

UNCLASSIFIED

MAY 20 1963

File No: XW-55, 3-2
T-19319
Test Completed: 4-24-63

CENTRAL RECORD FILE	
PC CARD (CARD)	1215
FILE No.	XW 55
	3-2

MR. J. D. BENION - 8125
Attn: M. Wells

Re: Simulated Water-Entry Shock Test of the XW-55 Series VII FTQU

RECEIVED
JUN 1 1963

Summary of Test

A two phase shock test was conducted with an XW-55 Series VII FTQU unit. The shock specifications were the same as those for previous XW-55 TDM tests. The object of this test was to determine the structural integrity of the unit when subjected to a simulated water-entry shock. The unit was not visibly damaged as a result of the test. The MC1258 ESD switch did not close during the test.

CENTRAL RECORD FILE

Object of Test

The object of this test was to determine the structural integrity of the XW-55 Series VII FTQU when subjected to a simulated water entry shock.

Authorization for Test

This test was requested in an Environmental Test Request from W. A. Maupin, 8125-1, to R. S. Hooper, Attn: R. I. Butler, 7325-2, dated 1-16-63. Mr. M. Wells, 8125-1, was the consultant.

Setup for Test

Table I lists the equipment used. The components tested and the instrumentation locations are given under FTQU Type 2A, Dwg. No. K23677. The general setup is the same as for previous tests, T-17832, and T-19121 and is shown in a sketch in Table II. The accelerometer and strain gage information is given in Tables II and III.

The XW-55 was delivered with the instrumentation already mounted inside of the unit. Two strain gages were mounted on the case as shown in Table III. A striated copper impact plate with a 0.2 inch air gap was used to obtain the spike. A circuit was employed to limit the current through the MC1258 ESD switch to 25 ma upon switch closure. The circuit was checked by short circuiting the switch and observing the resulting trace. The circuit functioned properly before the test.

PROGRAM	3
CATEGORY	0469
ORG.	202
DATE	6/3/68

SANDIA SYSTEMATIC DECLASSIFICATION REVIEW	
Review Date: 9/22/68	Determination (Circle Numbers):
Author: W. Maupin	Classification Retained: U
Date: 9/23/68	Classification Changed to: U
Authority: R. S. Hooper	Contains No DOE Classified Information: U
	Coordinates With: U
	Consistent UCAI: U
	Comments: OK for Open

SANDIA SYSTEMATIC DECLASSIFICATION REVIEW DOWNGRADING OR DECLASSIFICATION STAMP	
CLASSIFICATION CHANGED TO: U	AUTHORITY: R. B. Crann
PERSON CHANGING MARKING & DATE: Emelda Selph 9/24/98	RECORD ID: 98SN4396
PERSON VERIFYING MARKING & DATE: W. C. Lane 9/28/98	DATED: 9/23/98

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Mr. J. D. Benton -

- 2 -

T-19019

All of the leads were connected, the safety band was removed, and the assembly was sealed in the air gun barrel. A check was made on the instrumentation and the circuit for the accelerometer located on the forward trim was found to be defective. The assembly was then removed from the gun to ascertain the trouble. The accelerometer was found to be defective, and the consultant decided to proceed without replacing the defective accelerometer. The assembly was again seated in the air gun barrel and the test was run with a fire pressure of 1150 psig and a muzzle pressure of 7 psig.

Results

The unit was not visibly damaged as a result of the test. The MC1258 EGB switch did not close during the test as shown in Table III. The results are shown in Tables II and III.

SC-4452B(M) was used as the basis for data interpretation. Since the recording system used to obtain the data shown in Table III was limited to 2.5 KC frequency response, the nose data shown in Table III is unreliable. This nose data is unreliable because the recording system used was unable to accurately reproduce the short duration spike.

J. F. Damke

J. F. DAMKE - 7325-2

J. E. Bear

Test Project Engineer: J. E. BEAR - 7331-1

Approved By: *Bill Johnson*
B. JOHNSON - 7331-1

JFD:7325-2:mxw

Encl: Tables I, II, III.

Copy to:

Livermore Central Record File, 8233-2

E. H. Copeland, 7331

Central Record File, 3421-3

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T-19319

TABLE X
EQUIPMENT USED
TWO PHASE SHOCK TEST OF XN-55

<u>Name of Equipment</u>	<u>Type</u>	<u>Model No.</u>	<u>Serial No.</u>	<u>Property No.</u>
CNC Cathode Ray Oscillograph	S-140		8005	122855
CNC Recording Oscillograph	S-119 P4-36M		11016	122934
Cathode Followers	Shop-made		121-39	
SKL Variable Electronic Filter		302	919	79943
John Fluke Power Supply		407	484	106357
Kintel Strain Gage Power Supply	6-channel	P5G-6		99092
Calibrate Panel	Shop-made			
Balance Panel	Shop-made			
Crystal Calibrator	Shop-made			93108
Kintel Amplifiers	DC	111-BE		

