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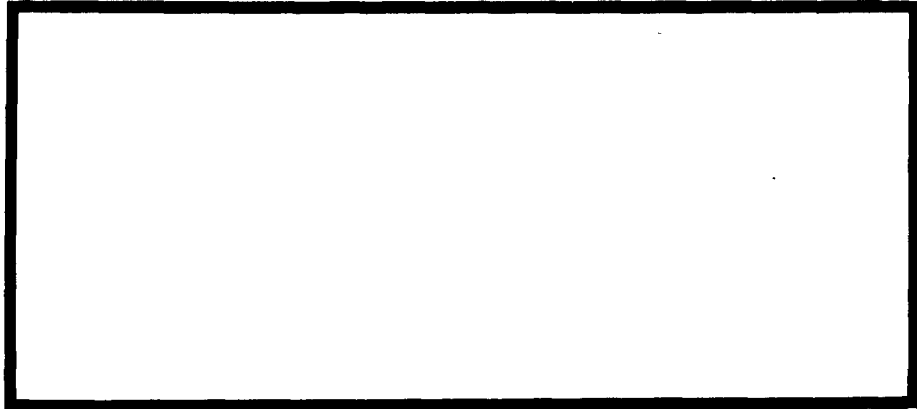
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THE BOEING COMPANY

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NUMBER ⑭ 02-3929-431 CODE IDENT. NO. 81205
UNCLASSIFIED TITLE ⑥ ACCEPTANCE SUMMARY REPORT - FTM 431
MODEL SPECIFICATION S-133-1000-0-1
MODEL NO. XSM - 808⑤ CONTRACT NO. AF-4(647)289
ISSUE NO. F-26 ISSUED TO ASD/DWTMR
CLASSIFIED TITLE UNCLASSIFIED
(STATE CLASSIFICATION)
CHARGE NUMBER

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SUPERVISED BY R. E. Merriman 6/19/63
APPROVED BY Ray B. Jones 6/20/63
CLASS. & DIST. Ray B. Jones 6/20/63
APPROVED BY Ray B. Jones 6/20/63
(DATE)

⑪ 20 Jun 63

Doc/Rev 6-21-34

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PURPOSE

this volume
The purpose of ~~B2-3929~~ is to document an Acceptance Summary Report for Flight Test Missiles as required to support final acceptance activities at the Boeing Test Site.

It provides evidence of missile configuration identification and certification. It defines deviations from compliance with the Airborne Vehicle Model Specification S-133-1000-0-1. ↗

Reference Document D2-6272, Missile Functional Test Procedures, for a record of testing performed and for a record of specified acceptance test measurements.

Reference D2-9611, Failure and Time/Cycle Data, for a record of Reliability Data.

SCOPE

This document contains the following:

1. Waivers and Deviations granted by Air Force Ballistic System Division/Space Technology Laboratories (AFBSD/STL).

This includes all waivers and deviations granted by AFBSD/STL at the Boeing Test Site against the requirements of Model Specifications S-133-1000-0-1 for this missile.

2. Contractor Certification Forms - Certification by Boeing Engineering and Quality Control that the Missile Assembly complies with the requirements of the applicable specification and/or top drawing.

Certification by Autonetics, Thiokol Chemical Corporation, Aerojet General Corporation and Hercules Powder Company, of compliance with applicable specifications and/or top drawing.

3. Part Shortage Items - A list of part shortages for the Missile and a list incomplete items traveled to the Launch Area.
4. Equipment Identification Forms - Identify by Equipment Model and/or Drawing Number the Missile Configuration (Ref. Sec. VII, Page 0).

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ABBREVIATIONS USED IN THIS DOCUMENT

AFBSD.....AIR FORCE BALLISTIC SYSTEM DIVISION
 AGC.....AERJET GENERAL CORPORATION
 AN.....AUTONETICS
 BATC.....BOEING ATLANTIC TEST CENTER
 BQC.....BOEING QUALITY CONTROL
 CO.....COMPANY
 CORP.....CORPORATION
 DWG.....DRAWING
 FTM.....FLIGHT TEST MISSILE
 G&C.....GUIDANCE AND CONTROL
 HPC.....HERCULES POWDER COMPANY
 MAB.....MISSILE ASSEMBLY BUILDING
 M&IR.....MANUFACTURING AND INSPECTION RECORD
 N/A.....NOT AVAILABLE, NOT APPLICABLE
 NO.....NUMBER
 P/N.....PART NUMBER
 REF.....REFERENCE
 SEC.....SECTION
 S/N.....SERIAL NUMBER
 STL.....SPACE TECHNOLOGY LABORATORIES
 TBC.....THE BOEING COMPANY
 UER.....UNPLANNED EVENT RECORD
 VOL.....VOLUME
 XDUCE.....TRANSDUCER

MODEL XSM-80B

DOCUMENT NUMBER D2-3929-431

SECTION OR ADDENDUM NO. II

TITLE

ACCEPTANCE CERTIFICATION

NO. OF PAGES 10

DATE June 19, 1963

PREPARED BY *[Signature]*

APPROVED BY *K.E. McErim*

APPROVED BY *[Signature]*

APPROVED BY *[Signature]*

WORK ORDER

UNIT NO.

ITEM NO.

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DOCUMENTS

046 0000 (WAS BAC 1142A)

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STL ACCEPTANCE RECOMMENDATION

To: Chairman, WS-153A
Acceptance Team

From: Howard Doane

1. WS-153A MINUTEMAN Flight Test Missile S/N 431 has been examined by STL.

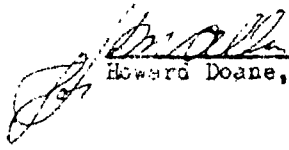
Technical compliance of this missile with current requirements has been established, and acceptance of the missile is recommended.

2. This recommendation is based on:

- 2.1 Visual examination of the missile; following system compatibility testing in MAB.

- 2.2 Analysis of all test data through system compatibility testing in MAB, using S-133-1000-C-1 Model Specification as criteria.

- 2.3 Review of discrepancy reports, waivers, deviations and shortage lists.


Howard Doane, Senior STL Member

Date 6-19-3

REVISED _____

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CERTIFICATION OF MISSILE ACCEPTANCE

This is to certify that Flight Test Missile 431
is accepted.

Signed Jack H. Kennedy, Jr.
AFESD Representative
(Acceptance Team Chairman)

Date 17 June 68

REVISED _____

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MODEL SPECIFICATION STATUS

1. MODEL SPECIFICATION

Model Specification S-133-1000-0-1, (Boeing Document D2-14286-1, revised 15 October '62, titled, "R & D Prototypes for Wing II Missiles," and D2-14286-2, dated 28 August '62, titled "R & D Addenda S-133-1000-0-1, Telemetry Outputs")

2. APPLICABLE SCN'S

A. SCN's to D2-14286-1, applicable to this missile.

1 thru 27 and 30 thru 36.

B. SCN's to D2-14286-2, applicable to this missile.

50, 59, 100 thru 104, 109, 119 thru 123, 127, 128,
130, 131, 132, 134.

THE BOEING COMPANY TECHNICAL CERTIFICATION

The undersigned has reviewed the Engineering Data and certifies that the Missile meets the requirements of the Missile Model Specification (Ref. Page 3, Sec. II) with the exception of Deviations, waivers and Shortages as noted in Sections IV, V and VI of this Document.

Signed S. E. Brown
Engineering Representative for
The Boeing Company

Date 6/19/65

MISSILE SPECIFICATION CERTIFICATION

This is to certify:

1. That the Missile and the associated M&IE Integrated Records have been inspected and reviewed, and that All specifications and requirements per the Missile Model Specification (Ref. Page 5, Sec. II) have been met with the exception of Deviations, Waivers and Shortages as noted in Section IV, V and VI of this Document.
2. That the Missile has been inspected and meets the Visual Physical Specification Requirements, such as finish, workmanship, freedom from damage, etc.
3. That all installed and portable test support equipment used to test the missile was certified as noted on the applicable M&IE Records.

Listed below is the Associate Contractors' documentation in which the home plant waivers and/or deviations are contained.

1. The Boeing Co.: D2-10889-1, Vol. 44 and D2-10889-2, Vol. 44
2. Autonetics: Minuteman G&C Set Acceptance Data Book - Unit 10 Model W1010H
3. Thiokol Chemical Corp: Engine Acceptance Log - S/N 0010041 Model 103
4. Aerojet General Corp: Engine Acceptance Log - S/N 0020042 Model 1036
5. Hercules Powder Co.: Engine Acceptance Log - S/N 0030040 Model 1037

Signed R. E. McQuinn
Boeing Quality Control
Representative

Date JUNE 19, 1963

ASSOCIATE CONTRACTOR SPECIFICATION CERTIFICATION

This is to certify the the Autonetics Guidance and Control
System, Model NF108 Unit 10 meets the Specifications
And Requirements of the Missile Model Specification (Ref. Page
3, Sec. II) with the following exceptions:

Deviations listed on pages 5 thru 9 of Section IV and Waiver
listed on page 8 of Section V of this Document D2-3929-431.

