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AUTHORITY

SAMSO ltr, 16 Aug 1973

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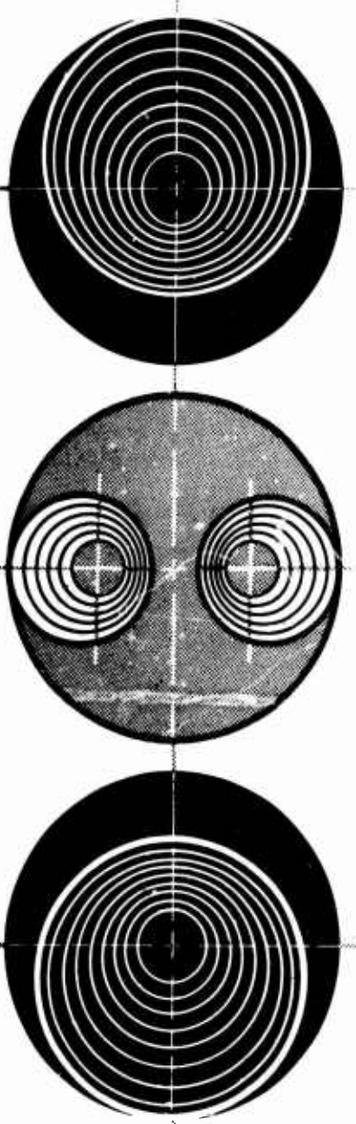
MARTIN DENVER SSD-CR-63-128 Supplement 2 Copy No. 63

CONTRACT AF04(695)-150

PROGRAM SUPPORT REQUEST MOL-HSQ

NOVEMBER 1965



prepared by

MARTIN
DENVER

prepared for

HEADQUARTERS
SPACE SYSTEMS DIVISION
AIR FORCE SYSTEMS COMMAND
AIR FORCE UNIT POST OFFICE
LOS ANGELES, CALIFORNIA 90045

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SSD-CR-63-128 Supplement 2

Copy No. 8

Contract AF 04(695)-150

PROGRAM SUPPORT REQUEST
MOL - HSQ

November 1965

Author

W. Pilgrim

Approved

R. B. Demoret
Program Manager
MOL-HSQ

MARTIN COMPANY
Denver 1, Colorado
Aerospace Division of Martin-Marietta Corporation

FOREWORD

This document is submitted under item 1, Exhibit A, Task 5.13 of Contract AF 04(695)-150, in accordance with Line Item 3C-21 Contractor Specification SSS-TIII-010 DRD (Rev 3), dated 15 April 1963 and SCN 1 thru DSCN 112.

This document defines the range support requirements for the MOL-HSQ Program.

This document is issued as a supplement to SSD-CR-63-128 (Line Item 1K-68).

TABLE OF CONTENTS

1. SECURITY CLASSIFICATION: (U)
2. PAGE: 040
3. DATE: 12 Nov 1965
4. REPLACES PAGE(S): DATED
5. PROGRAM TITLE: TIII SLS/MOL-HSQ
6. PROGRAM REQUIREMENT CODE: 3900
7. SYSTEM CODE:
8. CONTRACTOR: MC/MAC

11. ✓	12. PAGE NO.	13. ADDITIONAL PAGE NO.	14. PAGE TITLE	15. CLASS. S	C	U	16. PAGE DATE (DAY-MO-YEAR)
			ADMINISTRATION				
	010		PROGRAM APPROVAL AUTHORITY				
	020		DISTRIBUTION LIST				
	030		PROGRAM REQ. REVISION CONTROL SHEET				
✓	040	040.1	TABLE OF CONTENTS			2	12Nov 65
✓	050		SYSTEM SECURITY CLASSIFICATION			1	12 Nov65
✓	060		TECHNICAL REFERENCES			1	12Nov 65
✓	070		SPEC. NOMENCLATURE & ABBREVIATIONS			1	12Nov 65
			GENERAL INFORMATION				
✓	110		KEY PERSONNEL			1	12Nov 65
	111		PERSONNEL ASSIGNMENT SCHEDULE				
	112		PERSONNEL DOWNRANGE SCHEDULE				
✓	120		PROGRAM OPERATIONS SCHEDULE			1	12Nov 65
✓	130		PROGRAM OBJECTIVES			1	12Nov 65
✓	140		PROGRAM DESCRIPTION			1	12Nov 65
✓	141		TRAJECTORY DATA - PLAN VIEW			1	12Nov 65
✓	142		TRAJECTORY DATA - FULL RANGE			1	12Nov 65
✓	143		TRAJECTORY DATA - LAUNCH			1	12Nov 65
	144		TRAJECTORY DATA - ORBITAL & SPACE				
✓	145		TRAJECTORY DATA - TERMINAL			1	12Nov 65
✓	150	.1	VEHICLE DESCRIPTION			2	12Nov 65
✓	151	.1,.2,.3	DRAWING-MISSILE OR VEHICLE			4	12Nov 65
✓	152	.1,.1.1,.2-.7	TELEMETRY SYSTEM			9	12Nov 65
✓	153	.1 - .6	TRANSPONDER & BEACONS			7	12Nov 65
	154		COMMAND CONTROL/DESTRUCT SYSTEM				
✓	155	.1, .2	ORDNANCE ITEMS			3	12Nov 65
✓	156		ORDNANCE(DRAWING)			1	12Nov 65
✓	157		OTHER VEHICLE BORNE EQUIPMENT			1	12Nov 65
✓	158		SYSTEM MISSION CAPABILITY			1	12Nov 65
✓	159	.1 - .9	SYSTEM FUNCTIONAL DESCRIPTION			10	12Nov 65
✓	160	1,.2,.3	RANGE USERS' INSTRUMENTATION			4	12Nov 65
	161		INSTRUMENTATION TRANSMITTERS (SURFACE/AIR/OTHER)				
✓	162		INSTRUMENTATION RECEIVERS (SURFACE/AIR/OTHER)			1	12Nov 65

11. ✓	12. PAGE NO.	13. ADDITIONAL PAGE NO.	14. PAGE TITLE	15. CLASS. S	C	U	16. PAGE DATE (DAY-MO-YEAR)
✓	170		OCCUPATIONAL HAZARDS - MEDICAL			1	12 Nov 65
✓	190		SUMMARY OF FREQUENCY UTILIZATION			1	12 Nov 65
			DATA				
✓	210	.1, .2	METRIC DATA - GENERAL			3	12 Nov 65
✓	211	.1, .2	METRIC LAUNCH DATA			3	12 Nov 65
	212		METRIC MIDCOURSE DATA				
	213		METRIC ORBITAL AND SPACE DATA				
✓	214		METRIC TERMINAL DATA			1	12 Nov 65
	215		OTHER METRIC DATA				
✓	220		ENGINEERING SEQUENTIAL DATA			1	12 Nov 65
✓	230	.1 - .4	TELEMETRY DATA			5	12 Nov 65
✓	240	.1	OTHER DATA			2	12 Nov 65
			METEOROLOGICAL SERVICES				
✓	310	.1, .2	FORECASTS			3	12 Nov 65
✓	320	.1	OBSERVATIONS			2	12 Nov 65
✓	330		MINIMA			1	12 Nov 65
	340		CONSULTANT SERVICES				
	350		IONOSPHERIC SOUNDINGS				
			SUPPORT INSTRUMENTATION				
✓	410	.1	COMMUNICATIONS - GENERAL			2	12 Nov 65
✓	411	.1	NETWORK DRAWINGS (RADIO & WIRE)			2	12 Nov 65
✓	412	.1	COMMUNICATIONS RECORDINGS			2	12 Nov 65
✓	420		RADIO			1	12 Nov 65
✓	430		WIRE			1	12 Nov 65
✓	431	.1 - .4	MOPS			5	12 Nov 65
✓	432	.1, .2	TELEPHONE			3	12 Nov 65
✓	433	.1	TELETYPE			2	12 Nov 65
✓	434	.1	PUBLIC ADDRESS			2	12 Nov 65

AFMTC FORM OCT 63 30A-1

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10. DATE OF ORIGINAL PAGE

1. SECURITY CLASSIFICATION: (U)

9. REVISION NO.

TABLE OF CONTENTS

1. SECURITY CLASSIFICATION	2. PAGE	040.1
(U)	3. DATE	12 Nov. 1965
	4. REPLACES PAGE(S) DATED	

5. PROGRAM TITLE	6. PROGRAM REQUIREMENT CODE	7. SYSTEM CODE	8. CONTRACTOR
TIII SLS/MOL-HSQ	3900		MC/MAC

11. ✓	12. PAGE NO.	13. ADDITIONAL PAGE NO.	14. PAGE TITLE	15. CLASS. S	C	U	16. PAGE DATE (DAY-MO-YEAR)
✓	435		CLOSED LOOP TELEVISION			1	12 Nov65
✓	440		TIMING			1	12Nov 65
✓	450		SEQUENCER			1	12Nov 65
✓	460	.1	VISUAL COUNTDOWN & STATUS INDICATOR			2	12Nov 65
✓	--	.1 -.4	DATA HANDLING SYSTEM.			5	12Nov 65
	471		DATA HANDLING SYSTEM (DRAWINGS)				
	480		COMMAND CONTROL				
	490		OTHER SUPPORT INSTRUMENTATION				
			MATERIEL & SERVICES				
✓	510	.1-.3	SERVICES - GENERAL			4	12Nov 65
✓	520		VEHICLES & GROUND HANDLING EQUIPMENT			1	12Nov 65
✓	530		PROPELLANTS, GASES & CHEMICALS			1	12Nov 65
	531		AIRCRAFT & GROUND VEHICLE FUELS				
✓	535		MISC. LUBRICANTS HYDRAULIC FLUIDS, PRESERVATIVES, ETC.			1	12 Nov65
✓	540	.1 - .3	CHEMICAL & PHYSICAL ANALYSIS			4	12Nov 65
	550		BIOSCIENCE REQUIREMENTS - GENERAL				
✓	560	.1 -.13	TEST INSTRUMENTATION MAINTENANCE & CALIBRATION SCHEDULE			14	12Nov 65
✓	570	.1, .2	DOCUMENTARY PHOTOGRAPHY			3	12Nov 65
			TRANSPORTATION LOGISTICS				
	610		SURFACE LOGISTICS SCHEDULE				
✓	620		AIR LOGISTICS SCHEDULE			1	12Nov 65
			RECOVERY				
✓	710	.1, .2	NORMAL RECOVERY			3	12Nov 65
✓	720		SALVAGE & DISPOSITION			1	12Nov 65

11. ✓	12. PAGE NO.	13. ADDITIONAL PAGE NO.	14. PAGE TITLE	15. CLASS. S	C	U	16. PAGE DATE (DAY-MO-YEAR)
			AIR & SEACRAFT				
	810		NON-RANGE AIRCRAFT				
	820		SEACRAFT REQUIREMENTS				
	830		TARGET REQUIREMENTS				
	840		RANGE AIRCRAFT				
			DATA PROCESSING				
✓	910		DATA PROCESSING & DISPOSITION			1	12Nov 65
			FACILITIES				
✓	1010		FACILITIES - GENERAL			1	12Nov 65
✓	1011		FACILITIES (DRAWING)			1	12Nov 65
	1020		LAUNCH FACILITIES				

AFMTC FORM 30A-2 SEP 61

10. DATE OF ORIGINAL PAGE

11. SECURITY CLASSIFICATION (U)

12. REVISION NO.

SYSTEM SECURITY CLASSIFICATION

5. PROGRAM TITLE	6. PROGRAM REQUIREMENT CODE	7. SYSTEM CODE	8. CONTRACTOR	1. SECURITY CLASSIFICATION	2. PAGE	3. DATE	4. REPLACES PAGE(S)
TIII SLS/MOL-HSQ	3900		MC	(U)	050	12 Nov. 1965	DATED

10. ITEM	11. SECURITY CLASSIFICATION S	C	U	OTHER
A. OVER-ALL PROGRAM		4		
B. PRIME CONTRACTOR (CONNECTION WITH PROGRAM)			X	
C. LISTS OF CONTRACTORS, ASSOCIATE CONTRACTORS AND/OR SUB-CONTRACTORS ON TEST PROGRAM			X	
D. PRODUCTION, PROCUREMENT, AND SUPPLY INFORMATION			X	
E. TITLE OF R & D PROGRAM			X	
F. TEST VEHICLE OR MISSILE NAME			X	
G. TYPE DESIGNATION (BAL., SSM, SPACE, ETC.)			X	
H. EXTERNAL CONFIGURATION				
(1) VIEWED FROM OUTSIDE LAUNCH COMPLEX			X	
(2) VIEWED FROM INSIDE LAUNCH COMPLEX			X	
(3) VIEWED IN ASSEMBLY BUILDING			X	
I. PHYSICAL CHARACTERISTICS (LEN., DIAM., ETC.)			X	
J. Performance			X	
K. COUNTERMEASURE INFORMATION, PROVEN AND UNPROVEN				N/A
L. TEST INITIATION DATE			X	
M. TEST COMPLETION DATE			X	
N. STATUS AND PROGRESS REPORTS			X	
O. TEST AND PERFORMANCE INFORMATION		4		
P. PROPULSION SYSTEM — TYPE			X	
P. PROPULSION SYSTEM — DESCRIPTION			X	
Q. GUIDANCE SYSTEM — TYPE			X	
Q. GUIDANCE SYSTEM — DESCRIPTION		4		
R. CONTROL SYSTEM — TYPE			X	
R. CONTROL SYSTEM — DESCRIPTION		4		
S. WARHEAD — TYPE				N/A
S. WARHEAD — DESCRIPTION				N/A
T. NOSE CONE — TYPE				N/A
T. NOSE CONE — DESCRIPTION				N/A
U. CAPSULE — TYPE				N/A
U. CAPSULE — DESCRIPTION				N/A
V. TARGETS — TYPE				N/A
V. TARGETS — DESCRIPTION				N/A
W.				

10. ITEM	11. SECURITY CLASSIFICATION S	C	U	OTHER
X. DRAWINGS, SKETCHES, PHOTOGRAPHS, EXTERNAL OR INTERNAL VIEWS, AND DESIGN INFORMATION, (including engineering notes, computations and models or mock-ups relative to systems of missile)				
(1) PROPULSION SYSTEMS		4		
(2) CONTROL AND GUIDANCE SYSTEM	4			
(3) WARHEAD				N/A
(4) NOSE CONE				N/A
(5) CAPSULE				N/A
(6) TARGETS				N/A
(7)				
Y. OPERATION READINESS DATE		4		
Z. COMBAT READINESS DATE				N/A
AA. INSTRUMENTATION (INTERNAL)			X	
BB. INSTRUMENTATION (EXTERNAL)			X	
CC. TRAINING EQUIPMENT			X	
DD. GROUND SUPPORT EQUIPMENT			X	
EE. RAW DATA			X	
FF. REDUCED DATA			X	
GG. TECHNICAL PUBLICATIONS		4		
HH.		4		
II.				

*System performance is unclassified except for injection accuracy which reveals guidance accuracy capability of WS 107A. When injection accuracy is specifically stated or can be deduced, the information is secret.

12. SECURITY GUIDE(S) AND DOCUMENT(S)	13. CONFIRMATION - OFFICE SECURITY ADVISOR
Security Classified Guide, Program 624A, Standard Launch Vehicle 5, dated 1 April 1964 (Rev. 5, dated 23 July 1965)	

AFMTC FORM 308 SEP 61 PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE.

1. SECURITY CLASSIFICATION	9. REVISION NO.
(U)	

TECHNICAL REFERENCES

1. SECURITY CLASSIFICATION	2. PAGE	OBD
(U)	3. DATE	12 Nov. 1965
	4. REPLACES PAGE(S)	DATED

5. PROGRAM TITLE	6. PROGRAM REQUIREMENT CODE	7. SYSTEM CODE	8. CONTRACTOR
TIII SLS/MOL-HSQ	3900		MC

10. PRD PAGE REFERENCE	11. TITLE	12. CLASS S	C	U	13. PUBLISHER AND DATE	14. SOURCE
150	Program Requirements Document No. 3700 (Revision 5)			x	6555th Aerospace Test Wing	6555th Aerospace Test Wing Cape Kennedy, Florida
410, 411, 412, 420, 431.4, 432.2 433.1, 434.1	Integrated Communications Requirements, SSD-CR-63-215.			x	Martin Company	SSD
050	Security Classification Guide, Program 624A Standard Launch Vehicle 5			x	Headquarters Space System Division	SSD (SSAS)
152.1.1	Flight Termination System Report, Program 624A, SSD-CR-63-123			x	Martin Company	SSD
130, 140	Program Plan, Manned Orbiting Laboratory - Heat Shield Qualification SSD-CR-65-91			x	Martin Company, (Oct. 1965)	SSD

AFMTC FORM 30B-1 MAR 61

1. SECURITY CLASSIFICATION	9. REVISION NO.
(U)	MT

SPECIAL ABBREVIATIONS AND NOMENCLATURE			1. SECURITY CLASSIFICATION (U)	2. PAGE 979
				3. DATE 12 Nov. 1965
5. TEST PROGRAM TIII SLS/MOL-HSQ	6. PROGRAM REQUIREMENT NO. 3900	7. SYSTEM CODE	8. CONTRACTOR MC/MAC	4. REPLACES PAGE(S) — — — — — — — — DATED

10. WORD OR ABBREVIATION	11. DEFINITION OR MEANING
HSQ	Heat Shield Qualifica.ion Flight Test
MOL	Manned Orbiting Laboratory
MAC	McDonnell Aircraft Company
MC	Martin Company

KEY PERSONNEL

5. TEST PROGRAM TITLE	6. PROGRAM REQUIREMENT CODE	7. SYSTEM CODE	8. CONTRACTOR	1. SECURITY CLASSIFICATION	2. PAGE	3. DATE	4. REPLACES PAGE(S)
TIII SLS/MOL-HSQ	3900		MC	UNCLASSIFIED	110	12 Nov. 1965	DATED

10. NAME	11. POSITION AND ORGANIZATION	12. PROJECT RESPONSIBILITY	13. BUSINESS ADDRESS	14. TELEPHONE NO.
R. B. Demoret	Program Manager	MOL-HSQ	Martin-Denver	2096

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NRD

1. SECURITY CLASSIFICATION: UNCLASSIFIED

9. REVISION NO.: MT

PROGRAM OPERATIONS SCHEDULE

1. SECURITY CLASSIFICATION	2. PAGE	3. DATE	4. REPLACES PAGE(S)
UNCLASSIFIED	120	12 Nov. 1965	DATED

5. PROGRAM TITLE	6. PROGRAM REQUIREMENT CODE	7. SYSTEM CODE	8. CONTRACTOR
TIII SLS/MOL-HSQ	3900		MC/MAC

10. TEST CODE LTR.	11. TEST SERIES/CATEGORIES	12. RANGE HRS/ TEST	14. NUMBER OF OPERATIONS AND/OR RECOVERIES/MONTH-QUARTER																							
			FY 1966										FY 1967				FY				FY				FY			
			CY 1966										CY				CY				CY				CY			
			J	F	M	A	M	J	J	A	S	O	N	D	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
HSQ	LAUNCH	8										X																	
	DRY RUNS (FAT. F-1 DAY ETC.)																												
	STATIC FIRINGS (FRF. ETC.)																												
	STAGE I																												
	STAGE II																												
	STAGE III																												
	SIMULATED FLIGHTS																												
	AIRBORNE INSTRUMENTATION TESTS																												
T	Launch Veh./Gemini "C" Band	4										X																	
	GROUND INSTRUMENTATION TESTS Beacon	Test																											
	13. PLANNED R. SERIES																												
	NOSE CONE																												
U	CAPSULE - DATA/UNMANNED												X																
	CAPSULE - MANNED																												

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1. SECURITY CLASSIFICATION	9. REVISION NO.
UNCLASSIFIED	MT

PROGRAM OBJECTIVES

1. SECURITY CLASSIFICATION	2. PAGE 138.
UNCLASSIFIED	3. DATE 12 Nov. 1965
	4. REPLACES PAGE(S)
	DATED

5. TEST PROGRAM	6. PROGRAM REQUIREMENT NO.	7. SYSTEM CODE	8. CONTRACTOR
TIII SLS/MOL-HSQ	3900		MC/MAC

10. ITEM NO.	11. TEST CODE	12. CATEGORY PRIM	12. CATEGORY OTHER	13. TEST OBJECTIVES	14. TEST AGENCY
1	HSQ	X		Verify the Gemini heat shield as modified to accommodate the MOL crew-transfer method	
2	HSQ	X		Collect data on ascent environment for the payload vehicle structure	
3	HSQ	X		Demonstrate structural integrity and control capability of the Titan IIIC for launch and ascent with a MOL-type payload	
4	HSQ		X	Demonstrate the MOL outboard profile compatibility with the ITL concept	
5	HSQ		X	Demonstrate recovery/retrieval techniques	
6	HSQ		X	Exercise selected segments of the MOL tracking network	

PROGRAM DESCRIPTION

1. SECURITY CLASSIFICATION: UNCLASSIFIED

2. PAGE 148.

3. DATE 12 Nov. 1965

4. REPLACES PAGE(S) — — — — — — DATED

5. TEST PROGRAM: TIII SLS/MOL-HSQ

6. PROGRAM REQUIREMENT NO. 3900

7. ARDC SYSTEM CODE

8. CONTRACTOR: MC/MAC

10. ITEM NO.	11. TEST CODE	12. TEST DESCRIPTION	13. HOURS/TEST USER	13. HOURS/TEST RANGE	14. TEST LOCATION
1	HSQ	A Titan IIIC launch vehicle with minor modifications to enable spacecraft separation and integrated countdown will be launched from Eastern Test Range (ETR). This Heat Shield Qualification (HSQ) flight is suborbital with a launch azimuth of 107.5deg. The flight vehicle is comprised of a simulated laboratory, fabricated from a Titan II, Stage I oxidizer tank to approximate outboard profile, mass properties, and structural characteristics of the anticipated MOL laboratory and furnished with an independent telemetry system; a Gemini Spacecraft, refurbished GT-2 previously flown to qualify Gemini A heat shield. This spacecraft has a "boilerplate" adapter to mate it to the Simulated Laboratory and active systems to enable separation, reentry, recovery and acquisition of pertinent experimental data during all flight phases.			
2	T	Airborne Instrumentation Test consists of open loop and closed loop radiation test of Launch Vehicle/Gemini tracking equipment.	4	4	Complex 40

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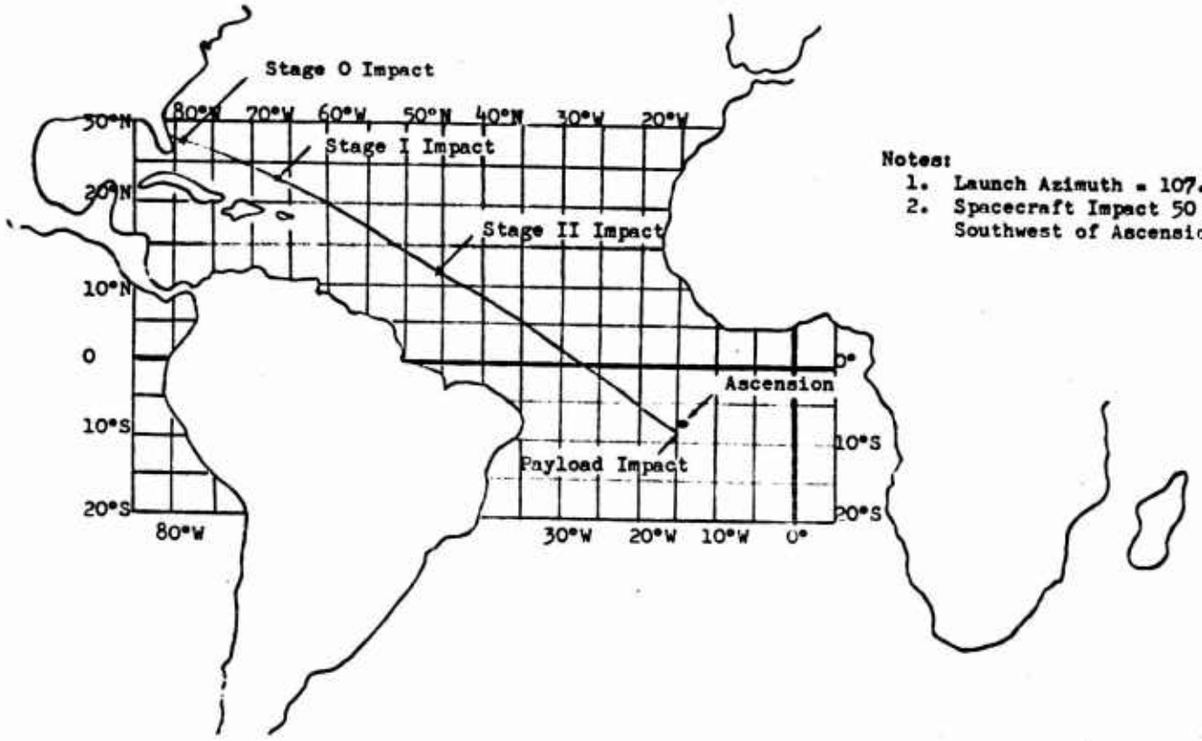
1. SECURITY CLASSIFICATION: UNCLASSIFIED

9. REVISION NO. MT

TRAJECTORY DATA - PLAN VIEW

5. PROGRAM TITLE: TIII SLS/MOL-HSQ	6. PROGRAM REQUIREMENT CODE: 3900	7. SYSTEM CODE:	8. CONTRACTOR: MAC	1. SECURITY CLASSIFICATION: (U)
				2. PAGE: 141
				3. DATE: 12 Nov. 1965
				4. REPLACES PAGE(S) DATED:
				TEST CODE: HSQ

10. PLAN VIEW (INCLUDING LAUNCH AZIMUTH AND IMPACT POINT(S) OF TEST VEHICLE OR MISSILE STAGES).



Notes:
1. Launch Azimuth = 107.5 degrees
2. Spacecraft Impact 50 n. mi. Southwest of Ascension Island.

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1. SECURITY CLASSIFICATION: (U)

9. REVISION NO.

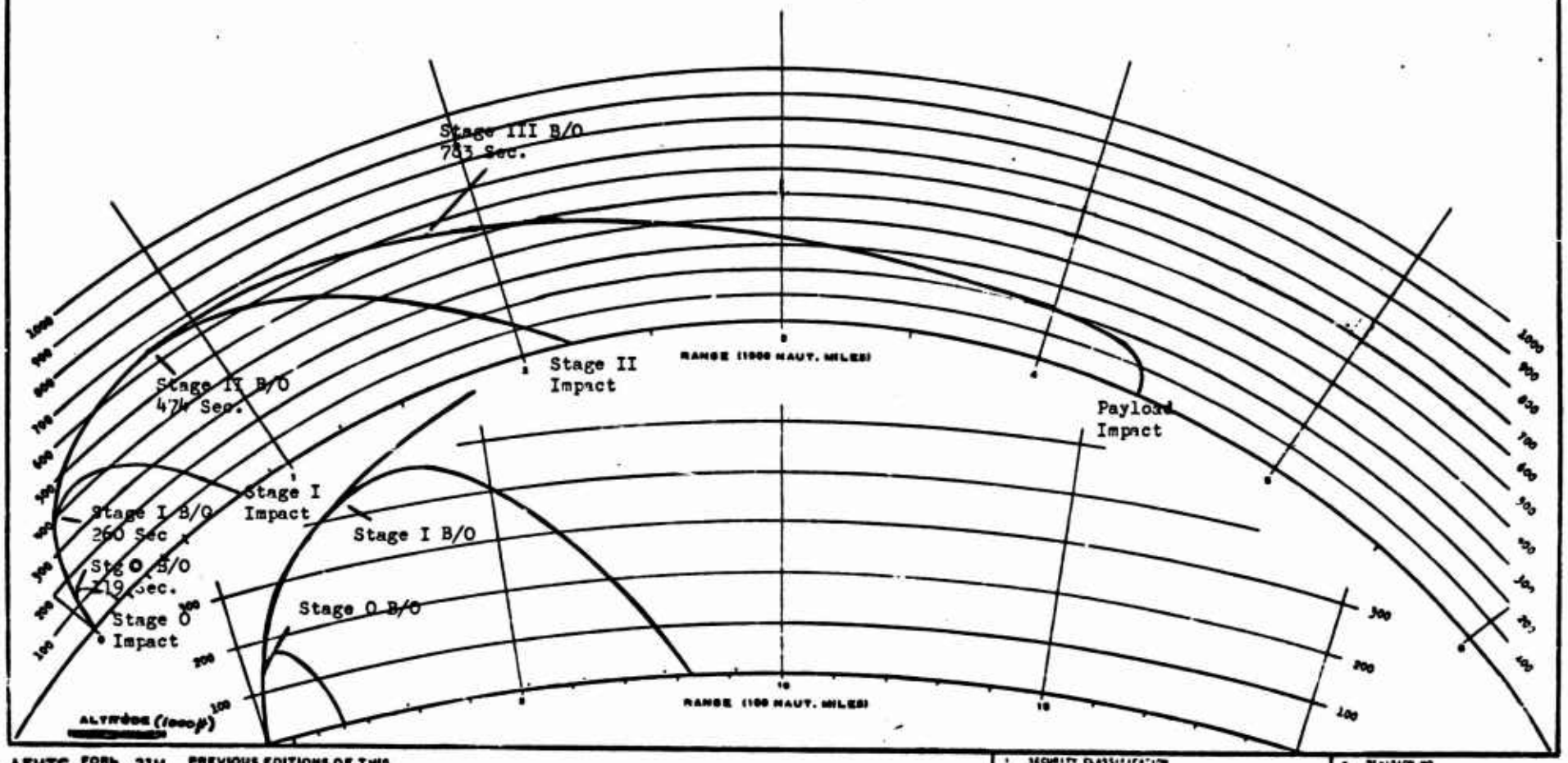
TRAJECTORY DATA - FULL RANGE

1. SECURITY CLASSIFICATION	2. PAGE 142
(U)	3. DATE 12 Nov. 1965
	4. REPLACES PAGE(S) DATED

5. PROGRAM TITLE	6. PROGRAM REQUIREMENT CODE	7. SYSTEM CODE	8. CONTRACTOR
TIII SLS/MOL-HSQ	3900		MC/ MAC

10. PLANNED TRAJECTORY(S) (INCLUDING BURNOUT, SEPARATION AND IMPACT POINT(S) OF TEST VEHICLE OR MISSILE STAGE(S))

TEST CODE HSQ



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1 SECURITY CLASSIFICATION (U)

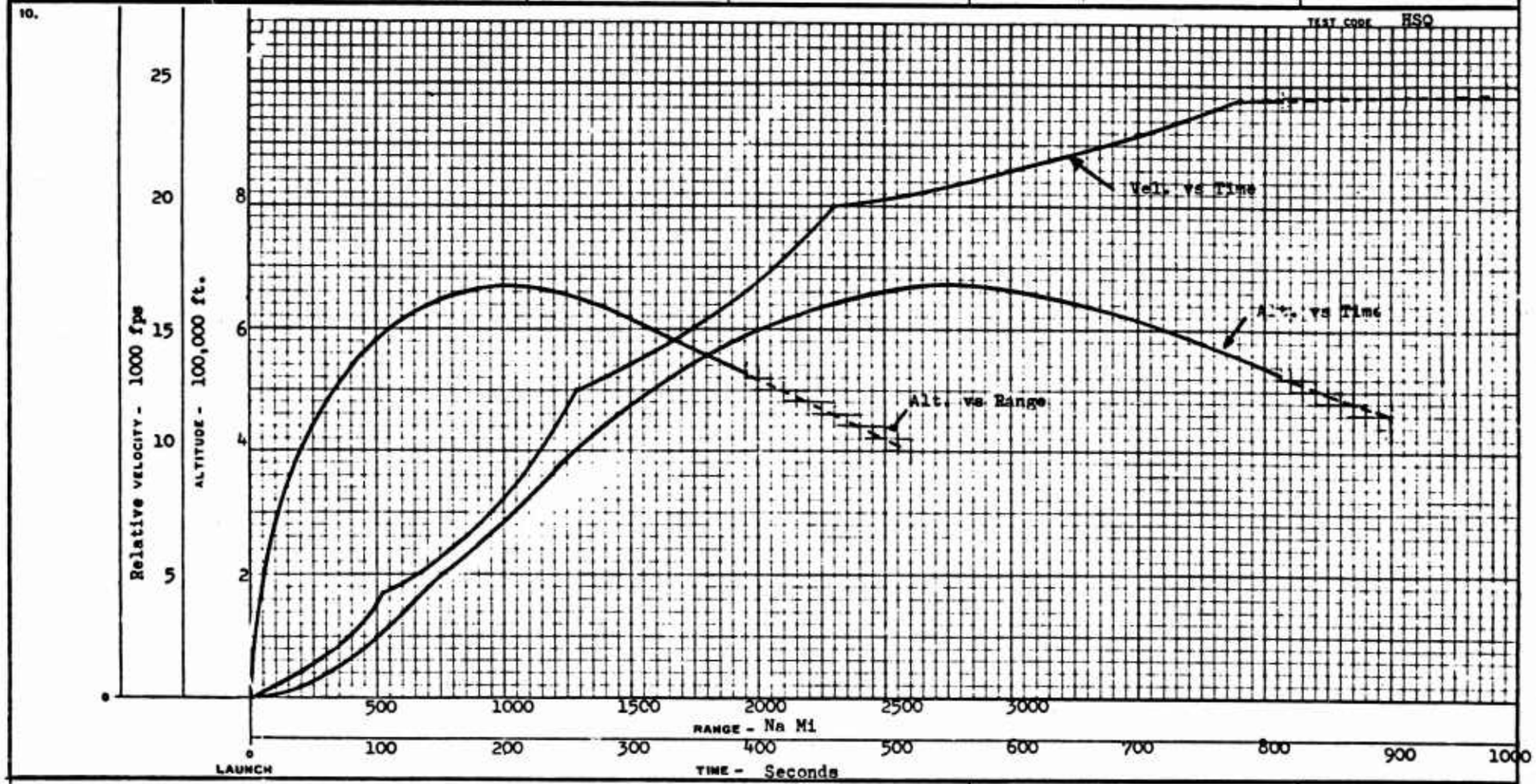
TRAJECTORY DATA - LAUNCH

1. SECURITY CLASSIFICATION	2. PAGE	143
(U)	3. DATE	12 Nov. 1965
	4. REPLACES PAGE(S)	DATED

5. PROGRAM TITLE	6. PROGRAM REQUIREMENT CODE	7. SYSTEM CODE	8. CONTRACTOR
TIII SLS/MOL-HSQ	3900		MC

10.

TEST CODE HSQ



AFMTC FORM 31J JUN 61 PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE.

1. SECURITY CLASSIFICATION	2. REVISION NO.
(U)	

TRAJECTORY DATA - TERMINAL

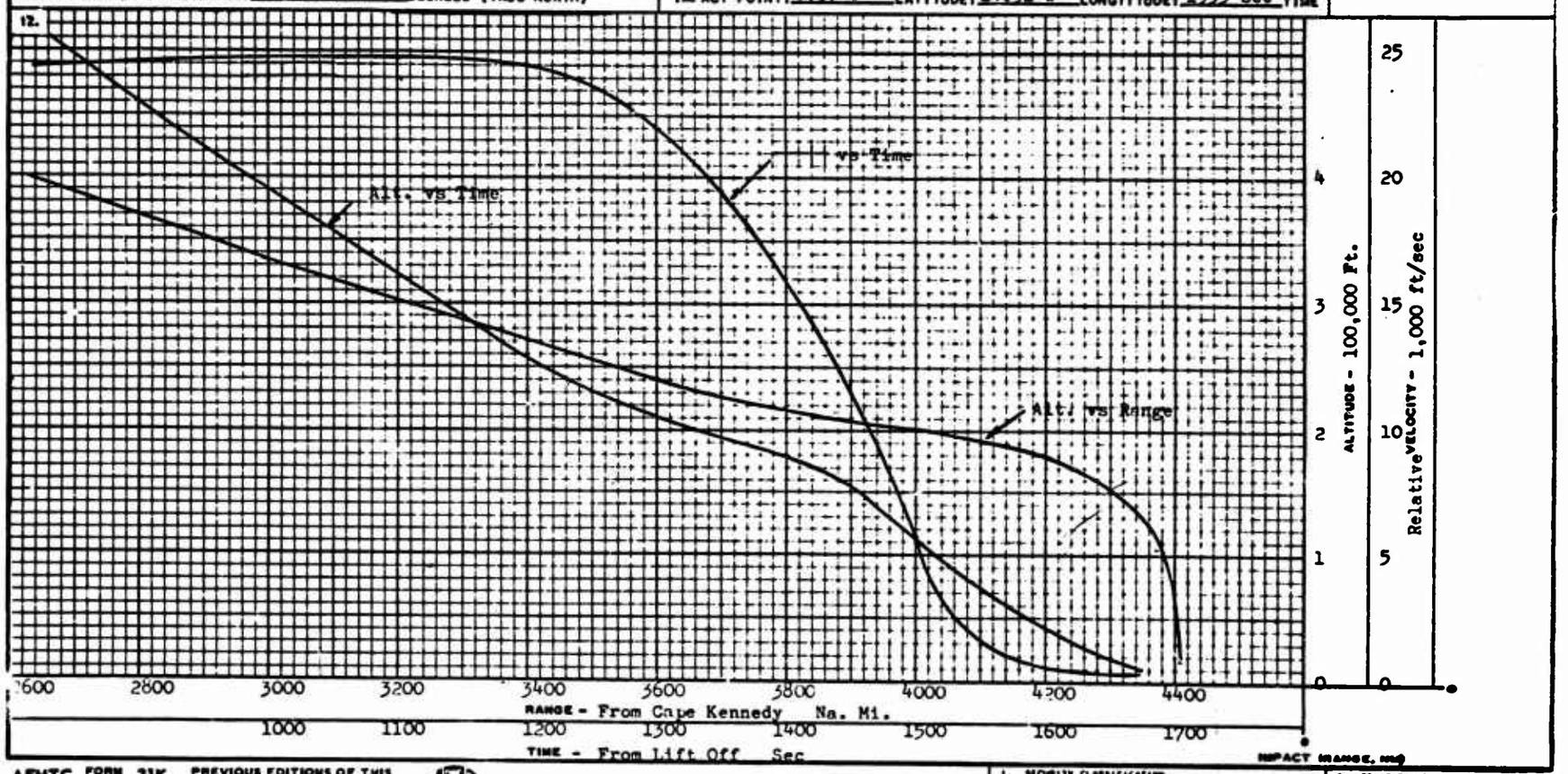
1. SECURITY CLASSIFICATION: (U)				4. PAGE 148
				5. DATE 12 Nov. 1965
6. PROGRAM TITLE: TIII $LS/MOL-HSQ	6. PROGRAM REQUIREMENT CODE: 3900	7. SYSTEM CODE	8. CONTRACTOR: MAC	9. REPLACES PAGE(S) DATED

10. FLIGHT AZIMUTH ON RE-ENTRY: 123.8 DEGREES (TRUE NORTH)

11. IMPACT POINT: 8.57°S LATITUDE; 14.91°W LONGITUDE; 1953 sec TIME

TEST CODE: HSQ

12.



AFMTC FORM 31K JUN 61 PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE.

7. SECURITY CLASSIFICATION: (U)	8. REVISION NO.

TEST VEHICLE DESCRIPTION

1. SECURITY CLASSIFICATION	UNCLASSIFIED
2. PAGE	150.
3. DATE	12 Nov. 1965
4. REPLACES PAGE(S) DATED	— — — — — — — —
5. TEST PROGRAM	TIII SLS/MOL-HSQ
6. PROGRAM REQUIREMENT NO.	3900
7. SYSTEM CODE	
8. CONTRACTOR	MC
10. TEST CODE & SERIES	HSQ
11. TEST VEHICLE NAME	Simulated Lab
12. ☐ SPACE ☒ BALLISTIC ☐ SATELLITE ☐ CRUISE	
13. TYPE & DESIGNATION	N/A
14. LAUNCH AZIMUTH-DEG. T.	107.5
15. LAUNCH ELEVATION-DEGREES	90°
16. TRAJECTORY AZIMUTH-DEG. T.	
17.	

* CHARACTERISTIC PER STAGE	TOTAL	(1)	(2)	(3)	(4)	(5)
18. PHYSICAL DIMENSIONS - FT						
A. LENGTH	33.7					
B. DIAMETER	10					
C. WIDTH - MAX	10					
19. WEIGHTS - POUNDS						
A. DRY (EMPTY - NO FUEL)	13,795					
B. PROPELLANT OR FUEL						
C. OXIDIZER						
D. GASES						
E. MISCELLANEOUS						
F. DESTRUCT MATERIAL						
G. LAUNCH						
H. BURNOUT						
20. PROPULSION SYSTEM						
A. TYPE ENGINE						
B. MANUFACTURER						
C. DESIGNATION						
D. NUMBER OF ENGINES						
E. SPECIFIC IMPULSE - ISP						
F. THRUST - POUNDS / ENG.						
G. THRUST DURATION - SEC.						
21. PROPELLANTS & GASES						
A. PROPELLANT OR FUEL						
B. OXIDIZER						
C. GASES						
D. GAS PRESSURE - PSI						
E.						
22. PERFORMANCE						
A. RANGE -						
B. ALTITUDE -						
C. MAX. VELOCITY -						
D. MAX. ACCELERATION - G						
E. TIME - T+SEC.						

23. LAUNCHER DESCRIPTION
Pad 40 - See Titan III space launching system PRD 3700 pages 1020.1

24. GUIDANCE SYSTEM (TYPE & DESCRIPTION)
N/A

25. NOTES:
N/A

* TYPE IN NAME OR NUMBER OF STAGE OR PHASE.

AFMTC FORM 31L JUN 61 PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE.

1. SECURITY CLASSIFICATION	UNCLASSIFIED
9. REVISION NO.	MT

Gemini Spacecraft

TEST VEHICLE DESCRIPTION

1. SECURITY CLASSIFICATION: (U)
2. PAGE 130.1
3. DATE 12 Nov. 1965
4. REPLACES PAGE(S): — — — — — —
DATED

5. TEST PROGRAM: TIII SLS/MOL-HSQ
6. PROGRAM REQUIREMENT NO. 3900
7. SYSTEM CODE
8. CONTRACTOR: MAC

10. TEST CODE & SERIES: HSQ	11. TEST VEHICLE NAME: Gemini B HSQ S/C		12. ☐ SPACE ☒ BALLISTIC ☐ SATELLITE ☐ CRUISE		13. TYPE & DESIGNATION: N/A	
14. LAUNCH AZIMUTH-DEG. T.: 107.5	15. LAUNCH ELEVATION-DEGREES: 90°		16. TRAJECTORY AZIMUTH-DEG. T.		17.	
* CHARACTERISTIC PER STAGE	TOTAL	(1) Launch	(2) Re-entry	(3) Landing	(4)	(5)
18. PHYSICAL DIMENSIONS - FT						
A. LENGTH	16.5	16.5	12.6	8.6		
B. DIAMETER	10/3.22	10/3.22	7.5/3.22	7.5/3.22		
C. WIDTH - MAX						
19. WEIGHTS - POUNDS (1)						
A. DRY (EMPTY - NO FUEL)	6333 (4)	6333 (4)	4646 (4)	4247 (4)		
B. PROPELLANT OR FUEL	31.6	31.6	31.6	8		
C. OXIDIZER	40.4	40.4	40.4	10		
D. GASES	N2-2.8	N2-2.8	N2-2.8	N2-2.8		
E. MISCELLANEOUS	17.6 (1)	17.6 (1)	14.6 (1)	14.6 (1)		
F. DESTRUCT MATERIAL	52 (3)	52 (3)	42 (3)	33 (3)		
G. LAUNCH	6405 (4)	6405 (4)	4718 (4)	4265 (4)		
H. BURNOUT						
20. PROPULSION SYSTEM			RCS (2)			
A. TYPE ENGINE			LIQUID			
B. MANUFACTURER			ROCKETDYNE			
C. DESIGNATION			SE-6			
D. NUMBER OF ENGINES			16			
E. SPECIFIC IMPULSE -ISP						
F. THRUST - POUNDS / ENG.			23.5			
G. THRUST DURATION - SEC.			VARIABLE			
21. PROPELLANTS & GASES						
A. PROPELLANT OR FUEL			N2H3CH3			
B. OXIDIZER			N2O4			
C. GASES			N2			
D. GAS PRESSURE - PSI			3000			
E.						
22. PERFORMANCE						
A. RANGE -						
B. ALTITUDE -						
C. MAX. VELOCITY -						
D. MAX. ACCELERATION - G						
E. TIME - T+SEC.						

23. LAUNCHER DESCRIPTION

24. GUIDANCE SYSTEM (TYPE & DESCRIPTION)

Inertial - consisting of inertial platform and associated electronics. Used after re-entry module separation for attitude control and rate damping.

25. NOTES:

(1) Coolant: Monsanto MCS 198
(2) Liquid bi-propellant system. Two redundant systems are installed; each contains 8 fixed-mount engines which operate on storable hypergolic propellants. A gas pressurized positive expulsion feed system supplies propellant.
(3) Weight of installed pyrotechnics (Estimated)
(4) Nominal values

* TYPE IN NAME OR NUMBER OF STAGE OR PHASE.

AFMTC FORM 31L JUN 61 PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE.

1. SECURITY CLASSIFICATION: (U)
9. REVISION NO. MT

DRAWING - MISSILE OR VEHICLE

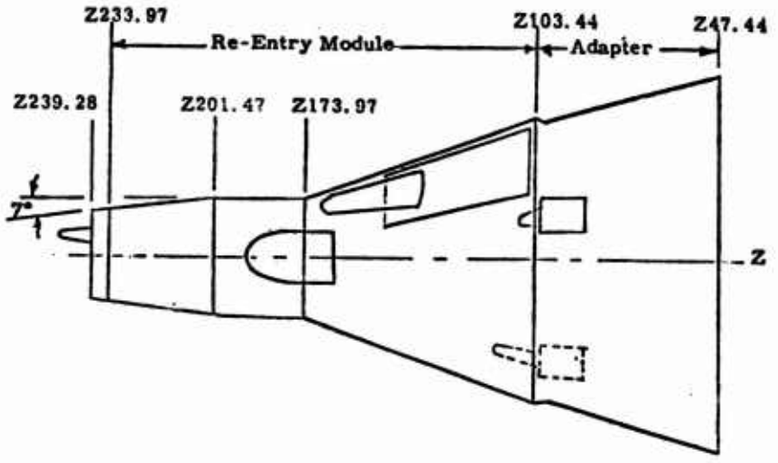
HSQ Spacecraft

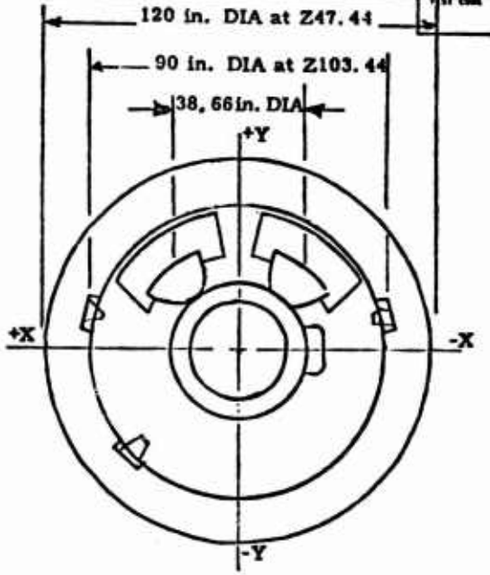
1. SECURITY CLASSIFICATION	2. PAGE NO.
(U)	
	3. DATE 12 Nov. 1965
	4. REPLACES PREVIOUS
	DATED

5. PROGRAM TITLE	6. PROGRAM REQUIREMENT CODE	7. SYSTEM CODE	8. CONTRACTOR	9. TEST CODE
TIII SLS/MOL-HSQ	3900		MAC	HSQ

10. DIMENSIONAL DRAWING OF MISSILE OR VEHICLE SHOWING PAINT PATTERN, CHARACTERISTIC MARKINGS, LOCATION OF INSTRUMENTS, ETC.

GENERAL ARRANGEMENT





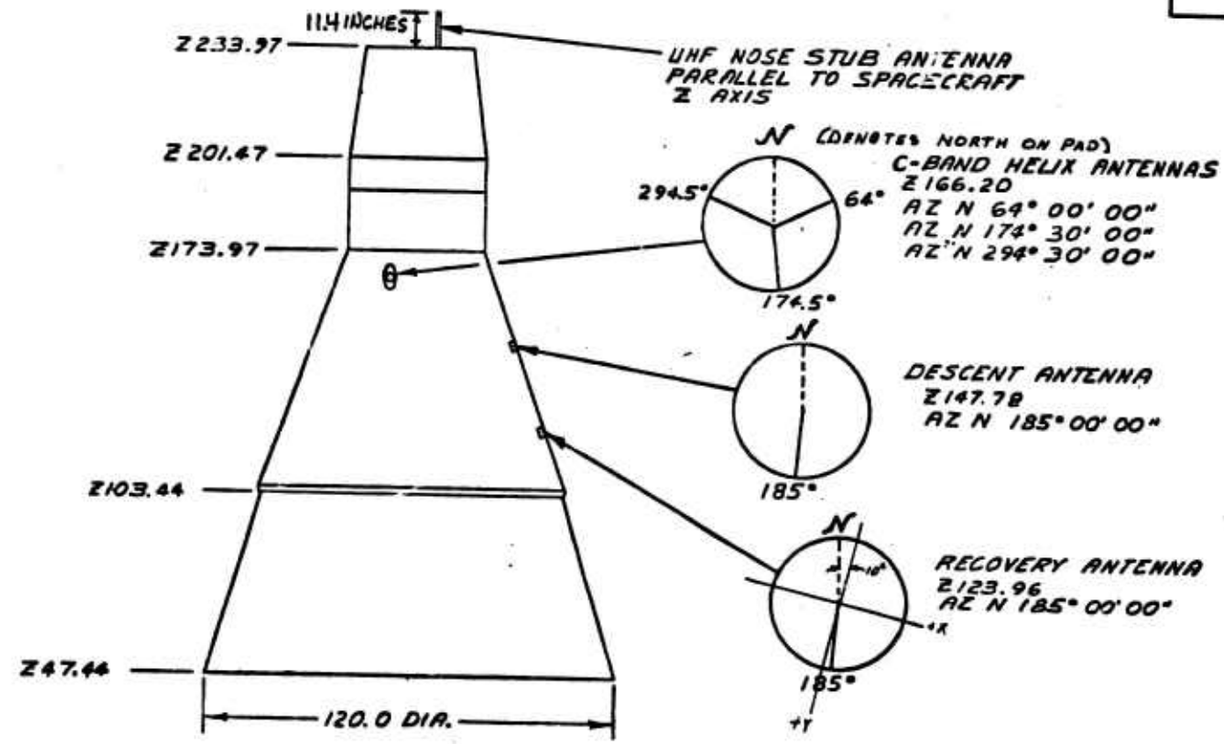
VIEW LOOKING AFT

AFMTC FORM 311A JUN 61 PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE.

1. SECURITY CLASSIFICATION	2. REVISION NO.
(U)	

DRAWING - MISSILE OR VEHICLE - Antenna Location

TIII SLS/MOL-HSQ	3900		(U)	PAGE 150.1
			MAC	DATE 12 Nov. 1965
				DATED
				HSQ



AFMTC FORM 31M Jun 61 PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE.

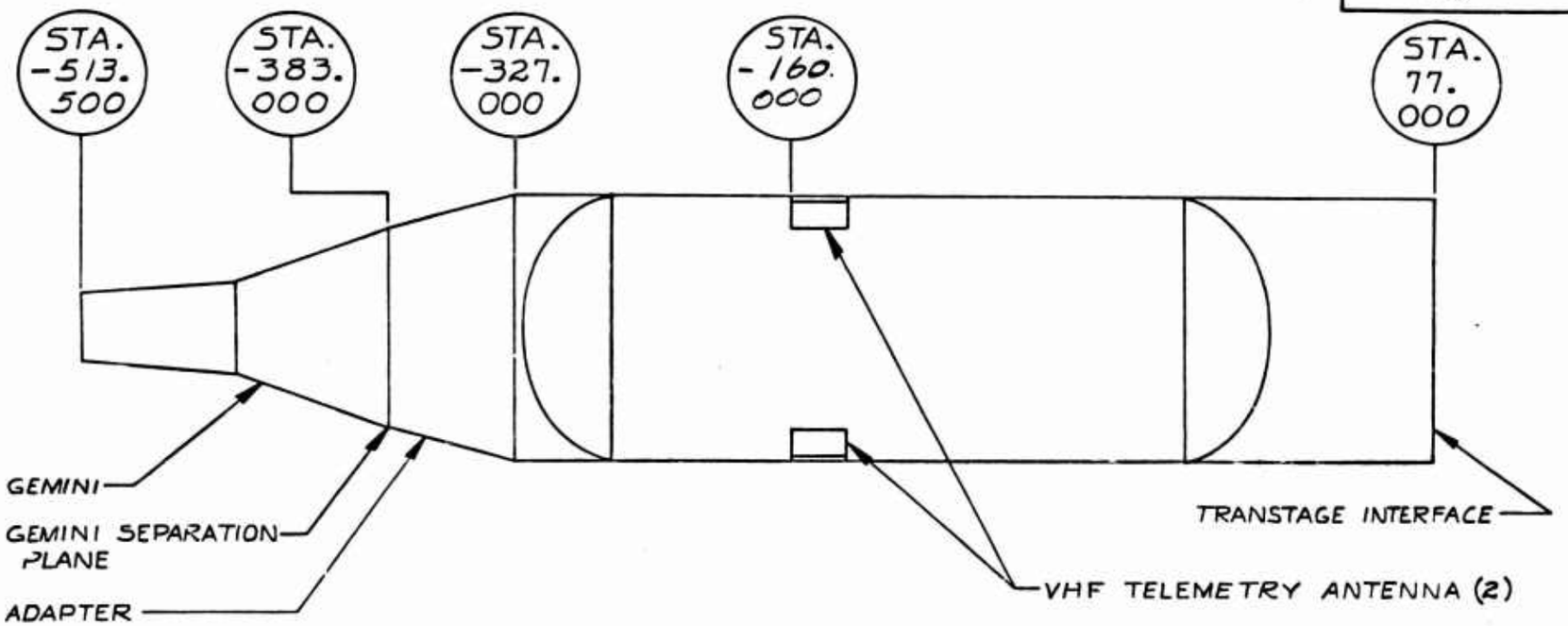
GRD

LAB and Gemini

DRAWING - MISSILE OR VEHICLE

1. SECURITY CLASSIFICATION	2. PAGE 151 2
Unclassified	3. DATE 12 Nov. 1965
4. PROGRAM TITLE: TIII SLS/MOL-MSQ	5. PROGRAM REQUIREMENT CODE: 3900
6. SYSTEM CODE	7. CONTRACTOR: MC/MAC
8. REPLACES PAGE(S) / DATED	9. TEST CODE: HSQ

10. DIMENSIONAL DRAWING OF MISSILE OR VEHICLE SHOWING PAINT PATTERN, CHARACTERISTIC MARKINGS, LOCATION OF ANTENNAE, ETC.



AFMTC FORM 31M JUN 61 PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE.

1. SECURITY CLASSIFICATION	2. REVISION NO.
Unclassified	

DRAWING - MISSILE OR VEHICLE

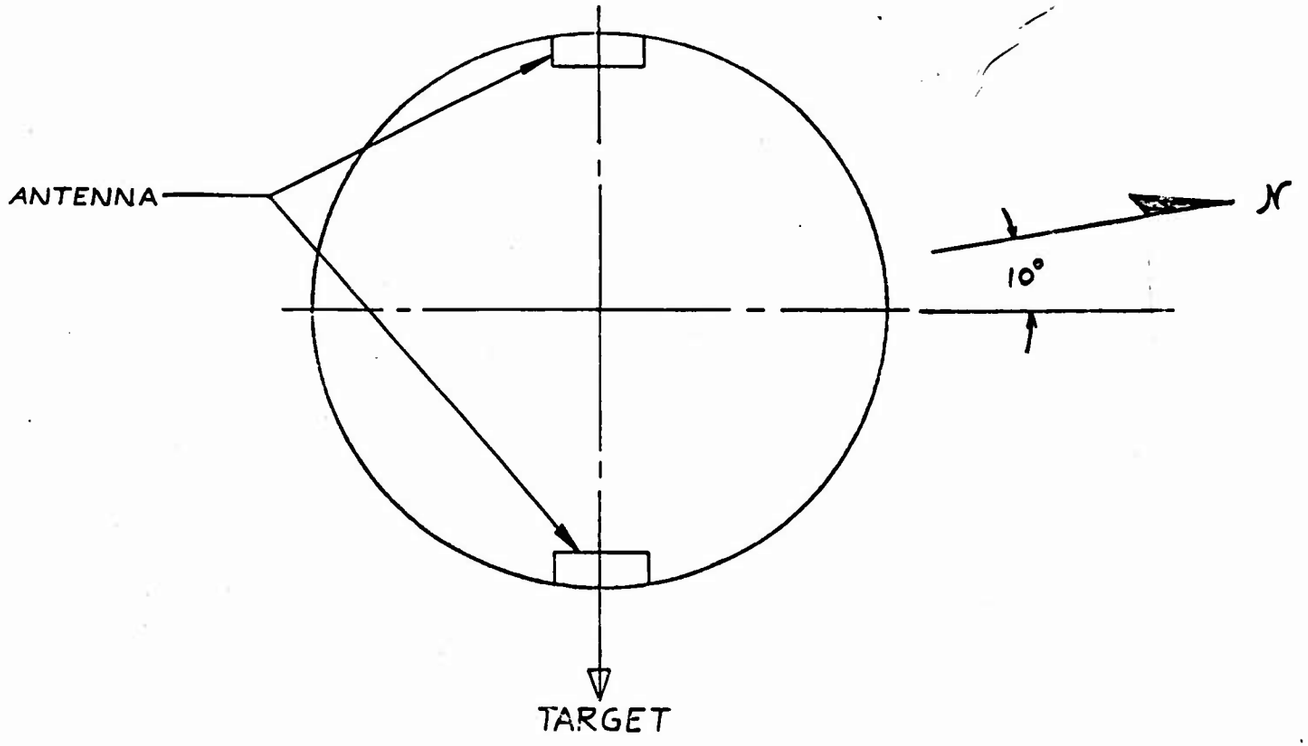
Lab Antenna Location -- TIII Sta.-160.00

1. SECURITY CLASSIFICATION	2. PAGE	3. DATE
Unclassified	153	12 Nov. 1965

5. PROGRAM TITLE	6. PROGRAM REQUIREMENT CODE	7. SYSTEM CODE	8. CONTRACTOR	4. REPLACES PAGE(S) DATED
TIII SLS/MOL-HSQ	3900		MC/MAC	

10. DIMENSIONAL DRAWING OF MISSILE OR VEHICLE SHOWING PAINT PATTERN, CHARACTERISTIC MARKINGS, LOCATION OF ANTENNAE, ETC.

ESD CODE: HSQ



AFMTC FORM 31M JUN 61 PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE.

NRD

1. SECURITY CLASSIFICATION	9. REVISION NO.
UNCLASSIFIED	

TELEMETRY SYSTEM

Simulated Laboratory - SSB/FM

1. SECURITY CLASSIFICATION: (U)
2. PAGE 152
3. DATE 12 Nov. 1965
4. REPLACES PAGE(S): — — — — — —
DATED

5. TEST PROGRAM: TIII SLS/MOL-HSQ
6. PROGRAM REQUIREMENT NO. 3900
7. SYSTEM CODE
8. CONTRACTOR: MC

10. GENERAL INFORMATION

A. TEST CODE: HSQ

B. NUMBER OF CHANNELS:
CONTINUOUS: 15
COMMUTATED: None

C. NUMBER OF SEGMENTS/CHANNEL: N/A
CHANNEL — SEGMENTS

D. STATE NON-IRIG PARTICULARS:
75.835 KC Pilot Frequency

Subcarrier Frequencies

(Service)	.020 - 1.2 KC
1	1.74 - 4.74 KC
2	6.48 - 9.48 KC
3	11.22 - 14.22 KC
4	15.96 - 18.96 KC
5	20.70 - 23.70 KC
6	25.44 - 28.44 KC
7	30.18 - 33.18 KC
8	34.92 - 37.92 KC
9	39.66 - 42.66 KC
10	44.40 - 47.40 KC
11	49.14 - 52.14 KC
12	53.88 - 56.88 KC
13	58.62 - 61.62 KC
14	63.36 - 66.36 KC
15	68.10 - 71.10 KC

11. TRANSMITTER CHARACTERISTICS

A. LOCATION: Simulated Lab — STAGE
B. TYPE: SSB/FM
C. MODEL: 80801H24000
D. MANUFACTURER: Martin Company
E. LINK FREQUENCY: 231.9 MC
F. TYPE OF MODULATION: SSB/FM
G. BAND WIDTH AT 3DB: 0.25 MC
H. MIN. DEVIATION: ±112.5KC
I. MAX. DEVIATION: ±137.5KC
J. FREQUENCY STABILITY: ± 23.19 KC
K. AVERAGE POWER: 70 WATTS
L. CODING AND/OR MODULATION(PCM): N/A

M. SPECTRUM ANALYSIS REPORTS ON THIS TRANSMITTER:
[X] HAVE BEEN PROVIDED TO THE FREQUENCY CONTROL BRANCH
[ ] WILL BE AVAILABLE _____ (DATE)

NOTE: TRANSMITTING SYSTEMS WHICH REQUIRE EXTENSIVE PERIODS OF RF CHECKOUT TIME WILL BE REQUIRED TO BE EQUIPPED WITH A CLOSED LOOP OR NON-RADIATING CHECKOUT DEVISE.

12. ANTENNA CHARACTERISTICS

A. LOCATION: STA. -160 on BLO (100°) AZ.
STA. -160 on BLO (280°) AZ.
STA. AZ.
STA. AZ.
WITH REFERENCE TO TRUE NORTH AFTER THE VEHICLE IS ERECTED ON THE LAUNCH PAD.
B. TYPE: Slotted probe-fed cavity
C. MODEL: 804A3350110-069
D. MANUFACTURER: Martin Company
E. FREQUENCY RANGE: 230-252 MC
F. [ ] TUNABLE [X] FIXED TUNED
G. PREDOMINANT POLARIZATION: (CHECK ONLY ONE)
[X] VERTICAL
[ ] HORIZONTAL
[ ] CIRCULAR; SENSE: [ ] LH [ ] RH
[ ] OTHER
H. MAXIMUM GAIN IN DB WITH RESPECT TO ISOTROPIC: 54 DB
I. MAIN LOBE BEAMWIDTH IN DEGREES AT 3DB POINTS: ELEVATION N/A AZIMUTH N/A °
J. EFFECTIVE RADIATED POWER: 56.2 WATTS#
K. INDICATE THE AVAILABILITY DATE OF THE ANTENNA PATTERN MEASUREMENTS, PER AFMTC REG 80-14: 1 December 1965
L. IS THERE AVAILABLE A SPECTRUM RESPONSE REPORT ON THIS ANTENNA? [ ] YES [X] NO
(IF YES, PROVIDE ONE COPY)

13. DATA TO BE TRANSMITTED & REMARKS

Vehicle Flight Vibration and Acoustics Data.

#At antenna RF connector.

AFMTC FORM 31N JUN 61 PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE. NRD

1. SECURITY CLASSIFICATION: (U)
9. REVISION NO.
MT

TELEMETRY SYSTEM

Simulated Laboratory PCM/FM

1. SECURITY CLASSIFICATION: (U)

2. PAGE 152 1

3. DATE 12 Nov. 1965

4. REPLACES PAGE(S) — — — — — —

DATED

5. TEST PROGRAM: TIII SLS/MOL-HSQ

6. PROGRAM REQUIREMENT NO. 3900

7. SYSTEM CODE:

8. CONTRACTOR: MC

10. GENERAL INFORMATION

A. TEST CODE: HSQ

B. NUMBER OF CHANNELS:
CONTINUOUS:
COMMUTATED: 244

C. NUMBER OF SEGMENTS/CHANNEL:
CHANNEL — SEGMENTS

D. STATE NON-IRIG PARTICULARS:

11. TRANSMITTER CHARACTERISTICS

A. LOCATION: Simulated Lab STAGE

B. TYPE: PCM/FM

C. MODEL: 80801H21000

D. MANUFACTURER: Martin Company

E. LINK FREQUENCY: 236.2 MC

F. TYPE OF MODULATION: PCM/FM

G. BAND WIDTH AT 3DB: .25 MC

H. MIN. DEVIATION: 63KC

I. MAX. DEVIATION: 77KC

J. FREQUENCY STABILITY: ± 23.7 KC

K. AVERAGE POWER: 70 WATTS

L. CODING AND/OR MODULATION(PCM):

See Item 13

M. SPECTRUM ANALYSIS REPORTS ON THIS TRANSMITTER:

[X] HAVE BEEN PROVIDED TO THE FREQUENCY CONTROL BRANCH

[ ] WILL BE AVAILABLE _____ (DATE)

NOTE: TRANSMITTING SYSTEMS WHICH REQUIRE EXTENSIVE PERIODS OF RF CHECKOUT TIME WILL BE REQUIRED TO BE EQUIPPED WITH A CLOSED LOOP OR NON-RADIATING CHECKOUT DEVICE.

12. ANTENNA CHARACTERISTICS

A. LOCATION: STA. -160 on BLO (100°) AZ,
STA. -160 on BLO (280°) AZ,
STA. AZ,
STA. AZ,
WITH REFERENCE TO TRUE NORTH AFTER THE VEHICLE IS ERECTED ON THE LAUNCH PAD.

B. TYPE: Slot probe-fed cavity

C. MODEL:

D. MANUFACTURER: Martin Company

E. FREQUENCY RANGE: 230-252 MC

F. [ ] TUNABLE [X] FIXED TUNED

G. PREDOMINANT POLARIZATION: (CHECK ONLY ONE)
[X] VERTICAL (Parallel to Roll Axis)
[ ] HORIZONTAL
[ ] CIRCULAR SENSE: [ ] LH [ ] RH
[ ] OTHER

H. MAXIMUM GAIN IN DB WITH RESPECT TO ISOTRO 54 DB

I. MAIN LOBE BEAMWIDTH IN DEGREES AT 3DB POINTS: ELEVATION N/A AZIMUTH °

J. EFFECTIVE RADIATED POWER: 56.2 WATTS #

K. INDICATE THE AVAILABILITY DATE OF THE ANTENNA PATTERN MEASUREMENTS, PER AFMTC REG 80-14: November 30, 1965

L. IS THERE AVAILABLE A SPECTRUM RESPONSE REPORT ON THIS ANTENNA? [ ] YES [X] NO
(IF YES, PROVIDE ONE COPY)

13. DATA TO BE TRANSMITTED & REMARKS

Vehicle Flight Data

Coding format. Analog words consist of three 8-bit syllables plus 3-bit word sync (110).

320 word per frame. Frame sync 3-bit (011).

Each minor frame contains 64 words. Minor frame synchronization code in word 64 is 010101 etc., followed by 110 in bits 25, 26, and 27. Each major frame synchronization code is contained in word 64 in every 5th minor frame and is 10101 etc., followed by 011 in bits 25, 26, and 27. This major frame synchronization code will occur every 320 words. Bit rate is 172.8 kbps.

At antenna RF connector.

AFMTC FORM 31N JUN 61 PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE. NRD

1. SECURITY CLASSIFICATION (U)

2. REVISION NO. MT

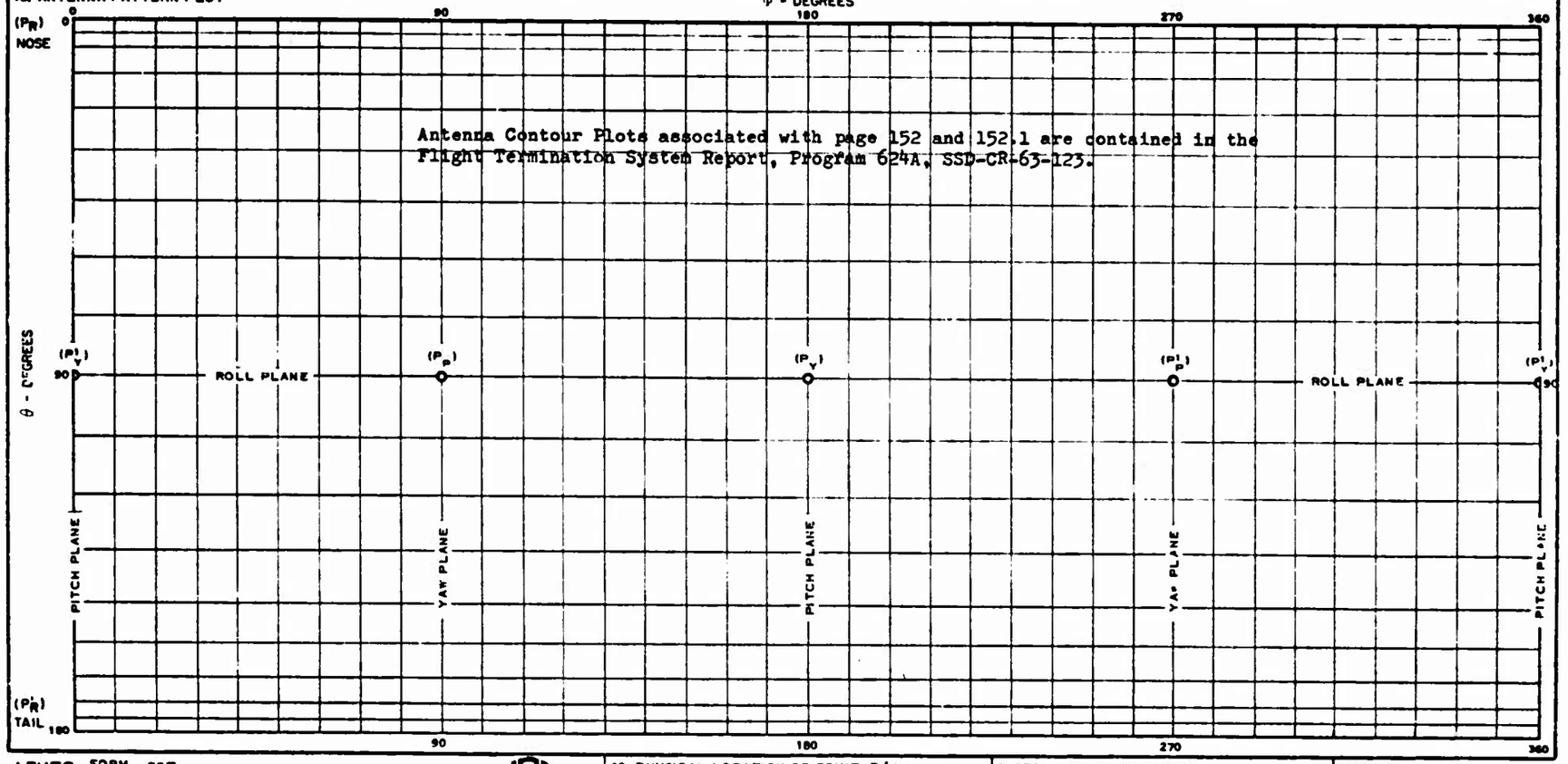
ANTENNA PATTERN
(COMMAND CONTROL/DESTRUCT)

1. SECURITY CLASSIFICATION	2. PAGE 152.1.1
(U)	3. DATE 12 Nov. 1965
	4. REPLACES PAGE(S)
	DATED:

5. PROGRAM TITLE	6. PROGRAM REQUIREMENT	7. SYSTEM CODE	8. CONTRACTOR
TIII SLS/MOL-HSQ	CODE: 3900		MC

10. INSTRUMENTATION SYSTEM:	11. ANTENNA TYPE:	12. ANTENNA POLARIZATION:	13. POLARIZATION PLOTTED:
14. FREQUENCY RANGE:	15. PATTERN MEASUREMENT FREQUENCY:	16. MODEL SCALE:	17. TEST CODE:

18. ANTENNA PATTERN PLOT



Antenna Contour Plots associated with page 152 and 152.1 are contained in the Flight Termination System Report, Program 624A, SSD-CR-63-123.

AFMTC FORM FEB 62 50F

NRD

19. PHYSICAL LOCATION OF POINT P'V:	1. SECURITY CLASSIFICATION	9. REVISION NO.
	(U)	

HSQ Spacecraft (Real Time)

TELEMETRY SYSTEM

1. SECURITY CLASSIFICATION: (U)
2. PAGE 152.2
3. DATE 12 Nov. 1965
4. REPLACES PAGE(S): — — — — — —
DATED

5. TEST PROGRAM: TIII SLS/MOL-HSQ
6. PROGRAM REQUIREMENT NO. 3900
7. SYSTEM CODE:
8. CONTRACTOR: MAC

10. GENERAL INFORMATION

A. TEST CODE: HSQ
B. NUMBER OF CHANNELS:
CONTINUOUS: N/A
COMMUTATED: N/A
C. NUMBER OF SEGMENTS/CHANNEL: N/A
CHANNEL SEGMENTS
D. STATE NON-IRIG PARTICULARS: None
E. Data Format: Page 152.6
F. Filtering: Page 152.7

11. TRANSMITTER CHARACTERISTICS

A. LOCATION: Reentry Module STAGE
B. TYPE: Crystal Controlled
C. MODEL: (52-85713)*(81-9005-67)**
D. MANUFACTURER: RCA
E. LINK FREQUENCY: 259.7 MC
F. TYPE OF MODULATION: PCM/FM
G. BAND WIDTH AT 3DB: 102.4 KC MC
H. MIN. DEVIATION:
I. MAX. DEVIATION: ±38.4 KC
J. FREQUENCY STABILITY: ± 25.8 KC
K. AVERAGE POWER: 2 WATTS
L. CODING AND/OR MODULATION (PCM):
Serial Binary Coded Digital, Most Significant Bit First Standard IRIG-NRZC.

M. SPECTRUM ANALYSIS REPORTS ON THIS TRANSMITTER:
☐ HAVE BEEN PROVIDED TO THE FREQUENCY CONTROL BRANCH
☒ WILL BE AVAILABLE 1 Febr. 1966 (DATE)

NOTE: A "one" will give a positive freq. excursion. "Zero" will give a lower Freq. excursion.

*MAC Part Number
**RCA Part Number

NOTE: TRANSMITTING SYSTEMS WHICH REQUIRE EXTENSIVE PERIODS OF RF CHECKOUT TIME WILL BE REQUIRED TO BE EQUIPPED WITH A CLOSED LOOP OR NON-RADIATING CHECKOUT DEVICE.

12. ANTENNA CHARACTERISTICS

A. LOCATION: STA. , AZ,
Whip STA. Z147.78 , 185.0° AZ,
Stub STA. Z233.97 , parallel AZ,
STA. , AZ,
WITH REFERENCE TO TRUE NORTH AFTER THE VEHICLE IS ERECTED ON THE LAUNCH PAD.
B. TYPE: Stubs and Whip
C. MODEL: 52-85101-901, 52-85103-301
D. MANUFACTURER: MAC
E. FREQUENCY RANGE: 225 - 460 MC
F. ☐ TUNABLE ☒ FIXED TUNED
G. PREDOMINANT POLARIZATION: (CHECK ONLY ONE)
☒ VERTICAL
☐ HORIZONTAL
☐ CIRCULAR: SENSE: ☐ LH ☐ RH
☐ OTHER
H. MAXIMUM GAIN IN DB WITH RESPECT TO ISOTROPIC: 0 DB
I. MAIN LOBE BEAMWIDTH IN DEGREES AT 3DB POINTS: ELEVATION 40 AZIMUTH OMNI °
J. EFFECTIVE RADIATED POWER: 2 WATTS
K. INDICATE THE AVAILABILITY DATE OF THE ANTENNA PATTERN MEASUREMENTS, PER AFMTC REG 80-14:
L. IS THERE AVAILABLE A SPECTRUM RESPONSE REPORT ON THIS ANTENNA? ☐ YES ☒ NO
(IF YES, PROVIDE ONE COPY)

13. DATA TO BE TRANSMITTED & REMARKS

This information to be supplied prior to launch. See applicable OR supplement.

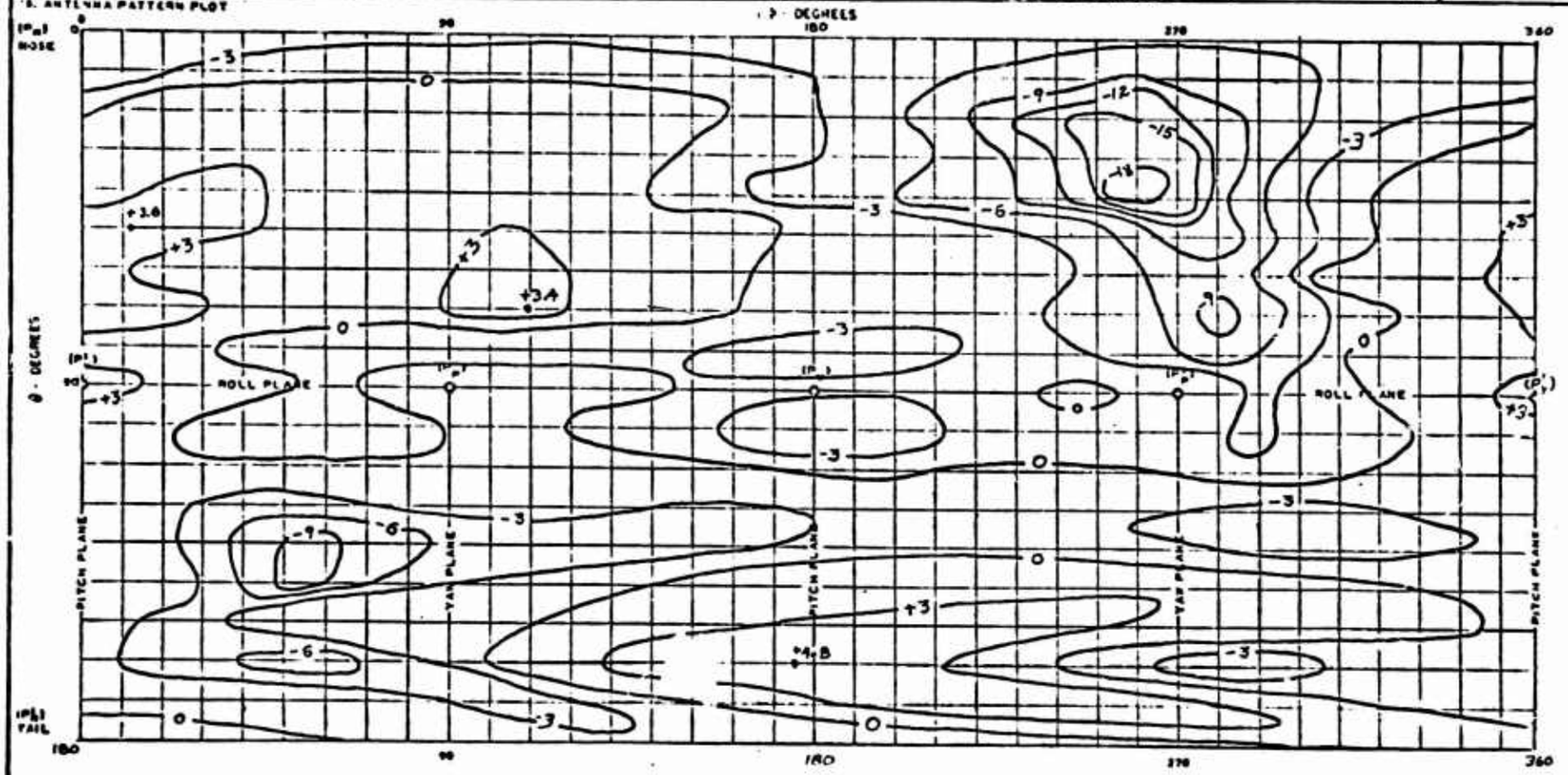
AFMTC FORM 31N JUN 61 PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE. NRD

1. SECURITY CLASSIFICATION (U)
9. REVISION NO. MT

ANTENNA PATTERN (OTHER) Monopole (Ground Radar Plane) Reentry Module with Adapter

1. SECURITY CLASSIFICATION: (U)	2. PAGE 152.3		
	3. DATE 12 Nov. 1965		
	4. REPLACES PAGE(S)		
	DATED:		
5. PROGRAM TITLE: TIII SLS/MOL-HSQ	6. PROGRAM REQUIREMENT CODE: 3900	7. SYSTEM CODE	8. CONTRACTOR: MAC
10. INSTRUMENTATION SYSTEM: T/M	11. ANTENNA TYPE: Monopole	12. ANTENNA POLARIZATION: Linear	13. POLARIZATION PLOTTED: Right Circular
14. FREQUENCY RANGE: 259.7	15. PATTERN MEASUREMENT FREQUENCY: 779.1	16. MODEL SCALE: 1/3 Full Scale	17. TEST CODE: HSQ

18. ANTENNA PATTERN PLOT



AFMTC FORM 50E FEB 62 PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE.

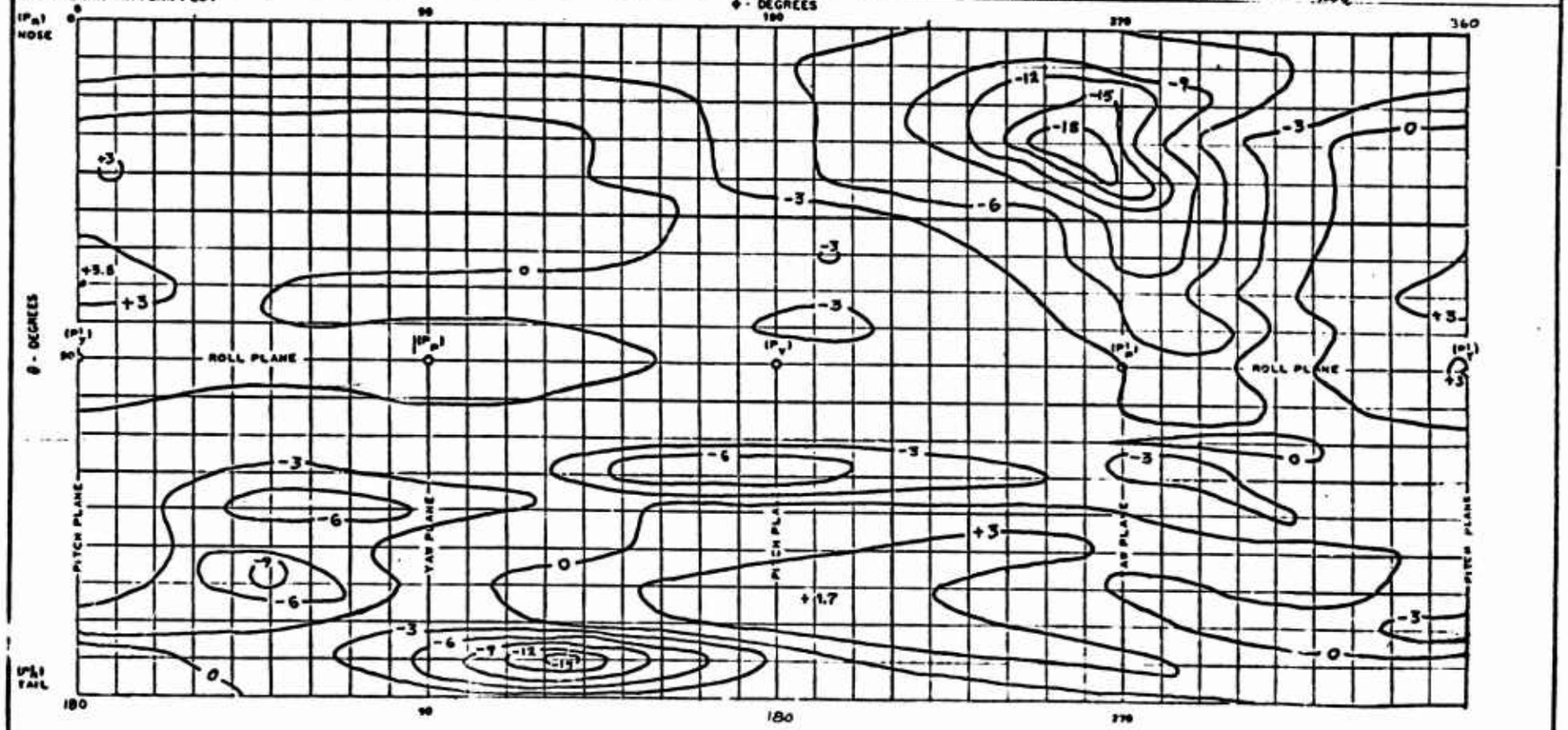
19. PHYSICAL LOCATION OF POINT P_N: Z161.35; AZ=10° East of North	1. SECURITY CLASSIFICATION: (U)	9. REVISION NO.

