$ $Q = 1063$ $V_{15} = .01000$ $V_{19} = .02500$ $RVS = 2.50000$

T-12 - Lat
 $B =$ $Q =$ $V_{15} =$ $V_{19} =$ $RVS =$

T-12 - Resultant, Lat and Long
 $B =$ $Q =$ $V_{15} =$ $V_{19} =$ $RVS =$

$AIS = 3.861$ $AIS (BRUR) = 3.470$ $MAIS = 2.921$
 $AIS (AVP) = 4.089$ $AIS (RES) = 4.631$

COMMENTS: SID 4 with 6 inches from H-point to door, 4.5 inch thick polyethylene pad between dummy and door. LRDY potentiometer shaft discovered bent post-test. Replaced prior to next test.

N/A = Not Applicable

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TABLE L-13. SIDE IMPACT DUMMY RESPONSE SUMMARY (TEST T4-14)

TEST NO. T4-14

TEST DATE 3-27-81

TEST CONFIGURATION:

Target Vehicle	VW Body Buck	Speed	0 mph
Bullet Vehicle	Bullet Sled	Speed	27.86 mph
Impact Location	Right Side Door	Angle	90 deg
Dummy Model	HSRI SID 5 RIB		

HEAD RESPONSE:

Peak A_R	37.96	G	Impacted Object	-
HIC	115.2		Time	28 - 110 ms

CHEST RESPONSE:

DEFLECTION (IN.): LRDY 0.97

Location	Pk A (G)	Pk A_R (G)	3ms Clip (G)	SI	ΔV_y (MPH)	Impact Time (ms)
Upper Sternum (X)	54.4		50.5	N/A	N/A	17
Lower Sternum (X)	50.9		44.3	N/A	N/A	17
LUR (Y)	72.3		65.7	N/A	23.7	15
LLR (X)	53.1		43.2	N/A	N/A	15
RUR (Y)	104.1		80.0	N/A	25.3	15
RLR (X)	30.3		24.8	N/A	N/A	15
RLR (Y)	79.4		66.5	N/A	25.2	14
Upper Thorax (T-1)	79.5	80.3	57.3	426	24.3	15
Lower Thorax (T-12)	88.1	99.5	86.9	730	28.2	15
PELVIS RESPONSE:		131.0	88.5	910	29.0	14

COMPUTED INJURY COEFFICIENTS:

Lower Sternum - Long					
B = 6.483	Q = 354	$V_{15} = .00313$	$V_{19} = .04125$	RVS = 13.200	
Left Upper Rib - Lat					
B = 6.854	Q = -1059	$V_{15} = .00750$	$V_{19} = .01625$	RVS = 2.167	
Right Upper Rib - Lat					
B = 7.002	Q = 1023	$V_{15} = .00687$	$V_{19} = .01938$	RVS = 2.818	
T-12 - Lat					
B =	Q =	$V_{15} =$	$V_{19} =$	RVS =	
T-12 - Resultant, Lat and Long					
B =	Q =	$V_{15} =$	$V_{19} =$	RVS =	
AIS = 4.144 AIS (BRUR) = 3.753 MAIS = 3.303					
AIS (AVP) = 4.276 AIS (RES) = 4.958					

COMMENTS: SID 6 with Polyurethane padding (4.0 inches thick) between dummy and door in pelvis and thorax regions. 6.0 inches between Hip Point and door surface.

N/A = Not Applicable

FORM DSI 23R (5/82)

TABLE L-14. SIDE IMPACT DUMMY RESPONSE SUMMARY (TEST T4-15)

TEST NO. T4-15

TEST DATE 3-27-81

TEST CONFIGURATION:

Target Vehicle	VW Body Buck	Speed	0 mph
Bullet Vehicle	Bullet Sled	Speed	27.61 mph
Impact Location	Right Side Door	Angle	90 deg
Dummy Model	HSRI SID 5 RIB		

HEAD RESPONSE:

Peak A_R	34.0	G	Impacted Object	Window Sill
HIC	122.8		Time	33 - 111 ms

CHEST RESPONSE:

DEFLECTION (IN.): LRDY 1.3

Location	Pk A (G)	Pk A_R (G)	3ms Clip (G)	SI	ΔV_y (MPH)	Impact Time (ms)
Upper Sternum (X)	58.6		42.4	N/A	N/A	17
Lower Sternum (X)	43.0		32.2	N/A	N/A	17
LUR (Y)	57.8		53.4	N/A	23.4	17
LLR (X)	31.3		25.9	N/A	N/A	17
RUR (Y)	71.9		58.9	N/A	23.8	16
RLR (X)	26.2		21.7	N/A	N/A	16
RLR (Y)	64.4		57.2	N/A	23.4	16
Upper Thorax (T-1)	57.5	57.9	55.3	346	24.5	16
Lower Thorax (T-12)	78.6	80.6	73.5	574	27.9	15
PELVIS RESPONSE:		106.3	93.5	828	28.7	14

COMPUTED INJURY COEFFICIENTS:

Lower Sternum - Long						
B =	6.235	Q =	458	V_{15} =	.01000	V_{19} = .04500 RVS = 4.5000
Left Upper Rib - Lat						
B =	6.756	Q =	-1050	V_{15} =	.00937	V_{19} = .01875 RVS = 2.0000
Right Upper Rib - Lat						
B =	6.685	Q =	1063	V_{15} =	.00937	V_{19} = .03257 RVS = 3.4667
T-12 - Lat						
B =		Q =		V_{15} =		V_{19} = RVS =
T-12 - Resultant, Lat and Long						
B =		Q =		V_{15} =		V_{19} = RVS =
AIS = 3.760 AIS (BRUR) = 3.280 MAIS = 2.665						
AIS (AVP) = 4.065 AIS (RES) = 4.613						

COMMENTS: SID 6 with 6.0 inches from door surface to H-Point. Ensolite Type AAC padding was used in thorax and pelvis locations (4.0 inches thick).

N/A = Not Applicable

TABLE L-15. SIDE IMPACT DUMMY RESPONSE SUMMARY (TEST T4-16)

TEST NO. T4-16

TEST DATE 3-30-81

TEST CONFIGURATION:

Target Vehicle	VW Body Buck	Speed	0 mph
Bullet Vehicle	Bullet Sled	Speed	27.35 mph
Impact Location	Right Side Door	Angle	90 deg
Dummy Model	HSRI SID 5 RIB		

HEAD RESPONSE:

Peak A_R	38.2	G	Impacted Object	Window Sill
HIC	199.0		Time	42 - 114 ms

CHEST RESPONSE:

DEFLECTION (IN.): LRDY 1.8

Location	Pk A (G)	Pk A_R (G)	3ms Clip (G)	SI	ΔV_y (MPH)	Impact Time (ms)
Upper Sternum (X)	83.4		60.5	N/A	N/A	16
Lower Sternum (X)	44.2		33.3	N/A	N/A	16
LUR (Y)	61.6		58.3	N/A	24.5	16
LLR (X)	32.2		28.7	N/A	N/A	16
RUR (Y)	76.6		69.6	N/A	25.9	12
RLR (X)	33.6		28.1	N/A	N/A	17
RLR (Y)	73.1		66.8	N/A	25.0	13
Upper Thorax (T-1)	60.4	61.6	53.5	341	25.1	16
Lower Thorax (T-12)	92.6	92.9	87.9	669	29.6	19
PELVIS RESPONSE:		115.7	99.9	985	29.8	17

COMPUTED INJURY COEFFICIENTS:

Lower Sternum - Long						
B =	6.106	Q =	249	V_{15} =	.00562	V_{19} = .04750 RVS = 8.4444
Left Upper Rib - Lat						
B =	6.771	Q =	-1095	V_{15} =	.00813	V_{19} = .01875 RVS = 2.3077
Right Upper Rib - Lat						
B =	6.805	Q =	1159	V_{15} =	.01000	V_{19} = .03000 RVS = 3.000
T-12 - Lat						
B =		Q =		V_{15} =		V_{19} = RVS =
T-12 - Resultant, Lat and Long						
B =		Q =		V_{15} =		V_{19} = RVS =
AIS = 4.155 AIS (BRUR) = 3.459 MAIS = 2.906						
AIS (AVP) = 4.186 AIS (RES) = 4.788						

COMMENTS: SID 6 was positioned next to 4.5 inch thick polyethylene padding. 6.0 inches was recorded between H-Point and door surface.

N/A = Not Applicable

FORM DSI 23R (5/82)

TABLE L-16. SIDE IMPACT DUMMY RESPONSE SUMMARY (TEST T4-17)

TEST NO. T4-17

TEST DATE 3-30-81

TEST CONFIGURATION:

Target Vehicle	VW Body Buck	Speed	0 mph
Bullet Vehicle	Bullet Sled	Speed	27.66 mph
Impact Location	Right Side Door	Angle	90 deg
Dummy Model	HSRI SID 5 RIB		

HEAD RESPONSE:

Peak A_R	24.8	G	Impacted Object	-
HIC	130.9		Time	31 - 200 ms

CHEST RESPONSE:

DEFLECTION (IN.): LRDY 1.5

Location	Pk A (G)	Pk A_R (G)	3ms Clip (G)	SI	ΔV_y (MPH)	Impact Time (ms)
Upper Sternum (X)	62.0		51.5	N/A	N/A	16
Lower Sternum (X)	66.5		57.8	N/A	N/A	17
LUR (Y)	74.2		66.5	N/A	22.13	16
LLR (X)	57.4		48.7	N/A	N/A	16
RUR (Y)	86.2		74.1	N/A	19.94	16
RLR (X)	37.0		30.8	N/A	N/A	16
RLR (Y)	98.7		82.8	N/A	21.8	16
Upper Thorax (T-1)	74.3	77.3	64.0	447	24.7	18
Lower Thorax (T-12)	95.0	98.3	77.9	755	27.8	18
PELVIS RESPONSE:		101.0	93.0	915	27.2	13

COMPUTED INJURY COEFFICIENTS:

Lower Sternum - Long									
B =	6.734	Q =	581	$V_{15} =$	.00438	$V_{19} =$	.04375	RVS =	10.000
Left Upper Rib - Lat									
B =	6.786	Q =	-991	$V_{15} =$	.00875	$V_{19} =$	.01875	RVS =	2.143
Right Upper Rib - Lat									
B =	6.818	Q =	891	$V_{15} =$	.00438	$V_{19} =$	.01938	RVS =	4.429
T-12 - Lat									
B =	N/A	Q =	1243	$V_{15} =$	N/A	$V_{19} =$	.01487	RVS =	N/A
T-12 - Resultant, Lat and Long									
B =	N/A	Q =	N/A	$V_{15} =$	N/A	$V_{19} =$	N/A	RVS =	N/A
AIS =		3.635	AIS (BRUR) =		3.478	MAIS =		2.933	
AIS (AVP) =		4.319	AIS (RES) =		4.998				

COMMENTS: SID 6 was used with Ensolite Type BCR padding (4 inches thick).
Dummy was positioned 6.0 inches from H-Point to door surface.

N/A = Not Applicable

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TABLE L-17. SIDE IMPACT DUMMY RESPONSE SUMMARY (TEST T4-18)

TEST NO. T4-18

TEST DATE 4-28-81

TEST CONFIGURATION:

Target Vehicle	VW Body Buck	Speed	0 mph
Bullet Vehicle	Bullet Sled	Speed	Approx. 27 mph
Impact Location	Right Side Door	Angle	90 deg
Dummy Model	HSRI SID 5 RIB		

HEAD RESPONSE:

Peak A_R	63.9	G	Impacted Object	-
HIC	139.4		Time	28 - 198 ms

CHEST RESPONSE:

DEFLECTION (IN.): LRDY 1.9

Location	Pk A (G)	Pk A_R (G)	3ms Clip (G)	SI	ΔV_y (MPH)	Impact Time (ms)
Upper Sternum (X)	43.1		33.7	N/A	N/A	17
Lower Sternum (X)	58.1		47.1	N/A	N/A	17
LUR (Y)	84.8		77.6	N/A	21.5	17
LLR (X)	40.3		33.0	N/A	N/A	18
RUR (Y)	62.0		55.1	N/A	21.7	16
RLR (X)	23.2		18.7	N/A	N/A	16
RLR (Y)	77.4		60.5	N/A	22.2	15
Upper Thorax (T-1)	45.7	48.6	42.5	209	18.9	17
Lower Thorax (T-12)	76.9	77.1	75.5	557	24.3	16
PELVIS RESPONSE:		101.3	76.5	573	24.5	17

COMPUTED INJURY COEFFICIENTS:

Lower Sternum - Long									
B =	6.381	Q =	-253	V_{15} =	.00250	V_{19} =	.00438	RVS =	1.7500
Left Upper Rib - Lat									
B =	6.941	Q =	-961	V_{15} =	.00625	V_{19} =	.01813	RVS =	2.900
Right Upper Rib - Lat									
B =	6.846	Q =	809	V_{15} =	.00750	V_{19} =	.01375	RVS =	1.833
T-12 - Lat									
B =	N/A	Q =	1085	V_{15} =	N/A	V_{19} =	.01426	RVS =	N/A
T-12 - Resultant, Lat and Long									
B =	N/A	Q =	1111	V_{15} =	N/A	V_{19} =	N/A	RVS =	N/A
AIS =		3.584	AIS (BRUR) =		3.521	MAIS =		2.990	
AIS (AVP) =		3.998	AIS (RES) =		4.551				

COMMENTS: SID 4 with 4 inch thick polyurethane pad. LRDY shaft was noted as being bent post-test. Speed determined from improperly positioned speed trap. A drop height of 36 feet was used (same as previous 27 mph tests). Gap was 6.0 inches.

N/A = Not Applicable

TABLE L-18. SIDE IMPACT DUMMY RESPONSE SUMMARY (TEST T4-19)

TEST NO. T4-19

TEST DATE 6-2-81

TEST CONFIGURATION:

Target Vehicle	VW Body Buck	Speed	0 mph
Bullet Vehicle	Bullet Sled	Speed	. mph
Impact Location	Right Side Door	Angle	90 deg
Dummy Model	PART 572		

HEAD RESPONSE:

Peak A_R	48.8	G	Impacted Object	PAD
HIC	185.3		Time	21 - 172 ms

CHEST RESPONSE:

DEFLECTION (IN.): LRDY N/A

Location	Pk A (G)	Pk A_R (G)	3ms Clip (G)	SI	ΔV_y (MPH)	Impact Time (ms)
Upper Sternum (X)	N/A	N/A	N/A	N/A	N/A	N/A
Lower Sternum (X)	N/A	N/A	N/A	N/A	N/A	N/A
LUR (Y)	N/A	N/A	N/A	N/A	N/A	N/A
LLR (X)	N/A	N/A	N/A	N/A	N/A	N/A
RUR (Y)	N/A	N/A	N/A	N/A	N/A	N/A
RLR (X)	N/A	N/A	N/A	N/A	N/A	N/A
RLR (Y)	N/A	N/A	N/A	N/A	N/A	N/A
Upper Thorax (T-1)	43.5	44.0	39.8	155	18.7	6
Lower Thorax (T-12)	N/A	N/A	N/A	N/A	N/A	N/A
PELVIS RESPONSE:		132.7	41.3	472	20.1	9

COMPUTED INJURY COEFFICIENTS:

Lower Sternum - Long

B = N/A Q = N/A V_{15} = N/A V_{19} = N/A RVS = N/A

Left Upper Rib - Lat

B = N/A Q = N/A V_{15} = N/A V_{19} = N/A RVS = N/A

Right Upper Rib - Lat

B = N/A Q = N/A V_{15} = N/A V_{19} = N/A RVS = N/A

T-12 - Lat

B = 6.285 Q = 872 V_{15} = .01125 V_{19} = .02563 RVS = 2.278

T-12 - Resultant, Lat and Long

B = 6.321 Q = 950 V_{15} = .01188 V_{19} = .02750 RVS = 2.31579

AIS = N/A AIS (BRUR) = N/A MAIS = N/A

AIS (AVP) = 3.205 AIS (RES) = 3.274

COMMENTS: Part 572 was used with a 10 inch thick Polyurethane pad in the thorax and pelvis areas. Maximum padding crush was 4.74 inches.

N/A = Not Applicable

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TABLE L-19. SIDE IMPACT DUMMY RESPONSE SUMMARY (TEST T4-20)

TEST NO. T4-20

TEST DATE 6-2-81

TEST CONFIGURATION:

Target Vehicle	VW Body Buck	Speed	0 mph
Bullet Vehicle	Bullet Sled	Speed	26.85 mph
Impact Location	Right Side Door	Angle	90 deg
Dummy Model	6 Year Child		

HEAD RESPONSE:

Peak A_R	114.1	G	Impacted Object	Side Pad
HIC	333.9		Time	20 - 33 ms

CHEST RESPONSE:

DEFLECTION (IN.): LRDY N/A

Location	Pk A (G)	Pk A_R (G)	3ms Clip (G)	SI	ΔV_y (MPH)	Impact Time (ms)
Upper Sternum (X)	N/A	N/A	N/A	N/A	N/A	N/A
Lower Sternum (X)	N/A	N/A	N/A	N/A	N/A	N/A
LUR (Y)	N/A	N/A	N/A	N/A	N/A	N/A
LLR (X)	N/A	N/A	N/A	N/A	N/A	N/A
RUR (Y)	N/A	N/A	N/A	N/A	N/A	N/A
RLR (X)	N/A	N/A	N/A	N/A	N/A	N/A
RLR (Y)	N/A	N/A	N/A	N/A	N/A	N/A
Upper Thorax (T-1)	45.1	46.2	44.7	228	18.7	5
Lower Thorax (T-12)	N/A	N/A	N/A	N/A	N/A	N/A
PELVIS RESPONSE:		98.7	49.7	282	14.5	13

COMPUTED INJURY COEFFICIENTS:

Lower Sternum - Long									
B =	N/A	Q =	N/A	V_{15} =	N/A	V_{19} =	N/A	RVS =	N/A
Left Upper Rib - Lat									
B =	N/A	Q =	N/A	V_{15} =	N/A	V_{19} =	N/A	RVS =	N/A
Right Upper Rib - Lat									
B =	N/A	Q =	N/A	V_{15} =	N/A	V_{19} =	N/A	RVS =	N/A
T-12 - Lat									
B =	6.5115	Q =	-858	V_{15} =	.00937	V_{19} =	.01813	RVS =	1.933
T-12 - Resultant, Lat and Long									
B =	6.5394	Q =	1010	V_{15} =	.01063	V_{19} =	.02938	RVS =	2.765
AIS =						N/A	AIS (BRUR) =		N/A
AIS (AVP) =						3.369	AIS (RES) =		3.321
MAIS =						N/A			

COMMENTS: The 6 Year Old Child Dummy was used with 10 inch thick Polyurethane padding in thorax and pelvis areas.

N/A = Not Applicable

TABLE L-20. SIDE IMPACT DUMMY RESPONSE SUMMARY (TEST T4-21)

TEST NO. T4-21

TEST DATE 6-4-81

TEST CONFIGURATION:

Target Vehicle	VW Body Buck	Speed	0 mph
Bullet Vehicle	Bullet Sled	Speed	27.18 mph
Impact Location	Right Side Door	Angle	90 deg
Dummy Model	95 Percentile Male		

HEAD RESPONSE:

Peak A _R	50.4	G	Impacted Object	-
HIC	81.7		Time	22 - 200 ms

CHEST RESPONSE:

DEFLECTION (IN.): LRDY N/A

Location	Pk A (G)	Pk A _R (G)	3ms Clip (G)	SI	ΔV_y (MPH)	Impact Time (ms)
Upper Sternum (X)	N/A		N/A	N/A	N/A	N/A
Lower Sternum (X)	N/A		N/A	N/A	N/A	N/A
LUR (Y)	N/A		N/A	N/A	N/A	N/A
LLR (X)	N/A		N/A	N/A	N/A	N/A
RUR (Y)	N/A		N/A	N/A	N/A	N/A
RLR (X)	N/A		N/A	N/A	N/A	N/A
RLR (Y)	N/A		N/A	N/A	N/A	N/A
Upper Thorax (T-1)	70.2	76.8	26.8	176	19.1	12
Lower Thorax (T-12)	N/A	N/A	N/A	N/A	N/A	N/A
PELVIS RESPONSE:		61.61	30.3	178	19.17	15

COMPUTED INJURY COEFFICIENTS:

Lower Sternum - Long						
B =	N/A	Q =	N/A	V ₁₅ =	N/A	V ₁₉ = N/A RVS = N/A
Left Upper Rib - Lat						
B =	N/A	Q =	N/A	V ₁₅ =	N/A	V ₁₉ = N/A RVS = N/A
Right Upper Rib - Lat						
B =	N/A	Q =	N/A	V ₁₅ =	N/A	V ₁₉ = N/A RVS = N/A
T-12 - Lat						
B =	6.3328	Q =	831	V ₁₅ =	.01125	V ₁₉ = .02500 RVS = 2.222
T-12 - Resultant, Lat and Long						
B =	6.348	Q =	1240	V ₁₅ =	.01875	V ₁₉ = .1175 RVS = 6.2667
AIS = N/A AIS (BRUR) = N/A MAIS = N/A						
AIS (AVP) = 3.174 AIS (RES) = 2.791						

COMMENTS: The 95 Percentile Male Dummy was used with 10 inch thick Polyurethane padding in the thorax and pelvis area.

N/A= Not Applicable

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TABLE L-21. SIDE IMPACT DUMMY RESPONSE SUMMARY (TEST T4-22)

TEST NO. T4-22

TEST DATE 6-5-81

TEST CONFIGURATION:

Target Vehicle	VW Body Buck	Speed	0 mph
Bullet Vehicle	Bullet Sled	Speed	27.20 mph
Impact Location	Right Side Door	Angle	90 deg
Dummy Model	HSRI SID 5 RIB		

HEAD RESPONSE:

Peak A_R	25.2	G	Impacted Object	-
HIC	95.0		Time	26 - 197 ms

CHEST RESPONSE:

DEFLECTION (IN.): LRDY 1.7

Location	Pk A (G)	Pk A_R (G)	3ms Clip (G)	SI	ΔV_y (MPH)	Impact Time (ms)
Upper Sternum (X)	51.3		40.7	N/A	N/A	13
Lower Sternum (X)	49.3		44.0	N/A	N/A	12
LUR (Y)	58.0		49.2	N/A	23.9	11
LLR (X)	34.0		27.0	N/A	N/A	13
RUR (Y)	78.5		63.3	N/A	15.0	8
RLR (X)	22.3		20.4	N/A	N/A	8
RLR (Y)	67.0		55.7	N/A	19.6	8
Upper Thorax (T-1)	41.4	45.4	35.8	180	13.2	8
Lower Thorax (T-12)	53.1	55.2	50.0	295	23.0	8
PELVIS RESPONSE:		111.2	60	438	23.8	9

COMPUTED INJURY COEFFICIENTS:

Lower Sternum - Long

B = 6.5077 Q = 317 $V_{15} = .00375$ $V_{19} = .00625$ RVS = 1.667

Left Upper Rib - Lat

B = 6.6122 Q = 1068 $V_{15} = .0125$ $V_{19} = .02563$ RVS = 2.050

Right Upper Rib - Lat

B = 6.7276 Q = 667 $V_{15} = .00375$ $V_{19} = .01188$ RVS = 3.167

T-12 - Lat

B = 6.5676 Q = 1049 $V_{15} = .01563$ $V_{19} = .02625$ RVS = 1.680

T-12 - Resultant, Lat and Long

B = 6.5923 Q = 1880 $V_{15} = .02313$ $V_{19} = .08437$ RVS = 3.649

AIS = 2.7119 AIS (BRUR) = 3.344 MAIS = 2.751

AIS (AVP) = 3.389 AIS (RES) = 3.496

COMMENTS: SID 6 with 10 inch thick Polyurethane padding in thorax and pelvis area.

N/A = Not Applicable

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TABLE L-22. SIDE IMPACT DUMMY RESPONSE SUMMARY (TEST T4-23)

TEST NO. T4-23

TEST DATE 6-8-81

TEST CONFIGURATION:

Target Vehicle	VW Body Buck	Speed	0 mph
Bullet Vehicle	Bullet Sled	Speed	27.07 mph
Impact Location	Right Side Door	Angle	90 deg
Dummy Model	HSRI SID 5 RIB		

HEAD RESPONSE:

Peak A_R	26.9	G	Impacted Object	-
HIC	46.4		Time	52 - 118 ms

CHEST RESPONSE:

DEFLECTION (IN.): LRDY 1.7

Location	Pk A (G)	Pk A_R (G)	3ms Clip (G)	SI	ΔV_y (MPH)	Impact Time (ms)
Upper Sternum (X)	65.7		54.3	N/A	N/A	42
Lower Sternum (X)	58.7		55.3	N/A	N/A	42
LUR (Y)	56.7		53.6	N/A	18.5	35
LLR (X)	49.2		39.4	N/A	N/A	41
RUR (Y)	112.9		94.2	N/A	13.7	35
RLR (X)	33.0		29.7	N/A	N/A	42
RLR (Y)	99.9		84.0	N/A	15.5	32
Upper Thorax (T-1)	44.6	50.1	46.0	181	11.4	32
Lower Thorax (T-12)	96.3	99.1	87.0	569	19.4	36
PELVIS RESPONSE:		95.1	72.8	478	20.4	34

COMPUTED INJURY COEFFICIENTS:

Lower Sternum - Long									
B =	6.525	Q =	346	V_{15} =	.00375	V_{19} =	.00625	RVS =	1.667
Left Upper Rib - Lat									
B =	6.631	Q =	829	V_{15} =	.00875	V_{19} =	.02125	RVS =	2.429
Right Upper Rib - Lat									
B =	6.949	Q =	596	V_{15} =	.00313	V_{19} =	.00562	RVS =	1.800
T-12 - Lat									
B =	6.910	Q =	780	V_{15} =	.00562	V_{19} =	.01125	RVS =	2.000
T-12 - Resultant, Lat and Long									
B =	6.954	Q =	1044	V_{15} =	.00625	V_{19} =	.01750	RVS =	2.800
AIS =		2.857	AIS (BRUR) =		3.674	MAIS =		3.196	
AIS (AVP) =		3.571	AIS (RES) =		3.996				

COMMENTS: SID 6 was positioned 11 inches from door at H-Point. No padding was used.

N/A = Not Applicable

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TABLE L-23. SIDE IMPACT DUMMY RESPONSE SUMMARY (TEST T4-24)

TEST NO. T4-24TEST DATE 6-8-81

TEST CONFIGURATION:

Target Vehicle	<u>VW Body Buck</u>	Speed	<u>0 mph</u>
Bullet Vehicle	<u>Bullet Sled</u>	Speed	<u>27.06 mph</u>
Impact Location	<u>Right Side Door</u>	Angle	<u>90 deg</u>
Dummy Model	<u>HSRI SID 5 RIB</u>		

HEAD RESPONSE:

Peak A_R	<u>32.8</u>	G	Impacted Object	<u>-</u>
HIC	<u>96.3</u>		Time	<u>33 - 110</u> ms

CHEST RESPONSE:

DEFLECTION (IN.): LRDY 1.6

Location	Pk A (G)	Pk A_R (G)	3ms Clip (G)	SI	ΔV_y (MPH)	Impact Time (ms)
Upper Sternum (X)	59.5		50.0	N/A	N/A	22
Lower Sternum (X)	39.5		36.6	N/A	N/A	19
LUR (Y)	87.2		76.6	N/A	20.5	21
LLR (X)	43.6		42.0	N/A	N/A	22
RUR (Y)	103.1		80.4	N/A	18.8	15
RLR (X)	34.1		28.3	N/A	N/A	17
RLR (Y)	92.1		78.1	N/A	18.7	17
Upper Thorax (T-1)	77.4	80.1	66.7	411	19.0	16
Lower Thorax (T-12)	91.0	92.1	88.5	1025	28.6	16
PELVIS RESPONSE:		162.3	125.3	1189	23.9	15

COMPUTED INJURY COEFFICIENTS:

Lower Sternum - Long									
B =	<u>6.290</u>	Q =	<u>648</u>	V_{15} =	<u>.01125</u>	V_{19} =	<u>.05750</u>	RVS =	<u>5.111</u>
Left Upper Rib - Lat									
B =	<u>6.976</u>	Q =	<u>937</u>	V_{15} =	<u>.00937</u>	V_{19} =	<u>.01875</u>	RVS =	<u>2.000</u>
Right Upper Rib - Lat									
B =	<u>6.882</u>	Q =	<u>675</u>	V_{15} =	<u>.00313</u>	V_{19} =	<u>.0100</u>	RVS =	<u>3.200</u>
T-12 - Lat									
B =	<u>7.112</u>	Q =	<u>1162 (840)*</u>	V_{15} =	<u>.00937</u>	V_{19} =	<u>.01563</u>	RVS =	<u>1.667</u>
T-12 - Resultant, Lat and Long									
B =	<u>7.183</u>	Q =	<u>1427</u>	V_{15} =	<u>.0100</u>	V_{19} =	<u>.02438</u>	RVS =	<u>2.438</u>
AIS =		<u>2.872 (3.227)*</u>	AIS (BRUR) =		<u>3.574</u>	MAIS =		<u>3.062</u>	
AIS (AVP) =		<u>4.056</u>	AIS (RES) =		<u>4.516</u>				

COMMENTS: SID 6 was used with 3 inch thick fiberglass padding in thorax and pelvis areas.

* These values based on hand calculation. See Figure L-1.

N/A = Not Applicable

FORM DSI 23R (5/82)

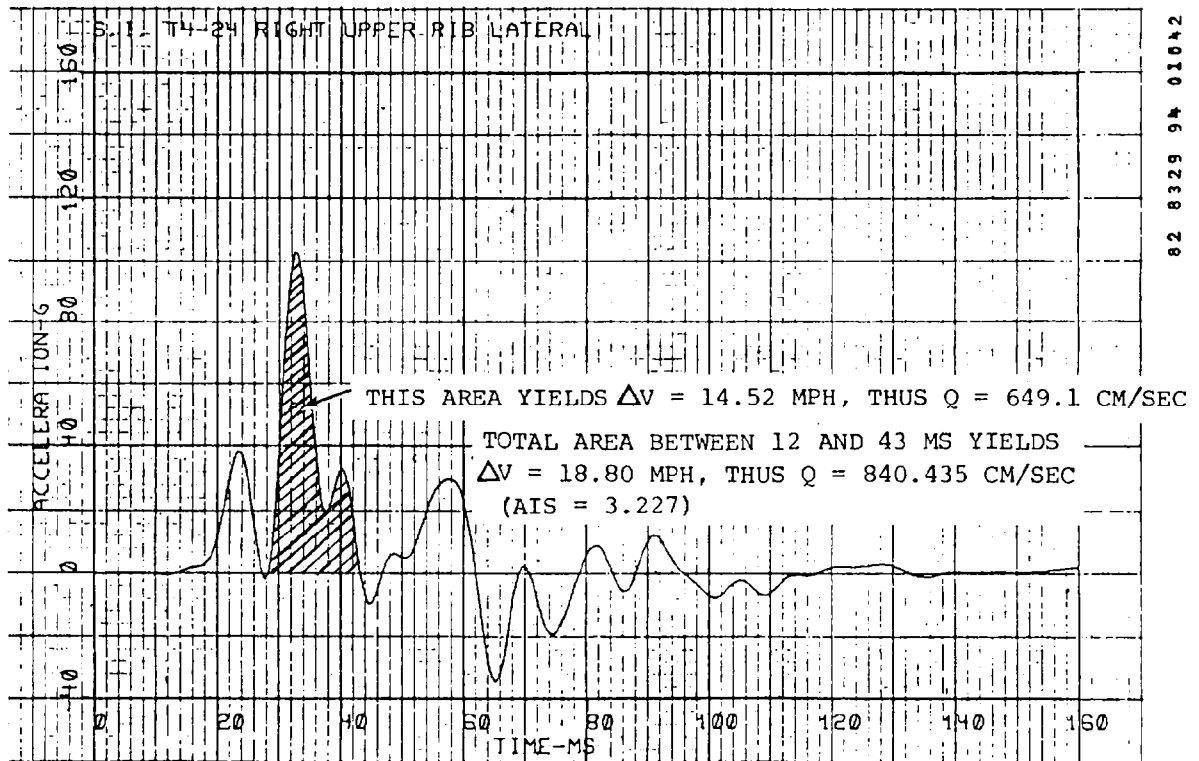


FIGURE L-1. HAND CALCULATION OF RIGHT UPPER RIB DATA - TEST T4-24.

TABLE L-24. SIDE IMPACT DUMMY RESPONSE SUMMARY (TEST T4-25)

TEST NO. T4-25

TEST DATE 6-9-81

TEST CONFIGURATION:

Target Vehicle	VW Body Buck	Speed	0 mph
Bullet Vehicle	Bullet Sled	Speed	26.74 mph
Impact Location	Right Side Door	Angle	90 deg
Dummy Model	HSRI SID 5 RIB		

HEAD RESPONSE:

Peak A_R	37.9	G	Impacted Object	-
HIC	181.7		Time	37 - 96 ms

CHEST RESPONSE:

DEFLECTION (IN.): LRDY 1.3

Location	Pk A (G)	Pk A_R (G)	3ms Clip (G)	SI	ΔV_y (MPH)	Impact Time (ms)
Upper Sternum (X)	62.9		52.0	N/A	N/A	21
Lower Sternum (X)	45.9		33.9	N/A	N/A	21
LUR (Y)	66.6		55.7	N/A	21.3	22
LLR (X)	32.4		31.5	N/A	N/A	28
RUR (Y)	94.9		84.3	N/A	24.0	19
RLR (X)	32.6		26.0	N/A	N/A	19
RLR (Y)	78.3		65.9	N/A	24.0	18
Upper Thorax (T-1)	58.8	59.1	53.5	343	23.1	16
Lower Thorax (T-12)	92.1	92.9	73.9	605	27.8	17
PELVIS RESPONSE:		116.66	92.5	788	26.71	16

COMPUTED INJURY COEFFICIENTS:

Lower Sternum - Long									
B =	6.261	Q =	598	V_{15} =	.0100	V_{19} =	.04625	RVS =	4.625
Left Upper Rib - Lat									
B =	6.741	Q =	963	V_{15} =	.01188	V_{19} =	.02063	RVS =	1.737
Right Upper Rib - Lat									
B =	6.878	Q =	920	V_{15} =	.00937	V_{19} =	.01625	RVS =	1.733
T-12 - Lat									
B =	6.981	Q =	1207	V_{15} =	.00813	V_{19} =	.01875	RVS =	2.308
T-12 - Resultant, Lat and Long									
B =	7.022	Q =	1386	V_{15} =	.00937	V_{19} =	.02688	RVS =	2.867
AIS =		3.323	AIS (BRUR) =		3.568	MAIS =		3.054	
AIS (AVP) =		3.925	AIS (RES) =		4.222				

COMMENTS: SID 6 was used with 4 inch thick HCR padding in thorax and pelvis areas.

N/A = Not Applicable

TABLE L-25. SIDE IMPACT DUMMY RESPONSE SUMMARY (TEST T4-26)

TEST NO. T4-26

TEST DATE 6-10-81

TEST CONFIGURATION:

Target Vehicle	VW Body Buck	Speed	0 mph
Bullet Vehicle	Bullet Sled	Speed	20.02 mph
Impact Location	Right Side Door	Angle	90 deg
Dummy Model	HSRI SID 5 RIB		

HEAD RESPONSE:

Peak A_R	17.7	G	Impacted Object	-
HIC	25.8		Time	46 - 121 ms

CHEST RESPONSE:

DEFLECTION (IN.): LRDY 1.7

Location	Pk A (G)	Pk A_R (G)	3ms Clip (G)	SI	ΔV_y (MPH)	Impact Time (ms)
Upper Sternum (X)	18.8		17.4	N/A	N/A	29
Lower Sternum (X)	16.2		14.8	N/A	N/A	28
LUR (Y)	36.6		34.5	N/A	16.6	27
LLR (X)	10.1		9.9	N/A	N/A	28
RUR (Y)	36.6		33.2	N/A		28
RLR (X)	17.6		14.1	N/A	N/A	29
RLR (Y)	37.1		35.9	N/A	15.6	27
Upper Thorax (T-1)	27.6	28.1	26.6	67	15.5	29
Lower Thorax (T-12)	33.9	34.2	32.7	108	17.1	23
PELVIS RESPONSE:		40.6	38.8	134	17.2	19

COMPUTED INJURY COEFFICIENTS:

Lower Sternum - Long									
B =	5.461	Q =	115	V_{15} =	.00313	V_{19} =	.00625	RVS =	2.000
Left Upper Rib - Lat									
B =	6.279	Q =	739	V_{15} =	.01063	V_{19} =	.02250	RVS =	2.118
Right Upper Rib - Lat									
B =	6.204	Q =	500	V_{15} =	.01063	V_{19} =	.01688	RVS =	1.588
T-12 - Lat									
B =	6.121	Q =	646	V_{15} =	.01125	V_{19} =	.02313	RVS =	2.056
T-12 - Resultant, Lat and Long									
B =	6.127	Q =	1302	V_{15} =	.02250	V_{19} =	.09937	RVS =	4.417
AIS =		2.593	AIS (BRUR) =		2.564	MAIS =		1.700	
AIS (AVP) =		3.031	AIS (RES) =		2.888				

COMMENTS: SID 4 was used with 4.0 inch thick Ensolute type AAC padding in thorax and pelvis areas.

N/A = Not Applicable

FORM DSI 23R (5/82)

TABLE L-26. SIDE IMPACT DUMMY RESPONSE SUMMARY (TEST T4-27)

TEST NO. T4-27

TEST DATE 6-10-81

TEST CONFIGURATION:

Target Vehicle	VW Body Buck	Speed	0 mph
Bullet Vehicle	Bullet Sled	Speed	27.12 mph
Impact Location	Right Side Door	Angle	90 deg
Dummy Model	HSRI SID 5 RIB		

HEAD RESPONSE:

Peak A_R	30.7	G	Impacted Object	-
HIC	83.0		Time	31 - 112 ms

CHEST RESPONSE:

DEFLECTION (IN.): LRDY 1.9

Location	Pk A (G)	Pk A_R (G)	3ms Clip (G)	SI	ΔV_y (MPH)	Impact Time (ms)
Upper Sternum (X)	40.4		35.2	N/A	N/A	17
Lower Sternum (X)	43.2		36.6	N/A	N/A	16
LUR (Y)	86.6		73.0	N/A	22.6	16
LLR (X)	31.3		28.4	N/A	N/A	17
RUR (Y)	67.4		55.2	N/A	20.3	15
RLR (X)	33.0		24.2	N/A	N/A	16
RLR (Y)	88.8		77.3	N/A	25.1	14
Upper Thorax (T-1)	53.9	54.5	48.9	216	17.5	15
Lower Thorax (T-12)	78.5	81.3	71.1	517	26.7	14
PELVIS RESPONSE:		110.4	68.5	641	24.1	15

COMPUTED INJURY COEFFICIENTS:

Lower Sternum - Long

B = 6.133 Q = 306 V_{15} = .00313 V_{19} = .0100 RVS = 3.200

Left Upper Rib - Lat

B = 6.871 Q = 967 V_{15} = .00750 V_{19} = .01938 RVS = 2.583

Right Upper Rib - Lat

B = 6.796 Q = 907 V_{15} = .00937 V_{19} = .02000 RVS = 2.133

T-12 - Lat

B = 6.935 Q = 1189 V_{15} = .01125 V_{19} = .01938 RVS = 1.722

T-12 - Resultant, Lat and Long

B = 6.949 Q = 1954 V_{15} = .01500 V_{19} = .08812 RVS = 5.875

AIS = 3.682 AIS (BRUR) = 3.446 MAIS = 2.889

AIS (AVP) = 3.855 AIS (RES) = 3.531

COMMENTS: SID 4 was used with 7 inch thick Polyurethane padding in thorax and pelvis areas.

N/A = Not Applicable

FORM DSI 23R (5/82)

TABLE L-27. SIDE IMPACT DUMMY RESPONSE SUMMARY (TEST T4-28)

TEST NO. T4-28

TEST DATE 6-10-81

TEST CONFIGURATION:

Target Vehicle	VW Body Buck	Speed	0 mph
Bullet Vehicle	Bullet Sled	Speed	26.92 mph
Impact Location	Right Side Door	Angle	90 deg
Dummy Model	HSRI SID 5 RIB		

HEAD RESPONSE:

Peak A_R	44.3	G	Impacted Object	-
HIC	98.9		Time	44 - 111 ms

CHEST RESPONSE:

DEFLECTION (IN.): LRDY 2.0

Location	Pk A (G)	Pk A_R (G)	3ms Clip (G)	SI	ΔV_y (MPH)	Impact Time (ms)
Upper Sternum (X)	84.3		66.6	N/A	N/A	29
Lower Sternum (X)	87.0		69.8	N/A	N/A	31
LUR (Y)	85.8		69.6	N/A	21.1	30
LLR (X)	61.2		58.5	N/A	N/A	33
RUR (Y)	140.9		110.4	N/A	15.8	31
RLR (X)	38.4		32.1	N/A	N/A	28
RLR (Y)	124.1		96.4	N/A	12.9	29
Upper Thorax (T-1)	57.8	72.5	52.0	383	12.1	29
Lower Thorax (T-12)	124.8	126.6	102.2	983	22.4	28
PELVIS RESPONSE:		154.8	118.0	1091	22.9	29

COMPUTED INJURY COEFFICIENTS:

Lower Sternum - Long

B = 6.787 Q = 390 $V_{15} = .0025$ $V_{19} = .00438$ RVS = 1.750

Left Upper Rib - Lat

B = 6.906 Q = 945 $V_{15} = .00937$ $V_{19} = .01938$ RVS = 2.067

Right Upper Rib - Lat

B = 7.113 Q = 703 $V_{15} = .0025$ $V_{19} = .00500$ RVS = 2.000

T-12 - Lat

B = 7.095 Q = 1085 $V_{15} = .00562$ $V_{19} = .02375$ RVS = 4.222

T-12 - Resultant, Lat and Long

B = 7.112 Q = 1875 $V_{15} = .01313$ $V_{19} = .04875$ RVS = 3.714

AIS = 3.270

AIS (BRUR) = 3.918

MAIS = 3.526

AIS (AVP) = 3.504

AIS (RES) = 4.237

COMMENTS: SID 4 was used with an 8.0 inch gap between H-Point and door. No padding was used.

N/A = Not Applicable

FORM DSI 23R (5/82)

TABLE L-28. SIDE IMPACT DUMMY RESPONSE SUMMARY (TEST T4-29)

TEST NO. T4-29

TEST DATE 6-11-81

TEST CONFIGURATION:

Target Vehicle	VW Body Buck	Speed	0 mph
Bullet Vehicle	Bullet Sled	Speed	26.93 mph
Impact Location	Right Side Door	Angle	90 deg
Dummy Model	HSRI SID 5 RIB		

HEAD RESPONSE:

Peak A_R	40.9	G	Impacted Object	-
HIC	150.6		Time	39 - 91 ms

CHEST RESPONSE:

DEFLECTION (IN.): LRDY 1.8

Location	Pk A (G)	Pk A_R (G)	3ms Clip (G)	SI	ΔV_y (MPH)	Impact Time (ms)
Upper Sternum (X)	40.1		34.1	N/A	N/A	18
Lower Sternum (X)	38.1		34.2	N/A	N/A	18
LUR (Y)	85.1		73.3	N/A	26.0	18
LLR (X)	41.4		38.4	N/A	N/A	20
RUR (Y)	85.6		77.5	N/A	23.8	17
RLR (X)	28.5		25.3	N/A	N/A	20
RLR (Y)	88.0		78.8	N/A	27.7	16
Upper Thorax (T-1)	56.5	57.1	50.8	302	18.6	18
Lower Thorax (T-12)	97.4	99.1	90.6	734	27.9	18
PELVIS RESPONSE:		114.0	90.0	845	27.4	15

COMPUTED INJURY COEFFICIENTS:

Lower Sternum - Long									
B =	6.339	Q =	337	$V_{15} =$	.00875	$V_{19} =$	.01250	RVS =	1.429
Left Upper Rib - Lat									
B =	6.941	Q =	1167	$V_{15} =$	.01000	$V_{19} =$	.01875	RVS =	1.875
Right Upper Rib - Lat									
B =	6.879	Q =	1060	$V_{15} =$	.00875	$V_{19} =$	.03188	RVS =	3.643
T-12 - Lat									
B =	6.991	Q =	1174	$V_{15} =$	.00813	$V_{19} =$	.01875	RVS =	2.308
T-12 - Resultant, Lat and Long									
B =	7.019	Q =	1282	$V_{15} =$	.00813	$V_{19} =$	.02063	RVS =	2.538
AIS =		3.808	AIS (BRUR) =		3.569	MAIS =		3.055	
AIS (AVP) =		3.864	AIS (RES) =		4.423				

COMMENTS: SID 4 was used with 3 inch Polyurethane padding in the thorax and pelvis areas. SID 4 suffered a broken knee during this test. Also the pelvis was noticed to be "leaking" lead shot and foam.

N/A = Not Applicable

FORM DSI 23R (5/82)

TABLE L-29. SIDE IMPACT DUMMY RESPONSE SUMMARY (TEST T4-30)

TEST NO. T4-30

TEST DATE 7-6-81

TEST CONFIGURATION:

Target Vehicle	VW Body Buck	Speed	0 mph
Bullet Vehicle	Bullet Sled	Speed	27.16 mph
Impact Location	Right Side Door	Angle	90 deg
Dummy Model	HSRI SID 5 RIB		

HEAD RESPONSE:

Peak A_R	67.7	G	Impacted Object	-
HIC	233.5		Time	38 - 200 ms

CHEST RESPONSE:

DEFLECTION (IN.): LRDY 1.8

Location	Pk A (G)	Pk A_R (G)	3ms Clip (G)	SI	ΔV_y (MPH)	Impact Time (ms)
Upper Sternum (X)	47.3		41.0	N/A	N/A	17
Lower Sternum (X)	46.5		36.5	N/A	N/A	18
LUR (Y)	73.0		67.7	N/A	23.7	18
LLR (X)	41.5		36.1	N/A	N/A	18
RUR (Y)	89.1		75.3	N/A	17.3	17
RLR (X)	42.0		27.7	N/A	N/A	18
RLR (Y)	103.2		82.2	N/A	25.7	17
Upper Thorax (T-1)	78.1	78.7	49.2	362	20.0	22
Lower Thorax (T-12)	108.2	111.0	67.6	647	27.4	18
PELVIS RESPONSE:		120.0	64.3	724	25.6	18

COMPUTED INJURY COEFFICIENTS:

Lower Sternum - Long

B = 6.113 Q = 260 $V_{15} = .00500$ $V_{19} = .00937$ RVS = 1.875

Left Upper Rib - Lat

B = 6.903 Q = -1049 $V_{15} = .00750$ $V_{19} = .01688$ RVS = 2.250

Right Upper Rib - Lat

B = 6.882 Q = 775 $V_{15} = .00687$ $V_{19} = .01125$ RVS = 1.636

T-12 - Lat

B = 7.109 Q = 1233 $V_{15} = .00750$ $V_{19} = .01688$ RVS = 2.250

T-12 - Resultant, Lat and Long

B = 7.134 Q = 1595 $V_{15} = .00813$ $V_{19} = .03375$ RVS = 4.154

AIS = 3.486 AIS (BRUR) = 3.574 MAIS = 3.061

AIS (AVP) = 4.110 AIS (RES) = 4.317

COMMENTS: SID 4 was used with 4 inch thick Ensolite AAC padding in the thorax and pelvis areas.

N/A = Not Applicable

FORM DSI 23R (5/82)

TABLE L-30. SIDE IMPACT DUMMY RESPONSE SUMMARY (TEST T4-31)

TEST NO. T4-31

TEST DATE 8-20-81

TEST CONFIGURATION:

Target Vehicle	VW Body Buck	Speed	0 mph
Bullet Vehicle	Bullet Sled	Speed	20.77 mph
Impact Location	Right Side Door	Angle	90 deg
Dummy Model	HSRI SID 5 RIB		

HEAD RESPONSE:

Peak A_R	24.9	G	Impacted Object	Window
HIC	42		Time	29 - 128 ms

CHEST RESPONSE:

DEFLECTION (IN.): LRDY 0.896

Location	Pk A (G)	Pk A_R (G)	3ms Clip (G)	SI	ΔV_y (MPH)	Impact Time (ms)
Upper Sternum (X)	16.9		15.8	N/A	N/A	25
Lower Sternum (X)	12.0		11.8	N/A	N/A	25
LUR (Y)	27.5		25.9	N/A	13.5	21
LLR (X)	19.0		18.5	N/A	N/A	23
RUR (Y)	25.5		24.2	N/A	14.1	23
RLR (X)	14.4		12.3	N/A	N/A	23
RLR (Y)	49.4		44.0	N/A	15.2	22
Upper Thorax (T-1)		62.0	36.0	156	5.8	17
Lower Thorax (T-12)		77.9	46.8	199	16.9	21
PELVIS RESPONSE:		52.4	46.7	162	15.4	18

COMPUTED INJURY COEFFICIENTS:

Lower Sternum - Long

B = 5.222 Q = 227 $V_{15} = .00813$ $V_{19} = .15250$ RVS = 18.77

Left Upper Rib - Lat

B = 5.914 Q = 594 $V_{15} = .01375$ $V_{19} = .02625$ RVS = 1.91

Right Upper Rib - Lat

B = 5.920 Q = 630 $V_{15} = .01250$ $V_{19} = .03313$ RVS = 2.65

T-12 - Lat

B = 6.545 Q = 757 $V_{15} = .00625$ $V_{19} = .01938$ RVS = 3.10

T-12 - Resultant, Lat and Long

B = 6.559 Q = 979 $V_{15} = .00875$ $V_{19} = .0325$ RVS = 3.71

AIS = 2.40

AIS (BRUR) = .2.14

MAIS = 1.13

AIS (AVP) = 3.20

AIS (RES) = 3.19

COMMENTS: SID 4 was used in this test. Spikes are evident in data. Rib potentiometer bent. Seat modified to Drawing DSL-1269.

N/A = Not Applicable

FORM DSI 23R (5/82)

TABLE L-31. SIDE IMPACT DUMMY RESPONSE SUMMARY (TEST T4-32)

TEST NO. T4-32

TEST DATE 8-21-81

TEST CONFIGURATION:

Target Vehicle	VW Body Buck	Speed	0 mph
Bullet Vehicle	Bullet Sled	Speed	27.53 mph
Impact Location	Right Side Door	Angle	90 deg
Dummy Model	HSRI SID 5 RIB		

HEAD RESPONSE:

Peak A_R	52.9	G	Impacted Object	Side Window
HIC	179		Time	40 - 82 ms

CHEST RESPONSE:

DEFLECTION (IN.): LRDY

Location	Pk A (G)	Pk A_R (G)	3ms Clip (G)	SI	ΔV_y (MPH)	Impact Time (ms)
Upper Sternum (X)	91.4		64.4	N/A	N/A	30
Lower Sternum (X)	56.0		45.8	N/A	N/A	28
LUR (Y)	40.7		40.0	N/A	22.7	26
LLR (X)	36.6		33.7	N/A	N/A	30
RUR (Y)	59.8		56.0	N/A	22.3	27
RLR (X)	19.8		18.1	N/A	N/A	25
RLR (Y)	71.9		69.3	N/A	23.4	24
Upper Thorax (T-1)		62.8	55.2	398	22.7	34
Lower Thorax (T-12)		76.2	67.8	516	25.1	18
PELVIS RESPONSE:		81.3	62.0	497	24.9	17

COMPUTED INJURY COEFFICIENTS:

Lower Sternum - Long									
B =	6.450	Q =	497	$V_{15} =$	.01000	$V_{19} =$	.01688	RVS =	1.69
Left Upper Rib - Lat									
B =	6.401	Q =	1017	$V_{15} =$	.01313	$V_{19} =$	.02500	RVS =	1.90
Right Upper Rib - Lat									
B =	6.767	Q =	951	$V_{15} =$	.00937	$V_{19} =$	.01750	RVS =	1.87
T-12 - Lat									
B =	6.916	Q =	1002	$V_{15} =$	.00750	$V_{19} =$	.01563	RVS =	2.08
T-12 - Resultant, Lat and Long									
B =	6.932	Q =	1483	$V_{15} =$	.01000	$V_{19} =$	.04438	RVS =	4.44
AIS =		3.09	AIS (BRUR) =		3.40	MAIS =		2.83	
AIS (AVP) =		3.88	AIS (RES) =		3.68				

COMMENTS: SID 6 was the ATD utilized. Broken lead on rib potentiometer.
Seat modified to Drawing DSL-1269. Headskin cut by Lucite.

N/A = Not Applicable

TABLE L-32. SIDE IMPACT DUMMY RESPONSE SUMMARY (TEST T4-33)

TEST NO. T4-33

TEST DATE 8-21-81

TEST CONFIGURATION:

Target Vehicle	VW Body Buck	Speed	0 mph
Bullet Vehicle	Bullet Sled	Speed	34.21 mph
Impact Location	Right Side Door	Angle	90 deg
Dummy Model	HSRI SID 5 RIB		

HEAD RESPONSE:

Peak A_R	28.5	G	Impacted Object	Window Glazing
HIC	1117		Time	36 - 70 ms

CHEST RESPONSE:

DEFLECTION (IN.): LRDY

Location	Pk A (G)	Pk A_R (G)	3ms Clip (G)	SI	ΔV_y (MPH)	Impact Time (ms)
Upper Sternum (X)	94.4		79.2	N/A	N/A	15
Lower Sternum (X)	84.7		81.6	N/A	N/A	16
LUR (Y)	92.8		84.4	N/A	32.2	15
LLR (X)	56.1		50.8	N/A	N/A	20
RUR (Y)	124.9		108.2	N/A	32.3	15
RLR (X)	58.3		46.6	N/A	N/A	15
RLR (Y)	144.4		126.0	N/A	26.5	12
Upper Thorax (T-1)		106.0	77.7	856	31.2	14
Lower Thorax (T-12)		131.8	126.7	1623	35.8	16
PELVIS RESPONSE:		165.4	111.6	1834	38.4	15

COMPUTED INJURY COEFFICIENTS:

Lower Sternum - Long									
B =	7.090	Q =	1161	$V_{15} =$	.00750	$V_{19} =$	.04375	RVS =	5.83
Left Upper Rib - Lat									
B =	7.088	Q =	1441	$V_{15} =$	.01250	$V_{19} =$	.02625	RVS =	2.10
Right Upper Rib - Lat									
B =	7.271	Q =	1441	$V_{15} =$	.00625	$V_{19} =$	.02313	RVS =	3.70
T-12 - Lat									
B =	7.387	Q =	1557	$V_{15} =$	.00687	$V_{19} =$	.01938	RVS =	2.82
T-12 - Resultant, Lat and Long									
B =	7.324	Q =	2538	$V_{15} =$	.01125	$V_{19} =$	.05750	RVS =	5.11
AIS =		4.17	AIS (BRUR) =		4.15	MAIS =		3.84	
AIS (AVP) =		4.64	AIS (RES) =		5.10				

COMMENTS: SID 6 was used for this test. Broken lead on rib potentiometer. Lucite SAR made severe cuts in headskin. Seat modified to Drawing DSL-1269.

N/A = Not Applicable

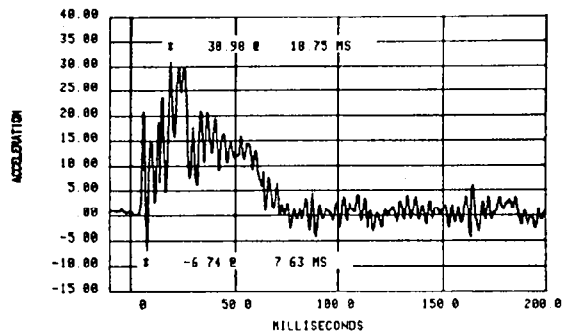
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APPENDIX M
GRAPHICAL DATA FOR
TASK 4 TESTS
(T4-12 THROUGH T4-33)

TASK 4 SLED TEST MATRIX (T4-12 THROUGH T4-33)									
Test No. 8329-	Test Date	Dummy	Interior Door Modifications			Seat Mod	Glazing	Bullet Velocity (mph)	Gap (in.)
			Thorax	Pelvis/ Legs	Seat Interface				
T4-12	3/25/81	SID #4	4 in. BCR	4 in. BCR	N/A	N/A	None	28.2	2.0
T4-13	3/26/81	SID #4	4.5 in. PE	4.5 in. PE	N/A	N/A	None	27.6	1.5
T4-14	3/27/81	SID #6	4 in. PU	4 in. PU	N/A	N/A	None	27.9	2.0
T4-15	3/27/81	SID #6	4 in. AAC	4 in. AAC	N/A	N/A	None	27.6	2.0
T4-16	3/30/81	SID #6	4.5 in. PE	4.5 in. PE	N/A	N/A	None	27.4	1.5
T4-17	3/30/81	SID #6	4 in. BCR	4 in. BCR	N/A	N/A	None	27.7	2.0
T4-18	4/28/81	SID #4	4 in. PU	4 in. PU	N/A	N/A	None	25.4	2.0
T4-19	6/02/81	Part 572	10 in. PU	10 in. PU	N/A	N/A	None	27.2	0.0
T4-20	6/02/81	6 Year Child	10 in. PU	10 in. PU	N/A	N/A	None	26.9	0.0
T4-21	6/04/81	95% Male	10 in. PU	10 in. PU	N/A	N/A	None	27.2	0.0
T4-22	6/05/81	SID #6	10 in. PU	10 in. PU	N/A	N/A	None	27.2	0.0
T4-23	6/08/81	SID #6	None	None	N/A	N/A	None	27.0	12.0
T4-24	6/08/81	SID #6	3.5 in. Fiberglass	3.5 in. Fiberglass	N/A	N/A	None	27.1	2.5
T4-25	6/09/81	SID #6	4 in. HCR	4 in. HCR	N/A	N/A	None	26.7	2.0
T4-26	6/10/81	SID #4	4 in. AAC	4 in. AAC	N/A	N/A	None	20.0	2.0
T4-27	6/10/81	SID #4	7 in. PU	7 in. PU	N/A	N/A	None	27.1	1.0
T4-28	6/10/81	SID #4	None	None	N/A	N/A	None	26.9	8.0
T4-29	6/11/81	SID #4	4 in. AAC	4 in. AAC	N/A	N/A	None	26.9	2.0
T4-30	7/06/81	SID #4	3.5 in. PU	3.5 in. PU	N/A	N/A	None	27.2	2.5
T4-31	8/20/81	SID #4	4 in. AAC	4 in. AAC	100 psi Honeycomb	DSL 1269	Lucite SAR	27.8	2.0
T4-32	8/21/81	SID #6	4 in. AAC	4 in. AAC	100 psi Honeycomb	DSL 1269	Lucite SAR	27.5	2.0
T4-33	8/21/81	SID #6	4 in. AAC	4 in. AAC	100 psi Honeycomb	DSL 1269	Lucite SAR	34.2	2.0

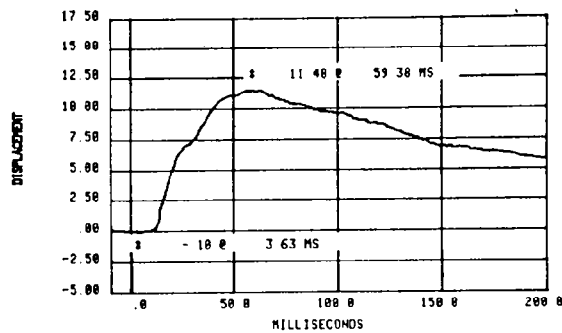
PU = Polyurethane Foam PE = Polyethylene Foam HCR = Ensolite HCR Foam
AAC = Ensolite AAC Foam BCR = Ensolite BCR Foam N/A = Not Applicable
To obtain mm, multiply in. by 25.4. To obtain kPa, multiply psi by 6.895.

TRACK: 11 CHANNEL: 4 100% CAL = 71.13
TEST: T4-12 S.I. SLED 00 DATE: 3-26-81



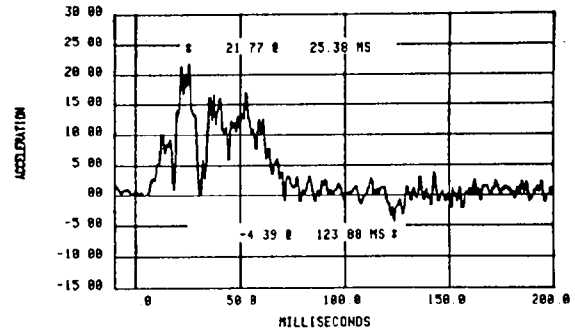
BULLET SLED LONGITUDINAL ACCELERATION

TRACK: 11 CHANNEL: 3 100% CAL = 22.50
TEST: T4-12 S.I. SLED 00 DATE: 3-26-81



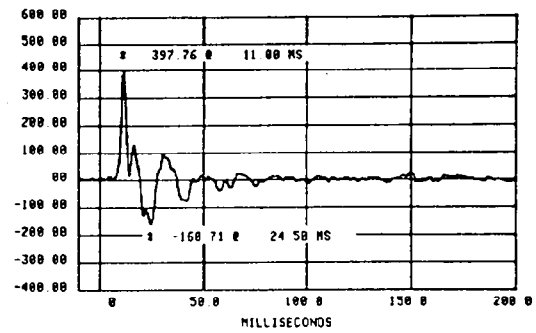
DOOR DISPLACEMENT

TRACK: 9 CHANNEL: 10 100% CAL = 154.75
TEST: T4-12 S.I. SLED 00 DATE: 3-26-81



TARGET SLED LATERAL ACCELERATION

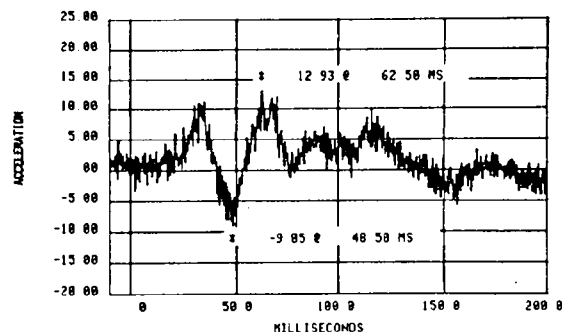
TRACK: 9 CHANNEL: 14 100% CAL = 696.01
TEST: T4-12 S.I. SLED 00 DATE: 3-26-81



DOOR LATERAL ACCELERATION

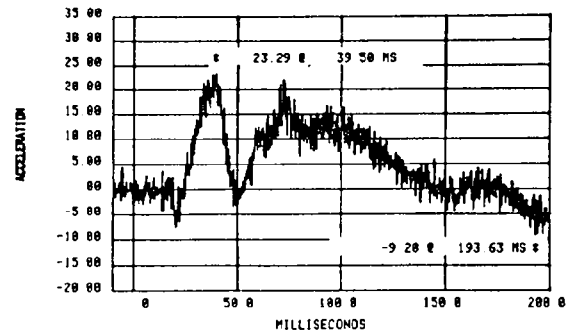
T4-12

TRACK-11 CHANNEL-12 100% CAL = 236.30
TEST-T4-12 S.I. SLED 00 DATE: 3-26-81



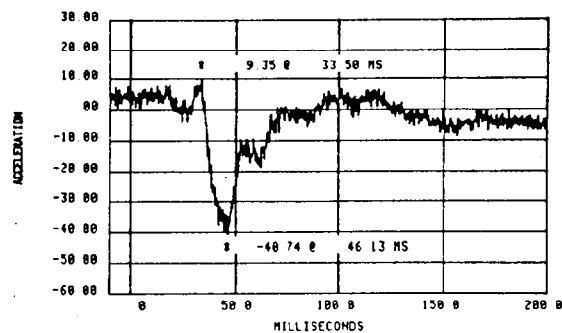
HEAD LONGITUDINAL ACCELERATION

TRACK-11 CHANNEL-13 100% CAL = 236.66
TEST-T4-12 S.I. SLED 00 DATE: 3-26-81



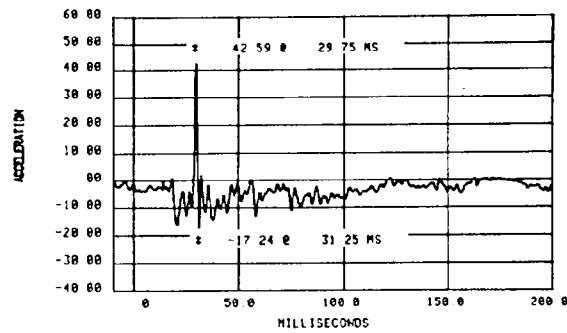
HEAD LATERAL ACCELERATION

TRACK-11 CHANNEL-14 100% CAL = 259.79
TEST-T4-12 S.I. SLED 00 DATE: 3-26-81



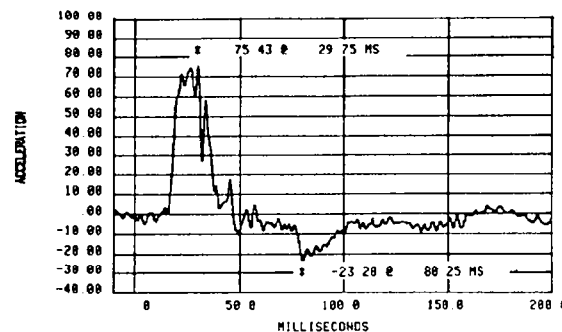
HEAD VERTICAL ACCELERATION

TRACK-11 CHANNEL-7 100% CAL = 333.79
TEST-T4-12 S.I. SLED 00 DATE: 3-26-81



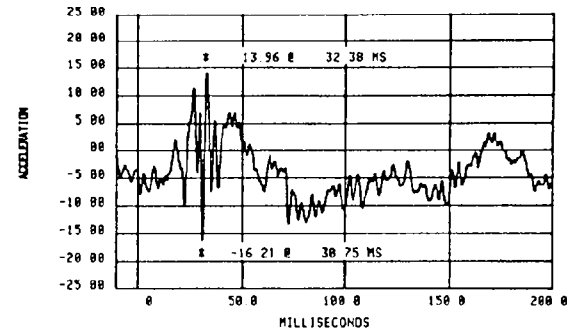
PELVIS LONGITUDINAL ACCELERATION

TRACK-11 CHANNEL-8 100% CAL = 395.57
TEST-T4-12 S.I. SLED 00 DATE: 3-26-81



PELVIS LATERAL ACCELERATION

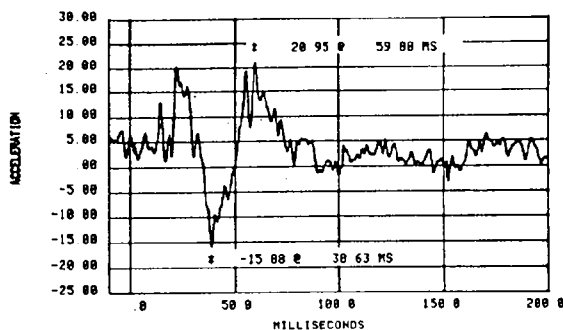
TRACK-11 CHANNEL-9 100% CAL = 368.42
TEST-T4-12 S.I. SLED 00 DATE: 3-26-81



PELVIS VERTICAL ACCELERATION

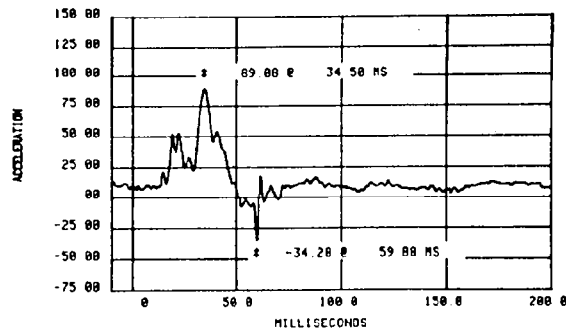
T4-12

TRACK: 9 CHANNEL: 7 100% CAL = 379.83
TEST: T4-12 S.I. SLED #8 DATE: 3-26-81



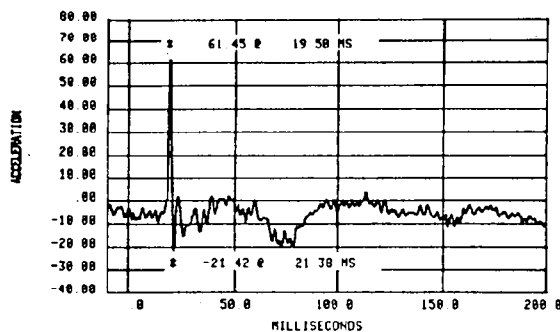
UPPER THORAX LONGITUDINAL ACCELERATION

TRACK: 9 CHANNEL: 8 100% CAL = 400.27
TEST: T4-12 S.I. SLED #8 DATE: 3-26-81



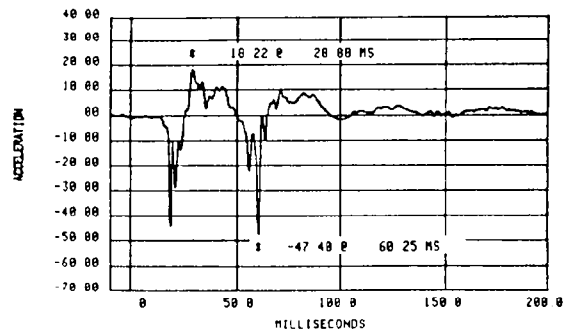
UPPER THORAX LATERAL ACCELERATION

TRACK: 9 CHANNEL: 9 100% CAL = 421.24
TEST: T4-12 S.I. SLED #8 DATE: 3-26-81



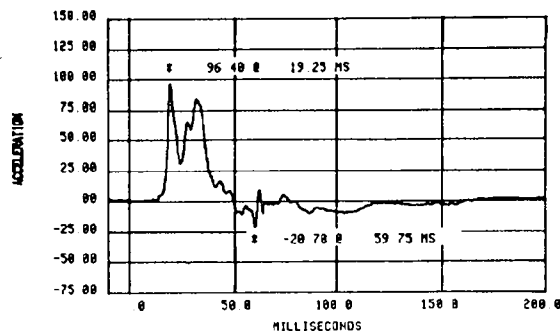
UPPER THORAX VERTICAL ACCELERATION

TRACK: 11 CHANNEL: 1 100% CAL = 362.55
TEST: T4-12 S.I. SLED #8 DATE: 3-26-81



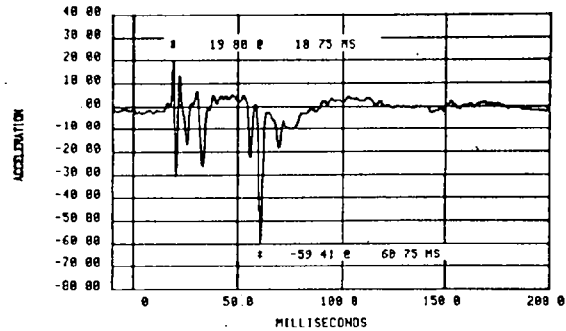
LOWER THORAX LONGITUDINAL ACCELERATION

TRACK: 11 CHANNEL: 2 100% CAL = 357.34
TEST: T4-12 S.I. SLED #8 DATE: 3-26-81



LOWER THORAX LATERAL ACCELERATION

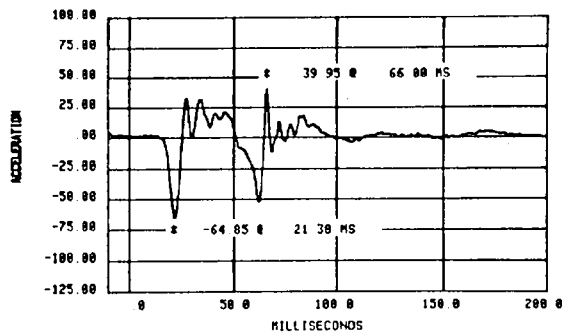
TRACK: 11 CHANNEL: 3 100% CAL = 329.25
TEST: T4-12 S.I. SLED #8 DATE: 3-26-81



LOWER THORAX VERTICAL ACCELERATION

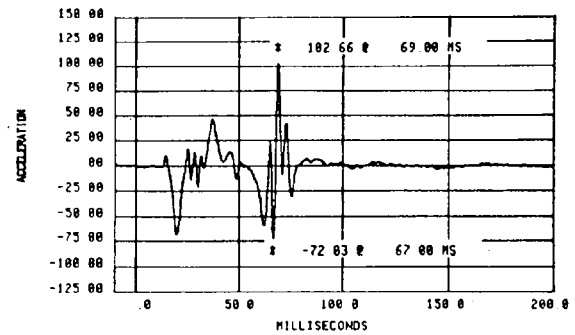
T4-12

TRACK: 9 CHANNEL: 4 100% CAL = 343.86
TEST: T4-12 S.I. SLED 08 DATE: 3-26-81



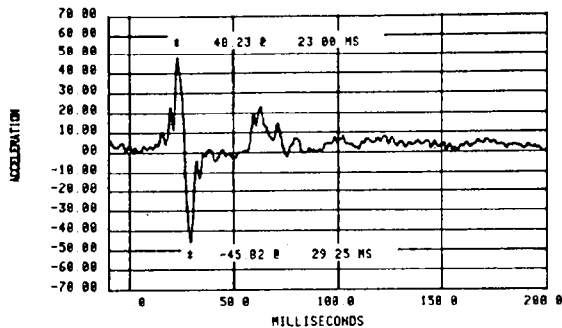
UPPER STERNUM LONGITUDINAL ACCELERATION

TRACK: 9 CHANNEL: 3 100% CAL = 339.86
TEST: T4-12 S.I. SLED 08 DATE: 3-26-81



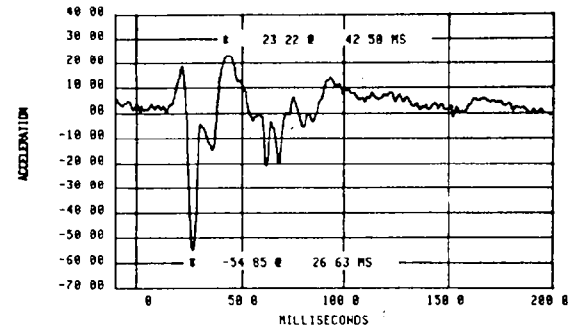
LOWER STERNUM LONGITUDINAL ACCELERATION

TRACK: 9 CHANNEL: 13 100% CAL = 397.91
TEST: T4-12 S.I. SLED 08 DATE: 3-26-81



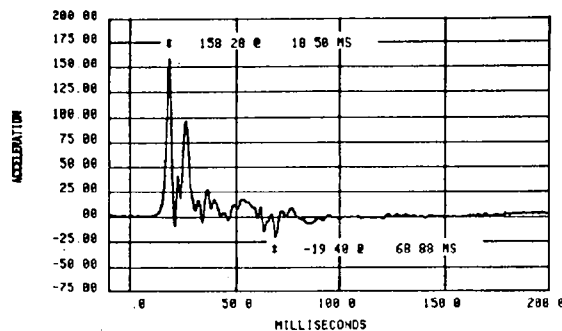
RIGHT LOWER RIB LONGITUDINAL ACCELERATION

TRACK: 9 CHANNEL: 11 100% CAL = 398.16
TEST: T4-12 S.I. SLED 08 DATE: 3-26-81



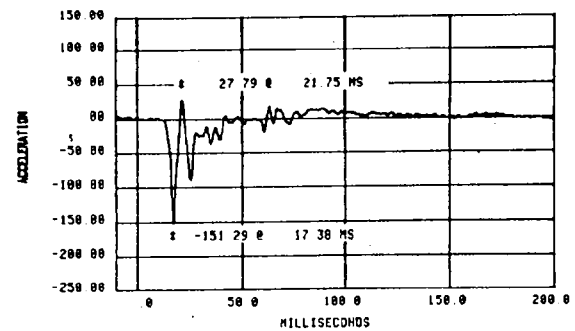
LEFT LOWER RIB LONGITUDINAL ACCELERATION

TRACK: 9 CHANNEL: 1 100% CAL = 363.74
TEST: T4-12 S.I. SLED 08 DATE: 3-26-81



RIGHT UPPER RIB LATERAL ACCELERATION

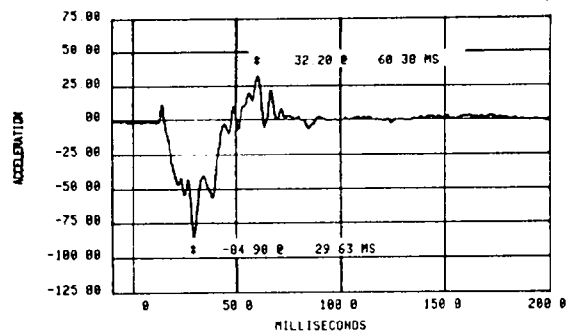
TRACK: 9 CHANNEL: 12 100% CAL = 421.71
TEST: T4-12 S.I. SLED 08 DATE: 3-26-81



RIGHT LOWER RIB LATERAL ACCELERATION

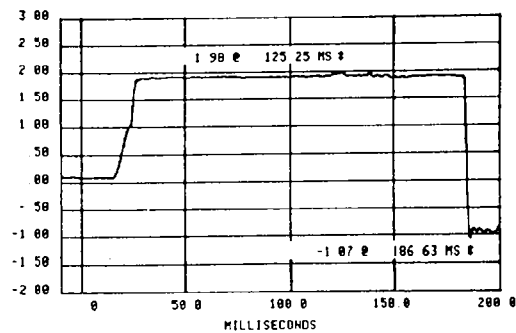
T4-12

TRACK 9 CHANNEL 2 100% CAL = 346.27
TEST T4-12 S.I. SLED 00 DATE 3-26-81

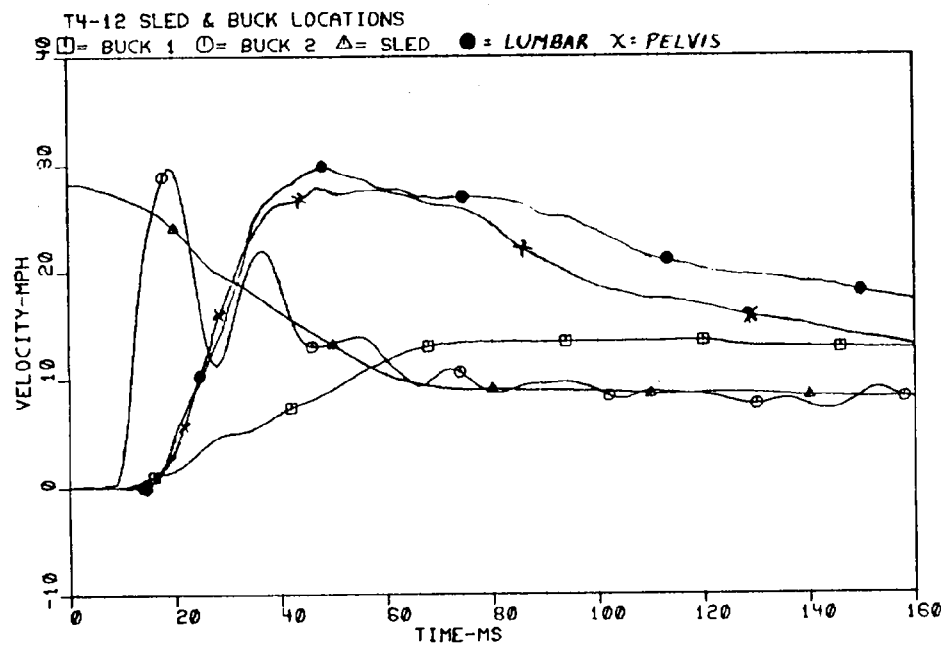


LEFT UPPER RIB LATERAL ACCELERATION

TRACK 11 CHANNEL 11 100% CAL = 2.77
TEST T4-12 S.I. SLED 00 DATE 3-26-81

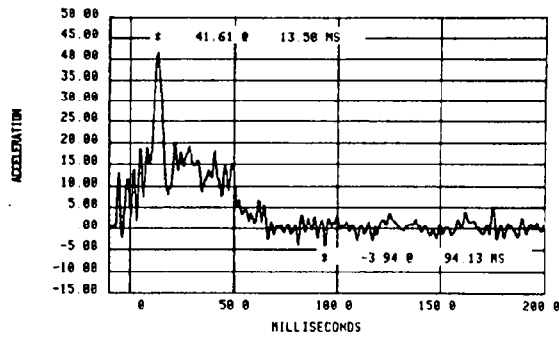


LOWER RIB DISPLACEMENT



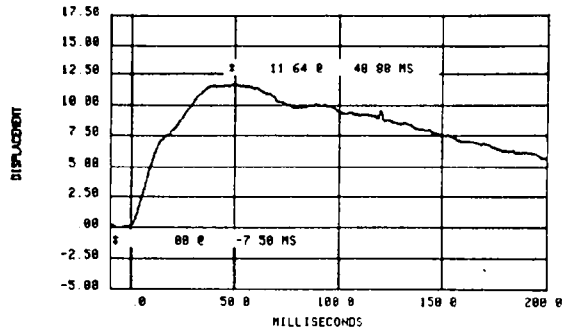
T4-12

TRACK: 11 CHANNEL: 4 100% CAL = 71.13
TEST: T4-13 S.I. SLED 09 DATE: 3-27-81



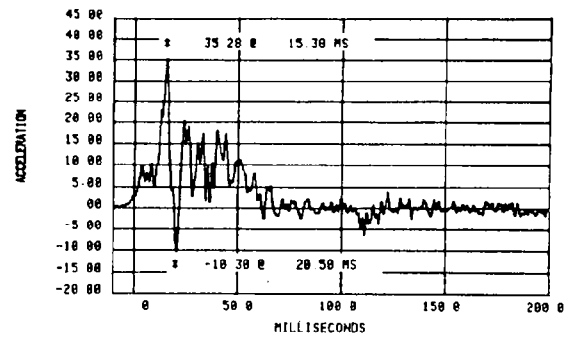
BULLET SLED LONGITUDINAL ACCELERATION

TRACK: 11 CHANNEL: 5 100% CAL = 22.52
TEST: T4-13 S.I. SLED 09 DATE: 3-27-81



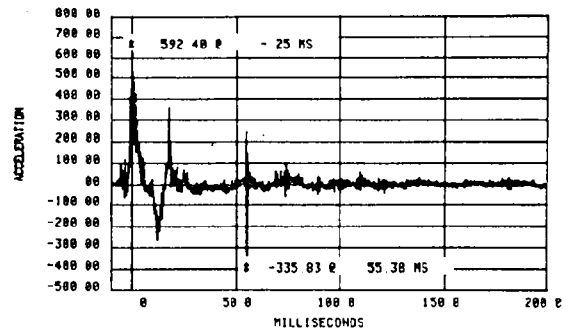
DOOR DISPLACEMENT

TRACK: 9 CHANNEL: 10 100% CAL = 134.73
TEST: T4-13 S.I. SLED 09 DATE: 3-27-81



TARGET SLED LATERAL ACCELERATION

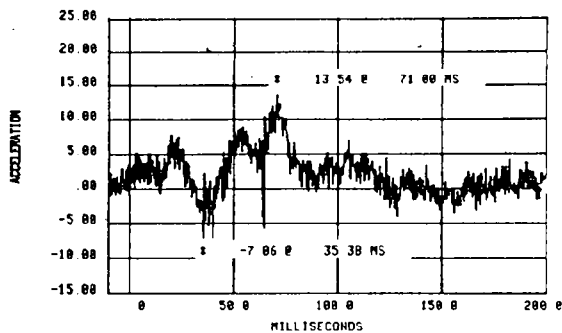
TRACK: 9 CHANNEL: 14 100% CAL = 696.81
TEST: T4-13 S.I. SLED 09 DATE: 3-27-81



DOOR LATERAL ACCELERATION

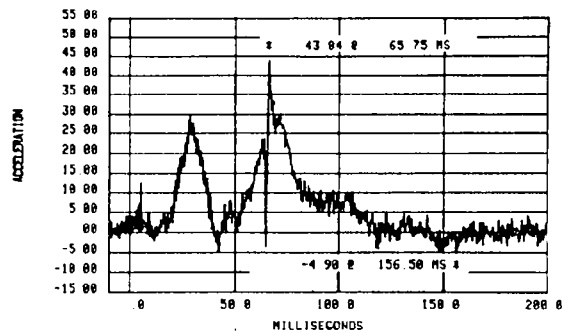
T4-13

TRACK-11 CHANNEL-12 100% CAL = 236.30
TEST-T4-13 S.I. SLED 09 DATE: 3-27-81



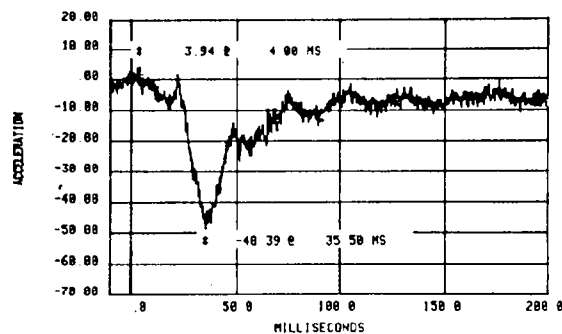
HEAD LONGITUDINAL ACCELERATION

TRACK-11 CHANNEL-13 100% CAL = 236.66
TEST-T4-13 S.I. SLED 09 DATE: 3-27-81



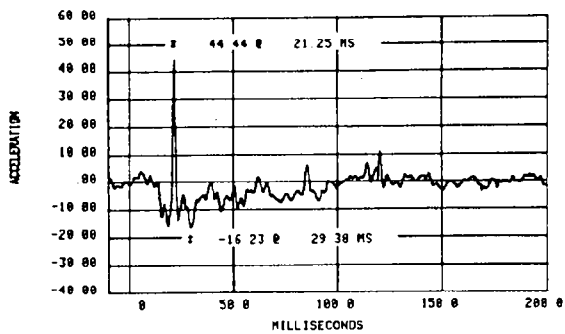
HEAD LATERAL ACCELERATION

TRACK-11 CHANNEL-14 100% CAL = 259.79
TEST-T4-13 S.I. SLED 09 DATE: 3-27-81



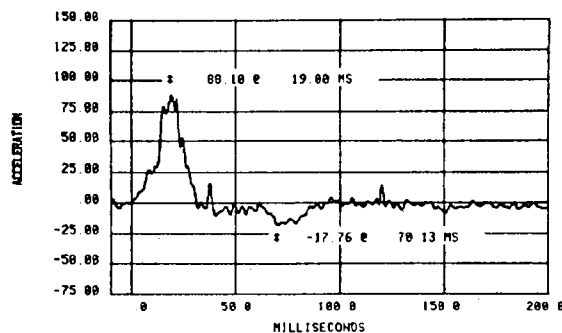
HEAD VERTICAL ACCELERATION

TRACK-11 CHANNEL-7 100% CAL = 333.79
TEST-T4-13 S.I. SLED 09 DATE: 3-27-81



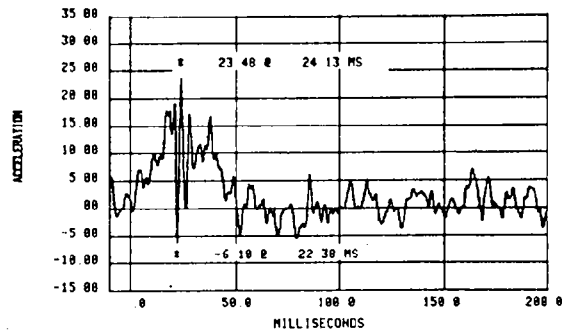
PELVIS LONGITUDINAL ACCELERATION

TRACK-11 CHANNEL-8 100% CAL = 396.57
TEST-T4-13 S.I. SLED 09 DATE: 3-27-81



PELVIS LATERAL ACCELERATION

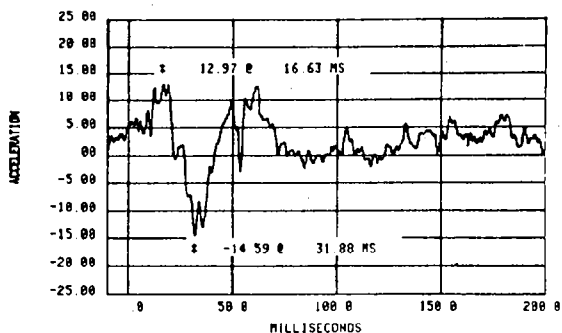
TRACK-11 CHANNEL-9 100% CAL = 360.42
TEST-T4-13 S.I. SLED 09 DATE: 3-27-81



PELVIS VERTICAL ACCELERATION

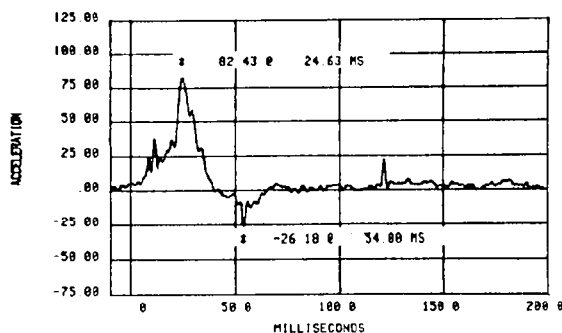
T4-13

TRACK: 9 CHANNEL: 7 100% CAL = 379.83
TEST: T4-13 S.I. SLED 09 DATE: 3-27-81



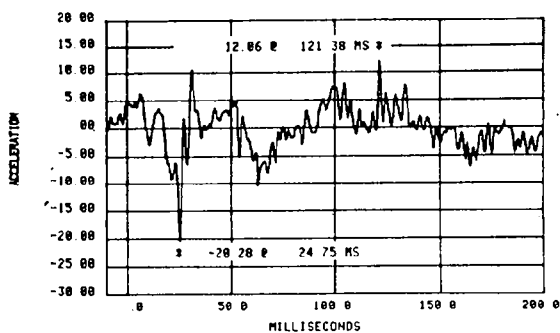
UPPER THORAX LONGITUDINAL ACCELERATION

TRACK: 9 CHANNEL: 8 100% CAL = 488.27
TEST: T4-13 S.I. SLED 09 DATE: 3-27-81



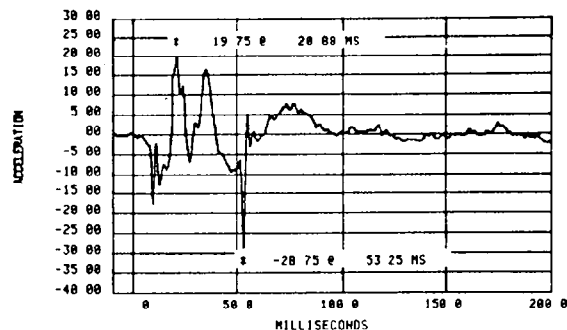
UPPER THORAX LATERAL ACCELERATION

TRACK: 9 CHANNEL: 9 100% CAL = 421.24
TEST: T4-13 S.I. SLED 09 DATE: 3-27-81



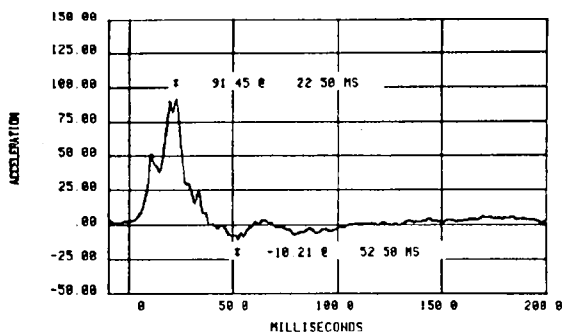
UPPER THORAX VERTICAL ACCELERATION

TRACK: 11 CHANNEL: 1 100% CAL = 362.55
TEST: T4-13 S.I. SLED 09 DATE: 3-27-81



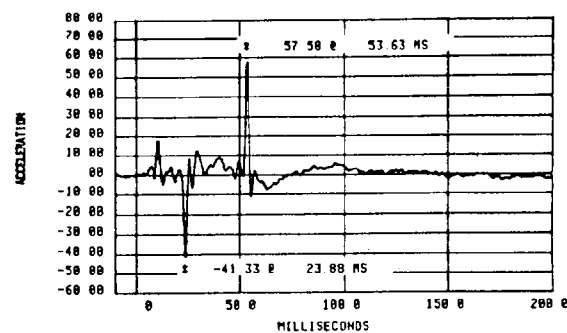
LOWER THORAX LONGITUDINAL ACCELERATION

TRACK: 11 CHANNEL: 2 100% CAL = 357.34
TEST: T4-13 S.I. SLED 09 DATE: 3-27-81



LOWER THORAX LATERAL ACCELERATION

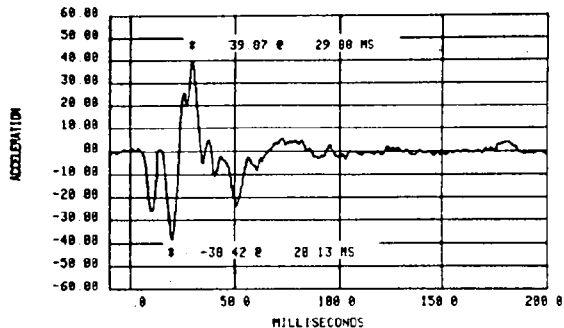
TRACK: 11 CHANNEL: 3 100% CAL = 329.25
TEST: T4-13 S.I. SLED 09 DATE: 3-27-81



LOWER THORAX VERTICAL ACCELERATION

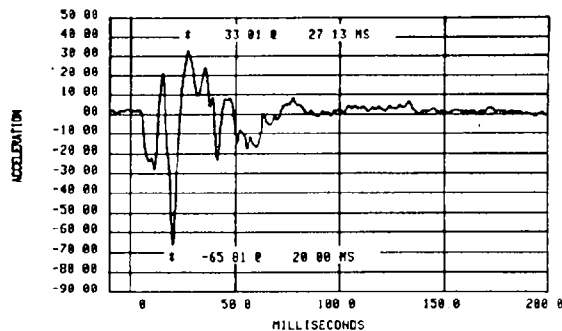
T4-13

TRACK: 9 CHANNEL: 4 100% CAL = 343.06
TEST: T4-13 S I SLED 09 DATE: 3-27-81



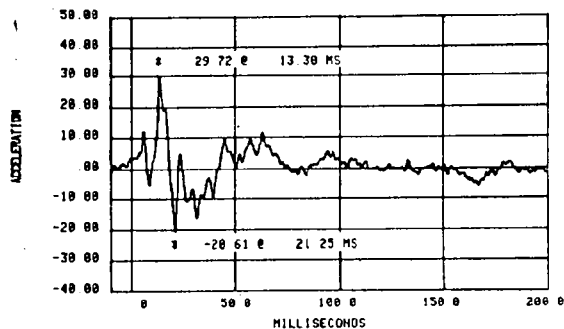
UPPER STERNUM LONGITUDINAL ACCELERATION

TRACK: 9 CHANNEL: 3 100% CAL = 339.86
TEST: T4-13 S I SLED 09 DATE: 3-27-81



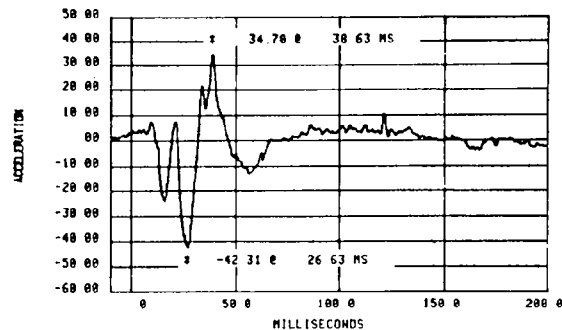
LOWER STERNUM LONGITUDINAL ACCELERATION

TRACK: 9 CHANNEL: 13 100% CAL = 397.91
TEST: T4-13 S I SLED 09 DATE: 3-27-81



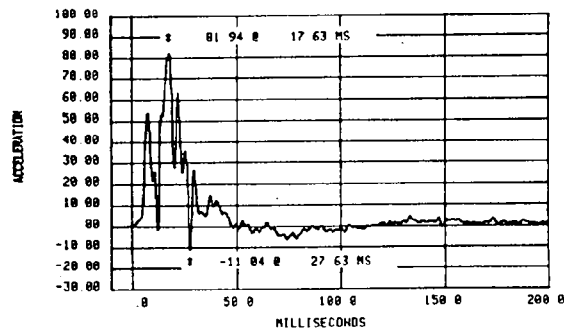
RIGHT LOWER RIB LONGITUDINAL ACCELERATION

TRACK: 9 CHANNEL: 11 100% CAL = 398.16
TEST: T4-13 S I SLED 09 DATE: 3-27-81



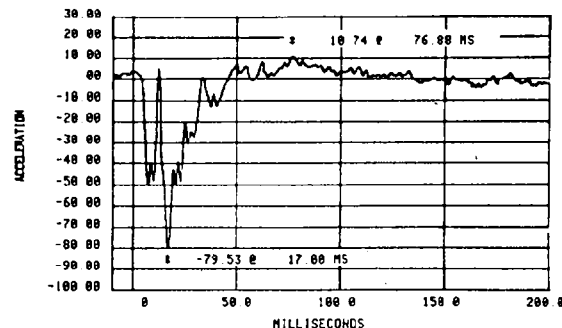
LEFT LOWER RIB LONGITUDINAL ACCELERATION

TRACK: 9 CHANNEL: 1 100% CAL = 363.74
TEST: T4-13 S I SLED 09 DATE: 3-27-81



RIGHT UPPER RIB LATERAL ACCELERATION

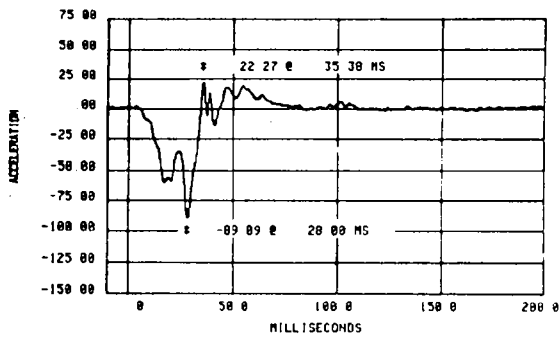
TRACK: 9 CHANNEL: 12 100% CAL = 421.71
TEST: T4-13 S I SLED 09 DATE: 3-27-81



RIGHT LOWER RIB LATERAL ACCELERATION

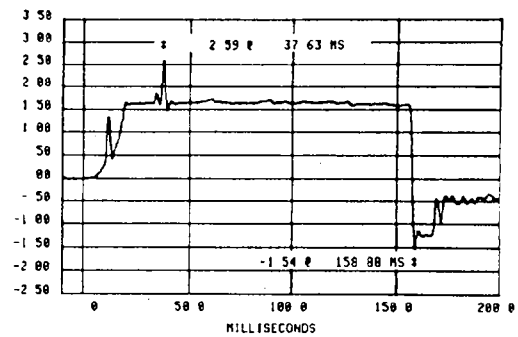
T4-13

TRACK: 9 CHANNEL: 2 100% CAL = 346.27
TEST: T4-13 S.1 SLED 09 DATE 3-27-81

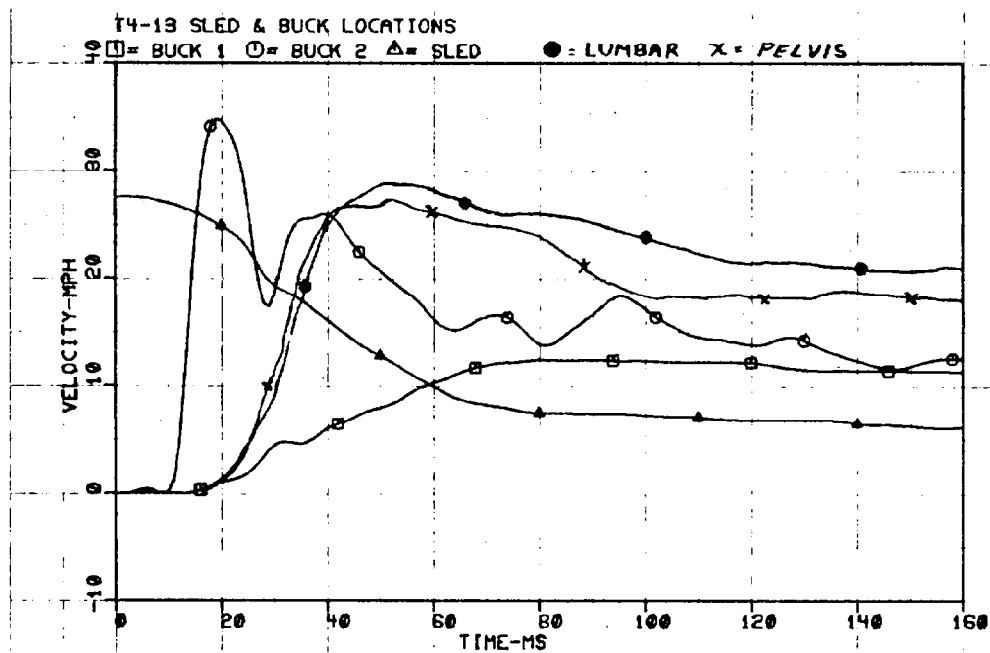


LEFT UPPER RIB LATERAL ACCELERATION

TRACK: 11 CHANNEL: 11 100% CAL = 2.77
TEST: T4-13 S.1 SLED 09 DATE 3-27-81



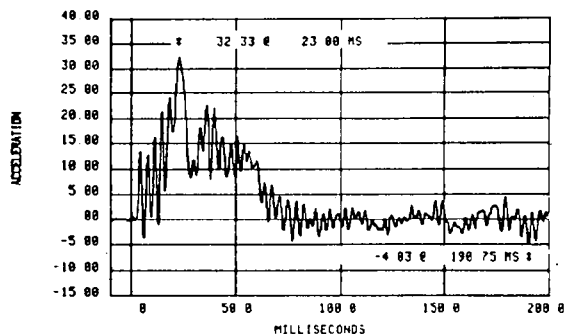
LOWER RIB DISPLACEMENT



T4-13

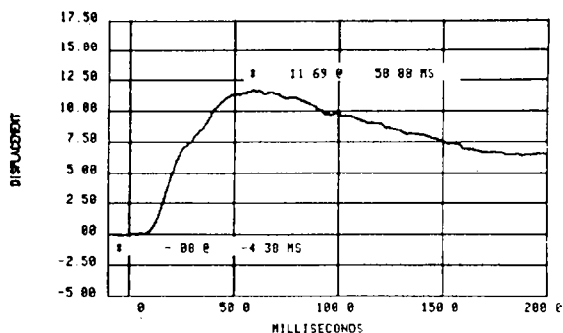
M-11

TRACK:11 CHANNEL: 4 100% CAL = 71.13
TEST:T4-14 S I 010 DATE: 3-31-01



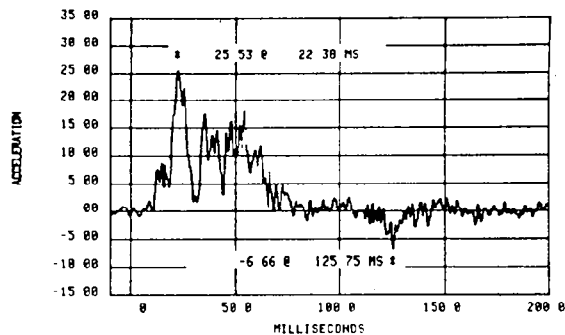
BULLET SLED LONGITUDINAL ACCELERATION

TRACK:11 CHANNEL: 5 100% CAL = 22.50
TEST:T4-14 S I 010 DATE: 3-31-01



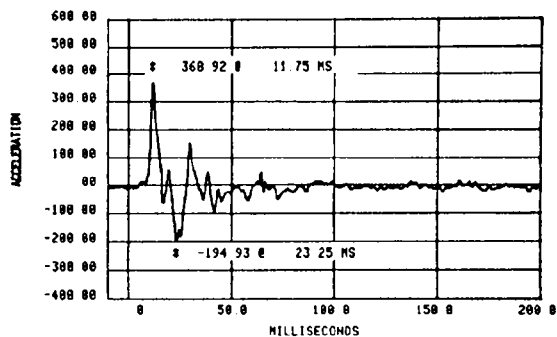
DOOR DISPLACEMENT

TRACK: 2 CHANNEL: 10 100% CAL = 154.75
TEST:T4-14 S I 010 DATE: 3-31-01



TARGET SLED LATERAL ACCELERATION

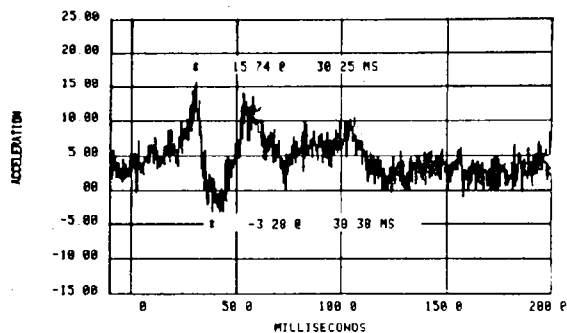
TRACK: 2 CHANNEL: 14 100% CAL = 696.01
TEST:T4-14 S I 010 DATE: 3-31-01



