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T9-5-041

LAUNCH REQUIREMENTS- JX28 VEHICLE 1616

22 SEPT. 1965

ATTACHED IS THE LAUNCH REQUIREMENTS AND LIMITATIONS FOR PAYLOAD JX28 VEHICLE 1616.

[redacted]
CHIEF
PAYLOAD INTEGRATION

DISTRIBUTION

[redacted]

TOP SECRET [redacted]

1.0 SCOPE

1.1 GENERAL.

THE FOLLOWING REQUIREMENTS GOVERN THE CONDITIONS UNDER WHICH THE VEHICLE WILL BE LAUNCHED WITH THE A/P PAYLOAD SYSTEM. ANY DEVIATION FROM THE PRESCRIBED LIMITS SHALL BE CAUSE FOR HOLD. ANY STATUS CHANGES MUST BE REPORTED TO PAYLOAD INTREGRATION IMMEDIATELY AFTER OCCURRENCE FOR EVALUATION. ALL DISCREPANCIES AND DEVIATIONS MUST BE CORRECTED PRIOR TO RESUMPTION OF VEHICLE LAUNCH COUNT-DOWN.

1.2 DESIRED OBJECTIVE

ALL CAMERA OPERATIONS AFTER MATING SHALL BE CALLED 'ALPHA CHECKS' AND SHALL BE MICROWAVED TO STC. VAFB-AP SHALL BE RESPONSIBLE FOR IMPLEMENTING THIS OBJECTIVE.

2.0 PAYLOAD INTERNAL TEMPERATURE.

65 +/- 10 DEG. F. FROM MATING TO T-4 HOURS.
65 +/- 5 DEG. F. FROM T-4 THROUGH LAUNCH.

TEMPERATURE OF PAYLOAD SYSTEM SHALL BE MONITORED AND LOGGED EVERY ONE-HALF HOUR FROM MATING TO LAUNCH

3.0 RELATIVE HUMIDITY.

50 PERCENT OR LESS AT ALL TIMES.

4.0 N2 PRESSURE.

THE N2 MUST BE CONNECTED AND FLOWING WHEN THE SYSTEM IS ON THE LAUNCH PAD. MAXIMUM OFF TIME IS ONE-HALF HOUR PER DAY.

5.0 SRV TRANSMISSION FREQUENCY

RECOVERY TLM	228.2 +/- 0.1 MC
RECOVERY BEACON	235.0 +/- 0.1 MC

6.0 POWER.

POWER MUST BE APPLIED TO THE PAYLOAD INTERFACE WHENEVER THE PAYLOAD IS TRANSPORTED.

7.0 THERMAL BLANKET

THERMAL BLANKET MUST REMAIN ON THE PAYLOAD FROM MATING UNTIL LAUNCH.

8.0 PRIMARY TELEMETRY READOUTS.

PAYLOAD CHECKOUT (MUST BE VERIFIED THROUGH VEHICLE TELEMETRY)

8.1 LENS ROTATION, HORIZON IDLER, AND CENTER OF FORMAT INSTRUMENT 1 CHANNEL 09, LINK I. NO BACK UP CHANNEL IS AVAILABLE.

8.2 LENS ROTATION, HORIZON IDLER, AND CENTER OF FORMAT INSTRUMENT 2 CHANNEL 10, LINK I. NO BACK UP CHANNEL IS AVAILABLE.

8.3 RING A COMMUTATOR (.4 X 63) CHANNEL 13, LINK I AND POINTS LISTED BELOW. THE PRIMARY COMMUTATED POINTS MUST BE VERIFIED DURING PAYLOAD CONFIDENCE AFTER MATING AND CHECKOUT TASKS RUNS.