ANTENNA PATTERN (OTHER)

MONOPOLE (RADAR GROUND PLANE)
REENTRY MODULE ONLY

1. SECURITY CLASSIFICATION: (U)	2. PAGE: 152.4		
	3. DATE: 12 Nov. 1965		
	4. REPLACES PAGE(S) DATED:		
5. PROGRAM TITLE: TIII SLS/MOL-HSQ	6. PROGRAM REQUIREMENT CODE: 3900	7. SYSTEM CODE	8. CONTRACTOR: MAC
10. INSTRUMENTATION SYSTEM: T/M	11. ANTENNA TYPE: Monopole	12. ANTENNA POLARIZATION: Linear	13. POLARIZATION PLOTTED: Right Circular
14. FREQUENCY RANGE: 259.7 MC	15. PATTERN MEASUREMENT FREQUENCY: 779.1	16. MODEL SCALE: 1/3 Full Scale	17. TEST CODE: HSQ

18. ANTENNA PATTERN PLOT



AFMTC FORM 50E FEB 62 — PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE.

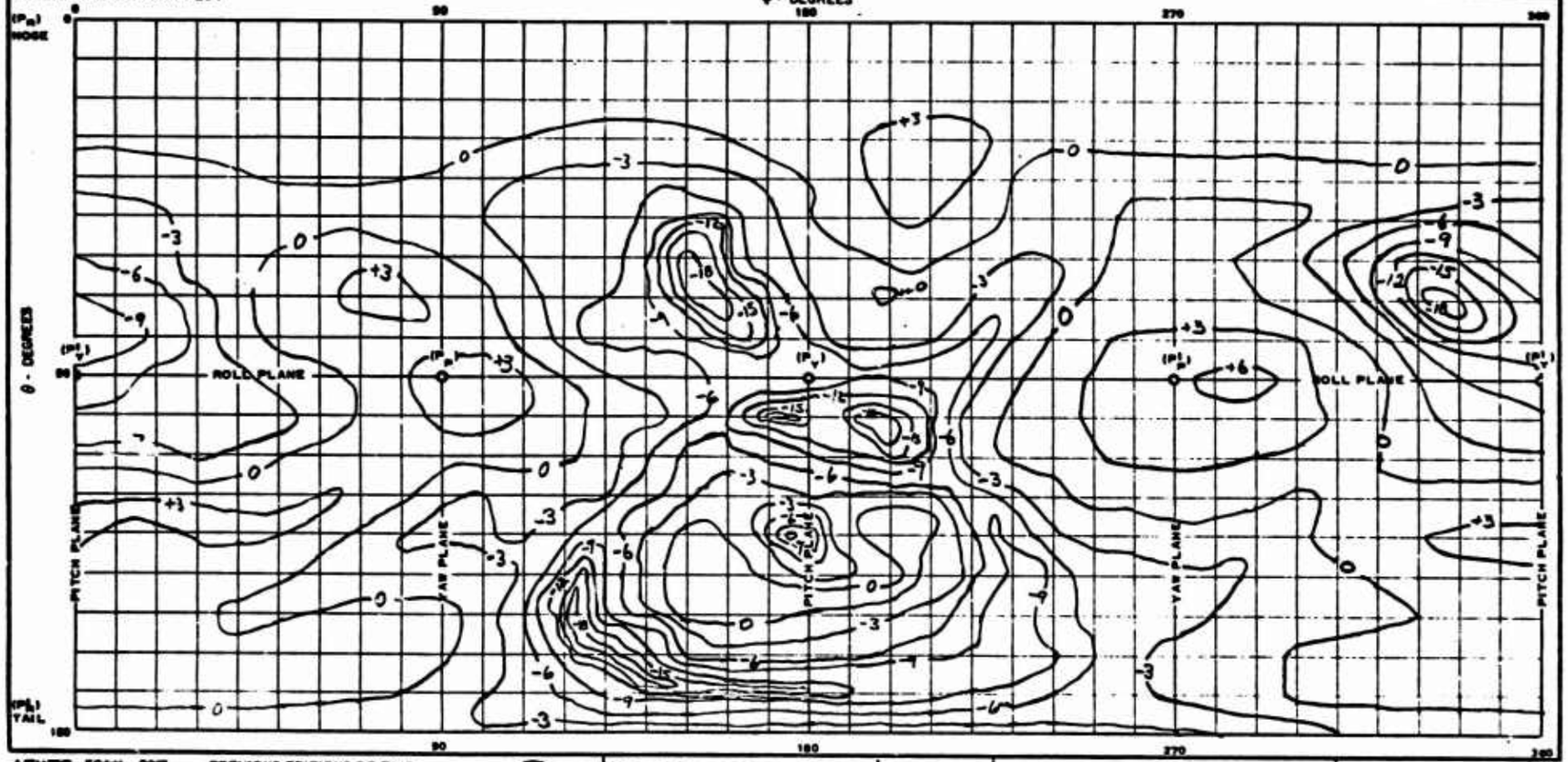
19. PHYSICAL LOCATION OF POINT P_v^1: Z161.35; AZ=10° East of North	1. SECURITY CLASSIFICATION: (U)	9. REVISION NO.

REAL TIME TELEMETRY SYSTEM ON DESCENT ANTENNA

ANTENNA PATTERN
(OTHER)

1. SECURITY CLASSIFICATION: (U)				2. PAGE 152.5
				3. DATE 12 Nov. 1965
				4. REPLACES PAGE(S)
				DATED:
5. PROGRAM TITLE: TIII SLS/MOL-GSQ	6. PROGRAM REQUIREMENT CODE:	7. SYSTEM CODE	8. CONTRACTOR: MAC	
10. INSTRUMENTATION SYSTEM: COMMUNICATIONS	11. ANTENNA TYPE: MONOPOLE		12. ANTENNA POLARIZATION: LINEAR	13. POLARIZATION PLOTTED: RIGHT CIRCULAR
14. FREQUENCY RANGE: 259.7 mc	15. PATTERN MEASUREMENT FREQUENCY: 779.1		16. MODEL SCALE: 1/3 FULL SCALE	17. TEST CODE: HSQ

18. ANTENNA PATTERN PLOT



AFMTC FORM 50E FEB 62 PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE.

19. PHYSICAL LOCATION OF POINT P_V': Z=161.35; AZ=10° East of North	1. SECURITY CLASSIFICATION: (U)	8. REVISION NO.

10. ITEM NO.	11. TEST CODE	12.
	HSQ	E. Data Format:

E. Data Format:

1. Word Structure: 8 Bits
2. Master Frame:
   - a) Consists of: 160 Words
   - b) Sampling Rate: 40 Master Frames Per Second
   - c) Sync. Word: First Three Words 01001100 11010111 10000010 (LSB)
   - d) No Adress
   - e) 3 Words Sampled at the Basic Master Frame Sampling Rate
   - f) Supercommutation:
     - 6 Data Channels consist of 16 Supercommutated Words Each (640 sps)
     - 6 Data Channels consist of 4 Supercommutated Words Each (160 sps)
     - 9 Data Channels consist of 2 Supercommutated Words Each (80 sps)
   - g) Subcommutation (prime sub frame)
     - (1) The prime sub frame (psf) is constructed from 16 master frame words making 64 psf words. Sampled at 10 sps.
     - (2) 3 psf words are prime sub frame sync and address as follows: 0110110011110101000xxxxx (x = address)
     - (3) 6 psf words are supercommutated to give 3 channels at 20 sps.
     - (4) 12 psf words are supercommutated to give 3 channels at 40 sps.
     - (5) 22 psf words are at prime sub frame rate of 10 sps sub-commutated to give:
       - 7 ch. at 10 sps.
       - 11 Bi-level 8 bit ch. at 10 sps.
       - 4 Bi-level pulse 8 bit ch. at 10 sps.
     - (6) 15 psf words are sub-commutated to give 120 ch. at 1.25 sps.
     - (7) 3 psf words are sub-commutated to give 3 words forming a 24 bit digital word at .416 sps occupying 3 consecutive 8 bit word spaces, giving 24 ch. at .416 sps.
     - (8) 3 psf words are sub-commutated to give 72 ch. at .416 sps.
3. Output to Transmitter: a 51.2 K Bit per second NRZ Change Signal

TELEMETRY SYSTEM			1. SECURITY CLASSIFICATION	2. PAGE 152.2
HSQ SPACECRAFT (REAL TIME)			(U)	3. DATE 12 Nov. 1965
5. TEST PROGRAM	6. PROGRAM REQUIREMENT NO.	7. SYSTEM CODE	8. CONTRACTOR	4. REPLACES PAGE(S)
TIII SLS/MOL-HSQ	3900		MAC	DATED

10. ITEM NO.	11. TEST CODE	12.
	HSQ	F. Filtering Pre-Modulation filtering with the following characteristics: 1. Lowpass: The 3 db point shall be 0.7 of bit rate. 2. Type: Manual Linear phase response. 3. Roll Off: 36 db per octave final slope until 60 db down.

HSQ SPACECRAFT (C-BAND) **TRANSPONDERS AND BEACONS**

1. SECURITY CLASSIFICATION: (U)
2. PAGE 153
3. DATE 12 Nov. 1965
4. REPLACES PAGE(S): — — — — — —
DATED

5. TEST PROGRAM: TIII SLS/MOL-HSQ
6. PROGRAM REQUIREMENT NO. 3900
7. SYSTEM CODE
8. CONTRACTOR: MAC

10. GENERAL INFORMATION

A. TEST CODE: HSQ
B. PURPOSE:
[X] RANGE SAFETY-IMPACT PREDICTION
[X] MIDCOURSE TRAJECTORY DATA
[X] TERMINAL TRAJECTORY DATA
[ ] TELEMETRY
C. LOCATION: Re-entry Module STAGE
D. TYPE: [X] TRANSPONDER [ ] BEACON
E. MODEL: 152-C2
F. MANUFACTURER: ACF Electronics
G. INTERROGATION PULSE CODE CAPABILITIES:
[ ] SINGLE PULSE [X] DOUBLE PULSES
DOUBLE PULSE SPACING
(Accept) 9 , 0.5 US
(Reject) , Other Than US
(Lockout) 8.9 to 15.80 US
[ ] TRIPLE PULSES
PULSE SPACINGS
FIRST & SECOND PULSES
: US
: US
: US
SECOND & THIRD PULSES
: US
: US
: US
H. COMMAND CONTROL CODE CAPABILITIES: N/A
NUMBER OF COMMAND CHANNELS AVAILABLE:
TYPE OF PULSE MODULATION:
I. POWER REQUIREMENTS: (500 PRF)
24 VOLTS, 35 WATTS

11. TRANSMITTER CHARACTERISTICS

A. FREQUENCY RANGE: 5600 to 5800 MC
B. [ ] TUNABLE [X] FIXED TUNED
C. BANDWIDTH AT 3DB: MC
AND AT 60DB: MC
D. EMISSION: [ ] AM, [ ] FM, [X] PULSE, [ ] COMPOSITE NONSTANDARD
E. FREQUENCY STABILITY: ± 3.0 MC MC/C°
F. AVERAGE POWER: WATTS
G. PEAK PULSE POWER: 1000 WATTS
H. MAXIMUM PRF: 2000 PPS
I. PULSE WIDTHS: 0.7 ± .2 US, US
AT 3DB POINTS
J. FIXED DELAY SETTINGS: 3.0 US, US
K. MAXIMUM DELAY VARIATION WITH SIGNAL STRENGTH FROM 10DBM TO WITHIN 5DBM OF MAXIMUM SENSITIVITY OF RECEIVER: 0.25 US
L. RECOVERY TIME: 60 US
M. MINIMUM FREQUENCY SEPARATION REQUIRED BETWEEN TRANSMITTER AND RECEIVER 75 MC
N. NOMINAL WARM-UP TIME: 2 MINUTES
O. IS THERE AVAILABLE A SPECTRUM ANALYSIS REPORT ON THIS TRANSMITTER? [ ] YES [X] NO
P. SPECTRUM ANALYSIS REPORTS ON THIS TRANSMITTER:
[ ] HAVE BEEN PROVIDED TO THE FREQUENCY CONTROL BRANCH
[X] WILL BE AVAILABLE 1 Febr. 1966 (DATE)

12. RECEIVER CHARACTERISTICS

A. FREQUENCY RANGE: 5600 to 5800 MC
B. [ ] TUNABLE [X] FIXED TUNED
C. INTERMEDIATE FREQUENCY: 80 MC
D. LOCAL OSCILLATOR FREQUENCY [ ] ABOVE, [X] BELOW INTERROGATION FREQUENCY
E. METHOD OF FREQUENCY CONTROL:
F. FREQUENCY STABILITY: ± 3.0 MC
G. SENSITIVITY:
MAXIMUM: DBM AT MC
MINIMUM: DBM AT MC
NOMINAL: -70 DBM AT 5690 MC
H. SELECTIVITY: (OVERALL)
3DB 8 to 12 MC
30DB Max. of 40 MC
60DB MC
I. TYPE AGC: None
J. AGC TIME CONST: N/A US
K. RECOVERY TIME TO 3DB POINT: US
L. NOMINAL WARM-UP TIME: 2 MINUTES
M. SPECTRUM ANALYSIS REPORTS ON THIS RECEIVER COVERING THE FREQUENCY RANGE 100 MC TO 10,000 MC:
[ ] HAVE BEEN PROVIDED TO FREQUENCY CONTROL BRANCH
[ ] WILL BE AVAILABLE (DATE)

13. ANTENNA CHARACTERISTICS

A. LOCATION: STA. Z166.20 , 64.0 °AZ
STA. Z166.20 , 174.5 °AZ
STA. Z166.20 , 294.5 °AZ
STA. , °AZ
WITH REFERENCE TO TRUE NORTH AFTER THE VEHICLE IS ERECTED ON THE LAUNCH PAD.
B. TYPE: Cavity Helix
C. MODEL: 52-85702-17
D. MANUFACTURER: Emertron
E. FREQUENCY RANGE: 5600 to 5800 MC
F. [ ] TUNABLE [X] FIXED TUNED
G. PREDOMINANT POLARIZATION: (CHECK ONLY ONE)
[ ] VERTICAL
[ ] HORIZONTAL
[X] CIRCULAR: SENSE: [ ] LH [X] RH
[ ] OTHER
H. MAXIMUM GAIN IN DB WITH RESPECT TO ISOTROPIC: DB
I. MAXIMUM NULL IN DB WITH RESPECT TO ISOTROPIC: DB
(WITHIN 60° FOR AZUSA, 120° FOR RADAR, OF LONGITUDINAL AXIS OF MAIN LOBE).
J. MAIN LOBE BEAMWIDTH IN DEGREES AT 3DB POINTS: ELEVATION: °, AZIMUTH °
K. INDICATE AVAILABILITY DATE OF ANTENNA PATTERN MEASUREMENTS PER AFMTC REG 80-14:
L. IS THERE AVAILABLE A SPECTRUM ANALYSIS REPORT ON THIS ANTENNA? [ ] YES [X] NO
(IF YES, PROVIDE ONE COPY)
M. USE AFMTC FORM 80E FOR ANTENNA PATTERN AND AFMTC FORM 80 FOR ANTENNA SYSTEM SCHEMATIC.

NOTE: QUANTITATIVE DATA FURNISHED ON THIS PAGE SHOULD BE MEASURED VALUES AFTER NOMINAL WARMUP TIME, WHERE APPLICABLE. THE DATA SOURCES OF UNMEASURED VALUES SHOULD BE INDICATED BY FOOTNOTE.

AFMTC FORM 31P JUN 61 PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE. NRD

1. SECURITY CLASSIFICATION (U)
9. REVISION NO. MT

ANTENNA PATTERN
(OTHER)

1. SECURITY CLASSIFICATION: (U)			2. PAGE 153.1
			3. DATE 12 Nov. 1965
			4. REPLACES PAGE(S) / DATED:
5. PROGRAM TITLE: TIII SLS/MOL-HSQ	6. PROGRAM REQUIREMENT CODE: 3900	7. SYSTEM CODE	8. CONTRACTOR: MAC
10. INSTRUMENTATION SYSTEM: C-Band Beacon	11. ANTENNA TYPE: 3 Helixes	12. ANTENNA POLARIZATION: RHCP	13. POLARIZATION PLOTTED: E ϕ
14. FREQUENCY RANGE: 5600-5800	15. PATTERN MEASUREMENT FREQUENCY: 5765 mc	16. MODEL SCALE: Full	17. TEST CODE: HSQ

18. ANTENNA PATTERN PLOT

AFMTC FORM 50E FEB 62 — PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE.

19. PHYSICAL LOCATION OF POINT P'v: Z=161.35; AZ=10° East of North	1. SECURITY CLASSIFICATION: (U)	9. REVISION NO.

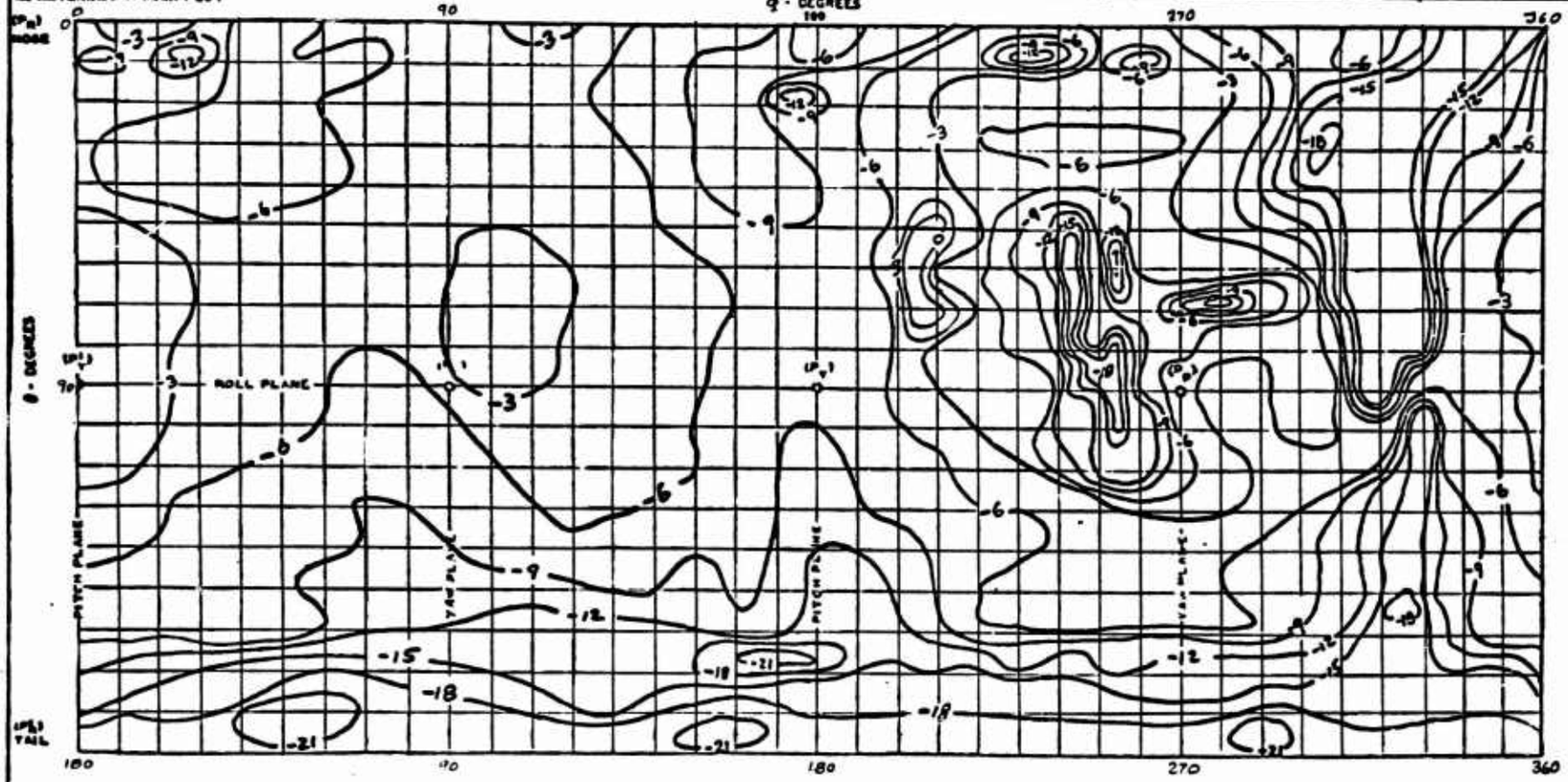
LAUNCH ONLY: C-Band

ANTENNA PATTERN (OTHER)

Launch Phase Only (Prior to Horizon-Sensor Fairing Jettison)

1. SECURITY CLASSIFICATION: (U)	2. PAGE: 153-2		
	3. DATE: 12 Nov. 1965		
	4. REPLACES PAGE(S) DATED:		
5. PROGRAM TITLE: TIII SLS/MOL-HSQ	6. PROGRAM REQUIREMENT CODE: 3900	7. SYSTEM CODE	8. CONTRACTOR: MAC
10. INSTRUMENTATION SYSTEM: C-Band Beacon	11. ANTENNA TYPE: 3 Helixes	12. ANTENNA POLARIZATION: RHCP	13. POLARIZATION PLOTTED: E θ
14. FREQUENCY RANGE: 5600-5800 mc	15. PATTERN MEASUREMENT FREQUENCY: 5765 mc	16. MODEL SCALE: Full	17. TEST CODE: HSQ

18. ANTENNA PATTERN PLOT



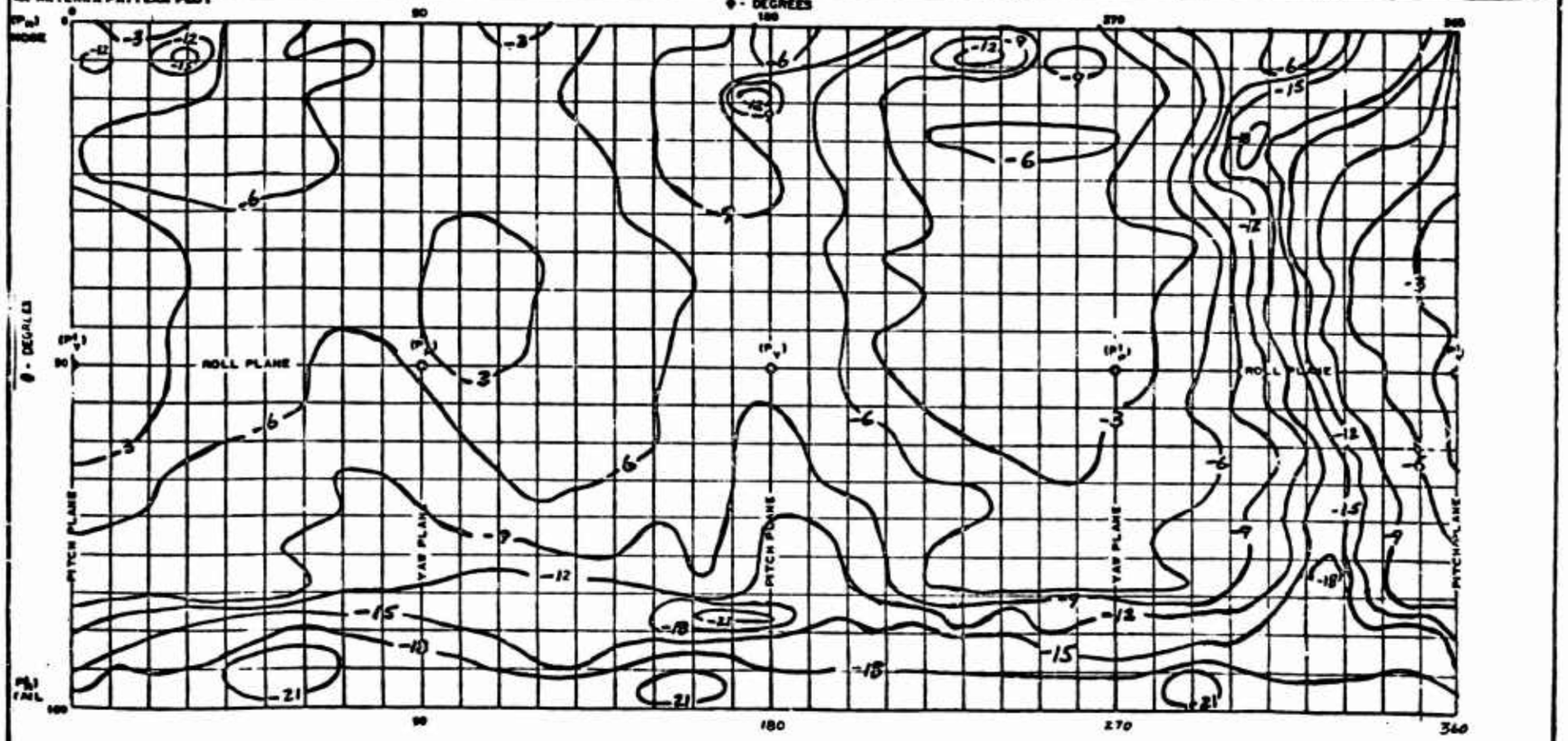
AFMTC FORM 50E FEB 62 — PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE.

19. PHYSICAL LOCATION OF POINT P_v': Z=161.35; AZ=10° East of North	1. SECURITY CLASSIFICATION: (U)	9. REVISION NO.

ANTENNA PATTERN
(OTHER)

1. SECURITY CLASSIFICATION: (U)				2. PAGE 153.3
				3. DATE 12 Nov. 1965
				4. REPLACES PAGE(S)
				DATED:
5. PROGRAM TITLE: TIII SLS/MCL-HSQ	6. PROGRAM REQUIREMENT CODE: 3900	7. SYSTEM CODE	8. CONTRACTOR: MAC	
10. INSTRUMENTATION SYSTEM: C-Band System	11. ANTENNA TYPE: 3 Helixes		12. ANTENNA POLARIZATION: RHCP	13. POLARIZATION PLOTTED: E θ
14. FREQUENCY RANGE: 5600-5800 mc	15. PATTERN MEASUREMENT FREQUENCY: 5765 mc		16. MODEL SCALE: Full	17. TEST CODE: HS

18. ANTENNA PATTERN PLOT



AFMTC FORM 50E FEB 62 PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE.

19. PHYSICAL LOCATION OF POINT P_v^1: Z=161.35; AZ=10° East of North	1. SECURITY CLASSIFICATION: (U)	9. REVISION NO.

TRANSPONDERS AND BEACONS

HSQ SPACECRAFT (UHF RECOVERY)

1. SECURITY CLASSIFICATION: (U)
2. PAGE 153. 4
3. DATE 12 Nov. 1965
4. REPLACES PAGE(S) — — — — — — DATED

5. TEST PROGRAM: TIII SLS/MOL-HSQ
6. PROGRAM REQUIREMENT NO. 3900
7. SYSTEM CODE
8. CONTRACTOR: MAC

10. GENERAL INFORMATION

A. TEST CODE: HSQ
B. PURPOSE:
- [ ] RANGE SAFETY-IMPACT PREDICTION
- [ ] MIDCOURSE TRAJECTORY DATA
- [ ] TERMINAL TRAJECTORY DATA
- [ ] TELEMETRY
- [x] Rescue

C. LOCATION: Adapter Module STAGE
D. TYPE: [ ] TRANSPONDER [x] BEACON
E. MODEL: (52-85719-13*)ACR-9/u-100
F. MANUFACTURER: ACR Electronics
G. INTERROGATION PULSE CODE CAPABILITIES: N/A
- [ ] SINGLE PULSE [ ] DOUBLE PULSES

DOUBLE PULSE SPACING
: US
: US
: US
- [ ] TRIPLE PULSES

PULSE SPACINGS
FIRST & SECOND PULSES
: US
: US
: US
SECOND & THIRD PULSES
: US
: US
: US

H. COMMAND CONTROL CODE CAPABILITIES: N/A
NUMBER OF COMMAND CHANNELS AVAILABLE:
TYPE OF PULSE MODULATION:
I. POWER REQUIREMENTS: 18-30.5 VOLTS, 25 WATTS

11. TRANSMITTER CHARACTERISTICS

A. FREQUENCY RANGE: 243 MC
B. [ ] TUNABLE [x] FIXED TUNED
C. BANDWIDTH AT 3DB: N/A MC,
AND AT 60DB: MC
D. EMISSION: [ ] AM, [ ] FM, [x] PULSE, [ ] COMPOSITE NONSTANDARD
E. FREQUENCY STABILITY: ± 0.01% MC/C°
F. AVERAGE POWER: N/A WATTS
G. PEAK PULSE POWER: 50W Min WATTS
H. MAXIMUM PRF: N/A PPS
I. PULSE WIDTHS: 30±10 US, US, US AT 3DB POINTS
J. FIXED DELAY SETTINGS: N/A US, US
K. MAXIMUM DELAY VARIATION WITH SIGNAL STRENGTH FROM 1DBM TO WITHIN ° DBM OF MAXIMUM SENSITIVITY OF RECEIVER: N/A US
L. RECOVERY TIME: N/A US
M. MINIMUM FREQUENCY SEPARATION REQUIRED BETWEEN TRANSMITTER AND RECEIVER N/A MC
N. NOMINAL WARM-UP TIME: 0.5 MINUTES
O. IS THERE AVAILABLE A SPECTRUM ANALYSIS REPORT ON THIS TRANSMITTER? [ ] YES [x] NO
P. SPECTRUM ANALYSIS REPORTS ON THIS TRANSMITTER:
- [ ] HAVE BEEN PROVIDED TO THE FREQUENCY CONTROL BRANCH
- [ ] WILL BE AVAILABLE _____ (DATE)

Pulse Group Spacing 5MS±500μS
Pulse Code Spacing 130±10μS

*MAC Part Number

12. RECEIVER CHARACTERISTICS N/A

A. FREQUENCY RANGE: MC
B. [ ] TUNABLE [ ] FIXED TUNED
C. INTERMEDIATE FREQUENCY:
D. LOCAL OSCILLATOR FREQUENCY [ ] ABOVE, [ ] BELOW INTERROGATION FREQUENCY
E. METHOD OF FREQUENCY CONTROL:
F. FREQUENCY STABILITY: ± MC
G. SENSITIVITY:
MAXIMUM: DBM AT MC
MINIMUM: DBM AT MC
NOMINAL: DBM AT MC
H. SELECTIVITY: (OVERALL)
3DB MC
30DB MC
60DB MC
I. TYPE AGC:
J. AGC TIME CONST: US
K. RECOVERY TIME TO 3DB POINT: US
L. NOMINAL WARM-UP TIME: MINUTES
M. SPECTRUM ANALYSIS REPORTS ON THIS RECEIVER COVERING THE FREQUENCY RANGE 100 MC TO 10,000 MC:
- [ ] HAVE BEEN PROVIDED TO FREQUENCY CONTROL BRANCH
- [ ] WILL BE AVAILABLE _____ (DATE)

13. ANTENNA CHARACTERISTICS

A. LOCATION: STA. 2123.96 , 185 °AZ
STA. , °AZ
STA. , °AZ
STA. , °AZ
WITH REFERENCE TO TRUE NORTH AFTER THE VEHICLE IS ERECTED ON THE LAUNCH PAD.
B. TYPE: ¼ Wave Whip
C. MODEL: 52-85102-301
D. MANUFACTURER: McDonnell
E. FREQUENCY RANGE: 243 MC
F. [ ] TUNABLE [x] FIXED TUNED
G. PREDOMINANT POLARIZATION: (CHECK ONLY ONE)
- [x] VERTICAL Linear
- [ ] HORIZONTAL
- [ ] CIRCULAR: SENSE: [ ] LH [ ] RH
- [ ] OTHER

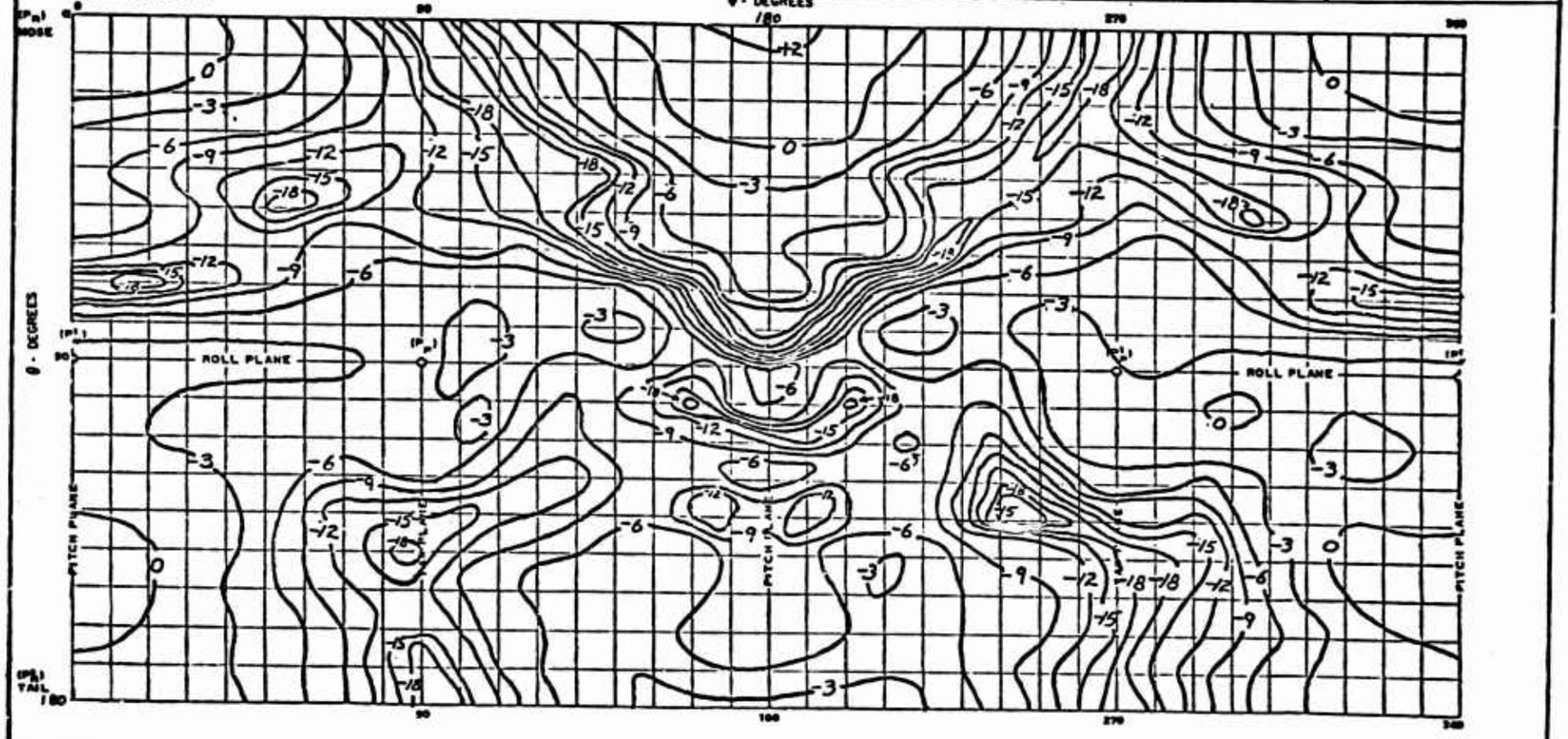
H. MAXIMUM GAIN IN DB WITH RESPECT TO ISOTROPIC: DB
I. MAXIMUM NULL IN DB WITH RESPECT TO ISOTROPIC: DB
(WITHIN 60° FOR AZUSA, 120° FOR RADAR, OF LONGITUDINAL AXIS OF MAIN LOBE).
J. MAIN LOBE BEAMWIDTH IN DEGREES AT 3DB POINTS: N/A
ELEVATION: °, AZIMUTH °
K. INDICATE AVAILABILITY DATE OF ANTENNA PATTERN MEASUREMENTS PER AFMTC REG 80-14:
L. IS THERE AVAILABLE A SPECTRUM ANALYSIS REPORT ON THIS ANTENNA? [ ] YES [x] NO
(IF YES, PROVIDE ONE COPY)
M. USE AFMTC FORM 80E FOR ANTENNA PATTERN AND AFMTC FORM 80 FOR ANTENNA SYSTEM SCHEMATIC.

NOTE: QUANTITATIVE DATA FURNISHED ON THIS PAGE SHOULD BE MEASURED VALUES AFTER NOMINAL WARMUP TIME. WHERE APPLICABLE, THE DATA SOURCES OF UNMEASURED VALUES SHOULD BE INDICATED BY FOOTNOTE.

ANTENNA PATTERN
(OTHER)

1. SECURITY CLASSIFICATION: (U)			2. PAGE 153.5
			3. DATE 12 Nov. 1965
4. REPLACES PAGE(S)			DATED:
5. PROGRAM TITLE: TIII SLS/MOL-HSQ	6. PROGRAM REQUIREMENT CODE: 3900	7. SYSTEM CODE	8. CONTRACTOR: MAC
10. INSTRUMENTATION SYSTEM: Recovery Beacon	11. ANTENNA TYPE: Monopole	12. ANTENNA POLARIZATION: Linear	13. POLARIZATION PLOTTED: E θ
14. FREQUENCY RANGE: 243 MC	15. PATTERN MEASUREMENT FREQUENCY: 729	16. MODEL SCALE: 1/3 Full Scale	17. TEST CODE: HSQ

18. ANTENNA PATTERN PLOT



AFMTC FORM 50E FEB 62 — PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE.

19. PHYSICAL LOCATION OF POINT P_V': 2161.35; AZ=10° East of North

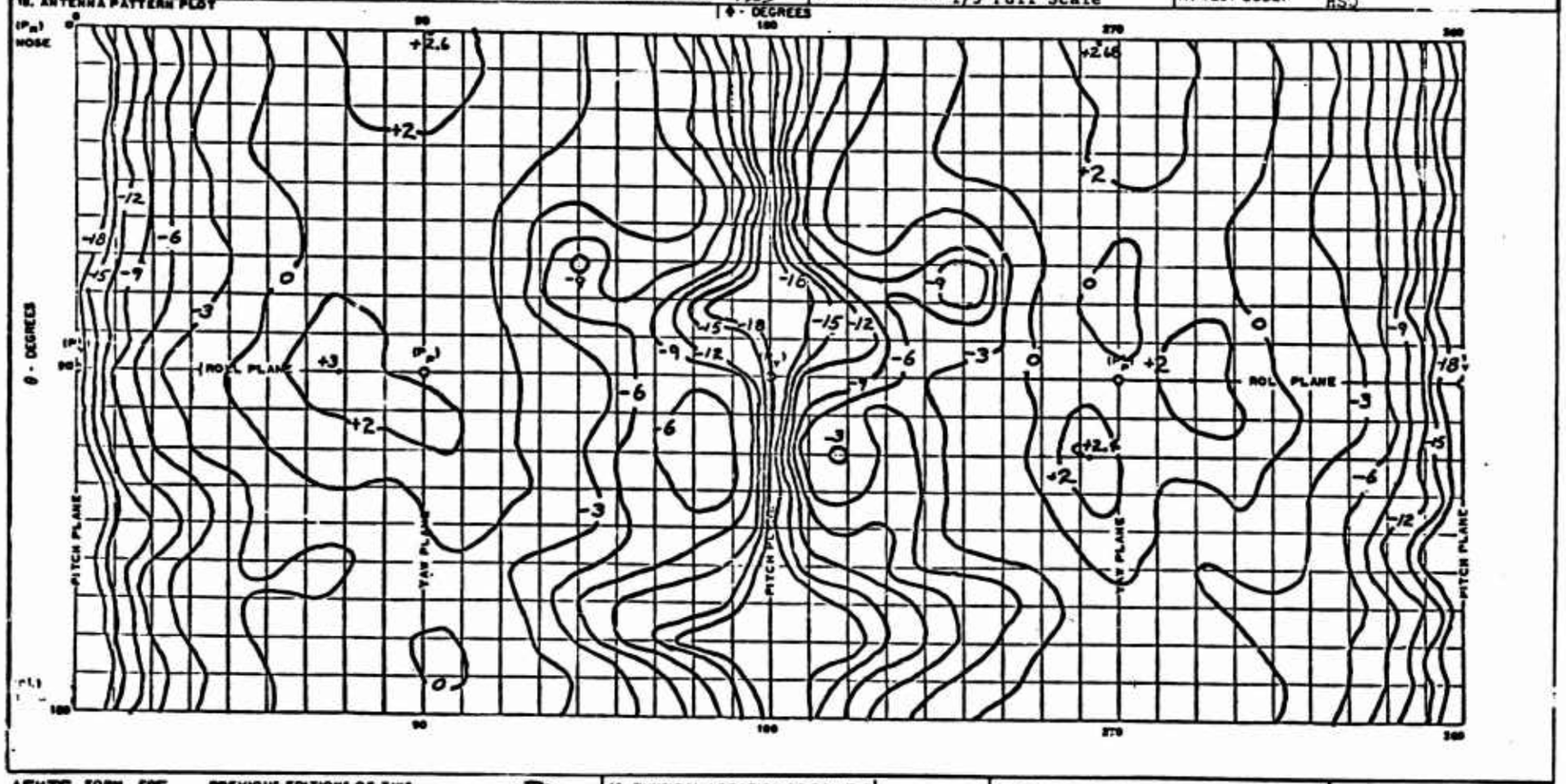
1. SECURITY CLASSIFICATION: (U)

9. REVISION NO.

ANTENNA PATTERN
(OTHER)

1. SECURITY CLASSIFICATION: (U)			2. PAGE 153.6	
			3. DATE 12 Nov. 1965	
5. PROGRAM TITLE: TIII SLS/MOL-HSQ	6. PROGRAM REQUIREMENT CODE: 3900	7. SYSTEM CODE	8. CONTRACTOR: MAC	4. REPLACES PAGE(S) DATED:
10. INSTRUMENTATION SYSTEM: Recovery Beacon	11. ANTENNA TYPE: Monopole		12. ANTENNA POLARIZATION: Linear	13. POLARIZATION PLOTTED: E
14. FREQUENCY RANGE: 243 MC	15. PATTERN MEASUREMENT FREQUENCY: 729		16. MODEL SCALE: 1/3 Full Scale	17. TEST CODE: HSQ

18. ANTENNA PATTERN PLOT



AFMTC FORM 50E FEB 62 PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE.

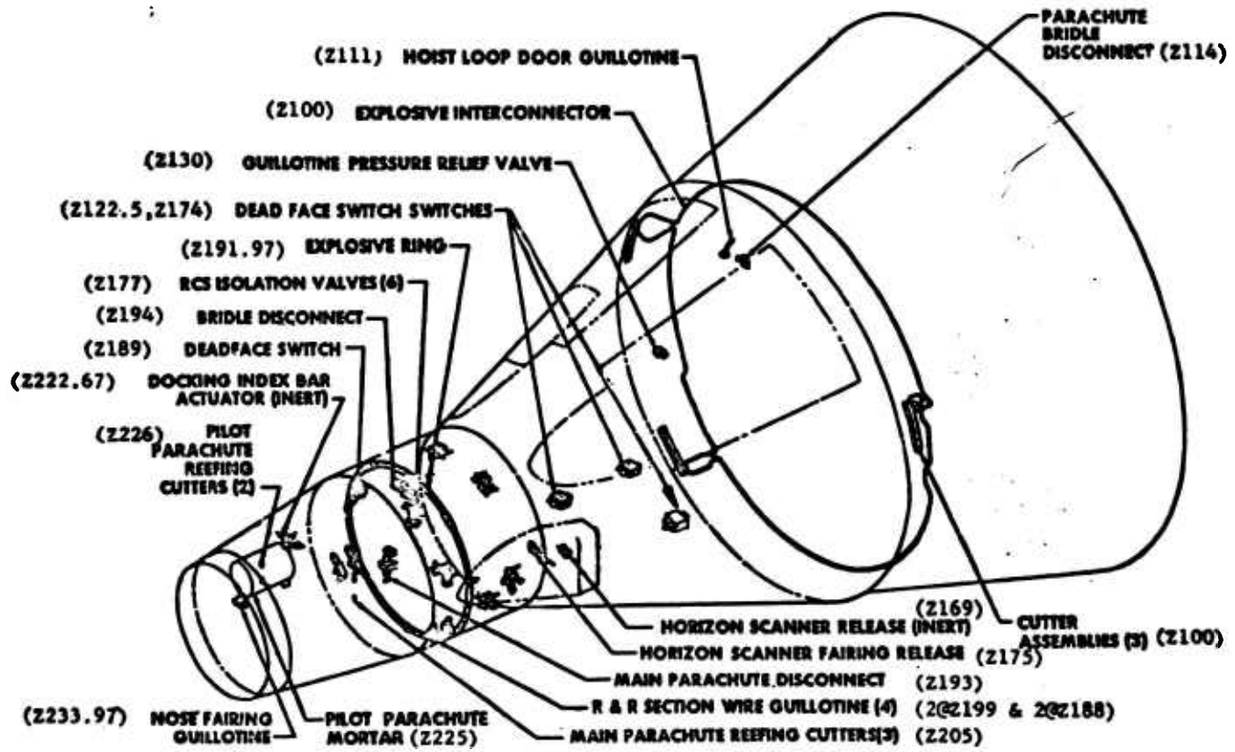
19. PHYSICAL LOCATION OF POINT P_m': Z161.35; AZ=10° East of North

1. SECURITY CLASSIFICATION: (U)

8. REVISION NO.

HSQ SPACECRAFT — ORDNANCE (Drawing)			1. SECURITY CLASSIFICATION (U)	2. PAGE 154
				3. DATE 12 Nov. 1965
4. TEST PROGRAM TIII SLS/MOL-HSQ	5. PROGRAM REQUIREMENT NO. 3900	7. SYSTEM CODE	8. CONTRACTOR MAC	6. REPLACES PAGE(S) — — — — — — DATED
10. DIMENSIONAL DRAWING OF MISSILE/TEST VEHICLE SHOWING THE LOCATION OF ALL ORDNANCE ITEMS				TEST CODE:

PYROTECHNIC DEVICES



AFMTC FORM 319-1 JUN 61	NRD	1. SECURITY CLASSIFICATION (U)	9. REVISION NO. 87

ORDNANCE ITEMS - HSQ SPACECRAFT

1. SECURITY CLASSIFICATION: (U)

2. PAGE: 155

3. DATE: 12 Nov, 1965

4. REPLACES PAGE(S):

DATED:

5. TEST PROGRAM: TIII SLS/MOL-HSQ

6. PROGRAM REQUIREMENT NO.: 3900

7. SYSTEM CODE:

8. CONTRACTOR: MAC

10. ITEM NO.	11. TEST CODE	12. PURPOSE	13. TYPE	14.	15. QTY	16. MANUFACTURER	17. PART NUMBER	18. INSTL	19. LEAD	20. LEAD LENGTH-METERS UN-SHIELDED UNINST	UN-SHIELDED INSTL	SHIELDED UNINST	SHIELDED INSTL	21. CURRENT-AMPS MAX NO FIRE	MIN FIRE	WORST FIRE	DAT	22. BRIDGE OHMS MAX	OHMS MIN	23. CLASS	24. RF SAFE	25. SEE NOTE
1	HSQ	Pilot Chute Ejection	Cartridge		2	ORDCO/NV	*52-41703 261-145	IT	NO	N/A	N/A	0	3½ft	1	4	7	26	* *	1.2	0.8	3	S	164
2	HSQ	Separates R&R Section from re-entry capsule	Explosive Ring (MDF)		1	Ordnance Assoc.	*52-72705-5	IT	NO	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	9	S	4
3	HSQ	Guillotine - Cable Cutter	Cartridge		6	Central Technology Inc.	*52-72724-11-105	IT	NO	N/A	N/A	0	10ft	1	4	7.66	***	1.2	0.8	3	S	265
4	HSQ	Guillotine - Wire Bundle Cutter	Cartridge		4	C.T.I.	*52-72724-9-101	IT	NO	N/A	N/A	0	10ft	1	4	6.99	***	1.2	0.8	3	S	265
5	HSQ	Cuts Pilot Chute Reefing Lines	Cutter		2	Ordnance Assoc./ Northrop Ventura	*52-41703-95	IT	NO	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1	S	164
6	HSQ	Cuts Main Chute Reefing Lines	Cutter		3	Ordnance Assoc./ Northrop Ventura	*52-41703-97	IT	NO	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1	S	164
7	HSQ	Main Chute Disconnect-Fwd	Cartridge		2	S.D.I./Northrop Ventura	*52-41703-229-137	IT	NO	N/A	N/A	0	18ft	1	4	6.28	****	1.2	0.8	3	S	266
8	HSQ	Main Chute Bridle Disconnect Fwd & Aft	Cartridge		4	S.D.I./Northrop Ventura	*52-41703-245-121	IT	NO	N/A	N/A	0	7ft	1	4	8.66	****	1.2	0.8	3	S	266
9	HSQ	Actuates Pyro Switch "A","C", "H", & "K"	Cartridge		4	C.T.I.	*52-72724-3-123	IT	NO	N/A	N/A	0	11ft	1	4	6.91	***	1.2	0.8	3	S	266

NOTE: ALL ORDNANCE DEVICES WHICH ARE DESIGNED TO PERMIT SAFE HANDLING AND INSTALLATION IN THE RADIATION ENVIRONMENT DESCRIBED IN AFNTC-TM-59-4, R.F. RADIATION HAZARDS, AFNTC, WILL BE SO NOTED BY PLACING AN "S" UNDER 'RF SAFE' COLUMN 24. ORDNANCE ITEMS NOT MEETING THIS CRITERION REQUIRE AN EXPLANATION OF THE PRECAUTIONS TO BE TAKEN.

AFNTC FORM Jun 61 31V PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE.

28. MISSILE SAFETY COORDINATION

1. SECURITY CLASSIFICATION: (U)

9. REVISION NO.

ORDNANCE ITEMS- HSQ SPACECRAFT

5. TEST PROGRAM: TIII SLS/MOL-HSQ	6. PROGRAM REQUIREMENT NO.: 3900	7. SYSTEM CODE:	8. CONTRACTOR: MAC

1. SECURITY CLASSIFICATION: (U)

2. PAGE 198 ,1

3. DATE 12 Nov. 1965

4. REPLACES PAGE/ITEM: DATED

10. ITEM NO.	11. TEST CODE	12. PURPOSE	13. TYPE	14.	15. QTY	16. MANUFACTURER	17. PART NUMBER	18. INSTL	19. LEAD	20. LEAD LENGTH-METERS UN-SHIELDED MINIMUM	UN-SHIELDED INSTL.	SHIELDED MINIMUM	SHIELDED INSTL.	21. CURRENT-AMPS MAX NO FIRE	MIN FIRE	WORST FIRE	22. BRIDGE DAT	BRIDGE MAX	BRIDGE MIN	23. CLASS	24. RF SAFE	25. SEE NOTE
10	HSQ	Actuates Horizon Scanner Fairing Ejector	Cartridge		2	Ord.Engr.Assoc./ HOLEX	*52-72712-37-131	IT	NO	N/A	N/A	0	9½ft	1	4	7.84	* *	1.2	0.8	3	S	3&6
11	HSQ	Detonates Items 2,13, & 14	Detonator		5	C.T.I.	*52-72724-25-120	IT	NO	N/A	N/A	0	21ft	1	4	6.9	***	1.2	0.8	8	S	2&6
12	HSQ	Opens RCS Valves	Cartridge		6	Pyrotechnics Rocketdyne	*52-52700-201-103	IT	NO	N/A	N/A	0	6ft	1	4	5.35	* *	1.2	0.8	3	S	2&6
13	HSQ	Cuts Straps & Wires between Adapter & Re-entry Vehicle	Cutter Assembly-Shaped Charge -		2	Ordnance Assoc.	*52-72704-97-120	IT	NO	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	9	S	7
14	HSQ	Same as Item 13 above	Cutter Assembly-Shaped Charge -		1	Ordnance Assoc.	*52-72704-98-120	IT	NO	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	9	S	7
15	HSQ	Explosively links cutter Assemblies	Explosive Interconnect (MDF)		1	Ordnance Assoc.	*52-72704-77	IT	NO	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	9	S	7
16	HSQ	Same as Item 15 above	Same as Item 15		1	Ordnance Assoc.	*52-72704-79	IT	NO	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	9	S	7
17	HSQ	Same as Item 15 above	Same as Item 15		1	Ordnance Assoc.	*52-72704-81	IT	NO	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	9	S	7

NOTE: ALL ORDNANCE DEVICES WHICH ARE DESIGNED TO PERMIT SAFE HANDLING AND INSTALLATION IN THE RADIATION ENVIRONMENT DESCRIBED IN AFMTC-TN-59-4, R.F. RADIATION HAZARDS, AFMTC, WILL BE SO NOTED BY PLACING AN "S" UNDER "RF SAFE", COLUMN 24. ORDNANCE ITEMS NOT MEETING THIS CRITERION REQUIRE AN EXPLANATION OF THE PRECAUTIONS TO BE TAKEN.

AFMTC FORM 31V JUN 61 PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE.

26. MISSILE SAFETY COORDINATION

1. SECURITY CLASSIFICATION: (U)

6. REVISION NO. 07

ORDNANCE ITEMS - HSQ SPACECRAFT

1. SECURITY CLASSIFICATION: (U)
2. PAGE 188.2
3. DATE 12 Nov. 1965
4. REPLACES PAGE(S): DATED
5. TEST PROGRAM: TIII SLS/MOL-HSQ
6. PROGRAM REQUIREMENT NO.: 3900
7. SYSTEM CODE:
8. CONTRACTOR: MAC

10. ITEM NO.	11. TEST CODE	12. PURPOSE	13. TYPE	14.	15. QTY	16. MANUFACTURER	17. PART NUMBER	18. INSTL	19 LEAD	20. LEAD LENGTH-METERS UNSHIELDED WITHOUT	UNSHIELDED INSTL	SHIELDED WITHOUT	SHIELDED INSTL	21. CURRENT-AMPS MAX NO FIRE	MIN FIRE	WORST FIRE	22. BRIDGE MAT	BRIDGE WIRE MAX	BRIDGE WIRE MIN	23. CLASS	24. RP SAFE	25. REF NOTE
18	HSQ	Same as Item 15	Same as Item 15		1	Ordnance Assoc.	*52-72704-83	IT	NO	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	9	S	7
19	HSQ	Same as Item 15	Same as Item 15		1	Ordnance Assoc.	*52-72704-85	IT	NO	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	9	S	7
20	HSQ	Same as Item 15	Same as Item 15		1	Ordnance Assoc.	*52-72704-87	IT	NO	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	9	S	7

NOTES:

*MAC part numbers given do not reflect next higher assemblies. All explosive items have been approved by the AFETR (ETORS-3) for use on the Gemini "A" program.

1. Items 5 and 6 are self-contained mechanical actuated units.
2. Item is used in several locations in the spacecraft. Reference Column 20: Length given is approximate and based on Gemini "A" data. It represents the longest lead (relay panel to cartridge) used on any item of this part number. Possible relocation of J-boxes in the HSQ spacecraft could change the stated length. Reference Column 21: The normal current listed is based upon Gemini "A" maximum circuit resistance, nominal battery voltage and represents the least current expected on any item with this part number.
3. Refe.ence Column 20: Information on installed lead length (relay panel to item) is based on Gemini "A" data and may change if J-box is relocated in the HSQ spacecraft. Reference Column 21: The normal current listed is based upon Gemini "A" maximum circuit resistance, nominal battery voltage, and is the least current expected through the circuit.
4. Items are located in the R and R Section.
5. Items are located in both the R & R Section and the Re-Entry Vehicle.
6. Items are located only in the Re-Entry Vehicle.
7. Items are located in the Adapter Section.

Reference Column 22:

** Tophet "A"
*** Platinum
**** #486 Secon Wire

NOTE: ALL ORDNANCE DEVICES WHICH ARE DESIGNED TO PE[illegible] SAFE HANDLING AND INSTALLATION IN THE RADIATION ENVIRONMENT DESCRIBED IN AFMTC-TN-[illegible], R.F. RADIATION HAZARDS, AFMTC, WILL BE SO NOTED BY PLACING AN "S" UNDER "RP SAFE" COLUMN 24. ORDNANCE ITEMS NOT MEETING THIS CRITERION REQUIRE AN EXPLANATION OF THE PRECAUTIONS TO BE TAKEN.

AFMTC FORM 31V JUN 61 PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE.

28. MISSILE SAFETY COORDINATION

1. SECURITY CLASSIFICATION: (U)

9. REVISION NO. BY

OTHER VEHICLEBORNE EQUIPMENT

1. SECURITY CLASSIFICATION	2. PAGE	3. DATE	4. REPLACES PAGE(S)
(U)	157	12 Nov 1965	DATED

5. PROGRAM TITLE	6. PROGRAM REQUIREMENT CODE	7. SYSTEM CODE	8. CONTRACTOR
TIII/SLS/MOL-HSQ	3900		MAC

10. ITEM NO.	11. TEST CODE	12. BRIEF DESCRIPTION OF ALL OTHER VEHICLEBORNE EQUIPMENT SUCH AS FLASHING LIGHTS, DATA CAPSULES, ETC.	
1	HSQ	Flashing Recovery Light:	A. Extends at main parachute jettison. B. Flashing rate at least 15 flashes per minute. C. Flash duration at least 10 microseconds at the 50 percent intensity points. D. Intensity shall be a minimum of 1.2 candle-seconds per flash measured at a look-angle perpendicular to either major light surface.
2	HSQ	Dye Marker Assembly:	A. Dye marker package installed below spacecraft flotation line on forward end of the RCS section. Package is exposed after R&R section is jettisoned. B. Dye marker shall consist of a yellow flourescent dye.
3	HSQ	Hoist Loop:	A. Hoist loop cable extended at main parachute jettison. B. Provides an attach point for lifting devices used for recovering the spacecraft.

SYSTEM MISSION CAPABILITIES

1. SECURITY CLASSIFICATION	2. PAGE 198
(U)	3. DATE 12 Nov. 1965
	4. REPLACES PAGE(S) DATED

5. TEST PROGRAM TITLE	6. PROGRAM REQUIREMENT CODE	7. SYSTEM CODE	8. CONTRACTOR
TIII SLS/MOL-HSQ	3900		MC/ MAC

10. CHARACTERISTICS

a. MISSION OF OPERATIONAL WEAPON SYSTEM

To gather environmental data and qualify selected hardware prior to manned flight.

1. Heat Shield Qualification
2. Gather Environmental Data on spacecraft during ascent.

b. SIGNIFICANT CHARACTERISTICS AND CAPABILITIES

1. Unmanned suborbital flight.
2. Spacecraft equipped with recovery system.

c. CONSTRAINTS INFLUENCING DESIGN

Earliest possible manned flight.

d.

e.

11. SUPPORT REQUIREMENTS

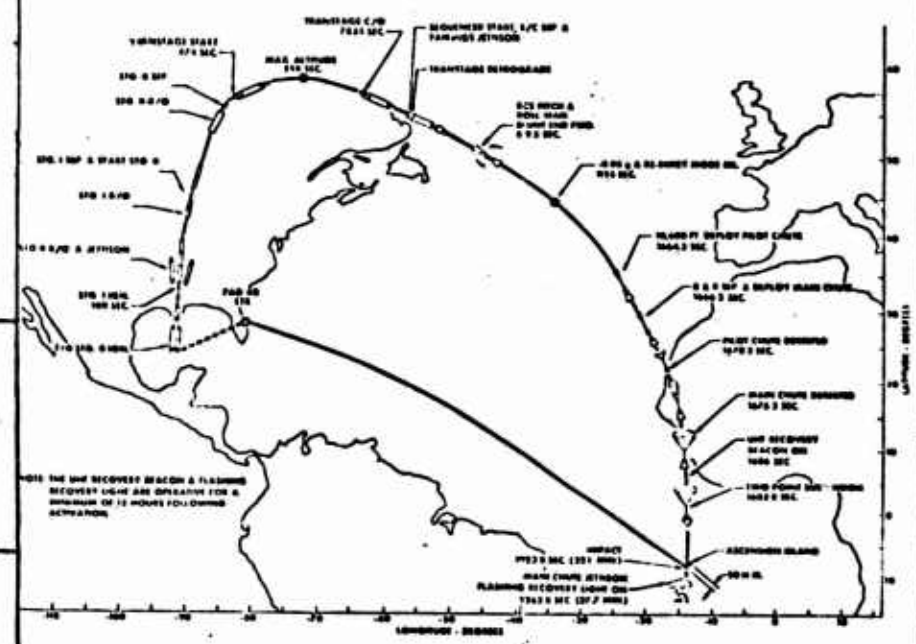
a.

1. ITL System (VIB, SMAB, LAUNCH COMPLEX 40, Rail System)
2. TM Data receiving and recording network.
3. Radar tracking and metric data reco ding network.
4. Atmospheric data gathering and recording network.
5. Recovery forces (aircraft, ships, men, etc.,) and equipment as required to recover the HSQ re-entry module.

c.

d.

12. OPERATIONAL PROFILE/SKETCH OF TACTICAL SITUATION



AFMTC FORM 312-1 JUN 61

1. SECURITY CLASSIFICATION	2. REVISION NO.
(U)	

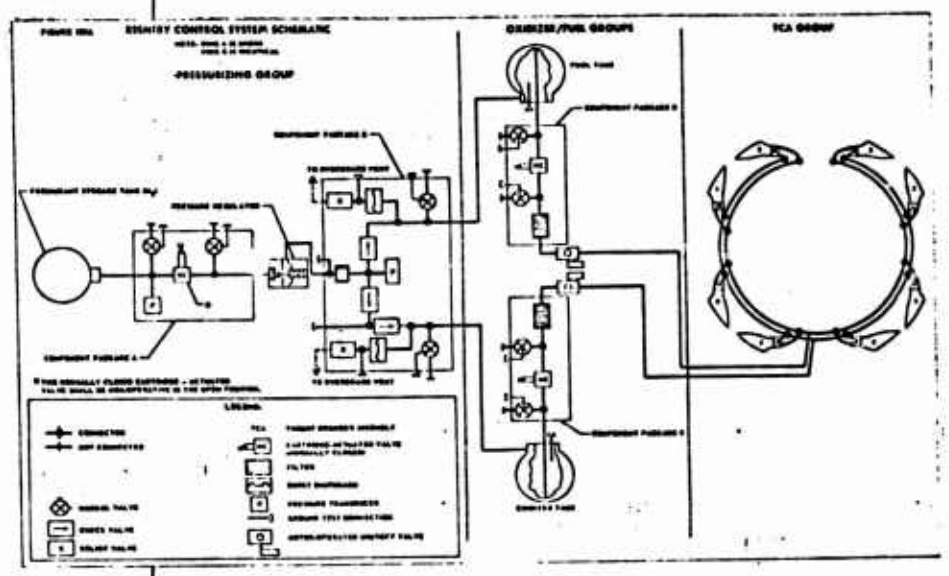
SYSTEM FUNCTIONAL DESCRIPTION

1. SECURITY CLASSIFICATION	4. PAGE 159
(U)	5. DATE 12 Nov. 1965
	6. REPLACES PAGE(S) DATED

2. TEST PROGRAM TITLE	3. PROGRAM REQUIREMENT CODE	7. SYSTEM CODE	8. CONTRACTOR/CONTRACT NUMBER
TIII SLS/MOL-HSQ	3900		MAC

10. (-) SYSTEM/MAJOR COMPONENT	11. FUNCTIONAL CHARACTERISTICS	12. SYSTEM FUNCTIONAL BLOCK DIAGRAM
A. Structure	The HSQ Spacecraft structure contains two elements, the re-entry module and the adapter section. The re-entry module structure is the basic Gemini A, modified to include a circular crew transfer hatch in the heat shield. The adapter is a new structure, in the shape of 15 Deg. frustum of a cone, 56 inches long, with "boiler-plate" steel construction. Normally, the re-entry module structure houses and protects the spacecraft systems and crew from hostile environment during launch, orbit and re-entry. This flight will be unmanned and will demonstrate the protection capability during re-entry. The adapter provides transition and attachment between the re-entry module and the simulated laboratory.	Refer to Page 151 for outline drawing.

SYSTEM FUNCTIONAL DESCRIPTION HSQ SPACECRAFT			1. SECURITY CLASSIFICATION (U)	2. PAGE 159.1 3. DATE 12 November 1965
5. TEST PROGRAM TITLE TIII SLS/MOL-HSQ	6. PROGRAM REQUIREMENT CODE 3900	7. SYSTEM CODE	8. CONTRACTOR/CONTRACT NUMBER MAC	4. REPLACES PAGE(S) DATED

10. SUB SYSTEM/MAJOR COMPONENT	11. FUNCTIONAL CHARACTERISTICS	12. SYSTEM FUNCTIONAL BLOCK DIAGRAM
B. Re-entry Control System (RCS)	The RCS consists of two identical and redundant hypergolic bi-propellant rocket engine systems as shown in figure 159A. The pressurant is gaseous Nitrogen (N_2). The propellants are Nitrogen Tetroxide (N_2O_4) oxidizer and Monomethylhydrazine ($H_2H_3CH_3$) fuel. The function of the RCS is to produce thrust which due to the TCA installation geometry generates attitude control torques. The TCA propellant valves receive command signals from the attitude control electronics subsystem to produce control about the pitch, roll and yaw axes. The cartridge actuated valves serving to isolate the propellants prior to system activation are operated via command from the AGE. The motor operated shut off valves are operated via commands from the sequencer system. Other interfaces include the instrumentation system and AGE.	

AFMTC FORM 31R-2 JUN 61

SYSTEM FUNCTIONAL DESCRIPTION
HSQ SPACECRAFT

5. TEST PROGRAM TITLE	6. PROGRAM REQUIREMENT CODE	7. SYSTEM CODE	8. CONTRACTOR/CONTRACT NUMBER	1. SECURITY CLASSIFICATION	2. PAGE / 3. DATE
TIII SLS/MOL-HSQ	3900		MAC	(U)	159.2 / 12 Nov. 1965

4. REPLACES PAGE(S) DATED

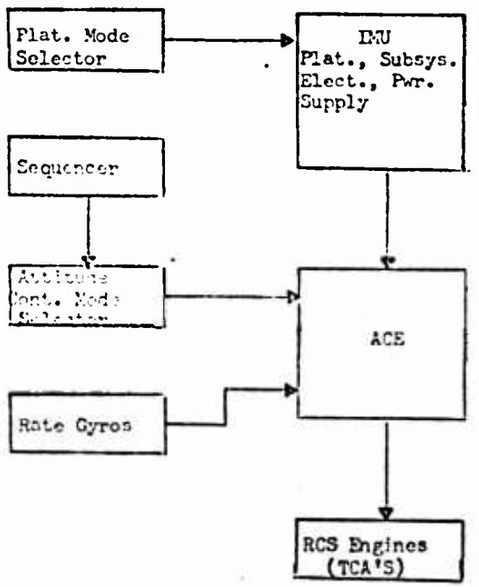
10. SUB SYSTEM/MAJOR COMPONENT	11. FUNCTIONAL CHARACTERISTICS	12. SYSTEM FUNCTIONAL BLOCK DIAGRAM
C. Guidance and Control System	The Guidance and Control System includes electronic and related electrical equipment to provide spacecraft attitude orientation and rate damping. This system inclues (1) Inertial Measurement Unit (IMU), (2) Attitude Control Electronics (ACE), (3) Rate Gyro Packages, (4) Control Circuitry and input devices required for system operation. The IMU consists of a four gimbal, stabilized inertial platform, subsystem electronics and a power supply. The ACE accepts input signals from the IMU, rate gyros and sequencer and converts these signals to fairing commands for the RCS engines. Numerous instrumentation parameters provide system monitor capability.	

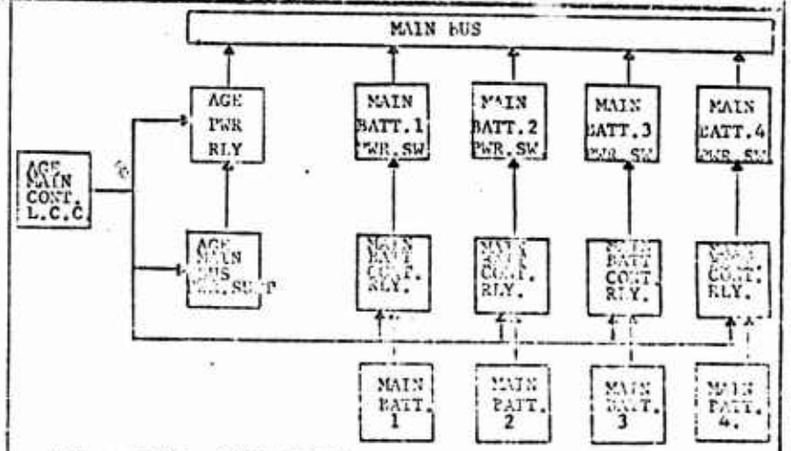
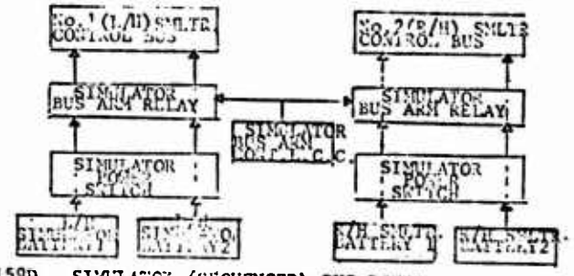
Figure 159B. GUIDANCE AND CONTROL SYSTEM

AFMTC FORM JUN 61 318-2

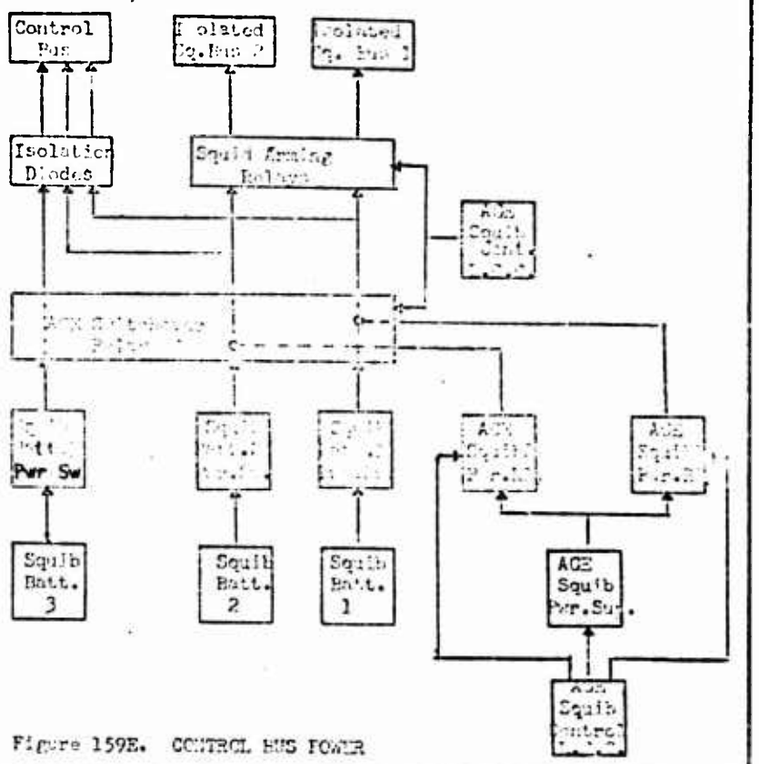
1. SECURITY CLASSIFICATION	9. REVISION NO.
(U)	

SYSTEM FUNCTIONAL DESCRIPTION

5. TEST PROGRAM TITLE	6. PROGRAM REQUIREMENT CODE	7. SYSTEM CODE	8. SECURITY CLASSIFICATION	9. PAGE 159 .3
TIII SLS/MOL-HSQ	3900		(U)	10. DATE 15 Nov. 1965
			11. CONTRACTOR/CONTRACT NUMBER MAC	12. REPLACES PAGES DATED

13. SLB SYSTEM/MAJOR COMPONENT	14. FUNCTIONAL CHARACTERISTICS	15. SYSTEM FUNCTIONAL BLOCK DIAGRAM
D. Electrical System	1. The primary DC electrical power for the spacecraft shall be supplied by silver-zinc batteries. Power source shall be capable of supplying nominal 24VDC power to the Bus for the electrically operated equipment for all phases of the plan[illegible] mission. In addition, sufficient power shall be available for a postlanding period of 12 hours for necessary recovery equipment. No primary AC electrical power system shall be provided for the spacecraft. Devices utilizing AC power shall obtain power from self-contained inverters within the individual systems. The inverters shall not be considered part of the electrical system but shall be inherent parts of the system served. Prior to launch, external electrical power shall be provided to the spacecraft through umbilicals and AGE cables from the AGE power supplies to prevent undue depletion of the spacecraft power supplies. Transfer from AGE power supplies to spacecraft power supplies shall occur before umbilical disconnect. 2. Power control and distribution is divided into these major subsystems: (1) Main Bus, (2) Control Bus, and (3) Simulator (Sequencer) Power Busses. Main Bus Power is supplied by four silver-zinc batteries(Cont.)	 Figure 159C. MAIN BUS POWER  Figure 159D. SIMULATOR (SEQUENCER) BUS POWER

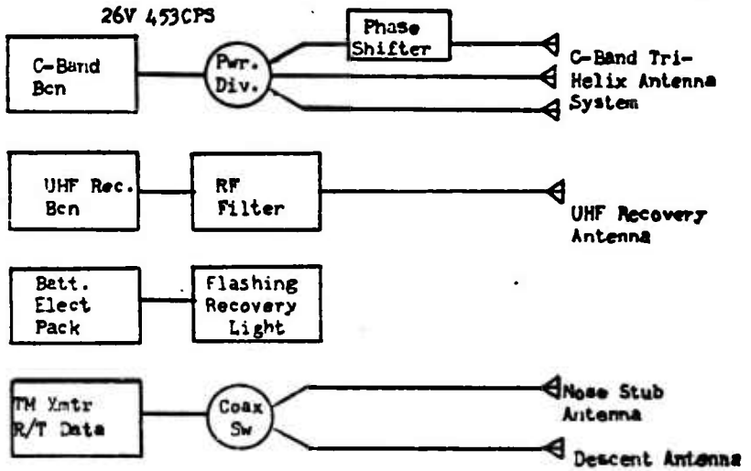
AFMTC FORM JUN 61 31R-2

SUB SYSTEM/MAJOR COMPONENT	FUNCTIONAL CHARACTERISTICS	SYSTEM FUNCTIONAL BLOCK DIAGRAM
D. Electrical System (Continued)	(see Figure 159C). External power for prelaunch testing is supplied via the umbilical. External control of on-board and AGE power is provided. 3. Control Bus Power is supplied by three silver-zinc batteries. (See Figure 159E) This bus is utilized to operate spacecraft control and switching circuitry. Each of the Isolated Squib busses is powered from one of the squib batteries. The squib busses supply power for all spacecraft pyrotechnics. External control of on-board and AGE power is provided. 4. Simulator (Sequencer) Power Busses are supplied by four silver-zinc batteries. (See Figure 159D). These Busses supply power for the automated program.	 Figure 159E. CONTROL BUS POWER

SYSTEM FUNCTIONAL DESCRIPTION
HSQ SPACECRAFT

1. SECURITY CLASSIFICATION	2. PAGE 199, 5
(U)	3. DATE 12 Nov. 1965
	4. REPLACES PAGE(S) DATED

5. TEST PROGRAM TITLE	6. PROGRAM REQUIREMENT CODE	7. SYSTEM CODE	8. CONTRACTOR/CONTRACT NUMBER
T III SLS/MOL-HSQ	3900		MAC

10. SUB SYSTEM/MAJOR COMPONENT	11. FUNCTIONAL CHARACTERISTICS	12. SYSTEM FUNCTIONAL BLOCK DIAGRAM
E. Communication and Tracking System	The communications and tracking system consists of a C-Band Beacon, a telemetry transmitter, a UHF recovery beacon, and a flashing recovery light. The nose stub antenna, the descent antenna, the recovery antenna, and the C-Band tri-helix antenna of the Gemini A have been retained. The functions of the communications and tracking system are: 1. To provide an RF link for real time transmission of spacecraft system parameters to ground stations. 2. To provide RF signals for tracking stations to determine spacecraft location. 3. To provide both RF and visible signals for recovery forces to determine spacecraft location. The first function is accomplished by the TM transmitter. The second function is accomplished by the C-Band Beacon system. The third function is accomplished by the UHF Recovery Beacon and Flashing Recovery Light. In addition, the TM transmitter transmits an unmodulated carrier frequency after touch down to serve as a redundant system to the UHF Recovery Beacon.	

AFMTC FORM 31R-2 JUN 61

1. SECURITY CLASSIFICATION	9. REVISION NO.
(U)	

SYSTEM FUNCTIONAL DESCRIPTION
EGQ SPACECRAFT

1. SECURITY CLASSIFICATION	2. PAGE	189.6
(U)	3. DATE	12 Nov. 1965
	4. REPLACES PAGE(S) DATED	

5. TEST PROGRAM TITLE	6. PROGRAM REQUIREMENT CODE	7. SYSTEM CODE	8. CONTRACTOR/CONTRACT NUMBER
T III SLS/MOL-EGQ	3900		MAC

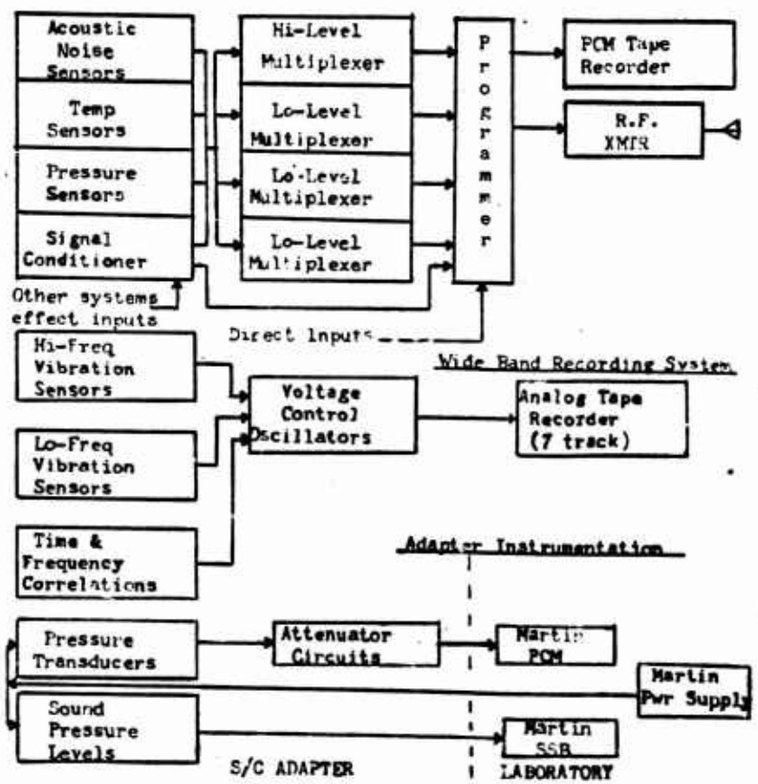
10. SUB SYSTEM/MAJOR COMPONENT	11. FUNCTIONAL CHARACTERISTICS	12. SYSTEM FUNCTIONAL BLOCK DIAGRAM

F. Instrumentation System and Recording

The instrumentation system will consist of existing elements of the NASA Gemini, such as multiplexers, and signal conditioners.

The spacecraft instrumentation system is devoted exclusively to the data acquisition function and performs the following:

a. Accepts signals from the sequential, electrical, reentry module propulsion, and guidance and control systems through sensing devices included as components of these systems;
b. Senses structural signals (e.g., vibrations sound, temperature) aerodynamic pressures, and cabin pressures through transducers included within the instrumentation system;
c. Provides suitable signal-conditioning equipment to adapt signals to the input requirements of coding equipment;
d. Provides suitable equipment to code data for telemetry and recording on tape;
e. Provides tape recording equipment for all telemetry transmissions, thus providing full-time PCM data collection for ground playback and evaluation;
f. Provides equipment for onboard recording and sensing of specific signals (e.g., high-frequency vibration sensors), for which the normal operational and development instrumentation provided is not adequate;



1. SECURITY CLASSIFICATION	9. REVISION NO.
(U)	

AFMTC FORM JUN 61 31R-2

SYSTEM FUNCTIONAL DESCRIPTION HSQ SPACECRAFT			1. SECURITY CLASSIFICATION (U)	2. PAGE 199.7 3. DATE 12 Nov. 1965 4. REPLACES PAGE(S) DATED
5. TEST PROGRAM TITLE T III SIS/MOL-HSQ	6. PROGRAM REQUIREMENT CODE 3900	7. SYSTEM CODE	8. CONTRACTOR/CONTRACT NUMBER MAC	

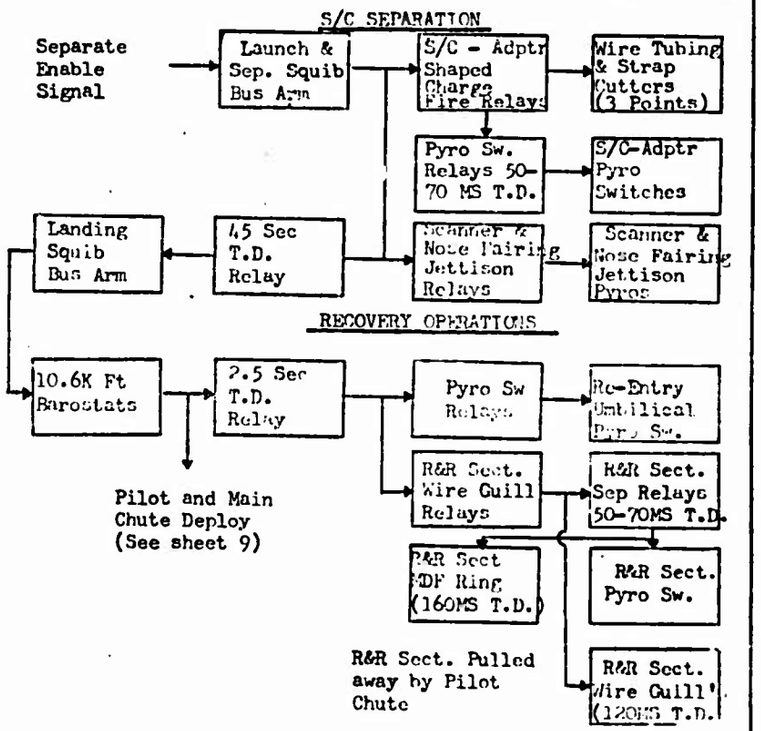
10. SUB SYSTEM/MAJOR COMPONENT	11. FUNCTIONAL CHARACTERISTICS	12. SYSTEM FUNCTIONAL BLOCK DIAGRAM
F. Instrumentation System and Recording (continued)	RF transmission of instrumentation data in the reentry vehicle is via the Communication System Telemetry Transmitter. Transmission of this data is in real time as defined on page 230.	

