[redacted]

SECRET

July 9, 1963

C. Murphy

1001 File

TO: Distribution

FROM: [redacted]

SUBJECT: J Readiness Review - July 3, 1963

The J Readiness Review was held at the A/P facility on July 3, 1963 with [redacted] S.E. Presiding. Attendees were as follows:

Attendees:	Firm/Activity
Col. L. Battle	SSD
[redacted]	LMSC
	SE
	LMSC
	LMSC
	NRO
	LMSC
	LMSC
	LMSC
	ITEK
	LMSC
	NRO (CCB)
	Hq. (CCB)
Capt. A. W. Johnson	SSD (CCB)
[redacted]	SE
	LMSC
	LMSC
	LMSC
	ITEK
Col. C. Murphy	HQ. (CCB)
[redacted]	LMSC
J. Parangosky	HQ. (CCB)
[redacted]	SE
J. W. Plummer	LMSC
[redacted]	LMSC
	ITEK
Lt. Col. V. Webb	LMSC
[redacted]	HQ.
	LMSC

Declassified

In Accordance with [redacted]

on NOV 26 1997

[redacted]

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AGENDA FOR J-1 READINESS REVIEW

I. Review of Mission Philosophy and Design Concept - SE

II. Qualification Requirements - SE

a) Launch Environment Imposed by TAT

b) Long Term Storage on Orbit

III. Review of Recovery System Qualification Tests - SE

IV. Review of Instrument Qualification Tests - Boston

V. Review of Payload System Design & Flight Confidence Testing - A/P

a) Structure design and qual status

b) Internal system design and qual status

c) Thermal Design

d) System Qual Test Requirements and Status

VI. Results of Vehicle Activate - Deactivate Experiments

VII. Payload Command, Control, and Programming Concepts - A/P / S.V.

VIII. Retro-Rocket Plume Studies and Separation Dynamics - SE and A/P

IX. Weight Status & Mission Capability - A/P / S.V.

X. Schedule and Status for First Flight - A/P

Distribution

I. <u>REVIEW OF MISSION PHILOSPHY AND DESIGN CONCEPT:</u> [redacted] SE

A. J mission is thirty days in orbit, five days active, twenty days inactive, and five additional days active.

B. J system is similar to M with two S/I cameras and two SRV's.

C. As much as possible, proven M design components are to be utilized in J system.

II. <u>QUALIFICATION REQUIREMENTS:</u> [redacted] - SE

A. Launch environment imposed by TAT. J system/components are being qualified to the improved Thor launch environment.

B. Long term storage on orbit. Qualification tests prove that the J system will function after the inactive storage period in orbit.

III. <u>REVIEW OF RECOVERY SYSTEM QUALIFICATION TESTS:</u> [redacted] - SE

A. GE completed a thirty-day J mission simulated altitude thermal SRV certification test 1 April 1963 (Retro-rocket was tested at Thiokol.)

B. The recovery battery did not perform to specification.

C. A [illegible] was issued by SE for design of a larger capacity (3AH) battery. The battery is nearly through certification testing. One has been delivered to A/P and is now installed in J-2B SRV.

D. The SRV system and components, less the 3AH new recovery battery, are certified for the J mission. Battery is to be certified in near future.

HAND OUT

DEFINITIONS

SRV	-	Satellite Recovery Vehicle
RV	-	Re-entry Vehicle
A45	-	SRV's as used on C, M, J-A, L, A
k-10	-	J Program 30 Day Certification SRV Testing - Developmental
K-11	-	J Program - Production of SRV's
J-A	-	First SRV on a J Payload System
J-B	-	Second SRV on a J Payload System

SATELLITE RECOVERY VEHICLE CERTIFICATION

J PROGRAM

Background: Maximum use is to be made of the existing SRV Systems for the J Program, i.e. mark 5A SRV as used on the present programs C, M, L, J-A.

Objective: To certify by testing, that the entire A45 SRV System meets all mission objectives over an entire J mission profile.

J mission = 30 days in orbit
5 days operational
20 days inactive
5 days operational
30 days total

30-DAY SRV CERTIFICATION TEST

Location: GE, Philadelphia, Pennsylvania - Dates: 2 March through 1 April 1963

Configuration: A-45 SRV complete with film samples, and minus retro-rocket.

Test:
1. Thirty day J mission altitude thermal simulation
2. All voltages, events, and temperatures monitored, measured and recorded.
3. Normal recovery sequence performed at end of mission.
4. SRV was visually inspected.

Results: SRV performed normally except for the low time limit of the recovery battery power to the beacon and flashing light. Individual battery 30-day tests proved this also.

