

AD-A207 061

FINAL REPORT

MARCH 1988

EVT 11-86

TRANSPORTABILITY TEST  
OF SURVIVABILITY OVERPACK  
CONTAINER (SOC)

VOLUME II OF II

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SYNOPSIS OF TEST NO. 8

In Test No. 8, the casters were removed from the SOC. The SOC was positioned crosswise on the M871 semitrailer and secured with a single web strap tiedown assembly from each of four tiedown/lift rings. An additional two web strap tiedown assemblies were used over the top of the SOC.

The SOC completed the road hazard course twice for the purpose of instrumentation data accumulation. In the first complete road test, lateral forces were measured and during the second complete test, vertical forces were measured.

Minimal movement was observed during either test. The securement method used in the two tests is proper.

<b>Accession For</b>	
NTIS GRA&I	<input checked="" type="checkbox"/>
DTIC TAB	<input checked="" type="checkbox"/>
Unannounced	<input type="checkbox"/>
Justification	
By _____	
Distribution/	
<b>Availability Codes</b>	
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ROAD TEST DATA

TEST NO. 8(a)

DATE: 14 Sep 86

TEST SPECIMEN: SOC with castors removed secured laterally on M871 semitrailer. Lateral forces measured. Total six web strap tiedown assemblies used with one strap from each tiedown ring and two straps over the top of the SOC.

PASS 1-A OVER FIRST SERIES OF TIES 6.15 SEC 5.54 MPH

PASS 1-B OVER SECOND SERIES OF TIES 6.15 SEC 5.54 MPH

REMARKS: No movement

PASS 2-A OVER FIRST SERIES OF TIES 6.15 SEC 5.54 MPH

PASS 2-B OVER SECOND SERIES OF TIES 6.00 SEC 5.68 MPH

REMARKS: No movement

30 MILE ROAD TEST: SOC moved 1/4 inch to the left.

PANIC STOP TEST: No movement

PASS 3-A OVER FIRST SERIES OF TIES 6.30 SEC 5.41 MPH

PASS 3-B OVER SECOND SERIES OF TIES 6.30 SEC 5.41 MPH

REMARKS: No movement

PASS 4-A OVER FIRST SERIES OF TIES 6.60 SEC 5.17 MPH

PASS 4-B OVER SECOND SERIES OF TIES 6.30 SEC 5.41 MPH

REMARKS: No movement

WASHBOARD COURSE: No movement

TEST 15: LATERAL ACCELERATION FROM ROAD HAZARD TEST ON SOC  
(SOC WITHOUT CASTERS, CROSSWISE ON M871 TRAILER)

DATE: 09-14-86

TAPE CHANNEL 1 : LATERAL ACCELERATION ON #1 AFT SOC

TEST	SPEED MPH	PEAK VALUE G'S	DURATION MILLISECONDS	AREA G'S-SECONDS
PASS 1, COURSE A	5.50	-1.87	113.14	.13
PASS 1, COURSE B	5.50	-1.60	96.66	.10
PASS 2, COURSE A	5.50	-1.94	114.32	.13
PASS 2, COURSE B	5.50	-1.58	97.91	.10
PASS 3, COURSE A	5.50	-1.85	115.59	.13
PASS 3, COURSE B	5.50	-1.57	95.65	.09
PASS 4, COURSE A	5.50	-1.92	114.75	.13
PASS 4, COURSE B	5.50	-1.57	96.13	.10
WASHBOARD COURSE	5.50	1.85	103.05	.11

TAPE CHANNEL 3 : LATERAL ACCELERATION ON #1 FOR SOC

TEST	SPEED MPH	PEAK VALUE G'S	DURATION MILLISECONDS	AREA G'S-SECONDS
PASS 1, COURSE A	5.50	2.51	111.79	.17
PASS 1, COURSE B	5.50	2.19	97.58	.14
PASS 2, COURSE A	5.50	2.65	112.47	.17
PASS 2, COURSE B	5.50	2.13	97.85	.14
PASS 3, COURSE A	5.50	-2.49	130.61	.19
PASS 3, COURSE B	5.50	2.12	95.57	.13
PASS 4, COURSE A	5.50	2.49	113.41	.17
PASS 4, COURSE B	5.50	2.16	94.83	.13
WASHBOARD COURSE	5.50	-2.58	104.09	.16

TAPE CHANNEL 4 : LATERAL ACCELERATION ON #3 AFT SOC

TEST	SPEED MPH	PEAK VALUE G'S	DURATION MILLISECONDS	AREA G'S-SECONDS
PASS 1, COURSE A	5.50	1.60	138.51	.11
PASS 1, COURSE B	5.50	1.26	99.78	.08
PASS 2, COURSE A	5.50	1.65	133.54	.11
PASS 2, COURSE B	5.50	1.28	97.16	.08
PASS 3, COURSE A	5.50	1.62	120.40	.11
PASS 3, COURSE B	5.50	1.25	93.38	.07
PASS 4, COURSE A	5.50	1.60	128.66	.11
PASS 4, COURSE B	5.50	1.31	94.30	.08
WASHBOARD COURSE	5.50	-1.52	110.79	.10

TAPE CHANNEL 5 : LATERAL ACCELERATION ON #3 FOR SOC

TEST	SPEED MPH	PEAK VALUE G'S	DURATION MILLISECONDS	AREA G'S-SECONDS
PASS 1, COURSE A	5.50	-1.29	144.23	.08
PASS 1, COURSE B	5.50	-1.11	96.35	.07
PASS 2, COURSE A	5.50	-1.38	113.74	.09
PASS 2, COURSE B	5.50	-1.12	95.27	.07
PASS 3, COURSE A	5.50	-1.26	130.13	.08
PASS 3, COURSE B	5.50	-1.10	93.30	.06
PASS 4, COURSE A	5.50	-1.33	130.82	.09
PASS 4, COURSE B	5.50	-1.10	94.18	.07
WASHBOARD COURSE	5.50	1.35	104.89	.08

TAPE CHANNEL 6 : LATERAL ACCELERATION ON UNDERSIDE OF SOC

TEST	SPEED MPH	PEAK VALUE G'S	DURATION MILLISECONDS	AREA G'S-SECONDS
PASS 1, COURSE A	5.50	-1.43	110.22	.09
PASS 1, COURSE B	5.50	-1.14	98.67	.07
PASS 2, COURSE A	5.50	-1.53	110.32	.10
PASS 2, COURSE B	5.50	-1.15	99.42	.07
PASS 3, COURSE A	5.50	1.42	133.46	.11
PASS 3, COURSE B	5.50	-1.12	96.15	.07
PASS 4, COURSE A	5.50	-1.41	110.55	.09
PASS 4, COURSE B	5.50	-1.12	96.17	.07
WASHBOARD COURSE	5.50	1.40	106.99	.09

TAPE CHANNEL 7 : LATERAL ACCELERATION ON FORWARD SIDE OF SOC

TEST	SPEED MPH	PEAK VALUE G'S	DURATION MILLISECONDS	AREA G'S-SECONDS
PASS 1, COURSE A	5.50	-1.29	122.70	.10
PASS 1, COURSE B	5.50	-1.09	104.37	.07
PASS 2, COURSE A	5.50	-1.43	123.01	.11
PASS 2, COURSE B	5.50	-1.10	105.62	.07
PASS 3, COURSE A	5.50	-1.35	124.15	.10
PASS 3, COURSE B	5.50	-1.06	101.88	.07
PASS 4, COURSE A	5.50	-1.37	123.20	.10
PASS 4, COURSE B	5.50	-1.07	104.03	.07
WASHBOARD COURSE	5.50	1.37	123.68	.10

TAPE CHANNEL 8 : LATERAL ACCELERATION ON AFT SIDE OF SOC

TEST	SPEED MPH	PEAK VALUE G'S	DURATION MILLISECONDS	AREA G'S-SECONDS
PASS 1, COURSE A	5.50	1.34	115.24	.09
PASS 1, COURSE B	5.50	-1.09	100.41	.07
PASS 2, COURSE A	5.50	-1.36	113.57	.09
PASS 2, COURSE B	5.50	-1.06	100.63	.07
PASS 3, COURSE A	5.50	1.35	120.56	.10
PASS 3, COURSE B	5.50	-1.04	98.51	.06
PASS 4, COURSE A	5.50	1.34	148.88	.12
PASS 4, COURSE B	5.50	-1.01	97.52	.06
WASHBOARD COURSE	5.50	1.21	112.32	.08

TAPE CHANNEL 9 : LATERAL ACCELERATION ON RIGHT TRUCK BED

TEST	SPEED MPH	PEAK VALUE G'S	DURATION MILLISECONDS	AREA G'S-SECONDS
PASS 1, COURSE A	5.50	1.20	123.02	.09
PASS 1, COURSE B	5.50	.96	109.37	.06
PASS 2, COURSE A	5.50	1.29	123.85	.10
PASS 2, COURSE B	5.50	.95	109.21	.06
PASS 3, COURSE A	5.50	1.23	127.17	.10
PASS 3, COURSE B	5.50	.93	108.69	.06
PASS 4, COURSE A	5.50	1.25	122.29	.09
PASS 4, COURSE B	5.50	.93	107.61	.06
WASHBOARD COURSE	5.50	-1.13	119.01	.08

TAPE CHANNEL 10 : LATERAL ACCELERATION ON LEFT TRUCK BED

TEST	SPEED MPH	PEAK VALUE G'S	DURATION MILLISECONDS	AREA G'S-SECONDS
PASS 1, COURSE A	5.50	-1.22	142.58	.10
PASS 1, COURSE B	5.50	1.06	109.70	.07
PASS 2, COURSE A	5.50	1.21	122.84	.09
PASS 2, COURSE B	5.50	1.05	108.56	.07
PASS 3, COURSE A	5.50	-1.19	140.88	.10
PASS 3, COURSE B	5.50	1.03	107.81	.07
PASS 4, COURSE A	5.50	1.16	143.63	.10
PASS 4, COURSE B	5.50	1.04	106.78	.07
WASHBOARD COURSE	5.50	1.16	113.94	.08

ROAD TEST DATA

TEST NO. 8(b)

DATE: 14 Sep 86

TEST SPECIMEN: Same as Test No. 8(a) except vertical forces measured.

PASS 1-A OVER FIRST SERIES OF TIES      6.15 SEC      5.54 MPH

PASS 1-B OVER SECOND SERIES OF TIES      6.15 SEC      5.54 MPH

REMARKS: SOC moved 1/8 inch to the left.

PASS 2-A OVER FIRST SERIES OF TIES      6.30 SEC      5.41 MPH

PASS 2-B OVER SECOND SERIES OF TIES      6.15 SEC      5.54 MPH

REMARKS: No movement

30 MILE ROAD TEST: Omitted

PANIC STOP TEST: Omitted

PASS 3-A OVER FIRST SERIES OF TIES      6.30 SEC      5.41 MPH

PASS 3-B OVER SECOND SERIES OF TIES      6.00 SEC      5.68 MPH

REMARKS: No movement

PASS 4-A OVER FIRST SERIES OF TIES      6.15 SEC      5.54 MPH

PASS 4-B OVER SECOND SERIES OF TIES      6.15 SEC      5.54 MPH

REMARKS: No movement

WASHBOARD COURSE: No movement

TEST 16: VERTICAL ACCELERATION FROM ROAD HAZARD TEST ON SOC  
(SOC WITHOUT CASTERS, CROSSWISE ON M871 TRAILER)

DATE: 09-14-86

TAPE CHANNEL 1 : VERTICAL ACCELERATION ON #1 AFT SOC

TEST	SPEED MPH	PEAK VALUE G'S	DURATION MILLISECONDS	AREA G'S-SECONDS
PASS 1, COURSE A	5.50	4.75	73.16	.20
PASS 1, COURSE B	5.50	3.76	67.89	.14
PASS 2, COURSE A	5.50	4.76	76.34	.22
PASS 2, COURSE B	5.50	3.80	68.38	.15
PASS 3, COURSE A	5.50	4.48	75.51	.20
PASS 3, COURSE B	5.50	3.59	67.62	.14
PASS 4, COURSE A	5.50	4.81	75.36	.22
PASS 4, COURSE B	5.50	3.60	67.54	.13
WASHBOARD COURSE	5.50	3.34	70.80	.13

TAPE CHANNEL 3 : VERTICAL ACCELERATION ON #1 FOR SOC

TEST	SPEED MPH	PEAK VALUE G'S	DURATION MILLISECONDS	AREA G'S-SECONDS
PASS 1, COURSE A	5.50	2.32	75.87	.10
PASS 1, COURSE B	5.50	1.79	70.21	.07
PASS 2, COURSE A	5.50	2.31	79.18	.10
PASS 2, COURSE B	5.50	1.90	71.31	.08
PASS 3, COURSE A	5.50	2.29	77.51	.10
PASS 3, COURSE B	5.50	1.80	72.26	.07
PASS 4, COURSE A	5.50	2.29	76.71	.10
PASS 4, COURSE B	5.50	1.77	70.79	.07
WASHBOARD COURSE	5.50	1.60	64.88	.06

TAPE CHANNEL 4 : VERTICAL ACCELERATION ON #3 AFT SOC

TEST	SPEED MPH	PEAK VALUE G'S	DURATION MILLISECONDS	AREA G'S-SECONDS
PASS 1, COURSE A	5.50	3.31	74.11	.14
PASS 1, COURSE B	5.50	2.43	68.31	.09
PASS 2, COURSE A	5.50	3.19	77.40	.15
PASS 2, COURSE B	5.50	2.47	68.97	.10
PASS 3, COURSE A	5.50	3.06	75.75	.14
PASS 3, COURSE B	5.50	2.41	68.04	.10
PASS 4, COURSE A	5.50	3.31	76.37	.15
PASS 4, COURSE B	5.50	2.41	68.07	.10
WASHBOARD COURSE	5.50	2.14	72.78	.10

TAPE CHANNEL 5 : VERTICAL ACCELERATION ON #3 FOR SOC

TEST	SPEED MPH	PEAK VALUE G'S	DURATION MILLISECONDS	AREA G'S-SECONDS
PASS 1, COURSE A	5.50	3.52	77.07	.15
PASS 1, COURSE B	5.50	2.66	70.74	.11
PASS 2, COURSE A	5.50	3.36	78.41	.16
PASS 2, COURSE B	5.50	2.71	70.94	.11
PASS 3, COURSE A	5.50	3.32	76.81	.15
PASS 3, COURSE B	5.50	2.65	73.29	.11
PASS 4, COURSE A	5.50	3.43	76.36	.15
PASS 4, COURSE B	5.50	2.72	72.55	.11
WASHBOARD COURSE	5.50	2.28	64.87	.09

TAPE CHANNEL 6 : VERTICAL ACCELERATION ON UNDERSIDE OF SOC

TEST	SPEED MPH	PEAK VALUE G'S	DURATION MILLISECONDS	AREA G'S-SECONDS
PASS 1, COURSE A	5.50	-3.79	77.50	.17
PASS 1, COURSE B	5.50	-2.95	72.18	.12
PASS 2, COURSE A	5.50	-3.54	78.36	.16
PASS 2, COURSE B	5.50	-2.93	71.16	.12
PASS 3, COURSE A	5.50	-3.57	76.41	.16
PASS 3, COURSE B	5.50	-2.82	73.43	.12
PASS 4, COURSE A	5.50	-3.73	77.55	.17
PASS 4, COURSE B	5.50	-2.91	73.55	.12
WASHBOARD COURSE	5.50	-2.56	61.53	.09

TAPE CHANNEL 7 : VERTICAL ACCELERATION ON FORWARD SIDE OF SOC

TEST	SPEED MPH	PEAK VALUE G'S	DURATION MILLISECONDS	AREA G'S-SECONDS
PASS 1, COURSE A	5.50	3.40	77.85	.16
PASS 1, COURSE B	5.50	2.44	71.65	.10
PASS 2, COURSE A	5.50	3.42	81.55	.17
PASS 2, COURSE B	5.50	2.45	71.76	.10
PASS 3, COURSE A	5.50	3.25	79.56	.15
PASS 3, COURSE B	5.50	2.35	70.65	.09
PASS 4, COURSE A	5.50	3.49	80.21	.16
PASS 4, COURSE B	5.50	2.36	70.95	.09
WASHBOARD COURSE	5.50	2.11	74.11	.09

TAPE CHANNEL 8 : VERTICAL ACCELERATION ON AFT SIDE OF SOC

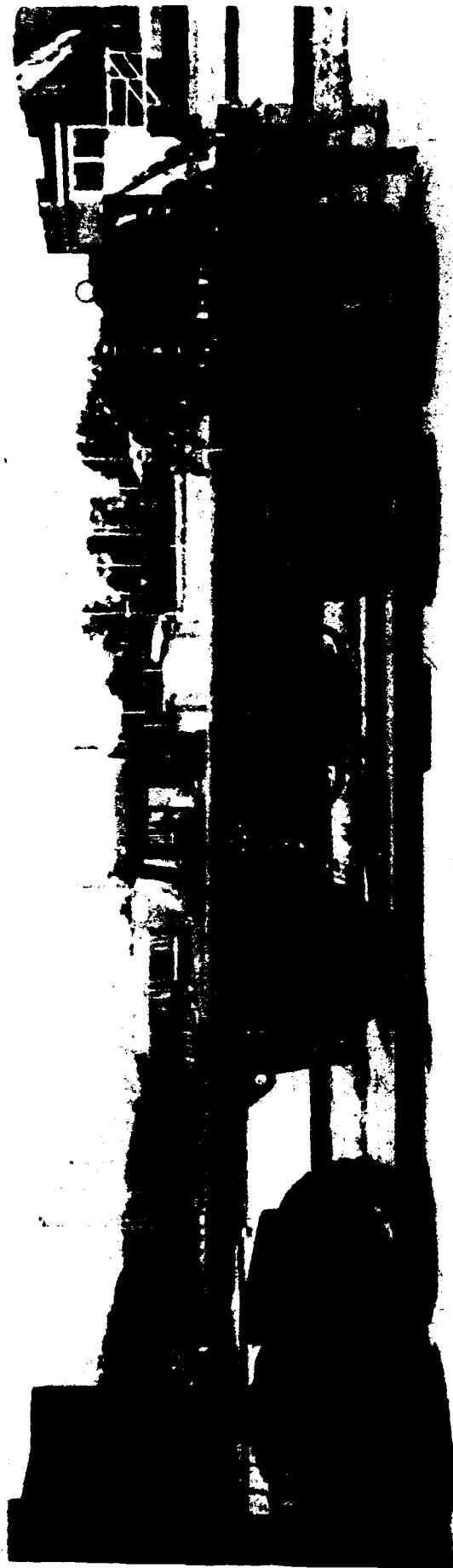
TEST	SPEED MPH	PEAK VALUE G'S	DURATION MILLISECONDS	AREA G'S-SECONDS
PASS 1, COURSE A	5.50	3.22	79.08	.15
PASS 1, COURSE B	5.50	2.59	74.23	.11
PASS 2, COURSE A	5.50	3.22	82.27	.16
PASS 2, COURSE B	5.50	2.67	74.18	.12
PASS 3, COURSE A	5.50	3.24	80.96	.16
PASS 3, COURSE B	5.50	2.38	72.24	.10
PASS 4, COURSE A	5.50	3.33	81.24	.16
PASS 4, COURSE B	5.50	2.51	74.19	.11
WASHBOARD COURSE	5.50	2.25	66.74	.09

TAPE CHANNEL 9 : VERTICAL ACCELERATION ON RIGHT TRUCK BED

TEST	SPEED MPH	PEAK VALUE G'S	DURATION MILLISECONDS	AREA G'S-SECONDS
PASS 1, COURSE A	5.50	3.25	78.41	.15
PASS 1, COURSE B	5.50	2.22	71.62	.09
PASS 2, COURSE A	5.50	3.24	81.94	.15
PASS 2, COURSE B	5.50	2.22	71.95	.09
PASS 3, COURSE A	5.50	3.07	80.86	.15
PASS 3, COURSE B	5.50	2.18	70.81	.09
PASS 4, COURSE A	5.50	3.30	81.64	.16
PASS 4, COURSE B	5.50	2.15	70.99	.09
WASHBOARD COURSE	5.50	1.93	73.82	.08

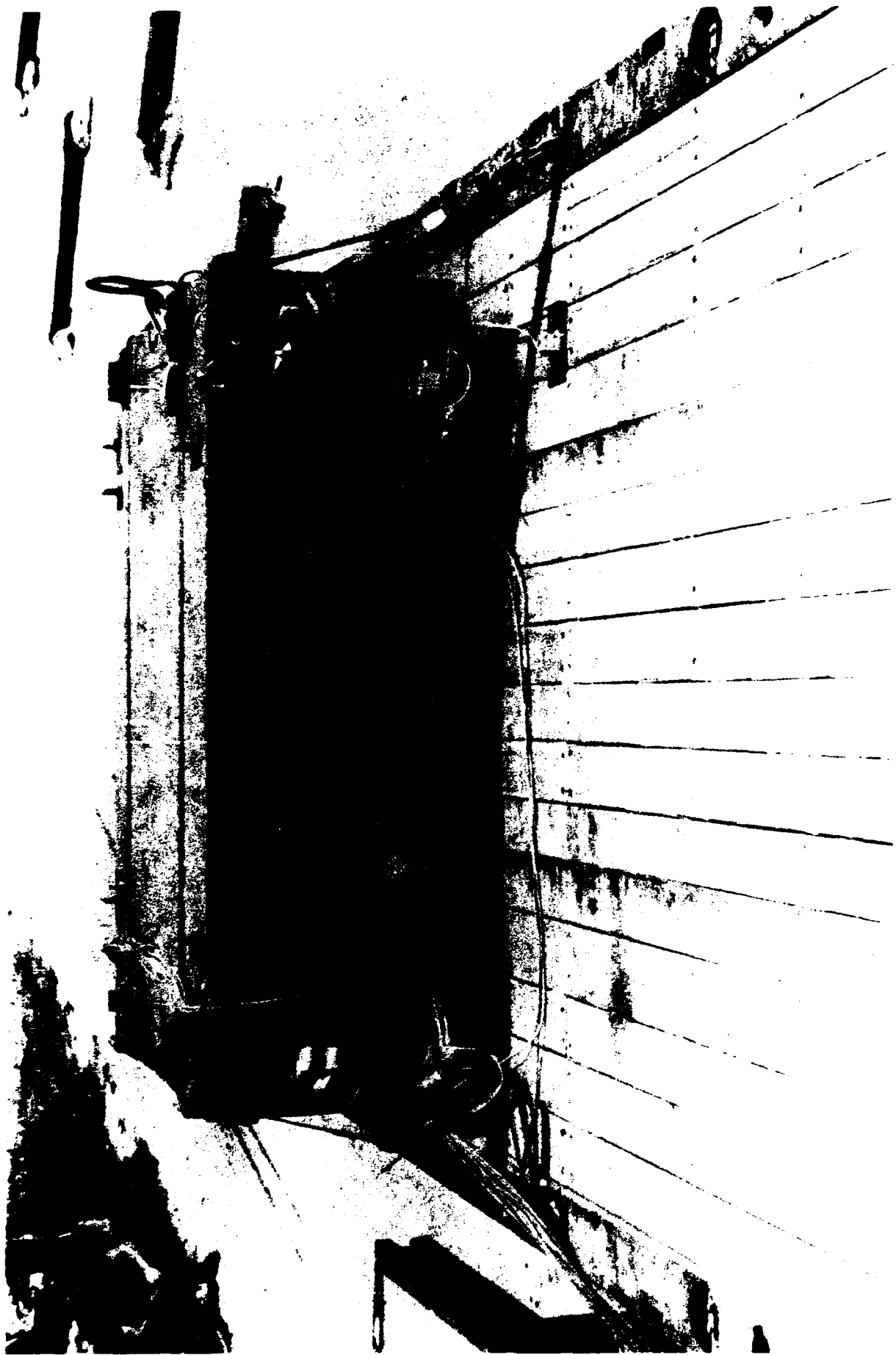
TAPE CHANNEL 10 : VERTICAL ACCELERATION ON LEFT TRUCK BED

TEST	SPEED MPH	PEAK VALUE G'S	DURATION MILLISECONDS	AREA G'S-SECONDS
PASS 1, COURSE A	5.50	3.44	81.72	.17
PASS 1, COURSE B	5.50	2.70	74.60	.12
PASS 2, COURSE A	5.50	3.40	82.69	.17
PASS 2, COURSE B	5.50	2.80	75.13	.12
PASS 3, COURSE A	5.50	3.39	81.02	.16
PASS 3, COURSE B	5.50	2.59	75.56	.12
PASS 4, COURSE A	5.50	3.44	80.80	.16
PASS 4, COURSE B	5.50	2.69	76.38	.11
WASHBOARD COURSE	5.50	2.50	68.14	.10



DEFENSE AMMUNITION CENTER AND SCHOOL - SAVANNA, IL

Photo 21. View of the SOC without casters secured to the floor of the M871.



DEFENSE AMMUNITION CENTER AND SCHOOL- SAVANNA, IL

Photo 22. View of the SOC secured to the deck of the M871 semitrailer.



DEFENSE AMMUNITION CENTER AND SCHOOL - SAVANNA, IL

Photo 23. View of the accelerometers mounted to the side of the SOC and the floor of the M871 semitrailer.

SYNOPSIS OF TEST NO. 9

In Test No. 9, the SOC on solid rubber casters was positioned longitudinally on the HEMTT. The casters of the SOC were unlocked and the brakes on the wheels were released.

Two complete road hazard course tests were accomplished with the SOC on the HEMTT. Vertical forces were measured in the first test and lateral forces measured on the second course.

The tiedown method is acceptable as tested.

ROAD TEST DATA

TEST NO. 9(a)

DATE: 15 Sep 86

TEST SPECIMEN: SOC on solid rubber casters secured longitudinally on the HEMTT. Vertical forces measured. Total of six web strap tiedown assemblies were used with one strap from each tiedown ring and two straps over the top of the SOC.

PASS 1-A OVER FIRST SERIES OF TIES      5.85 SEC      5.83 MPH

PASS 1-B OVER SECOND SERIES OF TIES      6.15 SEC      5.54 MPH

REMARKS: No movement

PASS 2-A OVER FIRST SERIES OF TIES      6.00 SEC      5.68 MPH

PASS 2-B OVER SECOND SERIES OF TIES      6.00 SEC      5.68 MPH

REMARKS: No movement

30 MILE ROAD TEST: No movement

PANIC STOP TEST: No movement

PASS 3-A OVER FIRST SERIES OF TIES      6.00 SEC      5.68 MPH

PASS 3-B OVER SECOND SERIES OF TIES      6.30 SEC      5.41MPH

REMARKS: No movement

PASS 4-A OVER FIRST SERIES OF TIES      5.85 SEC      5.83 MPH

PASS 4-B OVER SECOND SERIES OF TIES      5.70 SEC      5.98 MPH

REMARKS: No movement

WASHBOARD COURSE: No movement

TEST 17: VERTICAL ACCELERATION FROM ROAD HAZARD TEST ON SOC  
(SOC ON CASTERS, LENGTHWISE ON HEMTT)  
DATE: 09-15-86

TAPE CHANNEL 1 : VERTICAL ACCELERATION ON #1 AFT SOC

TEST	SPEED MPH	PEAK VALUE G'S	DURATION MILLISECONDS	AREA G'S-SECONDS
PASS 1, COURSE A	5.50	1.32	93.33	.07
PASS 1, COURSE B	5.50	1.15	93.96	.06
PASS 2, COURSE A	5.50	1.14	93.14	.06
PASS 2, COURSE B	5.50	.97	92.21	.05
PASS 3, COURSE A	5.50	1.35	93.13	.07
PASS 3, COURSE B	5.50	-.99	99.96	.06
PASS 4, COURSE A	5.50	1.32	91.62	.07
PASS 4, COURSE B	5.50	-1.02	98.76	.06
WASHBOARD COURSE	5.50	1.06	97.28	.07

TAPE CHANNEL 3 : VERTICAL ACCELERATION ON #1 FOR SOC

TEST	SPEED MPH	PEAK VALUE G'S	DURATION MILLISECONDS	AREA G'S-SECONDS
PASS 1, COURSE A	5.50	.77	103.89	.05
PASS 1, COURSE B	5.50	.78	112.53	.05
PASS 2, COURSE A	5.50	.77	112.10	.05
PASS 2, COURSE B	5.50	.62	114.39	.04
PASS 3, COURSE A	5.50	.74	101.96	.05
PASS 3, COURSE B	5.50	.60	113.85	.04
PASS 4, COURSE A	5.50	.75	102.30	.05
PASS 4, COURSE B	5.50	.55	116.82	.04
WASHBOARD COURSE	5.50	-.57	107.07	.04

TAPE CHANNEL 4 : VERTICAL ACCELERATION ON #3 FOR SOC

TEST	SPEED MPH	PEAK VALUE G'S	DURATION MILLISECONDS	AREA G'S-SECONDS
PASS 1, COURSE A	5.50	1.06	103.47	.07
PASS 1, COURSE B	5.50	1.00	123.95	.06
PASS 2, COURSE A	5.50	.98	420.11	.10
PASS 2, COURSE B	5.50	.83	96.44	.05
PASS 3, COURSE A	5.50	1.04	104.05	.06
PASS 3, COURSE B	5.50	.89	95.00	.05
PASS 4, COURSE A	5.50	1.06	105.33	.07
PASS 4, COURSE B	5.50	.82	111.14	.06
WASHBOARD COURSE	5.50	-.91	90.10	.05

TAPE CHANNEL 5 : VERTICAL ACCELERATION ON #3 FOR SOC

TEST	SPEED MPH	PEAK VALUE G'S	DURATION MILLISECONDS	AREA G'S-SECONDS
PASS 1, COURSE A	5.50	1.24	105.80	.08
PASS 1, COURSE B	5.50	1.28	116.99	.09
PASS 2, COURSE A	5.50	1.25	115.30	.09
PASS 2, COURSE B	5.50	1.00	119.40	.07
PASS 3, COURSE A	5.50	1.22	103.95	.08
PASS 3, COURSE B	5.50	1.00	117.75	.07
PASS 4, COURSE A	5.50	1.23	105.57	.08
PASS 4, COURSE B	5.50	.91	119.35	.07
WASHBOARD COURSE	5.50	.95	99.39	.06

TAPE CHANNEL 6 : VERTICAL ACCELERATION ON UNDERSIDE OF SOC

TEST	SPEED MPH	PEAK VALUE G'S	DURATION MILLISECONDS	AREA G'S-SECONDS
PASS 1, COURSE A	5.50	-1.26	105.50	.08
PASS 1, COURSE B	5.50	-1.28	114.70	.09
PASS 2, COURSE A	5.50	-1.30	115.98	.09
PASS 2, COURSE B	5.50	-1.02	118.35	.07
PASS 3, COURSE A	5.50	-1.23	104.30	.08
PASS 3, COURSE B	5.50	-1.01	118.38	.07
PASS 4, COURSE A	5.50	-1.24	104.94	.08
PASS 4, COURSE B	5.50	-.91	107.02	.06
WASHBOARD COURSE	5.50	.96	108.02	.07

TAPE CHANNEL 7 : VERTICAL ACCELERATION ON RIGHT OUTSIDE OF SOC

TEST	SPEED MPH	PEAK VALUE G'S	DURATION MILLISECONDS	AREA G'S-SECONDS
PASS 1, COURSE A	5.50	1.14	106.76	.07
PASS 1, COURSE B	5.50	1.04	140.73	.06
PASS 2, COURSE A	5.50	1.02	138.42	.06
PASS 2, COURSE B	5.50	.92	110.54	.06
PASS 3, COURSE A	5.50	-1.12	114.21	.08
PASS 3, COURSE B	5.50	.96	110.73	.06
PASS 4, COURSE A	5.50	1.10	107.15	.07
PASS 4, COURSE B	5.50	.88	105.91	.06
WASHBOARD COURSE	5.50	-.98	91.32	.05

TAPE CHANNEL 8 : VERTICAL ACCELERATION ON LEFT OUTSIDE OF SOC

TEST	SPEED MPH	PEAK VALUE G'S	DURATION MILLISECONDS	AREA G'S-SECONDS
PASS 1, COURSE A	5.50	1.09	102.26	.07
PASS 1, COURSE B	5.50	1.09	110.45	.07
PASS 2, COURSE A	5.50	1.11	111.67	.08
PASS 2, COURSE B	5.50	.95	132.83	.07
PASS 3, COURSE A	5.50	1.07	112.37	.07
PASS 3, COURSE B	5.50	.88	121.18	.06
PASS 4, COURSE A	5.50	1.13	108.26	.07
PASS 4, COURSE B	5.50	.85	125.35	.06
WASHBOARD COURSE	5.50	.89	100.50	.06

TAPE CHANNEL 9 : VERTICAL ACCELERATION ON RIGHT TRUCK BED

TEST	SPEED MPH	PEAK VALUE G'S	DURATION MILLISECONDS	AREA G'S-SECONDS
PASS 1, COURSE A	5.50	1.19	106.85	.08
PASS 1, COURSE B	5.50	1.06	130.54	.07
PASS 2, COURSE A	5.50	1.09	140.98	.10
PASS 2, COURSE B	5.50	.90	120.13	.06
PASS 3, COURSE A	5.50	1.15	102.41	.07
PASS 3, COURSE B	5.50	.90	120.13	.06
PASS 4, COURSE A	5.50	1.19	98.69	.07
PASS 4, COURSE B	5.50	.92	103.52	.05
WASHBOARD COURSE	5.50	.93	98.92	.06

TAPE CHANNEL 10 : VERTICAL ACCELERATION ON LEFT TRUCK BED

TEST	SPEED MPH	PEAK VALUE G'S	DURATION MILLISECONDS	AREA G'S-SECONDS
PASS 1, COURSE A	5.50	1.10	106.76	.07
PASS 1, COURSE B	5.50	1.13	112.13	.08
PASS 2, COURSE A	5.50	1.12	105.06	.07
PASS 2, COURSE B	5.50	.89	105.39	.06
PASS 3, COURSE A	5.50	1.06	110.75	.07
PASS 3, COURSE B	5.50	.88	110.40	.06
PASS 4, COURSE A	5.50	1.08	113.03	.07
PASS 4, COURSE B	5.50	.83	111.28	.05
WASHBOARD COURSE	5.50	.86	101.81	.05

ROAD TEST DATA

TEST NO. 9(b)

DATE: 15 Sep 86

TEST SPECIMEN: Same as Test No. 9(a) except lateral forces measured.

PASS 1-A OVER FIRST SERIES OF TIES 6.00 SEC 5.68 MPH

PASS 1-B OVER SECOND SERIES OF TIES 6.60 SEC 5.17 MPH

REMARKS: No movement.