DOOR LATERAL ACCELERATION

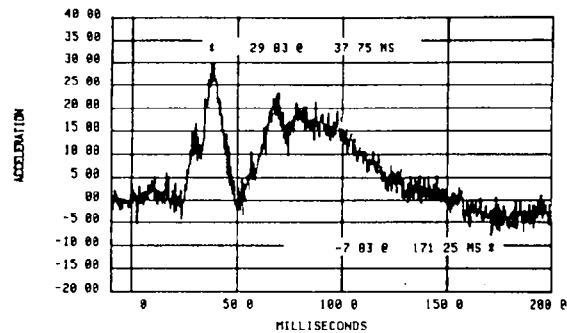
T4-14

TRACK 11 CHANNEL 12 100% CAL = 215.64
TEST 14-14 S I 010 DATE 3-31-81



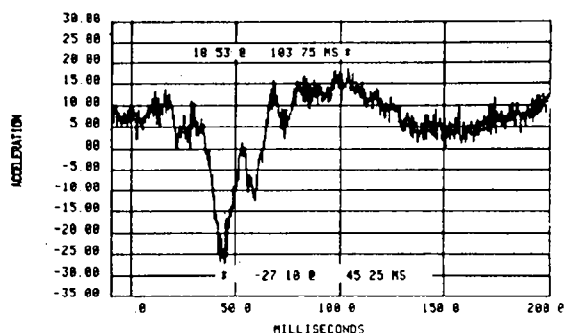
HEAD LONGITUDINAL ACCELERATION

TRACK 11 CHANNEL 13 100% CAL = 242.01
TEST 14-14 S I 010 DATE 3-31-81



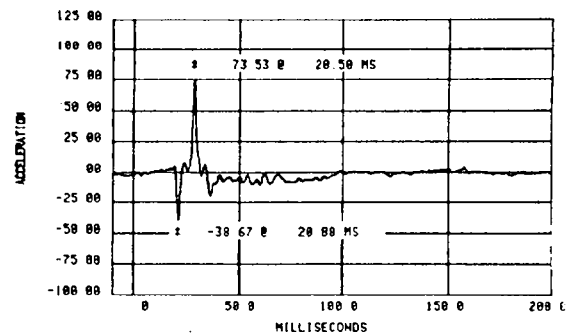
HEAD LATERAL ACCELERATION

TRACK 11 CHANNEL 14 100% CAL = 255.58
TEST 14-14 S I 010 DATE 3-31-81



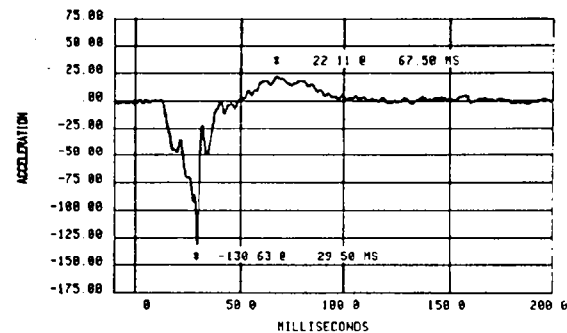
HEAD VERTICAL ACCELERATION

TRACK 11 CHANNEL 7 100% CAL = 329.60
TEST 14-14 S I 010 DATE 3-31-81



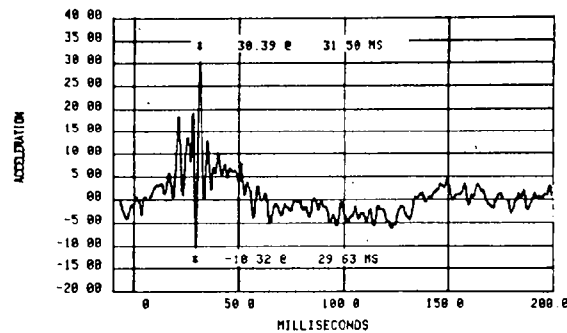
PELVIS LONGITUDINAL ACCELERATION

TRACK 11 CHANNEL 8 100% CAL = 334.97
TEST 14-14 S I 010 DATE 3-31-81



PELVIS LATERAL ACCELERATION

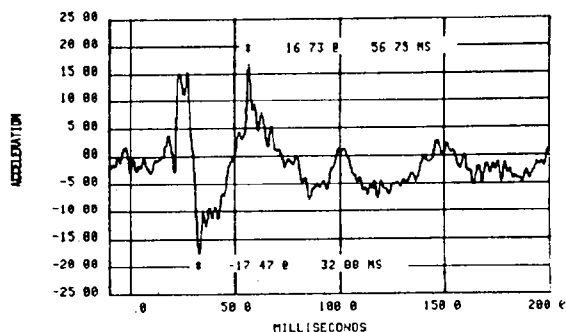
TRACK 11 CHANNEL 9 100% CAL = 317.10
TEST 14-14 S I 010 DATE 3-31-81



PELVIS VERTICAL ACCELERATION

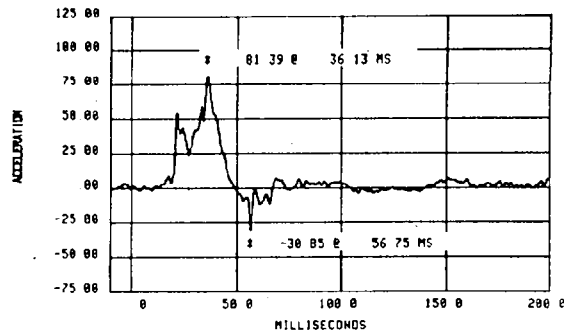
T4-14

TRACK: 2 CHANNEL: 7 100% CAL = 305.90
TEST: T4-14 S 1 010 DATE: 3-31-81



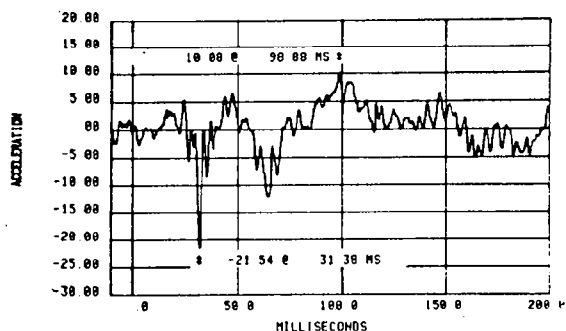
UPPER THORAX LONGITUDINAL ACCELERATION

TRACK: 2 CHANNEL: 8 100% CAL = 318.78
TEST: T4-14 S 1 010 DATE: 3-31-81



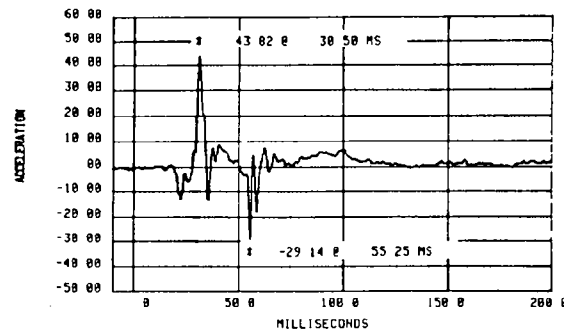
UPPER THORAX LATERAL ACCELERATION

TRACK: 2 CHANNEL: 9 100% CAL = 325.25
TEST: T4-14 S 1 010 DATE: 3-31-81



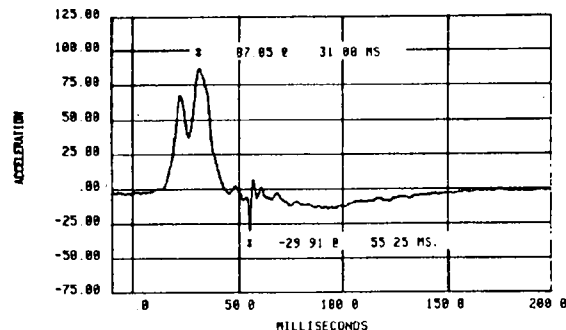
UPPER THORAX VERTICAL ACCELERATION

TRACK: 11 CHANNEL: 1 100% CAL = 371.76
TEST: T4-14 S 1 010 DATE: 3-31-81



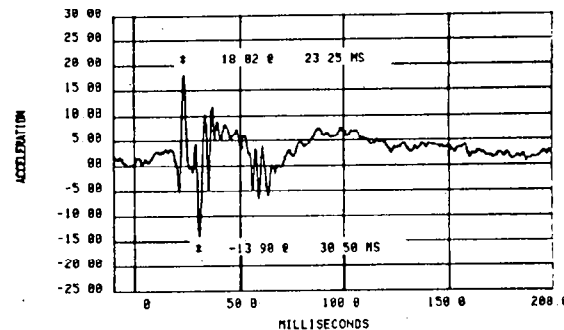
LOWER THORAX LONGITUDINAL ACCELERATION

TRACK: 11 CHANNEL: 2 100% CAL = 367.64
TEST: T4-14 S 1 010 DATE: 3-31-81



LOWER THORAX LATERAL ACCELERATION

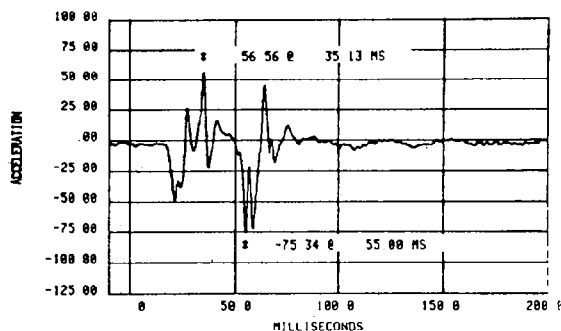
TRACK: 11 CHANNEL: 3 100% CAL = 323.12
TEST: T4-14 S 1 010 DATE: 3-31-81



LOWER THORAX VERTICAL ACCELERATION

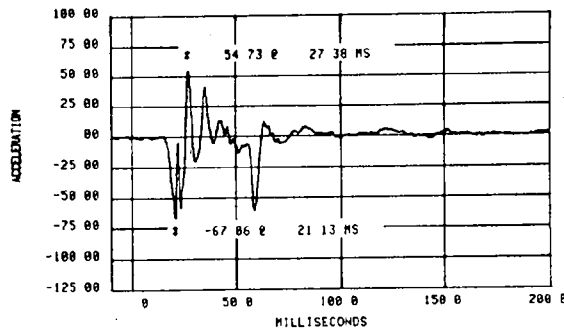
T4-14

TRACK: 2 CHANNEL: 4 100% CAL = 378.77
TEST: T4-14 S I 010 DATE: 3-31-81



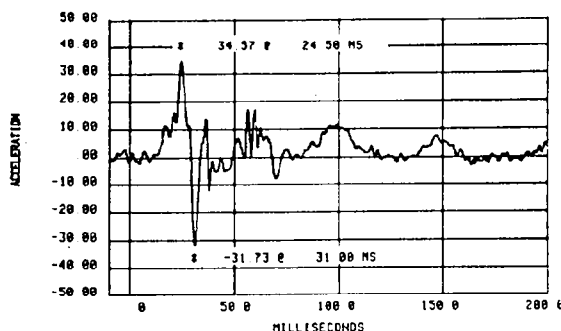
UPPER STERNUM LONGITUDINAL ACCELERATION

TRACK: 2 CHANNEL: 3 100% CAL = 316.99
TEST: T4-14 S I 010 DATE: 3-31-81



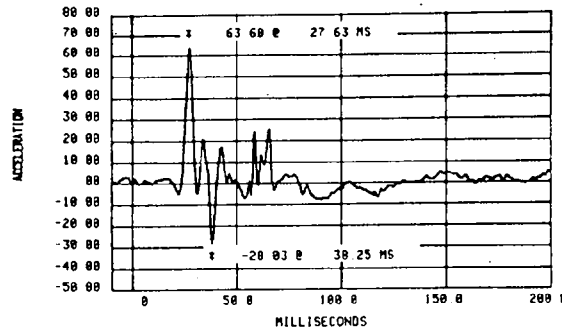
LOWER STERNUM LONGITUDINAL ACCELERATION

TRACK: 2 CHANNEL: 13 100% CAL = 387.14
TEST: T4-14 S I 010 DATE: 3-31-81



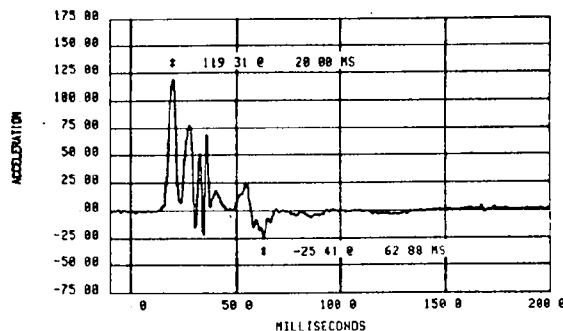
RIGHT LOWER RIB LONGITUDINAL ACCELERATION

TRACK: 2 CHANNEL: 11 100% CAL = 329.42
TEST: T4-14 S I 010 DATE: 3-31-81



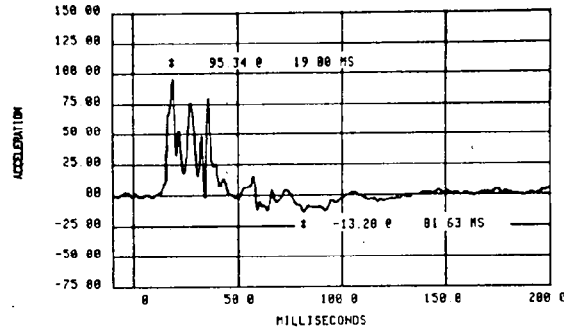
LEFT LOWER RIB LONGITUDINAL ACCELERATION

TRACK: 2 CHANNEL: 1 100% CAL = 334.15
TEST: T4-14 S I 010 DATE: 3-31-81



RIGHT UPPER RIB LATERAL ACCELERATION

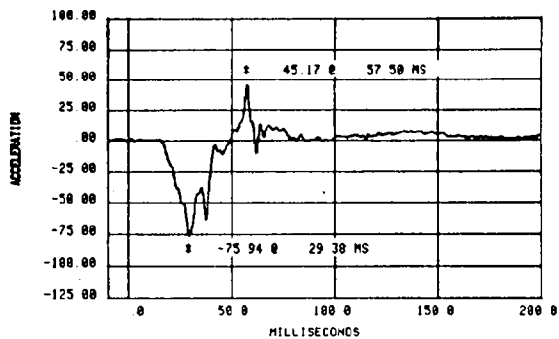
TRACK: 2 CHANNEL: 12 100% CAL = 319.03
TEST: T4-14 S I 010 DATE: 3-31-81



RIGHT LOWER RIB LATERAL ACCELERATION

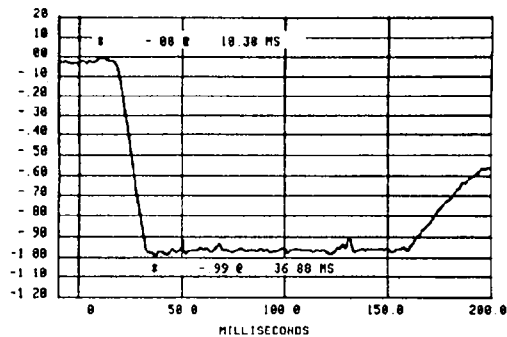
T4-14

TRACK: 2 CHANNEL: 2 100% CAL = 362.21
TEST: T4-14 S.I. 010 DATE: 3-31-81

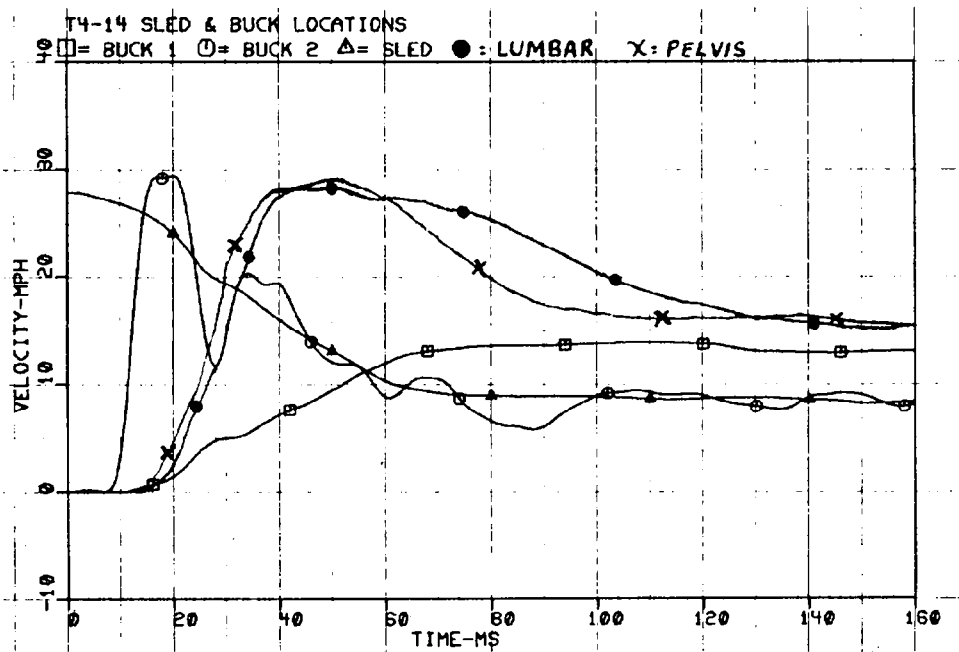


LEFT UPPER RIB LATERAL ACCELERATION

TRACK: 11 CHANNEL: 11 100% CAL = 2.85
TEST: T4-14 S.I. 010 DATE: 3-31-81

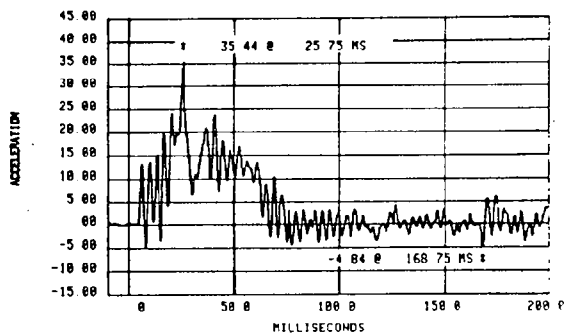


LOWER RIB DISPLACEMENT



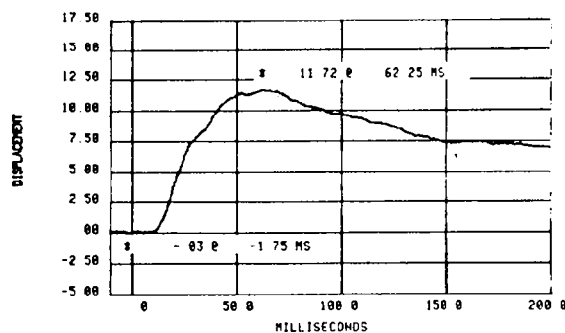
T4-14

TRACK 3 CHANNEL 4 100% CAL = 71.13
TEST T4-15 S I 011 DATE 4-2-81



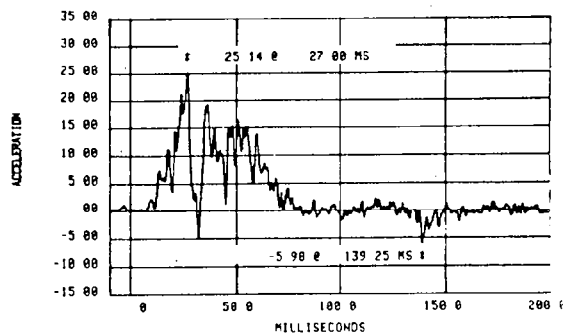
BULLET SLED LONGITUDINAL ACCELERATION

TRACK 3 CHANNEL 5 100% CAL = 22.50
TEST T4-15 S I 011 DATE 4-2-81



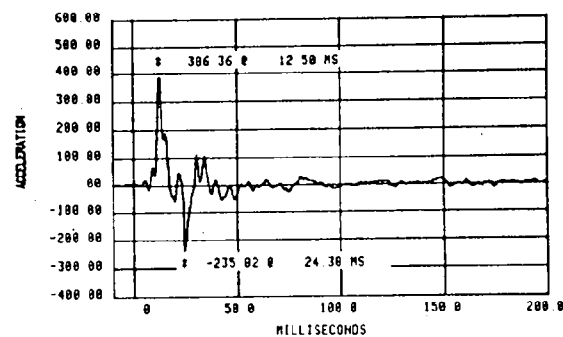
DOOR DISPLACEMENT

TRACK 9 CHANNEL 10 100% CAL = 154.75
TEST T4-15 S I 011 DATE 4-2-81



TARGET SLED LATERAL ACCELERATION

TRACK 9 CHANNEL 14 100% CAL = 696.01
TEST T4-15 S I 011 DATE 4-2-81

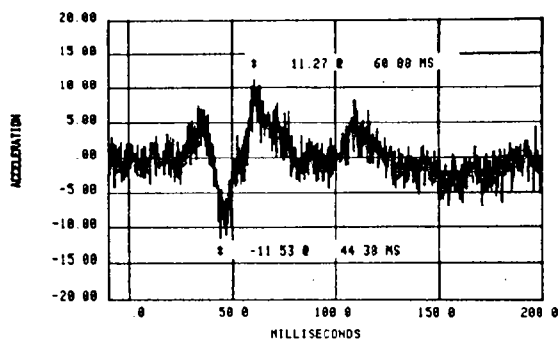


DOOR LATERAL ACCELERATION

T4-15

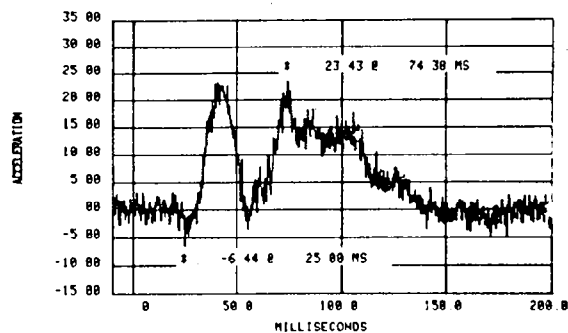
M-17

TRACK: 3 CHANNEL: 12 100% CAL = 215.64
TEST: T4-15 S 1 011 DATE: 4-2-81



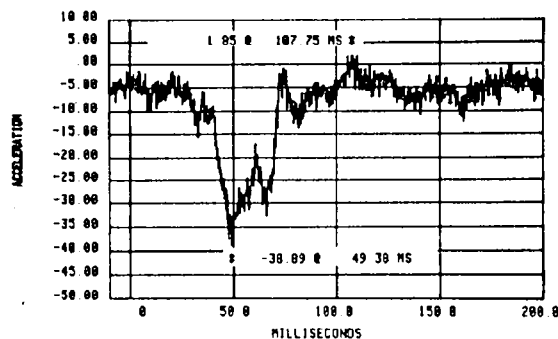
HEAD LONGITUDINAL ACCELERATION

TRACK: 3 CHANNEL: 13 100% CAL = 242.01
TEST: T4-15 S 1 011 DATE: 4-2-81



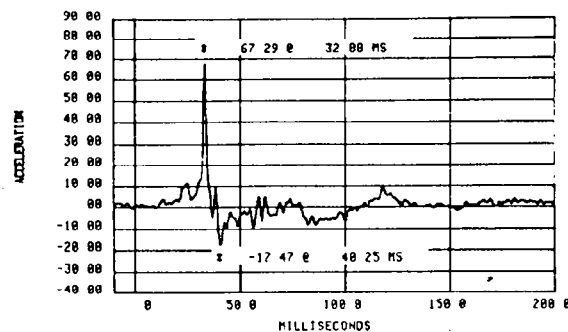
HEAD LATERAL ACCELERATION

TRACK: 3 CHANNEL: 14 100% CAL = 255.58
TEST: T4-15 S 1 011 DATE: 4-2-81



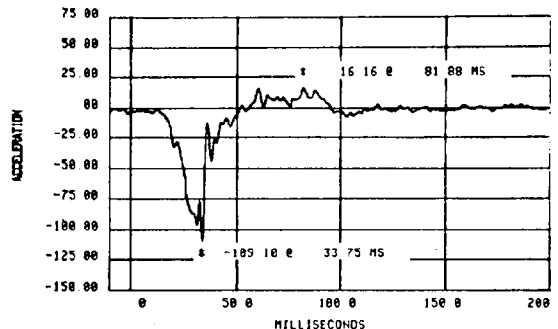
HEAD VERTICAL ACCELERATION

TRACK: 3 CHANNEL: 7 100% CAL = 329.60
TEST: T4-15 S 1 011 DATE: 4-2-81



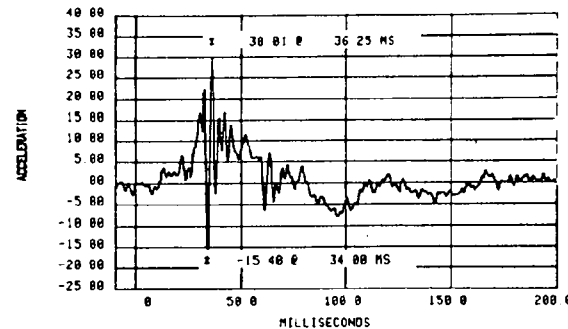
PELVIS LONGITUDINAL ACCELERATION

TRACK: 3 CHANNEL: 8 100% CAL = 334.97
TEST: T4-15 S 1 011 DATE: 4-2-81



PELVIS LATERAL ACCELERATION

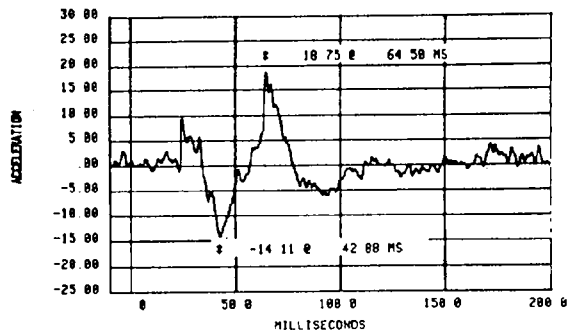
TRACK: 3 CHANNEL: 9 100% CAL = 317.10
TEST: T4-15 S 1 011 DATE: 4-2-81



PELVIS VERTICAL ACCELERATION

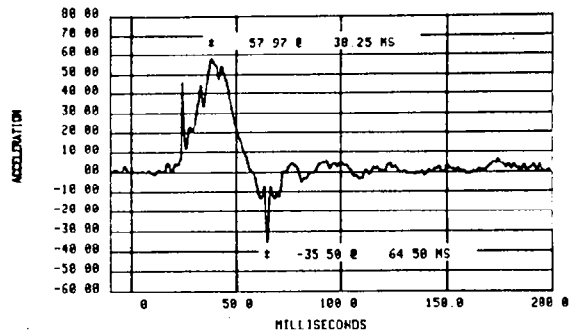
T4-15

TRACK: 9 CHANNEL: 7 100% CAL = 305.98
TEST: T4-15 S I 011 DATE: 4-2-81



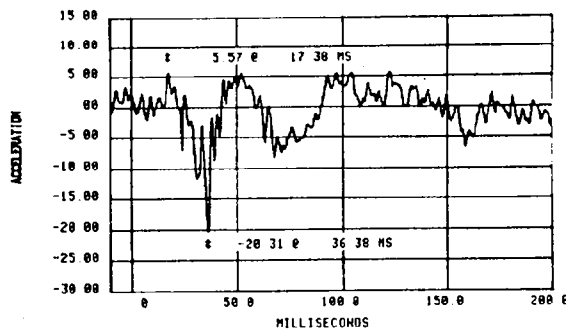
UPPER THORAX LONGITUDINAL ACCELERATION

TRACK: 9 CHANNEL: 8 100% CAL = 310.78
TEST: T4-15 S I 011 DATE: 4-2-81



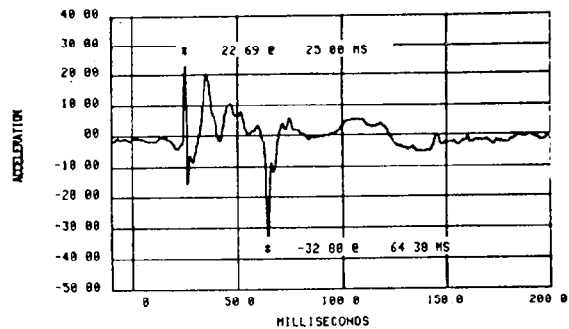
UPPER THORAX LATERAL ACCELERATION

TRACK: 9 CHANNEL: 9 100% CAL = 325.29
TEST: T4-15 S I 011 DATE: 4-2-81



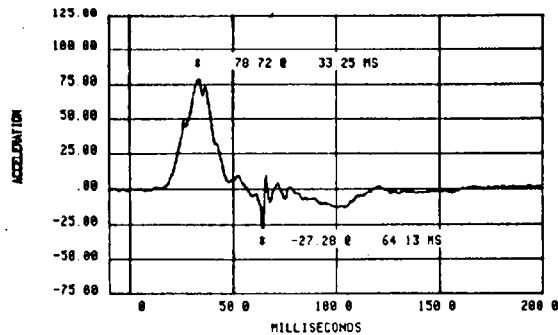
UPPER THORAX VERTICAL ACCELERATION

TRACK: 3 CHANNEL: 1 100% CAL = 371.76
TEST: T4-15 S I 011 DATE: 4-2-81



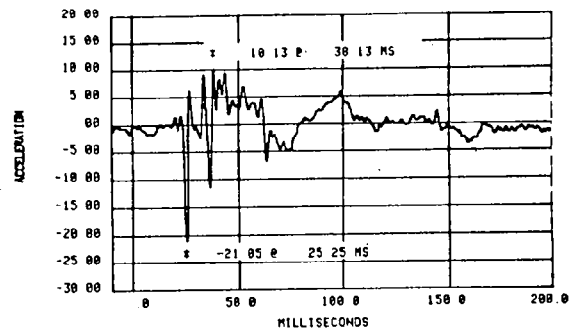
LOWER THORAX LONGITUDINAL ACCELERATION

TRACK: 3 CHANNEL: 2 100% CAL = 367.64
TEST: T4-15 S I 011 DATE: 4-2-81



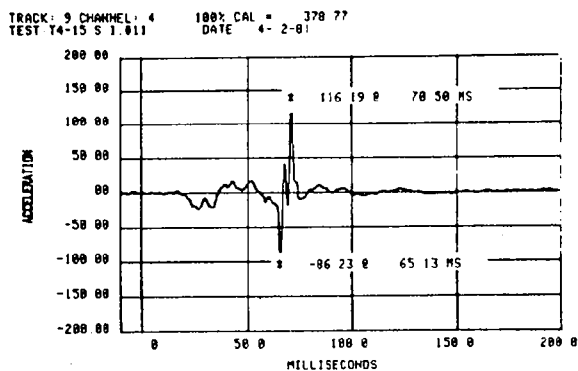
LOWER THORAX LATERAL ACCELERATION

TRACK: 3 CHANNEL: 3 100% CAL = 323.12
TEST: T4-15 S I 011 DATE: 4-2-81

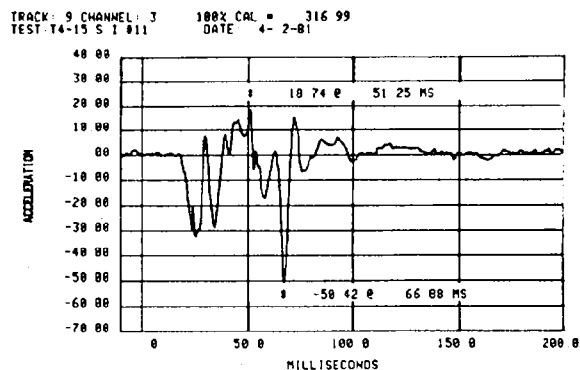


LOWER THORAX VERTICAL ACCELERATION

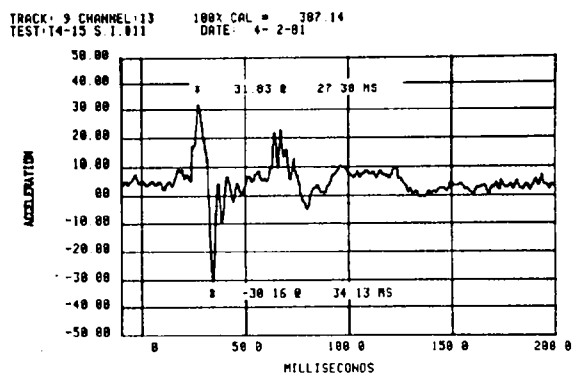
T4-15



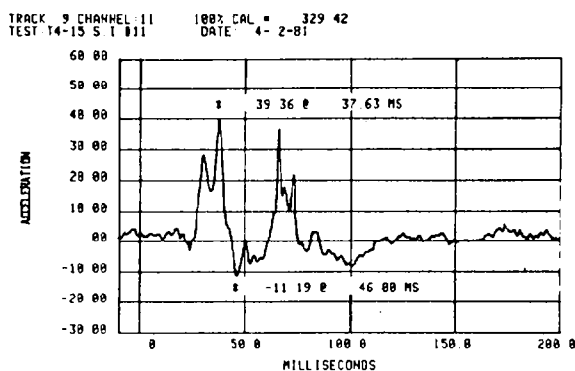
UPPER STERNUM LONGITUDINAL ACCELERATION



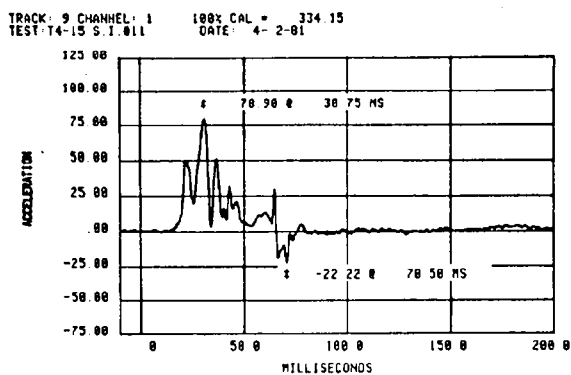
LOWER STERNUM LONGITUDINAL ACCELERATION



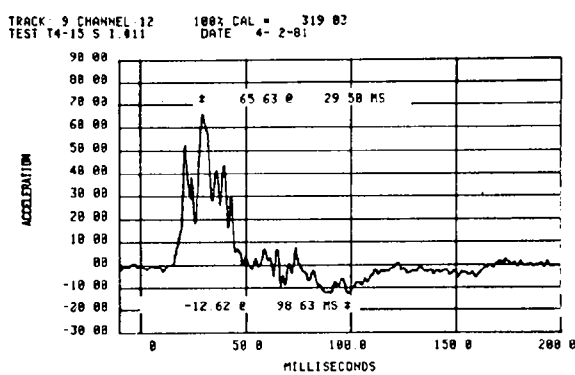
RIGHT LOWER RIB LONGITUDINAL ACCELERATION



LEFT LOWER RIB LONGITUDINAL ACCELERATION



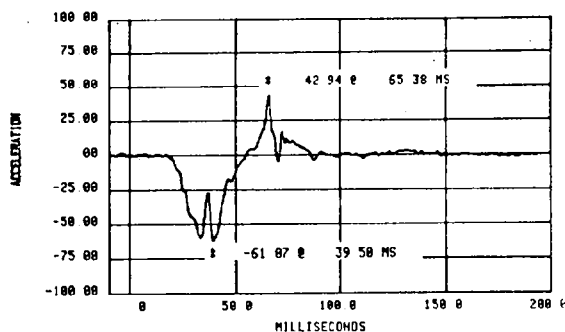
RIGHT UPPER RIB LATERAL ACCELERATION



RIGHT LOWER RIB LATERAL ACCELERATION

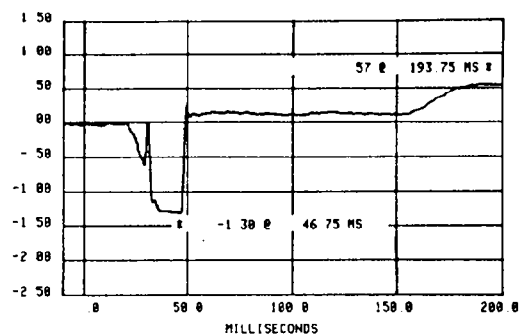
T4-15

TRACK: 9 CHANNEL: 2 100% CAL = 362.21
TEST: T4-15 S 1 #11 DATE: 4-2-81

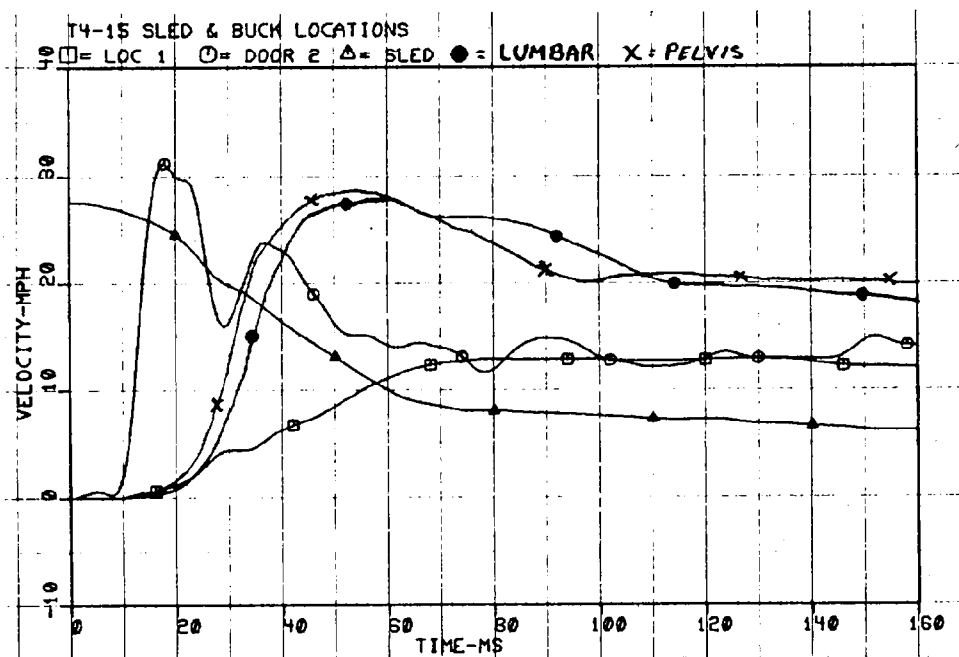


LEFT UPPER RIB LATERAL ACCELERATION

TRACK: 3 CHANNEL: 11 100% CAL = 2.85
TEST: T4-15 S 1 #11 DATE: 4-2-81

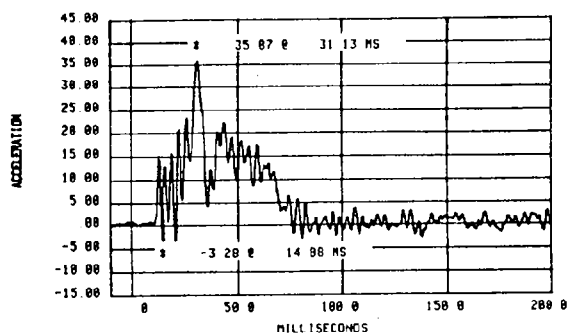


LOWER RIB DISPLACEMENT



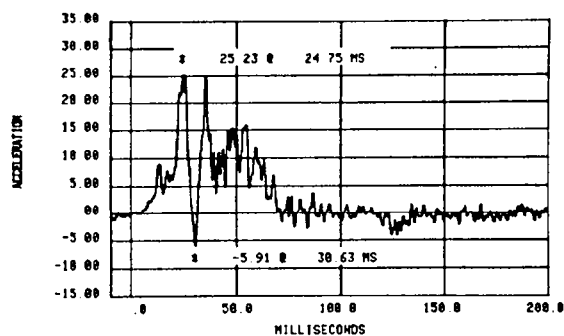
T4-15

TRACK: 3 CHANNEL: 4 100% CAL = 71.13
TEST: T4-16 DATE: 4-2-81



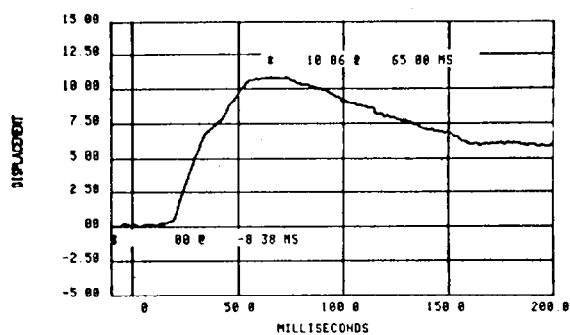
BULLET SLED LONGITUDINAL ACCELERATION

TRACK: 9 CHANNEL: 10 100% CAL = 154.75
TEST: T4-16 DATE: 4-2-81



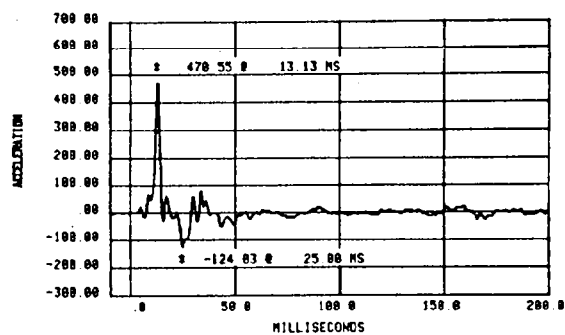
TARGET SLED LATERAL ACCELERATION

TRACK: 3 CHANNEL: 5 100% CAL = 22.58
TEST: T4-16 DATE: 4-2-81



DOOR DISPLACEMENT

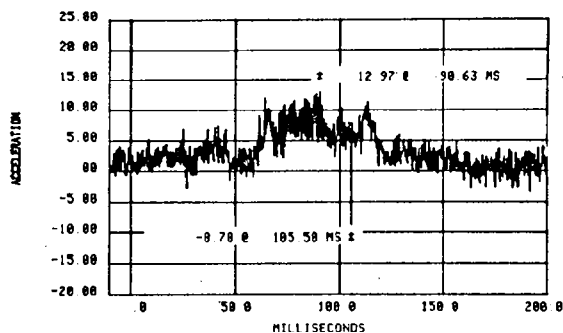
TRACK: 9 CHANNEL: 14 100% CAL = 696.81
TEST: T4-16 DATE: 4-2-81



DOOR LATERAL ACCELERATION

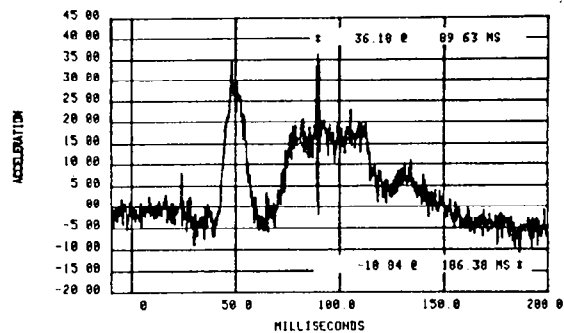
T4-16

TRACK: 3 CHANNEL: 12 100% CAL = 215.64
TEST: T4-16 DATE: 4-2-81



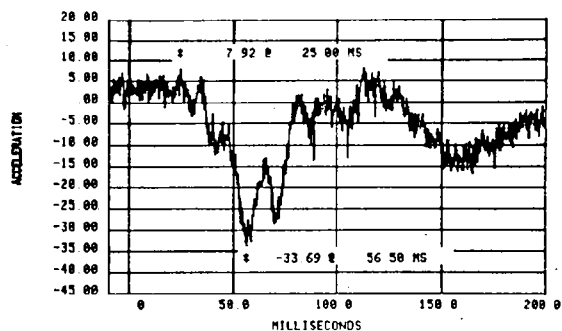
HEAD LONGITUDINAL ACCELERATION

TRACK: 3 CHANNEL: 13 100% CAL = 242.81
TEST: T4-16 DATE: 4-2-81



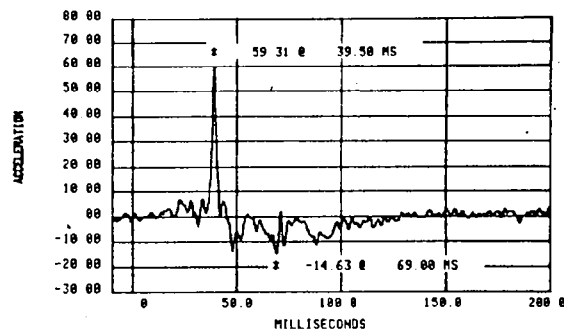
HEAD LATERAL ACCELERATION

TRACK: 3 CHANNEL: 14 100% CAL = 255.58
TEST: T4-16 DATE: 4-2-81



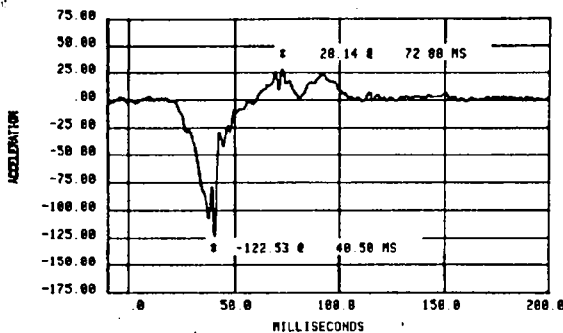
HEAD VERTICAL ACCELERATION

TRACK: 3 CHANNEL: 7 100% CAL = 329.68
TEST: T4-16 DATE: 4-2-81



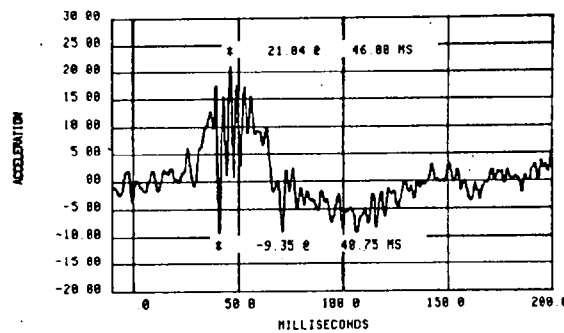
PELVIS LONGITUDINAL ACCELERATION

TRACK: 3 CHANNEL: 8 100% CAL = 334.97
TEST: T4-16 DATE: 4-2-81



PELVIS LATERAL ACCELERATION

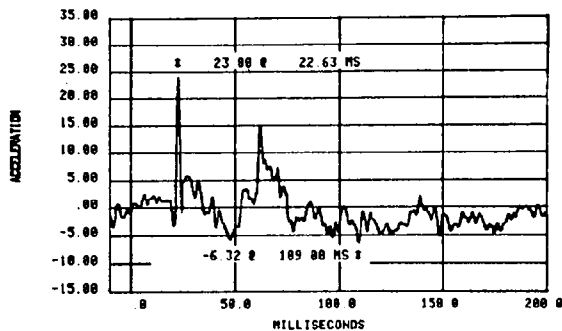
TRACK: 3 CHANNEL: 9 100% CAL = 317.18
TEST: T4-16 DATE: 4-2-81



PELVIS VERTICAL ACCELERATION

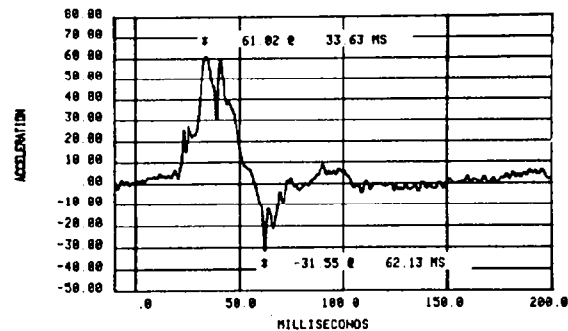
T4-16

TRACK: 9 CHANNEL: 7 100% CAL = 305.90
TEST: T4-16 DATE: 4-2-81



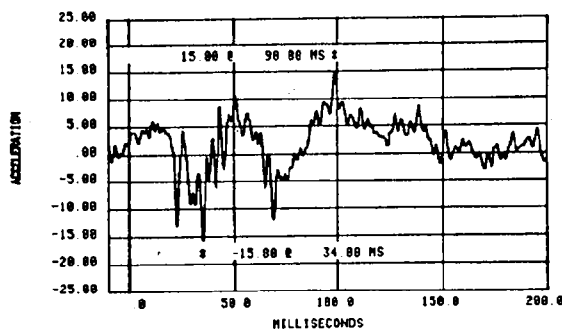
UPPER THORAX LONGITUDINAL ACCELERATION

TRACK: 9 CHANNEL: 8 100% CAL = 310.70
TEST: T4-16 DATE: 4-2-81



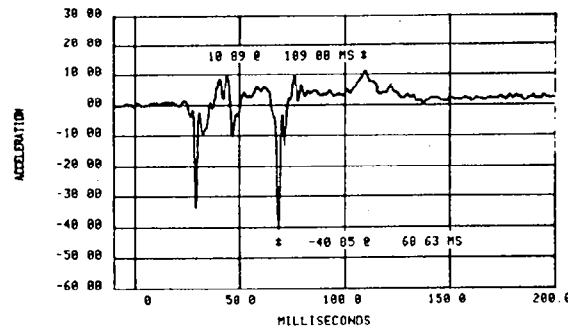
UPPER THORAX LATERAL ACCELERATION

TRACK: 9 CHANNEL: 9 100% CAL = 325.29
TEST: T4-16 DATE: 4-2-81



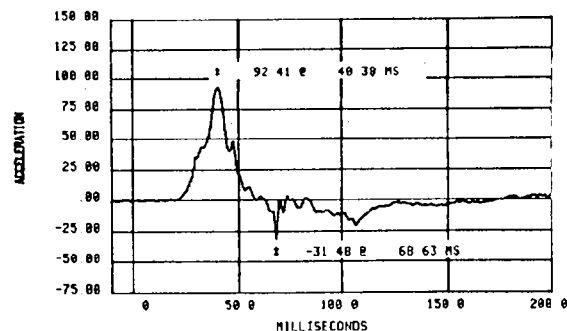
UPPER THORAX VERTICAL ACCELERATION

TRACK: 3 CHANNEL: 1 100% CAL = 371.76
TEST: T4-16 DATE: 4-2-81



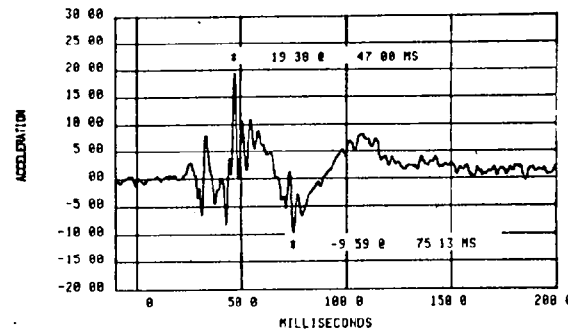
LOWER THORAX LONGITUDINAL ACCELERATION

TRACK: 3 CHANNEL: 2 100% CAL = 367.64
TEST: T4-16 DATE: 4-2-81



LOWER THORAX LATERAL ACCELERATION

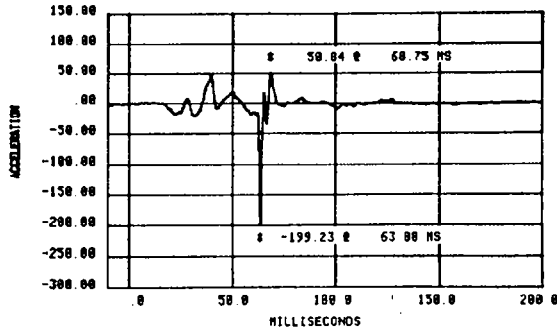
TRACK: 3 CHANNEL: 3 100% CAL = 323.12
TEST: T4-16 DATE: 4-2-81



LOWER THORAX VERTICAL ACCELERATION

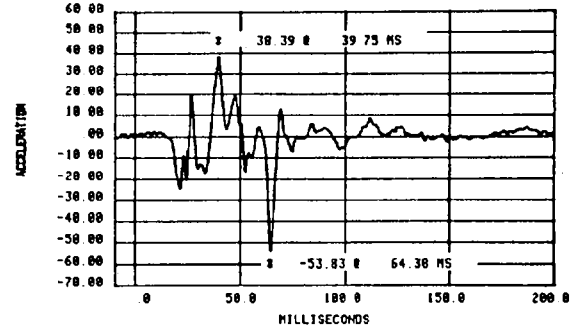
T4-16

TRACK: 9 CHANNEL: 4 100% CAL = 370.77
TEST: T4-16 DATE: 4-2-81



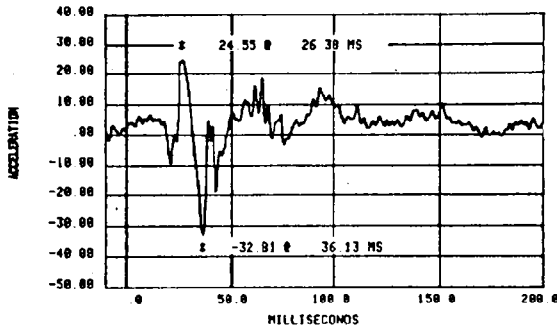
UPPER STERNUM LONGITUDINAL ACCELERATION

TRACK: 9 CHANNEL: 3 100% CAL = 316.99
TEST: T4-16 DATE: 4-2-81



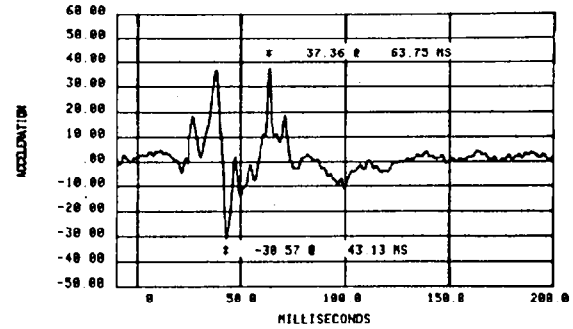
LOWER STERNUM LONGITUDINAL ACCELERATION

TRACK: 9 CHANNEL: 13 100% CAL = 387.14
TEST: T4-16 DATE: 4-2-81



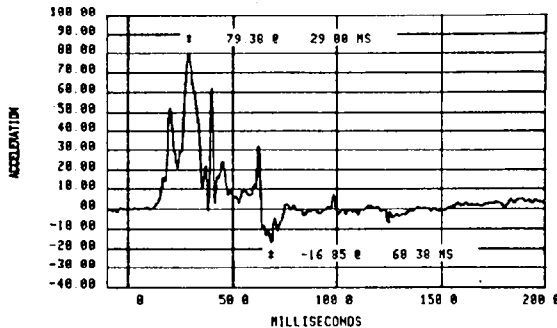
RIGHT LOWER RIB LONGITUDINAL ACCELERATION

TRACK: 9 CHANNEL: 11 100% CAL = 329.42
TEST: T4-16 DATE: 4-2-81



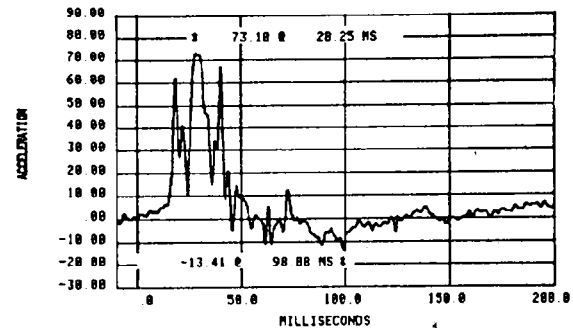
LEFT LOWER RIB LONGITUDINAL ACCELERATION

TRACK: 9 CHANNEL: 1 100% CAL = 334.15
TEST: T4-16 DATE: 4-2-81



RIGHT UPPER RIB LATERAL ACCELERATION

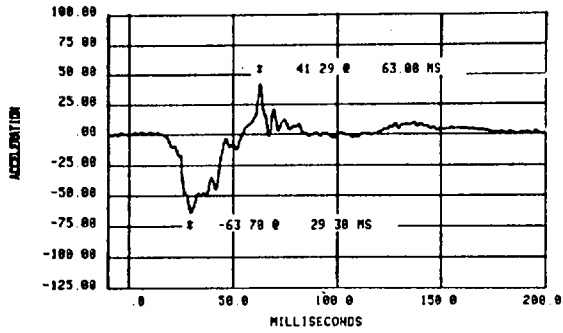
TRACK: 9 CHANNEL: 12 100% CAL = 319.03
TEST: T4-16 DATE: 4-2-81



RIGHT LOWER RIB LATERAL ACCELERATION

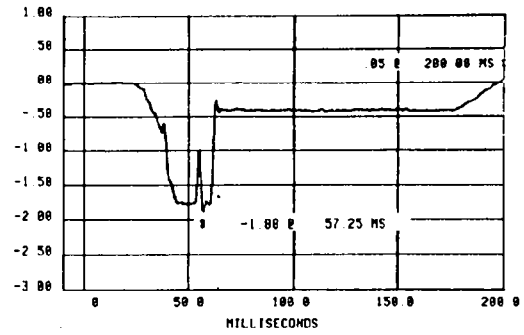
T4-16

TRACK: 9 CHANNEL: 2 100% CAL = 362.21
TEST: T4-16 DATE: 4-2-81

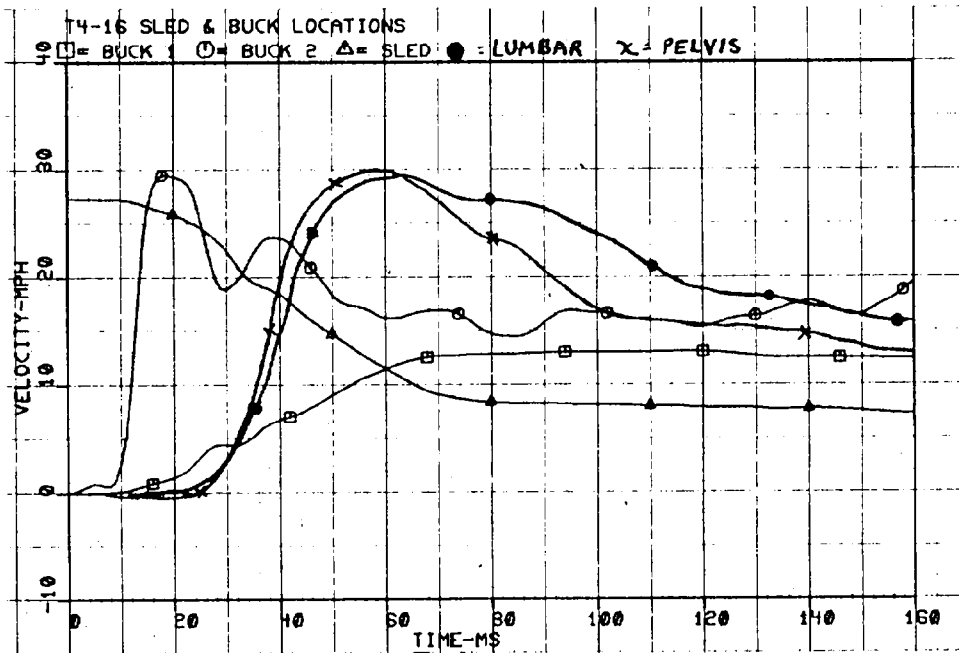


LEFT UPPER RIB LATERAL ACCELERATION

TRACK: 3 CHANNEL: 11 100% CAL = 2.85
TEST: T4-16 DATE: 4-2-81

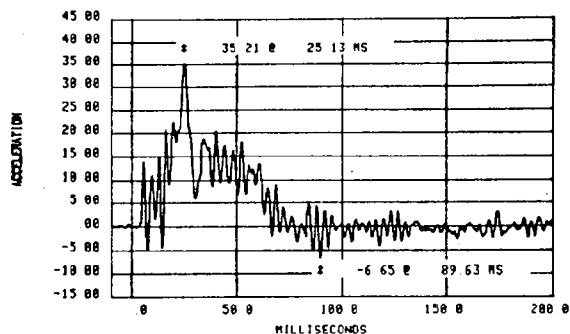


LOWER RIB DISPLACEMENT



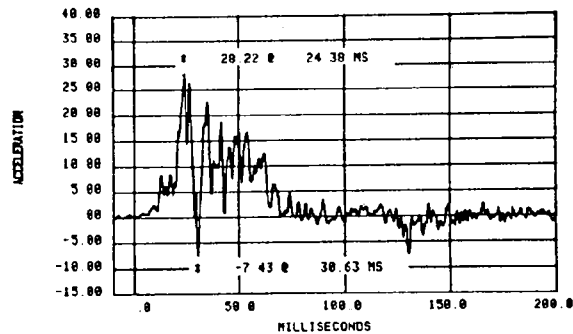
T4-16

TRACK: 3 CHANNEL: 4 100% CAL = 71.13
TEST: S I T4-17 DATE: 4-7-81



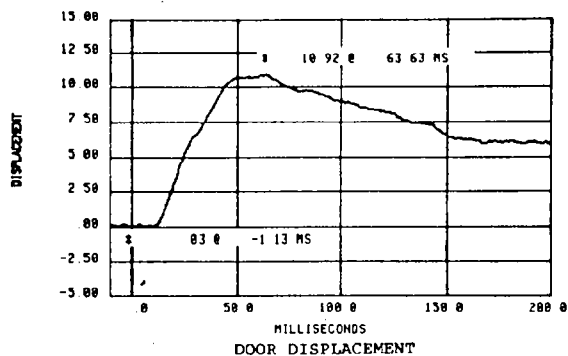
BULLET SLED LONGITUDINAL ACCELERATION

TRACK: 9 CHANNEL: 10 100% CAL = 154.73
TEST: S I T4-17 DATE: 4-7-81



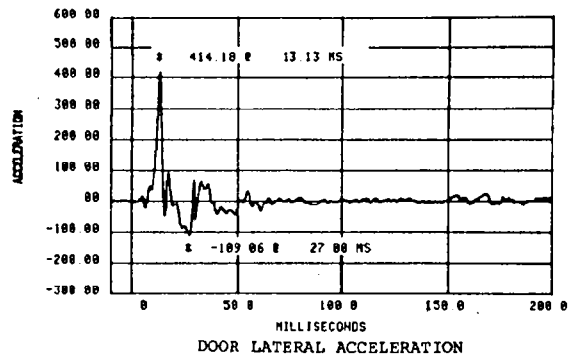
TARGET SLED LATERAL ACCELERATION

TRACK: 3 CHANNEL: 5 100% CAL = 22.50
TEST: S I T4-17 DATE: 4-7-81



DOOR DISPLACEMENT

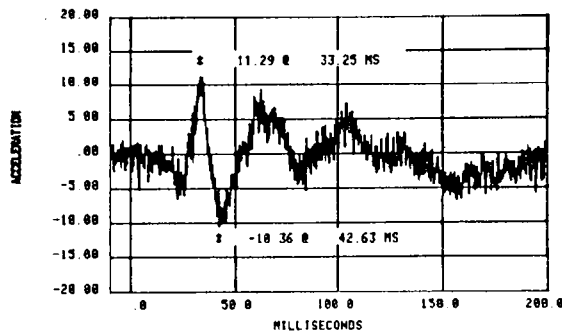
TRACK: 9 CHANNEL: 14 100% CAL = 696.81
TEST: S I T4-17 DATE: 4-7-81



DOOR LATERAL ACCELERATION

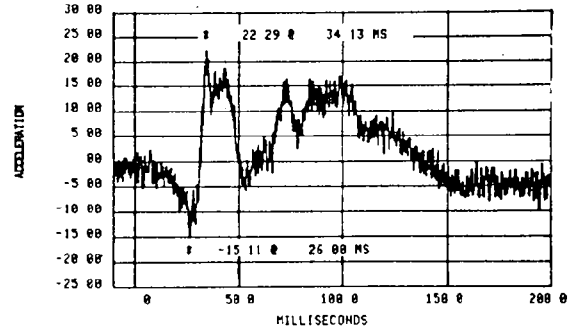
T4-17

TRACK: 3 CHANNEL: 12 100% CAL = 215.64
TEST: S.I. T4-17 DATE: 4-7-81



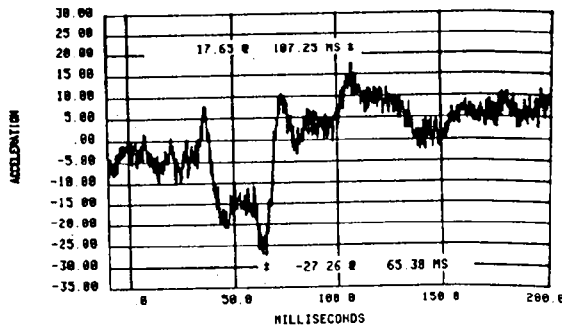
HEAD LONGITUDINAL ACCELERATION

TRACK: 3 CHANNEL: 13 100% CAL = 242.81
TEST: S.I. T4-17 DATE: 4-7-81



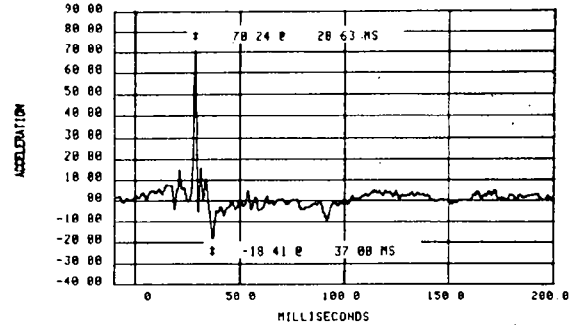
HEAD LATERAL ACCELERATION

TRACK: 3 CHANNEL: 14 100% CAL = 233.59
TEST: S.I. T4-17 DATE: 4-7-81



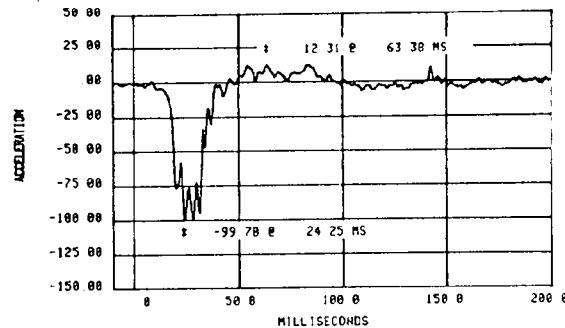
HEAD VERTICAL ACCELERATION

TRACK: 3 CHANNEL: 7 100% CAL = 329.60
TEST: S.I. SLED T4-17 DATE: 6-12-81



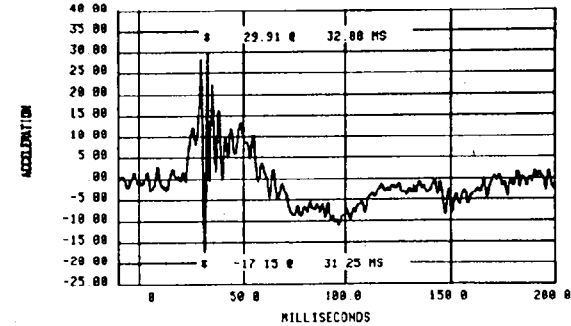
PELVIS LONGITUDINAL ACCELERATION

TRACK: 3 CHANNEL: 8 100% CAL = 334.97
TEST: S.I. T4-17 DATE: 4-7-81



PELVIS LATERAL ACCELERATION

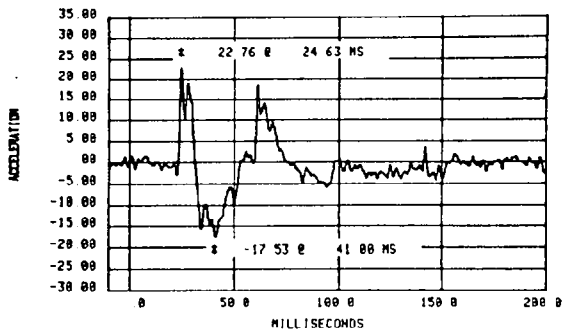
TRACK: 3 CHANNEL: 9 100% CAL = 317.10
TEST: S.I. T4-17 DATE: 4-7-81



PELVIS VERTICAL ACCELERATION

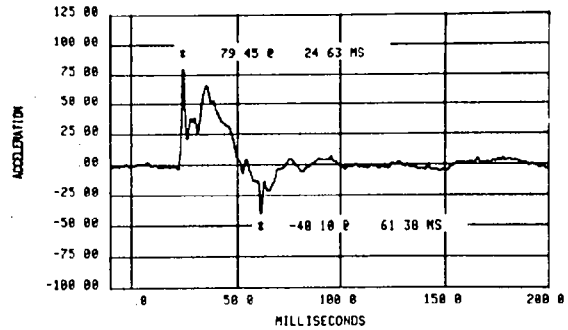
T4-17

TRACK: 9 CHANNEL: 7 100% CAL = 385.98
TEST S: 1 T4-17 DATE: 4-7-81



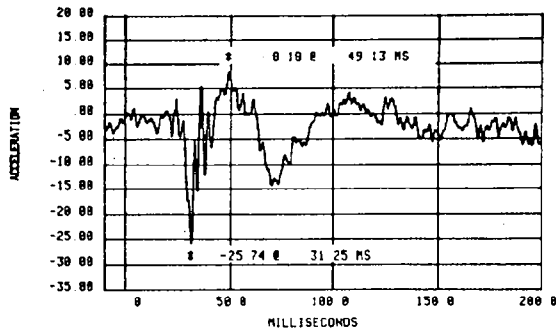
UPPER THORAX LONGITUDINAL ACCELERATION

TRACK: 9 CHANNEL: 8 100% CAL = 310.78
TEST S: 1 T4-17 DATE: 4-7-81



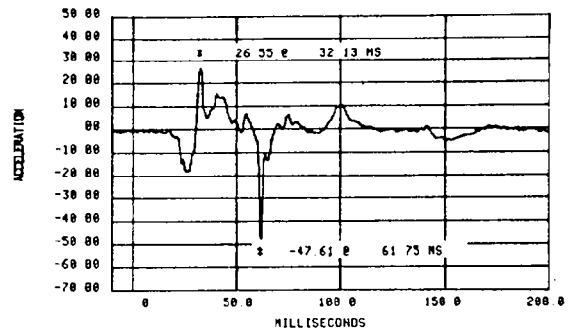
UPPER THORAX LATERAL ACCELERATION

TRACK: 9 CHANNEL: 9 100% CAL = 325.29
TEST S: 1 T4-17 DATE: 4-7-81



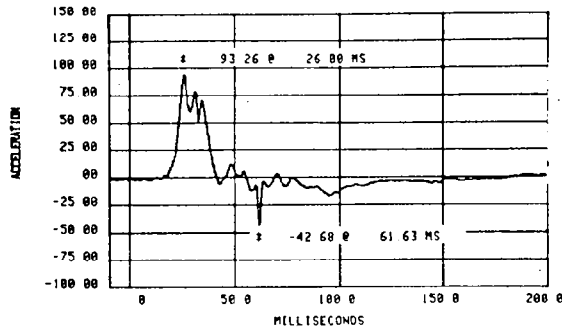
UPPER THORAX VERTICAL ACCELERATION

TRACK: 3 CHANNEL: 1 100% CAL = 371.76
TEST S: 1 T4-17 DATE: 4-7-81



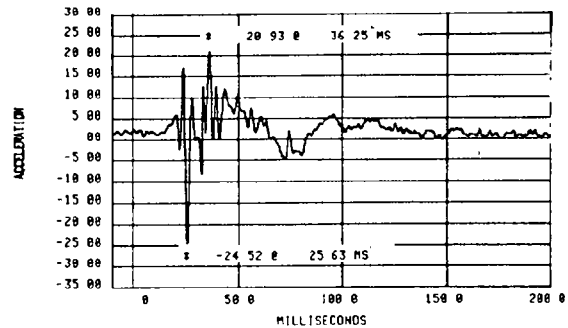
LOWER THORAX LONGITUDINAL ACCELERATION

TRACK: 3 CHANNEL: 2 100% CAL = 367.64
TEST S: 1 T4-17 DATE: 4-7-81



LOWER THORAX LATERAL ACCELERATION

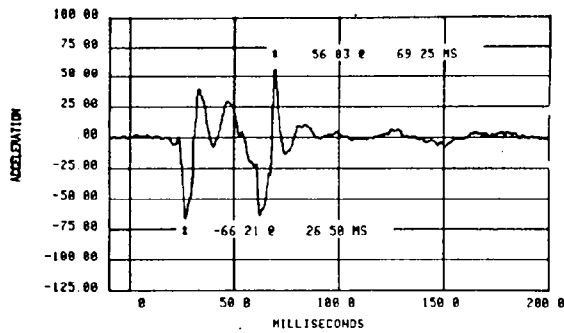
TRACK: 3 CHANNEL: 3 100% CAL = 323.12
TEST S: 1 T4-17 DATE: 4-7-81



LOWER THORAX VERTICAL ACCELERATION

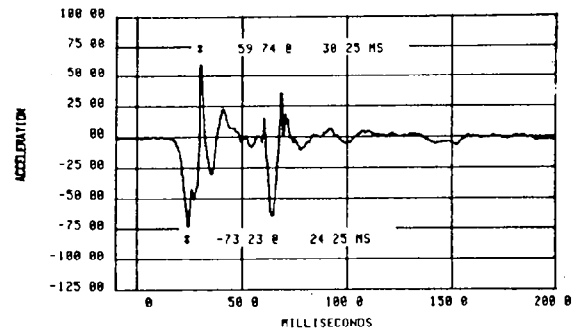
T4-17

TRACK: 9 CHANNEL: 4 100% CAL = 378.77
TEST: S. 1 T4-17 DATE: 4-7-81



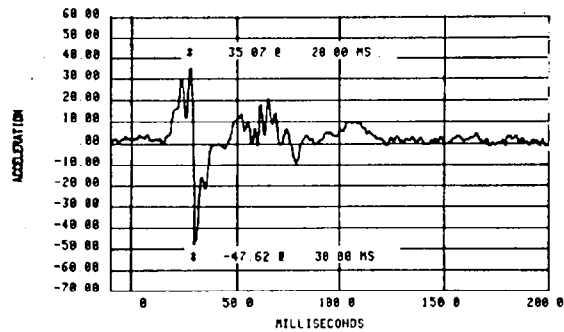
UPPER STERNUM LONGITUDINAL ACCELERATION

TRACK: 9 CHANNEL: 3 100% CAL = 316.99
TEST: S. 1 T4-17 DATE: 4-7-81



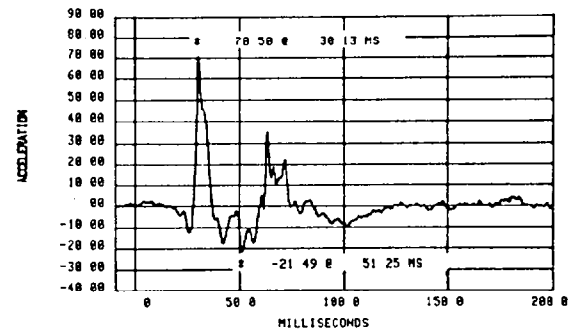
LOWER STERNUM LONGITUDINAL ACCELERATION

TRACK: 9 CHANNEL: 13 100% CAL = 387.14
TEST: S. 1 T4-17 DATE: 4-7-81



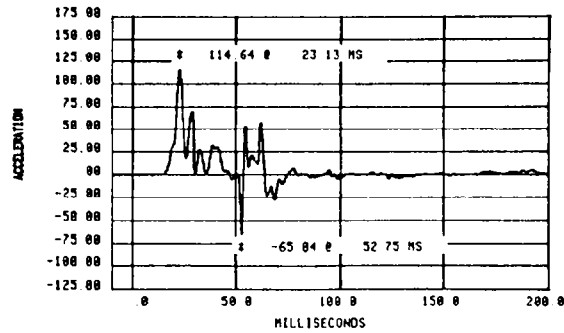
RIGHT LOWER RIB LONGITUDINAL ACCELERATION

TRACK: 9 CHANNEL: 11 100% CAL = 329.42
TEST: S. 1 T4-17 DATE: 4-7-81



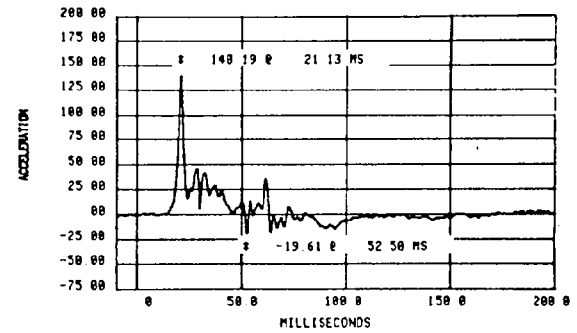
LEFT LOWER RIB LONGITUDINAL ACCELERATION

TRACK: 9 CHANNEL: 1 100% CAL = 334.15
TEST: S. 1 T4-17 DATE: 4-7-81



RIGHT UPPER RIB LATERAL ACCELERATION

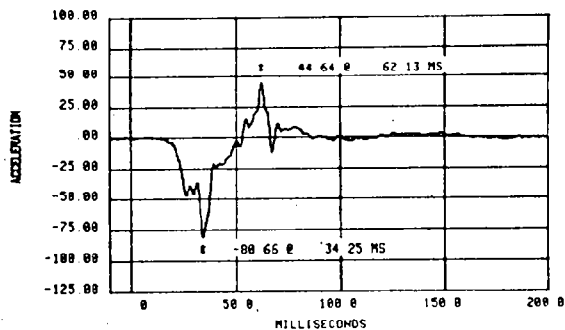
TRACK: 9 CHANNEL: 12 100% CAL = 319.03
TEST: S. 1 T4-17 DATE: 4-7-81



RIGHT LOWER RIB LATERAL ACCELERATION

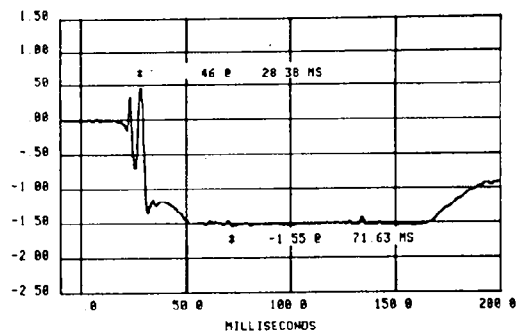
T4-17

TRACK: 9 CHANNEL: 2 100% CAL = 362.21
TEST: S I 14-17 DATE: 4-7-81

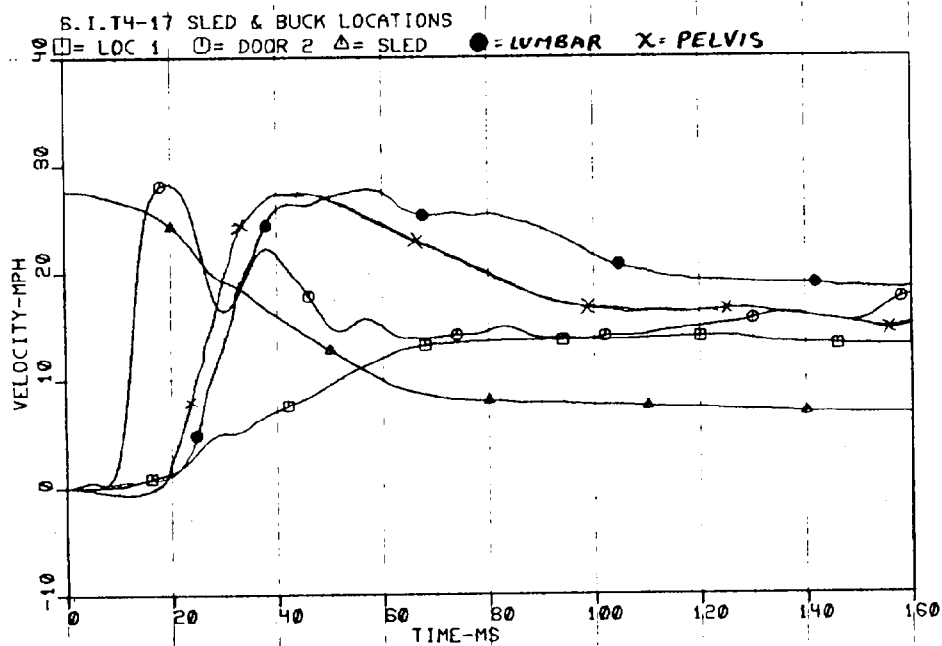


LEFT UPPER RIB LATERAL ACCELERATION

TRACK: 3 CHANNEL: 11 100% CAL = 2.85
TEST: S I 14-17 DATE: 4-7-81

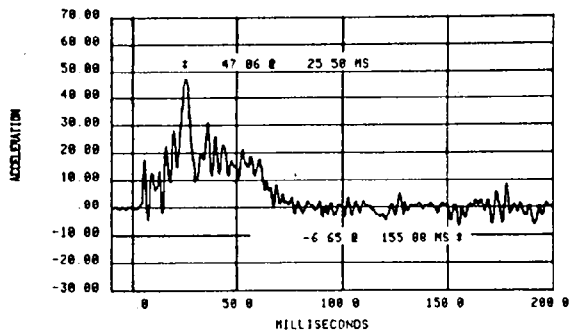


LOWER RIB DISPLACEMENT



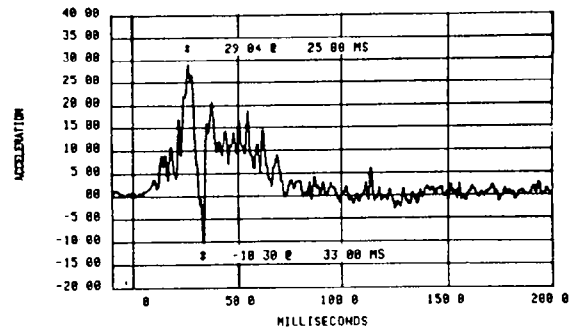
T4-17

TRACK: 9 CHANNEL: 4 100% CAL = 71.13
TEST: S I T4-18 DATE: 4-29-81



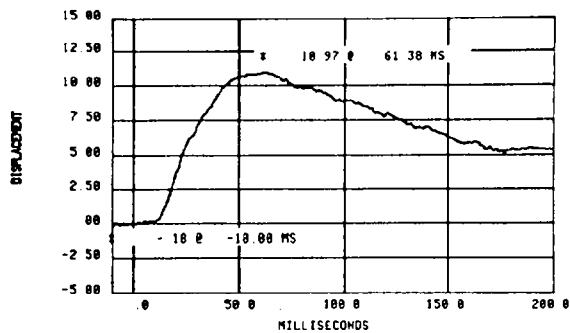
BULLET SLED LONGITUDINAL ACCELERATION

TRACK: 11 CHANNEL: 18 100% CAL = 154.75
TEST: S I T4-18 DATE: 4-29-81



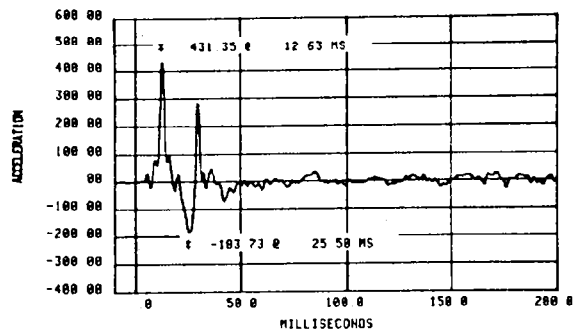
TARGET SLED LATERAL ACCELERATION

TRACK: 9 CHANNEL: 5 100% CAL = 22.50
TEST: S I T4-18 DATE: 4-29-81



DOOR DISPLACEMENT

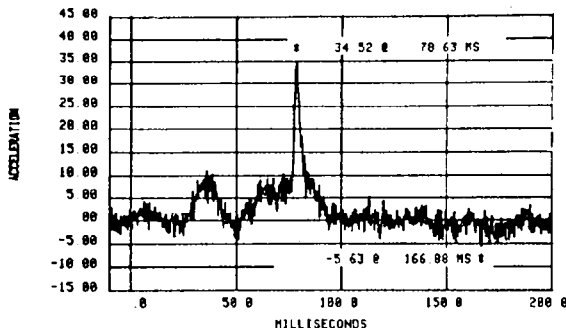
TRACK: 11 CHANNEL: 14 100% CAL = 689.82
TEST: S I T4-18 DATE: 4-29-81



DOOR LATERAL ACCELERATION

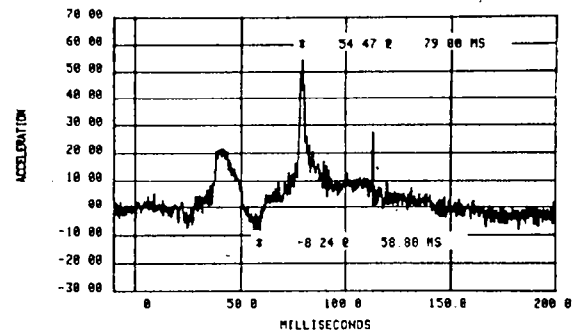
T4-18

TRACK: 9 CHANNEL: 12 100% CAL = 236.30
TEST: S. I. T4-18 DATE: 4-29-81



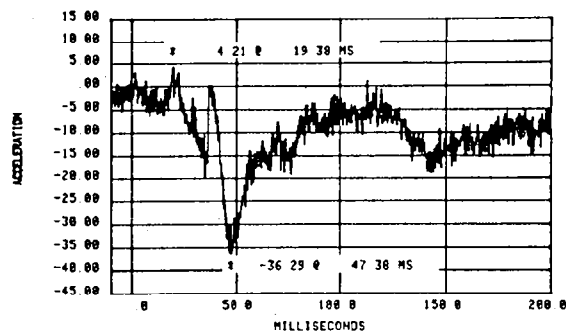
HEAD LONGITUDINAL ACCELERATION

TRACK: 9 CHANNEL: 13 100% CAL = 236.66
TEST: S. I. T4-18 DATE: 4-29-81



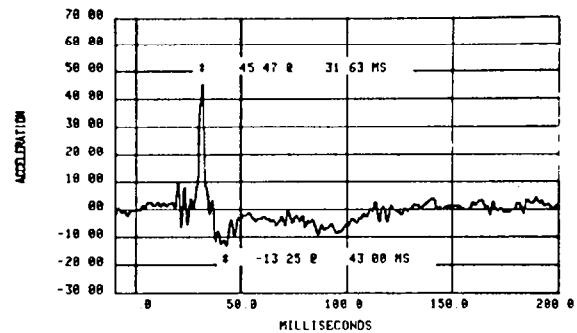
HEAD LATERAL ACCELERATION

TRACK: 9 CHANNEL: 14 100% CAL = 259.79
TEST: S. I. T4-18 DATE: 4-29-81



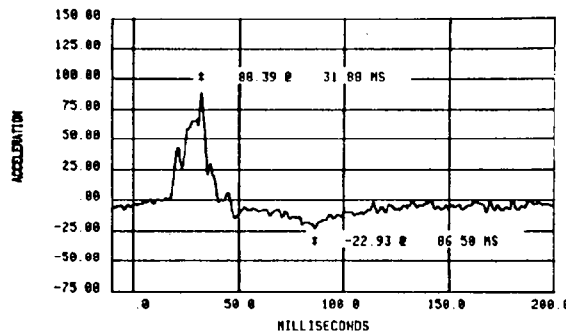
HEAD VERTICAL ACCELERATION

TRACK: 9 CHANNEL: 7 100% CAL = 333.79
TEST: S. I. T4-18 DATE: 4-29-81



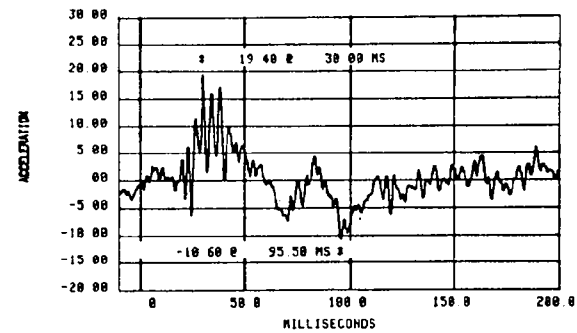
PELVIS LONGITUDINAL ACCELERATION

TRACK: 9 CHANNEL: 8 100% CAL = 396.57
TEST: S. I. T4-18 DATE: 4-29-81



PELVIS LATERAL ACCELERATION

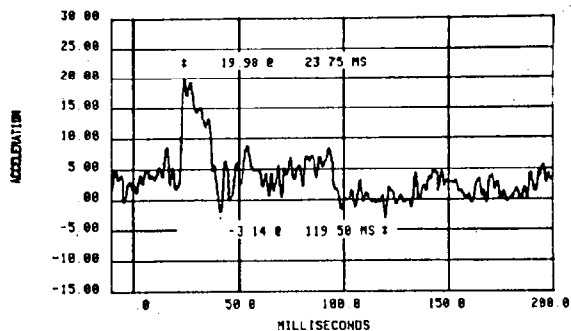
TRACK: 9 CHANNEL: 9 100% CAL = 368.42
TEST: S. I. T4-18 DATE: 4-29-81



PELVIS VERTICAL ACCELERATION

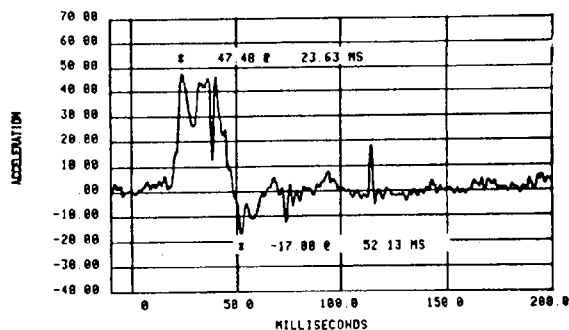
T4-18

TRACK 11 CHANNEL 7 100% CAL = 370.81
TEST S. I. T4-18 DATE 4-29-81



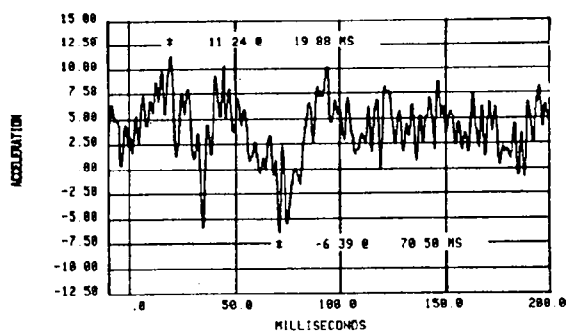
UPPER THORAX LONGITUDINAL ACCELERATION

TRACK 11 CHANNEL 8 100% CAL = 339.86
TEST S. I. T4-18 DATE 4-29-81



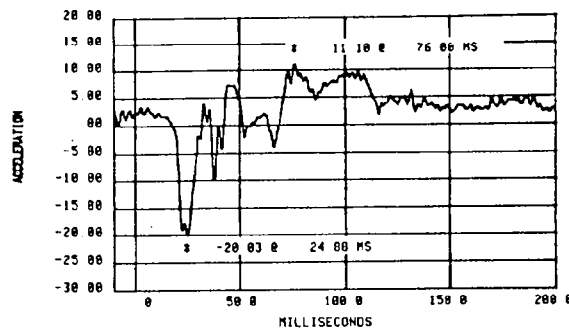
UPPER THORAX LATERAL ACCELERATION

TRACK 11 CHANNEL 9 100% CAL = 362.87
TEST S. I. T4-18 DATE 4-29-81



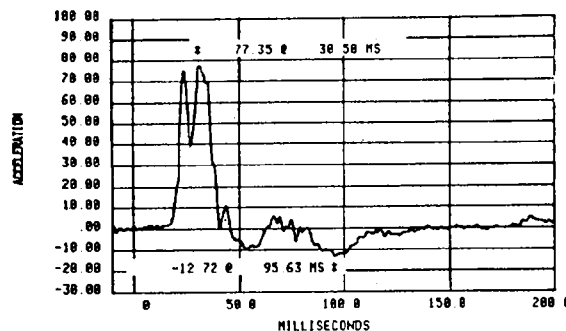
UPPER THORAX VERTICAL ACCELERATION

TRACK 9 CHANNEL 1 100% CAL = 395.88
TEST S. I. T4-18 DATE 4-29-81



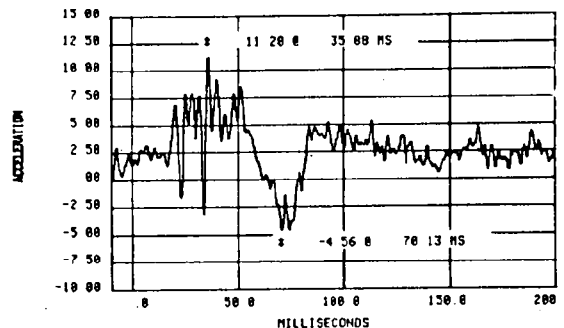
LOWER THORAX LONGITUDINAL ACCELERATION

TRACK 9 CHANNEL 2 100% CAL = 336.71
TEST S. I. T4-18 DATE 4-29-81



LOWER THORAX LATERAL ACCELERATION

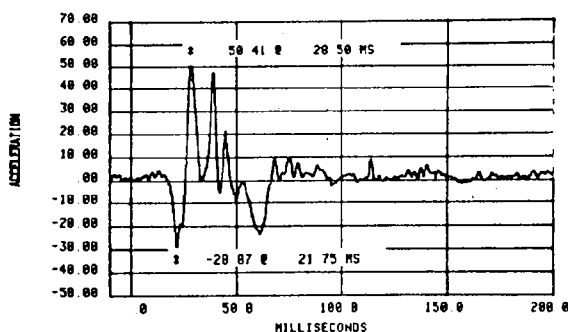
TRACK 9 CHANNEL 3 100% CAL = 339.86
TEST S. I. T4-18 DATE 4-29-81



LOWER THORAX VERTICAL ACCELERATION

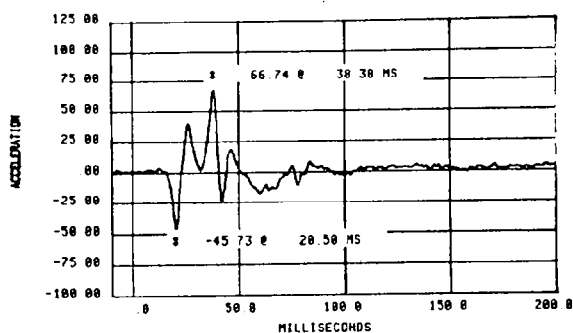
T4-18

TRACK:11 CHANNEL: 4 100% CAL = 343.86
TEST: S.I. T4-18 DATE: 4-29-81



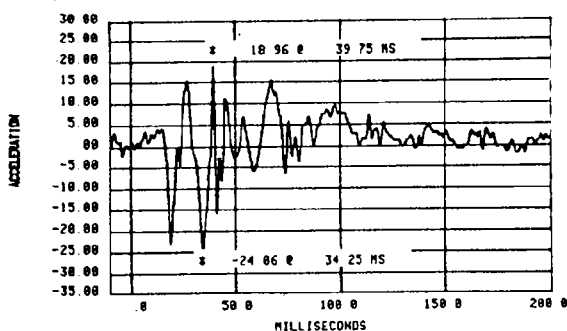
UPPER STERNUM LONGITUDINAL ACCELERATION

TRACK:11 CHANNEL: 3 100% CAL = 339.86
TEST: S.I. T4-18 DATE: 4-29-81



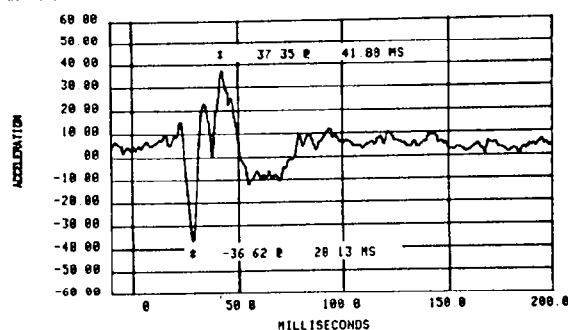
LOWER STERNUM LONGITUDINAL ACCELERATION

TRACK:11 CHANNEL: 13 100% CAL = 397.91
TEST: S.I. T4-18 DATE: 4-29-81



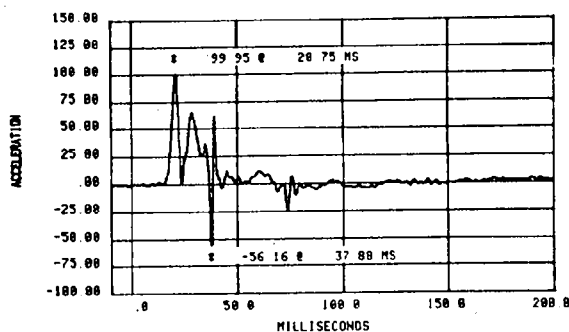
RIGHT LOWER RIB LONGITUDINAL ACCELERATION

TRACK:11 CHANNEL: 11 100% CAL = 398.16
TEST: S.I. T4-18 DATE: 4-29-81



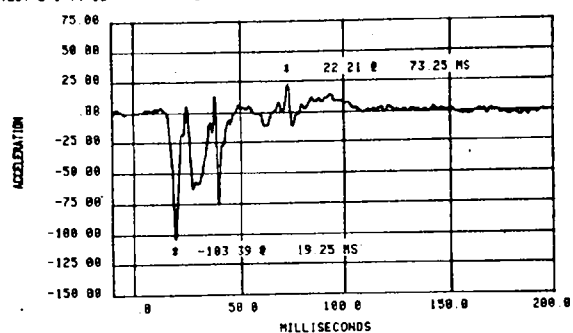
LEFT LOWER RIB LONGITUDINAL ACCELERATION

TRACK:11 CHANNEL: 1 100% CAL = 363.74
TEST: S.I. T4-18 DATE: 4-29-81



RIGHT UPPER RIB LATERAL ACCELERATION

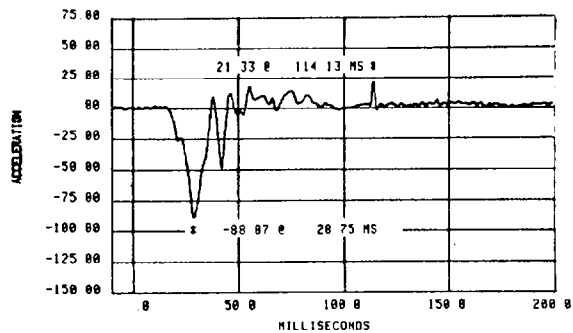
TRACK:11 CHANNEL: 12 100% CAL = 421.71
TEST: S.I. T4-18 DATE: 4-29-81