Action: A technical directive was issued by SE for GE to provide a larger capacity recovery battery of 8 ampere hours.

Other Test: Retro-rocket was tested to K-10 environment at GE's vendor - results okay.

Distribution

Status:

1. The SRV for J-3 has been certified by GE for the J mission - excepting the 8AH recovery battery.
2. The 8AH battery is currently completing certification testing and should be certified next week.
3. 8AH batteries have already been received at K/S and one is installed in J-2B SRV.
4. 8AH battery weighs 12.1# vs. 9.6# for 5AH battery.

Reports: GE certification test reports are available for review.

IV. REVIEW OF INSTRUMENT QUALIFICATION TESTS: [redacted] - Itek

A. Instruments completed thirty-day altitude test 18 January 1963 - film path was observed to be satisfactory. 7800 feet of film was run and 6,000 feet sat with no ill effects.

B. Corona problems - Itek does not measure dielectric capacitance because of the variances in manufacture of rollers, i.e., roller material thicknesses, grinding tolerances, etc.

C. The only conclusion to Corona-roller problem is by testing until correct rollers are installed. No Corona discharge was observed in the film processed from this test.

D. Horizon Cameras Status - J-2 has new one, i.e., lens field twice as large as J-1 horizon lenses, integral baffles installed, camera installed further from skin, and shutter can only fail in closed position.

E. If there is a focus shift in instruments after [redacted], they are to be sent back to Boston for correction.

F. The items being qualified on J-2 will not be flown on J-1.

G. A minor change was made on #2 S/I shield to save weight. Snap-on shield is not used.

V. REVIEW OF PAYLOAD SYSTEM DESIGN AND FLIGHT CONFIDENCE TESTING: [redacted] - LMSC

A. Structure Design and Qualification Status: [redacted] - LMSC

1. Ten doors are similar to M, have been functionally tested alone, and a sequence test will be made for all of them.

2. Thermal curtain of rubberized nylon with aluminum coating and slotted for venting is being developed for J-1.

3. No. 1 S/I film path is similar to M.

4. No. 2 S/I film path requires rollers because of S/I camera location.

5. J payload to Agena interface: four electrical connectors and eight bolts; similar to L system.

6. See attached list for structures test status. (V Att 2 pages)

B. Internal System Design and Qualification Status: [redacted] - LMSC

1. J System has repackaged M circuitry to provide more flexibility in design, testing, trouble shooting, etc.

2. Same pyro system as used on M.

3. Same command system as M except more commands are involved.

4. Signal conditioner essentially same as M but includes more functions.

5. Added: J transfer box to switch recovery functions from J-A to J-B.

6. J-B recovery barrel includes J-B peculiar components. This gives flexibility in reverting from J to M system. This barrel can be removed and adapter cables installed.

7. Electrical harnesses are improved in design to increase reliability.

8. All new J components have received environmental tests and bench check-out tests successfully.

9. J functional schematics have been prepared and are released.

10. There is a controlled Electrical Interface document for payload to Agena, payload to test/C/O equipment, and payload to payload simulator.

C. Thermal Design: [redacted] - LMSC

1. J nominal system temperatures (°F) for total orbit, and no variation in Albedo are:

Component Master Instrument	Condition Beta = 53	 Beta = 0
(a) lens	73	75
(b) scan arm	76	74
(c) plate	78	77

Component	Condition	
	Beta = 53	Beta = 0
Slave Instrument		
(a) lens	71	70
(b) scan arm	71	68
(c) plate	76	74
Skin	111	78
J-B recovery system	--	80

2. J thermal conditions are better than M

3. M system thermal statistical data versus analytical data indicates only a 10°F deviation.

4. J can tolerate larger on-orbit Beta values with little thermal variations.

5. Possible reasons for M-22 high thermal condition.

   (a) Optical properties of paint changed.

   (b) T/M calibration could be invalid.

   (c) High Albedo condition could have existed, heavy cloud cover.

6. J paint/pattern:

   (a) has not been 30-day qualification tested.

   (b) existing chem-acryl paint is not recommended for use above 450°F.

   (c) Silicon-Elastomer paint is on order and can tolerate higher ascent temperatures.

D. System Qualification Test Requirements and Status: [redacted] LMSC

1. Vibration levels were reduced to nearly 70% of qualification specification levels to approximate flight levels. This action was taken to prevent damage to the J-1 flight system. Low level resonance sweeps were also performed to reduce possible damage.

2. Dancer rollers were added to the supply cassettes to improve tension features so that the film would not creep during vibration levels.