PASS 2-A OVER FIRST SERIES OF TIES 5.85 SEC 5.83 MPH

PASS 2-B OVER SECOND SERIES OF TIES 5/85 SEC 5.83 MPH

REMARKS: No movement

30 MILE ROAD TEST: Omitted

PANIC STOP TEST: Omitted

PASS 3-A OVER FIRST SERIES OF TIES 6.00 SEC 5.68 MPH

PASS 3-B OVER SECOND SERIES OF TIES 6.30 SEC 5.41 MPH

REMARKS: No movement

PASS 4-A OVER FIRST SERIES OF TIES 5.85 SEC 5.83 MPH

PASS 4-B OVER SECOND SERIES OF TIES 6.15 SEC 5.54 MPH

REMARKS: No movement

WASHBOARD COURSE: No movement

TEST 18: LATERAL ACCELERATION FROM ROAD HAZARD TEST ON SOC  
(SOC ON CASTERS, LENGTHWISE ON HEMTT)  
DATE: 09-15-86

TAPE CHANNEL 1 : LATERAL ACCELERATION ON #1 AFT SOC

TEST	SPEED MPH	PEAK VALUE G'S	DURATION MILLISECONDS	AREA G'S-SECONDS
PASS 1, COURSE A	5.50	-.88	142.99	.08
PASS 1, COURSE B	5.50	-.58	163.07	.06
PASS 2, COURSE A	5.50	-.83	154.17	.08
PASS 2, COURSE B	5.50	-.53	76.94	.02
PASS 3, COURSE A	5.50	-.84	160.31	.08
PASS 3, COURSE B	5.50	-.52	167.64	.05
PASS 4, COURSE A	5.50	-.53	170.36	.05
PASS 4, COURSE B	5.50	.61	167.00	.06
WASHBOARD COURSE	5.50	-.28	67.02	.01

TAPE CHANNEL 3 : LATERAL ACCELERATION ON #1 FOR SOC

TEST	SPEED MPH	PEAK VALUE G'S	DURATION MILLISECONDS	AREA G'S-SECONDS
PASS 1, COURSE A	5.50	1.10	82.66	.05
PASS 1, COURSE B	5.50	.71	94.23	.04
PASS 2, COURSE A	5.50	1.10	82.15	.06
PASS 2, COURSE B	5.50	-.70	167.55	.06
PASS 3, COURSE A	5.50	1.14	77.80	.06
PASS 3, COURSE B	5.50	.82	105.00	.05
PASS 4, COURSE A	5.50	*****	*****	*****
PASS 4, COURSE B	5.50	.82	120.38	.06
WASHBOARD COURSE	5.50	.41	52.48	.01

TAPE CHANNEL 4 : LATERAL ACCELERATION ON #3 FOR SOC

TEST	SPEED MPH	PEAK VALUE G'S	DURATION MILLISECONDS	AREA G'S-SECONDS
PASS 1, COURSE A	5.50	.88	140.13	.08
PASS 1, COURSE B	5.50	.57	160.17	.06
PASS 2, COURSE A	5.50	.81	149.89	.08
PASS 2, COURSE B	5.50	.54	78.90	.03
PASS 3, COURSE A	5.50	.84	152.03	.08
PASS 3, COURSE B	5.50	.55	160.42	.05
PASS 4, COURSE A	5.50	.58	264.73	.13
PASS 4, COURSE B	5.50	-.59	159.24	.06
WASHBOARD COURSE	5.50	-.31	58.90	.01

TAPE CHANNEL 5 : LATERAL ACCELERATION ON #3 FOR SOC

TEST	SPEED MPH	PEAK VALUE G'S	DURATION MILLISECONDS	AREA G'S-SECONDS
PASS 1, COURSE A	5.50	-.87	79.73	.04
PASS 1, COURSE B	5.50	-.56	92.36	.03
PASS 2, COURSE A	5.50	-.82	78.14	.04
PASS 2, COURSE B	5.50	.55	151.07	.06
PASS 3, COURSE A	5.50	-.89	74.55	.04
PASS 3, COURSE B	5.50	-.63	111.20	.04
PASS 4, COURSE A	5.50	-.66	114.92	.05
PASS 4, COURSE B	5.50	-.64	115.08	.04
WASHBOARD COURSE	5.50	-.30	50.61	.01

TAPE CHANNEL 6 : LATERAL ACCELERATION ON UNDERSIDE OF SOC

TEST	SPEED MPH	PEAK VALUE G'S	DURATION MILLISECONDS	AREA G'S-SECONDS
PASS 1, COURSE A	5.50	.95	74.64	.04
PASS 1, COURSE B	5.50	-.59	111.35	.04
PASS 2, COURSE A	5.50	.90	73.74	.04
PASS 2, COURSE B	5.50	-.59	138.72	.05
PASS 3, COURSE A	5.50	.99	69.61	.04
PASS 3, COURSE B	5.50	.68	104.84	.04
PASS 4, COURSE A	5.50	.68	105.28	.04
PASS 4, COURSE B	5.50	.68	115.70	.05
WASHBOARD COURSE	5.50	.36	48.72	.01

TAPE CHANNEL 7 : LATERAL ACCELERATION ON RIGHT OUTSIDE OF SOC

TEST	SPEED MPH	PEAK VALUE G'S	DURATION MILLISECONDS	AREA G'S-SECONDS
PASS 1, COURSE A	5.50	1.00	147.53	.09
PASS 1, COURSE B	5.50	.66	164.57	.07
PASS 2, COURSE A	5.50	.91	161.94	.09
PASS 2, COURSE B	5.50	.59	211.93	.06
PASS 3, COURSE A	5.50	.93	163.47	.09
PASS 3, COURSE B	5.50	.62	168.47	.06
PASS 4, COURSE A	5.50	.63	170.65	.06
PASS 4, COURSE B	5.50	-.67	166.49	.07
WASHBOARD COURSE	5.50	.27	67.61	.01

TAPE CHANNEL 8 : LATERAL ACCELERATION ON LEFT OUTSIDE OF SOC

TEST	SPEED MPH	PEAK VALUE G'S	DURATION MILLISECONDS	AREA G'S-SECONDS
PASS 1, COURSE A	5.50	-.77	84.33	.04
PASS 1, COURSE B	5.50	.52	155.34	.05
PASS 2, COURSE A	5.50	-.74	82.86	.04
PASS 2, COURSE B	5.50	-.48	72.79	.02
PASS 3, COURSE A	5.50	-.76	77.56	.04
PASS 3, COURSE B	5.50	-.58	120.79	.04
PASS 4, COURSE A	5.50	-.58	120.92	.04
PASS 4, COURSE B	5.50	-.59	119.50	.04
WASHBOARD COURSE	5.50	-.25	57.85	.01

TAPE CHANNEL 9 : LATERAL ACCELERATION ON RIGH TRUCK BED

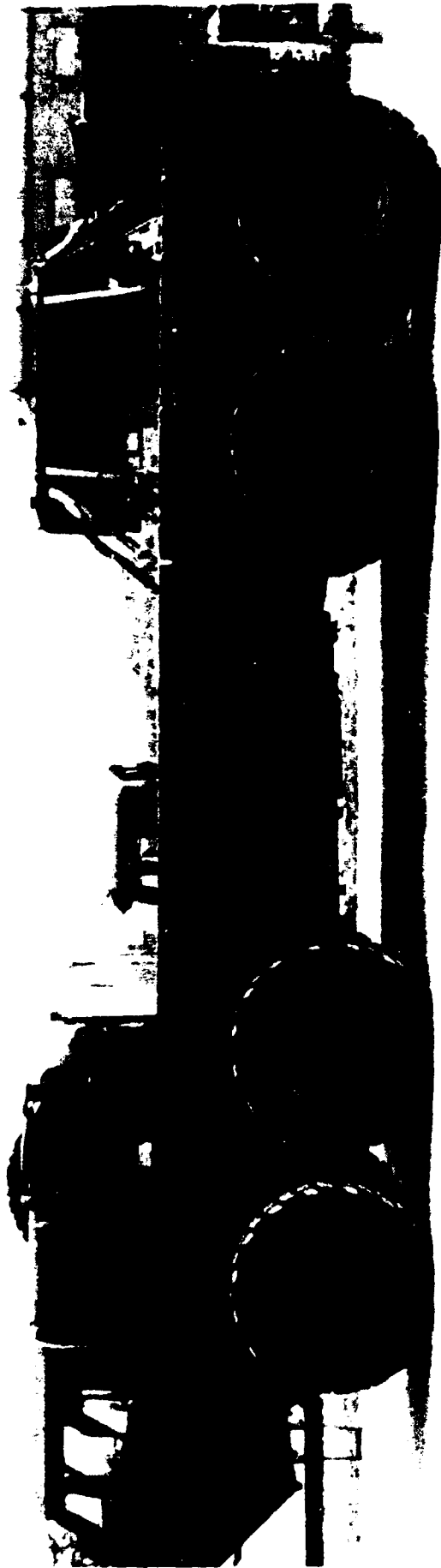
TEST	SPEED MPH	PEAK VALUE G'S	DURATION MILLISECONDS	AREA G'S-SECONDS
PASS 1, COURSE A	5.50	.56	194.65	.07
PASS 1, COURSE B	5.50	-.42	214.10	.05
PASS 2, COURSE A	5.50	.51	262.01	.06
PASS 2, COURSE B	5.50	-.42	278.83	.03
PASS 3, COURSE A	5.50	.46	172.15	.05
PASS 3, COURSE B	5.50	-.48	162.52	.05
PASS 4, COURSE A	5.50	-.50	165.83	.05
PASS 4, COURSE B	5.50	.45	244.05	.05
WASHBOARD COURSE	5.50	*****	*****	*****

TAPE CHANNEL 10 : LATERAL ACCELERATION ON LEFT TRUCK BED

TEST	SPEED MPH	PEAK VALUE G'S	DURATION MILLISECONDS	AREA G'S-SECONDS
PASS 1, COURSE A	5.50	-.52	401.86	.03
PASS 1, COURSE B	5.50	.40	261.61	.04
PASS 2, COURSE A	5.50	-.49	269.84	.05
PASS 2, COURSE B	5.50	.40	402.86	.02
PASS 3, COURSE A	5.50	-.42	181.34	.05
PASS 3, COURSE B	5.50	.39	171.15	.04
PASS 4, COURSE A	5.50	-.44	258.55	.06
PASS 4, COURSE B	5.50	-.42	244.10	.05
WASHBOARD COURSE	5.50	.10	60.41	.00

NOTES:

\*\*\*\*\*: DATA NOT AVAILABLE.



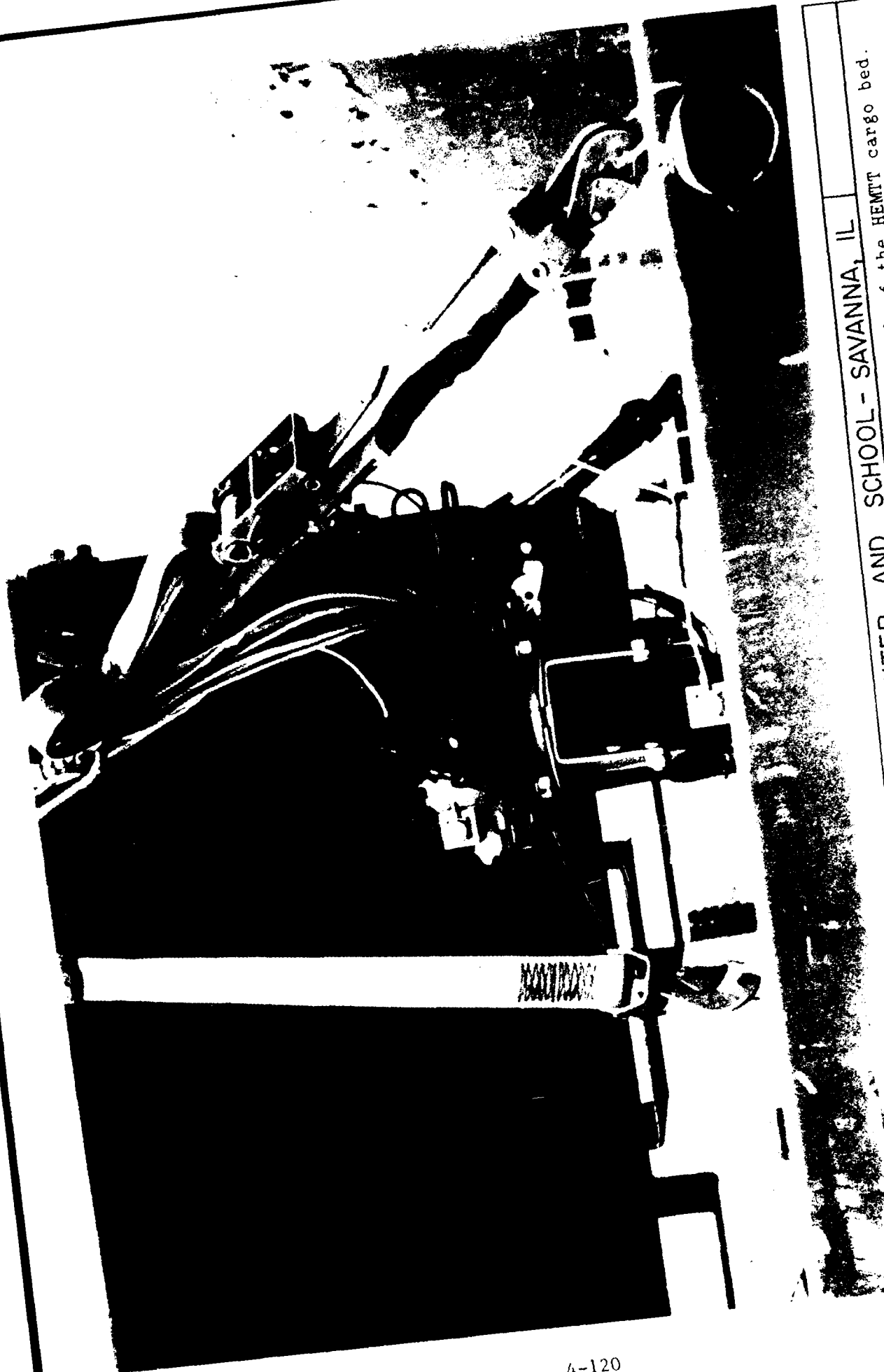
DEFENSE AMMUNITION CENTER AND SCHOOL - SAVANNA, IL

Photo 24. View of the SOC on solid rubber castors positioned lengthwise on the HEMTT.



DEFENSE AMMUNITION CENTER AND SCHOOL - SAVANNA, IL

Photo 25. View of the SOC secured to the cargo bed of the HEMTT.



IL

DEFENSE AMMUNITION CENTER AND SCHOOL - SAVANNAH

and the deck of the HEMTT cargo bed.

Photo 26.

View of the accelerometers mounted to the side of the SOC and the deck of the HEMTT cargo bed.

#### SYNOPSIS OF TEST NO. 10

In Test No. 10, the casters were removed from the SOC. The SOC was positioned lengthwise on the HEMTT and secured with a single web strap tiedown assembly from each of four tiedown/lift rings. An additional two web strap tiedown assemblies were used over the top of the SOC.

The SOC completed the road hazard course twice for the purpose of accumulating instrumentation data. In the first complete road test, lateral forces were measured and during the second complete test, vertical forces were measured.

No movement of the SOC was observed during either test. The tiedown method passed the USADACS road hazard course.

ROAD TEST DATA

TEST NO. 10(a)

DATE: 15-16 Sep 86

TEST SPECIMEN: SOC with casters removed secured longitudinally on the HEMTT. Lateral forces measured. Total six web strap tiedown assemblies used with one strap from each tiedown ring and two tiedown straps over the top of the SOC.

PASS 1-A OVER FIRST SERIES OF TIES      5.85 SEC      5.83 MPH

PASS 1-B OVER SECOND SERIES OF TIES      6.00 SEC      5.68 MPH

REMARKS: No movement

PASS 2-A OVER FIRST SERIES OF TIES      5.85 SEC      5.83 MPH

PASS 2-B OVER SECOND SERIES OF TIES      6.00 SEC      5.68 MPH

REMARKS: No movement

30 MILE ROAD TEST: No movement

PANIC STOP TEST: No movement

PASS 3-A OVER FIRST SERIES OF TIES      6.00 SEC      5.68 MPH

PASS 3-B OVER SECOND SERIES OF TIES      6.90 SEC      4.94 MPH

REMARKS: No movement

PASS 4-A OVER FIRST SERIES OF TIES      6.00 SEC      5.68 MPH

PASS 4-B OVER SECOND SERIES OF TIES      6.30 SEC      5.41 MPH

REMARKS: No movement

WASHBOARD COURSE

TEST 19: LATERAL ACCELERATION FROM ROAD HAZARD TEST ON SOC  
(SOC WITHOUT CASTERS, LENGTHWISE ON HEMTT)  
DATE: 09-15&16-86

TAPE CHANNEL 1 : LATERAL ACCELERATION ON #1 AFT SOC

TEST	SPEED MPH	PEAK VALUE G'S	DURATION MILLISECONDS	AREA G'S-SECONDS
PASS 1, COURSE A	5.50	-.53	95.99	.04
PASS 1, COURSE B	5.50	-.44	70.91	.02
PASS 2, COURSE A	5.50	-.47	169.21	.05
PASS 2, COURSE B	5.50	-.43	140.98	.04
PASS 3, COURSE A	5.50	-.56	110.58	.05
PASS 3, COURSE B	5.50	-.45	217.70	.05
PASS 4, COURSE A	5.50	-.57	107.73	.05
PASS 4, COURSE B	5.50	.43	243.49	.05
WASHBOARD COURSE	5.50	.19	58.62	.01

TAPE CHANNEL 3 : LATERAL ACCELERATION ON #1 FOR SOC

TEST	SPEED MPH	PEAK VALUE G'S	DURATION MILLISECONDS	AREA G'S-SECONDS
PASS 1, COURSE A	5.50	.63	154.56	.07
PASS 1, COURSE B	5.50	.58	195.32	.07
PASS 2, COURSE A	5.50	.67	175.50	.07
PASS 2, COURSE B	5.50	-.57	170.74	.06
PASS 3, COURSE A	5.50	.66	131.48	.07
PASS 3, COURSE B	5.50	.63	280.01	.06
PASS 4, COURSE A	5.50	.64	160.79	.07
PASS 4, COURSE B	5.50	.59	265.75	.05
WASHBOARD COURSE	5.50	*****	*****	*****

TAPE CHANNEL 4 : LATERAL ACCELERATION ON #3 FOR SOC

TEST	SPEED MPH	PEAK VALUE G'S	DURATION MILLISECONDS	AREA G'S-SECONDS
PASS 1, COURSE A	5.50	.50	117.29	.05
PASS 1, COURSE B	5.50	.43	75.20	.02
PASS 2, COURSE A	5.50	-.51	143.08	.04
PASS 2, COURSE B	5.50	.42	71.15	.02
PASS 3, COURSE A	5.50	.57	102.78	.04
PASS 3, COURSE B	5.50	.43	229.72	.05
PASS 4, COURSE A	5.50	.54	96.11	.04
PASS 4, COURSE B	5.50	-.44	131.86	.04
WASHBOARD COURSE	5.50	.22	66.91	.01

TAPE CHANNEL 5 : LATERAL ACCELERATION ON #3 FOR SOC

TEST	SPEED MPH	PEAK VALUE G'S	DURATION MILLISECONDS	AREA G'S-SECONDS
PASS 1, COURSE A	5.50	.52	169.79	.06
PASS 1, COURSE B	5.50	.46	212.33	.03
PASS 2, COURSE A	5.50	-.51	148.35	.05
PASS 2, COURSE B	5.50	-.47	189.64	.05
PASS 3, COURSE A	5.50	-.50	146.81	.05
PASS 3, COURSE B	5.50	-.50	230.79	.06
PASS 4, COURSE A	5.50	-.48	149.38	.05
PASS 4, COURSE B	5.50	.47	272.48	.05
WASHBOARD COURSE	5.50	.22	69.71	.01

TAPE CHANNEL 6 : LATERAL ACCELERATION ON UNDERSIDE OF SOC

TEST	SPEED MPH	PEAK VALUE G'S	DURATION MILLISECONDS	AREA G'S-SECONDS
PASS 1, COURSE A	5.50	.52	151.94	.05
PASS 1, COURSE B	5.50	.47	213.74	.06
PASS 2, COURSE A	5.50	.54	162.16	.06
PASS 2, COURSE B	5.50	.46	344.38	.03
PASS 3, COURSE A	5.50	.52	164.92	.05
PASS 3, COURSE B	5.50	.52	261.52	.06
PASS 4, COURSE A	5.50	.52	153.11	.05
PASS 4, COURSE B	5.50	.48	345.14	.04
WASHBOARD COURSE	5.50	*****	*****	*****

TAPE CHANNEL 7 : LATERAL ACCELERATION ON RIGHT OUTSIDE OF SOC

TEST	SPEED MPH	PEAK VALUE G'S	DURATION MILLISECONDS	AREA G'S-SECONDS
PASS 1, COURSE A	5.50	.53	261.80	.04
PASS 1, COURSE B	5.50	.46	170.57	.05
PASS 2, COURSE A	5.50	-.56	154.53	.04
PASS 2, COURSE B	5.50	-.47	163.07	.05
PASS 3, COURSE A	5.50	-.54	141.62	.05
PASS 3, COURSE B	5.50	.51	230.52	.06
PASS 4, COURSE A	5.50	.56	207.54	.06
PASS 4, COURSE B	5.50	-.50	244.71	.06
WASHBOARD COURSE	5.50	-.23	75.85	.01

TAPE CHANNEL 8 : LATERAL ACCELERATION ON LEFT OUTSIDE OF SOC

TEST	SPEED MPH	PEAK VALUE G'S	DURATION MILLISECONDS	AREA G'S-SECONDS
PASS 1, COURSE A	5.50	.48	258.20	.06
PASS 1, COURSE B	5.50	-.47	245.07	.06
PASS 2, COURSE A	5.50	-.47	146.74	.04
PASS 2, COURSE B	5.50	-.46	256.49	.05
PASS 3, COURSE A	5.50	-.48	188.78	.05
PASS 3, COURSE B	5.50	-.49	309.02	.05
PASS 4, COURSE A	5.50	-.48	185.75	.05
PASS 4, COURSE B	5.50	.43	323.88	.05
WASHBOARD COURSE	5.50	*****	*****	*****

TAPE CHANNEL 9 : LATERAL ACCELERATION ON RIGH TRUCK BED

TEST	SPEED MPH	PEAK VALUE G'S	DURATION MILLISECONDS	AREA G'S-SECONDS
PASS 1, COURSE A	5.50	.48	243.21	.05
PASS 1, COURSE B	5.50	.44	184.96	.05
PASS 2, COURSE A	5.50	.50	244.23	.05
PASS 2, COURSE B	5.50	-.44	153.70	.04
PASS 3, COURSE A	5.50	.49	242.58	.05
PASS 3, COURSE B	5.50	.44	220.61	.05
PASS 4, COURSE A	5.50	.50	205.08	.06
PASS 4, COURSE B	5.50	-.46	252.51	.06
WASHBOARD COURSE	5.50	-.19	75.51	.01

TAPE CHANNEL 10 : LATERAL ACCELERATION ON LEFT TRUCK BED

TEST	SPEED MPH	PEAK VALUE G'S	DURATION MILLISECONDS	AREA G'S-SECONDS
PASS 1, COURSE A	5.50	.44	235.14	.04
PASS 1, COURSE B	5.50	-.40	198.34	.05
PASS 2, COURSE A	5.50	-.46	258.40	.05
PASS 2, COURSE B	5.50	-.41	270.74	.04
PASS 3, COURSE A	5.50	-.45	178.64	.05
PASS 3, COURSE B	5.50	-.46	203.96	.06
PASS 4, COURSE A	5.50	-.43	190.00	.05
PASS 4, COURSE B	5.50	-.41	562.18	.05
WASHBOARD COURSE	5.50	.15	91.13	.01

NOTES:

\*\*\*\*\*: DATA NOT AVAILABLE.

ROAD TEST DATA

TEST NO. 10(b)

DATE: 16 Sep 86

TEST SPECIMEN: Same as Test 10(a) except vertical forces measured.

PASS 1-A OVER FIRST SERIES OF TIES      6.00 SEC      5.68 MPH

PASS 1-B OVER SECOND SERIES OF TIES      6.00 SEC      5.68 MPH

REMARKS: No movement

PASS 2-A OVER FIRST SERIES OF TIES      6.15 SEC      5.54 MPH

PASS 2-B OVER SECOND SERIES OF TIES      7.20 SEC      4.73 MPH

REMARKS: No movement

30 MILE ROAD TEST: Omitted

PANIC STOP TEST: Omitted

PASS 3-A OVER FIRST SERIES OF TIES      6.30 SEC      5.41 MPH

PASS 3-B OVER SECOND SERIES OF TIES      7.50 SEC      4.55 MPH

REMARKS: No movement

PASS 4-A OVER FIRST SERIES OF TIES      6.00 SEC      5.68 MPH

PASS 4-B OVER SECOND SERIES OF TIES      7.20 SEC      4.73 MPH

REMARKS: No movement

WASHBOARD COURSE: No movement

TEST 20: VERTICAL ACCELERATION FROM ROAD HAZARD TEST ON SOC  
(SOC WITHOUT CASTERS, LENGTHWISE ON HEMTT)  
DATE: 09-16-86

TAPE CHANNEL 1 : VERTICAL ACCELERATION ON #1 AFT SOC

TEST	SPEED MPH	PEAK VALUE G'S	DURATION MILLISECONDS	AREA G'S-SECONDS
PASS 1, COURSE A	5.50	-1.32	123.41	.10
PASS 1, COURSE B	5.50	.74	104.89	.05
PASS 2, COURSE A	5.50	.95	108.25	.06
PASS 2, COURSE B	5.50	.83	125.12	.06
PASS 3, COURSE A	5.50	-1.22	113.30	.09
PASS 3, COURSE B	5.50	.68	108.75	.05
PASS 4, COURSE A	5.50	1.22	104.79	.08
PASS 4, COURSE B	5.50	1.02	110.22	.07
WASHBOARD COURSE	5.50	-.65	84.66	.03

TAPE CHANNEL 3 : VERTICAL ACCELERATION ON #1 FOR SOC

TEST	SPEED MPH	PEAK VALUE G'S	DURATION MILLISECONDS	AREA G'S-SECONDS
PASS 1, COURSE A	5.50	.65	101.34	.04
PASS 1, COURSE B	5.50	.61	110.81	.04
PASS 2, COURSE A	5.50	.64	104.50	.04
PASS 2, COURSE B	5.50	.60	114.55	.04
PASS 3, COURSE A	5.50	.72	105.89	.05
PASS 3, COURSE B	5.50	.46	124.99	.04
PASS 4, COURSE A	5.50	.69	105.81	.05
PASS 4, COURSE B	5.50	.73	113.45	.05
WASHBOARD COURSE	5.50	-.41	83.65	.02

TAPE CHANNEL 4 : VERTICAL ACCELERATION ON #3 FOR SOC

TEST	SPEED MPH	PEAK VALUE G'S	DURATION MILLISECONDS	AREA G'S-SECONDS
PASS 1, COURSE A	5.50	1.06	99.48	.06
PASS 1, COURSE B	5.50	*****	*****	*****
PASS 2, COURSE A	5.50	.97	105.57	.06
PASS 2, COURSE B	5.50	1.05	96.63	.06
PASS 3, COURSE A	5.50	1.10	95.74	.06
PASS 3, COURSE B	5.50	.60	103.42	.04
PASS 4, COURSE A	5.50	1.10	101.79	.07
PASS 4, COURSE B	5.50	1.13	100.31	.07
WASHBOARD COURSE	5.50	.55	86.63	.03

TAPE CHANNEL 5 : VERTICAL ACCELERATION ON #3 FOR SOC

TEST	SPEED MPH	PEAK VALUE G'S	DURATION MILLISECONDS	AREA G'S-SECONDS
PASS 1, COURSE A	5.50	1.18	97.10	.07
PASS 1, COURSE B	5.50	.99	110.27	.07
PASS 2, COURSE A	5.50	1.05	105.86	.07
PASS 2, COURSE B	5.50	1.04	116.56	.07
PASS 3, COURSE A	5.50	.06	99.93	.00
PASS 3, COURSE B	5.50	.04	109.57	.00
PASS 4, COURSE A	5.50	.06	91.81	.00
PASS 4, COURSE B	5.50	.06	112.06	.00
WASHBOARD COURSE	5.50	-.04	74.28	.00

TAPE CHANNEL 6 : VERTICAL ACCELERATION ON UNDERSIDE OF SOC

TEST	SPEED MPH	PEAK VALUE G'S	DURATION MILLISECONDS	AREA G'S-SECONDS
PASS 1, COURSE A	5.50	-1.16	96.75	.06
PASS 1, COURSE B	5.50	-1.00	111.67	.07
PASS 2, COURSE A	5.50	-1.11	107.00	.07
PASS 2, COURSE B	5.50	-1.03	113.36	.07
PASS 3, COURSE A	5.50	-1.23	106.13	.08
PASS 3, COURSE B	5.50	-.78	126.91	.06
PASS 4, COURSE A	5.50	-1.20	106.44	.08
PASS 4, COURSE B	5.50	-1.27	112.34	.09
WASHBOARD COURSE	5.50	.68	91.81	.04

TAPE CHANNEL 7 : VERTICAL ACCELERATION ON RIGHT OUTSIDE OF SOC

TEST	SPEED MPH	PEAK VALUE G'S	DURATION MILLISECONDS	AREA G'S-SECONDS
PASS 1, COURSE A	5.50	1.22	104.42	.07
PASS 1, COURSE B	5.50	.80	101.11	.05
PASS 2, COURSE A	5.50	1.02	103.49	.06
PASS 2, COURSE B	5.50	1.13	100.43	.07
PASS 3, COURSE A	5.50	1.19	102.93	.07
PASS 3, COURSE B	5.50	.63	106.48	.04
PASS 4, COURSE A	5.50	1.17	102.79	.07
PASS 4, COURSE B	5.50	1.22	105.40	.08
WASHBOARD COURSE	5.50	.63	86.29	.03

TAPE CHANNEL 8 : VERTICAL ACCELERATION ON LEFT OUTSIDE OF SOC

TEST	SPEED MPH	PEAK VALUE G'S	DURATION MILLISECONDS	AREA G'S-SECONDS
PASS 1, COURSE A	5.50	.91	105.23	.05
PASS 1, COURSE B	5.50	.83	116.94	.06
PASS 2, COURSE A	5.50	.91	110.54	.06
PASS 2, COURSE B	5.50	.78	121.10	.06
PASS 3, COURSE A	5.50	.96	120.32	.07
PASS 3, COURSE B	5.50	.73	120.71	.05
PASS 4, COURSE A	5.50	.95	108.67	.07
PASS 4, COURSE B	5.50	.98	117.29	.07
WASHBOARD COURSE	5.50	-.56	79.94	.03

TAPE CHANNEL 9 : VERTICAL ACCELERATION ON RIGHT TRUCK BED

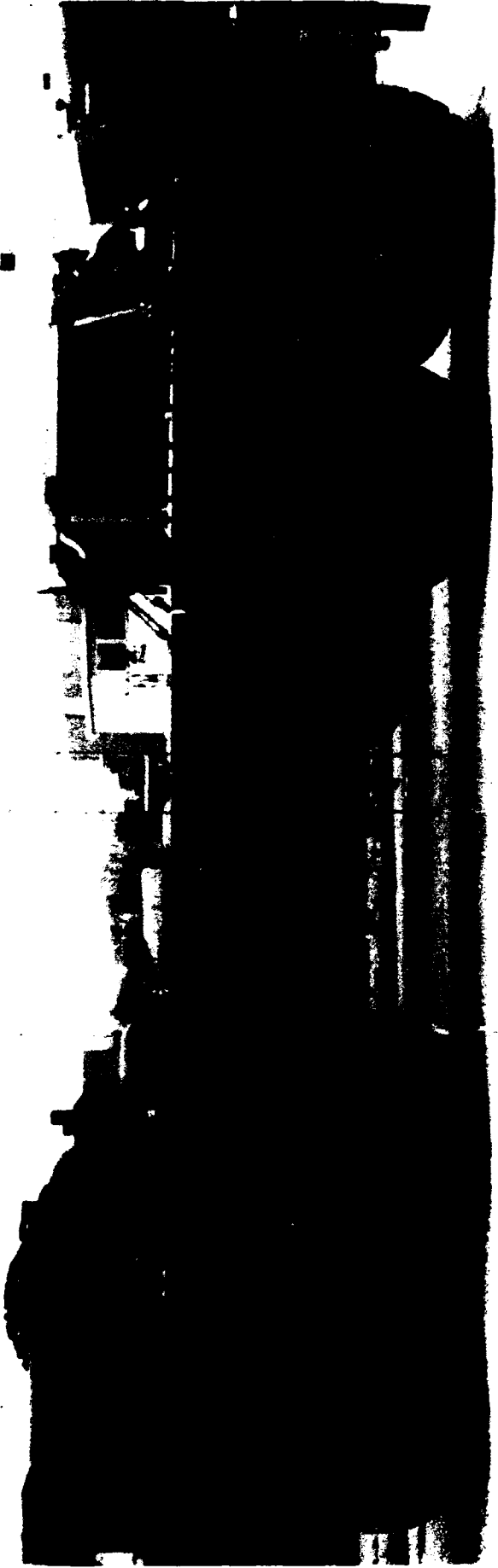
TEST	SPEED MPH	PEAK VALUE G'S	DURATION MILLISECONDS	AREA G'S-SECONDS
PASS 1, COURSE A	5.50	1.31	109.95	.08
PASS 1, COURSE B	5.50	.85	96.99	.05
PASS 2, COURSE A	5.50	1.10	101.05	.07
PASS 2, COURSE B	5.50	1.23	95.34	.07
PASS 3, COURSE A	5.50	1.29	100.80	.08
PASS 3, COURSE B	5.50	.66	106.73	.04
PASS 4, COURSE A	5.50	1.27	100.18	.07
PASS 4, COURSE B	5.50	1.33	98.09	.08
WASHBOARD COURSE	5.50	.67	85.16	.03

TAPE CHANNEL 10 : VERTICAL ACCELERATION ON LEFT TRUCK BED

TEST	SPEED MPH	PEAK VALUE G'S	DURATION MILLISECONDS	AREA G'S-SECONDS
PASS 1, COURSE A	5.50	1.03	106.06	.06
PASS 1, COURSE B	5.50	.86	115.86	.06
PASS 2, COURSE A	5.50	.96	108.27	.06
PASS 2, COURSE B	5.50	.86	126.37	.07
PASS 3, COURSE A	5.50	1.08	119.77	.08
PASS 3, COURSE B	5.50	.78	158.19	.06
PASS 4, COURSE A	5.50	1.04	108.98	.07
PASS 4, COURSE B	5.50	.99	115.92	.07
WASHBOARD COURSE	5.50	-.61	89.49	.03

NOTES:

\*\*\*\*\*: DATA NOT AVAILABLE.



DEFENSE AMMUNITION CENTER AND SCHOOL - SAVANNA, IL

Photo 27. View of the SOC without casters secured on the cargo bed of the HEMTT.