MONITOR FUNCTION	VERIFICATION PRIMARY CH-LK-PT	VOLTS	TOL.	ALTERNATE CH-LK-PT	VOLTS	TOL.
FAIRING SEPARATION	13-1-04	1.3	+/-.2	NONE	---	---
INSTR. 2 DOOR EJECT	13-1-07	1.3	+/-.2	NONE	---	---
INSTR. 1 DOOR EJECT	13-1-19	1.3	+/-.2	NONE	---	---
INSTR.1 CYCLE COUNT 1	13-1-22	0.55 STEP	+/-.15	13-1-25	4.05 OR GREATER	4.05 OR GREATER
INSTR.1 CYCLE COUNT 10	13-1-23	0.55 STEP	+/-.15	13-1-25	4.05 OR GREATER	4.05 OR GREATER
INSTR.1 CYCLE COUNT 100	13-1-24	0.55 STEP	+/-.15	13-1-25	4.05 OR GREATER	4.05 OR GREATER
FOOTAGE PUT INSTR. 1	13-1-25	4.05 OR GREATER		8-2-56	4.05 OR GREATER	
INSTR.2 CYCLE COUNT 1	13-1-27	0.55 STEP	+/-.15	13-1-31	0.9 OR LESS	0.9 OR LESS
INSTR.2 CYCLE COUNT 10	13-1-28	0.55 STEP	+/-.15	13-1-31	0.9 OR LESS	0.9 OR LESS
INSTR.2 CYCLE COUNT 100	13-1-29	0.55 STEP	+0-.15	13-1-31	0.9 OR LESS	0.9 OR LESS
CALIBRATE PLUS	13-1-30	5.0	--	13-1-04	5.0	---

FOOTAGE POT INSTR. 2	13-1-31	0.9 OR LESS	0.9 OR LESS	8-2-47	0.9 OR LESS	0.9 OR LESS
FILM DOOR CLOSURE	13-1-32	4.7	+/-.2	NONE	---	---
N2 BOTTLE PRESSURE	13-1-36	3.0 OR GREATER		NONE	---	---
MODE MONITOR REC1/REC2	13-1-37	1.0	+/-.2	NONE	---	---
CONTINUITY LOOP SRV-1	13-1-44	5.38	+/-.2	NONE	---	---
SEPARATION MON. SRV 1	13-1-45	0.28	+/-.1	16-1-25	0.28	+/-.1
RECOVERY BATTERY SRV-1	13-1-46	0.0	+/-.2	NONE	---	---
INTERNAL PRESSURE-CONIC	13-1-53	5.0	+/-.2	NONE	---	---
CONTINUITY LOOP SRV-2	13-1-54	5.36	+/-.2	NONE	---	---
SEPARATION MON. SRV 2	13-1-55	1.3	+/-.1	NONE	---	---
RECOVERY BATTERY SRV-2	13-1-56	0.0	+/-.2	NONE	---	---
CALIBRATE ZERO	13-1-57	0.0	---	13-1-13	0.0	---
SYC. PULSE	13-1-58	5.5	+/-.2	13-1-59	5.5	+/-.2
SYC. PULSE	13-1-58	5.5	+/-.2	13-1-60	5.5	+/-.2

ALL COMMAND SELECTOR POINTS AS LISTED PER LAUNCH REQUIREMENTS LIST IN APPENDIX I.

9.0 HOMING OF CAMERA SCAN ARMS.

9.1 BOTH CAMERA SCAN ARMS MUST BE PROPERLY HOMED PRIOR TO TERMINAL COUNT.

10.0 LAUNCH REQUIREMENTS COMMAND SETTINGS.

10.1 ALL STEPPING SWITCHES MUST BE POSITIONED IN ACCORDANCE WITH THE COMMAND SETTINGS LIST IN APPENDIX I PRIOR TO TERMINAL COUNT.

11.0 FILM CONSUMPTION PRIOR TO LAUNCH.

11.1 MINIMUM FILM CONSUMPTION PRIOR TO LAUNCH SHALL BE 100 CYCLES ON EACH INSTRUMENT.

11.2 SHOULD THE PAYLOAD SYSTEM STAY IN A LOADED CONDITION FOR AN EXTENDED PERIOD, THE SYSTEM SHALL BE OPERATED FOR 10 CYCLES EVERY FOUR DAYS.

12.0 RESPONSIBILITY.

12.1 IT SHALL BE THE RESPONSIBILITY OF THE SENIOR A/P PAYLOAD ENGINEER TO ENSURE THE IMPLEMENTATION OF THE RESTRICTIONS AND REQUIREMENTS LISTED HEREIN. IN ADDITION, HE IS CHARGED WITH THE RESPONSIBILITY OF SUPPLYING THE FOLLOWING SYSTEM INFORMATION IMMEDIATELY PRIOR TO LAUNCH TO FLIGHT OPERATIONS AND COMPUTER SERVICES BY TELEPHONE.