Signed

W. E. Jones

Representative for AUTONETICS
Quality Control and Reliability

Date

19 June 63

REVISED _____

US GPO 2000 (WAS GAC 41210)

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ASSOCIATE CONTRACTOR SPECIFICATION CERTIFICATION

This is to certify that the First Stage Motor, Serial Number
0010041 meets all Specifications and requirements of the
Missile Model Specification (Ref. Page 3, Sec. II) with the
following exceptions:

NONE

Signed [Signature]
Representative for
Thiokol Chemical Corporation

Date 1 June 1962

ASSOCIATE CONTRACTOR SPECIFICATION CERTIFICATION

This is to certify that the Second Stage Motor, Serial Number
0020042 meets all Specifications and Requirements of the
Missile Model Specification (Ref. Page 3, Sec. II) with the
following exceptions:

NONE

Signed [Signature] Date 6/1/63
Representative for
Aerojet-General Corp.

ASSOCIATE CONTRACTOR SPECIFICATION CERTIFICATION

This is to certify that the Third Stage Motor, Serial Number
00300 40 meets all Specifications and Requirements of the
Missile Model Specification (Ref. Page 3, Sec. II) with the
following exceptions:

NONE

Signed [Signature]
Representative for
Hercules Powder Company

Date 6-18-63

MODEL XSM-80B

DOCUMENT NUMBER D2-3929-431

SECTION OR ADDENDUM NO. LII

TITLE

WAIVER & DEVIATION SUMMARY

NO. OF PAGES 6

DATE June 19, 1963

PREPARED BY *[Signature]*

APPROVED BY *F. E. McQuinn*

APPROVED BY *[Signature]*

APPROVED BY *[Signature]*

WORK ORDER

UNIT NO.

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4046 0000 (WAS SAC 11/2A)

DEFINITION OF WAIVERS AND DEVIATIONS

WAIVER: - A waiver will be instituted when the configuration of the Missile Assembly cannot meet the requirements of the applicable specification. The requirement of the specification is waived (not revised) to agree with the existing configuration.

DEVIATION: - A deviation will be instituted when the requirements of the applicable specification is not or cannot be met by reason of design or hardware incompatibility. The specification is deviated (revised) to reflect the configuration of equipment.

There are two (2) types of waivers and deviations contained in this document:

1. Type I - Those waivers and deviations granted at the associate contractor's Home-Plant. Type I waivers and deviations are listed in this document only when the effect of the waiver or deviation results in an out-of-tolerance condition during BATC Testing per S-133-1000-0-1. Reference Sec. II, Page 5 of this document for a listing of the Associate Contractors' Documentation in which the Home-Plant waivers are contained.
2. Type II - Those waivers and deviations granted by AFBSD/STL during final assembly and test activities at BATC.

WAIVER & DEVIATION SUMMARY TYPE II

DEVIATION CLASSIFICATION

Class No.	Nomenclature	BC	AN	TCC	AGC	HPC
1	Test Support Equipment	1				
2	Test Method		2			
3	Specification Error		1			
4	Human Error					
5	Xducer Channel Problems					
6	Channel Measurement List Changes					
7	BSD/STL Direction	2	2			
8	Operational System					
9	Misc.	1				
	TOTALS	4	3			

WAIVER CLASSIFICATION

Class No.	Nomenclature	BC	AN	TCC	AGC	HPC
1	Test Support Equip.					
2	Test Method	1	1			
3	Specification Error					
4	Human Error					
5	Xducer Channel Problems	1				
6	Channel Measurement List Changes	1				
7	BSD/STL Direction					
8	Operational System					
9	Misc.					
	TOTALS	3	1			

TOTALS FOR THIS MISSILE

	WAIVERS	DEVIATIONS	TOTAL
The Boeing Company	3	4	7
Autonetics	1	5	6
Thiokol Chemical Corp.			
Aerojet General Corp.			
Hercules Powder Co.			
TOTALS	4	9	13

Number of Instrumentation Channels out of Specification Requirements 197

INDEX OF WAIVERS AND DEVIATIONS TYPE I

1 W-Waiver D-Deviation

3 Applicable Specification

2 Document which lists the waiver or deviation.

ITEM	DESCRIPTION	1	2	3
	NONE.			

INDEX OF TYPE II DEVIATIONS CONTAINED IN SECTION IV

1 DEVIATION NO.

BC-The Boeing Company
AN-Autonetics
TCC-Thiokol Chemical Corp.
AGC-Aerofjet General Corp.
HPC-Hercules Powder Co.

2 Section Page No.

3 Missile Effectivity

4 Classification No. Ref. Sec. III Page 2

1	2		3	4
BC-1	1	Change instrumentation section cooling air minimum flow rate to 19.5 pounds per minute.	431 thru 434	1
BC-2	2	Premature stage separation timer runs shall be within the limits specified below: Stage I Stage II 54.2±2 Sec. 110.2±2 Sec.	431 thru 434	7
BC-3	3	Battery performance test data will not be presented as part of the missile acceptance data package.	431 thru 434	9
BC-4	4	Listed Model Specification Testing Requirements will not be performed.	431 thru 438	7
AN-1	5	Change G&C System Turn-On requirements as follows: 1. Delete Memory Solenoid Requirement 2. Delete 4.8 KC Requirement 3. IMU Electronics Temperature 85±20°F 4. IMU Helium Temperature 65±15°F 5. VM Case Temperature 70±5°F	431 thru 434	3
AN-2	6	Change number of pitch and yaw increments required as follows: Pitch from -022±62 to -691±47 Yaw from +553±43 to +415±34 On missiles where accelerometer counts are accumulated for 30 seconds, change drift limit to 0.1845 for Pitch and Yaw.	431 thru 434	2
AN-3	7	NCU Sinusoidal Test will not be performed.	431 thru 434	7
AN-4	8	The MIO Discretes Test will not be performed during Compatibility Test.	431 thru 434	7
AN-5	9	Step 4.4.2.1.6(n).3 of the Model Specification will not be performed.	431 thru 434	2

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INDEX OF TYPE II WAIVERS CONTAINED IN SECTION V

1 WAIVER NO.

BC-The Boeing Company
 AN-Autonetics
 TCC-Thiokol Chemical Corp.
 AGC-Aerostat General Corp.
 HPC-Hughes Powder Co.

2 Section Page No.

3 Classification No. Ref. Sec. III,
 Page 2

1	2		3
BC-5	1	A Signal Level of -78 ¹ 1 DBM to the MISTRAM Sub-system Antenna Hood Flange was not verified during Compatibility Testing.	2
BC-6	2 thru 6	Listed Measurements have readings from Compatibility Test not in accord with Specification Requirements.	5
BC-7	7	Measurement Changes List.	5
AN-6	8	Computer Voltage Output "C" Signal was not verified.	2

BC-2

DATE: June 17, 1963

MISSILE EFFECTIVITY: 431 thru 434

SPEC. OR DOC. NO.: D2-14286-1

SPEC. OR DOC. TITLE: Model Specification - R & D Prototypes
For Wing II Missiles, S-133-1000-0-1

WAIVER _____

DEVIATION X

PAGE NO.: 61

PARAGRAPH NO.: 4.4.2.8.2.1

PARAGRAPH TITLE: Timer Initiation

DESCRIPTION:

Premature Stage Separation Timer Runs shall be within the limits specified below:

STAGE I

STAGE II

54.2±2Sec.

110.2±2Sec.

REASON:

The Model Specification has not been updated to reflect approved designed changes.

CHANGE STATUS:

An SCN to the Model Specification has been requested.

Boeing

STL

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2

BC-1

MISSILE EFFECTIVITY: 431 thru 434

SPEC. OR DOC. NO.: D2-14286-1

SPEC. OR DOC. TITLE: Model Specification - R & D Prototypes
For Wing II Missiles, S-133-1000-0-1

WAIVER _____

DEVIATION X.

PAGE NO.: 48

PARAGRAPH NO.: 4.3.2

PARAGRAPH TITLE: Test Power Cooling

DESCRIPTION:

Change instrumentation section cooling air minimum flow rate to 19.5 pounds per minute. The specification limits are 22.5 to 25 pounds per minute.

REASON:

1

- A. The flow rate obtained provides adequate cooling for the instrumentation section. Equipment required to increase the flow rate, as determined by present measurement techniques, would be prohibitively expensive.
- B. Some doubt exists as to the validity of the flow rate values obtained. Alternate methods of measurement are being investigated.

CHANGE STATUS:

An SCN to the Model Specification will be submitted if required.

Boeing

Guaranteed

STL

R. L. Cichan

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PAGE

1

BC-2

DATE: June 17, 1963

MISSILE EFFECTIVITY: 431 thru 434

SPEC. OR DOC. NO.: D2-14286-1

SPEC. OR DOC. TITLE: Model Specification - R & D Prototypes
For Wing II Missiles, S-133-1000-0-1

WAIVER _____

DEVIATION X

PAGE NO.: 61

PARAGRAPH NO.: 4.4.2.8.2.1

PARAGRAPH TITLE: Timer Initiation

DESCRIPTION:

Premature Stage Separation Timer Runs shall be within the limits specified below:

STAGE I

STAGE II

54.2±2Sec.

110.2±2Sec.

REASON:

The Model Specification has not been updated to reflect approved designed changes.