	DEFENSE AMMUNITION CENTER AND SCHOOL - SAVANNA, IL	
<p><u>Photo 28.</u> View of the SOC strapped to the cargo bed of the HEMTT.</p>		



DEFENSE AMMUNITION CENTER AND SCHOOL - SAVANNA, IL

Photo 29. View of the accelerometers mounted on the side of the SOC and the deck of the HEMTT cargo bed.

SYNOPSIS OF TEST NO. 11

In Test No. 11, the SOC on solid rubber casters was positioned laterally on the HEMTT. Casters of the SOC were unlocked and the brakes on the wheels were released.

The road hazard course was completed twice with the SOC on the HEMTT. Vertical forces were measured in the first test and lateral forces measured in the second test.

The SOC tiedown procedure secured the SOC without movement during the test.

ROAD TEST DATA

TEST NO. 11(a)

DATE: 16 Sep 86

TEST SPECIMEN: SOC on solid rubber casters secured laterally on the HEMTT.  
Vertical forces measured. Total of six web strap tiedown assemblies were used  
with one strap from each tiedown ring and two straps over the top of the SOC.

PASS 1-A OVER FIRST SERIES OF TIES            6.00 SEC            5.68 MPH

PASS 1-B OVER SECOND SERIES OF TIES        6.00 SEC            5.58 MPH

REMARKS: No movement

PASS 2-A OVER FIRST SERIES OF TIES            6.00 SEC            5.68 MPH

PASS 2-B OVER SECOND SERIES OF TIES        5.85 SEC            5.83 MPH

REMARKS: No movement

30 MILE ROAD TEST: No movement

PANIC STOP TEST: No movement

PASS 3-A OVER FIRST SERIES OF TIES            6.00 SEC            5.68 MPH

PASS 3-B OVER SECOND SERIES OF TIES        7.65 SEC            4.46 MPH

REMARKS: No movement

PASS 4-A OVER FIRST SERIES OF TIES            6.75 SEC            5.05 MPH

PASS 4-B OVER SECOND SERIES OF TIES        7.35 SEC            4.64 MPH

REMARKS: No movement

WASHBOARD COURSE: No movement

TEST 21: VERTICAL ACCELERATION FROM ROAD HAZARD TEST ON SOC  
(SOC WITH CASTERS, CROSSWISE ON HEMTT)  
DATE: 09-16-86

TAPE CHANNEL 1 : VERTICAL ACCELERATION ON #1 AFT SOC

TEST	SPEED MPH	PEAK VALUE G'S	DURATION MILLISECONDS	AREA G'S-SECONDS
PASS 1, COURSE A	5.50	1.35	81.18	.06
PASS 1, COURSE B	5.50	1.01	107.88	.07
PASS 2, COURSE A	5.50	1.32	106.56	.09
PASS 2, COURSE B	5.50	-1.00	150.32	.08
PASS 3, COURSE A	5.50	1.34	98.64	.08
PASS 3, COURSE B	5.50	1.24	141.58	.08
PASS 4, COURSE A	5.50	1.23	119.78	.07
PASS 4, COURSE B	5.50	1.07	88.25	.05
WASHBOARD COURSE	5.50	1.09	99.87	.06

TAPE CHANNEL 3 : VERTICAL ACCELERATION ON #1 FOR SOC

TEST	SPEED MPH	PEAK VALUE G'S	DURATION MILLISECONDS	AREA G'S-SECONDS
PASS 1, COURSE A	5.50	.76	98.64	.05
PASS 1, COURSE B	5.50	.66	107.85	.04
PASS 2, COURSE A	5.50	.76	98.68	.05
PASS 2, COURSE B	5.50	.63	113.79	.04
PASS 3, COURSE A	5.50	.60	103.85	.04
PASS 3, COURSE B	5.50	.67	107.52	.04
PASS 4, COURSE A	5.50	.64	102.46	.04
PASS 4, COURSE B	5.50	.56	116.32	.04
WASHBOARD COURSE	5.50	-.56	102.51	.03

TAPE CHANNEL 4 : VERTICAL ACCELERATION ON #3 FOR SOC

TEST	SPEED MPH	PEAK VALUE G'S	DURATION MILLISECONDS	AREA G'S-SECONDS
PASS 1, COURSE A	5.50	1.01	103.81	.06
PASS 1, COURSE B	5.50	.77	102.95	.04
PASS 2, COURSE A	5.50	.98	96.80	.05
PASS 2, COURSE B	5.50	.73	100.30	.04
PASS 3, COURSE A	5.50	.98	92.10	.05
PASS 3, COURSE B	5.50	.82	141.95	.05
PASS 4, COURSE A	5.50	.89	100.67	.05
PASS 4, COURSE B	5.50	.71	81.01	.03
WASHBOARD COURSE	5.50	.92	89.20	.05

TAPE CHANNEL 5 : VERTICAL ACCELERATION ON #3 FOR SOC

TEST	SPEED MPH	PEAK VALUE G'S	DURATION MILLISECONDS	AREA G'S-SECONDS
PASS 1, COURSE A	5.50	1.16	97.55	.07
PASS 1, COURSE B	5.50	.91	105.21	.06
PASS 2, COURSE A	5.50	1.14	97.59	.07
PASS 2, COURSE B	5.50	.88	109.60	.06
PASS 3, COURSE A	5.50	.91	92.60	.05
PASS 3, COURSE B	5.50	.97	104.52	.06
PASS 4, COURSE A	5.50	.94	101.73	.06
PASS 4, COURSE B	5.50	.85	115.84	.06
WASHBOARD COURSE	5.50	.84	100.45	.05

TAPE CHANNEL 6 : VERTICAL ACCELERATION ON UNDERSIDE OF SOC

TEST	SPEED MPH	PEAK VALUE G'S	DURATION MILLISECONDS	AREA G'S-SECONDS
PASS 1, COURSE A	5.50	-1.25	97.55	.08
PASS 1, COURSE B	5.50	-1.03	101.50	.06
PASS 2, COURSE A	5.50	-1.23	99.17	.08
PASS 2, COURSE B	5.50	-.98	106.34	.06
PASS 3, COURSE A	5.50	-.95	91.28	.05
PASS 3, COURSE B	5.50	-1.07	105.56	.07
PASS 4, COURSE A	5.50	-1.03	102.19	.07
PASS 4, COURSE B	5.50	-.92	115.27	.06
WASHBOARD COURSE	5.50	-.90	102.33	.06

TAPE CHANNEL 7 : VERTICAL ACCELERATION ON FORWARD SIDE OF SOC

TEST	SPEED MPH	PEAK VALUE G'S	DURATION MILLISECONDS	AREA G'S-SECONDS
PASS 1, COURSE A	5.50	1.01	100.93	.06
PASS 1, COURSE B	5.50	-.78	99.19	.05
PASS 2, COURSE A	5.50	1.02	99.54	.06
PASS 2, COURSE B	5.50	.74	99.90	.04
PASS 3, COURSE A	5.50	.97	101.07	.06
PASS 3, COURSE B	5.50	.84	112.72	.06
PASS 4, COURSE A	5.50	.88	101.23	.05
PASS 4, COURSE B	5.50	.69	85.88	.03
WASHBOARD COURSE	5.50	.92	91.20	.05

TAPE CHANNEL 8 : VERTICAL ACCELERATION ON AFT SIDE OF SOC

TEST	SPEED MPH	PEAK VALUE G'S	DURATION MILLISECONDS	AREA G'S-SECONDS
PASS 1, COURSE A	5.50	1.12	104.19	.07
PASS 1, COURSE B	5.50	1.04	116.44	.07
PASS 2, COURSE A	5.50	1.09	104.70	.07
PASS 2, COURSE B	5.50	.91	108.92	.06
PASS 3, COURSE A	5.50	.92	100.17	.05
PASS 3, COURSE B	5.50	1.01	115.42	.07
PASS 4, COURSE A	5.50	1.07	113.45	.08
PASS 4, COURSE B	5.50	1.01	151.00	.09
WASHBOARD COURSE	5.50	-.81	95.06	.05

TAPE CHANNEL 9 : VERTICAL ACCELERATION ON RIGHT TRUCK BED

TEST	SPEED MPH	PEAK VALUE G'S	DURATION MILLISECONDS	AREA G'S-SECONDS
PASS 1, COURSE A	5.50	.98	100.31	.06
PASS 1, COURSE B	5.50	-.72	105.96	.04
PASS 2, COURSE A	5.50	.98	95.81	.05
PASS 2, COURSE B	5.50	-.69	107.68	.04
PASS 3, COURSE A	5.50	.96	103.25	.06
PASS 3, COURSE B	5.50	.80	109.64	.05
PASS 4, COURSE A	5.50	-.84	125.52	.06
PASS 4, COURSE B	5.50	.61	130.70	.05
WASHBOARD COURSE	5.50	.82	94.88	.05

TAPE CHANNEL 10 : VERTICAL ACCELERATION ON LEFT TRUCK BED

TEST	SPEED MPH	PEAK VALUE G'S	DURATION MILLISECONDS	AREA G'S-SECONDS
PASS 1, COURSE A	5.50	1.09	96.02	.06
PASS 1, COURSE B	5.50	1.03	116.77	.07
PASS 2, COURSE A	5.50	1.15	105.12	.07
PASS 2, COURSE B	5.50	1.02	117.85	.07
PASS 3, COURSE A	5.50	.97	99.99	.06
PASS 3, COURSE B	5.50	1.01	120.00	.07
PASS 4, COURSE A	5.50	1.02	107.45	.07
PASS 4, COURSE B	5.50	.88	124.96	.06
WASHBOARD COURSE	5.50	-.85	103.76	.05

ROAD TEST DATA

TEST NO. 11(b)

DATE: 16 Sep 86

TEST SPECIMEN: Same as Test No. 11(a) except lateral forces measured.

PASS 1-A OVER FIRST SERIES OF TIES      6.00 SEC      5.68 MPH

PASS 1-B OVER SECOND SERIES OF TIES      6.00 SEC      5.68 MPH

REMARKS: No movement

PASS 2-A OVER FIRST SERIES OF TIES      6.00 SEC      5.68 MPH

PASS 2-B OVER SECOND SERIES OF TIES      6.00 SEC      5.68 MPH

REMARKS: No movement

30 MILE ROAD TEST: Omitted

PANIC STOP TEST: Omitted

PASS 3-A OVER FIRST SERIES OF TIES      5.85 SEC      5.83 MPH

PASS 3-B OVER SECOND SERIES OF TIES      5.85 SEC      5.83 MPH

REMARKS: No movement

PASS 4-A OVER FIRST SERIES OF TIES      5.85 SEC      5.83 MPH

PASS 4-B OVER SECOND SERIES OF TIES      5.85 SEC      5.83 MPH

REMARKS: No movement

WASHBOARD COURSE

TEST 22: LATERAL ACCELERATION FROM ROAD HAZARD TEST ON SOC  
(SOC ON CASTERS, CROSSWISE ON HEMTT)  
DATE: 09-17-86

TAPE CHANNEL 1 : LATERAL ACCELERATION ON #1 AFT SOC

TEST	SPEED MPH	PEAK VALUE G'S	DURATION MILLISECONDS	AREA G'S-SECONDS
PASS 1, COURSE A	5.50	-1.00	100.29	.06
PASS 1, COURSE B	5.50	-.83	139.34	.07
PASS 2, COURSE A	5.50	-.98	99.69	.06
PASS 2, COURSE B	5.50	-.79	137.49	.07
PASS 3, COURSE A	5.50	-1.04	104.41	.07
PASS 3, COURSE B	5.50	-.78	153.58	.07
PASS 4, COURSE A	5.50	-1.02	97.82	.06
PASS 4, COURSE B	5.50	-.79	137.29	.06
WASHBOARD COURSE	5.50	-.49	65.53	.02

TAPE CHANNEL 3 : LATERAL ACCELERATION ON #1 FOR SOC

TEST	SPEED MPH	PEAK VALUE G'S	DURATION MILLISECONDS	AREA G'S-SECONDS
PASS 1, COURSE A	5.50	1.49	101.14	.09
PASS 1, COURSE B	5.50	1.05	162.00	.11
PASS 2, COURSE A	5.50	1.43	102.09	.09
PASS 2, COURSE B	5.50	1.01	161.68	.11
PASS 3, COURSE A	5.50	1.53	103.92	.10
PASS 3, COURSE B	5.50	.99	172.47	.11
PASS 4, COURSE A	5.50	1.51	98.80	.09
PASS 4, COURSE B	5.50	1.03	158.21	.10
WASHBOARD COURSE	5.50	.70	68.14	.03

TAPE CHANNEL 4 : LATERAL ACCELERATION ON #3 AFT SOC

TEST	SPEED MPH	PEAK VALUE G'S	DURATION MILLISECONDS	AREA G'S-SECONDS
PASS 1, COURSE A	5.50	1.09	98.85	.07
PASS 1, COURSE B	5.50	-.63	196.44	.03
PASS 2, COURSE A	5.50	1.07	92.48	.06
PASS 2, COURSE B	5.50	.62	84.35	.03
PASS 3, COURSE A	5.50	1.17	103.67	.07
PASS 3, COURSE B	5.50	.65	83.97	.03
PASS 4, COURSE A	5.50	1.15	102.41	.07
PASS 4, COURSE B	5.50	.67	99.45	.04
WASHBOARD COURSE	5.50	.48	66.20	.02

TAPE CHANNEL 5 : LATERAL ACCELERATION ON #3 FOR SOC

TEST	SPEED MPH	PEAK VALUE G'S	DURATION MILLISECONDS	AREA G'S-SECONDS
PASS 1, COURSE A	5.50	-.88	96.66	.05
PASS 1, COURSE B	5.50	-.51	193.15	.06
PASS 2, COURSE A	5.50	-.88	98.42	.05
PASS 2, COURSE B	5.50	.51	144.65	.04
PASS 3, COURSE A	5.50	-.93	101.81	.06
PASS 3, COURSE B	5.50	-.53	84.60	.03
PASS 4, COURSE A	5.50	-.89	96.24	.05
PASS 4, COURSE B	5.50	.52	151.34	.04
WASHBOARD COURSE	5.50	-.41	64.57	.02

TAPE CHANNEL 6 : LATERAL ACCELERATION ON UNDERSIDE OF SOC

TEST	SPEED MPH	PEAK VALUE G'S	DURATION MILLISECONDS	AREA G'S-SECONDS
PASS 1, COURSE A	5.50	-.91	91.36	.05
PASS 1, COURSE B	5.50	-.57	167.99	.06
PASS 2, COURSE A	5.50	-.89	92.01	.05
PASS 2, COURSE B	5.50	-.56	168.51	.06
PASS 3, COURSE A	5.50	-.94	94.46	.05
PASS 3, COURSE B	5.50	-.56	83.67	.03
PASS 4, COURSE A	5.50	-.93	89.80	.05
PASS 4, COURSE B	5.50	.57	130.57	.05
WASHBOARD COURSE	5.50	-.44	62.41	.01

TAPE CHANNEL 7 : LATERAL ACCELERATION ON FORWARD SIDE OF SOC

TEST	SPEED MPH	PEAK VALUE G'S	DURATION MILLISECONDS	AREA G'S-SECONDS
PASS 1, COURSE A	5.50	.44	78.15	.02
PASS 1, COURSE B	5.50	-.48	78.81	.02
PASS 2, COURSE A	5.50	.45	98.03	.03
PASS 2, COURSE B	5.50	-.54	113.75	.04
PASS 3, COURSE A	5.50	.44	102.42	.03
PASS 3, COURSE B	5.50	-.48	82.33	.02
PASS 4, COURSE A	5.50	.46	98.74	.03
PASS 4, COURSE B	5.50	-.51	88.16	.03
WASHBOARD COURSE	5.50	.47	80.50	.02

TAPE CHANNEL 8 : LATERAL ACCELERATION ON AFT SIDE OF SOC

TEST	SPEED MPH	PEAK VALUE G'S	DURATION MILLISECONDS	AREA G'S-SECONDS
PASS 1, COURSE A	5.50	-.63	128.06	.05
PASS 1, COURSE B	5.50	-.63	143.95	.05
PASS 2, COURSE A	5.50	-.63	97.94	.04
PASS 2, COURSE B	5.50	-.61	140.51	.05
PASS 3, COURSE A	5.50	-.63	103.79	.04
PASS 3, COURSE B	5.50	-.57	148.89	.05
PASS 4, COURSE A	5.50	-.70	103.90	.05
PASS 4, COURSE B	5.50	-.57	143.45	.05
WASHBOARD COURSE	5.50	-.31	65.33	.01

TAPE CHANNEL 9 : LATERAL ACCELERATION ON RIGHT TRUCK BED

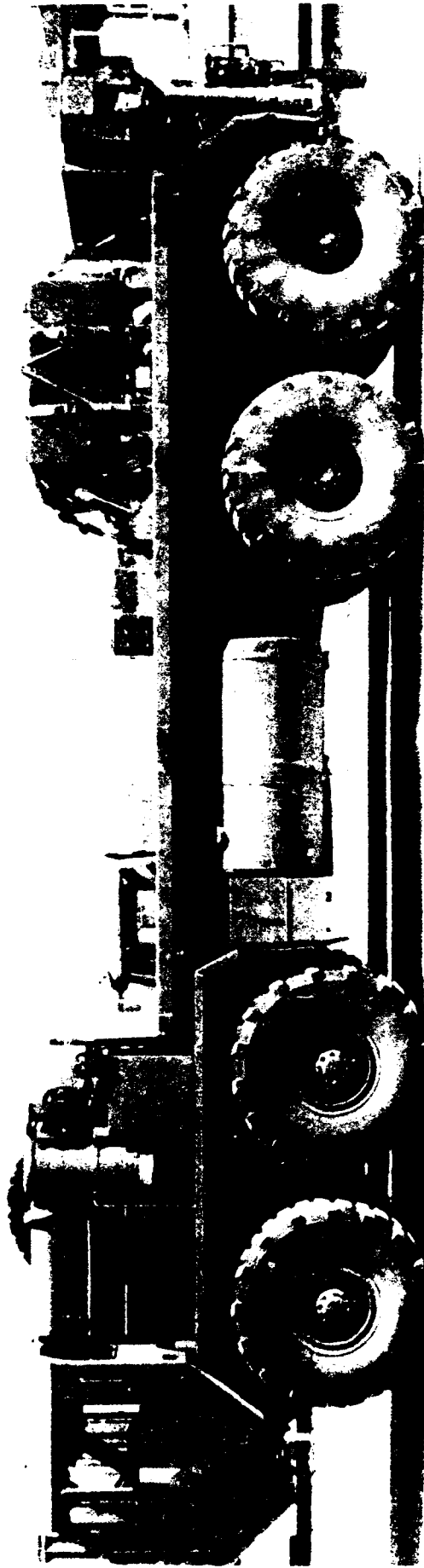
TEST	SPEED MPH	PEAK VALUE G'S	DURATION MILLISECONDS	AREA G'S-SECONDS
PASS 1, COURSE A	5.50	-.47	228.07	.05
PASS 1, COURSE B	5.50	.44	103.64	.03
PASS 2, COURSE A	5.50	-.48	181.83	.06
PASS 2, COURSE B	5.50	.46	106.01	.03
PASS 3, COURSE A	5.50	-.50	163.97	.05
PASS 3, COURSE B	5.50	.45	119.02	.03
PASS 4, COURSE A	5.50	*****	*****	*****
PASS 4, COURSE B	5.50	.46	109.07	.03
WASHBOARD COURSE	5.50	-.14	84.57	.01

TAPE CHANNEL 10 : LATERAL ACCELERATION ON LEFT TRUCK BED

TEST	SPEED MPH	PEAK VALUE G'S	DURATION MILLISECONDS	AREA G'S-SECONDS
PASS 1, COURSE A	5.50	.47	171.68	.05
PASS 1, COURSE B	5.50	.42	351.28	.03
PASS 2, COURSE A	5.50	.47	192.78	.05
PASS 2, COURSE B	5.50	.44	326.03	.03
PASS 3, COURSE A	5.50	.47	190.14	.05
PASS 3, COURSE B	5.50	.42	470.52	.05
PASS 4, COURSE A	5.50	.46	183.60	.05
PASS 4, COURSE B	5.50	.43	391.14	.04
WASHBOARD COURSE	5.50	.12	99.73	.01

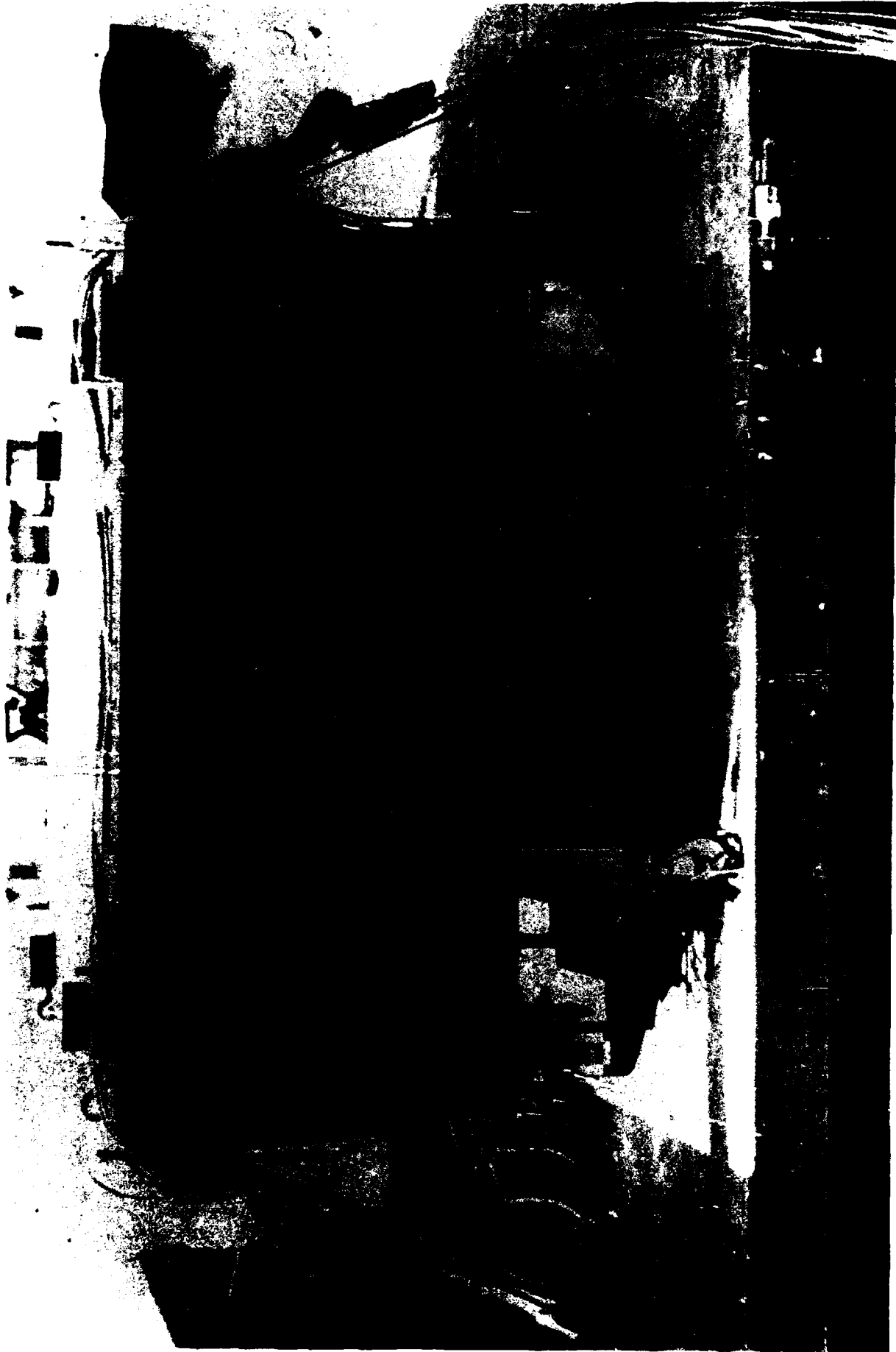
NOTES:

\*\*\*\*\*: DATA NOT AVAILABLE.



DEFENSE AMMUNITION CENTER AND SCHOOL - SAVANNA, IL

Photo 30. View of the SOC on solid rubber casters positioned crosswise on the HEMTT.



DEFENSE AMMUNITION CENTER AND SCHOOL - SAVANNA, IL

Photo 31. View of the SOC secured to the cargo bed of the HEMTT.



DEFENSE AMMUNITION CENTER AND SCHOOL - SAVANNA, IL

Photo 32. View of the accelerometers mounted to the side of the S0C and the deck of the HEMTT cargo bed.

SYNOPSIS OF TEST NO. 12

In Test No. 12, the casters were removed from the SOC. The SOC was positioned crosswise on the HEMTT and secured with a single web strap tie-down assembly from each of four tiedown/lift rings. An additional two web strap tiedown assemblies were used over the top of the SOC.

The SOC completed the road hazard course twice for the purpose of accumulating instrumentation data. In the first complete road test, lateral forces were measured, and during the second complete test, vertical forces were measured.

The SOC did not move during the two tests. The tiedown procedure passed the USADACS road hazard course.

ROAD TEST DATA

TEST NO. 12(a)

DATE: 16 Sep 86

TEST SPECIMEN: SOC with casters removed secured laterally on the HEMTT. Lateral forces measured. Total six web strap tiedown assemblies used with one strap from each tiedown ring and two straps over the top of the SOC.

PASS 1-A OVER FIRST SERIES OF TIES            5.85 SEC                            5.83 MPH

PASS 1-B OVER SECOND SERIES OF TIES        5.85 SEC                            5.83 MPH

REMARKS: No movement

PASS 2-A OVER FIRST SERIES OF TIES        6.00 SEC                            5.68 MPH

PASS 2-B OVER SECOND SERIES OF TIES       6.00 SEC                            5.68 MPH

REMARKS: No movement

30 MILE ROAD TEST: No movement

PANIC STOP TEST: No movement

PASS 3-A OVER FIRST SERIES OF TIES        6.00 SEC                            5.68 MPH

PASS 3-B OVER SECOND SERIES OF TIES       5.85 SEC                            5.83 MPH

REMARKS: No movement

PASS 4-A OVER FIRST SERIES OF TIES        5.85 SEC                            5.83 MPH

PASS 4-B OVER SECOND SERIES OF TIES       6.15 SEC                            5.54 MPH

REMARKS: No movement

WASHBOARD COURSE: No movement

TEST 23: LATERAL ACCELERATION FROM ROAD HAZARD TEST ON SOC  
(SOC WITHOUT CASTERS, CROSSWISE ON HEMTT)

DATE: 09-17-86

TAPE CHANNEL 1 : LATERAL ACCELERATION ON #1 AFT SOC

TEST	SPEED MPH	PEAK VALUE G'S	DURATION MILLISECONDS	AREA G'S-SECONDS
PASS 1, COURSE A	5.50	-.67	129.79	.06
PASS 1, COURSE B	5.50	-.62	286.88	.06
PASS 2, COURSE A	5.50	-.68	156.67	.07
PASS 2, COURSE B	5.50	-.60	209.64	.07
PASS 3, COURSE A	5.50	-.66	152.66	.07
PASS 3, COURSE B	5.50	-.60	444.27	.06
PASS 4, COURSE A	5.50	-.68	157.16	.08
PASS 4, COURSE B	5.50	-.59	153.04	.06
WASHBOARD COURSE	5.50	.26	61.70	.01

TAPE CHANNEL 3 : LATERAL ACCELERATION ON #1 FOR SOC

TEST	SPEED MPH	PEAK VALUE G'S	DURATION MILLISECONDS	AREA G'S-SECONDS
PASS 1, COURSE A	5.50	-.94	115.60	.06
PASS 1, COURSE B	5.50	.85	250.95	.09
PASS 2, COURSE A	5.50	.98	155.83	.10
PASS 2, COURSE B	5.50	.84	260.81	.09
PASS 3, COURSE A	5.50	.94	135.56	.10
PASS 3, COURSE B	5.50	.80	583.66	.10
PASS 4, COURSE A	5.50	.96	148.75	.11
PASS 4, COURSE B	5.50	.81	202.80	.11
WASHBOARD COURSE	5.50	-.37	63.50	.01

TAPE CHANNEL 4 : LATERAL ACCELERATION ON #3 AFT SOC

TEST	SPEED MPH	PEAK VALUE G'S	DURATION MILLISECONDS	AREA G'S-SECONDS
PASS 1, COURSE A	5.50	.60	107.96	.05
PASS 1, COURSE B	5.50	.54	188.50	.06
PASS 2, COURSE A	5.50	.62	157.80	.06
PASS 2, COURSE B	5.50	.52	199.30	.05
PASS 3, COURSE A	5.50	.91	113.68	.08
PASS 3, COURSE B	5.50	.57	79.29	.03
PASS 4, COURSE A	5.50	.84	117.38	.08
PASS 4, COURSE B	5.50	.72	255.75	.10
WASHBOARD COURSE	5.50	-.36	75.23	.02

TAPE CHANNEL 5 : LATERAL ACCELERATION ON #3 FOR SOC

TEST	SPEED MPH	PEAK VALUE G'S	DURATION MILLISECONDS	AREA G'S-SECONDS
PASS 1, COURSE A	5.50	.52	130.29	.04
PASS 1, COURSE B	5.50	-.44	205.12	.05
PASS 2, COURSE A	5.50	-.51	153.99	.05
PASS 2, COURSE B	5.50	-.43	228.35	.05
PASS 3, COURSE A	5.50	.53	164.31	.05
PASS 3, COURSE B	5.50	.53	232.20	.07
PASS 4, COURSE A	5.50	.56	132.45	.05
PASS 4, COURSE B	5.50	.47	241.12	.05
WASHBOARD COURSE	5.50	.24	65.50	.01

TAPE CHANNEL 6 : LATERAL ACCELERATION ON UNDERSIDE OF SOC

TEST	SPEED MPH	PEAK VALUE G'S	DURATION MILLISECONDS	AREA G'S-SECONDS
PASS 1, COURSE A	5.50	.53	121.78	.04
PASS 1, COURSE B	5.50	-.47	248.15	.05
PASS 2, COURSE A	5.50	-.54	152.19	.05
PASS 2, COURSE B	5.50	-.45	172.02	.05
PASS 3, COURSE A	5.50	.48	139.69	.04
PASS 3, COURSE B	5.50	.44	176.33	.05
PASS 4, COURSE A	5.50	.51	117.68	.04
PASS 4, COURSE B	5.50	-.44	150.72	.05
WASHBOARD COURSE	5.50	.20	57.46	.01

TAPE CHANNEL 7 : LATERAL ACCELERATION ON FORWARD SIDE OF SOC

TEST	SPEED MPH	PEAK VALUE G'S	DURATION MILLISECONDS	AREA G'S-SECONDS
PASS 1, COURSE A	5.50	.32	167.78	.02
PASS 1, COURSE B	5.50	-.28	115.22	.02
PASS 2, COURSE A	5.50	.29	141.82	.02
PASS 2, COURSE B	5.50	-.29	93.19	.02
PASS 3, COURSE A	5.50	.28	169.12	.02
PASS 3, COURSE B	5.50	-.27	94.88	.01
PASS 4, COURSE A	5.50	.35	229.12	.03
PASS 4, COURSE B	5.50	.40	231.50	.05
WASHBOARD COURSE	5.50	.16	82.70	.01

TAPE CHANNEL 8 : LATERAL ACCELERATION ON AFT SIDE OF SOC

TEST	SPEED MPH	PEAK VALUE G'S	DURATION MILLISECONDS	AREA G'S-SECONDS
PASS 1, COURSE A	5.50	.47	124.96	.04
PASS 1, COURSE B	5.50	-.46	197.15	.06
PASS 2, COURSE A	5.50	.51	331.69	.05
PASS 2, COURSE B	5.50	.45	222.38	.05
PASS 3, COURSE A	5.50	-.52	181.76	.06
PASS 3, COURSE B	5.50	-.54	196.56	.07
PASS 4, COURSE A	5.50	.59	185.32	.06
PASS 4, COURSE B	5.50	.48	414.96	.07
WASHBOARD COURSE	5.50	.28	79.85	.01

TAPE CHANNEL 9 : LATERAL ACCELERATION ON RIGHT TRUCK BED

TEST	SPEED MPH	PEAK VALUE G'S	DURATION MILLISECONDS	AREA G'S-SECONDS
PASS 1, COURSE A	5.50	.52	121.18	.04
PASS 1, COURSE B	5.50	.47	139.21	.04
PASS 2, COURSE A	5.50	-.49	167.55	.05
PASS 2, COURSE B	5.50	-.46	140.66	.04
PASS 3, COURSE A	5.50	-.51	178.92	.06
PASS 3, COURSE B	5.50	-.45	289.20	.05
PASS 4, COURSE A	5.50	.49	122.17	.04
PASS 4, COURSE B	5.50	.46	133.94	.04
WASHBOARD COURSE	5.50	.19	66.07	.01

TAPE CHANNEL 10 : LATERAL ACCELERATION ON LEFT TRUCK BED

TEST	SPEED MPH	PEAK VALUE G'S	DURATION MILLISECONDS	AREA G'S-SECONDS
PASS 1, COURSE A	5.50	.48	182.37	.05
PASS 1, COURSE B	5.50	.44	199.42	.06
PASS 2, COURSE A	5.50	.50	196.43	.05
PASS 2, COURSE B	5.50	.44	214.25	.06
PASS 3, COURSE A	5.50	.55	207.49	.06
PASS 3, COURSE B	5.50	*****	*****	*****
PASS 4, COURSE A	5.50	.53	199.10	.07
PASS 4, COURSE B	5.50	.48	676.44	.05
WASHBOARD COURSE	5.50	-.17	68.91	.01

NOTES:

\*\*\*\*\*: DATA NOT AVAILABLE.

ROAD TEST DATA

TEST NO. 12(b)

DATE: 18 Sep 86

TEST SPECIMEN: Same as Test No. 12(a) except vertical forces measured.