3. Cut and wrap operation was performed successfully after vibration testing.

[redacted]

4. J-1 is presently in simulated thermal-altitude test. 12,000 feet of film is to be expended. Cut and wrap is to be performed at altitude. Test is to be of six days duration; i.e., 2 days active, 2 days soak, 2 days active. Corona effects will be under surveillance. Light leak sensors have been added.

5. Separation test of J-A fairing, and J-B recovery system is to be performed after the thermal-altitude test.

VI. RESULTS OF VEHICLE ACTIVATE - DEACTIVATE EXPERIMENTS - [redacted] - LMSC

A. Activate - Deactivate experiments were to be performed on vehicles 1159, 1160, 1161. However, 1159 did not orbit. Information is available for 1160 and 1161.

B. 1160, Thor booster, BTL first stage eleven days in active period. Successful reactivation and pitch down.

C. 1161, TAT, BTL second stage, type VIII programmer used, two days inactive period. Successful reactivation. A Lifeboat recovery was used.

D. Results:

1. Thermal control - good.

2. Command system - normal.

3. T/M - normal

4. Guidance and timer operation after reactivation - normal

5. Instruments operated after reactivation.

6. Not verified squib operation. (However, tests proved squib function to be normal.)

E. LMSC to investigate deactivation of the vehicle upon orbit injection.

VII. PAYLOAD COMMAND, CONTROL AND PROGRAMMING CONCEPTS [redacted] - LMSC

A. V/H Transducer has the flexibility to adjust to actual orbit. J and M "follow-ons" have 10 programs using 20 orbital timer tracks.

B. LMSC will investigate using the existing M transducers as back-up for new J transducers.

C. Average perigee is used with V/H transducer since the type VIII timer can not adjust for perigee fluctuations.

D. Simulated J operational orbits were performed with computers. No problems were encountered.

[redacted]

E. System must "reactivate" at the "deactivate" position, i.e., same latitude and near longitude. [redacted] tracking station is a desirable location.

F. System has to stow the instruments after J-A recovery and during deactivation.

G. Hand-out for this section is attached.

VIII. RETRO-ROCKET PLUME STUDIES AND SEPARATION DYNAMICS: [redacted] - SE

A. A retro-rocket test at SCTB was performed to test for large particles impingment upon the J-B recovery system and immediate J payload structure. No particles impingment occurred. However, a differential pressure situation caused damage to the thermal curtain, springs and bracketry in the fairing and barrel areas around the J-B recovery system.

B. As a result of this test, S.E., LMSC and G.E. met and agreed that the differential pressure situation could be eliminated by delaying the SRV retro-rocket ignition after the spin event by 6 - 8 seconds. This 6 second delay will be incorporated in J-1A and J-1B recovery systems.

C. Sequence of events for J-1 are listed on attached hand outs.

D. On flight 1122 4 light leak sensors were installed at the lens openings to check for retro-rocket plume effects. No difference in the light leak levels occurred between the before and after conditions.

IX. WEIGHT STATUS AND MISSION CAPABILITY: [redacted] - LMSC - [redacted] - LMSC

A. J-1 actual weight 1420.5#
J-1 predicted weight 1387 #
Overweight 33.5#

B. Structure radiation shielding is 14.7#. Supply cassette radiation shielding is 30#.

C. There is a J Program for weight reduction.

D. J-6 and up will be 1406# ± 1%.

E. On J-1 flight, one more type VI battery 27# is needed to bring the electrical power level to a + 5.5% condition.

F. J-1 flight weight reduction:

1. Payload doors eject upon boost to eliminate 10#.

2. Reduce bottle drop on 1162 from 70 seconds to 65 seconds, eliminate 15#.

[redacted]

[redacted]

3. Use light weight E clock in J-1, eliminate 9#.

4. DRP tape recorder, 10#, could be omitted.

G. See attached detailed weight list.

X. SCHEDULE AND STATUS FOR FIRST FLIGHT: [redacted] - LMSC - [redacted] LMSC

A. Present flight dates

J-1 July 29
J-2 August 10
J-3 September 9
J-4 September 17

B. At R-19 it would take 14 days to convert from J to M and be back at R-19 condition.

C. J-1 critical date is completion of TASC tests by 6 July 1963 to make shipment to VAFB date of 14 July 1963.

D. LMSC to provide system conversion times.

[redacted]

[redacted]
S. E. Manager

Attachments

Distribution:

[redacted]

[redacted]

[redacted]