SYSTEM FUNCTIONAL DESCRIPTION
HSQ SPACECRAFT

1. SECURITY CLASSIFICATION	2. PAGE 199 8
(U)	3. DATE 12 Nov. 1965
	4. REPLACES PAGE(S)
	DATED

5. TEST PROGRAM TITLE	6. PROGRAM REQUIREMENT CODE	7. SYSTEM CODE	8. CONTRACTOR/CONTRACT NUMBER
TIII SLS/MOL-HSQ	3900		MAC

10. SUB SYSTEM/MAJOR COMPONENT	11. FUNCTIONAL CHARACTERISTICS	12. SYSTEM FUNCTIONAL BLOCK DIAGRAM
G. Pyrotechnics and Separation System	The re-entry module contains the parachute deployment ordnance, the RCS valve ordnance, and the R & R section separation ordnance. The Gemini A 3-point attachment ordnance will be used for separation of the re-entry module from the adapter section. See HSQ Pyrotechnic Devices Drawing (PRD Page 156) for location of pyros.	



(U)

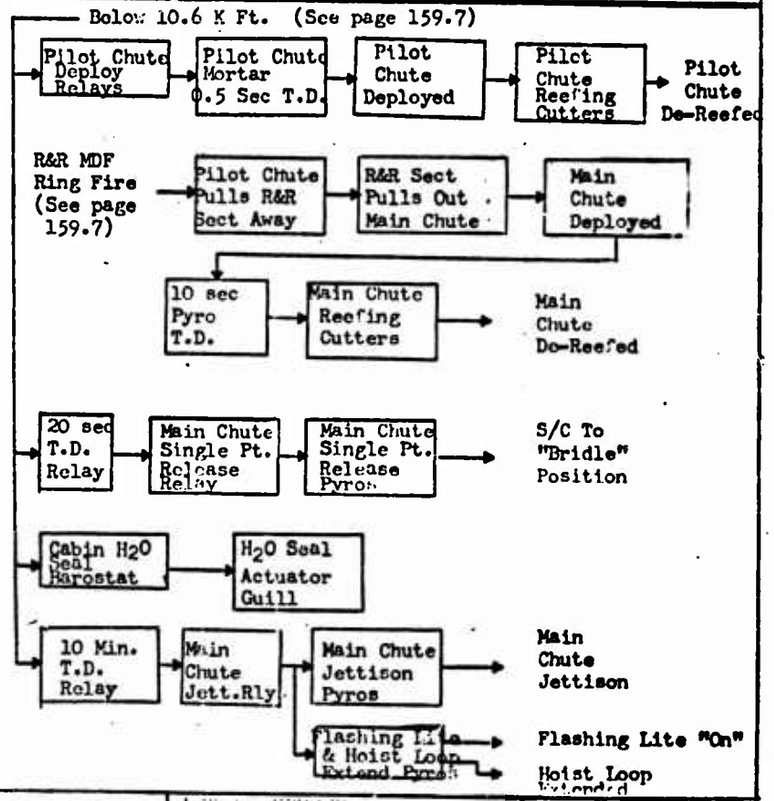
HSQ SPACECRAFT

SYSTEM FUNCTIONAL DESCRIPTION

1. SECURITY CLASSIFICATION	2. PAGE 159.9
(U)	3. DATE 12 Nov. 1965
	4. REPLACES PAGE(S) DATED

5. TEST PROGRAM TITLE	6. PROGRAM REQUIREMENT CODE	7. SYSTEM CODE	8. CONTRACTOR/CONTRACT NUMBER
TIII SLS/MOL-HSQ	3900		MAC

10. SUB SYSTEM/MAJOR COMPONENT	11. FUNCTIONAL CHARACTERISTICS	12. SYSTEM FUNCTIONAL BLOCK DIAGRAM
H. Landing System	The landing system is similar to the NASA Gemini A, consisting of an 18.3 foot diameter pilot parachute, and an 84.2 foot diameter main parachute. Post-landing recovery aids include a flashing light and dye markers.	



(U)

RANGE USERS' INSTRUMENTATION (SURFACE/AIR/OTHERS)

5. SECURITY CLASSIFICATION: (U)			2. PAGE 168.
			3. DATE 12 Nov. 1965
4. TEST PROGRAM: TIII SLS/MOL-HSQ	6. PROGRAM REQUIREMENT NO. 3900	7. SYSTEM CODE	4. REPLACES PAGE(S) — — — — — —
		8. CONTRACTOR: MAC	DATED

10. ITEM NO.	11. TEST CODE	12. BRIEF DESCRIPTION OF ALL RANGE USER'S ELECTRONIC, OPTICAL AND OTHER GROUND INSTRUMENTATION EQUIPMENT TO BE USED DURING THE TEST PROGRAM			
		TYPE	QTY	LOCATION	PURPOSE/FUNCTION
1	HSQ	Launch Control Center (LCC) (Payload Room #1)	1	VIB	Control Center for Preflight Evaluation and Launch.
2		Operational Ground Equipment Van #1 (OGE Van #1)	1	AGE Building	Provide Remote Control and Power for Spacecraft until Launch also Evaluate Guidance and Control System.
3		Operational Ground Equipment Van #2 (OGE Van #2)	1	AGE Building	Evaluation of Sequential, Re-entry Control, Communication, Crewman Simulator and Attitude Control Systems.
4		Telemetry Van (T/M Van)	1	VIB	Preflight Evaluation of Airborne Telemetry System.
5		PCM,discrete function display, EMR, 56-9001B4.	9	LCC	
6		PCM, Digital Analog Display, EMR, 56-9001A4.	17	LCC	
7		Oscillograph, Brush, RF1783-71.	2	OGE Van #1	
8		Recorder TI DM917185-1.		OGE Van #1	
9		Recorder, Modified.	3	OGE Van #2	
10	dSQ	Recorder, Brush, RD 268200.	1	OGE Van #2	

AFMTC FORM 315 JUN 61 PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE.

5. SECURITY CLASSIFICATION: (U)	6. REVISION NO. BY

RANGE USERS' INSTRUMENTATION (SURFACE/AIR/OTHERS)			1. SECURITY CLASSIFICATION (U)	2. PAGE 168 1 3. DATE 12 Nov, 1965 4. REPLACES PAGE(S) — — — — — — DATED
5. TEST PROGRAM TIII SLS/MOL-HSQ	6. PROGRAM REQUIREMENT NO. 3900	7. SYSTEM CODE	8. CONTRACTOR MAC	

10. ITEM NO.	11. TEST CODE	12. BRIEF DESCRIPTION OF ALL RANGE USER'S ELECTRONIC, OPTICAL AND OTHER GROUND INSTRUMENTATION EQUIPMENT TO BE USED DURING THE TEST PROGRAM			
		TYPE	QTY	LOCATION	PURPOSE/FUNCTION
11	HSQ	Receiver, HF, Collins, R-390.	1	OGE Van #2	
12		Spectrum Anal Display, Polarad, SA-84.	1	OGE Van #2	
13		Spectrum Display Unit, Vitro, NC 200.	1	OGE Van #2	
14		Receiver, UHF, Vitro, NC 1501.	1	OGE Van #2	
15		Range Extender, Vitro, REV-100.	1	OGE Van #2	
16		Oscillograph, Brush, RF 1783-71.	2	OGE Van #2	
17		Oscillograph, CEC 5-119P4-36-01.	-	OGE Van #2	
18		Oscillograph, CEC 5-119P4-50.	-	OGE Van #2	
19		Receiver, TM (215-260 mc), DEI, TMR-5A.	2	T/M Van	
20		Vacuum Tube, Voltmeter, HP, 400DR.	1	T/M Van	
21		Multicoupler, TM, DEI, TMC-4.	1	T/M Van	
22		Electronic Counter, HP, 523CR.	1	T/M Van	
23		TM Display Unit, DEI, TDU-4.	1	T/M Van	
24		DC Digital Voltmeter, HP, 405CR.	1	T/M Van	
25	HSQ	Tape Recorder, Ampex FR[illegible] 7 Track Modified.	2	T/M Van	

RANGE USERS' INSTRUMENTATION (SURFACE/AIR/OTHERS)

5. TEST PROGRAM	6. PROGRAM REQUIREMENT NO.	7. SYSTEM CODE	8. CONTRACTOR	1. SECURITY CLASSIFICATION	2. PAGE / 3. DATE / 4. REPLACES PAGE(S)
TIII SLS/MOL-HSQ	3900		MAC	(U)	2 / 12 Nov. 1965 / — — — — — — DATED

10. ITEM NO.	11. TEST CODE	12. BRIEF DESCRIPTION OF ALL RANGE USER'S ELECTRONIC, OPTICAL AND OTHER GROUND INSTRUMENTATION EQUIPMENT TO BE USED DURING THE TEST PROGRAM			
		TYPE	QTY	LOCATION	PURPOSE/FUNCTION
26	HSQ	Oscilloscope, Tektronix, RM35A.	1	T/M Van	
27		PCM Signal Simulator, EMR, 285-0537.	1	T/M Van	
28		Digital Recorder, HP, 561BR.	1	T/M Van	
29		PCM Decom, EMR 285,(5 racks).	1	T/M Van	
30		Power Supply, NJE, QR-18-6.	2	T/M Van	
31		PCM Discrete Function Display, EMR 56-9001B4.	3	T/M Van	
32		Power Supply, NJE, ETC-32-20.	4	T/M Van	
33		PCM Digital to Analog Display, EMR 56-9001A4.	7	T/M Van	
34		Printer Drive, EMR, 56-9001B.	1	T/M Van	
35		Tape Search, Astro Data 6222.	1	T/M Van	
36		Printer Drive, EMR, 56-9001A3.	1	T/M Van	
37		Recorder, Brush, Mark 200,	5	T/M Van	
38		Printer Memory, Fabri Tek, MB-60X8-5-RS.	1	T/M Van	
39		Recorder, EMR, RE 3610,	2	T/M Van	
40	HSQ	Power Supply, NJE, ETC-32-10.	2	T/M Van	

RANGE USERS' INSTRUMENTATION (SURFACE/AIR/OTHERS)			1. SECURITY CLASSIFICATION (U)	2. PAGE 140.3 / 3. DATE 12 Nov. 1965
5. TEST PROGRAM TIII SLS/MOL-HSQ	6. PROGRAM REQUIREMENT NO. 3900	7. SYSTEM CODE	8. CONTRACTOR MAC	4. REPLACES PAGE(S) — DATED —

10. ITEM NO.	11. TEST CODE	12. BRIEF DESCRIPTION OF ALL RANGE USER'S ELECTRONIC, OPTICAL AND OTHER GROUND INSTRUMENTATION EQUIPMENT TO BE USED DURING THE TEST PROGRAM			
		TYPE	QTY	LOCATION	PURPOSE/FUNCTION
41	HSQ	Printer, CDC, 166.	1	T/M Van	
42	↓	Power Supply, EMR, 56-9001U2.	1	T/M Van	
43	↓	Discriminators.	-	T/M Van	
44	↓	Display Driver, EMR, 56-9001B3.	1	T/M Van	
45	↓	Voltage Controlled Oscillator.	-	T/M Van	
46	↓	Line Driver, EMR, 56-9001D4.	1	T/M Van	
47	↓	Line Driver, EMR, 56-9001U3.	1	T/M Van	
48	↓	Computer, Word Display, EMR, 56-9001J3.			
49	HSQ	Discrete Function Patch and Storage, EMR, 56-9001L.			

INSTRUMENTATION - RECEIVERS (SURFACE/AIR/OTHERS)			1. SECURITY CLASSIFICATION (U)	2. PAGE 162
				3. DATE 12 Nov. 1965
5. PROGRAM TITLE TIII SLS/MOL-HSQ	6. PROGRAM REQUIREMENT CODE 3900	7. SYSTEM CODE	8. CONTRACTOR MAC	4. REPLACES PAGE(S) DATED

10. RECEIVER CHARACTERISTICS	11. ANTENNA CHARACTERISTICS	12. PURPOSE AND REMARKS
A. LOCATION: TM Station B. TYPE: Telemetry Receiver C. MODEL: TMR5A D. MANUFACTURER: Defense Electronics E. NO. OF EQUIPMENTS - FIXED OR MOBILE: 2 Fixed F. RECEIVING FREQ. TOLERANCES IN PERCENTAGE: 0.005 G. METHOD OF RECEIVER FREQ. CONTROL: Crystal H. INTERMEDIATE FREQ.: 30 mc, &R.V.F.O. 10 mc I. RCVR. SELECTIVITY IN DB-3DB, 20DB & 60DB: J. RCVR. SENSITIVITY: 3 Microvolt DBM K. LOCAL OSCILLATOR FREQUENCY (ABOVE OR BELOW): 245-290 MC L. SPURIOUS RESPONSE REJECTION: 60 DB M. CODED AND/OR MODULATION: PCM/FM N. ARE THERE AVAILABLE SPECTRUM ANALYSIS REPORTS ON THIS RECEIVER? ☐ YES ☒ NO IF YES, PROVIDE 2 COPIES TO NTRCF	A. LOCATION: VIB B. TYPE: Helix C. MODEL: 59900H D. MANUFACTURER: Andrew Corporation E. DIRECTIVITY AND BEAMWIDTH IN AZIMUTH & ELEVATION - ½ POWER: 30° F. RATE OF ROTATION, INDICATE IF FIXED: Fixed G. FREQ. RANGE OF ANTENNA: 216-260 MC H. POLARIZATION: Right Hand Circular I. IS THERE AVAILABLE A SPECTRUM ANALYSIS REPORT ON THIS ANTENNA? ☒ YES ☐ NO J. ANTENNA GAIN AT USING FREQUENCY: 13 db peak gain.	Used for checkout of telemeter airborne package Open loop operation.

AFMTC FORM 310 JUN 61 PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE.

7. SECURITY CLASSIFICATION (U)	9. REVISION NO.

OCCUPATIONAL HAZARDS - MEDICAL

1. SECURITY CLASSIFICATION	2. PAGE 170
(U)	3. DATE 12 Nov. 1965
	4. REPLACES PAGE(S)
	DATED

5. PROGRAM TITLE	6. PROGRAM REQUIREMENT NO.	7. SYSTEM CODE	8. CONTRACTOR
TIII SLS/MOL-HSQ	3900		MAC

10. ITEM NO.	11. TEST CODE	12. REPORT NAME	13. DATE REPORT SUPPLIED	14. DATE REPORT WILL BE SUPPLIED
1.		* PROPELLANTS AND OTHER TOXIC OR HAZARDOUS MATERIALS.	To be supplied.	
		a. Chemical and Physical Properties.		
		b. Toxicity - Acute and Chronic.		
		c. Recommended First Aid and Treatment.		
2.		* RADIATION HAZARDS.		
		a. Ionising.		
		b. Radio Frequency.		
3.		* ACOUSTIC HAZARDS.		
4.		* BLAST PARAMETERS FOR .4 PSI AND .65 PSI.		
		a. TNT Equivalent.		
		b. Hazard Radii.		
5.		* PROTECTIVE EQUIPMENT NEEDED.		
6.		HUMAN FACTORS ANALYSIS.		

* *Mandatory Report*

AFMTC FORM JUL 63 31W PREVIOUS EDITION OF THIS FORM IS OBSOLETE.

NRD

1. SECURITY CLASSIFICATION	9. REVISION NO.
(U)	

SUMMARY OF FREQUENCY UTILIZATION

1. SECURITY CLASSIFICATION	2. PAGE 190
(U)	3. DATE 12 Nov. 1965
	4. REPLACES PAGE(S) DATED

5. PROGRAM TITLE	6. PROGRAM REQUIREMENT CODE	7. SYSTEM CODE	8. CONTRACTOR
TIII SLS/MOL-HSQ	3900		MC,MAC

10. ITEM NO.	11. TEST CODE	12. FREQUENCY	13. EMISSION CHARACTERISTICS	14. PURPOSE	PROTECTION REQUIRED	16. EST. TIME OF USAGE PRE-OP.	LAUNCH	17. SPECIAL MONITORING REQUESTS
1	HSQ	236.2	PCM/FM	Airframe Telemetry (lab)	± 500 KC of C.F.	2:00	30 Min.	
2	HSQ	231.9	SSB/FM	Acoustic and Vibration Data (Lab)	± 500 KC of C.F.	2:00	30 Min.	
3	HSQ	259.7 MC	PCM/FM	Real Time Gemini TLM	± 500 KC of C.F.	20 hr	1.5 hr	
4	HSQ	5765/ 5690 MC	Pulse Radar 1000 watt max PRF 2000 PPS	C-Band Beacon (Gemini)	normal	---	----	
5	HSQ	243.0 MC	243.0 Pulse/CW 50 Watts Peak	Recovery Beacon (Gemini)	±24.3 kc of C.F.	2 hr	2 hr	This time is estimated and may be longer depending on recovery circumstances. Transmission will occur only in down range impact area.

AFMTC FORM 31X JUN 61

1. SECURITY CLASSIFICATION	9. REVISION NO.
(U)	

HSQ SPACECRAFT	GENERAL METRIC DATA	1. SECURITY CLASSIFICATION (U)	2. PAGE 210
			3. DATE 12 Nov. 1965
5. TEST PROGRAM TITLE TIII SLS/MOL-HSQ	6. PROGRAM REQUIREMENT CODE 3900	7. SYSTEM CODE	8. CONTRACTOR MAC
			4. REPLACES PAGE(S) DATED

10. ITEM NO.	11. TEST CODE	12. COORDINATE SYSTEM PREFERRED, POINT OF ORIGIN, NOTES, REMARKS AND OTHER GENERAL METRIC DATA

GENERAL METRIC DATA

1 HSQ

Coordinate System

The coordinate system to be used for expression of Metric Data will be the Range Rectangular (XYZ) Coordinate System (right handed) with the positive X axis coinciding with the flight azimuth. The point of origin will lie at mean sea level under the gravity vertical centerline of the launch vehicle on Pad 40.

2 HSQ

Position

Position is defined as the position of the most forward part of the flight vehicle.

3 HSQ

Flight Vehicle Attitude

Positive roll is clockwise when viewed from the aft end of the F/V, positive yaw is nose right when viewed from aft end of the F/V, and positive pitch is nose up.

4 HSQ

Data Reduction

AFETR will process and reduce metric data from range-operated optical and electronic tracking devices as necessary to meet the requirements of this document. Estimates of accuracy will be provided for all data. The methods which are employed for smoothing and for establishing accuracy estimates will be provided to the test agency. A breakdown of the estimate of total error into proportional estimates of random, systematic and other errors will be required; also, a tabulation is required which will correlate the accuracies of the processed data with the applicable data accuracy requirements specified in this document. A qualitative explanatory statement in each final data report will be required indicating the discrepancies which contributed to the data inaccuracies.

HSQ SPACECRAFT	GENERAL METRIC DATA	1. SECURITY CLASSIFICATION (U)	2. PAGE 210.1
			3. DATE 12 Nov. 1965
5. TEST PROGRAM TITLE: TIII SLS/MOL-HSQ	6. PROGRAM REQUIREMENT CODE: 3900	7. SYSTEM CODE	8. CONTRACTOR: MAC
			4. REPLACES PAGE(S) DATED

10. ITEM NO.	11. TEST CODE	12. COORDINATE SYSTEM PREFERRED. POINT OF ORIGIN. NOTES. REMARKS AND OTHER GENERAL METRIC DATA
5	HSQ	**Smoothing** Accuracy requirements during powered flight are stated in the absence of smoothing. If the random error components of the total error indicate that improvement can be achieved by smoothing, whereby the stated accuracy requirements can be better satisfied, smoothing intervals of up to a maximum of two seconds will be allowable during powered flight, unless noted otherwise. Smoothing intervals for unpowered flight data may be up to 10 seconds. If smoothing is used, end-point smoothing at trajectory discontinuities is required during the final portion of powered flight. Where smoothing is used copies of both the smoothed and unsmoothed data are mandatory.
6	HSQ	**Editing of Smoothed Data** When smoothing is applied to the reduced data, data editing will be allowed. Obviously incorrect data points may be removed as needed up to a maximum of 25% of the data points collected per second but no more than 10% in any 5-second period. A statement explaining method of editing and actual editing for a given set of data is required.
7	HSQ	**Best Estimate of Trajectory (BET)** Best estimates of position and velocity trajectories mathematically combining data from all applicable instrumentation systems will be required as final data. These best estimates should be accompanied with error estimators as specified in Item 4, page 210. . Coordinate systems to be as specified on page 210, item 1, above.

HSQ SPACECRAFT	GENERAL METRIC DATA	1. SECURITY CLASSIFICATION (U)	2. PAGE 210.2
3. TEST PROGRAM TITLE TIII SLS/MOL-HSQ	5. PROGRAM REQUIREMENT CODE 3900 / 7. SYSTEM CODE	8. CONTRACTOR MAC	3. DATE 12 Nov. 1965 / 4. REPLACES PAGE(S) / DATED

10. ITEM NO.	11. TEST CODE	12. COORDINATE SYSTEM PREFERRED, POINT OF ORIGIN, NOTES, REMARKS AND OTHER GENERAL METRIC DATA
8	HSQ	Accuracy a. Accuracy requirements listed are for unsmoothed position data, and are stated in terms of coordinate dispersions of the cartesian data system. Accuracy requirements listed do not apply to data transmitted in real time since the real time data will not have all known errors removed. b. Accuracy is specified as the measure of the difference between the true value and the computed or reduced value, and is requested to be within the stated limits with a probability of 0.68 (i.e., one sigma accuracy requirements.)
9	HSQ	Timing a. Timing correlation between tracking stations to be accurate within 2 milliseconds. b. Time of lift-off to be accurate to 1 millisecond. c. Time correlation of trajectory data to other flight events and recorded data is to be capable of resolution to 0.01 second (Class I) and to 0.001 second (Class II).

HSQ SPACECRAFT	METRIC LAUNCH DATA	1. SECURITY CLASSIFICATION (U)	2. PAGE 211
			3. DATE 12 Nov. 1965
5. PROGRAM TITLE TIII SLS/MOL-HSQ	6. PROGRAM REQUIREMENT CODE 3900 / 7. SYSTEM CODE	8. CONTRACTOR MAC	4. REPLACES PREVIOUS DATED

10. ITEM NO.	11. TEST CODE	12 DATA REQUIRED	13. INTERVAL (RANGE-ALTITUDE-TIME)	14. DATA POINTS/SEC	15. REDUCED DATA ACCURACY ± CLASS I	CLASS II	CLASS III	16. PURPOSE AND REMARKS
1	HSQ	Position x, y, z	T-2 sec to stage III cut-off.	10/sec or 4/sec (tracking cameras)	.01% Slant Range ± 10 ft.			1. Position, velocity, and acceleration data are required to establish trajectory parameters, to establish launch vehicle and spacecraft performance, and to calculate special and aerodynamic parameters.
2	HSQ	Velocity $\dot{x}$, $\dot{y}$, $\dot{z}$	Same as Item 1	Same as Item 1	±2.0 ft./sec.			
3	HSQ	Acceleration $\ddot{x}$; $\ddot{y}$; $\ddot{z}$; and total acceleration	Same as Item 1	Same as Item 1	±2.0 ft./sec.			
4	HSQ	Special parameters as follows:	Same as Item 1	5/sec				

		ACCURACY
V_e	Magnitude of earth fixed velocity (feet per second).	4 ft./sec.
V_i	Magnitude of space fixed velocity (feet per second).	4 ft./sec.
Y_e	Heading angle of the earth's fixed velocity vector measured in the plane normal to the radius vector, positive and clock-wise from North (degree).	0.01°
Y_i	Heading angle of the inertial velocity vector measured in the plane normal to the radius vector, positive and clock-wise from North (degree).	0.01°

AFMTC FORM 32A JUN 61 PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE.

1. SECURITY CLASSIFICATION (U)	9. REVISION NO.

HSQ SPACECRAFT	METRIC LAUNCH DATA	5. SECURITY CLASSIFICATION (U)	2. PAGE 211.1
			3. DATE 12 Nov. 1965
6. PROGRAM TITLE TIII SLS/MOL-HSQ	6. PROGRAM REQUIREMENT CODE 3900 / 7. SYSTEM CODE	8. CONTRACTOR MAC	4. REPLACES PAGE(S) DATED

10. ITEM NO.	11. TEST CODE	12. DATA REQUIRED	13. INTERVAL (RANGE-ALTITUDE-TIME)	14. DATA POINTS/SEC	15. REDUCED DATA ACCURACY ± CLASS I	CLASS II	CLASS III	16. PURPOSE AND REMARKS
		γ_c Earth fixed flight path angle; the angle between the earth-fixed velocity vector and the plane normal to the radius vector, positive and upward from this plane (degree).						0.03°
		γ_i Inertial flight path angle; the angle between the inertial velocity vector and the plane normal to the radius vector, positive end upward from this plane (degree).						0.03°
		h Altitude above Fischer Ellipsoid of 1960 (feet and nautical miles).						200 ft.
		L_c Geocentric latitude, positive North of equator (degree).						0.0001°
		L_d Geodetic latitude (Fischer Ellipsoid of 1960) (degree).						0.0001°
		λ_e Geographic longitude, positive West of Greenwich meridian (degree).						0.0001°
		S_p Curvilinear distance (arc length) along the earth's surface from the launch pad (nautical miles).						0.1 nm
		$r-\bar{R}$ Altitude above a spherical earth (feet).						200 ft.
		$\bar{R}$ 20,909,931 feet (radius of spherical earth).						
		r Radius from the center of earth to the vehicle (feet).						200 ft.
		SR Slant range from the launch pad to the vehicle (nautical miles).						200 ft.
		T Time from range zero (total seconds, minutes, seconds).						

AFMTC FORM 32A JUN 61 PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE.

5. SECURITY CLASSIFICATION (U)	9. REVISION NO.

HSQ LAUNCH VEHICLE	METRIC LAUNCH DATA	1. SECURITY CLASSIFICATION (U)	2. PAGE 211.2
			3. DATE 12 Nov. 1965
5. PROGRAM TITLE TIII SLS/MOL-HSQ	6. PROGRAM REQUIREMENT CODE 3900 / 7. SYSTEM CODE	8. CONTRACTOR MAC	4. REPLACES PAGE(S) / DATED

10. ITEM NO.	11. TEST CODE	12. DATA REQUIRED	13. INTERVAL (RANGE-ALTITUDE-TIME)	14. DATA POINTS/SEC	15. REDUCED DATA ACCURACY ± CLASS I	CLASS II	CLASS III	16. PURPOSE AND REMARKS
5	HSQ	Launch Vehicle attitude, pitch and yaw	T-2 seconds to stage III cut-off.	10 or limit of data acquisition equipment.		1^{o}		

AFMTC FORM 32A JUN 61 PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE.

7. SECURITY CLASSIFICATION (U)	9. REVISION NO.

METRIC TERMINAL DATA

1. SECURITY CLASSIFICATION	2. PAGE 214
(U)	3. DATE 12 Nov. 1965
	4. REPLACES PAGE(S) DATED

5. PROGRAM TITLE	6. PROGRAM REQUIREMENT CODE	7. SYSTEM CODE	8. CONTRACTOR
TIII SLS/MOL-HSQ	3900		MAC

10. ITEM NO.	11. TEST CODE	12. DATA REQUIRED	13. INTERVAL (RANGE-ALTITUDE-TIME)	14. DATA POINTS/SEC	15. REDUCED DATA ACCURACY ± CLASS I	CLASS II	CLASS III	16. PURPOSE AND REMARKS
1	HSQ	Position X, Y, Z	Stage III Cutoff to LOS	10	10 feet			1. Same as Note 1, Page 211.
2	HSQ	Velocity X, Y, Z, and total vel.	Same as Item 1	Same as Item 1	2 ft/sec			
3	HSQ	Acceleration X, Y, Z, and total accel.	Same as Item 1	Same as Item 1	2 ft/sec^2			
4	HSQ	Special Parameters listed in Item 4, P.211	Same as Item 1	Same as Item 1				
5	HSQ	Aerodynamic parameters of M - Mach Number q_d - Dynamic Pressure (lbs/ft^2) R_n - Reynolds number per ft. ($\frac{1}{ft}$)	Same as Item 1	Same as Item 1		2%		

AFMTC FORM JUN 61 32C PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE.

1. SECURITY CLASSIFICATION	9. REVISION NO.
(U)	

ENGINEERING SEQUENTIAL DATA

1. SECURITY CLASSIFICATION	2. PAGE 220
(U)	3. DATE 12 Nov. 1965
	4. REPLACES PAGE(S)
	DATED

5. TEST PROGRAM	6. PROGRAM REQUIREMENT	7. SYSTEM CODE	8. CONTRACTOR
TIII SLS/MOL-HSQ	3900		MC,MAC

10. ITEM NO.	11. TEST CODE	12. FILM SIZE MM	12. FILM TYPE	13. INTERVAL (RANGE-ALTITUDE-TIME)	14. ITEM TO BE VIEWED OR COVERED	15. PURPOSE AND REMARKS
					Any MOL-HSQ/peculiar requirements will be supplied at a later.	

AFMTC FORM 32E MAY 61 PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE.

NRD

1. SECURITY CLASSIFICATION	9. REVISION NO.
(U)	MT

TELEMETRY DATA

1. SECURITY CLASSIFICATION: (U)

2. PAGE: 230

3. DATE: 12 Nov. 1965

4. REPLACES PAGE(S): DATED

5. PROGRAM TITLE: TIII SLV/MOL-HSQ

6. PROGRAM REQUIREMENT CODE: 3900

7. SYSTEM CODE:

8. CONTRACTOR: MC,MAC

10. ITEM NO.	11. TEST CODE	12. LINK FREQ-MC & TYPE	13. CHANNEL NO.	13. CHANNEL FREQ.-MC	13. CHANNEL DEV -± %	13. CHANNEL NO. OF SEG	14. RATE, MEASURING -RPS, BPS	15. RECORDING INTERVAL (TIME, POSITION OR FLIGHT PHASE) CLASS I	CLASS II	CLASS III	16. DATA ACCURACY FINAL-± %	17. REQUIRED IN REAL TIME RECORDINGS TAPE	PEN	S.S.	OSC	CONS PRES	COM-PUT.	18. PURPOSE AND REMARKS
1	HSQ	231.0 SSB/FM	(See Page 152)				Cont-inuous	T-240 Sec. thru Re-Entry				X		X				Acoustic and Vibration Data
2	HSQ	236.2 PCM/FM					172.8K bps NRZ					X		X				Data from Airborne Instrumentation System
3	HSQ	259.7 PCM/FM (NRZC)					51.2 K BPS	T-240 Sec. to splash				X	X	X	X			1) Average is not expected during the black out portion of flight. 2) Blackout is expected to occur from T+1123 to T+1489 elapsed time. 3) AFETR will be required to receive and record real time telemetry data for post flight evaluation. Recordings are desired from ETR Sta #1, 3, 7, 9.1, and 12 plus two ships and two JC-130 aircraft.

AFMTC FORM 32F JUN 61 PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE.

TELEMETRY DATA				1. SECURITY CLASSIFICATION (U)	2. PAGE 230.1
					3. DATE 12 Nov. 1965
5. PROGRAM TITLE TIII SLS/MOL-HSQ		6. PROGRAM REQUIREMENT CODE 3900	7. SYSTEM CODE	8. CONTRACTOR MC/MAC	4. REPLACES PAGE(S) DATED
					TEST CODE:

Item No.	Test Code	Note	NOTES, REMARKS, SPECIAL INSTRUCTIONS, ETC.
1	All		Telemetry recording will utilize predetection techniques for PCM/CM and SSB/FM data recording. Predetection is a Class I requirement at all supporting AMR stations having predetection capability. Predetection frequency shall be 900 KC. Predetection recording shall be at 120 ips + 0.25%. Wow and Flutter + 0.25% from 0.2 cps to 10 KC, frequency response 3 db from 400 cps to 1 MC. S/N ratio 24 db from 400 cps to 1 MC.
2	All		Original PCM and SSB predetection tapes are required whenever available.
3	All		All magnetic tapes furnished by the AFMTC for data purposes, shall be new, unspliced stock. The data shall be recorded on 7-track, 1/2" wide tapes, using 14" diameter tape reels. Tape type shall be Scotch 951 or equivalent. Prior to usage the magnetic tape shall be run through the recorder in a normal record mode, repacked on the supply reel and degaussed.
4	All		Recordings are required from T-240 seconds to loss of data, at Station 1, and from data acquisition to loss of data at down range stations.
5	All		The signal strength at the receiver AGC must be recorded on magnetic tape for all PCM/FM and SSB/FM rf carriers. All stations supporting the test shall record the RF signals strength and center frequency in real time on pen recorders. These data should be calibrated logarithmically with an accuracy of + 3 db from 1-5000 uv at station 1, 1-1000 uv at down range stations and the ORVs, 1-1500 uv on aircraft. The calibration should be applied to the preamplifier input.
6	All		Magnetic tape recordings of each telemetry link are a Class I requirement (see track assignment pages 230.3 - 203.4).
7	All		Precision reels and electromagnetic shielded cans shall be used for PCM serial and SSB magnetic tapes.
8	All		The preflight telemetry calibration of the SSB/FM will be generated by MC during the last 90 seconds prior to lift-off, and recorded by AFMTC on the tape listed under item 15 page 230.4.
9	All		It is requested that AFMTC generate and record a 100 KC wow and flutter compensation signal to be recorded on all magnetic tapes as stated in the tape formats listed on pages 230.3 - 230.4.

TELEMETRY DATA				1. SECURITY CLASSIFICATION (U)	2. PAGE 230.2
					3. DATE 12 Nov. 1965
5. PROGRAM TITLE TIII SLS/MOL-HSQ	6. PROGRAM REQUIREMENT CODE 3900	7. SYSTEM CODE	8. CONTRACTOR MC/MAC		4. REPLACES PAGE(S) DATED
					TEST CODE:

ITEM NO.	TEST CODE	NOTE	NOTES, REMARKS, SPECIAL INSTRUCTIONS, ETC.
10	All		It is required that analog records of the TLM-18 azimuth and elevation, orientation indications and tracking error signals from all stations be recorded.
11	All		PCM/FM and SSB/FM telemetry data are to be recorded on magnetic tape recorders having a 1 MC minimum band width for approximately 15 minutes per test for CST.
12	All		All receivers shall have a bandpass of 500 KC and intermediate frequency of 900 KC
13	All		One ship, to be identified by AFETR, will be required to monitor the end of stage III burn, Gemini separation, and stage III retro. Possible location of this ship would be 14.2° N. latitude and 48.9°N. longitude.

TELEMETRY DATA				1. SECURITY CLASSIFICATION (U)	2. PAGE 230.3
					3. DATE 12 Nov. 1965
5. PROGRAM TITLE TIII SLS/MOL-HSQ		6. PROGRAM REQUIREMENT CODE 3900	7. SYSTEM CODE	8. CONTRACTOR MC/MAC	4. REPLACES PAGE(S) DATED
					TEST CODE:

ITEM NO.	TEST CODE	NOTE	NOTES, REMARKS, SPECIAL INSTRUCTIONS, ETC.
14	All		Telemetry tape format for flight test data transmitted over the PCM/FM telemetry links described on pages 152.1 and 152.2.

PRIMARY RECORDER

TRACK

1. a. 1 pps timing (B-1), 7.35 KC RDB, Channel 11
   b. 100 pps timing (D-5), 22 KC RBD, Channel A
   c. Voice annotation, 40 KC RBD Channel C and 70 KC RBD, Channel E
2. Receiver A - Flight Test Data - Sim Lab PCM/FM (left hand circular polarization)
3. Receiver B - Gemini PCM/FM (right hand circular polarization)
4. Unassigned.
5. Receiver C - Flight Test Data - Sim Lab PCM/FM (right hand circular polarization)
6. Receiver D - Gemini PCM/FM (left hand circular polarization)
7. a. Signal Strength of Receiver C 5.4 KC RBD Channel 10
   b. Signal Strength of Receiver D, 10.5 KC RBD Channel 12
   c. 100 KCreference (wow and flutter), direct
   d. 17 KC Speedlock, direct

TELEMETRY DATA				1. SECURITY CLASSIFICATION (U)	2. PAGE 230.4 3. DATE 12 Nov. 1965 4. REPLACES PAGE(S) DATED
5. PROGRAM TITLE TIII SLS/MOL-HSQ		6. PROGRAM REQUIREMENT CODE 3900	7. SYSTEM CODE	8. CONTRACTOR MC/MAC	TEST CODE:

ITEM NO.	TEST CODE	NOTE	NOTES, REMARKS, SPECIAL INSTRUCTIONS, ETC.
15	All		Telemetry format for vibration and acoustic data transmitted over sim lab SSB/FM telemetry link described on Page 152 should be as follows: PRIMARY RECORDER TRACK 1. Unassigned 2. Receiver E - Sim Lab acoustic and vibration SSB/FM (right hand circular polarization) 3. a. 1 pps timing (B-1), 7.35 KC RDB Channel 11 b. 100 pps timing (D-5), 22 KC RBD Channel A c. Voice annotation, 40 KC RDB Channel C and 70 KC RDB Channel E 4. Receiver E - Sim Lab Acoustic and Vibration SSB/FM (right hand circular polarization) 5. Unassigned 6. Receiver F - Sim Lab Acoustic and Vibration SSB/FM (Left hand circular polarization) 7. a. Signal strength of Receiver G, 5.4 KC RDB Channel 10 b. Signal strength of Receiver H, 10.5 KC RDB Channel 12 c. 100 KC reference (wow and flutter), direct d. 17 KC Speedlock, direct NOTE: Standard AFETR practic of providing a backup recorder is requested. Data will only be required from one source.

Spacecraft	OTHER DATA	1. SECURITY CLASSIFICATION (U)	2. PAGE 240
			3. DATE 12 Nov. 1965
5. PROGRAM TITLE: TIII SLS/MOL-HSQ	6. PROGRAM REQUIREMENT CODE: #3900	7. SYSTEM CODE	8. CONTRACTOR: MAC
			4. REPLACES PAGE(S) DATED

10. ITEM NO.	11. TEST CODE	12. DATA REQUIRED, INTERVAL, ACCURACY, PURPOSE, REMARKS, ETC.
1	HSQ	Telemetry data plus data which is not transmitted in real time is recorded on magnetic tape by a tape recorder on-board the HSQ Spacecraft. This tape must be removed from the spacecraft, after recovery, and returned to MAC personnel at CKAFS within 10 calendar days after launch.
2		Real time radar plotting boards, which are in addition to any Range Safety plotting boards, are required in a suitable location to provide range vs altitude, altitude vs time, and velocity vs time, from lift-off to the loss of radar track at the fartherest downrange station from which this track may be sent in real time to Station #1.
3		Signal strength and AGC recordings of the radar tracking signals as received at ETR Stations #1, 3, 7, 9.1, 12 and instrumentation ships are required.
4		Recordings showing the telemetry signals deviation from center frequency are also required from ETR Stations #1, 3, 7, 9.1, 12 and instrumentation ships.
5		A Preliminary Test Report showing a preliminary estimate of data coverage, AOS and LOS for the various stations, lift-off time, and impact time is required within two hours after launch for use during the post-flight review meeting.
6		A Recovery Report is required within 15 WD after termination of the test. This report should include, but should not be limited to: (a) The location of each component of the recovery force at lift-off. (b) The touchdown time, and impact point. (c) Time history covering contact and/or loss of contact with the re-entry vehicle by each component of the recovery force. (d) Identifying members (air-sea type) and their approximate location with respect to the re-entry module during times the re-entry vehicle is out of contact. Probable reasons for no contact are desired. (e) Activities and times required for: (1) Air and sea recovery forces to locate and reach the re-entry vehicle. (2) Deployment of para-divers and flotation gear. (3) Attachment of flotation gear. (4) Recovery and transport of the re-entry vehicle to ETR station #12.
	HSQ	

Spacecraft	OTHER DATA	1. SECURITY CLASSIFICATION (U)	2. PAGE 240.1
			3. DATE 12 Nov 1965
			4. REPLACES PAGE(S) DATED
5. PROGRAM TITLE TIII SLS/MOL-HSQ	6. PROGRAM REQUIREMENT CODE 3900	7. SYSTEM CODE	8. CONTRACTOR MAC

10. ITEM NO.	11. TEST CODE	12. DATA REQUIRED, INTERVAL, ACCURACY, PURPOSE, REMARKS, ETC.
7	HSQ	Color Motion Picture (documentary) coverage of the recovery activities starting with re-entry vehicle sighting should be as complete as possible within the limitations of operating conditions.
8		Extracts from the log of the operators of the telemetry receiving equipment at Stations 1, 3, 7, 9.1, 12 and instrumentation ships are required. These extracts should show: (a) Time of acquisition of signal (AOS). (b) Time of LOS (Loss-of-Signal). (c) Antenna azimuth and elevation at both AOS and LOS. (d) Unusual events, signals, etc., as observed.
9		Extracts are required from the tracking radar operators' logs for each of the Stations #1, 3, 7, 9.1, 12 and the instrumentation ships. These extracts should show: (a) Peak Power (b) Pulse Width (c) Type Coverage (Beacon or Skin) (d) Antenna Polarization. (e) PRF (f) Coding, if any (g) Noise figure of the Radar (h) Acquisition Data (1) Antenna Azimuth in mils at AOS and LOS (2) Antenna Elevation in mils at AOS and LOS (3) Slant Range of vehicle in N.M. at AOS and LOS (i) Deviations, as observed, from nominal frequency
10	HSQ	An electrical signal denoting "first motion" of the launch vehicle is required from an appropriate source delivered to the MAC telemetry van. This signal will then be imposed upon tape recordings, etc, as a timing signal. (28v nominal is desired).

HSQ SPACECRAFT	FORECASTS			1. SECURITY CLASSIFICATION (U)	2. PAGE 310 3. DATE 12 Nov. 1965 4. REPLACES PAGE(S) DATED
5. PROGRAM TITLE TIII SLS/MOL-HSQ		6. PROGRAM REQUIREMENT CODE 3900	7. SYSTEM CODE	8. CONTRACTOR MAC	

10. ITEM NO.	11. TEST CODE	12. TIME REQUIRED	13. FORECAST PARAMETERS (TYPE DATA, SURFACE, UPPER AIR, ALTITUDE, INTERVAL)	14. VALID TIME	15. LOCATION	16. PURPOSE AND REMARKS
1	HSQ	T-12H	FORECAST PARAMETERS: Surface parameters, such as wind, visibility, cloud cover, precipitation, temperature, etc., will be required for the launch area and the landing area to predict the feasibility of launch and recovery operations. Upper air parameters will be required to predict exit and re-entry conditions. The 4th Weather GR., Det. 11, PAFB, Florida, will provide forecasts for the planned landing area and along the flight path, as well as forecasts for the launch area that must be originated prior to F-2 days, and will be available for consultation during launch and recovery activities. Times when weather parameters will be required and minimum conditions at given locations will be specified in the applicable OR for each test.	T-12H to T+12H	Recovery Area	Assure positive recovery conditions within 12 hour maximum recovery time limit.

AFMTC FORM 33 JUN 61 PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE.

1. SECURITY CLASSIFICATION (U)	9. REVISION NO.

FORECASTS

5. PROGRAM TITLE	6. PROGRAM REQUIREMENT CODE	7. SYSTEM CODE	8. CONTRACTOR	1. SECURITY CLASSIFICATION	2. PAGE / 3. DATE / 4. REPLACES PAGE(S)
TIII SLS/MOL-HSQ	3900		MAC	(U)	310 1 / 12 Nov. 1965 / DATED

10. ITEM NO.	11. TEST CODE	12. TIME REQUIRED	13. FORECAST PARAMETERS (TYPE DATA, SURFACE, UPPER AIR, ALTITUDE, INTERVAL)	14. VALID TIME	15. LOCATION	16. PURPOSE AND REMARKS
2	HSQ	F-5D	Forecasts of the surface conditions, such as wind, visibility, cloud cover, precipitation, temperature, etc., are required for the launch area and for the primary boost phase abort impact areas. For water landing areas, forecasts of sea conditions are required, including the average wave height and period, and the wave spectrum if possible.	F-5D through T+12	Launch Recovery and flight path areas.	To determine feasibility of selected launch date and time.
3	HSQ	F-3D	Confirm or modify F-5D Forecast.	F-3D through T+12	Same	Same
4	HSQ	F-2D	Confirm or modify F-3D forecast and include upper air wind conditions to 50,000 feet.	F-2D through T+12	Same	Same
5	HSQ	F-1D through S/C Retrieval	Confirm or modify F-2D forecast and include upper air pressure, humidity, temperature, and winds to 50,000 ft. Forecasts of the sea surface conditions in the recovery area for the next day and for the nominal recovery day are required at this time. A synoptic weather briefing of weather conditions is required about the flight path with emphasis on severe weather, such as hurricanes and typhoons which would preclude safe recovery. Forecasts of surface conditions will include ground conditions, such as dry, muddy, flooded, etc., and/or sea conditions.	F-1D through S/C Retrieval	Launch and landing areas.	To determine feasibility of selected launch date and time, and recovery date.

FORECASTS

1. SECURITY CLASSIFICATION	2. PAGE 310.2
(U)	3. DATE 12 Nov. 1965
	4. REPLACES PAGE(S) DATED

5. PROGRAM TITLE	6. PROGRAM REQUIREMENT CODE	7. SYSTEM CODE	8. CONTRACTOR
TIII SLS/MOL-HSQ	3900		MAC

10. ITEM NO.	11. TEST CODE	12. TIME REQUIRED	13. FORECAST PARAMETERS (TYPE DATA, SURFACE, UPPER AIR, ALTITUDE, INTERVAL)	14. VALID TIME	15. LOCATION	16. PURPOSE AND REMARKS
6	HSQ	T-6H through S/C retrieval.	Confirm or modify F-1D forecasts.	T-6 hours and as noted.	Same	Final confirmation of selected launch time.
7	HSQ	F-Day through S/C Retrieval	Landing area forecast as defined above.	As required.	Landing areas	To determine feasibility of selected landing date and area.
8	HSQ	Landing -6H	Same as above.	F-Day and as required.	Same	Confirm landing time and area feasibility.

AFMTC FORM 33 JUN 61 PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE.

1. SECURITY CLASSIFICATION	9. REVISION NO.
(U)	

OBSERVATIONS

1. SECURITY CLASSIFICATION: (U)
2. PAGE: 320
3. DATE: 12 Nov. 1965
4. REPLACES PAGE(S): DATED
5. PROGRAM TITLE: TIII SLS/MOL-HSQ
6. PROGRAM REQUIREMENT CODE: 3900
7. SYSTEM CODE:
8. CONTRACTOR: MAC

10. ITEM NO.	11. TEST CODE	12. DATA REQUIRED	13. SURFACE				14. UPPER AIR						15. PURPOSE AND REMARKS
			TIME -MIN	LOCATION	ACCURACY -±	CLASS	TIME -MIN	LOCATION	INTERVALS	ALT - K FT	ACCURACY -±	CLASS	
1	HSQ	Wind velocity Wind direction Density Pressure Temperature	T-0 ± 1H	CKAFS	Density to ±2%	II	T-0 ± 1H	Launch Area	1000 ft.	Measured to 270 and extrapolated to 300.	Desired accuracy for density is to be within 2%.	II	Rocket sounding from upper limit of rawinsonde data to at least 270,000 feet.
2	HSQ	Wind velocity Wind direction Density Pressure Temperature	Time of landing ± 1H	Re-entry Area	Density to ±2%	II	Time of landing ± 1 hour	Reentry Area	1000 ft	Measured to 270 and extrapolated to 300.	Desired accuracy for density is to be within 2%.	II	Rocket sounding from upper limit of rawinsonde data to at least 270,000 feet.
3	HSQ	Wind velocity Wind direction Density Pressure Temperature	T-0 (-) 0 + 1H	Two ETR stations between Cape and Ascension	Density to ± 2%	II	T-0 (-) 0 + 1H	Two ETR stations between Cape and Ascension	1000 ft	Measured to 270 and extrapolated to 300.	Density to ± 2%.	II	Atmospheric properties along the flight path are required from the point of reentry to splash. One intermediate station should be selected as near the reentry point (approx. 800 n mi up-range of sta. 12) as possible. The other should be selected near mid-range to permit a mathematical construction of a complete flight-path atmosphere (lift-off thru splash) in the event measured values cannot be taken on the point of reentry.

AFMTC FORM JUN 61 33A PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE.

MRD

1. SECURITY CLASSIFICATION: (U)
8. REVISION NO.

OBSERVATIONS

1. SECURITY CLASSIFICATION: (U)
2. PAGE: 320.1
3. DATE: 12 Nov. 1965
4. REPLACES PAGE(S): DATED
5. PROGRAM TITLE: TIII SLS/MOL-HSQ
6. PROGRAM REQUIREMENT CODE: 3900
7. SYSTEM CODE:
8. CONTRACTOR: MAC

10. ITEM NO.	11. TEST CODE	12. DATA REQUIRED	13. SURFACE				14. UPPER AIR						15. PURPOSE AND REMARKS
			TIME -MIN	LOCATION	ACCURACY -±	CLASS	TIME -MIN	LOCATION	INTERVALS	ALT - K FT	ACCURACY -±	CLASS	
4	HSQ	Wind velocity Wind direction Pressure Temperature Speed of Sound Density Relative humidity Absolute humidity Cloud cover and type Index of refraction.	T-0 T+12H	Landing Area - ETR Sta. 12	± 2%	II	Time of landing + 12H	Reentry and Landing Area	Standard Rawinsonde Intervals 1000 ft	Maximum obtainable 50	Best Available ±2%	II	In the event that spacecraft has not been recovered.

AFMTC FORM 33A JUN 61 PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE.

1. SECURITY CLASSIFICATION: (U)
9. REVISION NO.

MINIMA			1. SECURITY CLASSIFICATION (U)	2. PAGE 330 3. DATE 12 Nov. 1965 4. REPLACES PAGE(S) DATED
5. PROGRAM TITLE TIII SLS/MOL-HSQ	6. PROGRAM REQUIREMENT CODE 3900	7. SYSTEM CODE	8. CONTRACTOR MAC	

10. ITEM NO.	11. TEST CODE	12. MINIMA (MINIMUM CLOUD COVERAGE, SURFACE OR UPPER WIND VELOCITIES OR SHEARS, ICING, SEA STATE, ETC.)
		The minima for the HSQ Gemini are as follows:
1	HSQ	Surface wind (maximum velocity in launch area): 40 mph with predicted winds in excess of 60 mph.
2	HSQ	Surface wind (maximum velocity in downrange recovery area): Surface wind velocity should be 30 knots or less.
3	HSQ	Maximum wind velocity at altitude: 300 fps.
4	HSQ	Maximum wind shear: .037 fps/ft. combined with maximum wind velocity.
5	HSQ	Icing: None
6	HSQ	State of sea (recovery area): See Item 2.
7	HSQ	State of sea (launch abort recovery region): See Item 1 and 2.
8	HSQ	Cloud cover: Information concerning cloud cover in the launch area as observed by long focal length cameras will be supplied to the Operations Director by the Network Controller in the Mission Control Center.
		Note: Notify Operations Director if any of the above conditions are forecast.

AFMTC FORM JUN 61 338 PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE.

1. SECURITY CLASSIFICATION (U)	9. REVISION NO.

COMMUNICATIONS - GENERAL			1. SECURITY CLASSIFICATION: UNCLASSIFIED	2. PAGE 410 3. DATE 12 Nov. 1965 4. REPLACES PAGE(S) DATED
5. TEST PROGRAM: TIII SLS/MOL-HSQ	6. PROGRAM REQUIREMENT NO. 3900	7. SYSTEM CODE	8. CONTRACTOR: MC	

10. ITEM NO.	11. TEST CODE	12. GENERAL DESCRIPTION OF INTER-STATION COMMUNICATIONS
	All	All requirements are identified in detail in Contract Document SSD-CR-63-215, "Integrated Communications Requirements Plan."

AFMTC FORM 34L NOV 61 PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE.

1. SECURITY CLASSIFICATION: UNCLASSIFIED	9. REVISION NO. MT

Spacecraft	COMMUNICATIONS - GENERAL			1. SECURITY CLASSIFICATION (U)	2. PAGE 410.1
					3. DATE 12 Nov 1965
5. TEST PROGRAM TIII SLS/MOL-HSQ		6. PROGRAM REQUIREMENT NO. 3900	7. SYSTEM CODE	8. CONTRACTOR MAC	4. REPLACES PAGE(S) — — — — — — — — DATED

10. ITEM NO.	11. TEST CODE	12. GENERAL DESCRIPTION OF INTER-STATION COMMUNICATIONS
1	HSQ	Under Sea Cable - The telemetry data (51.2 KB-NRZC PCM format) recorded at ETR stations #5, #7, & #9.1 shall be transmitted via submarine cable to ETR sta. #1 for recording on magnetic tape. This transmission shall be accomplished within 6 to 8 hours after the HSQ spacecraft has impacted.
2	HSQ	High Frequency Radio - This support is required to handle Flight Progress Reports and general voice communications between ETR stations 1, 3, 7, 9.1 & 12.
3	HSQ	VHF & UHF Radio - This support is required for Voice Communications between recovery aircraft, ships and ETR Station #12.
4	HSQ	Green Phones - This support requirement is defined on page 432.1.
5	HSQ	MITOC - This support requirement is defined on 431 series of pages.

NETWORK DRAWING (Radio and Wire)			1. SECURITY CLASSIFICATION: UNCLASSIFIED	2. PAGE 411
				3. DATE 12 Nov. 1965
5. TEST PROGRAM: TIII SLS/MOL HSQ	6. PROGRAM REQUIREMENT NO. 3900	7. SYSTEM CODE	8. CONTRACTOR: MC	4. REPLACES PAGE(S) DATED — — — — — — — —
10. COMMUNICATIONS NETWORK DRAWING				TEST CODE: ALL

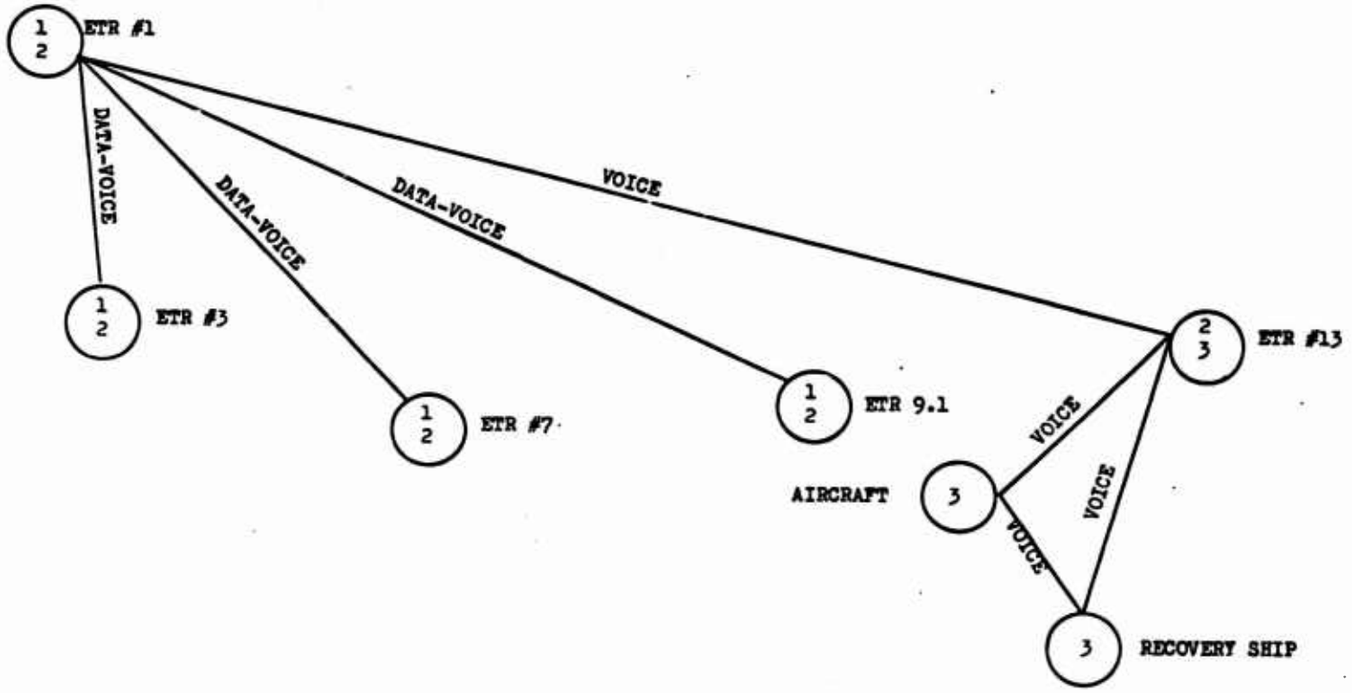
All requirements are identified in detail in Contract Document SSD-CR-63-215, "Integrated Communications Requirements Plan."

AFMTC FORM 34K JUN 61 REPLACES AFMTC FORM 34, JUN 59, WHICH IS OBSOLETE.

1. SECURITY CLASSIFICATION	9. REVISION NO.
UNCLASSIFIED	NT

NETWORK DRAWING (Radio and Wire)			1. SECURITY CLASSIFICATION (U)	2. PAGE 411.1
				3. DATE 12 Nov 1965
5. TEST PROGRAM TIII SLS/MOL-HSQ	6. PROGRAM REQUIREMENT NO. 3900	7. SYSTEM CODE	8. CONTRACTOR MAC	4. REPLACES PAGE(S) — — — — — — — — DATED
10. COMMUNICATIONS NETWORK DRAWING				TEST CODE: HSQ

Note: The numbers within the circles denote the capability indicated by corresponding item numbers on Page 410.



AFMTC FORM 34K JUN 61 REPLACES AFMTC FORM 34, JUN 59, WHICH IS OBSOLETE.

1. SECURITY CLASSIFICATION (U)	9. REVISION NO. MT

COMMUNICATIONS RECORDINGS

1. SECURITY CLASSIFICATION: UNCLASSIFIED			2. PAGE 412
			3. DATE 12 Nov. 1965
			4. REPLACES PAGE(S) — — — — — — — — DATED
5. PROGRAM TITLE: TIII SLS/MOL-HSQ	6. PROGRAM REQUIREMENT CODE: 3900	7. SYSTEM CODE	8. CONTRACTOR: MC

10. ITEM NO.	11. TEST CODE	12. REQUIRED RECORDINGS	13. TIME CORRELATION YES	13. TIME CORRELATION NO	14. DURATION OF RECORDING	15. PURPOSE AND REMARKS
	All	All requirements are identified in detail in Contract Document SSD-CR-63-215, "Integrated Communications Requirements Plan."				

AFMTC FORM SEP 61 34F PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE.

NRD

1. SECURITY CLASSIFICATION: UNCLASSIFIED

9. REVISION NO.

COMMUNICATIONS RECORDINGS

5. PROGRAM TITLE: TIII SLS/MOL-HSQ			6. PROGRAM REQUIREMENT CODE: 3900	7. SYSTEM CODE:	8. CONTRACTOR: MAC	1. SECURITY CLASSIFICATION: (U)	2. PAGE 412.1 3. DATE 12 Nov. 1965 4. REPLACES PAGE(S) — — — — — — DATED

10. ITEM NO.	11. TEST CODE	12. REQUIRED RECORDINGS	13. TIME CORRELATION YES	13. TIME CORRELATION NO	14. DURATION OF RECORDING	15. PURPOSE AND REMARKS
1	HSQ	Radio communication between ETR Sta. #1 and members of the Recovery Force	X		Entire recovery period	Time correlation may be by voice. Instructions to recovery forces are of particular interest.
2	HSQ	Radio communications between various members of the Recovery Force.	X		Entire recovery period	Time correlation may be by voice. Suggest recordings be made of Sta. #12.
3	HSQ	MITOC recordings for HSQ Nets 1 thru 20 plus launch vehicle TC and SRO's Nets.	X		T-120 min. to termination	Time correlation may be by voice. Test analysis and data correlation.
4	HSQ	Radiation check-out test during pre-launch testing.	X		As required during testing	Test analysis and data correlation (parameters to be recorded will be defined later).

AFMTC FORM SEP 61 34F PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE.

NRD

1. SECURITY CLASSIFICATION: (U)	9. REVISION NO.

RADIO				1. SECURITY CLASSIFICATION: UNCLASSIFIED	2. PAGE: 420
					3. DATE: 12 Nov. 1965
					4. REPLACES PAGE(S) DATED
5. PROGRAM TITLE: TIII SLS/MOL-HSQ	6. PROGRAM REQUIREMENT CODE: 3900	7. SYSTEM CODE:	8. CONTRACTOR: MC		

10. ITEM NO.	11. TEST CODE	12. USE: ADMIN.	12. USE: OPS	13. TYPE OF SERVICE	14. QTY	15. LOCATION OF OPERATING TERMINALS: STATION	BLDG.	ROOM	STATION, BLDG., ROOM, ETC.	16. PURPOSE AND REMARKS
	All	All requirements are identified in detail in Contract Document SSD-CR-63-215, "Integrated Communications Requirements Plan."								

AFMTC FORM 34 SEP 61 PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE.

1. SECURITY CLASSIFICATION: UNCLASSIFIED	9. REVISION NO.

Spacecraft	WIRE	1. SECURITY CLASSIFICATION: (U)	2. PAGE 430
			3. DATE 12 Nov. 1965
			4. REPLACES PAGE(S) DATED
5. PROGRAM TITLE: TIII SLS/MOL-HSQ	6. PROGRAM REQUIREMENT CODE: #3900	7. SYSTEM CODE	8. CONTRACTOR: MAC

10. ITEM NO.	11. TEST CODE	12. USE ADMIN.	12. USE OPS	13. TYPE OF SERVICE	14. QTY	15. LOCATION OF OPERATING TERMINALS STATION	BLDG.	ROOM	STATION, BLDG., ROOM, ETC.	16. PURPOSE AND REMARKS
1	HSQ		X	A2A Equalized Lines	2PR	From	AGE Bldg.	B-4	Pad 40 DTT Room to VIB FM Hardline from S/C	FM-Equal flat ± 1db from 200 cps to 100kc. Terminated at each end 75 ohm unbalanced.
						To	VIB	244		
2	HSQ		X	A2A Equalized Lines	2PR	From	AGE Bldg.	B-4	Pad 40 DTT Room to VIB	PCM 102.4kc split phase terminate each end 125 ohm balanced to ground. Grounds to be isolated.
						To	VIB	244		
3	HSQ		X	A2A Equalized Lines	3PR	From	AGE Bldg	B-4	Pad 40 DTT Room to VIB	VCO 600kc carrier flat ± 1 db 300kc to 900kc. Terminated each end 125 ohms balanced to ground. Ground to be isolated.
						To	VIB	244		
4	HSQ		X	A2A Equalized Lines	1PR	To	VIB	244	Tel II or III Recvr to VIB	PCM 102.4KC NRZC terminated to match receiver output and 125 ohm balanced to ground. Grounds to be isolated.
5	HSQ		X	19 Gage Pair, Hardlines	1PR	From	Pad 4)		Exact location from which signal will originate will be determined by AFETR.	To carry "first motion" signal from Pad 40 to TM Van. See item 10, page 240.1.
						To	TM Van	(V1b)		

AFMTC FORM JUN 61 34A PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE.

NRD

1. SECURITY CLASSIFICATION: (U)	9. REVISION NO.

HSQ SPACECRAFT MITOC - GENERAL INFORMATION			5. SECURITY CLASSIFICATION (U)	2. PAGE 431
				3. DATE 12 Nov. 1965
1. PROGRAM TITLE TIII SLS/MOL-HSQ	6. PROGRAM REQUIREMENT code 3900	7. SYSTEM CODE	8. CONTRACTOR MAC	4. REPLACES PAGE(S) DATED
10. SKETCHES, DIAGRAMS, ETC.				TEST CODE: HSQ

1. The number of Nets are as follows:

   12 Nets - Required for HSQ.
   13 Nets - Reserved for in the event of additional requirements.

2. New assignments, are indicated below:

ITEM NUMBER	NET NUMBER	NET TITLE
1		S/C Test Conductor
2		STE
3		Telemetry
4		Communications
5		Power
6		Sequential
7		Guidance/Computer
8		ECS
9		RCS
10		IMU
11		MST - Clean Room
12		Telemetry - MILA
13 through 26		Reserved in event of additional HSQ requirements.

NOTE: Requirements expressed on pages 431 thru 431.3 are based upon the assumption that pre-launch spacecraft testing will be performed on Pad 40. If testing is to be performed in the VIB, requirements must be increased to include end instruments on the work platforms in the VIB White Room.

3. End unit types are shown on the following pages. End Instrument Code:

   A. Push button type
   B. Exterior with nitrogen purge
   C. Standard

HSQ SPACECRAFT MOPS AND/OR MITOC

1. SECURITY CLASSIFICATION: (U)

2. PAGE 431.1

3. DATE 12 Nov. 1965

4. REPLACES PAGE(S) — DATED

5. TEST PROGRAM: TIII SLS/MOL-HSQ

6. PROGRAM REQUIREMENT NO. 3900

7. SYSTEM CODE

8. CONTRACTOR: MAC

NOTE: Requirements contained on pages 431 thru 431.3 are based upon assumption that spacecraft pre-launch testing will not be performed in the VIB. Otherwise requirements must be increased.

10. SYEM NO.	11. TEST CODE	12. LOCAL AREA	13. MOPS NET FUNCTION OR NAME: S/C Test Conductor	STE	Telemetry	Communications	Power	Sequential	Guidance/Comp.	ECS	RCS	IMU	EST—Clean Room Telemetry - MILA	Photo - CCTV	MOL Test Conductor	LV Test Conductor	LV-Flight Control	End Unit Type
			1	2	3	4	5	6	7	8	9	10	11	12	22	23	24	25
1	HSQ	LCC STC Rack 1	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	A
2		LCC STE Rack 2	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	A
3		LCC Pwr & Seq Rack 33	X	X	X	X	X	X	X	X	X	X	X	X		X		C
4		LCC Pwr & Seq Rack 34	X	X	X	X	X	X	X	X	X	X	X	X		X		C
5		LCC Guidance Rack 43C	X	X	X	X	X	X	X	X	X	X	X	X		X		C
6		LCC RCS RACK 33	X	X	X	X	X	X	X	X	X	X	X	X		X		C
7		LCC RCS Rack 31	X	X	X	X	X	X	X	X	X	X	X	X		X		C
8		LCC Remote Control Rack 404	X	X	X	X	X	X	X	X	X	X	X	X		X		C
9		LCC Test Co-ordinator Room #221	X	X	X	X	X	X	X	X	X	X	X	X		X		C
10		OGE VAN #1 IMU Rack 47 *	X	X	X	X	X	X	X	X	X	X	X		X	X	X	A
11		OGE Van #1 IMU Rack 44 *	X	X	X	X	X	X	X	X	X	X	X					C
12		OGE Van #1 IMU Rack 11 *	X	X	X	X	X	X	X	X	X	X	X					C
13		OGE Van #1 RCS Rack 19 *	X	X	X	X	X	X	X	X	X	X	X					C
14		OGE Van #1 Power Rack 20 *	X	X	X	X	X	X	X	X	X	X	X					C
15		OGE Van #1 SEQ Rack 18 *	X	X	X	X	X	X	X	X	X	X	X					C
16		OGE Van #1 Power Rack 62 *	X	X	X	X	X	X	X	X	X	X	X					C
17		AGE Bldg. Power Rack 85	X	X	X	X	X	X	X	X	X	X	X					C
18		AGE Bldg. Power Rack 97	X	X	X	X	X	X	X	X	X	X	X					C
19		OGE Van #2 Attitude Control Rack 43A*	X	X	X	X	X	X	X	X	X	X	X					C
20		OGE Van #2 Attitude Control Rack 43 *	X	X	X	X	X	X	X	X	X	X	X					C
21		OGE Van #2 Comm Rack 140 *	X	X	X	X	X	X	X	X	X	X	X					C
22		OGE Van #2 Comm Rack 143 *	X	X	X	X	X	X	X	X	X	X	X					C
23	HSQ	OGE Van #2 RCS Rack 32 *	X	X	X	X	X	X	X	X	X	X	X					C

14. REMARKS/SPECIAL INSTRUCTIONS/REQUIREMENTS

AFMTC FORM 348 JUL 61 PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE.

1. SECURITY CLASSIFICATION

9. REVISION NO. MT

HSQ SPACECRAFT — MOPS AND/OR MITOC

1. SECURITY CLASSIFICATION: (U)

3. PAGE 431.2

4. DATE 12 Nov. 1965

4. REPLACES PAGE(S) — — — — — —

DATED

5. TEST PROGRAM: TIII SLS/MOL-HSQ

6. PROGRAM REQUIREMENT NO. 3900

7. SYSTEM CODE

8. CONTRACTOR: MAC

Preliminary Information
Subject to change.

13. MOPS NET FUNCTION OR NAME

14. REMARKS/SPECIAL INSTRUCTIONS/REQUIREMENTS

10. ITEM NO.	11. TEST CODE	12. LOCAL AREA	1 S/C Test Conductor	2 S/E	3 Telemetry	4 Communications	5 Power	6 Sequential	7 Guidance/Comp.	8 ECS	9 RCS	10 IMU	11 MST -Clean Room	12 Telemetry - MILA	14	15	16	17	18	19	20	21 Photo - CCTV	22 MOL Test Conductor	23 LV Test Conductor	24 LV Flight Control	25 End Unit Type
24	HSQ	OGE Van #2 RCS Rack 31 *	X	X	X	X	X	X	X	X	X	X	X													C
25	↓	OGE Van #2 Crewman Simulator Rk. 236*	X	X	X	X	X	X	X	X	X	X	X													C
26		OGE Van #2 Seq. Rack 39 *	X	X	X	X	X	X	X	X	X	X	X													C
27		OGE Van #2 Seq. Rack 37 *	X	X	X	X	X	X	X	X	X	X	X													C
28		OGE Van #2 Power Rack 35 *	X	X	X	X	X	X	X	X	X	X	X													C
29		T/M Van Receiver Rack 61 C	X	X	X	X	X	X	X	X	X	X	X											X		C
30		T/M Van Simulator Rack 61B	X	X	X	X	X	X	X	X	X	X	X											X		C
31		T/M Van Display Rack 201	X	X	X	X	X	X	X	X	X	X	X											X		C
32		T/M Van Recorder Rack 196	X	X	X	X	X	X	X	X	X	X	X											X		C
33		T/M Van Recorder Rack 198	X	X	X	X	X	X	X	X	X	X	X											X		C
34		T/M Van PCM C/O Rack 5	X	X	X	X	X	X	X	X	X	X	X											X		A
35		Deleted.																								
36		Deleted.																								
37		Transporter - J-Box - Level 12	X	X	X	X	X	X	X	X	X	X	X	X												B
38		MST - White Room - Platform 12	X	X	X	X	X	X	X	X	X	X	X	X												B
39		MST - White Room - Platform 13	X	X	X	X	X	X	X	X	X	X	X	X												B
40		MST - White Room - Platform 13	X	X	X	X	X	X	X	X	X	X	X	X												B
41		MST - White Room - Platform 13	X	X	X	X	X	X	X	X	X	X	X	X												B
42		MST - White Room - Platform 13	X	X	X	X	X	X	X	X	X	X	X	X												B
43		MST White Room - Platform 14	X	X	X	X	X	X	X	X	X	X	X													B
44		MST - White Room - Platform 14	X	X	X	X	X	X	X	X	X	X	X													B
45		MST - White Room - Platform 14	X	X	X	X	X	X	X	X	X	X	X													B
46	↓	Pad 40 - Ready Room	X	X	X	X	X	X	X	X	X	X	X											X		C
47	HSQ	Pad 40 - Ready Room	X	X	X	X	X	X	X	X	X	X	X											X		C

AFMTC FORM 34B JUL 61 — PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE.

(RD)

1. SECURITY CLASSIFICATION: (U)

8. REVISION NO. MT

HSQ SPACECRAFT	MOPS AND/OR MITOC	1. SECURITY CLASSIFICATION: (U)	2. PAGE 631 ,3
5. TEST PROGRAM: TIII SLS/MOL-HSQ	6. PROGRAM REQUIREMENT NO. 3900 / 7. SYSTEM CODE	8. CONTRACTOR: MAC	3. DATE 12 Nov. 1965
			4. REPLACES PAGE(S) — — — — — — DATED

Preliminary Information
Subject to Change.

10. ITEM NO.	11. TEST CODE	12. LOCAL AREA	13. MOPS NET FUNCTION OR NAME: S/C Test Conductor	STE	Telemetry	Communications	Power	Sequential	Guidance/Comp.	ECS	RCS	IMU	MST - Clean Room	Telemetry - MILA										LV Test Conductor		Type of End Unit
			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
48	HSQ	Support Trailer No. 1 *	X	X	X	X	X	X	X	X	X	X	X														C
49		Support Trailer No. 2 *	X	X	X	X	X	X	X	X	X	X	X														C
50		Support Trailer No. 3 *	X	X	X	X	X	X	X	X	X	X	X														C
51		MSO - Ground Station Room 3456 **	X	X	X	X	X	X	X	X	X	X	X	X											X		C
52		Hangar "N" - Program Control Room	X	X	X	X	X	X	X	X	X	X	X												X		C
53		Hangar "N" - Program Manager	X	X	X	X	X	X	X	X	X	X	X	X											X		C
54		Hangar "N" - Test Procedures Group	X	X	X	X	X	X	X	X	X	X	X	X											X		C
55		Hangar "L" - Work Stand	X	X	X	X	X	X	X	X	X	X	X														C
56		DELETED																									
57		Pad 40 - Base MS	X	X	X	X	X	X	X	X	X	X	X														B
58		Road Block (Pad 40)	X	X																					X		B
59		DELETED																									
60		DELETED																									
61		LCC - Room #227	X	X	X	X	X	X	X	X	X	X	X												X		C
62		LCC - Room #227	X	X	X	X	X	X	X	X	X	X	X												X		C
63		LCC - Room #227	X	X	X	X	X	X	X	X	X	X	X												X		C
64		LCC - Room #227	X	X	X	X	X	X	X	X	X	X	X												X		C
65		VIB - Cable Room below LCC	X	X	X	X	X	X	X	X	X	X	X														C
66		UT - Level 245' - 11' Coolant Unit	X	X	X	X	X	X	X	X	X	X	X														B
67	HSQ	MSO - Comm Open Loop Sta Room 3412 **	X	X	X	X	X	X	X	X	X	X	X												X		

14. REMARKS/SPECIAL INSTRUCTIONS/REQUIREMENTS

*These trailers will be located at VIB then moved to Pad 40. Disconnect capability must exist.

**Instruments Installed

AFMTC FORM JUL 61 34B — PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE.

1. SECURITY CLASSIFICATION (U) — 2. REVISION NO. NT

MOPS

1. SECURITY CLASSIFICATION: UNCLASSIFIED

2. PAGE 431.4

3. DATE 12 Nov. 1965

4. REPLACES PAGE(S) — — — — — — — — DATED

5. TEST PROGRAM: TIII SLS/MOL-HSQ

6. PROGRAM REQUIREMENT NO. 3900

7. SYSTEM CODE

8. CONTRACTOR: MC

13. MOPS NET FUNCTION OR NAME

14. REMARKS/SPECIAL INSTRUCTIONS/ REQUIREMENTS

10. ITEM NO.	11. TEST CODE	12. LOCAL AREA
	All	All requirements are identified in detail in Contract Document SSD-CR-63-215, "Integrated Communications Requirements Plan."

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24

AFMTC FORM 34B JUL 61 PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE.

1. SECURITY CLASSIFICATION: UNCLASSIFIED

9. REVISION NO. MT

TELEPHONE - DIAL

1. SECURITY CLASSIFICATION	2. PAGE
(U)	432
	3. DATE 12 Nov. 1965
	4. REPLACES PAGE(S) DATED

5. PROGRAM TITLE	6. PROGRAM REQUIREMENT CODE	7. SYSTEM CODE	8. CONTRACTOR
TIII SLS/MOL-HSQ	3900		MAC

ITEM NO.	TEST CODE	9. USE: ADMIN.	9. USE: OPS	10. NO. OF LINES & EXT. BY CLASS: A LINE	A EXT	B LINE	B EXT	C LINE	C EXT	11. LOCATION OF TELEPHONES: STA. NO.	BLDG	ROOM	OTHER	12. PURPOSE AND REMARKS
1	HSQ		X	X 3						1	VIB	227		
										2	VIB	227		
										3	VIB	227		
2			X	X 1						4	VIB		S/C Area	Level 13
3			X	X 2	1					5	VIB		T/M Van	Mobile Unit permanently located on the
										6	VIB		T/M Van	North Side of VIB.
4			X	X 3						7	MST		Clean Room	Level 13 - LC 40
										8	MST		Clean Room	Level 13 - LC 40
										9	MST		Clean Room	Level 14 - LC 40
5			X	X 3						10	LC40		Ready Room	
										11	LC40		Ready Room	
										12	LC40		Ready Room	
6			X	X 2	1					13			OGE Van #1	Mobile Unit - VIB and/or AGE Building
										14			OGE Van #1	Mobile Unit - VIB and/or AGE Building
7			X	X 2	1					15			OGE Van #2	Mobile Unit - VIB and/or AGE Building
										16			OGE Van #2	Mobile Unit - VIB and/or AGE Building
8			X	X 3	2					17			Support Van #1	Mobile Unit - VIB and/or LC 40(Operations Trailer)
9			X	X 1						18			Support Van #2	Mobile Unit - VIB and/or LC 40
10			X	X 1						19			Support Van #2	Mobile Unit - VIB and/or LC 40
11			X	X 1						20	Hgr.L		Work Stand	
12	HSQ	X		X							Hgr.L		Office & Indus.Area	To be taken care of as a separate item
13	HSQ	X		X							Hgr.N		Office Area	as need occurs

NOTE: Items 6, 7, 8, 9, 10 to have disconnect capability. OGE Van #1 and OGE Van #2 will be in VIB for Complex Validation.

AFMTC FORM 34C JUN 61 PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE.

1. SECURITY CLASSIFICATION	2. REVISION NO.
(U)	

SPACECRAFT TELEPHONE

1. SECURITY CLASSIFICATION	2. PAGE 432.1
(U)	3. DATE 12 Nov. 1965
	4. REPLACES PAGE(S) DATED

5. PROGRAM TITLE	6. PROGRAM REQUIREMENT CODE	7. SYSTEM CODE	8. CONTRACTOR
TIII SLS/MOL-HSQ	3900		MAC

10. ITEM NO.	11. TEST CODE	12. USE		13. NO. OF LINES & EXT. BY CLASS									14. LOCATION OF TELEPHONES				15. PURPOSE AND REMARKS
		ADMIN.	OPS	A	LINE	EXT	B	LINE	EXT	C	LINE	EXT	STA. NO.	BLDG	ROOM	OTHER	
1	HSQ		X	X	1								1	VIB	227		Locate on Rack #2
													2	VIB	221		Locate on Conference Table
2			X	X	1								1	VIB	227	T/M Van	Locate on Rack #2
													2	VIB			Mobile unit permanently located north side VIB
																	Locate phone on wal to right of entrance door
3			X	X	1								1	VIB	227		Locate on Rack #2
													2			OGE Van #1	Mobile unit located AGE Building.
																	Disconnect capability to exist.
																	Locate phone on wall to right of entrance door.
4	HSQ		X	X	1								1	VIB	227		Locate on Rack #2
													2			OGE Van #2	Mobile unit located AGE Building.
																	Disconnect capability to exist.
																	Locate phone on wall to right of entrance door.

AFMTC FORM 34C JUN 61 PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE.

1. SECURITY CLASSIFICATION	9. REVISION NO.
(U)	

TELEPHONE

1. SECURITY CLASSIFICATION	2. PAGE 432.8
UNCLASSIFIED	3. DATE 12 Nov. 1965
	4. REPLACES PAGE(S) DATED

5. PROGRAM TITLE	6. PROGRAM REQUIREMENT CODE	7. SYSTEM CODE	8. CONTRACTOR
TIII SLS/MOL-HSQ	3900		MC

10. ITEM NO.	11. TEST CODE	12. USE		13. NO. OF LINES & EXT. BY CLASS									14. LOCATION OF TELEPHONES				15. PURPOSE AND REMARKS
		ADMIN.	OPS	A	LINE	EXT	B	LINE	EXT	C	LINE	EXT	STA. NO.	BLDG	ROOM	OTHER	
	All	All requirements are identified in detail in Contract Document SSD-CR-63-215, "Integrated Communications Requirements Plan."															

AFMTC FORM 34C JUN 61 PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE.

1. SECURITY CLASSIFICATION	9. REVISION NO.
UNCLASSIFIED	

TELETYPE

4. PROGRAM TITLE	5. PROGRAM REQUIREMENT CODE	7. SYSTEM CODE
TIII SLS/MOL-HSQ	3900	

1. SECURITY CLASSIFICATION	2. PAGE	438
(U)	3. DATE	12 Nov. 1965
8. CONTRACTOR	4. REPLACES PAGE(S) DATED	
MAC		

10. ITEM NO.	11. TEST CODE	12. USE ADMIN	12. USE OPS	13. SECURE YES	13. SECURE NO	14. LOCATION OF OPERATING TERMINALS STATION	BLDG.	ROOM	STATION, BLDG., ROOM, ETC.	15. PURPOSE AND REMARKS
1	All	X			X				Room 208, Hangar N	Required to send and receive messages that are not to be handled through regular mail channels. Provides expeditious means of communications with Contractor's parent plant, and Vendors and Subcontractors on matters of Administration and Engineering, and Test Site Operations. Additional requirements will be added at a later date.

AFMTC FORM 34D JUN 61 PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE.

1. SECURITY CLASSIFICATION	9. REVISION NO.
(U)	

TELETYPE

1. SECURITY CLASSIFICATION	2. PAGE 438.1
UNCLASSIFIED	3. DATE 12 Nov. 1965
	4. REPLACES PAGE(S) DATED

5. PROGRAM TITLE	6. PROGRAM REQUIREMENT CODE	7. SYSTEM CODE	8. CONTRACTOR
TIII SLS/MOL-HSQ	3900		MC

10. ITEM NO.	11. TEST CODE	12. USE		13. SECURE		14. LOCATION OF OPERATING TERMINALS				15. PURPOSE AND REMARKS
		ADMIN.	OPS	YES	NO	STATION	BLDG.	ROOM	STATION, BLDG., ROOM, ETC.	
All										All requirements are identified in detail in Contract Document SSD-CR-63-215, "Integrated Communications Requirements Plan."

AFMTC FORM 34D JUN 61 PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE.

NRD

17. SECURITY CLASSIFICATION	18. REVISION NO.
UNCLASSIFIED	

PUBLIC ADDRESS

5. NEW PROGRAM TITLE	6. PROGRAM REQUIREMENT CODE	7. SYSTEM CODE	7. SECURITY CLASSIFICATION	2. PAGE 434
TIII SLS/MOL-HSQ	3900		(U)	3. DATE 12 Nov. 1965
			8. CONTRACTOR MAC	4. REPLACES PAGE(S) DATED

10. ITEM NO.	11. TEST CODE	12. PURPOSE	13. SPEAKER LOCATION	14. REMARKS
1.	HSQ	To provide a means of informing personnel of Operations and Emergency Conditions consistant with routine and special testing.	VIB - Launch Control Center (LCC)	Tie speaker w/volume control into VIB public address system.
2.		(Same as above)	VIB - T/M Van	(Same as above)
3.		(Same as above)	Pad 40 - MST - Level 13 Clean Room	Locate one microphone on East wall of Clean Room. Tie speaker and microphone into Pad 40 Public Address System.
4.		(Same as above)	Pad 40 - MST - Level 14 Clean Room	Tie speaker into Pad 40 Public Address System.
5.		(Same as above)	OGE Van #1	Tie into VIB or Pad 40 Paging System dependant on location of Van.
6.		(Same as above)	OGE Van #2	(Same as above)
7.	HSQ	(Same as above)	AGE Building - Electrical Equipment Room	Tie speaker into Pad 40 Public Address System.