CHANGE STATUS:

An SCN to the Model Specification has been requested.

Boeing

STL

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BC-3

DATE: June 17, 1963

MISSILE EFFECTIVITY: 431 thru 434

SPEC. OR DOC. NO.: D8-14286-1

SPEC. OR DOC. TITLE: Model Specification - R & D Prototypes
For Wing II Missiles, S-133-1000-0-1

WAIVER _____

DEVIATION X

PAGE NO.: 64

PARAGRAPH NO.: 4.4.2.11

PARAGRAPH TITLE: Battery Performance Test

DESCRIPTION:

Data, required by the above paragraphs, will not be presented as part of the missile acceptance data package. The information will become available on MLIR records at the time of battery activation.

REASON:

The batteries are time limited with respect to flight certification after activation. Schedule considerations generally require activation subsequent to missile acceptance, at which time the batteries are tested per functional test (D2-5473) with limits identical to those of the Model Specification.

CHANGE STATUS:

An SCW to the Model Specification will be submitted.

Boeing

STL

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PAGE 3

BC-4

DATE: June 5, 1963

MISSILE EFFECTIVITY: 431 thru 458

SPEC. OR DOC. NO.: D2-14286-1

SPEC. OR DOC. TITLE: Model Specification - R & D Prototypes
For Wing II Missiles, S-133-1000-0-1

WAIVER _____

DEVIATION X

DESCRIPTION:

The following Model Specification testing requirements will not be performed:

<u>Model Spec. Para. No.</u>	<u>Para. Title</u>
4.4.2.14.7	SYSTEMS ACCURACY
4.4.2.14.8	Systems NOISE
4.4.2.14.9	CALIBRATION
4.4.2.14.10	OPERATION OF G&C ANALOG INSTRUMENTATION
4.4.2.14.11	DESTRUCT RECEIVER CALIBRATION
4.4.2.15.5	SYSTEMS ACCURACY
4.4.2.15.6	SYSTEMS LINEARITY
4.4.2.15.7	SYSTEMS NOISE
4.4.2.15.10	LINEARITY ACCELEROMETER SIMULATOR CALIBRATION
4.4.2.15.11	PRESSURE TRANSDUCER SIMULATION CALIBRATION
4.4.2.15.12	VIBRATION TRANSDUCER CALIBRATION SIMULATION.

REASON:

Model Specification requirements changed per BSD TWX
BSQAK-1 (361).

CHANGE STATUS:

An SCN to the Model Specification will be submitted. Reference
CCN 925 BSD-63-MSN-9776 dated 3 June 1963.

Boeing *Barne Shank*

STL *K. F. Eick*

7.

AM-1

DATE: June 17, 1983

MISSILE EFFECTIVITY: 431 thru 434

SPEC. OR DOC. NO.: D2-14286-1

SPEC. OR DOC. TITLE: Model Specification - R & D Prototypes
For Wing II Missiles, S-133-1000-0-1

WAIVER _____

DEVIATION X

PAGE NO.: 50

PARAGRAPH NO.: 4.4.2.1

PARAGRAPH TITLE: G&C System (Turn On)

DESCRIPTION:

Change requirements of this paragraph as follows:

1. Delete Memory Solenoid requirement.
2. Delete 4.8 KC requirement.
3. IMU Electronics Temperature $85 \pm 20^{\circ}F$
4. IMU Helium Temperature $65 \pm 15^{\circ}F$
5. VM Case Temperature $70 \pm 5^{\circ}F$

REASON:

The Model Specification has not been updated to reflect approved design changes.

CHANGE STATUS:

SCN's reflecting the above changes have been submitted.

A/W

J. M. Leonard STL

K. F. Eichen

3

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AN-2

DATE: June 17, 1963

MISSILE EFFECTIVITY: 431 thru 434

SPEC. OR DOC. NO.: D2-14286-1

SPEC. OR DOC. TITLE: Model Specification - RAD Prototypes
For Wing II Missiles, S-133-1000-0-1

WAIVER _____

DEVIATION X

PAGE NO.: 57

PARAGRAPH NO.: 4.4.2.1.11

PARAGRAPH TITLE: Angular Accelerometer Test

DESCRIPTION:

Change number of pitch and yaw increments required as follows:

Pitch from -922 $\pm$ 62 to -691 $\pm$ 47

Yaw from +553 $\pm$ 43 to +415 $\pm$ 34

On Missiles where accelerometer counts are accumulated for
30 seconds, change drift limit to 0 $\pm$ 1845 for Pitch and Yaw.

REASON:

A change in the period of sampling changed the number of counts.

CHANGE STATUS:

An SCN to the Model Specification has been submitted.

AN

J. M. Leonard

STL

R. F. Cich

REVISED

US 4000 2000

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AN-3

DATE: June 17, 1963

MISSILE EFFECTIVITY: 431 thru 434

SPEC. OR DOC. NO.: D2-14286-1

SPEC. OR DOC. TITLE: Model Specification - R&D Prototypes
For Wing II Missiles, S-133-1000-0-1

WAIVER _____ DEVIATION X

PAGE NO.: 58 PARAGRAPH NO.: 4.4.2.1.13

PARAGRAPH TITLE: NCU Sinusoidal Test

DESCRIPTION:

The tests required by this paragraph will not be performed.

REASON:

The test was eliminated since the required data can be obtained from other nozzle test. (Ref. MNCB STL-1245, dtd. November 9, 1962.)

CHANGE STATUS:

An SCM to the Model Specification has been submitted.

AN

J. L. Myland

STL

R. F. Richman

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MOE

AN-4

DATE: June 17, 1963

MISSILE EFFECTIVITY: 431 thru 434

SPEC. OR DOC. NO.: D2-14286-1

SPEC. OR DOC. TITLE: Model Specification - R&D Prototypes
For Wing II Missiles, S-133-1000-0-1

WAIVER _____

DEVIATION X

PAGE NO.: 65
(56)

PARAGRAPH NO.: 4.4.2.13.5
(4.4.2.1.7)

PARAGRAPH TITLE: Guidance & Control Subsystem Test.
(N10 Discretes Test)

DESCRIPTION:

The N10 Discretes Test per paragraph 4.4.2.1.7 will not be performed during Compatibility Test.

REASON:

This test was eliminated per BSD/STL direction
(Ref. MMCS STL - 1245, dtd 9 November, 1963).

CHANGE STATUS:

An SCM to the Model Specification has been submitted.

AN J. H. Milgrom

STL K. F. E. E. E.

REVISED _____
US ARMY 2000

BEING	VOL	NO. 22-1000-0-1
SEC. IV	PAGE	8

AN-5

DATE: June 17, 1963

MISSILE EFFECTIVITY: 431 thru 434

SPEC. OR DOC. NO.: D2-14286-1

SPEC. OR DOC. TITLE: Model Specification - R&D Prototypes
For Wing II Missiles, S-133-1000-0-1

WAIVER _____

DEVIATION X

PAGE NO.: 55

PARAGRAPH NO.: 4.4.2.1.6

PARAGRAPH TITLE: Platform Accuracy Test

DESCRIPTION:

The following step per Model Specification paragraph 4.4.2.1.6(n).3., will not be performed:

4.4.2.1.6(n).3. During Mode P₁, recordings of the VM servo motor instrumentation signals shall be examined to verify the negative change of the X-VM servo motor signal as the dragmagnet reverses direction.

REASON:

The servo motors are constantly torqued during Mode P₁. Reversal of servo motor T/M signal is difficult to analyze under these conditions. Verification can be accomplished during Platform Servo Test.

CHANGE STATUS:

An SCN to the Model Specification will be submitted.

AN J. M. [Signature]

STL K. F. [Signature]

2

REVISED _____
US 4525 5000

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SEC IV PAGE 5

MODEL XSM-80B

DOCUMENT NUMBER D2-3929-431

SECTION OR ADDENDUM NO. V

TITLE

WAIVERS

NO. OF PAGES 9
DATE June 19, 1963

PREPARED BY R. J. Gennard
APPROVED BY H. E. Morrison
APPROVED BY W. J. [unclear]
APPROVED BY [unclear]

WORK ORDER

UNIT NO.

ITEM NO.

Sub-section title page
DOCUMENTS

3 4046 0000 (NAS. 342 11/24)

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PAGE 0

BC-5

DATE: June 17, 1963

MISSILE EFFECTIVITY: 431

SPEC. OR DOC. NO.: D2-14286-1

SPEC. OR DOC. TITLE: Model Specification - R&D Prototypes
For Wing II Missiles, S-133-1000-0-1WAIVER X

DEVIATION _____

PAGE NO.: 64
65PARAGRAPH NO.: 4.4.2.13.1
4.4.2.13.2PARAGRAPH TITLE: Test Conditions (Compatibility)
MISTRAM Subsystem (Compatibility)

DESCRIPTION:

A signal level of -78±1 dbm to the MISTRAM subsystem antenna hood flange was not verified during compatibility testing.

REASON:

Phase lock could not be maintained on Calibrate channel during compatibility testing using the BTS-216 test set. The subsystem was operated open-loop with the range MACK station and phase lock was maintained. This waiver written to allow change in test method and elimination of signal level requirement.