TESTING - STRUCTURES

TITLE	DESCRIPTION	REMARKS
LIGHT SEAL QUAL. P/N T22-613	VIBRATION, ACCEL., SHOCK HIGH TEMP., ALT. & LOW TEMP.	ALL SUCCESSFUL
DOOR ACTUATOR P/N T22-209	VIB., ACCEL., SHOCK, HIGH TEMP. & ALT., LOW TEMP. & ALT.	22 UNITS TESTED ALL PHASES SUCCESSFUL
AFT BARREL PRESSURE TEST	SUBJECTED AFT BARREL TO COLLAPSE PRESS. 3.0 LIMIT (PSI) 3.75 ULT. (PSI)	SUCCESSFUL - NO PROBLEMS
FWD BARREL PRESSURE TEST	SUBJECTED FWD BARREL TO BURST PRESS. 6.83 PSI LIMIT 8.54 PSI ULT.	SUCCESSFUL - NO PROBLEMS
FAIRING AND CONIC ADAPTER PRESSURE TEST	SUBJECTED FAIRING AND CONIC ADAPTER TO COLLAPSE PRESSURE 5.8 PSI LIMIT 7.25 ULT.	SUCCESSFUL - NO PROBLEMS
STATIC LOADING SPACE STRUCTURE	BENDING AND AXIAL LOAD ON BASIC STRUCTURE MAX Q WITH CONDITION 2 AXES TESTED TO ULT. BENDING ULT. FLT. LOADS	SUCCESSFUL - NO PROBLEMS

[redacted]

TESTING - STRUCTURES

[redacted]

TITLE	DESCRIPTION	REMARKS
VIBRATION QUAL. PAYLOAD STRUCTURE	QUAL. VIB. LEVELS ON STRUCTURE 3 AXES USING MASS SIMULATION FOR INSTRUMENTS ETC.	X AXIS COMPLETE Y & Z IN TEST 7-2-63
AXIAL LOAD & TEMP. - BASIC STRUCTURE	MAX. AXIAL LOAD COMBINED WITH MAX. ASCENT TEMP. (MECO)	SCHEDULED APPROX. 7-10-63
LATERAL LOAD TESTS	LATERAL LOADING OF: (1) SUPPLY CASSETTE MOUNT (2) INSTRUMENT MOUNTS (3) 2ND REC. MOUNT	SUCCESSFUL - NO PROBLEMS

[redacted]

J - REAL TIME COMMANDS

[redacted]

RTC	FUNCTION
4	V/H RAMP LEVEL SELECTION
8	V/H RAMP AMPLITUDE SELECTION
9	PROGRAM SELECTION (1-10)
10	V/H RAMP START DELAY SELECT
11	STEREO/MONO SELECTION
12	INTERMIX START POSITION SELECTION
15	INTERMIX MODE SELECTION

[redacted]

J . STORED PROGRAM COMMANDS

[redacted]

H.TIMER BRUSH	FUNCTION
14	ORBIT COUNTER
17	CLOCK INTERROGATE
27	V 'H START PULSES
28	REDUNDANT OFF
29	T M ENABLE
50	T 'M OFF
51	TAPE RECORDER ON
52	TAPE RECORDER OFF

PROGRAM	ON	OFF
1	30	31
2	32	33
3	34	35
4	36	37
5	38	39
6	40	41
7	42	43
8	44	45
9	46	47
10	48	49

[redacted]

[redacted]

J - PROGRAMMING

[redacted]