AFMTC FORM 34E NOV 61 PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE. NRD

7. SECURITY CLASSIFICATION (U) 8. REVISION NO.

PUBLIC ADDRESS

1. SECURITY CLASSIFICATION: UNCLASSIFIED			2. PAGE 434.1
			3. DATE 12 Nov. 1965
5. TEST PROGRAM TITLE: TIII SLS/MOL-HSQ	6. PROGRAM REQUIREMENT CODE: 3900	7. INSTALL CODE:	4. REPLACES PAGE(S) DATED
			8. CONTRACTOR: MC

10. ITEM NO.	11. TEST CODE	12. PURPOSE	13. SPEAKER LOCATION	14. REMARKS
	All	All requirements are identified in detail in Contract Document SSD-CR-63-215, "Integrated Communications Requirements Plan."		

CLOSED CIRCUIT TELEVISION

1. SECURITY CLASSIFICATION: (U)
2. PAGE 435
3. DATE 12 Nov. 1965
4. REPLACES PAGE(S)
DATED

5. PROGRAM TITLE: TIII SLS/MOL-HSQ
6. PROGRAM REQUIREMENT CODE: 3900
7. SYSTEM CODE:
8. CONTRACTOR: MAC

10. ITEM NO.	11. TEST CODE	12. SUBJECT(S) TO BE VIEWED	13. MONITOR LOCATION(S)	14. INTERVAL (TIME)	15. PURPOSE AND REMARKS
1	HSQ	Launch Complex 40: Two (2) cameras in White Room with four (4) usable locations, one (1) camera on the umbilical tower mounted for the best view of the spacecraft umbilicals and thrusters after Clean Room break-up.	Three (3) 17" wide monitors to be mounted above the Gemini B Control Room racks. With the capability of monitoring any of the three (3) camera positions.	Continuous	This item is required for visual monitoring of spacecraft checkout, test, hazardous servicing of the Reaction Control System, static fire, umbilical drop, and launch. These cameras will be required on a two-shift five-days-per-week operation (minimum), and will be operated by McDonnel. This Closed Circuit Television System will be Range installed, and Range Contractor standby maintenance is required during major pad testing.
2	HSQ	Video recording of the TV signals appearing on the three(3) Launch Control Center payload TV monitors is required at ETR TV Central during launch operations and for major pad tests. Playback capability to the Payload Room in the Launch Control Center is required. The video tapes will be made available for engineering evaluation and to be part of the HSQ Historical documentation.			
3	HSQ	Launch Complex 40: Two (2) cameras to view over all launch vehicle, payload and complex facilities. (existing cameras maybe utilized)	Two (2) 17" monitors above the spacecraft racks in the VIB Launch Control Room.	Continuous	This Item is required for Visual monitoring of the over-all launch vehicle, Payload and Complex facilities by the personnel in the Spacecraft Launch Control Checkout Room. These cameras and monitors will be required on a two-shift, five-days-per-week operation (minimum). This Closed Circuit Televidon System is Range installed, and Range Contractor standby maintenance is required during major pad testing.

AFMTC FORM 50B JUL 68 PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE.

1. SECURITY CLASSIFICATION: (U)
9. REVISION NO.

SPACECRAFT

TIMING

(U)

PAGE 440

DATE 12 Nov. 1965

REPLACES PAGE(S) DATED

PROGRAM TITLE: TIII SLS/MOL-HSQ

PROGRAM REQUIREMENT CODE: 3900

SYSTEM CODE:

CONTRACTOR: MAC

ITEM NO.	TEST CODE	TIMING SIGNAL: TIMING CODES & REP. RATES	TIMING SIGNAL: CORRELATION ACCURACY ±	LOCATION OF RANGE END INSTRUMENT: STATION	BLDG. NGR OR BH. NO	ROOM NO.	RACK NO.	AMBIENT TEMP °F	SPACE AVAILABLE	QTY	RANGE USER'S RECORDING INSTRUMENT OR TRANSDUCER: TYPE & MODEL	RECORDING SPEED-CM/S	INPUT VOLTAGE-V	INPUT Z - OHMS	FREQUENCY RESPONSE-CPS	SEE NOTE
1	HSQ	A1, B1, D5	2MS		VIB	(T/M	Van)				TM Ground Station					1
2		A1, B1	2MS		VIB						Payload Room #1 (Back-up capability)					
3		B1, D5	2MS		VIB	OGE	Van #1				Timing Distribution Panel					1
4		B1, D5	2MS		AGE Bldg	"	" #1				" " "					
											The following describes equipment					
											utilizing timing from the above					
											distribution panels. MAC will supply					
											lines to carry timing to individual					
											units within the trailers. These					
											items are:					
1A		A1, B1		TM	Van		196-199	75°		4	Brush Mark 200 Recorders					2
1B		A1, B1		TM			195-199	75°		2	Brush RE 3610-60 Recorders					2
1C		D5		TM			200	75°		1	Time Code Translator		5-6		1000 cs	
1D		A1, B1, D5		TM	Van		202-203	75°		2	Ampex 600 Tape Recorders		5-6		1000 cs	2
2A		A1, B1		Payload Room				75°			(Back-up capability for recorders if installed)					
3A		B1	2MS	OGE	Van #1		235	75°		2	Brush MK-200 Recorder					2
3B		D5	2MS	OGE	Van #1		39	75°		1	CEC Oscillograph		5-6		1000 cs	
3C		B1	2MS	OGE	Van #2		235B	75°		2	Brush MK-200					2
3D		D5	2MS	OGE	Van #2		32	75°		1	CEC 5-119P4-50		5-6		1000 cs	
3E		B1	2MS	OGE	Van #2		36	75°		3	E-A Event 620T Recorder					2
3F		B1	2MS	OGE	Van #2		35	75°		1	Brush RD 268200					2
3G		B1		OGE	Van #1		44	75°		1	TI Model F3W, Recorder					2
3H	HSQ	B1		OGE	Van #2		236&237	75°		2	E-A Event 620T Recorder					2

NOTE 1: Items 3 and 4 to have disconnect capability. OGE Vans #1&2 will be in the Vib for complex validation, then moved to the AGE Bldg.

NOTE 2: The range should provide timing code in the form of a switch closure.

A1-1PPS 11 DIGIT BINARY WIDTH CODE	D1-100 PPS 17 DIGIT BINARY WIDTH CODE	PR 20-10 PPS, CONTINUOUS REP. RATE
A2-1PPS 17 DIGIT BINARY WIDTH CODE	D7-D1 WITH 1000 PPS (NEON)	PR 29-20 PPS, CONTINUOUS REP. RATE
B1-B1 AMPLITUDE MODULATED	D5-D1 AMPLITUDE MODULATED	PR 33-100 PPS, CONTINUOUS REP. RATE
C1-20 PPS, 17 DIGIT BINARY WIDTH CODE	PR 4-1 PPS, CONTINUOUS REP. RATE	PR 37-1000 PPS, CONTINUOUS REP. RATE
C8-C1 WITH 100 PPS (NEON)	PR 19-1 PPS, CONTINUOUS REP. RATE	SW 4-1000 CPS, CONTINUOUS SINEWAVE

SEQUENCER			1. SECURITY CLASSIFICATION (U)	2. PAGE 480
				3. DATE 12 Nov. 1965
				4. REPLACES PAGE(S) DATED
5. PROGRAM TITLE TIII SLS/MOL-HSQ	6. PROGRAM REQUIREMENT CODE 3900	7. SYSTEM CODE	8. CONTRACTOR MAC	

10. ITEM NO.	11. TEST CODE	12. FUNCTION: AUTOMATIC FUNCTION CONTROL CIRCUITS	12. FUNCTION: AUTOMATIC HOLD FIRE CIRCUITS	13. PERIOD OF OPERATION: START MIN	START SEC	STOP MIN	STOP SEC	TOTAL MIN	TOTAL SEC	14. ELECTRICAL CHARACTERISTICS: CONTACTS QTY	CONTACTS MAKE-BREAK	VOLTS	DC OR CYCLES	AMP	15. SEE NOTE
1	HSQ	The spacecraft will not have any automatic HOLD or KILL functions and will not automatically feed any HOLD signals into the launch vehicle automatic sequencer.													

AFMTC FORM NOV 61 34H PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE.

7. SECURITY CLASSIFICATION (U)	8. REVISION NO.

Spacecraft

VISUAL COUNTDOWN AND STATUS INDICATORS

1. SECURITY CLASSIFICATION: (U)

3. PAGE 460

3. DATE 12 Nov. 1965

4. REPLACES PAGE(S) DATED

5. PROGRAM TITLE: TIII SLS/MOL-HSQ

6. PROGRAM REQUIREMENT CODE: 3900

7. SYSTEM CODE:

8. CONTRACTOR: MAC

10. ITEM NO.	11. TEST CODE	12. INFORMATION TO BE DISPLAYED	13. PERIOD OF OPERATION FROM MIN.	FROM SEC.	TO MIN.	TO SEC.	TOTAL IN MIN.	14. INDICATORS QTY.	TYPE MOUNTING	15. LOCATION OF VISUAL INDICATOR STATION	BLDG NGR OR BH NO.	ROOM NO.	POSITION OR PANEL TITLE	16. SEE NOTE
1	HSQ	Range Count	Full	Count			600	2	B		VIB		TM Van outside VIB	
2		Range Count	Full	Count			600	3	B		VIB		Payload Room #1	
3		Range Count	Full	Count			600	2	B		Pad A/B		Oge Van #1	1
4		Range Count	Full	Count			600	2	B		Pad A/B		Oge Van #2	1
5		Range Count	Full	Count			600	4	B		Pad 40		Environmental Control Enclosure	4
6		Range Count	Full	Count			600	1	B		Pad 40		Shop Trailer	2
7		Range Count	Full	Count			600	1	B		Pad 40		Operations Trailer	2
8		Test of Spacecraft	-300		+30		330	2	B		VIB		TM Trailer	
9			-300		+30			2			VIB		Payload Room #1	3
10			-300		+30			2			Pad 40	A/B	OGE Van #1	1,3
11			-300		+30			2			Pad 40	A/B	OGE Van #2	1,3
12	HSQ	Test of Spacecraft	-300		+30		330	4	B		Pad 40		Environmental Control Enclosure	3,4

NOTES:
1. Trailers will be stationed in Cell #1, VIB, for complex checkout and will be moved to Pad 40 with transporter. When the vans are on the pad they will be inside the AGE building. Disconnect capability is required on the vans for both locations.
2. Trailers will be located at Pad 40. Disconnect capability is required.
3. A separate driving source is required to provide a separate countdown system for spacecraft testing. Control of this system is to be provided in Payload Room #1. Indicators to be used in this system must be in addition to those installed to show Range Count.
4. Two indicators are required on each work level and located diametrically opposite each other.
5. The requirements expressed on pages 460 and 460.1 are based upon the assumption that spacecraft/LV mating plus spacecraft checkout will be performed on Pad 40. If spacecraft testing is to be conducted in the VIB, additional indicators will be required.

AFMTC FORM 34J JUN 61 PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE.

1. SECURITY CLASSIFICATION (U)

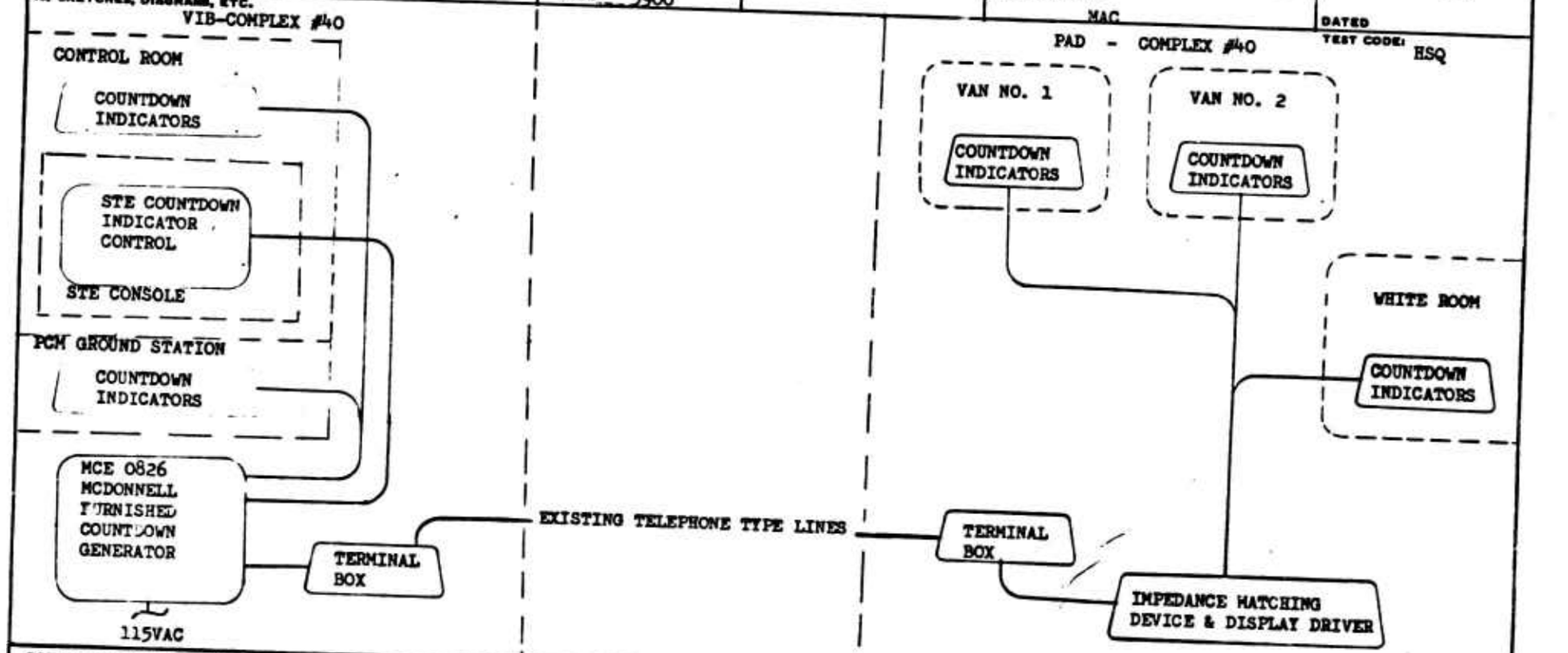
9. REVISION NO.

SPACECRAFT

CONTRACTOR'S INDEPENDENT COUNTDOWN TIMING SYSTEM (DRAWING)

2. PROGRAM TITLE: TIII SLS/MCL-HSQ	5. PROGRAM REQUIREMENT CODE: 3900	7. SYSTEM CODE	1. SECURITY CLASSIFICATION: (U)
8. CONTRACTOR: MAC			9. PAGE 460.1
			3. DATE 12 Nov. 1965
			4. REPLACES PAGE(S) DATED
			TEST CODE: HSQ

10. SKETCHES, DIAGRAMS, ETC.



COUNTDOWN INDICATOR REQUIREMENTS

a.	CONTROL ROOM	2 Required
b.	PCM STATION	2 Required
c.	VAN NO. 1	2 Required
d.	VAN No. 2	2 Required
e.	WHITE ROOM	2 Required

NOTE: Except for MCE 0826 which will be furnished by MAC, all equipment and cabling will be supplied, installed, and maintained as Range Support.

AFMTC FORM 50 NOV 61 PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE.

1. SECURITY CLASSIFICATION: (U)	5. REVISION NO.

Spacecraft	DATA HANDLING SYSTEM_ Launch & Ballistic Flight through Re-entry	1. SECURITY CLASSIFICATION (U)	2. PAGE 470 3. DATE 12 Nov. 1965 4. REPLACES PAGE(S) DATED
5. PROGRAM TITLE TIII SLS/MOL-HSQ	6. PROGRAM REQUIREMENT CODE 3900 / 7. SYSTEM CODE	8. CONTRACT/CONTRACT NUMBER MAC	

10. LOCATION	INSTRUMENTATION	USE Test Co[illegible] SQ
Cape Kennedy (ETR Station) TEL III	Telemetry Equipment PCM/FM, 1 Station	Internal Data: HSQ Spacecraft - record, and decommutate and provide real time strip-outs of TLM data.
Cape Kennedy (ETR Station 1)	CZR Cameras Cinetheodolites 35 mm Tracking Cameras C-Band Radar (FPS-16 or TPQ-18) Plotting Boards	Metric Data (2) Metric Data (2) Metric Data (2) Metric Data Show real time comparison between actual and planned trajectory.
ETR Station 1	Pad Cameras IFLOT	Engineering Sequential Data Engineering Sequential Data
ETR Station 1 TEL II	Telemetry Equipment: PCM/FM 1 Link	Internal Data: HSQ Spacecraft - record (back-up for TEL III)
False Cape (ETR Site 33)	Cinetheodolites IGOR	Metric Data (2) Metric Data & Engineering Sequential Data (2)
Williams Point (ETR Site 34)	IGOR	Metric Data & Engineering Sequential Data (2)

Spacecraft	DATA HANDLING SYSTEM - Launch & Ballistic Flight Through Re-entry	1. SECURITY CLASSIFICATION (U)	2. PAGE 470.1 3. DATE 12 Nov. 1965 4. REPLACES PAGE(S) DATED
5. PROGRAM TITLE TIII SLS/MOL-HSQ	6. PROGRAM REQUIREMENT CODE 3900	7. SYSTEM CODE	8. CONTRACTOR/CONTRACT NUMBER MAC

Test Code: HSQ

10. Location	Instrumentation	Use
Cocoa Beach (ETR Site 35)	Cinetheodolite ROTI	Metric Data (2) Metric Data & Engineering Sequential Data (2)
Patrick AFB	Cinetheodolites IGOR C-Band Radar (FPQ-6)	Metric Data (2) Metric Data & Engineering Sequential Data (2) Metric Data
Grand Bahama Island (ETR Station 3)	C-Band Radar (TPQ-18) Telemetry Equipment: PCM/FM	Metric Data Internal Data: HSQ Spacecraft - record HSQ Spacecraft - record & transmit via subcable (1)
Grand Turk Island (ETR Station 7)	C-Band Radar Telemetry Equipment: PCM/FM	Metric Data Internal Data: HSQ Spacecraft - record and transmit via subcable (1)

Spacecraft	DATA HANDLING SYSTEM Launch & Ballistic Flight Through Re-entry	1. SECURITY CLASSIFICATION (U)	2. PAGE 670 .2 3. DATE 12 Nov. 1965 4. REPLACES PAGE(S) DATED
5. PROGRAM TITLE TIII SLS/MOL-HSQ	6. PROGRAM REQUIREMENT CODE 3900 / 7. SYSTEM CODE	8. CONTRACTOR/CONTRACT NUMBER MAC	

Test Code: HSQ

10. Location	Instrumentation	Use
Antigua (ETR Station 9.1)	C-Band Radar (FPQ-6) Telemetry Equipment: PCM/FM 1 Link	Metric Data Internal Data: HSQ Spacecraft - record & transmit via subcable (1)
Trinidad (ETR Station)	L-Band Radar	Track spacecraft and pass acquisition data to Station 12 radar and TLM receiving equipment.
Range Instrumentation	C-Band Radar	Metric Data & pass acquisition data to Station 12 radar and telemetry
Ship (RIS) (12°30N, 45°00'W)	Telemetry Equipment: PCM/FM 1 Link	Internal Data: HSQ Spacecraft - record
Ascension (ETR Station 12)	C-Band Radar (TPQ-18) Telemetry Equipment: PCM/FM 1 Link	Metric Data Internal Data: HSQ Spacecraft - record & transmit via subcable (1)
TLM Aircraft Two JC-130 w/TAA-4 Antenna (S/C Impact Area)	Telemetry Equipment: PCM/FM 1 Link ARA-25 and Sarah Receivers or equivalent	Internal Data: HSQ Spacecraft - record Monitor Recovery Beacon

Spacecraft	DATA HANDLING SYSTEM		1. SECURITY CLASSIFICATION (U)	2. PAGE 470.3 3. DATE 12 Nov. 1965 4. REPLACES PAGE(S) DATED
5. PROGRAM TITLE TIII SLS/MOL-HSQ	6. PROGRAM REQUIREMENT CODE 3900	7. SYSTEM CODE	8. CONTRACTOR/CONTRACT NUMBER MAC	

10.

Test Code: HSQ

The following information applies to those requirements specified on page 470, 470.1 and 470.2.

Note (1) The requirements for transmission of telemetry information via the subcable will be in near real time. In the event of flight malfunction this information is required to be available approximately 6 hours after lift-off. If there is no flight malfunction a requirement for playback of data via the subcable will not exist.

Note (2) Film obtained during launch which shows optical metric data will be developed, reduced, and incorporated into the measured trajectory only upon special request after completion of the test.

Spacecraft	DATA HANDLING SYSTEM		1. SECURITY CLASSIFICATION (U)	2. PAGE 470.4
				3. DATE 12 Nov. 1965
4. PROGRAM TITLE TIII SLS/MOL-HSQ	5. PROGRAM REQUIREMENT CODE 3900	7. SYSTEM CODE	8. CONTRACTOR/CONTRACT NUMBER MAC	4. REPLACES PAGE(S) DATED

10. ITEM NO.	11. TEST CODE	12. DESCRIPTION OF DATA HANDLING SYSTEM
1	HSQ	Preflight Checkout Data Handling System for HSQ Spacecraft. 1.1 Two (2) A2A equalized lines from Room B-4 Pad 40 AGE Building to Room 244 VIB for FM/FM data. The input terminal impedance will be 75 OHMS unbalanced, output impedance will be 125 OHMS balanced to ground. 1.2 Two (2) A2A equalized lines from Room B-4 Pad 40 AGE Building to Room 244 VIB for 102.4kc split phase PCM input and output impedance will be 125 OHMS balanced to ground. 1.3 Three (3) A2A equalized lines from Room 244 VIB to Room B-4 Pad 40 AGE Building for digital control system. Input and output impedance will be 125 OHMS balanced to ground. 1.4 One (1) A2A equalized line from Tel II or III to Room 244 VIB, for TM receiver video output of 51.2KC NRZC PCM. Input Impedance to match receiver output. Output impedance 125 OHMS balanced to ground. NOTE 1: The following information pertains to the FM/FM telemetry data. a. Frequencies to be transmitted 200 CPS to 100 KC. b. Frequency response flat ± 1 db. c. Band width 100 KC d. Maximum level at transmitter end 2.0 Volts peak to peak. e. Minimum level at receiver end 1.0 Volts peak to peak. NOTE 2: The following information pertains to the digital data transmitted. a. 102.4 KC split phase PCM maximum signal level at transmitter end 2.0 Volts peak to peak. Minimum signal level at receiver end 1.0 Volts peak to peak. b. 4.0 KC phase shift, keyed, digital video maximum signal level at transmitter end 2.0 Volts peak to peak. Minimum signal level at receiver end 1.0 Volts peak to peak. NOTE 3: For further information see Pages 430 and 471.

SERVICES - GENERAL

☐ ADMINISTRATIVE ☐ FACILITIES OPERATION & MAINTENANCE ☐ MISCELLANEOUS
☐ AIR OPERATIONS ☐ MARINE OPERATIONS ☐ PROCUREMENT, STORAGE, & HOUSEKEEPING ☐ MEDICAL & DENTAL

1. SECURITY CLASSIFICATION: (U)
2. PAGE: 510
3. DATE: 12 Nov. 1965
4. REPLACES PAGE(S) DATED:
5. PROGRAM TITLE: TIII SLS/MOL-HSQ
6. PROGRAM REQUIREMENT CODE: 3900
7. SYSTEM CODE:
8. CONTRACTOR: MAC

10. ITEM NO.	11. TEST CODE	12. TYPE ITEM/SERVICES	12a. RUF OR RF	13. FURNISH DATES, AMOUNTS, OR CHECK FOR REQUIRED ITEM/SERVICE FROM: TO:	FROM: TO:	FROM: TO:	FROM: TO:	14. PURPOSE AND REMARKS/SPECIAL INSTRUCTIONS
1	HSQ	Food Service	RF	Mobile unit daily and as specified during mission periods.				Service at Hangars and launch complexes and Launch Control Center on an effective schedule during operational periods, specific times to be covered in individual QR's.
2	HSQ	Medical Services	RF					Standby ambulance service, stationed near complexes. Regular AFETR medical facilities must be available at each operation.
3	HSQ	Fire Protection	RF					Equipment must be available and capable of combatting large propellant spillage fires. Adequate supply of hand type CO_2 extinguishers required in Hangar "L" and Pad 40.
4	HSQ	Explosives Storage	RF					Storage area for explosives and pyrotechnics to be temperature and humidity controlled and shielded from radiation. Range Contractor to be notified 24 hours in advance as to requirements and delivery area.
5	HSQ	Guards and Security	RF					When vehicles are on pads - one guard at complex, one guard at vehicle. Additional guard at complex day of operation. Guard station to be manned 24 hours per day, 7 days per week until further notice. Appropriate guard orders and access lists to be provided by 6555th ATW.
6	HSQ	Maintenance Service for buildings, office equipment, installed equipment, roadways, diesel power units, circuitry, etc.	RF					Provide preventive maintenance to HSQ test program facilities and equipment. Specifically, preventive maintenance, including periodic inspection and repair or replacement of malfunctioning components.
7	HSQ	Photo Laboratory	RF					Make, process and print film for Project as required.

AFMTC FORM 35 DEC 61 PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE.

NRD

1. SECURITY CLASSIFICATION: (U)
9. REVISION NO.

SERVICES - GENERAL

☐ ADMINISTRATIVE ☐ FACILITIES OPERATION & MAINTENANCE ☐ MISCELLANEOUS
☐ AIR OPERATIONS ☐ MARINE OPERATIONS ☐ PROCUREMENT, STORAGE, & HOUSEKEEPING ☐ MEDICAL & DENTAL

1. SECURITY CLASSIFICATION	2. PAGE 510-1
(U)	3. DATE 12 Nov. 1965
	4. REPLACES PAGE(S) DATED

5. PROGRAM TITLE	6. PROGRAM REQUIREMENT CODE	7. SYSTEM CODE	8. CONTRACTOR
TIII SLS/MOL-HSQ	3900		MAC

10. ITEM NO.	11. TEST CODE	12. TYPE ITEM/SERVICES	12a. RUF OR RF	13. FURNISH DATES, AMOUNTS, OR CHECK FOR REQUIRED ITEM/SERVICE FROM: TO:	FROM: TO:	FROM: TO:	FROM: TO:	14. PURPOSE AND REMARKS/SPECIAL INSTRUCTIONS
8	HSQ	Standards Laboratory	RF					Support HSQ Tests
9	HSQ	Technical Library	RF					Support HSQ program.
10	HSQ	Reproduction Facilities (a) Photographic (b) Printing	RF					Furnish reproduction services and release prints of MAC supplied material, as required.
11	HSQ	Mobile Searchlight Facilities	RF					Spacecraft night operations.
12	HSQ	Parachute Packing Facilities	RF					Facilities only required for packing, repacking and storing HSQ spacecraft parachute.
13	HSQ	Optical equipment repair and calibration	RF	As required				Support HSQ launch (in optical lab.)
14	HSQ	Proof testing slings	RF	As required for each operation				Support HSQ Program (Physical Calibration Lab.)
15	HSQ	Service for Gov't and contractor vehicles	RF					Service to include gasoline, motor and oil and filters, lubrication, tire service, washing and other available services.
16	HSQ	Mosquito Spray		As required				Mosquito control.
17	HSQ	Pump Houses		Pump houses manned during launch operations				18 ft head required, usable in deluge tank for Complex 40 launches.
[illegible]	HSQ	Shop Facilities		As required.				Emergency reworks.
[illegible]	HSQ	Operation and Maintenance of propellant and pressurization system at Complex 40						Support of test operations.

AFMTC FORM 35 DEC 61 PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE.

1. SECURITY CLASSIFICATION	9. DIVISION NO.
(U)	

SERVICES - GENERAL

☐ ADMINISTRATIVE ☐ FACILITIES OPERATION & MAINTENANCE ☐ MISCELLANEOUS
☐ AIR OPERATIONS ☐ MARINE OPERATIONS ☐ PROCUREMENT, STORAGE, & HOUSEKEEPING ☐ MEDICAL & DENTAL

1. SECURITY CLASSIFICATION	2. PAGE 510.2
(U)	3. DATE 12 Nov. 1965
	4. REPLACES PAGE(S) DATED

5. PROGRAM TITLE	6. PROGRAM REQUIREMENT CODE	7. SYSTEM CODE	8. CONTRACTOR
TIII SLS/MOL-HSQ	3900		MAC

10. ITEM NO.	11. TEST CODE	12. TYPE ITEM/SERVICES	12a. RUF OR RF	13. FURNISH DATES, AMOUNTS, OR CHECK FOR REQUIRED ITEM/SERVICE FROM: TO:	FROM: TO:	FROM: TO:	FROM: TO:	14. PURPOSE AND REMARKS/SPECIAL INSTRUCTIONS
20	HSQ	Water at Complex 40 potable and non-potable	RF					Drinking and sanitation
21	HSQ	Water at Industrial Area Hangar N & L	RF					Drinking and sanitation
22	HSQ	18" and 36" water systems, 30,000 GPM at 150 PSI	RF					Emergency use for fire control
23	HSQ	18" and 36" water systems 30,000 GPM at 150 psi	RF					Launch cooling; maximum duration 7½ minutes, maximum daily 225,000 gal.
23	HSQ	Cleaning Laboratory	RF					Component cleaning services per contractor-furnished specifications.
25	HSQ	Distribution of T-0 and Liftoff signals	RF					Signals supplied by Martin: To T/M van at VIB & to Range Support T/M Stations.
26	HSQ	Propellant Disposal	RF					Personnel and equipment to safely dispose of oxidizer and fuel collected in launch complex.
27	HSQ	Scott Air Packs	RF					At Complex 40: 6 regular and ? with 50-ft lines
28	HSQ	Maintenance and operation of the Nitrogen Farm which supplies gaseous nitrogen to Complex 40.	RF	Continuously throughout the life of the program.				The nitrogen farm converts liquid nitrogen to gaseous nitrogen and is capable to delivering the gas at pressures of 2500 to 3500 psig. to the Spacecraft areas CX 40.
29	HSQ	UPS Operation	RF	For all formal tests				Some tests will require UPS operation for as long a period as T-540 minutes thru T+30 minutes. Detailed UPS operation and manning requirements will be specified in appropriate OR's.

AFMTC FORM 35 DEC 61 PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE.

1. SECURITY CLASSIFICATION	2. REVISION NO.
(U)	

SERVICES - GENERAL

☐ ADMINISTRATIVE ☐ FACILITIES OPERATION & MAINTENANCE ☐ MISCELLANEOUS
☐ AIR OPERATIONS ☐ MARINE OPERATIONS ☐ PROCUREMENT, STORAGE, & HOUSEKEEPING ☐ MEDICAL & DENTAL

1. SECURITY CLASSIFICATION: (U)
2. PAGE: 510.3
3. DATE: 12 Nov. 1965
4. REPLACES PAGE(S):
DATED

5. PROGRAM TITLE: TIII SLS/MOL-HSQ
6. PROGRAM REQUIREMENT CODE: 3900
7. SYSTEM CODE:
8. CONTRACTOR: MAC

10. ITEM NO.	11. TEST CODE	12. TYPE ITEM/SERVICES	12a. RUF OR RF	13. FURNISH DATES, AMOUNTS, OR CHECK FOR REQUIRED ITEM/SERVICE FROM: TO:	FROM: TO:	FROM: TO:	FROM: TO:	14. PURPOSE AND REMARKS/SPECIAL INSTRUCTIONS
30	HSQ	Air Conditioning Maint.	RF					Maintain air conditioning equipment as required.
31	HSQ	Electrical Maint.	PF					Provide electrical service as required.
32	HSQ	Janitorial Service	RF	Daily and as required during mission				Provide best possible appearance of Launch Control Center, (Payload Room #1), at all times.
33	HSQ	Janitorial Service	RF	One week prior to mate of capsule to just prior to launch. On a two shift basis from 0730.				To clean White Room and trailers at Complex 40.
34	HSQ	Radiation Hazard						Radiation hazard inspection will be required to check spacecraft after return from spaceflight.
35	HSQ	X-Ray	RF	As required				X-Ray service for spacecraft components as required.
36	HSQ	Electric Power Critical CX 40	RF					Requirements for items 36, 37, and 38 to be defined at later date.
37	HSQ	Electrical Power Industrial CX 40	RF					
38	HSQ	Electrical Power Instrumentation CX 40	PF					

AFMTC FORM 35 DEC 61 PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE.

1. SECURITY CLASSIFICATION: (U)
9. REVISION NO.

VEHICLE AND GROUND HANDLING EQUIPMENT

1. SECURITY CLASSIFICATION: (U)
2. PAGE: 520
3. DATE: 12 Nov. 1965
4. REPLACES PAGE(S): DATED
5. PROGRAM TITLE: TIII SLS/MOL-HSQ
6. PROGRAM REQUIREMENT CODE: 3900
7. SYSTEM CODE:
8. CONTRACTOR: MAC

10. ITEM NO.	11. NAME & NOMENCLATURE	12. CAPACITY	13. PURPOSE	14. % USED	15. RUF OR RF	16. NUMBER REQUIRED /QUARTER FY 67 CY 66				FY 68 CY 67				FY				FY				FY	
						1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4		
1	Truck, tractor	2½ ton	Movement of trailers	2	RF	2	2	2															
2	Tug, warehouse	4000 lb drawbar pull	Tow S/C transportation trailer & Equip	5	RF	1	1	1															
3	Truck, cargo, with hoist tailgate	2½ ton	Utility use-transport misc equip.	3	RF	1	1	1															
4	Truck, pick-up	¼ ton	Transport small parts	5	RF	2	4	4															
5	Fork lift	4000 lb	Utility use-handling of misc. items	3	RF	1	1	1															
6	Crane, mobile	5 ton	S/C handling at CKAFS	*	RF																		
7	Tractor, aircraft, with winch and operator	25,000lb	to unload aircraft at CKAFS	*	RF																		
8	Searchlights		Illumination of Pad area	**	RF		4	4															
9	Generator	75 KVP	Emergency power plus searchlights		RF																		

NOTES: * On call during spacecraft delivery and/or return.
** Required on call during testing on Pad.

AFMTC FORM 35A SEP 61 PREVIOUS EDITION OF THIS FORM IS OBSOLETE.

NRD

1. SECURITY CLASSIFICATION: (U)
9. REVISION NO.

Spacecraft

PROPELLANTS, GASES AND CHEMICALS
(FOR MISSILE OR TEST VEHICLE)

1. SECURITY CLASSIFICATION: (U)

2. PAGE 530

3. DATE 12 Nov. 1965

4. REPLACES PAGE(S) DATED

5. PROGRAM TITLE: TIII SLS/MOL-HSQ

6. PROGRAM REQUIREMENT CODE: 3900

7. SYSTEM CODE

8. CONTRACTOR: MAC

10. ITEM NO.	11. NAME/DESIGNATION	12. MILITARY SPECIFICATION NUMBER	13. UNITS: TONS	SCF	POUNDS	GALLONS	X BOTTLES	x 10 x	14. RUF OR RF	15. QUANTITY REQUIRED/QUARTER: FY / CY	FY 67 CY 66	FY / CY	FY / CY	FY / CY	FY
											1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4
1	DEIONIZED WATER	MMS-606				X			RF		45 45				
	DISTILLED WATER					X			RF						
	ETHYL ALCOHOL					X									
	FLUORINE (LIQUID)														
2	HELIUM			X			X		RF		5				
3	HYDRAZINE Monomethyl (MMH)	MIL-P-27404			X				RF		50				
	HYDROGEN (LIQUID)		X			X									
	HYDROGEN (GAS)			X											
	HYDROGEN PEROXIDE - 85%				X										
	HYDROGEN PEROXIDE - 90%				X										
	IRFNA				X										
4	NITROGEN - LIN (LIQUID)	MIL-P-27401B	X				X		RF		10				
5	NITROGEN - GAN (GASEOUS)	MIL-P-27401		X					RF		80				
6	NITROGEN TETROXIDE	MIL-P-26539A			X		X		RF		45.0				
7	OXYGEN - LOX (LIQUID)		X				X								
	RP-1					X									
	UDMH				X										
8	Argon	MMS-601A					X		RF		6				
9	Freon	Dupont MF				X					300				
10	Isopropyl Alcohol	Reagent Grade				X			RF		250				
11	Chlorothene (NU)					X			RF		25				
12	Air (Liquid)	MMS-N-705				X					400				
13	Oxygen (Gaseous)	MMS-603A					X		RF		5				

AFMTC FORM 35B NOV 62 | PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE.

16. TELEPHONE NO.

17. SECURITY CLASSIFICATION: (U)

18. REVISION NO.

MISCELLANEOUS LUBRICANTS, HYDRAULIC FLUIDS, PRESERVATIVES, ETC.

1. SECURITY CLASSIFICATION: (U)
2. PAGE 532
3. DATE 12 Nov. 1965
4. REPLACES PAGE(S)
DATED

5. PROGRAM TITLE: TIII SLS/MOL-HSQ
6. PROGRAM REQUIREMENT NO. 3900
7. SYSTEM CODE
8. CONTRACTOR: MAC

10. ITEM NO.	11. NAME / DESIGNATION	12. MILITARY SPECIFICATION NUMBER	13. UNITS (TONS / SEP / POUNDS / GALLONS / X 10 K)	14. RUF OR RF	15. QUANTITY REQUIRED / QUARTER															
					FY 66				FY 67				FY				FY			
					CY 66				CY				CY				CY			
					1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
1	Grease (Wheel Bearing)	MIL-C-3545A	POUNDS	RF			5													
2	Grease Lub(Gen. Purpose)	MIL-L-7111	POUNDS	RF			5													
3	Grease Low & High Temp (GLT)	MIL-G-3278	POUNDS	RF			5													
4	Versilube F-50 (GE) Silicone		GALLONS	RF			1/4													
5	Grease - Silicone (G-300)		GALLONS	RF			1/4													
6	MSC 198 Coolant (Monsanto Chemical Co)	MMS-602B	GALLONS	RF			20													
7	Lacquer Thinner		GALLONS	RF			10													

AFMTC FORM 35D SEP 61 PREVIOUS EDITION OF THIS FORM IS OBSOLETE.

1. SECURITY CLASSIFICATION: (U)
8. REVISION NO.

Spacecraft

CHEMICAL AND PHYSICAL ANALYSIS

1. SECURITY CLASSIFICATION	2. PAGE 340.
(U)	3. DATE 12 Nov. 1965
	4. REPLACES PAGE(S) — — — — — — — — DATED

5. PROGRAM TITLE	6. PROGRAM REQUIREMENT NO.	7. SYSTEM CODE	8. CONTRACTOR
TIII SLS/MOL-HSQ	3900		MAC

10. ITEM NO.	11. TEST CODE	12. NAME/DESIGNATION	13. MIL. SPEC. NO.	14. DETAILS OF ANALYSIS REQUIRED	15. SAMPLING TIMES
1	HSQ	Dust Count		Will be provided later.	
2	HSQ	Gaseous Helium	U.S. Bureau of Mines Grade A PS 12302, PS20530 GCE 01-009-8 PB 10-81		1. When trailers are filled

	RSS PROP	OTHER
1. Percentage purity	99.95 min	99.95 min
2. Hydrogen	10 ppm max	no requirement
3. Oxygen	15 ppm max	no requirement
4. Nitrogen	50 ppm max	no requirement
5. Carbon Monoxide	(15 ppm)	5.0 ppm max
6. Carbon Dioxide	(combined)	5.0 ppm max
7. Hydrocarbons, Combined (Methane equivalent)	(maximum)	no requirement
8. Methane	no requirement in addition to Item 7	25 ppm max
9. Ethane	"	2.0 ppm max
10. Ethylene	"	0.02 ppm max
11. Acetylene	"	0.05 ppm max
12. C_3 & higher hydrocarbons (Hexane equivalent)	"	
13. Nitrous Oxide	"	1.0 ppm max
14. Halogenated compounds	"	0.1 ppm max
15. Other	"	0.1 ppm max
16. Dew Point	-76 Deg F	-0.05 mg/l max
Particulate (if specified by authorizing document)		
10-25 microns	300/3SCF Max	40/3SCF max
50-100 microns	15/3SCF Max	5/3SCF max
Larger than 300 microns	None/3SCF	None/3SCF
25-50	60/3SCF	
100-300	3/3SCF	

AFMTC FORM OCT 62 35E PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

NRD

1. SECURITY CLASSIFICATION	9. REVISION NO.
(U)	MT

Spacecraft	CHEMICAL AND PHYSICAL ANALYSIS	1. SECURITY CLASSIFICATION (U)	2. PAGE 548. 1 3. DATE 12 Nov. 1965 4. REPLACES PAGE(S) — — — — — — — — DATED
5. PROGRAM TITLE TIII SLS/MOL-HSQ	6. PROGRAM REQUIREMENT NO. 3900 / 7. SYSTEM CODE	8. CONTRACTOR MAC	

10. ITEM NO.	11. TEST CODE	12. NAME/DESIGNATION	13. MIL. SPEC. NO.	14. DETAILS OF ANALYSIS REQUIRED		15. SAMPLING TIMES
3	HSQ	Nitrogen - GAN (Gaseous)	MIL-P-27401B PS 12302, 20530 PB 10-81 GCE 01-009-9	1. Percentage purity 2. Total Hydrocarbons By weight as carbon By volume as Methane 3. Moisture Content Particulate Count 10-25 microns 25-50 microns 50-100 microns 100-300 microns 4. N_2O_4 content *** 5. MMH content*** 6. Total filterable solids	99.5% min 25 ppm max 58.3 ppm max .02 mg/l (-63 Deg F Dew Point) 300/3 SCF max 60/3 SCF max 15/3 SCF max 3/3 SCF max 5 ppm max 1 ppm max 1.0 mg/SCF max	1. When Dewar is loaded
4	HSQ	Argon (Gaseous)	MMS 601 PS 12302, 20530 GCE 01-009-10 PB 10-81	1. Percentage purity 2. Nitrogen 3. Oxygen 4. Hydrogen 5. Dew Point 6. Particulate: * 10-25 microns 50-100 Larger than 300 microns 25-50 microns 100-300	99.997% min 13 ppm max 7 ppm max 5 ppm max -80 Deg F 5 ppm max 300/3 SCF 15/3 SCF None/3 SCF 60/3 SCF Max 3/3 SCF max	2. Complex nitrogen during validation As required per applicable operation requirements document

CHEMICAL AND PHYSICAL ANALYSIS

Spacecraft

1. SECURITY CLASSIFICATION	2. PAGE NO. 2
(U)	3. DATE 12 Nov. 1965
	4. REPLACES PAGE(S) — — — — — — — — DATED

5. PROGRAM TITLE	6. PROGRAM REQUIREMENT NO.	7. SYSTEM CODE	8. CONTRACTOR
TIII SLS/MOL-HSQ	3900		MAC

10. ITEM NO.	11. TEST CODE	12. NAME/DESIGNATION	13. MIL. SPEC. NO.	14. DETAILS OF ANALYSIS REQUIRED		15. SAMPLING TIMES
5	HSQ	Nitrogen Tetroxide (N_2O_4)	MIL-P-26539A (N_2O_4) PS 20530 PB 10-81	1. Percentage purity 2. Water equivalent 3. Choloride as Nitrosyl Chloride 4. Non-volatile Ash Particulate: * 10-25 microns 25-50 microns 50-100 microns Larger than 300 microns 100-300 microns	99.5% min. 0.1% max 0.08% max 0.01% max 100/100 ml max 20/100 ml max 5/100 ml max none/100 ml max 1/100 ml max	1. Upon receipt 2. Every 30 days 3. Before use(2 days) 4. After loading
6	HSQ	Monomethyl Hydrazine (MMH)	MIL-P-27404, PS20530 PB 10-81 GCE 01-009-12	Determine iron content (PPM) 1. Percentage purity 2. Water plus soluble impurities 3. Density at 77 Deg F (25 Deg F) in grams/milliter 4. Transmittancy (percent) 5. Particulate weight Particulate: * 10-25 microns 25-50 microns 50-100 microns Larger than 300 microns 100-300 microns	 98.0 2.0% max 0.872 ± 0.004 90 min 1.0 mg/liter max 100/100 ml max 20/100 ml max 5/100 ml max None/100 ml max 1/100 ml max	1. Upon receipt 2. 1 sample from each drum monthly 3. Before use (2 days) 4. After loading

*If specified by the accompanying GCE

AFMTC FORM OCT 62 35E PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

NRD

7. SECURITY CLASSIFICATION	8. REVISION NO.
(U)	MT

Spacecraft	CHEMICAL AND PHYSICAL ANALYSIS			1. SECURITY CLASSIFICATION (U)	2. PAGE NO. 3 3. DATE 12 Nov. 1965 4. REPLACES PAGE(S) DATED
5. PROGRAM TITLE TIII SLS/MOL-HSQ		6. PROGRAM REQUIREMENT NO. 3900	7. SYSTEM CODE	8. CONTRACTOR MAC	

10. ITEM NO.	11. TEST CODE	12. NAME/DESIGNATION	13. MIL. SPEC. NO.	14. DETAILS OF ANALYSIS REQUIRED	15. SAMPLING TIMES
7	HSQ	Demineralized Water	MMS 606, PS12302, 20530, PB 10-81	1. Filterable solids 1 mg/100 ml max Particulate 10-25 microns 100/100 ml max 25-50 microns 20/100 ml max 50-100 microns 5/100 ml max 100-300 microns 1/100 ml max 300 up none Total solids Info only Specific Conductance Info only	1 as required per applicable operation requirements document.
8	HSQ	Freon MF (Trichloromonofluoro-methane)	Dupont Specifications Filtered through 2 Micron Filter	Appearance - clear, colorless liquid Boiling PT - 74.8 Deg F at 1 ATM Boiling Range - (5 to 85% distilled) - 0.5 Deg F Soluble Residue (ppm by wt., max) - 2 Chloride Ion (ppm wt., max) - Nil Moisture content (ppm by wt., max) -10	One time requirement-two week notice

Spacecraft

TEST INSTRUMENT MAINTENANCE AND CALIBRATION

[X] ELECTRICAL & ELECTRONIC [ ] DIMENSIONAL & PHYSICAL [ ] OPTICAL INSTRUMENTS

1. SECURITY CLASSIFICATION: (U)

2. PAGE 360

3. DATE 12 Nov. 1965

4. REPLACES PAGE(S) DATED

5. PROGRAM TITLE: T III SLS/MOL-HSQ

6. PROGRAM REQUIREMENT NO. 3900

7. SYSTEM CODE

8. CONTRACTOR: MAC

10. ITEM NO.	11. RANGE USER'S PRECISION ELECTRONIC, MECHANICAL OR OPTICAL INSTRUMENTS: NAME/DESIGNATION	NAME OF MANUFACTURER	MODEL NUMBER	12. CALIBRATION: RANGE OR SCALE & UNITS	ACCURACY	CYCLE	IN PLACE: YES	IN PLACE: NO	13. REPAIRS: MAJOR	13. REPAIRS: MINOR	14. QUANTITY: FY 66 (1)	(2)	(3)	(4)	FY67	FY68
1	Analyzer, Distortion	Hewlett Packard	330DR	20 to 20 Kc	Mfg. Spec	3		X		X			1	1	1	
2	Analyzer, Dynamic	Industrial Control	100A		"	3		X		X			1	1	1	
3	Attenuator	Weinschel Eng.	10-10	10.15 db at DC 10.2 db at 0.4KMC 10.2 db at 0.75KMC 10.0 db at 1.0KMC	"	6		X		X			1	1	1	
4	Attenuator	Weinschel Eng.	50-20	20.0 db at DC 20.0 db at 0.4KMC 20.1 db at 1.0KMC	"	6		X		X			1	1	1	
5	Bridge, Impedance	General Radio	650A	0 to 1 Meg 0 to 100 MF 0 to 100 h	"	6		X		X			1	1	1	
6	Bridge, Impedance	General Radio	1650A	0 to 10 Meg 0 to 1000 MF 0 to 1000 h	"	6		X		X			1	1	1	
7	Bridge, RF	General Radio	1606A	0 to 1000 ohms 400 Kc to 60 Mc	"	6		X		X			1	1	1	
8	Bridge, Wheatstone	Rubicon Inst.	105Z	0 to 10 Meg	"	6		X		X			1	1	1	
9	Calibrator, AC-DC Precision	Ballantine	420	0 to 10 VDC	"	3		X		X			2	2	2	
10	Cell, Standard	Eppley Lab	100		0.01%	2		X		X			2	2	2	
11	Cell, Standard	Weston	4		0.01%	2		X		X			1	1	1	
12	Checker, L. C.	Aerovox	97	0.00015 to 3.5MFD 45 Kc to 44 Mc	Mfg. Spec	6		X		X			1	1	1	
13	Coder, Modulation	Babcock	BCC6		"	3		X		X			1	1	1	
14	Counter, Electronic	Beckman-Berkley	7060	0 to 1.0 Mc	"	3		X		X			1	1	1	
15	Counter, Electronic	Beckman-Berkley	7360JR	0 to 1.0 Mc	"	3		X		X			1	1	1	
16	Counter, Electronic	Hewlett Packard	521CR	1 cps to 120 Kc	"	3	X			X			1	1	1	
17	Counter, Electronic	Hewlett Packard	521CR		"	3		X		X			1	1	1	
18	Counter, Electronic	Hewlett Packard	522B	10 cps to 120 Kc	"	3		X		X			3	3	3	
19	Counter, Electronic	Hewlett Packard	523B	10 cps to 120 Kc	"	3		X		X			3	3	3	
20	Counter, Electronic	Hewlett Packard	532CR	10 cps to 1.2 Mc	"	3		X		X			1	1	1	
21	Counter, Electronic	Hewlett Packard	524C	10 cps to 10.1 Mc	"	3		X		X			1	1	1	

AFMTC FORM SEP 61 35G

1. SECURITY CLASSIFICATION (U)

9. REVISION NO.

Spacecraft

TEST INSTRUMENT MAINTENANCE AND CALIBRATION

x ELECTRICAL & ELECTRONIC __ DIMENSIONAL & PHYSICAL __ OPTICAL INSTRUMENTS

1. SECURITY CLASSIFICATION: (U)

2. PAGE 580 .1

3. DATE 12 Nov. 1965

4. REPLACES PAGE(S) DATED

5. PROGRAM TITLE: T III SLS/MOL-HSQ

6. PROGRAM REQUIREMENT NO. 3900

7. SYSTEM CODE

8. CONTRACTOR: MAC

10 ITEM NO	11. RANGE OF USER'S PRECISION ELECTRONIC, MECHANICAL OR OPTICAL INSTRUMENTS			12a CALIBRATION			IN PLACE		13. REPAIRS		14. QUANTITY				
	NAME/DESIGNATION	NAME OF MANUFACTURER	MODEL NUMBER	RANGE OR SCALE & UNITS	ACCURACY	CYCLE	YES	NO	MAJOR	MINOR	FY66 1	FY66 1 2	FY66 3	FY66 4	FY67	FY68
22	EPut Meter	Beckman-Berkley	7360	DC to 500 KC	Mfg. Spec.	2		X		X			2	2	2	
23	Counter, RDB	Dymec	2503B	1 cps to 100 KC	"	3		X		X			1	1	1	
24	Counter, RDB	Systron	1043	5 cps to 100 KC	"	3		X		X			1	1	1	
25	Counter,Universal Timer	Computer Measurement	225B	0 to 220 Kc	"	3		X		X			2	2	2	
26	Readout, In-Line	Beckman-Berkley	5916		"	3		X		X			1	1	1	
27	Decade, Capacitor	Cornell Dubilier	CDA5	0 to 0.01 MFD	"	6		X		X			1	1	1	
28	Decade, Capacitor	Cornell Dubilier	CDC3	0 to 10 MFD	"	6		X		X			1	1	1	
29	Decade, Capacitor	Electro Measurement	DC40	0.001 to 0.1 MFD	"	6		X		X			1	1	1	
30	Decade, Capacitor	General Radio	219M-3	0 to 0.1 MFD	"	6		X		X			1	1	1	
31	Decade, Capacitor	General Radio	1419K	0 to 1.0 MFD	"	6		X		X			1	1	1	
32	Decade, Resistor	General Radio	1432J	0 to 11,110 ohm	"	6		X		X			2	2	2	
33	Decade, Resistor	Rubicon Inst	1013	0 to 999.9 ohm	"	6		X		X			1	1	1	
34	Decade, Resistor	Rubicon Inst	1016	0 to 99,999 ohm	"	6		X		X			1	1	1	
35	Decade, Voltage Divider	General Radio	1454A	0.001 to 1.0 IN 0.001 Steps	"	6		X		X			2	2	2	
36	Filter, Band-Pass	Krohn-Hite	310B	20 to 200 Kc	"	3		X		X			2	2	2	
37	Filter, Band-Pass	Krohn-Hite	330A	0.02 to 2 Kc	"	3		X		X			1	1	1	
38	Filter, Band Pass	Krohn-Hite	310AB	20 to 200 Kc	"	3		X		X			1	1	1	
39	Generator, Audio	Hewlett Packard	200 TR	1 cps to 10 Kc PRF	"	3		X		X			2	2	2	
40	Generator, Dual Pulse	Beckman-Berkley	4904R	0.25 to 10 us PW	"	3		X		X			1	1	1	
41	Generator, Function	Hewlett Packard	202A	0.008 to 1.2 Kc	"	3		X		X			1	1	1	
42	Generator, Multi Pulse	Polaroid	MP1A	10 cps to 10Kc PRF 0.2 to 2 us PW	"	3		X		X			1	1	1	
43	Generator, Random Noise	General Radio	1390B	20Kc,500Kc,&5Mc	"	3		X		X			2	2	2	
44	Generator, Signal	Babcock	BSG10	405 to 420 Mc	"	3		X		X			1	1	1	
45	Generator, Signal FM-AM	Boonton Radio	202G	175 to 250 Mc	"	3		X		X			3	3	3	
46	Generator, Signal FM-AM	Maiconi Inst.	TF1066B	10 to 470 Mc	"	3		X		X			2	2	2	
47	Generator, Signal HF	Hewlett Packard	606A	50 Kc to 65 Mc	"	4		X		X			1	1	1	
48	Generator, Signal SHF	Hewlett Packard	618B	3800MC to 7600Mc	"	4		X		X			1	1	1	
49	Generator, Signal UHF	Hewlett Packard	616A	1800Mc to 4000Mc	"	4		X		X			1	1	1	
50	Generator, VHF	Hewlett Packard	608D	10 Mc to 420 Mc	"	4		X		X			1	1	1	

Spacecraft

TEST INSTRUMENT MAINTENANCE AND CALIBRATION

(X) ELECTRICAL & ELECTRONIC ( ) DIMENSIONAL & PHYSICAL ( ) OPTICAL INSTRUMENTS

1. SECURITY CLASSIFICATION: (U)

2. PAGE 660.2

3. DATE 12 Nov. 1965

4. REPLACES PAGE(S) DATED

5. PROGRAM TITLE: T III SLS/MOL-HSQ

6. PROGRAM REQUIREMENT NO. 3900

7. SYSTEM CODE

8. CONTRACTOR: MAC

10 ITEM NO	11. RANGE USER'S PRECISION ELECTRONIC, MECHANICAL OR OPTICAL INSTRUMENTS: NAME/DESIGNATION	NAME OF MANUFACTURER	MODEL NUMBER	12. CALIBRATION: RANGE OR SCALE & UNITS	ACCURACY	CYCLE	IN PLACE: YES	IN PLACE: NO	13. REPAIRS: MAJOR	REPAIRS: MINOR	14. QUANTITY: FY 66 1	FY 66 2	FY 66 3	FY 66 4	FY67	FY68
51	Generator, UHF	Hewlett Packard	608DR		Mfg. Spec.	4		X		X			1	1	1	1
52	Generator, Sweep TV-FM	RCA	WR69A	54 to 216 Mc	"	3		X		X			1	1	1	1
53	Generator, Square Wave	Tektronix	105	25 cps to 1 Mc	"	3		X		X			1	1	1	1
54	Generator, Square Wave	Tektronix	107	400 Kc to 1 Mc	"	3		X		X			1	1	1	1
55	Generator, Sine Wave	Tektronix	190B	50 Kc to 50 Mc	"	3		X		X			1	1	1	1
56	Generator, Time Marker	Tektronix	180A	SW Freq 5,10,50Mc TR Freq 1,10,100cps 1,10,100Kc	"	3		X		X			1	1	1	1
57	Indicator, Standing Wave	Hewlett Packard	415BR	1000cps	"	3		X		X			2	2	2	2
58	Meter, Admittance UHF	General Radio	1602B	40 to 1500 Mc	"	3		X		X			1	1	1	1
59	Meter, Amp AC	Westinghouse	PY-4	0 to 10 Amp	"	3		X		X			1	1	1	1
60	Meter, Amp DC	Weston	931	0 to 15 Amp	0.5%	3		X		X			1	1	1	1
61	Meter, Differential	John Fluke	803	0 to 560 Volt	Mfg. Spec.	3		X		X			2	2	2	2
62	Meter, Digital Ratio	Hycon	625	0 to 999 VDC 0 to 10 K ohm	"	3		X		X			1	1	1	1
63	Meter, Digital Volt	Beckman-Berkley	4011	0.00 to 999.9VDC	"	3		X		X			2	2	2	2
64	Meter, Digital Volt	Beckman-Berkley	4011R	0.00 to 999.9VDC	"	3		X		X			1	1	1	1
65	Meter, Digital Volt	Beckman-Berkley	5350	0 to 1000 VDC 0 to 500 VAC 0 to 10 Meg	"	3		X		X			2	2	2	2
66	Meter, Digital Volt	Beckman-Berkley	5350R	0 to 1000 VDC 0 to 500 VAC 0 to 10 Meg	"	3		X		X			1	1	1	1
67	Meter, Digital Volt	Hewlett Packard	405AR	0.001 to 999 VDC	"	3		X		X			2	2	2	2
68	Meter, Digital Volt	Hewlett Packard	405BR	0.001 to 999 VDC	"	3		X		X			1	1	1	1
69	Meter, Digital Volt	Hewlett Packard	405CR	0.001 to 999 VDC	"	3		X		X			3	3	3	3
70	Meter, Digital Volt	Kintel	456	0.001 to 1000 VDC	"	3		X		X			2	2	2	2
71	Meter, Digital Volt	Kintel	502	0 to 100 VAC or DC	"	2		X		X			2	2	2	2
72	Converter, AC	Kintel	452	0.001 to 999.9 V	"	3		X		X			2	2	2	2
73	Readout, Digital	Kintel	473A	N/A	"	3		X		X			2	2	2	2
74	Meter, Distortion & Noise	General Radio	1932A	50 to 15 Kc Dist 30 to 45 Kc Noise	"	3		X		X			1	1	1	1

AFMTC FORM SEP 61 35G

NRD

*Items will be required in FY'68 only if the program is expanded to include additional launches.

9. REVISION NO.

Spacecraft

TEST INSTRUMENT MAINTENANCE AND CALIBRATION

[X] ELECTRICAL & ELECTRONIC [ ] DIMENSIONAL & PHYSICAL [ ] OPTICAL INSTRUMENTS

1. SECURITY CLASSIFICATION: (U)

2. PAGE 500 3

3. DATE 12 Nov. 1965

4. REPLACES PAGE(S) DATED

5. PROGRAM TITLE: T III SLS/MOL-HSQ

6. PROGRAM REQUIREMENT NO. 3900

7. SYSTEM CODE

8. CONTRACTOR: MAC

10. ITEM NO.	11. RANGE USER'S PRECISION ELECTRONIC, MECHANICAL OR OPTICAL INSTRUMENTS: NAME/DESIGNATION	NAME OF MANUFACTURER	MODEL NUMBER	12. CALIBRATION: RANGE OR SCALE & UNITS	ACCURACY	CYCLE	IN PLACE: YES	IN PLACE: NO	13. REPAIRS: MAJOR	13. REPAIRS: MINOR	14. QUANTITY: FY 66 1	FY 66 2	FY 66 3	FY 66 4	FY67	FY68
75	Meter, Electronic Volt	Ballantine	300	1 Mv to 100V RMS 10 Cps to 150 Kc	Mfg. Spec.	3		X		X			2	2	2	
76	Meter, Electronic Volt	Ballantine	300D	1 Mv to 1000V RMS	"	3		X		X			3	3	3	
77	Meter, Electronic Volt	Ballantine	302C	100 uv to 1000V RMS	"	3		X		X			2	2	2	
78	Meter, Electronic Volt	Bruel & Kjoer	2409	0 to 1000V AV., RMS, & PP	"	3		X		X			1	1	1	
79	Meter, Electronic Multi	Daven	MF6/DU	500 uv to 500V RMS	"	3		X		X			1	1	1	
80	Meter, Electronic Multi	Harrison Lab	ME6/DU	500 uv to 500V RMS	"	3		X		X			1	1	1	
81	Meter Frequency	General Radio	720A	10 to 3000 Mc	"	3		X		X			2	2	2	
82	Meter, Frequency	JBI Instruments	33FP9M	100 to 130 VAC 380 to 420 cps	"	3		X		X			1	1	1	
83	Meter, Frequency	Narda Corp	802B	2350 to 10.5 Mc	"	3		X		X			3	3	3	
84	Meter, Frequency	Polytechnic Research	583D	2.7 to 3 K Mc	"	3		X		X			1	1	1	
85	Meter, Frequency	Sperry Corp	28C	4010 to 6000 Mc	"	3		X		X			1	1	1	
86	Meter, Hook-On Volt AMP AC	General Electric	AK4	0 to 750V 0 to 800A	"	3		X		X			1	1	1	
87	Meter, Megohm	Freed	1020B	1 to 2,000,000 Meg 500 VDC	3%	3		X		X			1	1	1	
88	Meter, Calorimetric Pwr.	Hewlett Packard	434AR		Mfg. Spec.	3		X		X			2	2	2	
89	Meter, Microwave Power	Hewlett Packard	430C	0 to 10 MW	"	3		X		X			1	1	1	
90	Meter, Microwave Power	Hewlett Packard	430CR	0 to 10 Mv	"	3		X		X			1	1	1	
91	Meter, Micro Volt-Amp DC	Kintel	203	100uWA to 100 MA 100 u V to 1000 V	"	3		X		X			1	1	1	
92	Meter, Milliamp DC	Weston	931	0 to 1.0 MA	0.5%	3		X		X			1	1	1	
93	Meter, Milliamp DC	Weston	931	0 to 15.0 MA	0.5%	3		X		X			1	1	1	
94	Meter, Milliohm	Shaucross	670A	0 to 0.5 Ohm	Mfg. Spec.	3		X		X			1	1	1	

AFMTC FORM SEP 61 35G

NRD

1. SECURITY CLASSIFICATION: (U)

8. REVISION NO.

Spacecraft

TEST INSTRUMENT MAINTENANCE AND CALIBRATION

(X) ELECTRICAL & ELECTRONIC ( ) DIMENSIONAL & PHYSICAL ( ) OPTICAL INSTRUMENTS

1. SECURITY CLASSIFICATION: (U)

2. PAGE 560

3. DATE 12 Nov, 1965

4. REPLACES PAGE(S) DATED

5. PROGRAM TITLE: T III SLS/MOL-HSQ

6. PROGRAM REQUIREMENT NO. 3900

7. SYSTEM CODE

8. CONTRACTOR: MAC

10 ITEM NO.	11. RANGE USER'S PRECISION ELECTRONIC, MECHANICAL OR OPTICAL INSTRUMENTS: NAME/DESIGNATION	NAME OF MANUFACTURER	MODEL NUMBER	12. CALIBRATION: RANGE OR SCALE & UNITS	ACCURACY	CYCLE	IN PLACE: YES	IN PLACE: NO	13. REPAIRS: MAJOR	REPAIRS: MINOR	14. QUANTITY: FY 65 (1)	(2)	(3)	(4)	FY67	FY68
95	Meter, VOM	Simpson	270	0 to 5000V AC&DC 0 to 10 A DC 0 to 20 Meg	Mfg Spec	3		X		X			10	10	10	
96	Meter, VOM	Triplett	630	0 to 6000 V AC&DC 0 to 12 A DC 0 to 100 Meg	"	3		X		X			3	3	3	
97	Meter, VOM	Triplett	630A	0 to 6000 V AC&DC 0 to 12 A DC 0 to 100 Meg	"	3		X		X			5	5	5	
98	Meter, VOM	Triplett	630APL	0 to 5000 V AC&DC 0 to 10 A DC 0 to 100 Meg	"	3		X		X			2	2	2	
99	Meter, VOM	Triplett	630NA	0 to 6000 V AC&DC 0 to 12 A DC 0 to 100 Meg	"	3		X		X			1	1	1	
100	Meter, VTVM	Hewlett Packard	400C	0 to 300 V RMS 10 cps to 2 Mc	"	3		X		X			2	2	2	
101	Meter, VTVM	Hewlett Packard	400D	0 to 300 V RMS 10 cps to 4 Mc	"	3		X		X			2	2	2	
102	Meter, VTVM	Hewlett Packard	400H	0 to 300 V RMS 10 cps to 4 Mc	"	3		X		X			2	2	2	
103	Meter, VTVM	Hewlett Packard	400 HR	0 to 300 V RMS 10 cps to 4 Mc	"	3		X		X			5	5	5	
104	Meter, VTVM	Hewlett Packard	410A	0 to 300 VAC 0 to 1000 VDC 0 to 500 Meg	"	3		X		X			1	1	1	

AFMTC FORM SEP 61 35G

1. SECURITY CLASSIFICATION: (U)

9. REVISION NO.

Spacecraft

TEST INSTRUMENT MAINTENANCE AND CALIBRATION

X ELECTRICAL & ELECTRONIC __ DIMENSIONAL & PHYSICAL __ OPTICAL INSTRUMENTS

1. SECURITY CLASSIFICATION: (U)

2. PAGE 360 ,5

3. DATE 12 Nov 1965

4. REPLACES PAGE(S)

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5. PROGRAM TITLE: T III SLS/MOL-HSQ

6. PROGRAM REQUIREMENT NO. 3900

SYSTEM CODE

8. CONTRACTOR: MAC

10 ITEM NO	11. RANGE USER'S PRECISION ELECTRONIC, MECHANICAL OR OPTICAL INSTRUMENTS: NAME DESIGNATION	NAME OF MANUFACTURER	MODEL NUMBER	12. CALIBRATION: RANGE OR SCALE & UNITS	ACCURACY	CYCLE	IN PLACE: YES	IN PLACE: NO	13. REPAIRS: MAJOR	REPAIRS: MINOR	14. QUANTITY: FY 66 (1)	(2)	(3)	(4)	FY67	FY68
105	Meter, VTVM	Hewlett Packard	410B	0 to 300 VAC 20 cps to 700Mc 0 to 1000 VDC	Mfg Spec	3		X		X			3	3	3	
106	Meter, VTVM	Hewlett Packard	412A	0 to 500 Meg 0 to 1000 VDC 0 to 1 ADC 0 to 5000 Meg	"	3		X		X			1	1	1	
107	Meter, VTVM	RCA	WV98A	0 to 1500 V AC&DC 0 to 4200 V-AC-PP 30 cps to 3 Mc 0 to 1000 Meg	"	3		X		X			3	3	3	
108	Meter, VTVM	Simpson	303	0 to 1200 V AC&DC 0 to 100 Kc 0 to 1000 Meg	"	3		X		X			1	1	1	
109	Meter, Watt	Bird Electric	43	0 to 25 W 0 to 50 W 0 to 100 W	"	6		X		X			3	3	3	
110	Meter, Watt	Bird Electric	61	0 to 15 W 0 to 60 W	"	6		X		X			2	2	2	
111	Meter, Watt	Bird Electric	611	0 to 15 W 0 to 60 W	"	6		X		X			2	2	2	
112	Meter, Watt	Sierra Electronic	185A100FN	0 to 30 W 0 to 100 W	"	6		X		X			2	2	2	
113	Oscillator, Audio	Hewlett-Packard	200ABR	20 to 40 Kc	"	3		X		X			2	2	2	
114	Oscillator, Audio	Hewlett-Packard	200CD	5 to 600 Kc	"	3		X		X			3	3	3	
115	Oscillator, Audio	Hewlett-Packard	202B	0.5 cps to 50 Kc	"	3		X		X			1	1	1	
116	Oscillator, Audio	Hewlett-Packard	202CR	1 cps to 100 Kc	"	3		X		X			2	2	2	

AFMTC FORM SEP 61 35G

NRD

1. SECURITY CLASSIFICATION: (U)

2. REVISION NO.

Spacecraft

TEST INSTRUMENT MAINTENANCE AND CALIBRATION

X ELECTRICAL & ELECTRONIC ___ DIMENSIONAL & PHYSICAL ___ OPTICAL INSTRUMENTS

1. SECURITY CLASSIFICATION: (U)
2. PAGE 360 .6
3. DATE 12 Nov 1965
4. REPLACES PAGE(S) DATED

5. PROGRAM TITLE: T III SLS/MOL-MSQ
6. PROGRAM REQUIREMENT NO. 3900
7. SYSTEM CODE
8. CONTRACTOR: MAC

10 ITEM NO	11. RANGE USER'S PRECISION ELECTRONIC, MECHANICAL OR OPTICAL INSTRUMENTS: NAME/DESIGNATION	NAME OF MANUFACTURER	MODEL NUMBER	12. CALIBRATION: RANGE OR SCALE & UNITS	ACCURACY	CYCLE	IN PLACE: YES	IN PLACE: NO	13. REPAIRS: MAJOR	13. REPAIRS: MINOR	14. QUANTITY: 66 (1)	66 (2)	66 (3)	66 (4)	67	68
117	Oscillator, Audio	Hewlett-Packard	202CR	1 cps to 100 Kc	+ 2%	2	X			X			2	2	2	
118	Oscillator, Electronic Sweep	Hewlett-Packard	683C	2.1 Mc to 2.1 GC	Mfg. Spec	3		X		X						
119	Oscillator, Electronic Sweep	Hewlett-Packard	684C	4.1 Mc to 4.1 GC	"			X		X			1	1	1	
120	Oscillator, Telemetry	Hewlett-Packard	200T	250 cps to 100 Kc	"	3		X		X			3	3	3	
121	Oscillator, Telemetry	Hewlett-Packard	200T	250 cps to 100 Kc	"	2	X			X			2	2	2	
122	Oscillator, Telemetry	Hewlett-Packard	200TR	250 cps to 100 Kc	"	3		X		X			2	2	2	
123	Oscillator, Transfer	Beckman Berkley	7580R	60Cps to 15K	"	2		X		X			1	1	1	
124	Oscillator, Transfer	Hewlett-Packard	540B	100 Mc to 220 Mc	"	3		X		X			1	1	1	
125	Oscillator, Unit	General Radio	1211B	0.5 to 50 Mc	"	4		X		X			1	1	1	
126	Oscilloscope	DuMont	304H	DC to 100 Kc	"	3		X		X			1	1	1	
127	Oscilloscope	DuMont	401A	DC to 100 Kc	"	3		X		X			1	1	1	
128	Oscilloscope	Hewlett-Packard	120A	DC to 200 Kc	"	3		X		X			1	1	1	
129	Oscilloscope	Hewlett-Packard	120AR	DC to 200 Kc	"	3		X		X			2	2	2	
130	Oscilloscope	Hewlett-Packard	122AR	DC to 200 Kc	"	3		X		X			1	1	1	
131	Oscilloscope	Hewlett-Packard	130BR	DC to 300 Kc	"	3		X		X			1	1	1	
132	Oscilloscope	Tektronix	535	DC to 12 Mc	"	3		X		X			1	1	1	
133	Oscilloscope	Tektronix	545A	DC to 30 Mc	"	3		X		X			3	3	3	
134	Oscilloscope	Tektronix	555A	DC to 30 Mc	"	3		X		X			2	2	2	
135	Oscilloscope	Tektronix	RM35A	DC to 15 Mc	"	3		X		X			2	2	2	
136	Oscilloscope	Tektronix	RM45	DC to 30 Mc	"	3		X		X			3	3	3	
137	Oscilloscope	Tektronix	RM45A	DC to 30 Mc	"	3		X		X			3	3	3	
138	Preamplifier, Oscilloscope	Tektronix	53/54	DC to 20 Mc	"	3		X		X			3	3	3	
139	Preamplifier, Oscilloscope	Tektronix	53/54C		"	2	X			X			2	2	2	
140	Preamplifier, Oscilloscope	Tektronix	53/54N		"	2	X			X			2	2	2	
141	Preamplifier, Oscilloscope	Tektronix	A	Dc to 20 Mc	"	3		X		X			2	2	2	
142	Preamplifier, Oscilloscope	Tektronix	B	DC to 20 Mc 2 cps to 12 Mc AC	"	3		X		X			1	1	1	
143	Preamplifier, Oscilloscope	Tektronix	CA	DC to 24 Mc	"	3		X		X			5	5	5	
144	Preamplifier, Oscilloscope	Tektronix	D	DC to 350 Kc at 1 mv/cm DC to 2 Mc at 50 Mv/cm	"	3		X		X			1	1	1	

AFMTC FORM SEP 61 35G

NRD

1. SECURITY CLASSIFICATION: (U)
2. REVISION NO.

Spacecraft

TEST INSTRUMENT MAINTENANCE AND CALIBRATION

X ELECTRICAL & ELECTRONIC ___ DIMENSIONAL & PHYSICAL ___ OPTICAL INSTRUMENTS

1. SECURITY CLASSIFICATION: (U)

2. PAGE 560 .7

3. DATE 12 Nov. 1965

4. REPLACES PAGE(S) DATED

5. PROGRAM TITLE: T III SIS/MOL-HSQ

6. PROGRAM REQUIREMENT NO. 3900

7. SYSTEM CODE

8. CONTRACTOR: MAC

10. ITEM NO.	11. RANGE USER'S PRECISION ELECTRONIC, MECHANICAL OR OPTICAL INSTRUMENTS: NAME/DESIGNATION	NAME OF MANUFACTURER	MODEL NUMBER	12. CALIBRATION: RANGE OR SCALE & UNITS	ACCURACY	CYCLE	IN PLACE: YES	IN PLACE: NO	13. REPAIRS: MAJOR	13. REPAIRS: MINOR	14. QUANTITY: FY 66 1	FY 66 2	FY 66 3	FY 66 4	FY 67	FY 68
145	Preamplifier,Oscilloscope	Tektronix	G	DC to 20 Mc	Mfg	3		X		X			1	1	1	
146	Preamplifier,Oscilloscope	Tektronix	H	DC to 15 Mc	Spec	3		X		X			2	2	2	
147	Preamplifier,Oscilloscope	Tektronix	K	DC to 30 Mc	"	3		X		X			2	2	2	
148	Preamplifier, Oscilloscope	Tektronix	L	DC to 30 Mc at 40 V/cm & 3 cps to 24 Mc at 4 V/cm	"	3		X		X			2	2	2	
149	Preamplifier,Oscilloscope	Tektronix	Z	DC to 10 Mc	"	3		X		X			3	3	3	
150	Preamplifier,Oscilloscope	Tektronix	123	0.2 mv to 100 VAC	± 3%	2	X			X			2	2	2	
151	Potentiometer	Rubicon	2745	0 to 16.1 Mv 0 to 80.5 Mv	Mfg Spec	3		X		X			2	2	2	
152	Receiver,Microwave Basic	Polarad	RB-1		"	12		X		X			1	1	1	
153	Tuning Unit,Receiver	Polarad	RM-T	4200 to 7740 Mc	"	12		X		X			1	1	1	
154	Receiver Phase Lock	Nems Clark	1432	215 to 260 Mc	"	6		X		X			1	1	1	
155	Tuning Unit, Receiver	Polarad	RS-T	2000 to 4200 M	"	12		X		X			1	1	1	
156	Display Unit,Spectrum	Nems Clark	200-3	30 Mc Center Freq	"	6		X		X			1	1	1	
157	Panadaptor,Type T-2000NC	Panotamic	SA-3	30 Mc Center Freq	"	6		X		X			2	2	2	
158	Receiver, Radio	Collins Radio	R390A	200 Kc to 30 Kc	"	12		X		X			1	1	1	
159	Receiver, Special	Nems Clark	1501A	55 to 260 Mc	"	12		X		X			1	1	1	
160	Extension Unit, Range	Nems Clark	REU-100	250 to 475 Mc	"	12		X		X			1	1	1	
161	Display Unit,Spectrum	Nems Clark	200-2	30 Mc Center Freq	"	3		X		X			1	1	1	
162	Receiver, Special	Nems Clark	1502A	55 to 260 Mc	"	6		X		X			1	1	1	
163	Receiver, Special	Nems Clark	1671	175 to 260 Mc	"	6		X		X			1	1	1	
164	Receiver, HF		5820-538-755		"	6		X		X			1	1	1	
165	Preadaptor,Type T-30001	Panoramic	5A3	21.4 Mc Center Freq	"	6		X		X			1	1	1	
166	Receiver,Telemetry-VHF	Defense Electronics	TMR5A	10 Kc to 1.5 Mc	"	6		X		X			2	2	2	
167	Display Unit,Telemetry	Defense Electronics	TDU-4	30 Mc Center Freq	"	6		X		X			1	1	1	
168	Resistor, Coaxial	Bird Electric	81	51.5 ohm 50 Watt	"	6		X		X			3	3	3	
169	Standard,DC Voltage	Kintel	302	+1 to 500 VDC	"	3		X		X			3	3	3	

AFMTC FORM SEP 61 35G

NRD

1. SECURITY CLASSIFICATION: (U)

9. REVISION NO.

Spacecraft

TEST INSTRUMENT MAINTENANCE AND CALIBRATION

XXX ELECTRICAL & ELECTRONIC ___ DIMENSIONAL & PHYSICAL ___ OPTICAL INSTRUMENTS

1. SECURITY CLASSIFICATION: (U)

2. PAGE 360 8

3. DATE 12 Nov 1965

4. REPLACES PAGE(S) DATED

5. PROGRAM TITLE: T III SLS/MOL-HSQ

6. PROGRAM REQUIREMENT NO. 3900

7. SYSTEM CODE

8. CONTRACTOR: MAC

10. ITEM NO.	11. RANGE USER'S PRECISION ELECTRONIC, MECHANICAL OR OPTICAL INSTRUMENTS: NAME/DESIGNATION	NAME OF MANUFACTURER	MODEL NUMBER	12. CALIBRATION: RANGE OR SCALE & UNITS	ACCURACY	CYCLE	IN PLACE: YES	IN PLACE: NO	13. REPAIRS: MAJOR	13. REPAIRS: MINOR	14. QUANTITY: FY 66 1	FY 66 2	FY 66 3	FY 66 4	FY 67	FY 68
170	Supply, Power.	Hewlett-Packard	712B	0 to 500 VDC at 200MA, 0 to 150VDC at 5MA-300VDC at 50MA,6.3VAC at 10A	Mfg Spec	6		X		X			2	2	2	
171	Supply Power	Hewlett-Packard	721B	0 to 50 VDC 0 to 150 MA	"	6		X		X			1	1	1	
172	Supply,Power	Hewlett-Packard	723A	0 to 40 VDC 0 to 500 MA	"	6		X		X			1	1	1	
173	Supply,Power	Kepco	SC32-15A	0 to 32 VDC 0 to 15A	"	6		X		X			1	1	1	
174	Supply,Power	Krohn-Hite	UHR245	0 to 500 VDC 0 to 500 Ma 6.3 VAC at 10A	"	6		X		X			1	1	1	
175	Supply,Power	Lamdba	LA50-03AM	0 to 34 VDC 0 to 5A	"	6		X		X			1	1	1	
176	Supply,Power	Lamdba	C28-1M	125V to 325 VDC 0 to 200 Ma	"	6		X		X			1	1	1	
177	Supply,Power	Lamdba	C88-1M	125V to 325 VDC 0 to 800 Ma	"	6		X		X			1	1	1	
178	Supply,Power	NJE Corp	ETC-32-20	0 to 32VDC 0 to 20A	"	6		X		X			3	3	3	
179	Supply,Power	NJE Corp	OR18-6	0 to 18VDC 0 to 6A	"	6		X		X			1	1	1	
180	Supply,Power	NJE Corp	SS32-3	0 to 32VDC; 0 to 3A	"	3		X		X			1	1	1	
181	Supply,Power	NJE Corp	ETC-32-10	0 to 36VDC 0 to 10A	"	6		X		X			1	1	1	

AFMTC FORM SEP 61 35G

NRD

1. SECURITY CLASSIFICATION (U)

9. REVISION NO.

Spacecraft

TEST INSTRUMENT MAINTENANCE AND CALIBRATION

[x] ELECTRICAL & ELECTRONIC [ ] DIMENSIONAL & PHYSICAL [ ] OPTICAL INSTRUMENTS

1. SECURITY CLASSIFICATION: (U)

2. PAGE 360 .9

3. DATE 12 Nov 1965

4. REPLACES PAGE(S) DATED

5. PROGRAM TITLE: T III SLS/MOL-HSQ

6. PROGRAM REQUIREMENT NO. 3900

7. SYSTEM CODE

8. CONTRACTOR: MAC

10. ITEM NO	11. RANGE USER'S PRECISION ELECTRONIC, MECHANICAL OR OPTICAL INSTRUMENTS: NAME/DESIGNATION	NAME OF MANUFACTURER	MODEL NUMBER	12. CALIBRATION: RANGE OR SCALE & UNITS	ACCURACY	CYCLE	IN PLACE: YES	IN PLACE: NO	13. REPAIRS: MAJOR	13. REPAIRS: MINOR	14. QUANTITY: FY 66 (1)	FY 66 (2)	FY 66 (3)	FY 66 (4)	FY 67	FY 68
182	Supply,Power	NJE Corp	SS32-20	0 to 32 VDC 0 to 20A	Mfg Spec	6		X		X			1	1	1	
183	Supply,Power	Perkin Eng Co	MTR636-30	6 to 36 VDC 0 to 30A	"	6		X		X			1	1	1	
184	Supply,Power	Perkin Eng Co	MR532-15	2 to 36VDC 0 to 15A	"	6		X		X			1	1	1	
185	Supply,Power	Sorrenson	E28-5	25.2 to 30.8 VDC 0 to 5A	"	6		X		X			1	1	1	
186	Supply,Power	Sorrenson	E28-10	25.2 to 30.8VDC 0 to 10A	"	6		X		X			1	1	1	
187	Amplifier,Wide Band	Hewlett Packard	460AR	20db to 90 Db in cascade	"	3		X		X			1	1	1	
188	Analyzer, Spectrum	Polarad	TSA		"	3		X		X			1	1	1	
189	Counter, Electronic Time Interval	Hewlett Packard	5275A	10 nanosecond to 0.1 second	"	3		X		X			1	1	1	
190	Generator, Digital Delay	Hewlett Packard	218AR	1 to 10,000 u sec	"	3		X		X			1	1	1	
191	Generator, Range	Missouri Research Lab	301	L Band 1300 to 1500 mc; 750 ft to 1,500,000 ft	"	3		X		X			1	1	1	
192	Meter,Digital Volt	Adage,Inc	V16-AD	0 to 100 VDC	"	3		X		X			1	1	1	
193	Oscillator	Hewlett Packard	101AR	1 mc	"	3		X		X			1	1	1	
194	Oscillatr, Test	Hewlett Packard	650A	10 to 10 mc	"	3		X		X			1	1	1	
195	Simulator, Video	Missouri Research Lab		Pulse Width: Range 1 u sec Azimuth 2 u sec Elevation 2 u sec	"	3		X		X			1	1	1	