CHANGE STATUS:

The Model Specification will not be changed.

Boeing S.E. HansenSTL Jim Allen

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REVISED _____

US 4800 0000

RECEIVED

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V

NO D2-14286-131

PAGE

MISSILE EFFECTIVITY: 431

SPEC. OR DOC. NO.: D2-14286-1

SPEC. OR DOC. TITLE: Model Specification - R&D Prototypes
For Wing II Missiles, S-133-1000-0-1WAIVER XDEVIATION

PAGE NO.: 65

PARAGRAPH NO.: 4.4.2.13.6

PARAGRAPH TITLE: PCM/FM Subsystem Test

DESCRIPTION:

The below listed measurements have readings from compatibility test not in accord with specification requirements.

MEAS NO.	AMBIENT		NOISE		REASON
	SPECIFIED	OBTAINED	SPECIFIED	OBTAINED	
A002A			2.0	3.88	(1)
A003A			2.0	3.65	(1)
G013D			1.5	2.50	(1)
G014D			1.5	3.00	(1)
G015D			1.5	3.50	(1)
G016D			1.5	3.50	(1)
G017D			1.5	3.00	(1)
G018D			1.5	3.00	(1)
G019D			1.5	2.00	(1)
G020D			1.5	4.00	(1)
G021D			1.5	2.50	(1)
G022D			1.5	3.50	(1)
G023D			1.5	2.50	(1)
G024D			1.5	2.00	(1)
G008E			1.5	4.15	(1)
G007E			1.5	4.03	(1)
G008E			1.5	3.57	(1)
G023E			1.5	4.90	(1)
G025E			1.5	3.69	(1)
G026E			1.5	4.21	(1)
G027E			1.5	2.25	(1)
G028E			1.5	3.55	(1)
G030E			1.5	26.00	(1)
G033E			1.5	3.84	(1)
G035E			1.5	3.93	(1)
G037E			1.5	4.09	(1)

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SEC. 5

PAGE 2

MEAS NO.	AMBIENT		NOISE		REASON
	SPECIFIED	OBTAINED	SPECIFIED	OBTAINED	
G039E			1.5	4.03	(1)
G040E			1.5	3.28	(1)
G041E			1.5	3.19	(1)
G042E			1.5	3.78	(1)
G043E			1.5	4.00	(1)
G044E			1.5	4.25	(1)
G045E			1.5	3.91	(1)
G058E			1.5	4.50	(1)
G059E			1.5	4.15	(1)
G060E			1.5	4.91	(1)
G061E			1.5	3.58	(1)
G062E			1.5	3.71	(1)
G063E			1.5	3.85	(1)
G070E			1.5	4.00	(1)
G071E			1.5	3.50	(1)
G072E			1.5	5.00	(1)
G073E			1.5	2.00	(1)
G074E	48.55±2.95	43.53	1.5	5.00	(1)(11)
G075E	48.28±2.95	42.37	1.5	7.00	(1)(11)
G077E			1.5	2.50	(1)
G078E			1.5	2.00	(1)
G080E			1.5	4.05	(1)
G081E			1.5	3.75	(1)
G082E			1.5	3.94	(1)
G083E			1.5	4.10	(1)
G084E			1.5	3.91	(1)
G087E			1.5	4.27	(1)
G090E			1.5	4.07	(1)
G091E			1.5	4.40	(1)
G092E			1.5	3.60	(1)
G103E			1.5	4.09	(1)
G104E			1.5	3.91	(1)
G105E			1.5	3.95	(1)
I005E			1.5	3.91	(1)
I006E			2.0	3.15	(1)
I007E			2.0	3.69	(1)
I008E			2.6	4.10	(1)
I009E			2.6	3.44	(1)
I010E			1.5	3.19	(1)
I011E			1.5	4.19	(1)
I012E			2.0	3.53	(1)
I013E			2.0	2.55	(1)
I014E			2.6	3.56	(1)
I015E			2.6	3.73	(1)
I016E			1.5	3.19	(1)
I017E			1.5	3.86	(1)
I018E			2.0	2.79	(1)
I019E			2.0	3.30	(1)
I020E			2.6	4.03	(1)
I021E			2.6	4.00	(1)
I031E			1.5	4.24	(1)

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MEAS. NO.	AMBIENT		NOISE		REASON
	SPECIFIED	OBTAINED	SPECIFIED	OBTAINED	
I032E			1.5	4.30	(1)
I033E			1.5	4.24	(1)
I034E			1.5	4.58	(1)
I035E			1.5	3.69	(1)
I036E	20.00±8.00	None	1.5	None	(111)
I039E			1.5	4.07	(1)
I040E			1.5	3.08	(1)
I041E			1.5	3.37	(1)
I043E			1.5	2.31	(1)
S018E			1.5	3.88	(1)
S021E	69.50±2.90	73.76	1.5	4.10	(1)(11)
S022E	70.50±3.00	74.29	1.5	4.82	(1)(11)
S080E			1.5	4.15	(1)
S081E			1.5	3.91	(1)
A022H			2.6	2.70	(1)
A023H			2.6	2.75	(1)
A098H			2.6	2.73	(1)
A105H			2.0	4.27	(1)
A107H			2.0	4.03	(1)
A109H			2.0	3.60	(1)
A110H			2.6	2.70	(1)
A111H			2.6	2.70	(1)
A112H			2.0	3.65	(1)
A121H			2.6	2.78	(1)
A125H			2.0	4.13	(1)
P025H			2.6	2.75	(1)
P026H			2.6	2.78	(1)
P037H			2.0	3.40	(1)
P050H			2.0	4.20	(1)
A076P			2.0	3.55	(1)
A082P			2.0	3.69	(1)
A088P			2.0	3.76	(1)
P015P			2.0	3.58	(1)
P018P			2.0	3.86	(1)
P040P			2.0	4.80	(1)
P041P			2.0	4.80	(1)
P402P			1.5	3.78	(1)
H001P			1.5	3.00	(1)
H002P			1.5	2.00	(1)
H003P			1.5	3.50	(1)
H004P			1.5	3.50	(1)
H005P			1.5	2.50	(1)
H006P			1.5	3.50	(1)
H007P			1.5	5.50	(1)
H008P			1.5	10.00	(1)
H009P			1.5	3.00	(1)
H010P			1.5	3.50	(1)
H011P			1.5	4.00	(1)
H012P			1.5	3.00	(1)
H013P			1.5	3.00	(1)
H014P			1.5	3.00	(1)

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MEAS.NO.	AMBIENT		NOISE		REASON
	SPECIFIED	OBTAINED	SPECIFIED	OBTAINED	
H015P			1.5	3.00	(1)
A001S			2.0	3.80	(1)
A002S			2.0	3.81	(1)
A003S			2.0	4.01	(1)
A005S			2.0	3.88	(1)
A006S			2.0	3.59	(1)
A007S			2.0	3.98	(1)
A008S			2.0	3.86	(1)
A011S			2.0	3.56	(1)
A012S			2.0	3.66	(1)
A013S			2.0	3.99	(1)
A059T	67.00±2.50	69.66	1.5	4.07	(1)
A060T			1.5	4.28	(1)
A144T			2.6	3.11	(1)
A145T			2.0	3.92	(1)
A146T			2.6	6.13	(1)
A152T			2.6	6.10	(1)
A154T			2.6	5.33	(1)
A155T			2.0	3.93	(1)
A156T			2.6	3.60	(1)
A159T			2.6	4.24	(1)
A160T			2.6	4.10	(1)
A180T			2.6	3.86	(1)
A183T			2.6	4.40	(1)
A202T			2.6	4.22	(1)
A206T			2.6	3.70	(1)
A249T			2.6	8.83	(1)
A253T			1.5	4.28	(1)
A254T			2.0	3.83	(1)
A255T			2.0	8.47	(1)
A256T			2.0	4.95	(1)
A258T			2.0	5.87	(1)
A259T			2.0	4.83	(1)
A260T			2.0	12.03	(1)
A263T			2.0	4.26	(1)
A266T			2.6	4.30	(1)
A267T			2.0	4.26	(1)
A268T			2.6	4.24	(1)
A279T			2.6	3.85	(1)
A280T			2.6	3.68	(1)
A281T			2.6	3.89	(1)
A282T			2.6	4.03	(1)
A283T			2.6	3.91	(1)
A284T			2.6	4.30	(1)
A285T			2.0	3.82	(1)
A286T			2.0	3.95	(1)
A291T			2.0	4.22	(1)
A296T			2.6	4.19	(1)
A297T			2.6	4.62	(1)
A306T			2.0	3.83	(1)

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MEAS. NO.	AMBIENT		NOISE		REASON
	SPECIFIED	OBTAINED	SPECIFIED	OBTAINED	
A312T			2.0	3.69	(1)
A320T			2.6	5.01	(1)
A336T			2.6	4.69	(1)
A337T			2.0	3.96	(1)
A338T			2.6	4.71	(1)
A341T			2.0	3.88	(1)
P009T			2.0	3.51	(1)
P018T			2.0	4.07	(1)
P025T			2.6	4.13	(1)
P034T			2.6	4.22	(1)
P049T			2.0	3.93	(1)
P050T			2.0	4.21	(1)
P069T			2.6	3.82	(1)
P094T			2.0	4.21	(1)
P113T			2.6	3.76	(1)
P006X			1.5	3.70	(1)
P007X	3.14±12.86	None	1.5	None	(iii)
P008X			1.5	3.90	(1)
P009X			1.5	4.15	(1)

REASONS:

- (i) A portion of the noise on these channels is due to operation of the nozzle control units on ground power. Experience from previous flights shows that, with the nozzle control units operating on battery power, this noise is reduced and does not effect analysis of flight data.
- (ii) The variation from specified ambient is outside of specified tolerance but does not imply a loss of confidence in the flight data expected from this channel.
- (iii) Data on these channels blanked out by the transmission of computer words.