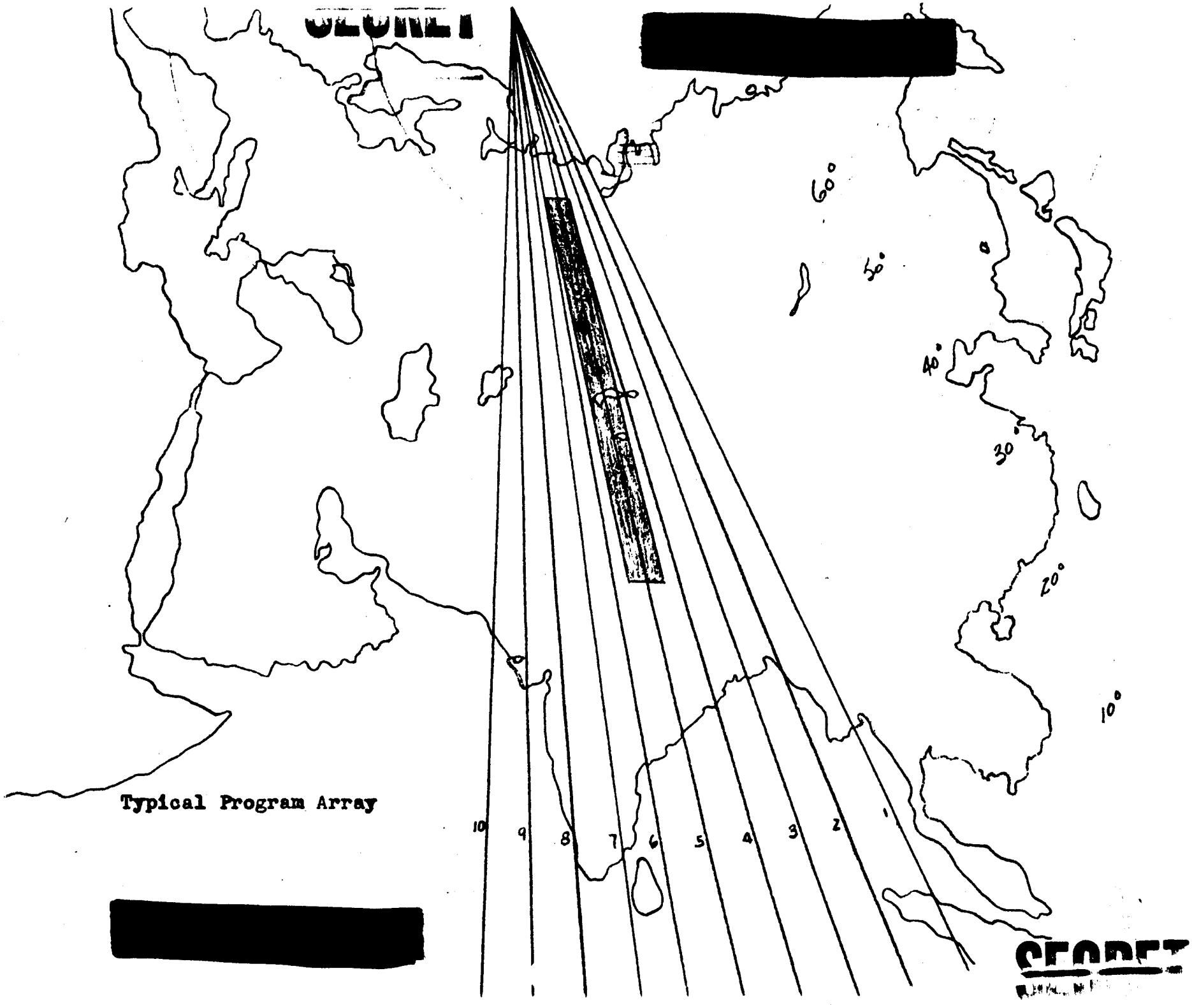
- V/H PROGRAMMER CONFIGURATION FOR PERIGEE IN NORTHERN HEMISPHERE

- ALTERNATE PROGRAMS USED TO COMPENSATE FOR
  1. LONGITUDINAL UNCERTAINTY
  2. REGRESSION RATE DIFFERENCES

- EVENT TIMING COMPENSATION BY
  1. USE OF AVERAGE PERIGEE LOCATION
  2. H-TIMER RESET ADJUST

[redacted]

[redacted]



Typical Program Array

DEACTIVATE STATUS/REACTIVATE CONTROL

[redacted]

- COMPUTATION OF POSSIBLE REACTIVATION REV'S AND REQUIRED COMMAND SETTINGS

- COMPUTATION OF THE PROGRAMMING FLEXIBILITIES/CAPABILITY
  1. PROGRAM NUMBER
  2. V/H RAMP SETTINGS
  3. DURATION OF PROGRAM
  4. DIRECTION OF COVERAGE

[redacted]

SECRET 1161 REACTIVATION [redacted]

REV.	ACTUAL NODE	ACTUAL REGRESSION	CROSSING BIAS	PROGRAM NUMBER	POSSIBLE PROGRAM CHANGES	ΔREG.	COVERAGE DIRECTION	COVERAGE INCREASING	COVERAGE DECREASING	1ST PROG. CHANGE	2ND PROG. CHANGE
69	60 90	22 82	-0.703	1	)	+ 0151	INCR	47	110	157	221
70	83 72		-1 214	8	2	+ 0150	INCR	80	110	190	221
85	65 94	22 81	.004	2	8	+ 0051	DECR	-	325	325	666
86	88 75		483	)	1	+ 0050	DECR	-	235	235	666
101	70.91	22.80	-0.692	4	3	- 0049	DECR	-	197	197	680
102	93.71		2.110	10	)	- 0048	DECR		785	785	694
117	75.80	22.81	.865	5	5	+ 0051	DECR	-	156	156	653
118	98.61		7.010	10	0	+.0050	DECR	-			666
132	57.83	22.80	-3.773	1	0	-.0049	DECR	-			679
133	80 63		-0.971	7	6	-.0048	DECR	-			693
148	62.59	22.79	.987	1	0	-.0149	INCR	66			222
149	85.38		.446	8	7	- 0148	INCR	30			225
164	67.28	22.79	-0.989	3	2	- 0149	DECR	-			222
165	90 07		-1 530	10	)	- 0148	DECR	-			225
180	71 90	22 79	298	4	3	- 0149	INCR	20			222
181	94 69		3 090	10	)	- 0148	INCR	208			225