AFMTC FORM SEP 61 35G

1. SECURITY CLASSIFICATION (U)

9. REVISION NO.

Spacecraft

TEST INSTRUMENT MAINTENANCE AND CALIBRATION

X ELECTRICAL & ELECTRONIC ⌊_ DIMENSIONAL & PHYSICAL ⌊_ OPTICAL INSTRUMENTS

1. SECURITY CLASSIFICATION: (U)

2. PAGE 560,10

3. DATE 12 Nov 1965

4. REPLACES PAGE(S) DATED

5. PROGRAM TITLE: T III SLS/MOL-HSQ

6. PROGRAM REQUIREMENT NO. 3900

7. SYSTEM CODE

8. CONTRACTOR: MAC

10 ITEM NO	11. RANGE USER'S PRECISION ELECTRONIC, MECHANICAL OR OPTICAL INSTRUMENTS: NAME/DESIGNATION	NAME OF MANUFACTURER	MODEL NUMBER	12. CALIBRATION: RANGE OR SCALE & UNITS	ACCURACY	CYCLE	IN PLACE: YES	IN PLACE: NO	13. REPAIRS: MAJOR	13. REPAIRS: MINOR	14. QUANTITY: FY 66 1	FY 66 2	FY 66 3	FY 66 4	FY 67	FY 68
				Amplitude: 2V for Range Pulse & Zero Angular Error	Mfg. Spec.											
196	Power Supply	NJE	QR-10-10B	0 to 10VDC;0 to 10A	"	6		X		X			2	2	2	
197	Power Supply	NJE	RB-50-1.5 BM	0 to 50VDC;0 to 1.5A	"	6		X		X			2	2	2	
198	Power Supply	NJE	SY-36-30BM	0 to 36VDC;0 to 30A									3	3	3	
199	Power Supply	NJE	TC-14-200	14 VDC,0 to 200A	"	6		X		X			1	1	1	
200	Power Supply	NJE	CS-36-CR5	36 VDC	"	6		X		X			2	2	2	
201	Power Supply	Basler	14700-102	36 VDC,0 to 100A	"	6		X		X			1	1	1	
202	Power Supply	Basler	TFC-115-100	105 to 130VDC, 0 to 200A, 380 Cps to 420 Cps	"	6		X		X			1	1	1	

AFMTC FORM SEP 61 35G

NRD

1. SECURITY CLASSIFICATION (U)

9. REVISION NO.

Spacecraft

TEST INSTRUMENT MAINTENANCE AND CALIBRATION

(X) ELECTRICAL & ELECTRONIC ( ) DIMENSIONAL & PHYSICAL ( ) OPTICAL INSTRUMENTS

1. SECURITY CLASSIFICATION: (U)
2. PAGE 560 11
3. DATE 12 Nov 1965
4. REPLACES PAGE(S) DATED

5. PROGRAM TITLE: M III SLS/MOL-MSQ
6. PROGRAM REQUIREMENT NO. 3900
7. SYSTEM CODE:
8. CONTRACTOR: MAC

10. ITEM NO.	11. RANGE USER'S PRECISION ELECTRONIC, MECHANICAL OR OPTICAL INSTRUMENTS: NAME/DESIGNATION	NAME OF MANUFACTURER	MODEL NUMBER	12. CALIBRATION: RANGE OR SCALE & UNITS	ACCURACY	CYCLE	IN PLACE: YES	IN PLACE: NO	13. REPAIRS: MAJOR	13. REPAIRS: MINOR	14. QUANTITY: FY 66 (1)	FY 66 (2)	FY 67 (3)	FY 67 (4)	FY 68
203	Meter, Power Output	General Radio	583A	0.1 to 5000 MW 2.5 to 20K Imped	Mfg Spec	9		X		X			2	2	2
204	Meter, Power Output VSWR	MC Jones Elect	263	0 to 1000 W	"	9		X		X			2	2	2
205	Meter, Power Output VSWR	MC Jones Elect	263.3	0 to 1000 W	"	6		X		X			3	3	3
206	Meter, Radio	Hewlett Packard	416A	1000 cps ± 40 cps	"	3		X		X			1	1	1
207	Meter, Recording Volt-Amp AC	General Electric	8CF72AN9	0 to 150 V	"	3		X		X			1	1	1
208	Meter, Time Interval	Beckman Berkley	7250	10 u Sec to 1 Sec interval	"	3		X		X			1	1	1
209	Meter, Volt-Amp AC	John Fluke	102	1.5 to 600 V 0.0015 to 30A 225 uw to 18 kw	"	6		X		X			1	1	1
210	Meter, Volt DC	Weston	931	0 to 50 V	0.5%	3		X		X			3	3	3
211	Meter, Volt DC	Weston	931	0 to 3 V	"	3		x		X			1	1	1
212	Meter, Volt DC	Weston	931	0 to 3 V 0 to 15 V 0 to 150 V	"	3		X		X			1	1	1
213	Meter, VOM	Bruno	ME70/PSM-6	0 to 1000 VAC 0 to 1000 VDC 0 to 10 ADC 0 to 10 Meg	Mfg Spec	3		X		X			5	5	5
214	Meter, VOM	Phaostrone	555A	0 to 1500V AC&DC 0 to 15 A AC&DC 0 to 10 Meg	"	3		X		X			3	3	3
215	Meter, VOM	Simpson	260	0 to 5000V AC&DC 0 to 10 A DC 0 to 20 Meg	"	3		X		X			10	10	10

AFMTC FORM SEP 61 35G

NRD

1. SECURITY CLASSIFICATION (U)

9. REVISION NO.

Spacecraft

TEST INSTRUMENT MAINTENANCE AND CALIBRATION

X ELECTRICAL & ELECTRONIC ___ DIMENSIONAL & PHYSICAL ___ OPTICAL INSTRUMENTS

1. SECURITY CLASSIFICATION: (U)

2. PAGE 560 12

3. DATE 12 Nov 1965

4. REPLACES PAGE(S) DATED

5. PROGRAM TITLE: T III SLS/MOL-HSQ

6. PROGRAM REQUIREMENT NO: 3900

7. SYSTEM CODE:

8. CONTRACTOR: MAC

10. ITEM NO.	11. RANGE USER'S PRECISION ELECTRONIC, MECHANICAL OR OPTICAL INSTRUMENTS: NAME/DESIGNATION	NAME OF MANUFACTURER	MODEL NUMBER	12. CALIBRATION: RANGE OR SCALE & UNITS	ACCURACY	CYCLE	IN PLACE: YES	IN PLACE: NO	13. REPAIRS: MAJOR	REPAIRS: MINOR	14. QUANTITY: FY 66 1	FY 66 2	FY 66 3	FY 66 4	FY 67	FY 68
216	Phase Sensitive AC VTVM	Trio Lab.	149-1		Mfg. Spec.								2	2	2	
217	DC Voltmeter	Trio Lab.	107-1										1	1	1	
218	DC Voltmeter 0-1V	Trio Lab.	106-1										1	1	1	
219	DC Voltmeter 0-1V, Zero Centered	Trio Lab.	106-2										1	1	1	
220	Primer Scope	Waterman Mark	1S-17-A										1	1	1	
221	Freq. Meter	H-P	521A	1 Cps to 120 Kc		3		X		X			2	2	2	
222	Ratio Bridge	Gertsch	CR-B-1B										1	1	1	
223	Multi-Range AC VTVM	Trio Lab.	109-1										1	1	1	
224	Multi-Range DC VTVM	Trio Lab.	107-1										1	1	1	
225	Pulse Generator	Beckman-Berkley	490H										1	1	1	
226	AC VTVM	H-P	400 DR										2	2	2	
227	DC VTVM - Ohmmeter	H-P	412 AR										2	2	2	
228	Digital Voltmeter	Cubic	V51										1	1	1	
229	AC-DC Voltmeter Converter	Cubic	AC-2										1	1	1	
230	Digital Voltmeter Control	Cubic	C-1										1	1	1	
231	Differential Voltmeter	Fluke	801										1	1	1	
232	Phase Meter	North Atlantic	VM202										1	1	1	
233	DC Milliammeter	Weston	901										1	1	1	
234	DC Ammeter	Weston	931										1	1	1	
235	AC Ammeter	Weston	904										1	1	1	
236	AC Milliammeter	Weston	433										1	1	1	
237	Oscilloscope	Tektronix	585										2	2	2	
238	Scope Plug-In Unit	Tektronix	Type 81										2	2	2	
239	Scope Plug-In Unit	Tektronix	Type K										2	2	2	
240	Scope Plug-In Unit	Tektronix	Type B	DC to 20 Mc	"	3		X		X			2	2	2	
241	Scope Plug-In Unit	Tektronix	Type C-A	DC to 24 Mc	"	3		X		X			2	2	2	
242	Scope Plug-In Unit	Tektronix	Type R										2	2	2	
243	Impedance Bridge	Brown Inst.	250-C1										1	1	1	
244	Constant Current Pwr. Supply	Kepco	SC 32-1										1	1	1	
245	Variable DC Pwr. Supply	NJE Corp.	CR-36-10										1	1	1	

AFMTC FORM SEP 61 35G

NRD

1. SECURITY CLASSIFICATION: (U)

9. REVISION NO.

Spacecraft

TEST INSTRUMENT MAINTENANCE AND CALIBRATION

[X] ELECTRICAL & ELECTRONIC [ ] DIMENSIONAL & PHYSICAL [ ] OPTICAL INSTRUMENTS

1. SECURITY CLASSIFICATION: (U)

2. PAGE 560 13

3. DATE 12 Nov 1965

4. REPLACES PAGE(S) DATED

5. PROGRAM TITLE: T III SDS/MOL-H3Q

6. PROGRAM REQUIREMENT NO. 3900

7. SYSTEM CODE

8. CONTRACTOR: MAC

10. ITEM NO.	11. RANGE USER'S PRECISION ELECTRONIC, MECHANICAL OR OPTICAL INSTRUMENTS: NAME/DESIGNATION	NAME OF MANUFACTURER	MODEL NUMBER	12. CALIBRATION: RANGE OR SCALE & UNITS	ACCURACY	CYCLE	IN PLACE: YES	IN PLACE: NO	13. REPAIRS: MAJOR	REPAIRS: MINOR	14. QUANTITY: FY 66 1	FY 66 2	FY 66 3	FY 66 4	FY67	FY68
246	3 Phase Pwr. Supply	Behman	2 KVA										1	1	1	
247	400 cps Converter	Behman	1001										1	1	1	
248	Variable Attenuator	H-P	394 A										2	2	2	

AFMTC FORM SEP 61 35G

1. SECURITY CLASSIFICATION (U)

9. REVISION NO

DOCUMENTARY PHOTOGRAPHY

1. SECURITY CLASSIFICATION	2. PAGE 370
(U)	3. DATE 12 Nov. 1965
	4. REPLACES PAGE(S)
	DATED

5. TEST PROGRAM	6. PROGRAM REQUIREMENT NO.	7. SYSTEM CODE	8. CONTRACTOR
TIII SLS/MOL-HSQ	3900		MAC

10. ITEM NO.	11. TEST CODE	12. FILM SIZE MM	12. FILM TYPE	13. ITEM TO BE VIEWED OR COVERED	14. LOCATION	15. PURPOSE AND REMARKS
1	HSQ	16 mm Movie 4x5 Stills	ECO/ER Color	Motion pictures and stills are required showing spacecraft arriving at PAFB or CCMTA Skid Strip by airlift. Show the preparation for unloading, actual unloading operation and visual inspection performed on the spot. Show all special equipment in use and procedures or changes in procedures used in receiving/ unloading operation. All damage to equipment should be covered with at least 2 angles for "establishing" and at least 2 medium and closeup shots of each established area.	Cape	During shooting, one camera should be used for main story and a second camera should be used to shoot inter-cuts, cutaway and insert shots to provide the greatest flexibility in editing. To provide motion picture film for communicating factual data to command, staff and industrial management groups. To present in pictorial form, program objectives, progress, setbacks, methods, techniques and new developments, employed to overcome problem areas. To provide a still picture record of all phases of the MOL-EFT HSQ Program for use in Engineering reports, Progress Reports, and Special reports. One optical film master and one work print is required for motion picture film. One 4X5 color negative and two color prints are required for each still.
2	HSQ	16 mm 4x5 Stills	ECO/ER Color	Receiving and inspection of all spacecraft components. Phase I assembly utilizing "establishing" shots, cut-aways and inser shots to show the mechanical and electrical assembly of the spacecraft and the installation of all systems. Phase II assembly showing installation and testing of all ordnance devices and circuits and final buttoning-up and buy-off of the spacecraft. Roll out of the completed spacecraft and transfer to VIB.	Cape - Hangar "L"	One optical film master and one work print are required for motion picture film. One 4x5 color negative and two color prints are required for each still shot.

AFMTC FORM NOV 65 35H

1. SECURITY CLASSIFICATION	9. REVISION NO.
(U)	MT

DOCUMENTARY PHOTOGRAPHY
HSQ SPACECRAFT

1. SECURITY CLASSIFICATION	2. PAGE 378.1
(U)	3. DATE 12 Nov. 1965
	4. REPLACES PAGE(S)
	DATED

5. TEST PROGRAM	6. PROGRAM REQUIREMENT NO.	7. SYSTEM CODE	8. CONTRACTOR
TIII SLS/MOL-HSQ	3900		MAC

10. ITEM NO.	11. TEST CODE	12. FILM SIZE MM	12. FILM TYPE	13. ITEM TO BE VIEWED OR COVERED	14. LOCATION	15. PURPOSE AND REMARKS
3	HSQ	16mm Movie 4x5 Stills	ECO/ER Color	Mating the spacecraft and the launch vehicle in the VIB. Hooking up the umbilicals and other special test items. All special tests in VIB. One optical film master plus one work print are required for movies. One color negative plus two color prints are required for still shots.	Complex 40 - VIB	Shooting in and around the VIB may require use of professional sun guns for illumination. Every possible attempt should be made to provide complete film sequences of each individual operation.
4	HSQ	16 mm Movie	B&W	Edited film report of launch showing miscellaneous spacecraft preparation, clearing pad, LCC interior during countdown and actual launch.	Complex 40	This film is to be used for Quick Look orientation of 6555th ATW and SSD Command Staff and Industrial Management. Two "Quick Look" release prints to be ready at T+36 hours or less. This film may be used as a vehicle to illustrate specific problems and how these problems impact MOL program scheduling. One optical film master and one work print required.
5	HSQ	16 mm Movie	ECO/ER	Launch area centered on Spacecraft.	Complex 40-Pad	Four views. Depending on time of day, weather and wind, these cameras to be positioned to get best coverage. One optical film master and one work print required.
6	HSQ	16 mm Movie 4 x 5 Still	ECO/ER Color	Miscellaneous views of last minute preparations around launch area and in LCC.	Complex 40	Motion picture and still alert camera to show last minute preparation as well as cover any emergency situation that may arise. "Establishing" shots and close-up should be utilized. Inserts and cutaways as well as short sequences of specific operations should be made. This item will utilize the same personnel as item 4. This item to be coordinated with MAC personnel directly on site. One optical film master

DOCUMENTARY PHOTOGRAPHY
HSQ Spacecraft

1. SECURITY CLASSIFICATION	2. PAGE 570 ,2
(U)	3. DATE 12 Nov. 1965
	4. REPLACES PAGE(S)
	DATED

5. TEST PROGRAM	6. PROGRAM REQUIREMENT NO.	7. SYSTEM CODE	8. CONTRACTOR
TIII SLS/MOL-HSQ	#3900		MAC

10. ITEM NO.	11. TEST CODE	12. FILM SIZE MM	12. FILM TYPE	13. ITEM TO BE VIEWED OR COVERED	14. LOCATION	15. PURPOSE AND REMARKS
6	(continued)					plus one work print required for motion picture film. One color negative plus two color prints required for each still shot.
7	HSQ	16 mm	ECO/ER	Missile and spacecraft flight from first acquisition to film run-out or T+120 seconds.	Complex 40 - Pad	Three views. Suggest 1 (one) 10" lens, one 20" lens and 40" lens. Longer focal length tracks may be obtained from Engineering Sequential and ROTI tracking items where required. One optical film master and one work pring required.
8	HSQ	16 mm Movie 4 x 5 Still	ECO/ER Color	Recovery of the spacecraft including the attachment of the recovery flotation gear, attachment of recovery slings, and removal from the water by either helicopter or ship.	Recovery Area aboard aircraft & ship	To present in pictorial form the general activity, progress, set-backs, methods, techniques, and new developments employed to overcome problems encountered during recovery operations. One optical film master plus one work print required for movies. One negative plus two prints are required for stills.
9	HSQ	16 mm Movie 4 x 5 Still	ECO/ER Color	Arrival, inspection, transporting, and testing of recovered spacecraft at Station 12.	ETR-Station 12	To present factual data relating to the condition of the spacecraft after flight. One optical film master and one work print required for motion picture film. One color negative plus two prints are required for all stills.
10	HSQ	16 mm Movie	ECO/ER Color	Missile & HSQ spacecraft as viewed from a "Chase Aircraft" during early ascent portions of flight	ETR-Station #1	To present in pictorial form the action of the spacecraft/simulated MOL laboratory combination during early flight

AFMTC FORM NOV 62 35H

1. SECURITY CLASSIFICATION	9. REVISION NO.
(U)	MT

AIR LOGISTIC SCHEDULE

1. SECURITY CLASSIFICATION	2. PAGE 620.
(U)	3. DATE 12 Nov 1965
	4. REPLACES PAGE(S)
	DATED

5. PROGRAM TITLE	6. PROGRAM REQUIREMENT NO.	7. SYSTEM CODE	8. CONTRACTOR
TIII SLS/MOL-HSQ	3900		MAC

10. ITEM NO.	11. TRIP FREQ/QTR OR TEST CODE	12. LOCATION (NO. OR NAME OF STATION, BASE, CENTER, ETC.) FROM	TO	13. LOAD PERSONNEL	13. LOAD LBS X 10^x	14. SEE NOTE	15. NUMBER OF PASSENGERS AND QUANTITY OF CARGO/QTR. FY 65 CY 65 1	2	3	4	FY 66 CY 66 1	2	3	4	FY 67 CY 1	2	3	4	FY 68 CY 1	2	3	4	FY 69 CY 1	2	3	4
	HSQ	PAFB	STA. 12	10	4	A	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0				
	HSQ	STA. 12	PAFB	10	3	A	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0				
	HSQ	PAFB	STA. 12	5	3	B	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0				
	HSQ	STA. 12	PAFB	5	4	B	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0				
		A. RECOVERY TRAINING EXERCISE.																								
		B. RECOVERY OPERATION.																								

AFMTC FORM SEP 61 36A PREVIOUS EDITION OF THIS FORM IS OBSOLETE.

NRD

1. SECURITY CLASSIFICATION	9. REVISION NO.
(U)	

HSQ S/C RE-ENTRY MODULE — NORMAL RECOVERY

1. SECURITY CLASSIFICATION	2. PAGE 718.
(U)	3. DATE 12 Nov. 1965
	4. REPLACES PAGE(S)
	DATED

5. TEST PROGRAM	6. PROGRAM REQUIREMENT CODE	7. SYSTEM CODE	8. CONTRACTOR
TIII SLS/MOL-HSQ	3900	8	MAC

10. ITEM NO.	11. TEST CODE	12. NAME/NOMENCLATURE	13. WEIGHT - POUNDS	14. DIMENSIONS LENGTH	WIDTH	DIA.	15. MANNED YES	NO	16. BRIEF DESCRIPTION OF SYSTEM OPERATION, RECOVERY AIDS, HAZARDS AND REMARKS
1	HSQ	Gemini B, HSQ Spacecraft Re-Entry Module *Spacecraft will contain approx. 2050 pounds of sea water at time of initial pickup. Water will drain within a few minutes leaving 4400 pounds of spacecraft hardware and recovery gear.	*6500	9 Ft.		7.5x 3.2Ft.		X	Transtage cutoff will occur approximately 783 seconds after lift-off. Thirty seconds thereafter the HSQ S/C re-entry module will be separated and the attitude control system (ACS) retrograde mode will be initiated. The coast phase will be continued to atmospheric re-entry at about 985 seconds. The ACS re-entry mode will be initiated when 0.05 g deceleration is sensed. At approximately 10,600 feet the landing system pilot chute will be deployed followed by rendezvous and recovery section release and separation by the pilot chute, the action of which deploys the main parachute. Subsequently, the main attachment/disconnect assembly will release the parachute riser allowing the re-entry module to be suspended on the bridle assembly attached to the re-entry module at two points. At this time the descent and recovery antennas will be extended and the recovery beacon activated. Following impact, which will occur about 1924 seconds after lift-off, the main parachute will be jettisoned, the recovery flashing light activated and the hoist loop extended. The telemetry transmitter will remain energized after impact, transmitting an unmodulated carrier frequency, to serve as a back-up for the UHF recovery beacon. The re-entry module will float, but installation of a flotation safety collar (range user supplied) is required within 30 minutes after impact as a precautionary measure to insure recovery.

AFMTC FORM NOV 61 37 PREVIOUS EDITION OF THIS FORM IS OBSOLETE.

NRD

17. SECURITY CLASSIFICATION	18. REVISION NO.
(U)	

HSQ S/C RE-ENTRY MODULE NORMAL RECOVERY			1. SECURITY CLASSIFICATION (U)	2. PAGE 710.1
5. PROGRAM TITLE TIII SLS/MOL-HSQ	6. PROGRAM REQUIREMENT CODE 3900	7. SYSTEM CODE	8. CONTRACTOR MAC	3. DATE 12 Nov. 1965
10. SKETCHES, DIAGRAMS, ETC.				4. REPLACES PAGE(S) DATED TEST CODE:

Landing System -

Landing system consists of a pilot parachute and a main parachute assembly.

The pilot parachute, an 18.3 foot diameter ringsail type, is ejected by a mortar at approximately 10,600 feet. The function of the pilot parachute is to separate the R and R section from the re-entry module, deploy the main parachute, and prevent recontact of the R and R section with the main parachute canopy.

The main parachute is an 84.2 foot diameter ringsail parachute, with alternating gores of white and orange, contained in a bag attached to the R and R section. It is extracted in a reefed condition when the pilot parachute pulls the R and R section away from the re-entry module. After the main parachute has been disreefed, and fully inflated, a sequentially activated pyro device releases the single-point attachment of the risers, re-orienting the re-entry module on a two-point attachment bridle with the small end 35° above the horizon in the proper position for a water landing. The vertical velocity at touch-down is approximately 30 ft./sec. After landing, the main parachute will be automatically jettisoned.

Recovery Aids

UHF Recovery Beacon

Activated:	By sequencer at R and R section separation plus 30 sec
Frequency:	243.0 mc
Mode:	CW and Pulse Code B
Output Power:	50 watts pulse, 0.75 watt CW

Telemetry

Activated:	At prelaunch (remains energized as backup to UHF Recovery Beacon)
Frequency:	259.7 mc
Mode:	CW (unmodulated)

HSQ S/C RE-ENTRY MODULE NORMAL RECOVERY			1. SECURITY CLASSIFICATION (U)	2. PAGE 210.2
5. PROGRAM TITLE TIII SLS/MOL-HSQ	6. PROGRAM REQUIREMENT CODE 3900	7. SYSTEM CODE	8. CONTRACTOR MAC	3. DATE 12 Nov. 1965
10. SKETCHES, DIAGRAMS, ETC.				4. REPLACES PAGE(S) DATED TEST CODE:

Telemetry (continued)

Output Power: 2 Watts

Flashing Light

At R and R section separation plus 10 min., a Zenon discharge lamp is automatically erected and activated. The flashing rate will be one pulse every four seconds with a pulse duration of two milliseconds. The light is primarily a night time recovery aid and will operate within specifications for 12 hours and with decreased rate for approximately an additional 12 hours.

Fluorescent Sea Marker

Dye marker will be located in a well in the bottom of the cylindrical section of the re-entry module. Upon landing, the dye marker will be submerged and will leave a green-yellow fluorescent streak in the wake of the re-entry module. The width and density of the dye marker streak are dependent upon wind and sea conditions. The lifetime of the dye marker will be approximately two to six hours, depending upon the sea state.

Hazards and Remarks

The HSQ S/C re-entry module may contain hazardous pyrotechnics, hypergolic fuels and numerous high pressure systems. Detailed descriptions of these hazards as well as prescribed handling procedures will be furnished at a later date. Lifting slings, flotation safety devices and other specialized retrieval and handling gear will be provided by the Range User for this operation. Gemini B, HSQ spacecraft specialist will be provided by the Range User in the recovery area to perform the required post retrieval re-entry module operations.

Impact Location and Recovery Area

Exact impact point and recovery area have not been established at this time. The recovery area is a footprint 250 nm in a downrange direction by 50 nm in a crossrange direction with the nominal impact point 50 n.m. SW of Station 12.

SALVAGE AND DISPOSITION

1. SECURITY CLASSIFICATION	2. PAGE 720
(U)	3. DATE 12 Nov 1965
	4. REPLACES PAGE(S) DATED

5. PROGRAM TITLE	6. PROGRAM REQUIREMENT CODE	7. SYSTEM CODE	8. CONTRACTOR
TIII SLS/MOL-HSQ	3900		MAC

10. ITEM NO.	11. TEST CODE	12. COMPONENT	13. WEIGHT - POUNDS	14. LOCATION	15. PURPOSE, DISPOSITION, SPECIAL INSTRUCTIONS AND HAZARDS
1	HSQ	Tape Recorder, PCM	13.9	Lower center console cabin.	Retrieve tape recorder after an abort or a catastrophic failure on the pad. Verify that all power is off. No retrieval attempt should be made until all danger of fire and explosion has been eliminated. All signs of fire or propellant system leakage must be eliminated before attempting access to the interior of the spacecraft. The tape will provide information for analysis of the cause and/or effect of the failure.
2	HSQ	Tape Recorder, FM Analog	10.8	Right Hand Pallet.	Retrieve tape recorder after an abort or catastrophic failure on the pad. These tapes will provide information for the analysis of the cause and/or effect of the failure. Special instructions and hazards same as Item 1.
3	HSQ	Overall Spacecraft	Variable N/A (up to 6000 lbs.)		In the event of a mid-air explosion or separation of spacecraft sections on or in the immediate vicinity of the pad, work should be started as soon as practical to locate and collect as much of the spacecraft as possible. This search should undertaken after emergency egress crews have completed their efforts and after Pad Safety has opened the pad to search crews. The extent of the search should be confined to retrieving parts or sections considered valuable in performing fault analysis.

DATA PROCESSING AND DISPOSITION

1. SECURITY CLASSIFICATION: (U)
2. PAGE 910
3. DATE 12 Nov 1965
4. REPLACES PAGE(S)
DATED

5. PROGRAM TITLE: TIII SLS/MOL-HSQ
6. PROGRAM REQUIREMENT CODE: 3900
7. SYSTEM CODE:
8. CONTRACTOR: All

10. ITEM NO.	11. TEST CODE	12. DATA	13. REFERENCE PAGE NUMBER	13. REFERENCE ITEM NO.	14. QTY ORIG	14. QTY CYS	15. FINAL RECIPIENT	16. TIME REQ'D.	17. RAW	17. REC	17. PHOT	17. DESIRED DATA PRESENTATION & REMARKS
1	HSQ	LAB TLM	230	1,2		3	6555th ATW Project Office	2H		X		
2	HSQ	GEM TLM	230	3		3		2H		X		
3	HSQ	Metric Data	210-215			4		4H		X		
4	HSQ	Eng. Seq. Data	220			3		24H			X	
5	HSQ	Meteorological	310-350			2		2H		X		
6	HSQ	Communications Recordings	412.1			2		2H		X		
7	HSQ	Documentary Photg.	570			5		24H			X	

AFMTC FORM 39 NOV 61 PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE.

1. SECURITY CLASSIFICATION: (U)
9. REVISION NO.

FACILITIES GENERAL

1. SECURITY CLASSIFICATION: (U)		2. PAGE: 1010	
		3. DATE: 12 Nov 1965	
		4. REPLACES PAGE(S) DATED:	
5. PROGRAM TITLE: TIII SLS/MOL-HSQ	6. PROGRAM REQUIREMENT CODE: 3900	7. SYSTEM CODE:	8. CONTRACTOR/CONTRACT NUMBER: MAC

10. ITEM NO.	11. TEST CODE	12. LOCATION	13. TYPE OF FACILITY	14. SITE DESIRED	15. ASSIGNED	15. NEW	15. EXISTING	16. SCHEDULE FY 66 CY 65 Q1	Q2	Q3	Q4	FY 67 CY 66 Q1	Q2	Q3	Q4	FY 68 CY 67 Q1	Q2	Q3	Q4	FY	FY CY Q1	Q2	Q3	Q4
1	HSQ	1	Hangar .	Hangar N																				
1.1			P 5500/70		x					X	X	X	X	X	X	X	D							
1.2			P 5500/88				x					X	X	X	X	X	D							
2	HSQ	1	Hangar	Han ar L																				
2.1			P 1875/10				x				X	X	X	X	X	X	D							
2.2			Q 6500/15				x			X	X	X	X	X	X	X	D							
2.3			R 5250/-				x				X	X	X	X	X	X	D							
2.4			S 7300/20				x					X	X	X	X	X	D							

AFWTR FORM SEP 64 101

AFSD

1. SECURITY CLASSIFICATION: (U)

9. REVISION NO.

DRAWINGS - FACILITIES			1. SECURITY CLASSIFICATION (U)	2. PAGE 1011 3. DATE 12 Nov 1965 4. REPLACES PAGE(S) DATED
5. PROGRAM TITLE TIII SLS/MOL-HSQ	6. PROGRAM ELEMENT CODE 3900	7. SYSTEM CODE	8. CONTRACTOR MAC	

10. DRAWING

To be supplied at a later date.

11. REFERENCES (Drawings)

AFMTC FORM NOV 61 40A

1. SECURITY CLASSIFICATION (U)

9. REVISION NO.

SUPPLEMENTARY

INFORMATION

DOCUMENT CHANGE INSTRUCTION

Form DEN 1016-02 (2-64)

AD 477 362

ENCLOSURE: SSD-CR-63-128, Supplement 2, (Rev. 1)

TITLE: Program Support Request, MOL-HSQ

INSTRUCTIONS:

Replace the following pages:

40	170	412	540	1011
40.1	190	430	540.1	1011.1
70	210.1	430.1	540.2	Title Page
120	212	431	570	ii
130	214	431.1	710.2	
140	230	431.2	720	
142	230.1	433	810	
143	230.2	434	810.1	
151.2	230.3	435	820	
151.3	230.4	440	820.1	
152.2	230.5	460	840	
157	240	530	910	
158	240.1	532	1010	

Add new pages as follows:

30	155.3	159.18	162.1	570.1	30.1
144	156.1	159.19	162.2	570.2	30.2
152.8	156.2	159.20	162.3	840.1	540.3
152.9	156.3	159.21	190.1	910.1	
152.10	159.10	159.22	215	910.2	
152.11	159.11	159.23	470.5	910.3	
152.12	159.12	159.24	480	910.4	
152.13	159.13	160.4	480.1	910.5	
152.14	159.14	161	530.1	910.6	
152.15	159.15	161.1	530.2	910.7	
154	159.16	161.2	540.4	1010.1	
154.1	159.17	161.3	540.5	1011.2	

REFERENCE: Item 1, Exhibit A, task 5.13 of Contract AF 04(695)-150, line Item 3C-21 of SSS-TIII-010 DRD (Rev. 3) dated 15 April 1963 and SCN 1 through DSCN 137

FILE THIS PAGE IN THE FRONT OF THE DOCUMENT TO INDICATE THE LATEST CHANGE.

SSD-CR-63-128 Supplement 2 (Rev 1) Copy No. _____

Contract AF 04(695)-150

PROGRAM SUPPORT REQUEST
MOL - HSQ

May 1966

Author

W. Pilgrim

Approved

R. B. Demoret
Program Manager
MOL-HSQ

MARTIN COMPANY
Denver 1, Colorado
Aerospace Division of Martin-Marietta Corporation

FOREWORD

This document is submitted under item 1, Exhibit A, Task 5.13 of Contract AF 04(695)-150, in accordance with Line Item 3C-21 Contractor Specification SSS-TIII-010 DRD (Rev 3), dated 15 April 1963 and SCN 1 thru DSCN 137.

This document defines the range support requirements for the MOL-HSQ Program.

This document is issued as a supplement to SSD-CR-63-128 (Line Item 1K-68).

PROGRAM REQUIREMENT REVISION CONTROL SHEET

1. SECURITY CLASSIFICATION	2. PAGE 030
Unclassified	3. DATE 18 May 1966
	4. REPLACES PAGE(S) New
	DATED

5. TEST PROGRAM	6. PROGRAM REQUIREMENT NO.	7. SYSTEM CODE	8. CONTRACTOR
TIII SLS/MOL-HSQ	3900		MC

10. PAGE NO.	11. CLASS S	C	U	12. INSTRUCTIONS / REMARKS
30			x	New
40				Revised
40.1				Revised
70				Revised
120				Revised
130				Revised
140				Revised
142				Revised
143				Revised
144				New
151.2				Revised
152.2				Revised
152.8				New
152.9				New
152.10				New
152.11				New
152.12				New
152.13				New
152.14				New
152.15				New
154				New
154.1				New
155.3				New
156.1				New
156.2			x	New
156.3				New
157				Revised
158				Revised
159.10				New
159.11				New
159.12				New
159.13				New
159.14				New
159.15				New
159.16				New
159.17				New
159.18				New
159.19				New
159.20				New
159.21				New
159.22				New
159.23				New
159.24				New
160.4				New
161				New
161.1				New
161.2				New
161.3			x	New

13. APPROVAL	14. APPROVAL	15. APPROVAL	16. NATIONAL RANGE ACCEPTANCE

AFMTC FORM 30C MAR 61 — PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE. FEB 59

NRD

17. IF INCLOSURES ARE WITHDRAWN (not attached) THE CLASSIFICATION OF THIS PAGE WILL BE CANCELLED IN ACCORDANCE WITH FAR 37H, AFR 206-1.

1. SECURITY CLASSIFICATION (U)

9. REVISION NO. 1
MT
COPY NO. 1

PROGRAM REQUIREMENT REVISION CONTROL SHEET

1. SECURITY CLASSIFICATION	2. PAGE 030 .1
Unclassified	3. DATE 18 May 1966
	4. REPLACES PAGE(S) New
	DATED

5. TEST PROGRAM	6. PROGRAM REQUIREMENT NO.	7. SYSTEM CODE	8. CONTRACTOR
TIII SLS/MOL-HSQ	3900		MC

10. PAGE NO.	11. CLASS S	C	U	12. INSTRUCTIONS / REMARKS
162.1			x	New
162.2				New
162.3				New
170				Revised
190				Revised
190.1				New
210.1				Revised
212				
214				
215				New
230				Revised
230.1				Revised
230.2				Revised
230.3				Revised
230.4				Revised
230.5				Revised
240				Revised
240.1				Revised
412				Revised
430				Revised
430.1				Revised
431				Revised
431.1				Revised
431.2			x	Revised

10. PAGE NO.	11. CLASS S	C	U	12. INSTRUCTIONS / REMARKS
433			x	Revised
434				Revised
435				Revised
440				Revised
460				Revised
470.5				New
480				New
480.1				New
530				
530.1				New
530.2				New
532				Revised
540				Revised
540.1				Revised
540.2				Revised
540.3				Revised
540.4				New
540.5				New
570				Revised
570.1				New
570.2				New
710.2				Revised
720				Revised
810			x	Revised

13. APPROVAL	14. APPROVAL	15. APPROVAL	16. NATIONAL RANGE ACCEPTANCE

AFMTC FORM 30C MAR 61 — PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE. FEB 59

NRD

17. IF INCLOSURES ARE WITHDRAWN (not attached) THE CLASSIFICATION OF THIS PAGE WILL BE CANCELLED IN ACCORDANCE WITH FAR 37H, AFR 205-1.

1. SECURITY CLASSIFICATION	9. REVISION NO. 1
(U)	MT
	COPY NO. 2

PROGRAM REQUIREMENT REVISION CONTROL SHEET

1. SECURITY CLASSIFICATION	2. PAGE 030 .2
Unclassified	3. DATE 18 May 1966
	4. REPLACES PAGE(S) — — New — — — — DATED

5. TEST PROGRAM	6. PROGRAM REQUIREMENT NO.	7. SYSTEM CODE	8. CONTRACTOR
TIII SLS/MOL-HSQ	3900		MC

10. PAGE NO.	11. CLASS S	C	U	12. INSTRUCTIONS / REMARKS
810.1			x	Revised
820				Revised
820.1				Revised
840				Revised
840.1				Revised
910				Revised
910.1				New
910.2				New
910.3				New
910.4				New
910.5				New
910.6				New
910.7				New
1010				Revised
1010.1				New
1011				Revised
1011.1				Revised
1011.2			x	New
151.3			x	Revised
30.1			x	New
30.2			x	New

10. PAGE NO.	11. CLASS S	C	U	12. INSTRUCTIONS / REMARKS

13. APPROVAL	14. APPROVAL	15. APPROVAL	16. NATIONAL RANGE ACCEPTANCE

AFMTC FORM 30C MAR 61 — PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE. FEB 59

NRD

17. IF INCLOSURES ARE WITHDRAWN (not attached) THE CLASSIFICATION OF THIS PAGE WILL BE CANCELLED IN ACCORDANCE WITH PAR 37H, AFR 205-1.

1. SECURITY CLASSIFICATION (U)

9. REVISION NO. MT 1

COPY NO. 3

TABLE OF CONTENTS

1. SECURITY CLASSIFICATION	2. PAGE	040
(U)	3. DATE	18 May 1966
	4. REPLACES PAGE(S)	DATED

5. PROGRAM TITLE	6. PROGRAM REQUIREMENT CODE	7. SYSTEM CODE	8. CONTRACTOR
TIII SLS/MOL-HSQ	3900		MC/MAC

11. ✓	12. PAGE NO.	13. ADDITIONAL PAGE NO.	14. PAGE TITLE	15. CLASS. S	C	U	16. PAGE DATE (DAY-MO-YEAR)
			ADMINISTRATION				
	010		PROGRAM APPROVAL AUTHORITY				
	020		DISTRIBUTION LIST				
x	030	.1,.2	PROGRAM REQ. REVISION CONTROL SHEET				
x	040	040.1	TABLE OF CONTENTS				
x	050		SYSTEM SECURITY CLASSIFICATION				
x	060		TECHNICAL REFERENCES				
x	070		SPEC. NOMENCLATURE & ABBREVIATIONS				
			GENERAL INFORMATION				
x	110		KEY PERSONNEL				
	111		PERSONNEL ASSIGNMENT SCHEDULE				
	112		PERSONNEL DOWNRANGE SCHEDULE				
x	120		PROGRAM OPERATIONS SCHEDULE				
x	130		PROGRAM OBJECTIVES				
x	140		PROGRAM DESCRIPTION				
x	141		TRAJECTORY DATA - PLAN VIEW				
x	142		TRAJECTORY DATA - FULL RANGE				
x	143		TRAJECTORY DATA - LAUNCH				
x	144		TRAJECTORY DATA - ORBITAL & SPACE				
x	145		TRAJECTORY DATA - TERMINAL				
x	150	.1	VEHICLE DESCRIPTION				
x	151	.1,.2,.3	DRAWING-MISSILE OR VEHICLE				
x	152	.1,-.15	TELEMETRY SYSTEM				
x	153	.1 - .6	TRANSPONDER & BEACONS				
x	154	.1,.2,.3	COMMAND CONTROL/DESTRUCT SYSTEM				
x	155	.1,.2,.3	ORDNANCE ITEMS				
x	156	.1,.2,.3	ORDNANCE(DRAWING)				
x	157		OTHER VEHICLE BORNE EQUIPMENT				
x	158		SYSTEM MISSION CAPABILITY				
x	159	.1 - .24	SYSTEM FUNCTIONAL DESCRIPTION				
x	160	.1,.2,.3,.4	RANGE USERS' INSTRUMENTATION				
x	161	.1,.2,.3	INSTRUMENTATION TRANSMITTERS (SURFACE/AIR/OTHER)				
x	162	.1,.2,.3	INSTRUMENTATION RECEIVERS (SURFACE/AIR/OTHER)				

11. ✓	12. PAGE NO.	13. ADDITIONAL PAGE NO.	14. PAGE TITLE	15. CLASS. S	C	U	16. PAGE DATE (DAY-MO-YEAR)
x	170		OCCUPATIONAL HAZARDS - MEDICAL			1	
x	190	.1	SUMMARY OF FREQUENCY UTILIZATION			2	
			DATA				
x	210	.1, .2	METRIC DATA - GENERAL			3	
x	211	.1, .2	METRIC LAUNCH DATA			3	
x	212		METRIC MIDCOURSE DATA			1	
	213		METRIC ORBITAL AND SPACE DATA				
x	214		METRIC TERMINAL DATA			1	
x	215		OTHER METRIC DATA			1	
x	220		ENGINEERING SEQUENTIAL DATA			1	
x	230	.1 - .5	TELEMETRY DATA			6	
x	240	.1	OTHER DATA			2	
			METEOROLOGICAL SERVICES				
x	310	.1, .2	FORECASTS			3	
x	320	.1	OBSERVATIONS			2	
x	330		MINIMA			1	
	340		CONSULTANT SERVICES				
	350		IONOSPHERIC SOUNDINGS				
			SUPPORT INSTRUMENTATION				
x	410	.1	COMMUNICATIONS - GENERAL			2	
x	411	.1	NETWORK DRAWINGS (RADIO & WIRE)			2	
x	412	.1	COMMUNICATIONS RECORDINGS			2	
x	420		RADIO			1	
x	430	.1	WIRE			1	
x	431	.1,.2,.4	MOPS			4	
x	432	.1, .2	TELEPHONE			3	
x	433	.1	TELETYPE			2	
x	434	.1	PUBLIC ADDRESS			2	

AFMTC FORM SEP 61 30A-1

NRD

10. DATE OF ORIGINAL PAGE

9. SECURITY CLASSIFICATION: (U)

9. REVISION NO.: 1

TABLE OF CONTENTS

1. SECURITY CLASSIFICATION	2. PAGE	040.1
(U)	3. DATE	18 May 1966
	4. REPLACES PAGE(S)	DATED

5. PROGRAM TITLE	6. PROGRAM REQUIREMENT CODE	7. SYSTEM CODE	8. CONTRACTOR
TIII SIS/MOL-HSQ	3900		MC/MAC

11. ✓	12. PAGE NO.	13. ADDITIONAL PAGE NO.	14. PAGE TITLE	15. CLASS. S	C	U	16. PAGE DATE (DAY-MO-YEAR)
X	435		CLOSED LOOP TELEVISION			1	
X	440		TIMING			1	
X	450		SEQUENCER			1	
X	460	.1	VISUAL COUNTDOWN & STATUS INDICATOR			2	
X	[illegible]	.1-.5	DATA HANDLING SYSTEM,			6	
	471		DATA HANDLING SYSTEM (DRAWINGS)				
X	480	.1	COMMAND CONTROL			2	
	490		OTHER SUPPORT INSTRUMENTATION				
X			MATERIEL & SERVICES				
X	510	.1-.3	SERVICES - GENERAL			4	
X	520	.1,.2	VEHICLES & GROUND HANDLING EQUIPMENT			1	
X	530		PROPELLANTS, GASES & CHEMICALS			3	
	531		AIRCRAFT & GROUND VEHICLE FUELS				
X	532		MISC. LUBRICANTS HYDRAULIC FLUIDS, PRESERVATIVES, ETC.			1	
X	540	.1-.5	CHEMICAL & PHYSICAL ANALYSIS			6	
	550		BIOSCIENCE REQUIREMENTS - GENERAL				
X	560	.1-.13	TEST INSTRUMENTATION MAINTENANCE & CALIBRATION SCHEDULE			14	
X	570	.1, .2	DOCUMENTARY PHOTOGRAPHY			3	
			TRANSPORTATION LOGISTICS				
	610		SURFACE LOGISTICS SCHEDULE				
X	620		AIR LOGISTICS SCHEDULE			1	
			RECOVERY				
X	710	.1, .2	NORMAL RECOVERY			3	
X	720		SALVAGE & DISPOSITION			1	

11. ✓	12. PAGE NO.	13. ADDITIONAL PAGE NO.	14. PAGE TITLE	15. CLASS. S	C	U	16. PAGE DATE (DAY-MO-YEAR)
			AIR & SEACRAFT				
X	810	.1	NON-RANGE AIRCRAFT			2	
X	820	.1	SEACRAFT REQUIREMENTS			2	
	830		TARGET REQUIREMENTS				
X	840	.1	RANGE AIRCRAFT			2	
			DATA PROCESSING				
X	910	.1-.7	DATA PROCESSING & DISPOSITION			8	
			FACILITIES				
X	1010	.1	FACILITIES - GENERAL			2	
X	1011	.1, .2	FACILITIES (DRAWING)			3	
	1020		LAUNCH FACILITIES				

AFMTC FORM SEP 61 30A-2

NRD

10. DATE OF ORIGINAL PAGE	1. SECURITY CLASSIFICATION	9. REVISION NO.
	(U)	1

SPECIAL ABBREVIATIONS AND NOMENCLATURE

1. SECURITY CLASSIFICATION (U)

2. PAGE 87?

3. DATE 18 May 1966

4. REPLACES PAGE(S) — — — — —

DATED — —

5. TEST PROGRAM TIII SLS/MOL-HSQ

6. PROGRAM REQUIREMENT NO. 3900

7. SYSTEM CODE

8. CONTRACTOR MC/MAC

10. WORD OR ABBREVIATION	11. DEFINITION OR MEANING
HSQ	Heat Shield Qualification Flight Test
MOL	Manned Orbiting Laboratory
MAC	McDonnell Aircraft Company
MC	Martin Company
MMD	Micrometeoroid Detector
HTTC	Heat Transfer Test Capsule

AFMTC FORM MAR 61 31B-2

1. SECURITY CLASSIFICATION (U)

9. REVISION NO. 1

MT C

PROGRAM OPERATIONS SCHEDULE

1. SECURITY CLASSIFICATION	2. PAGE	3. DATE	4. REPLACES PAGE(S)
UNCLASSIFIED	120	18 May 1966	120 DATED 12 Nov. 1965

5. PROGRAM TITLE	6. PROGRAM REQUIREMENT CODE	7. SYSTEM CODE	8. CONTRACTOR
TIII SLS/MOL-HSQ	3900		MC/MAC

10. TEST CODE LTR.	11. TEST SERIES/CATEGORIES	12. RANGE HRS/ TEST	14. NUMBER OF OPERATIONS AND/OR RECOVERIES/MONTH-QUARTER																							
			FY 1966										FY 1967				FY				FY				FY			
			CY										CY				CY				CY				CY			
			J	F	M	A	M	J	J	A	S	O	N	D	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
HSQ	LAUNCH (Veh #9)	8										1																	
	(Experiments)																												
A	Zero G Propellant Gauging																												
B	Micrometeoroid Detector																												
C	Heat Transfer Tes Capsule																												
K	Fuel Cell																												
D	Bio Cell																												
V	Orbis Low																												
Z	Sim Lab/Exp																												
Y	OV-1																												
S	OV-4																												
G	Gemini Spacecraft																												
	(Area Activity)																												
W	Experimenter Industrial Area																												
X	On-Orbit																												
N	EMC Test	32/8									1																		
E	Prop Load	11									1	1																	
E	Prop Unload	8									1																		
H	Launch Veh/Gemini "C" Band Beacon Test	4									1																		
H	Ground and A/B Instr Test	4									1																		
F	CST (Dry)	4								1	2																		
S	Wet Mock	23*																											
U	Capsule - Data/Unmanned											1																	
H	Command Control Test	4									1																		
VV	S/C Verification										1																		

Note: To identify specific support for experiments dual coding is used.
Example:
ZX - Sim Lab/Exp on Orbit support

AFMTC FORM MAR 61 31C PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE.

NRD

1. SECURITY CLASSIFICATION	9. REVISION NO.
Unclassified	MT 1

PROGRAM OBJECTIVES

1. SECURITY CLASSIFICATION	2. PAGE 130.
UNCLASSIFIED	3. DATE 3 January 1966
	4. REPLACES PAGE(S) Same DATED 12 November 1965

5. TEST PROGRAM	6. PROGRAM REQUIREMENT NO.	7. SYSTEM CODE	8. CONTRACTOR
TIII SLS/MOL-HSQ	3900		MC/MAC

10. ITEM NO.	11. TEST CODE	12. CATEGORY PRIM	12. CATEGORY OTHER	13. TEST OBJECTIVES	14. TEST AGENCY
1	HSQ	X		Verify the Gemini heat shield as modified to accommodate the MOL crew-transfer method	
2	HSQ	X		Collect data on ascent environment for the payload vehicle structure	
3	HSQ	X		Demonstrate structural integrity and control capability of the Titan IIIC for launch and ascent with a MOL-type payload	
4	HSQ		X	Demonstrate the MOL outboard profile compatibility with the ITL concept	
5	HSQ		X	Demonstrate recovery/retrieval techniques	
6	HSQ		X	Exercise selected segments of the MOL tracking network	
7	HSQ		X	Simulated Lab/Vehicle Accommodation of unmanned experiments.	

AFMTC FORM MAR 61 31D PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE.

NRD

1. SECURITY CLASSIFICATION	9. REVISION NO.
UNCLASSIFIED	MT - 1

PROGRAM DESCRIPTION

1. SECURITY CLASSIFICATION: UNCLASSIFIED

2. PAGE 140

3. DATE 3 January 1966

4. REPLACES PAGE(S): Same DATED 12 November 1965

5. PROGRAM TITLE: TIII SLS/MOL-HSQ

6. PROGRAM REQUIREMENT CODE: 3900

7. SYSTEM CODE:

8. CONTRACTOR/CONTRACT NUMBER: MC/MAC

10. ITEM NO.	11. TEST CODE	12. TEST DESCRIPTION	13. HOURS/TEST USER	13. HOURS/TEST RANGE	14. TEST LOCATION
1	HSQ	A Titan IIIC launch vehicle with minor modification to enable Gemini spacecraft separation and integrated countdown will be launched from Eastern Test Range (ETR) with an azimuth of 107.5 deg. The flight vehicle is comprised of a simulated MOL laboratory with secondary experiments, and a Gemini spacecraft. First transtage burnout velocity and flight path angle are such that the desired conditions for Gemini spacecraft re-entry are obtained. The spacecraft will be recovered in an impact area near Ascension Island. This portion of the general mission constitutes the Heat Shield Qualification (HSQ) portion. The transtage will be re-oriented after Gemini separation and a second and third transtage burn will maneuver the Simulated Laboratory and secondary experiments into an approximately circular 160 n mi orbit.			

AFWTR FORM SEP 64 26

NRD

9. SECURITY CLASSIFICATION: UNCLASSIFIED

10. REVISION NO.: 1

TRAJECTORY DATA - FULL RANGE

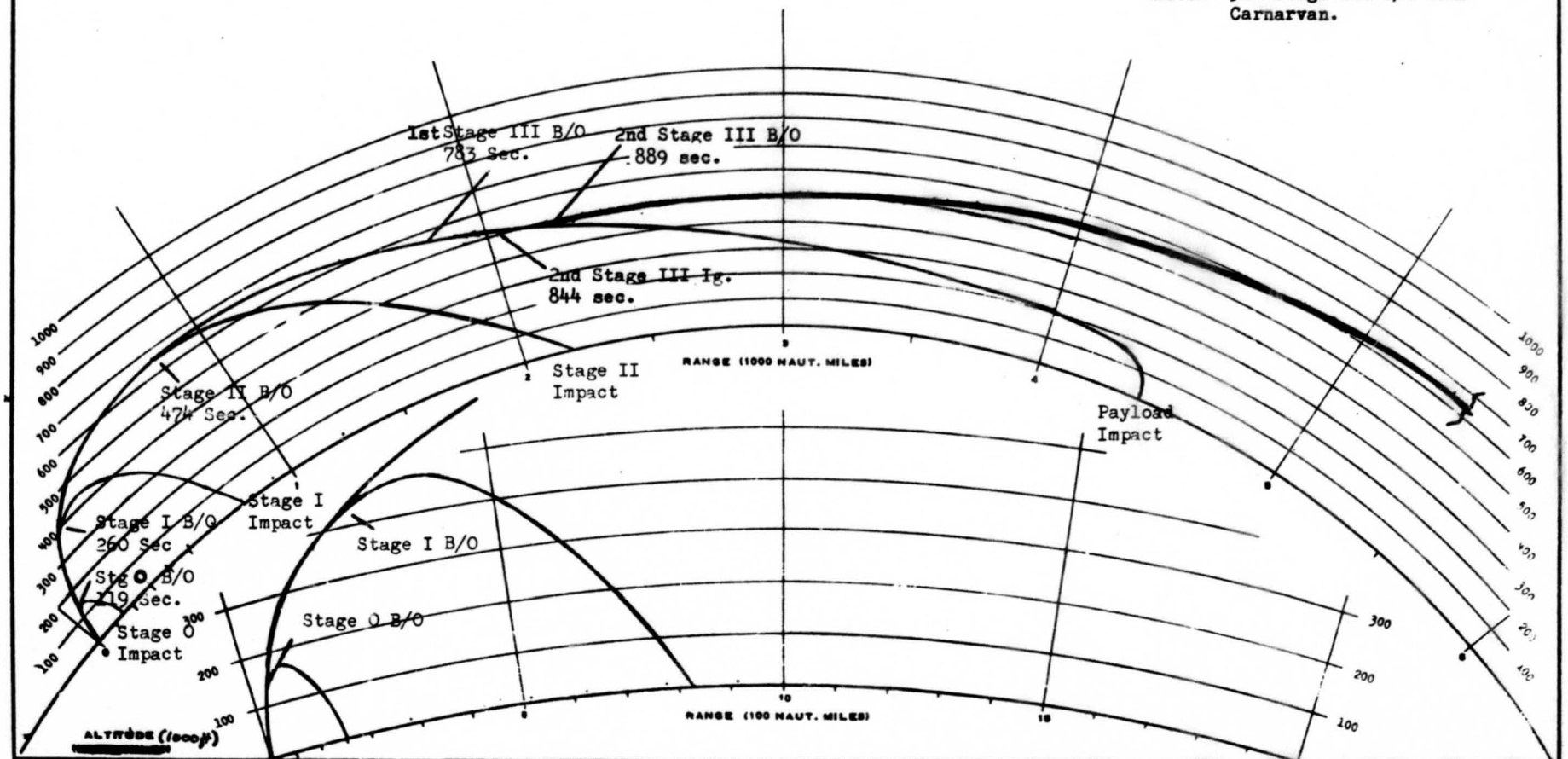
1. SECURITY CLASSIFICATION	2. PAGE 142
(U)	3. DATE 3 January 1966
	4. REPLACES PAGE(S)
	DATED

5. PROGRAM TITLE	6. PROGRAM REQUIREMENT CODE	7. SYSTEM CODE	8. CONTRACTOR
TIII SLS/MOL-HS2	3900		MC/ MAC

10. PLANNED TRAJECTORY(S) (INCLUDING BURNOUT, SEPARATION AND IMPACT POINT(S) OF TEST VEHICLE OR MISSILE STAGE(S))

TEST CODE HS2

Note: 3rd Stage III B/O over Carnarvan.



AFMTC FORM 31H JUN 61 PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE.

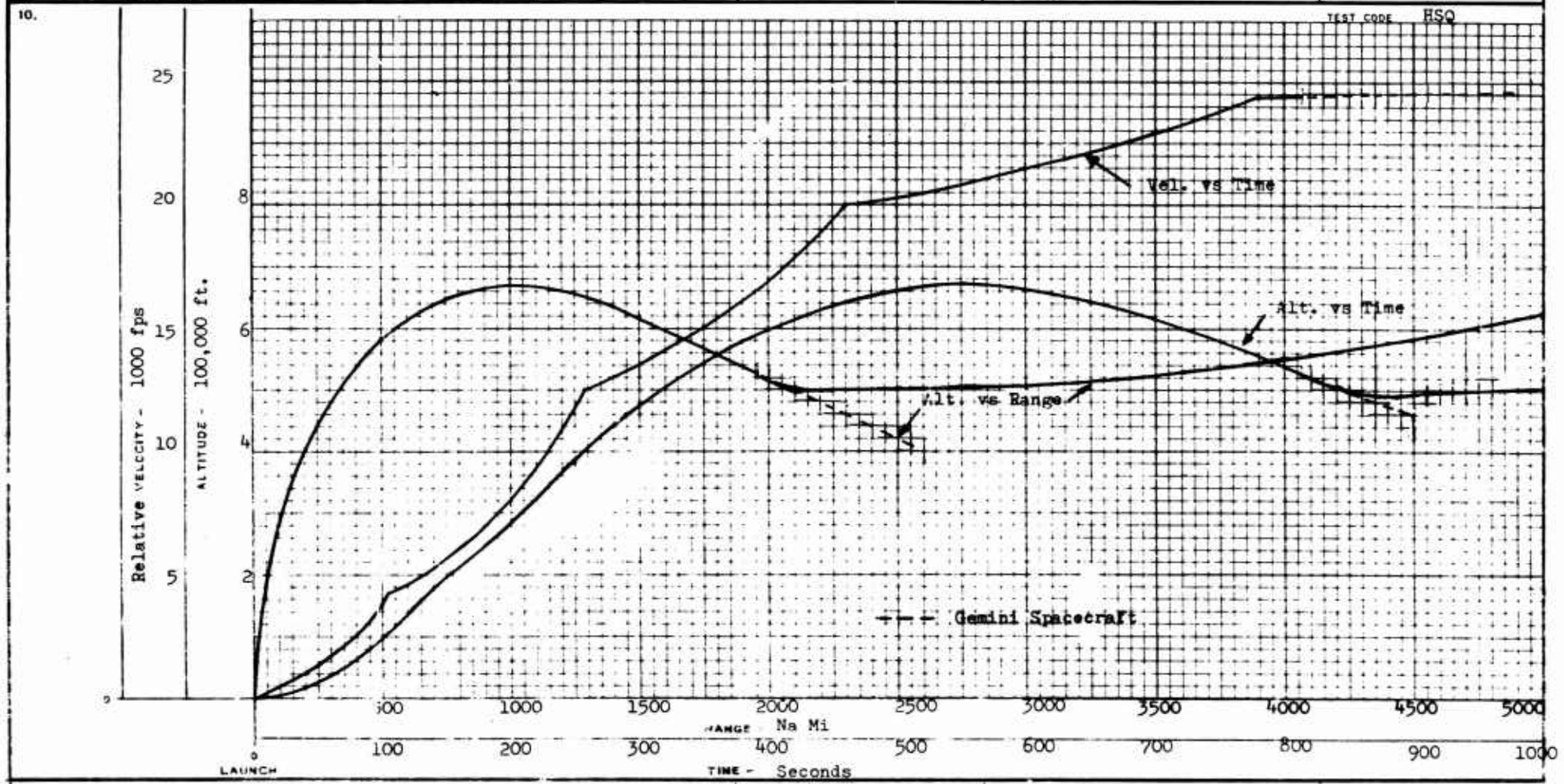
1. SECURITY CLASSIFICATION	9. REVISION NO
(U)	

TRAJECTORY DATA - LAUNCH

1. SECURITY CLASSIFICATION	2. PAGE	3. DATE	4. REPLACES PAGE(S)
(U)	143	3 January 1966	DATED

5. PROGRAM TITLE	6. PROGRAM REQUIREMENT CODE	7. SYSTEM CODE	8. CONTRACTOR
TIII SLS/MOL-HSQ	3900		MC

10. TEST CODE HSQ



AFMTC FORM 313 JUN 61 PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE.

NRD

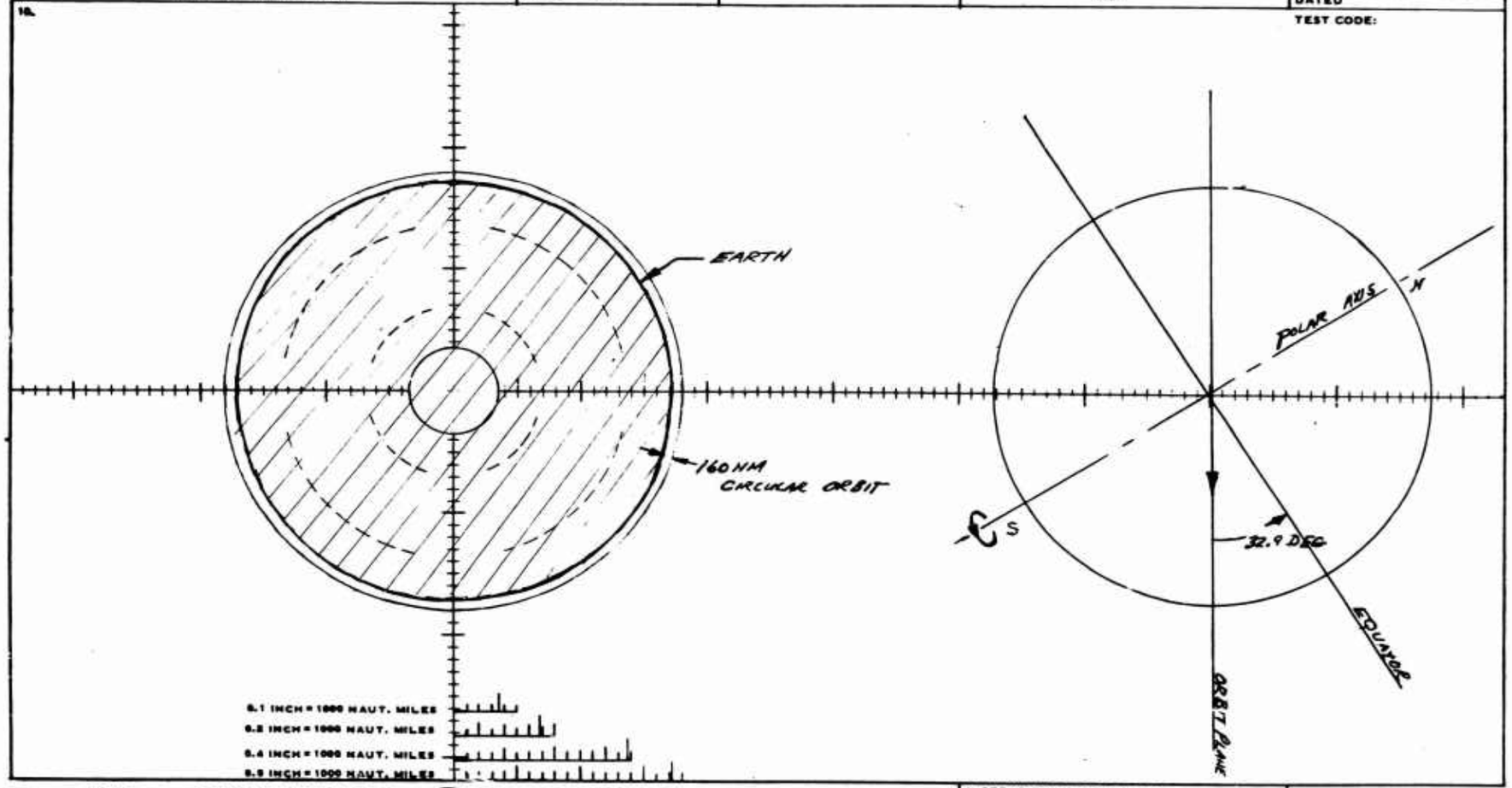
1. SECURITY CLASSIFICATION	2. REVISION NO.
(U)	1

TRAJECTORY DATA - ORBITAL & SPACE

5. TEST PROGRAM: TIII SLS/MOL-HSQ	6. PROGRAM REQUIREMENT NO. 3900	7. SYSTEM CODE	8. CONTRACTOR: MC	1. SECURITY CLASSIFICATION: Unclassified

2. PAGE 144
3. DATE 3 January 1966
4. REPLACES PAGE(S) — — — — — — — —
DATED
TEST CODE:

10.



AFMTC FORM 31G JUN 61 PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE.

NRD

1. SECURITY CLASSIFICATION: Unclassified	9. REVISION NO. MT 1

LAB and Gemini

DRAWING - MISSILE OR VEHICLE

1. SECURITY CLASSIFICATION: Unclassified

2. PAGE: 151.2

3. DATE: 3 January 1966

4. REPLACES PAGE(S): (Same) DATED 12 November 1965

5. PROGRAM TITLE: TIII SLS/MOL-HSQ

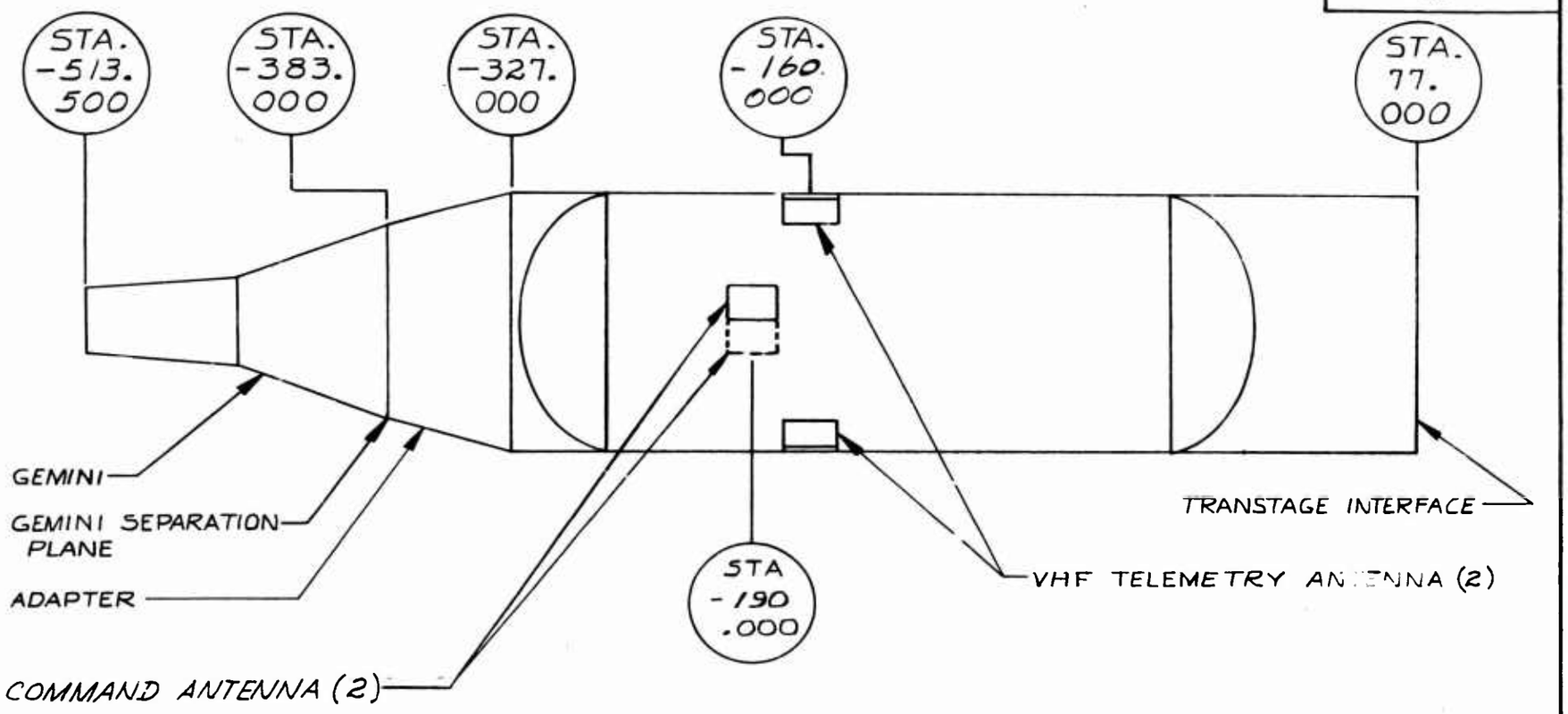
6. PROGRAM REQUIREMENT CODE: 3900

7. SYSTEM CODE:

8. CONTRACTOR: MC/MAC

TEST CODE: HSQ

10. DIMENSIONAL DRAWING OF MISSILE OR VEHICLE SHOWING PAINT PATTERN, CHARACTERISTIC MARKINGS, LOCATION OF ANTENNAE, ETC.



AFMTC FORM 31M JUN 61 PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE.

NRD

1. SECURITY CLASSIFICATION: Unclassified

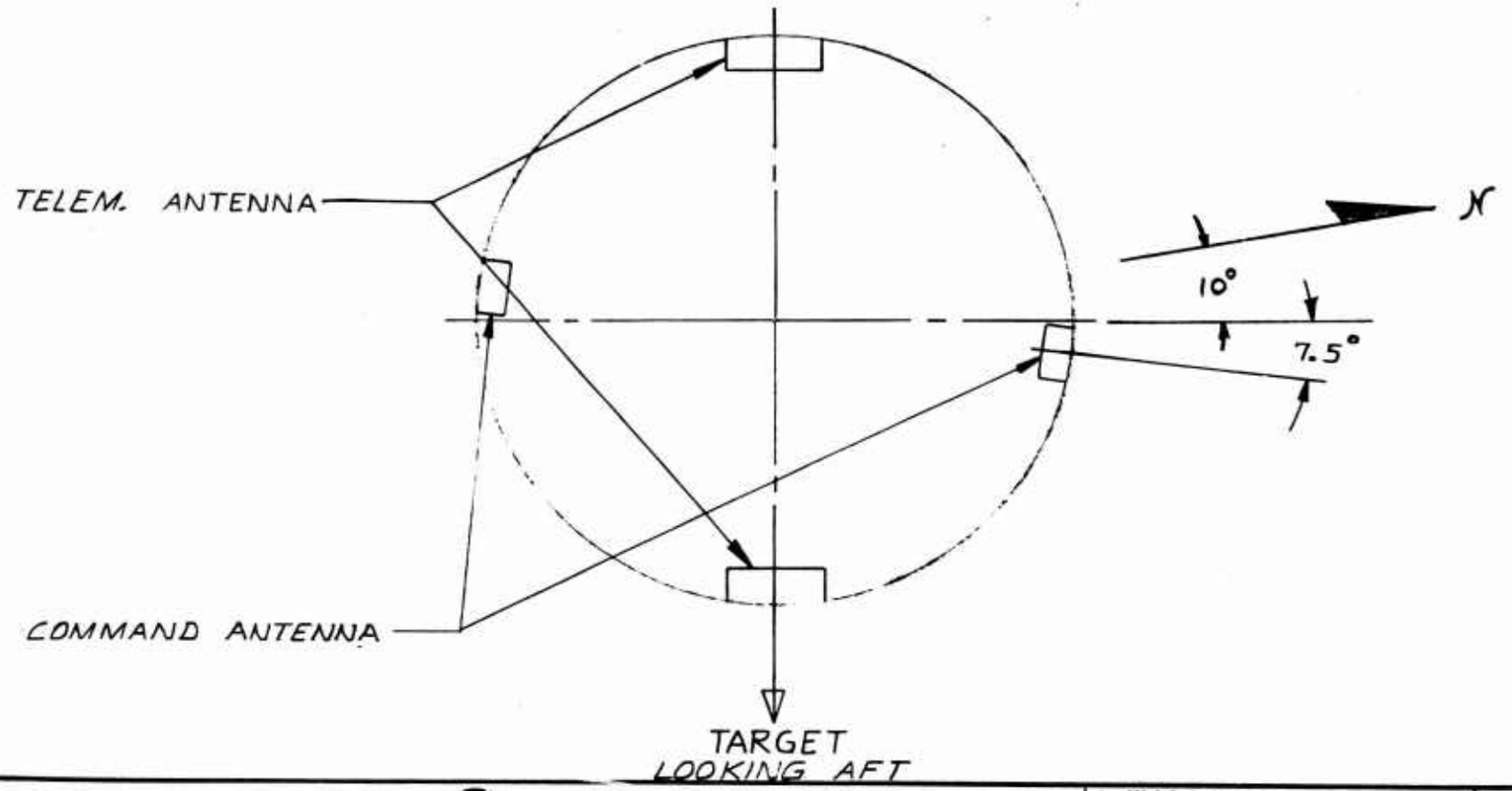
9. REVISION NO.

DRAWING - MISSILE OR VEHICLE

Lab Antenna Location -- TIII Sta.-160.00

1. SECURITY CLASSIFICATION	2. PAGE 153
Unclassified	3. DATE 3 January 1966
5. PROGRAM TITLE: TIII SLS/MOL-HSQ	6. PROGRAM REQUIREMENT CODE: 3900
7. SYSTEM CODE	8. CONTRACTOR: MC/MAC
4. REPLACES PAGE(S): (same) dated 12 November 1965	
	TEST CODE: HSQ

10. DIMENSIONAL DRAWING OF MISSILE OR VEHICLE SHOWING PAINT PATTERN, CHARACTERISTIC MARKINGS, LOCATION OF ANTENNAE, ETC.



AFMTC FORM 31M JUN 61 PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE.

NRD

1. SECURITY CLASSIFICATION	9. REVISION NO.
UNCLASSIFIED	1

HSQ Spacecraft (Real Time)

TELEMETRY SYSTEM

1. SECURITY CLASSIFICATION: (U)

2. PAGE 152.2

3. DATE 1 April 1966

4. REPLACES PAGE(S) 152.2 DATED

5. TEST PROGRAM: TIII SLS/MOL-HSQ

6. PROGRAM REQUIREMENT NO. 3900

7. SYSTEM CODE

8. CONTRACTOR: MAC

10. GENERAL INFORMATION

A. TEST CODE: HSQ

B. NUMBER OF CHANNELS:
CONTINUOUS: N/A
COMMUTATED: N/A

C. NUMBER OF SEGMENTS/CHANNEL: N/A
CHANNEL SEGMENTS

D. STATE NON-IRIG PARTICULARS: None

E. Data Format: Page 152.6

F. Filtering: Page 152.7

11. TRANSMITTER CHARACTERISTICS

A. LOCATION: Reentry Module STAGE

B. TYPE: Crystal Controlled

C. MODEL: (52-85713)*(81-9005-65)**

D. MANUFACTURER: RCA

E. LINK FREQUENCY: 259.7 MC

F. TYPE OF MODULATION: PCM/FM

G. BAND WIDTH AT 3DB: 102.4 KC MC

H. MIN. DEVIATION:

I. MAX. DEVIATION: ±38.4 KC

J. FREQUENCY STABILITY: ± 25.8 KC

K. AVERAGE POWER: 2 WATTS

L. CODING AND/OR MODULATION (PCM):
Serial Binary Coded Digital, Most Significant Bit First Standard IRIG-NRZC.

M. SPECTRUM ANALYSIS REPORTS ON THIS TRANSMITTER:

☐ HAVE BEEN PROVIDED TO THE FREQUENCY CONTROL BRANCH

☒ WILL BE AVAILABLE _____ (DATE)

NOTE: A "one" will give a positive freq. excursion. "Zero" will give a lower Freq. excursion.

*MAC Part Number
**RCA Part Number

NOTE: TRANSMITTING SYSTEMS WHICH REQUIRE EXTENSIVE PERIODS OF RF CHECKOUT TIME WILL BE REQUIRED TO BE EQUIPPED WITH A CLOSED LOOP OR NON-RADIATING CHECKOUT DEVISE.

12. ANTENNA CHARACTERISTICS

A. LOCATION: STA. , AZ,
Whip STA. Z147.78 , 185.0° AZ,
Stub STA. Z233.97 , parallel AZ,
STA. , AZ,
WITH REFERENCE TO TRUE NORTH AFTER THE VEHICLE IS ERECTED ON THE LAUNCH PAD.

B. TYPE: Stubs and Whip

C. MODEL: 52-85101-17 52-85103-301

D. MANUFACTURER: MAC

E. FREQUENCY RANGE: 225 - 460 MC

F. ☐ TUNABLE ☒ FIXED TUNED

G. PREDOMINANT POLARIZATION: (CHECK ONLY ONE)
☒ VERTICAL
☐ HORIZONTAL
☐ CIRCULAR; SENSE: ☐ LH ☐ RH
☐ OTHER

H. MAXIMUM GAIN IN DB WITH RESPECT TO ISOTROPIC: 0 DB

I. MAIN LOBE BEAMWIDTH IN DEGREES AT 3DB POINTS: ELEVATION 40 AZIMUTH OMNI °

J. EFFECTIVE RADIATED POWER: 2 WATTS

K. INDICATE THE AVAILABILITY DATE OF THE ANTENNA PATTERN MEASUREMENTS, PER AFMTC REG 80-14:

L. IS THERE AVAILABLE A SPECTRUM RESPONSE REPORT ON THIS ANTENNA? ☐ YES ☒ NO
(IF YES, PROVIDE ONE COPY)

13. DATA TO BE TRANSMITTED & REMARKS

This information to be supplied prior to launch. See applicable OR supplement.

TELEMETRY SYSTEM

Simulated Laboratory PAM/FM/FM

1. SECURITY CLASSIFICATION: UNCLASSIFIED
2. PAGE 1528
3. DATE 18 May 1966
4. REPLACES PAGE(S) — — — — — — — — DATED

5. TEST PROGRAM: TIII SLS/MOL-HSQ
6. PROGRAM REQUIREMENT NO. 3900
7. SYSTEM CODE:
8. CONTRACTOR: MC

10. GENERAL INFORMATION

A. TEST CODE: HSQ; ZX

B. NUMBER OF CHANNELS: Four on
CONTINUOUS: orbit at ground command.
COMMUTATED: 180 total (Inc Sync)

C. NUMBER OF SEGMENTS/CHANNEL:

CHANNEL	SEGMENTS
IRIG 13	90x0.5 NRZ/PAM
IRIG 14	90x0.5 NRZ/PAM
IRIG C	26(90x0.5NRZ/PAM)
IRIG E	26(90x0.5NRZ/PAM)

D. STATE NON-IRIG PARTICULARS:

1. Two solid state PAM commutators; 90 ch by 0.5 Frame/sec 100% duty cycle (NRZ/PAM). Frame sync pulse on channels 86 and 90 zero amplitude (minimum signal) and channels 87, 88, & 89 full scale (maximum signal). Channel 1, zero amplitude calibration (minimum signal) and channel 2, 90% amplitude (90% of maximum signal).
2. A/B FM Tape Recorder Record Time 185 minutes nominal with playback 26 times record speed (7.1 minutes). Playback of data is in reverse order from record.

11. TRANSMITTER CHARACTERISTICS

A. LOCATION: Simulated Lab. STAGE
B. TYPE: Solid State
C. MODEL: Cubic 102725;Martin SK808D01409
D. MANUFACTURER: Cubic Corporation
E. LINK FREQUENCY: 236.2 MC
F. TYPE OF MODULATION: PAM/FM/FM
G. BAND WIDTH AT 3DB: 0.25 MC
H. MIN. DEVIATION: ± 106 KC
I. MAX. DEVIATION: ± 144 KC
J. FREQUENCY STABILITY: ± 11.8 KC
K. AVERAGE POWER: 10 WATTS
L. CODING AND/OR MODULATION (PCM): N/A

M. SPECTRUM ANALYSIS REPORTS ON THIS TRANSMITTER:
☐ HAVE BEEN PROVIDED TO THE FREQUENCY CONTROL BRANCH
☒ WILL BE AVAILABLE Unknown at Present Time (DATE)

NOTE: TRANSMITTING SYSTEMS WHICH REQUIRE EXTENSIVE PERIODS OF RF CHECKOUT TIME WILL BE REQUIRED TO BE EQUIPPED WITH A CLOSED LOOP OR NON-RADIATING CHECKOUT DEVISE.

12. ANTENNA CHARACTERISTICS

A. LOCATION: STA. -160 on BLO (100°) AZ,
STA. -160 on BLO (280°) AZ,
STA. , AZ,
STA. , AZ,
WITH REFERENCE TO TRUE NORTH AFTER THE VEHICLE IS ERECTED ON THE LAUNCH PAD.
B. TYPE: Slotted probe-fed cavity
C. MODEL: 804A3350110-069
D. MANUFACTURER: Martin Company
E. FREQUENCY RANGE: 230 - 252 MC
F. ☐ TUNABLE ☒ FIXED TUNED
G. PREDOMINANT POLARIZATION: (CHECK ONLY ONE)
☒ VERTICAL (Parallel to roll axis)
☐ HORIZONTAL
☐ CIRCULAR; SENSE: ☐ LH ☐ RH
☐ OTHER
H. MAXIMUM GAIN IN DB WITH RESPECT TO ISOTROPIC: 5.4 DB
I. MAIN LOBE BEAMWIDTH IN DEGREES AT 3DB POINTS: ELEVATION N/A AZIMUTH N/A °
J. EFFECTIVE RADIATED POWER: 8.03 WATTS*
K. INDICATE THE AVAILABILITY DATE OF THE ANTENNA PATTERN MEASUREMENTS, PER AFMTC REG 80-14: 1 December 1965
L. IS THERE AVAILABLE A SPECTRUM RESPONSE REPORT ON THIS ANTENNA? ☐ YES ☒ NO (IF YES, PROVIDE ONE COPY)

*At antenna RF connector.

13. DATA TO BE TRANSMITTED & REMARKS

Scientific data on orbit for 6 days. Transmission is controlled from ground command. Data from two 90 x 0.5 NRZ/PAM commutators (including time) will be recorded on a two track FM tape recorder. At ground command, the recorded PAM data will be reproduced at a compression ratio of 26 into IRIG subcarrier oscillator (SCO) channels C&E. Simultaneously the real time NRZ/PAM data will modulate IRIG SCO's 13 and 14. The SCO multiplex will FM modulate a 10 watt solid state transmitter for transmission.

AFMTC FORM 31N JUN 61 PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE. NRD

1. SECURITY CLASSIFICATION (U)
9. REVISION NO. MT - 1

TELEMETRY SYSTEM

Simulated Laboratory PAM/FM/FM (cont)

1. SECURITY CLASSIFICATION: UNCLASSIFIED
2. PAGE 152.9
3. DATE 18 May 1966
4. REPLACES PAGE(S) — — — — — — — —
DATED

5. TEST PROGRAM: TIII SLS/MOL-HSO
6. PROGRAM REQUIREMENT NO. 3900
7. SYSTEM CODE
8. CONTRACTOR MC

10. GENERAL INFORMATION

A. TEST CODE:
B. NUMBER OF CHANNELS:
CONTINUOUS:
COMMUTATED:
C. NUMBER OF SEGMENTS/CHANNEL:
CHANNEL SEGMENTS

D. STATE NON-IRIG PARTICULARS:

3. Data- PAM data on SCO channels 13 and 14 will be real time and in a forward direction (i.e., calibration on channels 1, 2 and data on 3, 4, 5, etc). PAM data on SCO C&E (tape recorder playback data) will be in reverse direction (i.e., data appears to be on ch. 1, 2, 3, etc with calibration on channels 84 and 85.)

11. TRANSMITTER CHARACTERISTICS

A. LOCATION: STAGE
B. TYPE:
C. MODEL:
D. MANUFACTURER:
E. LINK FREQUENCY: MC
F. TYPE OF MODULATION:
G. BAND WIDTH AT 3DB: MC
H. MIN. DEVIATION:
I. MAX. DEVIATION:
J. FREQUENCY STABILITY: ± KC
K. AVERAGE POWER: WATTS
L. CODING AND/OR MODULATION (PCM):

M. SPECTRUM ANALYSIS REPORTS ON THIS TRANSMITTER:
☐ HAVE BEEN PROVIDED TO THE FREQUENCY CONTROL BRANCH
☐ WILL BE AVAILABLE _____ (DATE)

NOTE: TRANSMITTING SYSTEMS WHICH REQUIRE EXTENSIVE PERIODS OF RF CHECKOUT TIME WILL BE REQUIRED TO BE EQUIPPED WITH A CLOSED LOOP OR NON-RADIATING CHECKOUT DEVISE.