12.1.1 FINAL FLIGHT SYSTEM WEIGHTS

12.1.1.1 TOTAL SYSTEM WEIGHT, IN POUNDS. .....

	A SRV S/N 650	B SRV S/N 636
12.1.1.2 RETRO ROCKET WEIGHT, LBS.	.....	.....
12.1.1.3 PARACHUTE WEIGHT, LBS.	.....	.....

12.1.2 AT THE TIME THE FLIGHT FILM IS FIRST SPLICED TO THE SYSTEM, RECORD THE CYCLE COUNTER READINGS, CASSETTE FOOTAGE POT. VOLTAGE AND LENGTH OF TAKE-UP CASSETTE LEADER ON EACH INSTRUMENT.

	MASTER	SLAVE
A. CYCLE COUNTERS, CYCLES	.....	.....
B. FOOTAGE POT VOLTAGE, VOLTS	.....	.....
C. TOTAL SYSTEM LEADER, FT.	.....	.....

12.1.3 IF ANY OFF SPOOLING IS PERFORMED, THE FOLLOWING IS REQUIRED AT THE TIME THE FINAL SPLICE IS MADE BETWEEN THE FLIGHT FILM AND THE TAKE-UP LEADER. RECORD THE CYCLE COUNTER READINGS, CASSETTE FOOTAGE POT VOLTAGES, AND REMAINING LENGTH OF LEADER IN THE TAKE-UP CASSETTES.

	MASTER	SLAVE
A. CYCLE COUNTERS, CYCLES	.....	.....
B. FOOTAGE POT VOLTAGE, VOLTS	.....	.....
C. REMAINING TAKE-UP LEADER, FT.	.....	.....

12.1.4 CYCLE COUNTER AND FILM FOOTAGE POT READINGS FOR EACH INSTRUMENT, AT LAUNCH.

	MASTER	SLAVE
A. CYCLE COUNTERS, CYCLES	.....	.....
B. FOOTAGE POT VOLTAGE, VOLTS	.....	.....

12.1.5 CLOCK ERROR, STATIC RUN, IN MICROSECONDS .....

12.1.6 TOTAL LENGTH OF FLIGHT FILM OFF-SPOOLED FROM EACH SUPPLY SPOOL INCLUDING ALL CONTROL STRIPS AND SAMPLES.

A. MASTER ..... FT.

B. SLAVE ..... FT.

12.1.7 TOTAL LENGTH OF FILM OFF-SPOOLED FROM EACH S/I INSTRUMENT.

A. S/I A STELLAR ..... FT.

A INDEX ..... FT.

B. S/I B STELLAR ..... FT.

B INDEX ..... FT.

APPENDIX I PAYLOAD LAUNCH REQUIREMENT LETTER

LAUNCH REQUIREMENT- COMMAND SETTINGS

THE FOLLOWING COMMAND SETTINGS ARE SPECIFIED FOR THE JX28 PAYLOAD 1616 VEHICLE.

NO.	FUNCTION	COMMAND SELECTOR POSITION	VERIFICATION PRIMARY CH-LK-PT	PRIMARY VOLTS	PRIMARY TOL	VERIFICATION SECONDARY CH-LK-PT	SECONDARY VOLTS	SECONDARY TOL
6	V/H RAMP LEVEL	7	13-1-C2 13-1-C3	2.0 3.0		8-2-24 8-2-26	2.0 3.0	
8	V/H RAMP AMPLITUDE	7	13-1-C5 13-1-C6	2.0 3.0		8-2-28 8-2-30	2.0 3.0	
9	PROGRAM	4	13-1-C8 13-1-C9	1.0 4.0	5%	8-2-32 8-2-34	1.0 4.0	5%
10	V/H RAMP DELAY	6	13-1-11 13-1-12	2.0 2.0	+1	8-2-44 8-2-45	2.0 2.0	+1
11	INSTR. MODE	1	13-1-14 13-1-15	1.0 1.0		8-2-48 8-2-50	1.0 1.0	
12	INTERMIX POSITION	11	13-1-17 13-1-18	4.0 4.0		8-2-52 8-2-53	4.0 4.0	
15	INTERMIX MODE	4	13-1-2C	4.0		8-2-55	4.0	

LAUNCH REQUIREMENTS- CAMERA SYSTEM

LOADING MONITORS- THE FOLLOWING REPRESENTATIVES HAVE BEEN DESIGNATED RESPONSIBLE DURING LOADING OF THE FLIGHT SYSTEM

- CUSTOMER- PRIME [redacted]
  ALTERNATE [redacted]
  AF- PRIME [redacted]
  ALTERNATE [redacted]
  BOSTON PRIME [redacted]
  ALTERNATE .....
- OR DESIGNATED REPRESENTATIVE.