PASS 1-A OVER FIRST SERIES OF TIES 5.40 SEC 6.31 MPH

PASS 1-B OVER SECOND SERIES OF TIES 6.60 SEC 5.17 MPH

REMARKS: No movement

PASS 2-A OVER FIRST SERIES OF TIES 5.85 SEC 5.83 MPH

PASS 2-B OVER SECOND SERIES OF TIES 6.00 SEC 5.68 MPH

REMARKS: No movement

30 MILE ROAD TEST: Omitted

PANIC STOP TEST: Omitted

PASS 3-A OVER FIRST SERIES OF TIES 5.55 SEC 6.14 MPH

PASS 3-B OVER SECOND SERIES OF TIES 6.00 SEC 5.68 MPH

REMARKS: No movement

PASS 4-A OVER FIRST SERIES OF TIES 6.60 SEC 5.17 MPH

PASS 4-B OVER SECOND SERIES OF TIES 6.00 SEC 5.68 MPH

REMARKS: No movement

WASHBOARD COURSE: No movement

TEST 24: VERTICAL ACCELERATION FROM ROAD HAZARD TEST ON SOC  
(SOC WITHOUT CASTERS, CROSSWISE ON HEMTT)

DATE: 09-18-86

TAPE CHANNEL 1 : VERTICAL ACCELERATION ON #1 AFT SOC

TEST	SPEED MPH	PEAK VALUE G'S	DURATION MILLISECONDS	AREA G'S-SECONDS
PASS 1, COURSE A	5.50	1.31	110.49	.10
PASS 1, COURSE B	5.50	1.31	120.71	.09
PASS 2, COURSE A	5.50	-1.31	123.72	.10
PASS 2, COURSE B	5.50	1.46	122.46	.10
PASS 3, COURSE A	5.50	-1.29	122.85	.10
PASS 3, COURSE B	5.50	1.22	106.04	.07
PASS 4, COURSE A	5.50	1.26	110.98	.09
PASS 4, COURSE B	5.50	1.20	105.58	.07
WASHBOARD COURSE	5.50	.68	67.48	.03

TAPE CHANNEL 3 : VERTICAL ACCELERATION ON #1 FOR SOC

TEST	SPEED MPH	PEAK VALUE G'S	DURATION MILLISECONDS	AREA G'S-SECONDS
PASS 1, COURSE A	5.50	.82	107.25	.05
PASS 1, COURSE B	5.50	.69	128.92	.05
PASS 2, COURSE A	5.50	.76	106.28	.05
PASS 2, COURSE B	5.50	.69	113.67	.05
PASS 3, COURSE A	5.50	.73	105.45	.05
PASS 3, COURSE B	5.50	.66	122.98	.05
PASS 4, COURSE A	5.50	.76	96.17	.04
PASS 4, COURSE B	5.50	.62	120.81	.04
WASHBOARD COURSE	5.50	.40	85.93	.02

TAPE CHANNEL 4 : VERTICAL ACCELERATION ON #3 AFT SOC

TEST	SPEED MPH	PEAK VALUE G'S	DURATION MILLISECONDS	AREA G'S-SECONDS
PASS 1, COURSE A	5.50	-1.02	112.29	.07
PASS 1, COURSE B	5.50	.84	118.33	.06
PASS 2, COURSE A	5.50	-1.05	116.26	.07
PASS 2, COURSE B	5.50	.82	113.07	.05
PASS 3, COURSE A	5.50	-1.04	113.87	.07
PASS 3, COURSE B	5.50	-.81	135.27	.07
PASS 4, COURSE A	5.50	-1.01	114.93	.07
PASS 4, COURSE B	5.50	-.81	104.92	.05
WASHBOARD COURSE	5.50	.54	66.44	.02

TAPE CHANNEL 5 : VERTICAL ACCELERATION ON #3 FOR SOC

TEST	SPEED MPH	PEAK VALUE G'S	DURATION MILLISECONDS	AREA G'S-SECONDS
PASS 1, COURSE A	5.50	1.25	105.17	.08
PASS 1, COURSE B	5.50	.99	123.53	.07
PASS 2, COURSE A	5.50	1.14	105.03	.07
PASS 2, COURSE B	5.50	1.01	110.63	.07
PASS 3, COURSE A	5.50	1.09	104.47	.07
PASS 3, COURSE B	5.50	.97	117.50	.07
PASS 4, COURSE A	5.50	1.15	104.84	.07
PASS 4, COURSE B	5.50	.94	111.27	.06
WASHBOARD COURSE	5.50	.60	85.73	.03

TAPE CHANNEL 6 : VERTICAL ACCELERATION ON UNDERSIDE OF SOC

TEST	SPEED MPH	PEAK VALUE G'S	DURATION MILLISECONDS	AREA G'S-SECONDS
PASS 1, COURSE A	5.50	-1.29	103.88	.08
PASS 1, COURSE B	5.50	-1.03	122.76	.07
PASS 2, COURSE A	5.50	-1.16	103.48	.07
PASS 2, COURSE B	5.50	-1.05	110.13	.07
PASS 3, COURSE A	5.50	-1.00	103.76	.06
PASS 3, COURSE B	5.50	-.91	116.70	.06
PASS 4, COURSE A	5.50	-.97	104.14	.06
PASS 4, COURSE B	5.50	-.79	112.23	.05
WASHBOARD COURSE	5.50	-.53	87.42	.03

TAPE CHANNEL 7 : VERTICAL ACCELERATION ON FORWARD SIDE OF SOC

TEST	SPEED MPH	PEAK VALUE G'S	DURATION MILLISECONDS	AREA G'S-SECONDS
PASS 1, COURSE A	5.50	-1.08	112.13	.07
PASS 1, COURSE B	5.50	.93	124.59	.07
PASS 2, COURSE A	5.50	-1.11	115.41	.08
PASS 2, COURSE B	5.50	.89	118.49	.06
PASS 3, COURSE A	5.50	-1.10	113.82	.08
PASS 3, COURSE B	5.50	-.81	146.96	.07
PASS 4, COURSE A	5.50	-1.08	113.68	.07
PASS 4, COURSE B	5.50	-.86	110.10	.06
WASHBOARD COURSE	5.50	-.47	76.96	.02

TAPE CHANNEL 8 : VERTICAL ACCELERATION ON AFT SIDE OF SOC

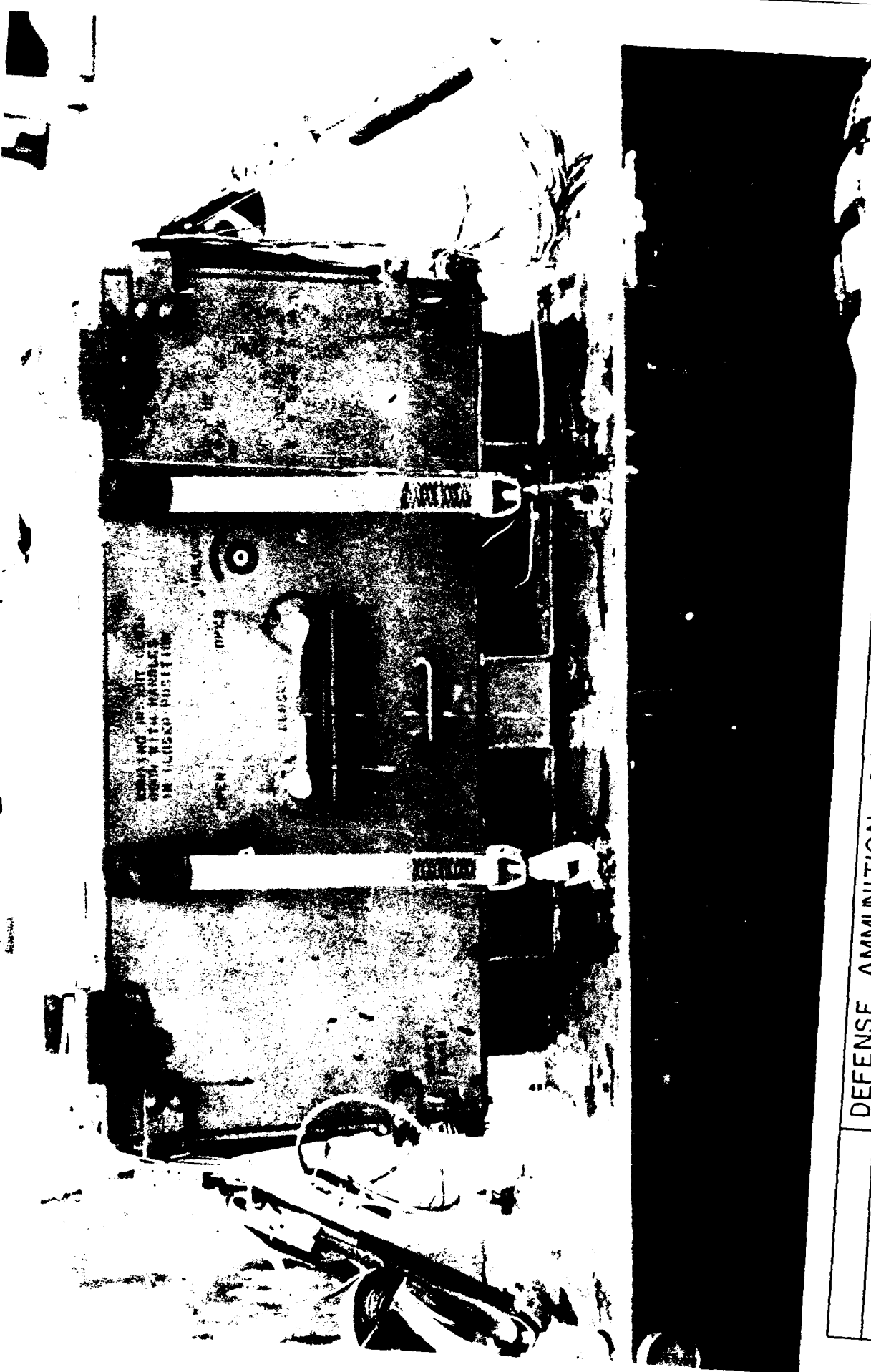
TEST	SPEED MPH	PEAK VALUE G'S	DURATION MILLISECONDS	AREA G'S-SECONDS
PASS 1, COURSE A	5.50	1.21	107.95	.08
PASS 1, COURSE B	5.50	1.07	127.63	.08
PASS 2, COURSE A	5.50	1.13	108.03	.08
PASS 2, COURSE B	5.50	1.08	117.71	.08
PASS 3, COURSE A	5.50	1.08	107.44	.07
PASS 3, COURSE B	5.50	.99	122.38	.07
PASS 4, COURSE A	5.50	1.12	106.19	.07
PASS 4, COURSE B	5.50	.98	144.86	.07
WASHBOARD COURSE	5.50	.59	88.43	.03

TAPE CHANNEL 9 : VERTICAL ACCELERATION ON RIGHT TRUCK BED

TEST	SPEED MPH	PEAK VALUE G'S	DURATION MILLISECONDS	AREA G'S-SECONDS
PASS 1, COURSE A	5.50	-1.05	111.45	.07
PASS 1, COURSE B	5.50	.86	128.17	.06
PASS 2, COURSE A	5.50	-1.07	116.04	.08
PASS 2, COURSE B	5.50	.79	119.84	.05
PASS 3, COURSE A	5.50	-1.07	113.42	.07
PASS 3, COURSE B	5.50	-.80	111.40	.05
PASS 4, COURSE A	5.50	-1.05	115.40	.07
PASS 4, COURSE B	5.50	-.84	109.97	.06
WASHBOARD COURSE	5.50	-.49	78.73	.02

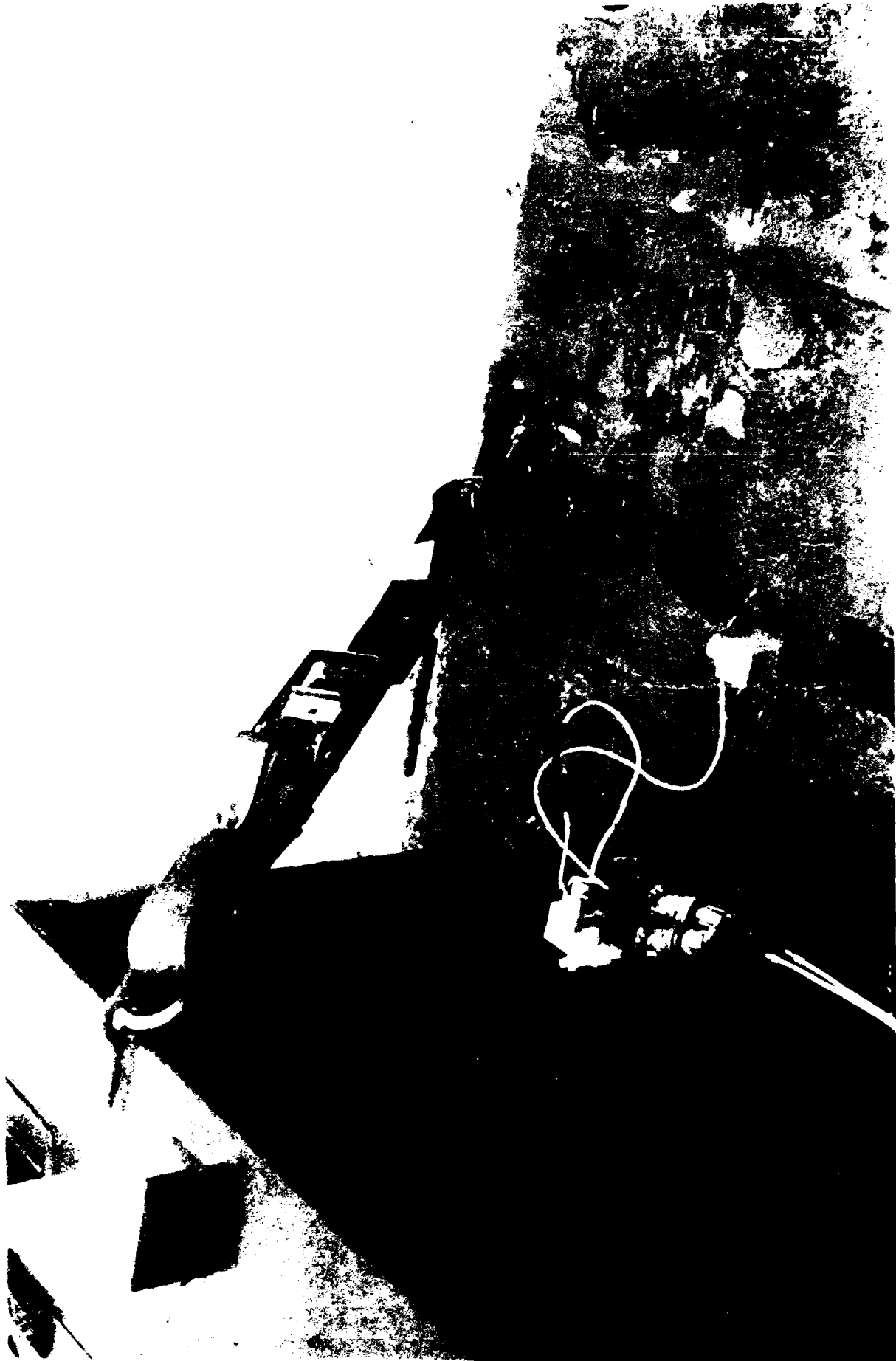
TAPE CHANNEL 10 : VERTICAL ACCELERATION ON LEFT TRUCK BED

TEST	SPEED MPH	PEAK VALUE G'S	DURATION MILLISECONDS	AREA G'S-SECONDS
PASS 1, COURSE A	5.50	1.28	109.64	.09
PASS 1, COURSE B	5.50	1.13	130.30	.09
PASS 2, COURSE A	5.50	1.19	108.20	.08
PASS 2, COURSE B	5.50	1.15	118.37	.09
PASS 3, COURSE A	5.50	1.14	107.72	.08
PASS 3, COURSE B	5.50	1.06	123.20	.08
PASS 4, COURSE A	5.50	1.21	108.74	.08
PASS 4, COURSE B	5.50	1.02	126.20	.08
WASHBOARD COURSE	5.50	.59	87.47	.03



DEFENSE AMMUNITION CENTER AND SCHOOL - SAVANNA, IL

Photo 33. View of the SOC secured to the cargo bed of the HEMTT



DEFENSE AMMUNITION CENTER AND SCHOOL - SAVANNA, IL

Photo 34. View of the accelerometers mounted on the side of the SOC and on the cargo bed of the HEMTT.

### SYNOPSIS OF TEST NO. 13

In Test No. 13, polyurethane and phenolic casters on the SOC were tested over the road hazard course with the SOC secured to the M923 5-ton cargo truck. The SOC was secured longitudinally and laterally with single web strap tiedown assembly from each of four tiedown/lift rings. An additional two web strap tiedown assemblies were used over the top of the SOC.

Accelerometers were not mounted on the interior of the SOC for this test. Triaxial accelerometers were affixed on the SOC exterior at diagonally opposite corners and under the SOC floor. Instrumentation data from the three dimensions were recorded simultaneously from the three locations.

Although movement of the SOC occurred during each test, the tiedown method continued to restrain the SOC.

ROAD TEST DATA

TEST NO. 13(a)

DATE: 15 Dec 86

TEST SPECIMEN: SOC on polyurethane casters secured longitudinally on the M923 5-ton cargo truck. Triaxial accelerometers affixed to the exterior of the SOC.

PASS 1-A OVER FIRST SERIES OF TIES      6.60 SEC      5.17 MPH

PASS 1-B OVER SECOND SERIES OF TIES      6.60 SEC      5.17 MPH

REMARKS: No movement

PASS 2-A OVER FIRST SERIES OF TIES      6.90 SEC      4.94 MPH

PASS 2-B OVER SECOND SERIES OF TIES      6.60 SEC      5.17 MPH

REMARKS: No movement

30 MILE ROAD TEST: Omitted

PANIC STOP TEST: Omitted

PASS 3-A OVER FIRST SERIES OF TIES      6.90 SEC      4.94 MPH

PASS 3-B OVER SECOND SERIES OF TIES      6.60 SEC      5.17 MPH

REMARKS: Rear of SOC moved 2 inches side-to-side.

PASS 4-A OVER FIRST SERIES OF TIES      6.90 SEC      4.94 MPH

PASS 4-B OVER SECOND SERIES OF TIES      6.30 SEC      5.41 MPH

REMARKS: Rear of SOC moved 2 inches side-to-side.

WASHBOARD COURSE: No movement

TEST 1: ROAD HAZARD TEST ON SOC ON 5-TON TRUCK  
 (POSITION: LENGTHWISE, CASTERS: CLEAR PLASTIC)  
 DATE: 15 DECEMBER 1986

TAPE CHANNEL 1 : LONGITUDINAL ACCELERATION ON VEHICLE BED (RIGHT)

TEST	SPEED MPH	PEAK VALUE G'S	DURATION MILLISECONDS	AREA G'S-SECONDS
PASS 1, COURSE A	5.50	.23	169.37	.01
PASS 1, COURSE B	5.50	.17	107.58	.01
PASS 2, COURSE A	5.50	-.25	133.69	.02
PASS 2, COURSE B	5.50	.20	99.24	.01
PASS 3, COURSE A	5.50	-.24	86.02	.01
PASS 3, COURSE B	5.50	.19	76.24	.01
PASS 4, COURSE A	5.50	.24	63.57	.01
PASS 4, COURSE B	5.50	.15	85.92	.01
WASHBOARD COURSE	5.50	-.15	112.92	.01

TAPE CHANNEL 3 : LATERAL ACCELERATION ON VEHICLE BED (RIGHT)

TEST	SPEED MPH	PEAK VALUE G'S	DURATION MILLISECONDS	AREA G'S-SECONDS
PASS 1, COURSE A	5.50	1.42	104.24	.09
PASS 1, COURSE B	5.50	-1.21	201.42	.17
PASS 2, COURSE A	5.50	*****	*****	*****
PASS 2, COURSE B	5.50	-.92	121.33	.07
PASS 3, COURSE A	5.50	1.27	105.86	.08
PASS 3, COURSE B	5.50	-.98	118.65	.07
PASS 4, COURSE A	5.50	1.35	216.83	.17
PASS 4, COURSE B	5.50	.97	130.43	.08
WASHBOARD COURSE	5.50	.53	63.59	.02

TAPE CHANNEL 4 : LONGITUDINAL ACCELERATION ON VEHICLE BED (LEFT)

TEST	SPEED MPH	PEAK VALUE G'S	DURATION MILLISECONDS	AREA G'S-SECONDS
PASS 1, COURSE A	5.50	.01	80.14	.00
PASS 1, COURSE B	5.50	*****	*****	*****
PASS 2, COURSE A	5.50	*****	*****	*****
PASS 2, COURSE B	5.50	.00	91.14	.00
PASS 3, COURSE A	5.50	.01	87.08	.00
PASS 3, COURSE B	5.50	*****	*****	*****
PASS 4, COURSE A	5.50	.01	91.80	.00
PASS 4, COURSE B	5.50	*****	*****	*****
WASHBOARD COURSE	5.50	-.01	118.26	.00

TAPE CHANNEL 5 : LATERAL ACCELERATION ON VEHICLE BED (LEFT)

TEST	SPEED MPH	PEAK VALUE G'S	DURATION MILLISECONDS	AREA G'S-SECONDS
PASS 1, COURSE A	5.50	.59	110.61	.04
PASS 1, COURSE B	5.50	.45	103.43	.03
PASS 2, COURSE A	5.50	-.53	131.26	.04
PASS 2, COURSE B	5.50	.37	100.38	.02
PASS 3, COURSE A	5.50	.54	241.05	.08
PASS 3, COURSE B	5.50	.42	75.53	.02
PASS 4, COURSE A	5.50	.59	185.85	.07
PASS 4, COURSE B	5.50	.39	198.77	.03
WASHBOARD COURSE	5.50	-.26	59.00	.01

TAPE CHANNEL 6 : VERTICAL ACCELERATION ON VEHICLE BED (LEFT)

TEST	SPEED MPH	PEAK VALUE G'S	DURATION MILLISECONDS	AREA G'S-SECONDS
PASS 1, COURSE A	5.50	1.70	170.47	.17
PASS 1, COURSE B	5.50	1.84	140.45	.16
PASS 2, COURSE A	5.50	1.82	141.94	.16
PASS 2, COURSE B	5.50	-1.83	231.35	.26
PASS 3, COURSE A	5.50	-1.47	220.68	.20
PASS 3, COURSE B	5.50	-1.85	226.96	.27
PASS 4, COURSE A	5.50	2.02	146.15	.17
PASS 4, COURSE B	5.50	-1.89	212.32	.25
WASHBOARD COURSE	5.50	2.92	87.63	.15

TAPE CHANNEL 7 : LONGITUDINAL ACCELERATION ON RIGHT SIDE OF SOC

TEST	SPEED MPH	PEAK VALUE G'S	DURATION MILLISECONDS	AREA G'S-SECONDS
PASS 1, COURSE A	5.50	-.82	127.89	.07
PASS 1, COURSE B	5.50	-.74	155.05	.07
PASS 2, COURSE A	5.50	-.75	127.17	.06
PASS 2, COURSE B	5.50	-.74	172.18	.08
PASS 3, COURSE A	5.50	-.79	147.37	.07
PASS 3, COURSE B	5.50	-.65	167.10	.07
PASS 4, COURSE A	5.50	-.69	141.91	.06
PASS 4, COURSE B	5.50	-.71	159.12	.07
WASHBOARD COURSE	5.50	.62	86.05	.03

TAPE CHANNEL 8 : LATERAL ACCELERATION ON RIGHT SIDE OF SOC

TEST	SPEED MPH	PEAK VALUE G'S	DURATION MILLISECONDS	AREA G'S-SECONDS
PASS 1, COURSE A	5.50	1.10	187.00	.12
PASS 1, COURSE B	5.50	-1.05	152.72	.10
PASS 2, COURSE A	5.50	1.12	175.03	.12
PASS 2, COURSE B	5.50	.93	149.80	.09
PASS 3, COURSE A	5.50	1.16	195.41	.13
PASS 3, COURSE B	5.50	1.01	146.35	.09
PASS 4, COURSE A	5.50	1.21	221.34	.15
PASS 4, COURSE B	5.50	-.97	147.99	.09
WASHBOARD COURSE	5.50	.43	62.04	.02

TAPE CHANNEL 9 : VERTICAL ACCELERATION ON RIGHT SIDE OF SOC

TEST	SPEED MPH	PEAK VALUE G'S	DURATION MILLISECONDS	AREA G'S-SECONDS
PASS 1, COURSE A	5.50	-2.07	139.50	.18
PASS 1, COURSE B	5.50	1.55	108.33	.12
PASS 2, COURSE A	5.50	2.13	140.35	.20
PASS 2, COURSE B	5.50	1.55	103.82	.11
PASS 3, COURSE A	5.50	-1.76	160.64	.19
PASS 3, COURSE B	5.50	1.56	107.77	.12
PASS 4, COURSE A	5.50	2.00	155.41	.23
PASS 4, COURSE B	5.50	1.62	101.80	.11
WASHBOARD COURSE	5.50	2.34	93.82	.12

TAPE CHANNEL 10 : LONGITUDINAL ACCELERATION ON LEFT SIDE OF SOC

TEST	SPEED MPH	PEAK VALUE G'S	DURATION MILLISECONDS	AREA G'S-SECONDS
PASS 1, COURSE A	5.50	.84	131.76	.07
PASS 1, COURSE B	5.50	.87	136.61	.07
PASS 2, COURSE A	5.50	.91	139.10	.08
PASS 2, COURSE B	5.50	.59	157.21	.06
PASS 3, COURSE A	5.50	.96	140.39	.08
PASS 3, COURSE B	5.50	.55	147.74	.05
PASS 4, COURSE A	5.50	.87	141.01	.08
PASS 4, COURSE B	5.50	.54	137.82	.04
WASHBOARD COURSE	5.50	-.51	77.51	.02

TAPE CHANNEL 11 : LATERAL ACCELERATION ON LEFT SIDE OF SOC

TEST	SPEED MPH	PEAK VALUE G'S	DURATION MILLISECONDS	AREA G'S-SECONDS
PASS 1, COURSE A	5.50	1.18	241.36	.17
PASS 1, COURSE B	5.50	1.00	264.31	.14
PASS 2, COURSE A	5.50	-1.52	237.64	.21
PASS 2, COURSE B	5.50	1.14	202.39	.14
PASS 3, COURSE A	5.50	-1.50	229.72	.20
PASS 3, COURSE B	5.50	1.11	188.36	.12
PASS 4, COURSE A	5.50	-1.47	226.83	.19
PASS 4, COURSE B	5.50	1.15	194.97	.13
WASHBOARD COURSE	5.50	-.48	75.30	.02

TAPE CHANNEL 12 : VERTICAL ACCELERATION ON LEFT SIDE OF SOC

TEST	SPEED MPH	PEAK VALUE G'S	DURATION MILLISECONDS	AREA G'S-SECONDS
PASS 1, COURSE A	5.50	-.97	175.88	.11
PASS 1, COURSE B	5.50	1.33	125.88	.10
PASS 2, COURSE A	5.50	1.40	130.19	.11
PASS 2, COURSE B	5.50	1.26	133.56	.11
PASS 3, COURSE A	5.50	-.94	204.80	.12
PASS 3, COURSE B	5.50	1.28	215.52	.14
PASS 4, COURSE A	5.50	1.49	145.02	.13
PASS 4, COURSE B	5.50	1.29	131.03	.11
WASHBOARD COURSE	5.50	2.02	87.79	.10

TAPE CHANNEL 14 : VERTICAL ACCELERATION ON VEHICLE BED (RIGHT)

TEST	SPEED MPH	PEAK VALUE G'S	DURATION MILLISECONDS	AREA G'S-SECONDS
PASS 1, COURSE A	5.50	-1.58	181.37	.17
PASS 1, COURSE B	5.50	.99	180.89	.11
PASS 2, COURSE A	5.50	1.39	329.97	.04
PASS 2, COURSE B	5.50	.98	173.16	.10
PASS 3, COURSE A	5.50	-1.36	221.66	.18
PASS 3, COURSE B	5.50	.96	191.77	.11
PASS 4, COURSE A	5.50	-1.50	190.69	.17
PASS 4, COURSE B	5.50	1.01	194.11	.11
WASHBOARD COURSE	5.50	1.73	97.67	.10

NOTES:

\*\*\*\*\*: DATA NOT AVAILABLE.

ROAD TEST DATA

TEST NO. 13(b)

DATE: 15 Dec 86

TEST SPECIMEN: SOC on phenolic casters secured longitudinally on the M923 5-ton cargo truck. Triaxial accelerometers affixed to the exterior of the SOC.

PASS 1-A OVER FIRST SERIES OF TIES          6.60 SEC                      5.17 MPH

PASS 1-B OVER SECOND SERIES OF TIES        7.20 SEC                      4.73 MPH

REMARKS: No movement

PASS 2-A OVER FIRST SERIES OF TIES        7.20 SEC                      4.73 MPH

PASS 2-B OVER SECOND SERIES OF TIES       6.75 SEC                      5.05 MPH

REMARKS: SOC moved forward one inch and left one inch. Also moved side-to-side one inch.

30 MILE ROAD TEST: Omitted

PANIC STOP TEST: Omitted

PASS 3-A OVER FIRST SERIES OF TIES        6.90 SEC                      4.94 MPH

PASS 3-B OVER SECOND SERIES OF TIES       6.60 SEC                      5.17 MPH

REMARKS: SOC moved one inch side-to-side.

PASS 4-A OVER FIRST SERIES OF TIES        7.35 SEC                      4.64 MPH

PASS 4-B OVER SECOND SERIES OF TIES       6.90 SEC                      4.94 MPH

REMARKS: SOC moved one inch side-to-side. SOC moved forward 1/2 inch.

WASHBOARD COURSE: No movement

TEST 2: ROAD HAZARD TEST ON SOC ON 5-TON TRUCK  
 (POSITION: LENGTHWISE, CASTERS: COMPOSITION)  
 DATE: 15 DECEMBER 1986

TAPE CHANNEL 1 : LONGITUDINAL ACCELERATION ON VEHICLE BED (RIGHT)

TEST	SPEED MPH	PEAK VALUE G'S	DURATION MILLISECONDS	AREA G'S-SECONDS
PASS 1, COURSE A	5.50	.20	91.21	.01
PASS 1, COURSE B	5.50	.19	58.83	.01
PASS 2, COURSE A	5.50	-.23	64.86	.01
PASS 2, COURSE B	5.50	.15	62.38	.01
PASS 3, COURSE A	5.50	.22	50.55	.01
PASS 3, COURSE B	5.50	.14	69.77	.01
PASS 4, COURSE A	5.50	-.27	73.55	.01
PASS 4, COURSE B	5.50	.14	63.47	.00
WASHBOARD COURSE	5.50	.16	94.16	.01

TAPE CHANNEL 3 : LATERAL ACCELERATION ON VEHICLE BED (RIGHT)

TEST	SPEED MPH	PEAK VALUE G'S	DURATION MILLISECONDS	AREA G'S-SECONDS
PASS 1, COURSE A	5.50	-1.20	147.98	.10
PASS 1, COURSE B	5.50	-.97	143.03	.08
PASS 2, COURSE A	5.50	-1.24	141.90	.11
PASS 2, COURSE B	5.50	-.98	155.94	.09
PASS 3, COURSE A	5.50	1.12	160.62	.11
PASS 3, COURSE B	5.50	.87	140.20	.07
PASS 4, COURSE A	5.50	1.13	170.18	.11
PASS 4, COURSE B	5.50	-.92	144.32	.08
WASHBOARD COURSE	5.50	.37	119.59	.02

TAPE CHANNEL 4 : LONGITUDINAL ACCELERATION ON VEHICLE BED (LEFT)

TEST	SPEED MPH	PEAK VALUE G'S	DURATION MILLISECONDS	AREA G'S-SECONDS
PASS 1, COURSE A	5.50	-.01	62.88	.00
PASS 1, COURSE B	5.50	-.01	113.03	.00
PASS 2, COURSE A	5.50	-.01	168.36	.00
PASS 2, COURSE B	5.50	-.01	74.98	.00
PASS 3, COURSE A	5.50	-.01	100.39	.00
PASS 3, COURSE B	5.50	-.01	91.79	.00
PASS 4, COURSE A	5.50	-.01	104.12	.00
PASS 4, COURSE B	5.50	-.01	62.01	.00
WASHBOARD COURSE	5.50	-.01	138.62	.00

TAPE CHANNEL 5 : LATERAL ACCELERATION ON VEHICLE BED (LEFT)

TEST	SPEED MPH	PEAK VALUE G'S	DURATION MILLISECONDS	AREA G'S-SECONDS
PASS 1, COURSE A	5.50	.46	166.33	.04
PASS 1, COURSE B	5.50	.38	203.70	.03
PASS 2, COURSE A	5.50	.47	152.13	.04
PASS 2, COURSE B	5.50	-.38	151.97	.04
PASS 3, COURSE A	5.50	.44	158.03	.04
PASS 3, COURSE B	5.50	-.39	121.11	.03
PASS 4, COURSE A	5.50	-.44	106.98	.03
PASS 4, COURSE B	5.50	.37	191.45	.04
WASHBOARD COURSE	5.50	-.13	68.86	.01

TAPE CHANNEL 6 : VERTICAL ACCELERATION ON VEHICLE BED (LEFT)

TEST	SPEED MPH	PEAK VALUE G'S	DURATION MILLISECONDS	AREA G'S-SECONDS
PASS 1, COURSE A	5.50	-1.58	96.01	.09
PASS 1, COURSE B	5.50	-1.44	108.26	.09
PASS 2, COURSE A	5.50	-1.39	89.75	.07
PASS 2, COURSE B	5.50	-1.57	115.89	.11
PASS 3, COURSE A	5.50	-1.64	91.85	.09
PASS 3, COURSE B	5.50	-1.71	115.76	.12
PASS 4, COURSE A	5.50	-1.56	90.65	.08
PASS 4, COURSE B	5.50	-1.63	112.16	.11
WASHBOARD COURSE	5.50	3.16	85.16	.16

TAPE CHANNEL 7 : LONGITUDINAL ACCELERATION ON RIGHT SIDE OF SOC

TEST	SPEED MPH	PEAK VALUE G'S	DURATION MILLISECONDS	AREA G'S-SECONDS
PASS 1, COURSE A	5.50	.60	79.19	.03
PASS 1, COURSE B	5.50	-.54	80.39	.03
PASS 2, COURSE A	5.50	.62	121.99	.05
PASS 2, COURSE B	5.50	.57	101.98	.04
PASS 3, COURSE A	5.50	-.62	89.97	.03
PASS 3, COURSE B	5.50	.61	105.50	.04
PASS 4, COURSE A	5.50	-.58	87.07	.03
PASS 4, COURSE B	5.50	.51	116.20	.04
WASHBOARD COURSE	5.50	.63	78.90	.03

TAPE CHANNEL 8 : LATERAL ACCELERATION ON RIGHT SIDE OF SOC

TEST	SPEED MPH	PEAK VALUE G'S	DURATION MILLISECONDS	AREA G'S-SECONDS
PASS 1, COURSE A	5.50	.96	128.62	.08
PASS 1, COURSE B	5.50	-.80	109.50	.05
PASS 2, COURSE A	5.50	.97	112.26	.06
PASS 2, COURSE B	5.50	.77	144.70	.07
PASS 3, COURSE A	5.50	1.11	116.21	.07
PASS 3, COURSE B	5.50	-.75	92.78	.04
PASS 4, COURSE A	5.50	-.96	109.21	.06
PASS 4, COURSE B	5.50	-.73	102.13	.05
WASHBOARD COURSE	5.50	-.38	50.30	.01

TAPE CHANNEL 9 : VERTICAL ACCELERATION ON RIGHT SIDE OF SOC

TEST	SPEED MPH	PEAK VALUE G'S	DURATION MILLISECONDS	AREA G'S-SECONDS
PASS 1, COURSE A	5.50	-1.71	95.42	.10
PASS 1, COURSE B	5.50	1.14	90.78	.06
PASS 2, COURSE A	5.50	-1.67	96.23	.10
PASS 2, COURSE B	5.50	1.01	95.32	.06
PASS 3, COURSE A	5.50	-1.77	102.80	.11
PASS 3, COURSE B	5.50	1.06	81.70	.05
PASS 4, COURSE A	5.50	-1.69	103.95	.11
PASS 4, COURSE B	5.50	1.08	90.26	.06
WASHBOARD COURSE	5.50	2.43	95.99	.13

TAPE CHANNEL 10 : LONGITUDINAL ACCELERATION ON LEFT SIDE OF SOC

TEST	SPEED MPH	PEAK VALUE G'S	DURATION MILLISECONDS	AREA G'S-SECONDS
PASS 1, COURSE A	5.50	.68	67.24	.03
PASS 1, COURSE B	5.50	.51	75.34	.02
PASS 2, COURSE A	5.50	.72	81.29	.03
PASS 2, COURSE B	5.50	.52	76.01	.02
PASS 3, COURSE A	5.50	.68	81.87	.03
PASS 3, COURSE B	5.50	.47	65.37	.02
PASS 4, COURSE A	5.50	-.63	75.53	.03
PASS 4, COURSE B	5.50	-.53	76.03	.02
WASHBOARD COURSE	5.50	-.44	74.02	.02

TAPE CHANNEL 11 : LATERAL ACCELERATION ON LEFT SIDE OF SOC

TEST	SPEED MPH	PEAK VALUE G'S	DURATION MILLISECONDS	AREA G'S-SECONDS
PASS 1, COURSE A	5.50	-1.21	119.87	.08
PASS 1, COURSE B	5.50	.97	195.85	.06
PASS 2, COURSE A	5.50	-1.32	120.68	.09
PASS 2, COURSE B	5.50	-.93	155.34	.09
PASS 3, COURSE A	5.50	-1.23	119.12	.08
PASS 3, COURSE B	5.50	.93	113.27	.06
PASS 4, COURSE A	5.50	-1.23	121.90	.09
PASS 4, COURSE B	5.50	.93	122.05	.07
WASHBOARD COURSE	5.50	-.33	73.05	.01

TAPE CHANNEL 12 : VERTICAL ACCELERATION ON LEFT SIDE OF SOC

TEST	SPEED MPH	PEAK VALUE G'S	DURATION MILLISECONDS	AREA G'S-SECONDS
PASS 1, COURSE A	5.50	-.94	92.65	.05
PASS 1, COURSE B	5.50	.91	89.85	.05
PASS 2, COURSE A	5.50	.83	76.88	.04
PASS 2, COURSE B	5.50	-.97	114.28	.06
PASS 3, COURSE A	5.50	-.94	87.90	.05
PASS 3, COURSE B	5.50	-1.05	111.51	.07
PASS 4, COURSE A	5.50	-.89	86.52	.05
PASS 4, COURSE B	5.50	-1.04	110.38	.07
WASHBOARD COURSE	5.50	2.04	84.15	.10

TAPE CHANNEL 14 : VERTICAL ACCELERATION ON VEHICLE BED (RIGHT)

TEST	SPEED MPH	PEAK VALUE G'S	DURATION MILLISECONDS	AREA G'S-SECONDS
PASS 1, COURSE A	5.50	-1.36	114.50	.09
PASS 1, COURSE B	5.50	.88	99.61	.05
PASS 2, COURSE A	5.50	-1.27	106.20	.08
PASS 2, COURSE B	5.50	.77	100.26	.04
PASS 3, COURSE A	5.50	-1.39	110.31	.09
PASS 3, COURSE B	5.50	.88	90.09	.05
PASS 4, COURSE A	5.50	-1.30	114.53	.09
PASS 4, COURSE B	5.50	.83	98.30	.05
WASHBOARD COURSE	5.50	1.84	96.16	.11

NOTES:

\*\*\*\*\*: DATA NOT AVAILABLE.