12. ANTENNA CHARACTERISTICS

A. LOCATION: STA. , AZ,
STA. , AZ,
STA. , AZ,
STA. , AZ,
WITH REFERENCE TO TRUE NORTH AFTER THE VEHICLE IS ERECTED ON THE LAUNCH PAD.
B. TYPE:
C. MODEL:
D. MANUFACTURER:
E. FREQUENCY RANGE: MC
F. ☐ TUNABLE ☐ FIXED TUNED
G. PREDOMINANT POLARIZATION; (CHECK ONLY ONE)
☐ VERTICAL
☐ HORIZONTAL
☐ CIRCULAR; SENSE: ☐ LH ☐ RH
☐ OTHER
H. MAXIMUM GAIN IN DB WITH RESPECT TO ISOTROPIC: DB
I. MAIN LOBE BEAMWIDTH IN DEGREES AT 3DB POINTS: ELEVATION AZIMUTH °
J. EFFECTIVE RADIATED POWER: WATTS
K. INDICATE THE AVAILABILITY DATE OF THE ANTENNA PATTERN MEASUREMENTS, PER AFMTC REG 80-14:
L. IS THERE AVAILABLE A SPECTRUM RESPONSE REPORT ON THIS ANTENNA? ☐ YES ☐ NO
(IF YES, PROVIDE ONE COPY)

13. DATA TO BE TRANSMITTED & REMARKS

AFMTC FORM 31N JUN 61 PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE.

1. SECURITY CLASSIFICATION: UNCLASSIFIED
9. REVISION NO. MT -

OV-1

TELEMETRY SYSTEM

1. SECURITY CLASSIFICATION: UNCLASSIFIED

2. PAGE 152.10

3. DATE 18 May 1966

4. REPLACES PAGE(S) — — — — — — — —

DATED

5. TEST PROGRAM: TIII SLS/MOL-HSQ

6. PROGRAM REQUIREMENT NO. 3900

7. SYSTEM CODE

8. CONTRACTOR (GD/C) MC

10. GENERAL INFORMATION

A. TEST CODE: YW, YH

B. NUMBER OF CHANNELS;

CONTINUOUS: 0

COMMUTATED: 4

C. NUMBER OF SEGMENTS/CHANNEL:

CHANNEL	SEGMENTS
12	30
15	30
16	30
17	30

D. STATE NON-IRIG PARTICULARS:

Channel 12 commutation rate is 1.6 fps.

11. TRANSMITTER CHARACTERISTICS

A. LOCATION: CV1-6S Satellite STAGE

B. TYPE: PAM/FM/FM

C. MODEL: CTM 201-B

D. MANUFACTURER: Conic Corp.

E. LINK FREQUENCY: 230.9 mc MC

F. TYPE OF MODULATION: FM

G. BAND WIDTH AT 3DB: 0.3 MC

H. MIN. DEVIATION: -

I. MAX. DEVIATION: 125 kc

J. FREQUENCY STABILITY: ± 23.0 KC

K. AVERAGE POWER: 2 WATTS

L. CODING AND/OR MODULATION(PCM):

M. SPECTRUM ANALYSIS REPORTS ON THIS TRANSMITTER:

[X] HAVE BEEN PROVIDED TO THE FREQUENCY CONTROL BRANCH

[ ] WILL BE AVAILABLE _____ (DATE)

NOTE: TRANSMITTING SYSTEMS WHICH REQUIRE EXTENSIVE PERIODS OF RF CHECKOUT TIME WILL BE REQUIRED TO BE EQUIPPED WITH A CLOSED LOOP OR NON-RADIATING CHECKOUT DEVISE.

12. ANTENNA CHARACTERISTICS

A. LOCATION: STA. -326.5 , AZ,

STA. , AZ,

STA. , AZ,

STA. , AZ,

WITH REFERENCE TO TRUE NORTH AFTER THE VEHICLE IS ERECTED ON THE LAUNCH PAD.

B. TYPE: Whip

C. MODEL: 64-24304

D. MANUFACTURER: GD/C

E. FREQUENCY RANGE: 230.9 MC

F. [ ] TUNABLE [X] FIXED TUNED

G. PREDOMINANT POLARIZATION; (CHECK ONLY ONE)

[ ] VERTICAL

[ ] HORIZONTAL

[ ] CIRCULAR SENSE: [ ] LH [ ] RH

[X] OTHER Linear

H. MAXIMUM GAIN IN DB WITH RESPECT TO ISOTROPIC: 0 DB

I. MAIN LOBE BEAMWIDTH IN DEGREES AT 3DB POINTS: ELEVATION , AZIMUTH - °

J. EFFECTIVE RADIATED POWER: 1.85 WATTS

K. INDICATE THE AVAILABILITY DATE OF THE ANTENNA PATTERN MEASUREMENTS, PER AFMTC REG 80-14: NA

L. IS THERE AVAILABLE A SPECTRUM RESPONSE REPORT ON THIS ANTENNA? [ ] YES [X] NO (IF YES, PROVIDE ONE COPY)

Polar coordinated plots of the antenna are available.

13. DATA TO BE TRANSMITTED & REMARKS

Satellite and experimental payload data will be transmitted and recorded by TLM ground station or portable test equipment upon command to satellite.

AFMTC FORM 31N JUN 61 PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE.

NRD

1. SECURITY CLASSIFICATION: UNCLASSIFIED

9. REVISION NO MT 1

OV-4

TELEMETRY SYSTEM

1. SECURITY CLASSIFICATION: (U)

2. PAGE 152.11

3. DATE 18 May 1966

4. REPLACES PAGE(S) — — — — — — — —

DATED

5. TEST PROGRAM: TIII SLS/MOL-HSQ

6. PROGRAM REQUIREMENT NO. 3900

7. SYSTEM CODE

8. CONTRACTOR: MC

10. GENERAL INFORMATION

A. TEST CODE: SX Link 1, 245.3mc

B. NUMBER OF CHANNELS: 1

CONTINUOUS: 1

COMMUTATED:

C. NUMBER OF SEGMENTS/CHANNEL:

CHANNEL — SEGMENTS

D. STATE NON-IRIG PARTICULARS:

Deviation of ± 400 KC. No calibration or synchronization transmitted.

11. TRANSMITTER CHARACTERISTICS

A. LOCATION: Receiver Satellite STAGE

B. TYPE: 1500F9 Wide Band FM

C. MODEL: TX 3903

D. MANUFACTURER: Sonex

E. LINK FREQUENCY: 245.3 MC MC

F. TYPE OF MODULATION: FM

G. BAND WIDTH AT 3DB: MC

H. MIN. DEVIATION: 3 KC

I. MAX. DEVIATION: ± 400 KC

J. FREQUENCY STABILITY: ± ± 0.005% KC

K. AVERAGE POWER: 2 WATTS

L. CODING AND/OR MODULATION (PCM):

FM modulated by IF of AM experimental receiver

M. SPECTRUM ANALYSIS REPORTS ON THIS TRANSMITTER:

☒ HAVE BEEN PROVIDED TO THE FREQUENCY CONTROL BRANCH

☐ WILL BE AVAILABLE Sept 65 (DATE)

NOTE: TRANSMITTING SYSTEMS WHICH REQUIRE EXTENSIVE PERIODS OF RF CHECKOUT TIME WILL BE REQUIRED TO BE EQUIPPED WITH A CLOSED LOOP OR NON-RADIATING CHECKOUT DEVISE.

12. ANTENNA CHARACTERISTICS

A. LOCATION: STA. , NYA AZ,

STA. , AZ,

STA. , AZ,

STA. , AZ,

WITH REFERENCE TO TRUE NORTH AFTER THE VEHICLE IS ERECTED ON THE LAUNCH PAD.

B. TYPE: Quasi Isotropic Dipole

C. MODEL:

D. MANUFACTURER: Raytheon Co

E. FREQUENCY RANGE: 245.3 ± 0.1 MC

F. ☐ TUNABLE ☒ FIXED TUNED

G. PREDOMINANT POLARIZATION: (CHECK ONLY ONE)

☐ VERTICAL

☒ HORIZONTAL

☐ CIRCULAR; SENSE: ☐ LH ☐ RH

☐ OTHER

H. MAXIMUM GAIN IN DB WITH RESPECT TO ISOTROPIC: (1) 2 DB

I. MAIN LOBE BEAMWIDTH IN DEGREES AT 3DB POINTS: ELEVATION not applicable AZIMUTH

J. EFFECTIVE RADIATED POWER: 1.7 WATTS

K. INDICATE THE AVAILABILITY DATE OF THE ANTENNA PATTERN MEASUREMENTS, PER AFMTC REG 80-14: scaled down patterns avail.

L. IS THERE AVAILABLE A SPECTRUM RESPONSE REPORT ON THIS ANTENNA? ☐ YES ☒ NO

(IF YES, PROVIDE ONE COPY)

13. DATA TO BE TRANSMITTED & REMARKS

One of three wide band links used to transmit experiment data

Transmission on all three links will be initiated by a single ground command, Turn off is accomplished by ground command on an 8 minute timer. Timer set to turn off at approx. 4 min.

T/M system utilized on-orbit only.

(1) Due to S/C tumbling, gain can be as low as -3 db.

AFMTC FORM 31N JUN 61 PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE. NRD

1. SECURITY CLASSIFICATION (U)

9. REVISION NO. 1

MT

OV-4

TELEMETRY SYSTEM

1. SECURITY CLASSIFICATION: (U)

2. PAGE 152.12

3. DATE 18 May 1966

4. REPLACES PAGE(S) — — — — — — DATED

5. TEST PROGRAM: TIII SLS/MOL-HSQ

6. PROGRAM REQUIREMENT NO. 3900

7. SYSTEM CODE

8. CONTRACTOR: MC

10. GENERAL INFORMATION

A. TEST CODE: SX, Link 2, 249.9mc

B. NUMBER OF CHANNELS: 1

CONTINUOUS: 1

COMMUTATED:

C. NUMBER OF SEGMENTS/CHANNEL:

CHANNEL — SEGMENTS

D. STATE NON-IRIG PARTICULARS:

Deviation of ± 400 KC. No calibration or synchronization transmitted.

11. TRANSMITTER CHARACTERISTICS

A. LOCATION: Receiver Satellite STAGE

B. TYPE: 1500F9 Wide Band FM

C. MODEL: TX 3903

D. MANUFACTURER: Sonex

E. LINK FREQUENCY: 249.9 MC

F. TYPE OF MODULATION: FM

G. BAND WIDTH AT 3DB: MC

H. MIN. DEVIATION: 3 KC

I. MAX. DEVIATION: ± 400 KC

J. FREQUENCY STABILITY: ± 0.005% KC

K. AVERAGE POWER: 2 WATTS

L. CODING AND/OR MODULATION (PCM):

FM modulated by IF of AM experimental receiver.

M. SPECTRUM ANALYSIS REPORTS ON THIS TRANSMITTER:

[X] HAVE BEEN PROVIDED TO THE FREQUENCY CONTROL BRANCH

[ ] WILL BE AVAILABLE _____ (DATE)

NOTE: TRANSMITTING SYSTEMS WHICH REQUIRE EXTENSIVE PERIODS OF RF CHECKOUT TIME WILL BE REQUIRED TO BE EQUIPPED WITH A CLOSED LOOP OR NON-RADIATING CHECKOUT DEVISE.

12. ANTENNA CHARACTERISTICS

A. LOCATION: STA. , AZ,

STA. , AZ,

STA. , AZ,

STA. , AZ,

WITH REFERENCE TO TRUE NORTH AFTER THE VEHICLE IS ERECTED ON THE LAUNCH PAD.

B. TYPE: Quasi Isotropic Dipole

C. MODEL:

D. MANUFACTURER: Raytheon Co

E. FREQUENCY RANGE: 249.9 ± 0.1 MC

F. [ ] TUNABLE [X] FIXED TUNED

G. PREDOMINANT POLARIZATION: (CHECK ONLY ONE)

[ ] VERTICAL

[X] HORIZONTAL

[ ] CIRCULAR SENSE: [ ] LH [ ] RH

[ ] OTHER

H. MAXIMUM GAIN IN DB WITH RESPECT TO (1) ISOTROPIC: 2 DB

I. MAIN LOBE BEAMWIDTH IN DEGREES AT 3DB POINTS: ELEVATION not applicable AZIMUTH

J. EFFECTIVE RADIATED POWER: 1.7 WATTS

K. INDICATE THE AVAILABILITY DATE OF THE ANTENNA PATTERN MEASUREMENTS, PER AFMTC REG 80-14: scaled down patterns avail.

L. IS THERE AVAILABLE A SPECTRUM RESPONSE REPORT ON THIS ANTENNA? [ ] YES [X] NO (IF YES, PROVIDE ONE COPY)

13. DATA TO BE TRANSMITTED & REMARKS

One of three wide band links used to transmit experiment data.

Transmission on all three links will be initiated by a single ground command. Turn off is accomplished by command of an 8 minute timer. Timer set to turn off at approx 4 min.

T/M system utilized on-orbit only.

(1) Due to S/C tumbling, gain can be as low as -3 db.

AFMTC FORM 31N JUN 61 PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE.

NRD

1. SECURITY CLASSIFICATION: (U)

9. REVISION NO. 1 MT

TELEMETRY SYSTEM

OV-4

1. SECURITY CLASSIFICATION: (U)

2. PAGE 152.3

3. DATE 18 May 1966

4. REPLACES PAGE(S) — — — — — — — DATED

5. TEST PROGRAM: TIII SLS/MOL-HSQ

6. PROGRAM REQUIREMENT NO. 3900

7. SYSTEM CODE

8. CONTRACTOR: MC

10. GENERAL INFORMATION

A. TEST CODE: SX, Link 3, 255.1mc

B. NUMBER OF CHANNELS: 1

CONTINUOUS: 1

COMMUTATED:

C. NUMBER OF SEGMENTS/CHANNEL:

CHANNEL — SEGMENTS

D. STATE NON-IRIG PARTICULARS:

Deviation of ± 400 KC. No calibration or synchronization transmitted.

11. TRANSMITTER CHARACTERISTICS

A. LOCATION: Receiver Satellite STAGE

B. TYPE: 1500F9 Wide Band FM

C. MODEL: TX 3903

D. MANUFACTURER: Sonex

E. LINK FREQUENCY: 255.1 MC

F. TYPE OF MODULATION: FM

G. BAND WIDTH AT 3DB: MC

H. MIN. DEVIATION: 3 KC

I. MAX. DEVIATION: ± 400 KC

J. FREQUENCY STABILITY: ± 0.005% KC

K. AVERAGE POWER: 2 WATTS

L. CODING AND/OR MODULATION (PCM):

FM modulated by IF of AM experimental receiver.

M. SPECTRUM ANALYSIS REPORTS ON THIS TRANSMITTER:

[X] HAVE BEEN PROVIDED TO THE FREQUENCY CONTROL BRANCH

[ ] WILL BE AVAILABLE _____ (DATE)

NOTE: TRANSMITTING SYSTEMS WHICH REQUIRE EXTENSIVE PERIODS OF RF CHECKOUT TIME WILL BE REQUIRED TO BE EQUIPPED WITH A CLOSED LOOP OR NON-RADIATING CHECKOUT DEVISE.

12. ANTENNA CHARACTERISTICS

A. LOCATION: STA. , AZ,

STA. , AZ,

STA. , AZ,

STA. , AZ,

WITH REFERENCE TO TRUE NORTH AFTER THE VEHICLE IS ERECTED ON THE LAUNCH PAD.

B. TYPE: Quasi Isotropic Monopole

C. MODEL:

D. MANUFACTURER: Raytheon Co

E. FREQUENCY RANGE: 255.1 ± 0.1 MC

F. [ ] TUNABLE [X] FIXED TUNED

G. PREDOMINANT POLARIZATION; (CHECK ONLY ONE)

[ ] VERTICAL

[X] HORIZONTAL

[ ] CIRCULAR; SENSE: [ ] LH [ ] RH

[ ] OTHER

H. MAXIMUM GAIN IN DB WITH RESPECT TO (1) ISOTROPIC: 4 DB

I. MAIN LOBE BEAMWIDTH IN DEGREES AT 3DB POINTS: ELEVATION not applicable AZIMUTH .

J. EFFECTIVE RADIATED POWER: 1.8 WATTS

K. INDICATE THE AVAILABILITY DATE OF THE ANTENNA PATTERN MEASUREMENTS, PER AFMTC REG 80-14: scaled down patterns avail.

L. IS THERE AVAILABLE A SPECTRUM RESPONSE REPORT ON THIS ANTENNA? [ ] YES [X] NO

(IF YES, PROVIDE ONE COPY)

13. DATA TO BE TRANSMITTED & REMARKS

One of three wide band links used to transmit experiment data.

Transmission on all three links will be initiated by a single ground command. Turn off is accomplished by command or an 8 minute timer.

Timer set to turn off at approx. 4 min.

T/M system utilized on-orbit only.

(1) Due to S/C tumbling, gain can be as low as -3 db.

AFMTC FORM 31N JUN 61 PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE.

NRD

1. SECURITY CLASSIFICATION: (U)

9. REVISION NO. MT

OV-4

TELEMETRY SYSTEM

1. SECURITY CLASSIFICATION: (U)

2. PAGE 152.14

3. DATE 18 May 1966

4. REPLACES PAGE(S) — — — — — — — —

DATED

5. TEST PROGRAM: TIII SLS/MOL-HSQ

6. PROGRAM REQUIREMENT NO. 3900

7. SYSTEM CODE

8. CONTRACTOR: OV4 - AFAL

10. GENERAL INFORMATION

A. TEST CODE: SX, Link 4 230.9

B. NUMBER OF CHANNELS: 1

CONTINUOUS:

COMMUTATED: 1

C. NUMBER OF SEGMENTS/CHANNEL:

CHANNEL	SEGMENTS
1	30(30x2.5)

75 SPS

D. STATE NON-IRIG PARTICULARS.

11. TRANSMITTER CHARACTERISTICS

A. LOCATION: Receiver Satellite STAGE

B. TYPE: 300F9 FM

C. MODEL: TR 16B

D. MANUFACTURER: United Electro Dynamics

E. LINK FREQUENCY: 230.9 MC

F. TYPE OF MODULATION: FM

G. BAND WIDTH AT 3DB: MC

H. MIN. DEVIATION: ± 56.4 KC

I. MAX. DEVIATION:

J. FREQUENCY STABILITY: ± 11.6 KC

K. AVERAGE POWER: 2 WATTS

L. CODING AND/OR MODULATION (PCM): PAM/FM/FM

M. SPECTRUM ANALYSIS REPORTS ON THIS TRANSMITTER:

[X] HAVE BEEN PROVIDED TO THE FREQUENCY CONTROL BRANCH

[ ] WILL BE AVAILABLE _____ (DATE)

NOTE: TRANSMITTING SYSTEMS WHICH REQUIRE EXTENSIVE PERIODS OF RF CHECKOUT TIME WILL BE REQUIRED TO BE EQUIPPED WITH A CLOSED LOOP OR NON-RADIATING CHECKOUT DEVISE.

12. ANTENNA CHARACTERISTICS

A. LOCATION: STA. , AZ,
STA. , AZ,
STA. , AZ,
STA. , AZ,
WITH REFERENCE TO TRUE NORTH AFTER THE VEHICLE IS ERECTED ON THE LAUNCH PAD.

B. TYPE: Quasi Isotropic Dipole

C. MODEL:

D. MANUFACTURER: Raytheon Co

E. FREQUENCY RANGE: 230.9 ± 0.1 MC

F. [ ] TUNABLE [X] FIXED TUNED

G. PREDOMINANT POLARIZATION; (CHECK ONLY ONE)

[ ] VERTICAL

[X] HORIZONTAL

[ ] CIRCULAR; SENSE: [ ] LH [ ] RH

[ ] OTHER

H. MAXIMUM GAIN IN DB WITH RESPECT TO (1)
ISOTROPIC: 2 DB

I. MAIN LOBE BEAMWIDTH IN DEGREES AT 3DB POINTS: ELEVATION not applicable AZIMUTH .

J. EFFECTIVE RADIATED POWER: 1.6 WATTS

K. INDICATE THE AVAILABILITY DATE OF THE ANTENNA PATTERN MEASUREMENTS, PER AFMTC REG 80-14: Scaled down patterns avail.

L. IS THERE AVAILABLE A SPECTRUM RESPONSE REPORT ON THIS ANTENNA? [ ] YES [X] NO
(IF YES, PROVIDE ONE COPY)

13. DATA TO BE TRANSMITTED & REMARKS

Transmissions of systems (satellite condition and command status) data.

A keyed command will be used to control turn on of this link. Turn off will be by ground command or by 8 minute timer. Timer set to turn off at approx. 4 min.

T/M system utilized on-orbit only.

(1) Due to S/C tumbling, gain can be as low as -3 db.

AFMTC FORM 31N JUN 61 PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE.

1. SECURITY CLASSIFICATION: (U)

9. REVISION NO. 1

MT 33

OV-4

TELEMETRY SYSTEM

1. SECURITY CLASSIFICATION: (U)

2. PAGE 152.15

3. DATE 18 May 1966

4. REPLACES PAGE(S) — — — — — — — DATED

5. TEST PROGRAM: TIII SLS/MOL-HSQ

6. PROGRAM REQUIREMENT NO. 3900

7. SYSTEM CODE

8. CONTRACTOR: CV4 - "FAL

10. GENERAL INFORMATION

A. TEST CODE: SX, Link 5 230.9

B. NUMBER OF CHANNELS: 1

CONTINUOUS:

COMMUTATED: 1

C. NUMBER OF SEGMENTS/CHANNEL:

CHANNEL	SEGMENTS
NA	30 (30-2.5)

75 SPS

D. STATE NON-IRIG PARTICULARS:

11. TRANSMITTER CHARACTERISTICS

A. LOCATION: Transmitter Satellite STAGE

B. TYPE: 300F9 FM

C. MODEL: TR 16 B

D. MANUFACTURER: United Electro Dynamics

E. LINK FREQUENCY: 230.9 MC

F. TYPE OF MODULATION: FM

G. BAND WIDTH AT 3DB: MC

H. MIN. DEVIATION:

I. MAX. DEVIATION: ± 56.4 KC

J. FREQUENCY STABILITY: ± 11.6 KC

K. AVERAGE POWER: 2 WATTS

L. CODING AND/OR MODULATION (PCM):

PAM/FM/FM

M. SPECTRUM ANALYSIS REPORTS ON THIS TRANSMITTER:

☒ HAVE BEEN PROVIDED TO THE FREQUENCY CONTROL BRANCH

☐ WILL BE AVAILABLE _____ (DATE)

NOTE: TRANSMITTING SYSTEMS WHICH REQUIRE EXTENSIVE PERIODS OF RF CHECKOUT TIME WILL BE REQUIRED TO BE EQUIPPED WITH A CLOSED LOOP OR NON-RADIATING CHECKOUT DEVISE.

12. ANTENNA CHARACTERISTICS

A. LOCATION: STA. , AZ,
STA. , AZ,
STA. , AZ,
STA. , AZ,
WITH REFERENCE TO TRUE NORTH AFTER THE VEHICLE IS ERECTED ON THE LAUNCH PAD.

B. TYPE: Quasi Isotropic Dipole

C. MODEL:

D. MANUFACTURER: Raytheon Co

E. FREQUENCY RANGE: 230.9 ± 0.1 MC

F. ☐ TUNABLE ☒ FIXED TUNED

G. PREDOMINANT POLARIZATION: (CHECK ONLY ONE)
☐ VERTICAL
☒ HORIZONTAL
☐ CIRCULAR SENSE: ☐ LH ☐ RH
☐ OTHER

H. MAXIMUM GAIN IN DB WITH RESPECT TO (1)
ISOTROPIC: 2 DB

I. MAIN LOBE BEAMWIDTH IN DEGREES AT 3DB POINTS: ELEVATION Not applicable AZIMUTH

J. EFFECTIVE RADIATED POWER: 1.6 WATTS

K. INDICATE THE AVAILABILITY DATE OF THE ANTENNA PATTERN MEASUREMENTS, PER AFMTC REG 80-14: Scaled down patterns avail.

L. IS THERE AVAILABLE A SPECTRUM RESPONSE REPORT ON THIS ANTENNA? ☐ YES ☒ NO
(IF YES, PROVIDE ONE COPY)

13. DATA TO BE TRANSMITTED & REMARKS

Transmission of systems (satellite condition and command status) data.

A keyed command will be used to control turn on of this link. Turn off will be by ground command or by 8 minute timer. Timer set to turn off at approx. 4 min.

T/M system utilized on-orbit only.

(1) Due to S/C tumbling, gain can be as low as -3 db.

AFMTC FORM 31N JUN 61 PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE.

1. SECURITY CLASSIFICATION (U)

9. REVISION NO. MT / 1

COMMAND CONTROL

1. SECURITY CLASSIFICATION: UNCLASSIFIED
2. PAGE 154.
3. DATE 3 January 1966
4. REPLACES PAGE(S) — — New — — — DATED

5. TEST PROGRAM: TIII SLS/MOL-HSQ
6. PROGRAM REQUIREMENT NO. 3900
7. SYSTEM CODE
8. CONTRACTOR: MC

10. GENERAL INFORMATION

A. TEST CODE:
B. TRANSMISSION OF COMMAND FUNCTIONS: TYPE: [X] ON-OFF [ ] PROPORTIONAL
C. NO. OF ON-OFF CHANNELS TO BE TRANSMITTED: 12
D. BANDWIDTH OF PROPORTIONAL CHANNELS N/A KC INCLUSIVE.
E. REAL-TIME MONITORING OF TRANSMITTED COMMAND FUNCTIONS REQUIRED: [ ] YES [ ] NO
F. A FLIGHT-CONTROL CONSOLE [ ] WILL [X] WILL NOT BE USED.
G. PORTION, OR DURATION, OF FLIGHT THROUGHOUT WHICH RADIO COMMAND IS REQUIRED: First ~~7~~ 1/3 days of orbital life.
H. IN-FLIGHT TELEMETERED DATA: CHANNEL # The telemetry R-F LINK # system will not be USED TO TRANSMIT COMMAND CONTROL SIGNAL INTENSITY FROM MISSILEBORNE RECEIVER.
I. DOES COMMAND RECEIVER HAVE A REMOTE TURN-OFF CAPABILITY? [ ] YES [X] NO

11. RECEIVER CHARACTERISTICS

A. LOCATION: Simulated Lab STAGE.
B. TYPE: Solid State-Relay Contact
C. MODEL: 2624D/1801A Output
D. MANUFACTURER: R S Electronics
E. NUMBER INSTALLED: 2
F. FREQUENCY RANGE: 430 ± .01% MC
G. [ ] TUNABLE [X] FIXED TUNED
H. INTERMEDIATE FREQUENCY: 1ST 50 MC, 2ND none MC
I. LOCAL OSCILLATOR FREQUENCY [X] ABOVE, [ ] BELOW COMMAND TRANSMITTER FREQUENCY.
J. METHOD OF FREQUENCY CONTROL: 1ST OSC: crystal , 2ND OSC:
K. FREQUENCY STABILITY: ± .043 MC
L. SENSITIVITY:
MAXIMUM: -93 DBM AT 430 MC
MINIMUM: -87 DBM AT 430 MC
NOMINAL: -90 DBM AT 430 MC
M. SELECTIVITY; (OVERALL)
3DB MC
20DB MC
60DB Down at ± 2 MC
N. BANDWIDTH (FOR A GIVEN OPTIMUM SIGNAL) AT;
6DB DOWN KC
40DB DOWN KC
80DB DOWN KC
O. DEVIATION REQUIRED: ± 60 to ± 75 perc~~KC~~ tone
P. CAPTURE RATIO:
Q. SPURIOUS RESPONSE REJECTION: 60 DB
R. ATTACH A PLOT OF SIGNAL PLUS NOISE TO NOISE RATIO IN DB VERSUS INPUT SIGNAL IN UV OVER A RANGE OF 1-100 UV. 5 μV= 60 db $\frac{S+n}{N}$
S. A SPECTRUM ANALYSIS REPORT ON THIS RCVR [X] HAS BEEN PROVIDED TO THE FREQUENCY CONTROL BRANCH [ ] WILL BE AVAILABLE _____ (DATE)

12. ANTENNA CHARACTERISTICS

A. LOCATION: STA. 190 .7.5°WL60 AZ,
STA. , Quad I AZ,
STA. 190 .7.5°WL60 AZ,
STA. , Quad III AZ,
WITH REFERENCE TO TRUE NORTH AFTER THE VEHICLE IS ERECTED ON THE LAUNCH PAD.
B. TYPE: Crossed Slot
C. MODEL: 80801J01100-029
D. MANUFACTURER: Martin Company
E. FREQUENCY RANGE: 406-430
F. [ ] TUNABLE [X] FIXED TUNED
G. PREDOMINANT POLARIZATION; (CHECK ONLY ONE)
[ ] VERTICAL
[ ] HORIZONTAL
[X] CIRCULAR; SENSE: [X] LH [ ] RH
[ ] OTHER
H. MAXIMUM GAIN IN DB WITH RESPECT TO ISOTROPIC: 90% spher. Cow at -10 DB
I. MAXIMUM NULL IN DB WITH RESPECT TO ISOTROPIC: DB
J. LOSS IN TRANSMISSION LINES:
1 DB AT 430 MC
K. ANTENNA DIPLEXER: Hybrid Junction
3 DB LOSS AT 430 MC
L. REQUIRED SIGNAL STRENGTH - CALCULATED UV/METER, ASSUMING LEFT-HAND-SENSED, CIRCULARLY POLARIZED TRANSMITTING ANTENNA.
M. ATTACH ANTENNA PATTERN MEASUREMENTS AND A SCHEMATIC OF ANTENNA SYSTEM AS PER AFMTC REG 80-7. Page 154.1
N. IS THERE AVAILABLE A SPECTRUM RESPONSE REPORT ON THIS ANTENNA? [ ] YES [X] NO (IF YES, PROVIDE ONE COPY)

13. CONTROL SYSTEM DESCRIPTION

The receiver will be used for receipt of command control functions related primarily to the data acquisition system and to experiment operation control.

Destruct functions are not incorporated.

IRIG tones in dual combination are used for control functions. See page 480 for details.

14. COORDINATION SIGNATURE

MTRS:

AFMTC FORM 310 JUN 61 PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE.

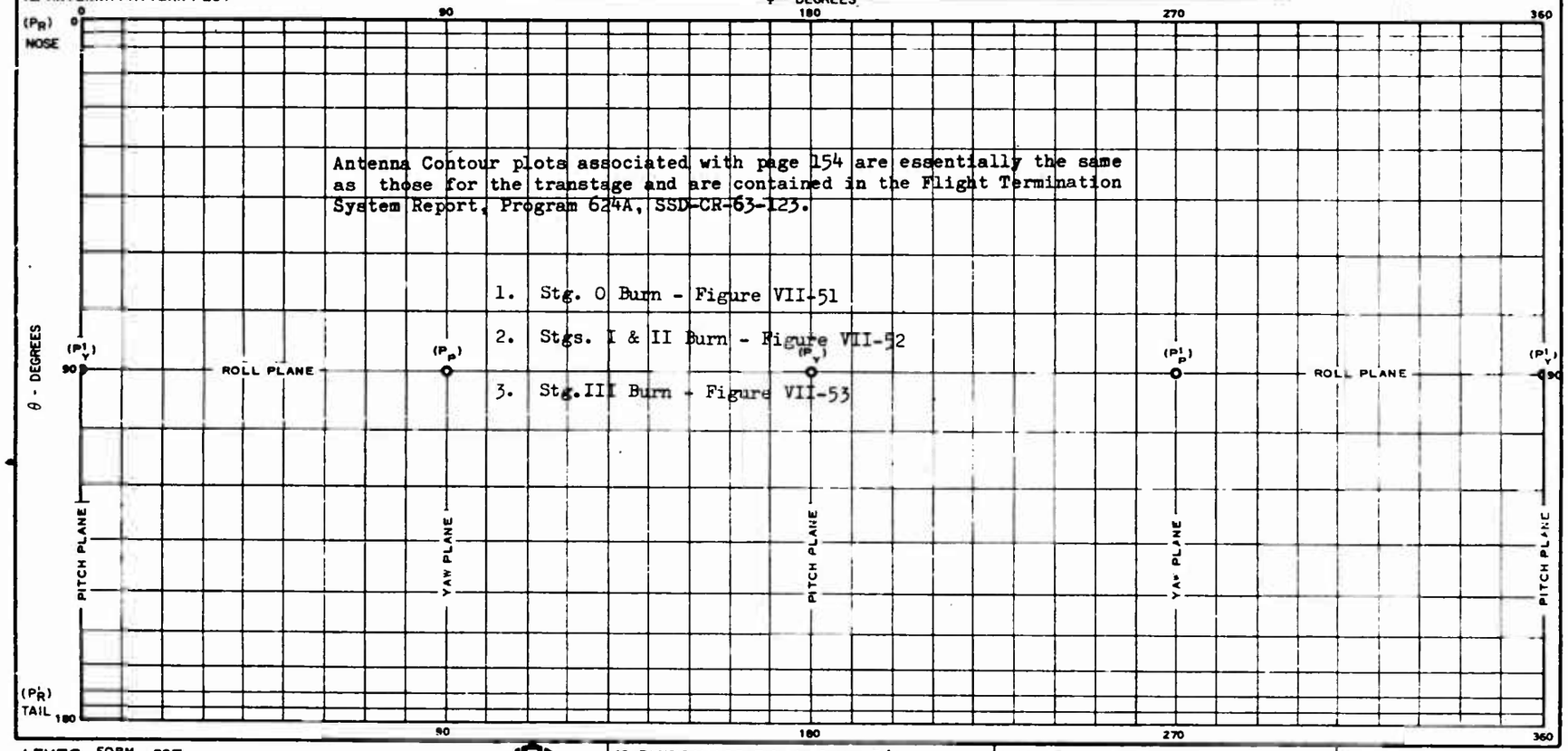
ANTENNA PATTERN

(COMMAND CONTROL.

Simulated Lab

1. SECURITY CLASSIFICATION: UNCLASSIFIED				2. PAGE 154.1
				3. DATE 3 January 1966
				4. REPLACES PAGE(S)
				DATED:
5. PROGRAM TITLE: TIII SLS/MOL-HSQ	6. PROGRAM REQUIREMENT CODE: 3900	7. SYSTEM CODE	8. CONTRACTOR: MC	
10. INSTRUMENTATION SYSTEM:	11. ANTENNA TYPE:		12. ANTENNA POLARIZATION:	13. POLARIZATION PLOTTED:
14. FREQUENCY RANGE:	15. PATTERN MEASUREMENT FREQUENCY:		16. MODEL SCALE:	17. TEST CODE:

18. ANTENNA PATTERN PLOT



Antenna Contour plots associated with page 154 are essentially the same as those for the transtage and are contained in the Flight Termination System Report, Program 624A, SSD-CR-63-123.

1. Stg. 0 Burn - Figure VII-51
2. Stgs. I & II Burn - Figure VII-52
3. Stg. III Burn - Figure VII-53

AFMTC FORM FEB 62 50F

NRD

19. PHYSICAL LOCATION OF POINT P'Y:

1. SECURITY CLASSIFICATION: UNCLASSIFIED

9. REVISION NO. 1

Experiments

ORDNANCE ITEMS

1. SECURITY CLASSIFICATION: (U)

2. PAGE 155.3

3. DATE 18 May 1966

4. REPLACES PAGE(S) New

DATED

5. TEST PROGRAM: TIII SLS/MOL-HSQ

6. PROGRAM REQUIREMENT NO.: 3900

7. SYSTEM CODE:

8. CONTRACTOR: MC

10. ITEM NO.	11. TEST CODE	12. PURPOSE	13. TYPE	14.	15. QTY	16. MANUFACTURER	17. PART NUMBER	18. INSTL	19. LEAD	20. LEAD LENGTH - METERS UN-SHIELDED UNINST	UN-SHIELDED INSTL	SHIELDED UNINST	SHIELDED INSTL	21. CURRENT - AMPS MAX NO FIRE	MIN FIRE	NORM FIRE	22. BRIDGE MAT	OHMS MAX	OHMS MIN	23. CLASS	24. RF SAFE	25. SEE NOTE
1	YX	Satellite Rel	Pres Cart	LAB	1	Hi-Shear	PC-61-003	PT	NO					*	*	*	*	*	*	*	*	*
2	SX	Satellite Rel	Pres Cart	LAB	8	Space Ordnance Sys.	SO 1-193							1.0	2.6	5.0	BW	1.45	1.25	1	S	A
3	SX	Rocket Ig.	Igniter	LAB	1	Thiokol-Elkton	X-1240		NO					1.0	2.5	4-5	BW	1.25	.95	1	S	A
4	SX	Satellite Rel	Rkt Motor	LAB	1	Thiokol	TE-M-52-5		N/A				0.51	1.0	2.5	5.0	BW	1.25	0.95	4	S	B
5	VX	Open Door	Pres Cart	LAB	2	McCormick Selph	805890-1	PT	NO					1.0	2.2	5.0	BW	.32	.22	1	S	A
6	VX	Antenna Rel	Squib	LAB	1	Holex	5801	FT	NO				0.1	1.0	4.5	5.0	BW	1.0	1.0	1C	*	*
7	HSQ	Rocket Ig	Igniters	LAB	5	Thiokol-Elkton	TE-350	PT	NO					1.0	2.2	4.5	BW	.20	.14	1	S	A
8	HSQ	Gemini Sep.	Rkt Motors	LAB	5	Thiokol-Elkton	TE-344	PT	N/A					N/A	N/A	N/A	N/A	N/A	N/A	2	S	B
								PT	N/A													
9	KX	Oper. Valves	Pres Cart	LAB	2	Pyrometics Inc.	3519-11	PT	NO					1.0	4.0	5.0	BW	1.3	0.9	1	S	A
10	BX	Open Doors	Pres Cart	LAB	4	McCormick-Selph	805890-1							1.0	2.2	5.0	BW	.32	.22	1	S	A
11	CX	Open Doors	Pres Cart	LAB	2	McCormick-Selph	805890-1							1.0	2.2	5.0	BW	.32	.22	1	S	A
12	SX	Antenna Rel	Sq.Bdl.Act	LAB	4	Hercules Pwder Co.	BA60A0							1.0	3.5	5.0	BW	1.0	.75	1	S	*
13	YX	IIT Canister	Squib	LAB	6	Hi-Shear	PC-36	PT	NO	0	0	0	1.0	1.0	3.5	5.0	BW	1.2	1.0	1	S	*
14	YX	Conax Ejection	Squib	LAB	18	Hercules Powder	CC-58	PT	NO	0	0	0	0.1	1.0	3.0	5.0	BW	0.1	.05	1	S	*
15	YX	Canister Squib	Squib	LAB	12	Holex	5208-5	PT	NO	0	0	0	0.1	1.0	4.5	4.5	BW	1.1	0.9	1	S	*

* To be supplied

NOTE: ALL ORDNANCE DEVICES WHICH ARE DESIGNED TO PERMIT SAFE HANDLING AND INSTALLATION IN THE RADIATION ENVIREMENT DESCRIBED IN AFMTC-TN-59-4, R.F. RADIATION HAZARDS, AFMTC, WILL BE SO NOTED BY PLACING AN "S" UNDER 'RF SAFE', COLUMN 24. ORDNANCE ITEMS NOT MEETING THIS CRITERION REQUIRE AN EXPLANATION OF THE PRECAUTIONS TO BE TAKEN.

AFMTC FORM 31V JUN 61 PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE.

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26. MISSILE SAFETY COORDINATION

1. SECURITY CLASSIFICATION (U)

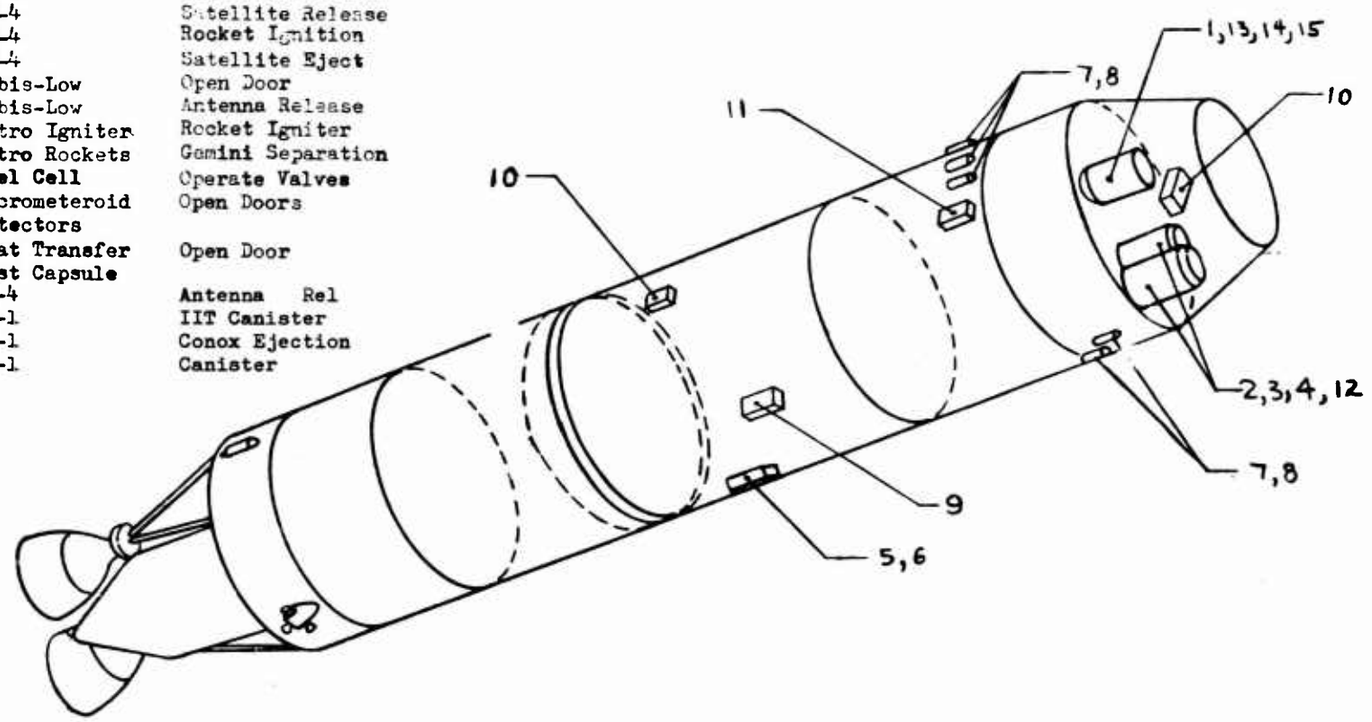
9. REVISION NO. MT 1

Sim Lab/Exp	**ORDNANCE (Drawing)**		1. SECURITY CLASSIFICATION (U)	2. PAGE 156.1
				3. DATE 18 May 1966
5. TEST PROGRAM TIII SLS/MOL-HSQ	6. PROGRAM REQUIREMENT NO. 3900	7. SYSTEM CODE	8. CONTRACTOR MC	4. REPLACES PAGE(S) — — — New — — — DATED

10. DIMENSIONAL DRAWING OF MISSILE/TEST VEHICLE SHOWING THE LOCATION OF ALL ORDNANCE ITEMS

TEST CODE: HSQ, ZX

Device		Purpose of Ordnance
1.	OV-1	Satellite Release
2.	OV-4	Satellite Release
3.	OV-4	Rocket Ignition
4.	OV-4	Satellite Eject
5.	Orbis-Low	Open Door
6.	Orbis-Low	Antenna Release
7.	Retro Igniter	Rocket Igniter
8.	Retro Rockets	Gemini Separation
9.	Fuel Cell	Operate Valves
10.	Micrometeroid Detectors	Open Doors
11.	Heat Transfer Test Capsule	Open Door
12.	OV-4	Antenna Rel
13.	OV-1	IIT Canister
14.	OV-1	Conox Ejection
15.	OV-1	Canister

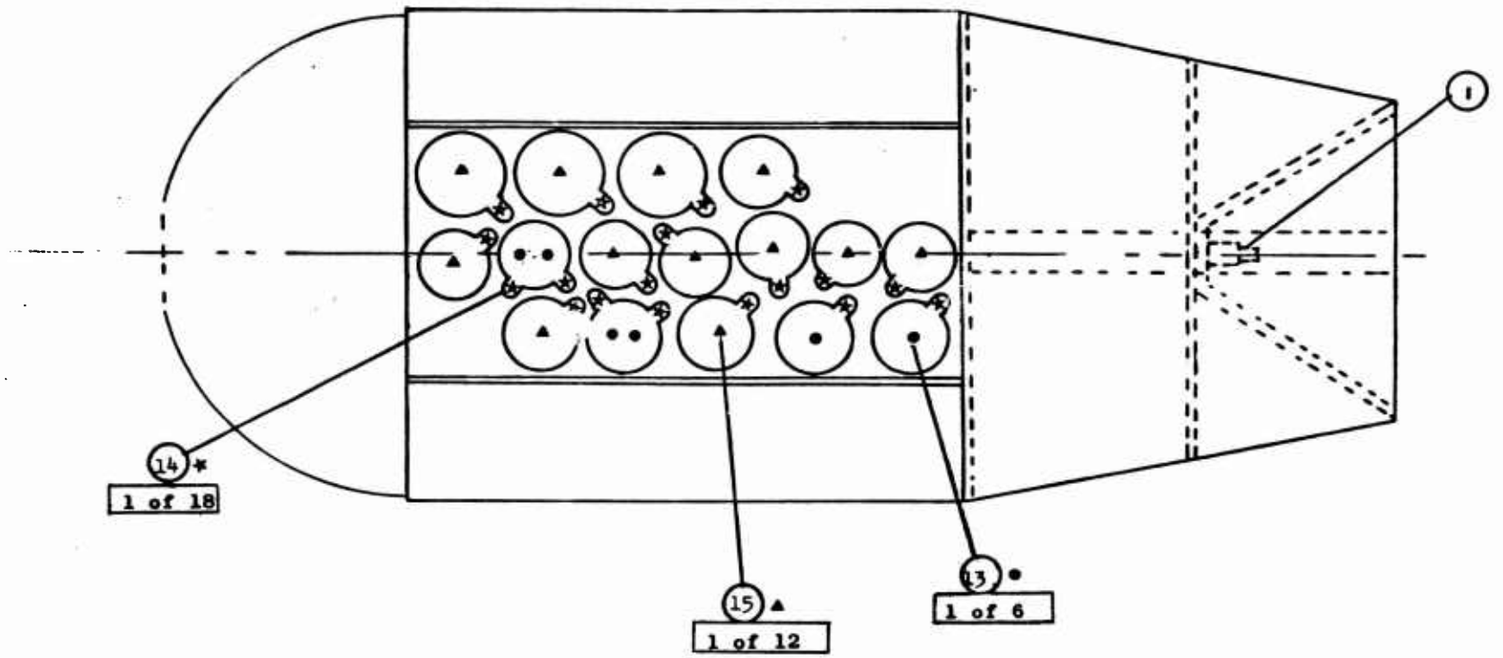


AFMTC FORM JUN 61 31Q-1

NRD

1. SECURITY CLASSIFICATION (U)	9. REVISION NO. MT 1

ORDNANCE (Drawing)			1. SECURITY CLASSIFICATION: UNCLASSIFIED	2. PAGE 156.2
OV-1				3. DATE 18 May 1966
5. TEST PROGRAM: TIII SLS/MOL-HSQ	6. PROGRAM REQUIREMENT NO. 3900	7. SYSTEM CODE	8. CONTRACTOR: MC/GDC	4. REPLACES PAGE(S): New; DATED
10. DIMENSIONAL DRAWING OF MISSILE/TEST VEHICLE SHOWING THE LOCATION OF ALL ORDNANCE ITEMS				TEST CODE:

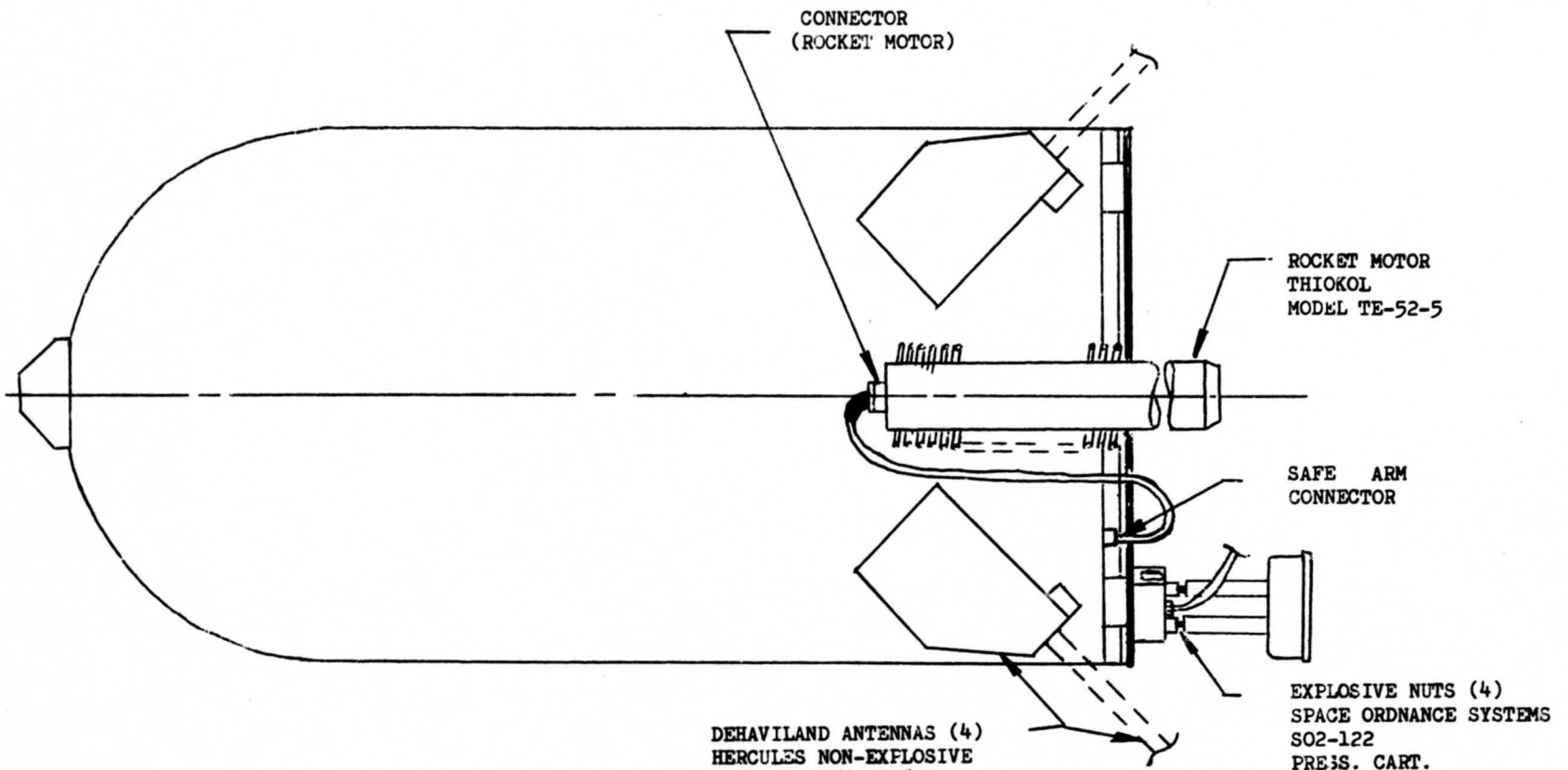


NOTE: Encircled numbers reference item number of ordnance listed on page 155.3

OV - 4	ORDNANCE (Drawing)		1. SECURITY CLASSIFICATION: Unclassified	2. PAGE 156.3 3. DATE 18 May 1966 4. REPLACES PAGE(S) New DATED
5. TEST PROGRAM: TIII SLS/MOL-HSQ	6. PROGRAM REQUIREMENT NO. 3900	7. SYSTEM CODE	8. CONTRACTOR: MC	

10. DIMENSIONAL DRAWING OF MISSILE/TEST VEHICLE SHOWING THE LOCATION OF ALL ORDNANCE ITEMS

TEST CODE:



HSQ SPACECRAFT	OTHER VEHICLEBORNE EQUIPMENT	1. SECURITY CLASSIFICATION (U)	2. PAGE 157
			3. DATE 1 April 1966
5. PROGRAM TITLE TIII SLS/MOL-HSQ	6. PROGRAM REQUIREMENT CODE 3900 / 7. SYSTEM CODE	8. CONTRACTOR/CONTRACT NUMBER MAC	4. REPLACES PAGE(S) 157 DATED

10. ITEM NO.	11. TEST CODE	12. BRIEF DESCRIPTION OF ALL OTHER VEHICLEBORNE EQUIPMENT SUCH AS FLASHING LIGHTS, DATA CAPSULES, ETC.	
1	HSQ	Flashing Recovery Light:	A. Extends at main parachute jettison. B. Flashing rate at least 15 flashes per minute. C. Flash duration at least 10 milliseconds at the 50 percent intensity points. D. Intensity shall be a minimum of 1.2 candle-seconds per flash measured at a look-angle, perpendicular to either major light surface. E. White Light. On a clear night the light will be visible for approximately 50 n. m. from an aircraft flying at 12K feet or higher.
2	HSQ	Dye Marker Assembly:	A. Dye marker package installed below spacecraft flotation line on forward end of the RCS section. Package is exposed after R&R section is jettisoned. B. Dye marker shall consist of a yellow fluorescent dye. C. Deployed at first contact with water.
3	HSQ	Hoist Loop:	A. Hoist loop cable extended at main parachute jettison. B. Provides an attach point for lifting devices used for recovering the spacecraft.
4	HSQ	Main Parachute:	A. Orange and white-Ring sail. B. Deploys at approximately 10.6 K feet. C. Jettisoned by timer 10 minutes after pilot chute deployed. D. 84.2 feet diameter.
5	HSQ	PCM Tape Recorder:	A. Single track recorder mounted on the left pallet. B. Records spacecraft instrumentation data through flight.
6	HSQ	Pallet Tape Recorder:	A. Seven track recorder mounted on the right pallet. B. Part of the wideband recording system. C. Records Vibration data.

SYSTEM MISSION CAPABILITIES

5. TEST PROGRAM TITLE: TIII SLS/MOL-HSQ	6. PROGRAM REQUIREMENT CODE: 3900	7. SYSTEM CODE:	8. CONTRACTOR: MC/ MAC	1. SECURITY CLASSIFICATION: (U)
				2. PAGE: 158
				3. DATE: 3 January 1966
				4. REPLACES PAGE(S): Same DATED: 12 November 1965

10. CHARACTERISTICS

A. MISSION OF OPERATIONAL WEAPON SYSTEM

To gather environmental data and qualify selected hardware prior to manned flight.

1. Heat Shield Qualification
2. Gather Environmental Data on spacecraft during ascent.

Accommodate Unmanned Experiments

B. SIGNIFICANT CHARACTERISTICS AND CAPABILITIES

1. Unmanned suborbital flight.
2. Spacecraft equipped with (S/C) recovery system.
3. Insertion of stage III, simulated lab, and secondary experiments into 160 n mi circular orbit.

C. CONSTRAINTS INFLUENCING DESIGN

Earliest possible manned flight.

D.

11. SUPPORT REQUIREMENTS

A.

1. ITL System (VIB, SMAB, LAUNCH COMPLEX 40, Rail System)
2. TM Data receiving and recording network.
3. Radar tracking and metric data recording network.
4. Atmospheric data gathering and recording network.
5. Recovery forces (aircraft, ships, men, etc.,) and equipment as required to recover the HSQ re-entry module.

C.

D.

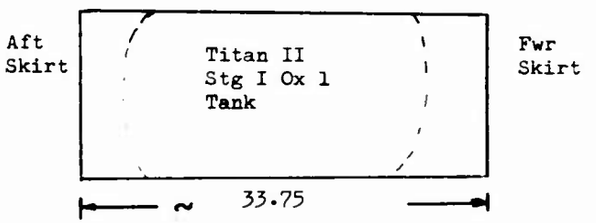
12. OPERATIONAL PROFILE/SKETCH OF TACTICAL SITUATION

SYSTEM FUNCTIONAL DESCRIPTION

Simulated Laboratory

1 SECURITY CLASSIFICATION	2 PAGE 159.10
(U)	3 DATE 18 May 1966
	4 REPLACES PAGE(S)
	DATED

5. TEST PROGRAM TITLE	6. PROGRAM REQUIREMENT CODE	7 SYSTEM CODE	8 CONTRACTOR/CONTRACT NUMBER
TIII SLS/MOL-HSQ	3900		MC

10. SUB SYSTEM/MAJOR COMPONENT	11. FUNCTIONAL CHARACTERISTICS	12. SYSTEM FUNCTIONAL BLOCK DIAGRAM
1. Simulated Laboratory Structure	1. The Simulated Laboratory consists of a modified Titan II Stage I oxidizer tank with added for and aft skirts all designed to simulate general external configuration and mass structural characteristics of a potential MOL vehicle. The structure provides a platform upon which the experiments, power supplies, T/M equipment, data storage equipment and the command control system may be mounted. Environmental control is also provided by the enclosure.	1. Simulated Laboratory 
2. Experiments (12) a. Micrometeoroid Detector b. Heat Transfer Test Capsule c. Fuel Cell d. Bio-cell e. Zero-G Propellant Gauging f. Orbis-Low g. OV-1 h. OV-4 i. Protuberance j. Structural Panel k. Paint Pattern l. Corner Reflectors	2. Experiments - see individual form 159's.	2. Experiments - see individual 159's.

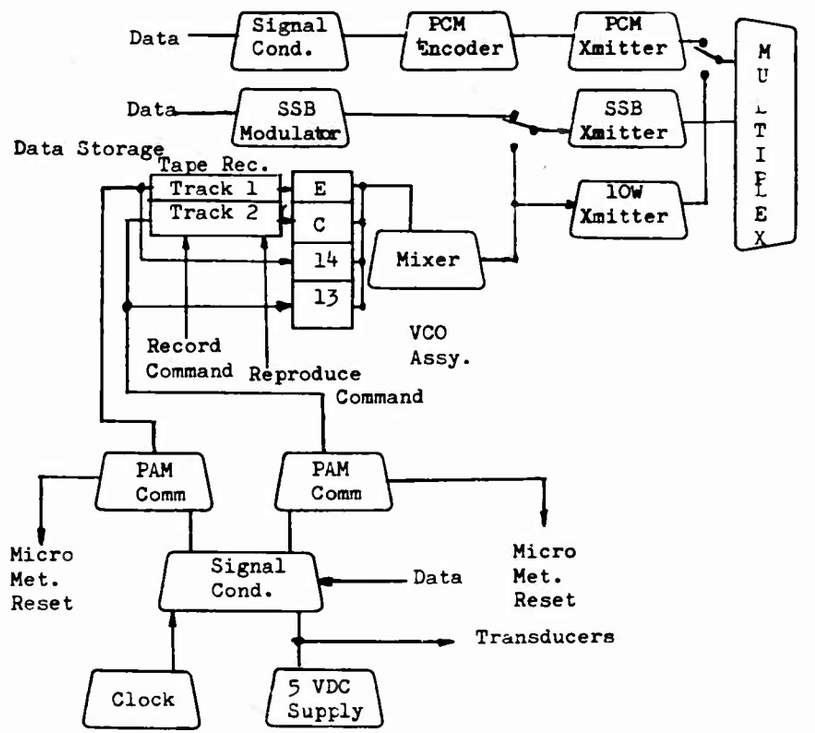
SYSTEM FUNCTIONAL DESCRIPTION

Simulated Laboratory (cont)

1. SECURITY CLASSIFICATION	2. PAGE	159.11
(U)	3. DATE	18 May 1966
	4. REPLACES PAGE(S)	
	DATED	

5. TEST PROGRAM TITLE	6. PROGRAM REQUIREMENT CODE	7. SYSTEM CODE	8. CONTRACTOR/CONTRACT NUMBER
TIII SLS/MOL-HSQ	3900		MC

10. SUB SYSTEM/MAJOR COMPONENT	11. FUNCTIONAL CHARACTERISTICS	12. SYSTEM FUNCTIONAL BLOCK DIAGRAM
3. T/M data link - boost phase. 4. T/M data link - on-orbit. 5. Data storage - on-orbit.	3. Boost phase T/M consists of the PCM and SSB transmitters. 4. On-orbit T/M consists of the 10 W transmitter with capability of switching to the SSB transmitter. 5. On-orbit data storage is accomplished by using a two track tape recorder capable of storing 185 minutes of data. Ground control of record and reproduce modes is provided.	3 and 4. T/M data links - boost and on-orbit.



AFMTC FORM JUN 61 31R-2

NRD

1. SECURITY CLASSIFICATION	9. REVISION NO.
(U)	53 1

Simulated Laboratory (cont)

SYSTEM FUNCTIONAL DESCRIPTION

5. TEST PROGRAM TITLE: TIII SLS/MOL-HSQ	6. PROGRAM REQUIREMENT CODE: 3900	7. SYSTEM CODE	8. CONTRACTOR/CONTRACT NUMBER: MC	1. SECURITY CLASSIFICATION: (U)
				2. PAGE: 159.12
				3. DATE: 18 May 1966
				4. REPLACES PAGE(S): DATED

10. SUB SYSTEM/MAJOR COMPONENT	11. FUNCTIONAL CHARACTERISTICS	12. SYSTEM FUNCTIONAL BLOCK DIAGRAM
6. Power Supply	6. Power supplies consists of three battery supplies, Simulated Laboratory Power Supply (SLPS), 25VDC orbital P.S. and HTTC P.S.	6. Experiments On-Orbit T/M; Boost T/M; Switched At ~L+4 hrs (HTTC); 25 VDC Orbital P.S.; Boost TM P.S.; HTTC P.S.; Neg Bus; 4- 400 A.H. batteries; 2 - 60 A.H. batteries; 2 - 60 A.H. batteries
7. Command Control System	7. Command Control System consists of two antennas and redundant receivers capable of providing 1 address and 14 tone pair commands	7. Command Control System: Antennas; Coupler; Receiver; Decoder; Receiver; Decoder; Typical Command; FRW-2 (Ground)

AFMTC FORM JUN 61 31R-2

NRD

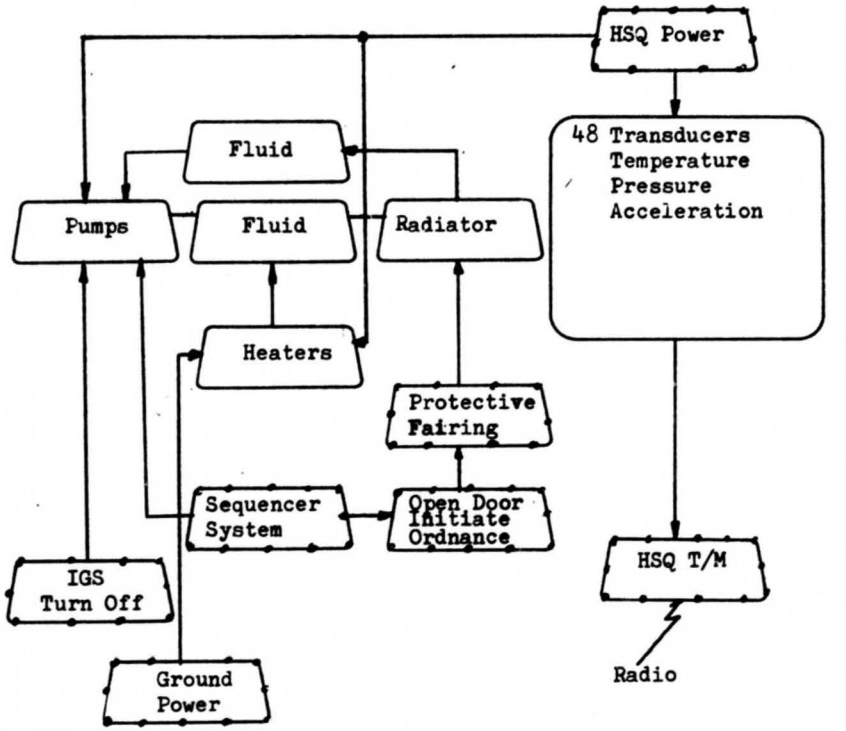
1. SECURITY CLASSIFICATION: (U)	9. REVISION NO.: 1

SYSTEM FUNCTIONAL DESCRIPTION

Heat Transfer Test Capsule (HTTC)

1. SECURITY CLASSIFICATION	2. PAGE 159.13
(U)	3. DATE 18 May 1966
	4. REPLACES PAGE(S)
	DATED

5. TEST PROGRAM TITLE	6. PROGRAM REQUIREMENT CODE	7. SYSTEM CODE	8. CONTRACTOR/CONTRACT NUMBER
TIII SLS/MOL-HSQ	3900		MC

10. SUB SYSTEM/MAJOR COMPONENT	11. FUNCTIONAL CHARACTERISTICS	12. SYSTEM FUNCTIONAL BLOCK DIAGRAM
1. Pumps 2. Heaters 3. Radiators 4. 48 Transducers, Pressure, Temperature, and Acceleration. 5. Liquid Metal.	1. Pump the fluid to the radiator in order to experimentally determine the required heat transfer and fluid floor data which will be necessary to predict boiler and condenser radiator performance in a zero gravity environment.	

Note: Equipment shown in dotted blocks is not part of the experiment and is shown for clarity only.

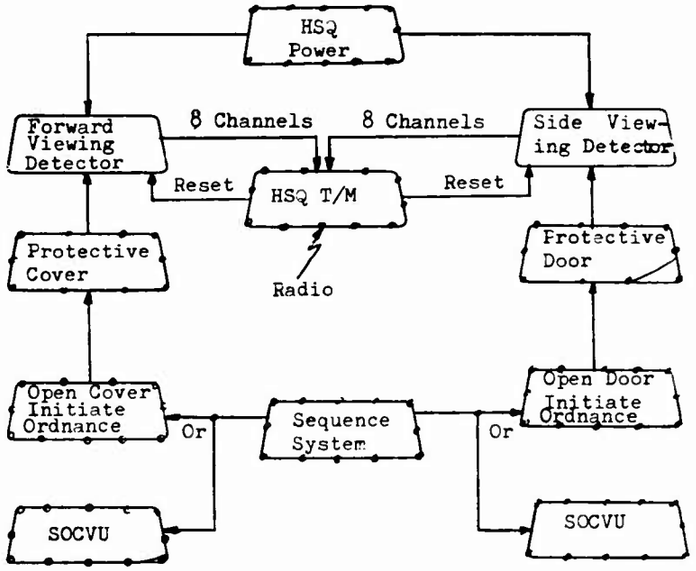
SYSTEM FUNCTIONAL DESCRIPTION

Micrometeoroid Detector

1. SECURITY CLASSIFICATION	2. PAGE 159.14
(U)	3. DATE 18 May 1966
	4. REPLACES PAGE(S)
	DATED

5. TEST PROGRAM TITLE	6. PROGRAM REQUIREMENT CODE	7. SYSTEM CODE	8. CONTRACTOR/CONTRACT NUMBER
TIII SLS/MOL-HSQ	3900		MC

10. SUB SYSTEM/MAJOR COMPONENT	11. FUNCTIONAL CHARACTERISTICS	12. SYSTEM FUNCTIONAL BLOCK DIAGRAM
1. Micrometeoroid detector, 2 packages	1. Measure velocity, mass and charge of micrometeorites.	



Note: Equipment shown in dotted blocks is not part of the experiment and is shown for clarity only.

AFMTC FORM JUN 61 31R-2

1. SECURITY CLASSIFICATION	9. REVISION NO.
(U)	1

SYSTEM FUNCTIONAL DESCRIPTION

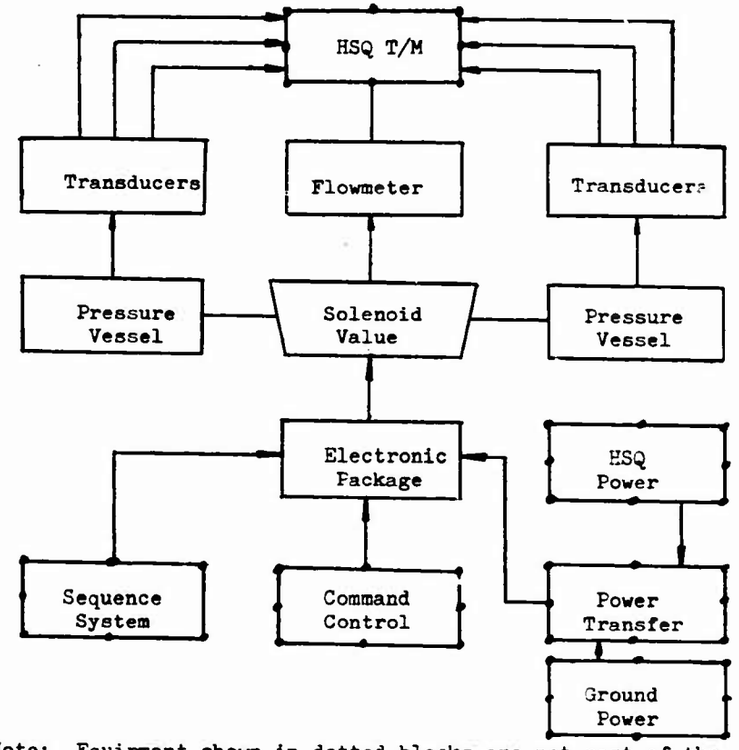
Zero "G" Propellant Gauging

1. SECURITY CLASSIFICATION	2. PAGE	159.16
(U)	3. DATE	18 May 1966
	4. REPLACES PAGE(S)	
	DATED	

5. TEST PROGRAM TITLE	6. PROGRAM REQUIREMENT CODE	7. SYSTEM CODE	8. CONTRACTOR/CONTRACT NUMBER
TIII SLS/MOL-HSQ	3900		MC

10. SUB SYSTEM/MAJOR COMPONENT	11. FUNCTIONAL CHARACTERISTICS
1. Pressure Vessels (2)	1. One pressure vessel to contain the simulated propellant prior to starting the experiment, and one to receive simulated propellant during the experiment.
2. Flow meter	2. Flow meter to measure quantity of simulated propellant transferred to receiving vessel during experiment.
3. Solenoid Valve	3. Solenoid valve to control flow of simulated propellant.
4. Transducers (6)	4. Transducers to measure quantity of simulated propellant (2) pressure in vessels (2), and temperatures (2).
5. Electronics Package	5. Electronic package for signal conditioning.

12. SYSTEM FUNCTIONAL BLOCK DIAGRAM



Note: Equipment shown in dotted blocks are not part of the experiment.

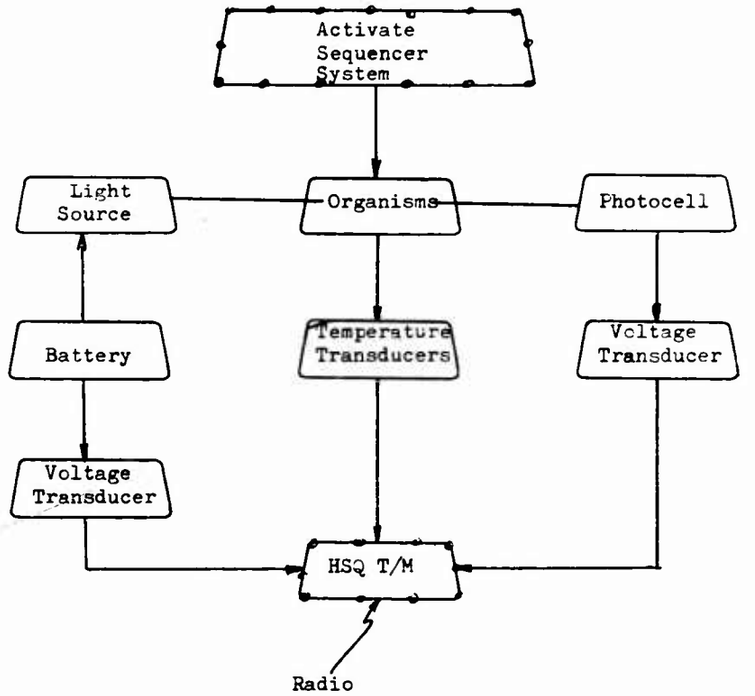
AFMTC FORM 31R-2 JUN 61

1. SECURITY CLASSIFICATION	9. REVISION NO.
(U)	1

SYSTEM FUNCTIONAL DESCRIPTION

Bio Cell

5. TEST PROGRAM TITLE	6. PROGRAM REQUIREMENT CODE	7. SYSTEM CODE	8. CONTRACTOR/CONTRACT NUMBER	9. SECURITY CLASSIFICATION	10. PAGE / 11. DATE / 12. SUPERSEDES PAGE DATED
TIII SLS/MOL-HSQ	3900		MC	UNCLASSIFIED	18 May 1966

10. SUB SYSTEM/MAJOR COMPONENT	11. FUNCTIONAL CHARACTERISTICS	12. SYSTEM FUNCTIONAL BLOCK DIAGRAM
1. Light Source 2. Photocell 3. Organisms 4. Container 5. Transducers, Voltage, Temperatures 6. Battery	1. Light source shines through organisms and is detected by photocell.	

NOTE: Equipment shown in dotted blocks is not part of the experiment and is shown for clarity only.

AFMTC FORM 31R-2 JUN 61

1. SECURITY CLASSIFICATION	2. REVISION NO.
(U)	1

Fuel Cell

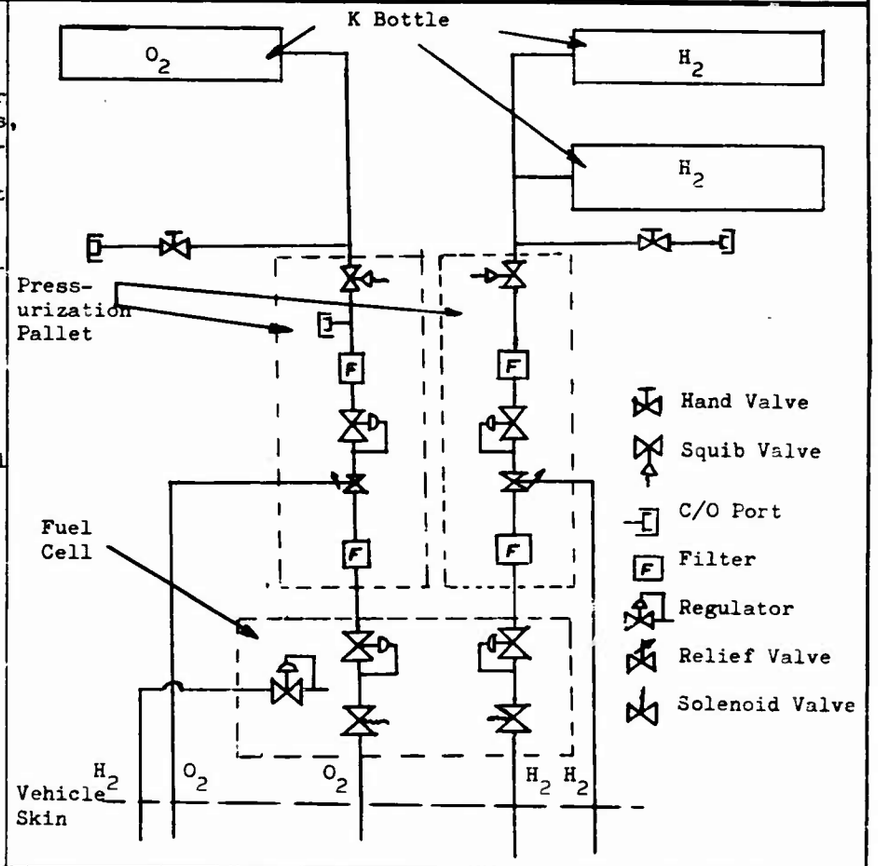
SYSTEM FUNCTIONAL DESCRIPTION

1. SECURITY CLASSIFICATION	2. PAGE 159.17
(U)	3. DATE 18 May 1966
	4. REPLACES PAGE(S)
	DATED

5. TEST PROGRAM TITLE	6. PROGRAM REQUIREMENT CODE	7. SYSTEM CODE	8. CONTRACTOR/CONTRACT NUMBER
TIII SLS/MOL-HSQ	3900		MC

10. SUB SYSTEM/MAJOR COMPONENT	11. FUNCTIONAL CHARACTERISTICS
1. K Bottles	1. Store high pressure, ambient temperature gaseous hydrogen and oxygen.
2. Pressurization Pallet	2. Two identical pallets, one for H_2 and one for O_2, contain start valves, filters, regulators, relief valves, checkout ports, and instrumentation. The pallet regulates gas pressure to the fuel cell under varying flow and inlet pressure conditions, and provides overpressure protection for the fuel cell. The operation of the fuel cell is started by firing the start valves after the orbit is attained.
3. Fuel Cell	3. The experimenter supplied module converts H_2 and O_2 gas to water vapor, heat, and electrical energy. Regulators are provided for secondary gas regulation, and solenoid valves controlled by a timer in the fuel cell allow periodic purging of O_2 and H_2 gas.
4. Vent Lines	4. Vent lines are routed from the relief valves and fuel cell purge ports to the vehicle skin and overboard. A vent line is routed from the fuel cell water vapor port to the vehicle skin and overboard such that the thrust vector is directed thru the vehicle C.G.

12. SYSTEM FUNCTIONAL BLOCK DIAGRAM



AFMTC FORM JUN 61 31R-2

NRD

1. SECURITY CLASSIFICATION	9. REVISION NO.
(U)	1

SYSTEM FUNCTIONAL DESCRIPTION

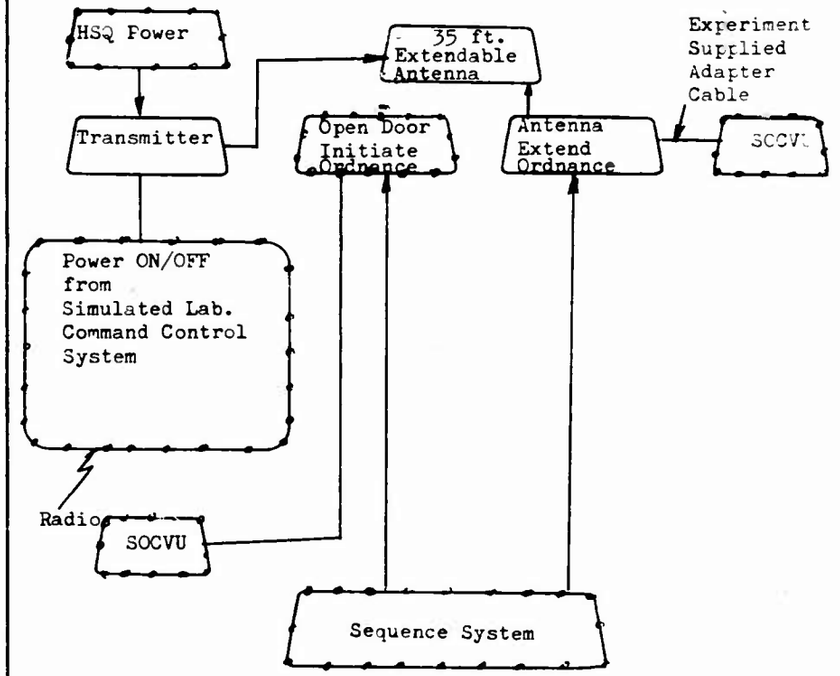
Orbis Low

5. TEST PROGRAM TITLE	6. PROGRAM REQUIREMENT CODE	7. SYSTEM CODE	8. CONTRACTOR/CONTRACT NUMBER	1. SECURITY CLASSIFICATION	2. PAGE	3. DATE
TIII SLS/MOL-HSQ	3900		MC	(U)	15 of 15	18 May 1966

4. REPLACES PAGE(S) DATED

10. SUB SYSTEM/MAJOR COMPONENT	11. FUNCTIONAL CHARACTERISTICS
1. Transmitter	1. The transmitter may be commanded on/off from ground control. Frequencies of transmission are 5.006, 10.004 and 30.012 MC.
2. 35 ft extendable antenna	2. Upon command from the sequence system, the antenna protective door will be opened.
3. Antenna extend ordnance	3. The 35 foot antenna will be extended upon command from the sequence system.
	4. Transmission "On-Orbit" only.

12. SYSTEM FUNCTIONAL BLOCK DIAGRAM



Note: Equipment shown in dotted blocks is not part of the experiment and is shown for clarity only.

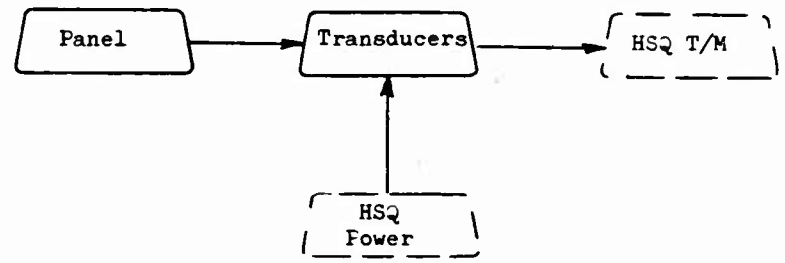
AFMTC FORM JUN 61 31R-2

1. SECURITY CLASSIFICATION	9. REVISION NO.
(U)	1

SYSTEM FUNCTIONAL DESCRIPTION

Structural Panel

5. TEST PROGRAM TITLE	6. PROGRAM REQUIREMENT CODE	7. SYSTEM CODE	8. CONTRACTOR/CONTRACT NUMBER	1. SECURITY CLASSIFICATION	2. PAGE / 3. DATE / 4. REPLACES PAGE(S)
TIII SLS/MOL-HSQ	3900		MC	(U)	159.1 / 18 May 1966 / DATED

10. SUB SYSTEM/MAJOR COMPONENT	11. FUNCTIONAL CHARACTERISTICS	12. SYSTEM FUNCTIONAL BLOCK DIAGRAM
1. Structural Panel 2. Transducers, static pressure, low frequency accelerometers temperature, and strain gauge.	1. Panel parameters monitored during powered flight.	

Note: Equipment shown in dotted block is not part of the experiment and is shown for clarity only.