RIGHT LOWER RIB LATERAL ACCELERATION

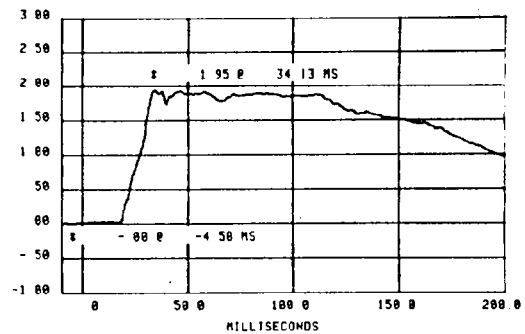
T4-18

TRACK 11 CHANNEL 2 100% CAL = 346.27
TEST S I T4-18 DATE 4-29-81



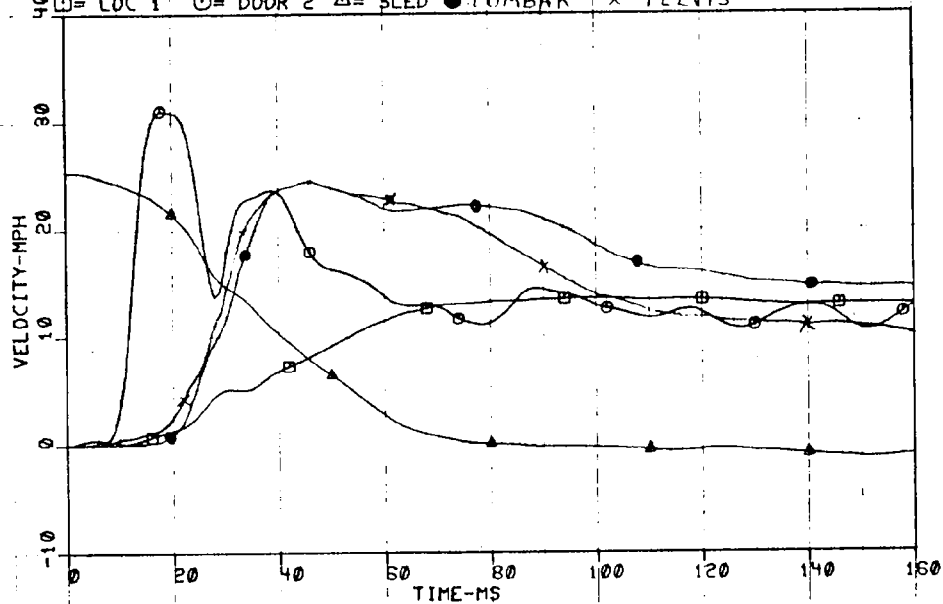
LEFT UPPER RIB LATERAL ACCELERATION

TRACK 9 CHANNEL 11 100% CAL = 2.79
TEST S I T4-18 DATE 4-29-81



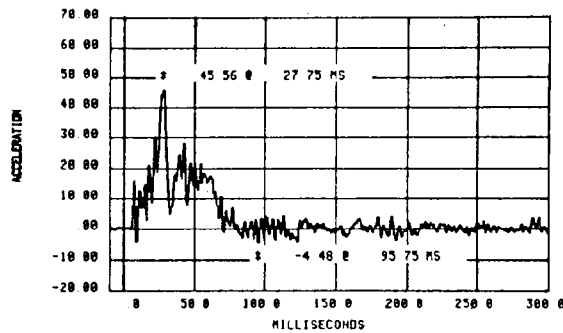
LOWER RIB DISPLACEMENT

S.I. T4-18 BUCK & SLED LOCATIONS
□ = LOC 1 ○ = DOOR 2 △ = SLED ● = LUMBAR X = PELVIS



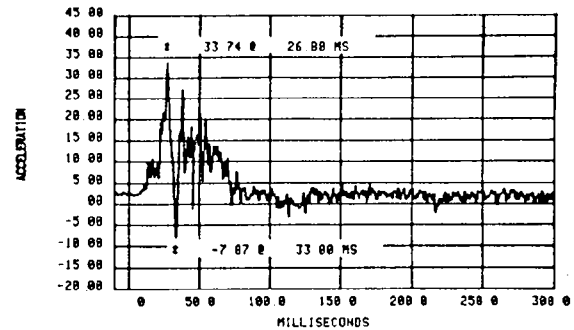
T4-18

TRACK: 3 CHANNEL: 4 100% CAL = 78.77
TEST: T4-19 S.I. SLED DATE: 6-3-81



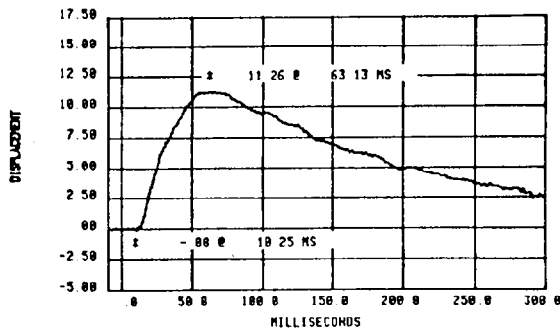
BULLET SLED LONGITUDINAL ACCELERATION

TRACK: 2 CHANNEL: 10 100% CAL = 154.75
TEST: T4-19 S.I. SLED DATE: 6-3-81



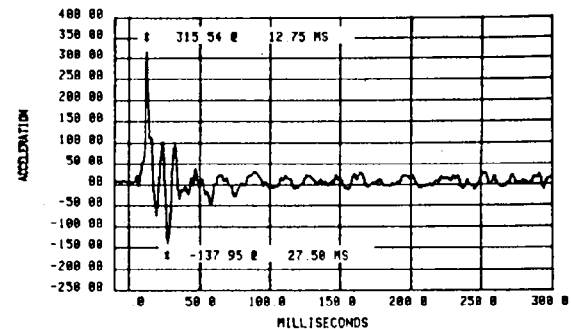
TARGET SLED LATERAL ACCELERATION

TRACK: 3 CHANNEL: 5 100% CAL = 22.50
TEST: T4-19 S.I. SLED DATE: 6-3-81



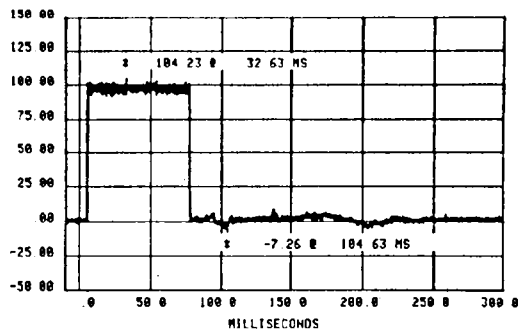
DOOR DISPLACEMENT

TRACK: 2 CHANNEL: 14 100% CAL = 380.97
TEST: T4-19 S.I. SLED DATE: 6-3-81

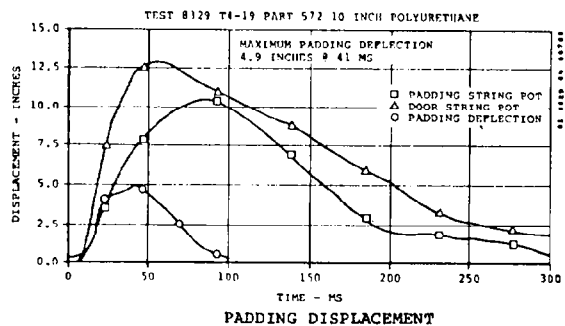


DOOR LATERAL ACCELERATION

TRACK: 2 CHANNEL: 11 100% CAL = 100.00
TEST: T4-19 S.I. SLED DATE: 6-3-81



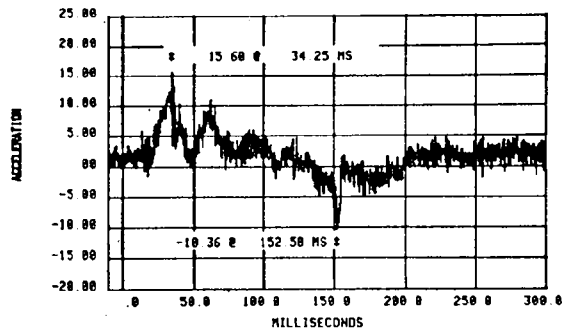
PADDING CONTACT TIME



PADDING DISPLACEMENT

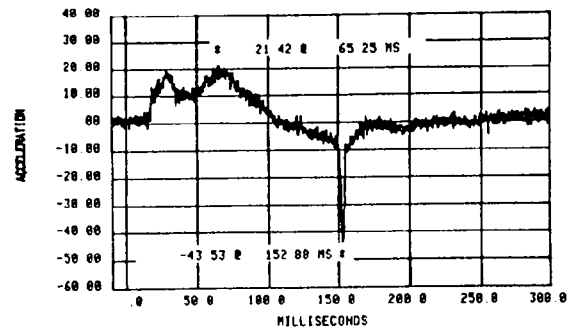
T4-19

TRACK: 3 CHANNEL: 12 100% CAL = 194.94
TEST: T4-19 S.I. SLED DATE: 6-3-81



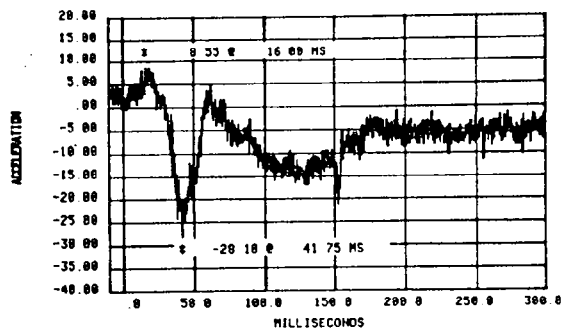
HEAD LONGITUDINAL ACCELERATION

TRACK: 3 CHANNEL: 13 100% CAL = 188.96
TEST: T4-19 S.I. SLED DATE: 6-3-81



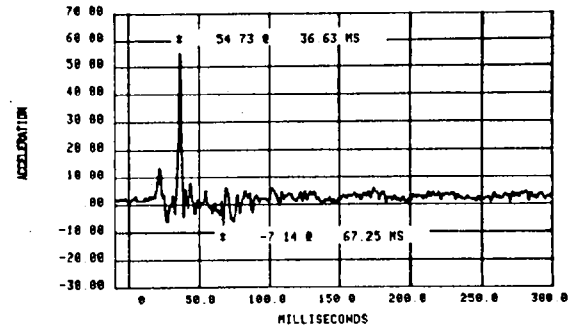
HEAD LATERAL ACCELERATION

TRACK: 3 CHANNEL: 14 100% CAL = 207.70
TEST: T4-19 S.I. SLED DATE: 6-3-81



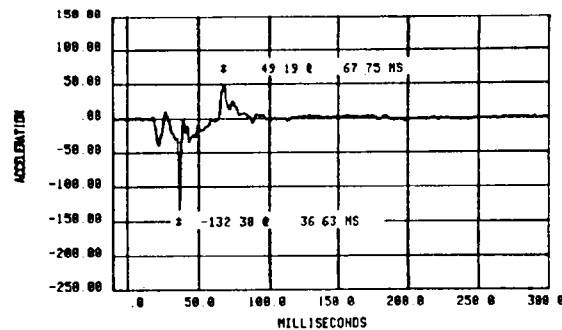
HEAD VERTICAL ACCELERATION

TRACK: 3 CHANNEL: 7 100% CAL = 219.31
TEST: T4-19 S.I. SLED DATE: 6-3-81



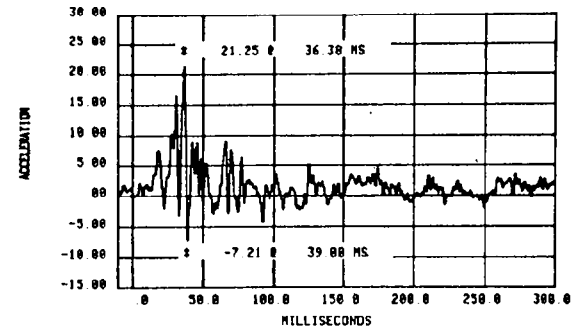
PELVIS LONGITUDINAL ACCELERATION

TRACK: 3 CHANNEL: 8 100% CAL = 214.54
TEST: T4-19 S.I. SLED DATE: 6-3-81



PELVIS LATERAL ACCELERATION

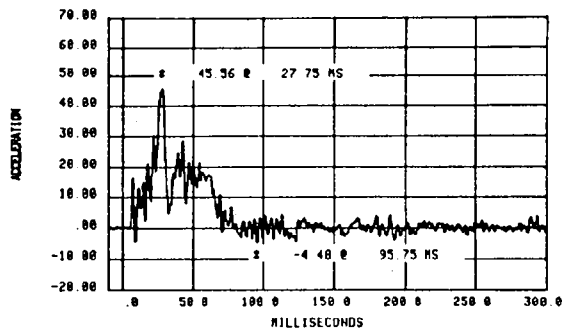
TRACK: 3 CHANNEL: 9 100% CAL = 214.83
TEST: T4-19 S.I. SLED DATE: 6-3-81



PELVIS VERTICAL ACCELERATION

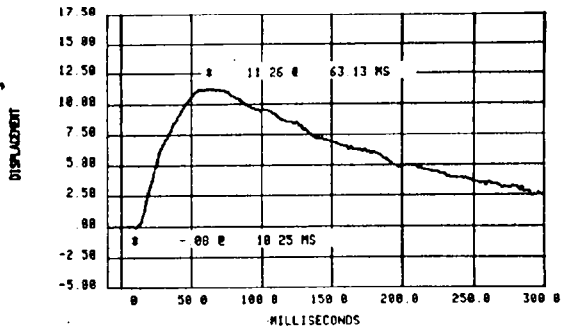
T4-19

TRACK: 3 CHANNEL: 4 100% CAL = 78.77
TEST: T4-19 S.I. SLED DATE: 6-3-81



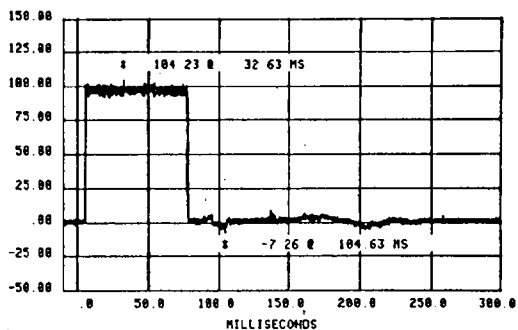
BULLET SLED LONGITUDINAL ACCELERATION

TRACK: 3 CHANNEL: 5 100% CAL = 22.50
TEST: T4-19 S.I. SLED DATE: 6-3-81



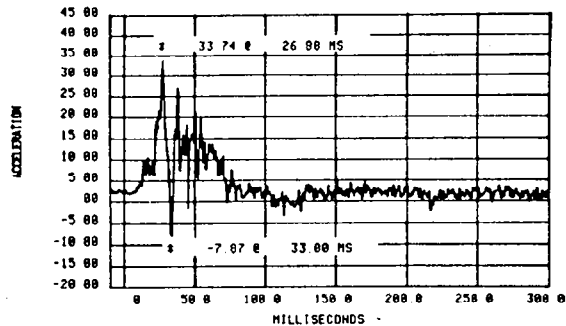
DOOR DISPLACEMENT

TRACK: 2 CHANNEL: 11 100% CAL = 100.00
TEST: T4-19 S.I. SLED DATE: 6-3-81



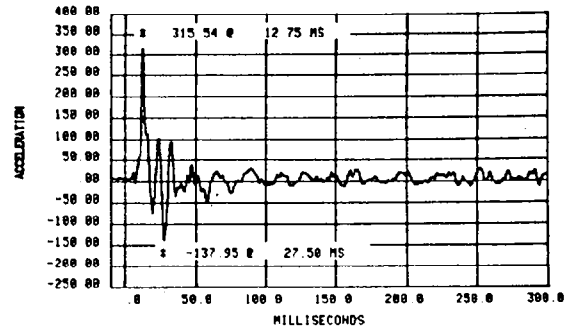
PADDING CONTACT TIME

TRACK: 2 CHANNEL: 10 100% CAL = 154.75
TEST: T4-19 S.I. SLED DATE: 6-3-81



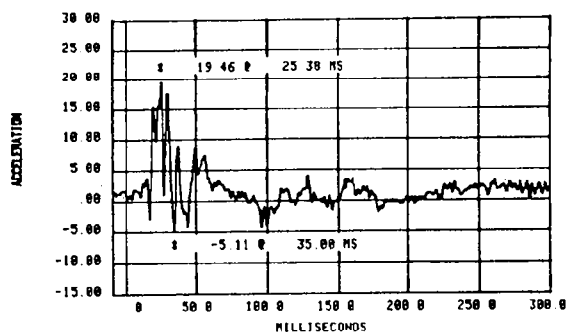
TARGET SLED LATERAL ACCELERATION

TRACK: 2 CHANNEL: 14 100% CAL = 300.97
TEST: T4-19 S.I. SLED DATE: 6-3-81



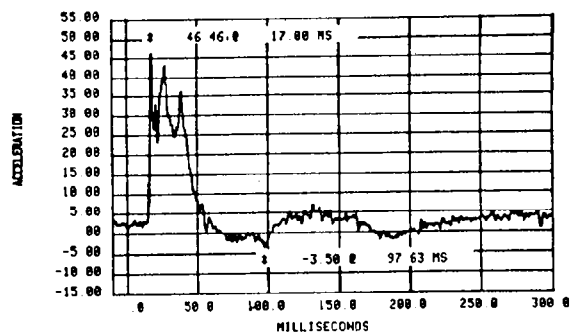
DOOR LATERAL ACCELERATION

TRACK: 3 CHANNEL: 1 100% CAL = 400.70
TEST: T4-19 S.I. SLED DATE: 6-3-81



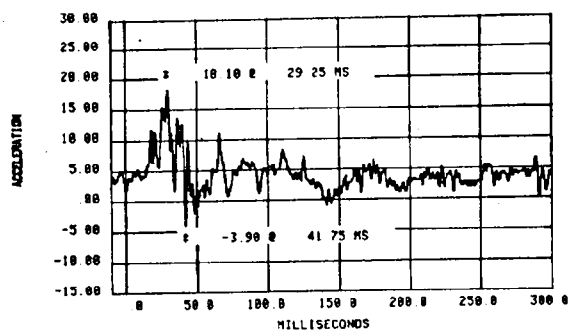
UPPER THORAX LONGITUDINAL ACCELERATION

TRACK: 3 CHANNEL: 2 100% CAL = 409.89
TEST: T4-19 S.I. SLED DATE: 6-3-81



UPPER THORAX LATERAL ACCELERATION

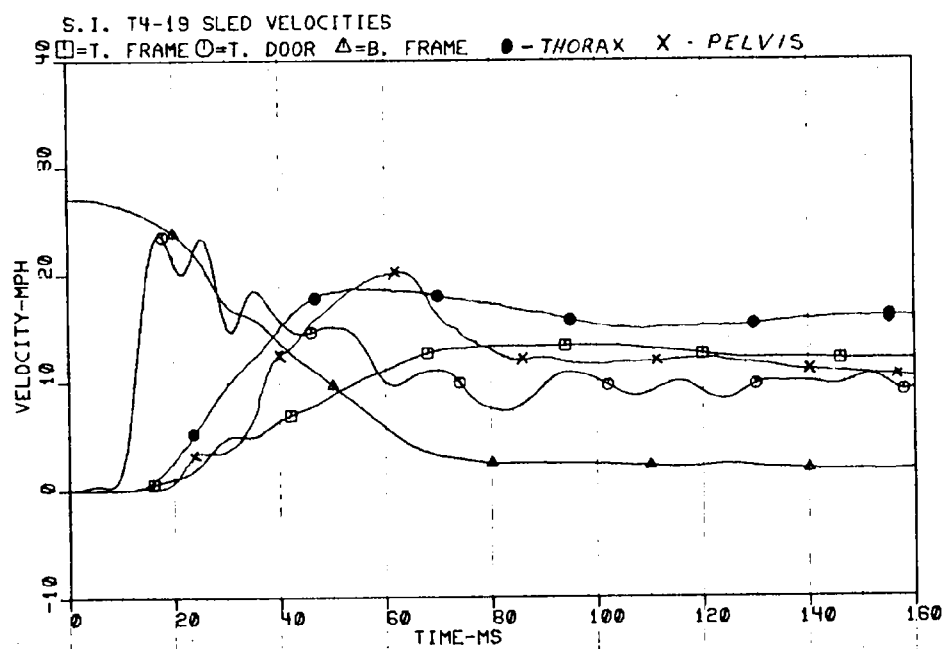
TRACK: 3 CHANNEL: 3 100% CAL = 450.40
TEST: T4-19 S.I. SLED DATE: 6-3-81



UPPER THORAX VERTICAL ACCELERATION

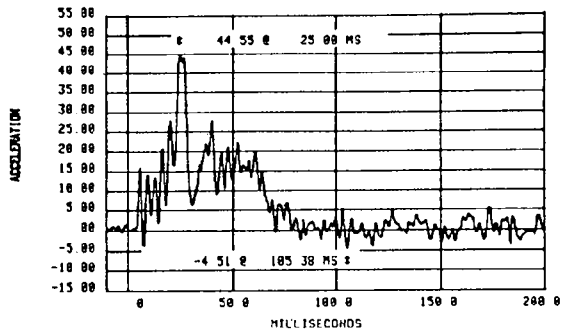
T4-19

M-40



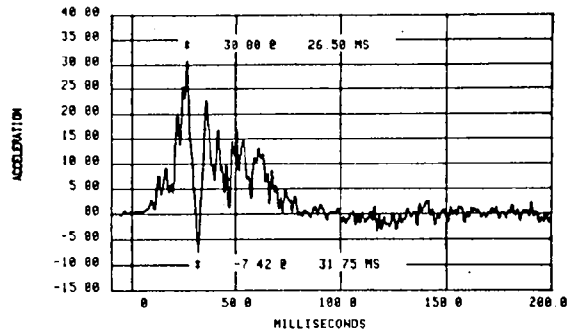
T4-19

TRACK: 3 CHANNEL: 4 100% CAL = 70.77
TEST: T4-20 S I SLED DATE: 6-3-81



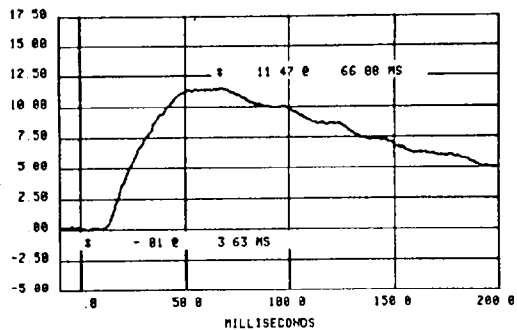
BULLET SLED LONGITUDINAL ACCELERATION

TRACK: 2 CHANNEL: 10 100% CAL = 154.75
TEST: T4-20 S I SLED DATE: 6-3-81



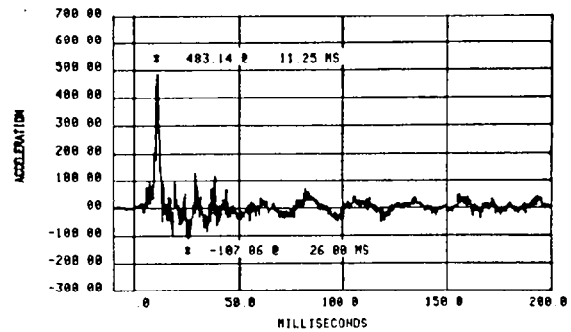
TARGET SLED LATERAL ACCELERATION

TRACK: 3 CHANNEL: 5 100% CAL = 22.50
TEST: T4-20 S I SLED DATE: 6-3-81



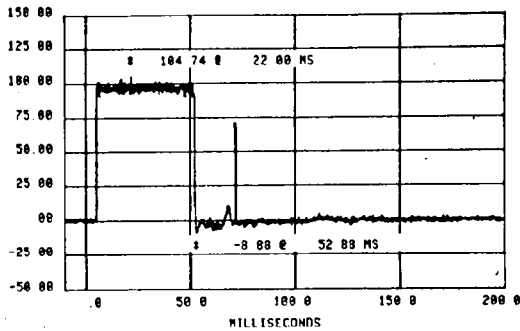
DOOR DISPLACEMENT

TRACK: 2 CHANNEL: 14 100% CAL = 388.97
TEST: T4-20 S I SLED DATE: 6-3-81

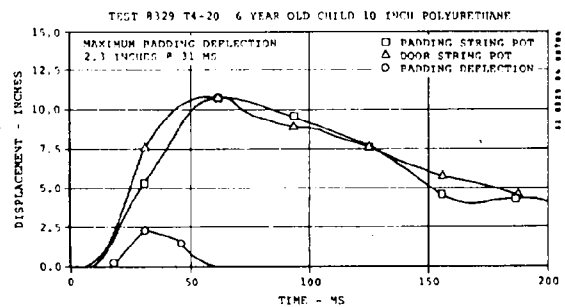


DOOR LATERAL ACCELERATION

TRACK: 2 CHANNEL: 11 100% CAL = 100.00
TEST: T4-20 S I SLED DATE: 6-3-81



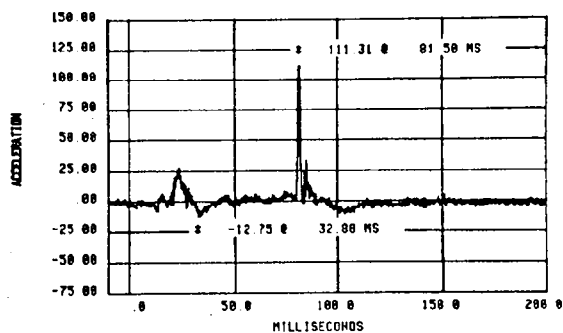
PADDING CONTACT TIME



PADDING DISPLACEMENT

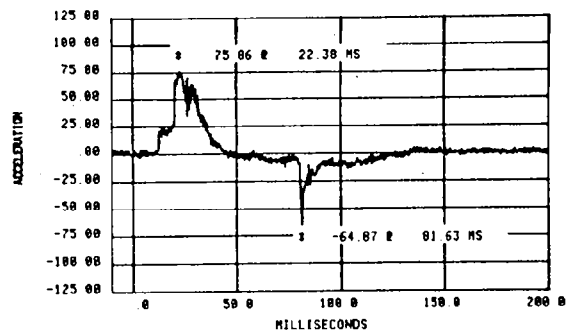
T4-20

TRACK: 3 CHANNEL: 12 100% CAL = 244.11
TEST: T4-20 S.I. SLED DATE: 6-3-81



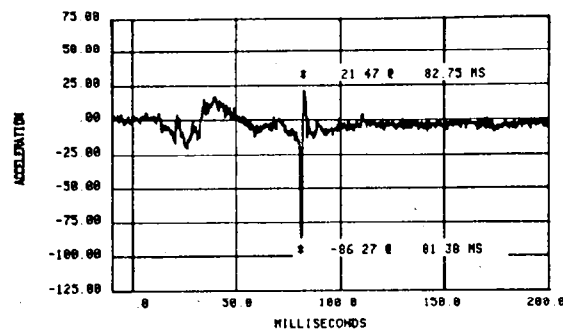
HEAD LONGITUDINAL ACCELERATION

TRACK: 3 CHANNEL: 13 100% CAL = 193.32
TEST: T4-20 S.I. SLED DATE: 6-3-81



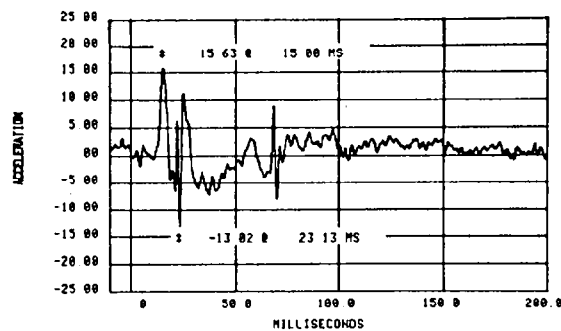
HEAD LATERAL ACCELERATION

TRACK: 3 CHANNEL: 14 100% CAL = 223.99
TEST: T4-20 S.I. SLED DATE: 6-3-81



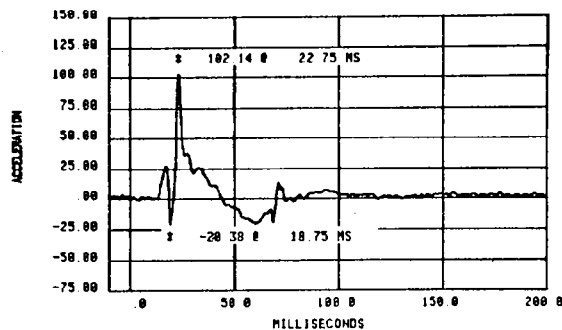
HEAD VERTICAL ACCELERATION

TRACK: 3 CHANNEL: 7 100% CAL = 252.67
TEST: T4-20 S.I. SLED DATE: 6-3-81



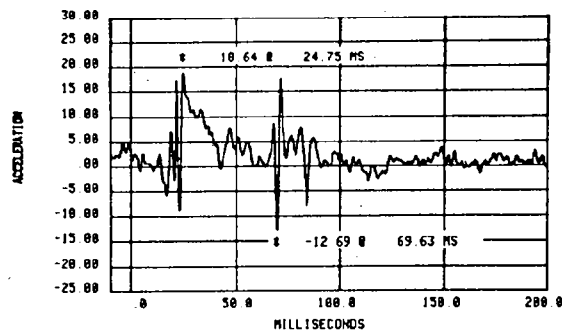
PELVIS LONGITUDINAL ACCELERATION

TRACK: 3 CHANNEL: 8 100% CAL = 212.41
TEST: T4-20 S.I. SLED DATE: 6-3-81



PELVIS LATERAL ACCELERATION

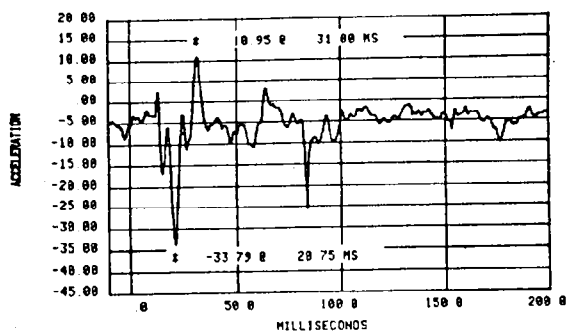
TRACK: 3 CHANNEL: 9 100% CAL = 254.78
TEST: T4-20 S.I. SLED DATE: 6-3-81



PELVIS VERTICAL ACCELERATION

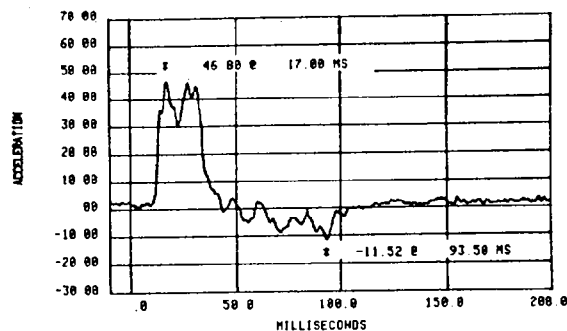
T4-20

TRACK: 3 CHANNEL: 1 100% CAL = 392.86
TEST: T4-20 S.I. SLED DATE: 6-3-81



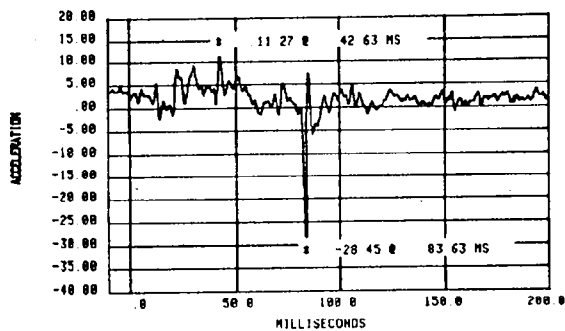
UPPER THORAX LONGITUDINAL ACCELERATION

TRACK: 3 CHANNEL: 2 100% CAL = 395.96
TEST: T4-20 S.I. SLED DATE: 6-3-81



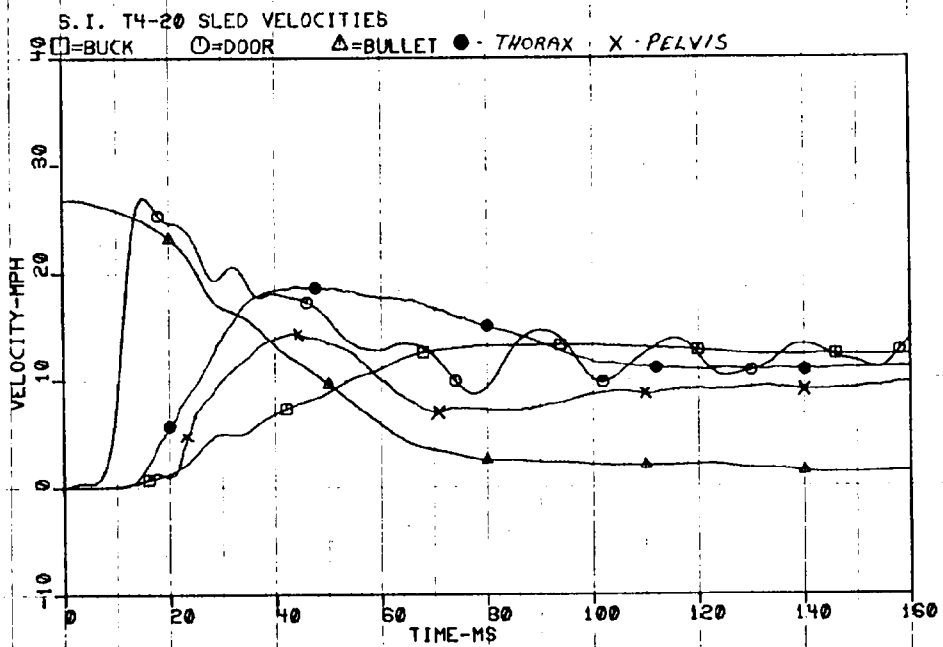
UPPER THORAX LATERAL ACCELERATION

TRACK: 3 CHANNEL: 3 100% CAL = 463.92
TEST: T4-20 S.I. SLED DATE: 6-3-81



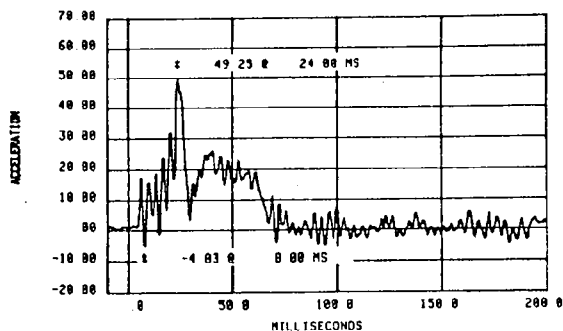
UPPER THORAX VERTICAL ACCELERATION

T4-20



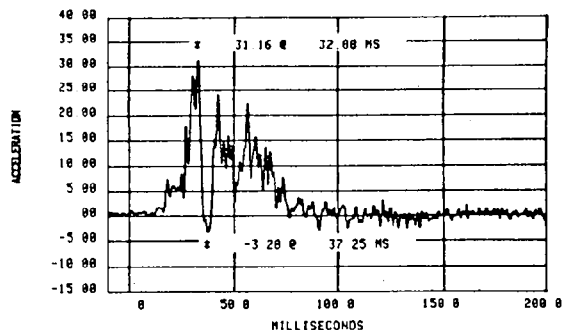
T4-20

TRACK: 3 CHANNEL: 4 100% CAL = 70.77
TEST: S I T4-21 SLED DATE: 6-5-81



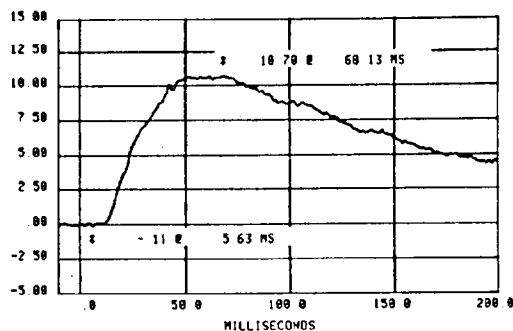
BULLET SLED LONGITUDINAL ACCELERATION

TRACK: 2 CHANNEL: 10 100% CAL = 154.75
TEST: S I T4-21 SLED DATE: 6-5-81



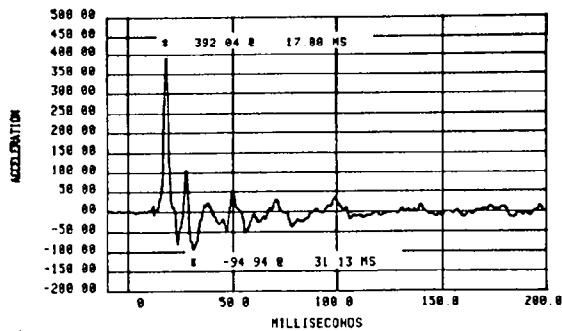
TARGET SLED LATERAL ACCELERATION

TRACK: 3 CHANNEL: 5 100% CAL = 22.50
TEST: S I T4-21 SLED DATE: 6-5-81



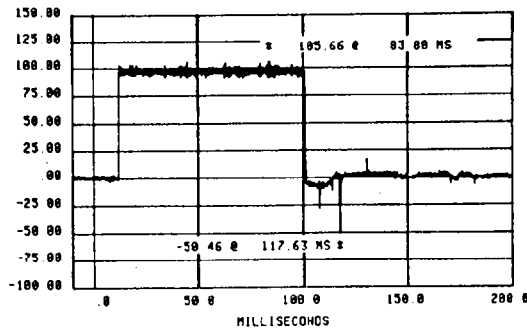
DOOR DISPLACEMENT

TRACK: 2 CHANNEL: 14 100% CAL = 300.97
TEST: S I T4-21 SLED DATE: 6-5-81

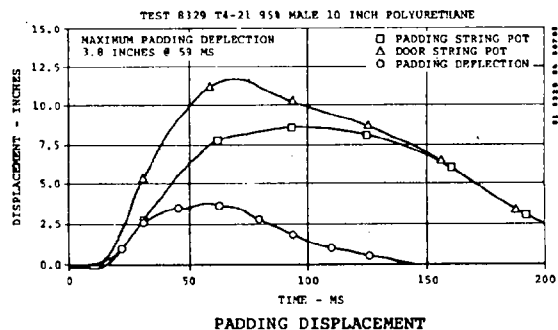


DOOR LATERAL ACCELERATION

TRACK: 2 CHANNEL: 11 100% CAL = 100.00
TEST: S I T4-21 SLED DATE: 6-5-81



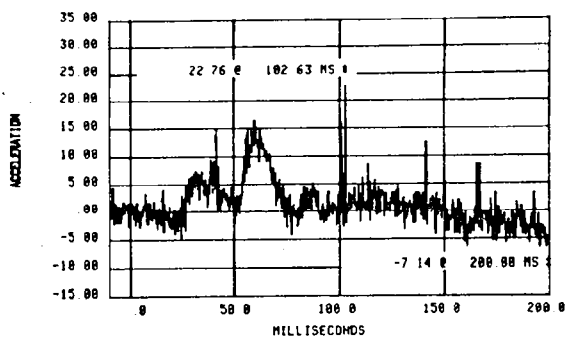
PADDING CONTACT TIME



PADDING DISPLACEMENT

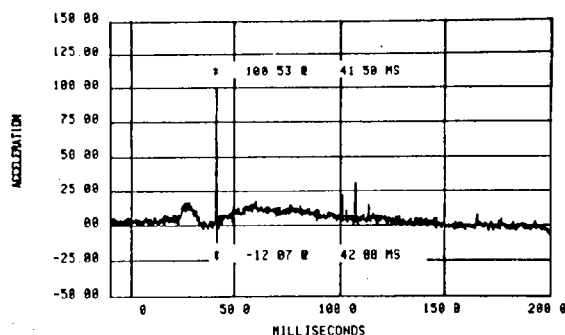
T4-21

TRACK: 3 CHANNEL: 12 100% CAL = 244.11
TEST: S. 1 T4-21 SLED DATE: 6-5-81



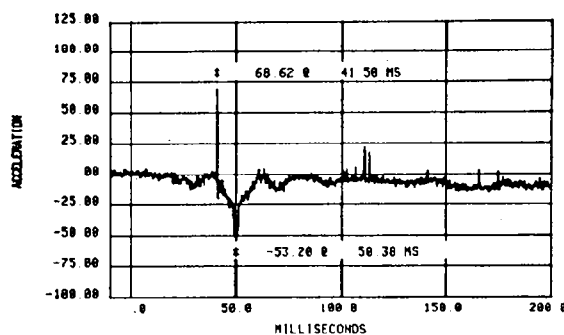
HEAD LONGITUDINAL ACCELERATION

TRACK: 3 CHANNEL: 13 100% CAL = 193.32
TEST: S. 1 T4-21 SLED DATE: 6-5-81



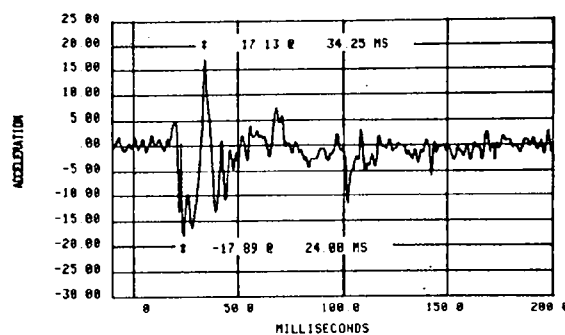
HEAD LATERAL ACCELERATION

TRACK: 3 CHANNEL: 14 100% CAL = 223.99
TEST: S. 1 T4-21 SLED DATE: 6-5-81



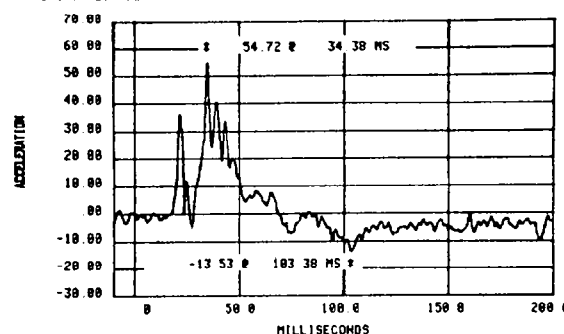
HEAD VERTICAL ACCELERATION

TRACK: 3 CHANNEL: 7 100% CAL = 252.67
TEST: S. 1 T4-21 SLED DATE: 6-5-81



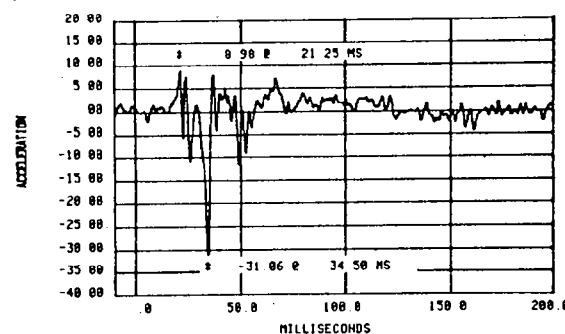
PELVIS LONGITUDINAL ACCELERATION

TRACK: 3 CHANNEL: 8 100% CAL = 254.78
TEST: S. 1 T4-21 SLED DATE: 6-5-81



PELVIS LATERAL ACCELERATION

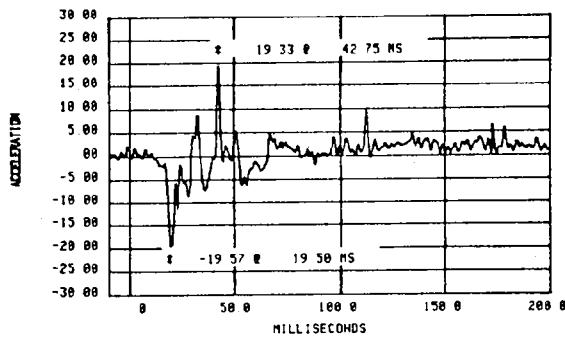
TRACK: 3 CHANNEL: 9 100% CAL = 212.41
TEST: S. 1 T4-21 SLED DATE: 6-5-81



PELVIS VERTICAL ACCELERATION

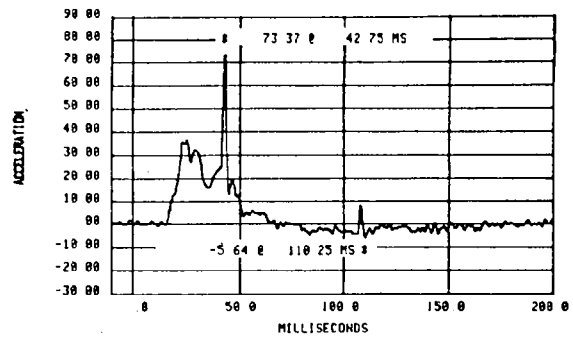
T4-21

TRACK: 3 CHANNEL: 1 100% CAL = 392.86
TEST: S.1 T4-21 SLED DATE: 6-5-81



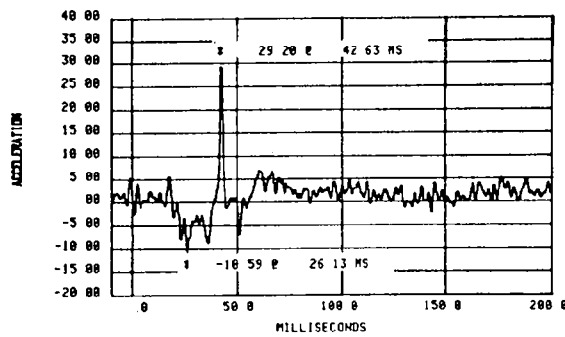
UPPER THORAX LONGITUDINAL ACCELERATION

TRACK: 3 CHANNEL: 2 100% CAL = 463.92
TEST: S.1 T4-21 SLED DATE: 6-5-81



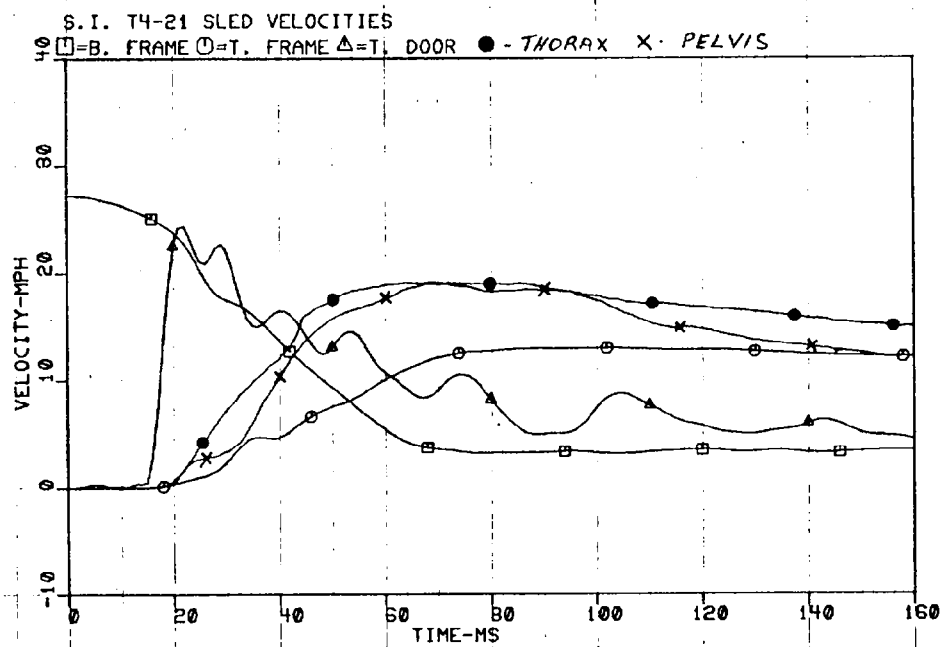
UPPER THORAX LATERAL ACCELERATION

TRACK: 3 CHANNEL: 3 100% CAL = 470.94
TEST: S.1 T4-21 SLED DATE: 6-5-81



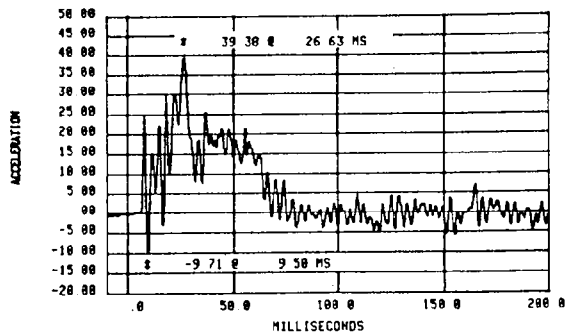
UPPER THORAX VERTICAL ACCELERATION

T4-21



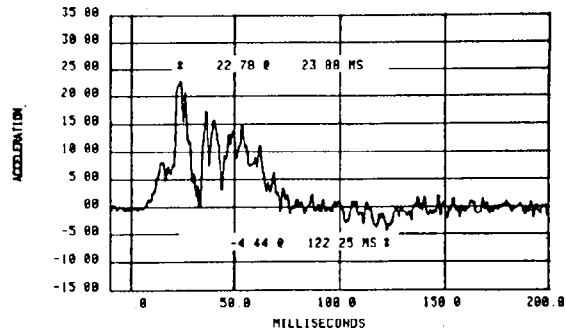
T4-21

TRACK: 11 CHANNEL: 4 100% CAL = 69.09
TEST: S.I. SLED T4-22 DATE: 6-8-81



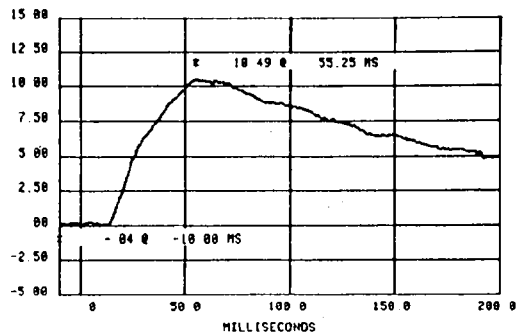
BULLET SLED LONGITUDINAL ACCELERATION

TRACK: 2 CHANNEL: 10 100% CAL = 154.75
TEST: S.I. SLED T4-22 DATE: 6-8-81



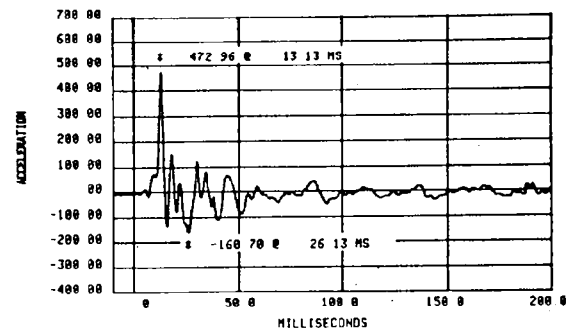
TARGET SLED LATERAL ACCELERATION

TRACK: 11 CHANNEL: 5 100% CAL = 22.50
TEST: S.I. SLED T4-22 DATE: 6-8-81



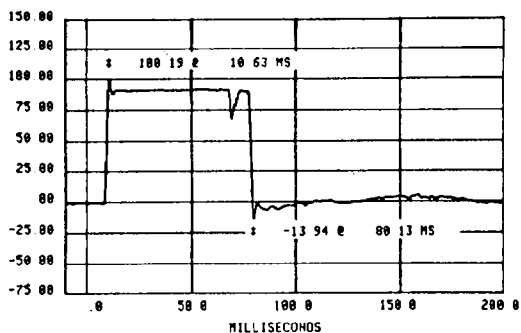
DOOR DISPLACEMENT

TRACK: 2 CHANNEL: 14 100% CAL = 500.61
TEST: S.I. SLED T4-22 DATE: 6-8-81

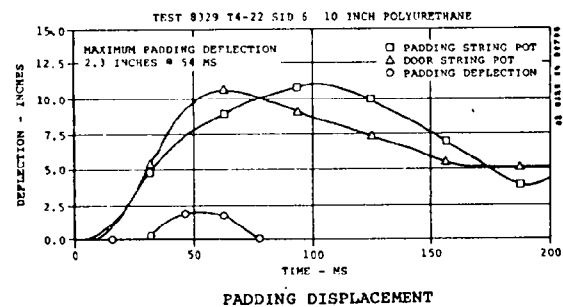


DOOR LATERAL ACCELERATION

TRACK: 11 CHANNEL: 10 100% CAL = 100.00
TEST: S.I. SLED T4-22 DATE: 6-8-81



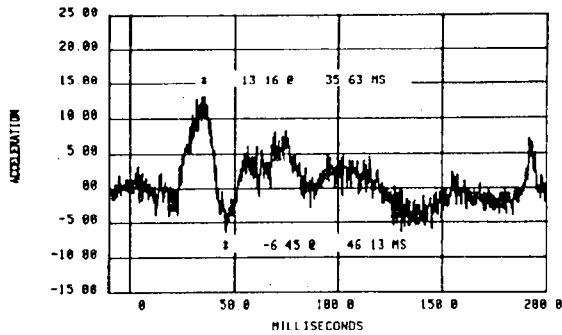
PADDING CONTACT TIME



PADDING DISPLACEMENT

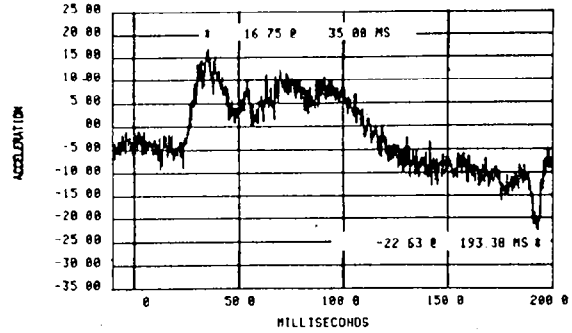
T4-22

TRACK 11 CHANNEL 12 100% CAL = 215.64
TEST S.I. SLED T4-22 DATE 6-8-81



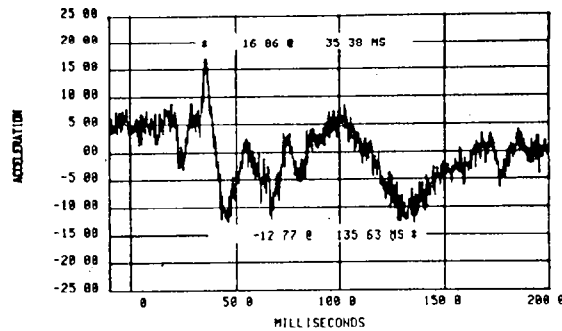
HEAD LONGITUDINAL ACCELERATION

TRACK 11 CHANNEL 13 100% CAL = 242.01
TEST S.I. SLED T4-22 DATE 6-8-81



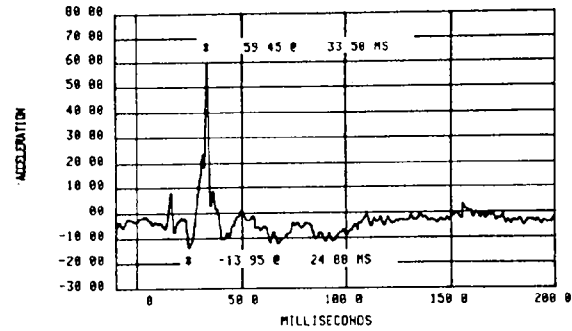
HEAD LATERAL ACCELERATION

TRACK 11 CHANNEL 14 100% CAL = 255.38
TEST S.I. SLED T4-22 DATE 6-8-81



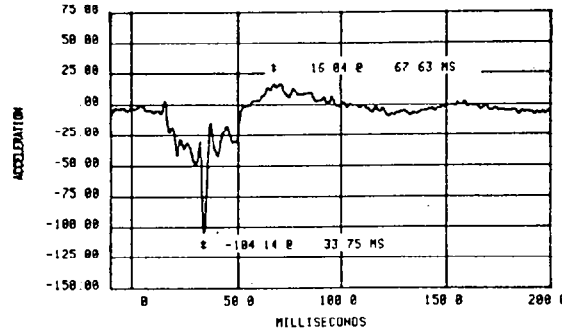
HEAD VERTICAL ACCELERATION

TRACK 11 CHANNEL 7 100% CAL = 329.60
TEST S.I. SLED T4-22 DATE 6-8-81



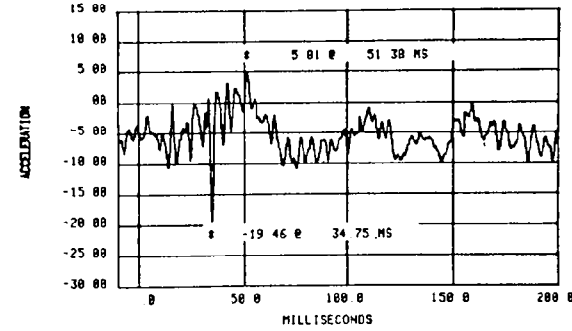
PELVIS LONGITUDINAL ACCELERATION

TRACK 11 CHANNEL 8 100% CAL = 333.32
TEST S.I. SLED T4-22 DATE 6-8-81



PELVIS LATERAL ACCELERATION

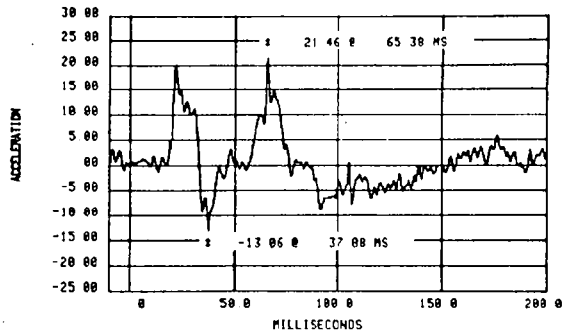
TRACK 11 CHANNEL 9 100% CAL = 317.10
TEST S.I. SLED T4-22 DATE 6-8-81



PELVIS VERTICAL ACCELERATION

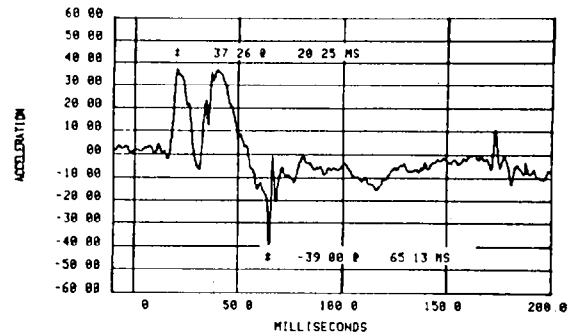
T4-22

TRACK: 2 CHANNEL: 7 100% CAL = 382.60
TEST: S I SLED T4-22 DATE: 6-8-81



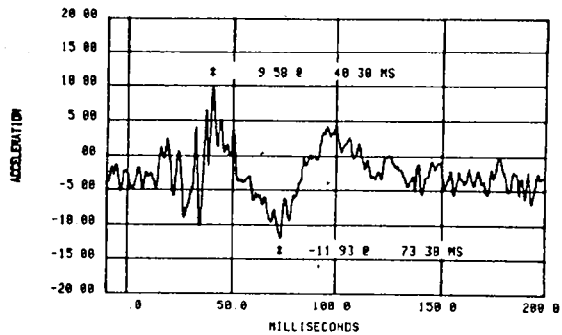
UPPER THORAX LONGITUDINAL ACCELERATION

TRACK: 2 CHANNEL: 8 100% CAL = 359.31
TEST: S I SLED T4-22 DATE: 6-8-81



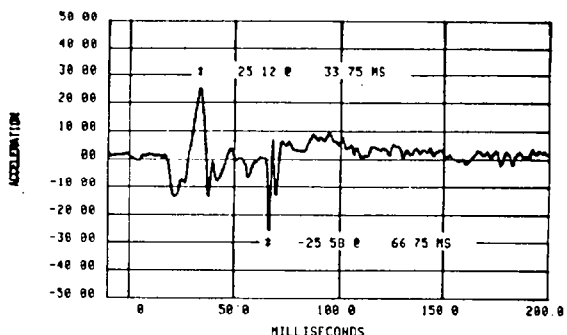
UPPER THORAX LATERAL ACCELERATION

TRACK: 2 CHANNEL: 9 100% CAL = 325.29
TEST: S I SLED T4-22 DATE: 6-8-81



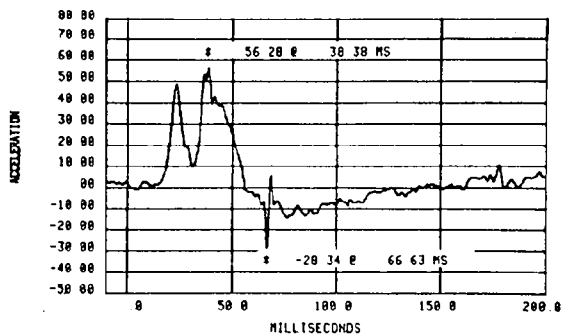
UPPER THORAX VERTICAL ACCELERATION

TRACK: 11 CHANNEL: 1 100% CAL = 371.76
TEST: S I SLED T4-22 DATE: 6-8-81



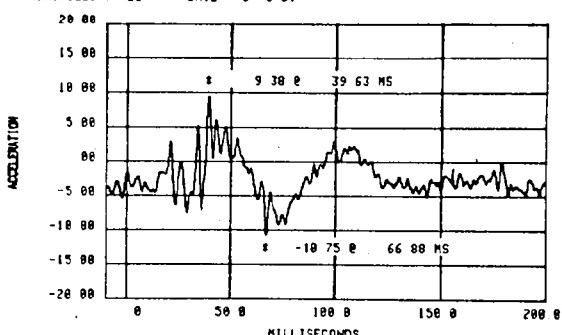
LOWER THORAX LONGITUDINAL ACCELERATION

TRACK: 11 CHANNEL: 2 100% CAL = 333.38
TEST: S I SLED T4-22 DATE: 6-8-81



LOWER THORAX LATERAL ACCELERATION

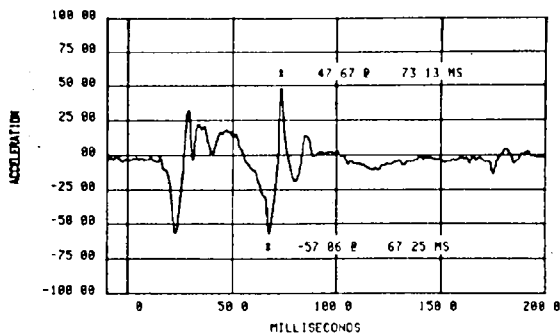
TRACK: 11 CHANNEL: 3 100% CAL = 323.12
TEST: S I SLED T4-22 DATE: 6-8-81



LOWER THORAX VERTICAL ACCELERATION

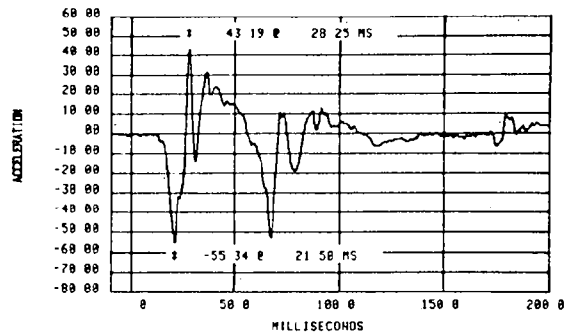
T4-22

TRACK: 2 CHANNEL: 4 100% CAL = 378 77
TEST S: 1 SLED T4-22 DATE: 6- 8-81



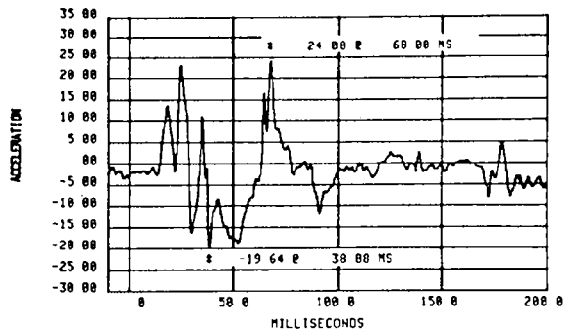
UPPER STERNUM LONGITUDINAL ACCELERATION

TRACK: 2 CHANNEL: 3 100% CAL = 316 99
TEST S: 1 SLED T4-22 DATE: 6- 8-81



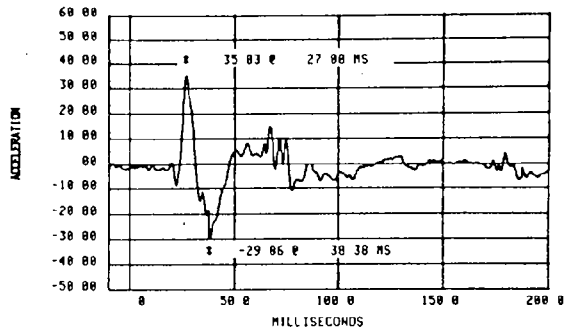
LOWER STERNUM LONGITUDINAL ACCELERATION

TRACK: 2 CHANNEL: 13 100% CAL = 387 14
TEST S: 1 SLED T4-22 DATE: 6- 8-81



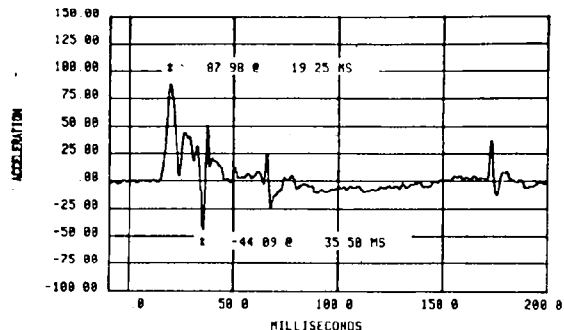
RIGHT LOWER RIB LONGITUDINAL ACCELERATION

TRACK: 2 CHANNEL: 11 100% CAL = 329 42
TEST S: 1 SLED T4-22 DATE: 6- 8-81



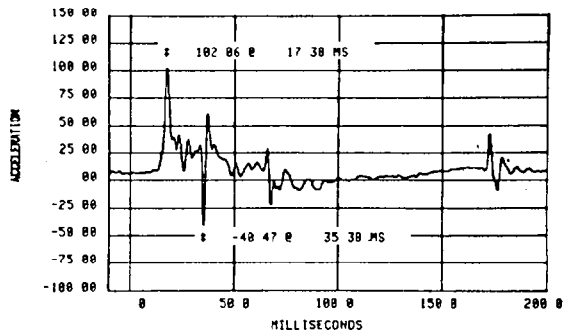
LEFT LOWER RIB LONGITUDINAL ACCELERATION

TRACK: 2 CHANNEL: 1 100% CAL = 334 15
TEST S: 1 SLED T4-22 DATE: 6- 8-81



RIGHT UPPER RIB LATERAL ACCELERATION

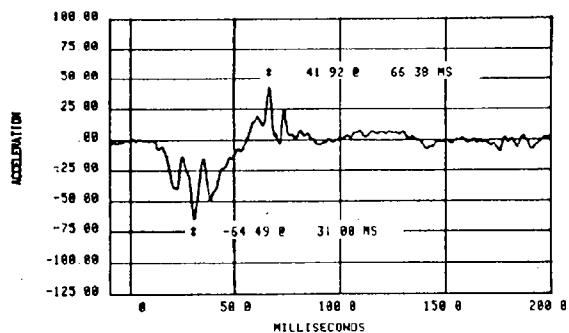
TRACK: 2 CHANNEL: 12 100% CAL = 320 65
TEST S: 1 SLED T4-22 DATE: 6- 8-81



RIGHT LOWER RIB LATERAL ACCELERATION

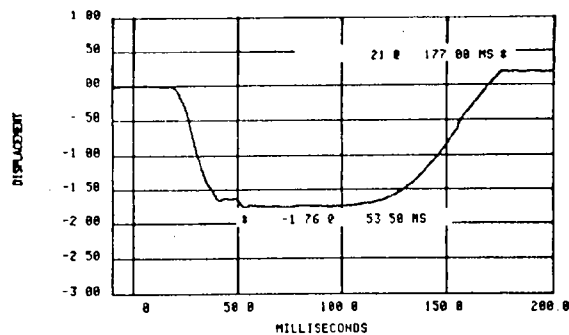
T4-22

TRACK: 2 CHANNEL: 2 100% CAL = 362.21
TEST: S1 SLED T4-22 DATE 6-8-81

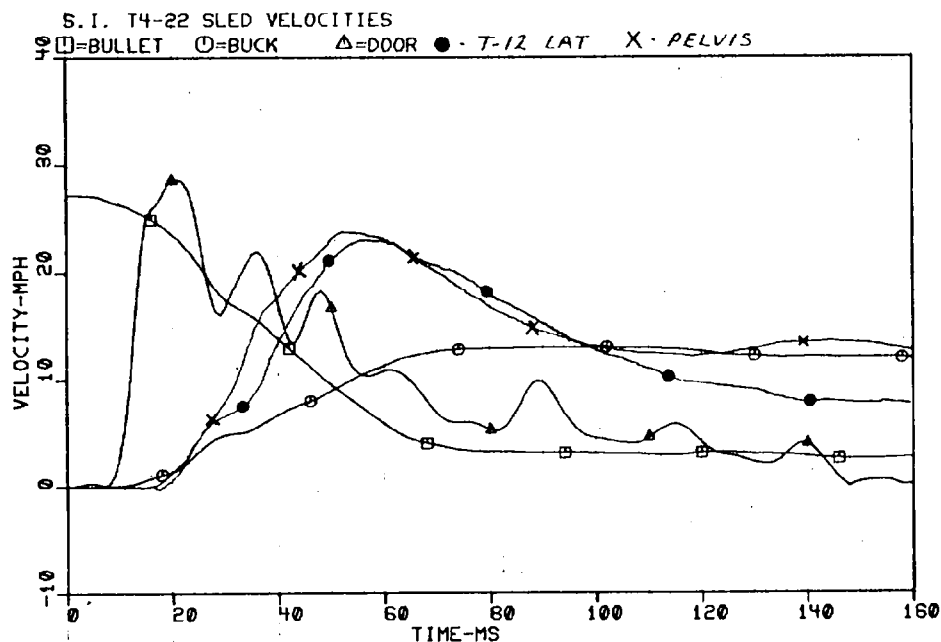


LEFT UPPER RIB LATERAL ACCELERATION

TRACK: 11 CHANNEL: 11 100% CAL = 2.85
TEST: S1 SLED T4-22 DATE 6-8-81

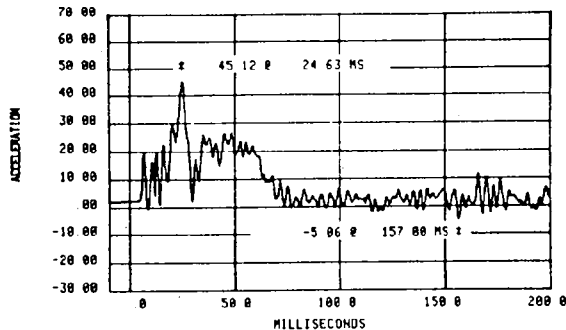


LOWER RIB DISPLACEMENT



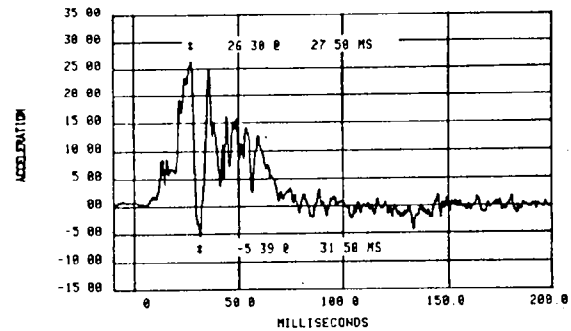
T4-22

TRACK: 3 CHANNEL: 4 100% CAL = 69.89
TEST: S1 SLED T4-23 DATE: 6-18-81



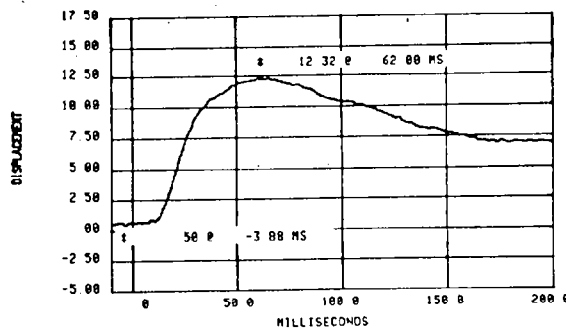
BULLET SLED LONGITUDINAL ACCELERATION

TRACK: 2 CHANNEL: 10 100% CAL = 154.75
TEST: S1 SLED T4-23 DATE: 6-18-81



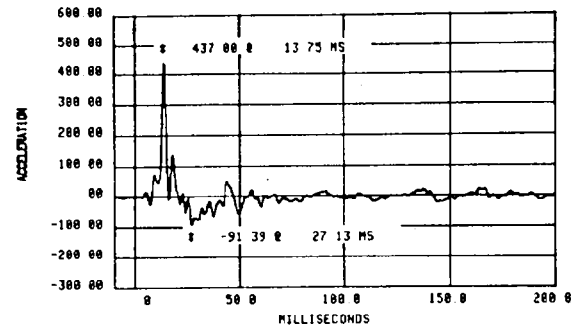
TARGET SLED LATERAL ACCELERATION

TRACK: 3 CHANNEL: 5 100% CAL = 22.50
TEST: S1 SLED T4-23 DATE: 6-18-81



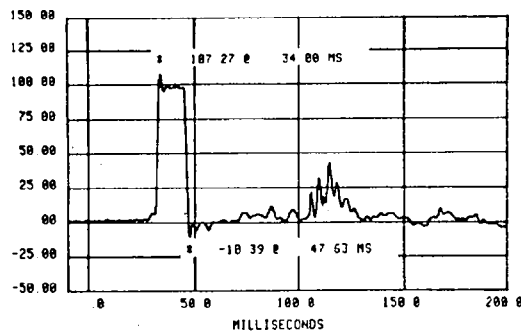
DOOR DISPLACEMENT

TRACK: 2 CHANNEL: 14 100% CAL = 300.61
TEST: S1 SLED T4-23 DATE: 6-18-81



DOOR LATERAL ACCELERATION

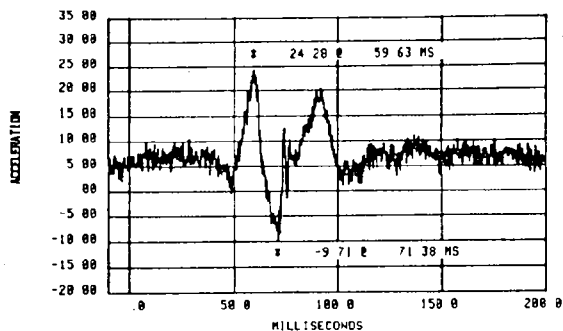
TRACK: 3 CHANNEL: 10 100% CAL = 100.00
TEST: S1 SLED T4-23 DATE: 6-18-81



PADDING CONTACT TIME

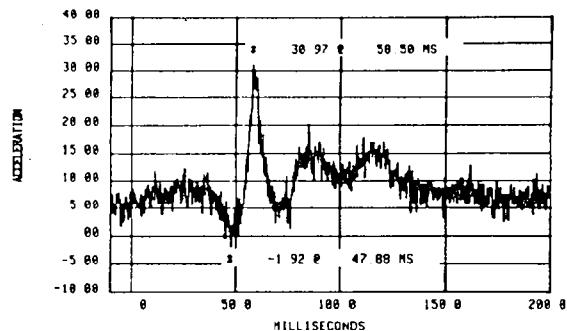
T4-23

TRACK: 3 CHANNEL: 12 100% CAL = 215.64
TEST: S1 SLED T4-23 DATE: 6-10-81



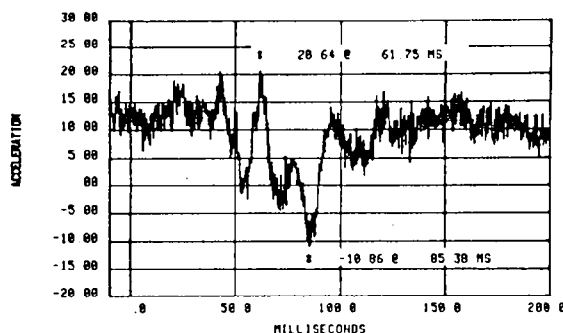
HEAD LONGITUDINAL ACCELERATION

TRACK: 3 CHANNEL: 13 100% CAL = 242.81
TEST: S1 SLED T4-23 DATE: 6-10-81



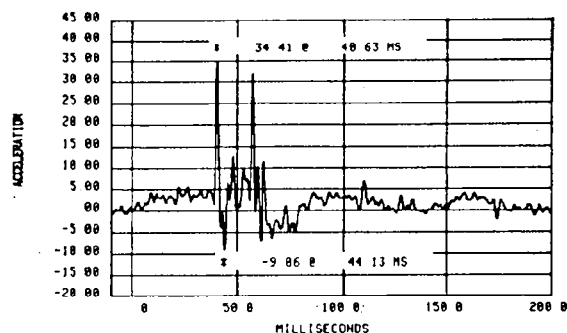
HEAD LATERAL ACCELERATION

TRACK: 3 CHANNEL: 14 100% CAL = 255.58
TEST: S1 SLED T4-23 DATE: 6-10-81



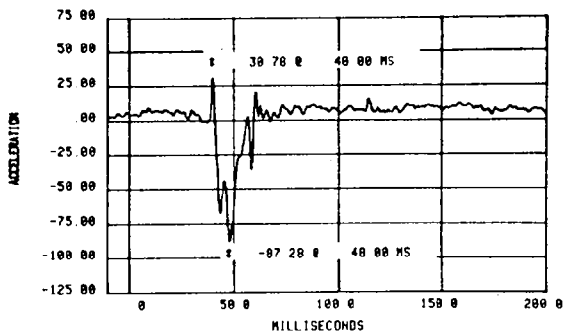
HEAD VERTICAL ACCELERATION

TRACK: 3 CHANNEL: 7 100% CAL = 329.68
TEST: S1 SLED T4-23 DATE: 6-10-81



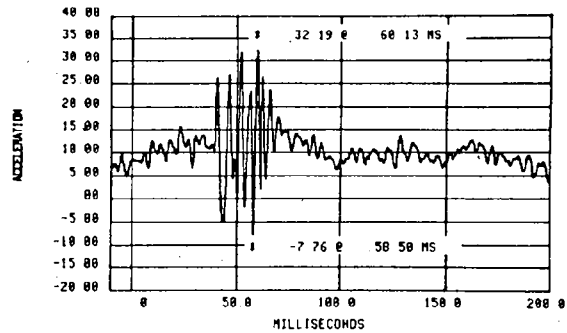
PELVIS LONGITUDINAL ACCELERATION

TRACK: 3 CHANNEL: 8 100% CAL = 333.32
TEST: S1 SLED T4-23 DATE: 6-10-81



PELVIS LATERAL ACCELERATION

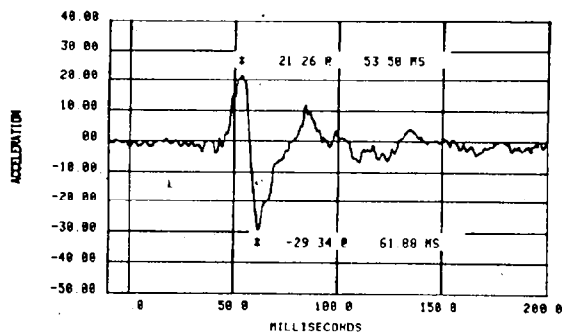
TRACK: 3 CHANNEL: 9 100% CAL = 317.18
TEST: S1 SLED T4-23 DATE: 6-10-81



PELVIS VERTICAL ACCELERATION

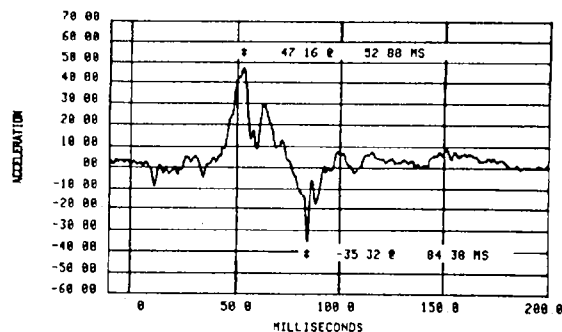
T4-23

TRACK: 2 CHANNEL: 7 100% CAL = 392.60
TEST S: 1 SLED T4-23 DATE: 6-10-81



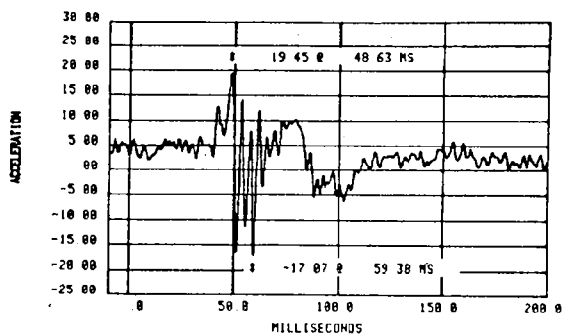
UPPER THORAX LONGITUDINAL ACCELERATION

TRACK: 2 CHANNEL: 8 100% CAL = 359.31
TEST S: 1 SLED T4-23 DATE: 6-10-81



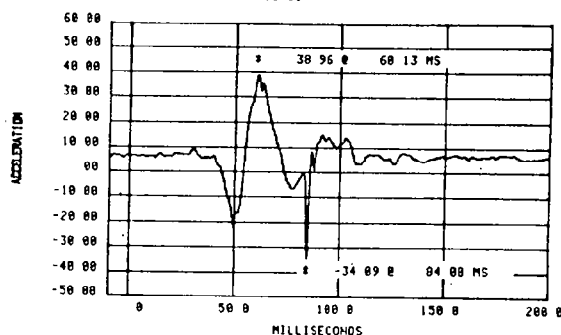
UPPER THORAX LATERAL ACCELERATION

TRACK: 2 CHANNEL: 9 100% CAL = 325.29
TEST S: 1 SLED T4-23 DATE: 6-10-81



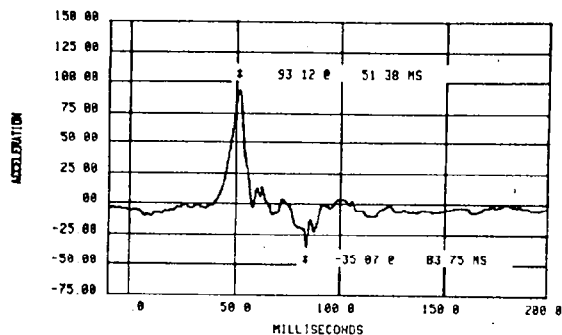
UPPER THORAX VERTICAL ACCELERATION

TRACK: 3 CHANNEL: 1 100% CAL = 371.76
TEST S: 1 SLED T4-23 DATE: 6-10-81



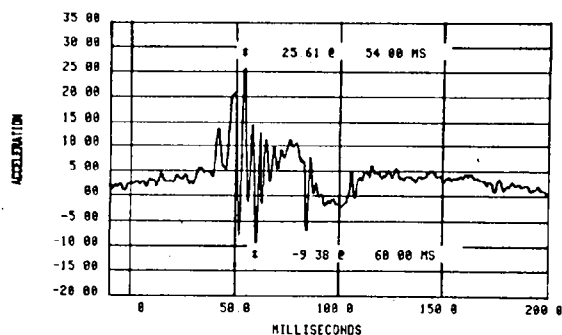
LOWER THORAX LONGITUDINAL ACCELERATION

TRACK: 3 CHANNEL: 2 100% CAL = 333.30
TEST S: 1 SLED T4-23 DATE: 6-10-81



LOWER THORAX LATERAL ACCELERATION

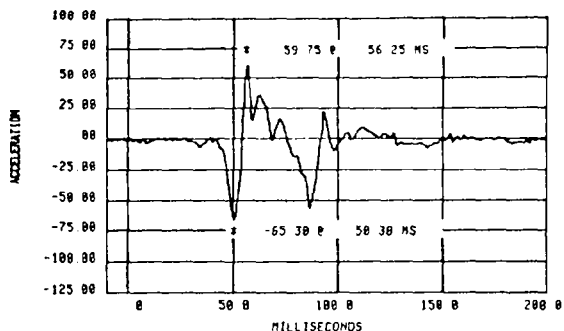
TRACK: 3 CHANNEL: 3 100% CAL = 323.12
TEST S: 1 SLED T4-23 DATE: 6-10-81



LOWER THORAX VERTICAL ACCELERATION

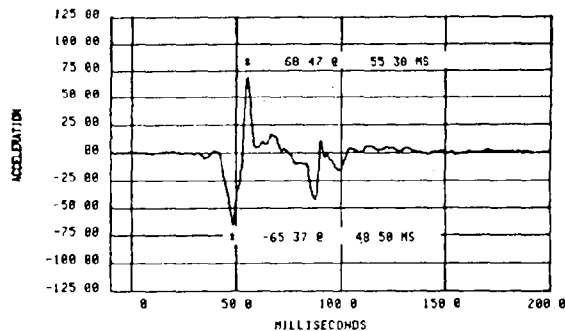
T4-23

TRACK: 2 CHANNEL: 4 100% CAL = -378.77
TEST S: 1 SLED T4-23 DATE: 6-18-81



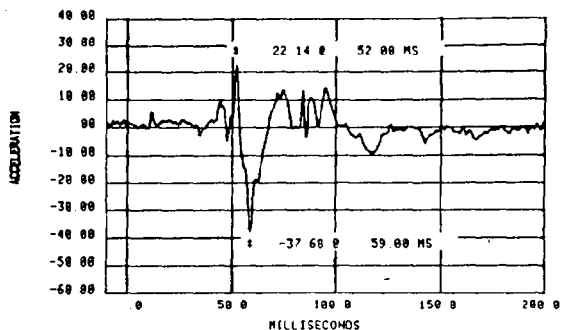
UPPER STERNUM LONGITUDINAL ACCELERATION

TRACK: 2 CHANNEL: 3 100% CAL = -316.99
TEST S: 1 SLED T4-23 DATE: 6-18-81



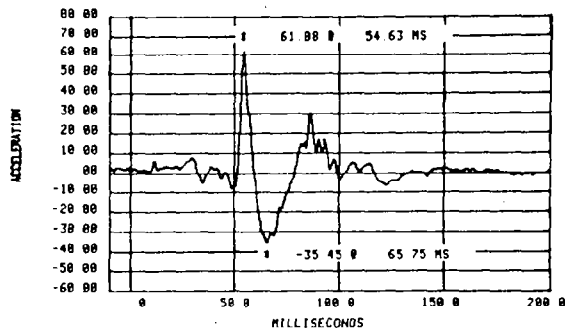
LOWER STERNUM LONGITUDINAL ACCELERATION

TRACK: 2 CHANNEL: 13 100% CAL = -387.14
TEST S: 1 SLED T4-23 DATE: 6-18-81



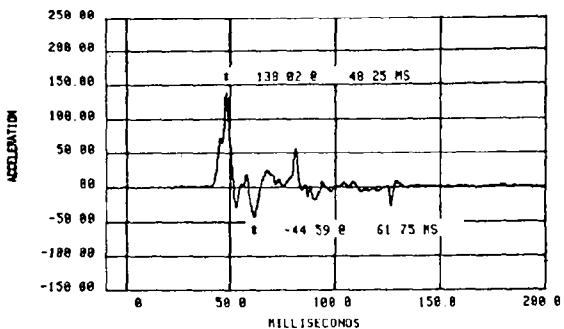
RIGHT LOWER RIB LONGITUDINAL ACCELERATION

TRACK: 2 CHANNEL: 11 100% CAL = -329.42
TEST S: 1 SLED T4-23 DATE: 6-18-81



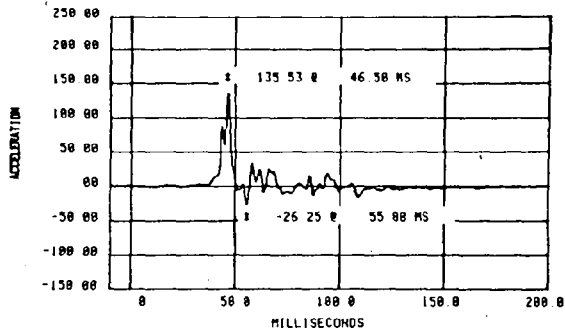
LEFT LOWER RIB LONGITUDINAL ACCELERATION

TRACK: 2 CHANNEL: 1 100% CAL = -334.15
TEST S: 1 SLED T4-23 DATE: 6-18-81



RIGHT UPPER RIB LATERAL ACCELERATION

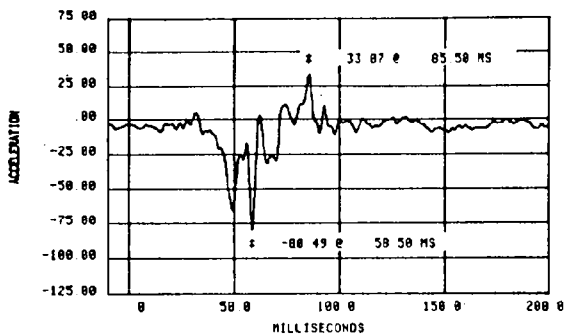
TRACK: 2 CHANNEL: 12 100% CAL = -328.65
TEST S: 1 SLED T4-23 DATE: 6-18-81



RIGHT LOWER RIB LATERAL ACCELERATION

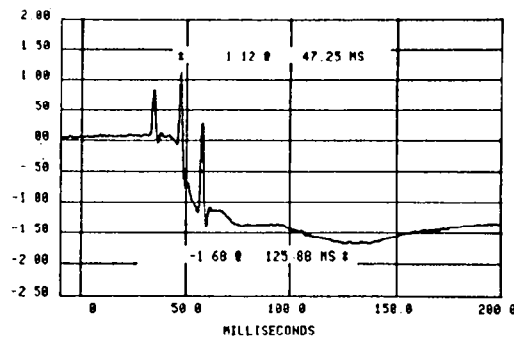
T4-23

TRACK: 2 CHANNEL: 2 100% CAL = 352.21
TEST: S.I. SLED T4-23 DATE: 6-18-81

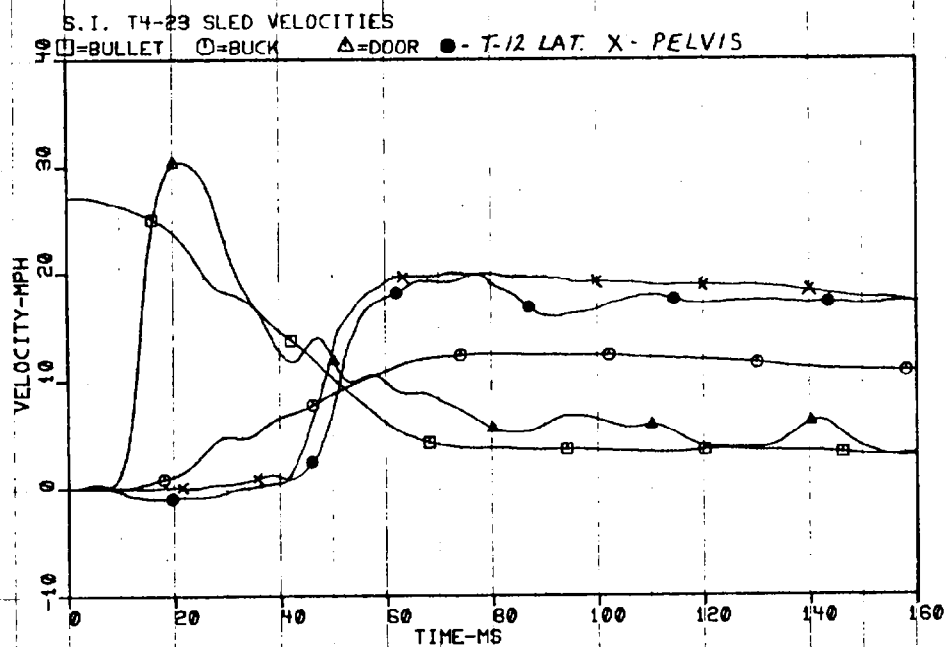


LEFT UPPER RIB LATERAL ACCELERATION

TRACK: 3 CHANNEL: 11 100% CAL = 2.83
TEST: S.I. SLED T4-23 DATE: 6-18-81

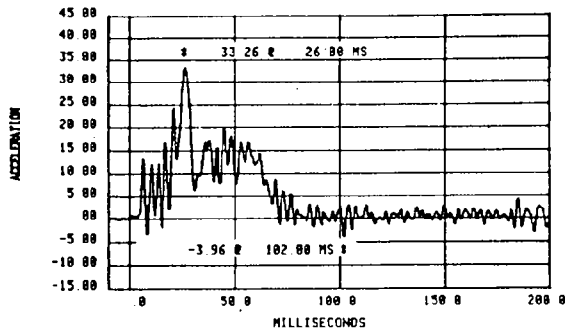


LOWER RIB DISPLACEMENT



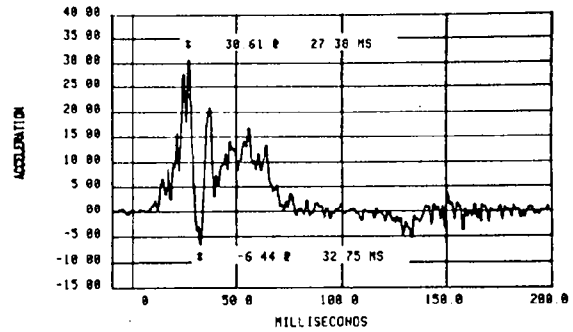
T4-23

TRACK: 3 CHANNEL: 4 100% CAL = 69.89
TEST: S.1 SLED T4-24 DATE: 6-18-81



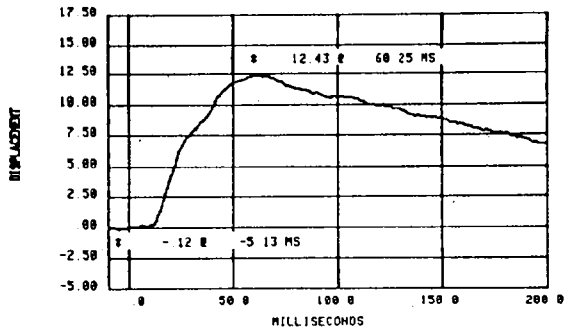
BULLET SLED LONGITUDINAL ACCELERATION

TRACK: 2 CHANNEL: 10 100% CAL = 154.75
TEST: S.1 SLED T4-24 DATE: 6-18-81



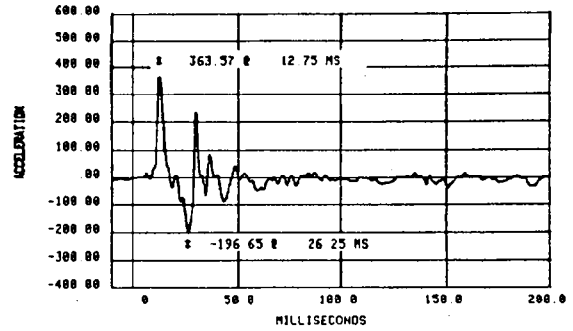
TARGET SLED LATERAL ACCELERATION

TRACK: 3 CHANNEL: 5 100% CAL = 22.50
TEST: S.1 SLED T4-24 DATE: 6-18-81



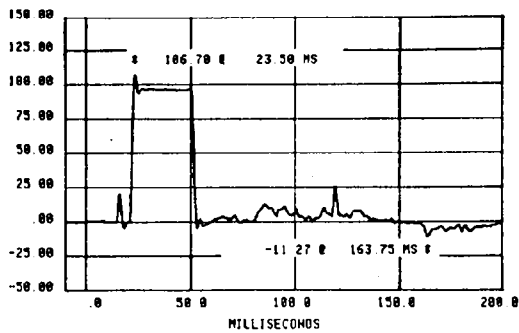
DOOR DISPLACEMENT

TRACK: 2 CHANNEL: 14 100% CAL = 500.61
TEST: S.1 SLED T4-24 DATE: 6-18-81

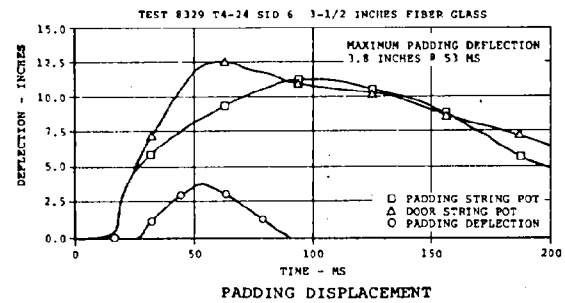


DOOR LATERAL ACCELERATION

TRACK: 3 CHANNEL: 10 100% CAL = 100.00
TEST: S.1 SLED T4-24 DATE: 6-18-81

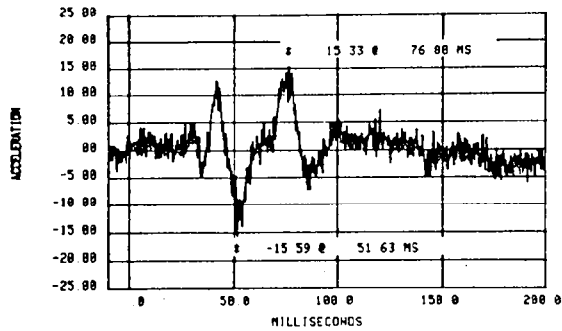


PADDING CONTACT TIME



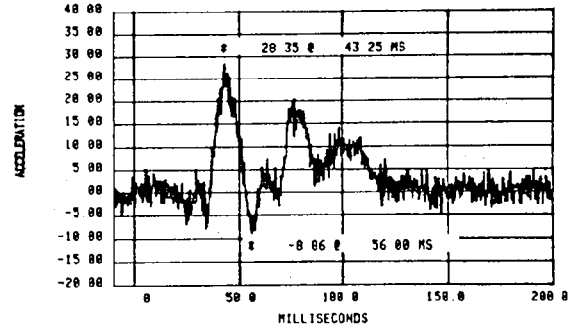
T4-24

TRACK: 3 CHANNEL: 12 100% CAL = 215.64
TEST: S I SLED T4-24 DATE: 6-18-81



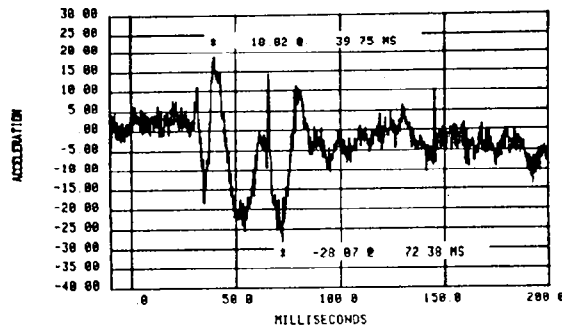
HEAD LONGITUDINAL ACCELERATION

TRACK: 3 CHANNEL: 13 100% CAL = 242.01
TEST: S I SLED T4-24 DATE: 6-18-81



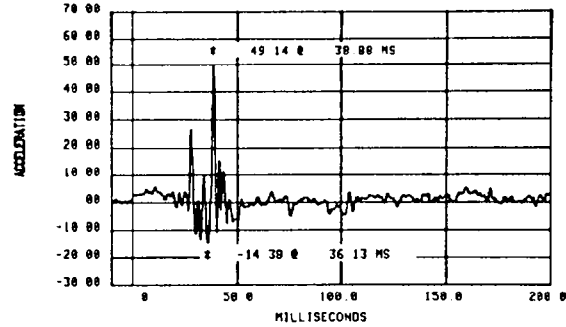
HEAD LATERAL ACCELERATION

TRACK: 3 CHANNEL: 14 100% CAL = 235.58
TEST: T4-19 S I SLED DATE: 6-3-81



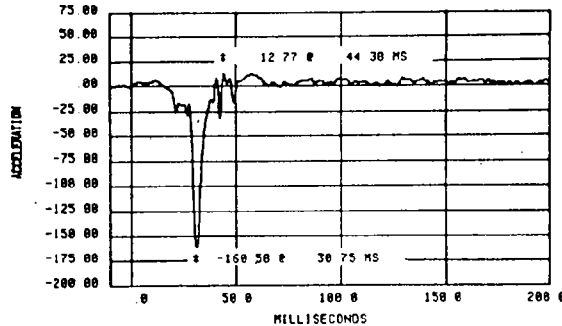
HEAD VERTICAL ACCELERATION

TRACK: 3 CHANNEL: 7 100% CAL = 329.60
TEST: S I SLED T4-24 DATE: 6-18-81



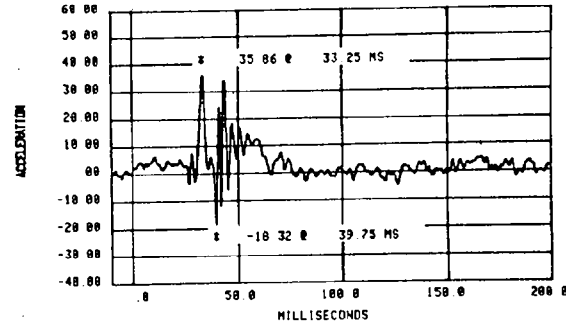
PELVIS LONGITUDINAL ACCELERATION

TRACK: 3 CHANNEL: 8 100% CAL = 333.32
TEST: S I SLED T4-24 DATE: 6-18-81



PELVIS LATERAL ACCELERATION

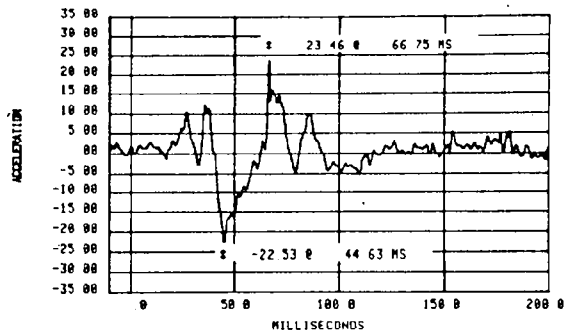
TRACK: 3 CHANNEL: 9 100% CAL = 317.10
TEST: S I SLED T4-24 DATE: 6-18-81