[redacted]

SECRET

[redacted]

SEQUENCE OF J-1 SEPARATION AND RETRO-PROPULSION EVENTS

Separation = $T_o = 0$

"A" System (Nominal) Sequence:

at T_o - 77 sec. (D-Timer) starts normal REC sequence - starts vehicle pitch-down

at T_o - 2 sec. (± .25) T/C thermal batteries activated

at T_o - 1.5 sec. (+ .33, - .5) T/C connector P28 disconnect (T/C timer starts)

at T_o = 0 sec. Physical separation of REC from vehicle occurs

at T_o + 0.15 sec. Fairing harness disconnects

at $T_1 = T_o$ + 3.4 sec. (± 0.3) Recovery system spin-up

at $T_2 = T_1$ + 7.55 sec. (± 0.45) Retro-fire

(T_1 + 1.25 sec. for previous M-system operations)

at $T_3 = T_2$ + 10.75 sec. (± 0.54) De-spin

at $T_4 = T_3$ + 1.50 sec. (± 0.15) T/C separate

"B" System Sequence: (Nominally the same as above except for addition of event of fwd cone section separation)

at T_{o_B} - 32 sec. (± 1) Start D-Timer. Fire fairing release device squibs, effecting physical separation of fairing and vehicle before vehicle pitch-down.

at T_{o_B} - 77 sec. (D-Timer) Starts normal REC sequence - starts vehicle pitch-down.

at T_{o_B} - 2 sec. (± .25) T/C thermal batteries activated

at T_{o_B} - 1.5 sec. (+.33, - .5) T/C connector P28 disconnect (T/C timer starts)

at T_{o_B} = 0 sec. Physical separation of REC from vehicle occurs.

at T_{o_B} + 0.15 sec. Fairing harness disconnects

at $T_{1_B} = T_{o_B}$ + 3.4 sec. (± 0.3) Recovery system spin-up

at $T_{2_B} = T_{1_B}$ + 7.55 sec. (± 0.45) Retro-fire [redacted]

(T_{1_B} + 1.25 sec. for previous M-system operations)

[redacted]

[redacted]

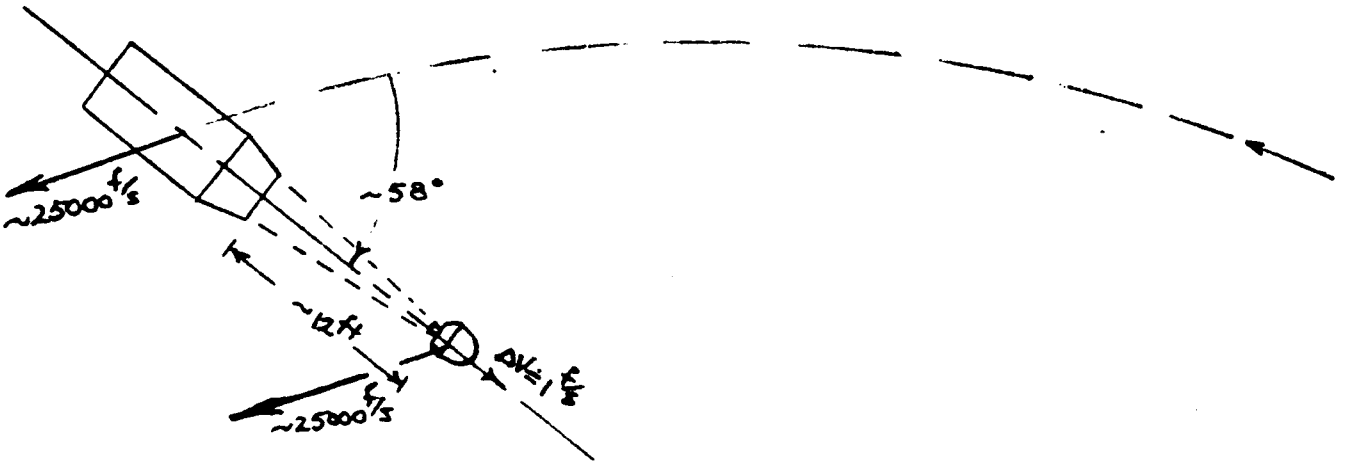
at $T_{3_B} = T_{2_B} + 10.75$ sec. ($\pm$ 0.54) De-spin