Boeing *J. E. Brown*

STL *John Allen*

Sht. 5 of 5.

BC-7

DATE: June 18, 1963

MISSILE EFFECTIVITY: 431

SPEC. OR DOC. NO.: D2-14286-1

SPEC. OR DOC. TITLE: Model Specification - R&D Prototypes
For Wing II Missiles, S-133-1000-0-1

WAIVER X

DEVIATION _____

DESCRIPTION:

The measurement list has been changed as follows:

<u>MEAS. NO.</u>	<u>DESCRIPTION OF CHANGE</u>
R015A	Deleted
R016A	Deleted
R017A	Deleted
R018A	Deleted
R019A	Deleted
R020A	Deleted
R021A	Deleted
R063E	Deleted
A097V	Deleted
R002V	Deleted
R003V	Deleted
R048X	Deleted
R049X	Deleted
R050X	Deleted
AL79T	Deleted

REASON:

This waiver written to reconcile differences between
Model Specification and Test Directive Part "B".

CHANGE STATUS:

The Model Specification will not be changed.

Boeing S.E. Hume

STL J. M. Allen

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U2 CRSS 2000

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DATE: June 17, 1963

MISSILE EFFECTIVITY: 431

SPEC. OR DOC. NO.: D2-14286-1

SPEC. OR DOC. TITLE: Model Specification - R&D Prototypes
For Wing II Missiles, S-133-2000-Q-1

WAIVER X

DEVIATION

PAGE NO.: 52

PARAGRAPH NO.: 4.4.2.1.1

PARAGRAPH TITLE: Platform Erection and Alignment

DESCRIPTION:

The Computer voltage output "C" signal was not verified as indicating a negative change corresponding to the yaw platform torque motor T/M signal positive change when the platform reaches and is held against the -20 degree yaw limit stop.

REASON:

Assigned T/M channel blanked out by computer word. This waiver written to prevent delay in compilation of missile acceptance package.

CHANGE STATUS:

The Model Specification will not be changed.

AN

STL

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NO D2-3929-431

PAGE 8

MODEL XSM-80B

DOCUMENT NUMBER D2-3929-431

SECTION OR ADDENDUM NO. VI

TITLE

SHORTAGES, TRAVELERS &
INCOMPLETE ITEMS

NO. OF PAGES 4
DATE June 19, 1963

PREPARED BY R. J. J. J. J.

APPROVED BY S. E. McKinnon

APPROVED BY W. J. J. J. J.

APPROVED BY W. J. J. J. J.

WORK ORDER

UNIT NO.

ITEM NO.

Sub-section title page
DOCUMENTS

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PAGE 0

146 0000 (WAS 94C 1142A)

SHORTAGE ITEMS

<u>ITEM NO.</u>	<u>PART NO.</u>	<u>NOMENCLATURE</u>	<u>CONTRACTOR</u>	<u>REF.</u>
1.	Mark 11	Re-entry Vehicle	Avco	
2.	25-25173-8	Battery Tray Ass'y.	Boeing	
3.	25-15799-25	Battery Command Distrust	Boeing	

- Will be installed at the Launch Area as evidenced by the Missile End-Item Records Package.

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TRAVELER ITEMS

<u>ITEM NO.</u>	<u>USER NO.</u>	<u>JOB NO.</u>	<u>NOMENCLATURE</u>
1.		40016	Transducer Cover Removal Verification
2.		40104	Time & Cycle
3.		45206	Cork Sample
4.		40100	Total Order Index
5.	U094819	45104	Trim 45 Sec. Fed. Ramp
6.		40108	Acceptance & Traveler M&IR

NOTE: All incomplete items which travel to the Launch Area will be completed prior to Missile Launch or will be listed as incomplete items on the Weapon System Test Release Forms.

INCOMPLETE ITEMS

<u>ITEM #</u>	<u>PART NUMBER</u>	<u>NOMENCLATURE</u>	<u>JOB NO.</u>
1.	21-50120-9530	Missile Countdown	40900
2.	25-25183-8	Battery Activation	43002
3.	25-19799-25	Battery Activation	43003

REVISED _____

U3 4889 2000 (WAS SAC 41310)

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VI

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MODEL XSM-80B

DOCUMENT NUMBER D2-3929-

SECTION OR ADDENDUM NO. VII

TITLE

EQUIPMENT IDENTIFICATION

NO. OF PAGES 18
DATE June 19, 1963

PREPARED BY R. Hemmestad

APPROVED BY R. E. Maximus

APPROVED BY Walter E. Guie

APPROVED BY Walter E. Guie

WORK ORDER

UNIT NO.

ITEM NO.

Sub-section title page
DOCUMENTS

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SECTION VII
EQUIPMENT IDENTIFICATION

This section contains the following:

- (A) "The Missile Configuration Index" - which lists the major components and systems of the missile by missile section, part number, nomenclature, serial number, manufacturer and the associate contractor furnishing the item of hardware.
- (B) "Drawing Indices" - Five drawing indices are contained in this section (one for each associate contractor) and list the following.
 - (1) The Boeing Company "Drawing Index" is in tree form and lists the drawing number and nomenclature of all drawings required to complete the final missile assembly.
 - (2) The Autonetics "Drawing Breakdown" is in tree form and lists the drawing number, model number, and serial number for components of the G & C System.
 - (3) The drawing indices for the Thiokol Chemical Corp., the Aerojet General Corp., and the Hercules Powder Co., list the drawing number, nomenclature, part number, and serial number for components of the first, second, and third stage motors.

The missile configuration listed in this document (D2-3929) is the configuration of the missile at the time of final missile acceptance by AFSSD. Any change of components or the configuration of components which occurs after missile acceptance will not be reflected in this document. Refer to Document D2-3894- (applicable missile No.) for the fly-away configuration of this missile. D2-3894 contains a detail listing of Boeing furnished missile parts received at BATC and reflects all changes incorporated at BATC. Autonetics, Thiokol Chemical Corp., Aerojet General Corp., and Hercules Powder Co. furnished components are listed in D2-3894 at the level reflected in the "Missile Configuration Index" incorporated in this document (D2-3929). D2-3894 is normally released for distribution ten days after the missile firing.

REVISED _____

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SECT.	PART NO.	NOMENCLATURE	MODEL	SERIAL NO.	MANUFACTURER	CONTR.
42	85007-106-71	Guidance & Control Set	NP10H	#10	Autonetics	Autonetics
42	7071-300001	Guidance & Control Body Section	MD-3C	0000013	Autonetics	Autonetics
42	65632-101-51	Inertial Guidance Set	NP10H	AO06D	Autonetics	Autonetics
42	61037-305-11	Digital Data Converter (Encoder)	D20A	EYD0040	Autonetics	Autonetics
42	65282-505-21	Analog Signal Conditioner	SE2F	AO08	Autonetics	Autonetics
42	1990011	Primary Battery Power (G&C)	SE12G	AAU9041	Cooke	Autonetics
42	52080-507	Ordinance Switch	P86A	DEMO008	Autonetics	Autonetics
42	65958-604	Battery Cover	SE137A	AO39	Autonetics	Autonetics