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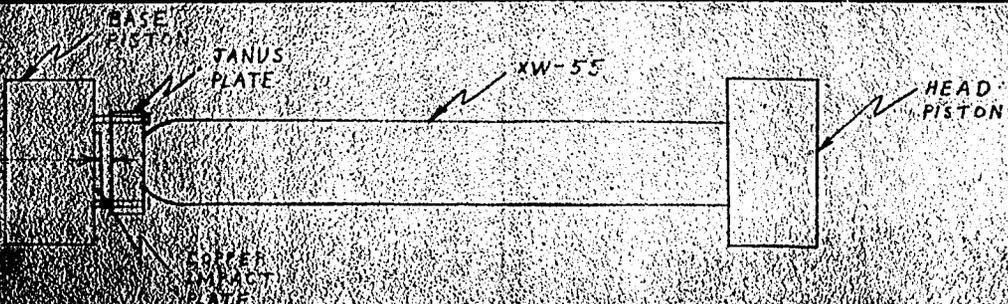
TABLE II

TEST NO. 1
T-19319

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LEGEND

PD - PULSE DURATION
RT - RISE TIME
MFP - MAXIMUM FAIRED PULSE
A - ACCELEROMETER



Acceleration Data

CALIBRATE

TEST NO.	TEST NAME	TEST DATE	TEST TIME	TEST LOCATION	TESTER	Acceleration Data					CALIBRATE
						RT (ms)	MFP (G)	RT (ms)	MFP (G)	PD (ms)	
1						1550	1280	1550	0.075	0.307	50007
2						1570	820	890	0.240	0.970	50007
3						1260	500				15024
4						1240		760	0.425	0.245	50007
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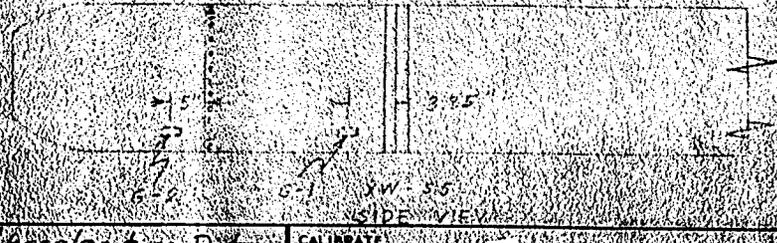
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TABLE II

TEST NO.
T-19319

LEGEND

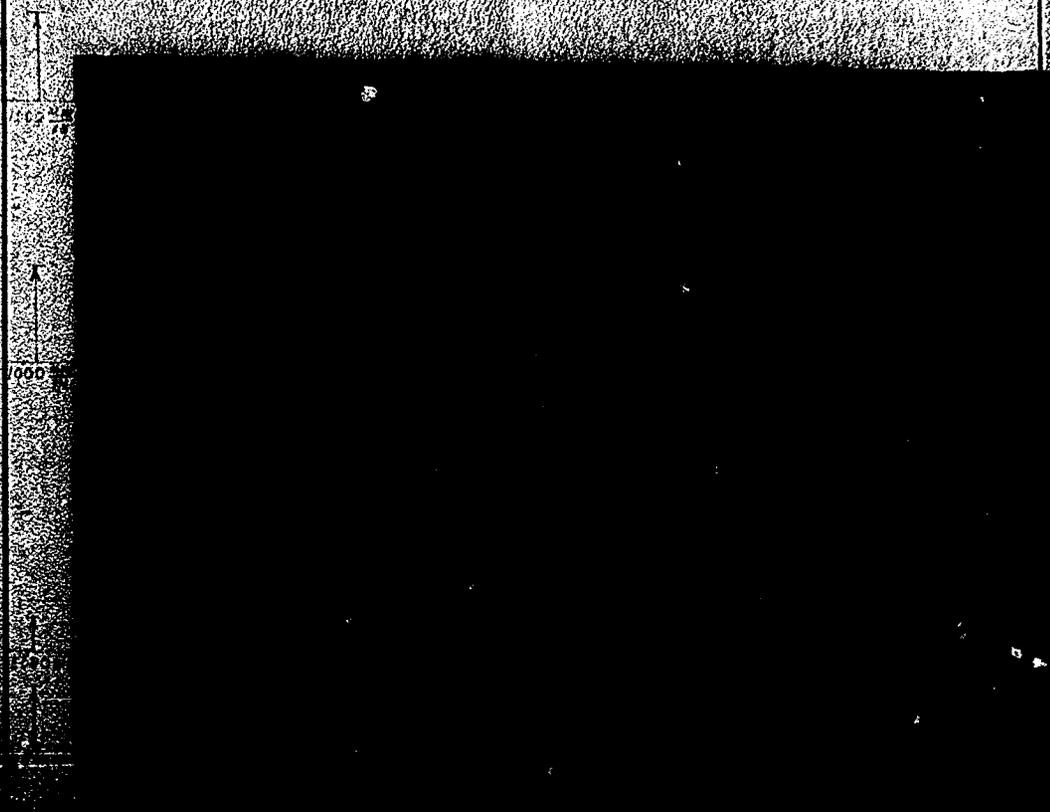
PD - PULSE DURATION
 RT - RISE TIME
 MPP - MAXIMUM PAIRED PULSE
 A - ACCELEROMETER
 S - STRAIN GAGE



Strain Acceleration Data

CALIBRATE

Run	Strain Gage	Accelerometer	Max. Strain	MPP (in)	RT (ms)	PD (ms)
5-1			24480 1000	1960 1000	0.357	2.52
5-2			15720 1000	12840 1000	0.357	2.52



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