PELVIS VERTICAL ACCELERATION

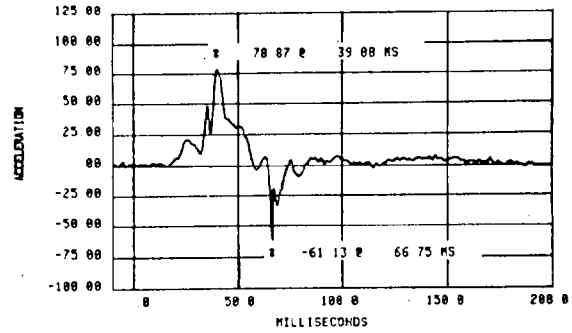
T4-24

TRACK: 2 CHANNEL: 7 100% CAL = 382.68
TEST: S I SLED T4-24 DATE: 6-18-81



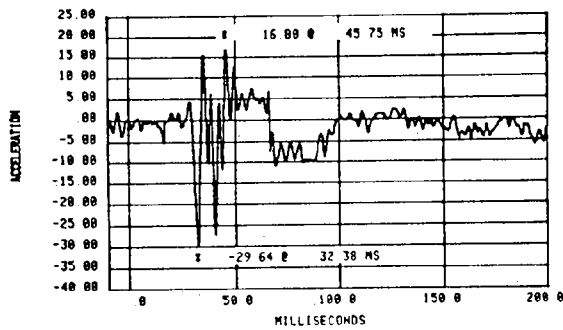
UPPER THORAX LONGITUDINAL ACCELERATION

TRACK: 2 CHANNEL: 8 100% CAL = 359.31
TEST: S I SLED T4-24 DATE: 6-18-81



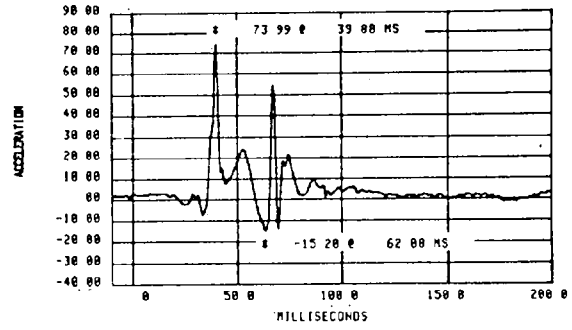
UPPER THORAX LATERAL ACCELERATION

TRACK: 2 CHANNEL: 9 100% CAL = 325.29
TEST: S I SLED T4-24 DATE: 6-18-81



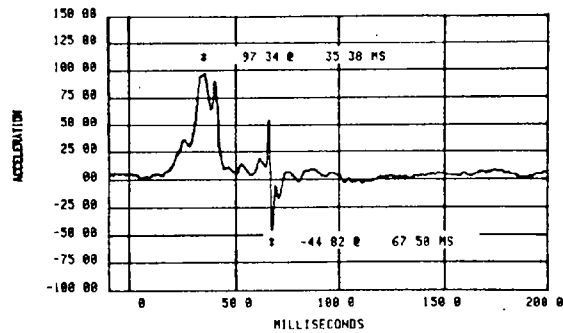
UPPER THORAX VERTICAL ACCELERATION

TRACK: 3 CHANNEL: 1 100% CAL = 371.76
TEST: S I SLED T4-24 DATE: 6-18-81



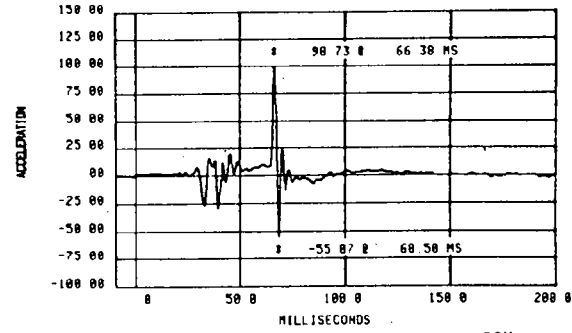
LOWER THORAX LONGITUDINAL ACCELERATION

TRACK: 3 CHANNEL: 2 100% CAL = 333.38
TEST: S I SLED T4-24 DATE: 6-18-81



LOWER THORAX LATERAL ACCELERATION

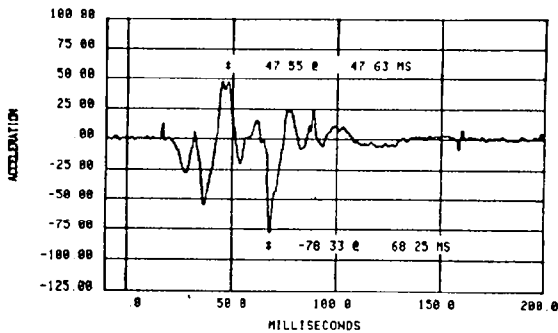
TRACK: 3 CHANNEL: 3 100% CAL = 323.12
TEST: S I SLED T4-24 DATE: 6-18-81



LOWER THORAX VERTICAL ACCELERATION

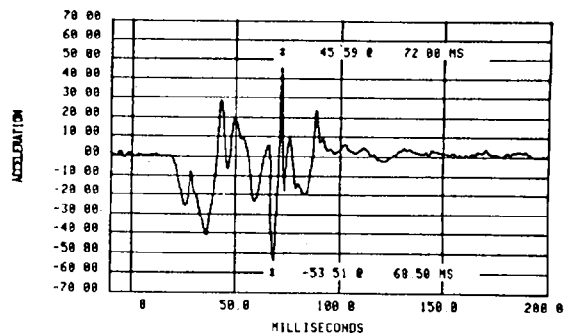
T4-24

TRACK: 2 CHANNEL: 4 100% CAL = 370.77
TEST: S I SLED T4-24 DATE: 6-10-81



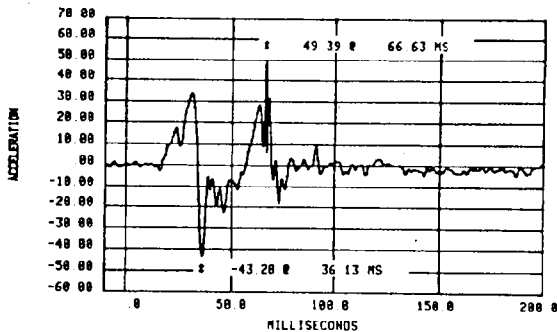
UPPER STERNUM LONGITUDINAL ACCELERATION

TRACK: 2 CHANNEL: 3 100% CAL = 316.99
TEST: S I SLED T4-24 DATE: 6-10-81



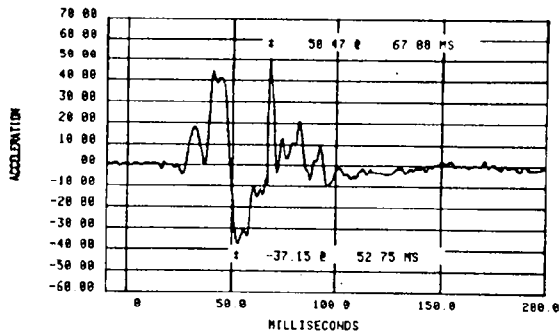
LOWER STERNUM LONGITUDINAL ACCELERATION

TRACK: 2 CHANNEL: 13 100% CAL = 387.14
TEST: S I SLED T4-24 DATE: 6-10-81



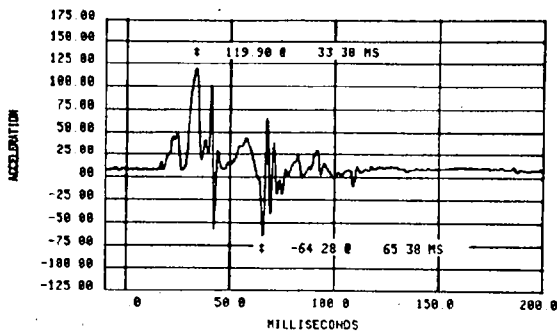
RIGHT LOWER RIB LONGITUDINAL ACCELERATION

TRACK: 2 CHANNEL: 11 100% CAL = 329.42
TEST: S I SLED T4-24 DATE: 6-10-81



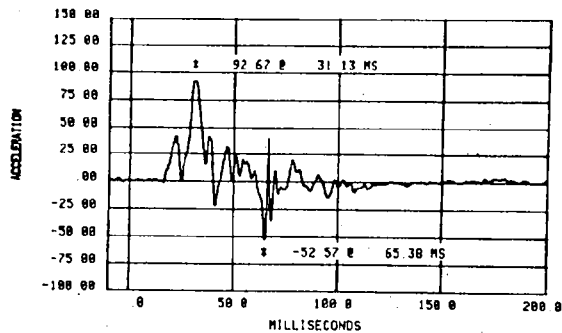
LEFT LOWER RIB LONGITUDINAL ACCELERATION

TRACK: 2 CHANNEL: 1 100% CAL = 334.15
TEST: S I SLED T4-24 DATE: 6-10-81



RIGHT UPPER RIB LATERAL ACCELERATION

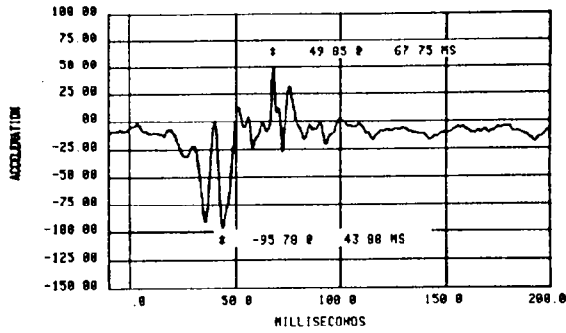
TRACK: 2 CHANNEL: 12 100% CAL = 320.65
TEST: S I SLED T4-24 DATE: 6-10-81



RIGHT LOWER RIB LATERAL ACCELERATION

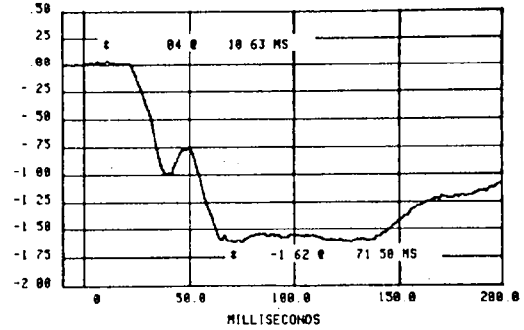
T4-24

TRACK: 2 CHANNEL: 2 100% CAL = 362.21
TEST: S. I. SLED T4-24 DATE: 6-10-81

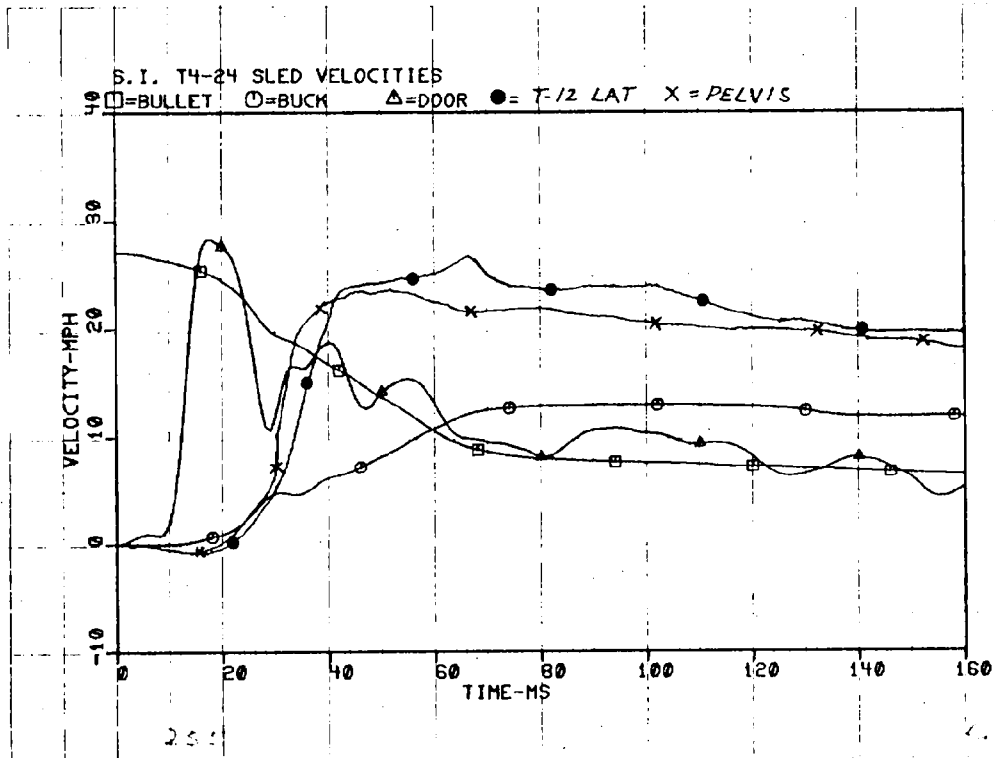


LEFT UPPER RIB LATERAL ACCELERATION

TRACK: 3 CHANNEL: 11 100% CAL = 2.85
TEST: S. I. SLED T4-24 DATE: 6-10-81

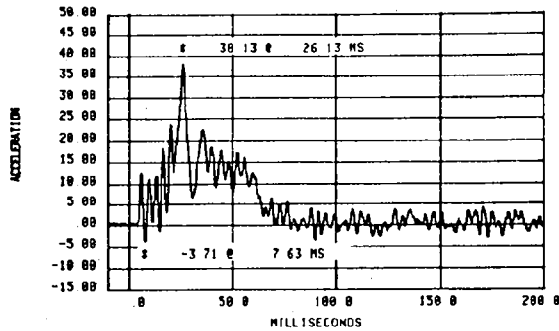


LOWER RIB DISPLACEMENT



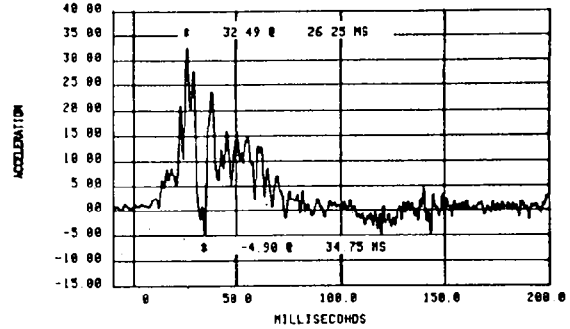
T4-24

TRACK: 3 CHANNEL: 4 100% CAL = 69.89
TEST: S I SLED T4-25 DATE: 6-10-81



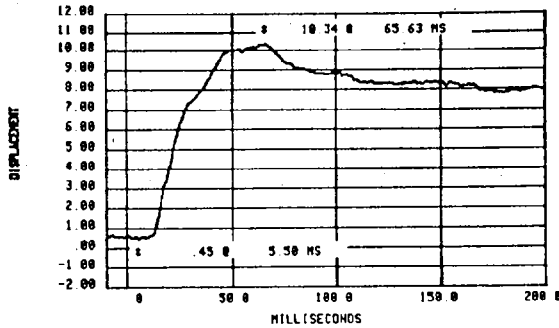
BULLET SLED LONGITUDINAL ACCELERATION

TRACK: 2 CHANNEL: 18 100% CAL = 154.75
TEST: S I SLED T4-25 DATE: 6-10-81



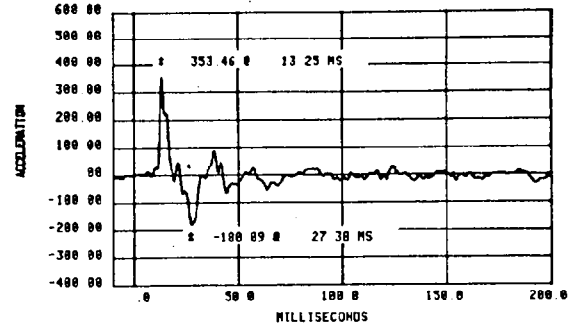
TARGET SLED LATERAL ACCELERATION

TRACK: 3 CHANNEL: 5 100% CAL = 20.37
TEST: S I SLED T4-25 DATE: 6-10-81



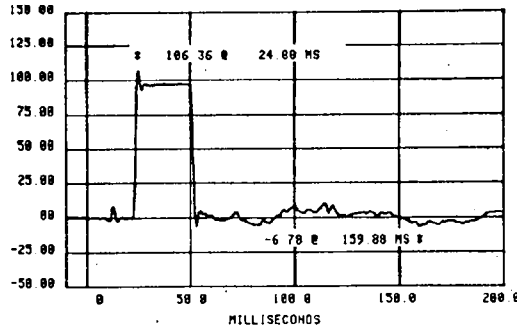
DOOR DISPLACEMENT

TRACK: 2 CHANNEL: 14 100% CAL = 388.61
TEST: S I SLED T4-25 DATE: 6-10-81

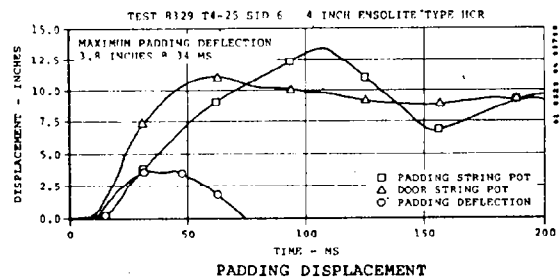


DOOR LATERAL ACCELERATION

TRACK: 3 CHANNEL: 10 100% CAL = 100.00
TEST: S I SLED T4-25 DATE: 6-10-81

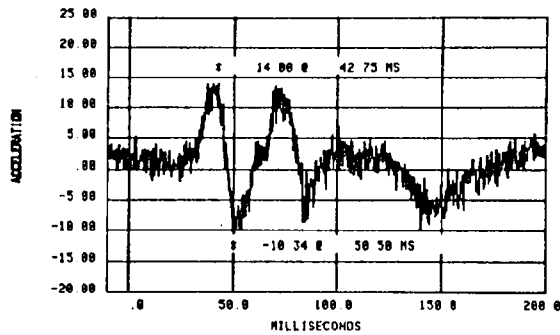


PADDING CONTACT TIME



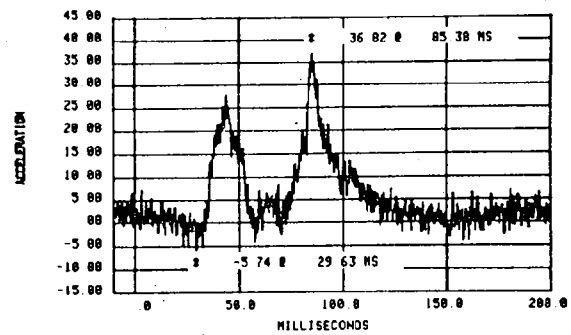
T4-25

TRACK: 3 CHANNEL: 12 100% CAL = 215.64
TEST: S. I. SLED T4-25 DATE: 6-10-81



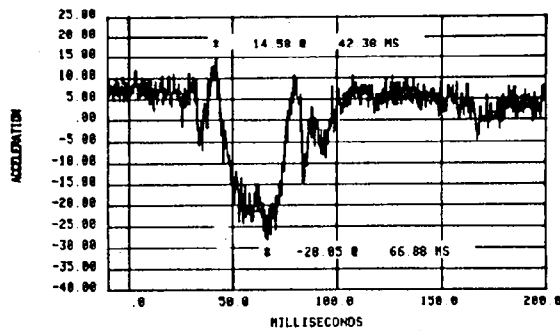
HEAD LONGITUDINAL ACCELERATION

TRACK: 3 CHANNEL: 13 100% CAL = 242.01
TEST: S. I. SLED T4-25 DATE: 6-10-81



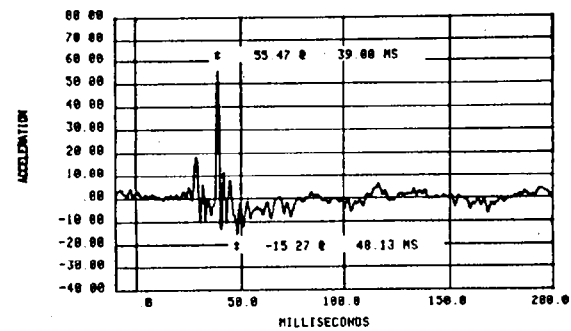
HEAD LATERAL ACCELERATION

TRACK: 3 CHANNEL: 14 100% CAL = 235.30
TEST: S. I. SLED T4-25 DATE: 6-10-81



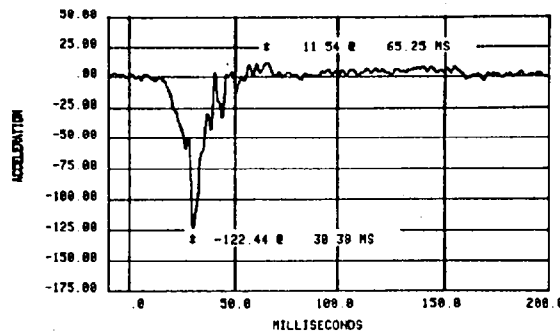
HEAD VERTICAL ACCELERATION

TRACK: 3 CHANNEL: 7 100% CAL = 329.60
TEST: S. I. SLED T4-25 DATE: 6-10-81



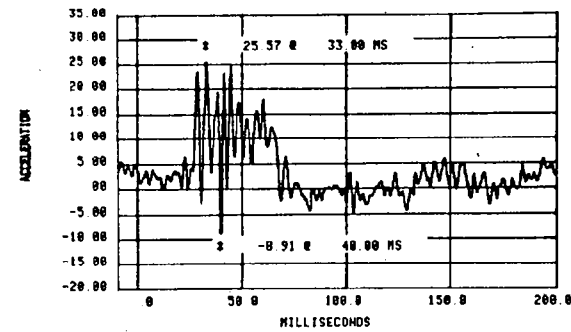
PELVIS LONGITUDINAL ACCELERATION

TRACK: 3 CHANNEL: 8 100% CAL = 333.32
TEST: S. I. SLED T4-25 DATE: 6-10-81



PELVIS LATERAL ACCELERATION

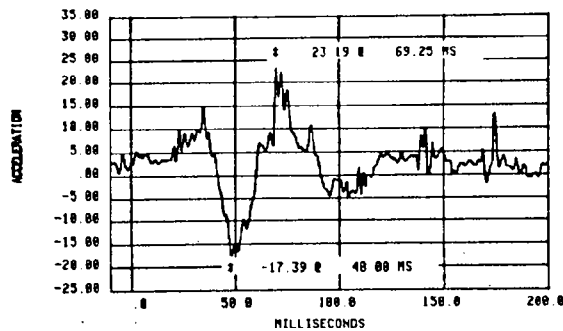
TRACK: 3 CHANNEL: 9 100% CAL = 317.18
TEST: S. I. SLED T4-25 DATE: 6-10-81



PELVIS VERTICAL ACCELERATION

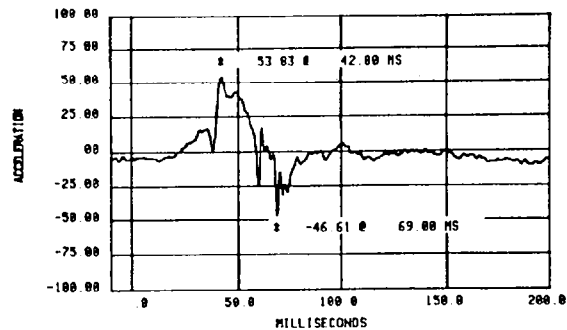
T4-25

TRACK: 2 CHANNEL: 7 100% CAL = 382.68
TEST: S.1 SLED T4-25 DATE: 6-18-81



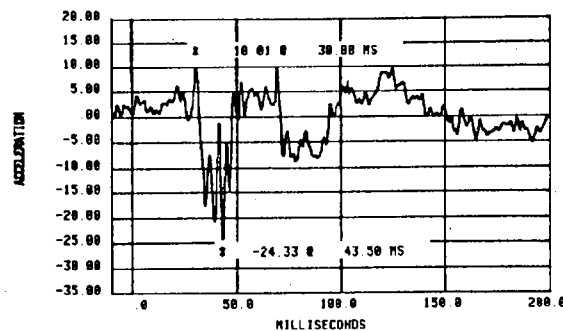
UPPER THORAX LONGITUDINAL ACCELERATION

TRACK: 2 CHANNEL: 8 100% CAL = 359.31
TEST: S.1 SLED T4-25 DATE: 6-18-81



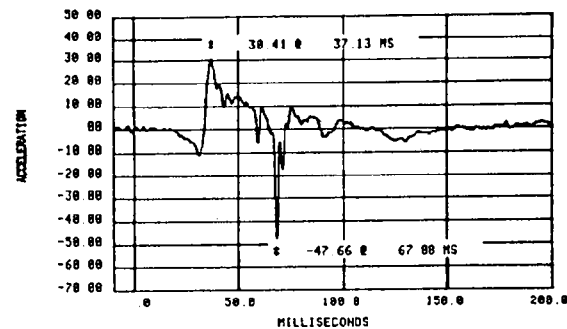
UPPER THORAX LATERAL ACCELERATION

TRACK: 2 CHANNEL: 9 100% CAL = 325.29
TEST: S.1 SLED T4-25 DATE: 6-18-81



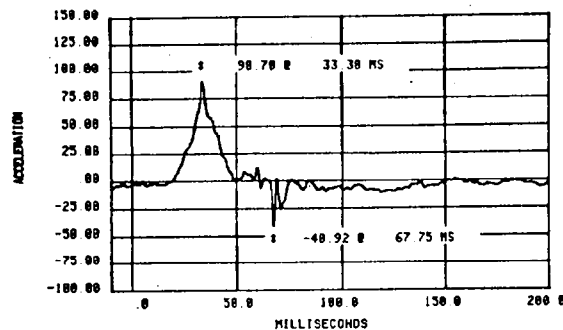
UPPER THORAX VERTICAL ACCELERATION

TRACK: 3 CHANNEL: 1 100% CAL = 371.76
TEST: S.1 SLED T4-25 DATE: 6-18-81



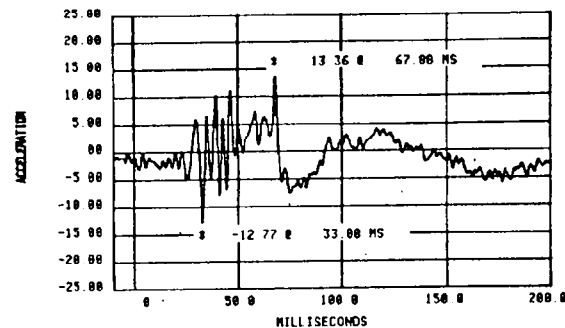
LOWER THORAX LONGITUDINAL ACCELERATION

TRACK: 3 CHANNEL: 2 100% CAL = 333.30
TEST: S.1 SLED T4-25 DATE: 6-18-81



LOWER THORAX LATERAL ACCELERATION

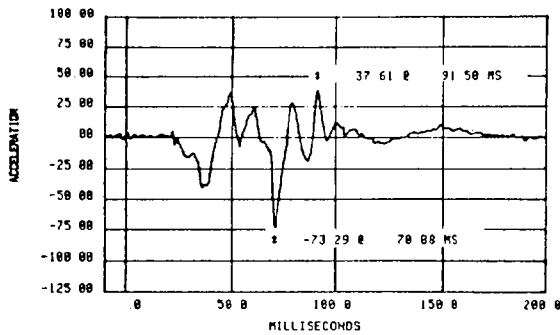
TRACK: 3 CHANNEL: 3 100% CAL = 323.12
TEST: S.1 SLED T4-25 DATE: 6-18-81



LOWER THORAX VERTICAL ACCELERATION

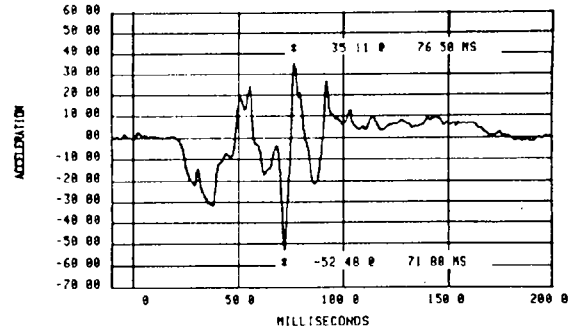
T4-25

TRACK: 2 CHANNEL: 4 100% CAL = 378.77
TEST S: 1 SLED T4-25 DATE: 6-10-81



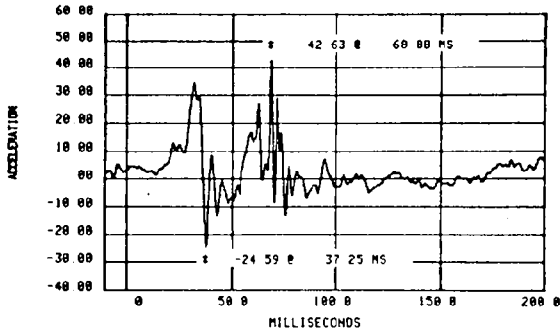
UPPER STERNUM LONGITUDINAL ACCELERATION

TRACK: 2 CHANNEL: 3 100% CAL = 316.99
TEST S: 1 SLED T4-25 DATE: 6-10-81



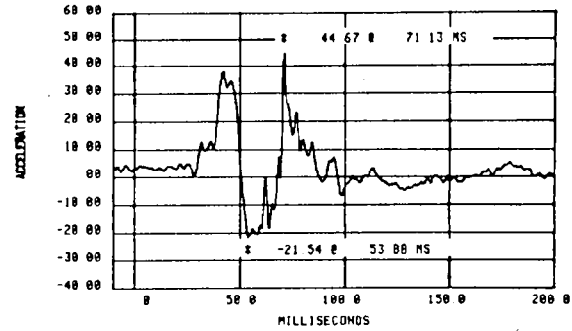
LOWER STERNUM LONGITUDINAL ACCELERATION

TRACK: 2 CHANNEL: 13 100% CAL = 387.14
TEST S: 1 SLED T4-25 DATE: 6-10-81



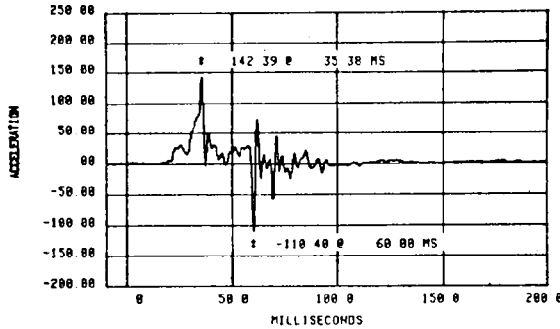
RIGHT LOWER RIB LONGITUDINAL ACCELERATION

TRACK: 2 CHANNEL: 11 100% CAL = 329.42
TEST S: 1 SLED T4-25 DATE: 6-10-81



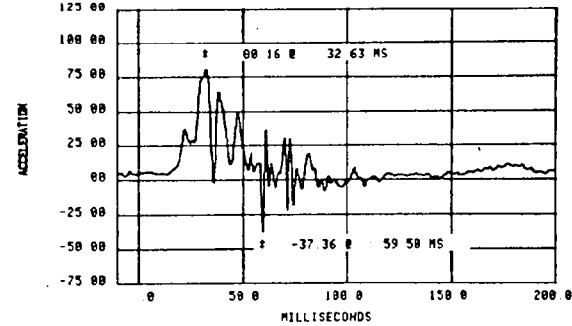
LEFT LOWER RIB LONGITUDINAL ACCELERATION

TRACK: 2 CHANNEL: 1 100% CAL = 334.15
TEST S: 1 SLED T4-25 DATE: 6-10-81



RIGHT UPPER RIB LATERAL ACCELERATION

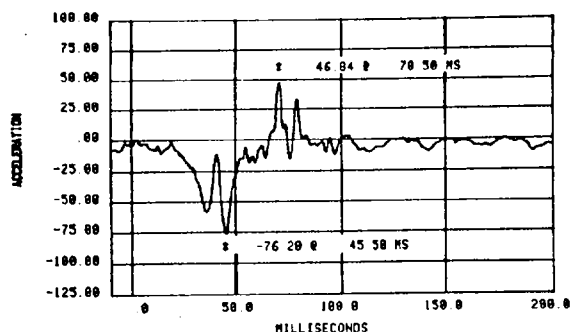
TRACK: 2 CHANNEL: 12 100% CAL = 320.65
TEST S: 1 SLED T4-25 DATE: 6-10-81



RIGHT LOWER RIB LATERAL ACCELERATION

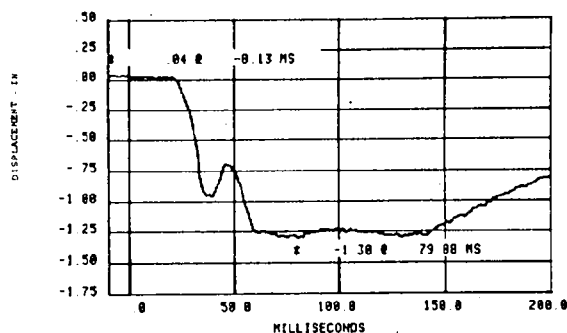
T4-25

TRACK: 2 CHANNEL: 2 100% CAL = 362.21
TEST: S. I. SLED T4-25 DATE: 6-10-81

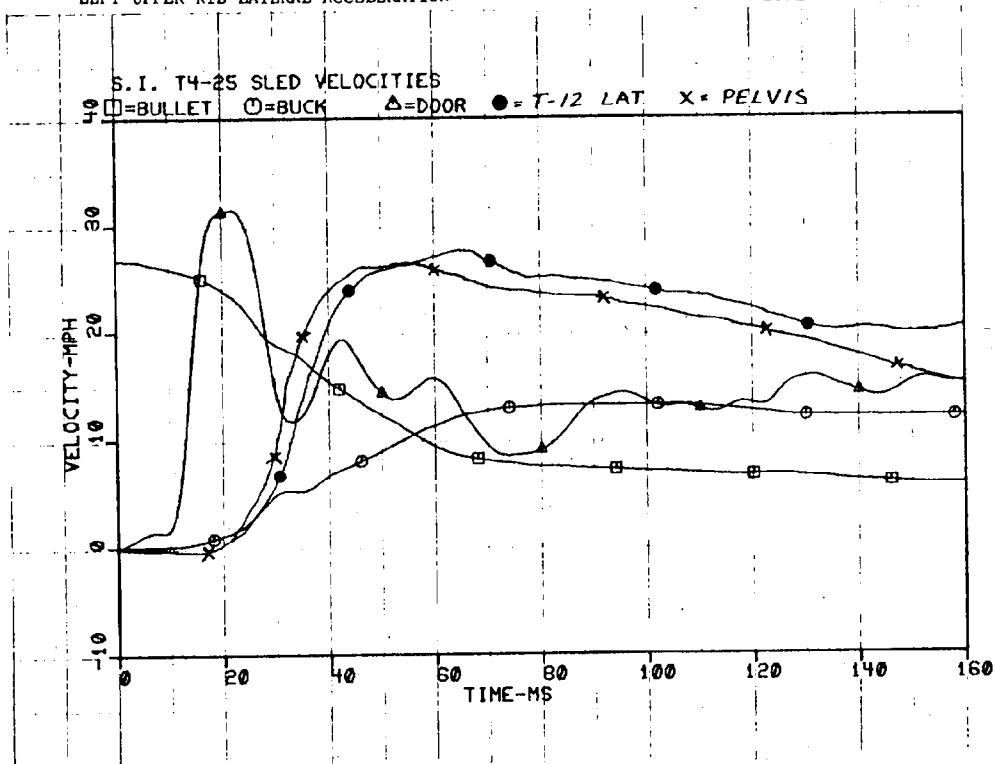


LEFT UPPER RIB LATERAL ACCELERATION

TRACK: 3 CHANNEL: 11 100% CAL = 2.85
TEST: S. I. SLED T4-25 DATE: 6-10-81

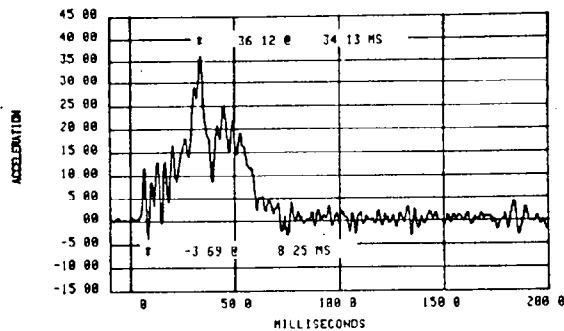


LOWER RIB DISPLACEMENT



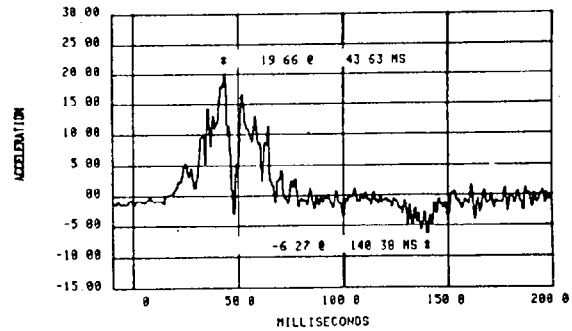
T4-25

TRACK: 3 CHANNEL: 4 100% CAL = 70.77
TEST S: 1 SLED T4-26 DATE: 6-11-81



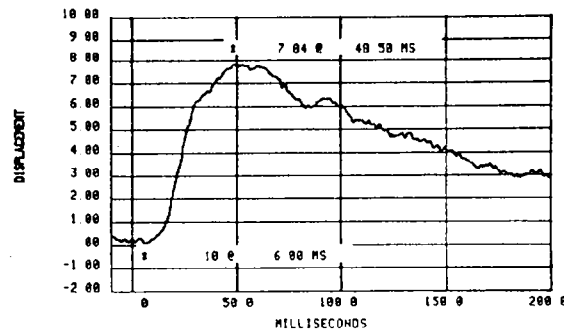
BULLET SLED LONGITUDINAL ACCELERATION

TRACK: 2 CHANNEL: 10 100% CAL = 154.75
TEST S: 1 SLED T4-26 DATE: 6-11-81



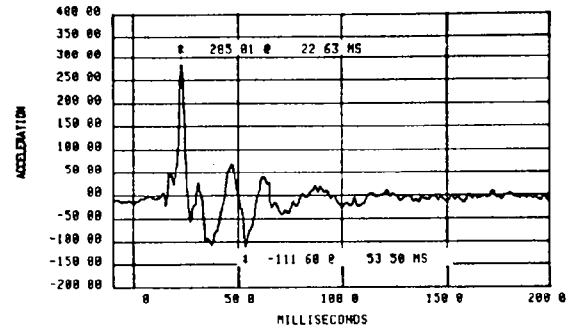
TARGET SLED LATERAL ACCELERATION

TRACK: 3 CHANNEL: 5 100% CAL = 22.50
TEST S: 1 SLED T4-26 DATE: 6-11-81



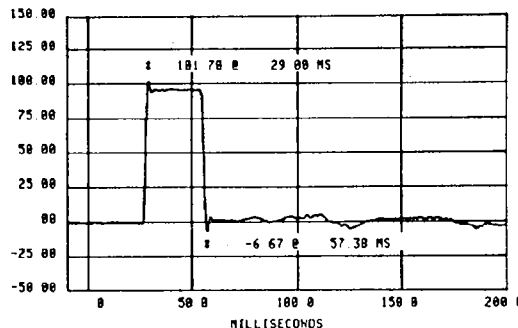
DOOR DISPLACEMENT

TRACK: 2 CHANNEL: 14 100% CAL = 300.61
TEST S: 1 SLED T4-26 DATE: 6-11-81

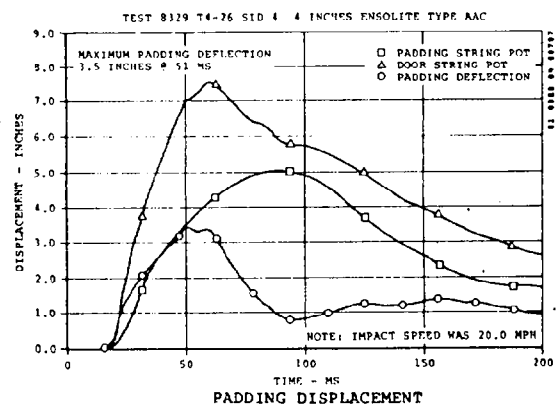


DOOR LATERAL ACCELERATION

TRACK: 3 CHANNEL: 10 100% CAL = 100.00
TEST S: 1 SLED T4-26 DATE: 6-11-81

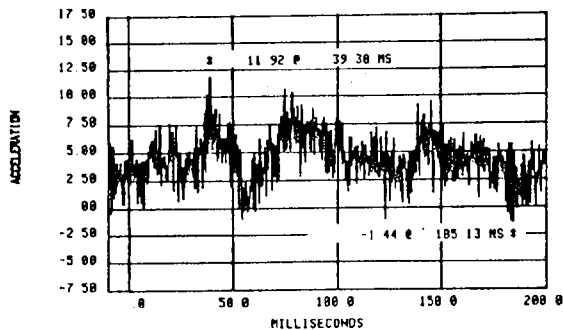


PADDING CONTACT TIME



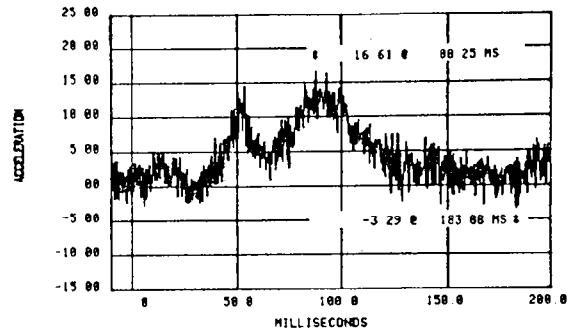
T4-26

TRACK: 3 CHANNEL: 12 100% CAL = 236.30
TEST: S I SLED T4-26 DATE: 6-11-81



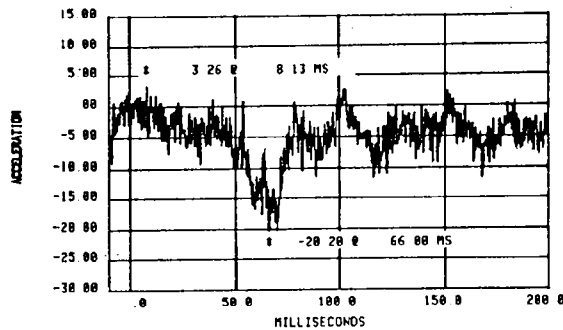
HEAD LONGITUDINAL ACCELERATION

TRACK: 3 CHANNEL: 13 100% CAL = 236.66
TEST: S I SLED T4-26 DATE: 6-11-81



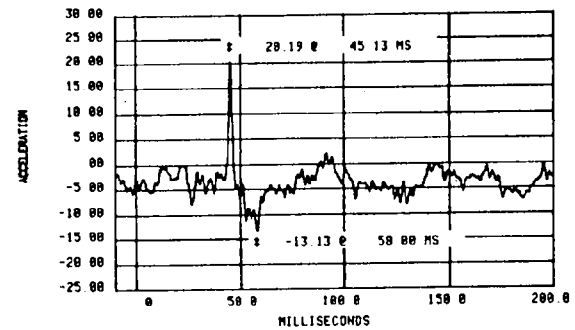
HEAD LATERAL ACCELERATION

TRACK: 3 CHANNEL: 14 100% CAL = 259.79
TEST: S I SLED T4-26 DATE: 6-11-81



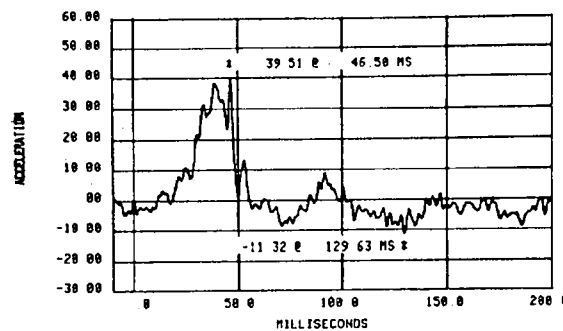
HEAD VERTICAL ACCELERATION

TRACK: 3 CHANNEL: 7 100% CAL = 333.79
TEST: S I SLED T4-26 DATE: 6-11-81



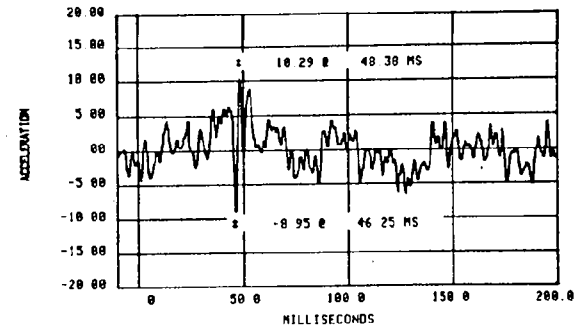
PELVIS LONGITUDINAL ACCELERATION

TRACK: 3 CHANNEL: 8 100% CAL = 396.57
TEST: S I SLED T4-26 DATE: 6-11-81



PELVIS LATERAL ACCELERATION

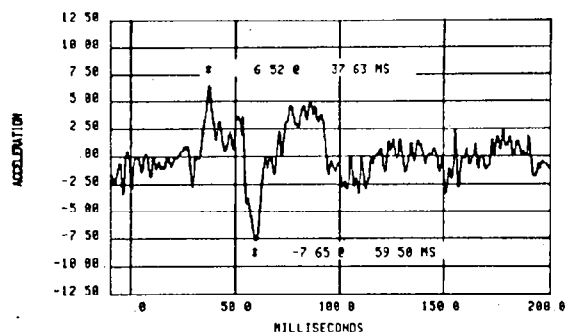
TRACK: 3 CHANNEL: 9 100% CAL = 368.42
TEST: S I SLED T4-26 DATE: 6-11-81



PELVIS VERTICAL ACCELERATION

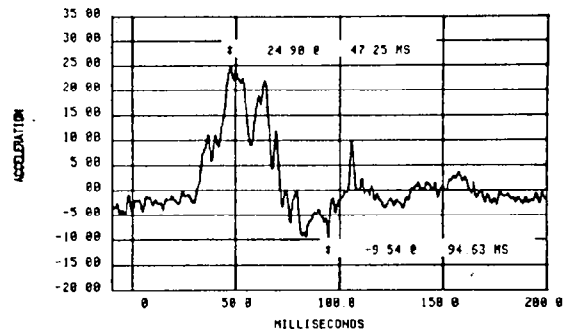
T4-26

TRACK: 2 CHANNEL: 7 100% CAL = 378.01
TEST: S. I SLED T4-26 DATE: 6-11-81



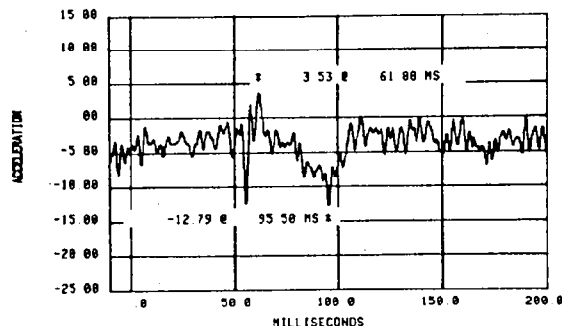
UPPER THORAX LONGITUDINAL ACCELERATION

TRACK: 2 CHANNEL: 8 100% CAL = 339.86
TEST: S. I SLED T4-26 DATE: 6-11-81



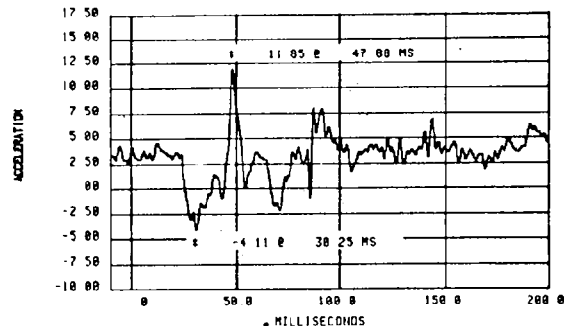
UPPER THORAX LATERAL ACCELERATION

TRACK: 2 CHANNEL: 9 100% CAL = 362.87
TEST: S. I SLED T4-26 DATE: 6-11-81



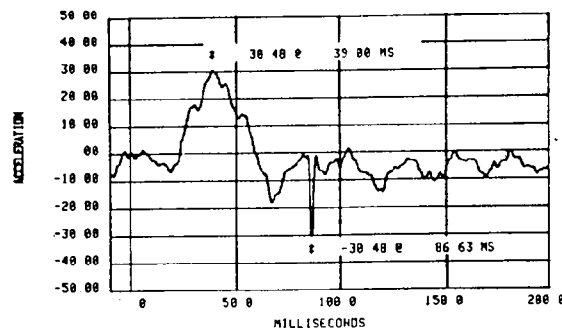
UPPER THORAX VERTICAL ACCELERATION

TRACK: 3 CHANNEL: 1 100% CAL = 395.09
TEST: S. I SLED T4-26 DATE: 6-11-81



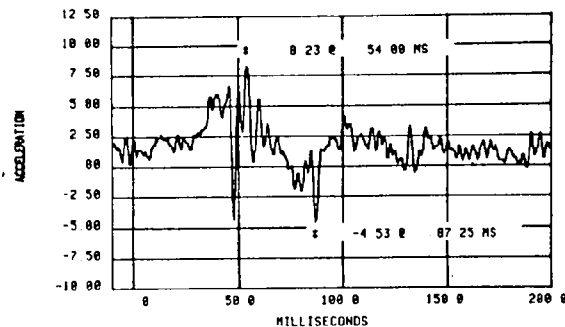
LOWER THORAX LONGITUDINAL ACCELERATION

TRACK: 3 CHANNEL: 2 100% CAL = 336.71
TEST: S. I SLED T4-26 DATE: 6-11-81



LOWER THORAX LATERAL ACCELERATION

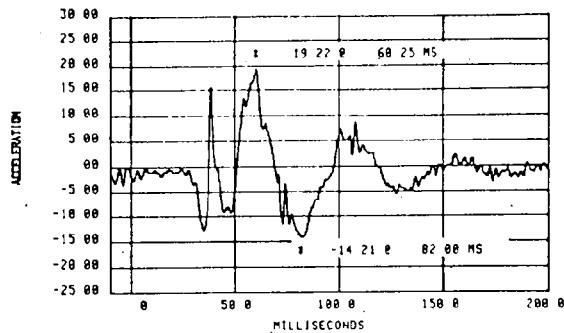
TRACK: 3 CHANNEL: 3 100% CAL = 339.86
TEST: S. I SLED T4-26 DATE: 6-11-81



LOWER THORAX VERTICAL ACCELERATION

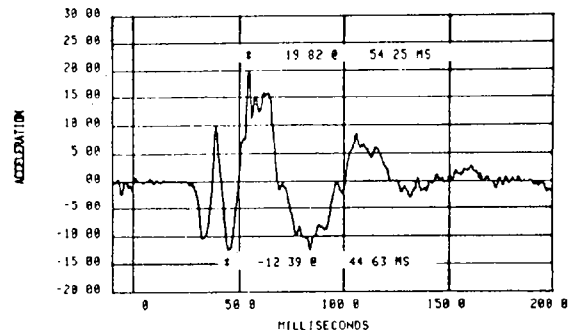
T4-26

TRACK 2 CHANNEL 4 100% CAL = 343.06
TEST S 1 SLED T4-26 DATE 6-11-81



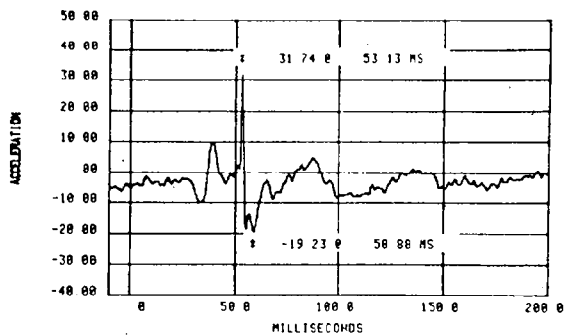
UPPER STEPHUM LONGITUDINAL ACCELERATION

TRACK 2 CHANNEL 3 100% CAL = 339.86
TEST S 1 SLED T4-26 DATE 6-11-81



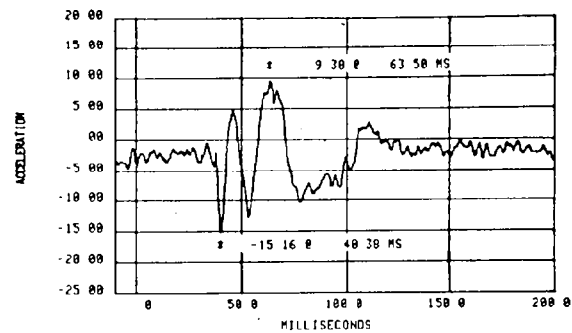
LOWER STEPHUM LONGITUDINAL ACCELERATION

TRACK 2 CHANNEL 13 100% CAL = 397.91
TEST S 1 SLED T4-26 DATE 6-11-81



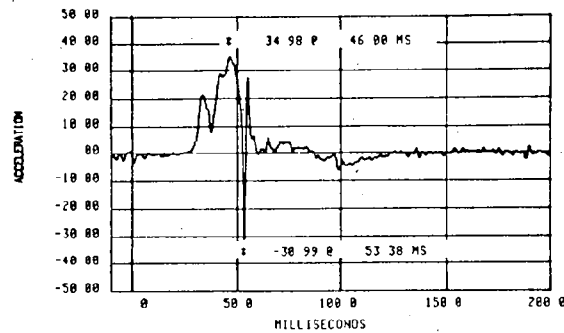
RIGHT LOWER RIB LONGITUDINAL ACCELERATION

TRACK 2 CHANNEL 11 100% CAL = 398.16
TEST S 1 SLED T4-26 DATE 6-11-81



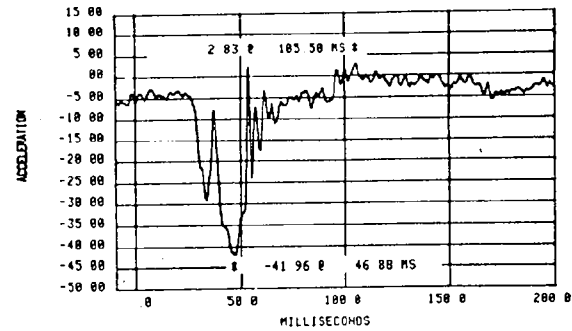
LEFT LOWER RIB LONGITUDINAL ACCELERATION

TRACK 2 CHANNEL 1 100% CAL = 363.74
TEST S 1 SLED T4-26 DATE 6-11-81



RIGHT UPPER RIB LATERAL ACCELERATION

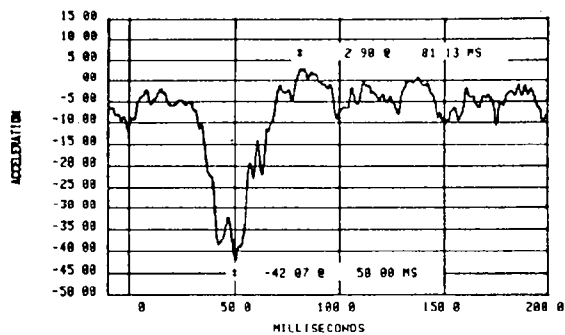
TRACK 2 CHANNEL 12 100% CAL = 421.71
TEST S 1 SLED T4-26 DATE 6-11-81



RIGHT LOWER RIB LATERAL ACCELERATION

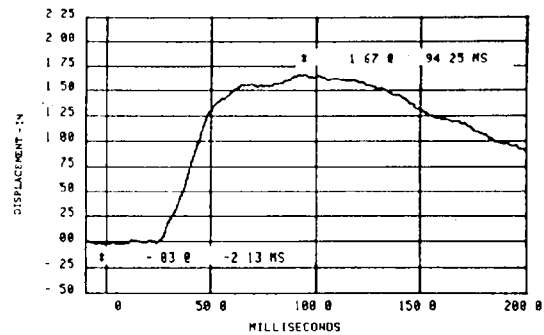
T4-26

TRACK: 2 CHANNEL: 2 100% CAL # 346 27
TEST: S1 SLED T4-26 DATE: 6-11-81

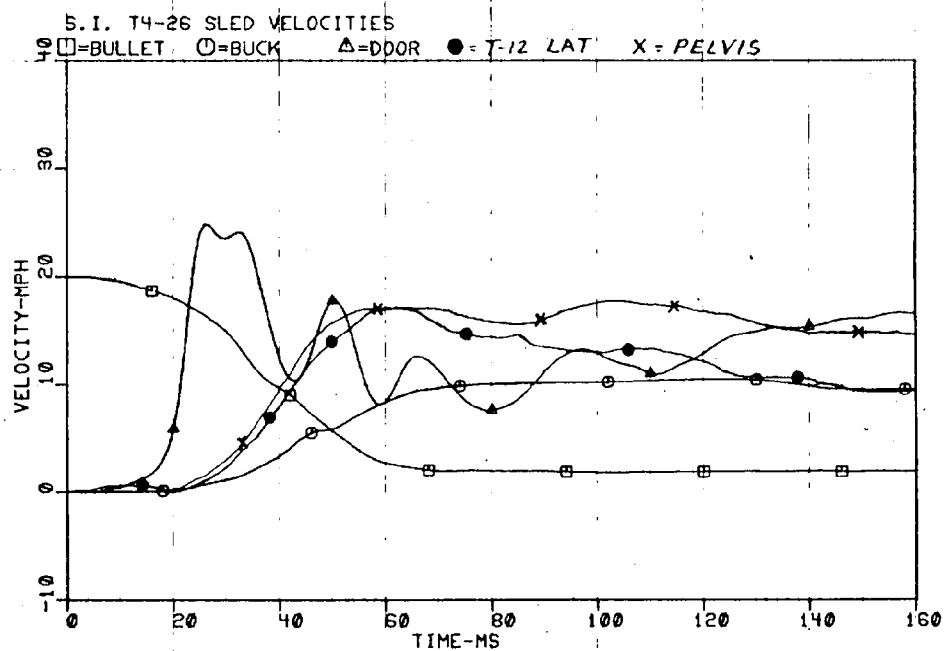


LEFT UPPER RIB LATERAL ACCELERATION

TRACK: 3 CHANNEL: 11 100% CAL # 2 91
TEST: S1 SLED T4-26 DATE: 6-11-81

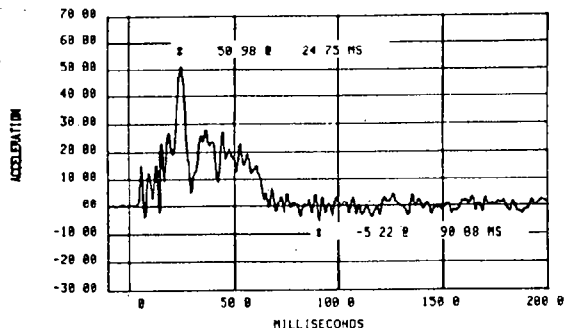


LOWER RIB DISPLACEMENT



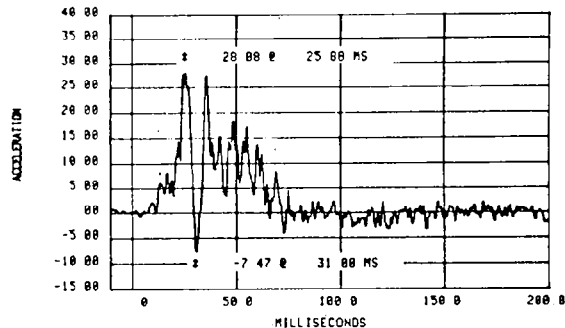
T4-26

TRACK 3 CHANNEL 4 100% CAL = 70.77
TEST S 1 SLED T4-27 DATE: 6-11-81



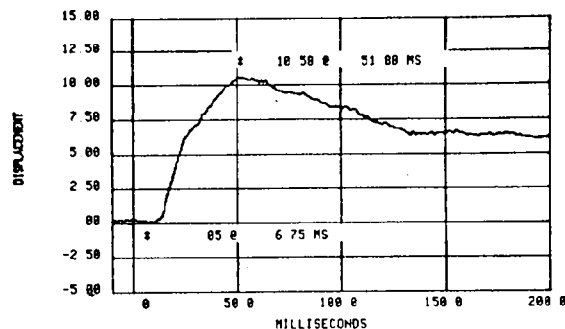
BULLET SLED LONGITUDINAL ACCELERATION

TRACK 2 CHANNEL 10 100% CAL = 154.75
TEST S 1 SLED T4-27 DATE: 6-11-81



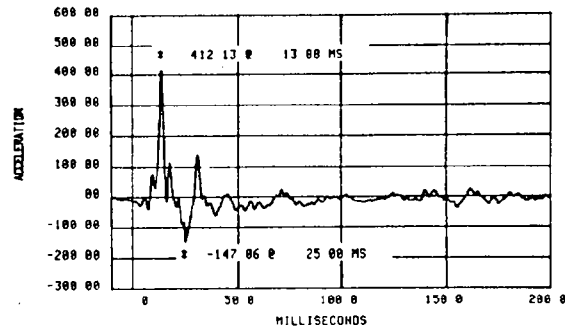
TARGET SLED LATERAL ACCELERATION

TRACK 3 CHANNEL 5 100% CAL = 22.50
TEST S 1 SLED T4-27 DATE: 6-11-81



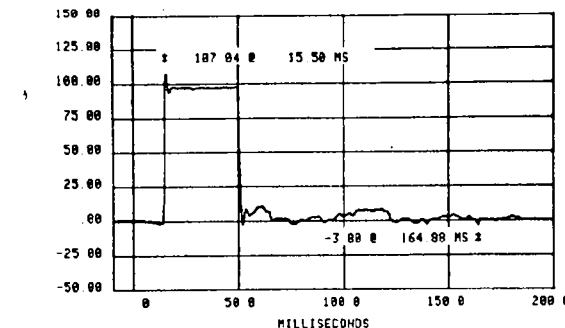
DOOR DISPLACEMENT

TRACK 2 CHANNEL 14 100% CAL = 580.61
TEST S 1 SLED T4-27 DATE: 6-11-81

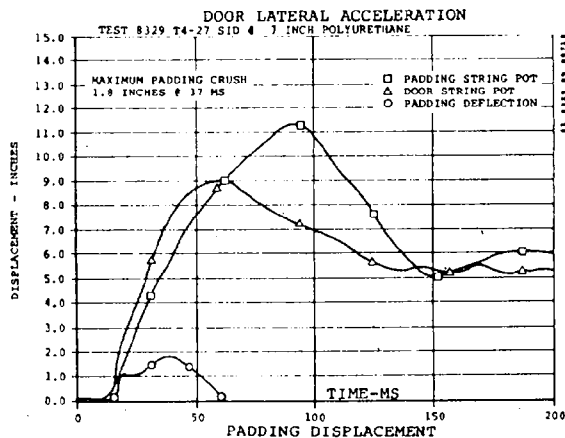


DOOR LATERAL ACCELERATION

TRACK 3 CHANNEL 10 100% CAL = 100.00
TEST S 1 SLED T4-27 DATE: 6-11-81

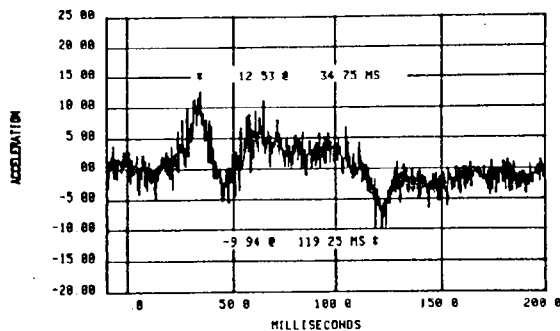


PADDING CONTACT TIME



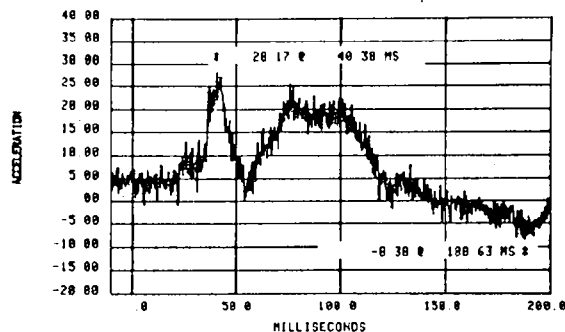
T4-27

TRACK: 3 CHANNEL: 12 100% CAL = 235.38
TEST: S.I. SLED T4-27 DATE: 6-11-81



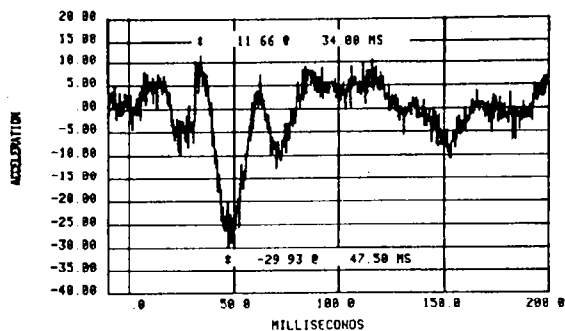
HEAD LONGITUDINAL ACCELERATION

TRACK: 3 CHANNEL: 13 100% CAL = 236.66
TEST: S.I. SLED T4-27 DATE: 6-11-81



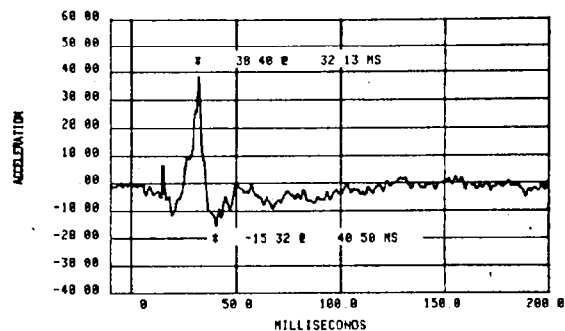
HEAD LATERAL ACCELERATION

TRACK: 3 CHANNEL: 14 100% CAL = 259.79
TEST: S.I. SLED T4-27 DATE: 6-11-81



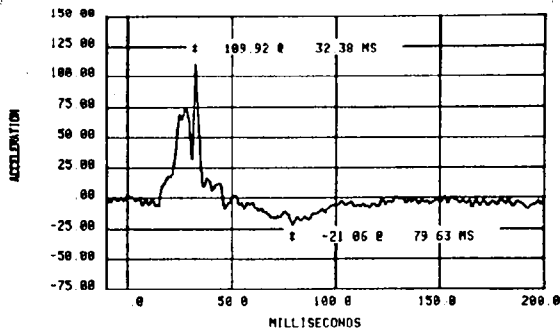
HEAD VERTICAL ACCELERATION

TRACK: 3 CHANNEL: 7 100% CAL = 333.79
TEST: S.I. SLED T4-27 DATE: 6-11-81



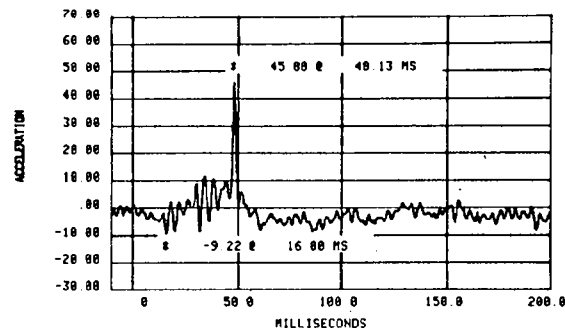
PELVIS LONGITUDINAL ACCELERATION

TRACK: 3 CHANNEL: 8 100% CAL = 396.57
TEST: S.I. SLED T4-27 DATE: 6-11-81



PELVIS LATERAL ACCELERATION

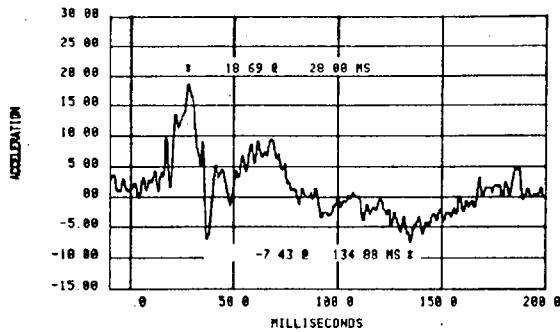
TRACK: 3 CHANNEL: 9 100% CAL = 368.42
TEST: S.I. SLED T4-27 DATE: 6-11-81



PELVIS VERTICAL ACCELERATION

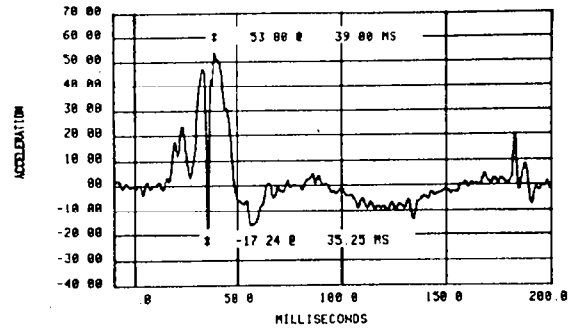
T4-27

TRACK: 2 CHANNEL: 7 100% CAL = 370.01
TEST: S. I. SLED T4-27 DATE: 6-11-81



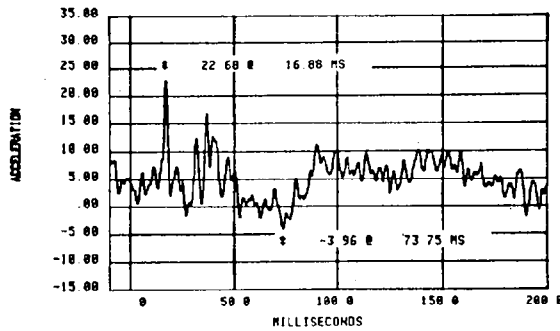
UPPER THORAX LONGITUDINAL ACCELERATION

TRACK: 2 CHANNEL: 8 100% CAL = 339.06
TEST: S. I. SLED T4-27 DATE: 6-11-81



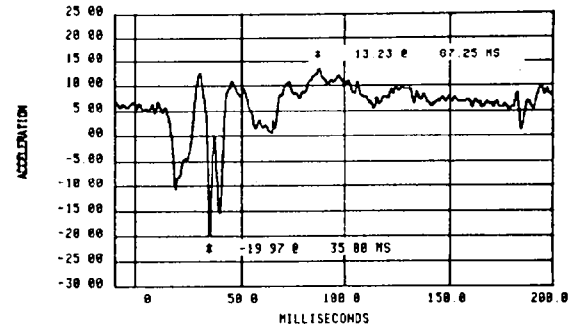
UPPER THORAX LATERAL ACCELERATION

TRACK: 2 CHANNEL: 9 100% CAL = 362.07
TEST: S. I. SLED T4-27 DATE: 6-11-81



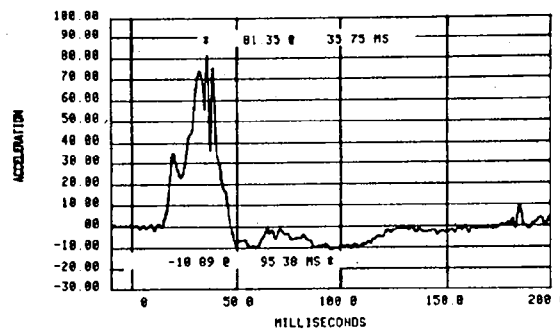
UPPER THORAX VERTICAL ACCELERATION

TRACK: 3 CHANNEL: 1 100% CAL = 395.08
TEST: S. I. SLED T4-27 DATE: 6-11-81



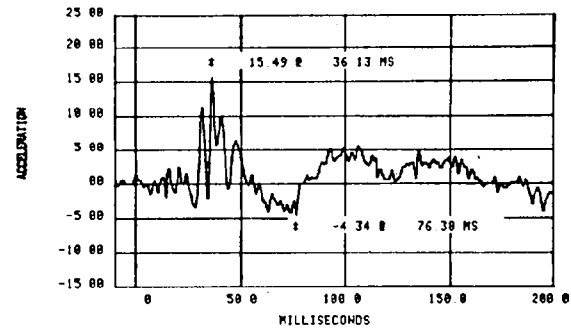
LOWER THORAX LONGITUDINAL ACCELERATION

TRACK: 3 CHANNEL: 2 100% CAL = 336.71
TEST: S. I. SLED T4-27 DATE: 6-11-81



LOWER THORAX LATERAL ACCELERATION

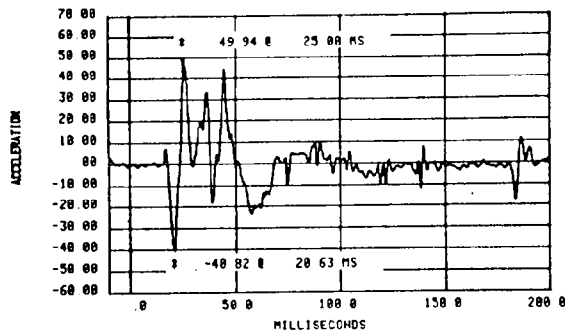
TRACK: 3 CHANNEL: 3 100% CAL = 339.06
TEST: S. I. SLED T4-27 DATE: 6-11-81



LOWER THORAX VERTICAL ACCELERATION

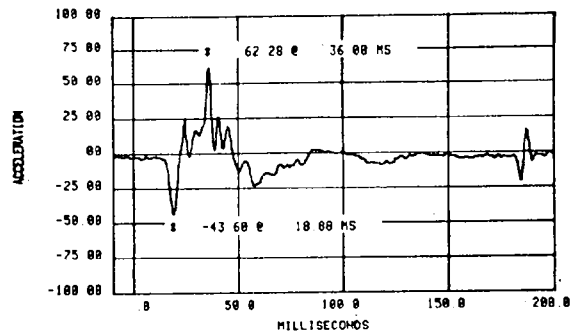
T4-27

TRACK: 2 CHANNEL: 4 100% CAL = 343.06
TEST: S.1 SLED T4-27 DATE: 6-11-81



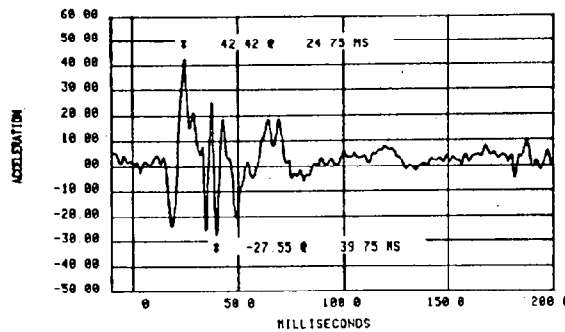
UPPER STERNUM LONGITUDINAL ACCELERATION

TRACK: 2 CHANNEL: 3 100% CAL = 339.06
TEST: S.1 SLED T4-27 DATE: 6-11-81



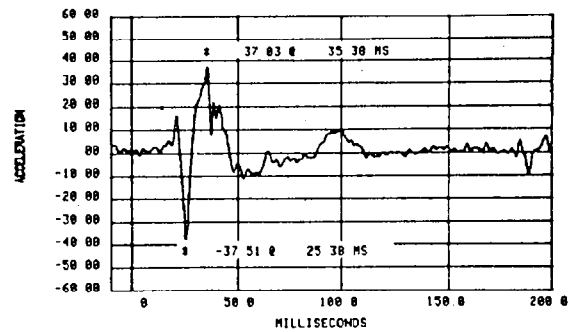
LOWER STERNUM LONGITUDINAL ACCELERATION

TRACK: 2 CHANNEL: 13 100% CAL = 397.91
TEST: S.1 SLED T4-27 DATE: 6-11-81



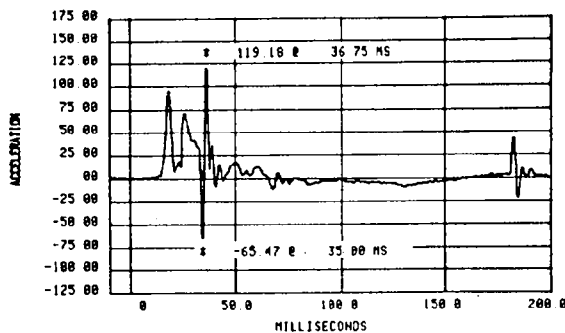
RIGHT LOWER RIB LONGITUDINAL ACCELERATION

TRACK: 2 CHANNEL: 11 100% CAL = 398.16
TEST: S.1 SLED T4-27 DATE: 6-11-81



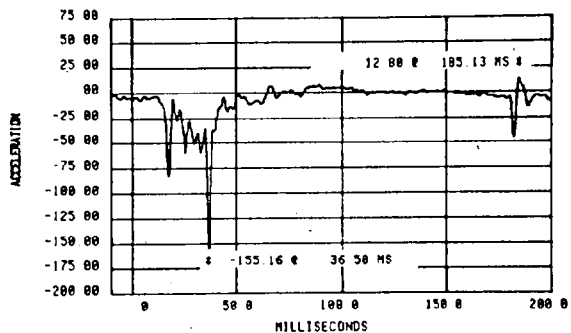
LEFT LOWER RIB LONGITUDINAL ACCELERATION

TRACK: 2 CHANNEL: 1 100% CAL = 363.74
TEST: S.1 SLED T4-27 DATE: 6-11-81



RIGHT UPPER RIB LATERAL ACCELERATION

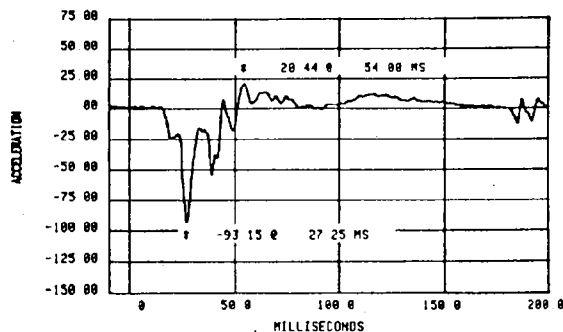
TRACK: 2 CHANNEL: 12 100% CAL = 421.71
TEST: S.1 SLED T4-27 DATE: 6-11-81



RIGHT LOWER RIB LATERAL ACCELERATION

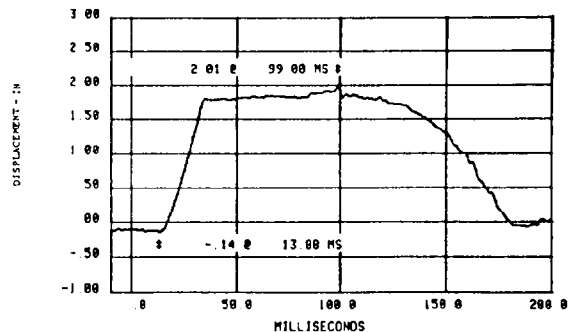
T4-27

TRACK: 2 CHANNEL: 2 100% CAL = 346 27
TEST S I SLED T4-27 DATE: 6-11-81

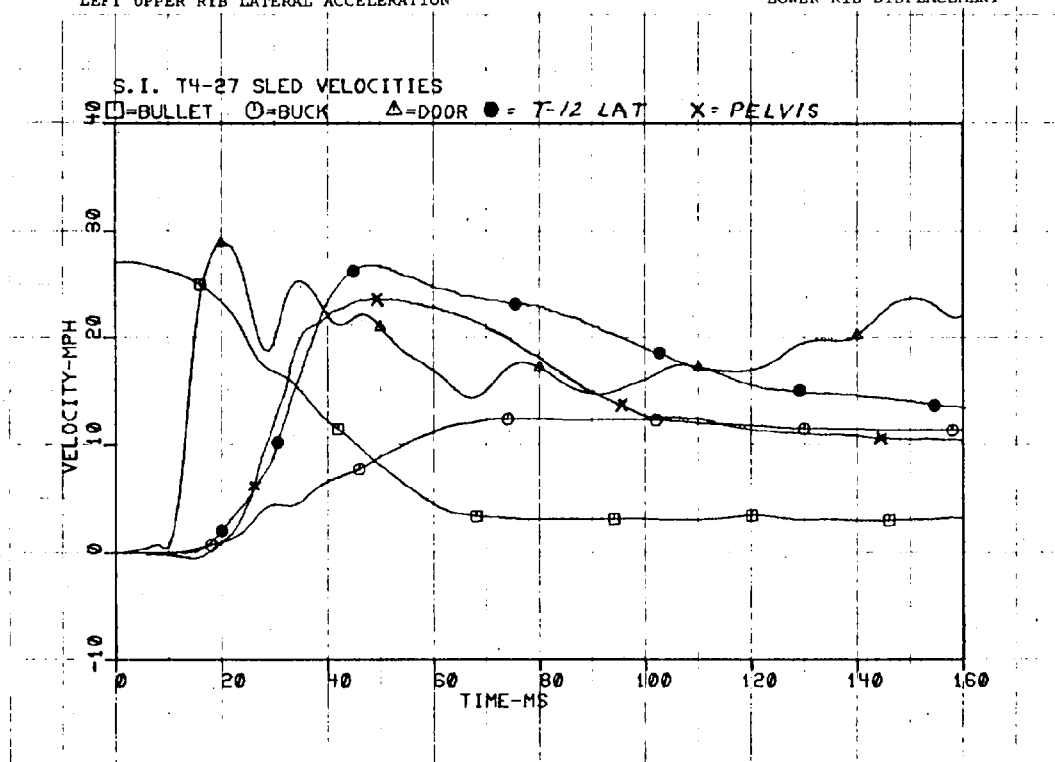


LEFT UPPER RIB LATERAL ACCELERATION

TRACK: 3 CHANNEL: 11 100% CAL = 2.01
TEST S I SLED T4-27 DATE: 6-11-81

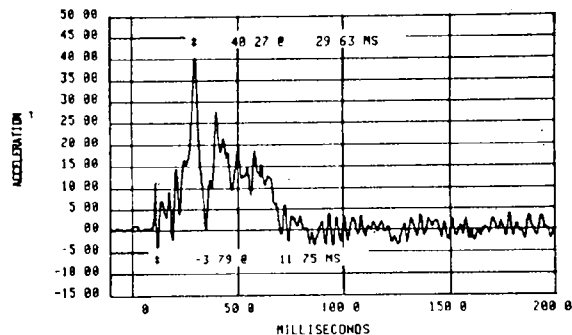


LOWER RIB DISPLACEMENT



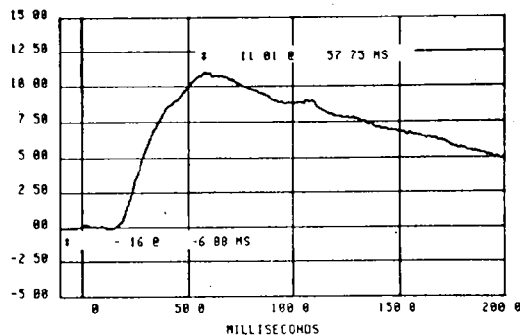
T4-27

TRACK 3 CHANNEL 4 100% CAL = 70 77
TEST S 1 SLED T4-28 DATE 6-12-81



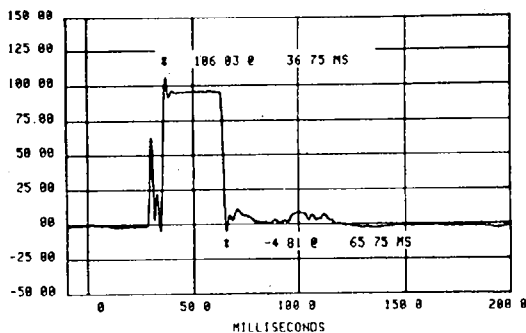
BULLET SLED LONGITUDINAL ACCELERATION

TRACK 3 CHANNEL 5 100% CAL = 22 58
TEST S 1 SLED T4-28 DATE 6-12-81



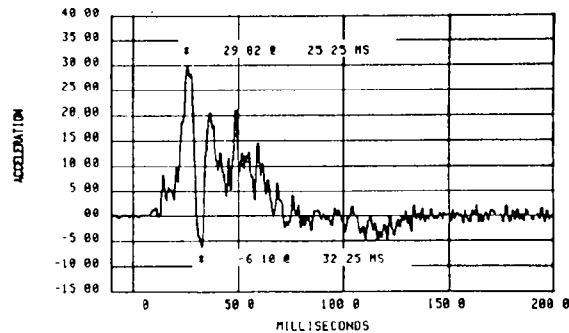
DOOR DISPLACEMENT

TRACK 3 CHANNEL 18 100% CAL = 100 00
TEST S 1 SLED T4-28 DATE 6-12-81



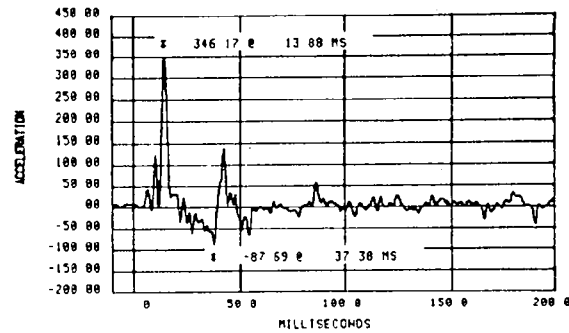
PADDING CONTACT TIME

TRACK 2 CHANNEL 10 100% CAL = 154 75
TEST S 1 SLED T4-28 DATE 6-12-81



TARGET SLED LATERAL ACCELERATION

TRACK 2 CHANNEL 14 100% CAL = 500 61
TEST S 1 SLED T4-28 DATE 6-12-81

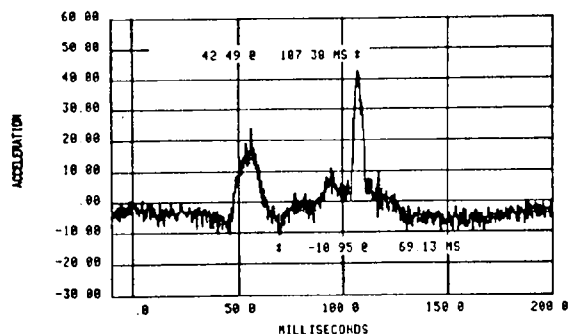


DOOR LATERAL ACCELERATION

T4-28

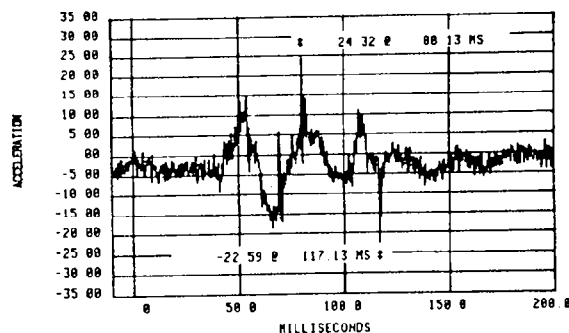
M-80

TRACK: 3 CHANNEL: 12 100% CAL = 236.66
TEST: S1 SLED T4-28 DATE: 6-12-81



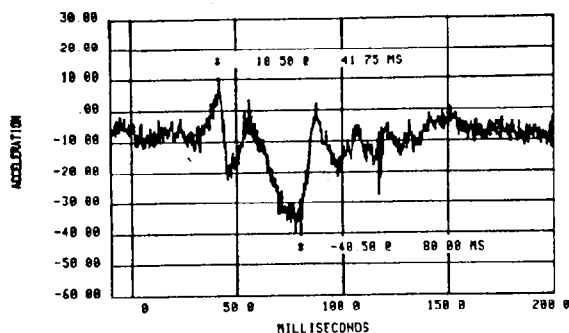
HEAD LONGITUDINAL ACCELERATION

TRACK: 3 CHANNEL: 13 100% CAL = 236.30
TEST: S1 SLED T4-28 DATE: 6-12-81



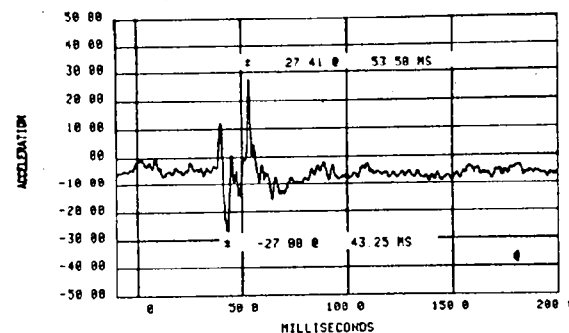
HEAD LATERAL ACCELERATION

TRACK: 3 CHANNEL: 14 100% CAL = 259.79
TEST: S1 SLED T4-28 DATE: 6-12-81



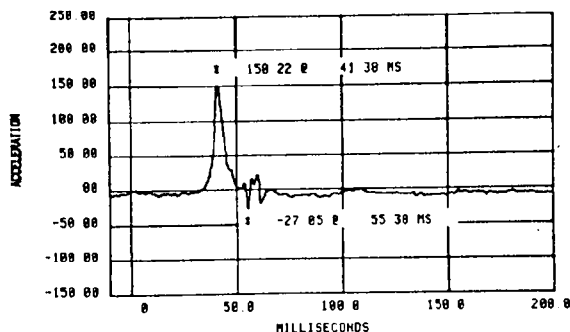
HEAD VERTICAL ACCELERATION

TRACK: 3 CHANNEL: 7 100% CAL = 333.79
TEST: S1 SLED T4-28 DATE: 6-12-81



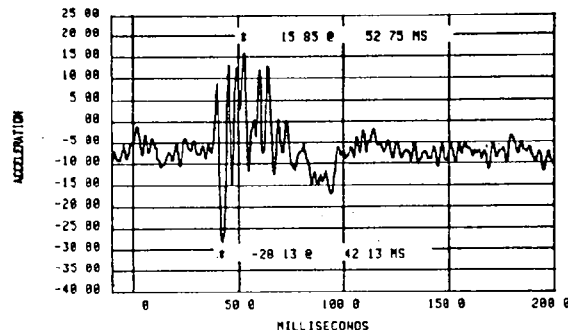
PELVIS LONGITUDINAL ACCELERATION

TRACK: 3 CHANNEL: 8 100% CAL = 396.57
TEST: S1 SLED T4-28 DATE: 6-12-81



PELVIS LATERAL ACCELERATION

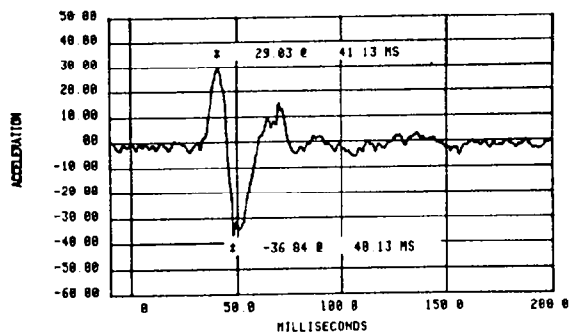
TRACK: 3 CHANNEL: 9 100% CAL = 368.42
TEST: S1 SLED T4-28 DATE: 6-12-81



PELVIS VERTICAL ACCELERATION

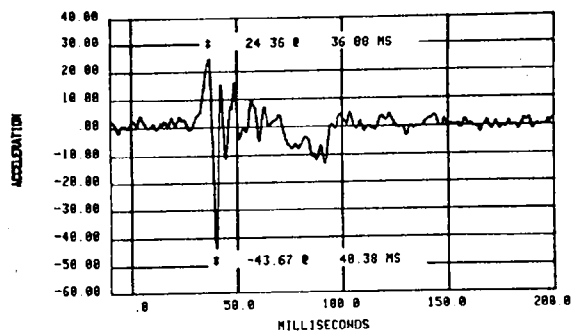
T4-28

TRACK: 2 CHANNEL: 7 100% CAL = 370.01
TEST: S. I. SLED T4-28 DATE: 6-12-81



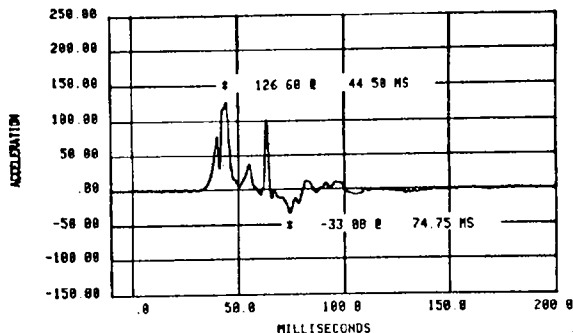
UPPER THORAX LONGITUDINAL ACCELERATION

TRACK: 2 CHANNEL: 9 100% CAL = 352.07
TEST: S. I. SLED T4-28 DATE: 6-12-81



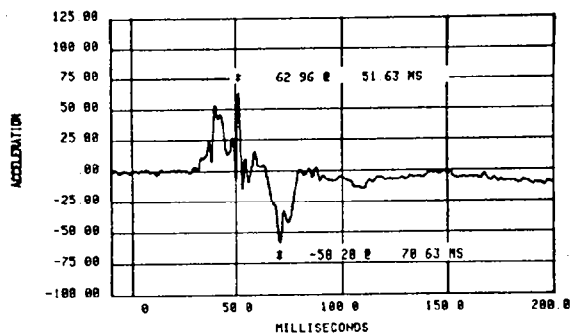
UPPER THORAX VERTICAL ACCELERATION

TRACK: 3 CHANNEL: 2 100% CAL = 336.71
TEST: S. I. SLED T4-28 DATE: 6-12-81



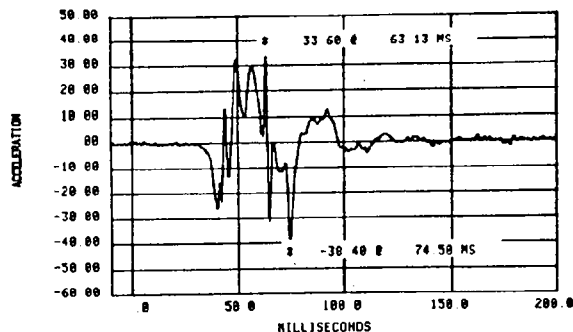
LOWER THORAX LATERAL ACCELERATION

TRACK: 2 CHANNEL: 8 100% CAL = 339.86
TEST: S. I. SLED T4-28 DATE: 6-12-81



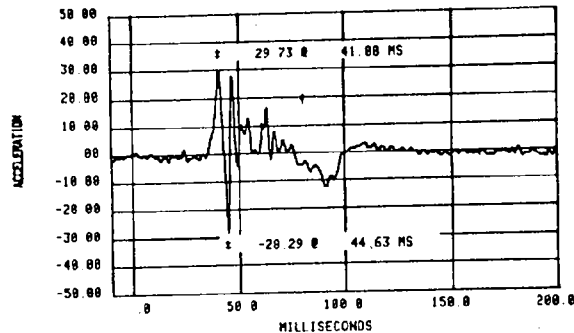
UPPER THORAX LATERAL ACCELERATION

TRACK: 3 CHANNEL: 1 100% CAL = 395.08
TEST: S. I. SLED T4-28 DATE: 6-12-81



LOWER THORAX LONGITUDINAL ACCELERATION

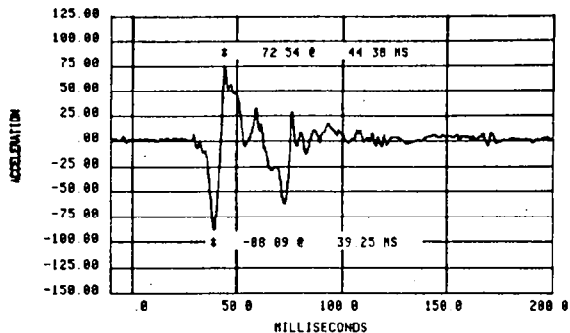
TRACK: 3 CHANNEL: 3 100% CAL = 339.86
TEST: S. I. SLED T4-28 DATE: 6-12-81



LOWER THORAX VERTICAL ACCELERATION

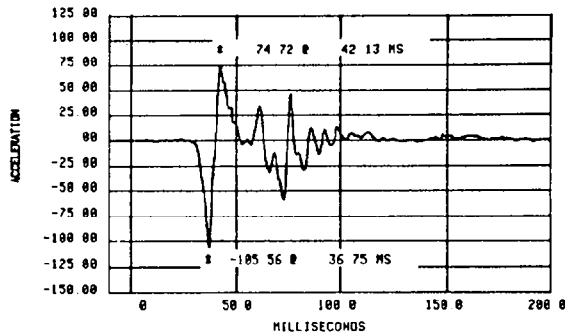
T4-28

TRACK: 2 CHANNEL: 4 100% CAL = 343.86
TEST: S I SLED T4-28 DATE: 6-12-81



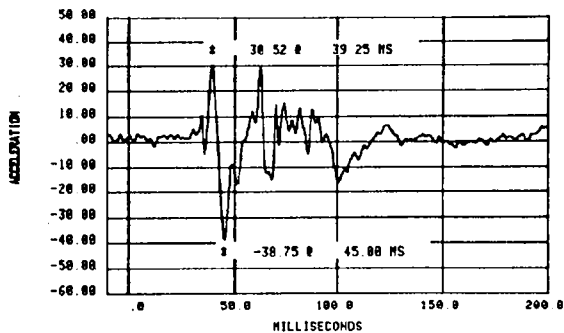
UPPER STERNUM LONGITUDINAL ACCELERATION

TRACK: 2 CHANNEL: 3 100% CAL = 339.86
TEST: S I SLED T4-28 DATE: 6-12-81



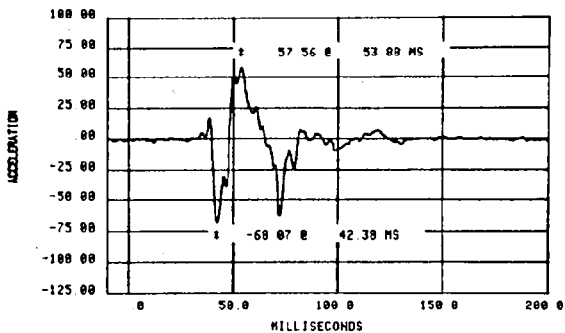
LOWER STERNUM LONGITUDINAL ACCELERATION

TRACK: 2 CHANNEL: 13 100% CAL = 397.91
TEST: S I SLED T4-28 DATE: 6-12-81



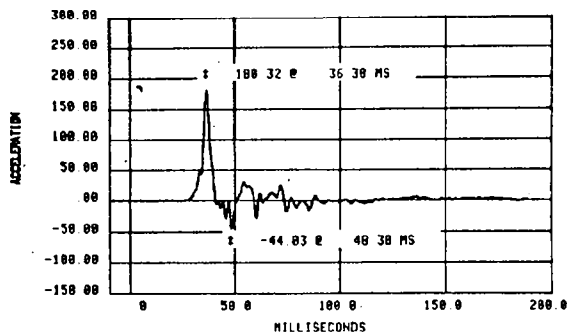
RIGHT LOWER RIB LONGITUDINAL ACCELERATION

TRACK: 2 CHANNEL: 11 100% CAL = 398.16
TEST: S I SLED T4-28 DATE: 6-12-81



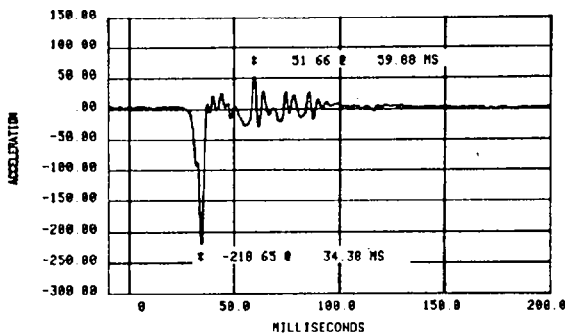
LEFT LOWER RIB LONGITUDINAL ACCELERATION

TRACK: 2 CHANNEL: 1 100% CAL = 363.74
TEST: S I SLED T4-28 DATE: 6-12-81



RIGHT UPPER RIB LATERAL ACCELERATION

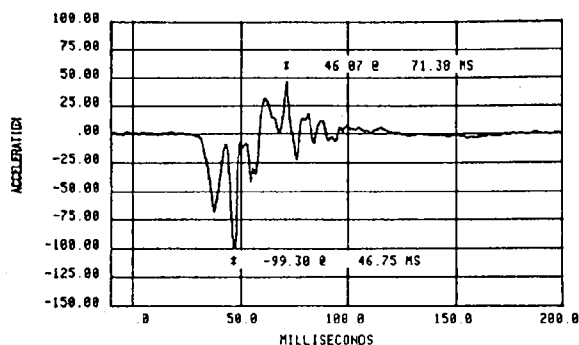
TRACK: 2 CHANNEL: 12 100% CAL = 421.71
TEST: S I SLED T4-28 DATE: 6-12-81