ROAD TEST DATA

TEST NO. 13(c)

DATE: 15 Dec 86

TEST SPECIMEN: SOC on phenolic casters secured laterally on the M923 5-ton cargo truck. Triaxial accelerometers affixed to the exterior of the SOC.

PASS 1-A OVER FIRST SERIES OF TIES 6.60 SEC 5.17 MPH

PASS 1-B OVER SECOND SERIES OF TIES 6.60 SEC 5.17 MPH

REMARKS: No movement

PASS 2-A OVER FIRST SERIES OF TIES 6.75 SEC 5.05 MPH

PASS 2-B OVER SECOND SERIES OF TIES 6.60 SEC 5.17 MPH

REMARKS: SOC moved one inch side-to-side.

30 MILE ROAD TEST: Omitted

PANIC STOP TEST: Omitted

PASS 3-A OVER FIRST SERIES OF TIES 6.90 SEC 4.94 MPH

PASS 3-B OVER SECOND SERIES OF TIES 6.30 SEC 5.41 MPH

REMARKS: SOC moved one inch side-to-side.

PASS 4-A OVER FIRST SERIES OF TIES 7.05 SEC 4.84 MPH

PASS 4-B OVER SECOND SERIES OF TIES 6.60 SEC 5.17 MPH

REMARKS: SOC moved one inch side-to-side.

WASHBOARD COURSE: No movement

TEST 3: ROAD HAZARD TEST ON SOC ON 5-TON TRUCK  
 (POSITION: CROSSWISE, CASTERS: COMPOSITION)  
 DATE: 15-16 DECEMBER 1986

TAPE CHANNEL 1 : LONGITUDINAL ACCELERATION ON VEHICLE BED (RIGHT)

TEST	SPEED MPH	PEAK VALUE G'S	DURATION MILLISECONDS	AREA G'S-SECONDS
PASS 1, COURSE A	5.50	-.24	71.46	.01
PASS 1, COURSE B	5.50	.16	66.44	.01
PASS 2, COURSE A	5.50	-.17	90.71	.01
PASS 2, COURSE B	5.50	.19	97.00	.01
PASS 3, COURSE A	5.50	.19	69.38	.01
PASS 3, COURSE B	5.50	.14	113.47	.01
PASS 4, COURSE A	5.50	.20	59.71	.01
PASS 4, COURSE B	5.50	.24	78.01	.01
WASHBOARD COURSE	5.50	.12	100.77	.01

TAPE CHANNEL 3 : LATERAL ACCELERATION ON VEHICLE BED (RIGHT)

TEST	SPEED MPH	PEAK VALUE G'S	DURATION MILLISECONDS	AREA G'S-SECONDS
PASS 1, COURSE A	5.50	1.15	121.46	.08
PASS 1, COURSE B	5.50	.82	93.44	.05
PASS 2, COURSE A	5.50	1.16	113.40	.08
PASS 2, COURSE B	5.50	.85	106.37	.05
PASS 3, COURSE A	5.50	-1.13	117.67	.08
PASS 3, COURSE B	5.50	.88	100.17	.05
PASS 4, COURSE A	5.50	-1.15	118.34	.08
PASS 4, COURSE B	5.50	.93	98.56	.05
WASHBOARD COURSE	5.50	-.15	90.90	.01

TAPE CHANNEL 4 : LONGITUDINAL ACCELERATION ON VEHICLE BED (LEFT)

TEST	SPEED MPH	PEAK VALUE G'S	DURATION MILLISECONDS	AREA G'S-SECONDS
PASS 1, COURSE A	5.50	-.01	151.84	.00
PASS 1, COURSE B	5.50	-.01	105.70	.00
PASS 2, COURSE A	5.50	-.01	86.31	.00
PASS 2, COURSE B	5.50	-.01	120.73	.00
PASS 3, COURSE A	5.50	-.01	75.53	.00
PASS 3, COURSE B	5.50	-.01	94.57	.00
PASS 4, COURSE A	5.50	-.01	102.78	.00
PASS 4, COURSE B	5.50	-.01	79.40	.00
WASHBOARD COURSE	5.50	-.01	144.96	.00

TAPE CHANNEL 5 : LATERAL ACCELERATION ON VEHICLE BED (LEFT)

TEST	SPEED MPH	PEAK VALUE G'S	DURATION MILLISECONDS	AREA G'S-SECONDS
PASS 1, COURSE A	5.50	-.53	103.42	.03
PASS 1, COURSE B	5.50	.38	90.40	.02
PASS 2, COURSE A	5.50	-.50	141.59	.04
PASS 2, COURSE B	5.50	.36	99.48	.02
PASS 3, COURSE A	5.50	-.48	138.10	.04
PASS 3, COURSE B	5.50	.37	103.31	.02
PASS 4, COURSE A	5.50	-.51	132.73	.04
PASS 4, COURSE B	5.50	.35	99.63	.02
WASHBOARD COURSE	5.50	.08	99.19	.00

TAPE CHANNEL 6 : VERTICAL ACCELERATION ON VEHICLE BED (LEFT)

TEST	SPEED MPH	PEAK VALUE G'S	DURATION MILLISECONDS	AREA G'S-SECONDS
PASS 1, COURSE A	5.50	-1.81	99.14	.11
PASS 1, COURSE B	5.50	-1.73	109.46	.11
PASS 2, COURSE A	5.50	-1.84	101.66	.11
PASS 2, COURSE B	5.50	-1.69	109.86	.11
PASS 3, COURSE A	5.50	-1.83	105.48	.12
PASS 3, COURSE B	5.50	-1.67	111.10	.11
PASS 4, COURSE A	5.50	-1.80	104.71	.12
PASS 4, COURSE B	5.50	-1.69	110.09	.11
WASHBOARD COURSE	5.50	1.88	89.81	.10

TAPE CHANNEL 7 : LONGITUDINAL ACCELERATION ON RIGHT SIDE OF SOC

TEST	SPEED MPH	PEAK VALUE G'S	DURATION MILLISECONDS	AREA G'S-SECONDS
PASS 1, COURSE A	5.50	-1.13	118.38	.08
PASS 1, COURSE B	5.50	.92	103.24	.05
PASS 2, COURSE A	5.50	-1.19	118.04	.08
PASS 2, COURSE B	5.50	-.88	118.42	.06
PASS 3, COURSE A	5.50	-1.25	117.12	.09
PASS 3, COURSE B	5.50	-.85	135.54	.06
PASS 4, COURSE A	5.50	-1.29	115.65	.09
PASS 4, COURSE B	5.50	.84	120.23	.06
WASHBOARD COURSE	5.50	-.20	96.89	.01

TAPE CHANNEL 8 : LATERAL ACCELERATION ON RIGHT SIDE OF SOC

TEST	SPEED MPH	PEAK VALUE G'S	DURATION MILLISECONDS	AREA G'S-SECONDS
PASS 1, COURSE A	5.50	-.87	53.54	.02
PASS 1, COURSE B	5.50	-.62	70.83	.02
PASS 2, COURSE A	5.50	-.84	92.68	.05
PASS 2, COURSE B	5.50	-.88	68.93	.03
PASS 3, COURSE A	5.50	-.70	68.64	.03
PASS 3, COURSE B	5.50	-.62	68.19	.03
PASS 4, COURSE A	5.50	-.71	75.10	.03
PASS 4, COURSE B	5.50	-.69	68.56	.03
WASHBOARD COURSE	5.50	-.53	84.98	.03

TAPE CHANNEL 9 : VERTICAL ACCELERATION ON RIGHT SIDE OF SOC

TEST	SPEED MPH	PEAK VALUE G'S	DURATION MILLISECONDS	AREA G'S-SECONDS
PASS 1, COURSE A	5.50	-1.60	114.81	.12
PASS 1, COURSE B	5.50	-1.10	129.13	.08
PASS 2, COURSE A	5.50	-1.55	111.56	.11
PASS 2, COURSE B	5.50	-1.20	129.20	.09
PASS 3, COURSE A	5.50	-1.53	106.56	.10
PASS 3, COURSE B	5.50	-1.11	131.59	.08
PASS 4, COURSE A	5.50	-1.54	119.15	.11
PASS 4, COURSE B	5.50	-1.25	136.55	.09
WASHBOARD COURSE	5.50	1.24	91.13	.07

TAPE CHANNEL 10 : LONGITUDINAL ACCELERATION ON LEFT SIDE OF SOC

TEST	SPEED MPH	PEAK VALUE G'S	DURATION MILLISECONDS	AREA G'S-SECONDS
PASS 1, COURSE A	5.50	1.26	113.61	.08
PASS 1, COURSE B	5.50	.90	120.47	.06
PASS 2, COURSE A	5.50	1.16	108.67	.07
PASS 2, COURSE B	5.50	-.86	92.32	.05
PASS 3, COURSE A	5.50	-1.05	142.23	.09
PASS 3, COURSE B	5.50	-.88	102.25	.05
PASS 4, COURSE A	5.50	1.08	112.67	.07
PASS 4, COURSE B	5.50	-.85	95.24	.05
WASHBOARD COURSE	5.50	.21	81.55	.01

TAPE CHANNEL 11 : LATERAL ACCELERATION ON LEFT SIDE OF SOC

TEST	SPEED MPH	PEAK VALUE G'S	DURATION MILLISECONDS	AREA G'S-SECONDS
PASS 1, COURSE A	5.50	.52	66.83	.02
PASS 1, COURSE B	5.50	-.51	96.01	.04
PASS 2, COURSE A	5.50	.55	82.36	.03
PASS 2, COURSE B	5.50	.66	77.88	.03
PASS 3, COURSE A	5.50	.68	62.13	.02
PASS 3, COURSE B	5.50	.57	79.03	.03
PASS 4, COURSE A	5.50	.68	69.57	.03
PASS 4, COURSE B	5.50	-.53	85.32	.03
WASHBOARD COURSE	5.50	.52	91.14	.03

TAPE CHANNEL 12 : VERTICAL ACCELERATION ON LEFT SIDE OF SOC

TEST	SPEED MPH	PEAK VALUE G'S	DURATION MILLISECONDS	AREA G'S-SECONDS
PASS 1, COURSE A	5.50	-1.19	100.30	.07
PASS 1, COURSE B	5.50	-1.03	104.12	.06
PASS 2, COURSE A	5.50	-1.20	101.63	.08
PASS 2, COURSE B	5.50	-1.06	101.15	.06
PASS 3, COURSE A	5.50	-1.18	101.40	.07
PASS 3, COURSE B	5.50	-1.06	103.48	.07
PASS 4, COURSE A	5.50	-1.16	96.70	.07
PASS 4, COURSE B	5.50	-1.06	102.26	.07
WASHBOARD COURSE	5.50	1.16	88.08	.06

TAPE CHANNEL 14 : VERTICAL ACCELERATION ON VEHICLE BED (RIGHT)

TEST	SPEED MPH	PEAK VALUE G'S	DURATION MILLISECONDS	AREA G'S-SECONDS
PASS 1, COURSE A	5.50	-1.13	126.52	.09
PASS 1, COURSE B	5.50	.71	82.56	.03
PASS 2, COURSE A	5.50	-1.04	133.63	.08
PASS 2, COURSE B	5.50	-.74	127.18	.06
PASS 3, COURSE A	5.50	-1.10	129.12	.08
PASS 3, COURSE B	5.50	-.71	116.03	.05
PASS 4, COURSE A	5.50	-1.07	139.88	.08
PASS 4, COURSE B	5.50	-.71	116.21	.05
WASHBOARD COURSE	5.50	.77	93.44	.04

ROAD TEST DATA

TEST NO. 13(d)

DATE: 16 Dec 86

TEST SPECIMEN: SOC on polyurethane casters secured laterally on the M923 5-ton cargo truck. Triaxial accelerometers affixed to the exterior of the SOC.

PASS 1-A OVER FIRST SERIES OF TIES 7.20 SEC 4.73 MPH

PASS 1-B OVER SECOND SERIES OF TIES 7.05 SEC 4.84 MPH

REMARKS: No movement

PASS 2-A OVER FIRST SERIES OF TIES 6.90 SEC 4.94 MPH

PASS 2-B OVER SECOND SERIES OF TIES 6.60 SEC 5.17 MPH

REMARKS: SOC moved one inch to the left. SOC moved side-to-side one to two inches.

30 MILE ROAD TEST: Omitted

PANIC STOP TEST: Omitted

PASS 3-A OVER FIRST SERIES OF TIES 6.75 SEC 5.05 MPH

PASS 3-B OVER SECOND SERIES OF TIES 6.60 SEC 5.17 MPH

REMARKS: SOC moved side-to-side two to three inches. All corner straps somewhat loose.

PASS 4-A OVER FIRST SERIES OF TIES 6.90 SEC 4.94 MPH

PASS 4-B OVER SECOND SERIES OF TIES 6.60 SEC 5.17 MPH

REMARKS: SOC moved side-to-side two to three inches. All corner straps loose.

WASHBOARD COURSE: Loose straps.

TEST 4: ROAD HAZARD TEST ON SOC ON 5-TON TRUCK  
 (POSITION: CROSSWISE, CASTERS: CLEAR PLASTIC)  
 DATE: 15-16 DECEMBER 1986

TAPE CHANNEL 1 : LONGITUDINAL ACCELERATION ON VEHICLE BED (RIGHT)

TEST	SPEED MPH	PEAK VALUE G'S	DURATION MILLISECONDS	AREA G'S-SECONDS
PASS 1, COURSE A	5.50	.23	102.39	.01
PASS 1, COURSE B	5.50	.13	68.36	.01
PASS 2, COURSE A	5.50	.12	88.06	.01
PASS 2, COURSE B	5.50	.11	61.54	.00
PASS 3, COURSE A	5.50	.15	100.54	.01
PASS 3, COURSE B	5.50	.12	58.58	.00
PASS 4, COURSE A	5.50	-.14	30.48	.01
PASS 4, COURSE B	5.50	.12	56.99	.00
WASHBOARD COURSE	5.50	-.12	88.07	.01

TAPE CHANNEL 3 : LATERAL ACCELERATION ON VEHICLE BED (RIGHT)

TEST	SPEED MPH	PEAK VALUE G'S	DURATION MILLISECONDS	AREA G'S-SECONDS
PASS 1, COURSE A	5.50	1.30	122.37	.09
PASS 1, COURSE B	5.50	.89	94.76	.05
PASS 2, COURSE A	5.50	1.18	114.16	.08
PASS 2, COURSE B	5.50	.86	102.47	.05
PASS 3, COURSE A	5.50	1.24	117.17	.09
PASS 3, COURSE B	5.50	-.92	81.23	.04
PASS 4, COURSE A	5.50	1.25	106.26	.08
PASS 4, COURSE B	5.50	-.81	84.55	.04
WASHBOARD COURSE	5.50	.35	58.96	.01

TAPE CHANNEL 4 : LONGITUDINAL ACCELERATION ON VEHICLE BED (LEFT)

TEST	SPEED MPH	PEAK VALUE G'S	DURATION MILLISECONDS	AREA G'S-SECONDS
PASS 1, COURSE A	5.50	-.01	116.78	.00
PASS 1, COURSE B	5.50	-.01	62.79	.00
PASS 2, COURSE A	5.50	-.01	180.83	.00
PASS 2, COURSE B	5.50	-.01	136.55	.00
PASS 3, COURSE A	5.50	-.01	80.04	.00
PASS 3, COURSE B	5.50	-.01	102.46	.00
PASS 4, COURSE A	5.50	-.00	77.99	.00
PASS 4, COURSE B	5.50	-.01	124.19	.00
WASHBOARD COURSE	5.50	-.01	156.02	.00

TAPE CHANNEL 5 : LATERAL ACCELERATION ON VEHICLE BED (LEFT)

TEST	SPEED MPH	PEAK VALUE G'S	DURATION MILLISECONDS	AREA G'S-SECONDS
PASS 1, COURSE A	5.50	-.49	174.72	.05
PASS 1, COURSE B	5.50	.32	245.01	.01
PASS 2, COURSE A	5.50	-.50	151.49	.04
PASS 2, COURSE B	5.50	.32	89.19	.02
PASS 3, COURSE A	5.50	.49	102.76	.03
PASS 3, COURSE B	5.50	-.31	83.20	.02
PASS 4, COURSE A	5.50	.49	107.07	.03
PASS 4, COURSE B	5.50	.28	69.52	.01
WASHBOARD COURSE	5.50	.17	58.55	.01

TAPE CHANNEL 6 : VERTICAL ACCELERATION ON VEHICLE BED (LEFT)

TEST	SPEED MPH	PEAK VALUE G'S	DURATION MILLISECONDS	AREA G'S-SECONDS
PASS 1, COURSE A	5.50	1.65	119.03	.11
PASS 1, COURSE B	5.50	-1.51	107.78	.10
PASS 2, COURSE A	5.50	1.82	107.31	.11
PASS 2, COURSE B	5.50	-1.67	113.18	.11
PASS 3, COURSE A	5.50	1.90	103.02	.11
PASS 3, COURSE B	5.50	-1.59	116.92	.11
PASS 4, COURSE A	5.50	1.75	106.57	.11
PASS 4, COURSE B	5.50	1.55	94.10	.09
WASHBOARD COURSE	5.50	2.19	74.54	.09

TAPE CHANNEL 7 : LONGITUDINAL ACCELERATION ON RIGHT SIDE OF SOC

TEST	SPEED MPH	PEAK VALUE G'S	DURATION MILLISECONDS	AREA G'S-SECONDS
PASS 1, COURSE A	5.50	-1.19	130.47	.09
PASS 1, COURSE B	5.50	.88	134.89	.07
PASS 2, COURSE A	5.50	-1.19	127.43	.09
PASS 2, COURSE B	5.50	.86	123.29	.06
PASS 3, COURSE A	5.50	-1.11	129.37	.09
PASS 3, COURSE B	5.50	.83	131.14	.07
PASS 4, COURSE A	5.50	-1.30	114.72	.09
PASS 4, COURSE B	5.50	-.81	102.80	.05
WASHBOARD COURSE	5.50	.22	71.90	.01

TAPE CHANNEL 8 : LATERAL ACCELERATION ON RIGHT SIDE OF SOC

TEST	SPEED MPH	PEAK VALUE G'S	DURATION MILLISECONDS	AREA G'S-SECONDS
PASS 1, COURSE A	5.50	-.70	78.13	.03
PASS 1, COURSE B	5.50	-.73	68.54	.03
PASS 2, COURSE A	5.50	-.77	75.09	.04
PASS 2, COURSE B	5.50	-.70	69.94	.03
PASS 3, COURSE A	5.50	-.78	74.51	.03
PASS 3, COURSE B	5.50	-.57	76.44	.02
PASS 4, COURSE A	5.50	-.74	86.98	.04
PASS 4, COURSE B	5.50	-.62	80.48	.03
WASHBOARD COURSE	5.50	.59	97.74	.03

TAPE CHANNEL 9 : VERTICAL ACCELERATION ON RIGHT SIDE OF SOC

TEST	SPEED MPH	PEAK VALUE G'S	DURATION MILLISECONDS	AREA G'S-SECONDS
PASS 1, COURSE A	5.50	-1.51	108.00	.10
PASS 1, COURSE B	5.50	-.99	128.61	.07
PASS 2, COURSE A	5.50	-1.66	100.48	.10
PASS 2, COURSE B	5.50	-1.22	128.82	.09
PASS 3, COURSE A	5.50	-1.70	98.69	.10
PASS 3, COURSE B	5.50	-1.34	125.37	.10
PASS 4, COURSE A	5.50	-1.58	110.07	.11
PASS 4, COURSE B	5.50	-1.34	123.09	.09
WASHBOARD COURSE	5.50	-1.65	82.68	.08

TAPE CHANNEL 10 : LONGITUDINAL ACCELERATION ON LEFT SIDE OF SOC

TEST	SPEED MPH	PEAK VALUE G'S	DURATION MILLISECONDS	AREA G'S-SECONDS
PASS 1, COURSE A	5.50	1.21	112.11	.08
PASS 1, COURSE B	5.50	.86	135.91	.07
PASS 2, COURSE A	5.50	1.22	109.55	.08
PASS 2, COURSE B	5.50	.88	100.59	.05
PASS 3, COURSE A	5.50	1.47	110.40	.10
PASS 3, COURSE B	5.50	1.04	104.71	.06
PASS 4, COURSE A	5.50	1.35	106.85	.08
PASS 4, COURSE B	5.50	.96	113.56	.06
WASHBOARD COURSE	5.50	.31	72.89	.01

TAPE CHANNEL 11 : LATERAL ACCELERATION ON LEFT SIDE OF SOC

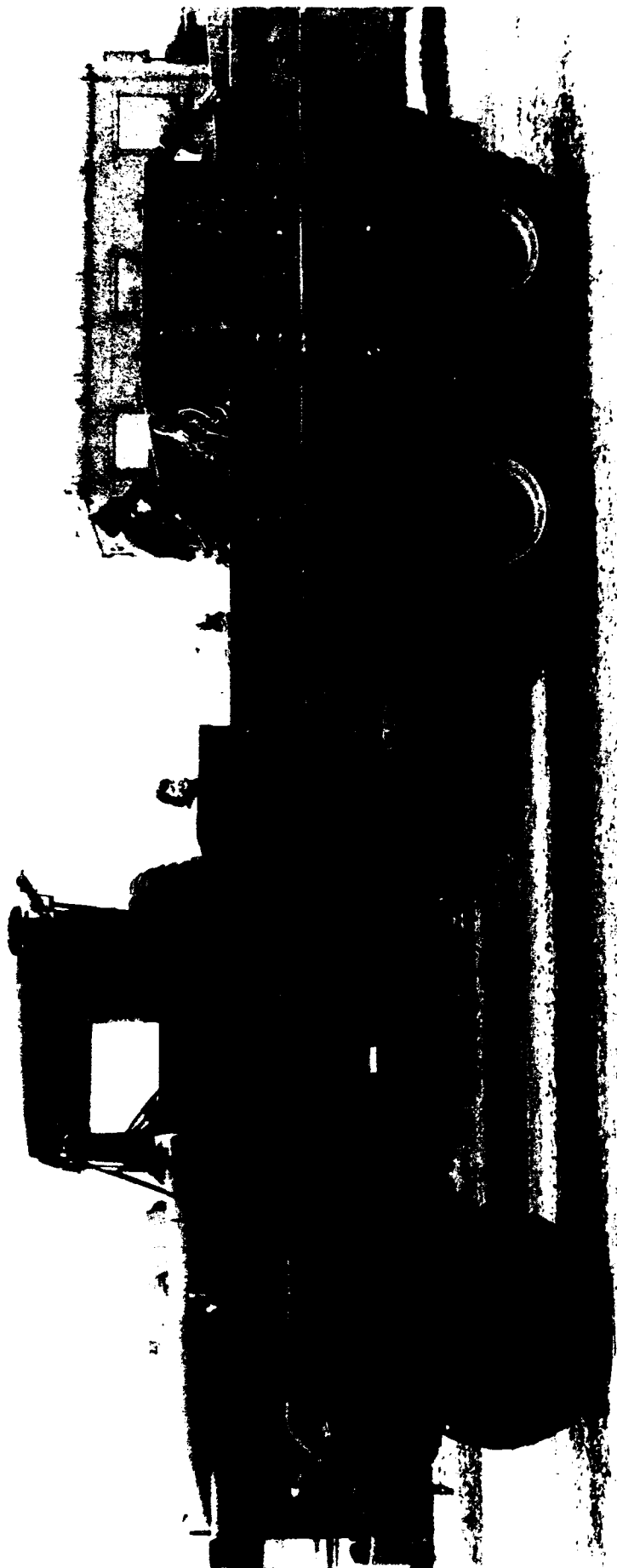
TEST	SPEED MPH	PEAK VALUE G'S	DURATION MILLISECONDS	AREA G'S-SECONDS
PASS 1, COURSE A	5.50	.87	71.66	.04
PASS 1, COURSE B	5.50	.59	72.86	.03
PASS 2, COURSE A	5.50	.68	80.23	.03
PASS 2, COURSE B	5.50	.60	71.54	.02
PASS 3, COURSE A	5.50	.66	107.80	.04
PASS 3, COURSE B	5.50	-.74	95.79	.04
PASS 4, COURSE A	5.50	.60	82.68	.03
PASS 4, COURSE B	5.50	-.55	88.55	.03
WASHBOARD COURSE	5.50	-.36	102.24	.02

TAPE CHANNEL 12 : VERTICAL ACCELERATION ON LEFT SIDE OF SOC

TEST	SPEED MPH	PEAK VALUE G'S	DURATION MILLISECONDS	AREA G'S-SECONDS
PASS 1, COURSE A	5.50	1.03	113.90	.07
PASS 1, COURSE B	5.50	-.92	106.98	.06
PASS 2, COURSE A	5.50	1.16	108.49	.07
PASS 2, COURSE B	5.50	-1.03	106.11	.07
PASS 3, COURSE A	5.50	1.21	102.48	.07
PASS 3, COURSE B	5.50	-1.03	105.48	.06
PASS 4, COURSE A	5.50	1.16	109.07	.07
PASS 4, COURSE B	5.50	-.99	115.65	.06
WASHBOARD COURSE	5.50	1.45	75.38	.06

TAPE CHANNEL 14 : VERTICAL ACCELERATION ON VEHICLE BED (RIGHT)

TEST	SPEED MPH	PEAK VALUE G'S	DURATION MILLISECONDS	AREA G'S-SECONDS
PASS 1, COURSE A	5.50	-1.07	123.48	.08
PASS 1, COURSE B	5.50	.61	90.55	.03
PASS 2, COURSE A	5.50	-1.13	115.89	.08
PASS 2, COURSE B	5.50	.74	81.49	.04
PASS 3, COURSE A	5.50	-1.16	119.17	.08
PASS 3, COURSE B	5.50	-.82	134.54	.06
PASS 4, COURSE A	5.50	-1.14	123.45	.08
PASS 4, COURSE B	5.50	-.79	123.51	.06
WASHBOARD COURSE	5.50	-1.12	82.59	.06



DEFENSE AMMUNITION CENTER AND SCHOOL - SAVANNA, IL

Photo 35. View of typical SOC on castors secured laterally on 5-ton cargo truck.



DEFENSE AMMUNITION CENTER AND SCHOOL - SAVANNA, IL

Photo 36. View of SOC on polyurethane casters secured on 5-ton cargo truck. Note position of accelerometers on exterior of SOC and floor of 5-ton cargo truck bed.

#### SYNOPSIS OF TEST NO. 14

In Test No. 14, polyurethane and phenolic casters on the SOC were tested over the road hazard course with the SOC secured to the M871 semitrailer. The SOC with each type caster was secured longitudinally with two web strap tiedown assemblies from each of four tiedown/lift rings. In testing the two types of casters in the lateral position, a single web strap tiedown assembly was applied at each of four tiedown/lift rings on the SOC. An additional two web strap tiedown assemblies were used over the top of the SOC in both the longitudinal and lateral position.

Accelerometers were not mounted on the interior of the SOC for this test. Triaxial accelerometers were affixed on the SOC exterior at diagonally opposite corners and under the SOC floor. Instrumentation data in the three dimensions was recorded simultaneously from the three locations.

The M871 semitrailer usually induces vertical forces that are unsurpassed by any other U.S. Army vehicle. The SOC was positioned as close to the rear end of the semitrailer as possible to obtain the most severe test.

From previous testing experience, use of two web strap tiedown assemblies from each of four tiedown/lift ring is necessary during testing the longitudinally positioned SOC with both polyurethane and phenolic casters. In comparing the two types of casters in the road test, the polyurethane caster moved less than one inch and no damage was inflicted on the M871 semitrailer floor; however, the phenolic caster cracked the timbers in the trailer floor during the test.

Unlike the test with the SOC positioned longitudinally, only a single web strap tiedown assembly was used from each of four tiedown/lift rings in testing the SOC in the lateral position. During the test with both the phenolic and polyurethane casters the straps became increasingly loose as

the test progressed. The loosened tiedown straps permitted the SOC to bounce on the cargo bed of the M871 semitrailer damaging the wood in the cargo bed floor. On completion of the road test, three of the four phenolic castors had been forced completely through the wooden floor of the semitrailer. The road test with the polyurethane casters was stopped after Step 4 of the road test, as the casters most likely would have also broken through the wooden floor of the semitrailer.

Testing on the M871 semitrailer has proven the need for two web strap tiedown assemblies from each of four SOC tiedown/lift rings regardless of the type of caster. Even with the two web strap tiedown assemblies from each of four tiedown/lift ring, the phenolic casters caused cracking of the wooden plank in the semitrailer's cargo bed.

Although the wood in the floor of the M871 semitrailer was not new, it was in good condition and is typical of the floor found in trailers used in the field.

A sequence of events were common to the SOC tests on the M871 semitrailer. All web straps in the tiedown assemblies were taut at the start of the test. As the test progressed, the wooden floor under the caster compressed causing the caster to settle into a cupped area in the floor. The result of the caster being lower due to the depression in the wood floor is loose SOC securement straps. The loose SOC straps allow the casters to lift off the wood floor and impact the wood floor further compressing the wood.

ROAD TEST DATA

TEST NO. 14(a)

DATE: 16 Dec 86

TEST SPECIMEN: SOC on polyurethane casters secured longitudinally on the M871 semitrailer. Triaxial accelerometers affixed to the exterior of the SOC. Two web strap tiedown assemblies were used from each tiedown ring with the assemblies over the top of the SOC.

PASS 1-A OVER FIRST SERIES OF TIES 7.20 SEC 4.73 MPH

PASS 1-B OVER SECOND SERIES OF TIES 6.60 SEC 5.17 MPH

REMARKS: No movement

PASS 2-A OVER FIRST SERIES OF TIES 6.60 SEC 5.17 MPH

PASS 2-B OVER SECOND SERIES OF TIES 6.30 SEC 5.41 MPH

REMARKS: No movement

30 MILE ROAD TEST: Omitted

PANIC STOP TEST: Omitted

PASS 3-A OVER FIRST SERIES OF TIES 6.15 SEC 5.54 MPH

PASS 3-B OVER SECOND SERIES OF TIES 6.15 SEC 5.54 MPH

REMARKS: No movement

PASS 4-A OVER FIRST SERIES OF TIES 6.60 SEC 5.17 MPH

PASS 4-B OVER SECOND SERIES OF TIES 6.00 SEC 5.68 MPH

REMARKS: SOC moved one inch side-to-side.