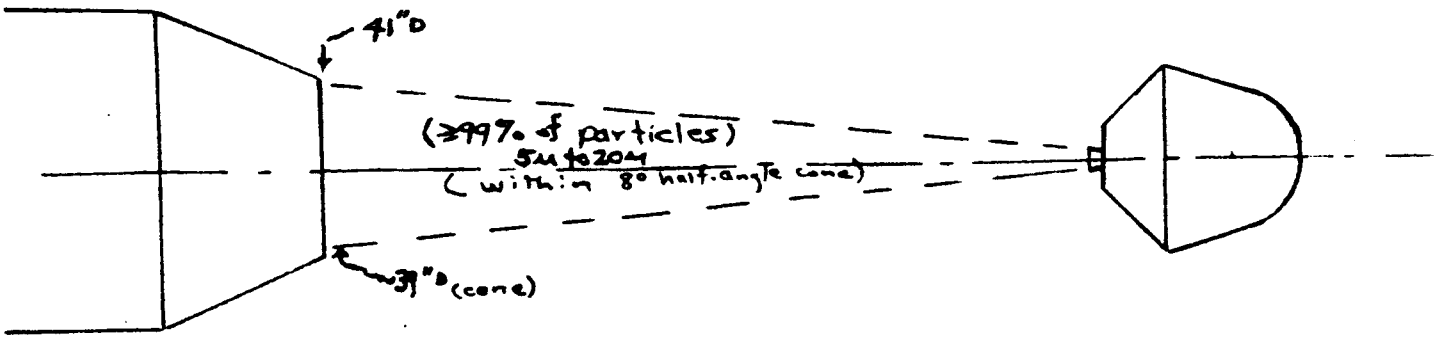
at $T_{4_B} = T_{3_B} + 1.50$ sec. ($\pm$ 0.15) T/C separate

[redacted]

[redacted]

Note - displacement of vehicle and capsule in 12sec ≈ 0.8° arc ⇒ 50 n.mi





[GAS FLOW DIAMETER
@ 12 ft ≥ 50 ft ≐ 15 to 20 × diameter of vehicle opening]

[redacted]

[redacted]

REPORT NO. 3 J PROGRAM 3 JULY 1963

	J-1	J-2	J-3,4,5	J-6+UP
FAIRING	43.9	43.9	43.9	43.9
FILM CHUTE	2.3	2.3	.3	.3
THERMAL CURTAIN	1.8	1.8	1.8	1.8
RECOVERY BARREL	34.7	34.7	34.7	34.7
SRV NO. 2 MOUNT	16.0	16.0	16.0	16.0
BARREL NO. 1	40.8	40.8	40.8	40.3
BARREL NO. 2	40.8	40.8	40.8	40.3
CONICAL ADAPTER	35.0	35.0	35.0	34.7
SUPPLY CASSETTE MOUNT	11.3	11.3	11.3	11.3
AFT SHIELD	3.9	3.9	3.9	3.9
MISC. BOLTS, CLIPS, ETC.	4.0	4.0	4.0	4.0
STRUCTURE, THERM. SHIELD	234.5	234.5	232.5	231.2
FAIRING J-BOX	1.5	1.5	1.5	1.3
TEMP SENSOR J-BOX	1.5	1.5	1.5	1.3
FAIRING HARNESSES	6.8	6.8	6.8	6.8
TRANSFER BOX	7.8	7.8	7.5	7.4
PYRO J-BOX	6.7	6.7	6.7	6.4
THERMAL RELAY MODULE	1.0	1.0	1.0	1.0
RECOV. BARREL HARNESSES	10.1	10.1	10.1	10.1
BARREL NO. 1 HARNESSES	9.7	9.7	9.7	9.7
BARREL NO. 2 J-BOX	2.6	2.6	2.6	2.5
BARREL NO. 2 HARNESSES	20.0	20.0	20.0	20.0
PYRO J-BOX	6.6	6.6	6.6	6.3
T/M + PWR J-BOX	11.5	11.5	11.5	11.0
COMMAND BOX	12.2	12.2	12.2	11.7
CLOCK	18.7	18.7	9.1	9.1
THERMAL RELAY MODULE	1.0	1.0	1.0	1.0
CONIC ADAPTER HARNESSES	14.3	14.3	14.3	14.3
ELOCOATING	2.5	2.5	2.5	2.5
TOTAL ELECTRICAL SYSTEM	134.5	134.5	124.9	122.4
SRV NO. 1	265.5	265.5	265.5	265.5
TAKE-UP CASSETTE	16.5	16.5	16.5	16.5
SRV NO. 2	265.5	269.5	269.5	269.5
TAKE-UP CASSETTE	20.0	20.0	20.0	20.0
TOTAL RECOVERY SYSTEM	569.5	571.5	571.5	571.5
S/A UNIT NO. 1	16.5	16.5	15.5	15.5
S/A UNIT NO. 2	18.5	18.5	18.0	18.0
RADIATION SHIELDING	4.7	4.7	0.0	0.0
ROLLER ASSY.	2.0	2.0	2.0	2.0
INSTRUMENT NO. 1	112.2	113.2	113.2	113.2
INSTRUMENT NO. 2	103.0	103.0	104.0	104.0