Corner Reflectors

SYSTEM FUNCTIONAL DESCRIPTION

5 TEST PROGRAM TITLE: TIII SLS/MCL-HSQ	6 PROGRAM REQUIREMENT CODE: 390.	7. SYSTEM CODE:	8 CONTRACTOR/CONTRACT NUMBER: MC	1 SECURITY CLASSIFICATION: (U)
				2 PAGE: 159 2C
				3 DATE: 18 May 1966
				4. REPLACES PAGE(S): DATED

10 SUB SYSTEM/MAJOR COMPONENT	11 FUNCTIONAL CHARACTERISTICS	12. SYSTEM FUNCTIONAL BLOCK DIAGRAM
1. 18 corner reflectors	1. Passive reflectors to provide laser ranging targets.	N/A

AFMTC FORM 31R-2 JUN 61

NRD

1. SECURITY CLASSIFICATION	9. REVISION NO.
(U)	1

SYSTEM FUNCTIONAL DESCRIPTION

Resolution Pattern

4. SECURITY CLASSIFICATION	2. PAGE 159.21
(U)	3. DATE 18 May 1966
	4. REPLACES PAGE(S) DATED

5. TEST PROGRAM TITLE	6. PROGRAM REQUIREMENT CODE	7. SYSTEM CODE	8. CONTRACTOR/CONTRACT NUMBER
TIII SLS/MOL-HSQ	3900		MC

10. SUB SYSTEM/MAJOR COMPONENT	11. FUNCTIONAL CHARACTERISTICS	12. SYSTEM FUNCTIONAL BLOCK DIAGRAM
1. Black and white paint pattern	1. Pattern of black and white paint having special optic and thermal properties applied to outside of simulated laboratory.	N/A

AFMTC FORM JUN 61 31R-2

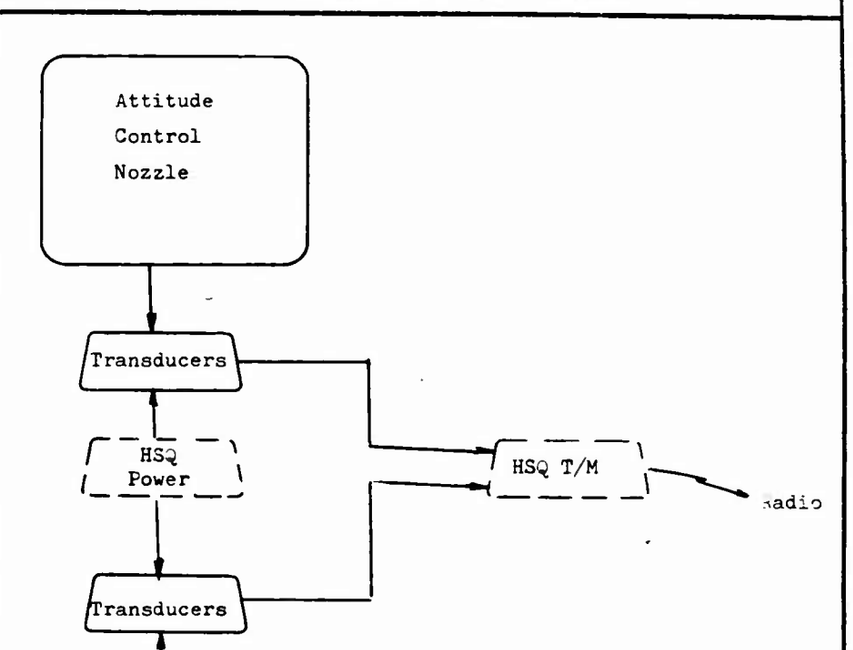
1. SECURITY CLASSIFICATION	9. REVISION NO.
(U)	1

SYSTEM FUNCTIONAL DESCRIPTION

Protuberance

4. SECURITY CLASSIFICATION	2. PAGE	159.22
(U)	3. DATE	18 May 1966
	4. REPLACES PAGE(S)	
	DATED	

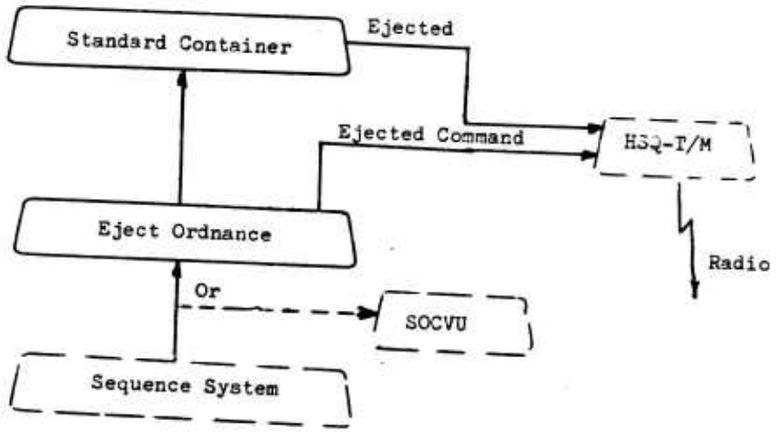
5. TEST PROGRAM TITLE	6. PROGRAM REQUIREMENT CODE	7. SYSTEM CODE	8. CONTRACTOR/CONTRACT NUMBER
TIII SLS/MOL-HSQ	3900		MC

10. SUB SYSTEM/MAJOR COMPONENT	11. FUNCTIONAL CHARACTERISTICS	12. SYSTEM FUNCTIONAL BLOCK DIAGRAM
1. One attitude control nozzles. 2. One aerodynamic fairing. 3. Temperature transducers.	1. Transducers determine effect during powered flight of aero heating on unprotected nozzle.	

OV-1

SYSTEM FUNCTIONAL DESCRIPTION

5. TEST PROGRAM TITLE: TIII SLS/MOL-HSQ	6. PROGRAM REQUIREMENT CODE: 3900	7. SYSTEM CODE	1. SECURITY CLASSIFICATION: (U)	2. PAGE: 159.28
			8. CONTRACTOR/CONTRACT NUMBER: MC	3. DATE: 16 May 1966
				4. REPLACES PAGE(S): DATED

10. SUB SYSTEM/MAJOR COMPONENT	11. FUNCTIONAL CHARACTERISTICS	12. SYSTEM FUNCTIONAL BLOCK DIAGRAM
1. Standard Container for multiple experiments.	1. The standard container contains individual experiments which will be ejected by OV-1 subsequent to its ejection from the simulated laboratory. Individual experiment ejection is accomplished by ordnance firing from an OV-1 bus which is armed subsequent to its ejection from the simulated laboratory.	

Note: Equipment shown in dotted blocks is not part of the experiment and is shown for clarity only.

AFMTC FORM JUN 61 31R-2

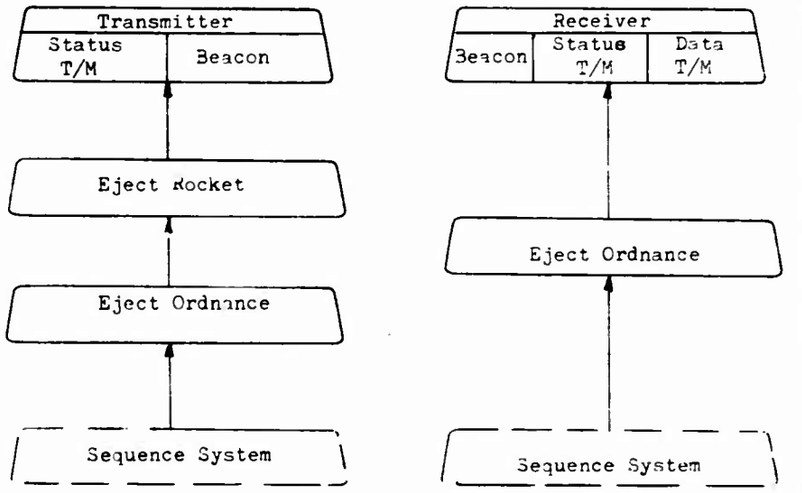
1. SECURITY CLASSIFICATION	9. REVISION NO.
(U)	1

OV-4

SYSTEM FUNCTIONAL DESCRIPTION

4. SECURITY CLASSIFICATION	5. PAGE
(U)	159.24
	6. DATE 13 May 1965
	7. REPLACES PAGE(S) DATED

5. TEST PROGRAM TITLE	6. PROGRAM REQUIREMENT CODE	7. SYSTEM CODE	8. CONTRACTOR/CONTRACT NUMBER
TIII SLS/MOL-HSQ	3900		MC

10. SUB SYSTEM/MAJOR COMPONENT	11. FUNCTIONAL CHARACTERISTICS	12. SYSTEM FUNCTIONAL BLOCK DIAGRAM
1. Transmitter Satellite	1. The transmitter satellite is ejected first by firing the eject ordnance which in turn ignites an eject rocket. Approximately fifteen seconds later the receiver satellite is ejected by igniting the eject ordnance. Tracking beacons in each satellite will transmit on 258.5 MC. Status information for each satellite will be transmitted on 230.9 MC. The transmitter will transmit on 20.75, 54.3, and 46.8 MC. Receiver data will be transmitted to the ground on 249.9, 255.1 and 245.3 MC. Transmission "On-Orbit" only.	

Note: Equipment shown in dotted blocks is not part of the experiment and is shown for clarity only.

RANGE USERS' INSTRUMENTATION (SURFACE/AIR/OTHERS)

1. SECURITY CLASSIFICATION	2. PAGE 160.4
(U)	3. DATE
	4. ACES PAGE(S)

5. TEST PROGRAM	6. PROGRAM REQUIREMENT NO.	7. SYSTEM CODE	8. CONTRACTOR
TIII SLS/MOL-HSQ	3900		MC

10. ITEM NO.	11. TEST CODE	12. BRIEF DESCRIPTION OF ALL RANGE USER'S ELECTRONIC, OPTICAL AND OTHER GROUND INSTRUMENTATION EQUIPMENT TO BE USED DURING THE TEST PROGRAM			
		Type	Qty.	Location	Purpose/Function
1	HSQ ZH	PAM/FM Ground Station EMR SK808D01408	1	Control Center	Data Playback and Checkout of Orbital T/M
2	HSQ ZH	FM Signal Generator RS Electronics Model 1021	1	Portable (Stored T/M Van)	Checkout of Command Receivers
3	HSQ ZH	Control Box	1	Portable (Stored T/M Van)	Checkout and Trouble-shooting of Instrumentation and Electrical Equipment.

Sim Lab

INSTRUMENTATION - TRANSMITTERS (SURFACE/AIR/OTHER)

1. SECURITY CLASSIFICATION	2. PAGE 161
(U)	3. DATE 18 May 196[illegible]
	4. REPLACES PAGE(S) DATED

5. PROGRAM TITLE	6. PROGRAM REQUIREMENT CODE	7. SYSTEM CODE	8. CONTRACTOR
TIII SLS/MOL-HSQ	3900		MC

10. TRANSMITTER CHARACTERISTICS

A. LOCATION: ITL Instr Van

B. TYPE: PCM/FM, SSB/FM, PAM/FM

C. MODEL:

D. MANUFACTURER:

E. NUMBER OF EQUIPMENTS: ITL-5/Van

☐ FIXED

☒ MOBILE Vans (Vib or AGE Bldg)

F. TYPE OF SERVICE:

☒ GND/GND, ☐ GND/AIR, ☐ OTHER.

G. FREQUENCY RANGE: MC

H. ☐ TUNABLE ☒ FIXED TUNED

I. METHOD OF FREQUENCY CONTROL: Deviation of a VCO (600 KC)

J. BANDWIDTH AT 3DB: MC,

AND AT 60DB: MC

K. EMISSION: ☐ AM, ☒ FM, ☐ PULSE, ☐ COMPOSITE NONSTANDARD

L. FREQUENCY STABILITY: ± N/A MC

M. AVERAGE POWER: N/A WATTS

N. PEAK PULSE POWER: N/A WATTS

O. MAXIMUM PRF: N/A PPS

P. PULSE WIDTHS: N/A US, US, US AT 3DB POINTS.

Q. HARMONIC SUPPRESSION: 2ND N/A DB, 3RD DB, 4TH DB.

R. CODING AND/OR MODULATION: PCM, SSB PAM/FM

S. ARE THERE AVAILABLE SPECTRUM ANALYSIS REPORTS ON THIS TRANSMITTER: ☐ YES ☒ NO (IF YES, PROVIDE ONE COPY)

NOTE: TRANSMITTING SYSTEMS WHICH REQUIRE EXTENSIVE PERIODS OF RF CHECKOUT TIME WILL BE REQUIRED TO BE EQUIPPED WITH A CLOSED LOOP OR NON-RADIATING CHECKOUT DEVICE.

11. ANTENNA CHARACTERISTICS

A. LOCATION: None:Coax

B. TYPE:

C. MODEL:

D. MANUFACTURER:

E. FREQUENCY RANGE: MC

F. ☐ TUNABLE ☐ FIXED TUNED

G. PREDOMINANT POLARIZATION: (CHECK ONLY ONE)

☐ VERTICAL

☐ HORIZONTAL

☐ CIRCULAR: SENSE: ☐ LH ☐ RH

☐ OTHER

H. MAXIMUM GAIN IN DB WITH RESPECT TO ISOTROPIC: DB

I. MAIN LOBE BEAMWIDTH IN DEGREES AT 3DB POINTS: ELEVATION AZIMUTH

J. RATE OF ROTATION - INDICATE IF FIXED RPM, ☐ FIXED

K. IS THERE AVAILABLE A SPECTRUM RESPONSE REPORT ON THIS ANTENNA? ☐ YES ☐ NO (IF YES, PROVIDE ONE COPY)

12. PURPOSE AND REMARKS

TEST CODE:

Transmit MOL-HSQ closed loop PCM, SSB, and PAM/FM Video Signals via GIE Van at 600 KC from Vib Cell or Launch Pads to Control Center.

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1. SECURITY CLASSIFICATION	9. REVISION NO.
(U)	1

OV-4 | INSTRUMENTATION - TRANSMITTERS (SURFACE/AIR/OTHER)

1. SECURITY CLASSIFICATION: (U)
2. PAGE: 161.1
3. DATE: 18 May 1966
4. REPLACES PAGE(S): DATED

5. PROGRAM TITLE: TIII SLS/MOL-HSQ
6. PROGRAM REQUIREMENT CODE: 3900
7. SYSTEM CODE:
8. CONTRACTOR: MC

10. TRANSMITTER CHARACTERISTICS

A. LOCATION: (OV4-1T) Transmitter Satellite
B. TYPE:
C. MODEL:
D. MANUFACTURER: THW
E. NUMBER OF EQUIPMENTS: 3
☐ FIXED
☐ ~~XXXXX~~ Orbital
F. TYPE OF SERVICE:
☐ GND/GND, ☐ GND/AIR, ☒ OTHER,
G. FREQUENCY RANGE: NYA MC
H. ☐ TUNABLE ☒ FIXED TUNED
I. METHOD OF FREQUENCY CONTROL: Crystal
J. BANDWIDTH AT 3DB: See Remarks MC,
AND AT 60DB: MC
K. EMISSION: ☐ AM, ☐ FM, ☐ PULSE,
☒ COMPOSITE NONSTANDARD
L. FREQUENCY STABILITY: ± 0.0001% MC
M. AVERAGE POWER: 1 WATTS
N. PEAK PULSE POWER: 1,000 WATTS
O. MAXIMUM PRF: PPS
P. PULSE WIDTHS: 1000 US, 100 US, 20 US
AT 3DB POINTS.
Q. HARMONIC SUPPRESSION: 2ND DB,
3RD DB, 4TH DB,
R. CODING AND/OR MODULATION:
S. ARE THERE AVAILABLE SPECTRUM ANALYSIS REPORTS ON THIS TRANSMITTER: ☐ YES ☒ NO
(IF YES, PROVIDE ONE COPY)

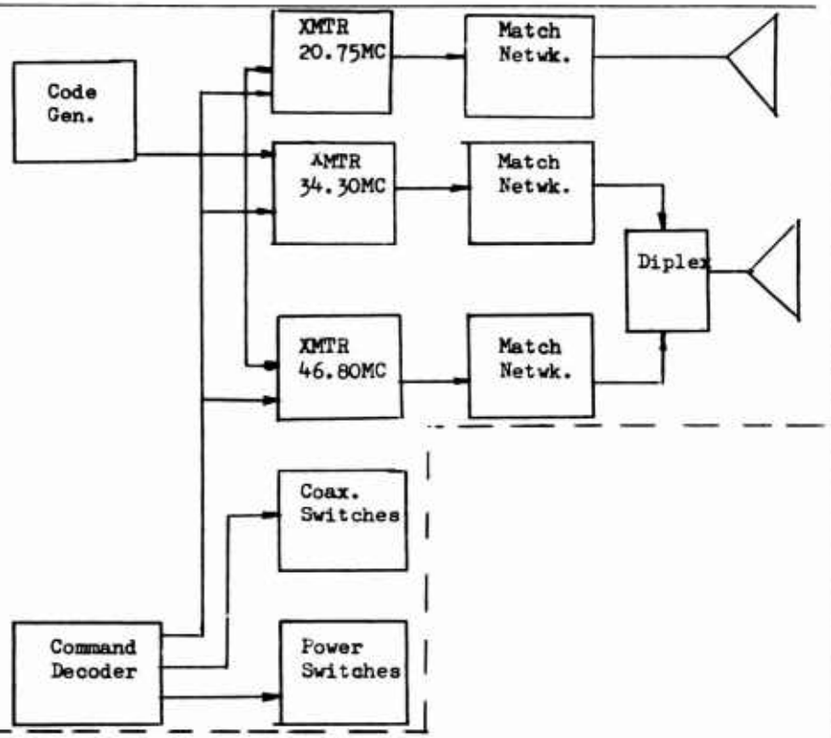
NOTE: TRANSMITTING SYSTEMS WHICH REQUIRE EXTENSIVE PERIODS OF RF CHECKOUT TIME WILL BE REQUIRED TO BE EQUIPPED WITH A CLOSED LOOP OR NON-RADIATING CHECKOUT DEVICE.

11. ANTENNA CHARACTERISTICS

A. LOCATION: NYA
B. TYPE: V shaped Dipole See Remarks
C. MODEL: NYA
D. MANUFACTURER: De Havilland
E. FREQUENCY RANGE: MC
F. ☐ TUNABLE ☐ FIXED TUNED
G. PREDOMINANT POLARIZATION: (CHECK ONLY ONE)
☐ VERTICAL
☒ HORIZONTAL
☐ CIRCULAR: SENSE: ☐ LH ☐ RH
☐ OTHER
H. MAXIMUM GAIN IN DB WITH RESPECT TO ISOTROPIC: 2 DB
I. MAIN LOBE BEAMWIDTH IN DEGREES AT 3DB POINTS: ELEVATION AZIMUTH:
J. RATE OF ROTATION - INDICATE IF FIXED
NYA RPM, ☐ FIXED
K. IS THERE AVAILABLE A SPECTRUM RESPONSE REPORT ON THIS ANTENNA? ☐ YES ☒ NO
(IF YES, PROVIDE ONE COPY)

A single V shaped De Havilland type dipole antenna (included angle of 90°) is used to transmit @ 20.75 mc The 46.80 mc and 34.30 mc transmitters employ a V shaped dipole as a common antenna with suitable isolation provided.

12. PURPOSE AND REMARKS TEST CODE: S X



T/M utilized on-orbit only. There are three experiment transmitters in the OV4-1T S/C that operate at the experimental spot frequencies noted above. The transmitter waveforms will contain 1 millisecond to 20 microsecond psuedo random pulses and have a bandwidth of 250 KC. An on board code generator provides this psuedo code used sequentially

AFMTC FORM 31T JUN 61 PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE.

NRD

1. SECURITY CLASSIFICATION
8. REVISION NO. 1

INSTRUMENTATION - TRANSMITTERS (SURFACE/AIR/OTHER)

OV-4 (Cont)

1. SECURITY CLASSIFICATION	2. PAGE 161.2
(U)	3. DATE 18 May 1966
	4. REPLACES PAGE(S)
	DATED

5. PROGRAM TITLE	6. PROGRAM REQUIREMENT CODE	7. SYSTEM CODE	8. CONTRACTOR
TIII SLS/MOL-HSQ (continued)	3900		MC

TEST CODE: S X

10. TRANSMITTER CHARACTERISTICS

A. LOCATION:

B. TYPE:

C. MODEL:

D. MANUFACTURER:

E. NUMBER OF EQUIPMENTS:

☐ FIXED

☐ MOBILE

F. TYPE OF SERVICE:

☐ GND/GND, ☐ GND/AIR, ☐ OTHER,

G. FREQUENCY RANGE: MC

H. ☐ TUNABLE ☐ FIXED TUNED

I. METHOD OF FREQUENCY CONTROL:

J. BANDWIDTH AT 3DB: MC,

AND AT 60DB: MC

K. EMISSION: ☐ AM, ☐ FM, ☐ PULSE,

☐ COMPOSITE NONSTANDARD

L. FREQUENCY STABILITY: ± MC

M. AVERAGE POWER: WATTS

N. PEAK PULSE POWER: WATTS

O. MAXIMUM PRF: PPS

P. PULSE WIDTHS: US, US, US

AT 3DB POINTS.

Q. HARMONIC SUPPRESSION: 2ND DB,

3RD DB, 4TH DB.

R. CODING AND/OR MODULATION:

S. ARE THERE AVAILABLE SPECTRUM ANALYSIS REPORTS ON THIS TRANSMITTER: ☐ YES ☐ NO

(IF YES, PROVIDE ONE COPY)

NOTE: TRANSMITTING SYSTEMS WHICH REQUIRE EXTENSIVE PERIODS OF RF CHECKOUT TIME WILL BE REQUIRED TO BE EQUIPPED WITH A CLOSED LOOP OR NON-RADIATING CHECKOUT DEVISE.

11. ANTENNA CHARACTERISTICS

A. LOCATION:

B. TYPE:

C. MODEL:

D. MANUFACTURER:

E. FREQUENCY RANGE: MC

F. ☐ TUNABLE ☐ FIXED TUNED

G. PREDOMINANT POLARIZATION: (CHECK ONLY ONE)

☐ VERTICAL

☐ HORIZONTAL

☐ CIRCULAR: SENSE: ☐ LH ☐ RH

☐ OTHER

H. MAXIMUM GAIN IN DB WITH RESPECT TO ISOTROPIC: DB

I. MAIN LOBE BEAMWIDTH IN DEGREES AT 3DB POINTS: ELEVATION AZIMUTH

J. RATE OF ROTATION - INDICATE IF FIXED RPM, ☐ FIXED

K. IS THERE AVAILABLE A SPECTRUM RESPONSE REPORT ON THIS ANTENNA? ☐ YES ☐ NO

(IF YES, PROVIDE ONE COPY)

12. PURPOSE AND REMARKS

to modulate one transmitter at a time. Each transmitter is modulated in turn over an interval of 11.2 sec. and is then silent for 22.4 sec.. Ground commands implemented thru the command decoder control the radiated power. Four operating levels are provided from zero to 1,000 watts peak (0/10/100/1, 000 watts).

ORBIS-LOW

INSTRUMENTATION - TRANSMITTERS (SURFACE/AIR/OTHER)

1. SECURITY CLASSIFICATION: (U)

2. PAGE: 161.5

3. DATE: 18 May 1966

4. REPLACES PAGE(S) DATED:

5. PROGRAM TITLE: TIII SLS/MOL-HSQ

6. PROGRAM REQUIREMENT CODE: 3900

7. SYSTEM CODE:

8. CONTRACTOR: MC

TEST CODE:

10. TRANSMITTER CHARACTERISTICS

A. LOCATION: At Stage 108.116.

B. TYPE: AT-1

C. MODEL: AT-1

D. MANUFACTURER: ARF Products

E. NUMBER OF EQUIPMENTS:
- [1] FIXED
- [ ] MOBILE

F. TYPE OF SERVICE:
- [ ] GND/GND, [X] GND/AIR, [ ] OTHER.

G. FREQUENCY RANGE: 5.006, 10.004, 30.012 MC

H. [ ] TUNABLE [X] FIXED TUNED

I. METHOD OF FREQUENCY CONTROL: Crystal

J. BANDWIDTH AT 3DB: ± 200 cps MC.
AND AT 60DB: ± 200 cps MC

K. EMISSION: [X] AM, [ ] FM, [ ] PULSE,
[ ] COMPOSITE NONSTANDARD

L. FREQUENCY STABILITY: ± .005% MC

M. AVERAGE POWER: 14 WATTS

N. PEAK PULSE POWER: WATTS

O. MAXIMUM PRF: PPS

P. PULSE WIDTHS: US, US, US
AT 3DB POINTS.

Q. HARMONIC SUPPRESSION; 2ND DB,
3RD DB, 4TH DB.

R. CODING AND/OR MODULATION:

S. ARE THERE AVAILABLE SPECTRUM ANALYSIS REPORTS ON THIS TRANSMITTER: [ ] YES [X] NO
(IF YES, PROVIDE ONE COPY)

NOTE: TRANSMITTING SYSTEMS WHICH REQUIRE EXTENSIVE PERIODS OF RF CHECKOUT TIME WILL BE REQUIRED TO BE EQUIPPED WITH A CLOSED LOOP OR NON-RADIATING CHECKOUT DEVICE.

11. ANTENNA CHARACTERISTICS

A. LOCATION: At Sta 108.116

B. TYPE: AAS1

C. MODEL: AAS1

D. MANUFACTURER: ARF. Products

E. FREQUENCY RANGE: 5, 10, 30 MC

F. [ ] TUNABLE [X] FIXED TUNED

G. PREDOMINANT POLARIZATION: (CHECK ONLY ONE)
- [ ] VERTICAL
- [X] HORIZONTAL
- [ ] CIRCULAR: SENSE: [ ] LH [ ] RH
- [ ] OTHER

H. MAXIMUM GAIN IN DB WITH RESPECT TO ISOTROPIC: 6 DB

I. MAIN LOBE BEAMWIDTH IN DEGREES AT 3DB POINTS: ELEVATION 100° AZIMUTH 140°

J. RATE OF ROTATION - INDICATE IF FIXED
RPM, [X] FIXED

K. IS THERE AVAILABLE A SPECTRUM RESPONSE REPORT ON THIS ANTENNA? [ ] YES [XX] NO
(IF YES, PROVIDE ONE COPY)

12. PURPOSE AND REMARKS

Operated On-Orbit only.

AFMTC FORM 31T JUN 61 PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE.

1. SECURITY CLASSIFICATION: (U)

9. REVISION NO.: 1

OV-1

INSTRUMENTATION - RECEIVERS (SURFACE/AIR/OTHERS)

UNCLASSIFIED

2 PAGE 162.1

3 DATE 18 May 1966

4 REPLACES PAGE(S)

DATED

5 PROGRAM TITLE: TIII SLS/MOL-HSQ

6 PROGRAM REQUIREMENT CODE: 3900

7 SYSTEM CODE:

8 CONTRACTOR: (GD/C) MC

TEST CODE:

10 RECEIVER CHARACTERISTICS	11 ANTENNA CHARACTERISTICS	12 PURPOSE AND REMARKS
A. LOCATION: OV1-6 Test Equipment	A. LOCATION:	
B. TYPE: Telemetry	B. TYPE: NONE	
C. MODEL: R-1037A	C. MODEL:	
D. MANUFACTURER: Vitro Electronics	D. MANUFACTURER:	
E. NO. OF EQUIPMENTS - FIXED OR MOBILE: (1) Mobile	E. DIRECTIVITY AND BEAMWIDTH IN AZIMUTH & ELEVATION - ½ POWER:	
F. RECEIVING FREQ. TOLERANCES IN PERCENTAGE: 0.005%	F. RATE OF ROTATION, INDICATE IF FIXED:	
G. METHOD OF RECEIVER FREQ. CONTROL: Xtal or manually tuneable	G. FREQ. RANGE OF ANTENNA:	
H. INTERMEDIATE FREQ.: 30 mc & 10 mc	H. POLARIZATION:	
I. RCVR. SELECTIVITY IN DB-3DB, 20DB & 60DB: 500 kc 3 db	I. IS THERE AVAILABLE A SPECTRUM ANALYSIS REPORT ON THIS ANTENNA? ☐ YES ☐ NO	
J. RCVR. SENSITIVITY: 2.0 microvolts DBM	J. ANTENNA GAIN AT USING FREQUENCY:	
K. LOCAL OSCILLATOR FREQUENCY (ABOVE OR BELOW): 43.4833 x 6		
L. SPURIOUS RESPONSE REJECTION: 60 DB		
M. CODED AND/OR MODULATION: MF DC to 250 KC		
N. ARE THERE AVAILABLE SPECTRUM ANALYSIS REPORTS ON THIS RECEIVER? ☐ YES ☒ NO		
IF YES, PROVIDE 2 COPIES TO NTRCF		

AFMTC FORM 310 JUN 61 PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE.

NRD

13 SECURITY CLASSIFICATION: (U)

9 REVISION NO.: 1

52

OV-1

INSTRUMENTATION - RECEIVERS (SURFACE/AIR/OTHERS)

1 SECURITY CLASSIFICATION: UNCLASSIFIED

2 PAGE: 162.2

3 DATE: 18 May 1966

4 REPLACES PAGE(S):

DATED

5 PROGRAM TITLE: TIII SLS/MOL-HSQ

6 PROGRAM ELEMENT CODE: 3900

7 SYSTEM CODE:

8 CONTRACTOR: (GD/C) MC

9 CCP CODE:

RECEIVER CHARACTERISTICS	11 ANTENNA CHARACTERISTICS	12. PURPOSE AND REMARKS
A. LOCATION: OV1-6 Satellite	A. LOCATION: OV1-6 Satellite	
B. TYPE: UHF Command	B. TYPE: Whip	
C. MODEL: 2621D	C. MODEL: 64-24304	
D. MANUFACTURER: RS Electronics Corp.	D. MANUFACTURER: GDC	
E. NO. OF EQUIPMENTS - FIXED OR MOBILE: 1	E. DIRECTIVITY AND BEAMWIDTH IN AZIMUTH & ELEVATION - ∫ POWER: Omnidirectional	
F. RECEIVING FREQ. TOLERANCES IN PERCENTAGE: 0.01	F. RATE OF ROTATION, INDICATE IF FIXED: Fixed	
G. METHOD OF RECEIVER FREQ. CONTROL: XTAL	G. FREQ. RANGE OF ANTENNA: 430 ± 10 mc	
H. INTERMEDIATE FREQ. 50 mc	H. POLARIZATION: Linear	
I. RCVR. SELECTIVITY IN 03-30B, 20D6 & 60D6	I. IS THERE AVAILABLE A SPECTRUM ANALYSIS REPORT ON THIS ANTENNA? [X] YES [ ] NO	
J. RCVR. SENSITIVITY: 60 db ± 2 mc DBM 5 microvolts	J. ANTENNA GAIN AT USING FREQUENCY: 0 db	
K. LOCAL OSCILLATOR FREQUENCY (ABOVE OR BELOW): 160 x 3		
L. SPURIOUS RESPONSE REJECTION: 80 DB		
M. CODED AND/OR MODULATION: 4 kc to 100 kc (FM)		
N. ARE THERE AVAILABLE SPECTRUM ANALYSIS REPORTS ON THIS RECEIVER? [ ] YES [X] NO		
IF YES, PROVIDE 2 COPIES TO RTRCP		

AFMTC FORM 31U JUN 61 PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE.

NRD

1 SECURITY CLASSIFICATION: (U)

9. REVISION NO.: 1

53

OV-4 | INSTRUMENTATION - RECEIVERS (SURFACE/AIR/OTHERS) | 1. SECURITY CLASSIFICATION: (U) | 2. PAGE: 162.3 | 3. DATE: 18 May 1966 | 4. REPLACES PAGE(S) | DATED

5. PROGRAM TITLE: TIII SLS/MOL-HSQ | 6. PROGRAM REQUIREMENT CODE: 3900 | 7. SYSTEM CODE | 8. CONTRACTOR: MC | 9. TEST CODE: S X

10. RECEIVER CHARACTERISTICS

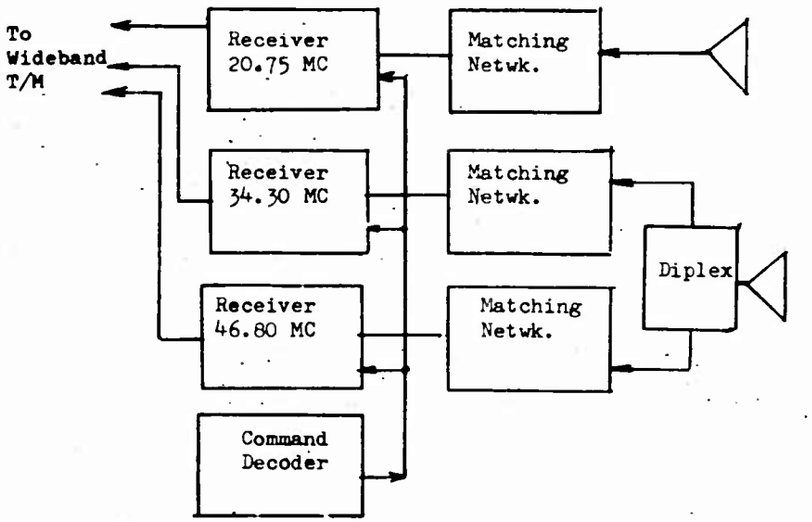
A. LOCATION: OV4-1R Receiver Satellite
B. TYPE:
C. MODEL:
D. MANUFACTURER: RHG Electronics Inc
E. NO. OF EQUIPMENTS - FIXED OR MOBILE: 3 Orbital
F. RECEIVING FREQ. TOLERANCES IN PERCENTAGE: .005%
G. METHOD OF RECEIVER FREQ. CONTROL: Crystal
H. INTERMEDIATE FREQ.: 125KC
I. RCVR. SELECTIVITY IN DB-3DB, 20DB & 60DB
J. RCVR. SENSITIVITY: DBM
K. LOCAL OSCILLATOR FREQUENCY (ABOVE OR BELOW)
L. SPURIOUS RESPONSE REJECTION: 70 DB
M. CODED AND/OR MODULATION: AM-Pulsed
N. ARE THERE AVAILABLE SPECTRUM ANALYSIS REPORTS ON THIS RECEIVER? ☐ YES ☒ NO
IF YES, PROVIDE 2 COPIES TO MTRCF

11. ANTENNA CHARACTERISTICS

A. LOCATION: NYA
B. TYPE: V-shaped Dipole
C. MODEL: NYA
D. MANUFACTURER: De Havilland
E. DIRECTIVITY AND BEAMWIDTH IN AZIMUTH & ELEVATION - ½ POWER:
F. RATE OF ROTATION, INDICATE IF FIXED: Fixed
G. FREQ. RANGE OF ANTENNA: Fixed tuned
H. POLARIZATION: Horizontal
I. IS THERE AVAILABLE A SPECTRUM ANALYSIS REPORT ON THIS ANTENNA? ☐ YES ☒ NO
J. ANTENNA GAIN AT USING FREQUENCY: 2db

See Remarks for antenna use

12. PURPOSE AND REMARKS



There are three experiment receivers in the OV4-1R S/C that compliment the experiment transmitters, contained in the OV4-1T S/C. When the receiver satellite is interrogated by a ground station, the decoder automatically activates these receivers and the wide band TLM associated with them. The experiment receivers do not contain 2nd detectors and their IF strip output is used to directly FM modulate the wide band TLM.

In case of failure in the wide band TLM links, it is possible to interchange TLM channels-experiment receiver assignment by ground command. T/M utilized on-orbit only.

AFNTC FORM 319 JUN 61 PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE.

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7. SECURITY CLASSIFICATION: (U) | 9. REVISION NO.: 1

OCCUPATIONAL HAZARDS - MEDICAL				1. SECURITY CLASSIFICATION: Unclassified	2. PAGE 170 3. DATE 18 May 1966 4. REPLACES PAGE(S) DATED
5. PROGRAM TITLE: TIII SLS/MOL-HSQ		6. PROGRAM REQUIREMENT NO. 3900	7. SYSTEM CODE	8. CONTRACTOR	

10. ITEM NO.	11. TEST CODE	12. REPORT NAME	13. DATE REPORT SUPPLIED	14. DATE REPORT WILL BE SUPPLIED
1.	HSQ	* PROPELLANTS AND OTHER TOXIC OR HAZARDOUS MATERIALS.		90 Day prior to Launch
		a. Chemical and Physical Properties.		
		b. Toxicity - Acute and Chronic.		
		c. Recommended First Aid and Treatment.		
2.	HSQ	* RADIATION HAZARDS.		
		a. Ionizing.		
		b. Radio Frequency.		
3.	HSQ	* ACOUSTIC HAZARDS.		
4.	HSQ	* BLAST PARAMETERS FOR .4 PSI AND .65 PSI.		
		a. TNT Equivalent.		
		b. Hazard Radii.		
5.	HSQ	* PROTECTIVE EQUIPMENT NEEDED.		
6.	HSQ	HUMAN FACTORS ANALYSIS.		

** Mandatory Report*

SUMMARY OF FREQUENCY UTILIZATION

1. SECURITY CLASSIFICATION	2. PAGE	3. DATE	4. REPLACES PAGE(S)
(U)	190	18 May 1966	DATED

5. PROGRAM TITLE	6. PROGRAM REQUIREMENT CODE	7. SYSTEM CODE	8. CONTRACTOR
TIII SLS/MOL-HSQ	3900		MC,MAC

10. ITEM NO.	11. TEST CODE	12. FREQUENCY	13. EMISSION CHARACTERISTICS	14. PURPOSE	PROTECTION REQUIRED	15. EST. TIME OF USAGE PRE-OP.	EST. TIME OF USAGE LAUNCH	17. SPECIAL MONITORING REQUESTS
1	HSQ	236.2	PCM/FM	Airframe Telemetry (lab)	± 500 KC of C.F.	2:00	30 Min.	
2	HSQ	231.9	SSB/FM	Acoustic and Vibration Data (Lab)	± 500 KC of C.F.	2:00	30 Min.	
3	HSQ	259.7 MC	PCM/FM	Real Time Gemini TLM	± 500 KC of C.F.	20 hr	1.5 hr	
4	HSQ	5765/ 5690 MC	Pulse Radar 1000 watt max PRF 2000 PPS	C-Band Beacon (Gemini)	normal	---	----	
5	HSQ	243.0 MC	243.0 Pulse/CW 50 Watts Peak	Recovery Beacon (Gemini)	±24.3 kc of C.F.	2 hr	2 hr	This time is estimated and may be longer depending on recovery circumstances. Transmission will occur only in down range impact area.
6	HSQ ZX	236.2 MC	PAM/FM	Orbital T/M Data	± 500 KC of C.F.	2:00	6 hrs	See pg. 230
7	HSQ ZX	231.9 MC	PAM/FM	Orbital T/M Data	± 500 KC of C.F.	2:00	6 hrs	See pg. 230
8	HSQ VX	5.006 MC	*	ORBIS-Low On-Orbit ionospheric sounding	*	0	10 days	Items 8-10 turned on by ground command, NO monitoring required
9	HSQ VX	10.004 MC	*		*			
10	HSQ VX	30.012 MC	*		*			
11	HSQ SX	230.9 MC	*	OV-4(T) status T/M	*			
12	HSQ SX	230.9 MC	*	OV-4(R) status T/M	*			* (to be supplied)

SUMMARY OF FREQUENCY UTILIZATION

1. SECURITY CLASSIFICATION	2. PAGE 190.1
(U)	3. DATE 18 May 1966
	4. REPLACES PAGE(S) DATED

5. PROGRAM TITLE	6. PROGRAM REQUIREMENT CODE	7. SYSTEM CODE	8. CONTRACTOR
TIII SLS/MOL-HSQ	3900		MC/MAC

10. ITEM NO.	11. TEST CODE	12. FREQUENCY	13. EMISSION CHARACTERISTICS	14. PURPOSE	PROTECTION REQUIRED	16. EST. TIME OF USAGE PRE-OP.	EST. TIME OF USAGE LAUNCH	17. SPECIAL MONITORING REQUESTS
13	HSQ YX	230.9 MC	*	OV-1 Status T/M	*			
14	HSQ SX	245.3 MC	*	OV-4 (R) Scientific Data Link	*			Note: Items 6-21 require no flight support prior to final orbit injection.
15	HSQ SX	249.9 MC	*	OV-4 (R) Scientific Data Link	*			
16	HSQ SX	255.1 MC	*	OV-4 (R) Scientific Data Link	*			
17	HSQ SX	258.5	*	OV-4 (R) Beacon	*			
18		20.75 MC	*	Sat to Sat Trans	*			
19		34.3 MC	*	Sat to Sat Trans	*			
20		46.8	*	Sat to Sat Trans	*			
21	HSQ ZX YX SX	430 MC	*	Command (Sim Lab, OV-1, OV-4)	*			

AFMTC FORM JUN 61 31X

NRD

1. SECURITY CLASSIFICATION	9. REVISION NO.
(U)	1

5 HSQ

Smoothing

Spacecraft position data shall not be smoothed. If the random error components of derivative data can be reduced by smoothing, whereby the stated accuracy requirements can be better satisfied, smoothing will be permitted. During the terminal phase of spacecraft flight the smoothing interval shall not exceed 2 seconds. Smoothing intervals and filter characteristics shall be specified in the data report. The special parameters of (1) "Ve" or magnitude of earth fixed velocity, (2) "Ye" or heading angle of earth fixed velocity, (3) "γe" or earth fix flight path angle, (4) "Lc" or Geocentric latitude, (5), "λe" or geographic longitude, and (6) "r" or radius from center of earth to vehicle shall be smoothed or computed from smoothed data, which ever is more accurate. See item 4 on page 211.1, 212, and 214.

6 HSQ

Editing of Smoothed Data

Data editing will be allowed: Obviously incorrect data points may be removed as needed up to a maximum of 25% of the data points collected per second but no more than 10% in any 5-second period. A statement explaining method of editing and actual editing for a given set of data is required.

7 HSQ

Best Estimate of Trajectory (BET)

Best estimates of position and velocity trajectories mathematically combining data from all applicable instrumentation systems will be required as final data. These best estimates should be accompanied with error estimators as specified in Item 4, page 210. Coordinate systems to be as specified on page 210, item 1, above.

METRIC MIDCOURSE DATA

1. SECURITY CLASSIFICATION	2. PAGE	212
U	3. DATE	1 April 1966
	4. REPLACES PAGE(S) DATED	212

5. PROGRAM TITLE	6. PROGRAM REQUIREMENT CODE	7. SYSTEM CODE	8. CONTRACTOR
TIII SLS/MOL-HSQ	3900		MAC

10. ITEM NO.	11. TEST CODE	12. DATA REQUIRED	13. INTERVAL (RANGE-ALTITUDE-TIME)	14. DATA POINTS/SEC	15. REDUCED DATA ACCURACY CLASS I	CLASS II	CLASS III
1	HSQ	Position*	Stg III first burn cutoff to S/C separation, plus a 30 sec minimum period after S/C separation and prior to S/C re-entry (400K Ft. Alt)	10/sec	+ 1000 ft. each Axis	+ 100 ft. each Axis.	
2		Velocity*	Stg III first burn cutoff to S/C separation, plus a 30 second minimum period after S/C separation and prior to S/C re-entry (400K Ft. alt).	10/sec	± 100 F.P.S.	± 10 F.P.S.	
3		Acceleration*	Stg III first burn cutoff to S/C separation, plus a 30 second minimum period after S/C separation and prior to S/C re-entry (400K Ft. Alt).	10/sec		± 10ft/sec^2	
4	HSQ	Special Parameter as listed in Item 4 on Page 211.1					

16. PURPOSE AND REMARKS

NOTES:

1. These data required for post flight analysis.
2. A suitable instrumentation ship, located between ETR Stations 9.1 and 12, will be required for acquisition of metric midcourse data. These data shall be of sufficient quantity and quality to insure the proper up-dating of acquisition look-angles for Sta. 12 radar.
3. Estimates of data accuracy will be provided on copies of the reduced data.
4. Metric data requirements for the transtage/LAB following Stage III, first burn cutoff will be presented in PR 3700.

* Quick look FVA will be required only in the event of major malfunction during flight. In the event it is required the data should be transmitted from appropriate recording sites via single side band radio or other suitable means.

METRIC TERMINAL DATA

1. SECURITY CLASSIFICATION	2. PAGE 214
U	3. DATE 1 April 1966
	4. REPLACES PAGE(S) 214 DATED

5. PROGRAM TITLE	6. PROGRAM REQUIREMENT CODE	7. SYSTEM CODE	8. CONTRACTOR
TIII SLS/MOL-HSQ	3900		MAC

10. ITEM NO.	11. TEST CODE	12. DATA REQUIRED	13. INTERVAL (RANGE-ALTITUDE-TIME)	14. DATA POINTS/SEC	15. REDUCED DATA ACCURACY ± CLASS I	CLASS II	CLASS III	16. PURPOSE AND REMARKS
1	HSQ	Position	Acquisition of S/C signal at ETR station 12 to impact.	10/sec.	+ 1000 ft. each axis	+ 100 ft. each Axis		
2		Velocity	A.O.S. at ETR Station 12 to Impact	10/sec.	+ 100 F.P.S. Each Axis	+ 10 F.P.S. each Axis		
3		Acceleration	A.O.S. at ETR Station 12 to Impact	10/sec.	$\pm$ 200 ft./sec^2	$\pm$ 10 ft./sec^2		
4		Special parameters listed in Item 4, P. 211.1	Same as Item 1	Same as Item I				
5	HSQ	Aerodynamic parameters of:						
	M	- Mach. no.						
	q_d	- Dynamic Pressure (lbs/ft^2)						
	R_n	- Reynolds number per ft. (1)/ft.						
6	HSQ	Quick-look PVA						

NOTES:

1. Adequate terminal metric data is essential to the success of the mission. Acquisition of Spacecraft tracking at earliest possible time is required. Acquisition prior to 200K altitude is highly desirable with acquisition by 120K being mandatory. Radar look-angle updating data from the radar tracking ship is required.

2. Estimates of data accuracy will be provided on copies of the reduced data.

3. Quick look PVA will be required only in the event of major malfunction during flight. In the event it is required the data should be transmitted from appropriate recording sites to Sta. #1 via SSB or other appropriate means.

4. To satisfy the time requirement stated on Page 910.1, the raw data tapes recorded in the terminal area should be airlifted to Sta. #1 within twenty four hours after spacecraft impact.

OTHER METRIC DATA			1. SECURITY CLASSIFICATION (U)	2. PAGE 215
				3. DATE 18 May 1966
5. TEST PROGRAM TITLE: TIII SLS/MOL-HSQ	6. PROGRAM REQUIREMENT CODE: 3900	7. SYSTEM CODE	8. CONTRACTOR: MC	4. REPLACES PAGE(S): New DATED

10. ITEM NO.	11. TEST CODE	12. DATA REQUIRED, INTERVAL, DATA POINTS/SEC, ACCURACY, PURPOSE AND REMARKS
1.	Bx	Micrometeoroid Detector -

Record 1

Word	1	Tape Identification
	2	Satellite Identification
	3	Year
	4	Day
	5	Second
	6	Year (UMT)
	7	Day (UMT)
	8	Second (UMT)
	9	intervals

Record 2 (Ephemeris)

Word	1	Year, month, day
	2	Second
	3	Longitude - deg
	4	Good. Latt - Deg
	5	Altitude - KM
	6	Geoc Latt - Deg
	7	Radial Dist - KM
	8	Velocity - Km/sec
	9	X-Km
	10	Y-Km
	11	Z-Km
	12	X-Km/sec
	13	Y-Km/sec
	14	Z-Km/sec

Data interval = ¼ sec

2. ZX — Corner Reflectors - Will require prompt transmission of orbital elements in the SPADATS format as quickly as possible after launch and at each update. If SPADATS format is not available, a complete description of the elements used by AFMTC/SSD. Elements will be used for on-site computations of Metric data by an existing 1620 computer.

3. ZX — Paint Pattern - Same as Item 2.

TELEMETRY DATA

1. SECURITY CLASSIFICATION	2. PAGE	3. DATE	4. REPLACES PAGE(S)
(U)	230	12 Nov. 1965	DATED

5. PROGRAM TITLE	6. PROGRAM REQUIREMENT CODE	7. SYSTEM CODE	8. CONTRACTOR
TIII SLS/MOL-HSQ	3900		MC,MAC

10. ITEM NO.	11. TEST CODE	12. LINK FREQ-MC & TYPE	13. CHANNEL NO.	CHANNEL FREQ.-KC	CHANNEL DEV -± %	CHANNEL NO. OF SEG	14. RATE, MEASURING -RPS, BPS	15. RECORDING INTERVAL (TIME, POSITION OR FLIGHT PHASE) CLASS I	CLASS II	CLASS III	16. DATA ACCURACY FINAL-± %	17. REQUIRED IN REAL TIME RECORDINGS TAPE	PEN	S.S.	OSC	CONS PRES	COMPUT.	18. PURPOSE AND REMARKS
1	HSQ	231.0 SSB/FM	(See Page 152)				Cont-inuous	T-240 Sec. thru Re-Entry				X		X				Acoustic and Vibration Data
2	HSQ	236.2 PCM/FM					172.8K bps NRZ					X		X				Data from Airborne Instrumentation System
3	HSQ	259.7 PCM/FM (NRZC)					51.2 K BPS	T-240 Sec. to splash				X	X	X	X			1) Average is not expected during the black out portion of flight. 2) Blackout is expected to occur from T+1123 to T+1489 elapsed time. 3) AFETR will be required to receive and record real time telemetry data for post flight evaluation. Recordings are desired from ETR Sta #1, 3, 7, 9.1, and 12 plus two ships and two JC-130 aircraft. (Notes on 230.5)
4	HSQ zx	*236.2					45 sps (2 VC 0) Real time 1170 sps (2 VC 0) stored	See Notes 230.5				X	X					

* Time shared with PCM (Item 2)

AFMTC FORM 32F JUN 61 PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE.

NRD

1. SECURITY CLASSIFICATION	9. REVISION NO.
(U)	1

TELEMETRY DATA			1. SECURITY CLASSIFICATION (U)	2. PAGE 230.1
				3. DATE 18 May 1966
5. PROGRAM TITLE TIII SLS/MOL-HSQ	6. PROGRAM REQUIREMENT CODE 3900	7. SYSTEM CODE	8. CONTRACTOR MC	4. REPLACES PAGE(S) 230.1 DATED
				TEST CODE:

Item No.	Test Code	Note	NOTES, REMARKS, SPECIAL INSTRUCTIONS, ETC.
1	All		Telemetry recording will utilize predetection techniques for PCM, SSB and PAM data recording. Predetection is a Class I requirement at all supporting AMR stations having predetection capability. Predetection frequency shall be 900 KC. Predetection recording shall be at 120 ips + 0.25%. Wow and Flutter + 0.25% from 0.2 cps to 10 KC, frequency response 3 db from 400 cps to 1 MC. S/N ratio 24 db from 400 cps to 1 MC.
2	All		Original PCM and SSB predetection tapes are required whenever available. (Also PAM)
3	All		All magnetic tapes furnished by the AFMTC for data purposes, shall be new, unspliced stock. The data shall be recorded on 7-track, 1/2" wide tapes, using 14" diameter tape reels. Tape type shall be Scotch 951 or equivalent. Prior to usage the magnetic tape shall be run through the recorder in a normal record mode, repacked on the supply reel and degaussed.
4	All		Recordings are required from T-240 seconds to loss of data, at Station 1, and from data acquisition to loss of data at down range stations.
5	All		The signal strength at the receiver AGC must be recorded on magnetic tape for all PCM/FM and SSB/FM rf carriers. All stations supporting the test shall record the RF signals strength and center frequency in real time on pen recorders. These data should be calibrated logarithmically with an accuracy of ± 3 db from 1-5000 uv at station 1, 1-1000 uv at down range stations and the ORVs, 1-1500 uv on aircraft. The calibration should be applied to the preamplifier input.
6	All		Magnetic tape recordings of each telemetry link are a Class I requirement (see track assignment pages 230.3 - 203.4).
7	All		Precision reels and electromagnetic shielded cans shall be used for PCM serial and SSB magnetic tapes. (Also PAM)
8	All		The preflight telemetry calibration of the SSB/FM will be generated by MC during the last 90 seconds prior to lift-off, and recorded by AFMTC on the tape listed under item 15 page 230.4.
9	All		It is requested that AFMTC generate and record a 100 KC wow and flutter compensation signal to be recorded on all magnetic tapes as stated in the tape formats listed on pages 230.3 - 230.4.

TELEMETRY DATA				1. SECURITY CLASSIFICATION (U)	2. PAGE 230.2
					3. DATE 18 May 1966
5. PROGRAM TITLE TIII SLS/MOL-HSQ		6. PROGRAM REQUIREMENT CODE 3900	7. SYSTEM CODE	8. CONTRACTOR MC	4. REPLACES PAGE(S) 230.2 DATED
					TEST CODE:

ITEM NO.	TEST CODE	NOTE	NOTES, REMARKS, SPECIAL INSTRUCTIONS, ETC.
10	All		It is required that analog records of the TLM-18 azimuth and elevation, orientation indications and tracking error signals from all stations be recorded.
11	All		PCM/FM and SSB/FM telemetry data are to be recorded on magnetic tape recorders having a 1 MC minimum band width for approximately 15 minutes per test for CST.
12	All		All receivers shall have a bandpass of 500 KC and intermediate frequency of 900 KC
13	All		One ship, to be identified by AFETR, will be required to monitor the end of stage III burn, Gemini separation, and stage III retro. Possible location of this ship would be 14.2° N. latitude and 48.9°N. longitude.
14	HSQ ZX		Recordings are required whenever the PAM is commanded on during 6 day period. (PFOAR)

TELEMETRY DATA				1. SECURITY CLASSIFICATION (U)	2. PAGE 230.3
					3. DATE 18 May 1966
5. PROGRAM TITLE TIII SLS/MOL-HSQ	6. PROGRAM REQUIREMENT CODE 3900	7. SYSTEM CODE	8. CONTRACTOR MC		4. REPLACES PAGE(S) 230.3 DATED
					TEST CODE:

ITEM NO.	TEST CODE	NOTE	NOTES, REMARKS, SPECIAL INSTRUCTIONS, ETC.
14	All		Telemetry tape format for flight test data transmitted over the PCM/FM telemetry links described on pages 152.1 and 152.2. PRIMARY RECORDER TRACK 1. a. 1 pps timing (B-1), 7.35 KC RDB, Channel 11 b. 100 pps timing (D-5), 22 KC RBD, Channel A c. Voice annotation, 40 KC RBD Channel C and 70 KC RBD, Channel E 2. Receiver A - Flight Test Data - Sim Lab PCM/FM (left hand circular polarization) PAM/FM (turned on only after PCM is off) 3. Receiver B - Gemini PCM/FM (right hand circular polarization) 4. Unassigned. 5. Receiver C - Flight Test Data - Sim Lab PCM/FM (right hand circular polarization) PAM/FM (turned on only after PCM is off) 6. Receiver D - Gemini PCM/FM (left hand circular polarization) 7. a. Signal Strength of Receiver C 5.4 KC RBD Channel 10 b. Signal Strength of Receiver D, 10.5 KC RBD Channel 12 c. 100 KCreference (wow and flutter), direct d. 17 KC Speedlock, direct

TELEMETRY DATA			1. SECURITY CLASSIFICATION (U)	2. PAGE 230.4 3. DATE 18 May 1966 4. REPLACES PAGE(S) 230.4 DATED
5. PROGRAM TITLE TIII SLS/MOL-HSQ	6. PROGRAM REQUIREMENT CODE 3900	7. ITEM CODE	8. CONTRACTOR MC	TEST CODE:

ITEM NO.	TEST CODE	NOTE	NOTES, REMARKS, SPECIAL INSTRUCTIONS, ETC.
15	All		Telemetry format for vibration and acoustic data transmitted over sim lab SSB/FM telemetry link described on Page 152 should be as follows: PRIMARY RECORDER TRACK 1. Unassigned 2. Receiver E - Sim Lab acoustic and vibration SSB/FM (right hand circular polarization) 3. a. 1 pps timing (B-1), 7.35 KC RDB Channel B b. 100 pps timing (D-5), 22 KC RBD Channel A c. Voice annotation, 40 KC RDB Channel C and 70 KC RDB Channel E 4. Receiver E - Sim Lab Acoustic and Vibration SSB/FM (right hand circular polarization) 5. Unassigned 6. Receiver F - Sim Lab Acoustic and Vibration SSB/FM (Left hand circular polarization) 7. a. Signal strength of Receiver E, 5.4 KC RDB Channel 10 b. Signal strength of Receiver F, 10.5 KC RDB Channel 12 c. 100 KC reference (wow and flutter), direct d. 17 KC Speedlock, direct NOTE: Standard AFETR practic of providing a backup recorder is requested. Data will only be required from one source.

SUPPLEMENTARY

INFORMATION

(Notes) TELEMETRY DATA			1. SECURITY CLASSIFICATION: UNCLASSIFIED	2. PAGE 230.5 3. DATE 18 May 1966 4. REPLACES PAGE(S) DATED
5. PROGRAM TITLE: TIII SLS/MOL-HSQ	6. PROGRAM REQUIREMENT CODE: 3900	7. SYSTEM CODE	8. CONTRACTOR: MC	

10. ITEM NO.	11. TEST CODE	12. DATA REQUIRED, INTERVAL ACCURACY, PURPOSE, REMARKS, ETC.
		Reference Item # 4 pg. 230
1	HSQ ZX	Ten seconds after shutdown of the transtage third burn the PCM and SSB links will be turned off and the PAM system actuated in order to be turned on by command control. From that point to the 144th hour after lift off the vehicle will sequence the dumping of the on board tape recorder at least once every three hours.
2		The fuel cell experiment will require the real time monitor of its output current and voltage periodically to form a basis for purging through the command control system.
3		Approximately 20 status measurements on one VCO will be required at Cape Canaveral every two to three Orbits to assess the the condition of the vehicle and allow real time decision making in mission plans.
4		The following notes and page numbers apply to the PAM system: Page 230.1 - Items 1-5 Item 7 Item 9 Page 230.2 - Items 10 - 12
5	HSQ ZX	After the first shutdown of the PAM link (6 days) the vehicle will be supported by special experiment ground station; but after the end of the thirteenth day, the PAM system will be re-energized and the vehicle will be supported as in the first 6 day period until power depletion (approx. two days).

HSQ SPACECRAFT	OTHER DATA	1. SECURITY CLASSIFICATION (U)	2. PAGE 240
			3. DATE 1 April 1966
			4. REPLACES PAGE(S) 240 DATED

5. PROGRAM TITLE	6. PROGRAM REQUIREMENT CODE	7. SYSTEM CODE	8. CONTRACTOR
TIII SLS/MOL-HSQ	3900		MAC

10. ITEM NO.	11. TEST CODE	12. DATA REQUIRED, INTERVAL, ACCURACY, PURPOSE, REMARKS, ETC.
1	HSQ	Telemetry data plus data which is not transmitted in real time is recorded on magnetic tape by tape recorders on board the HSQ Spacecraft. This tape will remain in the spacecraft. After spacecraft recovery and return to CKAFS, the recorders will be removed by MAC Personnel. In the event unusual circumstances require the removal of the tapes down range the task will be accomplished by MAC Personnel and the tapes returned to CKAFS by aircraft.
2		Signal strength and AGC recordings of the radar tracking signals as received at all ETR Stations and instrumentation ships are required.
3		Recordings showing the telemetry signal strength, deviation, and center frequency are also required from all ETR Stations and instrumentation ships.
4		A preliminary Test Report showing a preliminary estimate of data coverage, AOS and LOS for the various stations, lift-off time and impact time is required within two hours after launch for use during the post-flight review meeting.
5		A Recovery Report is required within 15 WD after termination of the test. This report should include, but should not be limited to: (a) The location of each component of the recovery force at lift-off. (b) The touchdown time, and impact point. (c) Time history covering contact and/or loss of contact with the re-entry vehicle by each component of the recovery force. (d) Identifying members (air-sea type) and their approximate location with respect to the re-entry module during times the re-entry vehicle is out of contact. Probable reasons for no contact are desired. (e) Activities and times required for: (1) Air and sea recovery forces to locate and reach the re-entry vehicle. (2) Deployment of para-divers and flotation gear. (3) Attachment of flotation gear. (4) Recovery and transport of the re-entry vehicle to ETR Station #12.
6	HSQ	A "quick look" tabular printout from the impact predictor is required. This printout should be based upon data gathered by station #1 plus that obtained by stations as far down range as possible.

(HSQ SPACECRAFT)	OTHER DATA		1. SECURITY CLASSIFICATION (U)	2. PAGE 240.1
				3. DATE 1 April 1966
5. PROGRAM TITLE TIII SLS/MOL-HSQ	6. PROGRAM REQUIREMENT CODE 3900	7. SYSTEM CODE	8. CONTRACTOR MAC	4. REPLACES PAGE(S) 240.1 DATED

10. ITEM NO.	11. TEST CODE	12. DATA REQUIRED, INTERVAL, ACCURACY, PURPOSE, REMARKS, ETC.
7	HSQ	Extracts from the log of the operators of the telemetry receiving equipment at all ETR Stations and instrumentation ships are required. These extracts should show: (a) Time of acquisition of signal (AOS). (b) Time of LOS (Loss-Of-Signal) (c) Antenna azimuth and elevation at both AOS and LOS. (d) Unusual events, signals, etc., as observed.
8	HSQ	Extracts are required from the tracking radar operators' logs for each of the ETR Stations and the instrumentation ships. These extracts should show: (a) Peak Power (b) Pulse Width (c) Type Coverage (Beacon or Skin) (d) Antenna Polarization. (e) PRF (f) Coding, if any (g) Noise figure of the Radar (h) Acquisition Data (1) Antenna Azimuth in mils at AOS and LOS (2) Antenna Elevation in mils at AOS and LOS (3) Slant Range of vehicle in N. M. at AOS and LOS. (i) Deviations, as observed, from nominal frequency (j) Irregularities in track, drop-outs, etc.
9	HSQ	An electrical signal denoting "first motion" of the launch vehicle is required from an appropriate source delivered to the MAC telemetry van. This signal will then be imposed upon tape recordings, etc., as a timing signal. (28v nominal is desired.) The correlation accuracy desired is $\pm$ 2 m. s. The "first motion" signal should also be imposed upon the telemetry recordings taken by the Range at Sta. 1.
10	HSQ	Magnetic tape recordings of certain telemetry data are required during certain prelaunch tests. Both the tests and the parameters to be recorded will be specified in applicable operations requirements.
11	HSQ	Tabouts of the launch vehicle guidance parameters as produced by the QLAP program, subprogram TTQB, are required. (Reference page 240.3, item 38, PRD-3700).

HSQ SPACECRAFT

COMMUNICATIONS RECORDINGS

5. PROGRAM TITLE			6. PROGRAM REQUIREMENT CODE 3900		7. SYSTEM CODE	1. SECURITY CLASSIFICATION (U)	2. PAGE 412
						8. CONTRACTOR MAC	3. DATE 1 April 1966
							4. REPLACES PAGE(S) __ __ New Page __ __ DATED

10. ITEM NO.	11. TEST CODE	12. REQUIRED RECORDINGS	13. TIME CORRELATION YES	13. TIME CORRELATION NO	14. DURATION OF RECORDING	15. PURPOSE AND REMARKS
1	HSQ	Radio communication between AF ETR Sta. #1 and members of the Recovery Force	X		Entire recovery period	Time correlation may be by voice. Instructions to recovery forces are of particular interest.
2	HSQ	Radio communications between various members of the Recovery Force.	X		Entire recovery period	Time correlation may be by voice. Suggest recordings be made of Sta. #12.
3	HSQ	MITOC recordings for HSQ Nets 22 thru 31 plus launch vehicle TC and SRO's nets. See page 431.	X		T-120 min. to termination	Time correlation may be by voice. Test analysis and data correlation.

NOTES:
1. Copies of the recordings of Items 1 and 2 will be required only if difficulties are encountered during search and retrieval operations.
2. Copies of recordings of approximately five selected channels of Item 3, above, will be required. The channels selected for recording will be specified in the applicable OR.

AFMTC FORM SEP 61 34F PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE.

1. SECURITY CLASSIFICATION (U)	9. REVISION NO. 1

WIRE - WIDE BAND

1. SECURITY CLASSIFICATION	2. PAGE	3. DATE	4. REPLACES PAGE(S)
(U)	430	1 April 1966	430 DATED

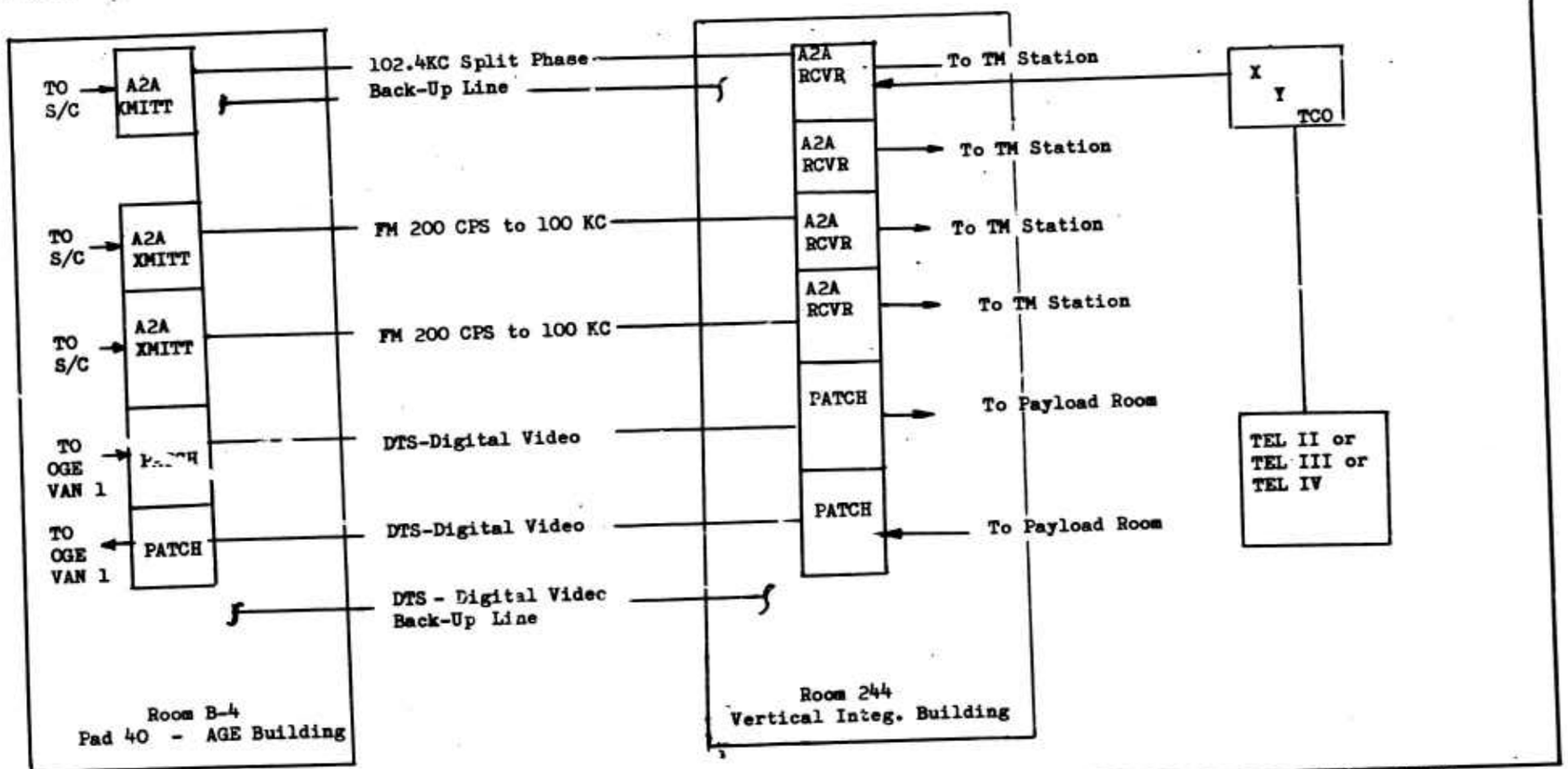
5. PROGRAM TITLE	6. PROGRAM REQUIREMENT CODE	7. SYSTEM CODE	8. CONTRACTOR
TIII SLS/MOL-HSQ	3900		MAC

10. ITEM NO.	11. TEST CODE	12. USE ADMIN.	12. USE OPS	13. TYPE OF SERVICE	14. QTY	15. LOCATION OF OPERATING TERMINALS STATION	BLDG.	ROOM	STATION, BLDG., ROOM, ETC.	16. PURPOSE AND REMARKS
1.	HSQ		X	A2A Equalized Lines (See Note 1)	2PR	From	AGE Bldg	B-4	Pad 40 DTT Room to VIB FM Hardline from S/C	FM-Equal flat ± 1db from 300 cps to 100 kc. Terminated at transmitting end 75 ohm unbalanced and receiving end 125 ohms balanced.
						To	VIB	244		
2	HSQ		X	A2A Equalized Lines (See Note 2)	2PR	From	AGE Bldg	B-4	Pad 40 DTT Room to VIB Hardline from S/C	PCM 102.4kc split phase terminated each end 125 ohm balanced to ground. Grounds to be isolated.
						To	VIB	244		
3	HSQ		X	Unequalized lines (See note 3)	3PR	From	AGE Bldg	B-4	Pad 40 DTT Room to VIB	DTS Video 2kc phase shift key flat ± 1db 800 cps to 4 kc. Terminated each end 125 ohms balanced to ground. Ground to be isolated.
						To	VIB	244		
4	HSQ		X	A2A Equalized Lines	1PR	to	VIB	244	Tel II or III Recvr to VIB	PCM 51.2KB NRZC terminated to match receiver output and 125 ohm balanced to ground. Grounds to be isolated.

NOTES:
1 - Both pair active
2 - One pair active and one pair spare.
3 - Two pair active and one pair spare.

5. PROGRAM TITLE: TIII SLS/MOL-HSQ	6. PROGRAM REQUIREMENT CODE: 3900	7. SYSTEM CODE	8. CONTRACTOR: MAC	1. SECURITY CLASSIFICATION: (U)
				2. PAGE: 430.1
				3. DATE: 1 April 1966
				4. REPLACES PAGE(S): 430.1
				DATED
				TEST CODE:

10. SKETCHES, DIAGRAMS, ETC.



AFMTC FORM NOV 61 50 PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE.	1. SECURITY CLASSIFICATION: (U)	9. REVISION NO.: 1

MOPS

1. SECURITY CLASSIFICATION	2. PAGE 431
(U)	3. DATE 1 April 1966
	4. REPLACES PAGE(S) ___ ___ 431 ___ ___ ___ DATED

5. TEST PROGRAM	6. PROGRAM REQUIREMENT NO.	7. SYSTEM CODE	8. CONTRACTOR
TIII SLS/MOL-HSQ	3900		MAC

13. MOPS NET FUNCTION OR NAME

10. ITEM NO.	11. TEST CODE	12. LOCAL AREA	22 S/C Test Conductor	23 Telemetry	24 Communications	25 Power	26 Sequential	27 ACME	28 ECS	29 RCS	30 IMU	31 MST - Envir. Shelter	Sim. Lab Test Conductor	02 T-III Test Conductor	End Unit Type
1	***	LCC STC Rack 1 - Rm #227	X	X	X	X	X	X	X	X	X	X	X	X	0
2		LCC Intg. Eng. Rack 2 - Rm. #227	X	X	X	X	X	X	X	X	X	X		M	0
3		LCC Pwr & Seq Rack 33 - Rm. #227	X	X	X	X	X	X	X	X	X	X		M	0
4		LCC Pwr & Seq Rack 34 - Rm. #227	X	X	X	X	X	X	X	X	X	X		M	0
5		LCC Guidance Rack 43C - Rm. #227	X	X	X	X	X	X	X	X	X	X		M	0
6		LCC RCS Rack 23 - Rm. #227	X	X	X	X	X	X	X	X	X	X		M	0
7		LCC RCS Rack 24 - Rm. #227	X	X	X	X	X	X	X	X	X	X		M	0
8		LCC Remote Control Rack 404-Rm. #227	X	X	X	X	X	X	X	X	X	X		M	0
9		OGE Van #1 IMU Rack 47 (*)	X	X	X	X	X	X	X	X	X	X		M	0
10		OGE Van #1 IMU Rack 44 (*)	X	X	X	X	X	X	X	X	X	X		M	0
11		OGE Van #1 IMU Rack 11 (*)	X	X	X	X	X	X	X	X	X	X		M	0
12		OGE Van #1 RCS Rack 19 (*)	X	X	X	X	X	X	X	X	X	X		M	0
13		OGE Van #1 Pwr Rack 20 (*)	X	X	X	X	X	X	X	X	X	X		M	0
14		OGE Van #1 Seq Rack 18 (*)	X	X	X	X	X	X	X	X	X	X		M	0
15		OGE Van #1 Pwr Rack 62A(*)	X	X	X	X	X	X	X	X	X	X		M	0
16		AGE Bldg. Power Rack 97(**)	X	X	X	X	X	X	X	X	X	X		M	0
17		OGE Van #2 Attitude Control Rack 43A*	X	X	X	X	X	X	X	X	X	X		M	0
18		OGE Van #2 Attitude Control Rack 43(*)	X	X	X	X	X	X	X	X	X	X		M	0
19		OGE Van #2 Comm Rack 140 (*)	X	X	X	X	X	X	X	X	X	X		M	0
20		OGE Van #2 Comm Rack 143 (*)	X	X	X	X	X	X	X	X	X	X		M	0
21		OGE Van #2 RCS Rack 32 (*)	X	X	X	X	X	X	X	X	X	X		M	0
22		OGE Van #2 RCS Rack 31 (*)	X	X	X	X	X	X	X	X	X	X		M	0
23		OGE Van #2 Crewman Sim. Rack 236 (*)	X	X	X	X	X	X	X	X	X	X		M	0

14. REMARKS/SPECIAL INSTRUCTIONS/REQUIREMENTS

1. Assignments are as follows:

Net Number	Switch Positions	Net Title
22	2	S/C Test Conductor
23	3	Telemetry
24	4	Communications
25	5	Power
26	6	Sequential
27	7	ACME
28	8	ACS
29	9	RCS
30	10	IMU
31	11	MST Env. Encl.
Unassigned	12	Sim.Lab.Test Con.
02	1	T-III Test Con.

2. End Unit types are as follows:

Code	Description
0	Standard
H	Outdoor - Hazardous Proof

NOTES:

* These trailers will be located at VIB & then moved to Pad 40. Disconnect capability must exist.

** Instruments installed.

*** All MOL/HSQ Test Codes as necessary for all line items.

X=Two-way capability
M-Monitor Capability

Channel 02 is a T-III channel (See PR3700)

AFMTC FORM JUL 61 34B PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE.

NRD

1. SECURITY CLASSIFICATION	REVISION NO.
(U)	MT 1

MOPS

1. SECURITY CLASSIFICATION	2. PAGE 431.1
(U)	3. DATE 1 April 1966
	4. REPLACES PAGE(S) 431.1
	DATED

5. TEST PROGRAM	6. PROGRAM REQUIREMENT NO.	7. SYSTEM CODE	8. CONTRACTOR
TIII SLS/MOL-HSQ	3900		MAC

13. MOPS NET FUNCTION OR NAME

14. REMARKS/SPECIAL INSTRUCTIONS/ REQUIREMENTS

See Page 431

10. ITEM NO.	11. TEST CODE	12. LOCAL AREA	S/C Test Conductor	Telemetry	Communications	Power	Sequential	ACME	ECS	RCS	IMU	MST - Envirn. Shelter	Sim. Lab Test Conductor	T-III Test Conductor	End Unit Type
			22	23	24	25	26	27	28	29	30	31		02	
24	***	OGE Van # 2 Seq. Rack 39 (*)	X	X	X	X	X	X	X	X	X	X		M	O
25		OGE Van # 2 Seq. Rack 37 (*)	X	X	X	X	X	X	X	X	X	X		M	O
26		OGE Van # 2 Pwr. Rack 35 (*)	X	X	X	X	X	X	X	X	X	X		M	O
27		TLM Van Receiver Rack 61C	X	X	X	X	X	X	X	X	X	X		M	O
28		TLM Van Simulator Rack 61B	X	X	X	X	X	X	X	X	X	X		M	O
29		TLM Van Display Rack 201	X	X	X	X	X	X	X	X	X	X		M	O
30		TLM Van Recorder Rack 196	X	X	X	X	X	X	X	X	X	X		M	O
31		TLM Van Recorder Rack 198	X	X	X	X	X	X	X	X	X	X		M	O
32		TLM Van PCM C/O Rack 5	X	X	X	X	X	X	X	X	X	X		M	O
33		VIB-Platform 13 (**)	X	X	X	X	X	X	X	X	X	X		M	O
34		VIB-Platform 14 (**)	X	X	X	X	X	X	X	X	X	X		M	O
35		MST Envirn. Shelter - Platform 12	X	X	X	X	X	X	X	X	X	X		M	H
36		MST Envirn. Shelter - Platform 13(**)	X	X	X	X	X	X	X	X	X	X		M	H
37		MST Envirn. Shelter - Platform 13(**)	X	X	X	X	X	X	X	X	X	X		M	H
38		MST Envirn. Shelter - Platform 13	X	X	X	X	X	X	X	X	X	X		M	H
39		MST Envirn. Shelter - Platform 13	X	X	X	X	X	X	X	X	X	X		M	H
40		MST Envirn. Shelter - Platform 14(**)	X	X	X	X	X	X	X	X	X	X		M	H
41		MST Envirn. Shelter - Platform 14	X	X	X	X	X	X	X	X	X	X		M	H
42		MST Envirn. Shelter - Platform 14	X	X	X	X	X	X	X	X	X	X		M	H
43		Ready Room - Pad 40	X	X	X	X	X	X	X	X	X	X		M	O
44		Room @ Complex Support Building	X	X	X	X	X	X	X	X	X	X		M	O
45		Support Trailer #3	X	X	X	X	X	X	X	X	X	X		M	O
46		MSO - TLM Grd. Stat. Rm.#3456 (**)	X	X	X							X		M	O
47		Base UT - Pad 40	X	X	X	X	X	X	X	X	X	X		M	H

AFMTC FORM 34B JUL 61 PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE.

NRD

1. SECURITY CLASSIFICATION	9. REVISION NO.
(U)	1

MOPS

1. SECURITY CLASSIFICATION	2. PAGE 431.2
(U)	3. DATE 1 April 1966
	4. REPLACES PAGE(S) 431.2 DATED

5. TEST PROGRAM	6. PROGRAM REQUIREMENT NO.	7. SYSTEM CODE	8. CONTRACTOR
TIII SLS/MOL-HSQ	3900		MAC

10. ITEM NO.	11. TEST CODE	12. LOCAL AREA	13. MOPS NET FUNCTION OR NAME: S/C Test Conductor	Telemetry	Communications	Power	Sequential	ACME	ECS	RCS	IMU	MST - Envirn. Shelter	Sim.Lab Test Conductor	T-III Test Conductor	End Unit Type
			22	23	24	25	26	27	28	29	30	31	02		
48	***	LCC - Pm #227 (**)	X	X	X	X	X	X	X	X	X	X	M		O
49		UT - Level 245' - 11" Coolant Unit **	X	X	X	X	X	X	X	X	X	X	M		H
50		MSO - Comm. Open Loop Sta.Rm.#3412**	X	X	X	X						X	M		O

14. REMARKS/SPECIAL INSTRUCTIONS/ REQUIREMENTS

AFMTC FORM 34B JUL 61 PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE.

1. SECURITY CLASSIFICATION	9. REVISION NO.
(U)	MT 75 1

TELETYPE

1. SECURITY CLASSIFICATION: (U)	2. PAGE: 433		
	3. DATE: 1 April 1966		
	4. REPLACES PAGE(S): 433 DATED		
5. PROGRAM TITLE: TIII SLS/MOL-HSO	6. PROGRAM REQUIREMENT CODE: 3900	7. SYSTEM CODE:	8. CONTRACTOR: MAC

10. ITEM NO.	11. TEST CODE	12. USE ADMIN.	12. USE OPS	13. SECURE YES	13. SECURE NO	14. LOCATION OF OPERATING TERMINALS STATION	BLDG.	ROOM	STATION, BLDG., ROOM, ETC.	15. PURPOSE AND REMARKS
1	All	X			X				Hangar L	Required to send and receive messages that are not to be handled through regular mail channels. Provides expeditious means of communications with Contractor's parent plant, and Vendors and Sub-Contractors on matters of Administration and Engineering, and Test Site Operations. Equipment sufficient to satisfy this requirement exists and is installed. NOTE: Additional requirements, if necessary will be added as they are identified.

AFMTC FORM 34D JUN 61 PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE.

NRD

1. SECURITY CLASSIFICATION: (U)	9. REVISION NO: 1

PUBLIC ADDRESS

1. SECURITY CLASSIFICATION	2. PAGE 434
(U)	3. DATE 1 April 1966
	4. REPLACES PAGE(S) 434 DATED

5. TEST PROGRAM TITLE	6. PROGRAM REQUIREMENT CODE	7. SYSTEM CODE	8. CONTRACTOR
T III SLS/MOL-HSQ	3900		MAC

10. ITEM NO.	11. TEST CODE	12. PURPOSE	13. SPEAKER LOCATION	14. REMARKS
1	ALL	To provide a means of informing personnel of operations and emergency conditions consistent with routine and special testing.	VIB - Launch Control Center (LCC)	Existing
2	ALL	Same	VIB - T/M Van	Tie speaker with volume control into VIB public address system.
3	ALL	Same	Pad 40 MST - Level 13 Clean Room	Locate one microphone on east wall of Clean Room. Tie speaker and microphone into Pad 40 public address system.
4	ALL	Same	Pad 40 MST - Level 14 Clean Room	Tie speaker into Pad public address system.
5	ALL	Same	OGE Van #1	Tie into VIB or Pad 40 paging system dependent on location of van.
6	ALL	Same	OGE Van #2	Same
7	ALL	Same	AGE Building - Electrical Equipment Room	Tie speaker into Pad 40 public address system.
8	ALL	Same	Room 110 - Pad 40 Ready Bldg.	Locate one microphone in room 110 of Pad 40 Ready Bldg. Tie mike to existing system. Existing speakers are adequate.
9	ALL	Same	Room 110 Complex Support Bldg.	Locate one microphone in Room 110 of the Complex Supt. Bldg. Tie mike to existing system. Tie speaker into Pad Public Address System.

CLOSED CIRCUIT TELEVISION

1. SECURITY CLASSIFICATION: (U)			2. PAGE 435
			3. DATE 1 April 66
5. PROGRAM TITLE: TIII SLS/MOL-HSQ	6. PROGRAM REQUIREMENT CODE 3900	7. SYSTEM CODE	4. REPLACES PAGE(S) 435
8. CONTRACTOR: MAC			DATED

10. ITEM NO.	11. TEST CODE	12. SUBJECT(S) TO BE VIEWED	13. MONITOR LOCATION(S)	14. INTERVAL (TIME)	15. PURPOSE AND REMARKS
1	HSQ	Launch Complex 40: Two (2) cameras will be located in the Environmental Shelter with four (4)usable camera locations. One (1) camera will be located on the UT (See Note #1) mounted for best view of S/C umbilicals and thrusters after shelter break-up.	Three (3) 17" TV monitors to be mounted above the Payload Control Room (Rm #227) racks. The capability is required for monitoring any three (3) of the camera locations. (See Note #3).	Continuous	Required for monitoring of spacecraft checkout, test, hazardous servicing, of the Reaction Control System, static fire, umbilical drop, and launch.
2	HSQ	Launch Complex 40: Two (2) cameras to view the over all launch vehicle, payload and existing complex area. (See Note #2).	Two (2) 17" TV monitors to be mounted in the Payload Control Room (Rm #227) racks.	Continuous	Required for monitoring of the over all launch vehicle, Payload and Complex areas by the personnel in the Payload Control Room.

NOTE: 1. This requirement will be satisfied by use of existing Camera #13, located on Level #12 of the UT.
2. This requirement will be satisfied by use of existing cameras located on Complex 40.
3. Video recording of a single, but selected channel mentioned in Item #1, above, is required at the AFETR TV central during launch operations and for major pad tests. Playback capability to the Payload Control Room (Rm 227) in the VIB is required. The video tapes will be made available to the Range User.