RIGHT LOWER RIB LATERAL ACCELERATION

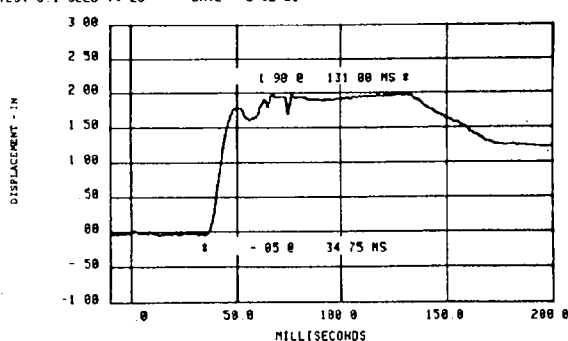
T4-28

TRACK: 2 CHANNEL: 2 100% CAL # 346.27
 TEST: S.I. SLED T4-20 DATE: 6-12-81

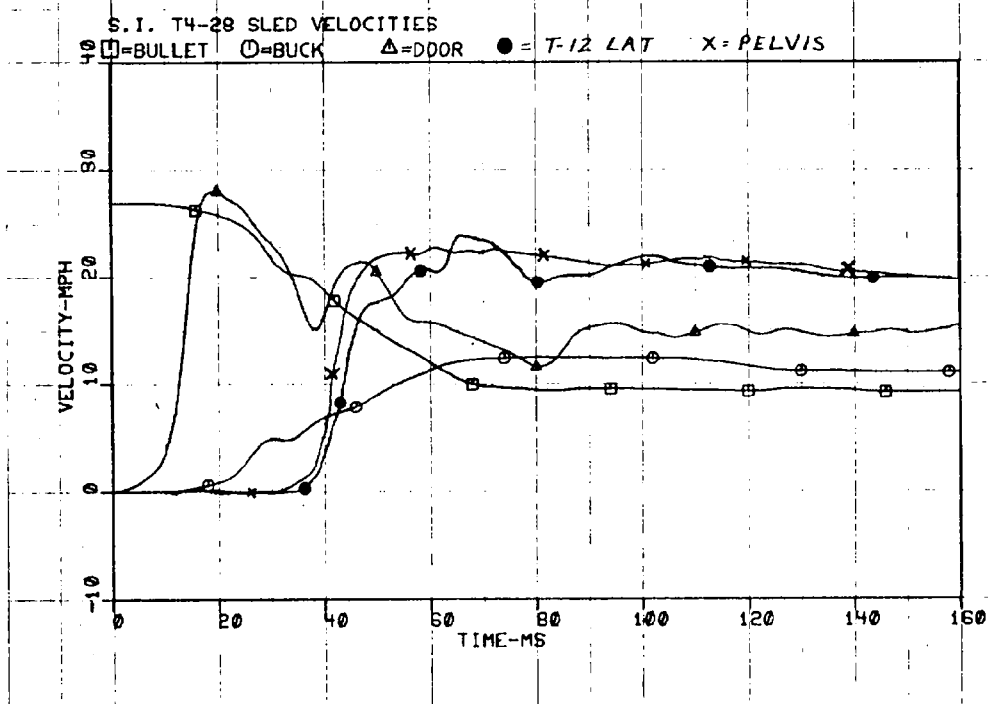


LEFT UPPER RIB LATERAL ACCELERATION

TRACK: 3 CHANNEL: 11 100% CAL # 2.81
 TEST: S.I. SLED T4-20 DATE: 6-12-81

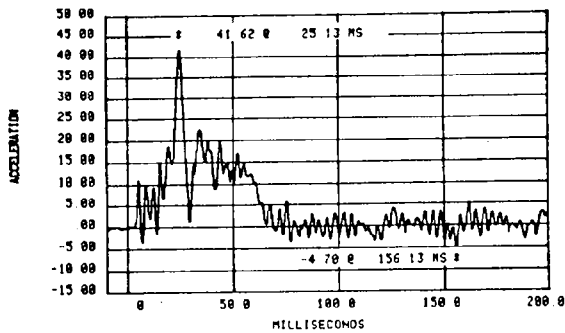


LOWER RIB DISPLACEMENT



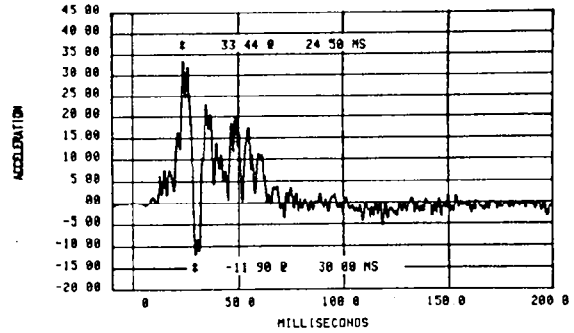
T4-28

TRACK: 3 CHANNEL: 4 100% CAL = 70.77
TEST: S. I. SLED T4-29 DATE: 6-15-81



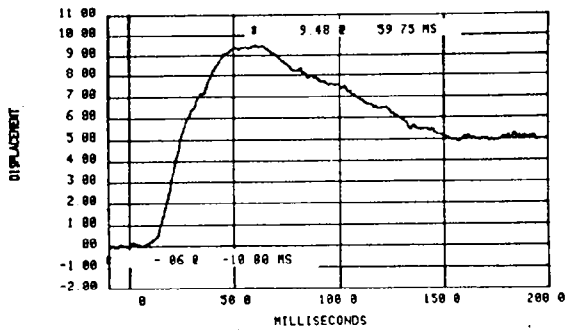
BULLET SLED LONGITUDINAL ACCELERATION

TRACK: 2 CHANNEL: 10 100% CAL = 154.75
TEST: S. I. SLED T4-29 DATE: 6-15-81



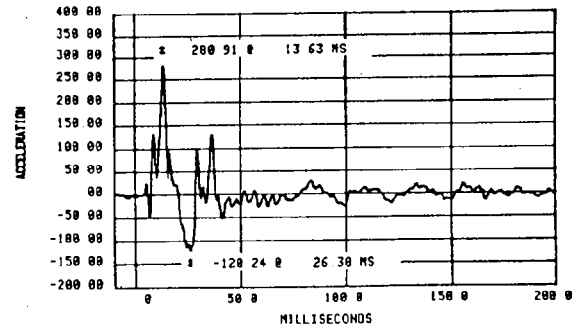
TARGET SLED LATERAL ACCELERATION

TRACK: 3 CHANNEL: 5 100% CAL = 20.37
TEST: S. I. SLED T4-29 DATE: 6-15-81



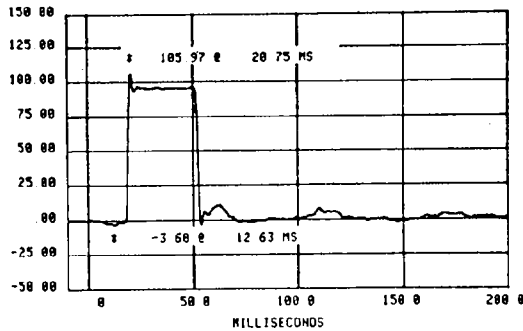
DOOR DISPLACEMENT

TRACK: 2 CHANNEL: 14 100% CAL = 500.61
TEST: S. I. SLED T4-29 DATE: 6-15-81

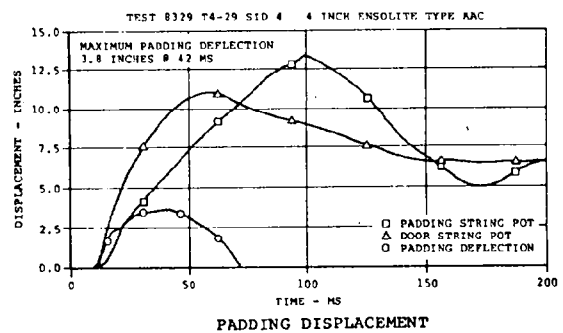


DOOR LATERAL ACCELERATION

TRACK: 3 CHANNEL: 10 100% CAL = 100.00
TEST: S. I. SLED T4-29 DATE: 6-15-81



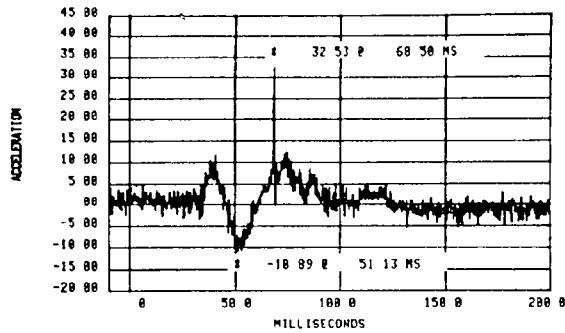
PADDING CONTACT TIME



T4-29

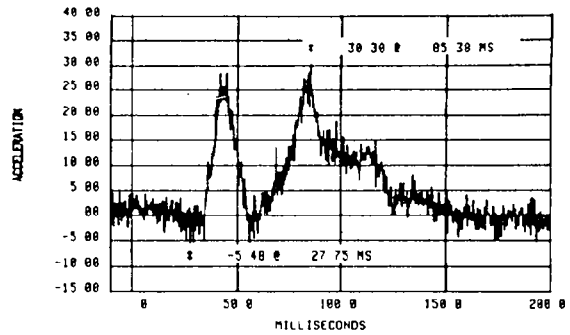
M-85

TRACK 3 CHANNEL 12 100% CAL = 236.30
TEST S 1 SLED T4-29 DATE 6-15-81



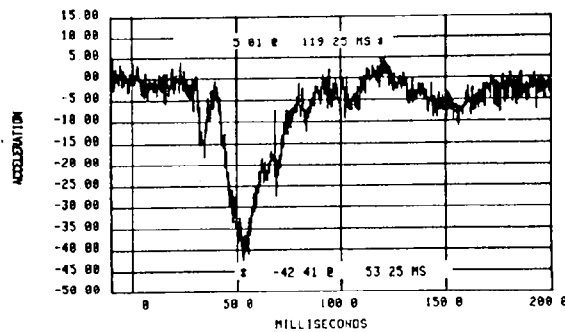
HEAD LONGITUDINAL ACCELERATION

TRACK 3 CHANNEL 13 100% CAL = 236.66
TEST S 1 SLED T4-29 DATE 6-15-81



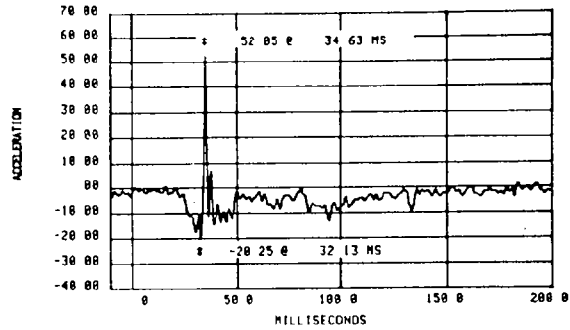
HEAD LATERAL ACCELERATION

TRACK 3 CHANNEL 14 100% CAL = 259.79
TEST S 1 SLED T4-29 DATE 6-15-81



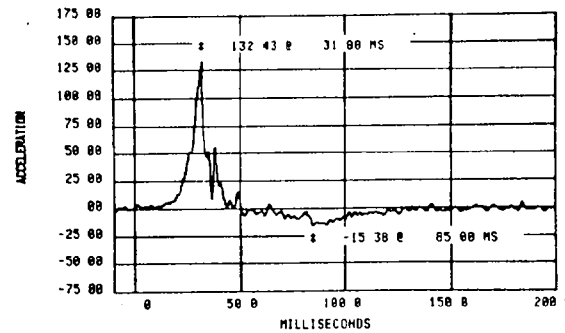
HEAD VERTICAL ACCELERATION

TRACK 3 CHANNEL 7 100% CAL = 333.79
TEST S 1 SLED T4-29 DATE 6-15-81



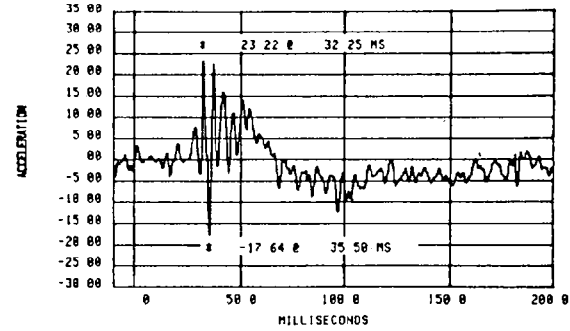
PELVIS LONGITUDINAL ACCELERATION

TRACK 3 CHANNEL 8 100% CAL = 396.57
TEST S 1 SLED T4-29 DATE 6-15-81



PELVIS LATERAL ACCELERATION

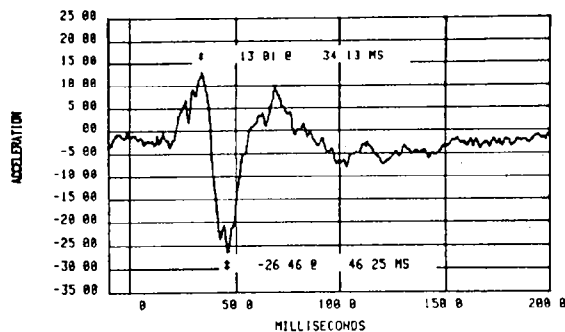
TRACK 3 CHANNEL 9 100% CAL = 368.42
TEST S 1 SLED T4-29 DATE 6-15-81



PELVIS VERTICAL ACCELERATION

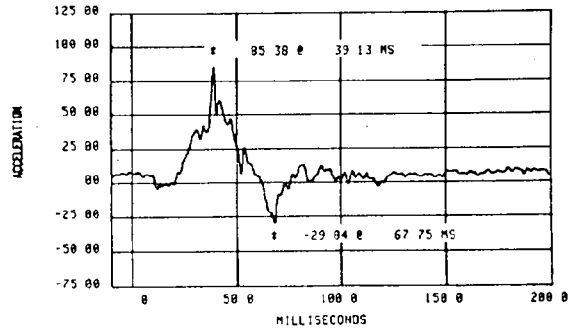
T4-29

TRACK: 2 CHANNEL: 7 100% CAL = 370 01
TEST: S 1 SLED T4-29 DATE: 6-15-81



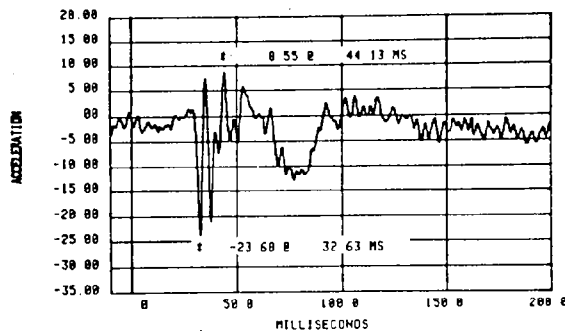
UPPER THORAX LONGITUDINAL ACCELERATION

TRACK: 2 CHANNEL: 8 100% CAL = 339 06
TEST: S 1 SLED T4-29 DATE: 6-15-81



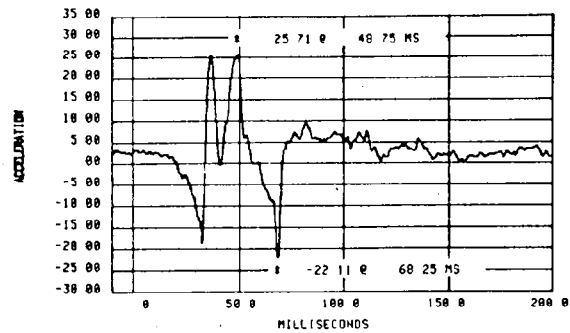
UPPER THORAX LATERAL ACCELERATION

TRACK: 2 CHANNEL: 9 100% CAL = 362 07
TEST: S 1 SLED T4-29 DATE: 6-15-81



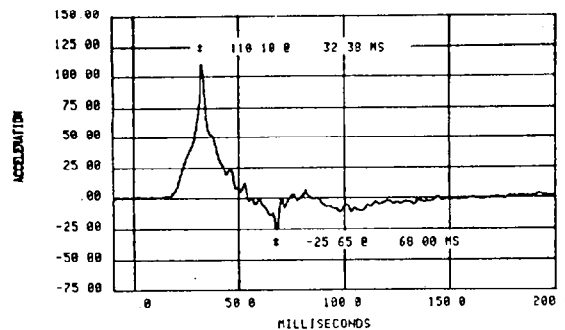
UPPER THORAX VERTICAL ACCELERATION

TRACK: 3 CHANNEL: 1 100% CAL = 395 00
TEST: S 1 SLED T4-29 DATE: 6-15-81



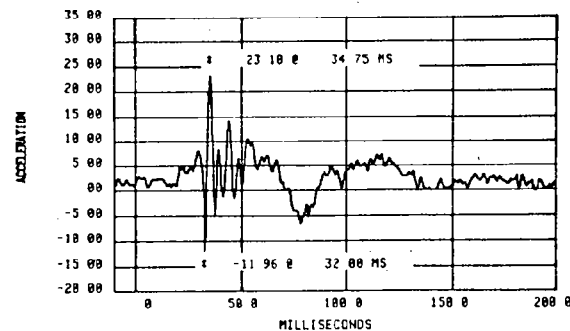
LOWER THORAX LONGITUDINAL ACCELERATION

TRACK: 3 CHANNEL: 2 100% CAL = 336 71
TEST: S 1 SLED T4-29 DATE: 6-15-81



LOWER THORAX LATERAL ACCELERATION

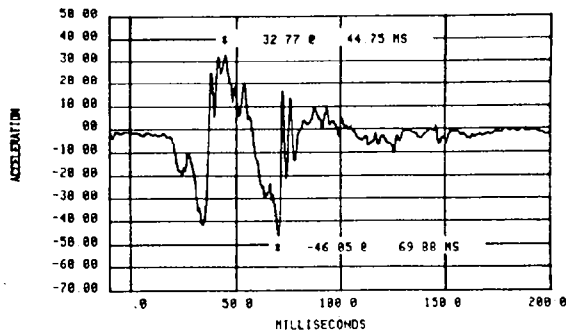
TRACK: 3 CHANNEL: 3 100% CAL = 339 06
TEST: S 1 SLED T4-29 DATE: 6-15-81



LOWER THORAX VERTICAL ACCELERATION

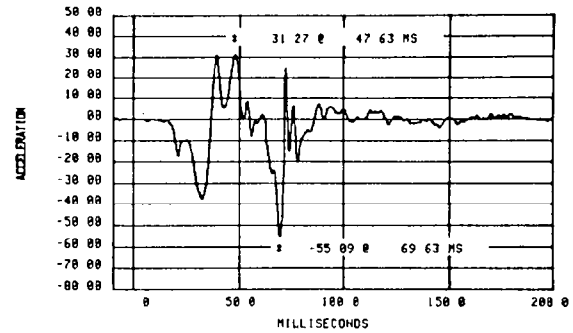
T4-29

TRACK: 2 CHANNEL: 4 100% CAL = 343.86
TEST: S1 SLED T4-29 DATE: 6-15-81



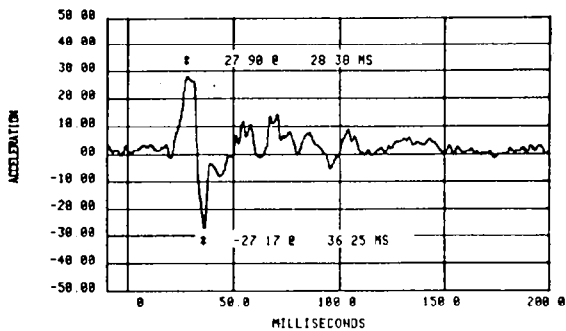
UPPER STERNUM LONGITUDINAL ACCELERATION

TRACK: 2 CHANNEL: 3 100% CAL = 339.86
TEST: S1 SLED T4-29 DATE: 6-15-81



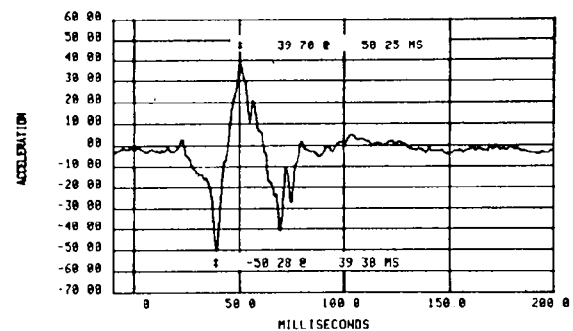
LOWER STERNUM LONGITUDINAL ACCELERATION

TRACK: 2 CHANNEL: 13 100% CAL = 397.91
TEST: S1 SLED T4-29 DATE: 6-15-81



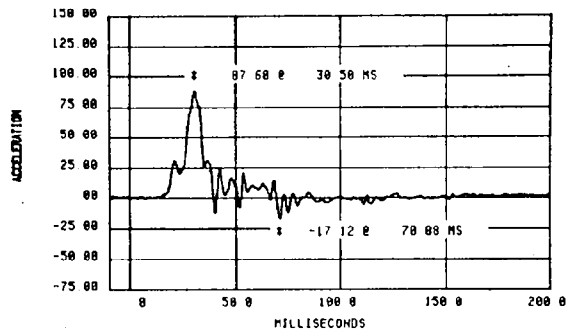
RIGHT LOWER RIB LONGITUDINAL ACCELERATION

TRACK: 2 CHANNEL: 11 100% CAL = 398.16
TEST: S1 SLED T4-29 DATE: 6-15-81



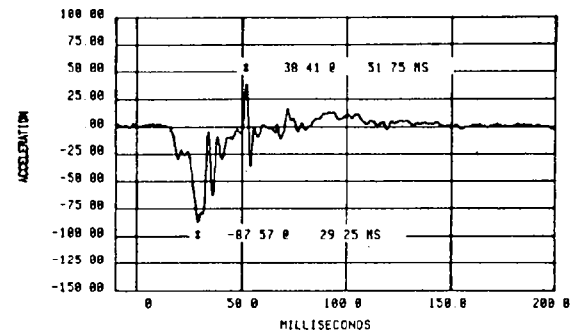
LEFT LOWER RIB LONGITUDINAL ACCELERATION

TRACK: 2 CHANNEL: 1 100% CAL = 363.74
TEST: S1 SLED T4-29 DATE: 6-15-81



RIGHT UPPER RIB LATERAL ACCELERATION

TRACK: 2 CHANNEL: 12 100% CAL = 421.71
TEST: S1 SLED T4-29 DATE: 6-15-81

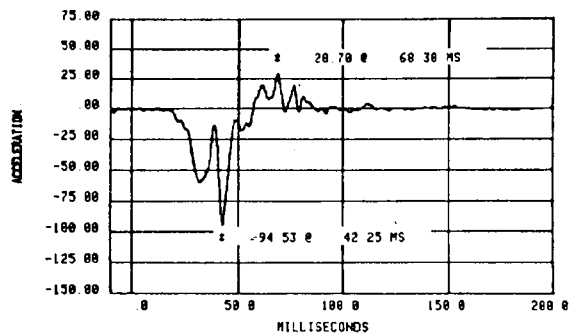


RIGHT LOWER RIB LATERAL ACCELERATION

T4-29

TRACK: 2 CHANNEL: 2
TEST: S. I. SLED T4-29

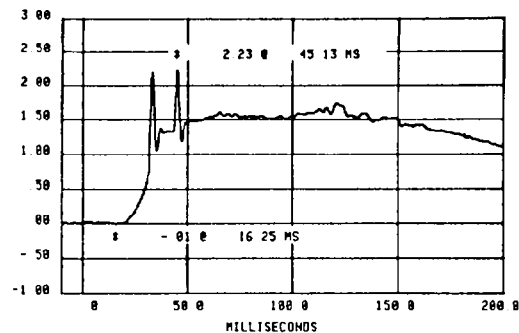
100% CAL = 346.27
DATE: 6-15-81



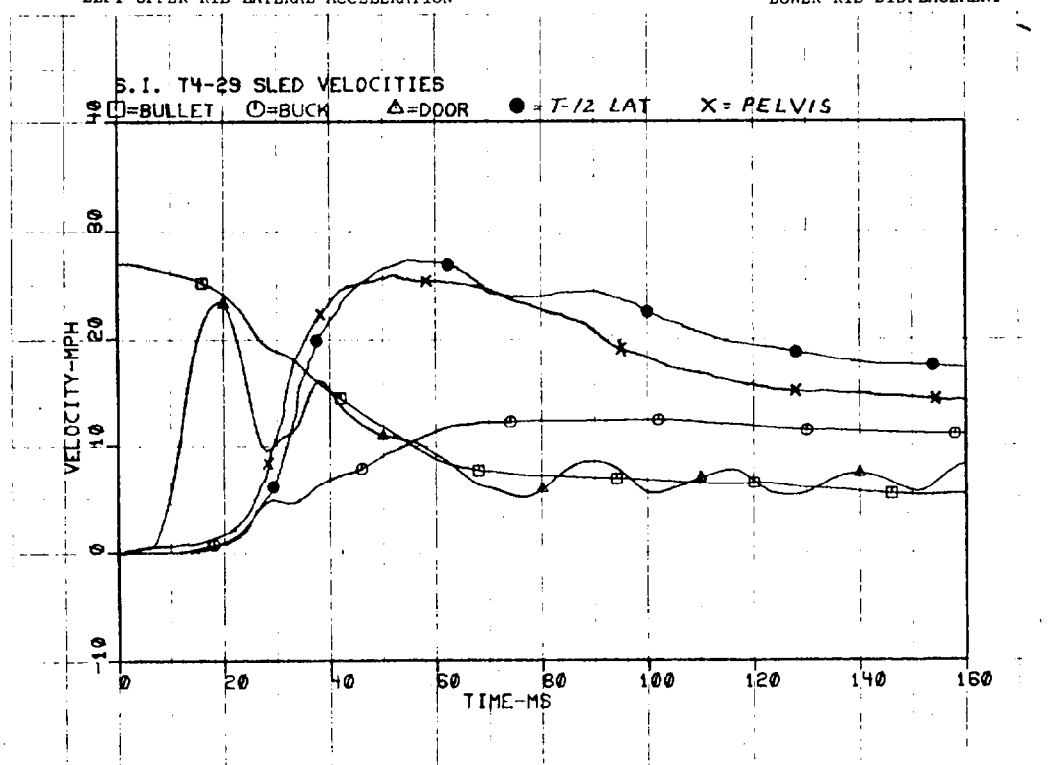
LEFT UPPER RIB LATERAL ACCELERATION

TRACK: 3 CHANNEL: 11
TEST: S. I. SLED T4-29

100% CAL = 2.01
DATE: 6-15-81



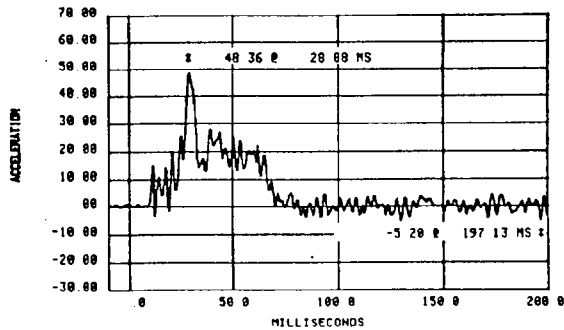
LOWER RIB DISPLACEMENT



T4-29

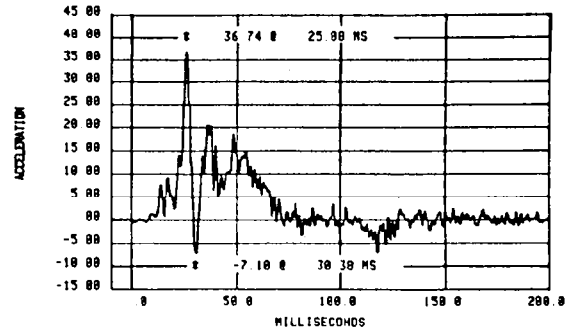
M-89

TRACK: 3 CHANNEL: 4 100% CAL = 70.77
TEST: S.I. T4-30 DATE: 7-6-81



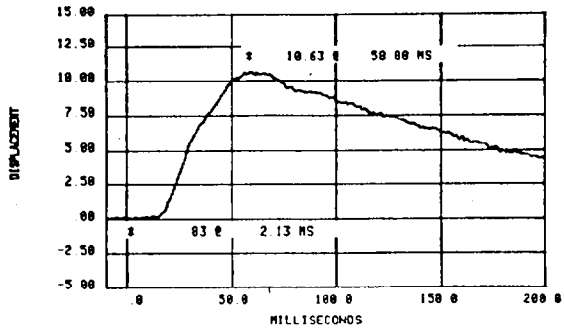
BULLET SLED LONGITUDINAL ACCELERATION

TRACK: 2 CHANNEL: 10 100% CAL = 121.04
TEST: S.I. T4-30 DATE: 7-6-81



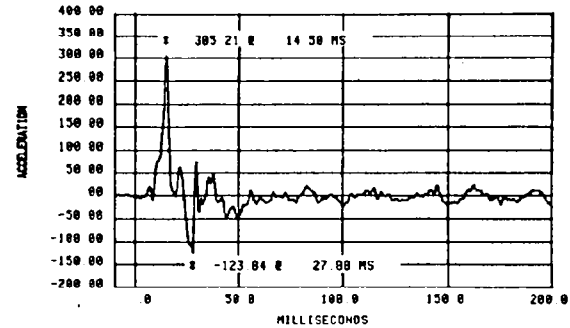
TARGET SLED LATERAL ACCELERATION

TRACK: 3 CHANNEL: 5 100% CAL = 21.99
TEST: S.I. T4-30 DATE: 7-6-81



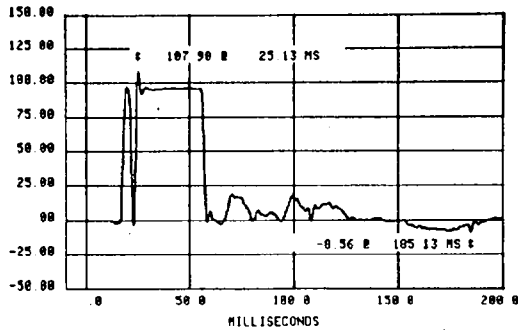
DOOR DISPLACEMENT

TRACK: 2 CHANNEL: 14 100% CAL = 500.61
TEST: S.I. T4-30 DATE: 7-6-81

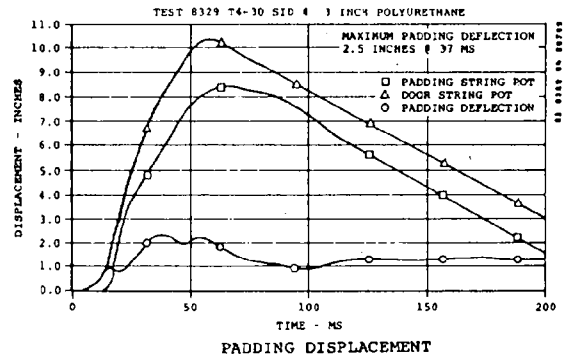


DOOR LATERAL ACCELERATION

TRACK: 3 CHANNEL: 10 100% CAL = 100.00
TEST: S.I. T4-30 DATE: 7-6-81

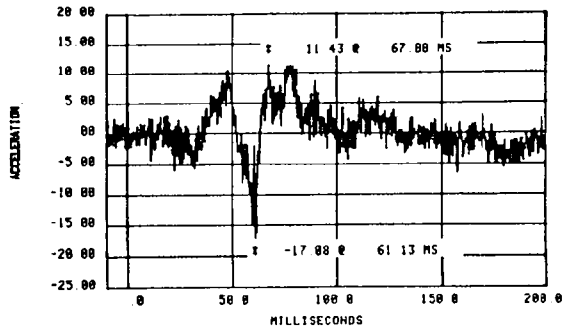


PADDING CONTACT TIME



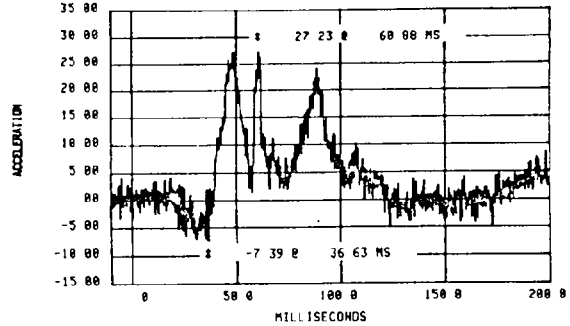
T4-30

TRACK: 3 CHANNEL: 12 100% CAL = 236.30
TEST: S I 14-30 DATE: 7-6-81



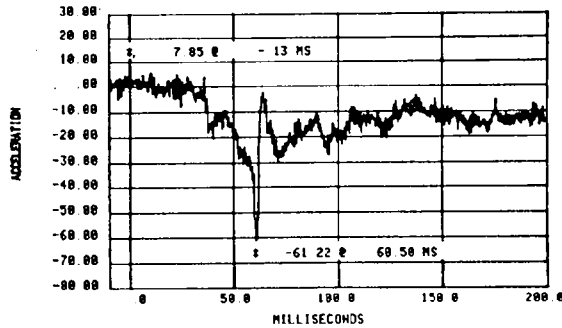
HEAD LONGITUDINAL ACCELERATION

TRACK: 3 CHANNEL: 13 100% CAL = 236.66
TEST: S I 14-30 DATE: 7-6-81



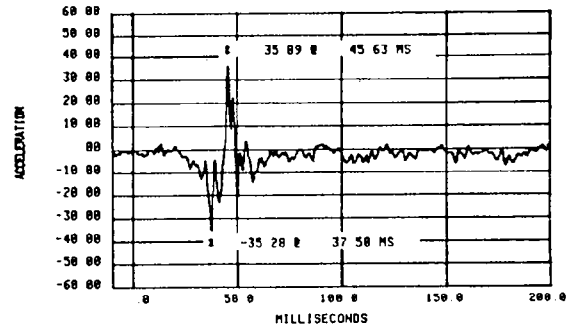
HEAD LATERAL ACCELERATION

TRACK: 3 CHANNEL: 14 100% CAL = 259.79
TEST: S I 14-30 DATE: 7-6-81



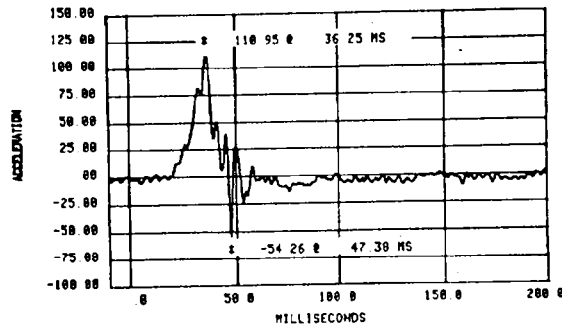
HEAD VERTICAL ACCELERATION

TRACK: 3 CHANNEL: 7 100% CAL = 333.79
TEST: S I 14-30 DATE: 7-6-81



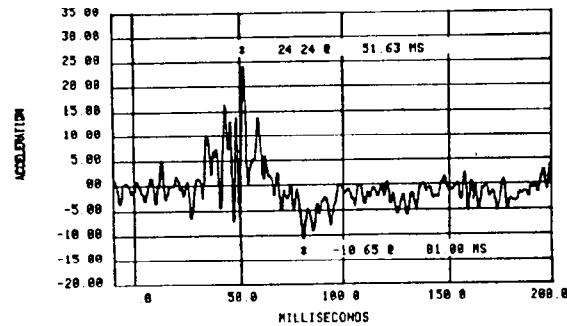
PELVIS LONGITUDINAL ACCELERATION

TRACK: 3 CHANNEL: 8 100% CAL = 396.57
TEST: S I 14-30 DATE: 7-6-81



PELVIS LATERAL ACCELERATION

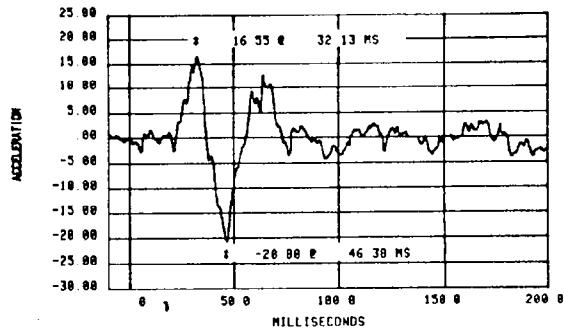
TRACK: 3 CHANNEL: 9 100% CAL = 368.42
TEST: S I 14-30 DATE: 7-6-81



PELVIS VERTICAL ACCELERATION

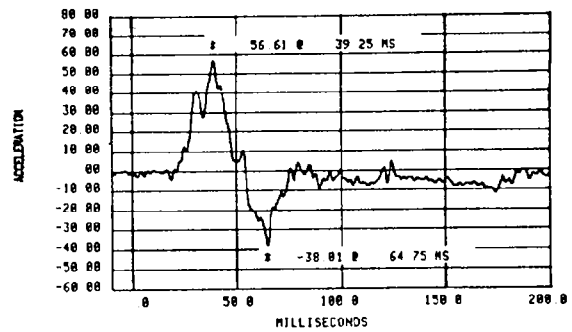
T4-30

TRACK: 2 CHANNEL: 7 100% CAL = 370.81
TEST: S. I. T4-30 DATE: 7-6-81



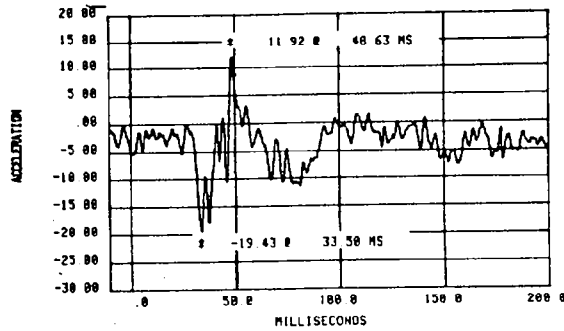
UPPER THORAX LONGITUDINAL ACCELERATION

TRACK: 2 CHANNEL: 8 100% CAL = 339.86
TEST: S. I. T4-30 DATE: 7-6-81



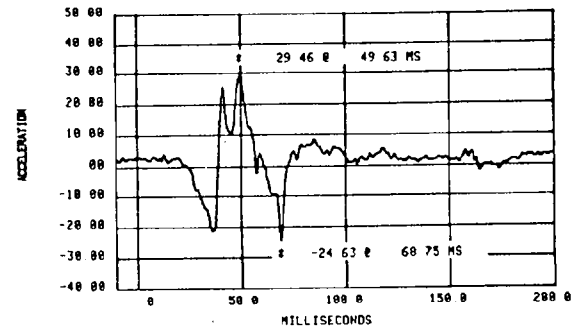
UPPER THORAX LATERAL ACCELERATION

TRACK: 2 CHANNEL: 9 100% CAL = 362.87
TEST: S. I. T4-30 DATE: 7-6-81



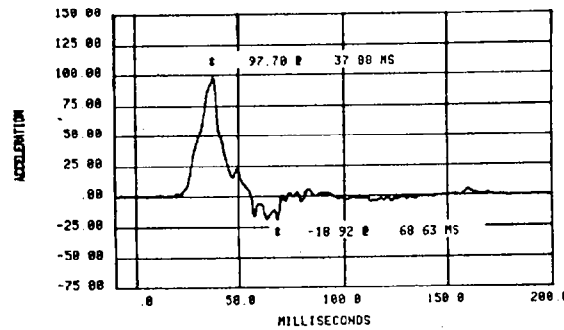
UPPER THORAX VERTICAL ACCELERATION

TRACK: 3 CHANNEL: 1 100% CAL = 395.88
TEST: S. I. T4-30 DATE: 7-6-81



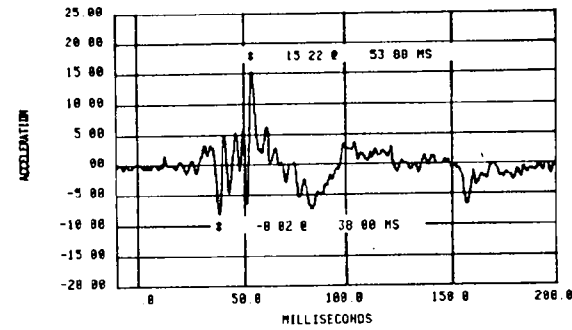
LOWER THORAX LONGITUDINAL ACCELERATION

TRACK: 3 CHANNEL: 2 100% CAL = 336.71
TEST: S. I. T4-30 DATE: 7-6-81



LOWER THORAX LATERAL ACCELERATION

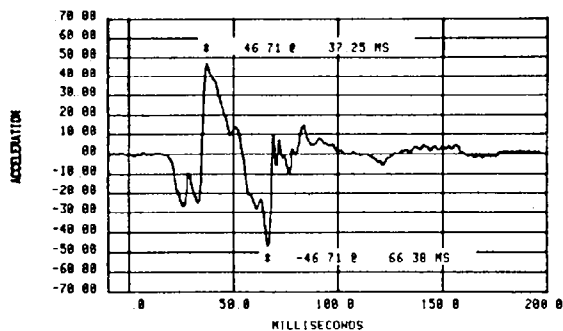
TRACK: 3 CHANNEL: 3 100% CAL = 339.86
TEST: S. I. T4-30 DATE: 7-6-81



LOWER THORAX VERTICAL ACCELERATION

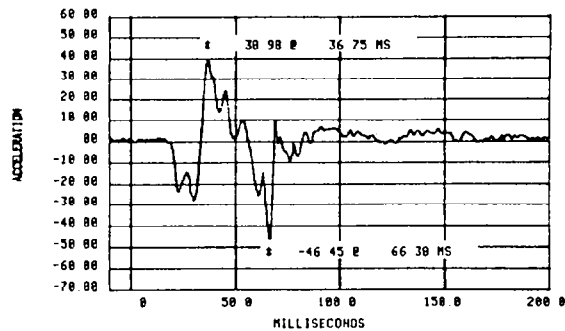
T4-30

TRACK: 2 CHANNEL: 4 100% CAL = .343 06
TEST: S. I. 14-30 DATE: 7-6-81



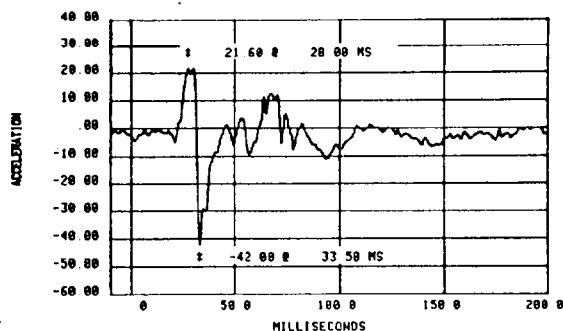
UPPER STERNUM LONGITUDINAL ACCELERATION

TRACK: 2 CHANNEL: 3 100% CAL = .339 06
TEST: S. I. 14-30 DATE: 7-6-81



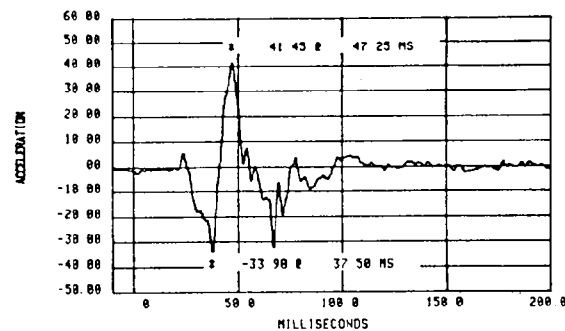
LOWER STERNUM LONGITUDINAL ACCELERATION

TRACK: 2 CHANNEL: 13 100% CAL = .397 91
TEST: S. I. 14-30 DATE: 7-6-81



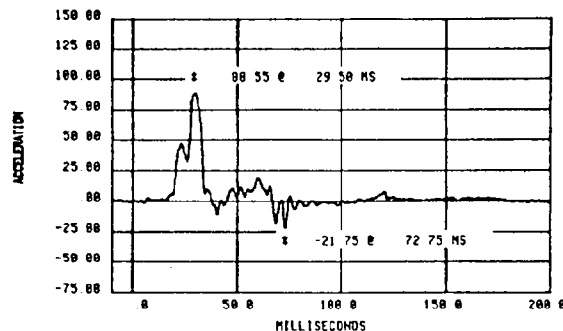
RIGHT LOWER RIB LONGITUDINAL ACCELERATION

TRACK: 2 CHANNEL: 11 100% CAL = .398 16
TEST: S. I. 14-30 DATE: 7-6-81



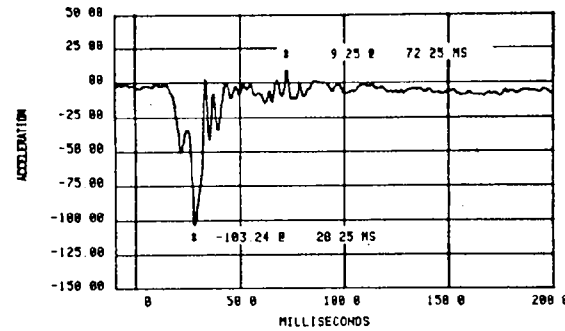
LEFT LOWER RIB LONGITUDINAL ACCELERATION

TRACK: 2 CHANNEL: 1 100% CAL = .363 74
TEST: S. I. 14-30 DATE: 7-6-81



RIGHT UPPER RIB LATERAL ACCELERATION

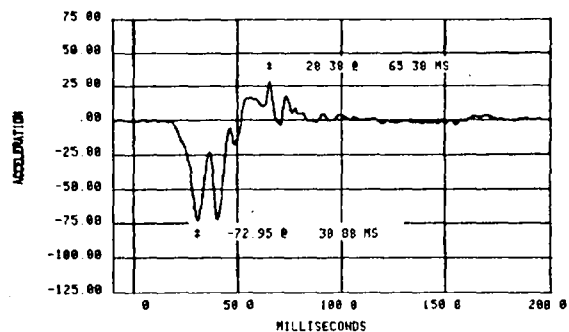
TRACK: 2 CHANNEL: 12 100% CAL = .421 71
TEST: S. I. 14-30 DATE: 7-6-81



RIGHT LOWER RIB LATERAL ACCELERATION

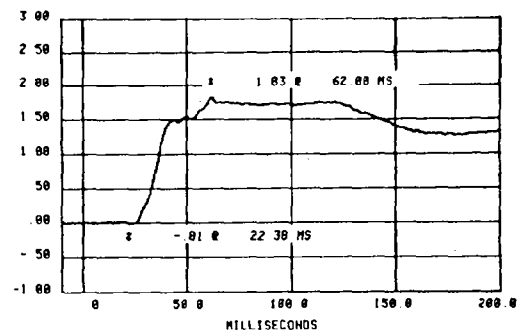
T4-30

TRACK: 2 CHANNEL: 2 100% CAL = 346 27
TEST: S.I. T4-30 DATE: 7-6-81

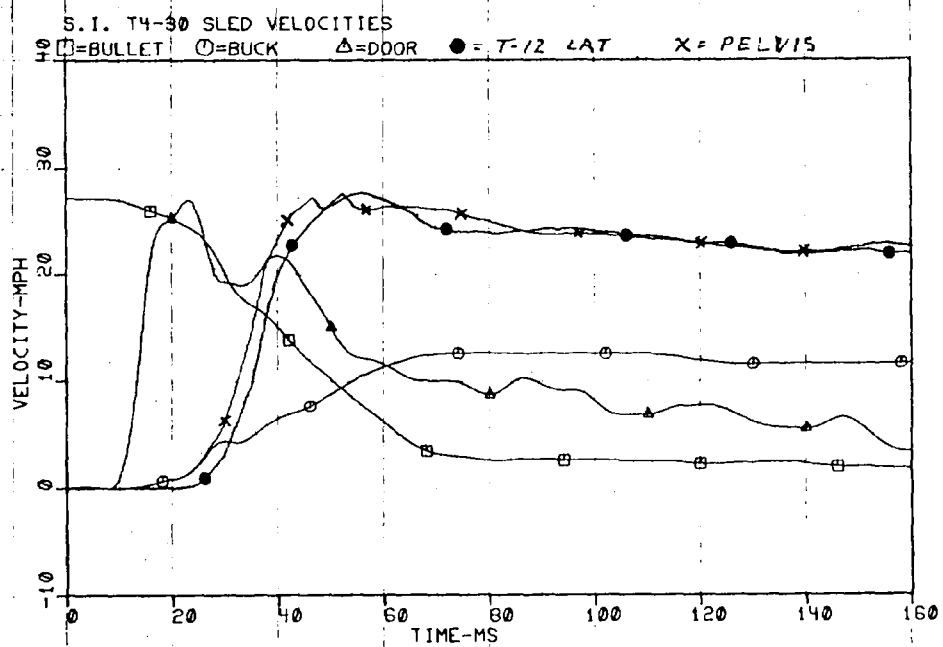


LEFT UPPER RIB LATERAL ACCELERATION

TRACK: 3 CHANNEL: 11 100% CAL = 2 81
TEST: S.I. T4-30 DATE: 7-6-81

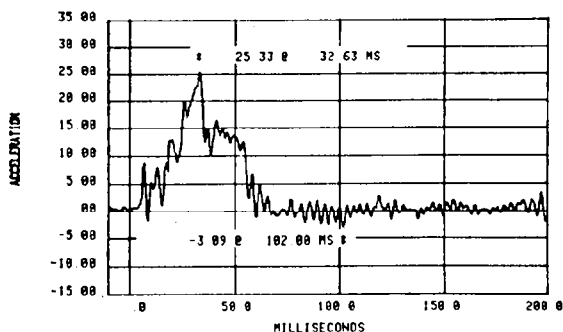


LOWER RIB DISPLACEMENT



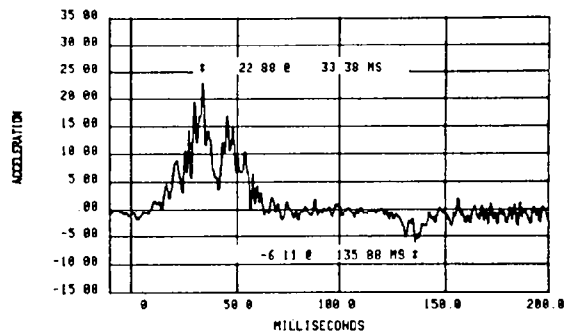
T4-30

TRACK: 3 CHANNEL: 4 100% CAL = 82.87
TEST S: 1 SLED T4-31 DATE: 8-28-81



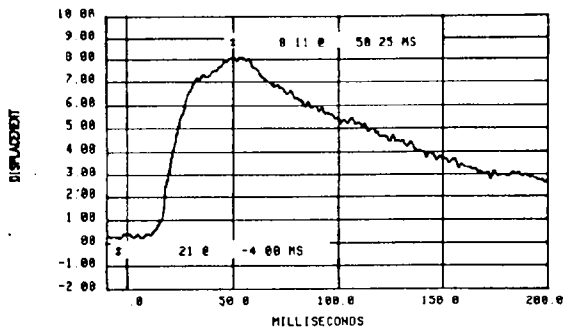
BULLET SLED LONGITUDINAL ACCELERATION

TRACK: 2 CHANNEL: 10 100% CAL = 154.94
TEST S: 1 SLED T4-31 DATE: 8-28-81



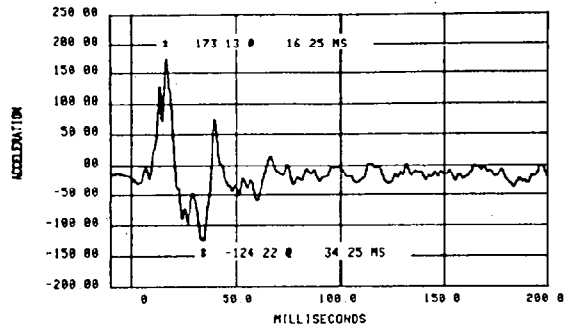
TARGET SLED ACCELERATION

TRACK: 3 CHANNEL: 5 100% CAL = 21.73
TEST S: 1 SLED T4-31 DATE: 8-28-81



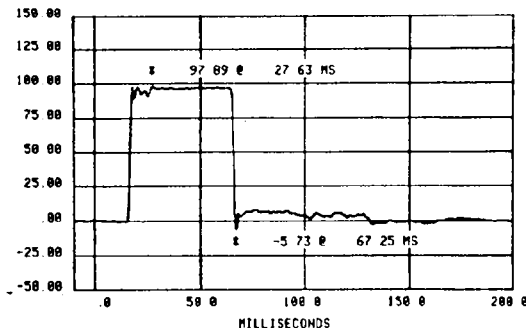
DOOR DISPLACEMENT

TRACK: 2 CHANNEL: 14 100% CAL = 588.61
TEST S: 1 SLED T4-31 DATE: 8-28-81



DOOR LATERAL ACCELERATION

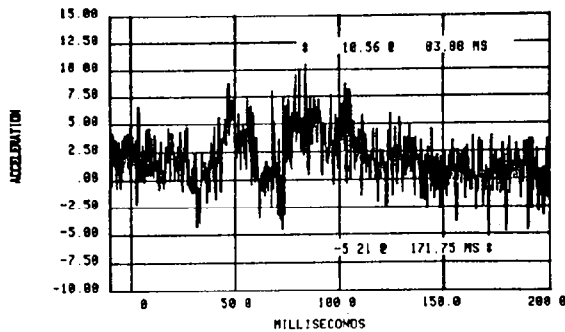
TRACK: 3 CHANNEL: 10 100% CAL = 100.00
TEST S: 1 SLED T4-31 DATE: 8-28-81



PADDLING CONTACT TIME

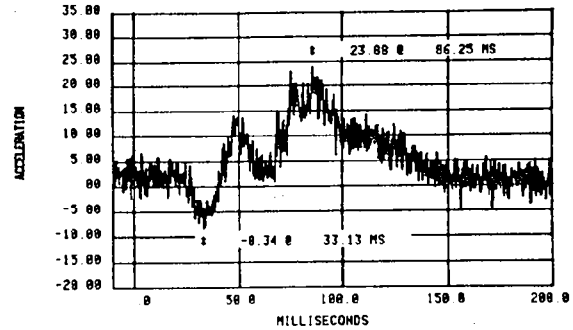
T4-31

TRACK: 3 CHANNEL: 12 100% CAL = 236.30
TEST: S.I. SLED T4-31 DATE: 8-20-81



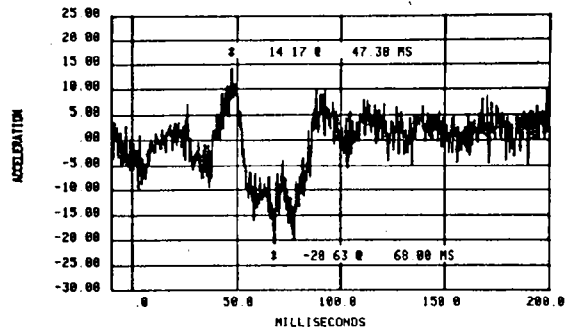
HEAD LONGITUDINAL ACCELERATION

TRACK: 3 CHANNEL: 13 100% CAL = 236.66
TEST: S.I. SLED T4-31 DATE: 8-20-81



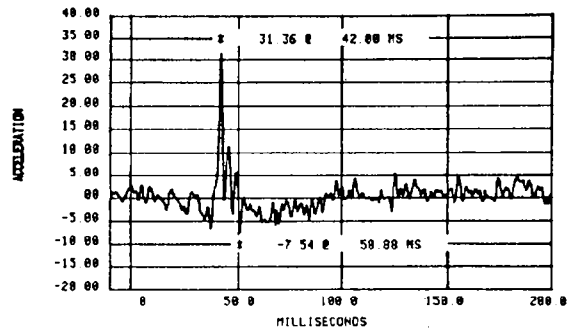
HEAD LATERAL ACCELERATION

TRACK: 3 CHANNEL: 14 100% CAL = 259.79
TEST: S.I. SLED T4-31 DATE: 8-20-81



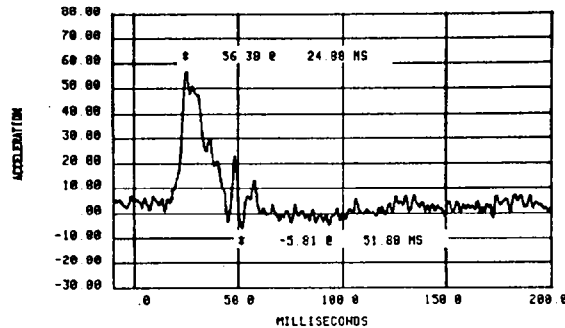
HEAD VERTICAL ACCELERATION

TRACK: 3 CHANNEL: 7 100% CAL = 333.79
TEST: S.I. SLED T4-31 DATE: 8-20-81



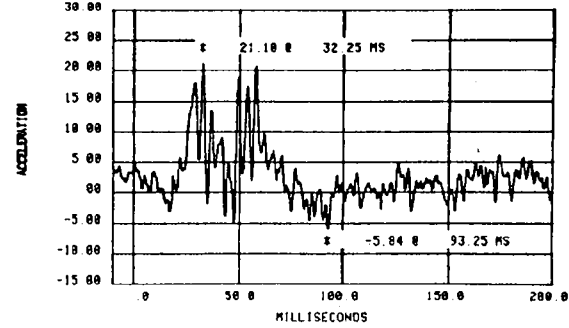
PELVIS LONGITUDINAL ACCELERATION

TRACK: 3 CHANNEL: 8 100% CAL = 396.57
TEST: S.I. SLED T4-31 DATE: 8-20-81



PELVIS LATERAL ACCELERATION

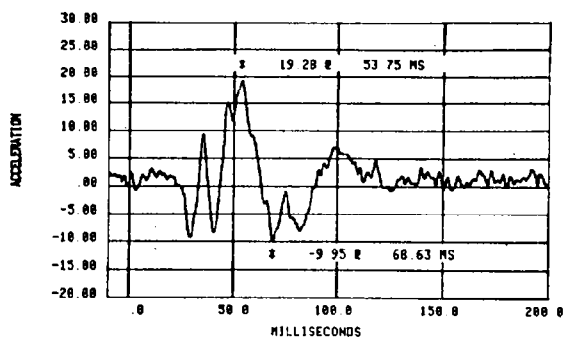
TRACK: 3 CHANNEL: 9 100% CAL = 368.42
TEST: S.I. SLED T4-31 DATE: 8-20-81



PELVIS VERTICAL ACCELERATION

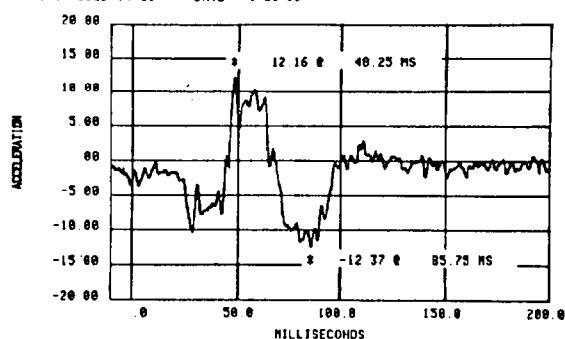
T4-31

TRACK: 2 CHANNEL: 4 100% CAL = 343.86
TEST: S.I. SLED T4-31 DATE: 8-28-81



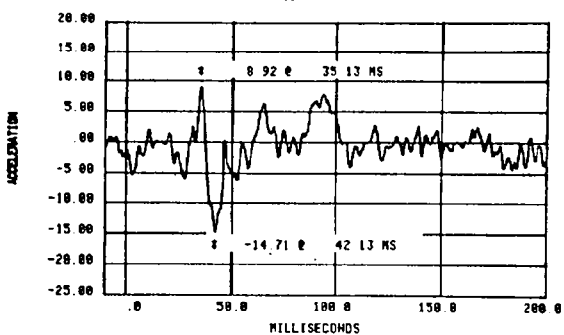
UPPER STERNUM LONGITUDINAL ACCELERATION

TRACK: 2 CHANNEL: 3 100% CAL = 339.86
TEST: S.I. SLED T4-31 DATE: 8-28-81



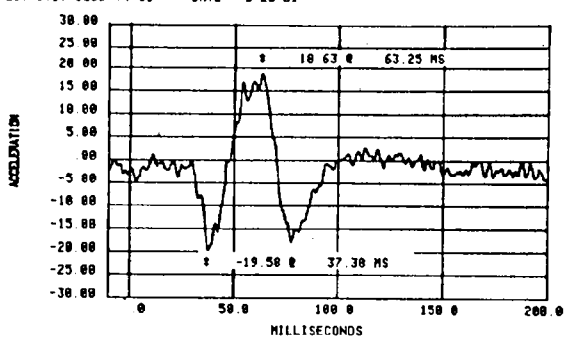
LOWER STERNUM LONGITUDINAL ACCELERATION

TRACK: 2 CHANNEL: 13 100% CAL = 397.91
TEST: S.I. SLED T4-31 DATE: 8-28-81



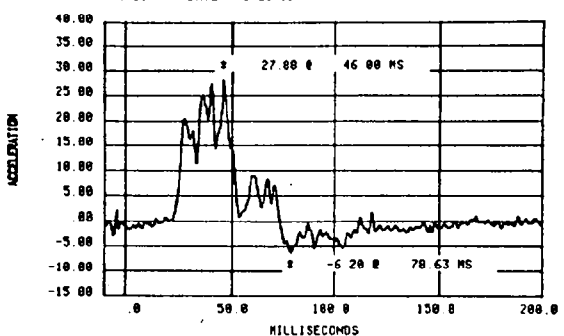
RIGHT LOWER RIB LONGITUDINAL ACCELERATION

TRACK: 2 CHANNEL: 11 100% CAL = 398.16
TEST: S.I. SLED T4-31 DATE: 8-28-81



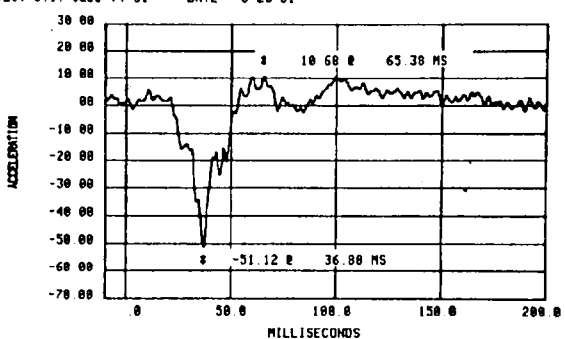
LEFT LOWER RIB LONGITUDINAL ACCELERATION

TRACK: 2 CHANNEL: 1 100% CAL = 363.74
TEST: S.I. SLED T4-31 DATE: 8-28-81



RIGHT UPPER RIB LATERAL ACCELERATION

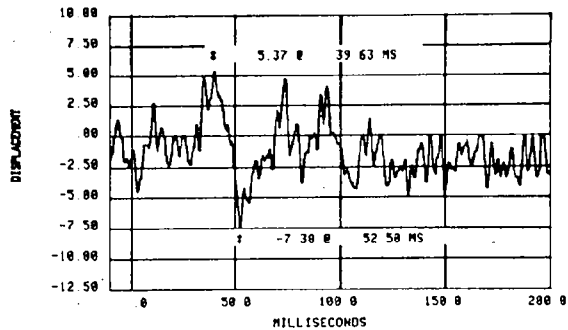
TRACK: 2 CHANNEL: 12 100% CAL = 421.71
TEST: S.I. SLED T4-31 DATE: 8-28-81



RIGHT LOWER RIB LATERAL ACCELERATION

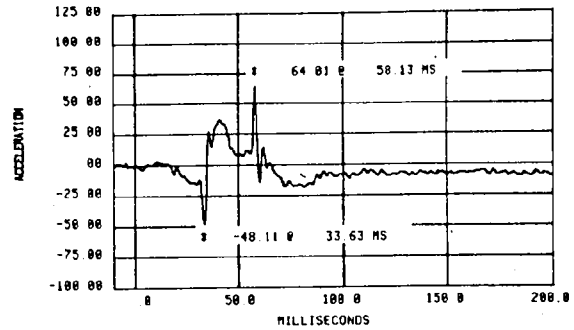
T4-31

TRACK: 2 CHANNEL: 7 100% CAL = 370.81
TEST: S 1 SLED T4-31 DATE: 8-28-81



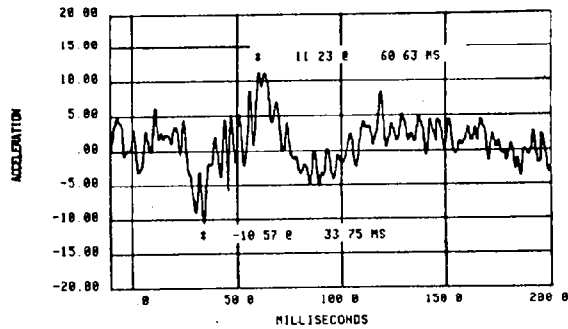
UPPER THORAX LONGITUDINAL ACCELERATION

TRACK: 2 CHANNEL: 8 100% CAL = 339.86
TEST: S 1 SLED T4-31 DATE: 8-28-81



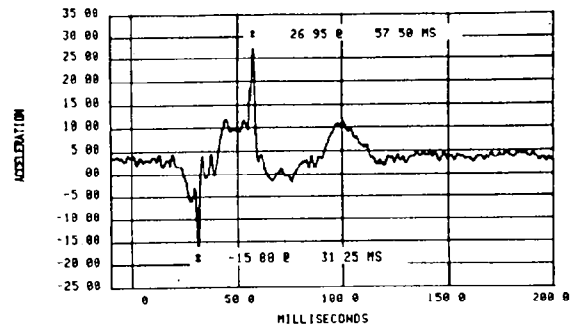
UPPER THORAX LATERAL ACCELERATION

TRACK: 2 CHANNEL: 9 100% CAL = 362.87
TEST: S 1 SLED T4-31 DATE: 8-28-81



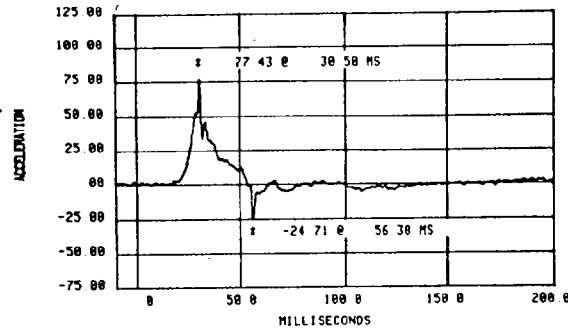
UPPER THORAX VERTICAL ACCELERATION

TRACK: 3 CHANNEL: 1 100% CAL = 395.88
TEST: S 1 SLED T4-31 DATE: 8-28-81



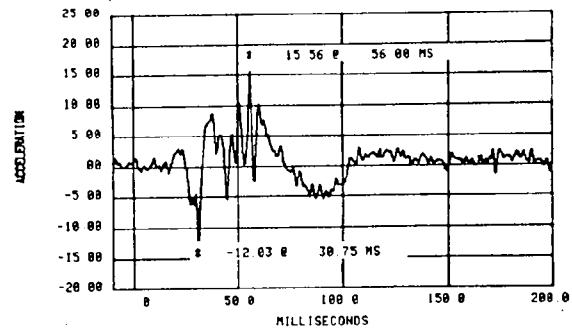
LOWER THORAX LONGITUDINAL ACCELERATION

TRACK: 3 CHANNEL: 2 100% CAL = 336.71
TEST: S 1 SLED T4-31 DATE: 8-28-81



LOWER THORAX LATERAL ACCELERATION

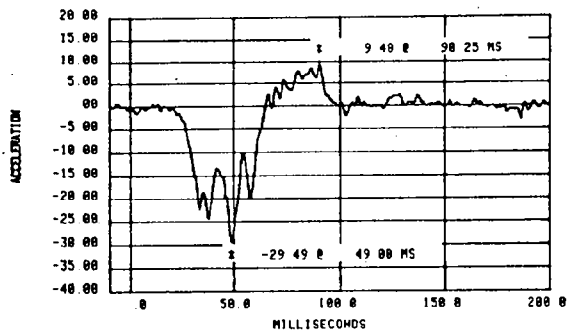
TRACK: 3 CHANNEL: 3 100% CAL = 339.86
TEST: S 1 SLED T4-31 DATE: 8-28-81



LOWER THORAX VERTICAL ACCELERATION

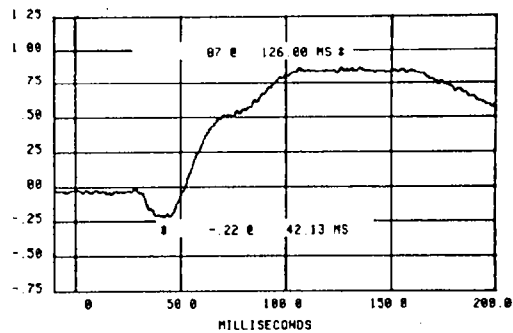
T4-31

TRACK: 2 CHANNEL: 2 100% CAL = -346.27
 TEST S.I. SLED T4-31 DATE: 8-20-81

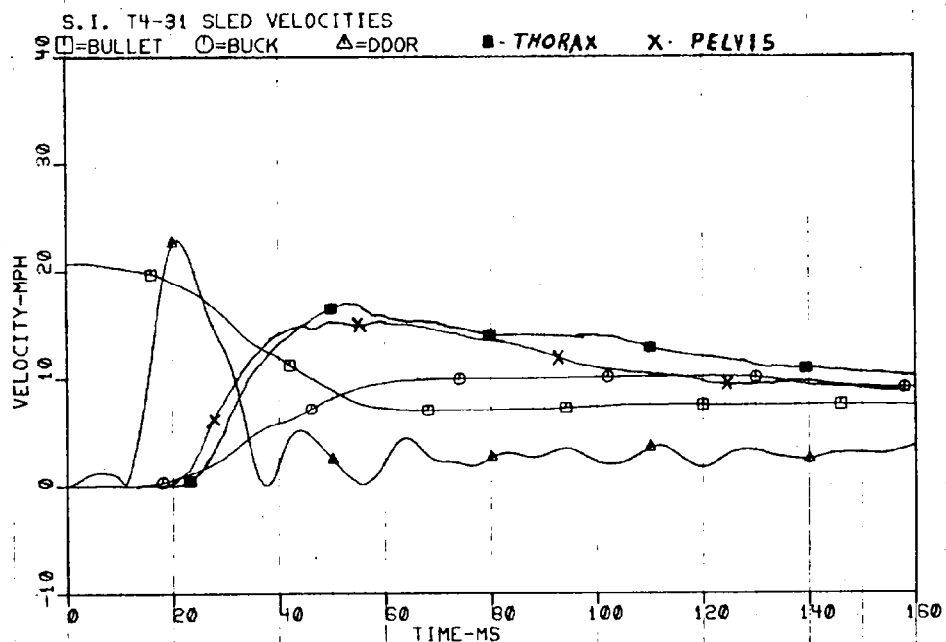


LEFT UPPER RIB LATERAL ACCELERATION

TRACK: 3 CHANNEL: 11 100% CAL = 2.01
 TEST S.I. SLED T4-31 DATE: 8-20-81

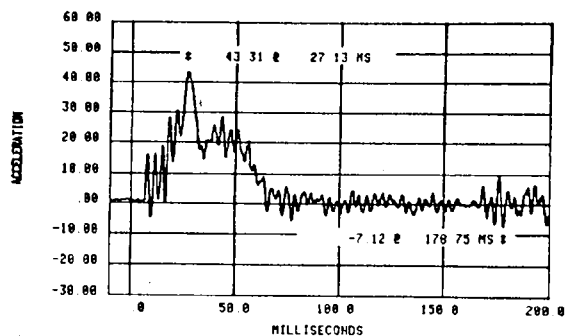


LOWER RIB DISPLACEMENT



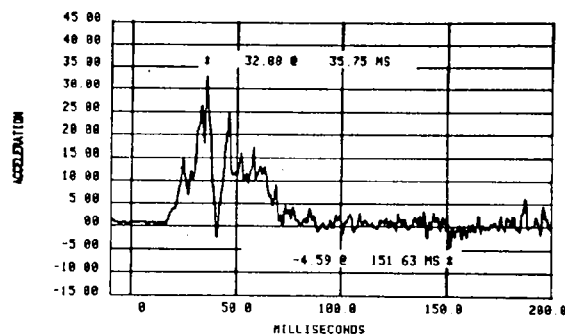
T4-31

TRACK: 3 CHANNEL: 4 100% CAL = .62 87
TEST: S.I. T4-32 DATE: 8-24-81



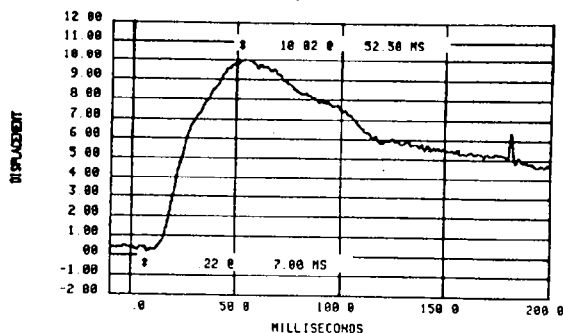
BULLET SLED LONGITUDINAL ACCELERATION

TRACK: 2 CHANNEL: 10 100% CAL = .154 94
TEST: S.I. T4-32 DATE: 8-24-81



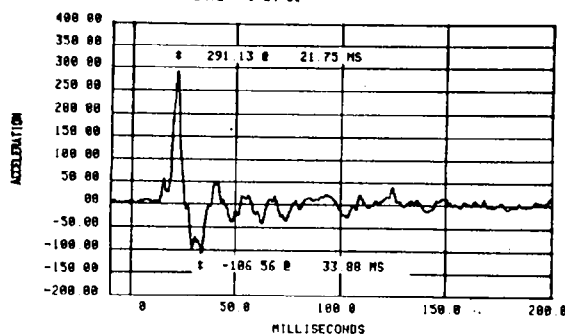
TARGET SLED ACCELERATION

TRACK: 3 CHANNEL: 5 100% CAL = .21 73
TEST: S.I. T4-32 DATE: 8-24-81



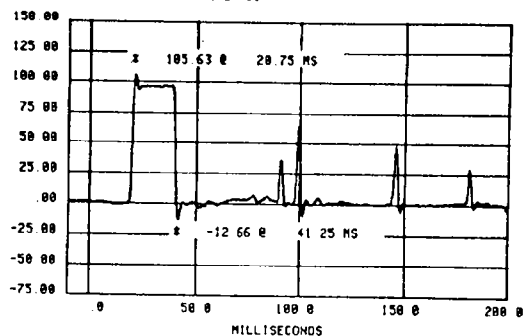
DOOR DISPLACEMENT

TRACK: 2 CHANNEL: 14 100% CAL = .588 61
TEST: S.I. T4-32 DATE: 8-24-81



DOOR LATERAL ACCELERATION

TRACK: 3 CHANNEL: 10 100% CAL = .100 00
TEST: S.I. T4-32 DATE: 8-24-81

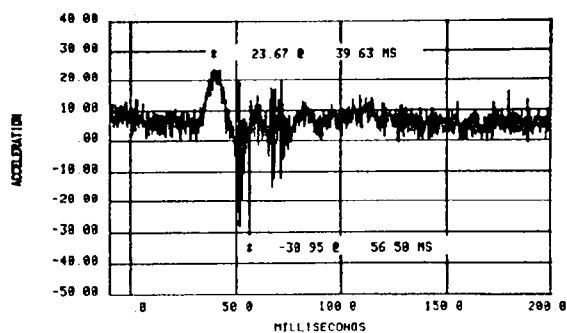


PADDING CONTACT TIME

T4-32

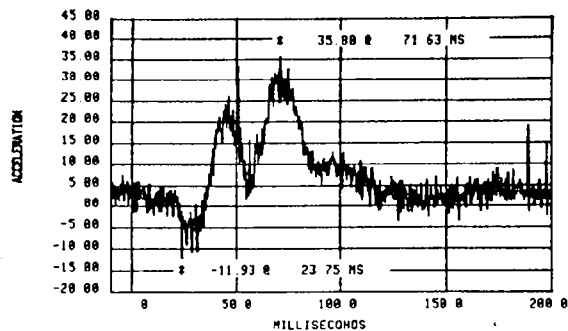
M-100

TRACK: 3 CHANNEL: 12 100% CAL = 253.30
TEST: S. 1 T4-32 DATE: 8-24-81



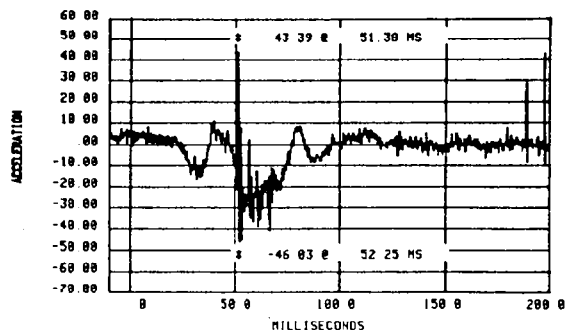
HEAD LONGITUDINAL ACCELERATION

TRACK: 3 CHANNEL: 13 100% CAL = 240.43
TEST: S. 1 T4-32 DATE: 8-24-81



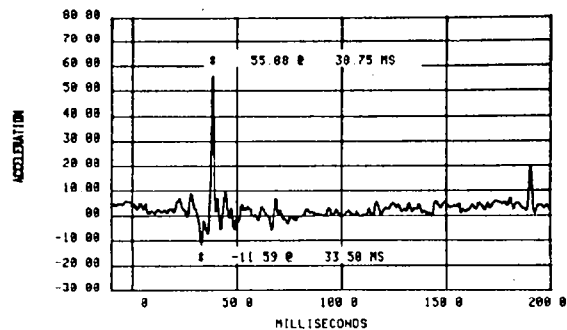
HEAD LATERAL ACCELERATION

TRACK: 3 CHANNEL: 14 100% CAL = 215.24
TEST: S. 1 T4-32 DATE: 8-24-81



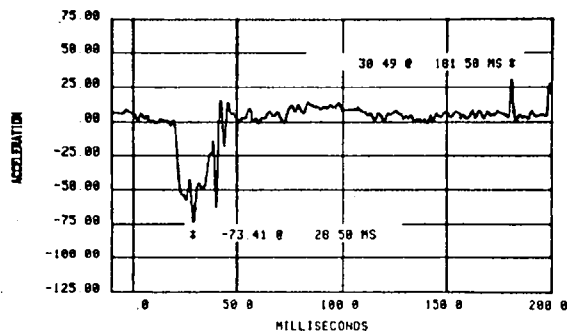
HEAD VERTICAL ACCELERATION

TRACK: 3 CHANNEL: 7 100% CAL = 311.15
TEST: S. 1 T4-32 DATE: 8-24-81



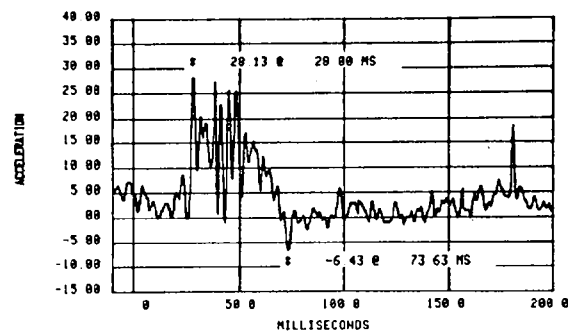
PELVIS LONGITUDINAL ACCELERATION

TRACK: 3 CHANNEL: 8 100% CAL = 370.23
TEST: S. 1 T4-32 DATE: 8-24-81



PELVIS LATERAL ACCELERATION

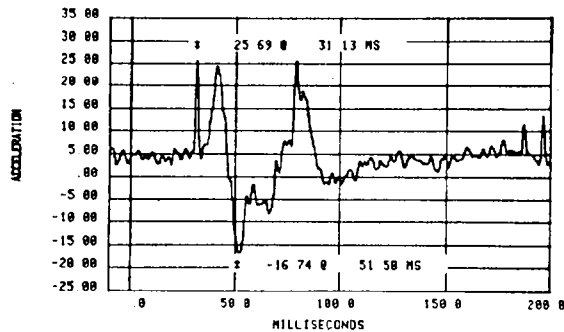
TRACK: 3 CHANNEL: 9 100% CAL = 383.35
TEST: S. 1 T4-32 DATE: 8-24-81



PELVIS VERTICAL ACCELERATION

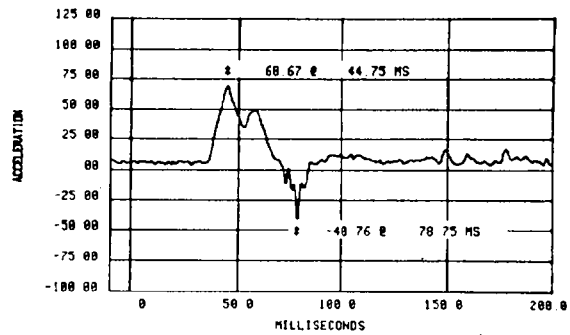
T4-32

TRACK: 2 CHANNEL: 7 100% CAL = 382.68
TEST: S I T4-32 DATE: 8-24-81



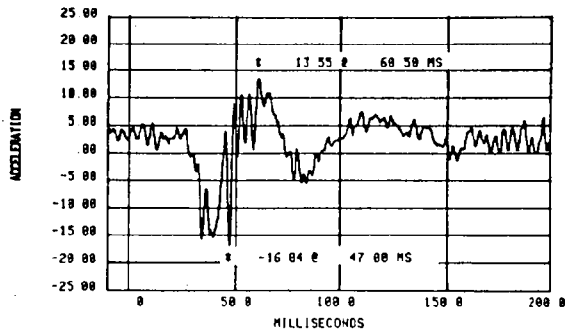
UPPER THORAX LONGITUDINAL ACCELERATION

TRACK: 2 CHANNEL: 8 100% CAL = 359.31
TEST: S I T4-32 DATE: 8-24-81



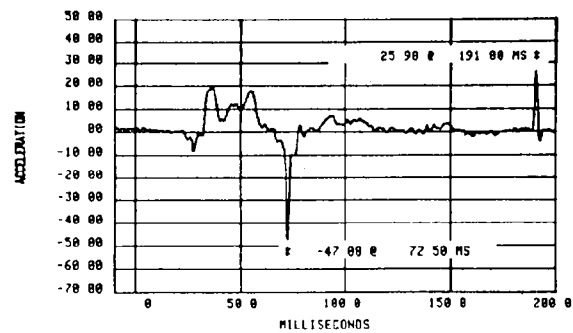
UPPER THORAX LATERAL ACCELERATION

TRACK: 2 CHANNEL: 9 100% CAL = 319.89
TEST: S I T4-32 DATE: 8-24-81



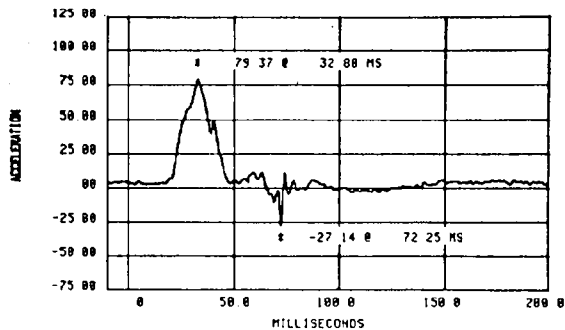
UPPER THORAX VERTICAL ACCELERATION

TRACK: 3 CHANNEL: 1 100% CAL = 364.20
TEST: S I T4-32 DATE: 8-24-81



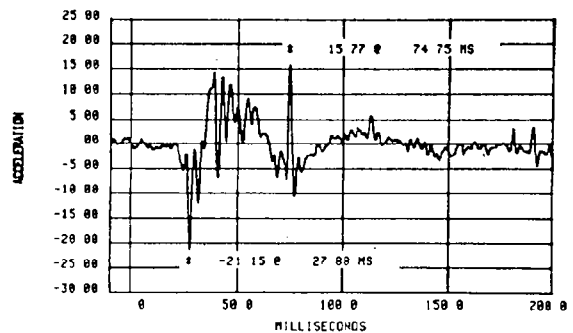
LOWER THORAX LONGITUDINAL ACCELERATION

TRACK: 3 CHANNEL: 2 100% CAL = 333.38
TEST: S I T4-32 DATE: 8-24-81



LOWER THORAX LATERAL ACCELERATION

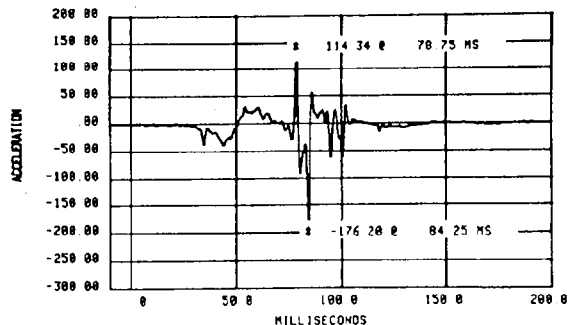
TRACK: 3 CHANNEL: 3 100% CAL = 317.44
TEST: S I T4-32 DATE: 8-24-81



LOWER THORAX VERTICAL ACCELERATION

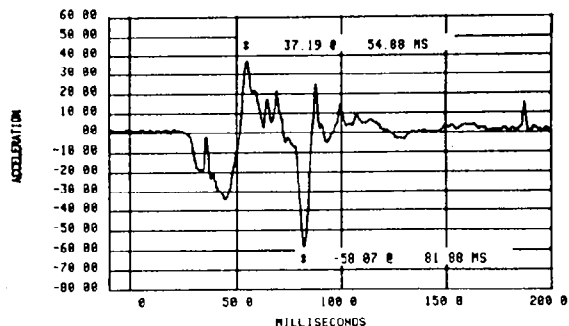
T4-32

TRACK: 2 CHANNEL: 4 100% CAL = 377.75
TEST: S. I. T4-32 DATE: 8-24-81



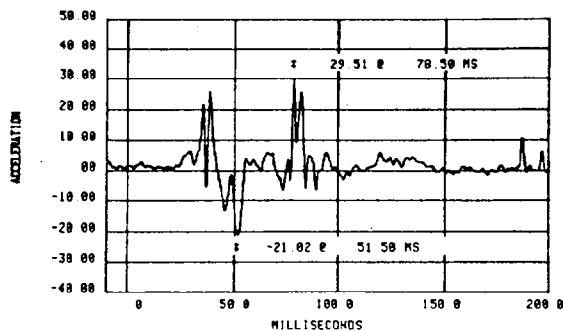
UPPER STERNUM LONGITUDINAL ACCELERATION

TRACK: 2 CHANNEL: 3 100% CAL = 313.11
TEST: S. I. T4-32 DATE: 8-24-81



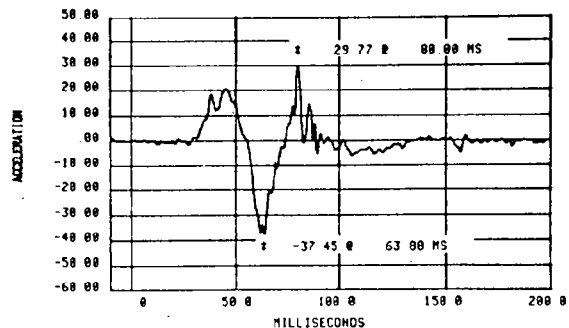
LOWER STERNUM LONGITUDINAL ACCELERATION

TRACK: 2 CHANNEL: 11 100% CAL = 326.38
TEST: S. I. T4-32 DATE: 8-24-81



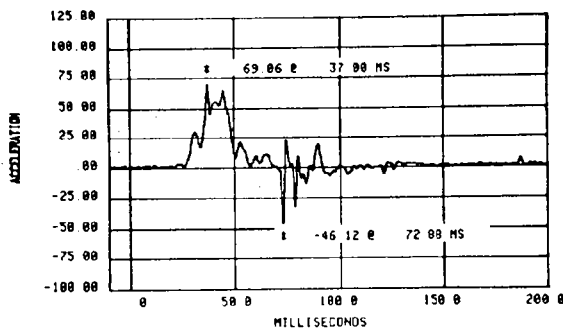
RIGHT LOWER RIB LONGITUDINAL ACCELERATION

TRACK: 2 CHANNEL: 11 100% CAL = 312.34
TEST: S. I. T4-32 DATE: 8-24-81



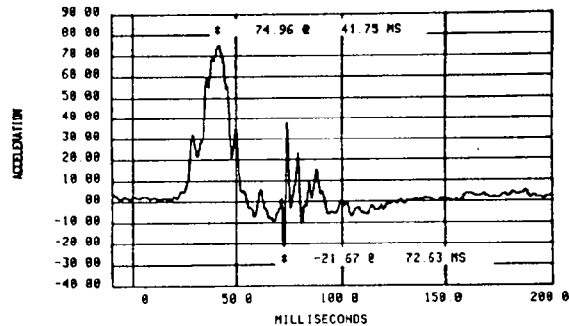
LEFT LOWER RIB LONGITUDINAL ACCELERATION

TRACK: 2 CHANNEL: 1 100% CAL = 418.63
TEST: S. I. T4-32 DATE: 8-24-81



RIGHT UPPER RIB LATERAL ACCELERATION

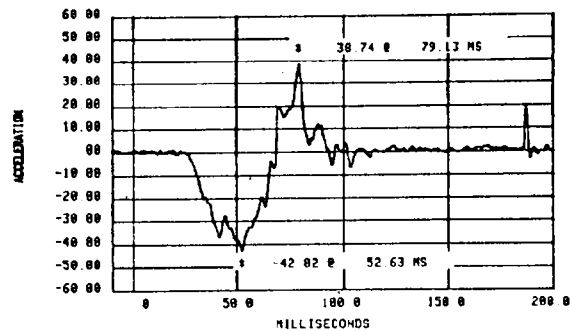
TRACK: 2 CHANNEL: 12 100% CAL = 318.96
TEST: S. I. T4-32 DATE: 8-24-81



RIGHT LOWER RIB LATERAL ACCELERATION

T4-32

TRACK: 2 CHANNEL: 2 100% CAL = 361.53
TEST: S.I. T4-32 DATE: 8-24-81



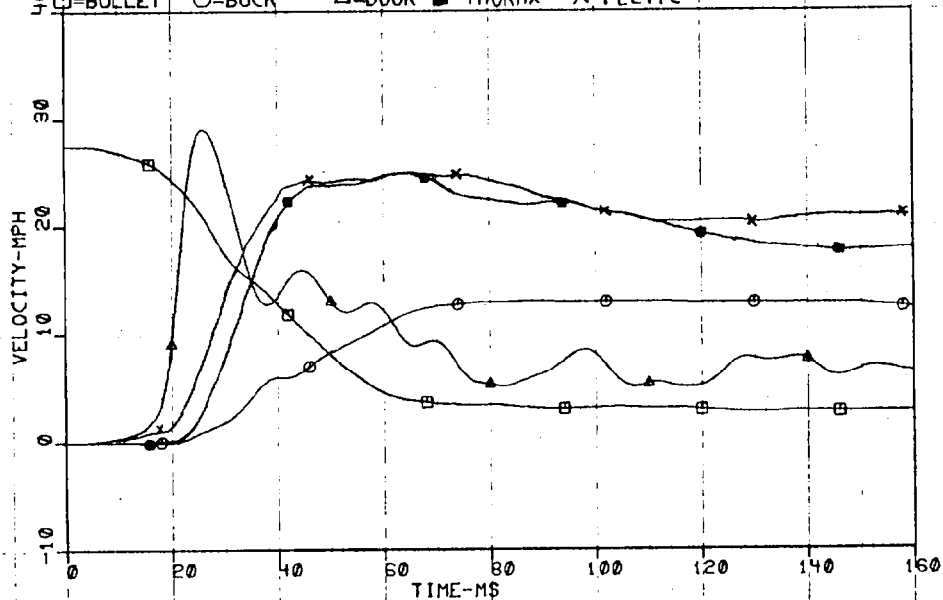
NO DATA AVAILABLE

LEFT UPPER RIB LATERAL ACCELERATION

LOWER RIB DISPLACEMENT

S.I. T4-32 SLED VELOCITIES

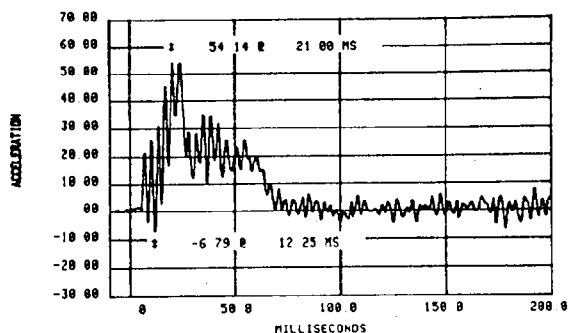
□=BULLET ○=BUCK △=DOOR ■=THORAX X=PELVIC



T4-32

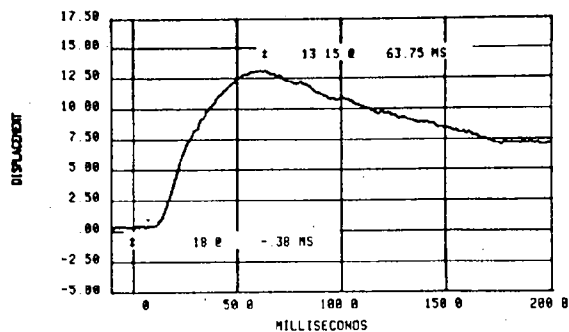
M-104

TRACK: 3 CHANNEL: 4 100% CAL = 82.87
TEST: S. I. SLED T4-33 DATE: 8-25-81



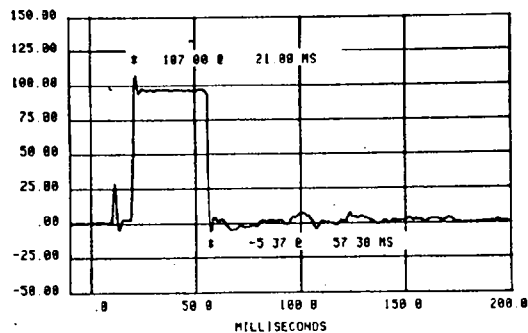
BULLET SLED LONGITUDINAL ACCELERATION

TRACK: 3 CHANNEL: 3 100% CAL = 21.73
TEST: S. I. SLED T4-33 DATE: 8-25-81



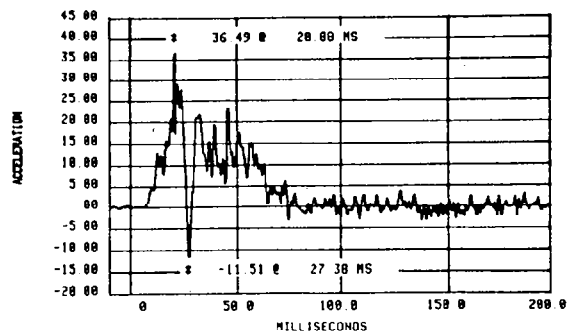
DOOR DISPLACEMENT

TRACK: 3 CHANNEL: 10 100% CAL = 100.00
TEST: S. I. SLED T4-33 DATE: 8-25-81



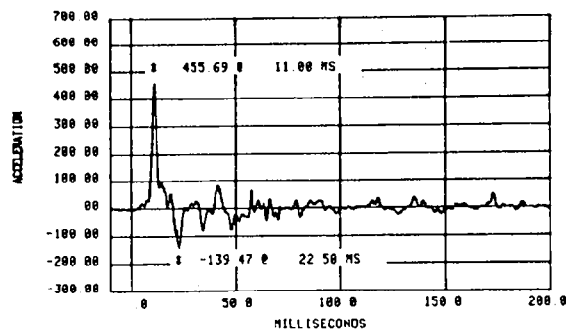
PADDING CONTACT TIME

TRACK: 2 CHANNEL: 10 100% CAL = 154.94
TEST: S. I. SLED T4-33 DATE: 8-25-81



TARGET SLED LATERAL ACCELERATION

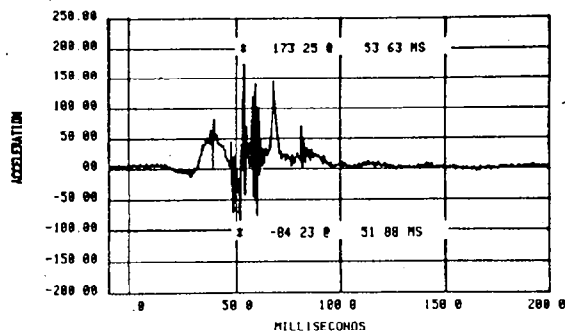
TRACK: 2 CHANNEL: 14 100% CAL = 500.61
TEST: S. I. SLED T4-33 DATE: 8-25-81



DOOR LATERAL ACCELERATION

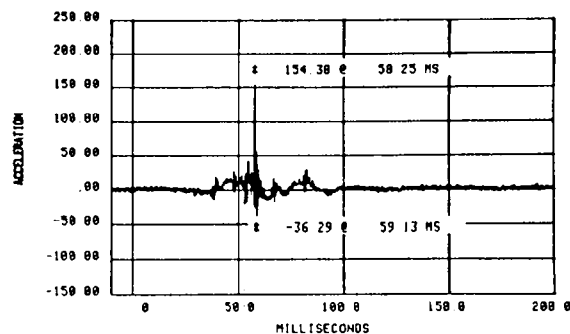
T4-33

TRACK: 3 CHANNEL: 12 100% CAL = 253.30
TEST: S.I. SLED T4-33 DATE: 8-25-81



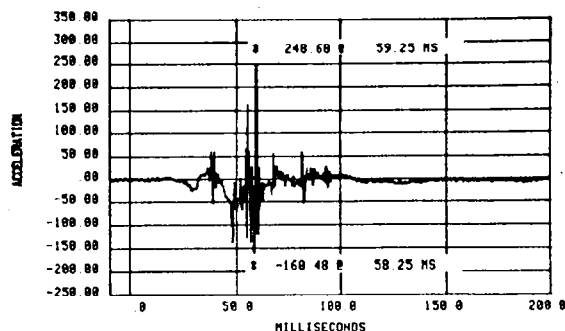
HEAD LONGITUDINAL ACCELERATION

TRACK: 3 CHANNEL: 13 100% CAL = 240.43
TEST: S.I. SLED T4-33 DATE: 8-25-81



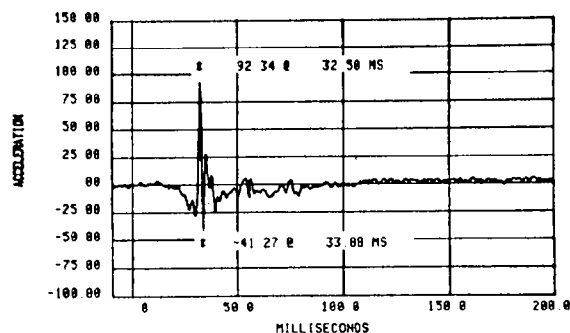
HEAD LATERAL ACCELERATION

TRACK: 3 CHANNEL: 14 100% CAL = 215.24
TEST: S.I. SLED T4-33 DATE: 8-25-81



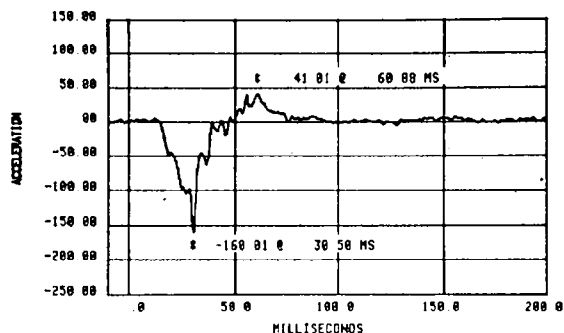
HEAD VERTICAL ACCELERATION

TRACK: 3 CHANNEL: 7 100% CAL = 311.15
TEST: S.I. SLED T4-33 DATE: 8-25-81



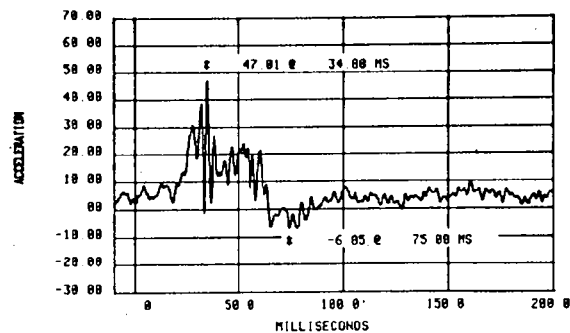
PELVIS LONGITUDINAL ACCELERATION

TRACK: 3 CHANNEL: 8 100% CAL = 378.23
TEST: S.I. SLED T4-33 DATE: 8-25-81



PELVIS LATERAL ACCELERATION

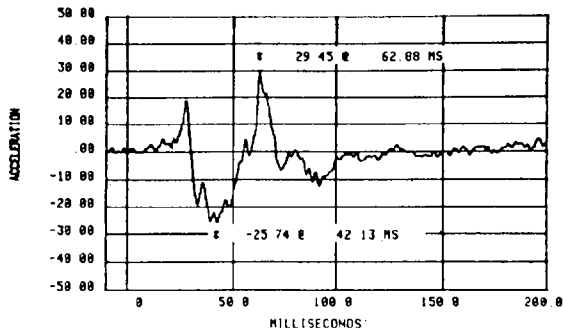
TRACK: 3 CHANNEL: 9 100% CAL = 383.35
TEST: S.I. SLED T4-33 DATE: 8-25-81



PELVIS VERTICAL ACCELERATION

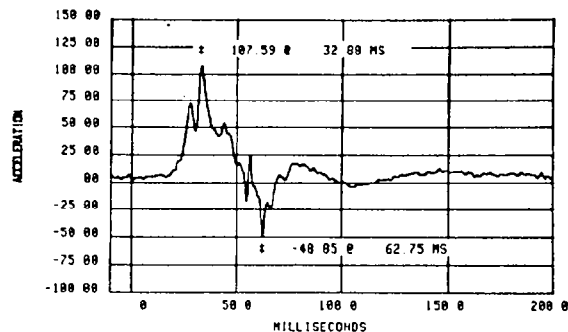
T4-33

TRACK: 2 CHANNEL: 7 100% CAL = 382.68
TEST: S I SLED T4-33 DATE: 8-25-81



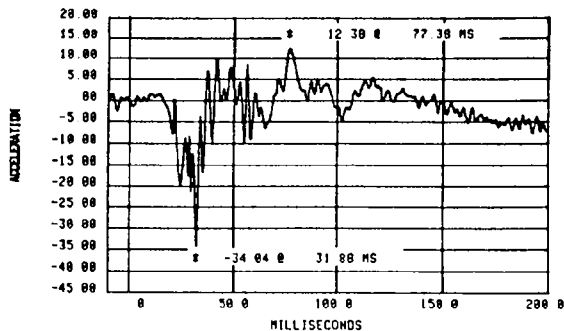
UPPER THORAX LONGITUDINAL ACCELERATION

TRACK: 2 CHANNEL: 8 100% CAL = 359.31
TEST: S I SLED T4-33 DATE: 8-25-81



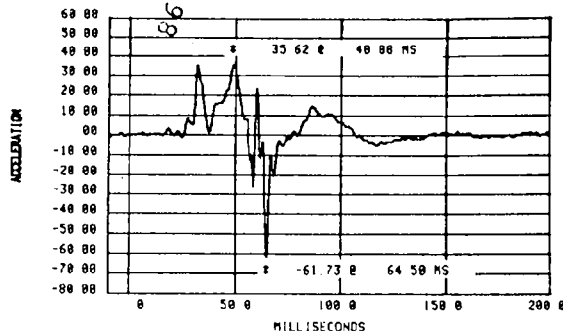
UPPER THORAX LATERAL ACCELERATION

TRACK: 2 CHANNEL: 9 100% CAL = 319.89
TEST: S I SLED T4-33 DATE: 8-25-81



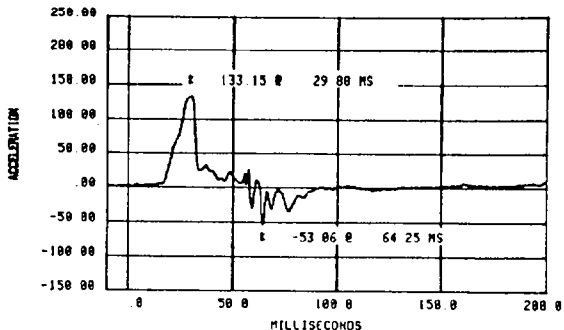
UPPER THORAX VERTICAL ACCELERATION

TRACK: 3 CHANNEL: 1 100% CAL = 364.28
TEST: S I SLED T4-33 DATE: 8-25-81



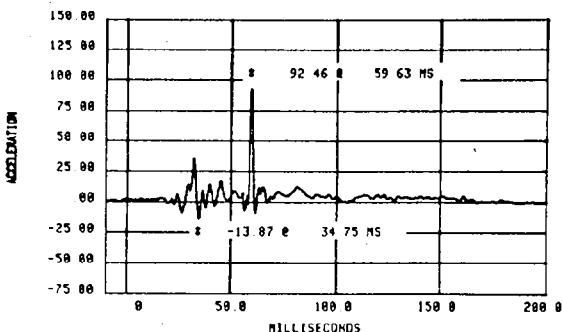
LOWER THORAX LONGITUDINAL ACCELERATION

TRACK: 3 CHANNEL: 2 100% CAL = 333.38
TEST: S I SLED T4-33 DATE: 8-25-81



LOWER THORAX LATERAL ACCELERATION

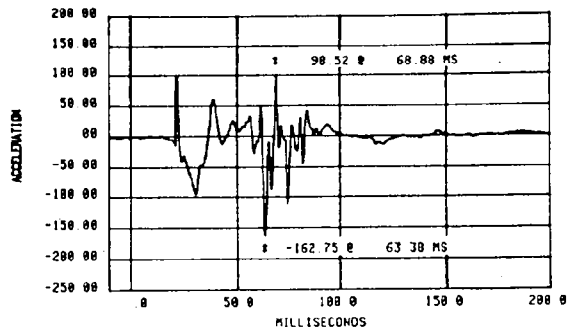
TRACK: 3 CHANNEL: 3 100% CAL = 317.44
TEST: S I SLED T4-33 DATE: 8-25-81