MISSILE CONFIGURATION INDEX FTM 431

SECT.	PART NO.	NOMENCLATURE	MODEL	SERIAL NO.	MANUFACTURER	CONTR.
43	25-15718-41	Instrumentation Section Assembly	NA	M431	Boeing Co.	Boeing Co.
43	25-25173-8	Battery Tray Assembly	NA	*	Boeing Co.	Boeing Co.
43	25-15799-25	Battery Command Destruct	NA	*	Boeing Co.	Boeing Co.
43	25-15850-9	Telemetry Antenna, Assy. of	NA	M425-3	Boeing Co.	Boeing Co.
43	25-15850-9	Telemetry Antenna, Assy. of	NA	M425-1	Boeing Co.	Boeing Co.
43	25-15850-9	Telemetry Antenna, Assy. of	NA	M415-1	Boeing Co.	Boeing Co.
43	25-15837-5	Command Destruct Antenna	NA	M435-1	Boeing Co.	Boeing Co.
43	25-15837-5	Command Destruct Antenna	NA	M435-2	Boeing Co.	Boeing Co.
43	25-15837-5	Command Destruct Antenna	NA	M435-3	Boeing Co.	Boeing Co.
43	10-20402-40	R. F. Section	NA	565	United Electrodynamics	Boeing Co.
43	10-20409-0	Triplexer	NA	1050	Allen Bradley Co.	Boeing Co.
43	21-50031-4	Multiplexer-Programmer, Assy. of	NA	0001	Radiation, Inc.	Boeing Co.
43	21-50031-7	Multiplexer, Assy. of	NA	M431	Radiation, Inc.	Boeing Co.
43	10-20459-2	D. C. Signal Amplifier	NA	123	Avion, Inc.	Boeing Co.
43	10-20428-2	Command Destruct Receiver	NA	0087	King Electric	Boeing Co.
43	10-20428-2	Command Destruct Receiver	NA	0097	King Electric	Boeing Co.
43	10-20410-0	Voltage Regulator-Transducer Pwr.	NA	0072	Electro Development	Boeing Co.
43	10-20420-7	Switch Transfer Test & Calibrate	NA	0139	United Electrodynamics	Boeing Co.
43	10-20420-8	Switch-Instr. Pwr. Trans.	NA	0132	United Electrodynamics	Boeing Co.
43	10-20420-9	Switch-Command Destruct Pwr.	NA	0136	United Electrodynamics	Boeing Co.
43	10-20483-1	Umbilical Receptical	NA	*	Ampenol	Boeing Co.
43	10-20439-7	Cartridge Assembly	NA	*		Boeing Co.
43	10-20439-7	Cartridge Assembly	NA	*		Boeing Co.
43	10-20439-8	Cooling Valve	NA	*		Boeing Co.
43	10-20439-8	Cooling Valve	NA	*		Boeing Co.
43	25-25493-2	Mistram Tray Assembly	NA	M431	Boeing Co.	Boeing Co.
43	25-34555-6	Matching Unit	NA	M431	Boeing Co.	Boeing Co.
43	25-27129-17	R&D Raceway Cap	NA	A235	Avion, Inc.	Boeing Co.
43	10-20478-8	Thermocouple Reference Junction Assy.	NA	A207	Avion, Inc.	Boeing Co.
43	10-20478-8	Thermocouple Reference Junction Assy.	NA	11198	Statham Instruments	Boeing Co.
43	10-20454-5	Linear Accelerometer	NA	11843	Statham Instruments	Boeing Co.
43	10-20454-5	Linear Accelerometer	NA	11292	Statham Instruments	Boeing Co.
43	10-20454-6	Linear Accelerometer	NA	0168	Electro Development	Boeing Co.
43	10-20476-0	Switch Staging	NA	M431	Boeing Co.	Boeing Co.
43	25-16462-8	Event Marker	NA	471	United Electrodynamics	Boeing Co.
43	10-20401-1	Event Marker	NA	472	United Electrodynamics	Boeing Co.
43	10-20401-1	Event Marker	NA	473	United Electrodynamics	Boeing Co.
43	10-20401-1	Event Marker	NA	474	United Electrodynamics	Boeing Co.
43	10-20403-7	FM/FM Telemetry	NA	0577		Boeing Co.
43	10-20403-8	FM/FM Telemetry	NA	0669		Boeing Co.

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43	10-20403-8	FM/FM Telemetry	NA	0589		Boeing Co.
43	10-20408-9	FM/FM Telemetry	NA	0591		Boeing Co.
43	25-25518-13	Mistram Antenna Assy. Instr. Sec.	NA	M431-1		Boeing Co.
43	25-25518-13	Mistram Antenna Assy. Instr. Sec.	NA	M431-2		Boeing Co.

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44	25-25874-172	R&D Raceway Cover	NA	*	Boeing Co.	Boeing Co.
44	25-30103-60	Operational Raceway Cover	NA	*	Boeing Co.	Boeing Co.
44	25-31024-4	Operational Raceway Cap	NA	*	Boeing Co.	Boeing Co.
44	01A00065-005	Rocket Motor Assembly	XM-57	0030040	Hercules Powder Co.	Hercules
44	01A00386-005	Case Grain Loaded			Hercules Powder Co.	Hercules
44	01A00768-010	Top Nozzle Assembly (Port #1 & 3)			Hercules Powder Co.	Hercules
44	01A00768-009	Top Nozzle Assembly (Port #2 & 4)			Hercules Powder Co.	Hercules
44		Nozzle #1		1398	Hercules Powder Co.	Hercules
44		Nozzle #2		1303	Hercules Powder Co.	Hercules
44		Nozzle #3		1304	Hercules Powder Co.	Hercules
44		Nozzle #4		1305	Hercules Powder Co.	Hercules
44		Igniter Assy.		HPC0694	Hercules Powder Co.	Hercules
44	01A00560-003	Igniter S&A Device		OB10611	Bulova Watch Co.	Hercules
44	KR80000-06	TT Ordnance Installation			Hercules Powder Co.	Hercules
44	01A00676	TT Arm/Disarm Switch		6194	Electro-Actuator Corp.	Hercules
44	7300-5	Nozzle Control Unit	P79D	DEZ0008	Autonetics	Autonetics
44	51250-507	G&C Cable, 3rd Stage	P76D	009	Amphenol	Autonetics
44	200-639-1200					

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45	25-23207-31	Interstage Assy. Insulated	NA		Boeing Co.	Boeing Co.
45	10-20451-5	Detonator Assy. of	NA		Universal Match Co.	Boeing Co.
45	10-20451-1	Linear Explosive	NA		Universal Match Co.	Boeing Co.
45	10-20451-3	Linear Explosive Assy.	NA		Universal Match Co.	Boeing Co.
45	10-20870-21	Linear Explosive Assy.	NA		Universal Match Co.	Boeing Co.
45	10-20870-21	Linear Explosive Assy.	NA		Universal Match Co.	Boeing Co.
45	10-20870-21	Linear Explosive Assy.	NA		Universal Match Co.	Boeing Co.
45	10-20870-18	Booster-Explosive	NA		Universal Match Co.	Boeing Co.
45	10-20870-30	Booster Time Delay	NA		Universal Match Co.	Boeing Co.
45	10-20870-30	Booster Time Delay	NA		Universal Match Co.	Boeing Co.
45	25-25218-15	Safe & Arm Mechanism Assy.	NA		Universal Match Co.	Boeing Co.
45	21-50031-5	Control Box, Assy. of	NA		Boeing Co.	Boeing Co.
45	21-50031-43	Auxiliary Box, Assy. of	NA	0063	Boeing Co.	Boeing Co.
45	21-50031-44	Auxiliary Box, Assy. of	NA	0001	Boeing Co.	Boeing Co.
45	21-50031-45	Auxiliary Box, Assy. of	NA	0001	Boeing Co.	Boeing Co.
45	25-34553-5	Matching Unit	NA	M431	Boeing Co.	Boeing Co.
45	25-25992-7	R&D Raceway Cap Fwd.	NA		Boeing Co.	Boeing Co.
45	25-32747-8	Beam and Cover Assy.	NA		Boeing Co.	Boeing Co.
45	25-26851-17	R&D Raceway Cap Aft.	NA		Boeing Co.	Boeing Co.
45	25-30102-802	Operational Raceway Cover Aft.	NA		Boeing Co.	Boeing Co.
45	10-20478-8	Thermocouple Reference Junction Assy.	NA	A240	Avien, Inc.	Boeing Co.
45	10-20478-9	Thermocouple Reference Junction Assy.	NA	0066	Avien, Inc.	Boeing Co.
45	10-20436-5	Arm & Disarm Mechanism	NA	0054	Universal Match	Boeing Co.
45	51325-507	Angular Accelerometer	P75D	DEJ0007	Autonetics	Autonetics

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46	10-20987-9	Interval Timer	NA	*	Boeing Co.	Boeing Co.
46	25-25874-165	RD Raceway Cover	NA	*	Boeing Co.	Boeing Co.
46	25-25874-166	RD Raceway Cover	NA	*	Boeing Co.	Boeing Co.
46	25-30101-126	Operational Raceway Cover	NA	*	Boeing Co.	Boeing Co.
46	25-30101-802	Operational Raceway Cover	NA	*	Boeing Co.	Boeing Co.
46	10-20942-3	Battery, Interstage	NA	*	Boeing Co.	Boeing Co.
46	367799-9	Rocket Motor Assembly	NA	*	Boeing Co.	Boeing Co.
45	359938	Closure Final Machine	XN-56	0020042	Telecomputing Corp.	Aerojet
46	366983-9	Nozzle #1		633147	Aerojet	Aerojet
46	366983-10	Nozzle #2		633176	Bendix Corp.	Aerojet
46	366983-9	Nozzle #3		633148	Bendix Corp.	Aerojet
46	366983-10	Nozzle #4		633177	Bendix Corp.	Aerojet
46	365580	Igniter Basket Assy.		62-8-BP-II	Aerojet	Aerojet
46	KR80000-06	Igniter S&A		0B10251	Bulova Watch Co.	Aerojet
46	365224-9	Inst. Assembly 2nd Stage			Aerojet	Aerojet
46	51175-507	Nozzle Control Unit	P78D	DEX0003	Autonetics	Autonetics
46	200-639-1100	G&C Cable, 2nd Stage	P75D	010	Amphenol	Autonetics
46	1990012	NCU Battery Power Supply	SE13G	AAV9068	Autonetics	Autonetics
46	359764-259	All Ordnance Destruct System		617619	Aerojet	Aerojet