SECRET

[redacted]

DETAIL WEIGHT STATUS

REPORT NO. 3

-J- PROGRAM

3 JULY, 1963

	J-1	J-2	J-3,4,5	J-6+UP
SUPPLY CASSETTE	66.6	66.6	66.6	66.6
TOTAL INSTRUMENT SYSTEM	325.5	325.5	319.3	319.3
SECONDARY IS/II PAYLOAD	.8	.8	.8	.8
FAIRING	.2	.2	.2	.2
MAIN PAYLOAD	157.5	157.5	157.5	157.5
TOTAL PAYLOAD	158.5	158.5	158.5	158.5
S/P WEIGHT AT LIFTOFF	1448.5	1424.5	1406.7	1402.9

[redacted]

SECRET

[redacted]

[redacted]

DETAIL WEIGHT STATUS

REPORT NO. 3

-L- PROGRAM

3 JULY, 1963

	L-3	L-4+UP
CONICAL FAIRING	40.1	40.1
CONICAL ADAPTER	27.4	27.4
FWD BARREL	61.8	61.8
AFT BARREL	76.5	76.5
ROLL JOINT STRUCTURE	17.6	17.6
MAIN DOOR	23.0	23.0
DOOR DOUBLERS, MECH.	11.6	11.6
ROLL JOINT MECHANISM	24.2	24.2
AGENA ATTACH BOLTS	2.0	2.0
INSTRUMENT MOUNTING	13.7	13.7
S/I MOUNT	3.0	3.0
MISC. HARDWARE	5.0	5.0
THERMAL SHIELDS	11.5	11.5
TOTAL STRUCTURE	317.4	317.4
DECODER	21.0	21.0
ROLL JOINT CONTROL	2.3	2.3
SIGNAL COND + COMMUTATOR	4.0	4.0
CLOCK	24.4	24.4
J-BOXES	15.0	15.0
WIRING	47.5	47.5
FLOCOATING	2.5	2.5
TOTAL ELECTRICAL	116.7	116.7
SRV - EMPTY	261.9	261.9
CASSETTE	17.0	17.0
TOTAL RECOVERY	278.9	278.9
MAIN INSTRUMENT	608.0	603.1
S/I INSTRUMENT	19.3	19.3
TOTAL INSTRUMENT SYSTEM	627.3	622.4
PAYLOAD	72.9	72.9
SECONDARY PAYLOAD	.8	.8
TOTAL PAYLOAD	73.7	73.7
A/P WEIGHT AT LIFTOFF	1414.0	1409.1

[redacted]

[redacted]

DETAIL WEIGHT STATUS

3 JULY, 1967

REPORT NO. 3

ITEM	REASON FOR CHANGE	WT. CHANGE	EFFECTIVITY
THERMAL CURTAIN	NEW DESIGN	-.7	J 1 - J 5
THERMAL CURTAIN	REVISED ESTIMATE	.3	J 6 - UP
RECOVERY BARREL	REVISED ESTIMATE	2.7	J 6 - UP
CONIC ADAPTER HARNESSES	ADDED NEW HARNESS	1.0	J 1 - UP
FLOCOATING	NEW REQUIREMENT	2.5	J 1 - UP
SRV NO. 1	REVISED ESTIMATE	2.0	J 6 - UP
SRV NO. 2	REVISED ESTIMATE	2.0	J 6 - UP
S/I UNIT NO. 1	ACTUAL VS ESTIMATED WT.	-1.4	J 2 - UP
S/I UNIT NO. 2	ACTUAL VS ESTIMATED WT.	1.1	J 3 - UP
INSTRUMENT NO. 1	MODIFIED V/H PROGRAMMER	3.2	J 1 - UP
SUPPLY CASSETTE	REVISED ESTIMATE	8.0	J 6 - UP
FLOCOATING	NEW REQUIREMENT	2.5	L 3 - UP
MAIN INSTRUMENT	ACTUAL WEIGHT	-4.9	L 4 - UP