LOWER THORAX VERTICAL ACCELERATION

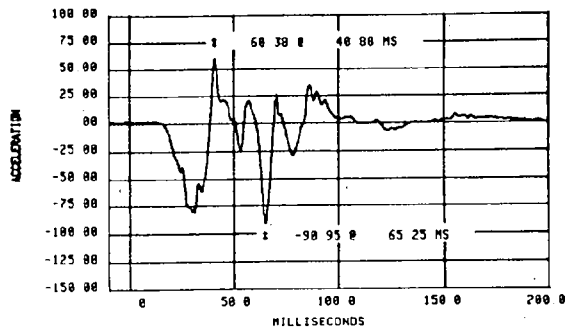
T4-33

TRACK: 2 CHANNEL: 4 100% CAL = 377.75
TEST: S I. SLED T4-33 DATE: 8-25-81



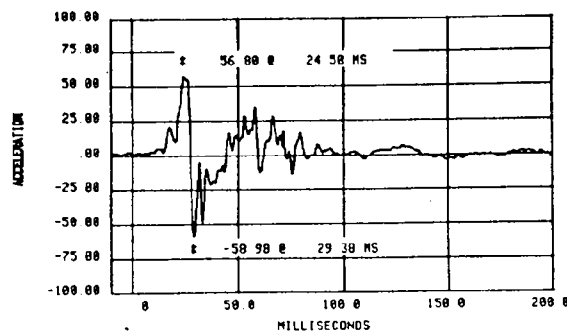
UPPER STERNUM LONGITUDINAL ACCELERATION

TRACK: 2 CHANNEL: 3 100% CAL = 313.11
TEST: S I. SLED T4-33 DATE: 8-25-81



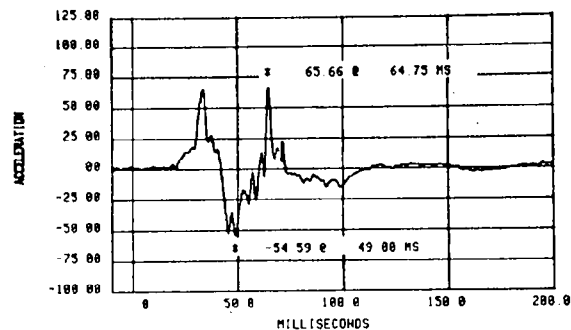
LOWER STERNUM LONGITUDINAL ACCELERATION

TRACK: 2 CHANNEL: 13 100% CAL = 326.38
TEST: S I. SLED T4-33 DATE: 8-25-81



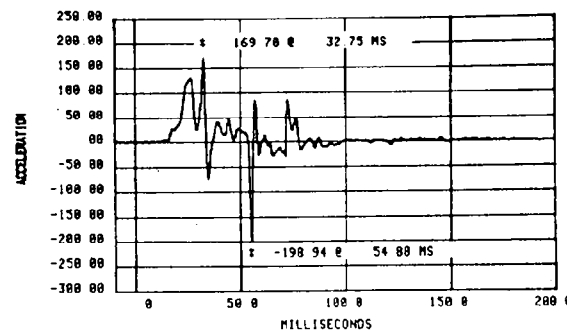
RIGHT LOWER RIB LONGITUDINAL ACCELERATION

TRACK: 2 CHANNEL: 11 100% CAL = 312.34
TEST: S I. SLED T4-33 DATE: 8-25-81



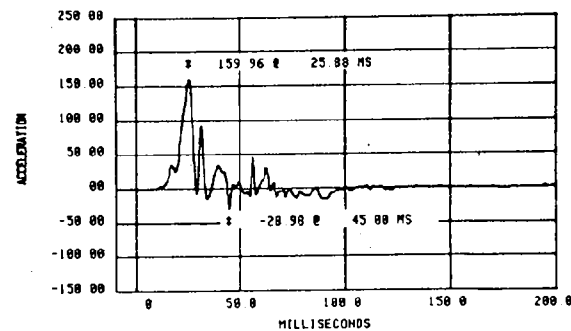
LEFT LOWER RIB LONGITUDINAL ACCELERATION

TRACK: 2 CHANNEL: 1 100% CAL = 418.63
TEST: S I. SLED T4-33 DATE: 8-25-81



RIGHT UPPER RIB LATERAL ACCELERATION

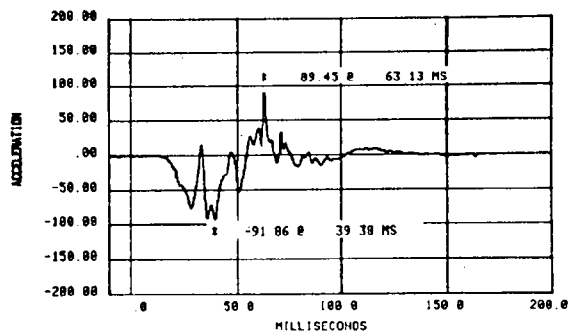
TRACK: 2 CHANNEL: 12 100% CAL = 318.96
TEST: S I. SLED T4-33 DATE: 8-25-81



RIGHT LOWER RIB LATERAL ACCELERATION

T4-33

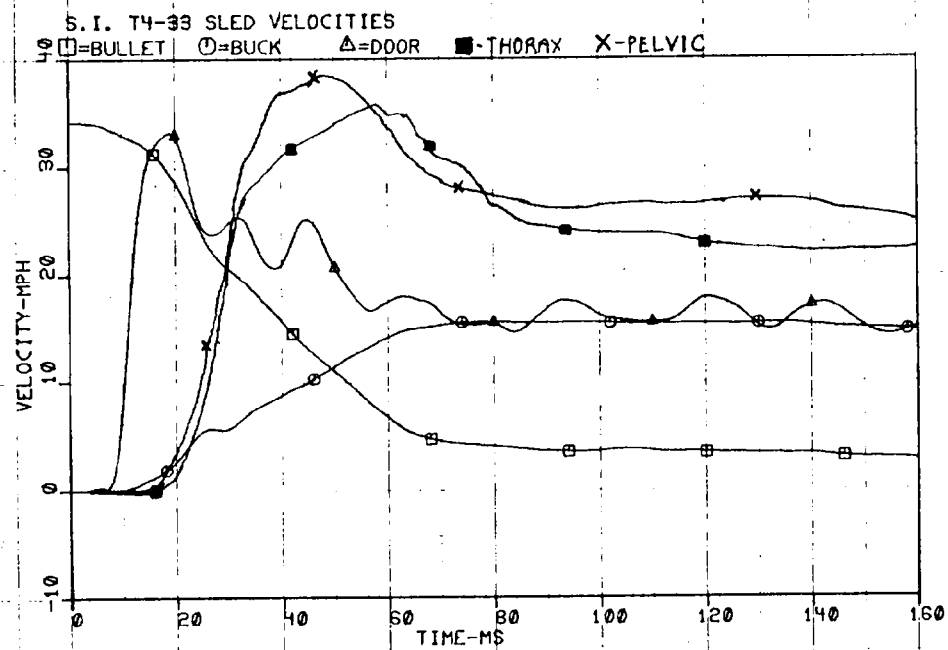
TRACK: 2 CHANNEL: 2 100% CAL = 361.53
 TEST: S. I. SLED T4-33 DATE: 8-25-81



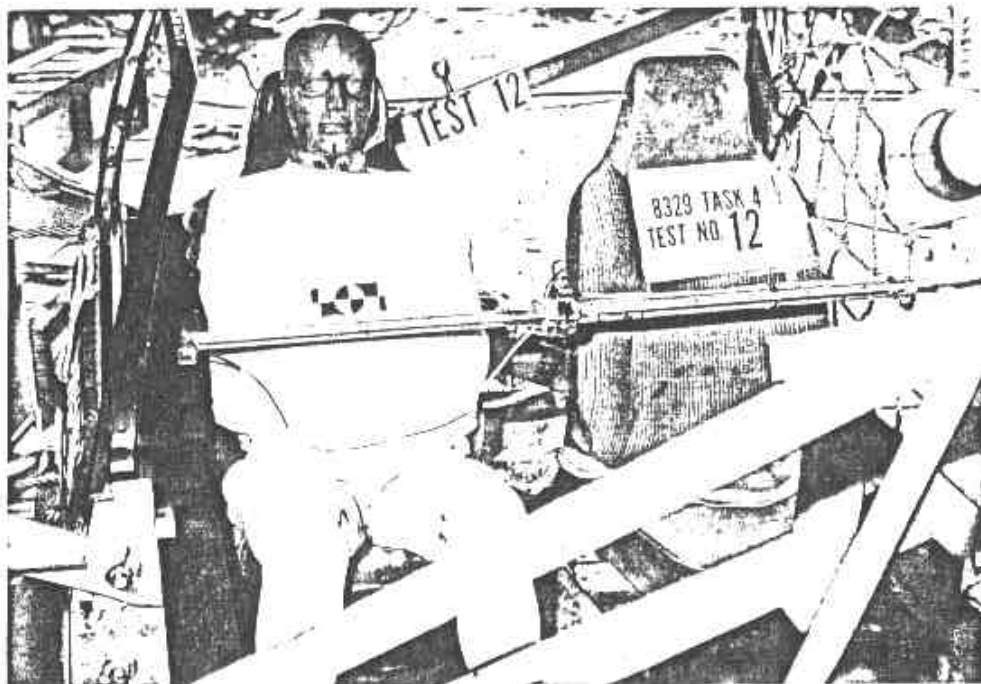
NO DATA AVAILABLE

LEFT UPPER RIB LATERAL ACCELERATION

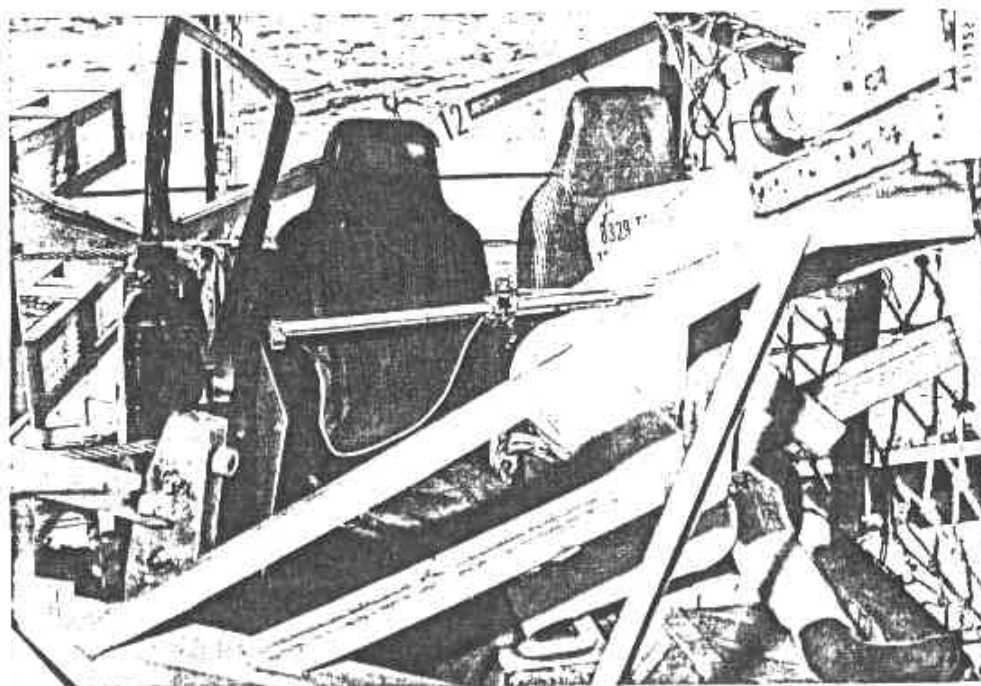
LOWER RIB DISPLACEMENT



T4-33



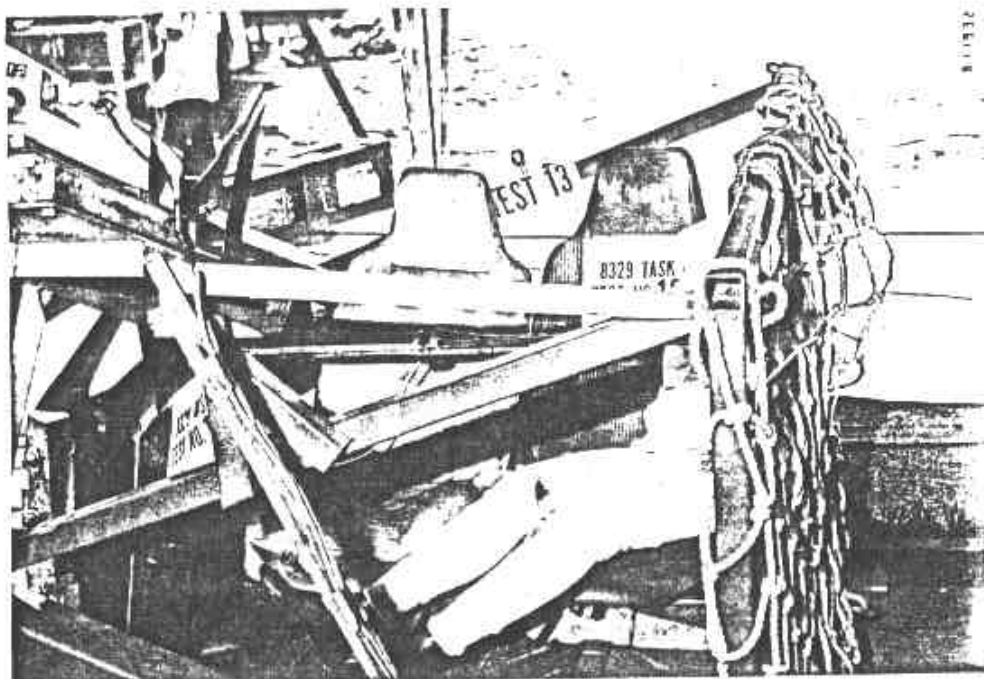
TEST T4-12 PRE-TEST CONFIGURATION



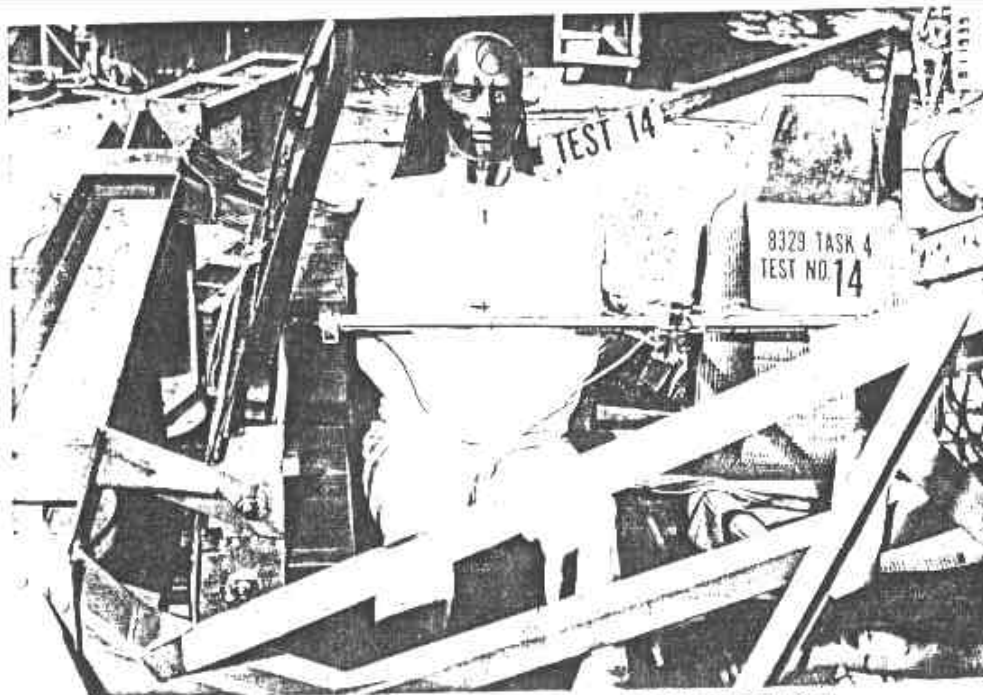
TEST T4-12 POST-TEST CONFIGURATION



TEST T4-13 PRE-TEST CONFIGURATION



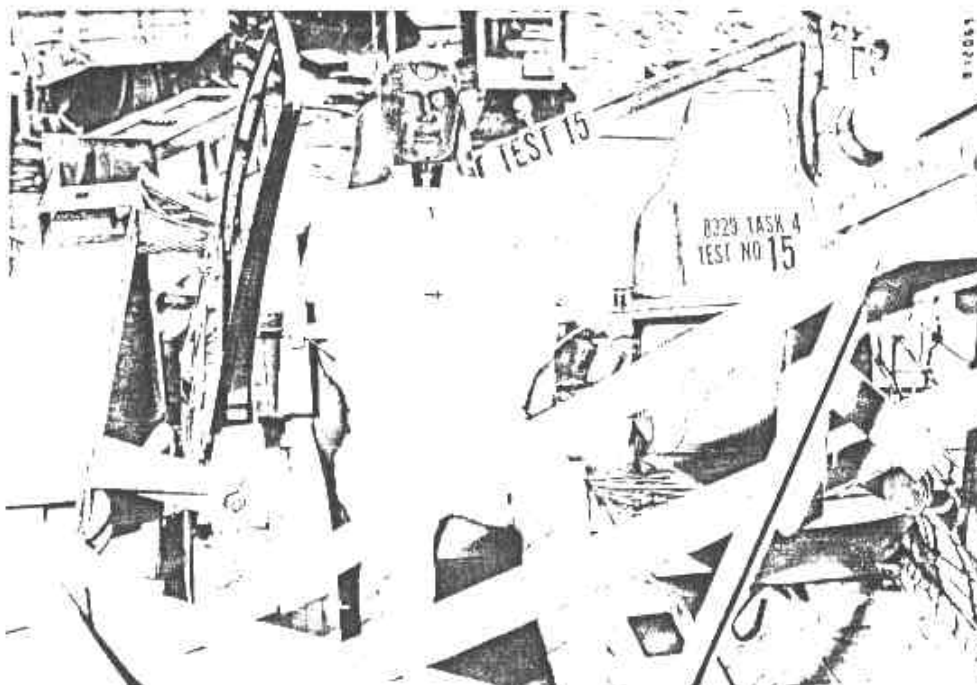
TEST T4-13 POST-TEST CONFIGURATION



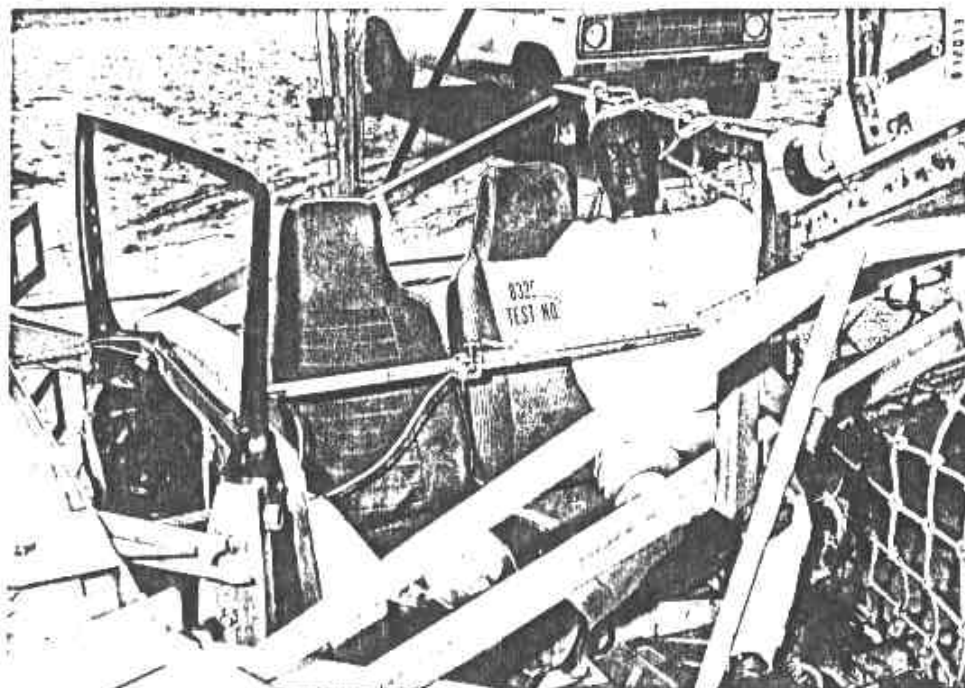
TEST T4-14 PRE-TEST CONFIGURATION



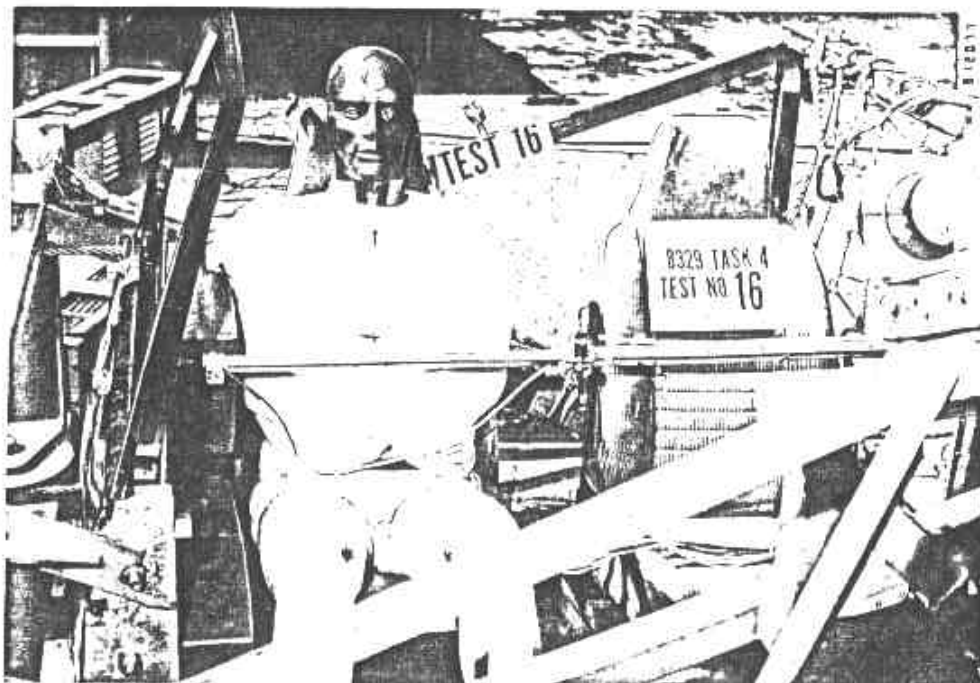
TEST T4-14 POST-TEST CONFIGURATION



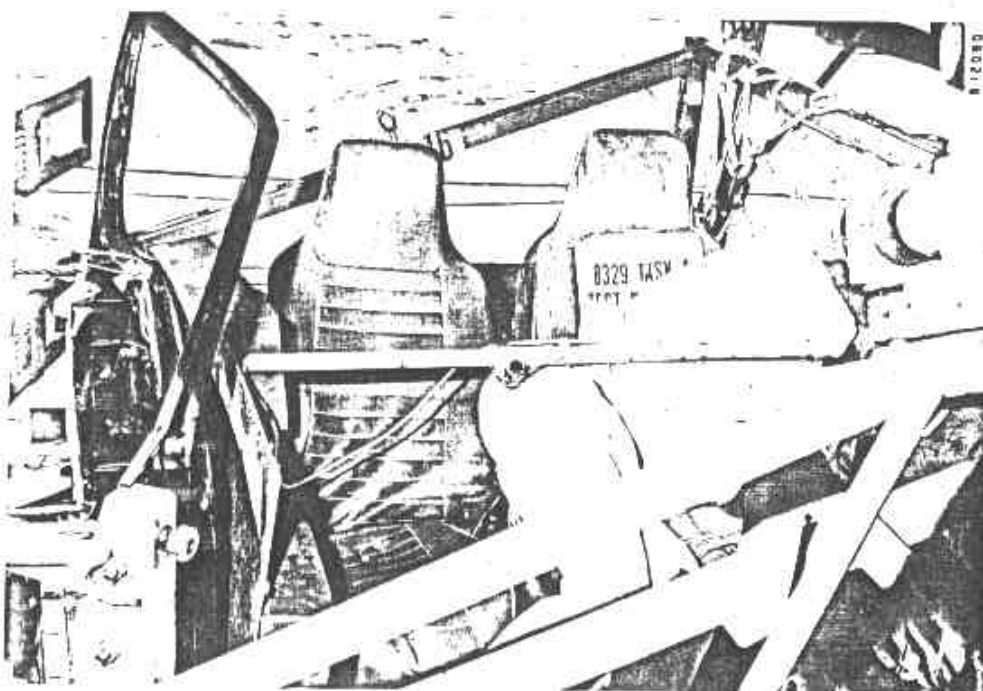
TEST T4-15 PRE-TEST CONFIGURATION



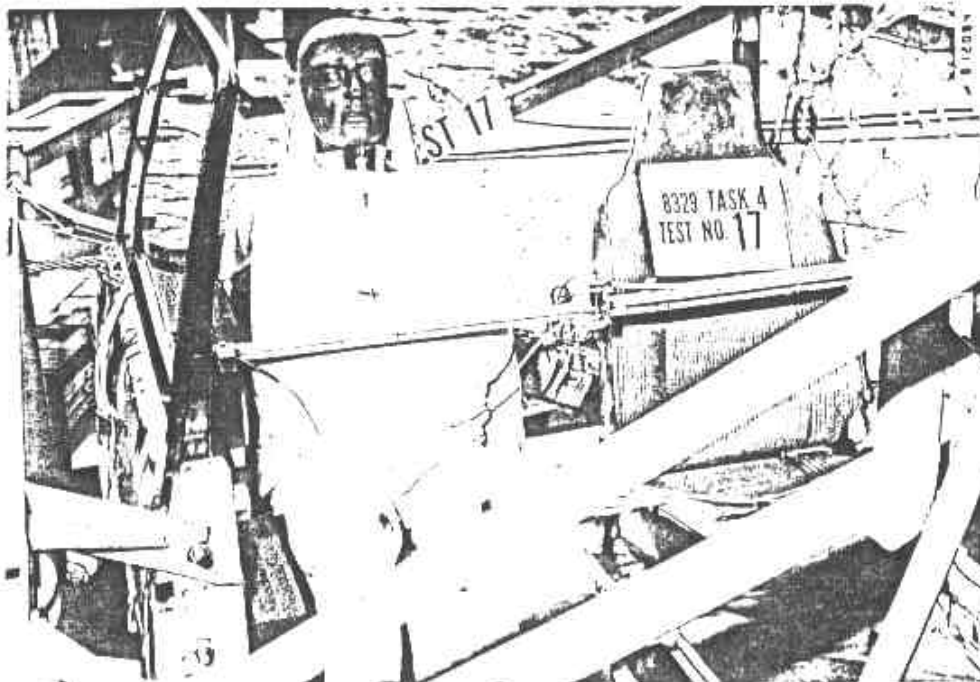
TEST T4-15 POST-TEST CONFIGURATION



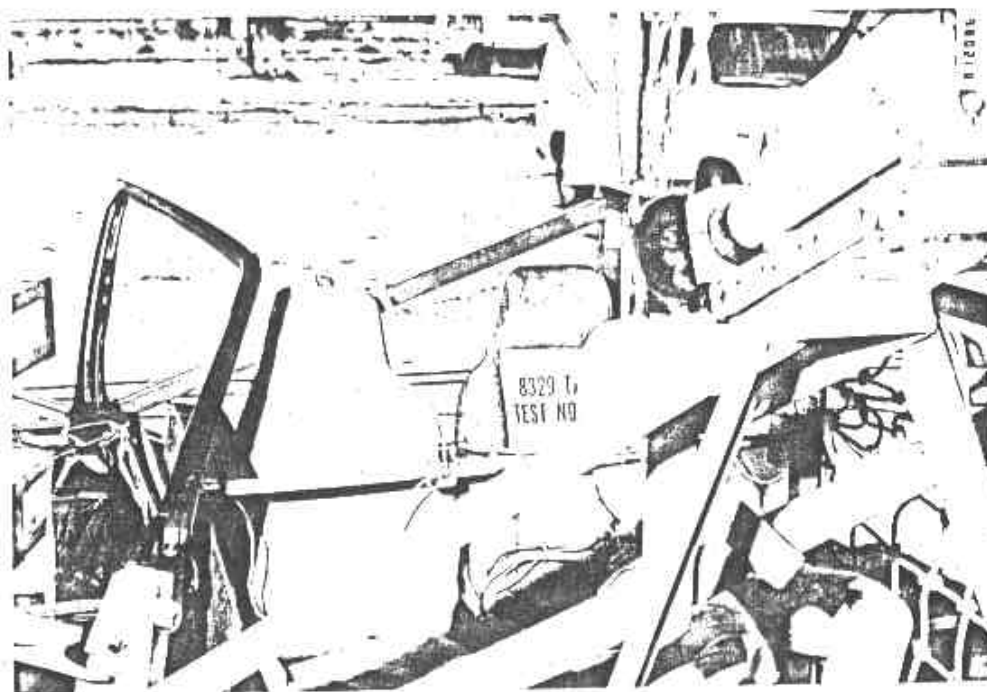
TEST T4-16 PRE-TEST CONFIGURATION



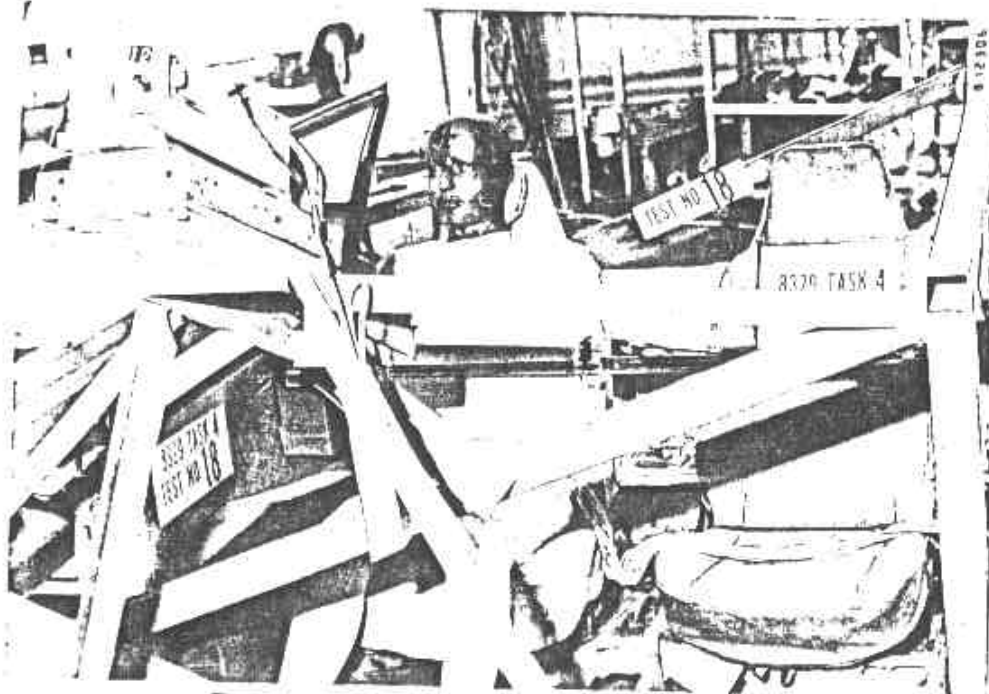
TEST T4-16 POST-TEST CONFIGURATION



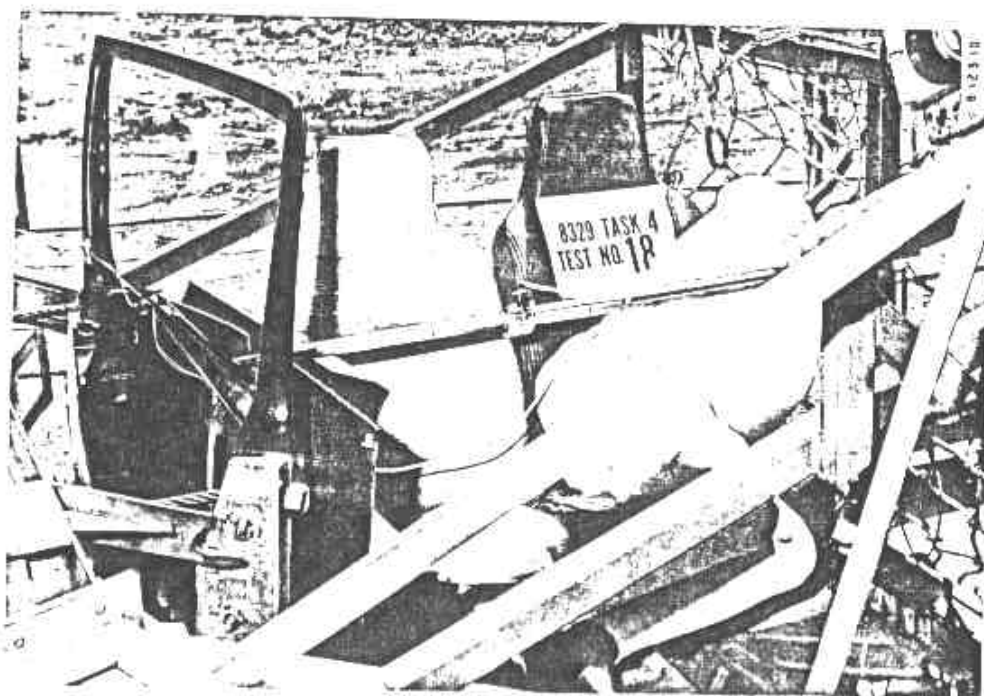
TEST T4-17 PRE-TEST CONFIGURATION



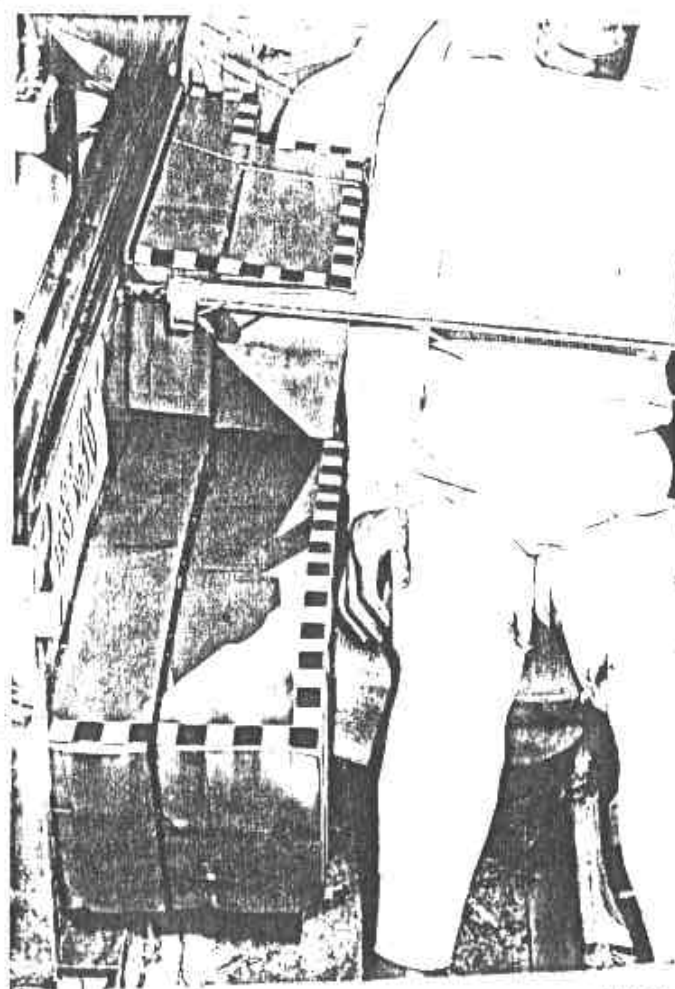
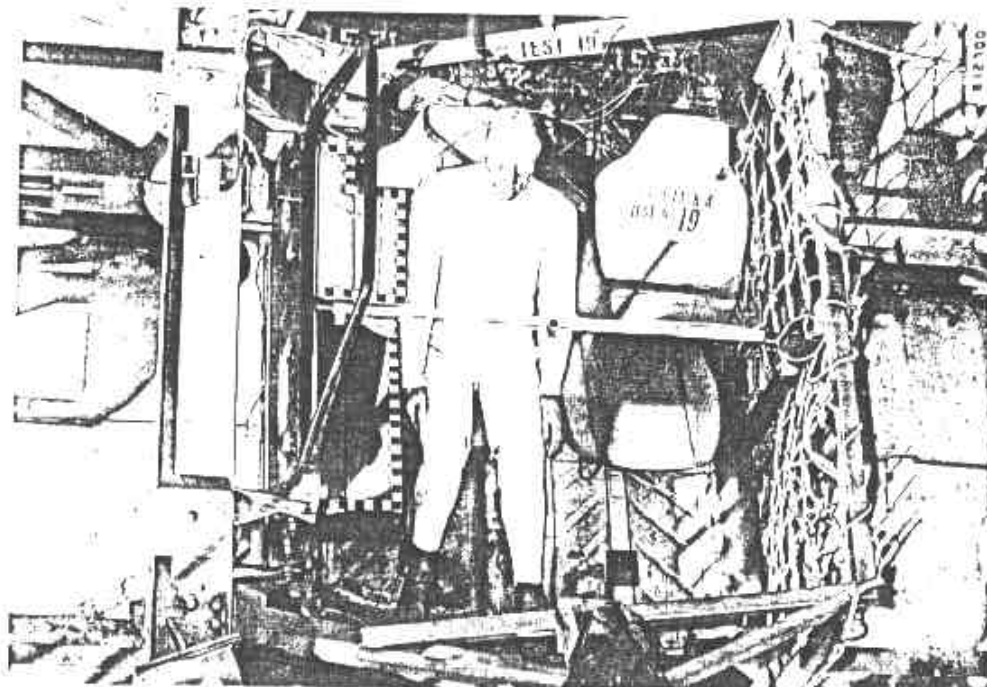
TEST T4-17 POST-TEST CONFIGURATION



TEST T4-18 PRE-TEST CONFIGURATION



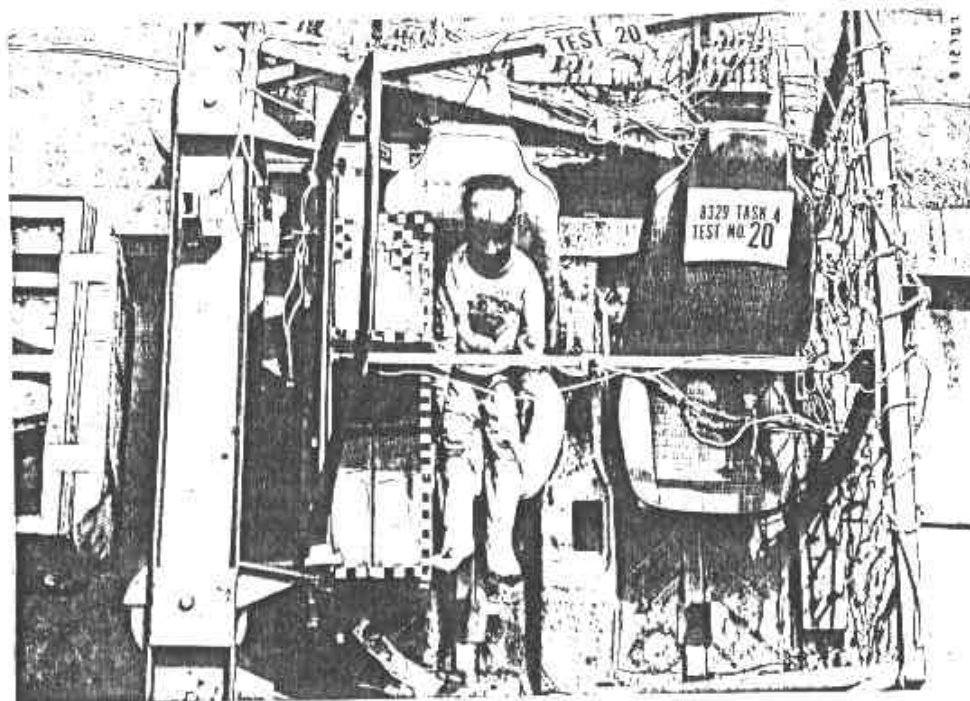
TEST T4-18 POST-TEST CONFIGURATION



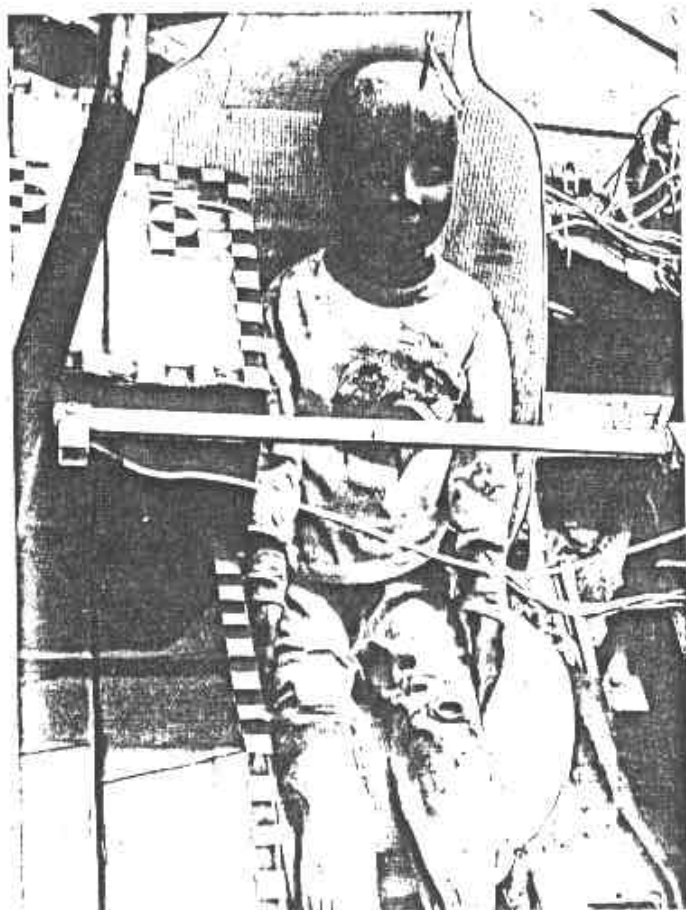
TEST T4-19 PRE-TEST CONFIGURATION
M-117



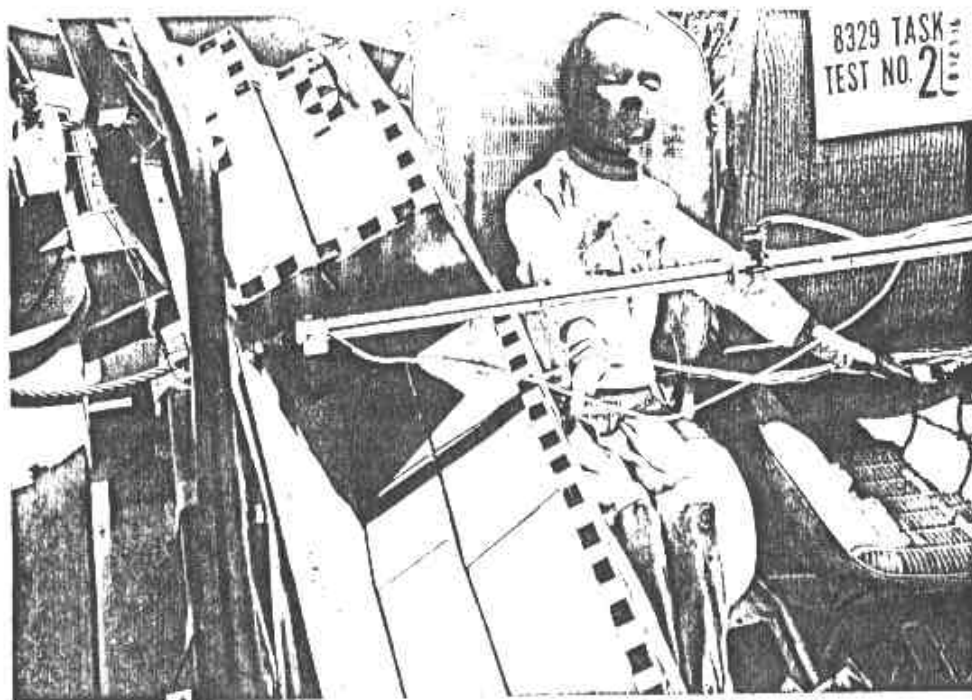
TEST T4-19 POST-TEST CONFIGURATION



TEST T4-20 PRE-TEST CONFIGURATION

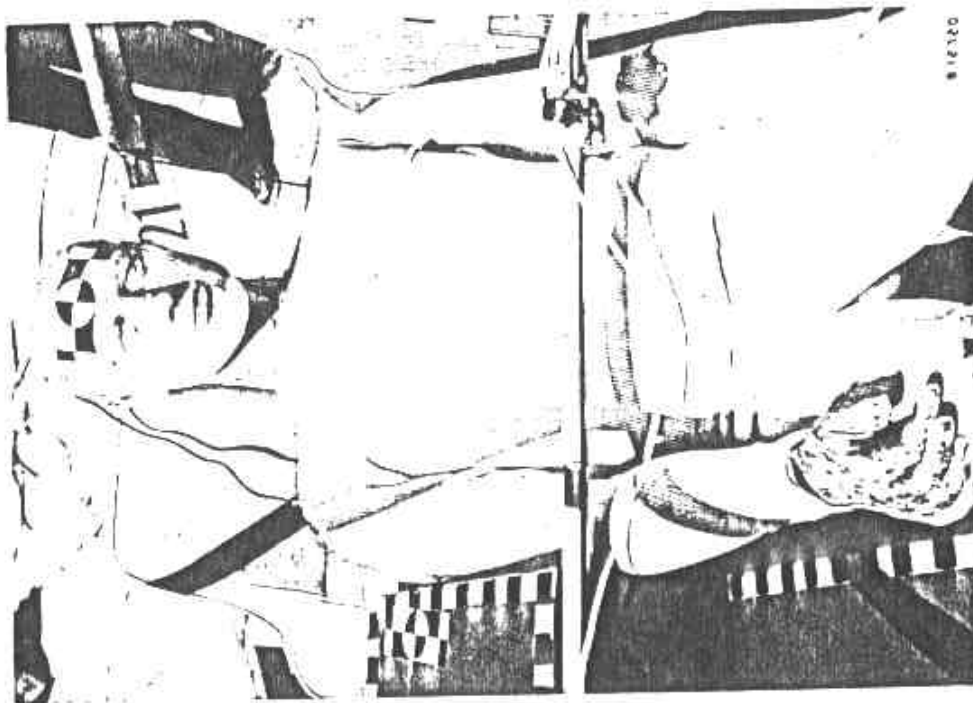


TEST T4-20 PRE-TEST CONFIGURATION



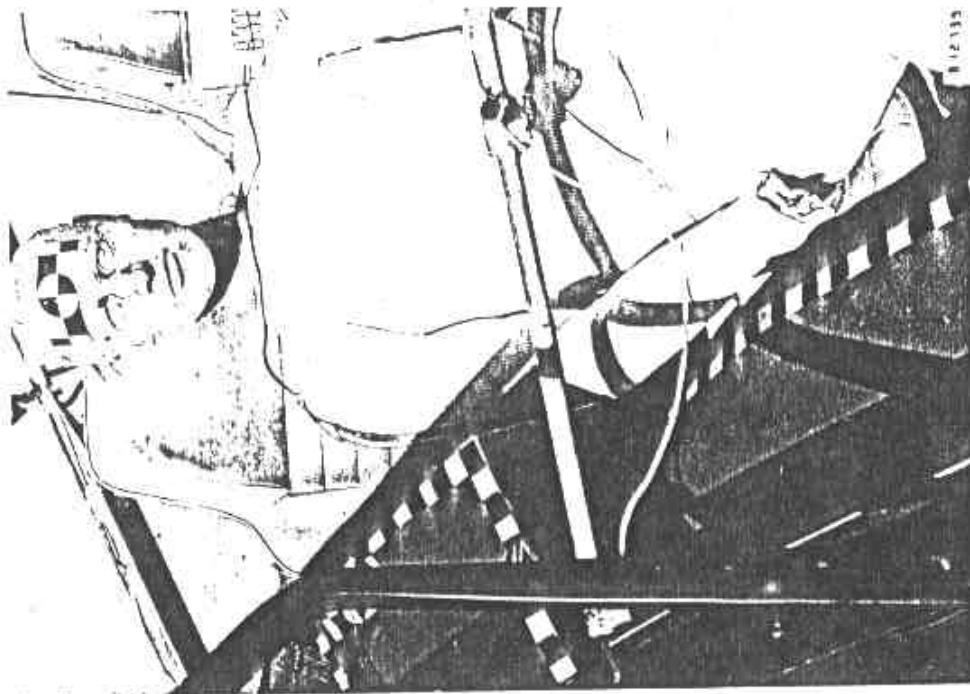
TEST T4-20 POST-TEST CONFIGURATION

M-119



812120

TEST T4-21 PRE-TEST CONFIGURATION

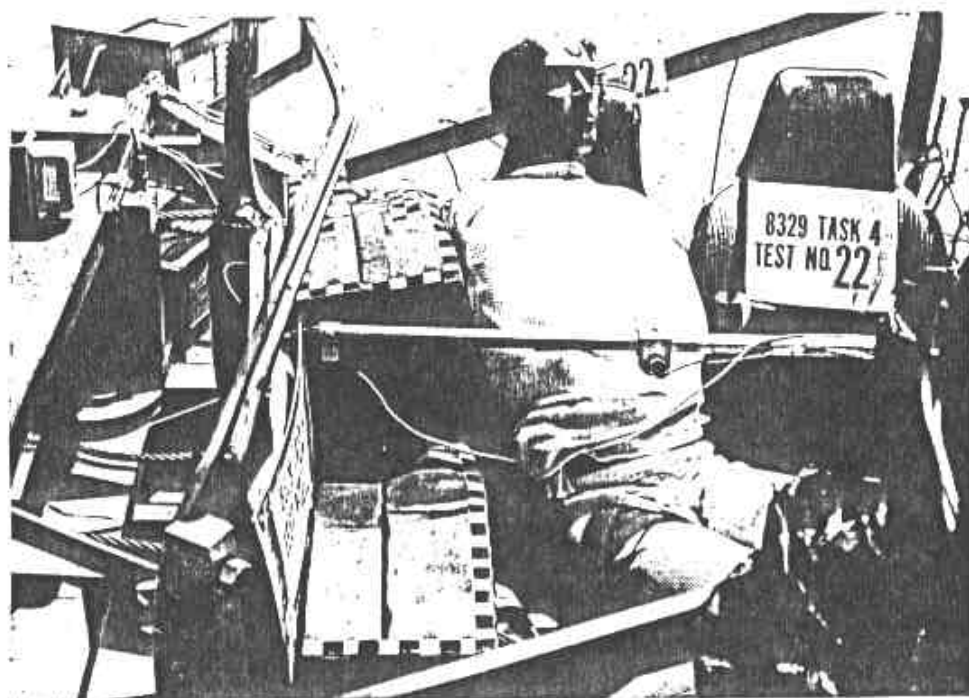


812135

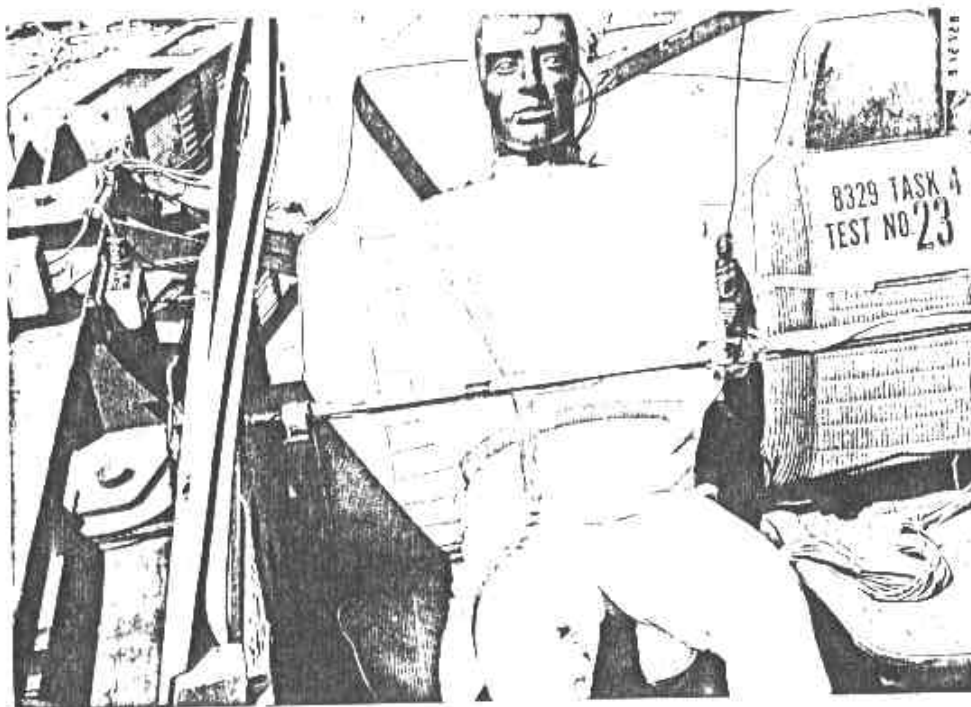
TEST T4-21 POST-TEST CONFIGURATION



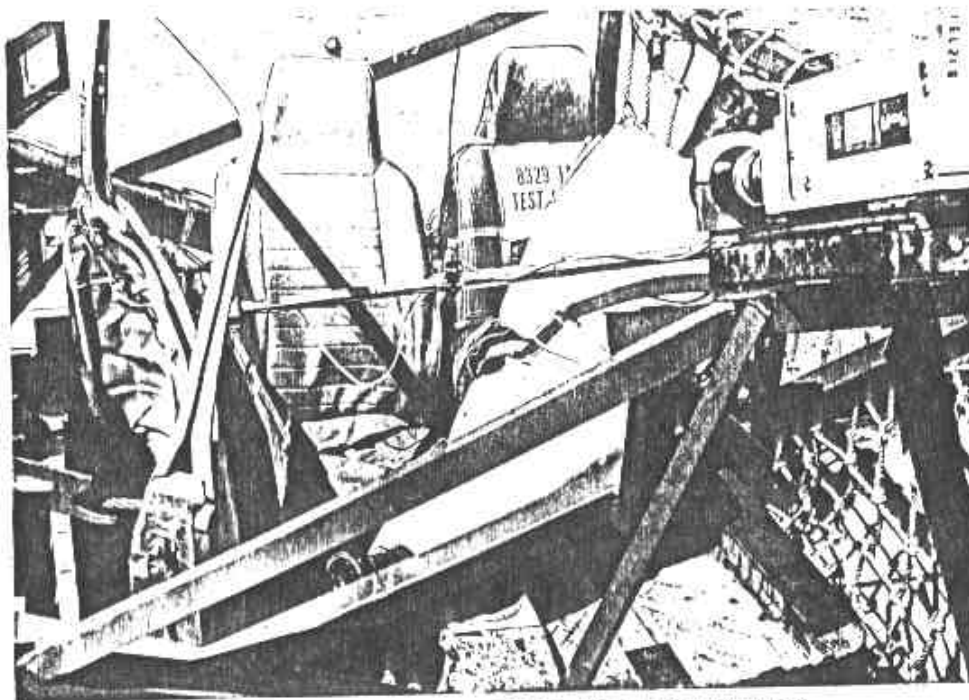
TEST T4-22 PRE-TEST CONFIGURATION



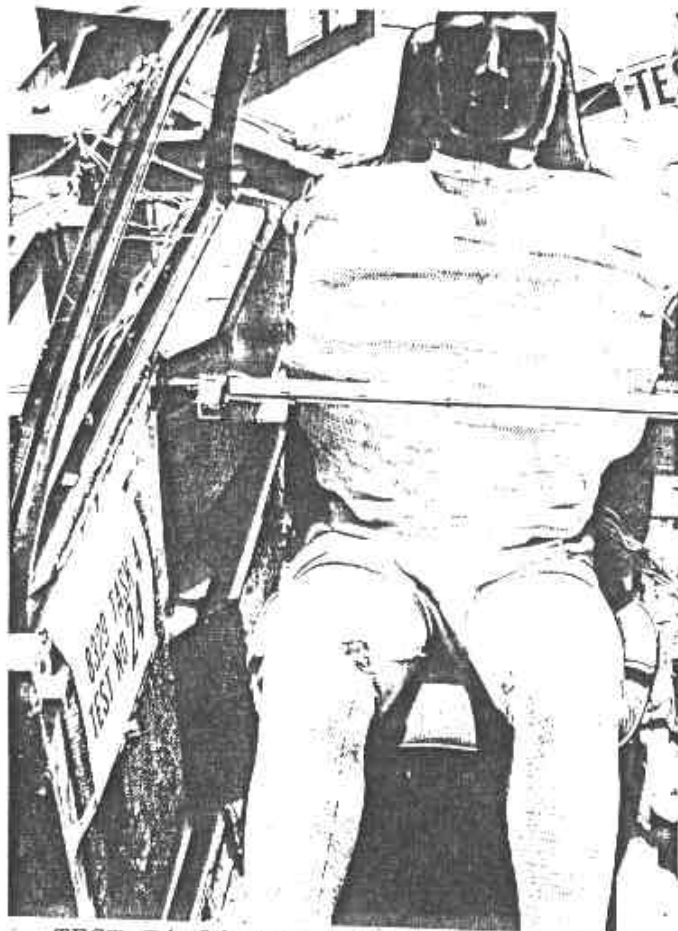
TEST T4-22 POST-TEST CONFIGURATION



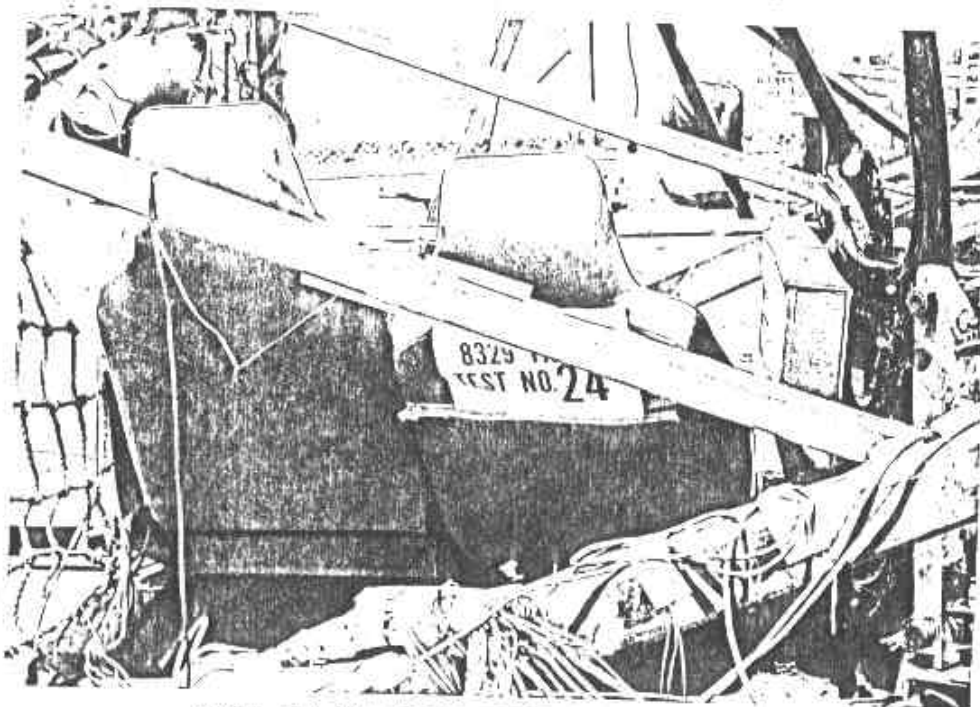
TEST T4-23 PRE-TEST CONFIGURATION



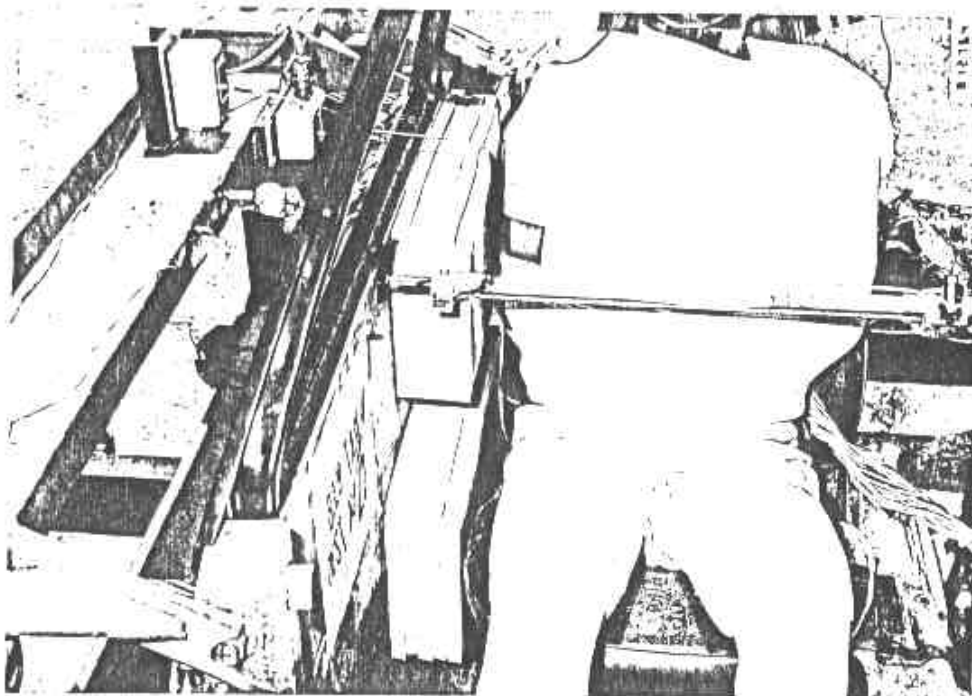
TEST T4-23 POST-TEST CONFIGURATION



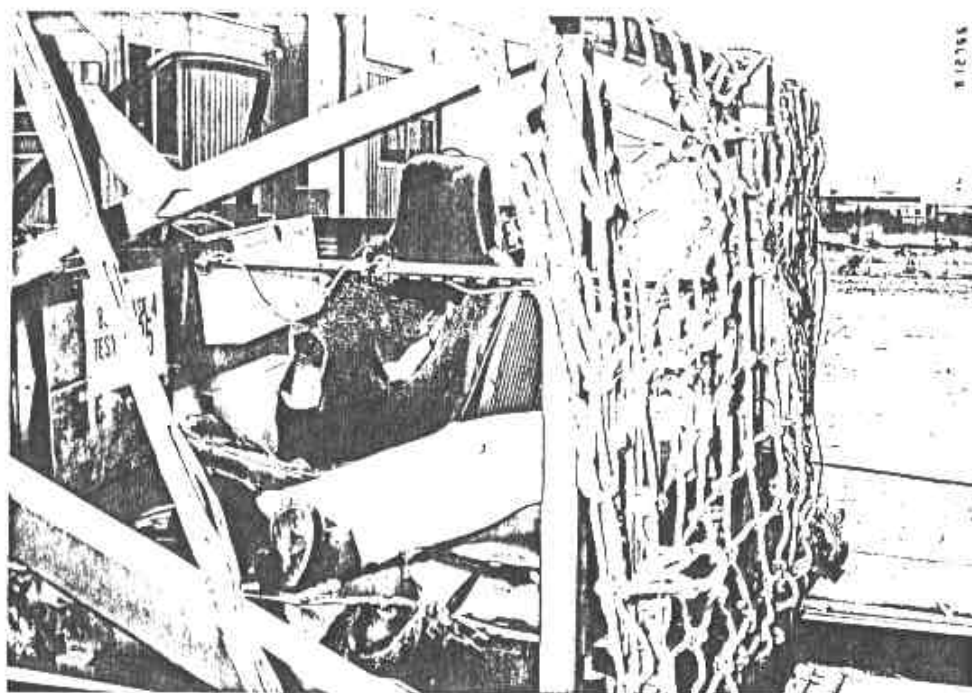
TEST T4-24 PRE-TEST CONFIGURATION



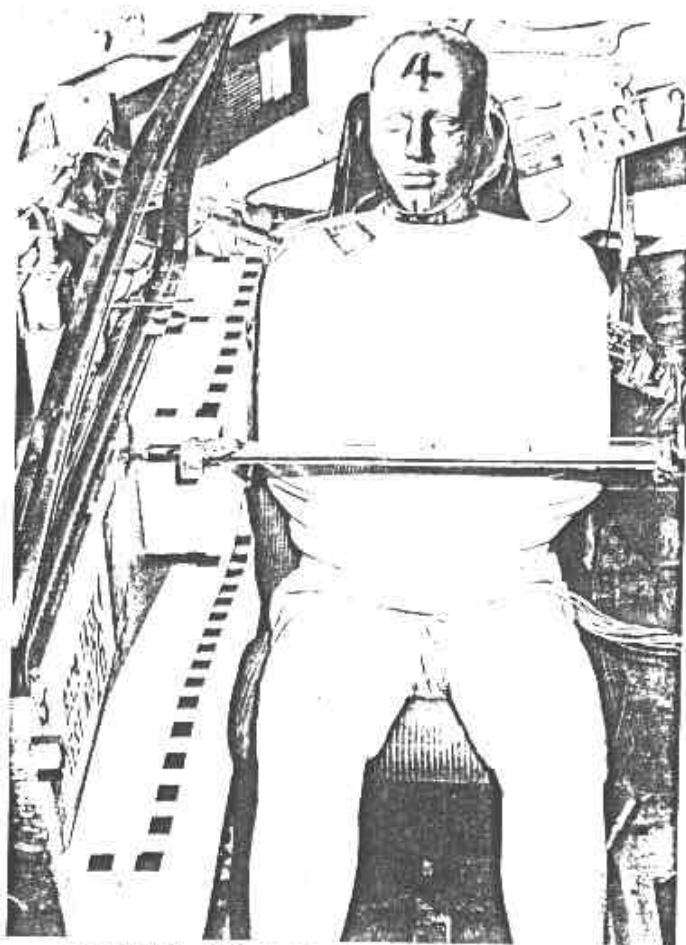
TEST T4-24 POST-TEST CONFIGURATION



TEST T4-25 PRE-TEST CONFIGURATION



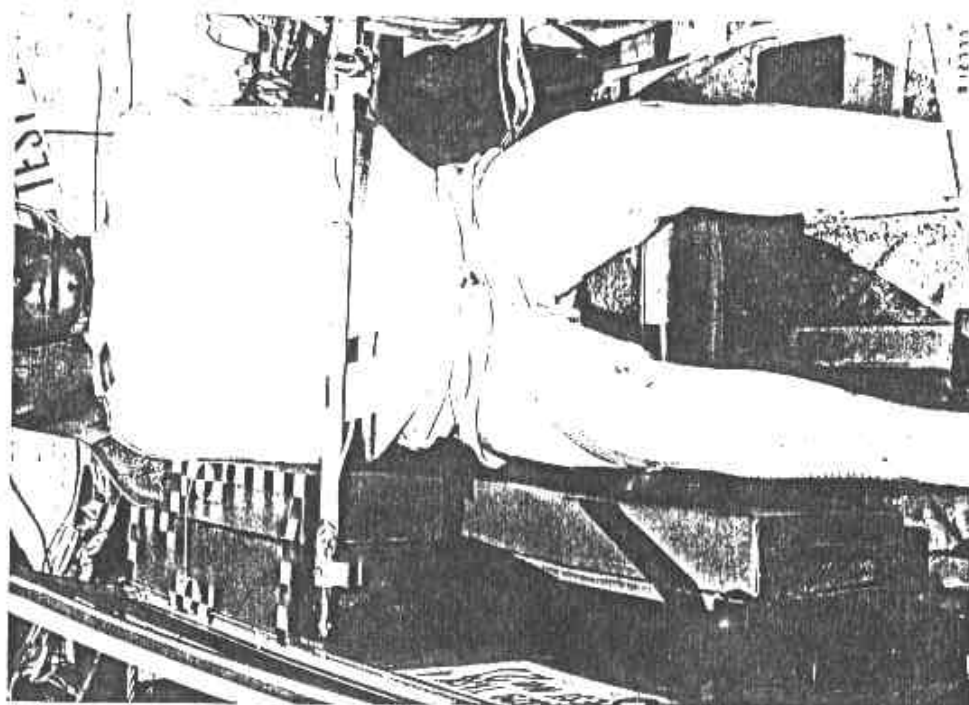
TEST T4-25 POST-TEST CONFIGURATION



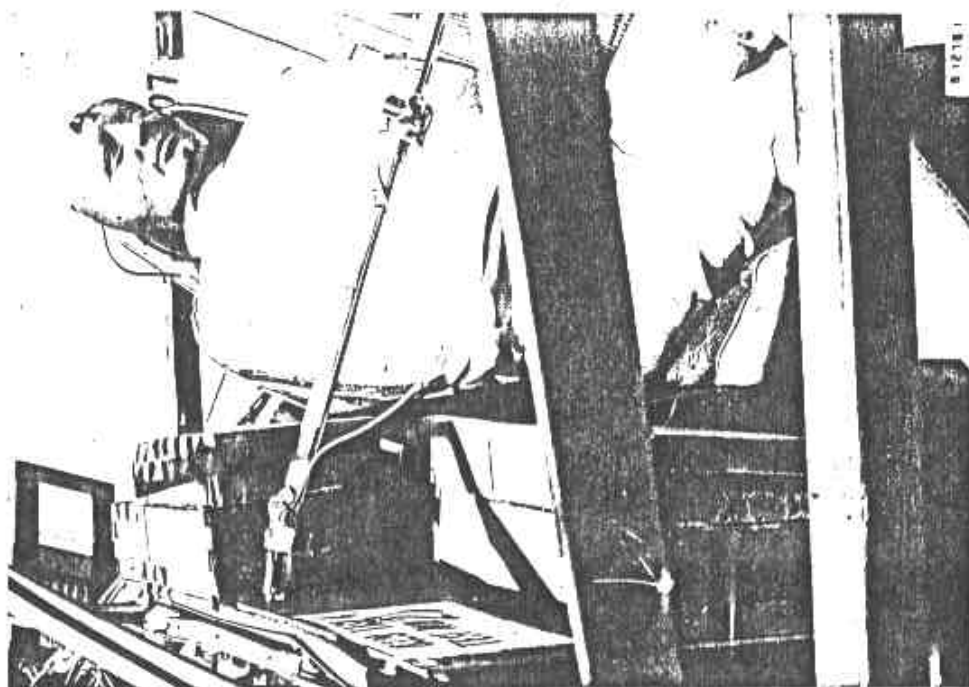
TEST T4-26 PRE-TEST CONFIGURATION



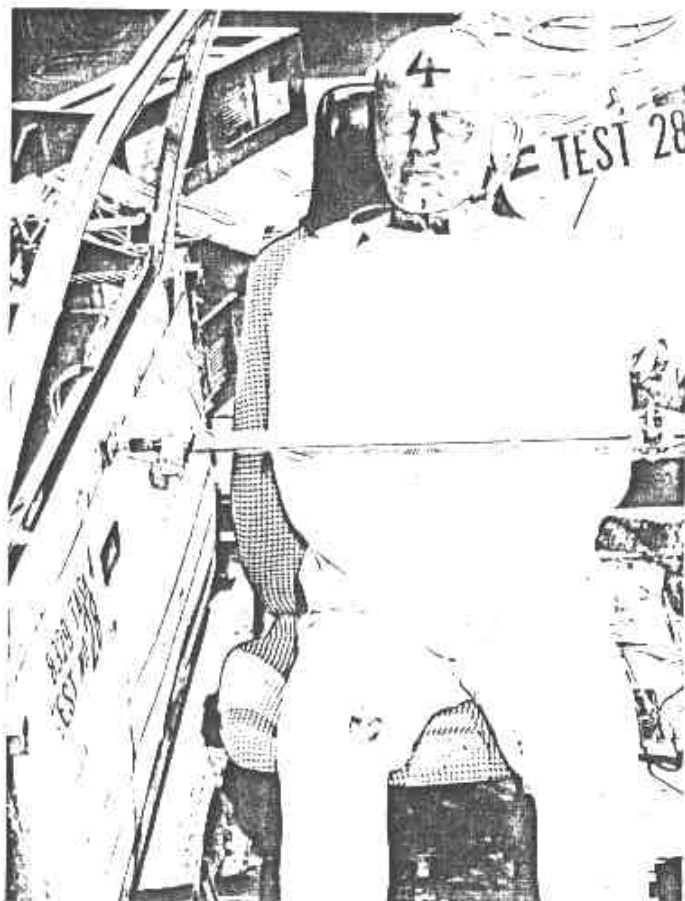
TEST T4-26 POST-TEST CONFIGURATION



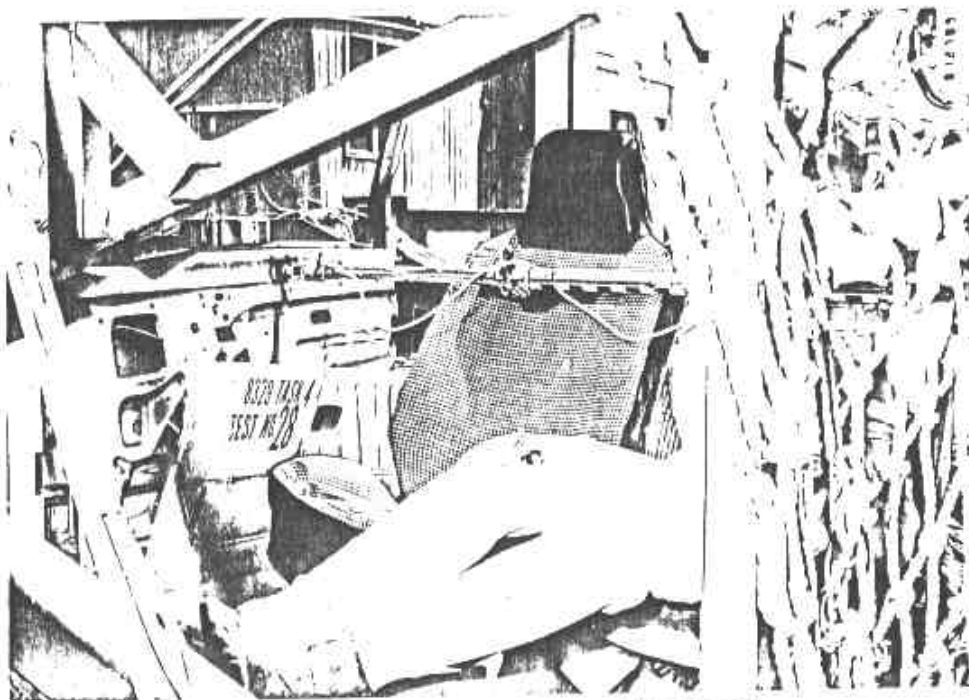
TEST T4-27 PRE-TEST CONFIGURATION



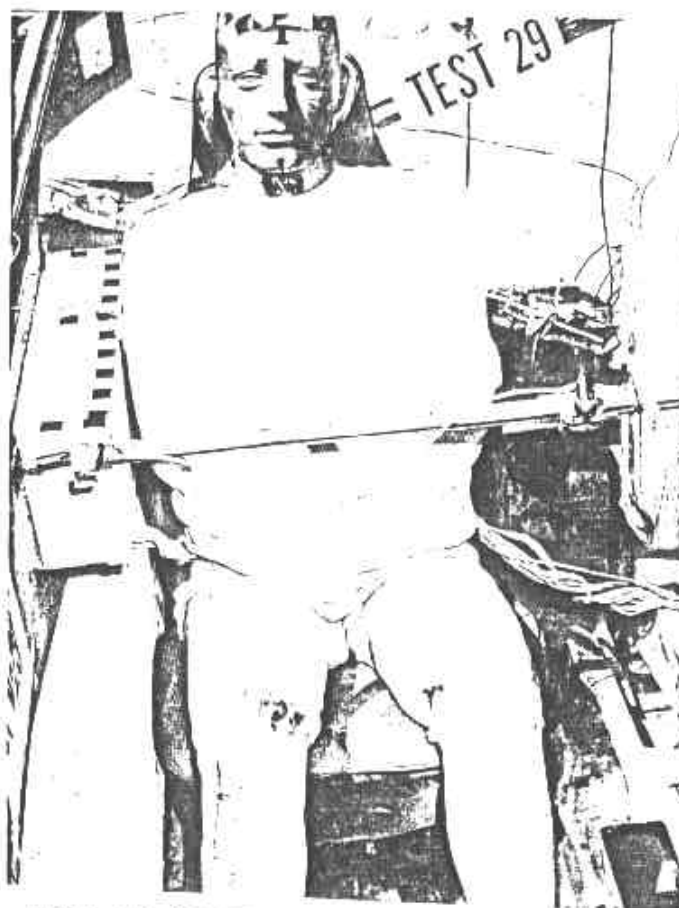
TEST T4-27 POST-TEST CONFIGURATION



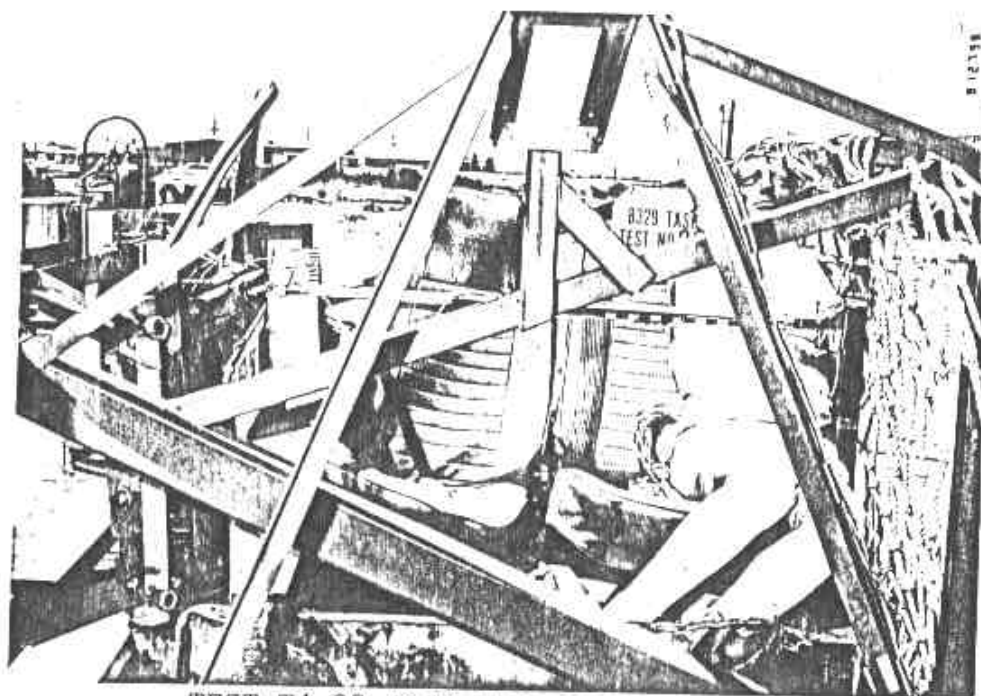
TEST T4-28 PRE-TEST CONFIGURATION



TEST T4-28 POST-TEST CONFIGURATION



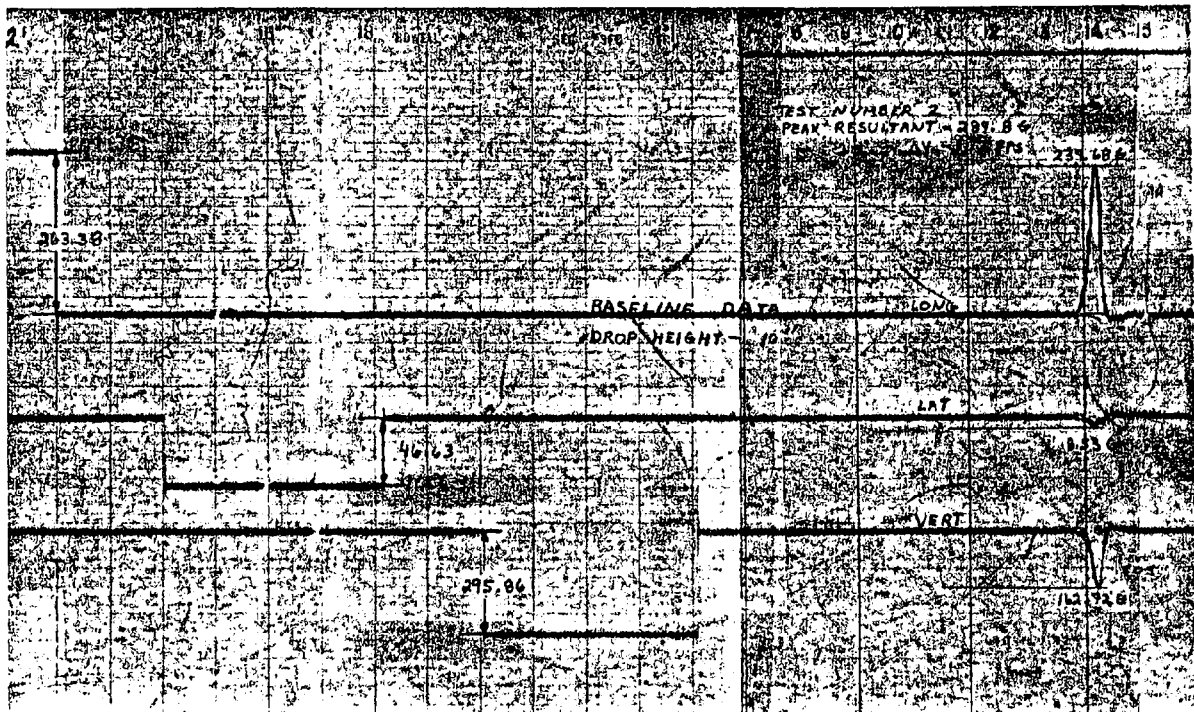
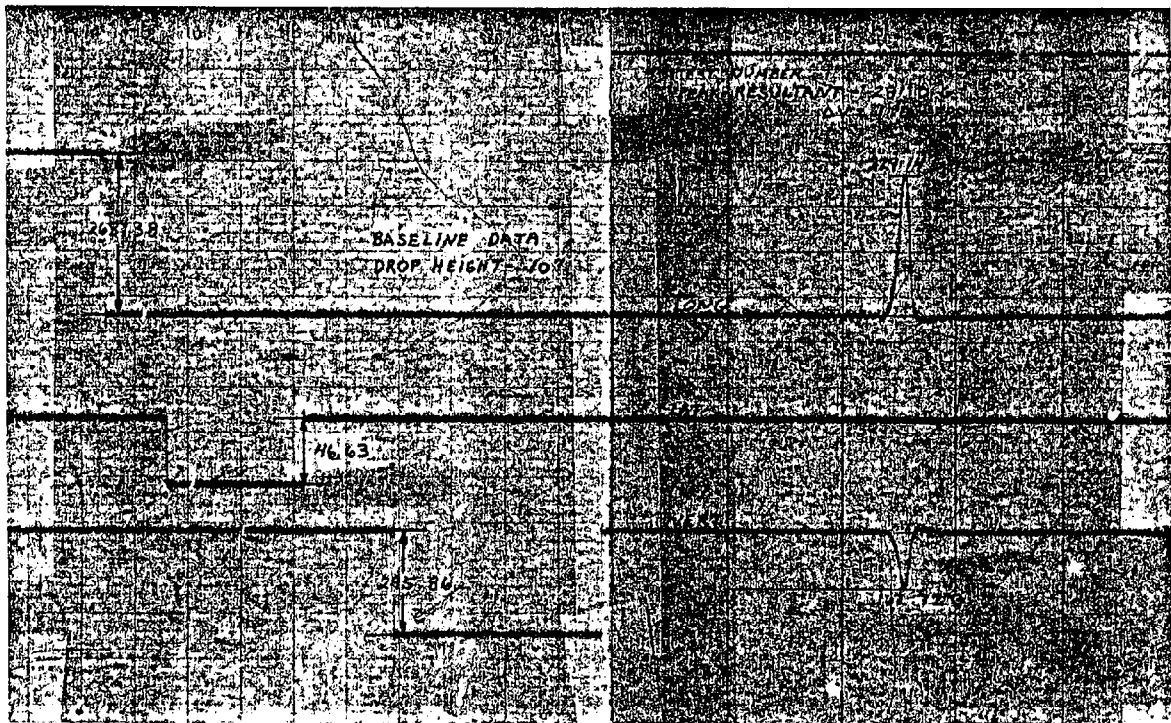
TEST T4-29 PRE-TEST CONFIGURATION

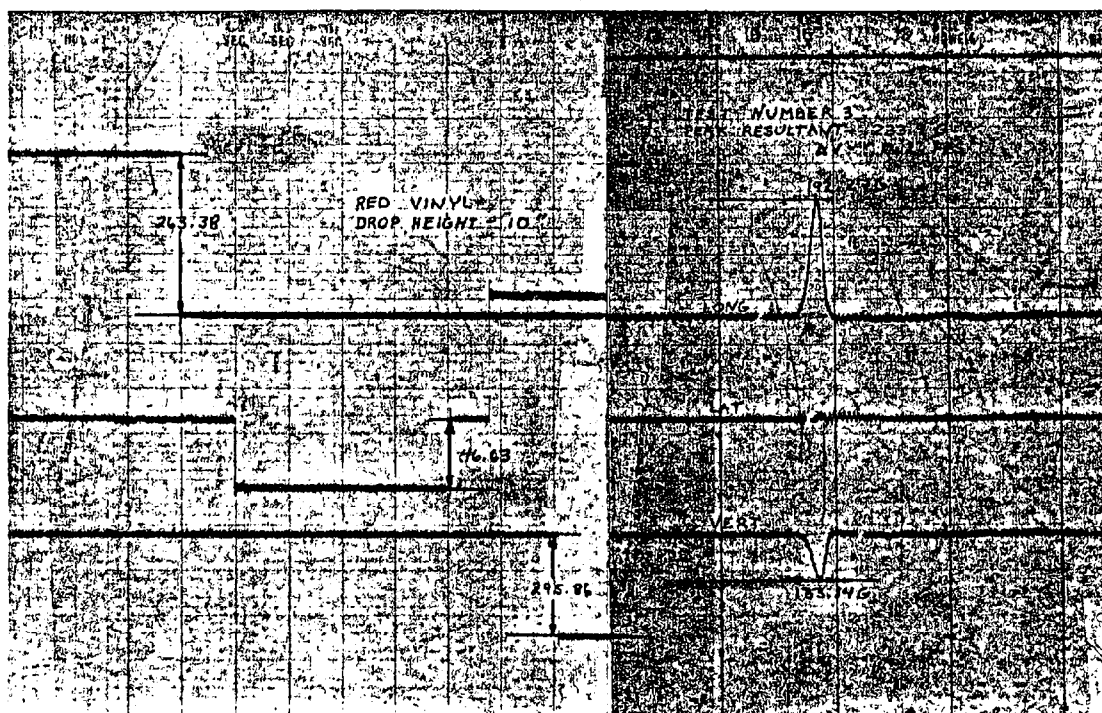
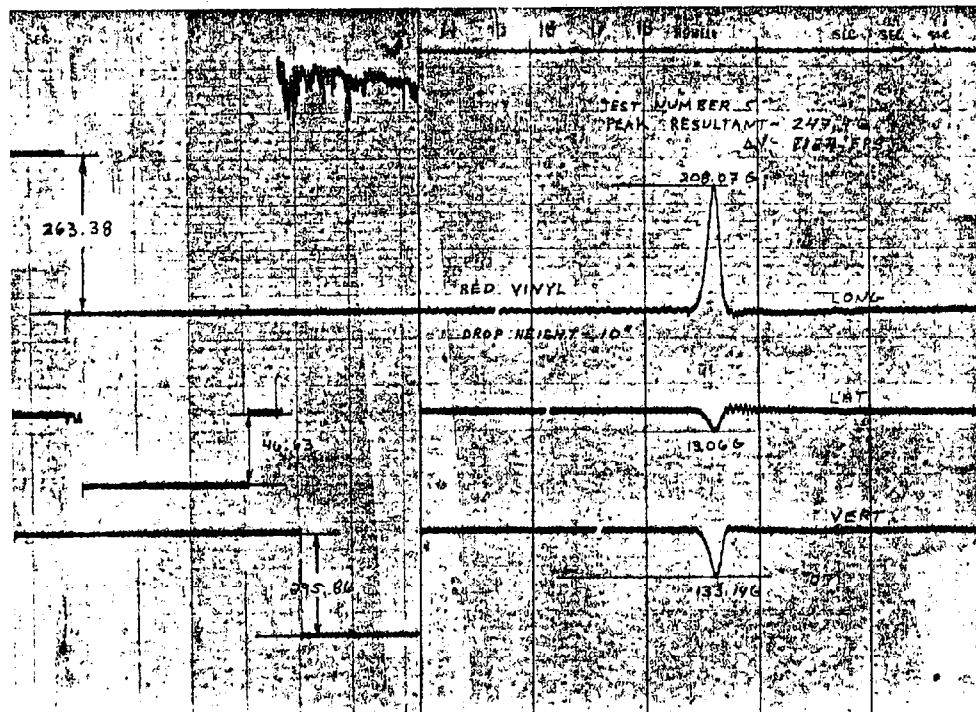


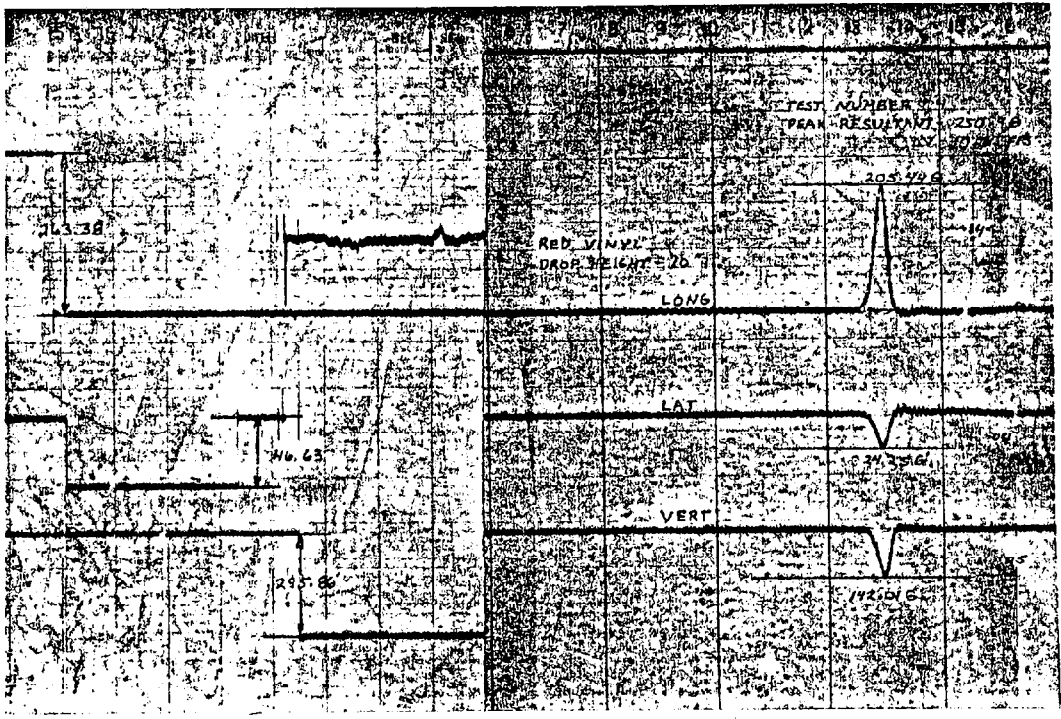
TEST T4-29 POST-TEST CONFIGURATION

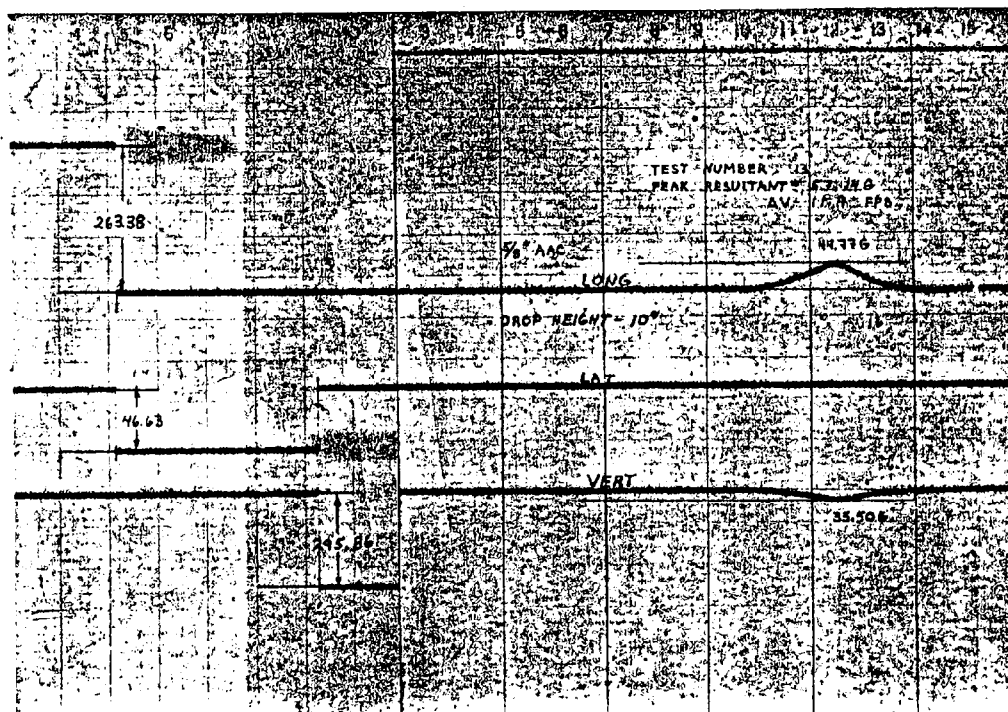
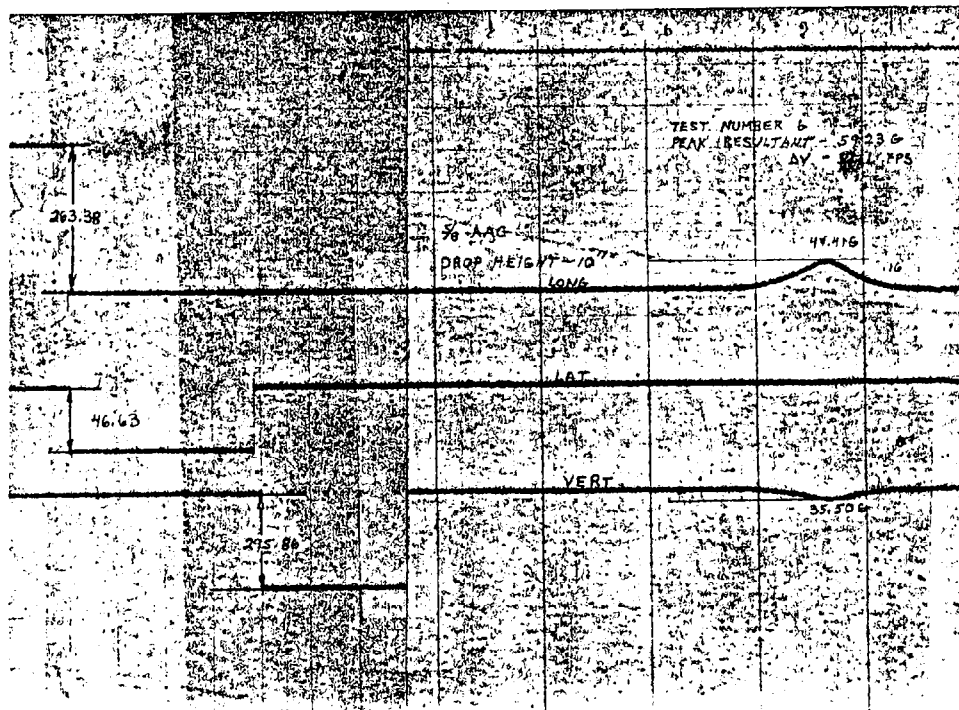
APPENDIX N
TEST DATA FOR
HEAD RESTRAINT TESTS
HD-1 THROUGH HD-15

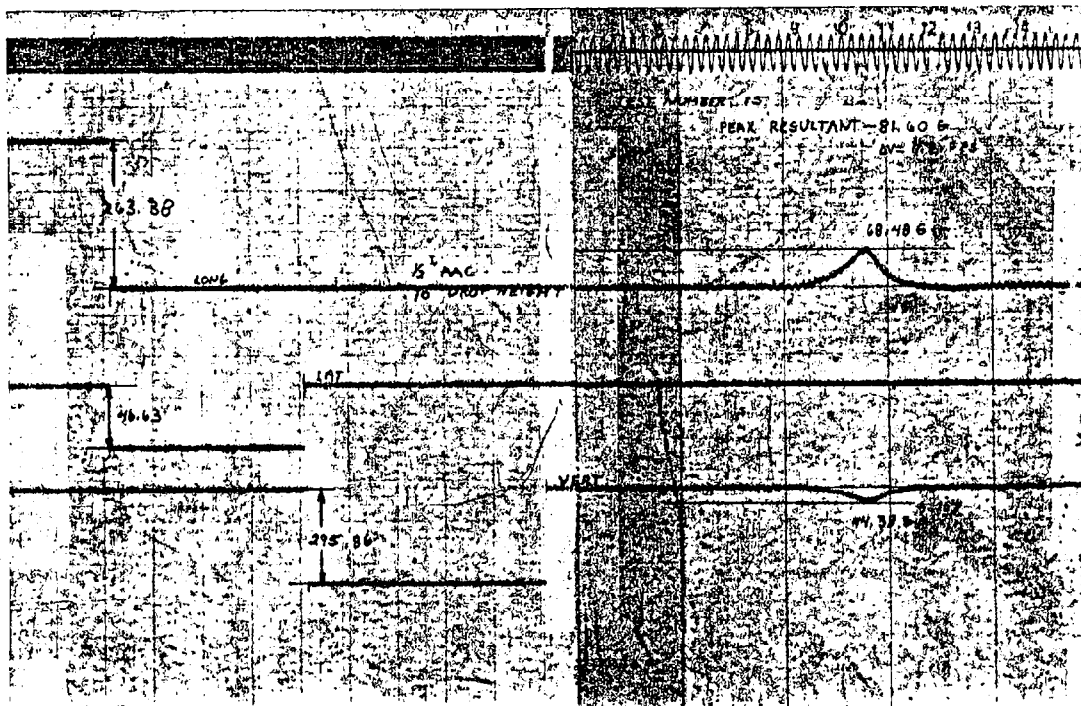
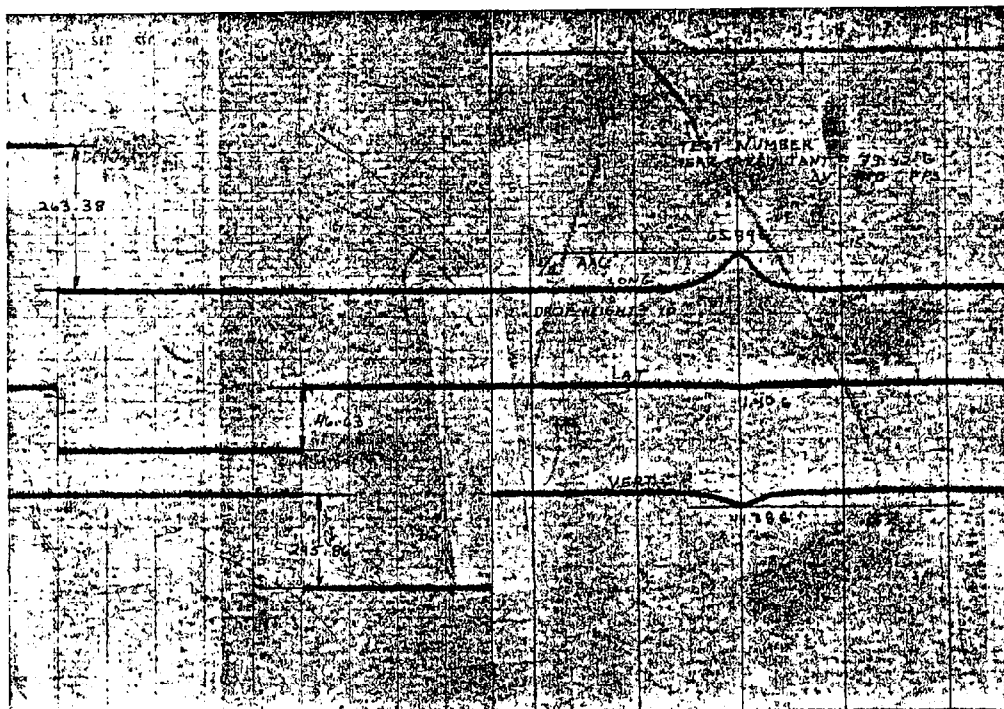
SUMMARY OF PEAK ACCELERATION VALUES FOR HEAD DROP TESTS					
Test 8329-	Padding	Peak A _x G	Peak A _y G	Peak A _z G	Peak A _r G
HD-1	Baseline (None)	229.1	0.0	162.7	281.0
HD-2	Baseline (None)	239.0	6.5	162.7	290.0
HD-3	Red Vinyl	192.3	0.0	133.1	234.0
HD-4	Red Vinyl	205.4	24.5	142.0	251.0
HD-5	Red Vinyl	208.1	13.1	133.1	247.0
HD-6	5/8 in. AAC	47.4	0.0	35.5	59.0
HD-13	5/8 in. AAC	44.8	0.0	35.5	57.0
HD-7	1/2 in. AAC	65.8	1.4	44.4	79.0
HD-15	1/2 in. AAC	68.5	0.0	44.4	82.0
HD-8	1/2 in. BCR	52.7	0.0	38.5	65.0
HD-12	1/2 in. BCR	60.6	5.6	38.5	72.0
HD-9	5/8 in. BCR	60.6	3.7	38.5	72.0
HD-14	5/8 in. BCR	60.6	0.0	38.5	72.0
HD-10	1/2 in. Uniroyal	63.2	0.0	44.4	77.0
HD-11	1/2 in. Uniroyal	63.2	0.0	44.4	77.0