WASHBOARD COURSE: No movement

TEST 5: ROAD HAZARD TEST ON SOC ON M871 SEMITRAILER  
 (POSITION: LENGTHWISE, CASTERS: CLEAR PLASTIC)  
 DATE: 16 DECEMBER 1986

TAPE CHANNEL 1 : LONGITUDINAL ACCELERATION ON VEHICLE BED (RIGHT)

TEST	SPEED MPH	PEAK VALUE G'S	DURATION MILLISECONDS	AREA G'S-SECONDS
PASS 1, COURSE A	5.50	-.13	67.39	.01
PASS 1, COURSE B	5.50	-.09	148.53	.01
PASS 2, COURSE A	5.50	-.12	71.26	.00
PASS 2, COURSE B	5.50	.11	99.72	.01
PASS 3, COURSE A	5.50	-.11	72.15	.00
PASS 3, COURSE B	5.50	.10	106.91	.01
PASS 4, COURSE A	5.50	-.13	79.54	.01
PASS 4, COURSE B	5.50	.10	104.53	.01
WASHBOARD COURSE	5.50	-.12	65.70	.00

TAPE CHANNEL 3 : LATERAL ACCELERATION ON VEHICLE BED (RIGHT)

TEST	SPEED MPH	PEAK VALUE G'S	DURATION MILLISECONDS	AREA G'S-SECONDS
PASS 1, COURSE A	5.50	-1.44	106.26	.10
PASS 1, COURSE B	5.50	-1.22	104.47	.08
PASS 2, COURSE A	5.50	-1.52	126.34	.12
PASS 2, COURSE B	5.50	-1.15	96.41	.07
PASS 3, COURSE A	5.50	1.51	122.10	.10
PASS 3, COURSE B	5.50	-1.20	97.95	.07
PASS 4, COURSE A	5.50	1.53	127.58	.10
PASS 4, COURSE B	5.50	-1.16	100.99	.07
WASHBOARD COURSE	5.50	-.75	102.68	.05

TAPE CHANNEL 4 : LONGITUDINAL ACCELERATION ON VEHICLE BED (LEFT)

TEST	SPEED MPH	PEAK VALUE G'S	DURATION MILLISECONDS	AREA G'S-SECONDS
PASS 1, COURSE A	5.50	-.01	105.83	.00
PASS 1, COURSE B	5.50	-.01	154.94	.00
PASS 2, COURSE A	5.50	-.01	65.92	.00
PASS 2, COURSE B	5.50	-.01	61.25	.00
PASS 3, COURSE A	5.50	-.01	101.13	.00
PASS 3, COURSE B	5.50	-.01	73.47	.00
PASS 4, COURSE A	5.50	-.01	123.08	.00
PASS 4, COURSE B	5.50	-.00	63.23	.00
WASHBOARD COURSE	5.50	-.01	70.68	.00

TAPE CHANNEL 5 : LATERAL ACCELERATION ON VEHICLE BED (LEFT)

TEST	SPEED MPH	PEAK VALUE G'S	DURATION MILLISECONDS	AREA G'S-SECONDS
PASS 1, COURSE A	5.50	-.51	117.79	.04
PASS 1, COURSE B	5.50	.51	111.45	.03
PASS 2, COURSE A	5.50	-.53	113.70	.04
PASS 2, COURSE B	5.50	.51	103.03	.03
PASS 3, COURSE A	5.50	-.60	99.85	.04
PASS 3, COURSE B	5.50	.50	99.73	.03
PASS 4, COURSE A	5.50	-.62	113.15	.04
PASS 4, COURSE B	5.50	.50	105.79	.03
WASHBOARD COURSE	5.50	.21	57.15	.01

TAPE CHANNEL 6 : VERTICAL ACCELERATION ON VEHICLE BED (LEFT)

TEST	SPEED MPH	PEAK VALUE G'S	DURATION MILLISECONDS	AREA G'S-SECONDS
PASS 1, COURSE A	5.50	2.77	106.15	.14
PASS 1, COURSE B	5.50	2.22	59.66	.07
PASS 2, COURSE A	5.50	3.01	111.01	.16
PASS 2, COURSE B	5.50	2.69	58.18	.08
PASS 3, COURSE A	5.50	3.19	56.41	.10
PASS 3, COURSE B	5.50	2.63	56.68	.08
PASS 4, COURSE A	5.50	3.01	53.70	.10
PASS 4, COURSE B	5.50	2.55	72.22	.10
WASHBOARD COURSE	5.50	2.23	90.64	.02

TAPE CHANNEL 7 : LONGITUDINAL ACCELERATION ON RIGHT SIDE OF SOC

TEST	SPEED MPH	PEAK VALUE G'S	DURATION MILLISECONDS	AREA G'S-SECONDS
PASS 1, COURSE A	5.50	.54	78.51	.03
PASS 1, COURSE B	5.50	-.50	80.93	.03
PASS 2, COURSE A	5.50	.64	73.36	.03
PASS 2, COURSE B	5.50	-.57	79.19	.03
PASS 3, COURSE A	5.50	.64	72.66	.03
PASS 3, COURSE B	5.50	.61	77.34	.03
PASS 4, COURSE A	5.50	.61	73.23	.03
PASS 4, COURSE B	5.50	.54	76.28	.02
WASHBOARD COURSE	5.50	-.78	68.14	.03

TAPE CHANNEL 8 : LATERAL ACCELERATION ON RIGHT SIDE OF SOC

TEST	SPEED MPH	PEAK VALUE G'S	DURATION MILLISECONDS	AREA G'S-SECONDS
PASS 1, COURSE A	5.50	-1.62	89.36	.08
PASS 1, COURSE B	5.50	1.30	88.31	.07
PASS 2, COURSE A	5.50	-1.53	111.61	.11
PASS 2, COURSE B	5.50	1.42	71.99	.06
PASS 3, COURSE A	5.50	1.57	102.12	.10
PASS 3, COURSE B	5.50	1.51	69.61	.06
PASS 4, COURSE A	5.50	1.63	101.20	.10
PASS 4, COURSE B	5.50	1.43	70.10	.06
WASHBOARD COURSE	5.50	-.60	98.91	.03

TAPE CHANNEL 9 : VERTICAL ACCELERATION ON RIGHT SIDE OF SOC

TEST	SPEED MPH	PEAK VALUE G'S	DURATION MILLISECONDS	AREA G'S-SECONDS
PASS 1, COURSE A	5.50	2.97	82.11	.14
PASS 1, COURSE B	5.50	1.63	87.93	.08
PASS 2, COURSE A	5.50	3.16	65.28	.12
PASS 2, COURSE B	5.50	2.66	65.30	.10
PASS 3, COURSE A	5.50	3.00	63.39	.11
PASS 3, COURSE B	5.50	2.54	63.74	.09
PASS 4, COURSE A	5.50	2.99	65.01	.11
PASS 4, COURSE B	5.50	2.63	65.29	.09
WASHBOARD COURSE	5.50	1.77	59.17	.06

TAPE CHANNEL 10 : LONGITUDINAL ACCELERATION ON LEFT SIDE OF SOC

TEST	SPEED MPH	PEAK VALUE G'S	DURATION MILLISECONDS	AREA G'S-SECONDS
PASS 1, COURSE A	5.50	-.73	60.75	.03
PASS 1, COURSE B	5.50	.72	65.54	.03
PASS 2, COURSE A	5.50	-.83	59.30	.03
PASS 2, COURSE B	5.50	.59	72.27	.02
PASS 3, COURSE A	5.50	.78	55.40	.02
PASS 3, COURSE B	5.50	-.67	58.49	.02
PASS 4, COURSE A	5.50	.81	53.80	.02
PASS 4, COURSE B	5.50	.57	72.47	.02
WASHBOARD COURSE	5.50	-.70	71.29	.03

TAPE CHANNEL 11 : LATERAL ACCELERATION ON LEFT SIDE OF SOC

TEST	SPEED MPH	PEAK VALUE G'S	DURATION MILLISECONDS	AREA G'S-SECONDS
PASS 1, COURSE A	5.50	-1.68	87.11	.09
PASS 1, COURSE B	5.50	-1.81	81.17	.09
PASS 2, COURSE A	5.50	1.87	77.79	.08
PASS 2, COURSE B	5.50	-1.83	78.90	.08
PASS 3, COURSE A	5.50	-1.93	79.75	.09
PASS 3, COURSE B	5.50	-1.79	80.01	.08
PASS 4, COURSE A	5.50	-2.11	79.47	.10
PASS 4, COURSE B	5.50	-1.81	82.08	.09
WASHBOARD COURSE	5.50	.62	83.17	.03

TAPE CHANNEL 12 : VERTICAL ACCELERATION ON LEFT SIDE OF SOC

TEST	SPEED MPH	PEAK VALUE G'S	DURATION MILLISECONDS	AREA G'S-SECONDS
PASS 1, COURSE A	5.50	1.91	67.82	.08
PASS 1, COURSE B	5.50	1.35	66.42	.05
PASS 2, COURSE A	5.50	1.98	74.43	.08
PASS 2, COURSE B	5.50	1.70	71.23	.07
PASS 3, COURSE A	5.50	2.22	63.88	.08
PASS 3, COURSE B	5.50	1.70	70.91	.07
PASS 4, COURSE A	5.50	2.27	62.17	.08
PASS 4, COURSE B	5.50	1.67	71.45	.07
WASHBOARD COURSE	5.50	1.50	61.64	.05

TAPE CHANNEL 14 : VERTICAL ACCELERATION ON VEHICLE BED (RIGHT)

TEST	SPEED MPH	PEAK VALUE G'S	DURATION MILLISECONDS	AREA G'S-SECONDS
PASS 1, COURSE A	5.50	2.35	87.94	.13
PASS 1, COURSE B	5.50	1.20	110.75	.08
PASS 2, COURSE A	5.50	2.34	93.03	.13
PASS 2, COURSE B	5.50	1.89	72.44	.08
PASS 3, COURSE A	5.50	2.21	96.25	.13
PASS 3, COURSE B	5.50	1.83	71.74	.08
PASS 4, COURSE A	5.50	2.48	96.77	.14
PASS 4, COURSE B	5.50	1.86	72.22	.08
WASHBOARD COURSE	5.50	1.15	57.99	.04

ROAD TEST DATA

TEST NO. 14(b)

DATE: 16 Dec 86

TEST SPECIMEN: SOC on phenolic casters secured longitudinally on the M871 semitrailer. Triaxial accelerometers affixed to the exterior of the SOC. Two web strap tiedown assemblies were used from each tiedown ring with two assemblies over the top of the SOC.

PASS 1-A OVER FIRST SERIES OF TIES      6.00 SEC      5.68 MPH

PASS 1-B OVER SECOND SERIES OF TIES      6.45 SEC      5.31 MPH

REMARKS: Cracks in cargo floor of M871 semitrailer under the rear two casters.

PASS 2-A OVER FIRST SERIES OF TIES      6.30 SEC      5.41 MPH

PASS 2-B OVER SECOND SERIES OF TIES      6.30 SEC      5.41 MPH

REMARKS: Slight propagation of cracks in cargo floor.

30 MILE ROAD TEST: Omitted

PANIC STOP TEST: Omitted

PASS 3-A OVER FIRST SERIES OF TIES      6.15 SEC      5.54 MPH

PASS 3-B OVER SECOND SERIES OF TIES      6.15 SEC      5.54 MPH

REMARKS: Increased cracking of wooden cargo floor.

PASS 4-A OVER FIRST SERIES OF TIES      6.45 SEC      5.31 MPH

PASS 4-B OVER SECOND SERIES OF TIES      6.15 SEC      5.54 MPH

REMARKS: No change

WASHBOARD COURSE: No change

TEST 6: ROAD HAZARD TEST ON SOC ON M871 SEMITRAILER  
 (POSITION: LENGTHWISE, CASTERS: COMPOSITION)  
 DATE: 16 DECEMBER 1986

TAPE CHANNEL 1 : LONGITUDINAL ACCELERATION ON VEHICLE BED (RIGHT)

TEST	SPEED MPH	PEAK VALUE G'S	DURATION MILLISECONDS	AREA G'S-SECONDS
PASS 1, COURSE A	5.50	.63	95.19	.04
PASS 1, COURSE B	5.50	.12	92.83	.01
PASS 2, COURSE A	5.50	-.14	78.68	.01
PASS 2, COURSE B	5.50	.13	91.49	.01
PASS 3, COURSE A	5.50	-.14	76.62	.01
PASS 3, COURSE B	5.50	.11	78.79	.01
PASS 4, COURSE A	5.50	-.13	63.27	.00
PASS 4, COURSE B	5.50	.12	78.61	.01
WASHBOARD COURSE	5.50	-.12	90.64	.00

TAPE CHANNEL 3 : LATERAL ACCELERATION ON VEHICLE BED (RIGHT)

TEST	SPEED MPH	PEAK VALUE G'S	DURATION MILLISECONDS	AREA G'S-SECONDS
PASS 1, COURSE A	5.50	3.01	64.31	.11
PASS 1, COURSE B	5.50	-1.14	105.07	.08
PASS 2, COURSE A	5.50	1.51	110.43	.11
PASS 2, COURSE B	5.50	-1.22	110.01	.08
PASS 3, COURSE A	5.50	1.52	172.98	.10
PASS 3, COURSE B	5.50	-1.13	109.93	.07
PASS 4, COURSE A	5.50	1.38	160.57	.08
PASS 4, COURSE B	5.50	-1.12	104.01	.07
WASHBOARD COURSE	5.50	-.46	137.15	.04

TAPE CHANNEL 4 : LONGITUDINAL ACCELERATION ON VEHICLE BED (LEFT)

TEST	SPEED MPH	PEAK VALUE G'S	DURATION MILLISECONDS	AREA G'S-SECONDS
PASS 1, COURSE A	5.50	.58	57.16	.02
PASS 1, COURSE B	5.50	-.01	63.39	.00
PASS 2, COURSE A	5.50	-.00	63.23	.00
PASS 2, COURSE B	5.50	-.01	68.85	.00
PASS 3, COURSE A	5.50	-.01	98.16	.00
PASS 3, COURSE B	5.50	*****	*****	*****
PASS 4, COURSE A	5.50	*****	*****	*****
PASS 4, COURSE B	5.50	*****	*****	*****
WASHBOARD COURSE	5.50	-.01	63.32	.00

TAPE CHANNEL 5 : LATERAL ACCELERATION ON VEHICLE BED (LEFT)

TEST	SPEED MPH	PEAK VALUE G'S	DURATION MILLISECONDS	AREA G'S-SECONDS
PASS 1, COURSE A	5.50	-.75	79.32	.03
PASS 1, COURSE B	5.50	.48	105.80	.03
PASS 2, COURSE A	5.50	-.59	208.81	.03
PASS 2, COURSE B	5.50	.46	118.64	.03
PASS 3, COURSE A	5.50	-.57	140.60	.04
PASS 3, COURSE B	5.50	.46	109.98	.03
PASS 4, COURSE A	5.50	-.54	201.98	.03
PASS 4, COURSE B	5.50	.46	111.26	.03
WASHBOARD COURSE	5.50	.15	65.29	.01

TAPE CHANNEL 6 : VERTICAL ACCELERATION ON VEHICLE BED (LEFT)

TEST	SPEED MPH	PEAK VALUE G'S	DURATION MILLISECONDS	AREA G'S-SECONDS
PASS 1, COURSE A	5.50	2.20	62.78	.08
PASS 1, COURSE B	5.50	2.62	70.60	.10
PASS 2, COURSE A	5.50	3.23	58.17	.10
PASS 2, COURSE B	5.50	2.59	57.94	.09
PASS 3, COURSE A	5.50	3.40	56.74	.12
PASS 3, COURSE B	5.50	2.64	69.62	.10
PASS 4, COURSE A	5.50	3.19	84.20	.17
PASS 4, COURSE B	5.50	2.57	69.91	.10
WASHBOARD COURSE	5.50	2.23	61.64	.08

TAPE CHANNEL 7 : LONGITUDINAL ACCELERATION ON RIGHT SIDE OF SOC

TEST	SPEED MPH	PEAK VALUE G'S	DURATION MILLISECONDS	AREA G'S-SECONDS
PASS 1, COURSE A	5.50	2.59	95.14	.14
PASS 1, COURSE B	5.50	.84	64.23	.03
PASS 2, COURSE A	5.50	-.94	61.51	.03
PASS 2, COURSE B	5.50	.85	61.10	.03
PASS 3, COURSE A	5.50	-.87	62.85	.03
PASS 3, COURSE B	5.50	.89	62.30	.03
PASS 4, COURSE A	5.50	-.83	62.31	.03
PASS 4, COURSE B	5.50	.69	68.66	.03
WASHBOARD COURSE	5.50	.75	69.58	.03

TAPE CHANNEL 8 : LATERAL ACCELERATION ON RIGHT SIDE OF SOC

TEST	SPEED MPH	PEAK VALUE G'S	DURATION MILLISECONDS	AREA G'S-SECONDS
PASS 1. COURSE A	5.50	-.00	61.68	.00
PASS 1. COURSE B	5.50	1.36	84.29	.07
PASS 2. COURSE A	5.50	1.71	102.64	.10
PASS 2. COURSE B	5.50	1.47	82.20	.07
PASS 3. COURSE A	5.50	1.57	101.98	.10
PASS 3. COURSE B	5.50	1.53	69.19	.06
PASS 4. COURSE A	5.50	1.60	102.18	.10
PASS 4. COURSE B	5.50	1.45	81.09	.07
WASHBOARD COURSE	5.50	.36	85.20	.02

TAPE CHANNEL 9 : VERTICAL ACCELERATION ON RIGHT SIDE OF SOC

TEST	SPEED MPH	PEAK VALUE G'S	DURATION MILLISECONDS	AREA G'S-SECONDS
PASS 1. COURSE A	5.50	.21	58.26	.01
PASS 1. COURSE B	5.50	2.55	66.99	.10
PASS 2. COURSE A	5.50	2.98	79.74	.14
PASS 2. COURSE B	5.50	2.55	64.90	.09
PASS 3. COURSE A	5.50	3.19	81.73	.15
PASS 3. COURSE B	5.50	2.55	65.43	.09
PASS 4. COURSE A	5.50	2.99	71.58	.12
PASS 4. COURSE B	5.50	2.53	65.61	.09
WASHBOARD COURSE	5.50	1.81	65.29	.07

TAPE CHANNEL 10 : LONGITUDINAL ACCELERATION ON LEFT SIDE OF SOC

TEST	SPEED MPH	PEAK VALUE G'S	DURATION MILLISECONDS	AREA G'S-SECONDS
PASS 1. COURSE A	5.50	.14	100.71	.01
PASS 1. COURSE B	5.50	.38	77.95	.02
PASS 2. COURSE A	5.50	.75	55.63	.02
PASS 2. COURSE B	5.50	.53	72.81	.02
PASS 3. COURSE A	5.50	.76	53.73	.02
PASS 3. COURSE B	5.50	.51	79.33	.02
PASS 4. COURSE A	5.50	.74	56.12	.02
PASS 4. COURSE B	5.50	.55	77.38	.02
WASHBOARD COURSE	5.50	-.90	69.09	.04

TAPE CHANNEL 11 : LATERAL ACCELERATION ON LEFT SIDE OF SOC

TEST	SPEED MPH	PEAK VALUE G'S	DURATION MILLISECONDS	AREA G'S-SECONDS
PASS 1, COURSE A	5.50	2.22	63.22	.08
PASS 1, COURSE B	5.50	-1.66	81.91	.08
PASS 2, COURSE A	5.50	-1.96	75.61	.08
PASS 2, COURSE B	5.50	-1.62	83.95	.08
PASS 3, COURSE A	5.50	-1.93	75.23	.08
PASS 3, COURSE B	5.50	-1.59	84.39	.08
PASS 4, COURSE A	5.50	-1.74	92.57	.10
PASS 4, COURSE B	5.50	-1.58	85.05	.08
WASHBOARD COURSE	5.50	-.50	79.64	.02

TAPE CHANNEL 12 : VERTICAL ACCELERATION ON LEFT SIDE OF SOC

TEST	SPEED MPH	PEAK VALUE G'S	DURATION MILLISECONDS	AREA G'S-SECONDS
PASS 1, COURSE A	5.50	2.10	75.53	.07
PASS 1, COURSE B	5.50	1.73	69.74	.07
PASS 2, COURSE A	5.50	2.22	64.16	.08
PASS 2, COURSE B	5.50	1.71	68.76	.07
PASS 3, COURSE A	5.50	2.24	63.25	.08
PASS 3, COURSE B	5.50	1.77	69.17	.07
PASS 4, COURSE A	5.50	2.14	65.18	.08
PASS 4, COURSE B	5.50	1.67	70.51	.07
WASHBOARD COURSE	5.50	1.51	63.39	.06

TAPE CHANNEL 14 : VERTICAL ACCELERATION ON VEHICLE BED (RIGHT)

TEST	SPEED MPH	PEAK VALUE G'S	DURATION MILLISECONDS	AREA G'S-SECONDS
PASS 1, COURSE A	5.50	-.78	68.38	.03
PASS 1, COURSE B	5.50	1.81	73.63	.08
PASS 2, COURSE A	5.50	2.36	97.41	.14
PASS 2, COURSE B	5.50	1.83	71.93	.08
PASS 3, COURSE A	5.50	2.71	94.63	.15
PASS 3, COURSE B	5.50	1.88	73.95	.08
PASS 4, COURSE A	5.50	2.38	95.13	.13
PASS 4, COURSE B	5.50	1.78	72.56	.07
WASHBOARD COURSE	5.50	1.22	62.68	.04

NOTES:

\*\*\*\*\*: DATA NOT AVAILABLE.

ROAD TEST DATA

TEST NO. 14(c)

DATE: 16 Dec 86

TEST SPECIMEN: SOC on phenolic casters secured laterally on the M871 semitrailer. Triaxial accelerometers affixed to the exterior of the SOC. A single web strap tiedown assembly was used from each tiedown ring with two assemblies over the top of the SOC.

PASS 1-A OVER FIRST SERIES OF TIES      6.60 SEC                      5.17 MPH

PASS 1-B OVER SECOND SERIES OF TIES      6.15 SEC                      5.54 MPH

REMARKS: Right rear strap slightly loose. Wood on cargo floor compressing under the casters.

PASS 2-A OVER FIRST SERIES OF TIES      6.75 SEC                      5.05 MPH

PASS 2-B OVER SECOND SERIES OF TIES      6.15 SEC                      5.54 MPH

REMARKS: Right front, right rear and left rear straps loose. SOC moving two to three inches side-to-side.

30 MILE ROAD TEST: Omitted

PANIC STOP TEST: Omitted

PASS 3-A OVER FIRST SERIES OF TIES      6.15 SEC                      5.54 MPH

PASS 3-B OVER SECOND SERIES OF TIES      6.15 SEC                      5.54 MPH

REMARKS: All straps loose except two over the top of the SOC.

PASS 4-A OVER FIRST SERIES OF TIES      6.45 SEC                      5.31 MPH

PASS 4-B OVER SECOND SERIES OF TIES      6.15 SEC                      5.54 MPH

REMARKS: All straps loose.

WASHBOARD COURSE: Right rear, right front, and left rear casters broken through the wooden cargo floor. FAILURE.

TEST 7: ROAD HAZARD TEST ON SOC ON M871 SEMITRAILER  
 (POSITION: CROSSWISE, CASTERS: COMPOSITION)  
 DATE: 16 DECEMBER 1986

TAPE CHANNEL 1 : LONGITUDINAL ACCELERATION ON VEHICLE BED (RIGHT)

TEST	SPEED MPH	PEAK VALUE G'S	DURATION MILLISECONDS	AREA G'S-SECONDS
PASS 1, COURSE A	5.50	.15	128.26	.01
PASS 1, COURSE B	5.50	-.10	83.31	.00
PASS 2, COURSE A	5.50	.15	74.52	.01
PASS 2, COURSE B	5.50	-.12	69.19	.00
PASS 3, COURSE A	5.50	.14	137.94	.01
PASS 3, COURSE B	5.50	-.12	71.14	.01
PASS 4, COURSE A	5.50	.15	71.32	.01
PASS 4, COURSE B	5.50	-.10	76.67	.00
WASHBOARD COURSE	5.50	.11	90.64	.00

TAPE CHANNEL 3 : LATERAL ACCELERATION ON VEHICLE BED (RIGHT)

TEST	SPEED MPH	PEAK VALUE G'S	DURATION MILLISECONDS	AREA G'S-SECONDS
PASS 1, COURSE A	5.50	-1.69	139.79	.11
PASS 1, COURSE B	5.50	-1.11	114.04	.08
PASS 2, COURSE A	5.50	-1.59	95.16	.09
PASS 2, COURSE B	5.50	-1.24	93.60	.07
PASS 3, COURSE A	5.50	-1.69	105.45	.10
PASS 3, COURSE B	5.50	-1.08	66.76	.04
PASS 4, COURSE A	5.50	-1.47	118.07	.09
PASS 4, COURSE B	5.50	-1.16	68.04	.05
WASHBOARD COURSE	5.50	.40	62.17	.01

TAPE CHANNEL 4 : LONGITUDINAL ACCELERATION ON VEHICLE BED (LEFT)

TEST	SPEED MPH	PEAK VALUE G'S	DURATION MILLISECONDS	AREA G'S-SECONDS
PASS 1, COURSE A	5.50	*****	*****	*****
PASS 1, COURSE B	5.50	-.01	79.88	.00
PASS 2, COURSE A	5.50	-.01	75.54	.00
PASS 2, COURSE B	5.50	-.01	82.60	.00
PASS 3, COURSE A	5.50	-.01	83.01	.00
PASS 3, COURSE B	5.50	-.01	104.75	.00
PASS 4, COURSE A	5.50	-.01	71.97	.00
PASS 4, COURSE B	5.50	-.01	105.55	.00
WASHBOARD COURSE	5.50	-.01	70.56	.00

TAPE CHANNEL 5 : LATERAL ACCELERATION ON VEHICLE BED (LEFT)

TEST	SPEED MPH	PEAK VALUE G'S	DURATION MILLISECONDS	AREA G'S-SECONDS
PASS 1, COURSE A	5.50	.59	125.30	.04
PASS 1, COURSE B	5.50	-.52	112.81	.04
PASS 2, COURSE A	5.50	.59	83.66	.03
PASS 2, COURSE B	5.50	.48	84.46	.02
PASS 3, COURSE A	5.50	.58	92.38	.03
PASS 3, COURSE B	5.50	.44	70.07	.02
PASS 4, COURSE A	5.50	-.57	67.45	.02
PASS 4, COURSE B	5.50	.49	67.76	.02
WASHBOARD COURSE	5.50	.15	73.52	.01

TAPE CHANNEL 6 : VERTICAL ACCELERATION ON VEHICLE BED (LEFT)

TEST	SPEED MPH	PEAK VALUE G'S	DURATION MILLISECONDS	AREA G'S-SECONDS
PASS 1, COURSE A	5.50	3.32	70.98	.13
PASS 1, COURSE B	5.50	2.88	71.97	.12
PASS 2, COURSE A	5.50	3.15	70.46	.13
PASS 2, COURSE B	5.50	2.89	71.19	.12
PASS 3, COURSE A	5.50	3.05	79.49	.14
PASS 3, COURSE B	5.50	2.83	70.44	.12
PASS 4, COURSE A	5.50	3.50	83.10	.17
PASS 4, COURSE B	5.50	2.90	69.65	.12
WASHBOARD COURSE	5.50	2.47	56.08	.08

TAPE CHANNEL 7 : LONGITUDINAL ACCELERATION ON RIGHT SIDE OF SOC

TEST	SPEED MPH	PEAK VALUE G'S	DURATION MILLISECONDS	AREA G'S-SECONDS
PASS 1, COURSE A	5.50	1.55	90.80	.08
PASS 1, COURSE B	5.50	1.42	94.76	.08
PASS 2, COURSE A	5.50	1.69	82.06	.08
PASS 2, COURSE B	5.50	-1.47	95.07	.08
PASS 3, COURSE A	5.50	*****	*****	*****
PASS 3, COURSE B	5.50	-38.22	91.43	2.05
PASS 4, COURSE A	5.50	-1.48	161.36	.14
PASS 4, COURSE B	5.50	-1.44	101.64	.09
WASHBOARD COURSE	5.50	-.54	95.57	.03

TAPE CHANNEL 8 : LATERAL ACCELERATION ON RIGHT SIDE OF SOC

TEST	SPEED MPH	PEAK VALUE G'S	DURATION MILLISECONDS	AREA G'S-SECONDS
PASS 1, COURSE A	5.50	.74	79.01	.04
PASS 1, COURSE B	5.50	.54	66.00	.02
PASS 2, COURSE A	5.50	-.59	89.76	.03
PASS 2, COURSE B	5.50	-.59	77.91	.03
PASS 3, COURSE A	5.50	.55	65.04	.02
PASS 3, COURSE B	5.50	-.64	63.79	.02
PASS 4, COURSE A	5.50	.75	77.73	.03
PASS 4, COURSE B	5.50	.62	80.28	.03
WASHBOARD COURSE	5.50	-.69	66.42	.02

TAPE CHANNEL 9 : VERTICAL ACCELERATION ON RIGHT SIDE OF SOC

TEST	SPEED MPH	PEAK VALUE G'S	DURATION MILLISECONDS	AREA G'S-SECONDS
PASS 1, COURSE A	5.50	3.52	79.57	.16
PASS 1, COURSE B	5.50	2.66	68.37	.10
PASS 2, COURSE A	5.50	3.43	63.96	.12
PASS 2, COURSE B	5.50	2.77	66.68	.10
PASS 3, COURSE A	5.50	2.90	68.03	.11
PASS 3, COURSE B	5.50	2.77	66.80	.11
PASS 4, COURSE A	5.50	3.86	77.92	.18
PASS 4, COURSE B	5.50	2.88	70.69	.12
WASHBOARD COURSE	5.50	2.02	53.16	.06

TAPE CHANNEL 10 : LONGITUDINAL ACCELERATION ON LEFT SIDE OF SOC

TEST	SPEED MPH	PEAK VALUE G'S	DURATION MILLISECONDS	AREA G'S-SECONDS
PASS 1, COURSE A	5.50	1.58	97.76	.09
PASS 1, COURSE B	5.50	1.36	96.96	.08
PASS 2, COURSE A	5.50	1.77	86.99	.09
PASS 2, COURSE B	5.50	-1.92	80.31	.09
PASS 3, COURSE A	5.50	-2.15	80.09	.10
PASS 3, COURSE B	5.50	-1.96	76.38	.08
PASS 4, COURSE A	5.50	-1.80	87.21	.09
PASS 4, COURSE B	5.50	-1.59	81.40	.08
WASHBOARD COURSE	5.50	.36	68.21	.01

TAPE CHANNEL 11 : LATERAL ACCELERATION ON LEFT SIDE OF SOC

TEST	SPEED MPH	PEAK VALUE G'S	DURATION MILLISECONDS	AREA G'S-SECONDS
PASS 1, COURSE A	5.50	-.61	92.53	.03
PASS 1, COURSE B	5.50	.52	88.33	.03
PASS 2, COURSE A	5.50	-.51	69.74	.02
PASS 2, COURSE B	5.50	-.53	88.70	.03
PASS 3, COURSE A	5.50	-.57	70.33	.02
PASS 3, COURSE B	5.50	-.51	84.63	.03
PASS 4, COURSE A	5.50	-.50	102.01	.03
PASS 4, COURSE B	5.50	-.48	63.60	.02
WASHBOARD COURSE	5.50	-.37	78.67	.02

TAPE CHANNEL 12 : VERTICAL ACCELERATION ON LEFT SIDE OF SOC

TEST	SPEED MPH	PEAK VALUE G'S	DURATION MILLISECONDS	AREA G'S-SECONDS
PASS 1, COURSE A	5.50	2.07	69.23	.08
PASS 1, COURSE B	5.50	1.80	70.06	.08
PASS 2, COURSE A	5.50	2.03	66.75	.08
PASS 2, COURSE B	5.50	1.87	71.12	.08
PASS 3, COURSE A	5.50	2.02	81.15	.10
PASS 3, COURSE B	5.50	1.98	72.13	.08
PASS 4, COURSE A	5.50	2.35	84.54	.12
PASS 4, COURSE B	5.50	1.87	68.43	.08
WASHBOARD COURSE	5.50	1.93	58.43	.07

TAPE CHANNEL 14 : VERTICAL ACCELERATION ON VEHICLE BED (RIGHT)

TEST	SPEED MPH	PEAK VALUE G'S	DURATION MILLISECONDS	AREA G'S-SECONDS
PASS 1, COURSE A	5.50	2.39	83.70	.12
PASS 1, COURSE B	5.50	1.73	73.76	.07
PASS 2, COURSE A	5.50	2.20	72.19	.10
PASS 2, COURSE B	5.50	1.71	72.12	.07
PASS 3, COURSE A	5.50	1.75	74.39	.08
PASS 3, COURSE B	5.50	1.72	72.73	.07
PASS 4, COURSE A	5.50	2.46	83.89	.12
PASS 4, COURSE B	5.50	1.75	74.23	.08
WASHBOARD COURSE	5.50	1.19	67.15	.05

NOTES:

\*\*\*\*\*: DATA NOT AVAILABLE.

ROAD TEST DATA

TEST NO. 14(d)

DATE: 17 DEC 86

TEST SPECIMEN: SOC on polyurethane casters secured laterally on the M871 semitrailer. Triaxial accelerometers affixed to the exterior of the SOC. SOC positioned forward on the semitrailer to avoid the floor damage in the previous test.

PASS 1-A OVER FIRST SERIES OF TIES      6.60 SEC      5.17 MPH

PASS 1-B OVER SECOND SERIES OF TIES      6.60 SEC      5.17 MPH

REMARKS: SOC moved one inch side-to-side.

PASS 2-A OVER FIRST SERIES OF TIES      6.30 SEC      5.41 MPH

PASS 2-B OVER SECOND SERIES OF TIES      6.15 SEC      5.54 MPH

REMARKS: Previously described crack is slightly worse. All straps on the corners of the straps are slightly loose.

30 MILE ROAD TEST: Omitted

PANIC STOP TEST: Omitted

PASS 3-A OVER FIRST SERIES OF TIES      6.60 SEC      5.17 MPH

PASS 3-B OVER SECOND SERIES OF TIES      6.45 SEC      5.31 MPH

REMARKS: Straps are looser.

PASS 4-A OVER FIRST SERIES OF TIES      6.30 SEC      5.41 MPH

PASS 4-B OVER SECOND SERIES OF TIES      6.30 SEC      5.41 MPH

REMARKS: Straps continued to loosen. FAILURE.