R

TIMING

1. SECURITY CLASSIFICATION	2. PAGE	440
(U)	3. DATE	1 April 66
	4. REPLACES PAGE(S) DATED	440

5. PROGRAM TITLE	6. PROGRAM REQUIREMENT CODE	7. SYSTEM CODE	8. CONTRACTOR
TIII SLS/MOL-HSQ	3900		MAC

10. ITEM NO.	11. TEST CODE	12. TIMING SIGNAL: TIMING CODES & REP. RATES *	12. TIMING SIGNAL: CORRELATION ACCURACY ±	13. LOCATION OF RANGE END INSTRUMENT: STATION	BLDG. HGR OR BH. NO	ROOM NO.	RACK NO.	AMBIENT TEMP °F	SPACE AVAILABLE	QTY	14. RANGE USER'S RECORDING INSTRUMENT OR TRANSDUCER: TYPE & MODEL	RECORDING SPEED-CM/S	INPUT VOLTAGE-V	INPUT Z - OHMS	FREQUENCY RESPONSE-CPS	15. SEE NOTE	
1.	C-C	A1, B1, D5	2MS	VIB	(T/M Van)						TM Ground Station					1	
2.	C-C	A1, B1	2MS	VIB							VIB Room 227, (Back-up capability)						
3.	C-C	B1, D5	2MS	VIB	OGE Van #1						Timing Distribution Panel					1	
4.	C-C	B1 D5	2MS	AGE	Bldg. OGE Van #1						Timing Distribution Panel					1	
5.	C-C	A1, B1	2MS	MST	White Room						White Room (Back-up capability)						R
											The following describes equipment						
											utilizing timing from the above dis-						
											tribution panel. MAC will supply						
											lines to carry timing to individual						
											units within the trailers. These						
											items are:						
1A	C-C	A1, B1		TM	Van		196-199	75°		4	Brush Mark 200 Recorders					2	
1B	C-C	A1, B1		TM			196-199	75°		2	Brush RE 3610-60 Recorders					2	
1C	C-C	D5		TM			200	75°		1	Time Code Translator		5-6		1000 cs		
1D	C-C	A1,B1,D5		TM	Van		202-203	75°		2	Ampex 600 Tape Recorders		5-6		1000 cs	2	
2A	C-C	A1,B1		VIB	Rm.227			75°			(Back-up capability for recorders if installed)						R
3A	C-C	B1	7MS	OGE	Van #1		235	75°		2	Brush MK-200 Recorder					2	
3B	C-C	D5	2MS	OGE	Van#1		39	75°		1	CEC Oscillograph		5-6		1000 cs		
3C	C-C	B1	2MS	OGE	Van#2		235B	75°		2	Brush MK-200					2	
3D	C-C	D5	2MS	OGE	Van #2		32	75°		1	CEC 5-119P4-50		5-6		1000 cs		
3E	C-C	B1	2MS	OGE	Van #2		36	75°		3	E-A Event 620T Recorder					2	
3F	C-C	B1	2MS	OGE	Van #2		35	75°		1	Brush RD 268200					2	
3G	C-C	B1		OGE	Van #1		44	75°		1	TI Model F3W, Recorder					2	
3H	C-C	B1		OGE	Van #2		236,239	75°		2	E-A Event 620 T Recorder					2	
5A	C-C	A1, B1		White Room				75°			(Back-up capability for portable recorders)						R
					NOTE 1: Items 1,3 and 4 to have disconnect capability. OGE Vans #1 & 2 will be in the VIB for													R
					Complex validation, then moved to the AGE Bldg.													R
					NOTE 2: The range should provide timing code in the form of a switch closure. (A1, B1).													R

A1-1PP 11 DIGIT BINARY WIDTH CODE	D1-100 PPS 17 DIGIT BINARY WIDTH CODE	PR 28-10 PPS, CONTINUOUS REP. RATE
B1-1PPS 17 DIGIT BINARY WIDTH CODE	D7-D1 WITH 1000 PPS (NEON)	PR 29-20 PPS, CONTINUOUS REP. RATE
B3-B1 AMPLITUDE MODULATED	D8-D1 AMPLITUDE MODULATED	PR 33-100 PPS, CONTINUOUS REP. RATE
C1-20 PPS, 17 DIGIT BINARY WIDTH CODE	PR 4-1 PPM, CONTINUOUS REP. RATE	PR 37-1000 PPS, CONTINUOUS REP. RATE
C8-C1 WITH 100 PPS (NEON)	PR 19-1 PPS, CONTINUOUS REP. RATE	SW 4-1000 CPS, CONTINUOUS SINEWAVE

VISUAL COUNTDOWN AND STATUS INDICATORS

1. SECURITY CLASSIFICATION	2. PAGE	460
(U)	3. DATE	1 April 66
	4. REPLACES PAGE(S) DATED	460

5. PROGRAM TITLE	6. PROGRAM REQUIREMENT CODE	7. SYSTEM CODE	8. CONTRACTOR
TIII SLS/MOL-HSQ	3900		MAC

10. ITEM NO.	11. TEST CODE	12. INFORMATION TO BE DISPLAYED	13. PERIOD OF OPERATION FROM MIN.	FROM SEC.	TO MIN.	TO SEC.	TOTAL IN MIN.	14. INDICATORS QTY.	TYPE MOUNTING	15. LOCATION OF VISUAL INDICATOR STATION	BLDG HGR OR BH NO.	ROOM NO.	POSITION OR PANEL TITLE	16. SEE NOTE
1	HSQ	Range Count & Test of Spacecraft	Full	Cnt.			600	1	B		VIB		TM Van at VIB	A,B,C
2	HSQ	Range Count	Full	Cnt.			600	1	B		VIB	227	Payload Control Room	D
3	HSQ	Range Count & Test of Spacecraft	Full	Cnt.			600	1	B		VIB	227	Payload Control Room	C
4	HSQ	Range Count & Test of Spacecraft	Full	Cnt.			600	1	B				OGE Van 1, P-40	A,B,C
5	HSQ	Range Count & Test of Spacecraft	Full	Cnt.			600	1	B				OGE Van 2, P-40	A,B,C
6	HSQ	Range Count & Test of Spacecraft	Full	Cnt.			600	3	B		P-40		Environmental Control Enclosure	C

NOTE: A - Must have disconnect capability.
B - One each provided indicator is visible from distance of about 50 ft.
C - MAC provided time generator, Countdown Control Indicator and interconnecting cable. The same indicators are used by switching MAC count system and range count.
D - Indicator will show range count only.

AFMTC FORM 34J JUN 61 PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE.

NRD

1. SECURITY CLASSIFICATION	9. REVISION NO.
(U)	1

DATA HANDLING SYSTEM

1. SECURITY CLASSIFICATION	2. PAGE	3. DATE	4. REPLACES PAGE(S)
(U)	470-5	18 May 1966	New

5. PROGRAM TITLE	6. PROGRAM REQUIREMENT CODE	7. SYSTEM CODE	8. CONTRACTOR/CONTRACT NUMBER	DATED
TIII SLS/MOL-HSQ	3900		MC	

10. ITEM NO.	11. TEST CODE	12. DESCRIPTION OF DATA HANDLING SYSTEM
1	HSQ	Carnawan - Telemetry Equipment - Ascent T/M for sim. lab & experiments PCM/FM, 1 station
2	ZX	PAFB - Telemetry Equipment - On orbit T/M for sim. lab & experiments Antigua PAM/FM Acquisition over 6 day period to be determined Ascension estimated 14/4 min. aquisition/day Carnawan Hawaii Pt. Arguello

AFMTC FORM JUN 61 34H-2

NRD

1. SECURITY CLASSIFICATION	9. REVISION NO.
(U)	5- 1

COMMAND CONTROL

1. SECURITY CLASSIFICATION: UNCLASSIFIED	2. PAGE 486		
	3. DATE 3 January 1966		
5. PROGRAM TITLE: TIII SLS/MOL-HSQ	6. PROGRAM REQUIREMENT CODE 3900	7. SYSTEM CODE	8. CONTRACTOR: MC
	4. REPLACES PAGE(S)		DATED

10. ITEM NO.	11. TEST CODE	12. COMMAND FUNCTION	13. TIME	14. FUNCTION CODE	15. PURPOSE AND REMARKS/SPECIAL INSTRUCTIONS
1	HSQ	a) MOL/HSQ Address b) Low Power T/M On c) Propellant Gauging On	LAB above horizon	Tones 4 + 10	The purpose of the command control system is to permit various modes of operation for the data acquisition system and certain experiments. These modes are ground controlled and are in some cases based on real time T/M readout at the appropriate ground station.
2	HSQ	Recorder to playback mode	T/M carrier received on Gnd. Approx 10-60 sec after command #1	Tones 6 + 7	
3	HSQ	a) Recorder to record mode b) T/M Off c) Prop Gauge Off	1 min before dropping to horizon	Tones 6 + 8	The MOL/HSQ address code of tones 4 + 10 must precede each execute command (2 through 12) and each execute command must be sent with 15 seconds of the address code. The address code and each execute command must be transmitted for a minimum duration of 2 seconds.
4	HSQ	Spare	-	Tones 6 + 13	
5	HSQ	a) Fuel Cell On b) Fuel Cell Purge On	First PAFB Pass. T/M Readout	Tones 6 + 14	
6	HSQ	Fuel Cell Purge Off	Fixed Time after Command #5	Tones 7 + 8	
7	HSQ	Orbis Low On		Tones 7 + 13	
8	HSQ	Orbital Data Sys On	Hi Power T/M fails to come on	Tones 7 + 14	
9	HSQ			Tones 7 + 15	
10	HSQ	a) Hi Power T/M On b) Low Power T/M Off	Lo Power T/M fails to come on	Tones 8 + 13	

COMMAND CONTROL

1. SECURITY CLASSIFICATION: UNCLASSIFIED	2. PAGE 400.1		
	3. DATE 3 January 1966		
5. PROGRAM TITLE: TIII SLS/MOL-HSQ	6. PROGRAM REQUIREMENT CODE: 3900	7. SYSTEM CODE:	8. CONTRACTOR: MC
	4. REPLACES PAGE(S)		DATED

10. ITEM NO.	11. TEST CODE	12. COMMAND FUNCTION	13. TIME	14. FUNCTION CODE	15. PURPOSE AND REMARKS/SPECIAL INSTRUCTIONS
11	HSQ	Orbis Low Off	Fixed Time after Command #7	Tones 8 + 14	
12	HSQ	Fuel Cell Off		Tones 13 + 14	
13	HSQ	Orbital Data Sys Off		Tones 13 + 15	
14	HSQ	Spare		Tones 6 + 15	
15	HSQ	Spare		Tones 14 + 15	
16	HSQ	Redundant # 1		Tones 4 + 10	

AFMTC FORM NOV 61 34H-1

1. SECURITY CLASSIFICATION: UNCLASSIFIED

9. REVISION NO. 1

PROPELLANTS, GASES AND CHEMICALS
(FOR MISSILE OR TEST VEHICLE)

1. SECURITY CLASSIFICATION	2. PAGE	3. DATE	4. REPLACES PAGE(S)
U	530	1 April 1966	530 DATED

5. PROGRAM TITLE	6. PROGRAM REQUIREMENT CODE	7. SYSTEM CODE	8. CONTRACTOR
TIII SLS/MOL-HSQ	3900		MAC

10. ITEM NO.	11. NAME/DESIGNATION	12. MILITARY SPECIFICATION NUMBER	13. UNITS: TONS	SCF	POUNDS	GALLONS	x 10 x	14. RUF OR RF	15. QUANTITY REQUIRED/QUARTER: FY	CY	FY 66		FY 67		FY 68		FY
											CY 65		CY 66		CY 67		CY
									1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
1	DEIONIZED WATER	MMS-606			x		0	RF			45	45												
	DISTILLED WATER				x		0	RF					None											
	ETHYL ALCOHOL				x		0	RF					None											
	FLUORINE (LIQUID)			x																				
2	HELIUM	MMS-607	x			X	0	RF			5													
	HYDRAZINE Monomethyl(MMH)	MIL-P-27404			x	X	0	RF			50													
	HYDROGEN (LIQUID)		*			X	0						None											
	HYDROGEN (GAS)			x			0						None											
	HYDROGEN PEROXIDE - 35%				x		0						None											
	HYDROGEN PEROXIDE - 90%				x		0						None											
	IRFNA				x		0																	
3	NITROGEN - LIN (LIQUID)	MIL-P-27401B	x			X	0	RF		1500														
4	NITROGEN - GAN (GASEOUS)	MIL-P-27401B		x			2	RF		20														
5	NITROGEN TETROXIDE	MIL-P-26539A Amend #3			x	X	0	RF			45.0													
	OXYGEN - LOX (LIQUID)		x			X	0						None											
	RP-1				x		0																	
	UDMH				x		0																	
6	Argon	MMS-601				X	0	RF			6													
7	Freon	Interim Fed. or Spec. BB-G-00310				X	0			1500														
8	Isopropyl Alcohol	Reagent Grade				X	0	RF		1500														
9	Chlorothene (NU)					X	0	RF			25													
10	Air (Liquid)	MMS-N-705				X	0				400													
11	Oxygen (Gaseous)	MMS-603					X 0	RF			5													
12	Coolant fluid					X	0				10													

NOTE: * Units in "K-Bottles"

AFMTC FORM 35B NOV 62 | PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE.

NRD

16. TELEPHONE NO.	17. SECURITY CLASSIFICATION	18. REVISION NO.
	(U)	1

Fuel Cell Exp

PROPELLANTS, GASES AND CHEMICALS
(FOR MISSILE OR TEST VEHICLE)

1. SECURITY CLASSIFICATION: (U)
2. PAGE: 530.1
3. DATE: 18 May 1966
4. REPLACES PAGE(S): DATED

5. PROGRAM TITLE: TIII SLS/MOL-HSQ
6. PROGRAM REQUIREMENT CODE: 3900
7. SYSTEM CODE:
8. CONTRACTOR: MC

10. ITEM NO.	11. NAME/DESIGNATION	12. MILITARY SPECIFICATION NUMBER	13. UNITS: TONS	SCF	POUNDS	GALLONS	K-BOT	10 X	14. RUF OR RF	15. QUANTITY REQUIRED/QUARTER: FY 66 CY 66 (1 2 3 4)	FY 67 CY 66 (1 2 3 4)	FY CY (1 2 3 4)	FY CY (1 2 3 4)	FY CY (1 2 3 4)	FY CY (1 2 3 4)
	DEIONIZED WATER					X									
	DISTILLED WATER					X									
	ETHYL ALCOHOL					X									
	FLUORINE (LIQUID)				X										
	HELIUM			X											
	HYDRAZINE				X										
	HYDROGEN (LIQUID)		X												
1	HYDROGEN (GAS) *			X			X				4 (44 pounds)				
	HYDROGEN PEROXIDE - 35%				X										
	HYDROGEN PEROXIDE - 90%				X										
	IRFNA				X										
	NITROGEN - LIN (LIQUID)		X												
2	NITROGEN - GAN (GASEOUS)			X			X				1				
	NITROGEN TETROXIDE				X										
	OXYGEN - LOX (LIQUID)		X												
	RP-1					X									
	UDMH				X										
3	Oxygen (Gas) *						X				3 (60 pounds)				

*Each k-bottle shall be evacuated to 0.15 psia for 2 hrs prior to loading. Then loaded to 2215 + 50 psi after temperature stabilization is attained.

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10. TELEPHONE NO.

1. SECURITY CLASSIFICATION: (U)

9. REVISION NO.: 1

HTTC

PROPELLANTS, GASES AND CHEMICALS
(FOR MISSILE OR TEST VEHICLE)

1. SECURITY CLASSIFICATION: UNCLASSIFIED
2. PAGE: 530.2
3. DATE: 18 May 1966
4. REPLACES PAGE(S):
DATED

5. PROGRAM TITLE: TIII SLS/MOL-HSQ
6. PROGRAM REQUIREMENT CODE: 3900
7. SYSTEM CODE:
8. CONTRACTOR: MC

10. ITEM NO.	11. NAME/DESIGNATION	12. MILITARY SPECIFICATION NUMBER	13. UNITS: TONS	SCF	POUNDS	GALLONS	K-Sort	X 10 X	14. RUF OR RF	15. QUANTITY REQUIRED/QUARTER: FY 66 CY 66 1	2	FY 67 CY 3	4	CY 1	2	FY CY 3	4	CY 1	2	FY CY 3	4	CY 1	2	FY CY 3	4	FY
	DEIONIZED WATER				X																					
	DISTILLED WATER				X																					
	ETHYL ALCOHOL				X																					
	FLUORINE (LIQUID)			X																						
	HELIUM		X																							
	HYDRAZINE			X																						
	HYDROGEN (LIQUID)				X																					
	HYDROGEN (GAS)	X																								
	HYDROGEN PEROXIDE - 35%			X																						
	HYDROGEN PEROXIDE - 90%			X																						
	IRFNA			X																						
	NITROGEN - LIN (LIQUID)	X																								
1	NITROGEN - GAN (GASEOUS)	Ref 540.5		X			X		RF			1														
	NITROGEN TETROXIDE				X																					
	OXYGEN - LOX (LIQUID)	X																								
	RP - 1					X																				
	UDMH				X																					

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16. TELEPHONE NO.

1. SECURITY CLASSIFICATION: (U)

9. REVISION NO.: 1

MISCELLANEOUS LUBRICANTS, HYDRAULIC FLUIDS, PRESERVATIVES, ETC.

1. SECURITY CLASSIFICATION	2. PAGE 532.
U	3. DATE 1 April 1966
	4. REPLACES PAGE(S)
	DATED

5. PROGRAM TITLE	6. PROGRAM REQUIREMENT NO.	7. SYSTEM CODE	8. CONTRACTOR
TIII SLS/MOL-HSQ	3900		MAC

10. ITEM NO.	11. NAME / DESIGNATION	12. MILITARY SPECIFICATION NUMBER	13. UNITS (TONS, SCP, POUNDS, GALLONS, X 10 X)	14. RUF OR RF	15. QUANTITY REQUIRED / QUARTER															
					FY 66				FY 67				FY				FY			FY
					CY 66				CY				CY				CY			
					1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
1	Grease (Wheel Bearing)	MIL-C-3545A	POUNDS X 0	RF			5													
2	Grease Lub (Gen. Purpose)	MIL-L-7111	POUNDS X 0	RF			5													
3	Grease Low & High Temp. (GLT)	MIL-G-3278	POUNDS X 0	RF			5													
4	Versilube F-50 (GE) Silicone		GALLONS X 0	RF			½													
5	Grease - Silicone (G-300)		GALLONS X 0	RF			½													
6	MSC 198 Coolant (Monsanto Chemical Co)	MMS-602B	GALLONS X 0	RF			20													
7	Lacquer Thinner		GALLONS X 0	RF			10													
8	Archlor 1254		GALLONS X 0	RF			10													

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1. SECURITY CLASSIFICATION	9. REVISION NO.
(U)	1

CHEMICAL AND PHYSICAL ANALYSIS

1. SECURITY CLASSIFICATION: (U)			2. PAGE 540.
			3. DATE 1 April 1966
5. PROGRAM TITLE: TIII SLS/MOL-HSQ	6. PROGRAM REQUIREMENT NO. 3900	7. SYSTEM CODE	8. CONTRACTOR: MAC
			4. REPLACES PAGE(S) — 540 — DATED

10. ITEM NO.	11. TEST CODE	12. NAME/DESIGNATION	13. MIL. SPEC. NO.	14. DETAILS OF ANALYSIS REQUIRED	RSS PROP	OTHER	15. SAMPLING TIMES
1	HSQ	Gaseous Helium	MMS607 PS 12302, PS 20530 GCE 01-009-8 PB 10-81				1. When trailers are filled.
				1. Percentage purity	99.95 min.	99.95 min.	
				2. Hydrogen	10 ppm max	no requirement	
				3. Oxygen	15 ppm max	no requirement	
				4. Nitrogen	50 ppm max	no requirement	
				5. Carbon Monoxide	(15 ppm)	5.0 ppm max	
				6. Carbon Dioxide	(combined)	5.0 ppm max	
				7. Hydrocarbons, Combined (Methane equivalent)	(maximum)	no requirement	
				8. Dew Point	-76 Deg F	0.05 mg/l max Moisture content at the Dew Point.	
				PARTICULATE (if specified by authorizing document)			
				10-25 microns	100/SCF Max	40/3SCF max	
				50-100 microns	5/SCF max	5/3SCF max	
				Larger than 300 microns	None/3SCF	None/3SCF	
				25-50	0/SCF		
				100-300	10/SCF		

AFMTC FORM 35E OCT 62 PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

NRD

1. SECURITY CLASSIFICATION: (U)	9. REVISION NO. MTS 1

CHEMICAL AND PHYSICAL ANALYSIS

1. SECURITY CLASSIFICATION	2. PAGE 540.1
U	3. DATE 1 April 1966
	4. REPLACES PAGE(S) 540.1 DATED

5. PROGRAM TITLE	6. PROGRAM REQUIREMENT NO.	7. SYSTEM CODE	8. CONTRACTOR
TIII SLS/MOL-HSQ	3900		MAC

10. ITEM NO.	11. TEST CODE	12. NAME/DESIGNATION	13. MIL. SPEC. NO.	14. DETAILS OF ANALYSIS REQUIRED		15. SAMPLING TIMES
2	HSQ	Nitrogen - GAN (Gaseous)	MIL-P-27401B PS 12302, 20530 PB 10-81 GCE 01-009-9	1. Percentage purity	99.5% min	1. When Dewar is loaded
				2. Total Hydrocarbons		
				By weight as carbon	25 ppm max	
				By volume as Methane	58.3 ppm max	
				3. Moisture Content	.02 mg/l(-63 Deg F Dew Point)	
				PARTICULATE COUNT *		
				10-25 microns	100/SCF max	
				25-50 microns	200/SCF max	
				50-100 microns	15/SCF max	
				100-300 microns	10/SCF max	
				300 microns	0/SCF max	
				4. N_2O_4 content	20ppm max	
				5. MMH content	20ppm max	
				6. Total filterable solids	1.0 mg/SCF max	
3	HSQ	Argon (Gaseous)	MMS 601 PS 12302, 20530 GCE 01-009-10 PB 10-81	1. Percentage purity	99.997% min	As required per applicable operation requirements document
				2. Nitrogen	13 ppm max	
				3. Oxygen	7 ppm max	
				4. Hydrogen	5 ppm max	
				5. Dew Point	-80 Deg F	
				6. Particulate: *		
				10-25 microns	100/SCF	
				50-100	5/SCF	
				Larger than 300 microns	None/3 SCF	
				25-50 microns	20/SCF max	
				100-300	1/SCF max	
				7. Total Particulate wt.	1.0 mg/SCF max.	
				* If specified by the accompanying GCE		

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1. SECURITY CLASSIFICATION	9. REVISION NO. 1
(U)	MT 5y

CHEMICAL AND PHYSICAL ANALYSIS

1. SECURITY CLASSIFICATION	2. PAGE 540.2
U	3. DATE 1 April 1966
	4. REPLACES PAGE(S) 504.2
	DATED

5. PROGRAM TITLE	6. PROGRAM REQUIREMENT NO.	7. SYSTEM CODE	8. CONTRACTOR
TITAN III SLS/MOL-HSQ	3900		MAC

10. ITEM NO.	11. TEST CODE	12. NAME/DESIGNATION	13. MIL. SPEC. NO.	14. DETAILS OF ANALYSIS REQUIRED		15. SAMPLING TIMES
4	HSQ	Nitrogen Tetroxide	MIL-P-26539A Amend#1 (N_2O_4) PS 20530 PB 10-81 MIL-P-27408	1. N_2O_4 Total Assay 2. Water equivalent 3. Chloride as Nitrosyl Chloride 4. Particulate Wt. 5. Nitric Oxide % by wt. 6. Percentage N_2O_4 purity PARTICULATE: * 10-25 microns 25-50 microns 50-100 microns Larger than 300 microns 100-300 microns	99.5% min 0.1% max 0.08% max 10.0 mg/Liter max 0.45% min. 0.85% max. 99.5% less % N.O. min 100/100 ml max 20/100 ml max 5/100 ml max none/100 ml max 1/100 ml max	1. Upon receipt 2. Every 30 days 3. Before use (2 days) 4. After loading
5	HSQ	Monomethyl Hydrazine (MMH)	MIL-P-27404, PS20530 PB 10-81 GCE 01-009-12	1. Percentage purity 2. Water plus soluble impurities 3. Density at 77 Deg F (25 Deg F) in grams/milliter 4. Transmittancy (percent) PARTICULATE COUNT* 10-25 microns 25-50 microns 50-100 microns Larger than 300 microns 100-300 microns Total Filterable Solids *If specified by the accompanying GCE	98.0 2.0% max 0.872 ± 0.004 90 min. 100/100 ml max 20/100 ml max 5/100 ml max None/100 ml max 1/100 ml max 1.0 mg/100 ml. max.	1. Upon receipt 2. 1 sample from each drum monthly 3. Before use (2 days) 4. After loading

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NRD

1. SECURITY CLASSIFICATION	9. REVISION NO. MT 6
(U)	1

Spacecraft	CHEMICAL AND PHYSICAL ANALYSIS			1. SECURITY CLASSIFICATION (U)	2. PAGE 340. -3 3. DATE 18 May 1966 4. REPLACES PAGE(S) — — — — — — DATED
5. PROGRAM TITLE TIII SLS/MOL-HSQ		6. PROGRAM REQUIREMENT NO. 3900	7. SYSTEM CODE	8. CONTRACTOR MAC	

10. ITEM NO.	11. TEST CODE	12. NAME/DESIGNATION	13. MIL. SPEC. NO.	14. DETAILS OF ANALYSIS REQUIRED	15. SAMPLING TIMES
6	HSQ	Demineralized Water	MMS 606, PS12302, 20530, PB 10-81	1. Filterable solids 1 mg/100 ml max Particulate 10-25 microns 100/100 ml max 25-50 microns 20/100 ml max 50-100 microns 5/100 ml max 100-300 microns 1/100 ml max 300 up none Total solids Info only Specific Conductance Info only	1 as required per applicable operation requirements document.
7	HSQ	Freon MF (Trichloromonofluoro-methane)	Dupont Specifications Filtered through 2 Micron Filter	Appearance - clear, colorless liquid Boiling PT - 74.8 Deg F at 1 ATM Boiling Range - (5 to 85% distilled) - 0.5 Deg F Soluble Residue (ppm by wt., max) - 2 Chloride Ion (ppm wt., max) - Nil Moisture content (ppm by wt., max) -10	One time requirement-two week notice

CHEMICAL AND PHYSICAL ANALYSIS

Fuel Cell Exp

1. SECURITY CLASSIFICATION	2. PAGE 540.4
(U)	3. DATE 18 May 1966
	4. REPLACES PAGE(S) — — — — — — — — — — DATED

5. PROGRAM TITLE	6. PROGRAM REQUIREMENT NO.	7. SYSTEM CODE	8. CONTRACTOR
TIII SLS-MOL-HSQ	3900		MC

10. ITEM NO.	11. TEST CODE	12. NAME/DESIGNATION	13. MIL. SPEC. NO.	14. DETAILS OF ANALYSIS REQUIRED		15. SAMPLING TIMES
1	HSQ (K)	Gaseous Hydrogen		1. Percent Purity	99.99% Min	Prior to loading K-bottles
				2. Oxygen	10 PPM Max	
				3. Water	10 PPM Max	
				4. Carbon Bearing Gases	10 PPM Max	
				5. Inert Gases	60 PPM Max	
				6. Nitrogen	150 PPM Max	
2	HSQ (K)	Gaseous Oxygen		1. Percent Purity	99.99% Min	Prior to loading K-bottles
				2. Water	10 PPM Max	
				3. Carbon Bearing Gases	10 PPM Max	
				4. Inert Gases	45 PPM Max	
				5. N_2O	2 PPM Max	

Total filterable solids shall not exceed 2.5 milligrams per 100 grams of gas. Partical size shall be in accordance with the following:

	Size (Micron)	Max No/100 gram gas
Solids	0-300	Unlimited
	300-500	10
	500-1000	2
	over 1000	0
Filters	0-750x25	Unlimited
	750-2000x25	20
	2000-6000x40	2
	over 6000	0

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1. SECURITY CLASSIFICATION	9. REVISION NO.
(U)	MTF 1

HTTC

CHEMICAL AND PHYSICAL ANALYSIS

1. SECURITY CLASSIFICATION: UNCLASSIFIED

2. PAGE 540.5

3. DATE 18 May 1966

4. REPLACES PAGE(S) None DATED

5. PROGRAM TITLE: TIII SLS/MOL-HSQ

6. PROGRAM REQUIREMENT NO. 3900

7. SYSTEM CODE

8. CONTRACTOR

10. ITEM NO.	11. TEST CODE	12. NAME/DESIGNATION	13. MIL. SPEC. NO.	14. DETAILS OF ANALYSIS REQUIRED	15. SAMPLING TIMES
1	HSQ (CW)	Gaseous Nitrogen		a) Total filterable solids - 2.5 milligrams/100 gm.gas b) Solid particles & fibers:	None

	Size (microns)	#/100 gms. of gas
solids	0 - 300	unlimited
	300 - 500	10
	500 - 1000	2
	Over 1000	0
fibers	0 - 750 x 25	unlimited
	750 - 2000 x 25	20
	2000 - 6000 x 40	2
	Over 6000	0

AFMTC FORM 35E OCT 62 PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE

NRD

1. SECURITY CLASSIFICATION (U)

9. REVISION NO. 1

MT [illegible]

DOCUMENTARY PHOTOGRAPHY

1. SECURITY CLASSIFICATION	2. PAGE 570
U	3. DATE 1 April 1966
	4. REPLACES PAGE(S) 570
	DATED

5. TEST PROGRAM	6. PROGRAM REQUIREMENT NO.	7. SYSTEM CODE	8. CONTRACTOR
TIII SLS/MOL-HSQ	3900		MAC

10. ITEM NO.	11. TEST CODE	12. FILM SIZE MM	12. FILM TYPE	13. ITEM TO BE VIEWED OR COVERED	14. LOCATION	15. PURPOSE AND REMARKS
1	HSQ	16	Color	Spacecraft/Component arrival at PAFB or CKAFS by airlift. Preparation for unloading, unloading operation, and visual inspection performed on the spot.	CKAFS/PAFB	For historical record and evaluation of all events and operations. Show all special equipment used, receiving/unloading procedures, equipment damage. Suggest one camera for main story and a second camera for inter-cuts, cutaway and insert shots.
2		4X5 Stills	Color B&W	Same as Item 1		
3		16	Color	Spacecraft/component receiving inspection, assembly system installation, ordnance testing, miscellaneous hangar checkouts and modifications, and vehicle roll-out.	Hangar L	For historical record and evaluation of all events and operations. Utilize "establishing"shots, cutaways, and insert shots.
4		4X5 Stills	Color B&W	Same as Item 3		
5		16	Color	Gemini vehicle, including overall exterior and close ups of the heat shield.	Hangar L	For comparison with post-flight condition.
6		4X5 Stills	Color B&W	Same as Item 5		
7	HSQ	16	Color	Spacecraft arrival at pad, erection, mating to launch vehicle/lab., unbilical hookup, and related special tests/operations.	Complex 40	For historical record and evaluation of operations. Desire complete film sequences of each individual operation.

AFMTC FORM NOV 62 35H

1. SECURITY CLASSIFICATION	9. REVISION NO.
(U)	MT 7-66 1

DOCUMENTARY PHOTOGRAPHY

1. SECURITY CLASSIFICATION	2. PAGE 570.1
(U)	3. DATE 1 April 1966
	4. REPLACES PAGE(S) New Page
	DATED

5. TEST PROGRAM	6. PROGRAM REQUIREMENT NO.	7. SYSTEM CODE	8. CONTRACTOR
TIII SLS/MOL-HSQ	3900		MAC

10. ITEM NO.	11. TEST CODE	12. FILM SIZE MM	12. FILM TYPE	13. ITEM TO BE VIEWED OR COVERED	14. LOCATION	15. PURPOSE AND REMARKS
8	HSQ	4x5 Stills	Color B & W	Same as Item 7		
9		16	B & W	Edited film report of launch, showing miscellaneous spacecraft preparation, clearing pad, LCC interior during countdown, and actual launch	Complex 40/VIB	Quick look orientation, and to illustrate problems affecting program scheduling.
10		16	Color	Launch area, centered on Spacecraft. Overall views and closeups of entire vehicle/Spacecraft on stand.	Complex 40	Historical record. Desire four views--cameras positioned for best coverage.
11		4x5 Still	Color	Same as Item 10		
12		16	Color	Miscellaneous views of last minute preparations around launch area and in LCC.	Complex 40/VIB	Historical record and coverage of "emergency" situations. Desire inserts, cutaways, and short sequences of specific operations/events. May be satisfied by item 10, page 220.2, PRD 3700.
13		4x5 Still	Color B & W	Same as Item 12		
14		70	Color	Tracking Camera--Entire vehicle to fill frame at acquisition (first acquisition to limit of tracking)	Launch Area	May be satisfied by item 17, page 220.3, PRD 3700.
15		70	Color	Fixed Camera--Entire vehicle to fill frame (T-2 seconds to T+15 seconds).	Launch Area	To document lift-off.
16	HSQ	16	Color	Tracking--entire vehicle coverage (first acquisition to film run-out or T+120 seconds)	Launch Area	Desire three views. Suggest one 10" lens, one 20" lens, and one 20" lens. Longer focal length tracks may be obtained from Engineering Sequential and ROTI tracking items where required. Item 29, page 570.3, PRD 3700 may partially satisfy this requirement.

DOCUMENTARY PHOTOGRAPHY

1. SECURITY CLASSIFICATION	2. PAGE 570.2
U	3. DATE 1 April 1966
	4. REPLACES PAGE(S)
	DATED New Page

5. TEST PROGRAM	6. PROGRAM REQUIREMENT NO.	7. SYSTEM CODE	8. CONTRACTOR
TIII SLS/MOL-HSQ	3900		MAC

10. ITEM NO.	11. TEST CODE	12. FILM SIZE MM	12. FILM TYPE	13. ITEM TO BE VIEWED OR COVERED	14. LOCATION	15. PURPOSE AND REMARKS
17	HSQ	16	Color	Launch vehicle and Spacecraft as viewed from a "Chase Aircraft" during early ascent portions of flight.	ETR Station 1	Evaluation of early flight.
18		16	Color	Spacecraft recovery operations, including descent (if possible) attachment of flotation gear, attachment of slings, and removal from water.	Recovery Area	Document procedures/problems.
19		4x5 Stills	Color B&W	Same as Item 18.		
20		16	Color	Arrival, inspection, transporting and testing of recovered spacecraft.	ETR Station 12	Engineering evaluation of flight effects.
21	HSQ	4x5 Stills	Color B&W	Same as Item 20.		
				NOTE: Requirements listed on these pages are general requirements. Detailed requirements will be submitted on individual AFMTC Form 66's prior to need dates.		

NORMAL RECOVERY			1. SECURITY CLASSIFICATION: U	2. PAGE 710.2 3. DATE 1 April 1966
5. PROGRAM TITLE: TIII SLS/MOL-HSQ	6. PROGRAM REQUIREMENT CODE 3900	7. SYSTEM CODE	8. CONTRACTOR: MAC	4. REPLACES PAGE(S) 710.2 DATED
10. SKETCHES, DIAGRAMS, ETC.				TEST CODE: HSQ

Fluorescein Sea Marker

Dye marker will be located in a well in the bottom of the cylindrical section of the spacecraft. Upon landing of the spacecraft, the dye marker will be submerged and will leave a green-yellow streak in the wake of the spacecraft. The width and density of the dye marker streak are dependent upon wind and sea conditions. The lifetime of the dye marker will be approximately two to six hours, depending upon the sea state.

Hazards and Remarks

The Gemini spacecraft may contain hazardous pyrotechnics, hypergolic fuels and numberous high pressure systems. Detailed descriptions of these hazards as well as prescribed handling procedures will be furnished at a later date. Lifting slings, flotation safety devices and other specialized retrieval and handling gear will be provided by the Range User for this operation. Gemini spacecraft specialist will be provided by the Range User in the recovery area to perform the required post retrieval spacecraft operations.

Spacecraft Return After Retrieval

Since the location, retrieval, and evaluation of both the physical damage to the spacecraft heat shield and on-board telemetry data is essential to the accomplishment of primary mission objectives, the return of the spacecraft to CKAFS via aircraft is required within 6 calendar days of recovery. The aircraft should be capable of accommodating the spacecraft, the spacecraft handling equipment, the de-servicing kit, and approximately ten MAC personnel.

Recovery Operations Requirements

1. Flotation collar must be installed within 60 mins. (page 710, item 2), after impact.
2. Ship support, including RIS, capable of retrieving the REM from any impact point in the planned recovery area within 6 to 8 hours. (see pages 820 and 820.1)

Recovery Area - The nominal impact point and flight azimuth of the REM are identified on page 145. The three sigma footprint area or recovery zone is expected to be rectangular in shape and 320 nautical miles long in a downrange direction and 22 nautical miles wide in a cross range direction. The center of the rectangle is 16.8 n. miles downrange of the impact point and 1.7 nautical miles cross range from the impact point in the direction of Ascension Island.

SALVAGE AND DISPOSITION

1. SECURITY CLASSIFICATION	2. PAGE 720
(U)	3. DATE 1 April 1966
	4. REPLACES PAGE(S) 720 DATED

5. PROGRAM TITLE	6. PROGRAM REQUIREMENT CODE	7. SYSTEM CODE	8. CONTRACTOR
TIII SLS/MOL-HSQ	3900		MAC

10. ITEM NO.	11. TEST CODE	12. COMPONENT	13. WEIGHT - POUNDS	14. LOCATION	15. PURPOSE, DISPOSITION, SPECIAL INSTRUCTIONS AND HAZARDS
1	HSQ	Tape Recorder, PCM	13.9	Lower center console cabin.	Retrieve tape recorder after an abort or catastrophic failure on the pad. Verify that all power is off. No retrieval attempt should be made until all danger of fire and explosion has been eliminated before attempting access to the interior of the spacecraft. The tape will provide information for analysis of the cause and/or effect of the failure.
2		Tape Recorder, FM Analog	10.8	Right Hand Pallet.	Retrieve tape recorder after an abort or catastrophic failure on the pad. These tapes will provide information for the analysis of the cause and/or effect of the failure. Special instructions and hazards same as Item 1.
3	HSQ	Over-all Spacecraft	Variable (up to 6000 pounds)	N/A	In the event of a mid-air explosion or separation of spacecraft sections on or in the immediate vicinity of the pad, work should be started as soon as practical to locate and collect as much of the spacecraft as possible. This search should be undertaken after emergency egress crews have completed their efforts and after Pad Safety has opened the pad to search crews. The extent of the search should be confined to retrieving parts or sections considered valuable in performing fault analysis.
					NOTE: All items should be delivered to McDonnell Aircraft Corp., Hangar L, CKAFS, for further disposition per USAF instructions.

AFMTC FORM NOV 61 37A PREVIOUS EDITION OF THIS FORM IS OBSOLETE.

MRD

1. SECURITY CLASSIFICATION	9. REVISION NO.
(U)	1

HSQ SPACECRAFT

NON-RANGE AIRCRAFT

1. SECURITY CLASSIFICATION: (U)

2. PAGE: 810

3. DATE: 1 April 1966

4. REPLACES PAGE(S): 810 DATED

5. PROGRAM TITLE: TIII SLS/MOL-HSQ

6. PROGRAM REQUIREMENT CODE: 3900

7. SYSTEM CODE:

8. CONTRACTOR: MAC

10. ITEM NO.	11. FUNCTION AND PURPOSE	12. EQUIPMENT TO BE INSTALLED IN AIRCRAFT	13. ITEM		14. NUMBER OF AIRCRAFT AND AIRCRAFT FLYING HOURS/QUARTER															
					FY 65				FY 66				FY 67				FY			FY
					CY 65				CY 66				CY				CY			
					1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
1	RC-121 Aircraft (a) Skin track S/C during terminal portion of flight & predict impact location. (b) Search	SARAH & ARA-25 homing receivers, or equivalent to home on the S/C recovery beacon. See notes 1 & 2	A.	NUMBER OF AIRCRAFT								1								
			B.	NO. OF FLIGHTS/A/C								1	(Operational flight only)							
			C.	FLIGHT DURATION - HOURS																
			D.	TOTAL FLYING HRS/QTR																
			E.	STATION								12								
			F.	FLIGHT PATH																
			G.	SPEED RANGE - KTS																
			H.	ALTITUDE - 1000 FT.																
			A.	NUMBER OF AIRCRAFT																
			B.	NO. OF FLIGHTS/A/C																
			C.	FLIGHT DURATION - HOURS																
			D.	TOTAL FLYING HRS/QTR																
			E.	STATION																
			F.	FLIGHT PATH																
			G.	SPEED RANGE - KTS																
			H.	ALTITUDE - 1000 FT.																
2	HC-130H (a) Locate HSQ vehicle after landing. (b) Deploy swimmers and floatation gear	(a) Gemini floatation collar plus 1 spare. (b) Gemini emergency floatation bag. (See note 2)	A.	NUMBER OF AIRCRAFT								2								
			B.	NO. OF FLIGHTS/A/C								2*								
			C.	FLIGHT DURATION - HOURS																
			D.	TOTAL FLYING HRS/QTR																
			E.	STATION								12								
			F.	FLIGHT PATH																
			G.	SPEED RANGE - KTS																
			H.	ALTITUDE - 1000 FT.								5-10								

NOTES:
1. Equipment required to support this mission should be installed, maintained, and operated by USAF personnel.
2. Communication equipment should be such as to permit continuous voice contact with JC-130A Aircraft which are equipped with VHF (Collins 101) and UHF (ARC-34).

* 1 Training exercise
1 Operation

AFMTC FORM 38A DEC 61 — PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE.

NRD

1. SECURITY CLASSIFICATION: (U)

9. REVISION NO.: 1

HSQ SPACECRAFT

NON-RANGE AIRCRAFT

1. SECURITY CLASSIFICATION: (U)
2. PAGE: 810
3. DATE: 1 April 1966
4. REPLACES PAGE(S): 810 DATED

5. PROGRAM TITLE: TIII SLS/MOL-HSQ
6. PROGRAM ELEMENT CODE: 3900
7. SYSTEM CODE:
8. CONTRACTOR: MAC

10. ITEM NO.	11. FUNCTION AND PURPOSE	12. EQUIPMENT TO BE INSTALLED IN AIRCRAFT	13. ITEM		14. NUMBER OF AIRCRAFT AND AIRCRAFT FLYING HOURS/QUARTER															
					FY 65				FY 66				FY 67				FY			FY
					CY 65				CY 66				CY				CY			
					1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
1	RC-121 Aircraft (a) Skin track S/C during terminal portion of flight & predict impact location. (b) Search	SARAH & ARA-25 homing receivers, or equivalent to home on the S/C recovery beacon. See notes 1 & 2	A.	NUMBER OF AIRCRAFT								1								
			B.	NO. OF FLIGHTS/A/C								1	(Operational flight only)							
			C.	FLIGHT DURATION - HOURS																
			D.	TOTAL FLYING HRS/QTR																
			E.	STATION								12								
			F.	FLIGHT PATH																
			G.	SPEED RANGE - KTS																
			H.	ALTITUDE - 1000 FT.																
2	HC-130H (a) Locate HSQ vehicle after landing. (b) Deploy swimmers and floatation gear	(a) Gemini floatation collar plus 1 spare. (b) Gemini emergency floatation bag. (See note 2)	A.	NUMBER OF AIRCRAFT								2								
			B.	NO. OF FLIGHTS/A/C								2*								
			C.	FLIGHT DURATION - HOURS																
			D.	TOTAL FLYING HRS/QTR																
			E.	STATION								12								
			F.	FLIGHT PATH																
			G.	SPEED RANGE - KTS																
			H.	ALTITUDE - 1000 FT.								5-10								

NOTES:
1. Equipment required to support this mission should be installed, maintained, and operated by USAF personnel.
2. Communication equipment should be such as to permit continuous voice contact with JC-130A Aircraft which are equipped with VHF (Collins 101) and UHF (ARC-34).

* 1 Training exercise
1 Operation

HSQ SPACECRAFT

NON-RANGE AIRCRAFT

1. SECURITY CLASSIFICATION: (U)

2. PAGE: 810.1

3. DATE: 1 April 1966

4. REPLACES PAGE(S): 810 DATED

5. PROGRAM TITLE: TIII SLS/MOL-HSQ

6. PROGRAM REQUIREMENT CODE: 3900

7. SYSTEM CODE: 632A

8. CONTRACTOR:

10. ITEM NO.	11. FUNCTION AND PURPOSE	12. EQUIPMENT TO BE INSTALLED IN AIRCRAFT	13. ITEM	14. NUMBER OF AIRCRAFT AND AIRCRAFT FLYING HOURS/QUARTER															
				FY				FY 66				FY 67				FY			
				CY				CY 66				CY				CY			
				1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
3	C-130 Aircraft (a) Transport personnel and recovery gear to recovery area. (b) Return recovered S/C and associated equipment to CKAFS	Standard	A. NUMBER OF AIRCRAFT								1								
			B. NO. OF FLIGHTS/A/C								2								
			C. FLIGHT DURATION-HOURS																
			D. TOTAL FLYING HRS/QTR																
			E. STATION								12								
			F. FLIGHT PATH																
			G. SPEED RANGE - KTS																
			H. ALTITUDE - 1000 FT.																
			A. NUMBER OF AIRCRAFT																
			B. NO. OF FLIGHTS/A/C																
			C. FLIGHT DURATION-HOURS																
			D. TOTAL FLYING HRS/QTR																
			E. STATION																
			F. FLIGHT PATH																
			G. SPEED RANGE - KTS																
			H. ALTITUDE - 1000 FT.																
			A. NUMBER OF AIRCRAFT																
			B. NO. OF FLIGHTS/A/C																
			C. FLIGHT DURATION-HOURS																
			D. TOTAL FLYING HRS/QTR																
			E. STATION																
			F. FLIGHT PATH																
			G. SPEED RANGE - KTS																
			H. ALTITUDE - 1000 FT.																

SEACRAFT REQUIREMENTS

5. PROGRAM TITLE: TIII SLS/MOL-HSQ	6. PROGRAM REQUIREMENT CODE: 3900	7. SYSTEM CODE:	1. SECURITY CLASSIFICATION: (U)	2. PAGE: 820 3. DATE: 1 April 1966 4. REPLACES PAGE(S): 820 DATED

10. TYPE AND FUNCTION: C-4-S-A1 — Gen. H. H. Arnold or Gen. Hoyt Vandenberg

	CY 66												CY		CY	
	1	2	3	4	5	6	7	8	9	10	11	12	1	2	1	2
11. NO. OF OPERATIONS										1						
12. TOTAL TIME REQUIRED ON STATION																

13. MAXIMUM RANGE: _____ N.M. FROM _____

14. BEARING (True): _____ DEG. FROM _____

15. MAXIMUM SPEED:

16. DESCRIPTION OF OPERATION:
Located downrange of AFETR station 9.1 to provide telemetry, metric, and meteorological data for a portion of the HSQ flight between stations 9.1 and 12.

17. EQUIPMENT TO BE INSTALLED ON SEACRAFT:
1. TM receiving and recording equipment.
2. Radar tracking and metric data gathering and recording equipment.
3. Meteorological rocket launching facilities plus meteorological data gathering and recording equipment.

R

10. TYPE AND FUNCTION: CM-M-AV1 — Sword Knot or Coastal Crusader

	CY 66												CY		CY	
	1	2	3	4	5	6	7	8	9	10	11	12	1	2	1	2
11. NO. OF OPERATIONS										2	(Includes	one practice exercise).				
12. TOTAL TIME REQUIRED ON STATION																

13. MAXIMUM RANGE: _____ N.M. FROM _____

14. BEARING (True): _____ DEG. FROM _____

15. MAXIMUM SPEED:

16. DESCRIPTION OF OPERATION:
Located near the predicted impact point of the spacecraft and is required to provide high quality telemetry data, monitor parachute deployment, and participate in Spacecraft recovery operations.

17. EQUIPMENT TO BE INSTALLED ON SEACRAFT:
1. TM receiving and recording equipment including a strip-out recorder to provide a real-time display of TM signal strength.
2. Crane or beam capable of retrieving the S/C.
3. SARAH or AN/[illegible]25 homing equipment or equivalent.

10. TYPE AND FUNCTION: DD - Recovery

	CY 66												CY		CY	
	1	2	3	4	5	6	7	8	9	10	11	12	1	2	1	2
11. NO. OF OPERATIONS										2	(Includes	one practice exercise)				
12. TOTAL TIME REQUIRED ON STATION										168						

13. MAXIMUM RANGE: _____ N.M. FROM _____

14. BEARING (True): _____ DEG. FROM _____

15. MAXIMUM SPEED: 33 Knots

16. DESCRIPTION OF OPERATION:
Two destroyers located in the impact foot-print area are required to:
1. Participate in spacecraft recovery operations.
2. Provide the capability of quickly delivering the recovered spacecraft to a U. S. port for offloading.

17. EQUIPMENT TO BE INSTALLED ON SEACRAFT:
1. The Davit Pivot modification and equipment.
2. Communication equipment compatible with other components of the Recovery Force.

SEACRAFT REQUIREMENTS

1. SECURITY CLASSIFICATION: (U)

2. PAGE: 820.1

3. DATE: 1 April 1966

4. REPLACES PAGE(S) DATED: New Page

5. PROGRAM TITLE: TIII SLS/MOL-HSQ

6. PROGRAM REQUIREMENT CODE: 3900

7. SYSTEM CODE:

8. CONTRACTOR: MAC

10. TYPE AND FUNCTION: A-O - Recovery and Refueling

	CY 66												CY		CY	
	1	2	3	4	5	6	7	8	9	10	11	12	1	2	1	2
11. NO. OF OPERATIONS										2	(Includes one practice exercise)					
12. TOTAL TIME REQUIRED ON STATION										168						

13. MAXIMUM RANGE: _____ N.M. FROM _____

14. BEARING (True): _____ DEG. FROM _____

15. MAXIMUM SPEED:

16. DESCRIPTION OF OPERATION:

An aviation oiler is required to:
1. Keep destroyers fueled and serviced.
2. Participate in spacecraft recovery operations.

17. EQUIPMENT TO BE INSTALLED ON SEACRAFT:

Standard.

---

10. TYPE AND FUNCTION:

	CY												CY		CY	
	1	2	3	4	5	6	7	8	9	10	11	12	1	2	1	2
11. NO. OF OPERATIONS																
12. TOTAL TIME REQUIRED ON STATION																

13. MAXIMUM RANGE: _____ N.M. FROM _____

14. BEARING (True): _____ DEG. FROM _____

15. MAXIMUM SPEED:

16. DESCRIPTION OF OPERATION:

17. EQUIPMENT TO BE INSTALLED ON SEACRAFT:

---

10. TYPE AND FUNCTION:

	CY												CY		CY	
	1	2	3	4	5	6	7	8	9	10	11	12	1	2	1	2
11. NO. OF OPERATIONS																
12. TOTAL TIME REQUIRED ON STATION																

13. MAXIMUM RANGE: _____ N.M. FROM _____

14. BEARING (True): _____ DEG. FROM _____

15. MAXIMUM SPEED:

16. DESCRIPTION OF OPERATION:

17. EQUIPMENT TO BE INSTALLED ON SEACRAFT:

HSQ RE-ENTRY MODULE	RANGE AIRCRAFT	1. SECURITY CLASSIFICATION: (U)	2. PAGE: 840
			3. DATE: 1 April 1966
5. PROGRAM TITLE: TIII SLS/MOL-HSQ	6. PROGRAM REQUIREMENT CODE: 3900	7. SYSTEM CODE:	8. CONTRACTOR: MAC
			4. REPLACES PAGE(S): 840 DATED

10. ITEM NO.	11. FUNCTION AND PURPOSE	12. EQUIPMENT TO BE INSTALLED IN AIRCRAFT	13. ITEM	14. NUMBER OF AIRCRAFT AND AIRCRAFT FLYING HOURS/QUARTER															
				FY 67				FY 68				FY				FY			
				CY 66				CY 67				CY				CY			
				1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
1	JC-130A (a) Record TM data. (b) Locate re-entry module after impact. (c) Aid recovery operations. (d) Monitor parachute deployment. (See Note 1)	(a) TAA-4 TM antenna. (b) TM receiving and tape recording equipment. (c) SARAH and ARA-25 homing receivers or their equivalent with the capability of homing-in on the re-entry module recovery beacon	A. NUMBER OF AIRCRAFT				2												
			B. NO. OF FLIGHTS/A/C				2**												
			C. FLIGHT DURATION-HOURS																
			D. TOTAL FLYING HRS/QTR																
			E. STATION				12												
			F. FLIGHT PATH																
			G. SPEED RANGE - KTS																
			H. ALTITUDE - 1000 FT.				15												
			A. NUMBER OF AIRCRAFT																
			B. NO. OF FLIGHTS/A/C																
			C. FLIGHT DURATION-HOURS																
			D. TOTAL FLYING HRS/QTR																
			E. STATION																
			F. FLIGHT PATH																
			G. SPEED RANGE - KTS																
			H. ALTITUDE - 1000 FT.																
			A. NUMBER OF AIRCRAFT																
			B. NO. OF FLIGHTS/A/C																
			C. FLIGHT DURATION-HOURS																
			D. TOTAL FLYING HRS/QTR																
			E. STATION																
			F. FLIGHT PATH																
			G. SPEED RANGE - KTS																
			H. ALTITUDE - 1000 FT.																

15. REMARKS

NOTES: 1 - A short significant signal strength decrease takes place for approximately 20 seconds at chute deployment due to spacecraft antenna switching. This function may be visually monitored from scope presentation.

** 1 Training Exercise
1 Operational Exercise

AFMTC FORM 38 DEC 61 — PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE.

NRD

1. SECURITY CLASSIFICATION: (U)	9. REVISION NO.: 1

RANGE AIRCRAFT

1. SECURITY CLASSIFICATION	2. PAGE	3. DATE	4. REPLACES PAGE(S)
(U)	840.1	1 April 1966	New Page DATED

5. PROGRAM TITLE	6. PROGRAM REQUIREMENT CODE	7. SYSTEM CODE	8. CONTRACTOR
TIII SLS/MOL-HSQ	3900		MAC

10. ITEM NO.	11. FUNCTION AND PURPOSE	12. EQUIPMENT TO BE INSTALLED IN AIRCRAFT	13. ITEM		14. NUMBER OF AIRCRAFT AND AIRCRAFT FLYING HOURS/QUARTER															
					FY				FY 66				FY 67				FY				FY
					CY 65				CY 66				CY				CY				
					1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
2	Cargo Aircraft (a) Transport TM and metric data tapes from Sta.# 3, 7, 9.1 and RIS to CKAFS	Standard	A.	NUMBER OF AIRCRAFT								1								
			B.	NO. OF FLIGHTS/A/C								1								
			C.	FLIGHT DURATION-HOURS																
			D.	TOTAL FLYING HRS/QTR																
			E.	STATION								N/A								
			F.	FLIGHT PATH																
			G.	SPEED RANGE - KTS																
			H.	ALTITUDE - 1000 FT.																
			A.	NUMBER OF AIRCRAFT																
			B.	NO. OF FLIGHTS/A/C																
			C.	FLIGHT DURATION-HOURS																
			D.	TOTAL FLYING HRS/QTR																
			E.	STATION																
			F.	FLIGHT PATH																
			G.	SPEED RANGE - KTS																
			H.	ALTITUDE - 1000 FT.																
			A.	NUMBER OF AIRCRAFT																
			B.	NO. OF FLIGHTS/A/C																
			C.	FLIGHT DURATION-HOURS																
			D.	TOTAL FLYING HRS/QTR																
			E.	STATION																
			F.	FLIGHT PATH																
			G.	SPEED RANGE - KTS																
			H.	ALTITUDE - 1000 FT.																

15. REMARKS

AFMTC FORM 38 DEC 61 PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE.

1. SECURITY CLASSIFICATION	9. REVISION NO.
(U)	1

DATA PROCESSING AND DISPOSITION

1. SECURITY CLASSIFICATION: (U)	2. PAGE 910		
	3. DATE 18 May 1966		
5. PROGRAM TITLE: TIII SLS/MOL-HSQ	6. PROGRAM REQUIREMENT CODE: 3900	7. SYSTEM CODE:	8. CONTRACTOR: All
	4. REPLACES PAGE(S): 910 DATED		

10. ITEM NO.	11. TEST CODE	12. DATA	13. REFERENCE PAGE NUMBER	13. REFERENCE ITEM NO.	14. QTY ORIG	14. QTY CYS	15. FINAL RECIPIENT	16. TIME REQ'D.	17. RAW	17. RED	17. PHOT	DESIRED DATA PRESENTATION & REMARKS
1	HSQ	LAB TLM	230	1,2		4	6555th ATW Project Office	24H	X	X		
2	HSQ	GEM TLM	230	3		3		2H		X		
3	HSQ	Metric Data	210-215			4		4H		X		
4	HSQ	Eng. Seq. Data	220			3		24H			X	
5	HSQ	Meteorological	310-350			2		2H		X		
6	HSQ	Communications Recordings	412.1			2		2H		X		
7	HSQ	Documentary Photg.	570			5		24H			X	

AFMTC FORM 39 NOV 61 PREVIOUS EDITIONS OF THIS FOFM ARE OBSOLETE.

NRD

1. SECURITY CLASSIFICATION: (U)	9. REVISION NO

DATA PROCESSING AND DISPOSITION

1. SECURITY CLASSIFICATION	2. PAGE 910.1
Unclassified	3. DATE 18 May 1963
	4. REPLACES PAGE(S) DATED

5. PROGRAM TITLE	6. PROGRAM REQUIREMENT CODE	7. SYSTEM CODE	8. CONTRACTOR
TIII SLS/MOL-HSQ	3900		MC

10. ITEM NO.	11. TEST CODE	12. DATA	13. REFERENCE PAGE NUMBER	13. REFERENCE ITEM NO.	14. QTY ORIG	14. QTY CYS	15. FINAL RECIPIENT	16. TIME REQ'D.	17. RAW	17. DED	17. PHOT	DESIRED DATA PRESENTATION & REMARKS
1	BX MMD	Decommutate all channels assigned to AFCRL MMD and put in digital format with the appropriate clock data so that the data can be referenced to Universal Time. The above information should be combined on magnetic tape. The output channels from each detector should have the appropriate clock data for the particular commutator from which they were obtained.					Air Force Cambridge Research Labs L.G. Hanscom Field Bedford, Mass. Attn: S. Crest (CRFM)					
2	AX ZG PG	Tank #1 gauge, tank #2 guage, Tank #1 press, tank #2 pressure, Flowmeter, Temp #1, Temp #2				2	J. Lee Acoustica Associates, Inc. Los Angeles, Calif.	L +7w	x	x		Sanborne recordings, decommutated Digital computer data (PCM). Format to be determined
3	DX BioC	Internal Battery Voltage, Temp., photo cell output	230 Ref prev. page			2	HQ AMD Brooks AFB, Texas Attn: Maj.L.A. Irvine	L +7w	x			
4	HSQ HTTC Boost	Thermocouple Meas (ID)	230			2	Thompson Ramo Wooldridge Equipment Lab. 23555 Euclid Ave. Cleveland, Ohio Attn: R. A. McKinnon	24 hr.	x			To be supplied

AFMTC FORM 39 NOV 61 PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE.

NRD

1. SECURITY CLASSIFICATION	9. REVISION NO.
(U)	1

DATA PROCESSING AND DISPOSITION

1. SECURITY CLASSIFICATION: Unclassified
2. PAGE 910 ,2
3. DATE 18 May 1963
4. REPLACES PAGE(S)
DATED

5. PROGRAM TITLE: TIII SLS/MOL-HSQ
6. PROGRAM REQUIREMENT CODE: 3900
7. SYSTEM CODE:
8. CONTRACTOR: MC

10. ITEM NO.	11. TEST CODE	12. DATA	13. REFERENCE PAGE NUMBER	13. REFERENCE ITEM NO.	14. QTY ORIG	14. QTY CYS	15. FINAL RECIPIENT	16. TIME REQ'D.	17. RAW	17. RED	17. PHOT	DESIRED DATA PRESENTATION & REMARKS
5	HSQ HTTC Boost	Pressure transducer meas (6)	230			2	Thompson Ramo Wool-ridge Equipment Lab. 23555 Euclid Ave. Cleveland, Ohio Attn: R. A. McKinnon	L +7w		x		To be supplied
6	CX	Thermocouple Meas (39)	230			2	"	L +7w		x		"
		Pressure Meas (6) Accelerometers (3)	230			2	"	L +7w		x		"

AFMTC FORM 39 NOV 61 PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE.

NRD

1. SECURITY CLASSIFICATION: (U)
9. REVISION NO.: 1

107

DATA PROCESSING AND DISPOSITION

1. SECURITY CLASSIFICATION: (U)	2. PAGE 910.3		
	3. DATE April 1966		
5. PROGRAM TITLE: TIII SLS/MOL-HSQ	6. PROGRAM REQUIREMENT CODE: 3900	7. SYSTEM CODE:	8. CONTRACTOR: MAC
	4. REPLACES PAGE(S): New Page DATED		

10. ITEM NO.	11. TEST CODE	12. DATA	13. REFERENCE PAGE NUMBER	13. REFERENCE ITEM NO.	14. QTY ORIG	14. QTY CYS	15. FINAL RECIPIENT	16. TIME REQ'D.	17. RAW	17. RED	17. PHOT	DESIRED DATA PRESENTATION & REMARKS
1	HSQ	Position	211	1		1	McDonnell/CKAFS	3CD		X		Magnetic Tape - Final. Tape format shall accompany tape.
						2	McDonnell/CKAFS	3CD		X		Tabular printouts - Final
2		Velocity	211	2		1	McDonnell/CKAFS	3CD		X		Magnetic Tape - Final Tape format shall accompany tape.
						2	McDonnell/CKAFS	3CD		X		Tabular printout - final
3		Acceleration	211	3		1	McDonnell/CKAFS	3CD		X		Magnetic Tape - Final. Tape format shall accompany tape.
						2	McDonnell/CKAFS	3CD		X		Tabular printout - Final.
4		Special Parameters	211.1	4		1	McDonnell/CKAFS	3CD		X		Magnetic Tape - Final. Tape format shall accompany tape.
						2	McDonnell/CKAFS	3CD		X		Tabular printout - Final
5		Launch Vehicle Attitude, Pitch & Yaw	211.2	5		1	McDonnell/CKAFS	3CD		X		Tabular printout - Final
6		Quick Look PVA	211.2	6		1	McDonnell/CKAFS	1CD	X			Mag. tape & printout. See Note page 211.2
7		Position	212	1		1	McDonnell/CKAFS	3CD		X		Magnetic Tape - Final (See Note page 212). Tape format shall accompany tape.
						2	McDonnell/CKAFS	3CD		X		Tabular Printout - Final
8	HSQ	Velocity	212	2		1	McDonnell/CKAFS	3CD		X		Magnetic Tape - Final (See note page 212).

DATA PROCESSING AND DISPOSITION

1. SECURITY CLASSIFICATION	2. PAGE 910.4
(U)	3. DATE 1 April 1966
5. PROGRAM TITLE: TIII SLS/MOL-HSQ	4. REPLACES PAGE(S) DATED: New Page
6. PROGRAM REQUIREMENT CODE: 3900	7. SYSTEM CODE
8. CONTRACTOR: MAC	

10. ITEM NO.	11. TEST CODE	12. DATA	13. REFERENCE PAGE NUMBER	13. REFERENCE ITEM NO.	14. QTY ORIG	14. QTY CYS	15. FINAL RECIPIENT	16. TIME REQ'D.	17. RAW	17. RED	17. PHOT	DESIRED DATA PRESENTATION & REMARKS
						2	McDonnell/CKAFS	3CD		X		Tape format shall accompany tape. Tabular Printout - Final
9	HSQ	Acceleration	212	3		1	McDonnell/CKAFS	3CD		X		Magnetic Tape - Final (See Note page 212). Tape format shall accompany tape.
						2	McDonnell/CKAFS	3CD		X		Tabular printout - Final
10		Special Parameters	212	4		1	McDonnell/CKAFS	3CD		X		Magnetic Tape - Final. Tape format shall accompany tape.
						2	McDonnell/CKAFS	3CD		X		Tabular Printout - Final
11		Best Estimate of Trajectory	210.1	7		1	McDonnell/CKAFS	3CD		X		Magnetic Tape - Final. Tape format shall accompany tape.
						2	McDonnell/CKAFS	3CD		X		Tabular printout - Final
12		Position	214	1		1	McDonnell/CKAFS	3CD		X		Magnetic Tape - Final. Tape format shall accompany tape.
						2	McDonnell/CKAFS	3CD		X		Tabular Printout - Final
13		Velocity	214	2		1	McDonnell/CKAFS	3CD		X		Magnetic Tape - Final Tape format shall accompany tape.
						2	McDonnell/CKAFS	3CD		X		Tabular Printout - Final
14	HSQ	Acceleration	214	3		1	McDonnell/CKAFS	3CD		X		Magnetic Tape - Final. Tape format shall accompany tape.
						2	McDonnell/CKAFS	3CD		X		Tabular Printout - Final

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NRD

1. SECURITY CLASSIFICATION	9. REVISION NO.
(U)	1

DATA PROCESSING AND DISPOSITIO

1. SECURITY CLASSIFICATION: (U)
2. PAGE 910.5
3. DATE 1 April 1966
4. REPLACES PAGE(S) DATED: New Page
5. PROGRAM TITLE: TIII SLS/MOL-HSQ
6. PROGRAM REQUIREMENT CODE: 3900
7. SYSTEM CODE:
8. CONTRACTOR: MAC

10. ITEM NO.	11. TEST CODE	12. DATA	13. REFERENCE PAGE NUMBER	13. REFERENCE ITEM NO.	14. QTY ORIG	14. QTY CYS	15. FINAL RECIPIENT	16. TIME REQ'D.	17. RAW	17. RED	17. PHOT	DESIRED DATA PRESENTATION & REMARKS
15	HSQ	Special Parameters	214	4		1	McDonnell/CKAFS	3CD		X		Magnetic Tape - Final. Tape format shall accompany tape.
						2	McDonnell/CKAFS	3CD		X		Tabular Printout - Final
16		Aerodynamic Parameters	214	5		2	McDonnell/CKAFS	3CD		X		Plots
						2	McDonnell/CKAFS	3CD		X		Tabular Printouts - Final
17		Quick Look PVA	214	6		1	McDonnell/CKAF	1CD	X			See Note 3, Page 214 Mag. tape & printout
18		Telemetry (Launch Vehicle Vibration & Acoustics)	230	1		2	McDonnell/CKAFS	3CD		X		Tabular printout
19		Telemetry	230	2		2	McDonnell/CKAFS	3CD		X		Plots.
						2	McDonnell/CKAFS	3CD		X		Tabular Printouts.
20		Telemetry (Spacecraft)	230	3		2	McDonnell/CKAFS	3CD	X			Magnetic Tape with format. Two copies from recording station is required.
21		Telemetry (Recorders on-board spacecraft)	240	1	2	0	McDonnell/CKAFS	6CD	X			See Page 710.2 "Spacecraft Return After Retrieval".
22		Radar AGE & Signal Strength Recordings	240	2		1	McDonnell/CKAFS	3CD	X			Oscillograph or analog strip charts. - one per tracking station.
23	HSQ	Telemetry Signal Strength, Deviation, & Center Frequency	240	3		1	McDonnell/CKAFS	3CD	X			Oscillograph or analog strip charts - one per recording station.

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NRD

1. SECURITY CLASSIFICATION: (U)
9. REVISION NO.: 1

DATA PROCESSING AND DISPOSITION

1. SECURITY CLASSIFICATION	2. PAGE 310.6
(U)	3. DATE 1 April 1966
5. PROGRAM TITLE: TIII SLS/MOL-HSQ	6. PROGRAM REQUIREMENT CODE: 3900
7. SYSTEM CODE	8. CONTRACTOR: MAC
4. REPLACES PAGE(S): New Page	DATED

10. ITEM NO.	11. TEST CODE	12. DATA	13. REFERENCE PAGE NUMBER	13. REFERENCE ITEM NO.	14. QTY ORIG	14. QTY CYS	15. FINAL RECIPIENT	16. TIME REQ'D.	17. RAW	17. REO	17. PHOT	DESIRED DATA PRESENTATION & REMARKS
24	HSQ	Preliminary Test Report	240	4		3	McDonnell/CKAFS	2H	X			Standard AFETR Format.
25		Recovery Report	240	5		3	McDonnell/CKAFS	15WD	X			Standard AFETR Format.
26		Quick Look Impact Prediction	240	6		2	McDonnell/CKAFS	2H	X			Tabular printout
27		Extracts - TLM Station Operators Logs	240.1	7		1	McDonnell/CKAFS	3CD	X			AFETR Format - One per station
28		Extracts - Radar operators Logs	240.1	8		1	McDonnell/CKAFS	3CD	X			AFETR Format - One per station
29		Weather Forecasts	310	All		1	McDonnell/CKAFS	1CD	X			AFETR Format
30		Weather Observations	320	All		1	McDonnell/CKAFS	3CD	X			Tabular Printout
				All		1	McDonnell/CKAFS	3CD		X		Tabular Printout
31		Weather Observations	320.1	4		1	McDonnell/CKAFS	3CD	X			Tabular Printout
						1	McDonnell/CKAFS	3CD		X		Tabular Printout
32	HSQ	Engineering Sequential	220	All		1	McDonnell/CKAFS	12H			X	Black and white
						2	McDonnell/CKAFS	2WD			X	Color corrected. Quick process for early engineering evaluation. Retain timing on all movie film. Mark containers with location, camera, film speed and lens.

DATA PROCESSING AND DISPOSITION

1. SECURITY CLASSIFICATION	2. PAGE 91.7
(U)	3. DATE 1 April 1966
5. PROGRAM TITLE: TIII SLS/MOL-HSQ	4. REPLACES PAGE(S) DATED: New Page
6. PROGRAM REQUIREMENT CODE: 3900	7. SYSTEM CODE:
8. CONTRACTOR: MAC	

10. ITEM NO.	11. TEST CODE	12. DATA	13. REFERENCE PAGE NUMBER	13. REFERENCE ITEM NO.	14. QTY ORIG	14. QTY CYS	15. FINAL RECIPIENT	16. TIME REQ'D.	17. RAW	17. RED	17. PHOT	17. DESIRED DATA PRESENTATION & REMARKS
33	HSQ	Telemetry Recordings - Prelaunch tests	240.1	10		1	McDonnell/CKAFS	2H	X			Magnetic Tape.
34		Voice Recordings of MOPS/MITOC	412	3		2	McDonnell/CKAFS	15WD	X			Magnetic Tape. In the event of difficulties during tests conducted during launch countdown, recordings of selected channels may be requested within 3CD.
35		Voice Recordings of Radio Communications	412	1&2		2	McDonnell/CKAFS	15WD	X			Magnetic Tape. See Note 1, page 412.
36		TV Recordings	435	1		1	McDonnell/CKAFS	15WD	X			Magnetic Tape. See Note 3, page 435.
37		Documentary Photography	570 thru 570.2	All			McDonnell/CKAFS	15WD			X	Exact number of copies required and other pertinent information will be supplied on the AFMTC Form 66 submitted prior to each test.
38		QLAP Guidance Parameters	240.1	11		3	McDonnell/CKAFS	8CD		X		Tabular printouts.
39	HSQ	Quick Look PVA	212	1,2, &3		1	McDonnell/CKAFS	1CD	X			Magnetic tape and tabular printout.

AFMTC FORM 39 NOV 61 PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE.

NRD

1. SECURITY CLASSIFICATION	9. REVISION NO.
(U)	1

112

FACILITIES GENERAL

1. SECURITY CLASSIFICATION: (U)
2. PAGE: 1010
3. DATE: 1 April 1966
4. REPLACES PAGE(S): DATED 1010
5. PROGRAM TITLE: TIII SLS/MOL-HSQ
6. PROGRAM REQUIREMENT CODE: 3900
7. SYSTEM CODE:
8. CONTRACTOR: MAC

10. ITEM NO.	11. TEST CODE	12. LOCATION	13. TYPE OF FACILITY	14. SITE DESIRED	15. ASSIGNED	15. NEW	15. EXISTING	16. SCHEDULE FY 65 CY 1	CY 2	CY 3	CY 4	FY 66 CY 1	CY 2	CY 3	CY 4	FY 67 CY 1	CY 2	CY 3	CY 4	FY CY 1	CY 2	CY 3	CY 4	FY CY 1	CY 2	CY 3	CY 4
1	HSQ	1	Hangar	Hangar L																							
1.1			P 9, 150/120		X		X					x	x	x	x	D											
1.2			Q 10, 350/55		X		X					x	x	x	x	D											
1.3			R 6, 050/2		X		X			x	x	x	x	x	x	D											
1.4			S 1,200/23		X		X					x	x	x	x	D											
			T 26,750/200																								
2	HSQ	1	Ready Room	Complex 40																							
2.1			Rm 110P 200/16		X		X						x	x	x	D											
2.2			108 P 144/2		X		X					x	x	x	x	D											
2.3			109 P 144/2		X		X				x	x	x	x	x	D											
2.4			111 P 144/2		X		X						x	x	x	D											
2.5			112 P 144/2		X		X						x	x	x	D											
			T 2, 576/24																								
3	HSQ		Complex Support Building	Complex 40																							
3.1			Rms 111 S 1000/13		X		X						x	x	x	D											
			T 1000/13																								
4	HSQ		Launch Control Center	VIB																							
			Rm. 227 S 800/8		X		X						x	x	x	D											
			T 800/8																								

AFMTC FORM JUN 63 40 PREVIOUS EDITIONS OF THIS FORM ARE OBSOLETE.

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1. SECURITY CLASSIFICATION: (U)
9. REVISION NO.: 1

113

FACILITIES GENERAL

1. SECURITY CLASSIFICATION	2. PAGE	3. DATE
(U)	1010.1	18 May 1966

5. PROGRAM TITLE	6. PROGRAM REQUIREMENT CODE	7. SYSTEM CODE	8. CONTRACTOR	4. REPLACES PAGE(S) DATED
TIII SLS/MOL-HSQ	3900		MC	New

10. ITEM NO.	11. TEST CODE	12. LOCATION	13. TYPE OF FACILITY	14. SITE DESIRED	15. ASSIGNED	15. NEW	15. EXISTING	16. SCHEDULE FY / CY 1	FY / CY 2	FY / CY 3	FY / CY 4	FY / CY 1	FY / CY 2	FY / CY 3	FY / CY 4	FY / CY 1	FY / CY 2	FY / CY 3	FY / CY 4	FY / CY 1	FY / CY 2	FY / CY 3	FY / CY 4
1	HSQ		S 400-5 (OV-1)	VIB						X													
2	HSQ		P 75/1 (bio-cell)	VIB						X													
3	HSQ	1	Hanger	Hanger L																			
3.1	HSQ		Q 60/2 + Desk + 110 vac/ 100 amp (HTTC) a) 208 VAC or 230 VAC 3 ph, 8.5 A/ph b) 110 VAC,15 A, 3 out min. c) N_2 supply	(no dampness)						X														
4	HSQ	1	Hanger	Hanger L																			
4.1			S 800/5 (OV-4) (Clean Rm or better) 60 cy/110 vac/30 amp																				
5	HSQ		Q 20/1 (Orbis Low) 115 VAC/15 amp							X													
6	HSQ		S 400/1 (Zero GPG) 110 vac std. out.	VIB						X													
7	HSQ		S 100/2 (Corn.Ref & Fnt. Patt.) 110 VAC + desk	Hanger L						X													
8	HSQ		S 100/2 (MMD) 110 VAC + table & chairs	VIB						X	X												

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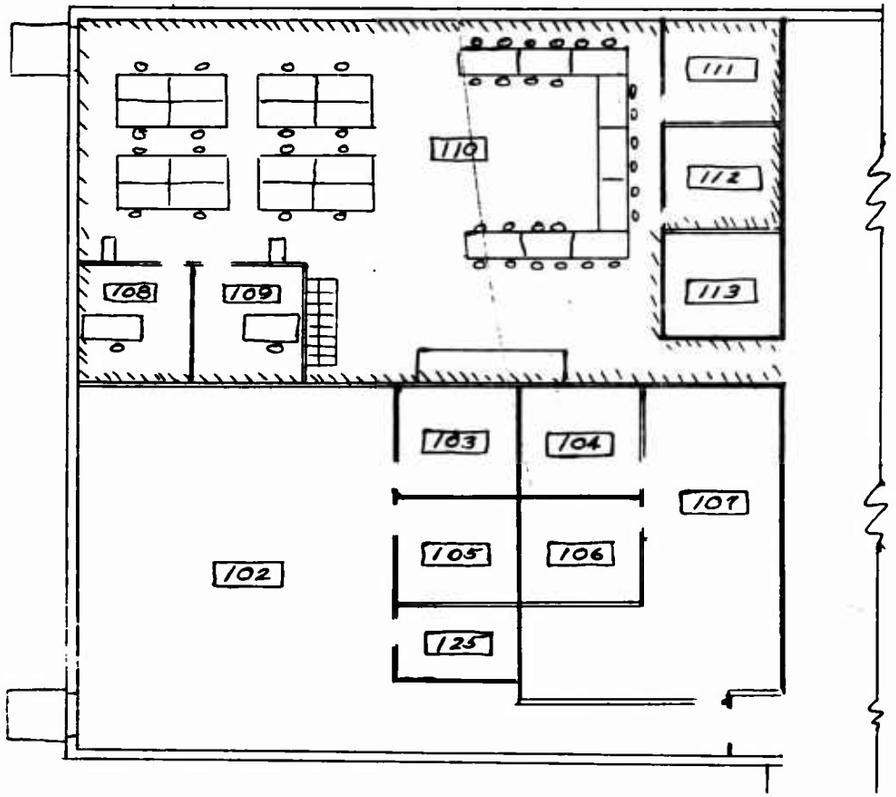
1. SECURITY CLASSIFICATION	9. REVISION NO.
(U)	1

DRAWINGS - FACILITIES

1. SECURITY CLASSIFICATION	2. PAGE	10 11
(U)	3. DATE	April 1966
	4. REPLACE	N age
	DATED	

5. PROGRAM TITLE	6. PROGRAM REQUIREMENT CODE	7. SYSTEM CODE	8. CONTRACTOR
TIII SLS/MOL-HSQ	3900		MAC

10. DRAWING



N

Approximate Scale
1/16" = 1'0"

WEST SIDE

COMPLEX 40

READY BUILDING

11. REMARKS (Drawings)

Addendum No. 1
IFS-TIII-32000
(LC) READY
BUILDING LAYOUT

MCDONNELL AREA
ENCLOSED BY
HASH MARKS

AFMTC FORM NOV 61 40A

1. SECURITY CLASSIFICATION	9. REVISION NO.
(U)	1

DRAWINGS - FACILITIES

5. PROGRAM TITLE	6. PROGRAM REQUIREMENT CODE	7. SYSTEM CODE	8. CONTRACTOR
TIII SLS/MOL-HSQ	3900		MAC

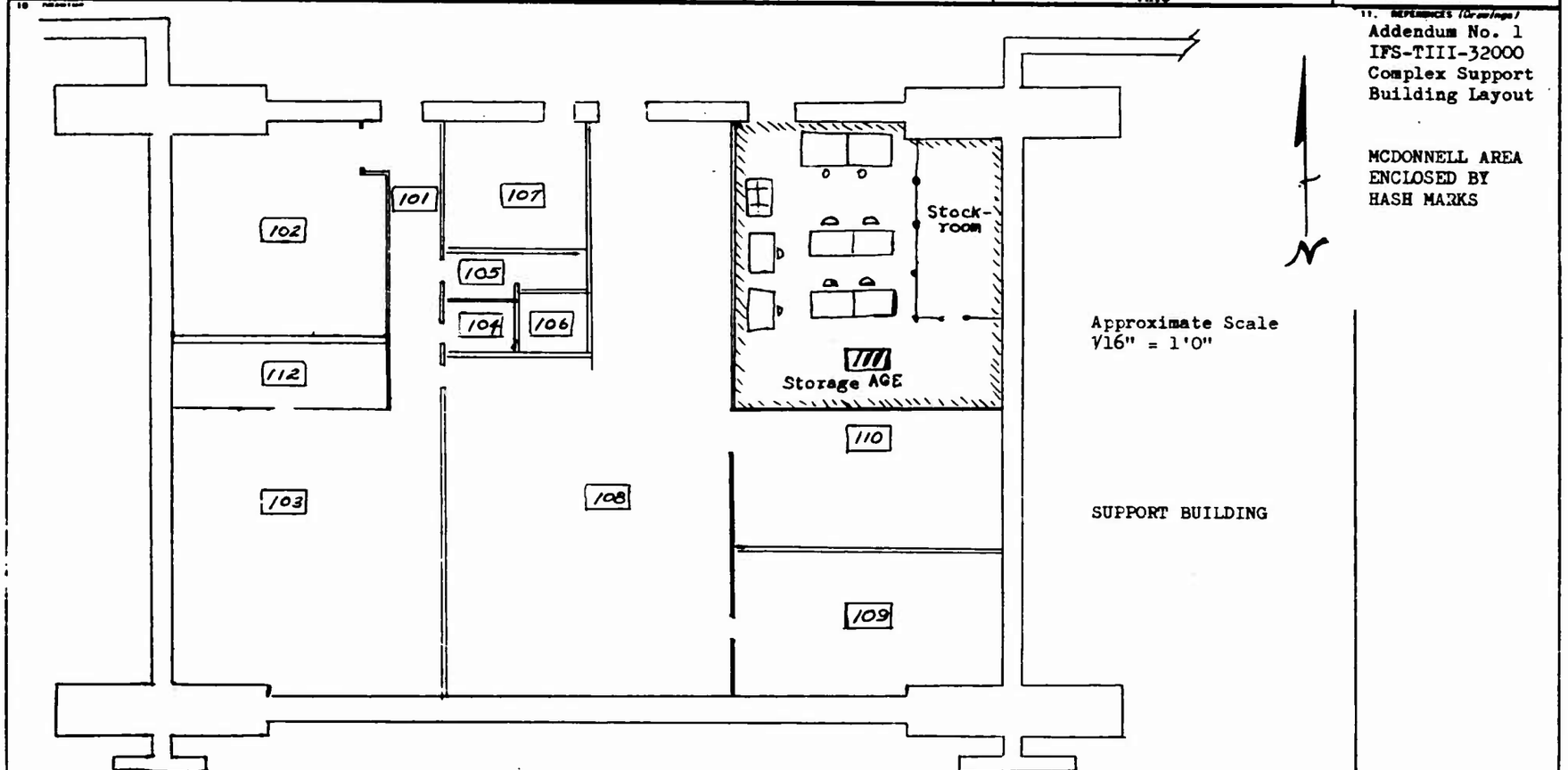
1. SECURITY CLASSIFICATION: (U)

2. PAGE: 1011.1

3. DATE: 1 April 1966

4. REPLACES PAGE(S) DATED: New Page

11. REFERENCES (Drawings)
Addendum No. 1
IFS-TIII-32000
Complex Support
Building Layout



MCDONNELL AREA
ENCLOSED BY
HASH MARKS

Approximate Scale
1/16" = 1'0"

SUPPORT BUILDING

AFSTC FORM NOV 61 40A

(U)

9. REVISION NO. 1

OV-1

DRAWINGS - FACILITIES

1. SECURITY CLASSIFICATION	2. PAGE
UNCLASSIFIED	1011.2
	3. DATE 18 May 1966
	4. REPLACES PAGE(S) DATED

5. PROGRAM TITLE	6. PROGRAM REQUIREMENT CODE	7. SYSTEM CODE	8. CONTRACTOR
TIII SLS/MOL-HSQ	3900		(GD/C) MC

10. DRAWING

11. REFERENCES (Drawings)

A. CHECKOUT FACILITY (Item #1, P. 1010.1)

1. 20 ft. by 20 ft. room 8 ft. ceiling (minimum)
2. Temperature controlled (70 ± 5 degrees)
3. Filtered air (dust free area)
4. Humidity 50% maximum
5. Entrance 80 inches high by 72 inches wide (minimum)
6. Two work benches
7. Three 115 V 20 Amp circuits

AFMTC FORM NOV 61 40A

NRD

7. SECURITY CLASSIFICATION	8. REVISION NO.
(U)	1