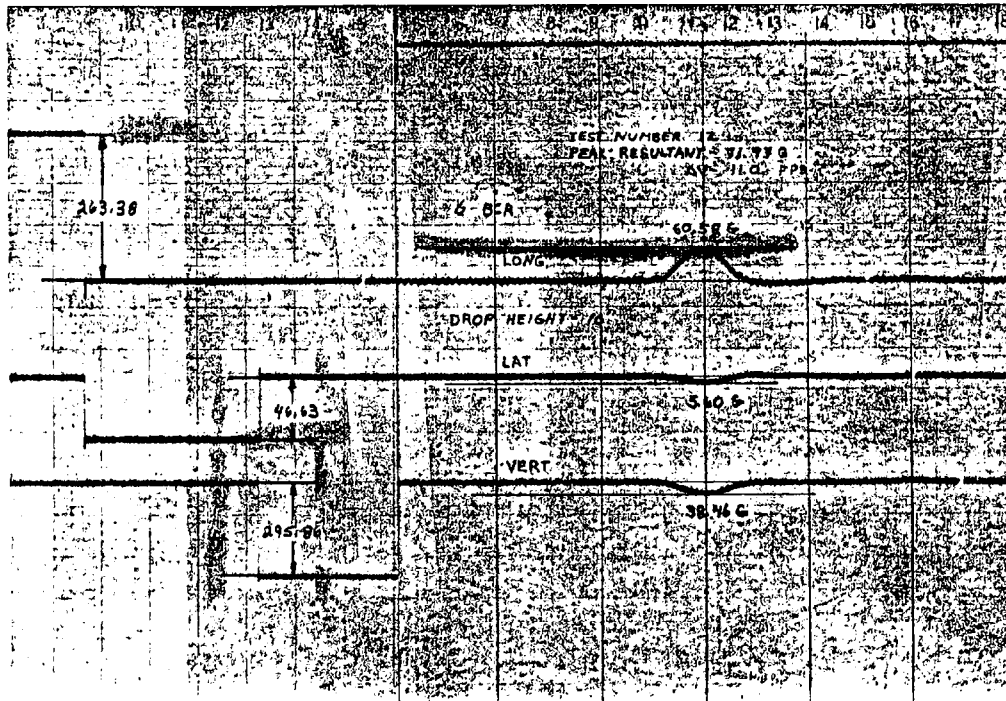
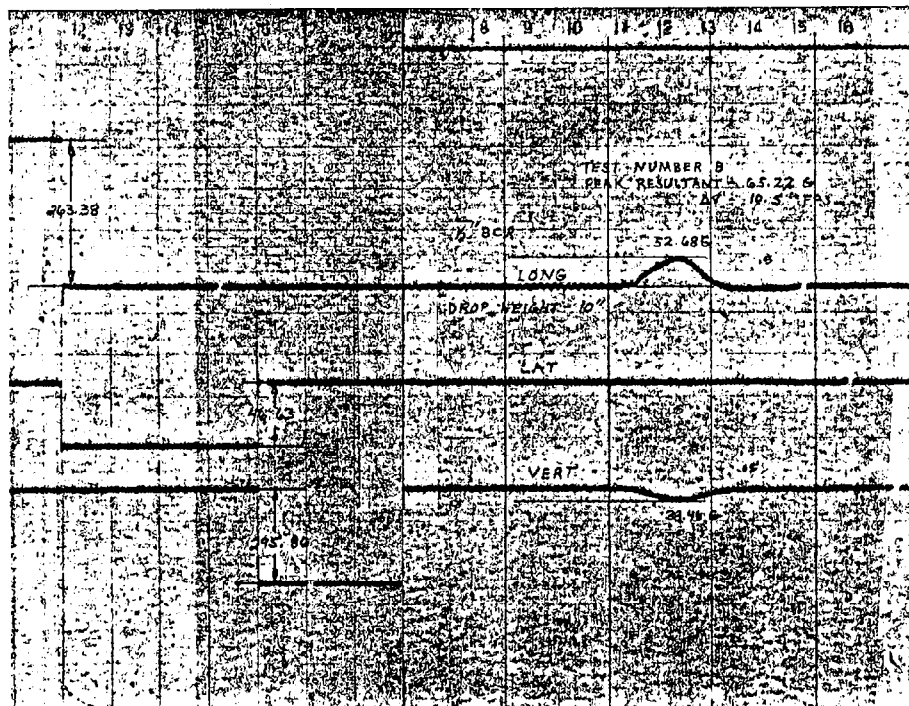


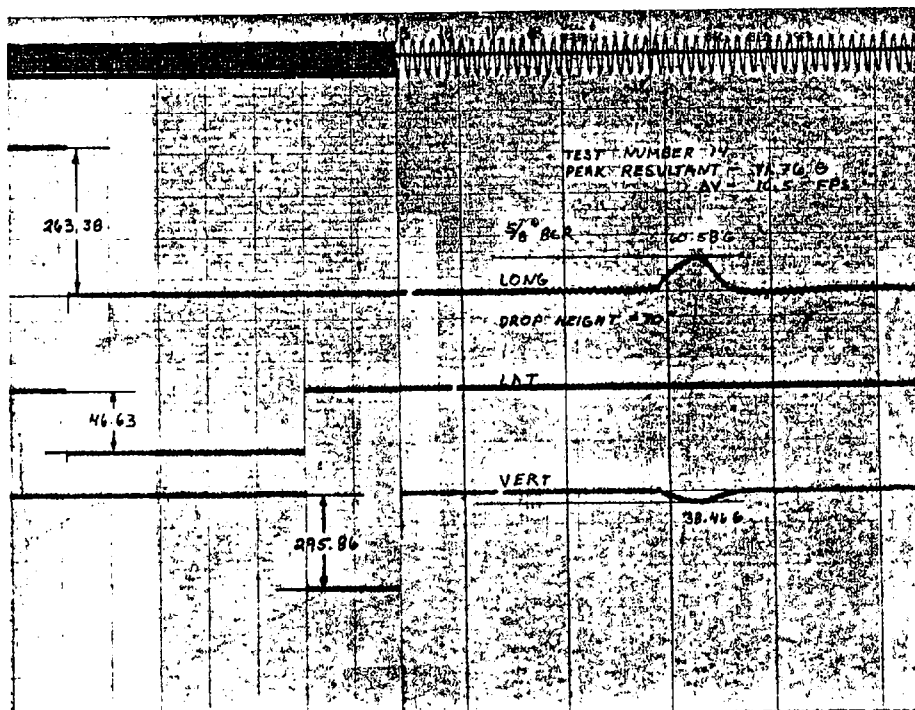
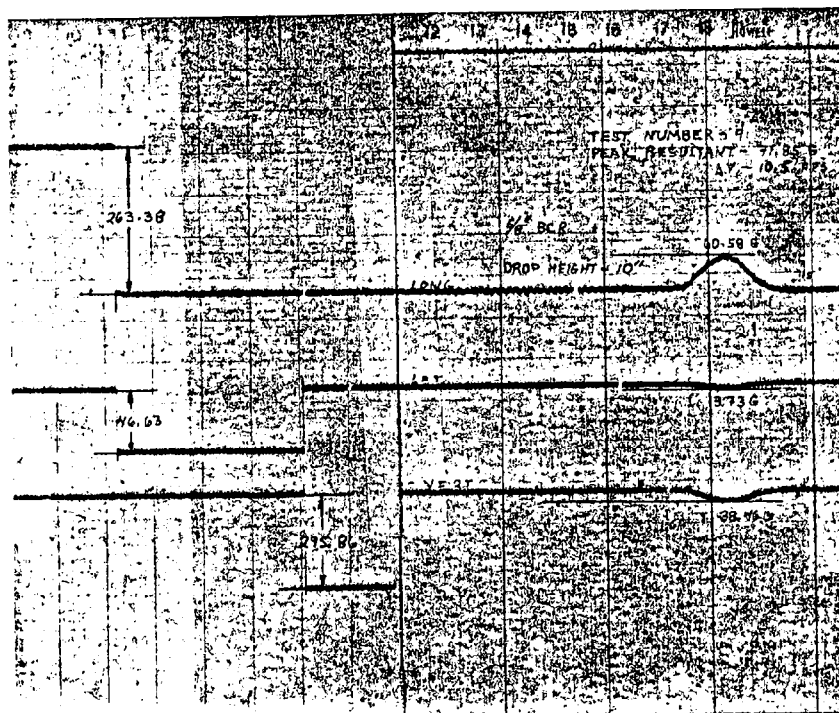


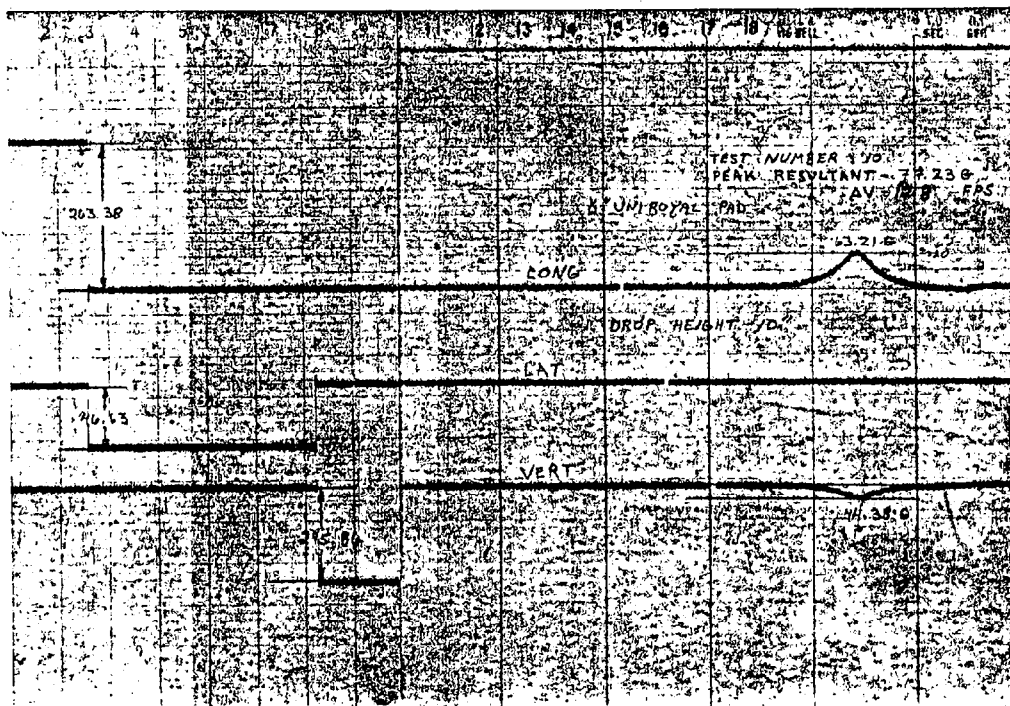
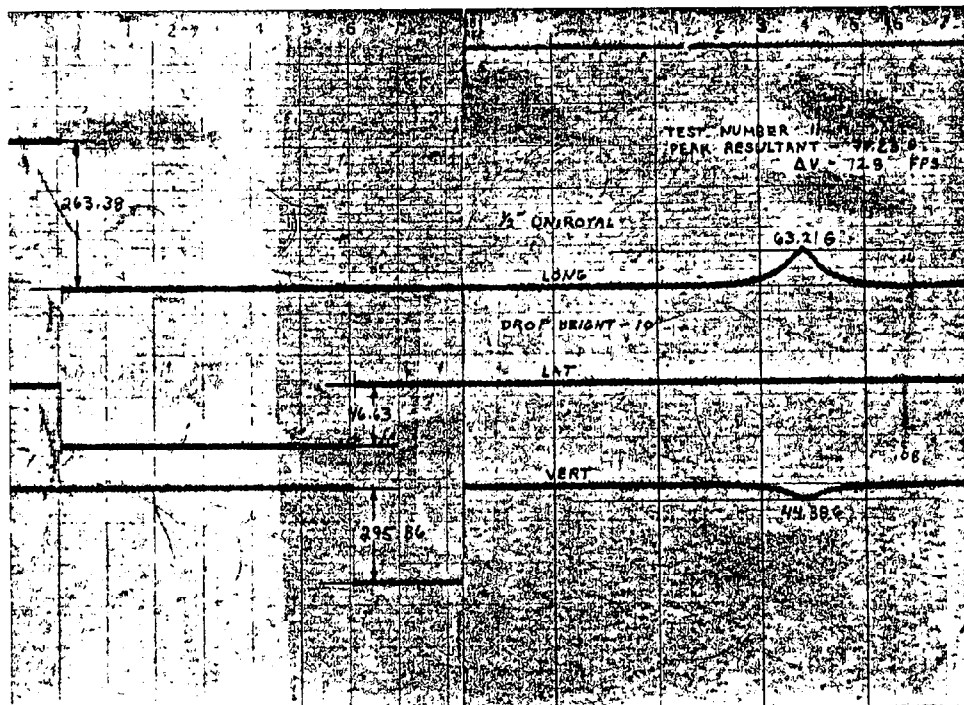






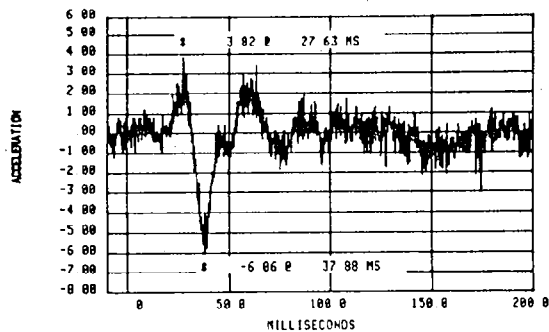






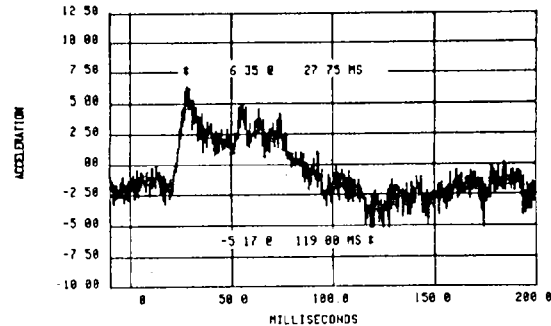
APPENDIX O
INITIAL DUMMY
BUMP TEST DATA
(SID 6 AND SID 4)

TRACK: 6 CHANNEL: 12 100% CAL = 213.64
TEST DUMMY CAL SID 6 A1 DATE: 3-4-81



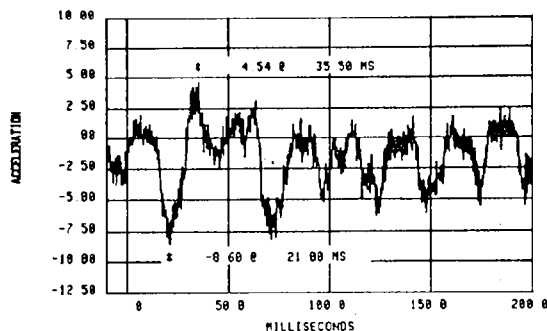
HEAD LONGITUDINAL ACCELERATION

TRACK: 6 CHANNEL: 13 100% CAL = 242.81
TEST DUMMY CAL SID 6 A1 DATE: 3-4-81



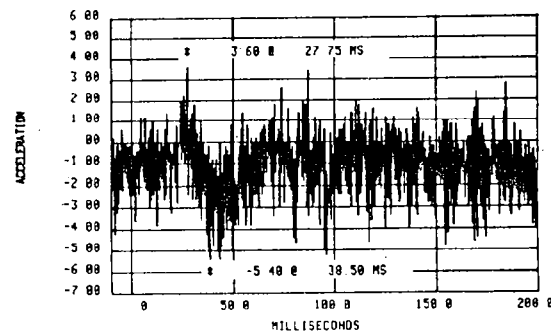
HEAD LATERAL ACCELERATION

TRACK: 6 CHANNEL: 14 100% CAL = 255.58
TEST DUMMY CAL SID 6 A1 DATE: 3-4-81



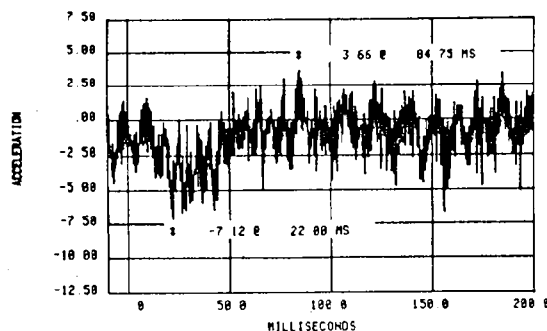
HEAD VERTICAL ACCELERATION

TRACK: 6 CHANNEL: 7 100% CAL = 329.68
TEST DUMMY CAL SID 6 A1 DATE: 3-4-81



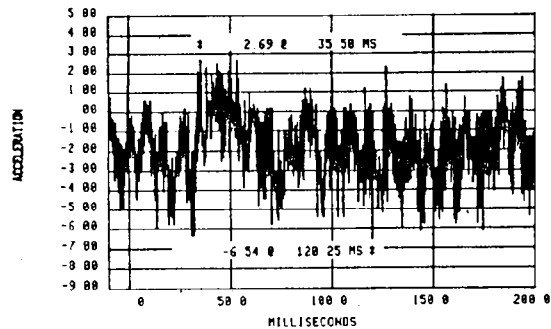
PELVIS LONGITUDINAL ACCELERATION

TRACK: 6 CHANNEL: 8 100% CAL = 334.97
TEST DUMMY CAL SID 6 A1 DATE: 3-4-81



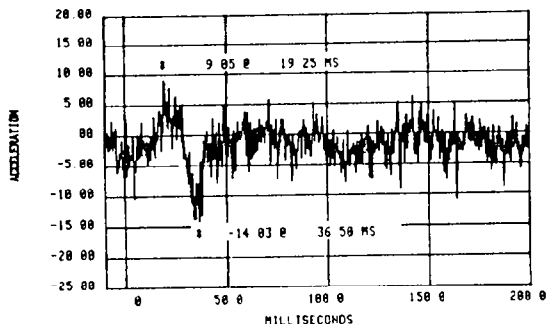
PELVIS LATERAL ACCELERATION

TRACK: 6 CHANNEL: 9 100% CAL = 317.18
TEST DUMMY CAL SID 6 A1 DATE: 3-4-81



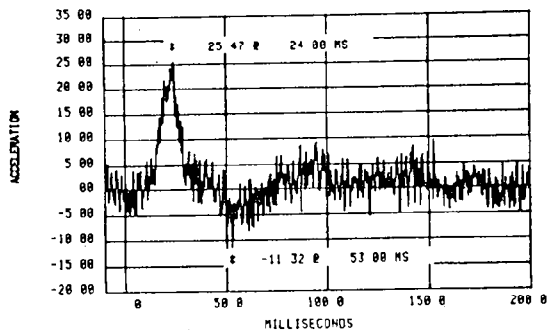
PELVIS VERTICAL ACCELERATION

TRACK: 5 CHANNEL: 7 100% CAL = 385.98
TEST DUMMY CAL SID 6 A1 DATE: 3-4-81



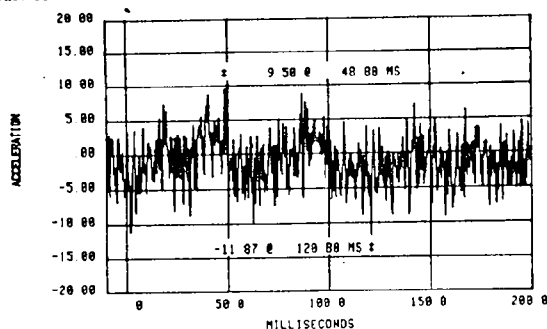
UPPER THORAX LONGITUDINAL ACCELERATION

TRACK: 5 CHANNEL: 8 100% CAL = 310.78
TEST DUMMY CAL SID 6 A1 DATE: 3-4-81



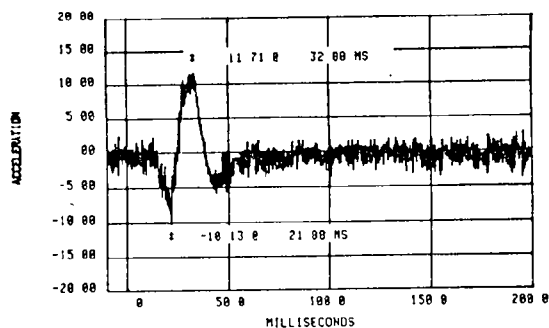
UPPER THORAX LATERAL ACCELERATION

TRACK: 5 CHANNEL: 9 100% CAL = 325.29
TEST DUMMY CAL SID 6 A1 DATE: 3-4-81



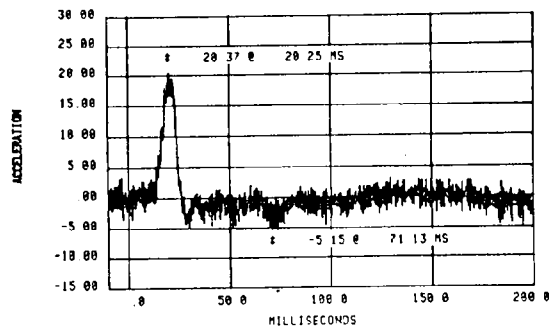
UPPER THORAX VERTICAL ACCELERATION

TRACK: 6 CHANNEL: 1 100% CAL = 371.76
TEST DUMMY CAL SID 6 A1 DATE: 3-4-81



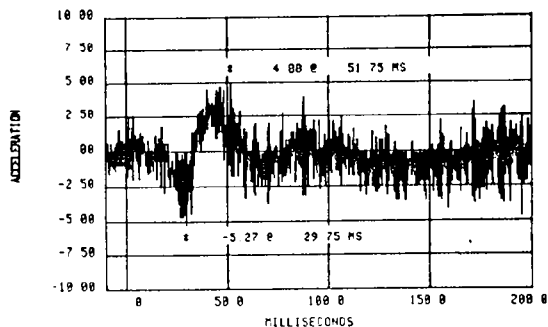
LOWER THORAX LONGITUDINAL ACCELERATION

TRACK: 6 CHANNEL: 2 100% CAL = 367.64
TEST DUMMY CAL SID 6 A1 DATE: 3-4-81



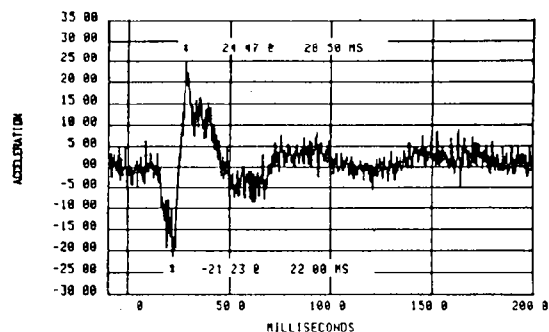
LOWER THORAX LATERAL ACCELERATION

TRACK: 6 CHANNEL: 3 100% CAL = 323.12
TEST DUMMY CAL SID 6 A1 DATE: 3-4-81



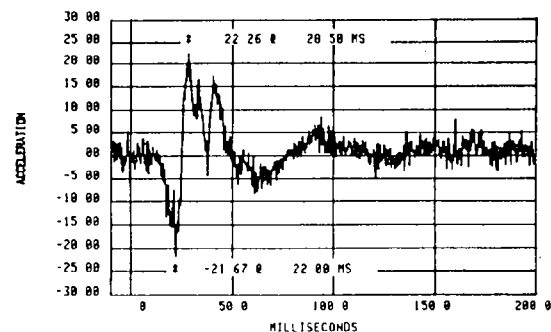
LOWER THORAX VERTICAL ACCELERATION

TRACK 5 CHANNEL 4 100% CAL = 378.77
TEST DUMMY CAL SID 6 A1 DATE 3-4-81



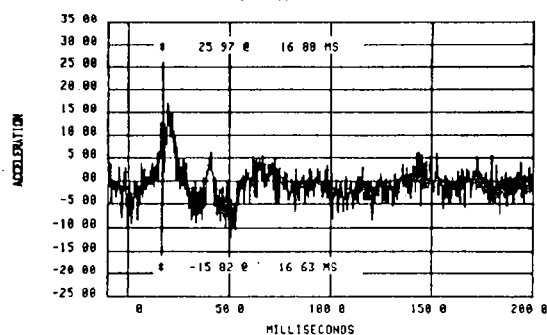
UPPER STERNUM LONGITUDINAL ACCELERATION

TRACK 5 CHANNEL 3 100% CAL = 316.99
TEST DUMMY CAL SID 6 A1 DATE 3-4-81



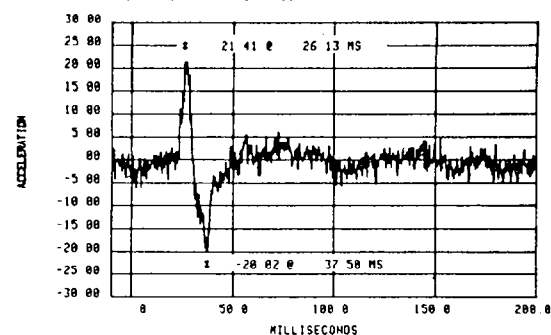
LOWER STERNUM LONGITUDINAL ACCELERATION

TRACK 5 CHANNEL 13 100% CAL = 387.14
TEST DUMMY CAL SID 6 A1 DATE 3-4-81



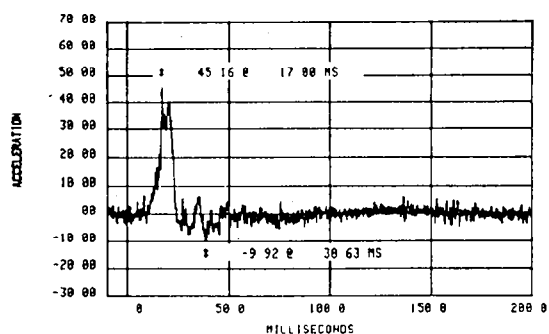
RIGHT LOWER RIB LONGITUDINAL ACCELERATION

TRACK 5 CHANNEL 11 100% CAL = 329.42
TEST DUMMY CAL SID 6 A1 DATE 3-4-81



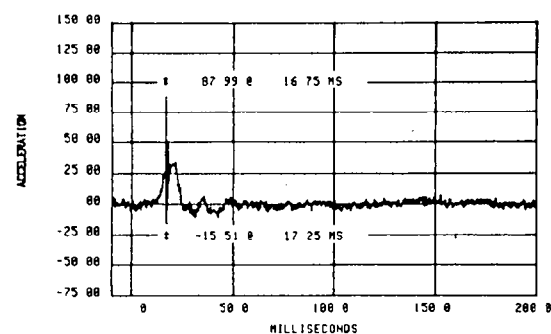
LEFT LOWER RIB LONGITUDINAL ACCELERATION

TRACK 5 CHANNEL 1 100% CAL = 334.15
TEST DUMMY CAL SID 6 A1 DATE 3-4-81



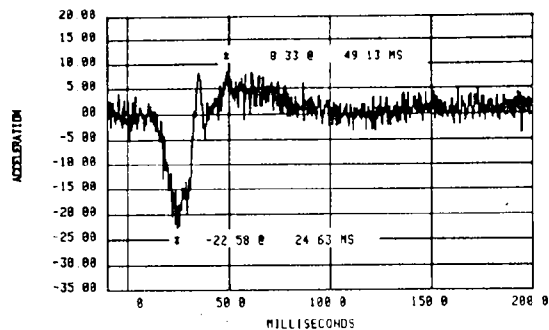
RIGHT UPPER RIB LATERAL ACCELERATION

TRACK 5 CHANNEL 12 100% CAL = 319.83
TEST DUMMY CAL SID 6 A1 DATE 3-4-81



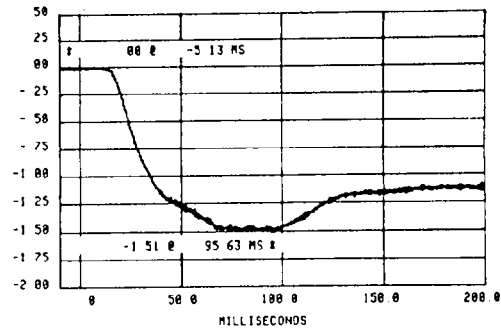
RIGHT LOWER RIB LATERAL ACCELERATION

TRACK: 5 CHANNEL: 2 100% CAL = 362.21
 TEST DUMMY CAL 510 6 A1 DATE: 3-4-81

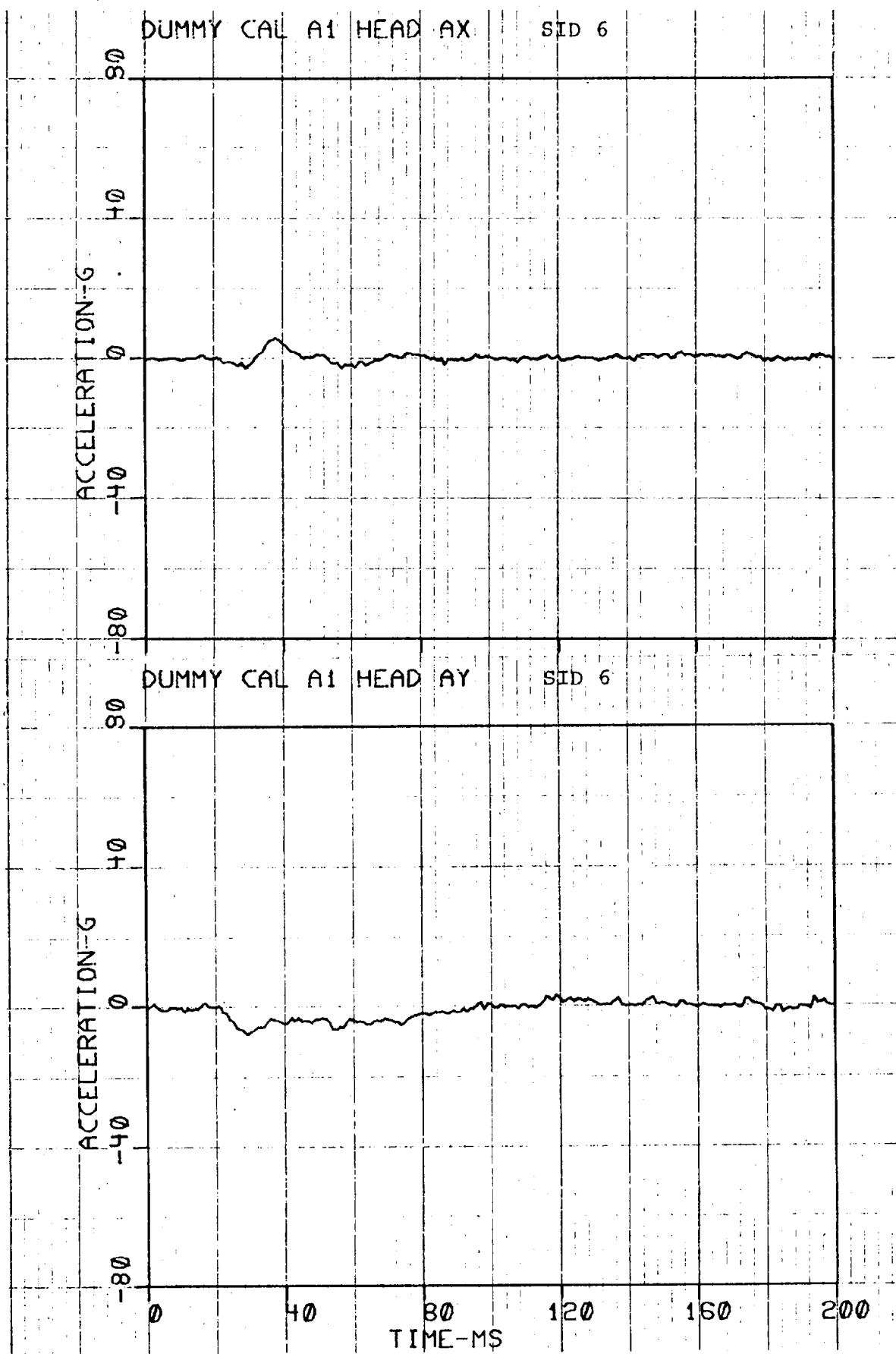


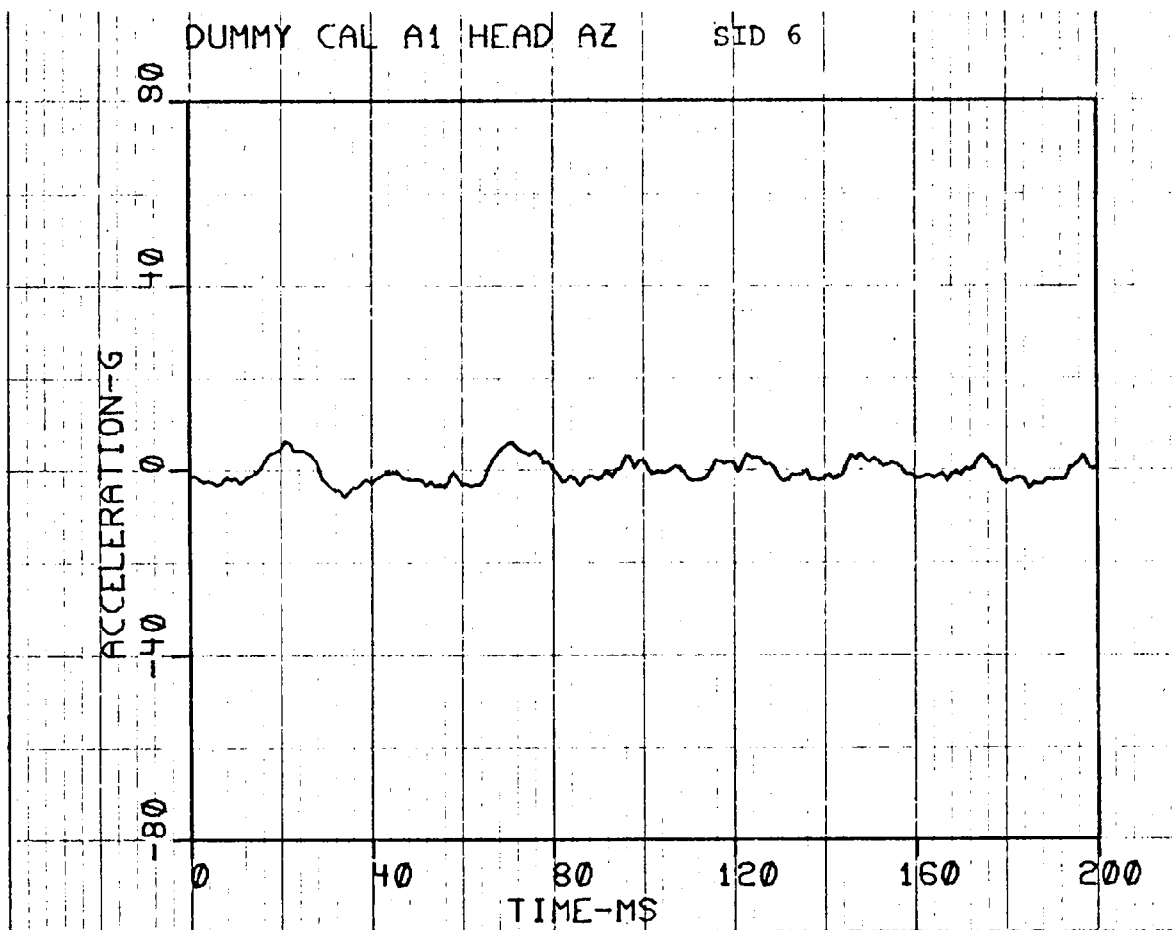
LEFT UPPER RIB LATERAL ACCELERATION

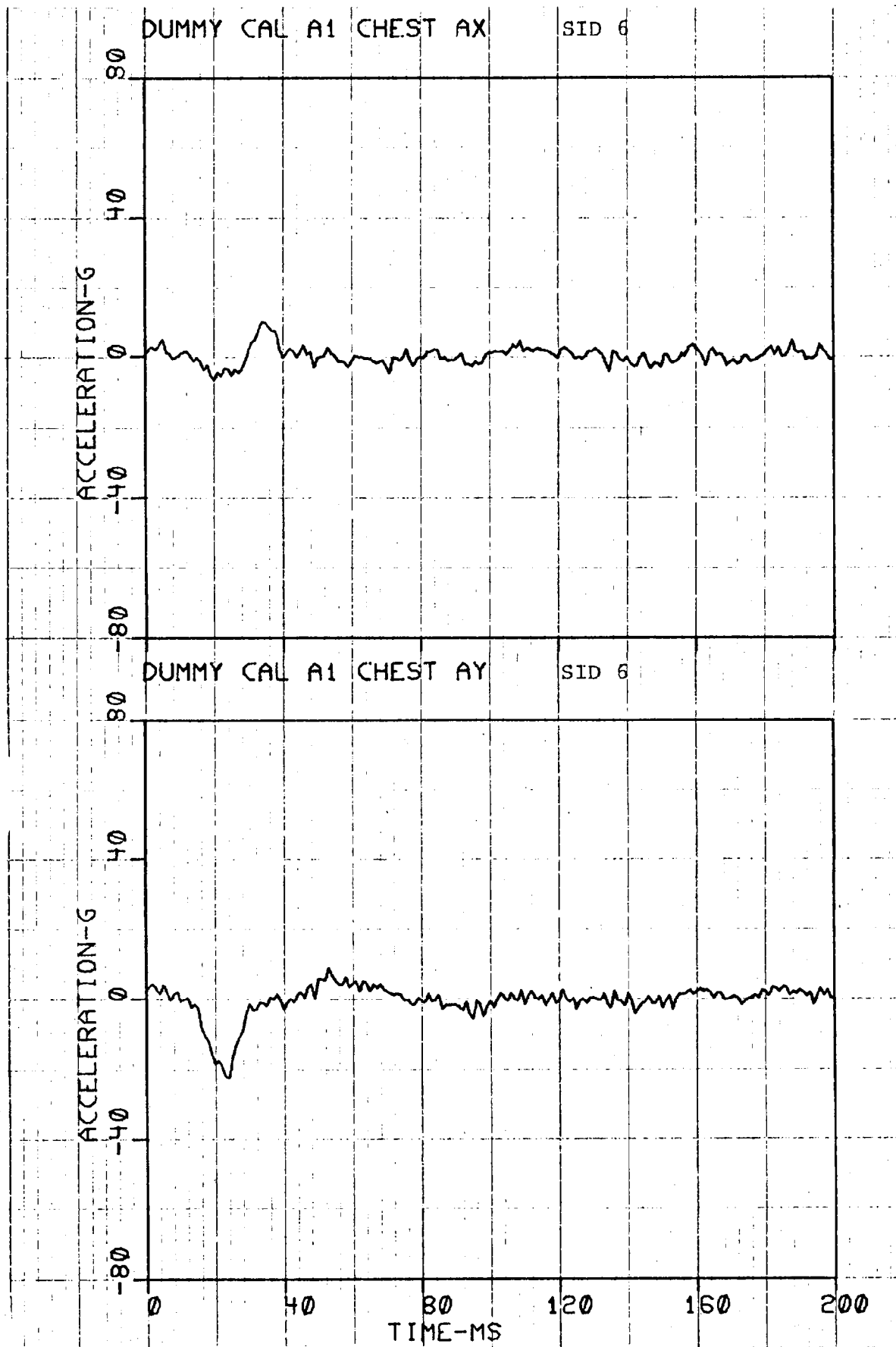
TRACK: 6 CHANNEL: 11 100% CAL = 2.85
 TEST DUMMY CAL 510 6 A1 DATE: 3-4-81

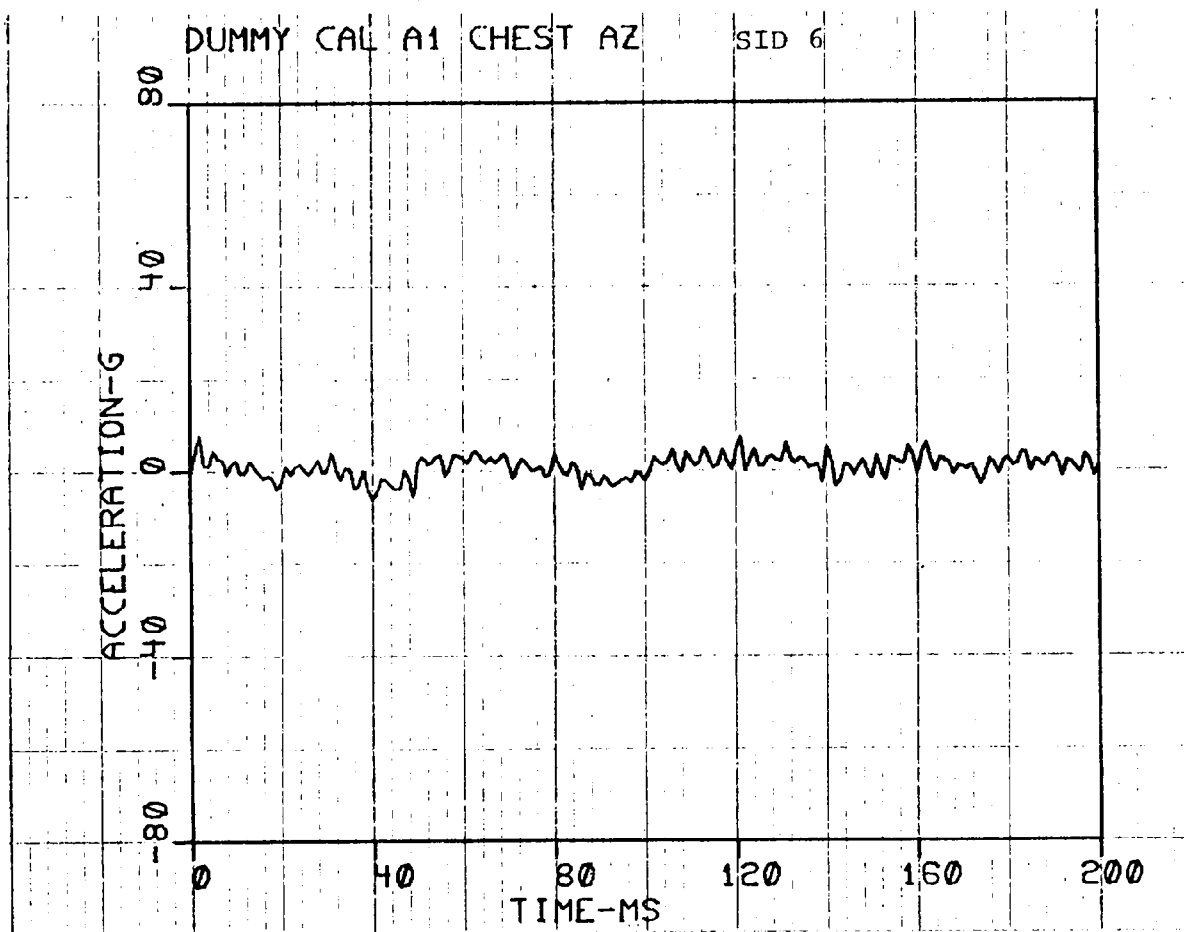


LOWER RIB DISPLACEMENT



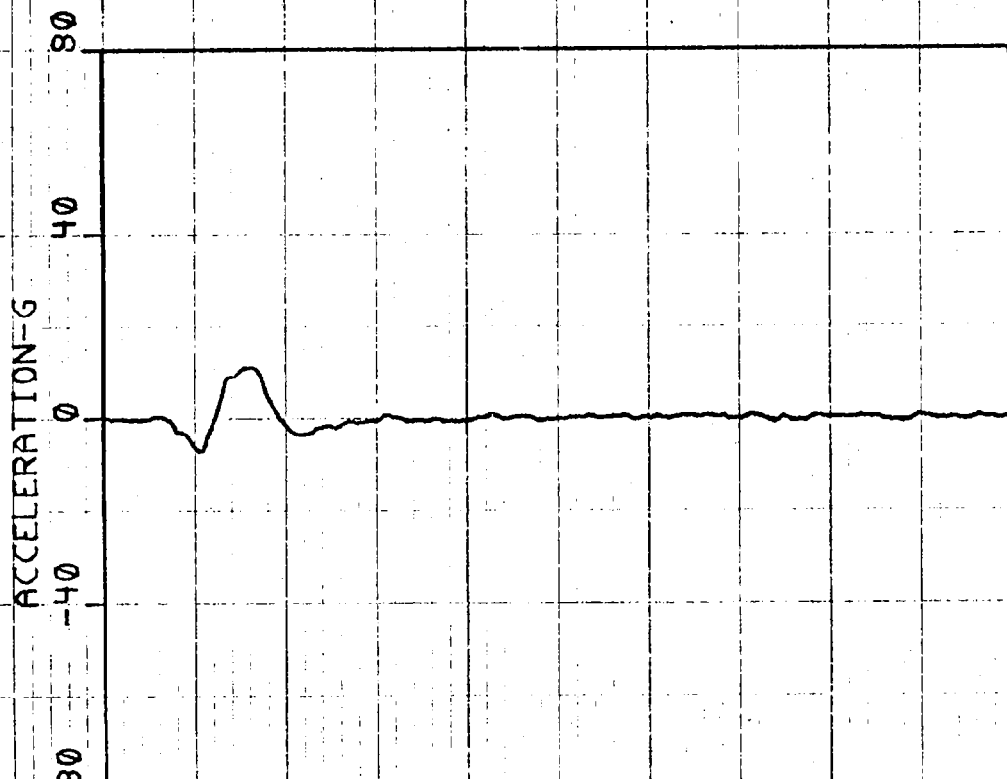






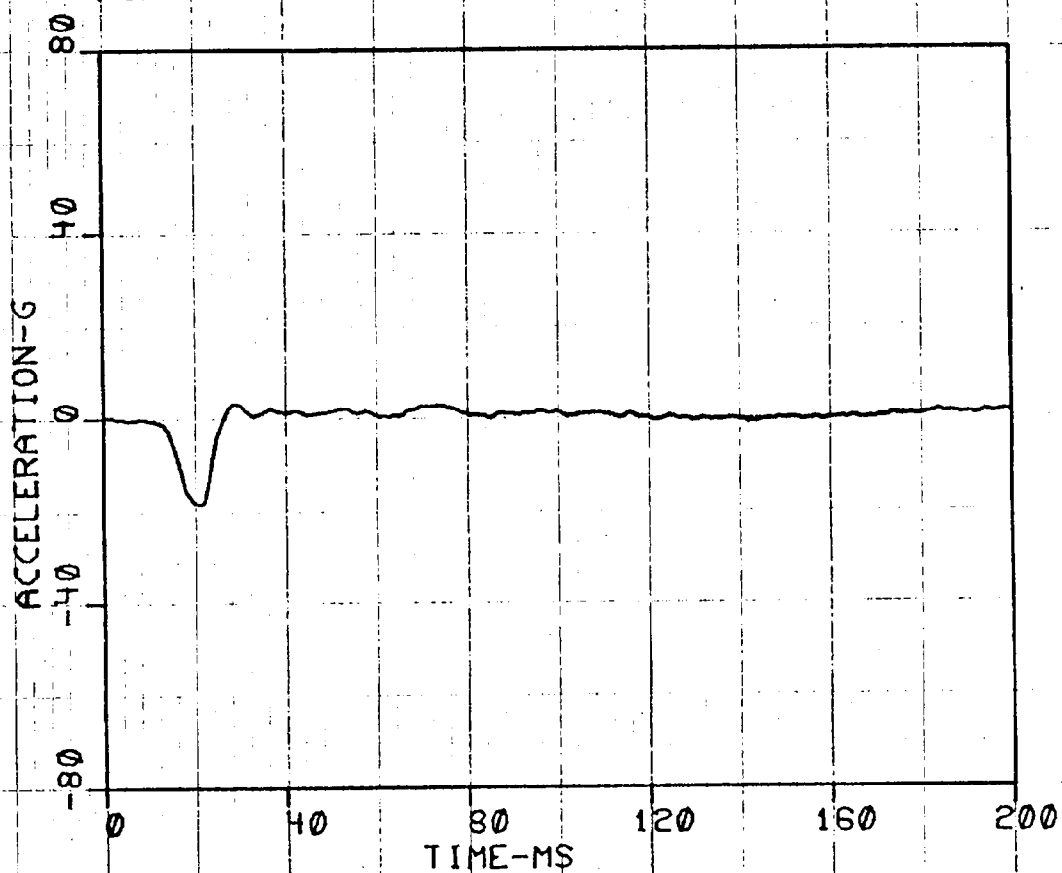
DUMMY CAL A1 LOWER THORAX AX

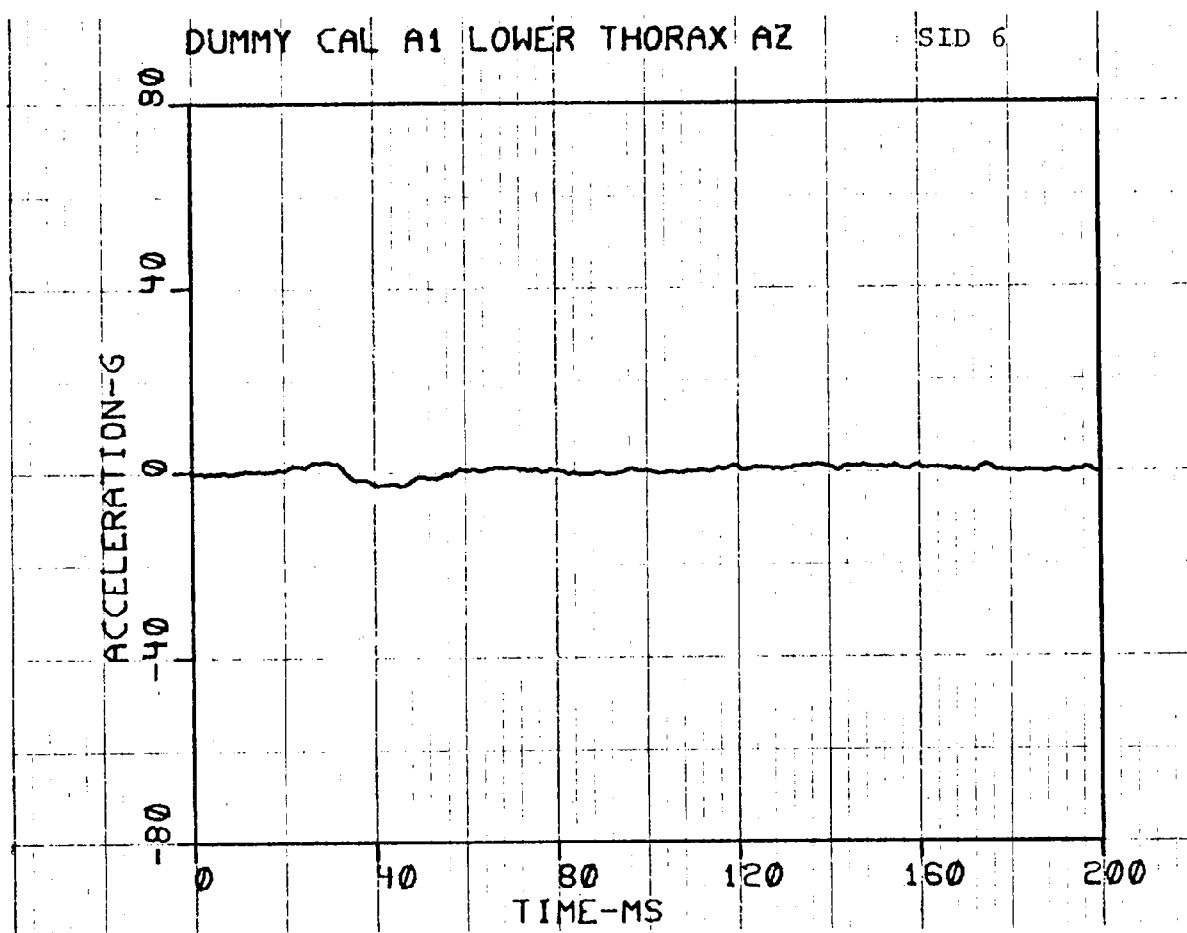
SID 6

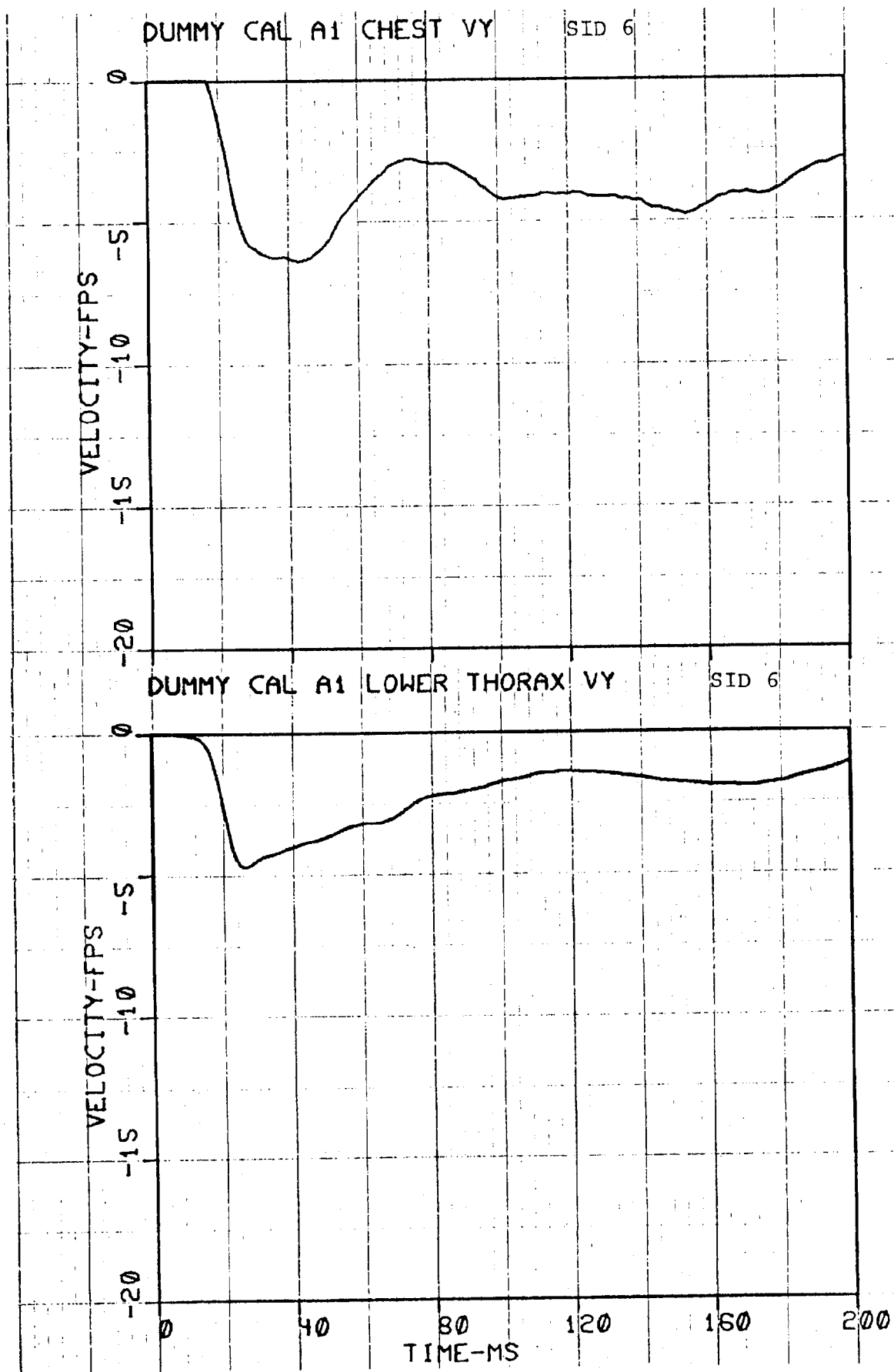


DUMMY CAL A1 LOWER THORAX AY

SID 6

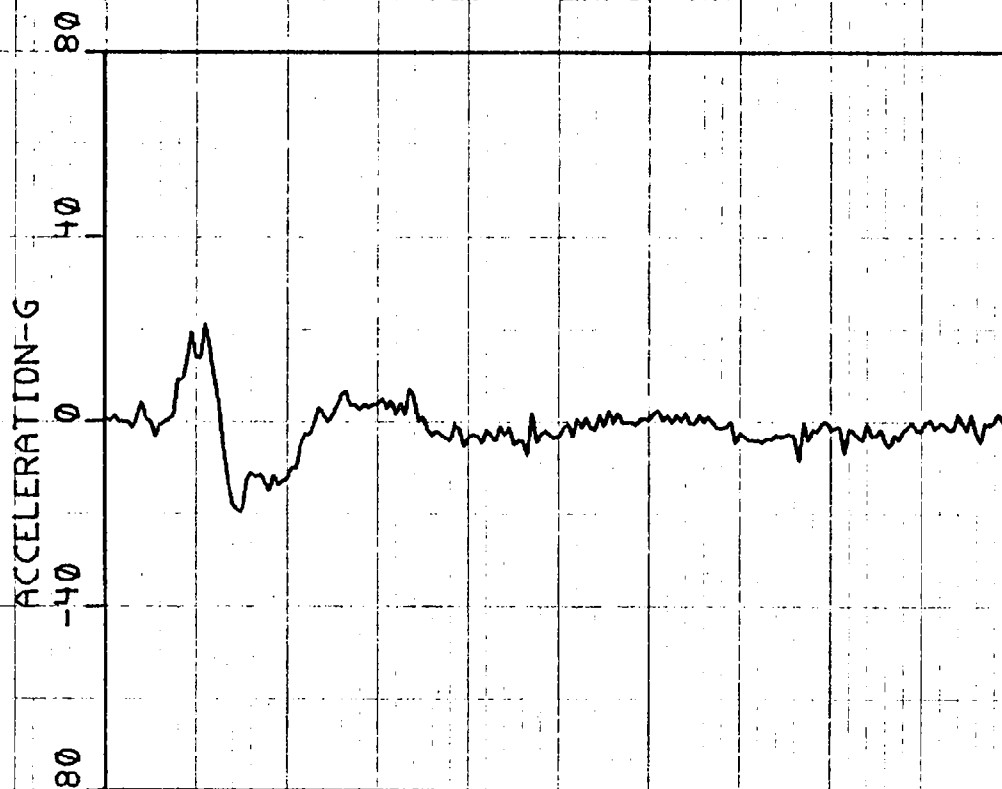






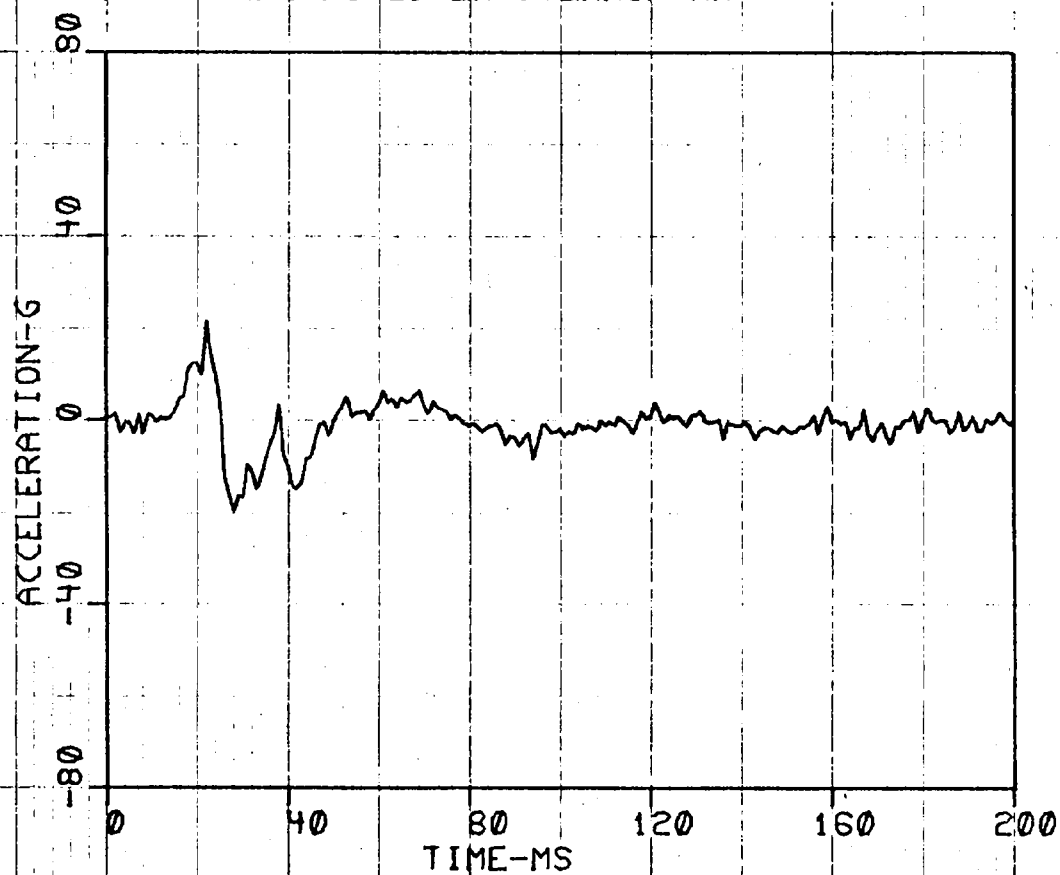
DUMMY CAL A1 UPPER STERNUM AX

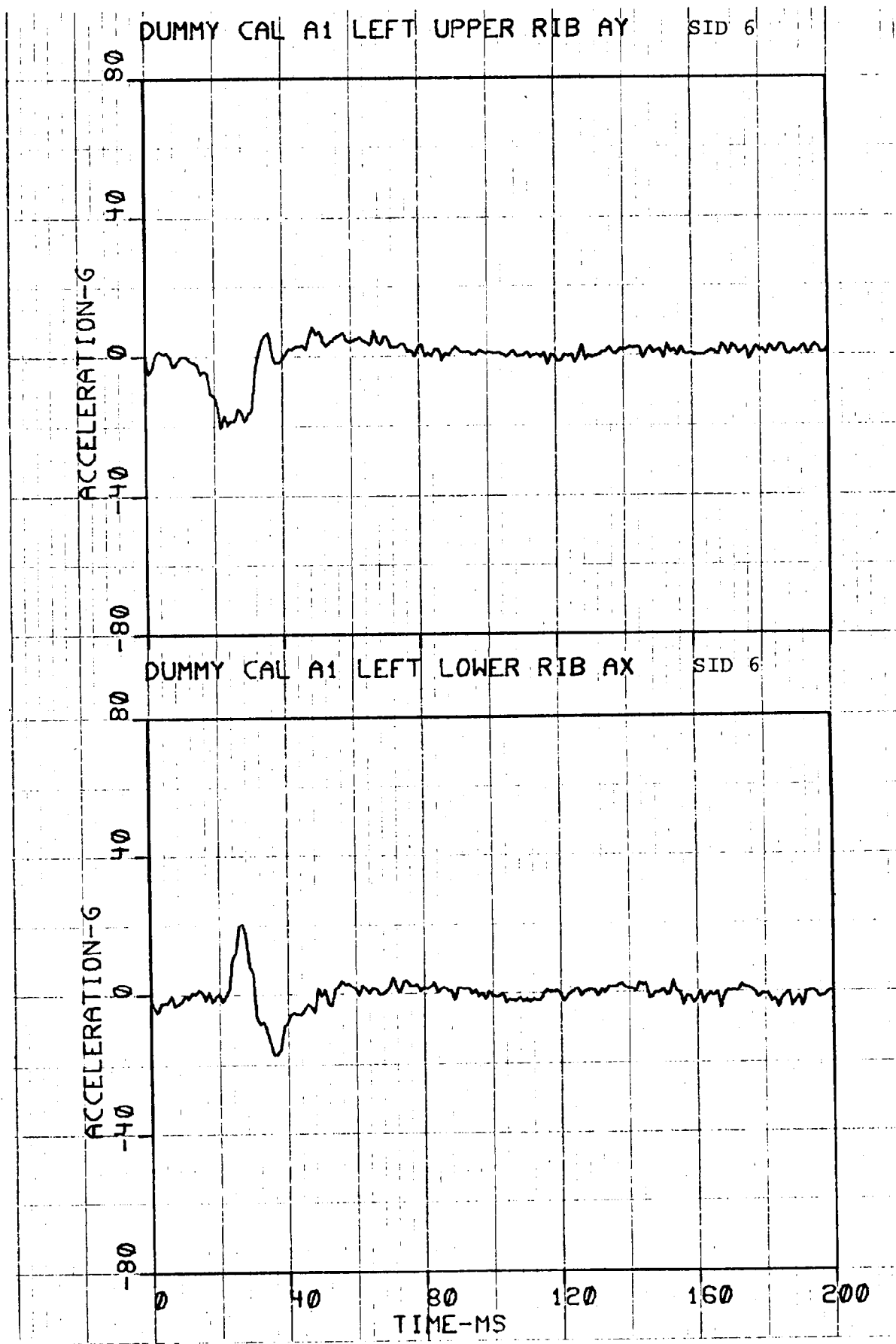
SID 6

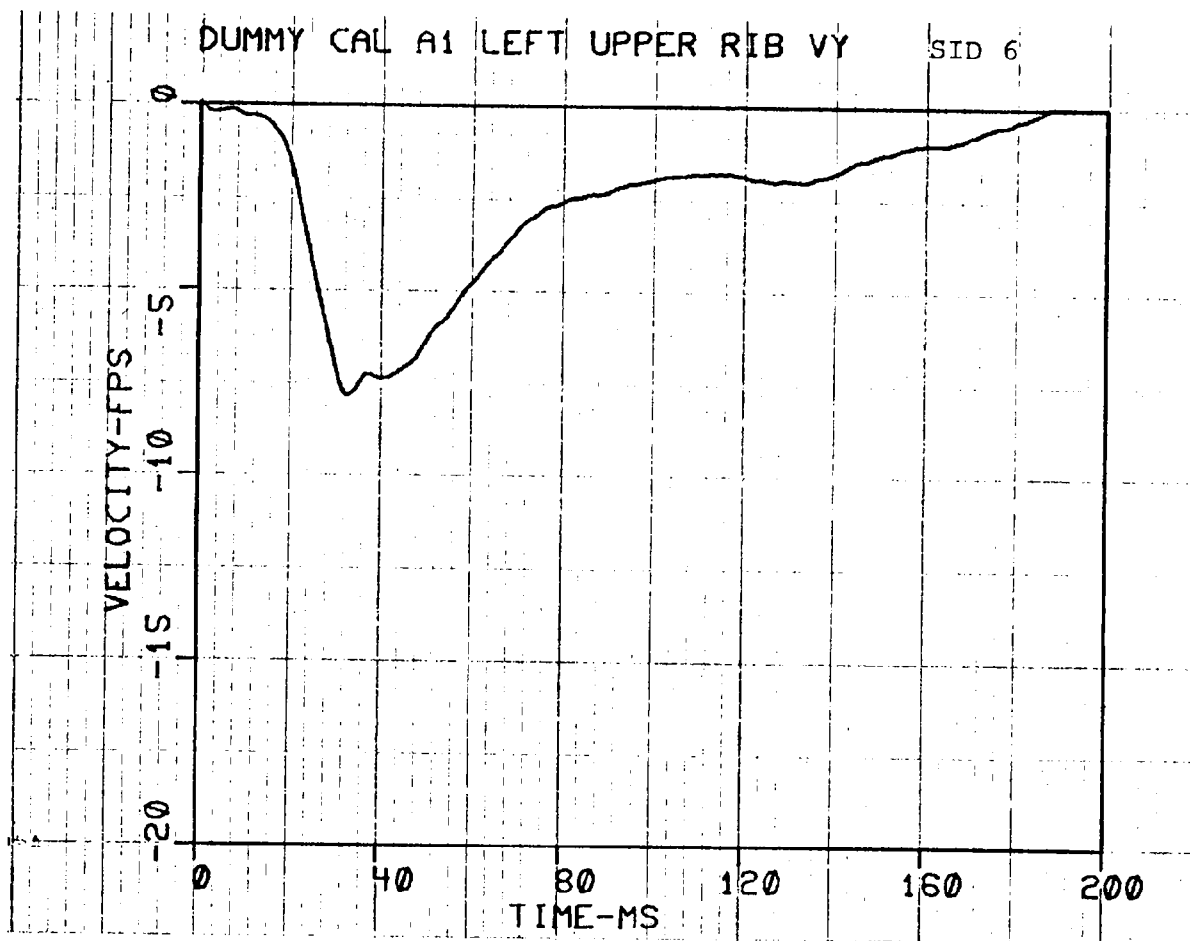


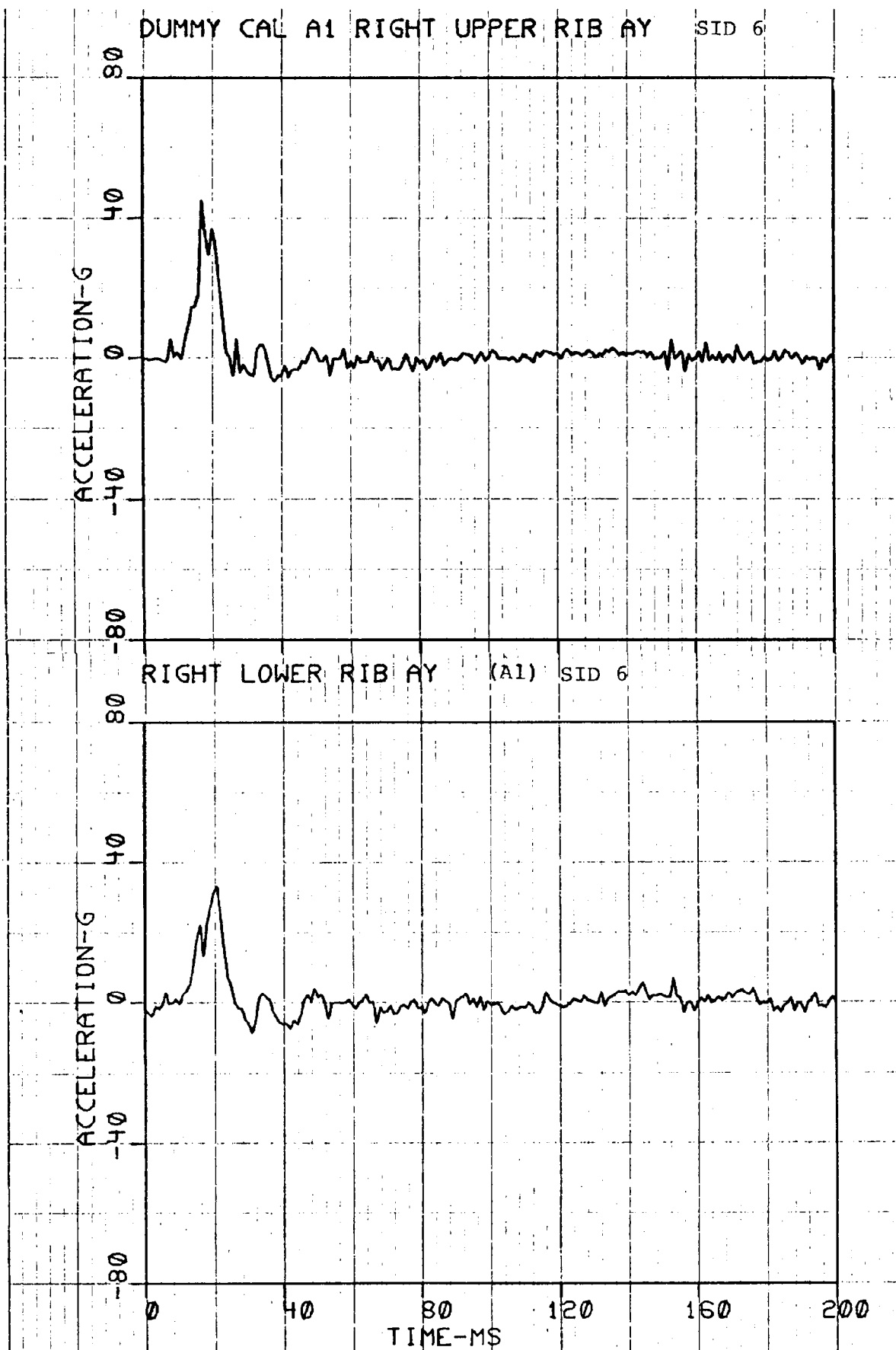
DUMMY CAL A1 LOWER STERNUM AX

SID 6

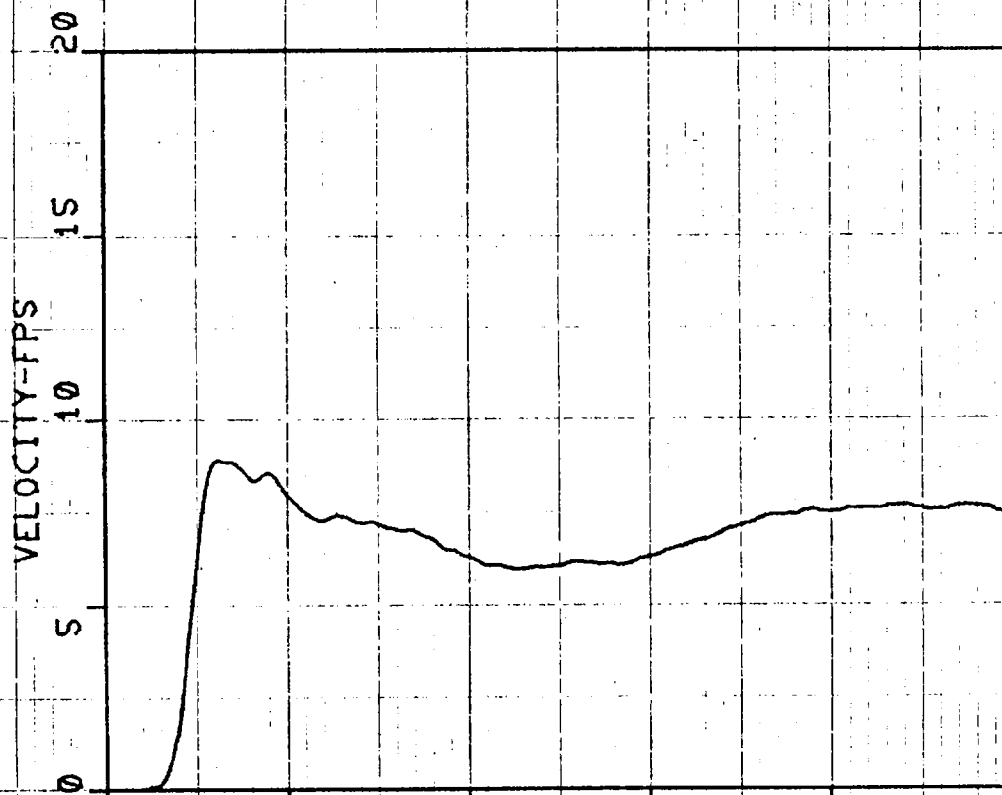




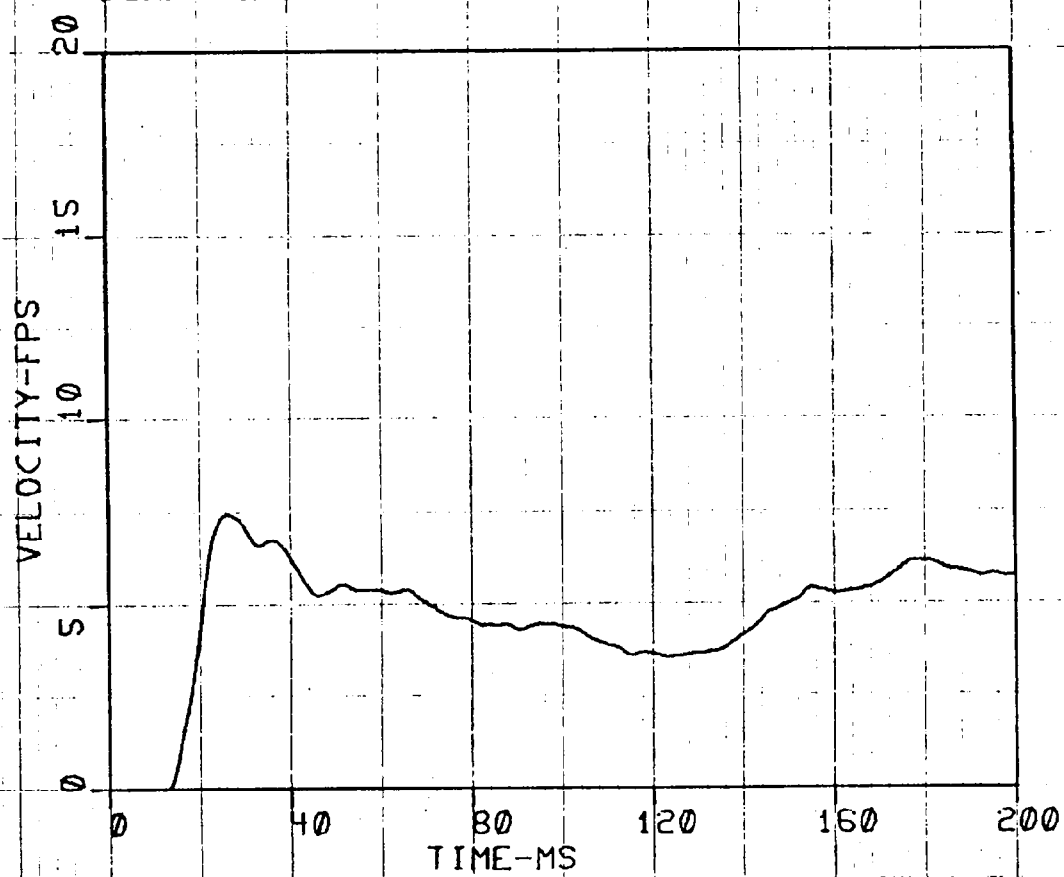


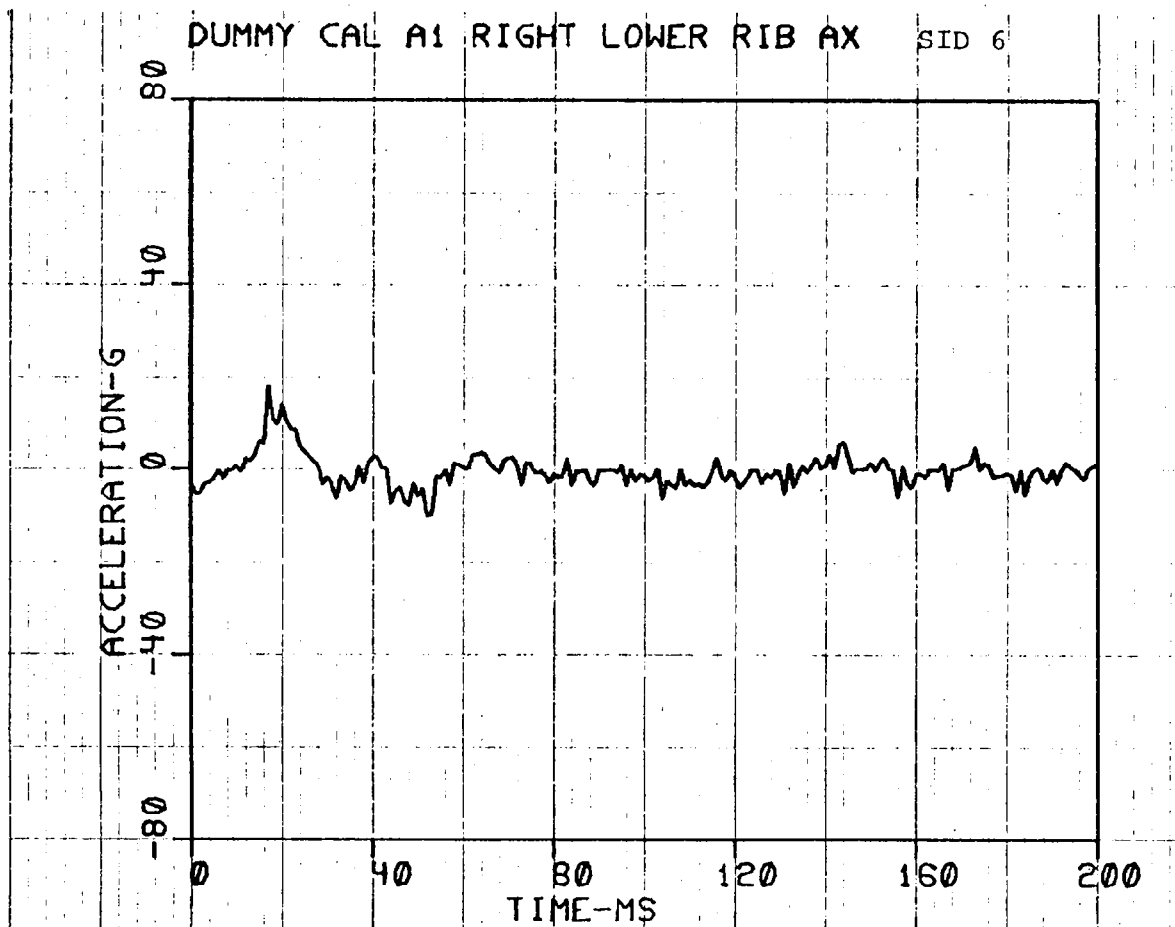


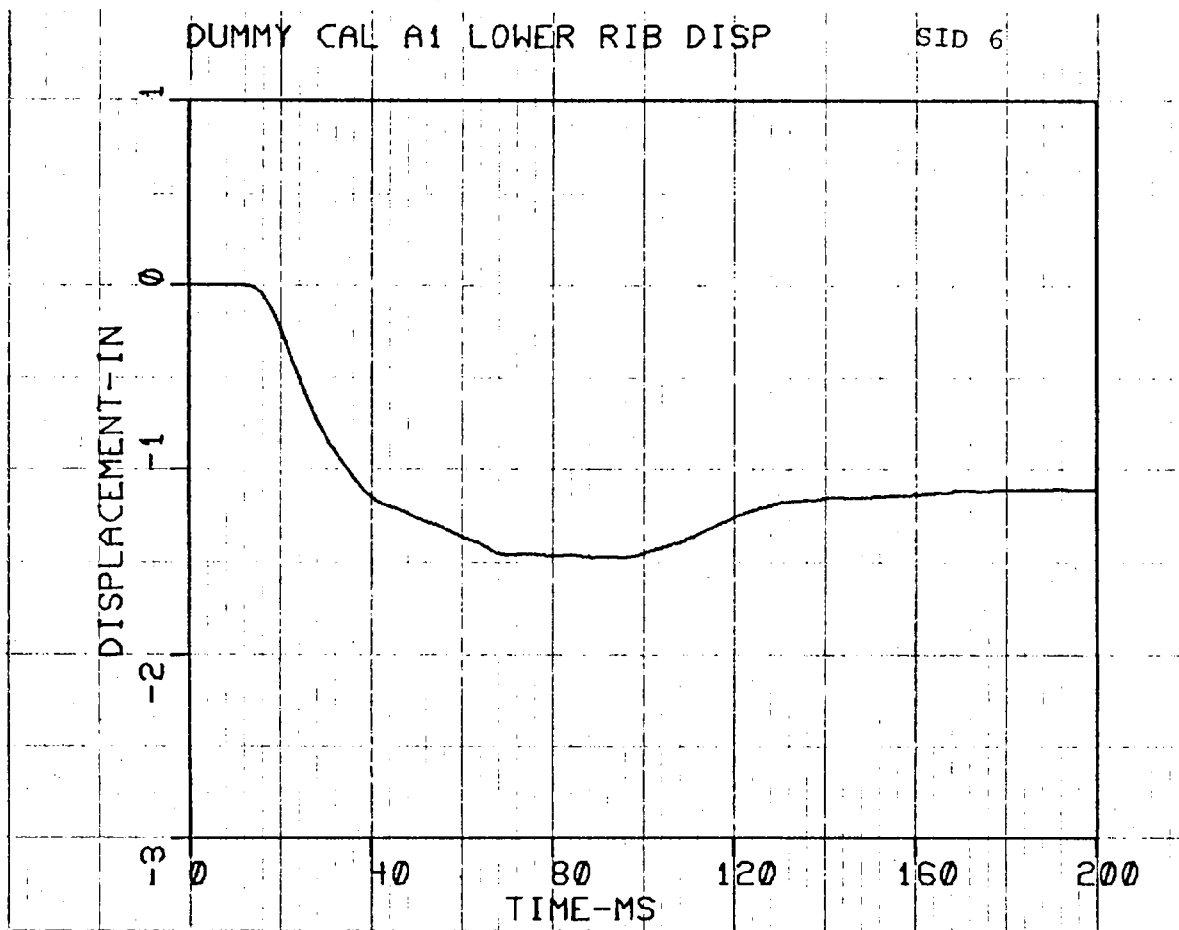
DUMMY CAL A1 RIGHT UPPER RIB VY SID 6



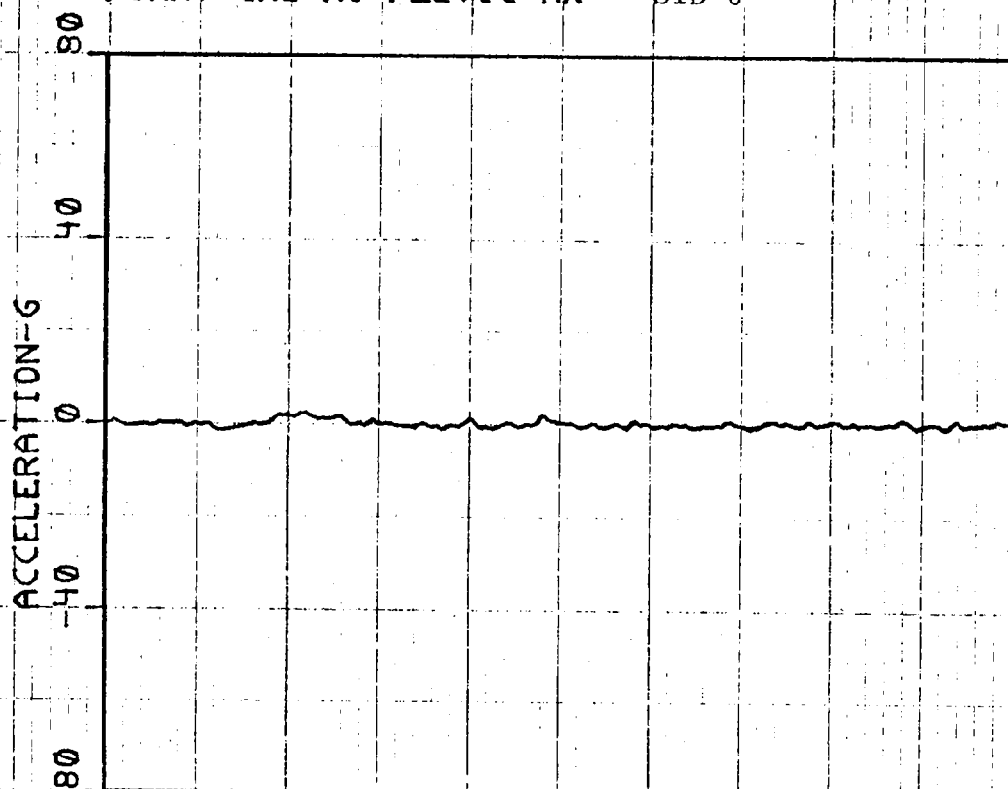
DUMMY CAL A1 RIGHT LOWER RIB VY SID 6



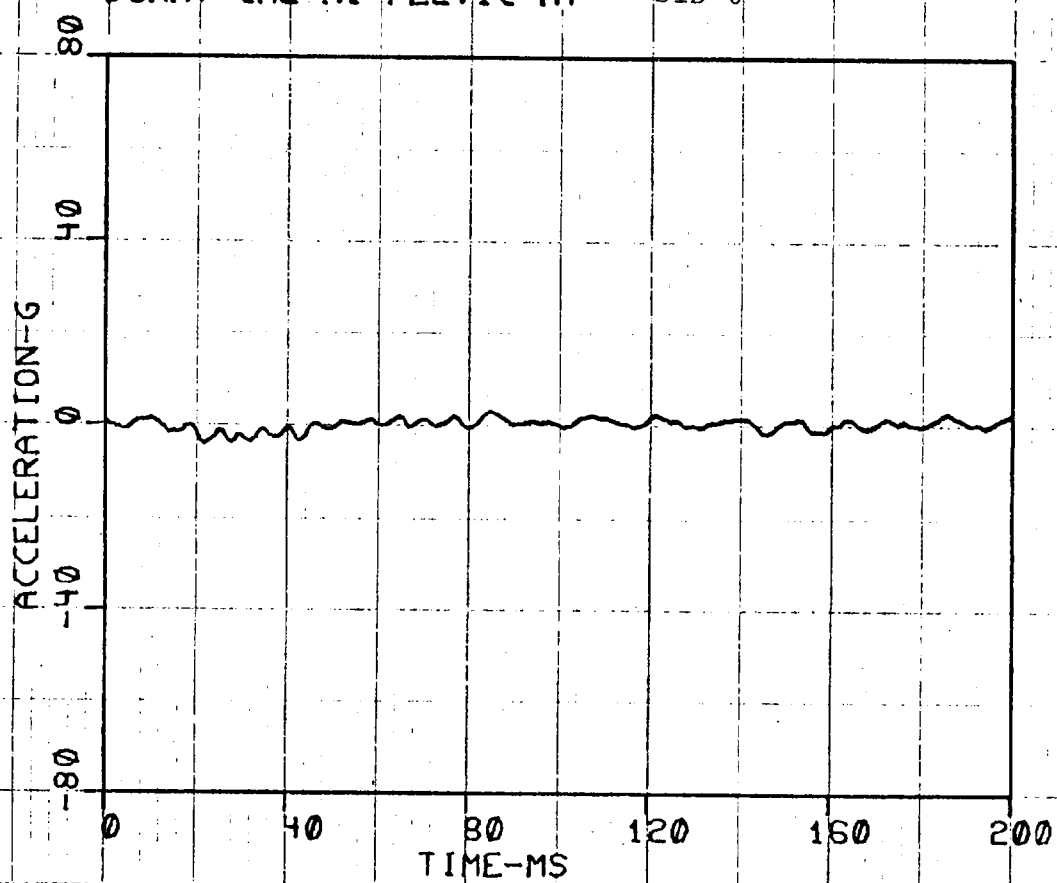


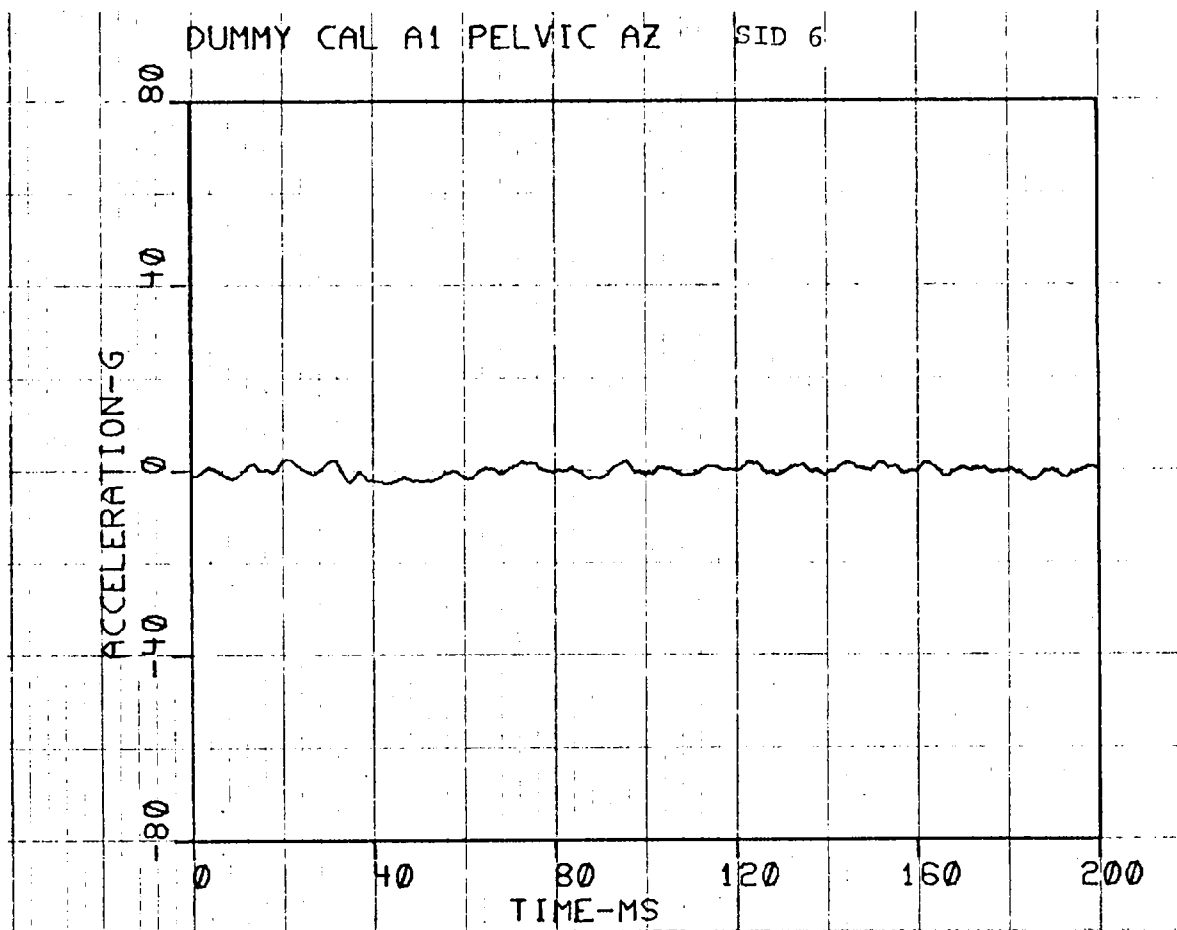


DUMMY CAL A1 PELVIC AX SID 6

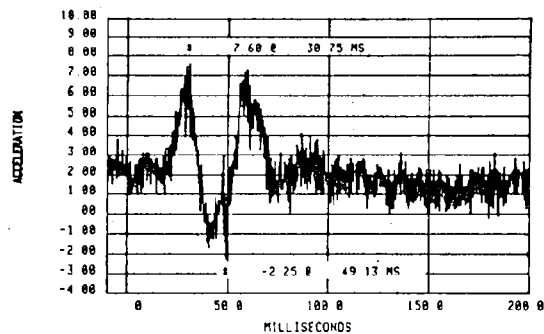


DUMMY CAL A1 PELVIC AY SID 6



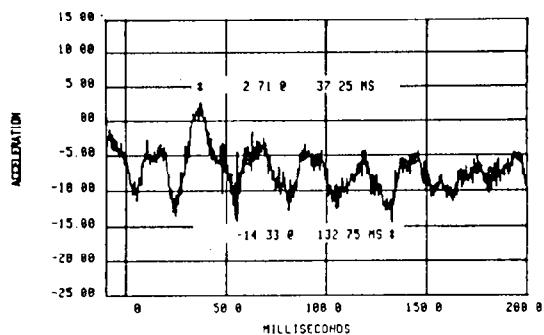


TRACK 18 CHANNEL 12 100% CAL = 236.30
TEST SID4 PRE CAL BUMP DATE: 3-28-81



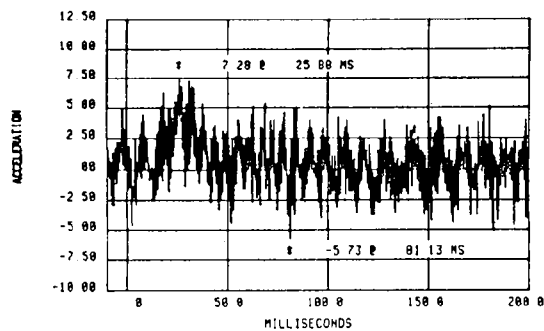
HEAD LONGITUDINAL ACCELERATION

TRACK 18 CHANNEL 14 100% CAL = 259.79
TEST SID4 PRE CAL BUMP DATE: 3-28-81



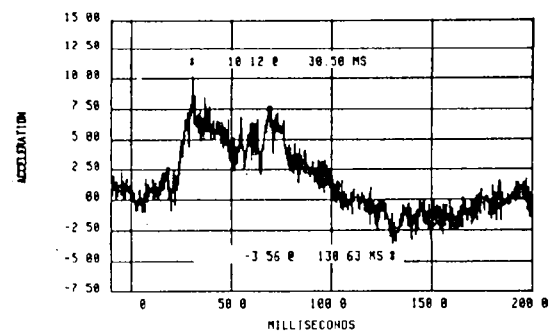
HEAD VERTICAL ACCELERATION

TRACK 18 CHANNEL 8 100% CAL = 396.57
TEST SID4 PRE CAL BUMP DATE: 3-28-81



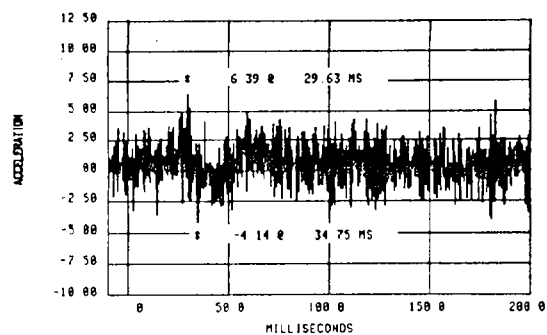
PELVIS LATERAL ACCELERATION

TRACK 18 CHANNEL 13 100% CAL = 236.66
TEST SID4 PRE CAL BUMP DATE: 3-28-81



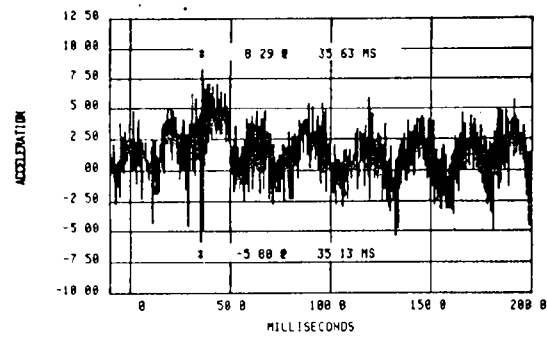
HEAD LATERAL ACCELERATION

TRACK 18 CHANNEL 7 100% CAL = 333.79
TEST SID4 PRE CAL BUMP DATE: 3-28-81



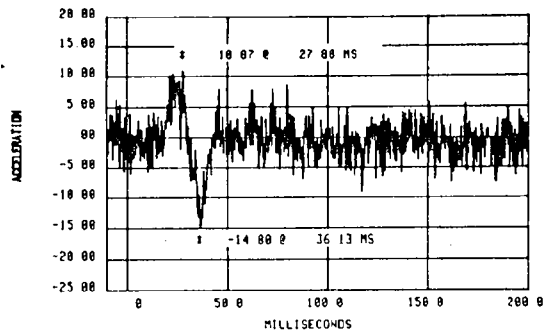
PELVIS LONGITUDINAL ACCELERATION

TRACK 18 CHANNEL 9 100% CAL = 368.42
TEST SID4 PRE CAL BUMP DATE: 3-28-81



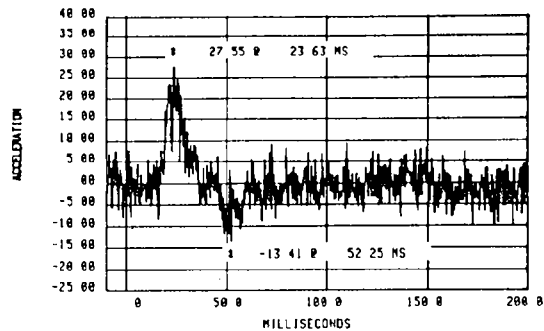
PELVIS VERTICAL ACCELERATION

TRACK: 9 CHANNEL: 7 100% CAL = 379 03
TEST: S104 PRE CAL BUMP DATE: 3-28-81



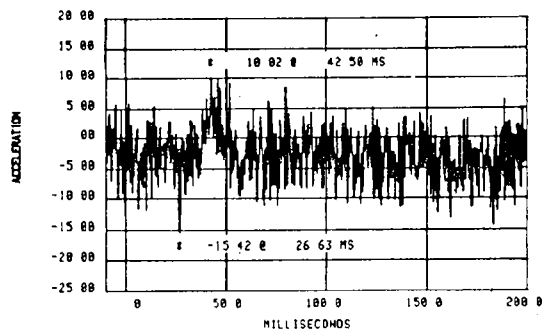
UPPER THORAX LONGITUDINAL ACCELERATION

TRACK: 9 CHANNEL: 8 100% CAL = 400 27
TEST: S104 PRE CAL BUMP DATE: 3-28-81



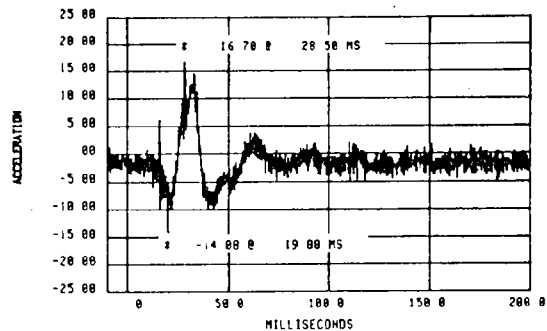
UPPER THORAX LATERAL ACCELERATION

TRACK: 10 CHANNEL: 9 100% CAL = 421 24
TEST: S104 PRE CAL BUMP DATE: 3-28-81



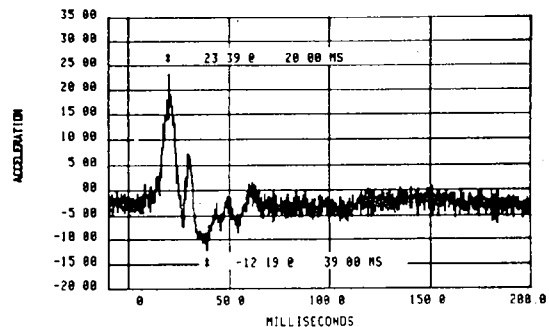
UPPER THORAX VERTICAL ACCELERATION

TRACK: 10 CHANNEL: 1 100% CAL = 362 33
TEST: S104 PRE CAL BUMP DATE: 3-28-81



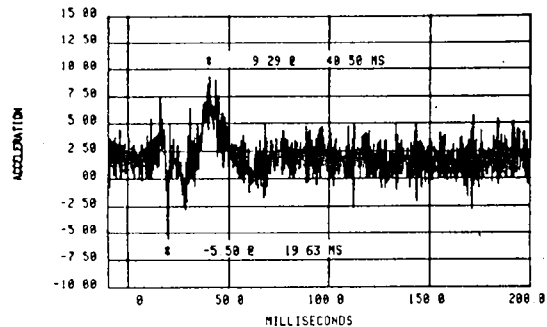
UPPER THORAX LONGITUDINAL ACCELERATION

TRACK: 10 CHANNEL: 2 100% CAL = 357 34
TEST: S104 PRE CAL BUMP DATE: 3-28-81



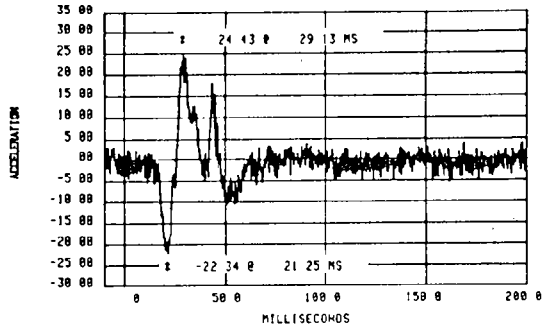
LOWER THORAX LATERAL ACCELERATION

TRACK: 10 CHANNEL: 3 100% CAL = 329 23
TEST: S104 PRE CAL BUMP DATE: 3-28-81



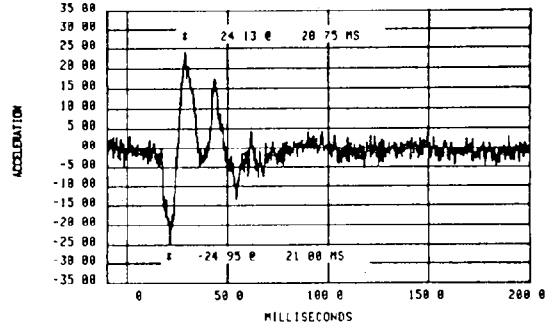
LOWER THORAX VERTICAL ACCELERATION

TRACK: 9 CHANNEL: 4 100% CAL = 343 86
TEST: SID4 PRE CAL BUMP DATE: 3-28-81



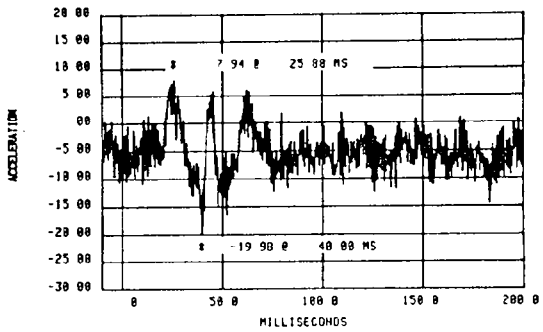
UPPER STERNUM LONGITUDINAL ACCELERATION

TRACK: 9 CHANNEL: 3 100% CAL = 339 86
TEST: SID4 PRE CAL BUMP DATE: 3-28-81



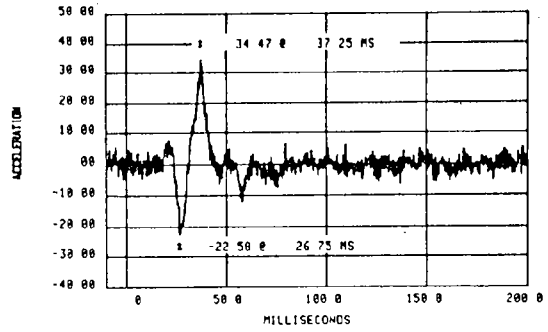
LOWER STERNUM LONGITUDINAL ACCELERATION

TRACK: 9 CHANNEL: 13 100% CAL = 397 91
TEST: SID4 PRE CAL BUMP DATE: 3-28-81



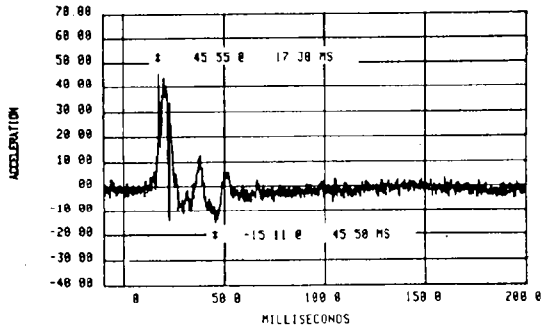
LEFT LOWER RIB LONGITUDINAL ACCELERATION