WASHBOARD COURSE

TEST 8: ROAD HAZARD TEST ON SOC ON M871 SEMITRAILER  
 (POSITION: CROSSWISE, CASTERS: CLEAR PLASTIC)  
 DATE: 16 DECEMBER 1986

TAPE CHANNEL 1 : LONGITUDINAL ACCELERATION ON VEHICLE BED (RIGHT)

TEST	SPEED MPH	PEAK VALUE G'S	DURATION MILLISECONDS	AREA G'S-SECONDS
PASS 1, COURSE A	5.50	-.16	76.22	.01
PASS 1, COURSE B	5.50	.14	75.93	.01
PASS 2, COURSE A	5.50	-.17	69.39	.01
PASS 2, COURSE B	5.50	.15	70.70	.01
PASS 3, COURSE A	5.50	-.17	72.37	.01
PASS 3, COURSE B	5.50	.15	70.87	.01
PASS 4, COURSE A	5.50	-.17	72.22	.01
PASS 4, COURSE B	5.50	.14	68.11	.01

TAPE CHANNEL 3 : LATERAL ACCELERATION ON VEHICLE BED (RIGHT)

TEST	SPEED MPH	PEAK VALUE G'S	DURATION MILLISECONDS	AREA G'S-SECONDS
PASS 1, COURSE A	5.50	1.63	100.71	.10
PASS 1, COURSE B	5.50	-1.03	93.81	.06
PASS 2, COURSE A	5.50	1.56	91.60	.09
PASS 2, COURSE B	5.50	.97	77.93	.04
PASS 3, COURSE A	5.50	1.77	92.73	.10
PASS 3, COURSE B	5.50	1.15	80.79	.05
PASS 4, COURSE A	5.50	1.81	86.36	.09
PASS 4, COURSE B	5.50	1.10	80.77	.05

TAPE CHANNEL 4 : LONGITUDINAL ACCELERATION ON VEHICLE BED (LEFT)

TEST	SPEED MPH	PEAK VALUE G'S	DURATION MILLISECONDS	AREA G'S-SECONDS
PASS 1, COURSE A	5.50	-.01	94.57	.00
PASS 1, COURSE B	5.50	-.01	56.89	.00
PASS 2, COURSE A	5.50	-.01	63.68	.00
PASS 2, COURSE B	5.50	-.01	74.38	.00
PASS 3, COURSE A	5.50	-.01	68.31	.00
PASS 3, COURSE B	5.50	-.01	84.21	.00
PASS 4, COURSE A	5.50	-.01	91.93	.00
PASS 4, COURSE B	5.50	-.01	113.00	.00

TAPE CHANNEL 5 : LATERAL ACCELERATION ON VEHICLE BED (LEFT)

TEST	SPEED MPH	PEAK VALUE G'S	DURATION MILLISECONDS	AREA G'S-SECONDS
PASS 1, COURSE A	5.50	.65	81.44	.03
PASS 1, COURSE B	5.50	-.50	85.20	.03
PASS 2, COURSE A	5.50	.55	73.88	.03
PASS 2, COURSE B	5.50	.45	76.13	.02
PASS 3, COURSE A	5.50	.68	75.97	.03
PASS 3, COURSE B	5.50	.51	74.31	.02
PASS 4, COURSE A	5.50	.68	73.95	.03
PASS 4, COURSE B	5.50	-.50	105.65	.03

TAPE CHANNEL 6 : VERTICAL ACCELERATION ON VEHICLE BED (LEFT)

TEST	SPEED MPH	PEAK VALUE G'S	DURATION MILLISECONDS	AREA G'S-SECONDS
PASS 1, COURSE A	5.50	3.14	82.39	.15
PASS 1, COURSE B	5.50	2.72	68.93	.11
PASS 2, COURSE A	5.50	3.04	77.88	.14
PASS 2, COURSE B	5.50	2.71	70.33	.11
PASS 3, COURSE A	5.50	3.34	83.51	.16
PASS 3, COURSE B	5.50	2.58	70.89	.11
PASS 4, COURSE A	5.50	3.23	84.87	.17
PASS 4, COURSE B	5.50	2.55	70.08	.10

TAPE CHANNEL 7 : LONGITUDINAL ACCELERATION ON RIGHT SIDE OF SOC

TEST	SPEED MPH	PEAK VALUE G'S	DURATION MILLISECONDS	AREA G'S-SECONDS
PASS 1, COURSE A	5.50	1.51	94.63	.09
PASS 1, COURSE B	5.50	1.44	93.47	.08
PASS 2, COURSE A	5.50	1.62	97.61	.09
PASS 2, COURSE B	5.50	-1.56	100.43	.09
PASS 3, COURSE A	5.50	1.93	96.57	.11
PASS 3, COURSE B	5.50	1.57	86.95	.08
PASS 4, COURSE A	5.50	1.91	94.66	.11
PASS 4, COURSE B	5.50	1.54	85.34	.08

TAPE CHANNEL 8 : LATERAL ACCELERATION ON RIGHT SIDE OF SOC

TEST	SPEED MPH	PEAK VALUE G'S	DURATION MILLISECONDS	AREA G'S-SECONDS
PASS 1, COURSE A	5.50	-.46	104.36	.03
PASS 1, COURSE B	5.50	.63	72.00	.02
PASS 2, COURSE A	5.50	.63	77.09	.03
PASS 2, COURSE B	5.50	.77	73.93	.03
PASS 3, COURSE A	5.50	.82	76.65	.04
PASS 3, COURSE B	5.50	.76	76.68	.03
PASS 4, COURSE A	5.50	.69	87.91	.04
PASS 4, COURSE B	5.50	.71	79.37	.03

TAPE CHANNEL 9 : VERTICAL ACCELERATION ON RIGHT SIDE OF SOC

TEST	SPEED MPH	PEAK VALUE G'S	DURATION MILLISECONDS	AREA G'S-SECONDS
PASS 1, COURSE A	5.50	3.13	66.19	.12
PASS 1, COURSE B	5.50	2.36	62.78	.09
PASS 2, COURSE A	5.50	3.42	81.25	.16
PASS 2, COURSE B	5.50	2.36	68.90	.09
PASS 3, COURSE A	5.50	3.47	83.95	.16
PASS 3, COURSE B	5.50	2.52	65.52	.09
PASS 4, COURSE A	5.50	3.66	75.61	.15
PASS 4, COURSE B	5.50	2.45	65.87	.10

TAPE CHANNEL 10 : LONGITUDINAL ACCELERATION ON LEFT SIDE OF SOC

TEST	SPEED MPH	PEAK VALUE G'S	DURATION MILLISECONDS	AREA G'S-SECONDS
PASS 1, COURSE A	5.50	1.83	89.56	.10
PASS 1, COURSE B	5.50	1.84	90.76	.10
PASS 2, COURSE A	5.50	1.71	89.86	.09
PASS 2, COURSE B	5.50	-1.94	83.55	.09
PASS 3, COURSE A	5.50	-1.98	86.37	.10
PASS 3, COURSE B	5.50	-1.94	82.36	.10
PASS 4, COURSE A	5.50	-1.78	87.46	.09
PASS 4, COURSE B	5.50	-1.95	84.26	.10

TAPE CHANNEL 11 : LATERAL ACCELERATION ON LEFT SIDE OF SOC

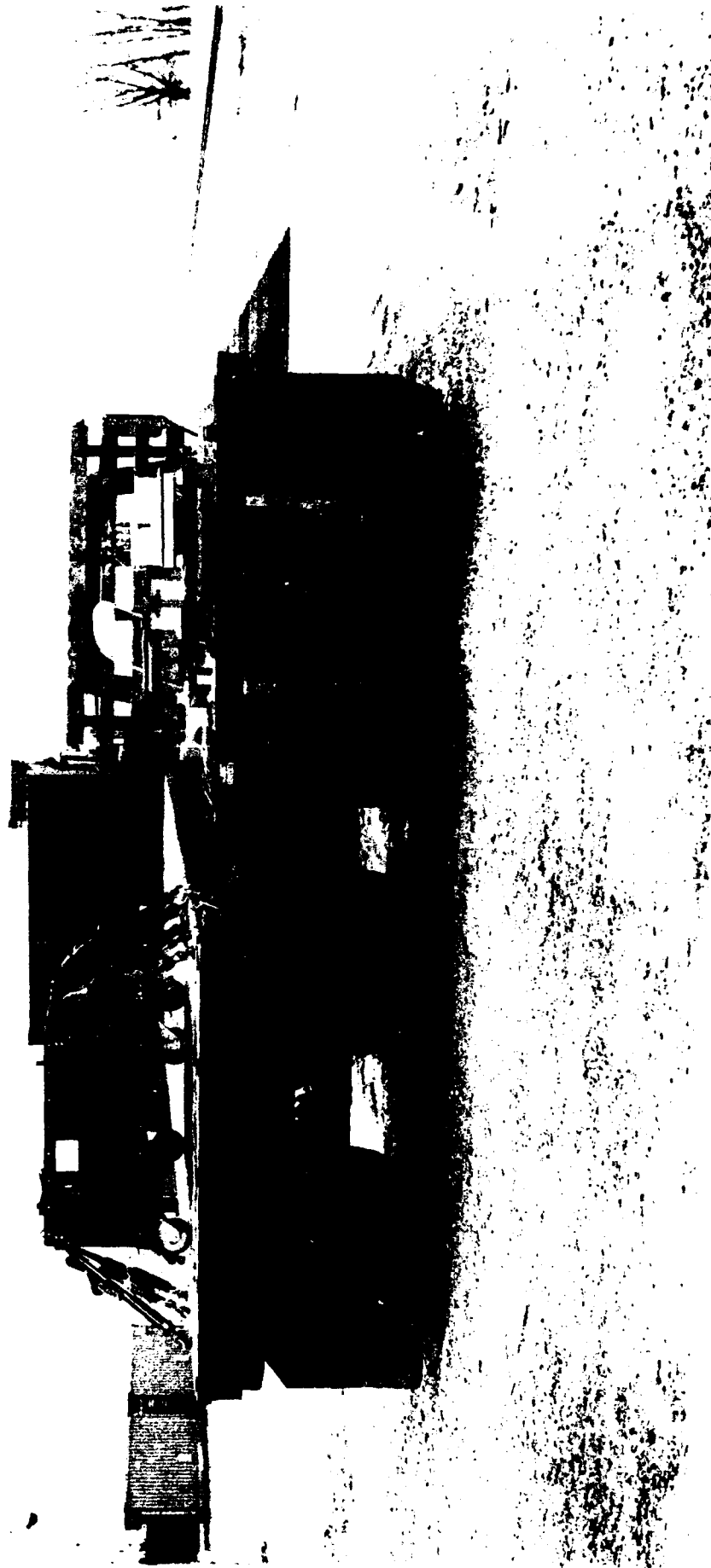
TEST	SPEED MPH	PEAK VALUE G'S	DURATION MILLISECONDS	AREA G'S-SECONDS
PASS 1, COURSE A	5.50	-.64	68.03	.03
PASS 1, COURSE B	5.50	-.71	75.76	.03
PASS 2, COURSE A	5.50	-.66	67.61	.03
PASS 2, COURSE B	5.50	-.74	67.71	.03
PASS 3, COURSE A	5.50	-.76	66.46	.03
PASS 3, COURSE B	5.50	.71	91.79	.04
PASS 4, COURSE A	5.50	-.64	71.69	.03
PASS 4, COURSE B	5.50	-.75	72.92	.03

TAPE CHANNEL 12 : VERTICAL ACCELERATION ON LEFT SIDE OF SOC

TEST	SPEED MPH	PEAK VALUE G'S	DURATION MILLISECONDS	AREA G'S-SECONDS
PASS 1, COURSE A	5.50	2.11	80.94	.10
PASS 1, COURSE B	5.50	1.78	65.59	.07
PASS 2, COURSE A	5.50	2.06	74.86	.08
PASS 2, COURSE B	5.50	1.86	66.52	.07
PASS 3, COURSE A	5.50	2.29	80.81	.11
PASS 3, COURSE B	5.50	1.84	66.97	.07
PASS 4, COURSE A	5.50	2.26	81.84	.11
PASS 4, COURSE B	5.50	1.81	65.86	.07

TAPE CHANNEL 14 : VERTICAL ACCELERATION ON VEHICLE BED (RIGHT)

TEST	SPEED MPH	PEAK VALUE G'S	DURATION MILLISECONDS	AREA G'S-SECONDS
PASS 1, COURSE A	5.50	2.23	88.44	.12
PASS 1, COURSE B	5.50	1.50	72.84	.06
PASS 2, COURSE A	5.50	2.35	84.30	.12
PASS 2, COURSE B	5.50	1.57	75.74	.07
PASS 3, COURSE A	5.50	2.35	85.45	.12
PASS 3, COURSE B	5.50	1.56	71.17	.06
PASS 4, COURSE A	5.50	2.41	83.12	.12
PASS 4, COURSE B	5.50	1.60	72.25	.06



DEFENSE AMMUNITION CENTER AND SCHOOL - SAVANNA, IL

Photo 37. View of the longitudinally positioned SOC on the polyurethane casters secured to the M871 semitrailer with two web strap tiedown assemblies from each tiedown ring, plus two assemblies over the top of the SOC. Note the accompanying truck is transporting the instrumentation package.



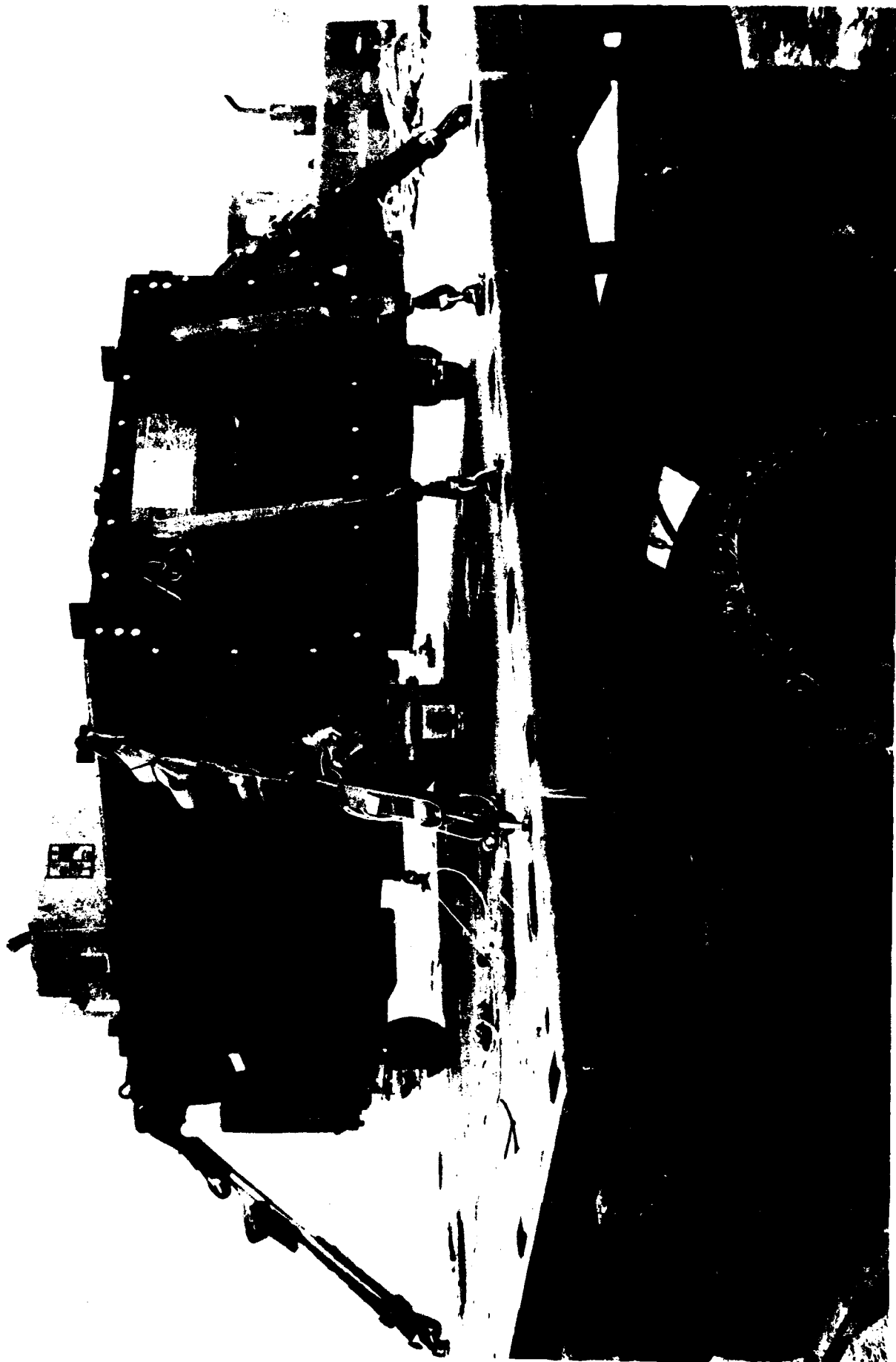
DEFENSE AMMUNITION CENTER AND SCHOOL - SAVANNA, IL

Photo 38. View of the longitudinally positioned SOC on the polyurethane casters secured to the M871 semitrailer. Note two web strap tiedown assemblies from each tiedown ring. Also note the position of the triaxial accelerometers.



DEFENSE AMMUNITION CENTER AND SCHOOL - SAVANNA, IL

Photo 39. View of the laterally positioned SOC on the phenolic casters following completion of the road hazard course on the M871 semitrailer. Note that the SOC casters have gone through the wooden cargo floor of the M871 semitrailer.



DEFENSE AMMUNITION CENTER AND SCHOOL - SAVANNA, IL

Photo 40. View of the laterally positioned SOC on the polyurethane casters secured to the M871 semitrailer with two web strap tiedown assemblies from each tiedown ring, plus two assemblies over the top of the SOC.

SYNOPSIS OF TEST NO. 15

In Test No. 15, polyurethane and phenolic casters on the SOC were tested over the road hazard course with the SOC secured to the HEMTT. The SOC was secured longitudinally and laterally with a single web strap tiedown assembly from each of four tiedown/lift rings. An additional two web strap tiedown assemblies were used over the top of the SOC.

Accelerometers were not mounted on the interior of the SOC for this test. Triaxial accelerometers were affixed on the SOC exterior at diagonally opposite corners and under the SOC floor. Instrumentation data from the three dimensions was recorded simultaneously from the three locations.

As evidenced in the test with the M871 semitrailer, and again with the HEMTT, the SOC on casters is very damaging to the floor of the vehicle. The bearing area or footprint of the casters is very small creating a high force per square inch. Both the polyurethane and the phenolic casters seem to have an equal effect on the HEMTT cargo bed floor.

ROAD TEST DATA

TEST NO. 15(a)

DATE: 17 Dec 86

TEST SPECIMEN: SOC on polyurethane casters secured longitudinally on the HEMTT. Triaxial accelerometers affixed to the exterior of the SOC.

PASS 1-A OVER FIRST SERIES OF TIES      6.00 SEC      5.68 MPH

PASS 1-B OVER SECOND SERIES OF TIES      7.05 SEC      4.84 MPH

REMARKS: Slight cupping of HEMTT metal floor under right rear caster.

PASS 2-A OVER FIRST SERIES OF TIES      6.00 SEC      5.68 MPH

PASS 2-B OVER SECOND SERIES OF TIES      6.00 SEC      5.68 MPH

REMARKS: No change

30 MILE ROAD TEST: Omitted

PANIC STOP TEST: Omitted

PASS 3-A OVER FIRST SERIES OF TIES      5.70 SEC      5.98 MPH

PASS 3-B OVER SECOND SERIES OF TIES      6.00 SEC      5.68 MPH

REMARKS: All tiedown straps are a little loose.

PASS 4-A OVER FIRST SERIES OF TIES      6.15 SEC      5.54 MPH

PASS 4-B OVER SECOND SERIES OF TIES      6.00 SEC      5.68 MPH

REMARKS: Slight indentation of HEMTT metal floor under right front caster.

WASHBOARD COURSE: No change

TEST 9: ROAD HAZARD TEST ON SOC ON HEMTT  
 (POSITION: LENGTHWISE, CASTERS: CLEAR PLASTIC)  
 DATE: 17 DECEMBER 1986

TAPE CHANNEL 1 : LONGITUDINAL ACCELERATION ON VEHICLE BED (RIGHT)

TEST	SPEED MPH	PEAK VALUE G'S	DURATION MILLISECONDS	AREA G'S-SECONDS
PASS 1, COURSE A	5.50	.08	108.96	.01
PASS 1, COURSE B	5.50	.10	235.39	.02
PASS 2, COURSE A	5.50	-.08	104.97	.01
PASS 2, COURSE B	5.50	.13	185.91	.02
PASS 3, COURSE A	5.50	-.09	92.35	.01
PASS 3, COURSE B	5.50	.11	113.44	.01
PASS 4, COURSE A	5.50	-.09	91.82	.01
PASS 4, COURSE B	5.50	-.07	86.17	.00
WASHBOARD COURSE	5.50	.05	86.77	.00

TAPE CHANNEL 3 : LATERAL ACCELERATION ON VEHICLE BED (RIGHT)

TEST	SPEED MPH	PEAK VALUE G'S	DURATION MILLISECONDS	AREA G'S-SECONDS
PASS 1, COURSE A	5.50	.72	99.66	.05
PASS 1, COURSE B	5.50	-.66	70.18	.03
PASS 2, COURSE A	5.50	.73	99.27	.05
PASS 2, COURSE B	5.50	-.62	71.05	.03
PASS 3, COURSE A	5.50	.71	110.05	.05
PASS 3, COURSE B	5.50	.58	59.41	.02
PASS 4, COURSE A	5.50	-.63	108.95	.04
PASS 4, COURSE B	5.50	-.57	80.81	.03
WASHBOARD COURSE	5.50	-.15	69.58	.01

TAPE CHANNEL 4 : LONGITUDINAL ACCELERATION ON VEHICLE BED (LEFT)

TEST	SPEED MPH	PEAK VALUE G'S	DURATION MILLISECONDS	AREA G'S-SECONDS
PASS 1, COURSE A	5.50	-.01	79.39	.00
PASS 1, COURSE B	5.50	-.01	74.18	.00
PASS 2, COURSE A	5.50	-.01	81.78	.00
PASS 2, COURSE B	5.50	-.01	67.99	.00
PASS 3, COURSE A	5.50	-.01	94.79	.00
PASS 3, COURSE B	5.50	-.01	70.51	.00
PASS 4, COURSE A	5.50	-.01	62.14	.00
PASS 4, COURSE B	5.50	-.01	58.70	.00
WASHBOARD COURSE	5.50	-.01	150.19	.00

TAPE CHANNEL 5 : LATERAL ACCELERATION ON VEHICLE BED (LEFT)

TEST	SPEED MPH	PEAK VALUE G'S	DURATION MILLISECONDS	AREA G'S-SECONDS
PASS 1, COURSE A	5.50	.27	100.56	.02
PASS 1, COURSE B	5.50	-.23	77.06	.01
PASS 2, COURSE A	5.50	.27	90.38	.02
PASS 2, COURSE B	5.50	-.24	79.00	.01
PASS 3, COURSE A	5.50	.25	118.08	.02
PASS 3, COURSE B	5.50	-.22	84.25	.01
PASS 4, COURSE A	5.50	-.24	109.43	.02
PASS 4, COURSE B	5.50	-.22	86.02	.01
WASHBOARD COURSE	5.50	-.06	75.83	.00

TAPE CHANNEL 6 : VERTICAL ACCELERATION ON VEHICLE BED (LEFT)

TEST	SPEED MPH	PEAK VALUE G'S	DURATION MILLISECONDS	AREA G'S-SECONDS
PASS 1, COURSE A	5.50	-1.06	111.45	.07
PASS 1, COURSE B	5.50	1.12	110.47	.08
PASS 2, COURSE A	5.50	1.10	85.58	.06
PASS 2, COURSE B	5.50	1.07	96.75	.07
PASS 3, COURSE A	5.50	-1.14	108.27	.07
PASS 3, COURSE B	5.50	1.00	120.53	.07
PASS 4, COURSE A	5.50	-1.12	117.11	.08
PASS 4, COURSE B	5.50	.95	119.72	.07
WASHBOARD COURSE	5.50	-.58	69.33	.02

TAPE CHANNEL 7 : LONGITUDINAL ACCELERATION ON RIGHT SIDE OF SOC

TEST	SPEED MPH	PEAK VALUE G'S	DURATION MILLISECONDS	AREA G'S-SECONDS
PASS 1, COURSE A	5.50	.35	84.74	.02
PASS 1, COURSE B	5.50	-.38	95.59	.02
PASS 2, COURSE A	5.50	.45	123.22	.03
PASS 2, COURSE B	5.50	-.46	127.43	.04
PASS 3, COURSE A	5.50	.46	124.45	.04
PASS 3, COURSE B	5.50	-.55	119.80	.04
PASS 4, COURSE A	5.50	.44	120.55	.03
PASS 4, COURSE B	5.50	-.58	100.82	.04
WASHBOARD COURSE	5.50	-.11	101.67	.01

TAPE CHANNEL 8 : LATERAL ACCELERATION ON RIGHT SIDE OF SOC

TEST	SPEED MPH	PEAK VALUE G'S	DURATION MILLISECONDS	AREA G'S-SECONDS
PASS 1, COURSE A	5.50	.76	115.31	.05
PASS 1, COURSE B	5.50	.78	78.21	.04
PASS 2, COURSE A	5.50	.81	132.76	.06
PASS 2, COURSE B	5.50	.84	90.23	.05
PASS 3, COURSE A	5.50	.91	140.13	.08
PASS 3, COURSE B	5.50	.71	90.87	.04
PASS 4, COURSE A	5.50	.97	132.23	.07
PASS 4, COURSE B	5.50	.81	77.45	.04
WASHBOARD COURSE	5.50	.24	63.72	.01

TAPE CHANNEL 9 : VERTICAL ACCELERATION ON RIGHT SIDE OF SOC

TEST	SPEED MPH	PEAK VALUE G'S	DURATION MILLISECONDS	AREA G'S-SECONDS
PASS 1, COURSE A	5.50	1.24	90.95	.07
PASS 1, COURSE B	5.50	1.23	94.35	.07
PASS 2, COURSE A	5.50	1.23	97.09	.07
PASS 2, COURSE B	5.50	1.36	94.24	.08
PASS 3, COURSE A	5.50	1.24	97.29	.08
PASS 3, COURSE B	5.50	1.11	101.14	.07
PASS 4, COURSE A	5.50	1.31	98.47	.08
PASS 4, COURSE B	5.50	1.05	98.83	.06
WASHBOARD COURSE	5.50	-.73	69.87	.03

TAPE CHANNEL 10 : LONGITUDINAL ACCELERATION ON LEFT SIDE OF SOC

TEST	SPEED MPH	PEAK VALUE G'S	DURATION MILLISECONDS	AREA G'S-SECONDS
PASS 1, COURSE A	5.50	.43	92.76	.02
PASS 1, COURSE B	5.50	.59	128.57	.05
PASS 2, COURSE A	5.50	.60	114.42	.04
PASS 2, COURSE B	5.50	.67	156.61	.06
PASS 3, COURSE A	5.50	.55	103.05	.03
PASS 3, COURSE B	5.50	.59	114.24	.04
PASS 4, COURSE A	5.50	.35	81.87	.02
PASS 4, COURSE B	5.50	.58	111.23	.04
WASHBOARD COURSE	5.50	-.14	91.70	.01

TAPE CHANNEL 11 : LATERAL ACCELERATION ON LEFT SIDE OF SOC

TEST	SPEED MPH	PEAK VALUE G'S	DURATION MILLISECONDS	AREA G'S-SECONDS
PASS 1, COURSE A	5.50	-.75	128.66	.06
PASS 1, COURSE B	5.50	-.65	192.20	.07
PASS 2, COURSE A	5.50	-.92	127.45	.07
PASS 2, COURSE B	5.50	-.81	132.23	.06
PASS 3, COURSE A	5.50	-.86	130.84	.07
PASS 3, COURSE B	5.50	-.69	96.33	.04
PASS 4, COURSE A	5.50	-.83	136.38	.07
PASS 4, COURSE B	5.50	-.65	155.19	.06
WASHBOARD COURSE	5.50	-.23	90.64	.01

TAPE CHANNEL 12 : VERTICAL ACCELERATION ON LEFT SIDE OF SOC

TEST	SPEED MPH	PEAK VALUE G'S	DURATION MILLISECONDS	AREA G'S-SECONDS
PASS 1, COURSE A	5.50	.72	90.93	.04
PASS 1, COURSE B	5.50	.70	119.77	.05
PASS 2, COURSE A	5.50	.71	91.12	.04
PASS 2, COURSE B	5.50	.69	88.11	.04
PASS 3, COURSE A	5.50	.71	110.66	.05
PASS 3, COURSE B	5.50	.63	147.75	.04
PASS 4, COURSE A	5.50	.72	83.69	.04
PASS 4, COURSE B	5.50	.59	113.73	.04
WASHBOARD COURSE	5.50	-5.04	66.27	.19

TAPE CHANNEL 14 : VERTICAL ACCELERATION ON VEHICLE BED (RIGHT)

TEST	SPEED MPH	PEAK VALUE G'S	DURATION MILLISECONDS	AREA G'S-SECONDS
PASS 1, COURSE A	5.50	1.01	103.33	.07
PASS 1, COURSE B	5.50	1.03	104.55	.06
PASS 2, COURSE A	5.50	1.03	99.45	.06
PASS 2, COURSE B	5.50	1.03	103.28	.06
PASS 3, COURSE A	5.50	1.03	101.45	.07
PASS 3, COURSE B	5.50	.87	112.59	.06
PASS 4, COURSE A	5.50	1.03	102.07	.07
PASS 4, COURSE B	5.50	.82	109.98	.05
WASHBOARD COURSE	5.50	-6.67	65.84	.25

ROAD TEST DATA

TEST NO. 15(b)

DATE: 17 Dec 86

TEST SPECIMEN: SOC on phenolic casters secured longitudinally on the HEMTT.  
Triaxial accelerometers affixed to the exterior of the SOC.

PASS 1-A OVER FIRST SERIES OF TIES      5.85 SEC      5.83 MPH

PASS 1-B OVER SECOND SERIES OF TIES      6.15 SEC      5.54 MPH

REMARKS: Rear two tiedown straps loose.

PASS 2-A OVER FIRST SERIES OF TIES      5.85 SEC      5.83 MPH

PASS 2-B OVER SECOND SERIES OF TIES      6.15 SEC      5.54 MPH

REMARKS: Rear of SOC moving side-to-side six inches.

30 MILE ROAD TEST: Omitted

PANIC STOP TEST: Omitted

PASS 3-A OVER FIRST SERIES OF TIES      6.00 SEC      5.68 MPH

PASS 3-B OVER SECOND SERIES OF TIES      6.15 SEC      5.54 MPH

REMARKS: All straps loose. Metal floor under casters is indented.

PASS 4-A OVER FIRST SERIES OF TIES      5.85 SEC      5.83 MPH

PASS 4-B OVER SECOND SERIES OF TIES      6.00 SEC      5.54 MPH

REMARKS: No change.

WASHBOARD COURSE: No change

TEST 10: ROAD HAZARD TEST ON SOC ON HEMTT  
 (POSITION: LENGTHWISE, CASTERS: COMPOSITION)  
 DATE: 17 DECEMBER 1986

TAPE CHANNEL 1 : LONGITUDINAL ACCELERATION ON VEHICLE BED (RIGHT)

TEST	SPEED MPH	PEAK VALUE G'S	DURATION MILLISECONDS	AREA G'S-SECONDS
PASS 1, COURSE A	5.50	.08	104.35	.01
PASS 1, COURSE B	5.50	.12	199.84	.02
PASS 2, COURSE A	5.50	.09	101.78	.01
PASS 2, COURSE B	5.50	-.15	178.06	.02
PASS 3, COURSE A	5.50	-.08	100.55	.01
PASS 3, COURSE B	5.50	-.09	117.62	.01
PASS 4, COURSE A	5.50	.08	335.90	.00
PASS 4, COURSE B	5.50	.08	100.71	.01
WASHBOARD COURSE	5.50	-.16	173.81	.02

TAPE CHANNEL 3 : LATERAL ACCELERATION ON VEHICLE BED (RIGHT)

TEST	SPEED MPH	PEAK VALUE G'S	DURATION MILLISECONDS	AREA G'S-SECONDS
PASS 1, COURSE A	5.50	.70	229.66	.06
PASS 1, COURSE B	5.50	.60	77.66	.03
PASS 2, COURSE A	5.50	.75	141.97	.06
PASS 2, COURSE B	5.50	.62	64.07	.02
PASS 3, COURSE A	5.50	.77	135.00	.07
PASS 3, COURSE B	5.50	.71	66.96	.03
PASS 4, COURSE A	5.50	.79	120.45	.06
PASS 4, COURSE B	5.50	.73	67.99	.03
WASHBOARD COURSE	5.50	.25	68.62	.01

TAPE CHANNEL 4 : LONGITUDINAL ACCELERATION ON VEHICLE BED (LEFT)

TEST	SPEED MPH	PEAK VALUE G'S	DURATION MILLISECONDS	AREA G'S-SECONDS
PASS 1, COURSE A	5.50	-.01	75.52	.00
PASS 1, COURSE B	5.50	-.01	99.12	.00
PASS 2, COURSE A	5.50	-.01	69.67	.00
PASS 2, COURSE B	5.50	-.01	105.69	.00
PASS 3, COURSE A	5.50	-.01	89.19	.00
PASS 3, COURSE B	5.50	-.01	79.40	.00
PASS 4, COURSE A	5.50	-.01	87.85	.00
PASS 4, COURSE B	5.50	-.01	86.63	.00
WASHBOARD COURSE	5.50	-.01	79.34	.00

TAPE CHANNEL 5 : LATERAL ACCELERATION ON VEHICLE BED (LEFT)

TEST	SPEED MPH	PEAK VALUE G'S	DURATION MILLISECONDS	AREA G'S-SECONDS
PASS 1, COURSE A	5.50	.25	124.50	.03
PASS 1, COURSE B	5.50	-.25	111.56	.02
PASS 2, COURSE A	5.50	.27	149.13	.03
PASS 2, COURSE B	5.50	.23	65.92	.01
PASS 3, COURSE A	5.50	.28	150.05	.03
PASS 3, COURSE B	5.50	.24	72.54	.01
PASS 4, COURSE A	5.50	.29	124.98	.02
PASS 4, COURSE B	5.50	.24	78.12	.01
WASHBOARD COURSE	5.50	.08	83.08	.00

TAPE CHANNEL 6 : VERTICAL ACCELERATION ON VEHICLE BED (LEFT)

TEST	SPEED MPH	PEAK VALUE G'S	DURATION MILLISECONDS	AREA G'S-SECONDS
PASS 1, COURSE A	5.50	1.11	83.46	.05
PASS 1, COURSE B	5.50	-1.06	129.65	.08
PASS 2, COURSE A	5.50	-1.10	112.73	.07
PASS 2, COURSE B	5.50	1.41	86.15	.08
PASS 3, COURSE A	5.50	-1.16	163.91	.07
PASS 3, COURSE B	5.50	1.05	79.07	.05
PASS 4, COURSE A	5.50	11.05	86.98	.55
PASS 4, COURSE B	5.50	-.94	120.74	.07
WASHBOARD COURSE	5.50	-.72	89.06	.04

TAPE CHANNEL 7 : LONGITUDINAL ACCELERATION ON RIGHT SIDE OF SOC

TEST	SPEED MPH	PEAK VALUE G'S	DURATION MILLISECONDS	AREA G'S-SECONDS
PASS 1, COURSE A	5.50	.45	118.37	.03
PASS 1, COURSE B	5.50	-.64	100.71	.04
PASS 2, COURSE A	5.50	-.93	95.91	.05
PASS 2, COURSE B	5.50	-1.09	111.95	.07
PASS 3, COURSE A	5.50	-.72	140.29	.06
PASS 3, COURSE B	5.50	.81	115.94	.05
PASS 4, COURSE A	5.50	-.62	149.39	.05
PASS 4, COURSE B	5.50	-.65	118.66	.04
WASHBOARD COURSE	5.50	.79	164.07	.08

TAPE CHANNEL 8 : LATERAL ACCELERATION ON RIGHT SIDE OF SOC

TEST	SPEED MPH	PEAK VALUE G'S	DURATION MILLISECONDS	AREA G'S-SECONDS
PASS 1, COURSE A	5.50	.72	134.16	.06
PASS 1, COURSE B	5.50	.87	76.30	.04
PASS 2, COURSE A	5.50	-.97	88.05	.05
PASS 2, COURSE B	5.50	.90	69.46	.04
PASS 3, COURSE A	5.50	-1.07	91.55	.06
PASS 3, COURSE B	5.50	-.85	109.02	.06
PASS 4, COURSE A	5.50	.95	115.62	.06
PASS 4, COURSE B	5.50	-.92	108.98	.06
WASHBOARD COURSE	5.50	-.40	65.13	.02

TAPE CHANNEL 9 : VERTICAL ACCELERATION ON RIGHT SIDE OF SOC

TEST	SPEED MPH	PEAK VALUE G'S	DURATION MILLISECONDS	AREA G'S-SECONDS
PASS 1, COURSE A	5.50	1.21	97.30	.08
PASS 1, COURSE B	5.50	1.29	98.32	.07
PASS 2, COURSE A	5.50	1.20	105.90	.07
PASS 2, COURSE B	5.50	1.21	105.48	.07
PASS 3, COURSE A	5.50	1.24	100.01	.08
PASS 3, COURSE B	5.50	.99	103.18	.06
PASS 4, COURSE A	5.50	1.24	98.76	.08
PASS 4, COURSE B	5.50	1.20	100.35	.08
WASHBOARD COURSE	5.50	.97	95.17	.05

TAPE CHANNEL 10 : LONGITUDINAL ACCELERATION ON LEFT SIDE OF SOC

TEST	SPEED MPH	PEAK VALUE G'S	DURATION MILLISECONDS	AREA G'S-SECONDS
PASS 1, COURSE A	5.50	.46	97.22	.03
PASS 1, COURSE B	5.50	.87	101.99	.05
PASS 2, COURSE A	5.50	1.01	93.41	.05
PASS 2, COURSE B	5.50	1.12	119.55	.08
PASS 3, COURSE A	5.50	1.02	100.71	.06
PASS 3, COURSE B	5.50	.85	100.04	.05
PASS 4, COURSE A	5.50	.87	114.96	.06
PASS 4, COURSE B	5.50	.56	122.25	.04
WASHBOARD COURSE	5.50	-1.44	62.28	.05

TAPE CHANNEL 11 : LATERAL ACCELERATION ON LEFT SIDE OF SOC

TEST	SPEED MPH	PEAK VALUE G'S	DURATION MILLISECONDS	AREA G'S-SECONDS
PASS 1, COURSE A	5.50	-.92	129.10	.07
PASS 1, COURSE B	5.50	-.81	123.35	.06
PASS 2, COURSE A	5.50	-1.25	131.48	.10
PASS 2, COURSE B	5.50	.95	117.17	.07
PASS 3, COURSE A	5.50	-.97	127.27	.07
PASS 3, COURSE B	5.50	-.88	111.67	.06
PASS 4, COURSE A	5.50	-.77	115.96	.05
PASS 4, COURSE B	5.50	-.67	127.12	.05
WASHBOARD COURSE	5.50	.24	60.46	.01

TAPE CHANNEL 12 : VERTICAL ACCELERATION ON LEFT SIDE OF SOC

TEST	SPEED MPH	PEAK VALUE G'S	DURATION MILLISECONDS	AREA G'S-SECONDS
PASS 1, COURSE A	5.50	.69	97.40	.05
PASS 1, COURSE B	5.50	.70	126.03	.05
PASS 2, COURSE A	5.50	.74	82.15	.04
PASS 2, COURSE B	5.50	.66	183.95	.03
PASS 3, COURSE A	5.50	.69	82.99	.03
PASS 3, COURSE B	5.50	-.58	162.69	.05
PASS 4, COURSE A	5.50	.66	107.09	.04
PASS 4, COURSE B	5.50	-.58	131.98	.04
WASHBOARD COURSE	5.50	-5.00	66.51	.18

TAPE CHANNEL 14 : VERTICAL ACCELERATION ON VEHICLE BED (RIGHT)

TEST	SPEED MPH	PEAK VALUE G'S	DURATION MILLISECONDS	AREA G'S-SECONDS
PASS 1, COURSE A	5.50	1.03	99.48	.06
PASS 1, COURSE B	5.50	1.00	103.63	.06
PASS 2, COURSE A	5.50	-.99	114.43	.07
PASS 2, COURSE B	5.50	.98	98.54	.06
PASS 3, COURSE A	5.50	1.02	100.65	.07
PASS 3, COURSE B	5.50	.80	107.21	.05
PASS 4, COURSE A	5.50	1.02	101.57	.07
PASS 4, COURSE B	5.50	.84	106.01	.05
WASHBOARD COURSE	5.50	-6.05	66.67	.23

ROAD TEST DATA

TEST NO. 15(c)

DATE: 18 Dec 86

TEST SPECIMEN: SOC on phenolic casters secured laterally on the HEMTT.  
Triaxial accelerometers affixed to the exterior of the SOC.