THE FOLLOWING SETTINGS/REQUIREMENTS ARE SPECIFIED FOR THE JX28 PAYLOAD 1616 VEHICLE.

PANORAMIC LENS SETTINGS-

	INSTRUMENT 1 (MASTER)	INSTRUMENT 2 (SLAVE)
SLIT DIMENSIONS	.175 Inches	.175 Inches
FILTER TYPE	Wratten 21	Wratten 21

NOTE- SLIT DIMENSIONS MUST BE MEASURED PRIOR TO INSTALLATION.

HORIZON OPTICS SETTINGS -

	INSTRUMENT 1 (MASTER)	INSTRUMENT 2 (SLAVE)
SUPPLY HORIZONS-		
APERTURE	F6.8	F8.0
SPEED-	1/100	1/100
FILTER	Wratten 25	Wratten 25
LENS SERIAL NO.		
TAKE-UP HORIZONS-		
APERTURE	F8.0	F6.8
SPEED	1/100	1/100
FILTER	Wratten 25	Wratten 25
LENS SERIAL NO.		

STELLAR INDEX OPTICS SETTINGS-

	STELLAR INDEX A	STELLAR INDEX B
STELLAR LENS-		
APERTURE	F1.8	F1.8
SPEED	2.0 Sec.	2.0 Sec.
FILTER	None	None

INDEX LENS-

APERTURE	F4.5	F4.5
SPEED	1/500	1/500
FILTER	Wratten 21	Wratten 21

FILM NOMENCLATURE-

PANORAMIC INSTRUMENTS

	INSTRUMENT 1 (MASTER)	INSTRUMENT 2 (SLAVE)
PRIMARY		
TYPE	7J-40-16000	7J-40-16000
EMUL. DATA	222-1-7-5	222-1-7-5
WT. AND SPCCL NO.	88.3-78.9-5s-R59F	88.3-78.9-5s-R60B
BOX NO.	40	40
SECONDARY		
TYPE	7J-40-16000	7J-40-16000
EMUL. DATA	228-52-9-5	228-52-9-5
WT. AND SPCCL NO.	89.5-80.1-6s-100T	89.1-79.8-7s-117B
BOX NO.	25	25

STELLAR INDEX-

	STELLAR INDEX A		STELLAR INDEX B	
	STELLAR	INDEX	STELLAR	INDEX
PRIMARY-				
TYPE	3J34-75	7J33-135	3J34-75	7J33-35
EMUL. DATA	124-35-8-5	104-14-6-5	124-35-8-5	104-14-6-5
SECONDARY				
TYPE. DATE	3J34-75	7J33-135	3J34-75	7J33-135
EMUL. DATA	124-35-8-5	104-14-6-5	124-35-8-5	104-14-6-5

PANORAMIC OFFSPCOLING REQUIREMENTS-

	MASTER	SLAVE
ORINGINAL LENGTH-FT.	16,000	16,000
LENGTH OF OFF SPCCL-FT.	0 +/-10	0 +/-10
LENGTH TO LOAC-FT.	16,000	16,000

STELLAR INDEX FILM OFFSPCOLING REQUIREMENTS

	STELLAR INDEX A		STELLAR INDEX B	
	STELLAR	INDEX	STELLAR	INDEX
ORGINAL LENGTH-FT.	75	135	75	135
LENGTH TO OFF SPCCL-FT.	29 +1 -0	43 +1 -0	29 +1 -0	43 +1 -0
LENGTH TO LOAC-FT.	46	92	46	92

CYCLE RATIO STELLAR INDEX TO PANORAMIC 1 TO 7

STELLAR BAFFLE TYPE-

	STELLAR A	STELLAR B
	5.00	5.00

LAUNCH WINDOW 1750 - 1830

APPROVEL BY

OPERATIONS AND ANALYSIS [redacted] DATE 9/22/65

PROGRAM INTEGRATION [redacted] DATE 9-22-65

RESIDENT OFFICER [redacted] DATE 9-22-65

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