TRACK: 9 CHANNEL: 11 100% CAL = 398 16
TEST: SID4 PRE CAL BUMP DATE: 3-28-81



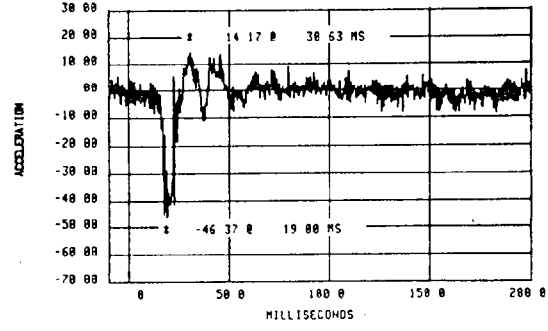
LEFT LOWER RIB LONGITUDINAL ACCELERATION

TRACK: 9 CHANNEL: 1 100% CAL = 363 74
TEST: SID4 PRE CAL BUMP DATE: 3-28-81



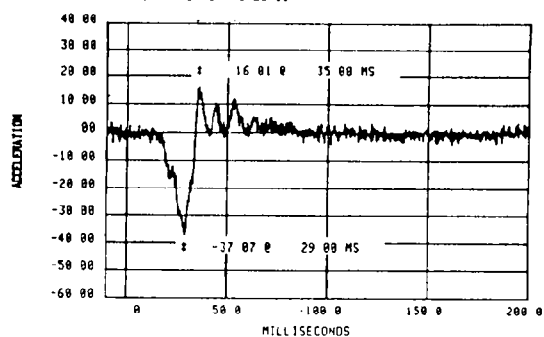
RIGHT UPPER RIB LATERAL ACCELERATION

TRACK: 9 CHANNEL: 12 100% CAL = 421 71
TEST: SID4 PRE CAL BUMP DATE: 3-28-81



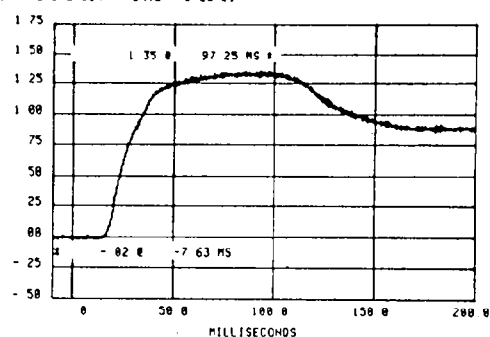
RIGHT LOWER RIB LATERAL ACCELERATION

TRACK: 9 CHANNEL: 2 100% CAL = 346.27
 TEST: SID4 PRE CAL BUMP DATE: 3-20-81

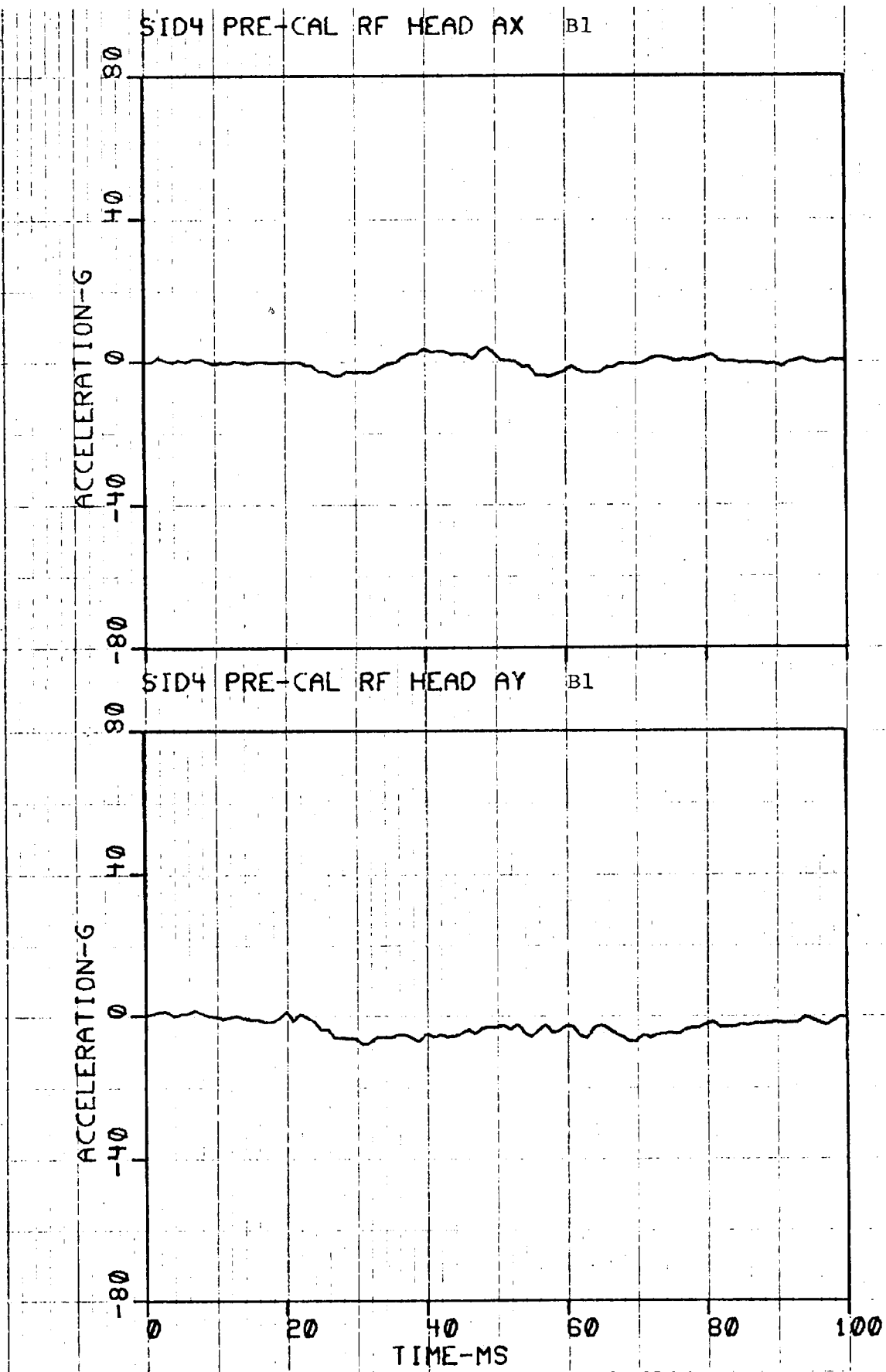


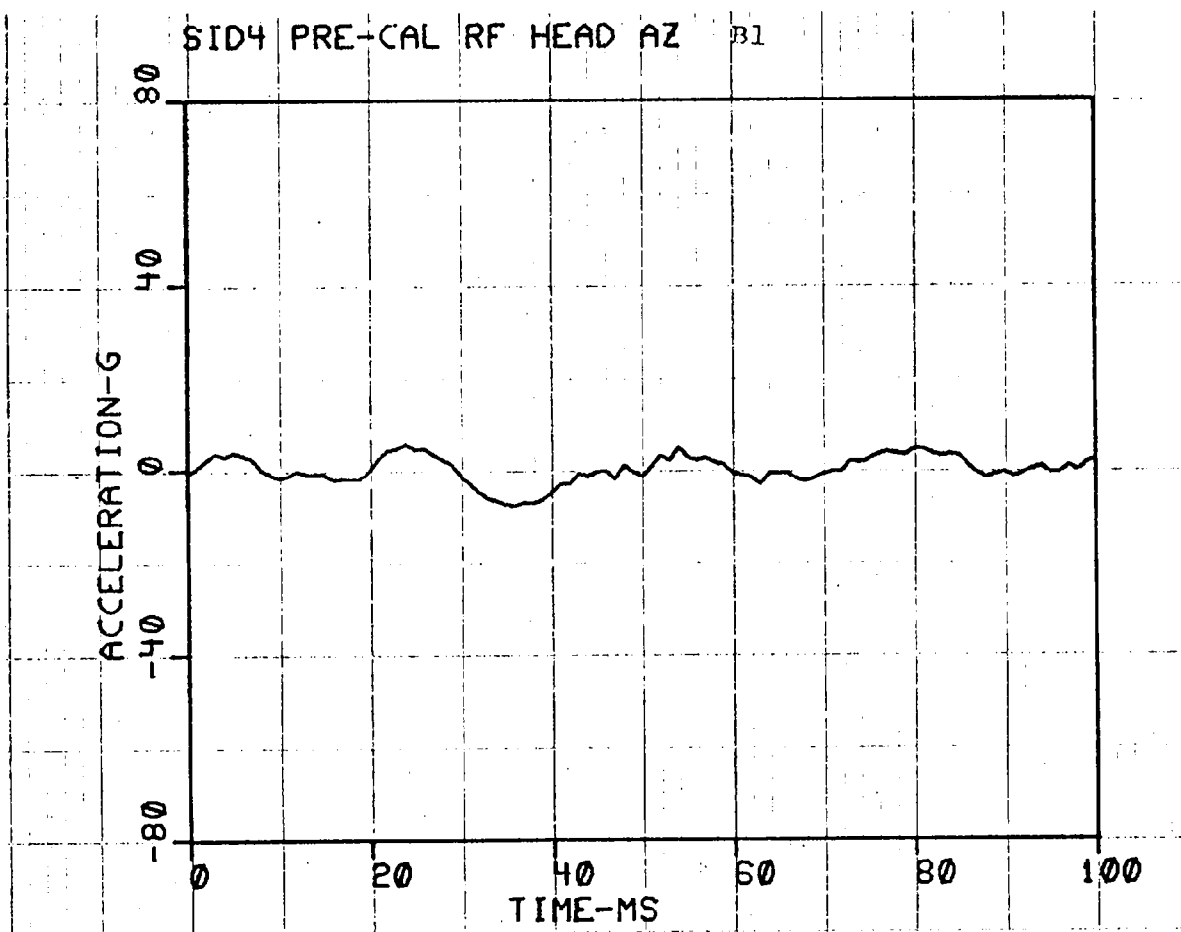
LEFT UPPER RIB LATERAL ACCELERATION

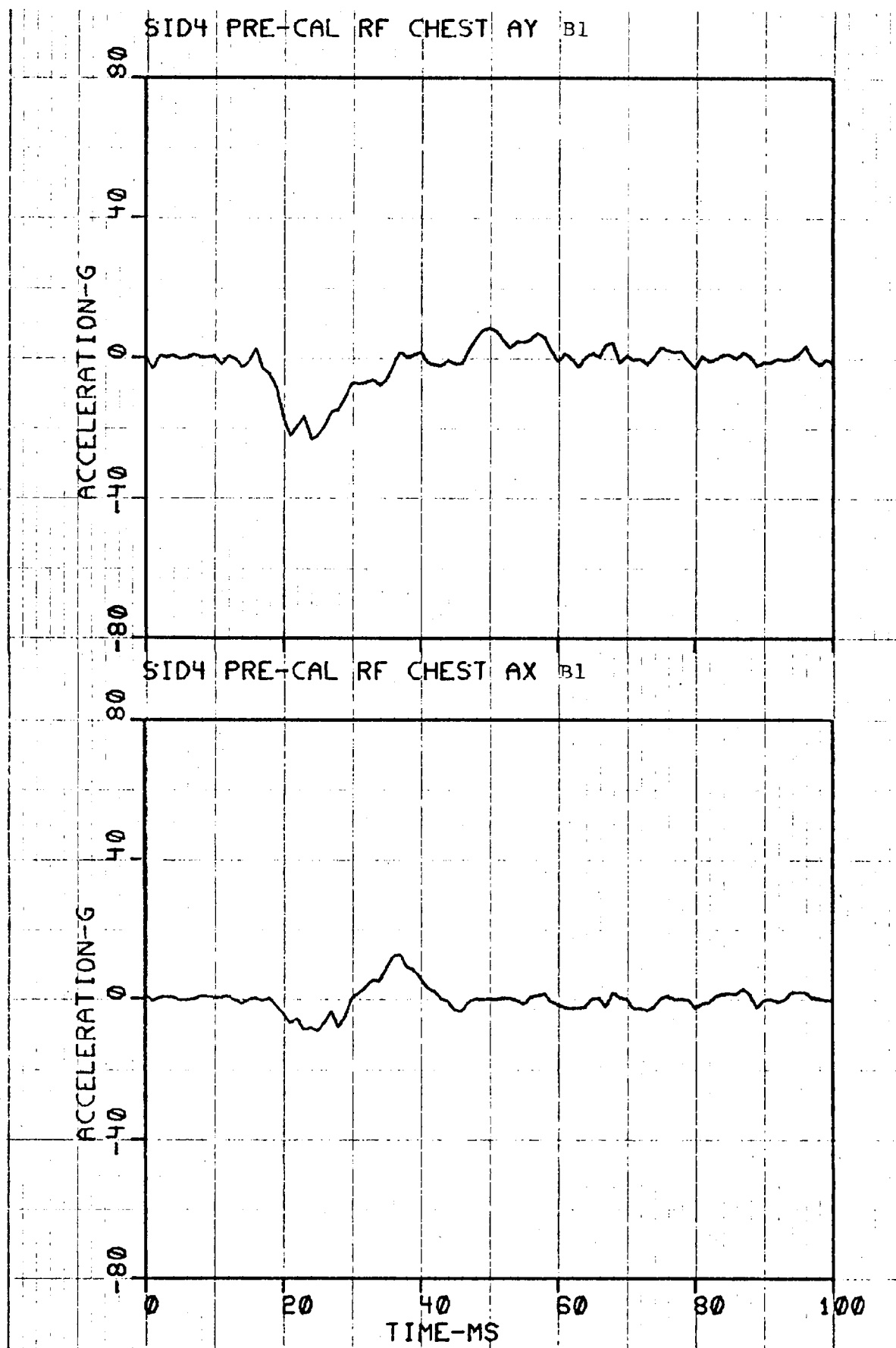
TRACK: 10 CHANNEL: 11 100% CAL = 2.77
 TEST: SID4 PRE CAL BUMP DATE: 3-20-81

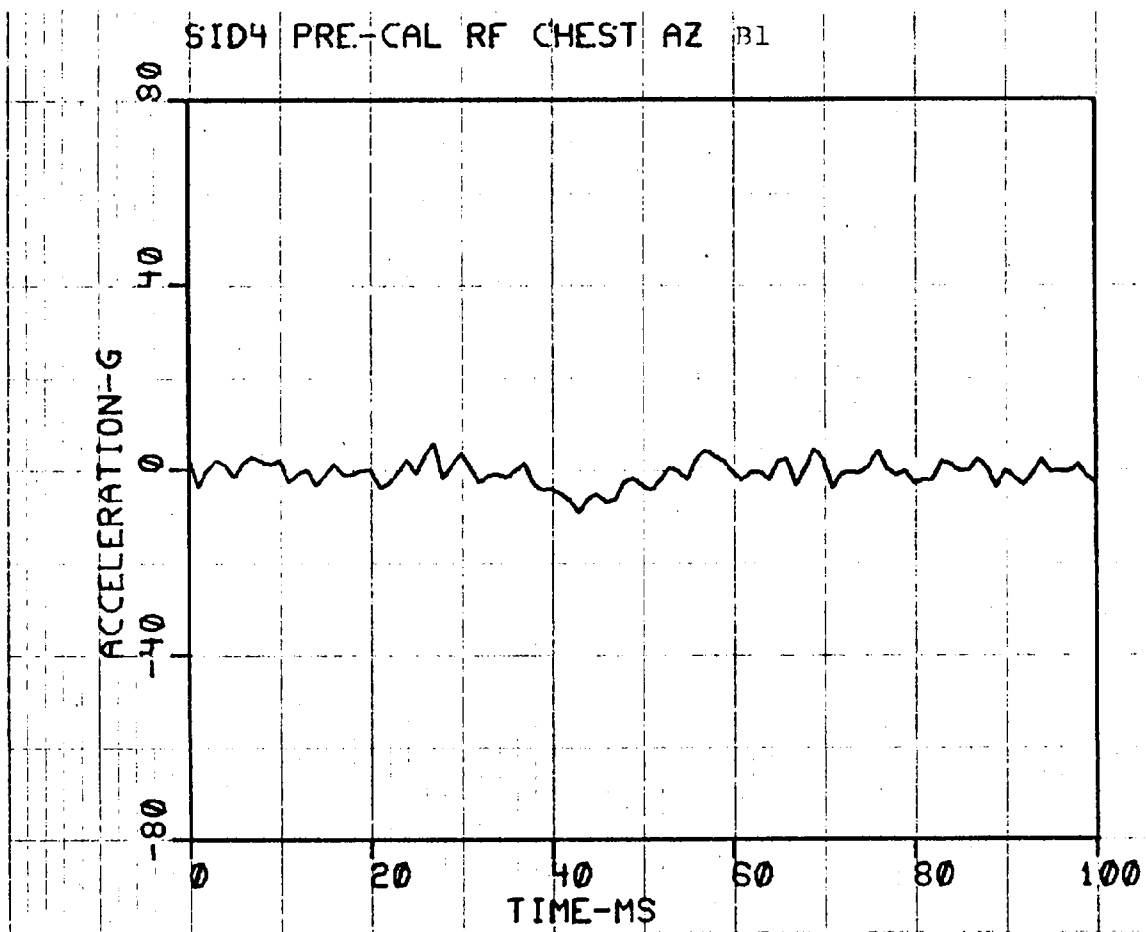


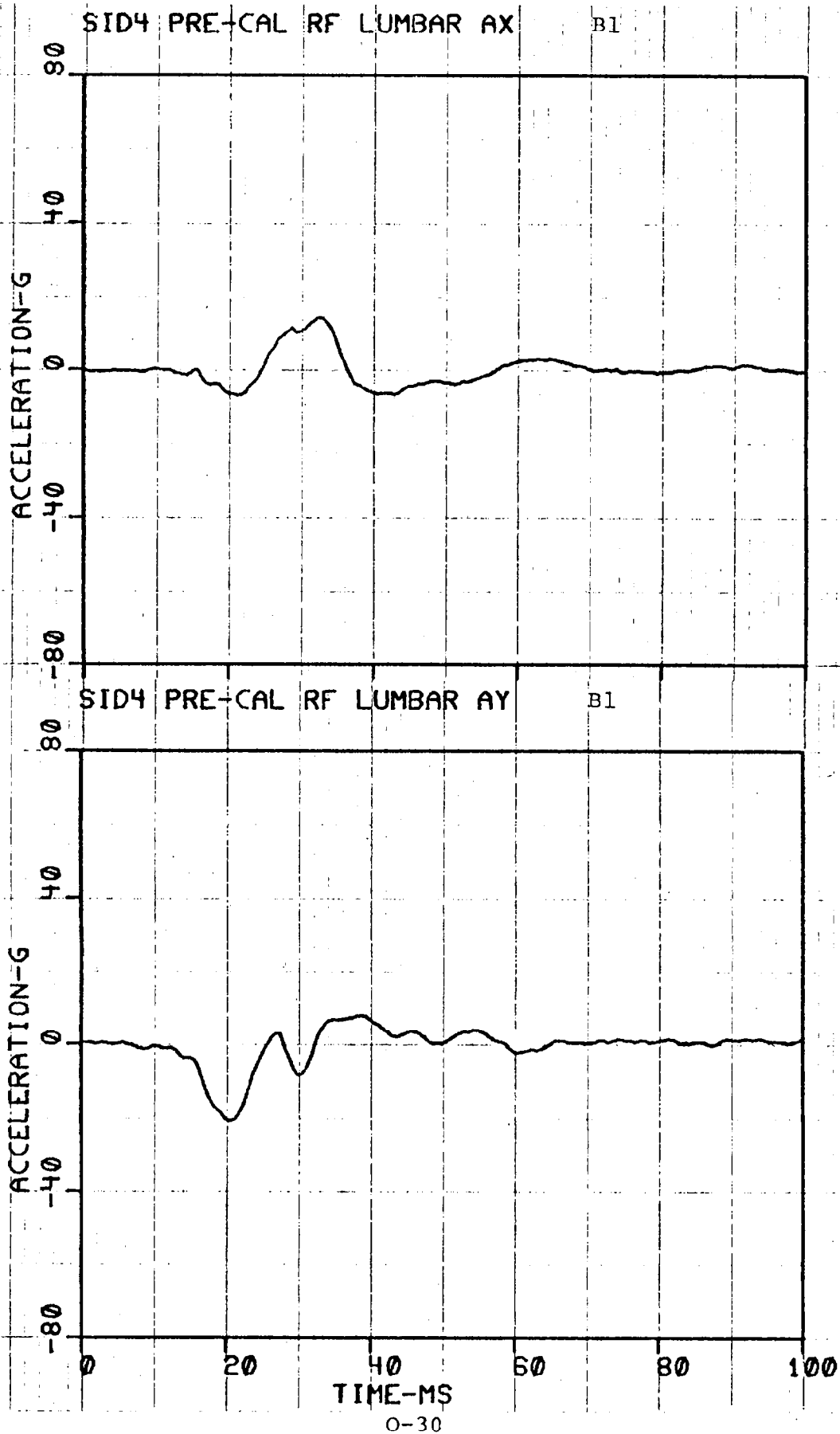
LOWER RIB DISPLACEMENT

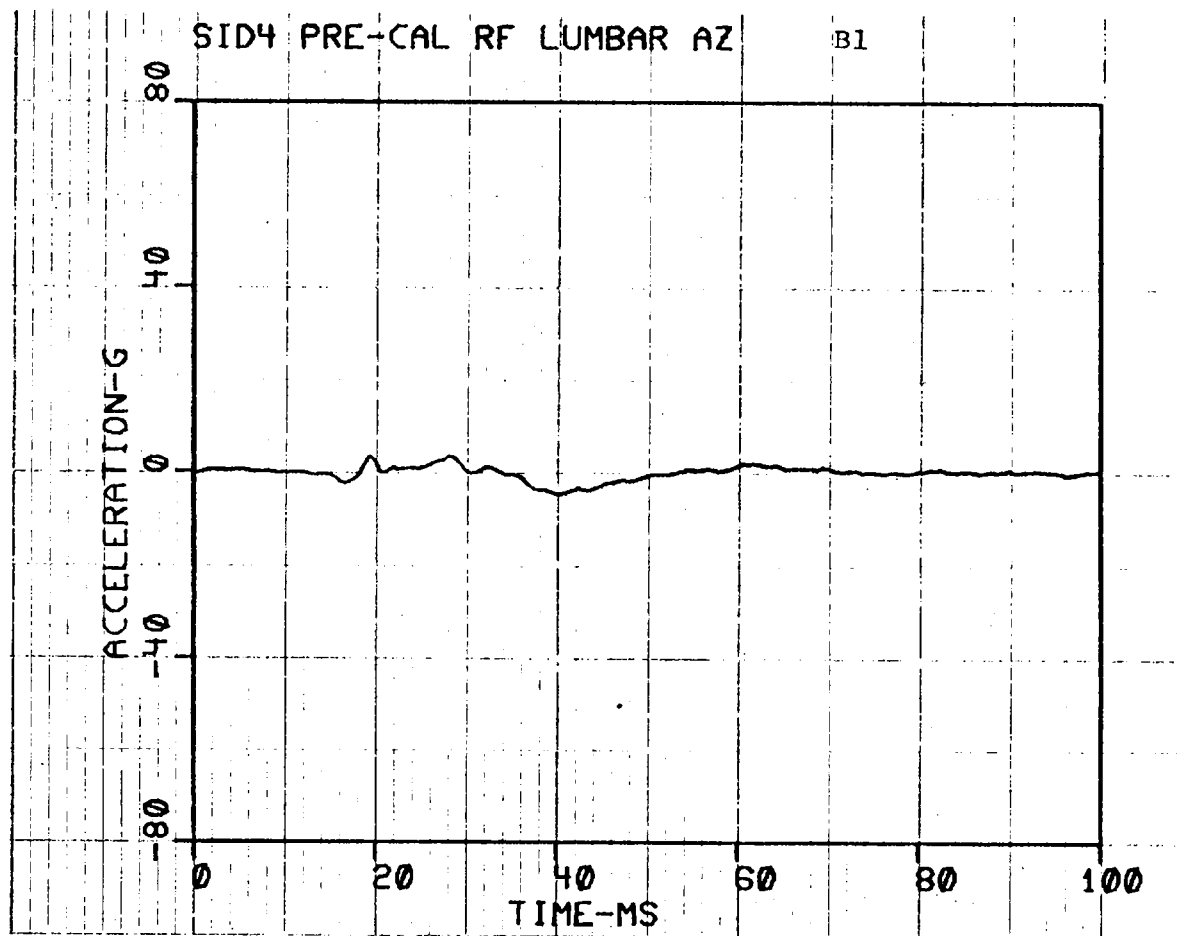


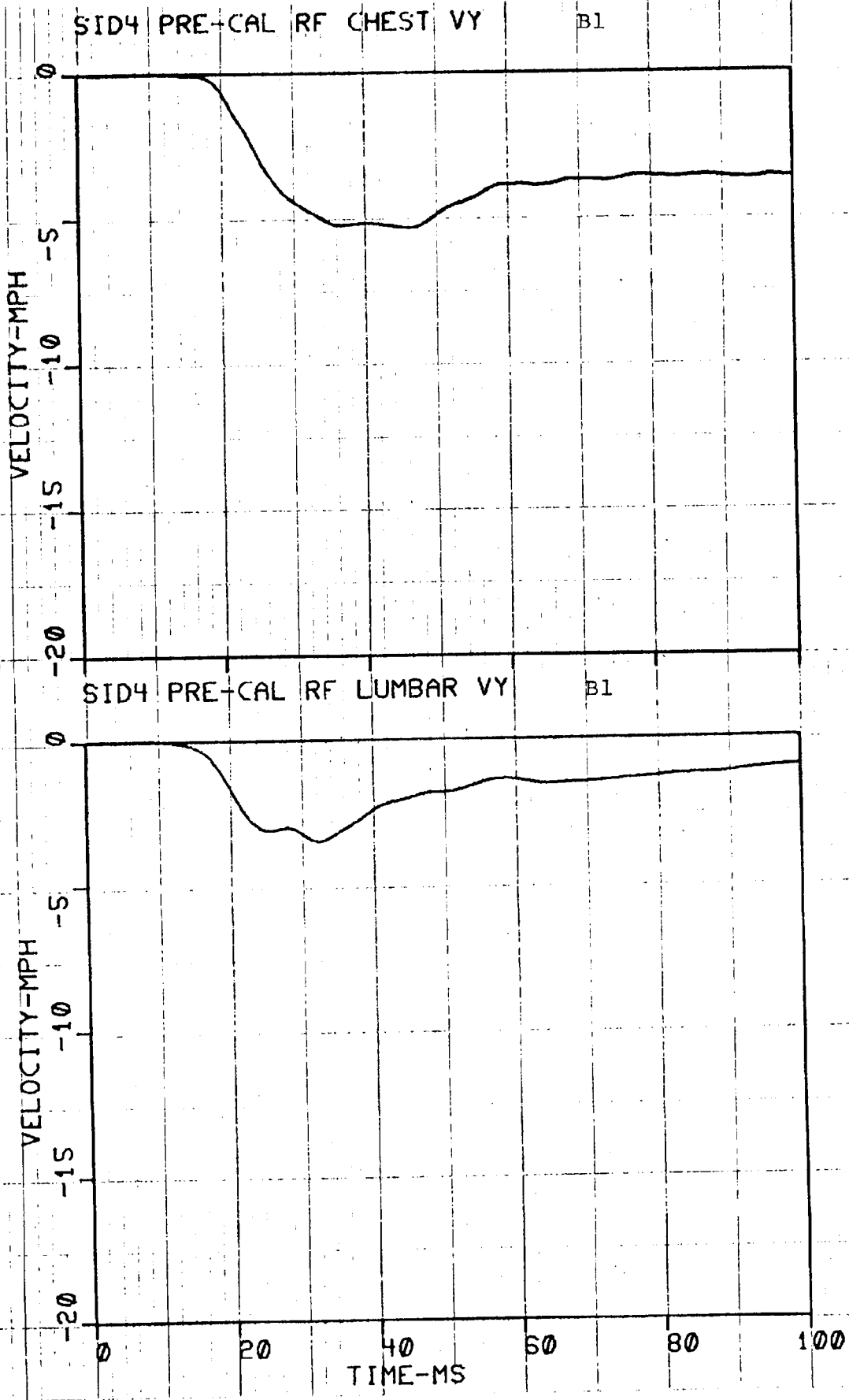




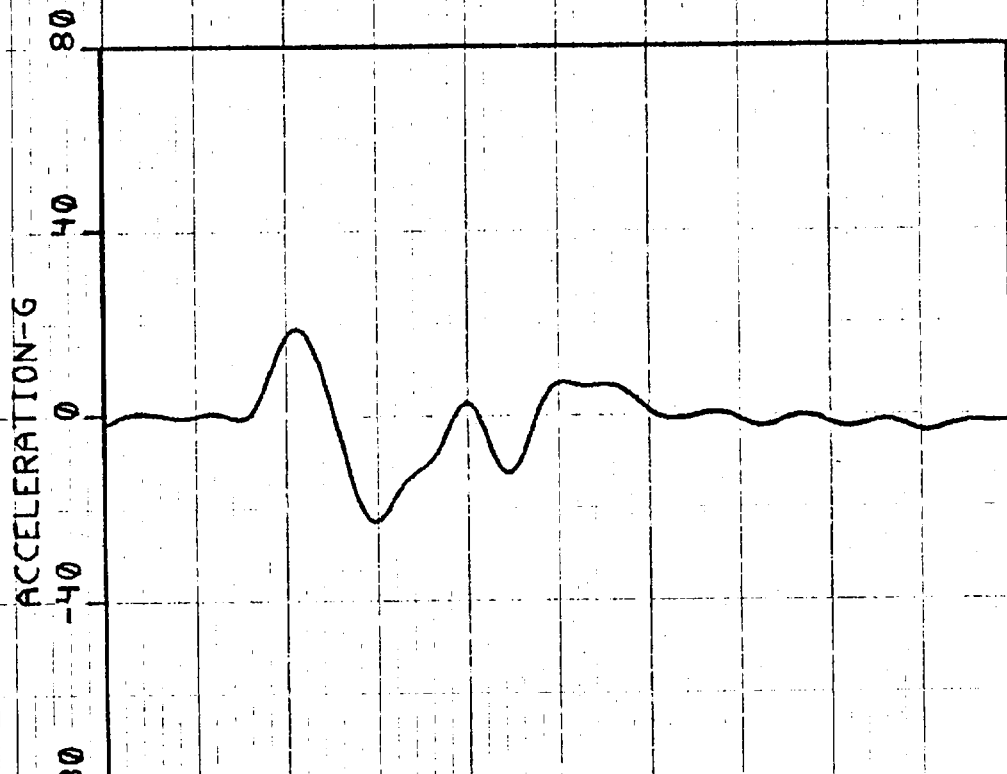




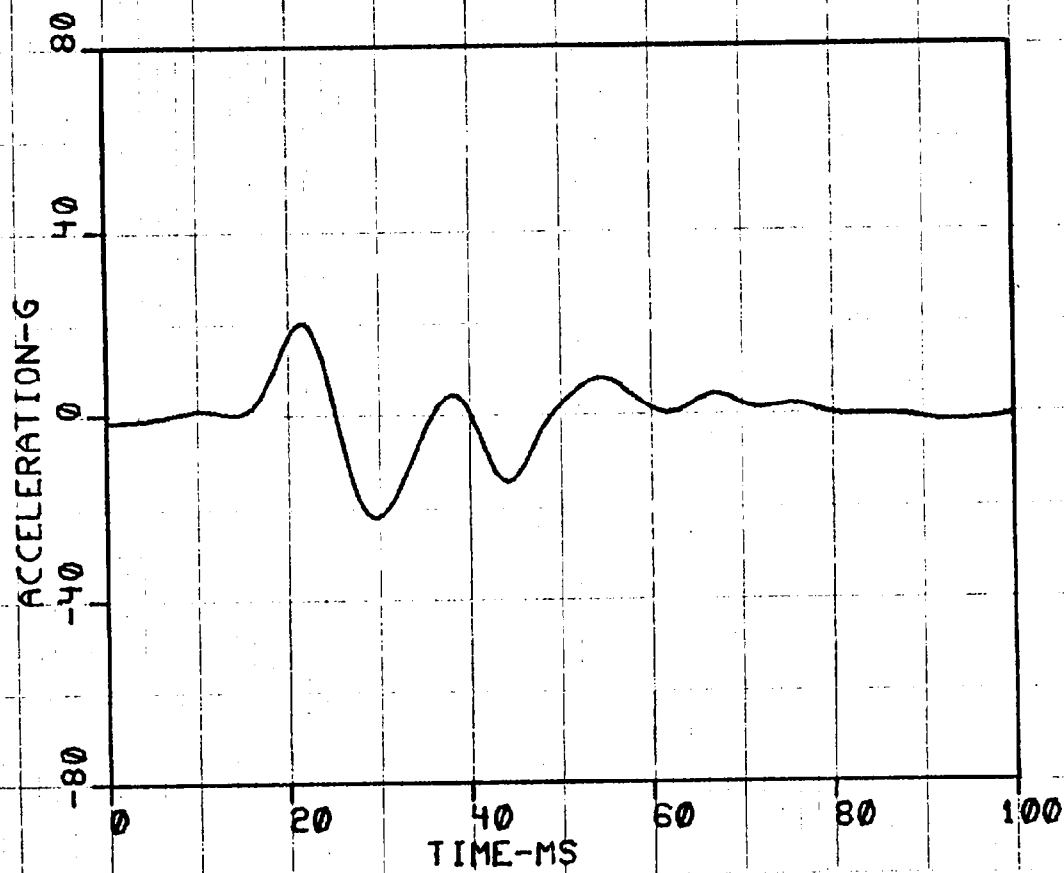


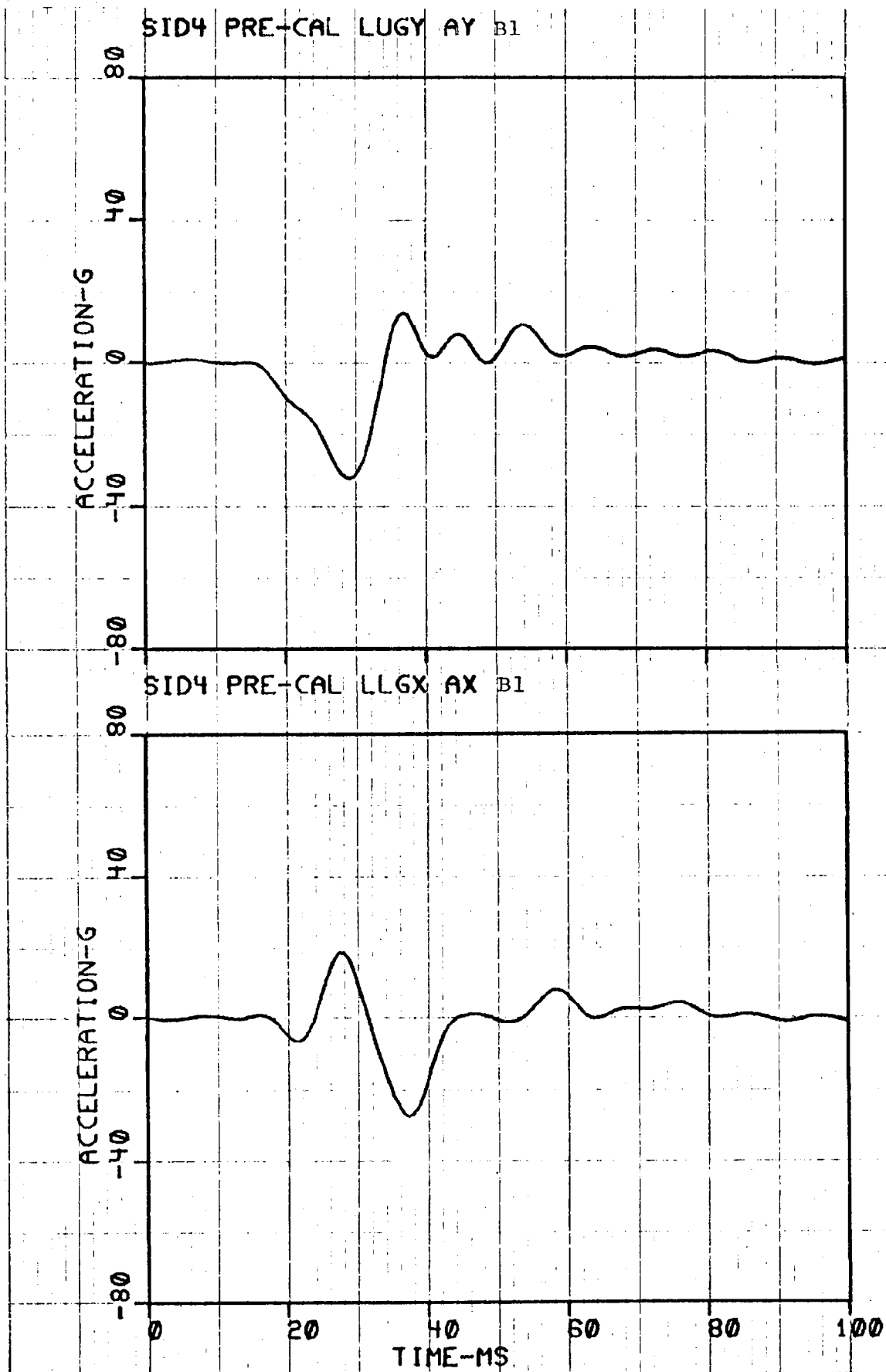


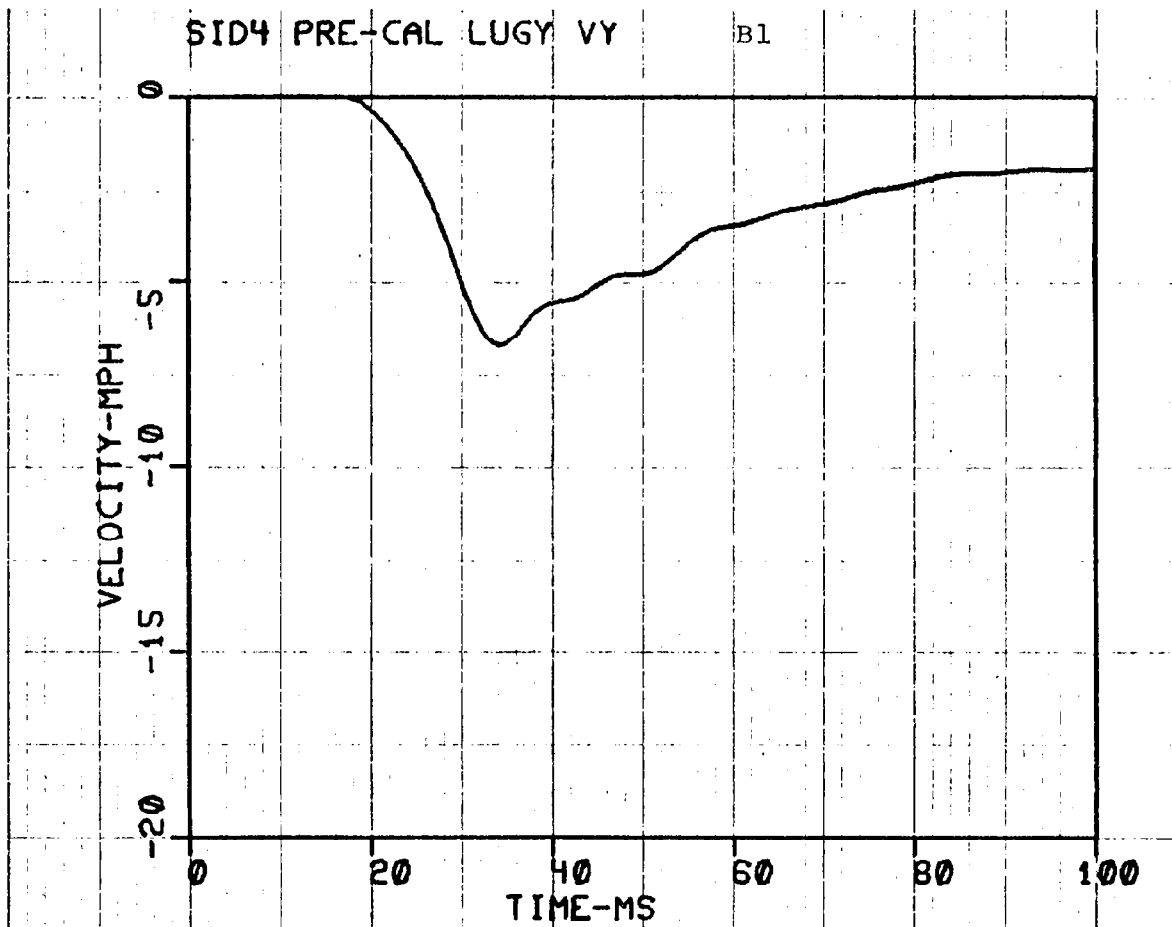
SID4 PRE-CAL USGX B1



SID4 PRE-CAL LSGX B1

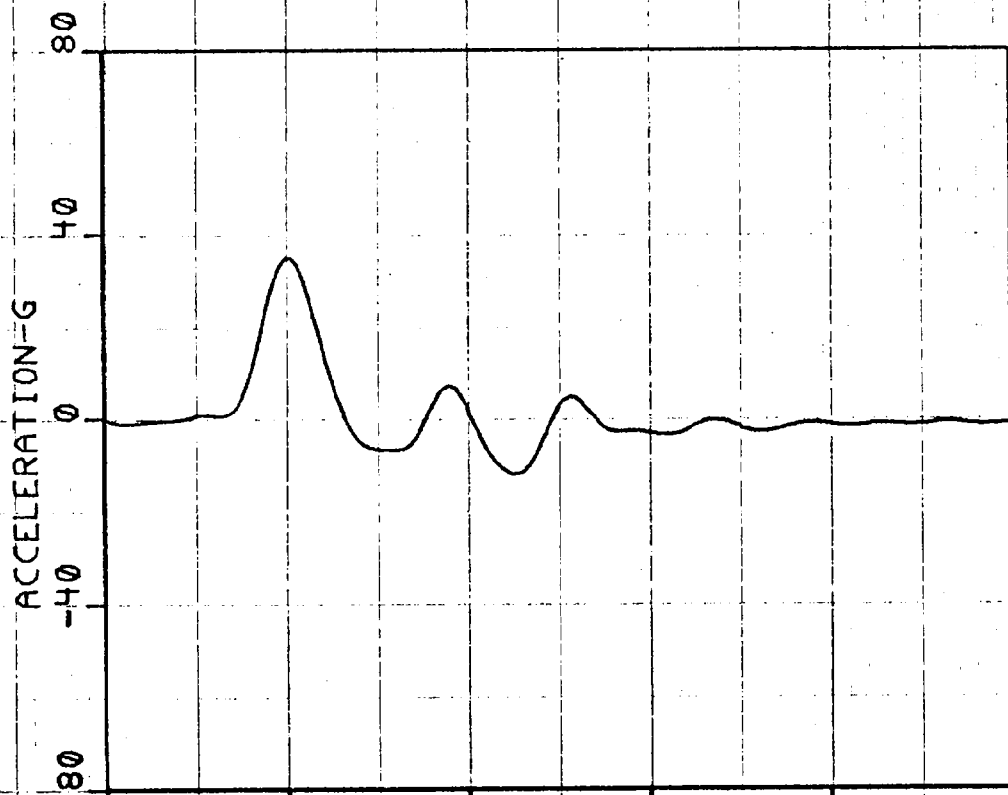






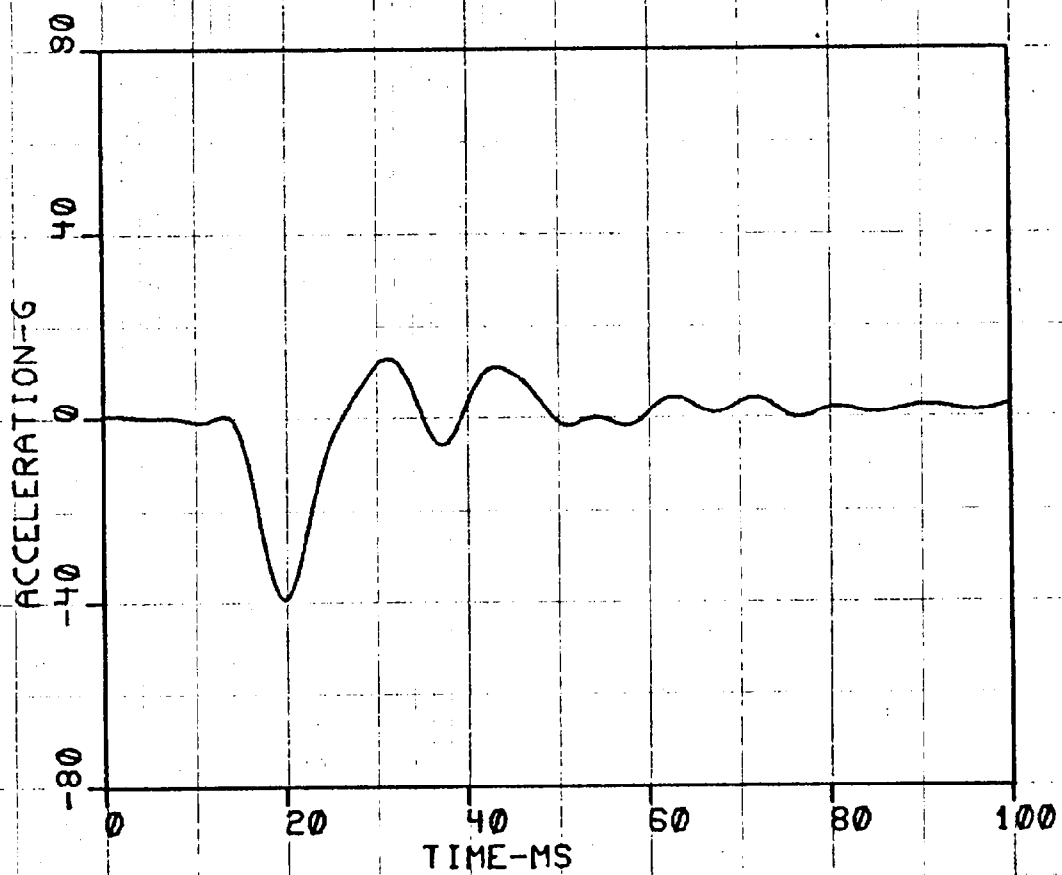
SID4 PRE-CAL RUGY AY

B1

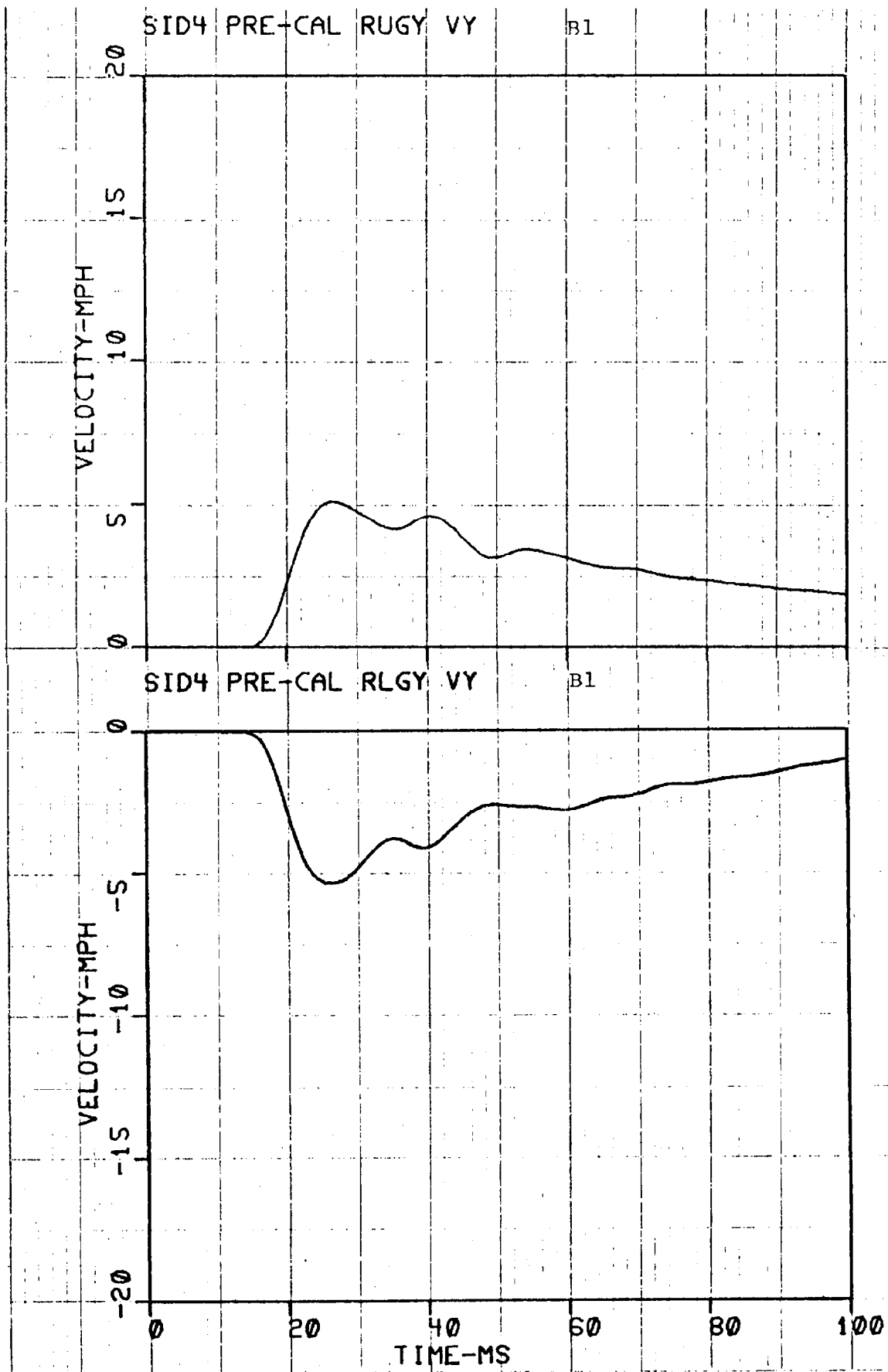


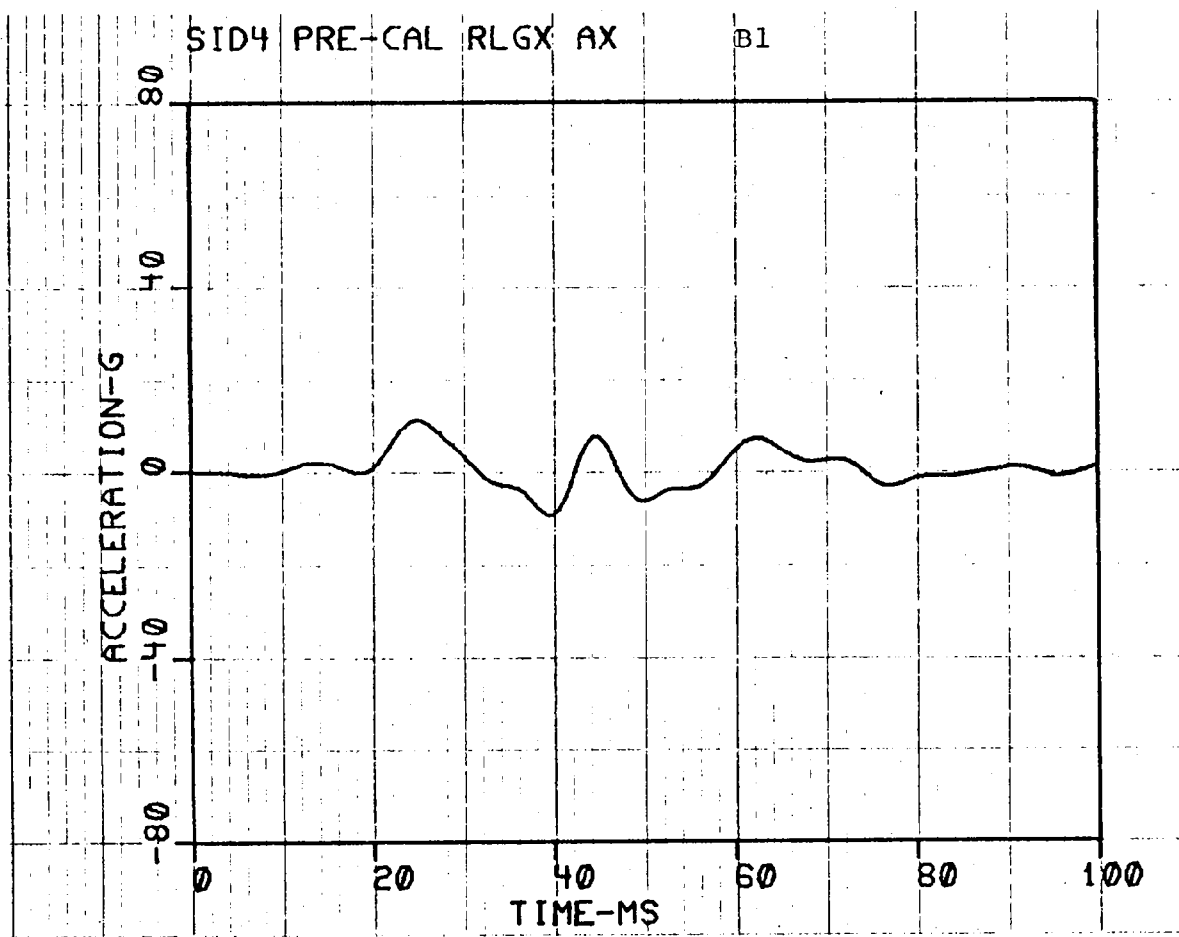
SID4 PRE-CAL RLGY AY

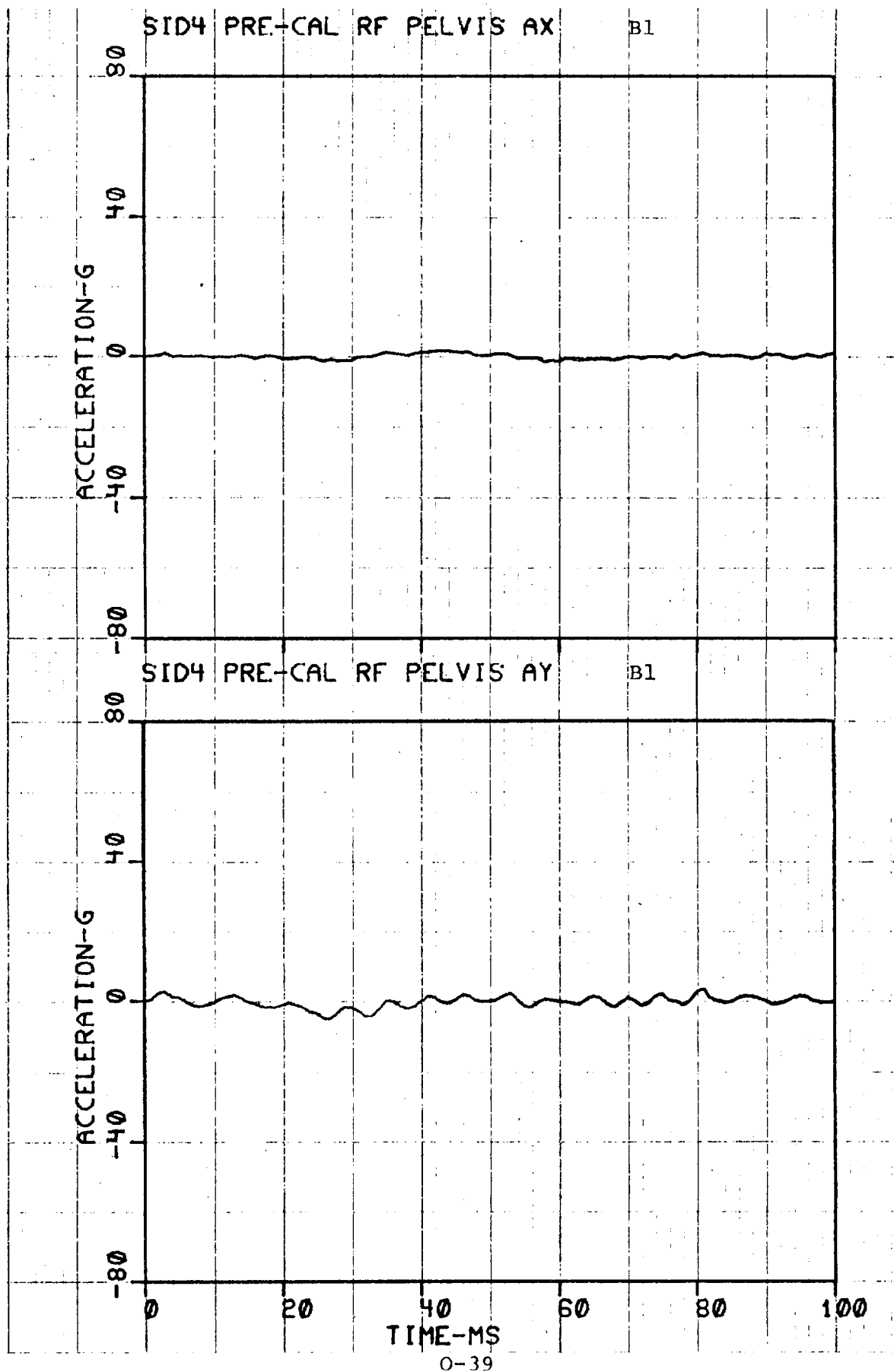
B1

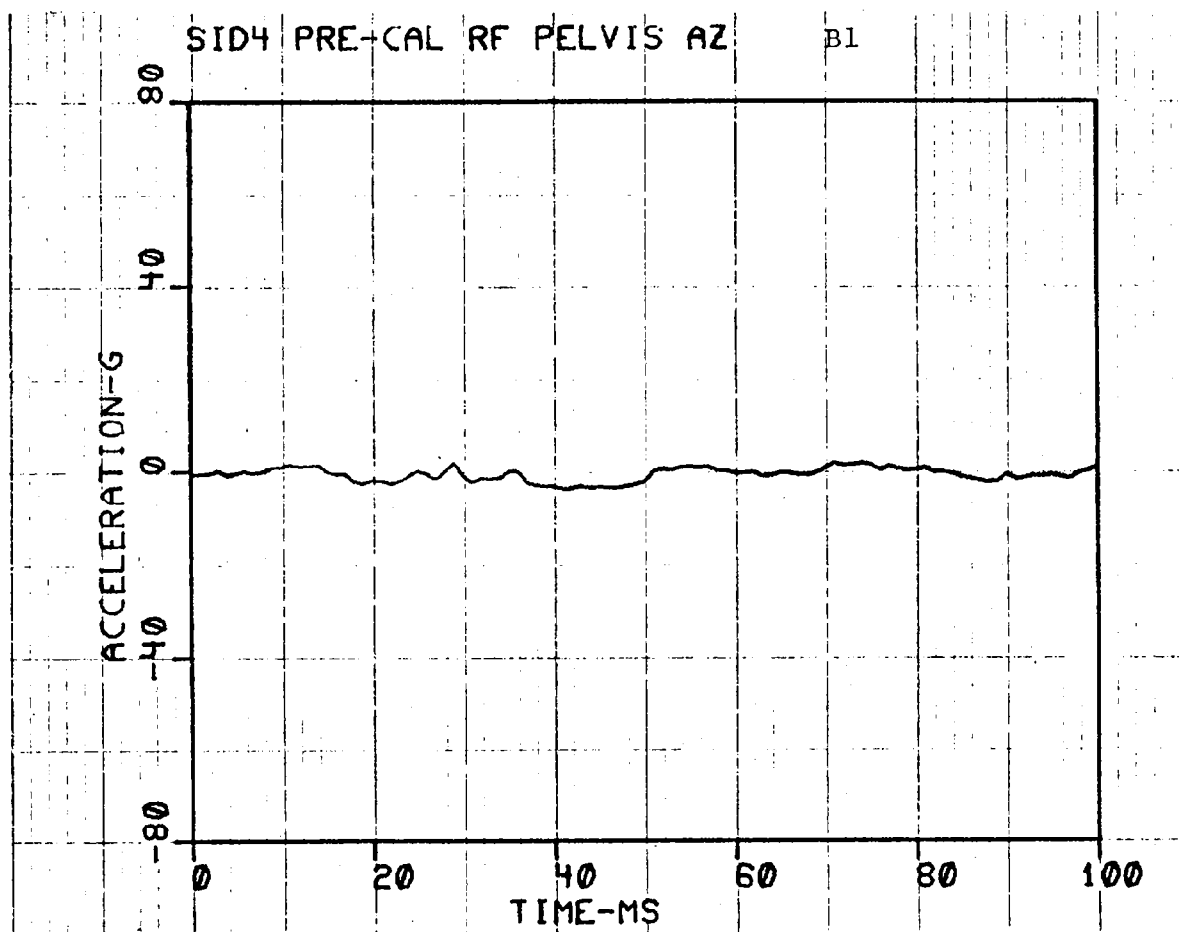


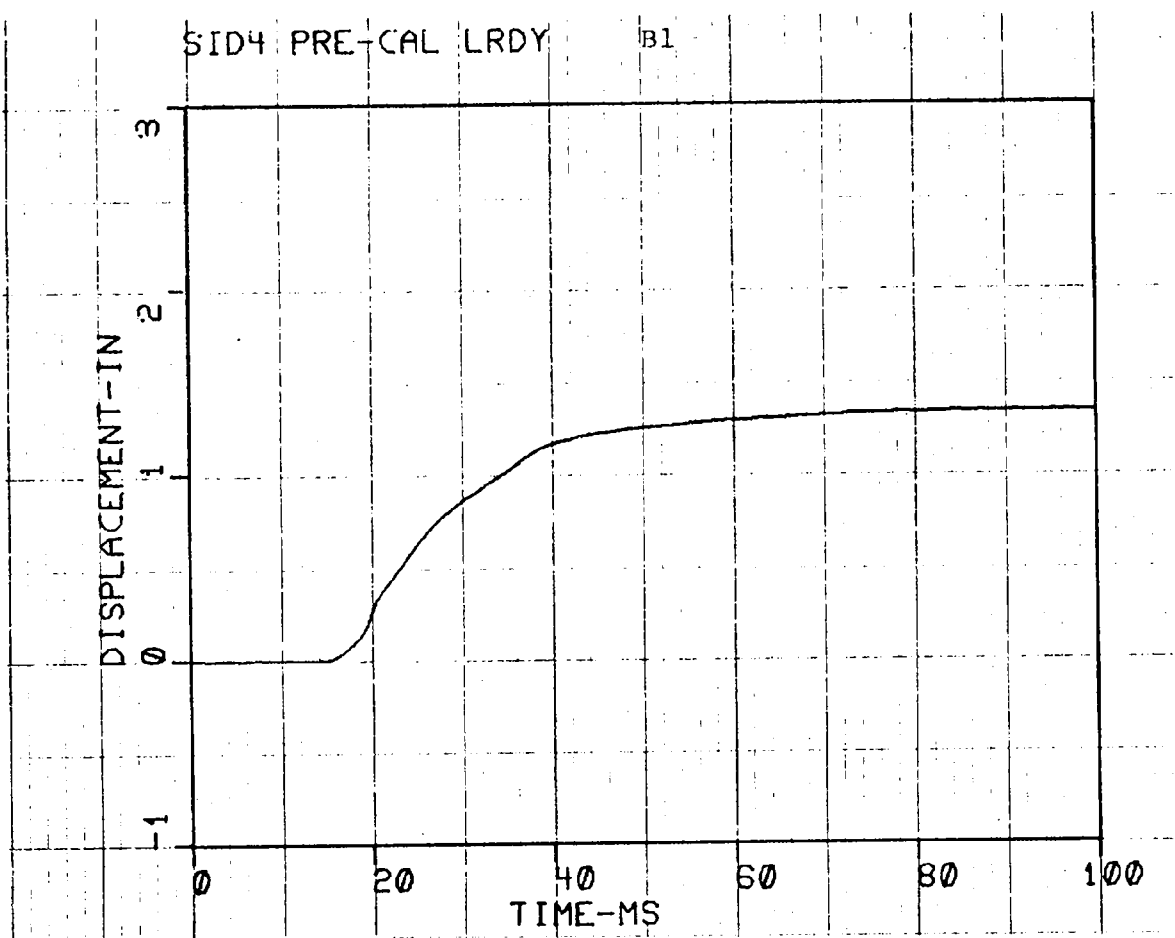
0-36







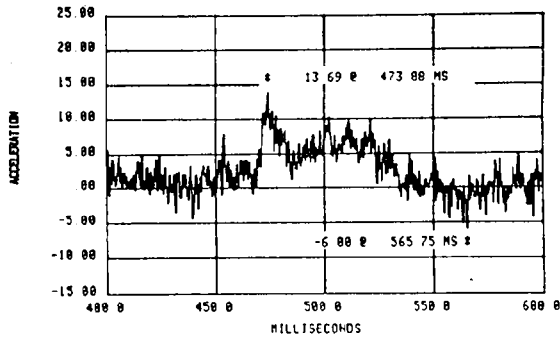




APPENDIX P
FINAL DUMMY
BUMP TEST DATA
(SID 6 AND SID 4)

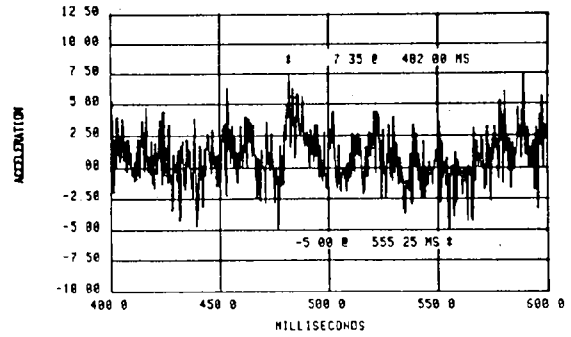
DATA FOR SID #6

TRACK: 3 CHANNEL: 12 100% CAL = 253.30
TEST: A8 SID6 DUMMY BUMP DATE: 8-27-81



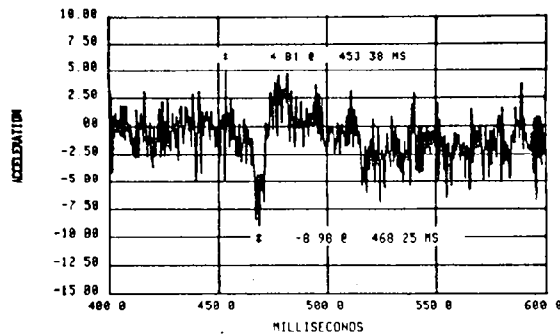
HEAD LONGITUDINAL ACCELERATION

TRACK: 3 CHANNEL: 13 100% CAL = 240.43
TEST: A8 SID6 DUMMY BUMP DATE: 8-27-81



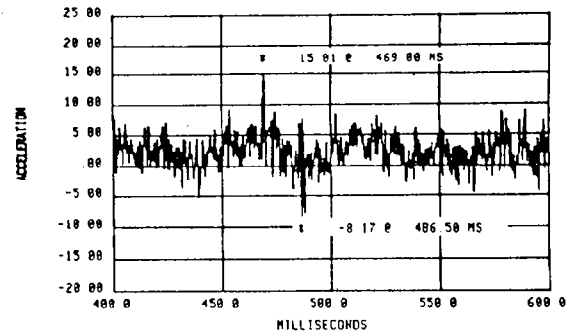
HEAD LATERAL ACCELERATION

TRACK: 3 CHANNEL: 14 100% CAL = 215.24
TEST: A8 SID6 DUMMY BUMP DATE: 8-27-81



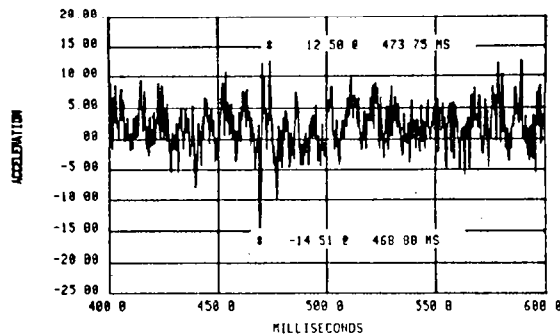
HEAD VERTICAL ACCELERATION

TRACK: 3 CHANNEL: 7 100% CAL = 311.15
TEST: A8 SID6 DUMMY BUMP DATE: 8-27-81



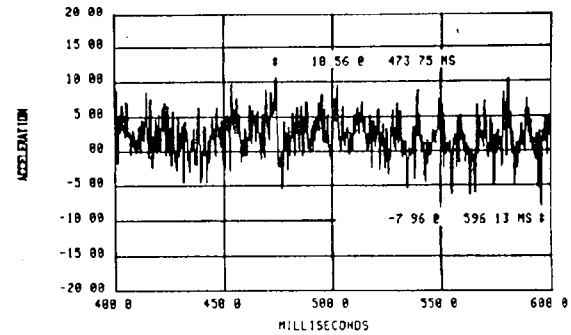
PELVIS LONGITUDINAL ACCELERATION

TRACK: 3 CHANNEL: 8 100% CAL = 370.23
TEST: A8 SID6 DUMMY BUMP DATE: 8-27-81



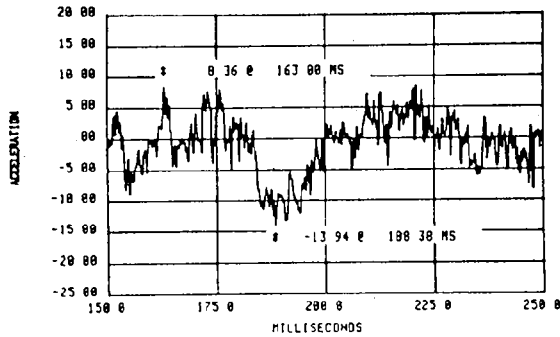
PELVIS LATERAL ACCELERATION

TRACK: 3 CHANNEL: 9 100% CAL = 303.35
TEST: A8 SID6 DUMMY BUMP DATE: 8-27-81



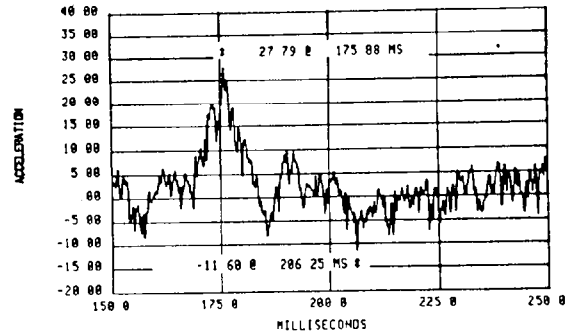
PELVIS VERTICAL ACCELERATION

TRACK 2 CHANNEL 7 100% CAL = 382.60
TEST AB SID6 DUMMY BUMP DATE 8-27-81



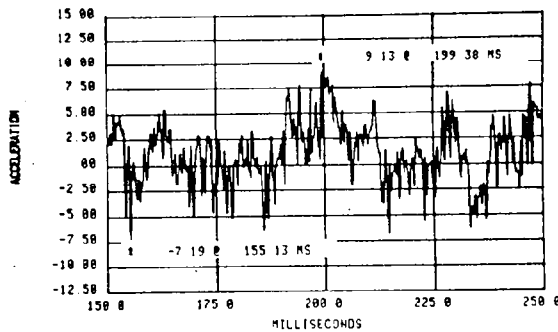
UPPER THORAX LONGITUDINAL ACCELERATION

TRACK 2 CHANNEL 8 100% CAL = 359.31
TEST AB SID6 DUMMY BUMP DATE 8-27-81



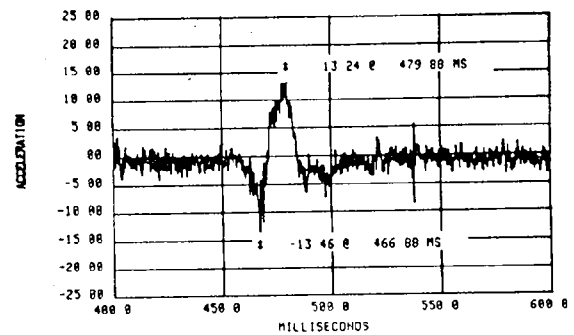
UPPER THORAX LATERAL ACCELERATION

TRACK 2 CHANNEL 9 100% CAL = 319.89
TEST AB SID6 DUMMY BUMP DATE 8-27-81



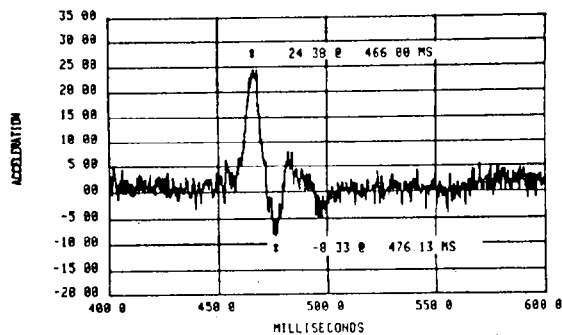
UPPER THORAX VERTICAL ACCELERATION

TRACK 3 CHANNEL 1 100% CAL = 364.28
TEST AB SID6 DUMMY BUMP DATE 8-27-81



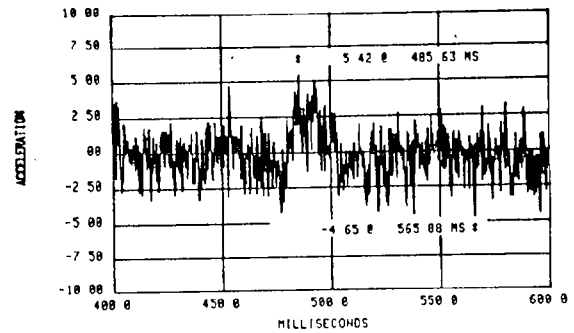
LOWER THORAX LONGITUDINAL ACCELERATION

TRACK 3 CHANNEL 2 100% CAL = 333.38
TEST AB SID6 DUMMY BUMP DATE 8-27-81



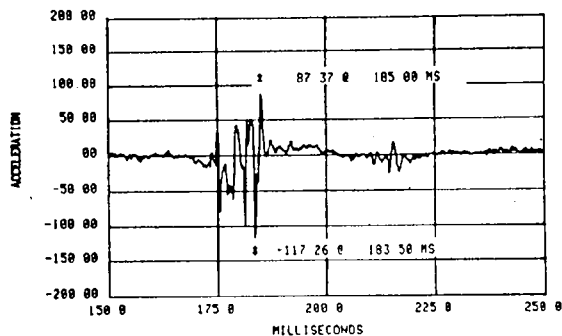
LOWER THORAX LATERAL ACCELERATION

TRACK 3 CHANNEL 3 100% CAL = 317.44
TEST AB SID6 DUMMY BUMP DATE 8-27-81



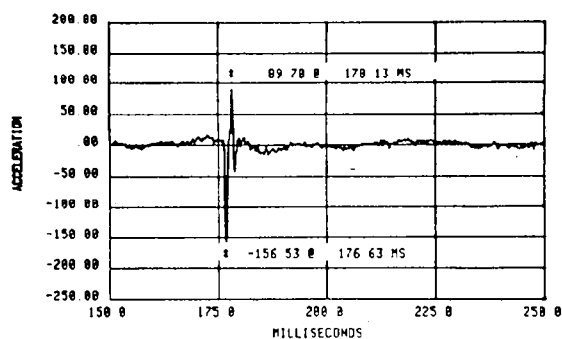
LOWER THORAX VERTICAL ACCELERATION

TRACK: 2 CHANNEL: 4 100% CAL = 377.75
TEST: AB SIDE DUMMY BUMP DATE: 8-27-81



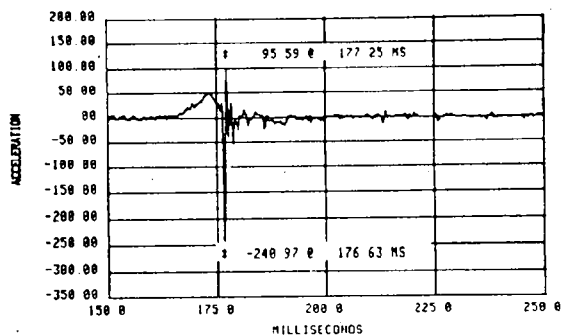
UPPER STERNUM LONGITUDINAL ACCELERATION

TRACK: 2 CHANNEL: 13 100% CAL = 326.38
TEST: AB SIDE DUMMY BUMP DATE: 8-27-81



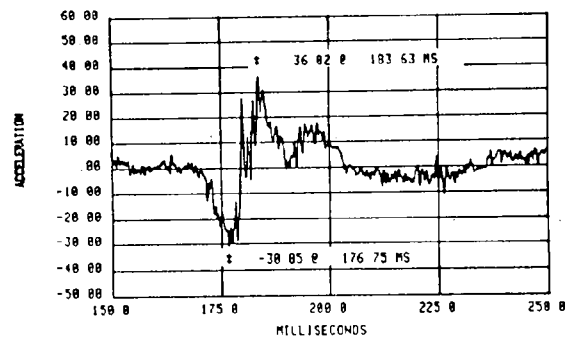
RIGHT LOWER RIB LONGITUDINAL ACCELERATION

TRACK: 2 CHANNEL: 1 100% CAL = 418.63
TEST: AB SIDE DUMMY BUMP DATE: 8-27-81



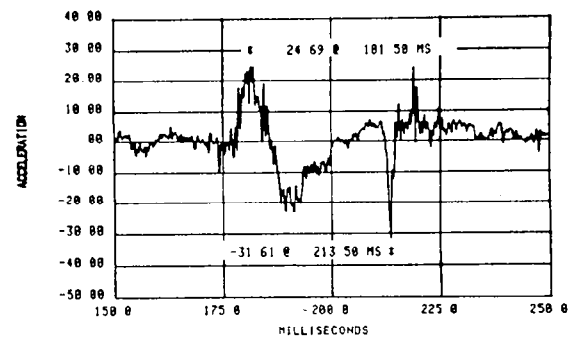
RIGHT UPPER RIB LATERAL ACCELERATION

TRACK: 2 CHANNEL: 3 100% CAL = 313.11
TEST: AB SIDE DUMMY BUMP DATE: 8-27-81



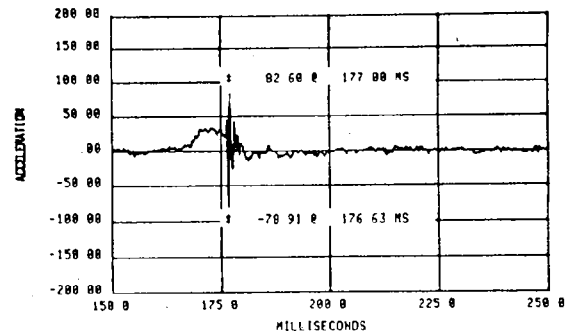
LOWER STERNUM LONGITUDINAL ACCELERATION

TRACK: 2 CHANNEL: 11 100% CAL = 312.34
TEST: AB SIDE DUMMY BUMP DATE: 8-27-81



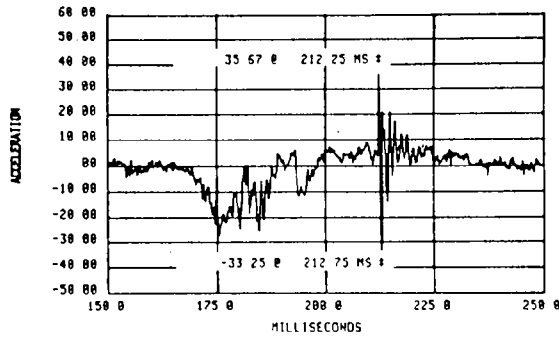
LEFT LOWER RIB LONGITUDINAL ACCELERATION

TRACK: 2 CHANNEL: 12 100% CAL = 318.96
TEST: AB SIDE DUMMY BUMP DATE: 8-27-81



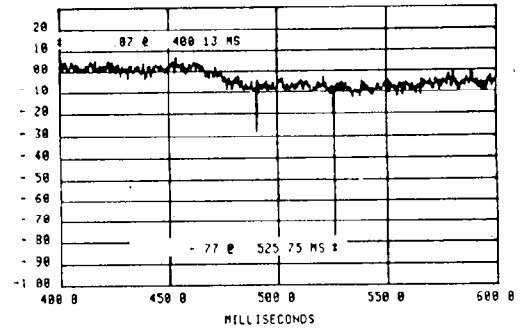
RIGHT LOWER RIB LATERAL ACCELERATION

TRACK 2 CHANNEL 2 100% CAL * 361.53
 TEST A8 SID6 DUMMY BUMP DATE 8-27-81



LEFT UPPER RIB LATERAL ACCELERATION

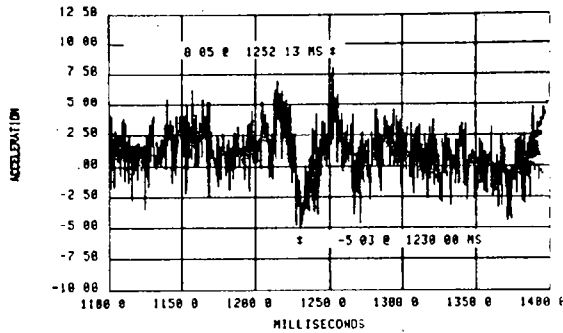
TRACK 3 CHANNEL 11 100% CAL * 2.05
 TEST A8 SID6 DUMMY BUMP DATE 8-27-81



LOWER RIB DISPLACEMENT

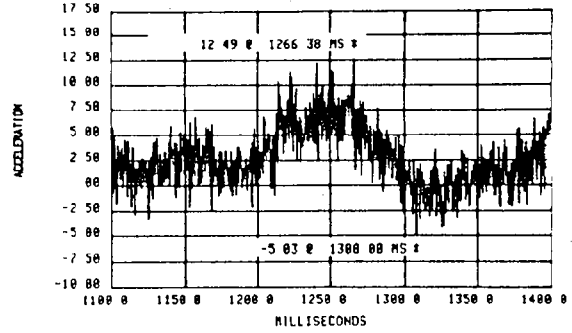
DATA FOR SID #4

TRACK 3 CHANNEL 12 100% CAL = 236.30
TEST B12 SID4 DUMMY BUMP DATE 8-31-81



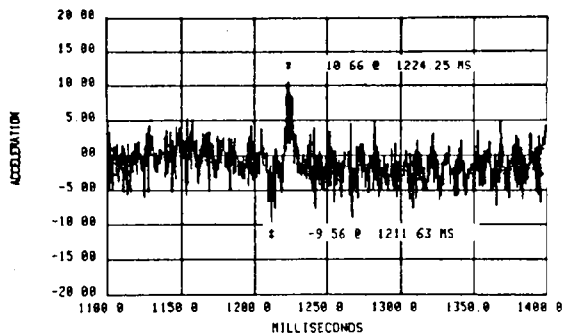
HEAD LONGITUDINAL ACCELERATION

TRACK 3 CHANNEL 13 100% CAL = 236.66
TEST B12 SID4 DUMMY BUMP DATE 8-31-81



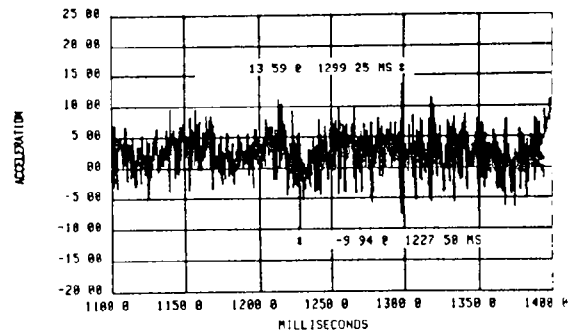
HEAD LATERAL ACCELERATION

TRACK 3 CHANNEL 14 100% CAL = 259.79
TEST B12 SID4 DUMMY BUMP DATE 8-31-81



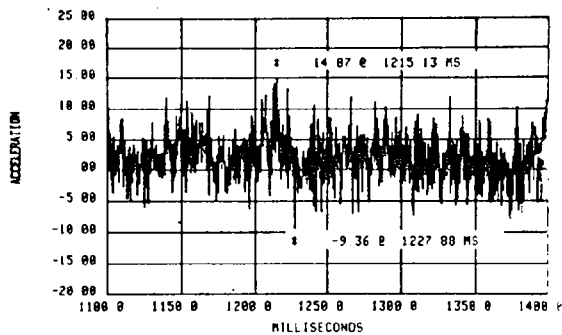
HEAD VERTICAL ACCELERATION

TRACK 3 CHANNEL 7 100% CAL = 333.75
TEST B12 SID4 DUMMY BUMP DATE 8-31-81



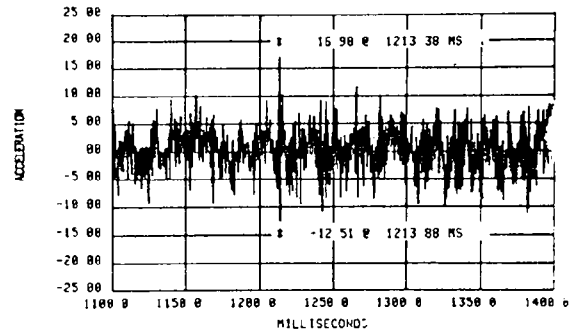
PELVIS LONGITUDINAL ACCELERATION

TRACK 3 CHANNEL 8 100% CAL = 396.57
TEST B12 SID4 DUMMY BUMP DATE 8-31-81



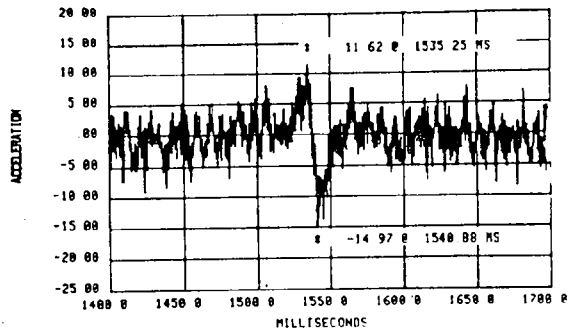
PELVIS LATERAL ACCELERATION

TRACK 3 CHANNEL 9 100% CAL = 368.42
TEST B12 SID4 DUMMY BUMP DATE 8-31-81



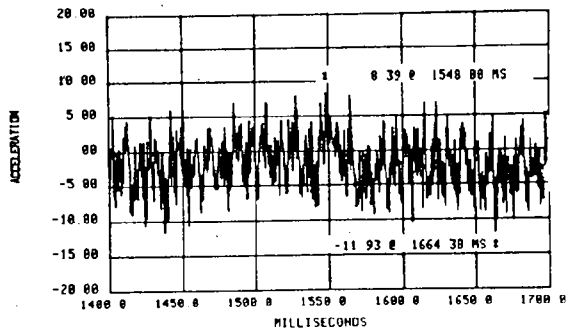
PELVIS VERTICAL ACCELERATION

TRACK 2 CHANNEL 7 100% CAL # 378 01
TEST B12 SID4 DUMMY BUMP DATE 8-31-81



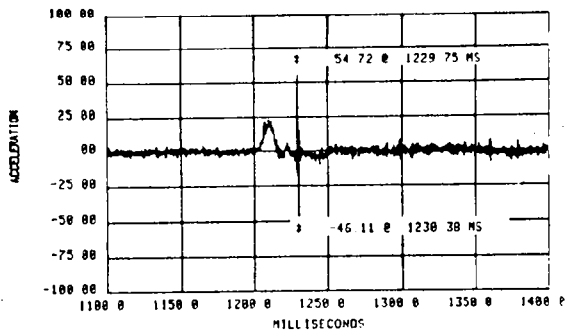
UPPER THORAX LONGITUDINAL ACCELERATION

TRACK 2 CHANNEL 9 100% CAL # 362 07
TEST B12 SID4 DUMMY BUMP DATE 8-31-81



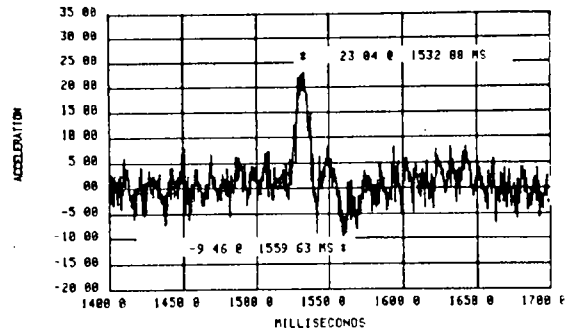
UPPER THORAX VERTICAL ACCELERATION

TRACK 3 CHANNEL 2 100% CAL # 336 71
TEST B12 SID4 DUMMY BUMP DATE 8-31-81



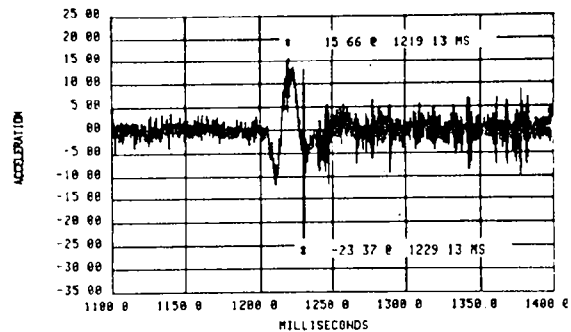
LOWER THORAX LATERAL ACCELERATION

TRACK 2 CHANNEL 8 100% CAL # 339 86
TEST B12 SID4 DUMMY BUMP DATE 8-31-81



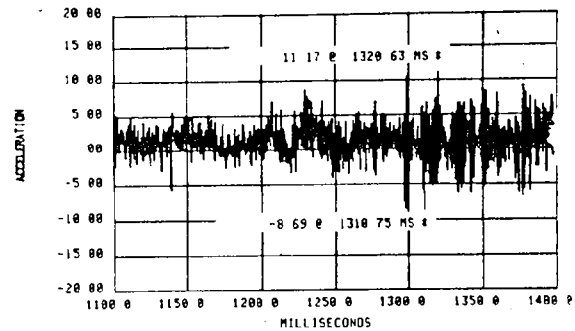
UPPER THORAX LATERAL ACCELERATION

TRACK 3 CHANNEL 1 100% CAL # 395 88
TEST B12 SID4 DUMMY BUMP DATE 8-31-81



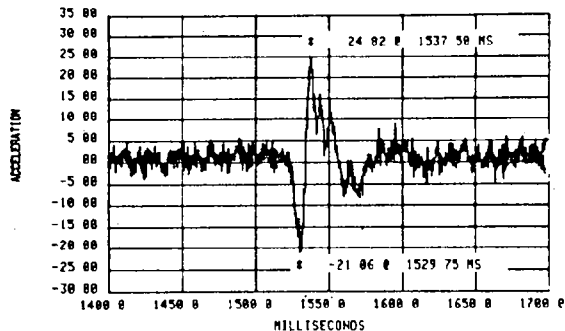
LOWER THORAX LONGITUDINAL ACCELERATION

TRACK 3 CHANNEL 3 100% CAL # 339 86
TEST B12 SID4 DUMMY BUMP DATE 8-31-81



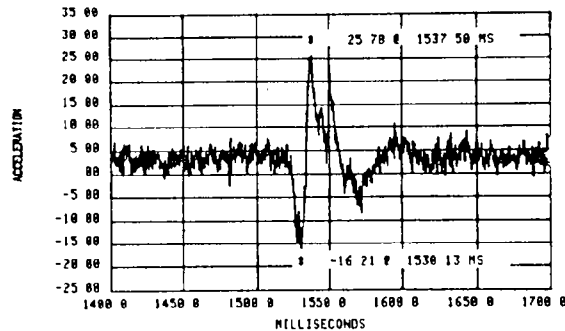
LOWER THORAX VERTICAL ACCELERATION

TRACK 2 CHANNEL 4 100% CAL = 343.06
TEST 812 SID4 DUMMY BUMP DATE 8-31-81



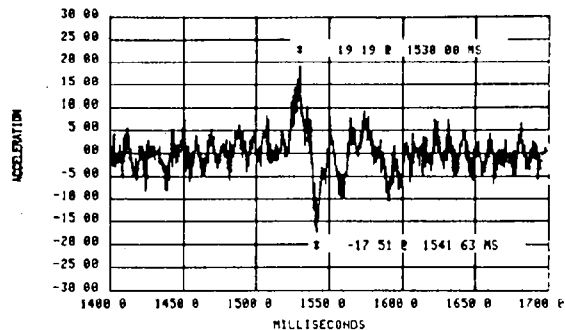
UPPER STERNUM LONGITUDINAL ACCELERATION

TRACK 2 CHANNEL 3 100% CAL = 339.06
TEST 812 SID4 DUMMY BUMP DATE 8-31-81



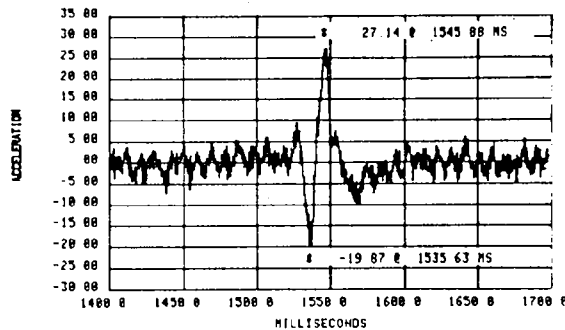
LOWER STERNUM LONGITUDINAL ACCELERATION

TRACK 2 CHANNEL 13 100% CAL = 397.91
TEST 812 SID4 DUMMY BUMP DATE 8-31-81



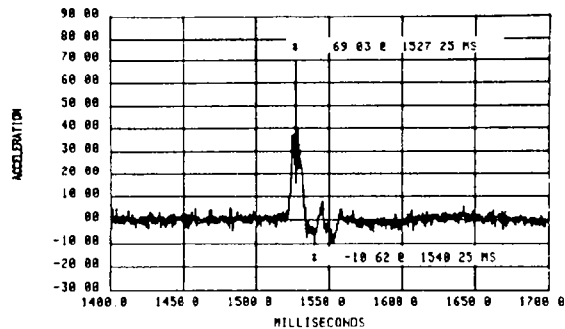
RIGHT LOWER RIB LONGITUDINAL ACCELERATION

TRACK 2 CHANNEL 11 100% CAL = 398.16
TEST 812 SID4 DUMMY BUMP DATE 8-31-81



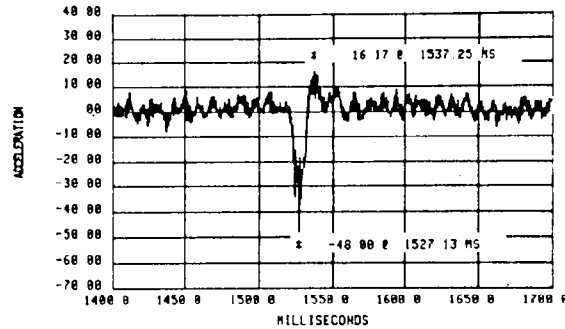
LEFT LOWER RIB LONGITUDINAL ACCELERATION

TRACK 2 CHANNEL 1 100% CAL = 363.74
TEST 812 SID4 DUMMY BUMP DATE 8-31-81



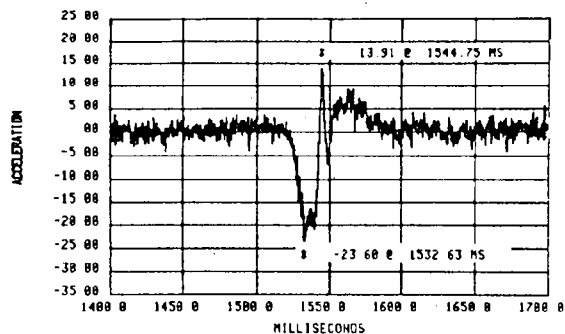
RIGHT UPPER RIB LATERAL ACCELERATION

TRACK 2 CHANNEL 12 100% CAL = 421.71
TEST 812 SID4 DUMMY BUMP DATE 8-31-81



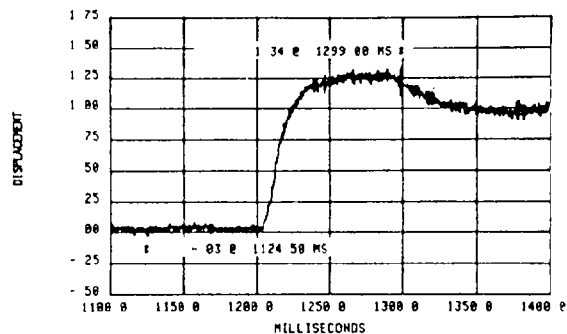
RIGHT LOWER RIB LATERAL ACCELERATION

TRACK: 2 CHANNEL: 2 100% CAL = 346.27
 TEST: B12 SID4 DUMMY BUMP DATE 8-31-81



LEFT UPPER RIB LATERAL ACCELERATION

TRACK: 3 CHANNEL: 11 100% CAL = 2.81
 TEST: B12 SID4 DUMMY BUMP DATE 8-31-81



LOWER RIB DISPLACEMENT

APPENDIX Q
EQUATIONS USED FOR CALCULATING
COMPUTED THORAX INJURY COEFFICIENTS

The computed injury coefficients presented in the tables for Side Impact Dummy Response are based on empirically-derived equations which use selected thorax accelerometer data. It should be noted that the coefficients in these equations are subject to change and future computations on NHTSA projects may use somewhat different equations.

The equations used in the data computation for this research program were defined in a 1979 draft report*, and are summarized below for driver side impacts:

$$AIS = 3.19 + 0.00215*Q(LUR) - 43.56 V15(LS) - 68.27*V19(RUR)$$

Q = Maximum Value of First Integral of Acceleration
Signal (cm/sec)

V15 = Time Between Achievement of 10% to 50% Q (sec)

V19 = Time Between Achievement of 10% to 90% Q (sec)

LUR = Left Upper Rib Data

LS = Lower Sternum Data

RUR = Right Upper Rib Data

$$AIS(BLUR) = 1.5953* B(LUR) - 7.6094$$

$$MAIS(BLUR) = 2.01*B(LUR) - 10.771$$

For passenger side impacts (as in the sled tests), one would use RUR for LUR, and LUR for RUR.

*K. Augustyn and R. J. Lehman, "HSRI Thoracic Injury Project - Procedures in Data Analysis," Draft Report, Contract DOT-HS-4-00921, June 29, 1979.