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47	25-31011-11	Interstage Assy. Insulated	NA		Boeing Co.	Boeing Co.
47	10-20942-3	Battery Interstage	NA		Telecomputing Corp.	Boeing Co.
47	10-20451-5	Detonator	NA		Universal Match	Boeing Co.
47	10-20451-4	Linear Explosive	NA		Universal Match	Boeing Co.
47	10-20451-2	Linear Explosive	NA		Universal Match	Boeing Co.
47	10-20870-18	Booster Explosive	NA		Universal Match	Boeing Co.
47	10-20870-20	Linear Explosive Assy.	NA		Universal Match	Boeing Co.
47	10-20870-20	Linear Explosive Assy.	NA		Universal Match	Boeing Co.
47	10-20870-20	Linear Explosive Assy.	NA		Universal Match	Boeing Co.
47	10-20870-26	Booster Time Delay	NA		Universal Match	Boeing Co.
47	10-20870-26	Booster Time Delay	NA		Universal Match	Boeing Co.
47	25-25218-16	Safe & Arm Mechanism Assy.	NA		Boeing Co.	Boeing Co.
47	25-27404-6	Shield Booster	NA		Boeing Co.	Boeing Co.
47	21-50031-6	Control Box, Assy. of	NA	M431	Boeing Co.	Boeing Co.
47	21-50031-18	Auxiliary Box, Assy. of	NA	0001	Boeing Co.	Boeing Co.
47	21-50031-19	Auxiliary Box, Assy. of	NA	0001	Boeing Co.	Boeing Co.
47	21-50031-20	Auxiliary Box, Assy. of	NA	0001	Boeing Co.	Boeing Co.
47	25-34554-6	Matching Unit	NA	M431	Boeing Co.	Boeing Co.
47	25-25991-4	R2D Raceway Cap Fwd.	NA		Boeing Co.	Boeing Co.
47	25-32748-8	Beam and Cover Assy.	NA		Boeing Co.	Boeing Co.
47	25-30100-6	Operational Raceway Cover Aft.	NA		Boeing Co.	Boeing Co.
47	25-26070-12	R2D Raceway Cap Aft.	NA		Boeing Co.	Boeing Co.
47	10-20478-8	Thermocouple Reference Junction Assy.	NA	0068	Avien, Inc.	Boeing Co.
47	10-20478-8	Thermocouple Reference Junction Assy.	NA	A210	Avien, Inc.	Boeing Co.
47	10-20436-5	Arm & Disarm Mechanism Assy.	NA	0040	Universal Match	Boeing Co.
47	10-20987-8	Interval Timer	NA		Universal Match	Boeing Co.

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48	25-25874-196	R&D Raceway Cover, Aft.	NA	*	Boeing Co.	Boeing Co.
48	25-25874-169	R&D Raceway Cover, Ctr.	NA	*	Boeing Co.	Boeing Co.
48	25-25874-169	R&D Raceway Cover, Ctr.	NA	*	Boeing Co.	Boeing Co.
48	25-25874-195	R&D Raceway Cover, Fwd.	NA	*	Boeing Co.	Boeing Co.
48	25-25874-173	Operational Raceway Cover, Aft.	NA	*	Boeing Co.	Boeing Co.
48	25-25874-174	Operational Raceway Cover, Ctr.	NA	*	Boeing Co.	Boeing Co.
48	25-25874-174	Operational Raceway Cover, Ctr.	NA	*	Boeing Co.	Boeing Co.
48	25-35416-35	Operational Raceway Cover, Fwd.	NA	*	Boeing Co.	Boeing Co.
48	1U-32400-38	Rocket Motor Assembly	M-55	0010041	Thiokol	Thiokol
48	1U-32953	Case & Closure Assembly		.1015	Thiokol	Thiokol
48	1U-32200-10	Nozzle #1		0021353	Arde-Portland, Inc.	Thiokol
48	1U-32200-11	Nozzle #2		0021354	Arde-Portland, Inc.	Thiokol
48	1U-32200-10	Nozzle #3		0021356	Arde-Portland, Inc.	Thiokol
48	1U-32200-11	Nozzle #4		0021357	Arde-Portland, Inc.	Thiokol
48	1U31510-13	Pyrogen Assembly		0000356	Thiokol	Thiokol
48	KR80000-06	S&A Igniter		0B10575	Bulova Watch Co.	Thiokol
48	51100-507	Nozzle Control Unit	P77D	DEU0006	Autonetics	Autonetics
48	200-752-1000	C&C Cable, 1st Stage	P74E	019	Amphenol	Autonetics
48	1U32299-18	Motor Assembly		.1015	Thiokol	Thiokol
48	1990012	MCU Battery Power Supply	SEL3G	AAV9067	Cooke	Autonetics
48	1U-32222-06	Instrumentation Assy.			Thiokol	Thiokol

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49	25-33938-96	Sdirt Assy. Insulated	NA	M131	Boeing Co.	Boeing
49	25-31463-800	25-31463-800	NA	*	Boeing Co.	Boeing
49	25-31463-800	Operational Airway Cap	NA	*	Boeing Co.	Boeing
49	10-20477-9120	Thermocouple Wire Assy.	NA	0941	Aero Research	Boeing
49	10-20477-9120	Thermocouple Wire Assy.	NA	0820	Aero Research	Boeing
49	10-20477-9120	Thermocouple Wire Assy.	NA	0874	Aero Research	Boeing
49	10-20477-9120	Thermocouple Wire Assy.	NA	0881	Aero Research	Boeing
49	10-20477-9120	Thermocouple Wire Assy.	NA	0903	Aero Research	Boeing
49	10-20477-9120	Thermocouple Wire Assy.	NA	0918	Aero Research	Boeing

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R/W COVER INSTL
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INTERSTAGE
TR EQUIP INSTL
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ELEC CABLE INSTL
R&D SECTION 47
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AUTOMATIC
BATTERY - CTCL
10-20942

PREMATURE SEPARA-
TION TIMER SWITCH
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1ST STAGE INSULATED
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WICH 66247-107-21 #10 WICH-107-21 #10 SET
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66247-107-21 #10