PASS 1-A OVER FIRST SERIES OF TIES      5.70 SEC      5.98 MPH

PASS 1-B OVER SECOND SERIES OF TIES      5.85 SEC      5.83 MPH

REMARKS: No movement

PASS 2-A OVER FIRST SERIES OF TIES      6.00 SEC      5.68 MPH

PASS 2-B OVER SECOND SERIES OF TIES      6.00 SEC      5.68 MPH

REMARKS: SOC moved forward 1/2 inch.

30 MILE ROAD TEST: Omitted

PANIC STOP TEST: Omitted

PASS 3-A OVER FIRST SERIES OF TIES      5.85 SEC      5.83 MPH

PASS 3-B OVER SECOND SERIES OF TIES      5.70 SEC      5.98 MPH

REMARKS: Metal floor of HEMTT is indented under the SOC casters.

PASS 4-A OVER FIRST SERIES OF TIES      5.85 SEC      5.83 MPH

PASS 4-B OVER SECOND SERIES OF TIES      6.00 SEC      5.68 MPH

REMARKS: No change

WASHBOARD COURSE: No change

TEST 11: ROAD HAZARD TEST ON SOC ON HEMTT  
 (POSITION: CROSSWISE, CASTERS: COMPOSITION)  
 DATE: 17-18 DECEMBER 1986

TAPE CHANNEL 1 : LONGITUDINAL ACCELERATION ON VEHICLE BED (RIGHT)

TEST	SPEED MPH	PEAK VALUE G'S	DURATION MILLISECONDS	AREA G'S-SECONDS
PASS 1, COURSE A	5.50	.09	146.12	.01
PASS 1, COURSE B	5.50	-.51	69.17	.02
PASS 2, COURSE A	5.50	.09	111.84	.01
PASS 2, COURSE B	5.50	.09	69.76	.00
PASS 3, COURSE A	5.50	.09	142.61	.01
PASS 3, COURSE B	5.50	.07	148.39	.00
PASS 4, COURSE A	5.50	-.07	210.68	.00
PASS 4, COURSE B	5.50	.07	125.89	.01
WASHBOARD COURSE	5.50	-.16	192.43	.02

TAPE CHANNEL 3 : LATERAL ACCELERATION ON VEHICLE BED (RIGHT)

TEST	SPEED MPH	PEAK VALUE G'S	DURATION MILLISECONDS	AREA G'S-SECONDS
PASS 1, COURSE A	5.50	-.77	163.45	.09
PASS 1, COURSE B	5.50	-.75	170.61	.09
PASS 2, COURSE A	5.50	-.75	182.12	.09
PASS 2, COURSE B	5.50	.76	80.70	.04
PASS 3, COURSE A	5.50	-.77	150.26	.08
PASS 3, COURSE B	5.50	-.76	166.55	.09
PASS 4, COURSE A	5.50	-.76	181.56	.09
PASS 4, COURSE B	5.50	-.74	209.86	.09
WASHBOARD COURSE	5.50	.35	62.74	.01

TAPE CHANNEL 4 : LONGITUDINAL ACCELERATION ON VEHICLE BED (LEFT)

TEST	SPEED MPH	PEAK VALUE G'S	DURATION MILLISECONDS	AREA G'S-SECONDS
PASS 1, COURSE A	5.50	-.01	67.24	.00
PASS 1, COURSE B	5.50	-.01	73.15	.00
PASS 2, COURSE A	5.50	-.01	147.13	.00
PASS 2, COURSE B	5.50	*****	*****	*****
PASS 3, COURSE A	5.50	-.01	132.51	.00
PASS 3, COURSE B	5.50	-.01	97.33	.00
PASS 4, COURSE A	5.50	-.01	58.39	.00
PASS 4, COURSE B	5.50	-.01	81.63	.00
WASHBOARD COURSE	5.50	-.01	94.33	.00

TAPE CHANNEL 5 : LATERAL ACCELERATION ON VEHICLE BED (LEFT)

TEST	SPEED MPH	PEAK VALUE G'S	DURATION MILLISECONDS	AREA G'S-SECONDS
PASS 1, COURSE A	5.50	-.26	127.19	.02
PASS 1, COURSE B	5.50	.22	69.55	.01
PASS 2, COURSE A	5.50	-.25	124.04	.02
PASS 2, COURSE B	5.50	.23	73.09	.01
PASS 3, COURSE A	5.50	-.25	111.04	.02
PASS 3, COURSE B	5.50	.23	70.71	.01
PASS 4, COURSE A	5.50	-.24	140.68	.02
PASS 4, COURSE B	5.50	.23	72.30	.01
WASHBOARD COURSE	5.50	.10	109.79	.01

TAPE CHANNEL 6 : VERTICAL ACCELERATION ON VEHICLE BED (LEFT)

TEST	SPEED MPH	PEAK VALUE G'S	DURATION MILLISECONDS	AREA G'S-SECONDS
PASS 1, COURSE A	5.50	-.05	101.79	.00
PASS 1, COURSE B	5.50	-.05	105.07	.00
PASS 2, COURSE A	5.50	-.89	117.40	.06
PASS 2, COURSE B	5.50	-.68	144.32	.05
PASS 3, COURSE A	5.50	-.86	122.67	.06
PASS 3, COURSE B	5.50	.69	90.39	.04
PASS 4, COURSE A	5.50	-.87	125.26	.06
PASS 4, COURSE B	5.50	.67	90.98	.04
WASHBOARD COURSE	5.50	.80	98.72	.05

TAPE CHANNEL 7 : LONGITUDINAL ACCELERATION ON RIGHT SIDE OF SOC

TEST	SPEED MPH	PEAK VALUE G'S	DURATION MILLISECONDS	AREA G'S-SECONDS
PASS 1, COURSE A	5.50	.74	134.91	.06
PASS 1, COURSE B	5.50	.66	80.38	.03
PASS 2, COURSE A	5.50	.74	130.23	.06
PASS 2, COURSE B	5.50	-6.78	69.06	.26
PASS 3, COURSE A	5.50	-6.36	65.61	.24
PASS 3, COURSE B	5.50	.64	138.99	.05
PASS 4, COURSE A	5.50	.75	130.82	.06
PASS 4, COURSE B	5.50	.66	80.95	.03
WASHBOARD COURSE	5.50	-6.63	66.42	.25

TAPE CHANNEL 8 : LATERAL ACCELERATION ON RIGHT SIDE OF SOC

TEST	SPEED MPH	PEAK VALUE G'S	DURATION MILLISECONDS	AREA G'S-SECONDS
PASS 1, COURSE A	5.50	-.30	52.64	.01
PASS 1, COURSE B	5.50	.42	73.45	.02
PASS 2, COURSE A	5.50	-.32	52.68	.01
PASS 2, COURSE B	5.50	.42	65.60	.02
PASS 3, COURSE A	5.50	-.31	51.58	.01
PASS 3, COURSE B	5.50	.40	62.93	.01
PASS 4, COURSE A	5.50	-.35	54.39	.01
PASS 4, COURSE B	5.50	.39	60.99	.01
WASHBOARD COURSE	5.50	-.50	100.16	.03

TAPE CHANNEL 9 : VERTICAL ACCELERATION ON RIGHT SIDE OF SOC

TEST	SPEED MPH	PEAK VALUE G'S	DURATION MILLISECONDS	AREA G'S-SECONDS
PASS 1, COURSE A	5.50	1.45	100.77	.09
PASS 1, COURSE B	5.50	1.41	117.02	.10
PASS 2, COURSE A	5.50	1.53	100.31	.09
PASS 2, COURSE B	5.50	1.41	116.60	.10
PASS 3, COURSE A	5.50	1.45	98.78	.09
PASS 3, COURSE B	5.50	1.39	114.38	.09
PASS 4, COURSE A	5.50	1.49	104.96	.09
PASS 4, COURSE B	5.50	1.44	117.35	.10
WASHBOARD COURSE	5.50	1.30	103.18	.08

TAPE CHANNEL 10 : LONGITUDINAL ACCELERATION ON LEFT SIDE OF SOC

TEST	SPEED MPH	PEAK VALUE G'S	DURATION MILLISECONDS	AREA G'S-SECONDS
PASS 1, COURSE A	5.50	-.74	116.53	.05
PASS 1, COURSE B	5.50	-.70	78.60	.03
PASS 2, COURSE A	5.50	-.77	112.06	.05
PASS 2, COURSE B	5.50	-.66	78.68	.03
PASS 3, COURSE A	5.50	-.74	120.74	.05
PASS 3, COURSE B	5.50	-.62	128.55	.06
PASS 4, COURSE A	5.50	-.77	121.03	.06
PASS 4, COURSE B	5.50	-.64	82.76	.03
WASHBOARD COURSE	5.50	-.34	62.26	.01

TAPE CHANNEL 11 : LATERAL ACCELERATION ON LEFT SIDE OF SOC

TEST	SPEED MPH	PEAK VALUE G'S	DURATION MILLISECONDS	AREA G'S-SECONDS
PASS 1, COURSE A	5.50	-.33	115.45	.02
PASS 1, COURSE B	5.50	-.40	95.10	.02
PASS 2, COURSE A	5.50	-.35	91.80	.02
PASS 2, COURSE B	5.50	-1.61	64.30	.06
PASS 3, COURSE A	5.50	-.34	105.89	.02
PASS 3, COURSE B	5.50	-.47	91.17	.03
PASS 4, COURSE A	5.50	-1.75	66.33	.07
PASS 4, COURSE B	5.50	-.48	89.28	.02
WASHBOARD COURSE	5.50	.41	1206.33	.02

TAPE CHANNEL 12 : VERTICAL ACCELERATION ON LEFT SIDE OF SOC

TEST	SPEED MPH	PEAK VALUE G'S	DURATION MILLISECONDS	AREA G'S-SECONDS
PASS 1, COURSE A	5.50	-.62	110.24	.04
PASS 1, COURSE B	5.50	-.48	168.31	.03
PASS 2, COURSE A	5.50	-.62	115.09	.04
PASS 2, COURSE B	5.50	1.70	72.61	.07
PASS 3, COURSE A	5.50	-.59	121.48	.04
PASS 3, COURSE B	5.50	1.52	71.60	.06
PASS 4, COURSE A	5.50	1.41	63.85	.05
PASS 4, COURSE B	5.50	1.17	61.62	.04
WASHBOARD COURSE	5.50	.51	103.95	.03

TAPE CHANNEL 14 : VERTICAL ACCELERATION ON VEHICLE BED (RIGHT)

TEST	SPEED MPH	PEAK VALUE G'S	DURATION MILLISECONDS	AREA G'S-SECONDS
PASS 1, COURSE A	5.50	1.11	105.28	.07
PASS 1, COURSE B	5.50	1.03	119.29	.08
PASS 2, COURSE A	5.50	1.10	105.15	.07
PASS 2, COURSE B	5.50	-5.94	61.05	.20
PASS 3, COURSE A	5.50	1.11	105.04	.07
PASS 3, COURSE B	5.50	-6.76	68.19	.25
PASS 4, COURSE A	5.50	-6.60	66.52	.25
PASS 4, COURSE B	5.50	-6.89	68.19	.27
WASHBOARD COURSE	5.50	.92	105.13	.06

NOTES:

\*\*\*\*\*: DATA NOT AVAILABLE.

ROAD TEST DATA

TEST NO. 15(d)

DATE: 18 Dec 86

TEST SPECIMEN: SOC on polyurethane casters secured laterally on the HEMTT.

Triaxial accelerometers affixed to the exterior of the SOC.

PASS 1-A OVER FIRST SERIES OF TIES      6.00 SEC      5.68 MPH

PASS 1-B OVER SECOND SERIES OF TIES      6.15 SEC      5.54 MPH

REMARKS: No movement

PASS 2-A OVER FIRST SERIES OF TIES      6.00 SEC      5.68 MPH

PASS 2-B OVER SECOND SERIES OF TIES      6.15 SEC      5.54 MPH

REMARKS: No movement

30 MILE ROAD TEST: Omitted

PANIC STOP TEST: Omitted

PASS 3-A OVER FIRST SERIES OF TIES      6.00 SEC      5.68 MPH

PASS 3-B OVER SECOND SERIES OF TIES      5.70 SEC      5.98 MPH

REMARKS: No movement

PASS 4-A OVER FIRST SERIES OF TIES      5.85 SEC      5.83 MPH

PASS 4-B OVER SECOND SERIES OF TIES      5.55 SEC      6.14 MPH

REMARKS: No movement

WASHBOARD COURSE: No movement

TEST 12: ROAD HAZARD TEST ON SOC ON HEMTT  
 (POSITION: CROSSWISE, CASTERS: CLEAR PLASTIC)  
 DATE: 17-18 DECEMBER 1986

TAPE CHANNEL 1 : LONGITUDINAL ACCELERATION ON VEHICLE BED (RIGHT)

TEST	SPEED MPH	PEAK VALUE G'S	DURATION MILLISECONDS	AREA G'S-SECONDS
PASS 1, COURSE A	5.50	-.08	171.89	.01
PASS 1, COURSE B	5.50	.09	127.17	.01
PASS 2, COURSE A	5.50	-.07	133.06	.01
PASS 2, COURSE B	5.50	.08	144.09	.01
PASS 3, COURSE A	5.50	-.59	67.27	.02
PASS 3, COURSE B	5.50	.08	74.53	.00
PASS 4, COURSE A	5.50	-.08	102.54	.00
PASS 4, COURSE B	5.50	.08	124.21	.01
WASHBOARD COURSE	5.50	.10	145.29	.01

TAPE CHANNEL 3 : LATERAL ACCELERATION ON VEHICLE BED (RIGHT)

TEST	SPEED MPH	PEAK VALUE G'S	DURATION MILLISECONDS	AREA G'S-SECONDS
PASS 1, COURSE A	5.50	-.80	160.07	.08
PASS 1, COURSE B	5.50	-.73	178.88	.09
PASS 2, COURSE A	5.50	-.75	171.21	.09
PASS 2, COURSE B	5.50	.70	85.10	.04
PASS 3, COURSE A	5.50	-.80	152.29	.08
PASS 3, COURSE B	5.50	-.73	171.81	.09
PASS 4, COURSE A	5.50	-.79	169.02	.09
PASS 4, COURSE B	5.50	-.70	171.39	.08
WASHBOARD COURSE	5.50	.32	83.72	.02

TAPE CHANNEL 4 : LONGITUDINAL ACCELERATION ON VEHICLE BED (LEFT)

TEST	SPEED MPH	PEAK VALUE G'S	DURATION MILLISECONDS	AREA G'S-SECONDS
PASS 1, COURSE A	5.50	-.01	123.81	.00
PASS 1, COURSE B	5.50	-.01	83.22	.00
PASS 2, COURSE A	5.50	-.01	85.37	.00
PASS 2, COURSE B	5.50	-.01	56.36	.00
PASS 3, COURSE A	5.50	-.01	147.20	.00
PASS 3, COURSE B	5.50	-.01	93.74	.00
PASS 4, COURSE A	5.50	-.01	112.83	.00
PASS 4, COURSE B	5.50	-.01	59.36	.00
WASHBOARD COURSE	5.50	-.01	156.14	.00

TAPE CHANNEL 5 : LATERAL ACCELERATION ON VEHICLE BED (LEFT)

TEST	SPEED MPH	PEAK VALUE G'S	DURATION MILLISECONDS	AREA G'S-SECONDS
PASS 1, COURSE A	5.50	-.23	160.86	.03
PASS 1, COURSE B	5.50	.21	77.21	.01
PASS 2, COURSE A	5.50	-.22	161.54	.03
PASS 2, COURSE B	5.50	.21	74.67	.01
PASS 3, COURSE A	5.50	-.23	134.21	.02
PASS 3, COURSE B	5.50	.20	73.88	.01
PASS 4, COURSE A	5.50	-.23	146.16	.03
PASS 4, COURSE B	5.50	.20	84.85	.01
WASHBOARD COURSE	5.50	.09	95.65	.00

TAPE CHANNEL 6 : VERTICAL ACCELERATION ON VEHICLE BED (LEFT)

TEST	SPEED MPH	PEAK VALUE G'S	DURATION MILLISECONDS	AREA G'S-SECONDS
PASS 1, COURSE A	5.50	-.86	131.69	.06
PASS 1, COURSE B	5.50	-.70	141.56	.05
PASS 2, COURSE A	5.50	-6.37	65.55	.24
PASS 2, COURSE B	5.50	-.71	99.42	.04
PASS 3, COURSE A	5.50	-.84	137.31	.05
PASS 3, COURSE B	5.50	-.73	137.72	.05
PASS 4, COURSE A	5.50	-.87	142.60	.06
PASS 4, COURSE B	5.50	-6.12	63.26	.22
WASHBOARD COURSE	5.50	.86	124.64	.05

TAPE CHANNEL 7 : LONGITUDINAL ACCELERATION ON RIGHT SIDE OF SOC

TEST	SPEED MPH	PEAK VALUE G'S	DURATION MILLISECONDS	AREA G'S-SECONDS
PASS 1, COURSE A	5.50	.69	149.05	.07
PASS 1, COURSE B	5.50	.63	136.52	.06
PASS 2, COURSE A	5.50	-6.43	64.87	.24
PASS 2, COURSE B	5.50	.63	140.72	.06
PASS 3, COURSE A	5.50	.69	176.83	.07
PASS 3, COURSE B	5.50	.62	144.04	.06
PASS 4, COURSE A	5.50	.65	191.79	.06
PASS 4, COURSE B	5.50	-5.74	63.49	.21
WASHBOARD COURSE	5.50	-6.50	66.12	.24

TAPE CHANNEL 8 : LATERAL ACCELERATION ON RIGHT SIDE OF SOC

TEST	SPEED MPH	PEAK VALUE G'S	DURATION MILLISECONDS	AREA G'S-SECONDS
PASS 1, COURSE A	5.50	-.34	58.84	.01
PASS 1, COURSE B	5.50	.49	70.48	.02
PASS 2, COURSE A	5.50	-.34	60.41	.01
PASS 2, COURSE B	5.50	.45	64.02	.02
PASS 3, COURSE A	5.50	.40	73.02	.02
PASS 3, COURSE B	5.50	.45	69.93	.02
PASS 4, COURSE A	5.50	.34	87.20	.02
PASS 4, COURSE B	5.50	.43	66.93	.02
WASHBOARD COURSE	5.50	-.48	65.70	.02

TAPE CHANNEL 9 : VERTICAL ACCELERATION ON RIGHT SIDE OF SOC

TEST	SPEED MPH	PEAK VALUE G'S	DURATION MILLISECONDS	AREA G'S-SECONDS
PASS 1, COURSE A	5.50	1.55	105.94	.10
PASS 1, COURSE B	5.50	1.36	113.83	.09
PASS 2, COURSE A	5.50	1.53	101.52	.10
PASS 2, COURSE B	5.50	1.43	115.86	.10
PASS 3, COURSE A	5.50	1.52	101.55	.10
PASS 3, COURSE B	5.50	1.34	117.15	.09
PASS 4, COURSE A	5.50	1.48	101.46	.09
PASS 4, COURSE B	5.50	1.29	102.62	.09
WASHBOARD COURSE	5.50	1.32	100.80	.08

TAPE CHANNEL 10 : LONGITUDINAL ACCELERATION ON LEFT SIDE OF SOC

TEST	SPEED MPH	PEAK VALUE G'S	DURATION MILLISECONDS	AREA G'S-SECONDS
PASS 1, COURSE A	5.50	-.71	145.21	.06
PASS 1, COURSE B	5.50	-.62	86.99	.03
PASS 2, COURSE A	5.50	-.71	142.67	.06
PASS 2, COURSE B	5.50	-.62	83.68	.03
PASS 3, COURSE A	5.50	-.70	149.60	.06
PASS 3, COURSE B	5.50	-.63	83.49	.03
PASS 4, COURSE A	5.50	-.72	156.95	.07
PASS 4, COURSE P	5.50	-.64	85.39	.03
WASHBOARD COURSE	5.50	-1.33	65.20	.05

TAPE CHANNEL 11 : LATERAL ACCELERATION ON LEFT SIDE OF SOC

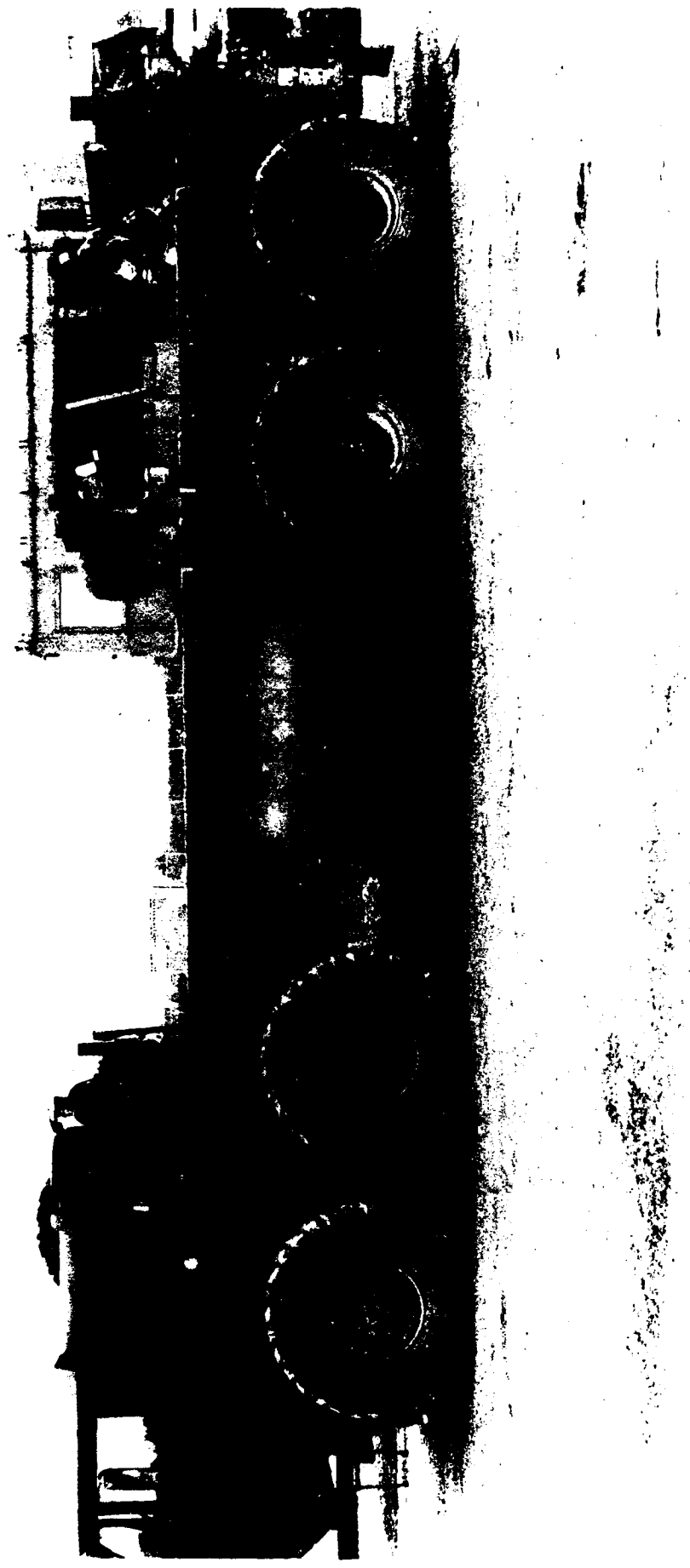
TEST	SPEED MPH	PEAK VALUE G'S	DURATION MILLISECONDS	AREA G'S-SECONDS
PASS 1, COURSE A	5.50	.30	70.15	.01
PASS 1, COURSE B	5.50	-.40	85.39	.02
PASS 2, COURSE A	5.50	.30	70.11	.01
PASS 2, COURSE B	5.50	-.37	84.42	.02
PASS 3, COURSE A	5.50	-1.58	67.55	.06
PASS 3, COURSE B	5.50	-.38	81.87	.02
PASS 4, COURSE A	5.50	-1.62	70.63	.06
PASS 4, COURSE B	5.50	-.41	84.52	.02
WASHBOARD COURSE	5.50	.43	79.35	.02

TAPE CHANNEL 12 : VERTICAL ACCELERATION ON LEFT SIDE OF SOC

TEST	SPEED MPH	PEAK VALUE G'S	DURATION MILLISECONDS	AREA G'S-SECONDS
PASS 1, COURSE A	5.50	-.56	119.74	.04
PASS 1, COURSE B	5.50	1.33	64.70	.05
PASS 2, COURSE A	5.50	-.59	126.21	.04
PASS 2, COURSE B	5.50	-.47	136.17	.04
PASS 3, COURSE A	5.50	1.34	62.78	.05
PASS 3, COURSE B	5.50	-.52	155.04	.04
PASS 4, COURSE A	5.50	1.68	76.47	.08
PASS 4, COURSE B	5.50	-.47	136.45	.04
WASHBOARD COURSE	5.50	-4.79	63.61	.17

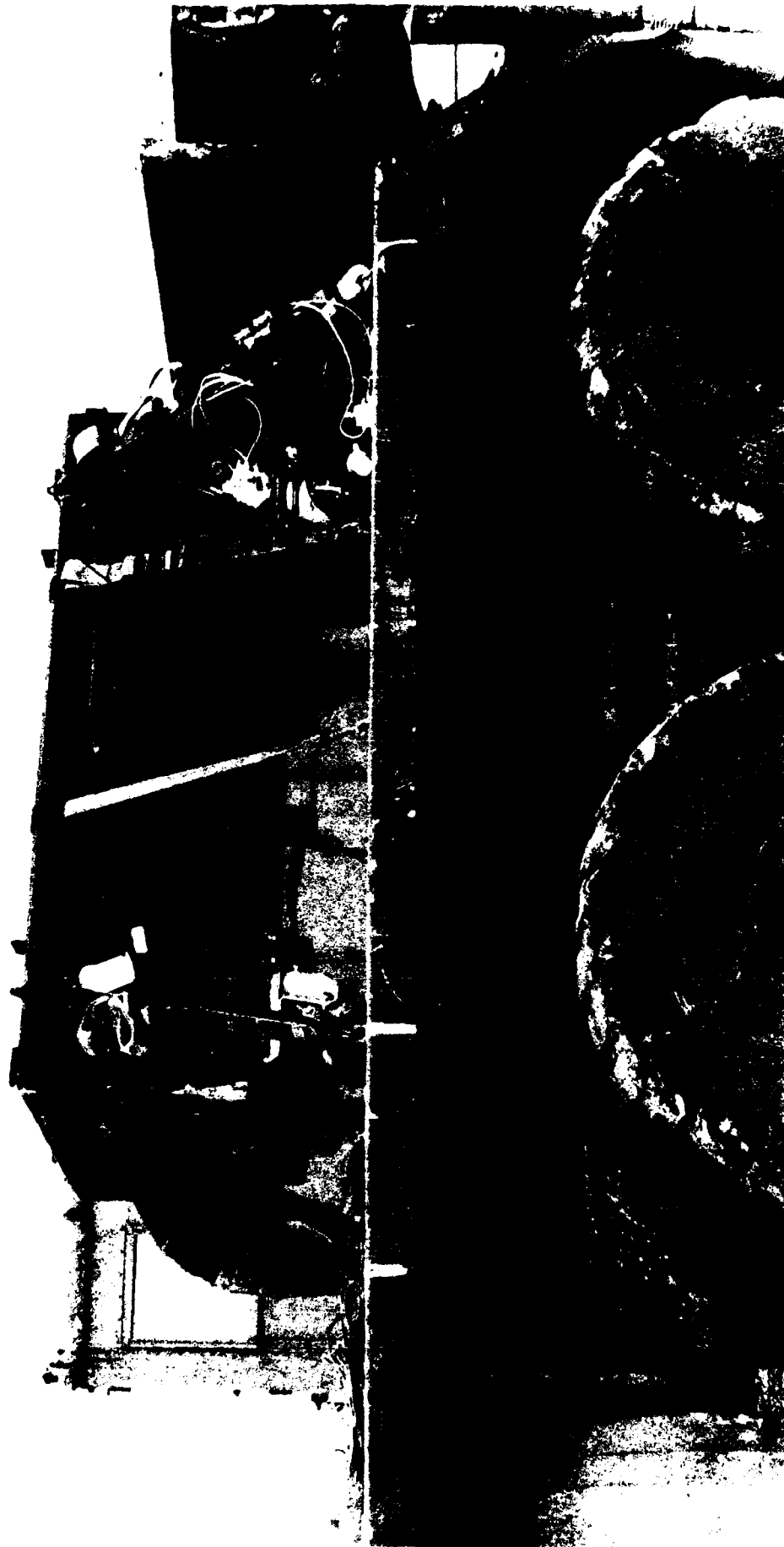
TAPE CHANNEL 14 : VERTICAL ACCELERATION ON VEHICLE BED (RIGHT)

TEST	SPEED MPH	PEAK VALUE G'S	DURATION MILLISECONDS	AREA G'S-SECONDS
PASS 1, COURSE A	5.50	1.12	106.51	.07
PASS 1, COURSE B	5.50	-6.56	65.54	.24
PASS 2, COURSE A	5.50	1.15	105.36	.07
PASS 2, COURSE B	5.50	1.03	118.72	.07
PASS 3, COURSE A	5.50	-6.59	66.69	.25
PASS 3, COURSE B	5.50	1.01	120.03	.07
PASS 4, COURSE A	5.50	-6.34	64.37	.22
PASS 4, COURSE B	5.50	.97	122.80	.07
WASHBOARD COURSE	5.50	-7.15	70.02	.28



DEFENSE AMMUNITION CENTER AND SCHOOL - SAVANNA, IL

Photo 41. View of the longitudinally positioned SOC on the polyurethane casters secured to the HEMTT.



DEFENSE AMMUNITION CENTER AND SCHOOL - SAVANNA, IL

Photo 42. View of the Longitudinally positioned SOC on the polyurethane casters secured to the HEMTT. Note position of the triaxial accelerometers on the SOC and HEMTT cargo bed floor.



DEFENSE AMMUNITION CENTER AND SCHOOL - SAVANNA, IL

Photo 43 View of the laterally positioned SOC on the phenolic casters secured to the HEMTT.