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FCP FTM-431

DATE _____

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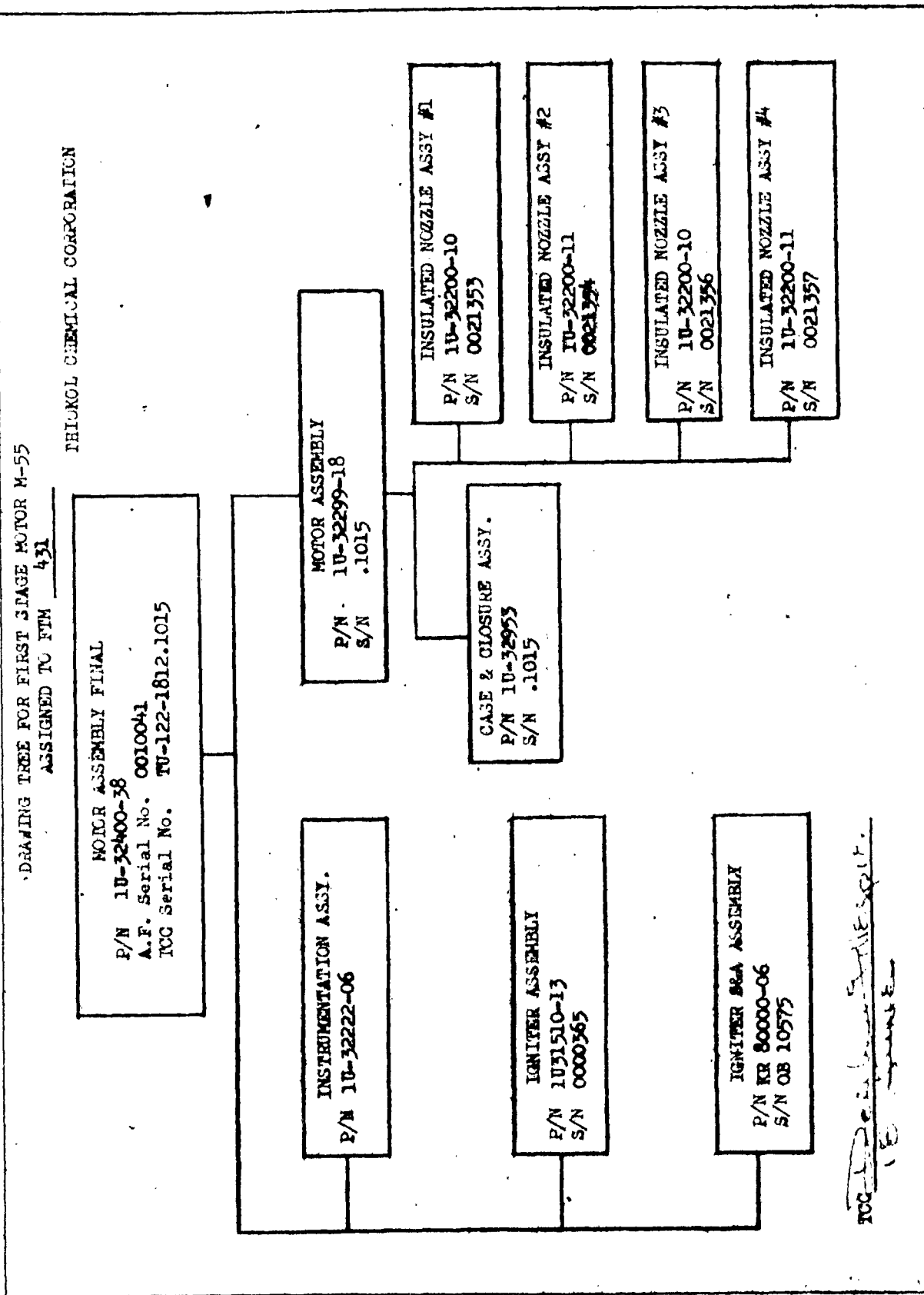
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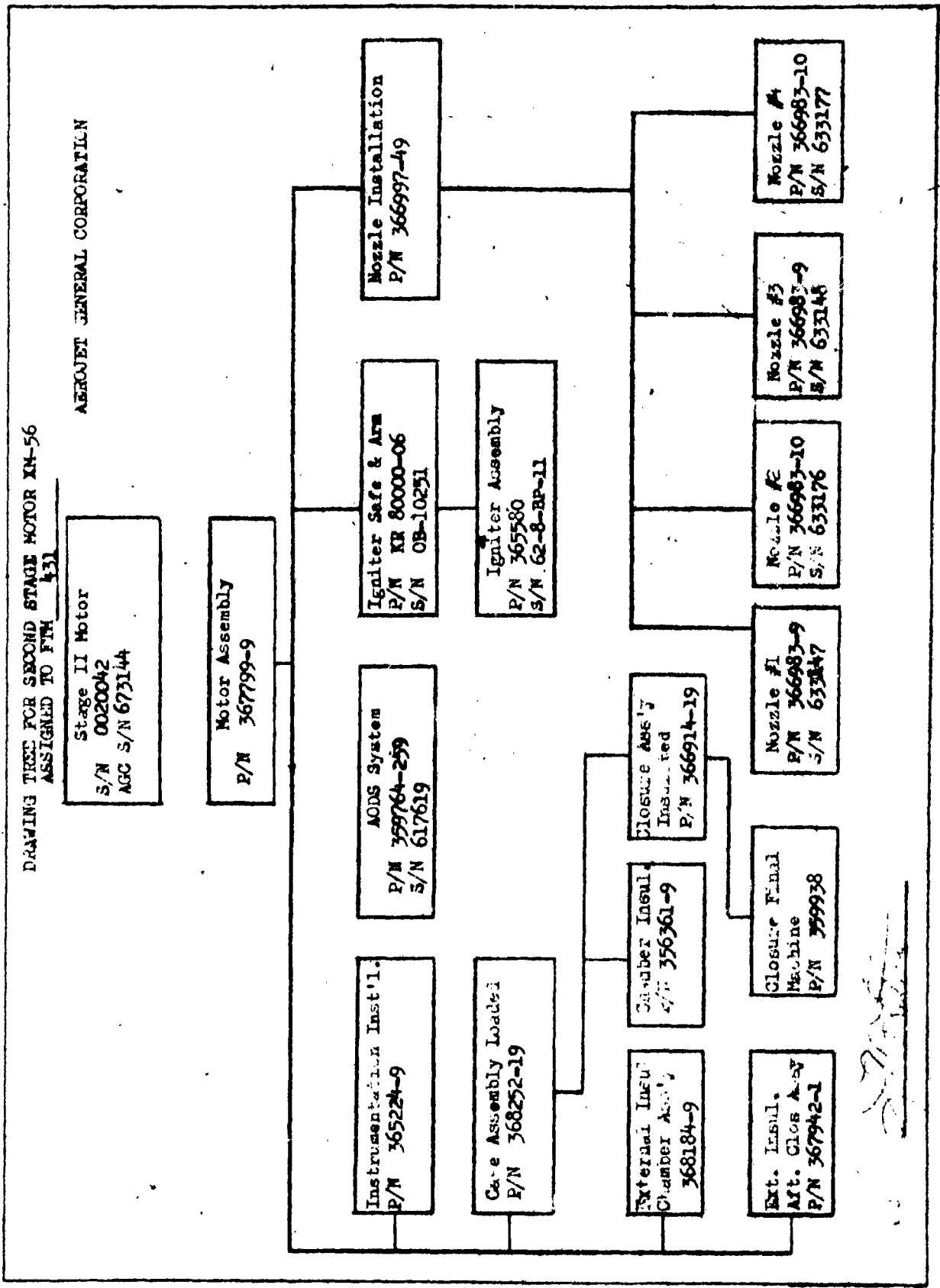
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SECTION OR ADDENDUM NO. VIII

TITLE

CHANGE STATUS

NO. OF PAGES 6

DATE June 19, 1963

PREPARED BY

APPROVED BY

APPROVED BY

APPROVED ~~BY~~

WORK ORDER

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ITEM NO.

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PTM 431

COMMITTED ENGINEERING CHANGES

A. Changes committed jointly by Seattle and BATC*:

<u>CHANGE NO.</u>	<u>EFFECTIVITY</u>	<u>PLANNING COMPL.</u>	<u>DDRC STATUS</u>
CCP 475	431 & On	6-14-3	Compl. 3-26-2
475-1	431 & On	2-11-3	Compl. 10-25-2
646	425, 425A 431 - 445	3-29-3	Compl. 12-12-2
666	423 & On less 424 & 426	3-19-3	Compl. 10-25-2
728	423 & On less 424 & 426	10-10-2	Compl. 9-18-2
737	423 & On less 424 & 426	12-11-2	Compl. 6-15-2
781	431 - 434	5-24-3	Compl. 10-15-2
838	431 & On	5-26-3	Compl. 11-26-2
838-1	431 & On	4-19-3	Compl. 11-6-2
857	423 & On less 424 & 426	12-22-3	Compl. 11-20-2
884	423-434 less 424 & 426	1-29-3	Compl. 12-4-2
PRR 4240	431 - 434	5-1-3	Compl. 9-19-2
4259	431 & On	6-5-3	Compl. 12-6-2
83546	419-434 less 421 & 422	12-6-2	Compl. 12-6-2

*Above Changes were shown "Incomp" in D2-10889 Seattle Acceptance Summary Document.

B. New Changes other than those shown above:

ECP 634	431 - 448	6-6-3	Dwg. 25-18124 Rev. K
CCP 781A	431 - 434	6-17-3	Compl. 6-11-3
1158	431 & On	Compl. by Seattle	Compl. 5-29-3
3000-12	431 - 448	5-10-3	Compl. 3-21-3
PRR 4059-	431 & On	7-10-2	Compl. 5-14-2

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COMMITTED ENGINEERING CHANGES

B. New Changes other than those shown above: (continued)

<u>CHANGE NO.</u>	<u>EFFECTIVITY</u>	<u>PLANNING COMPL.</u>	<u>DDRC STATUS</u>
PRR 4145	431 & On	4-24-3	Compl. 8-2-2
4149	431 & On	4-18-3	Compl. 8-24-2
4247	431 & On	4-22-3	Compl. 11-12-2
4260	431 & 434	4-18-3	Compl. 11-17-2
4272-1	431 - 434	5-29-3	Compl. 1-22-3
4276	431 & On	4-18-3	Compl. 1-17-3
4278	431 & On	1-25-3	Compl. 1-14-3
4285	431 & On	4-16-3	Compl. 2-15-3
4290	431 & On	Compl. by Seattle	Compl. 3-27-3
4304	431 - 434	5-27-3	Compl. 5-24-3
4304A	431 - 434	No Action Req'd.	COMPL. 6-4-3
11404	431 & On	4-30-3	Compl. 12-14-2
11916	431 & On	4-11-3	Compl. 3-20-3
80957	431 & On	3-12-3	Compl. 11-14-3
80959	431 & On	4-19-3	Compl. 12-12-2
83365R2S	431 - 434	4-19-3	Compl. 11-1-2
83745	431 & 432	5-31-3	Compl. 5-23-3
83751	431, 434 & 435	6-12-3	Compl. 6-6-3
83754	431 - 445	6-11-3	Compl. 6-10-3

C. Out-of Sequence Changes:

PRR 83734	427 & On	6-13-3	Compl. 5-23-3
83755	429 & On	6-10-3	Compl. 6-6-3

ASSOCIATE CONTRACTOR CHANGES

The following Engineering changes were accomplished at AMR on FTM 431.

CHANGE NO.

JOB NO.

ER NO.

NONE.

Signed [Signature]

Representative for
Thiokol Chemical Corporation

Date 15 June 1963

REVISED _____

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ASSOCIATE CONTRACTOR CHANGES

The following Engineering changes were accomplished at AMR on FTM 431.

CHANGE NO.

JOB NO.

ER NO.

NONE.

Signed _____
Representative for
Aerojet - General

Date _____

REVISED _____

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ASSOCIATE CONTRACTOR CHANGES

The following Engineering changes were accomplished at AMR on FTM 431.

CHANGE NO.

JOB NO.

ER NO.

NONE.

Signed: 

Representative for
Hercules Powder Company

Date 6-15-63