[redacted]

[redacted]

LAUNCH REQUIREMENTS - VEHICLE 1180/J16

Attached is the Launch Requirements and limitations for Vehicle 1180/J16.

[redacted]

[redacted]

Payload Integration

[redacted]

Declassified and Released by the N R O
In Accordance with E. O. 12958
on NOV 26 1997

[redacted]

[redacted] [redacted]

LAUNCH REQUIREMENTS - VEHICLE 1180/J16

1.0 SCOPE

1.1 General

The following requirements govern the condition 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 System Integration immediately after occurrence for evaluation. All discrepancies and deviations must be corrected prior to resumption of vehicle launch count-down.

2.0 PAYLOAD INTERNAL TEMPERATURE

$65 \pm 10^{\circ}$ F from mating to T-4 hours.

$65 \pm 5^{\circ}$ F from T-4 hours thru launch.

Temperature on Payload System shall be monitored and recorded every one-half hour from mating to launch.

3.0 RELATIVE HUMIDITY

50% or less at all times.

4.0 N_2 PRESSURE

The N_2 must be connected and flowing when the system is on the launch pad. Maximum off time is one-half hour per day.

[redacted]

[redacted] [redacted]

5.0 SRV TRANSMISSION FREQUENCY

Recovery T/M	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 raised or lowered.

7.0 THERMAL BLANKET

The thermal blanket must remain on the payload from mating until launch.

[redacted] PRIMARY TLM READOUTS

[redacted] Payload checkout (must be verified thru vehicle TLM).

8.1 Lens Rotation, Horizon idler, and center of format Instrument No. 1 channel 09 Link I. No backup channel is available.

8.2 Lens Rotation, Horizon idler, and center of format Instrument No. 2 channel 10 Link I. No backup channel is available.

8.3 Ring A Commutator (.4 x 60) channel 13 Link I and points listed below. The primary commutated points must be verified during payload confidence after mating and checkout task runs.

[redacted]

[redacted]

[illegible]	[illegible]					
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Function	[illegible]	[illegible]	Tol.	[illegible]	Volts	Tol.
Inst. 1 Cycle Count 1	13-1-22	.55 step	± .15	13-1-25	4.05 or greater	4.05 or greater
Inst. 1 Cycle Count 10	13-1-23	.55 step	± .15	13-1-25	"	"
Inst. 1 Cycle Count 100	13-1-24	.55 step	± .15	13-1-25	"	"
Film Footage Pot Inst. 1	13-1-25	4.05 or greater	4.05 or greater	8-2-56	"	"
Inst. 2 Cycle Count 1	13-1-27	.55 step	± .15	13-1-31	.9 or less	.9 or less
Inst. 2 Cycle Count 10	13-1-28	.55 step	± .15	13-1-31	"	"
Inst. 2 Cycle Count 100	13-1-29	.55 step	± .15	13-1-31	"	
Calibrate Plus	13-1-30	5	--	13-1-07	5	
Calibrate Plus	13-1-30	5	--	13-1-14	5	
Inst. 2 Film Footage Pot	13-1-31	.9 or less	.9 or less	8-2-47	.9 or less	.9 or less
Inst. 1 Door Eject	13-1-35	1.3	± .2	None	--	--
Inst. 2 Door Eject	13-1-45	1.3	± .2	"	--	--
Film Door Closure	13-1-47	4.7	± .2	"	--	--
Fairing Separation	13-1-49	1.3	± .2	"	--	--
Continuity Loop SRV-1	13-1-51	5.38	± .2	"	--	--
Separation Monitor - SRV's	13-1-52	0.5	+ .1 - .1	16-1-25	0.5	+ .1 - .1
Recovery Battery SRV-1	13-1-53	0	± .2	None	--	--
Continuity Loop SRV-2	13-1-54	5.38	± .2	"	--	--
Recovery Battery SRV-2	13-1-55	0	± .2	"	--	--
Calibrate Zero	13-1-57	0	--	13-1-04	0	
Calibrate Zero	13-1-57	0	--	13-1-11	0	
Calibrate Zero	13-1-57	0	--	13-1-17	0	
Sync.	13-1-58	5.5	± .2	13-1-59	5.5	[illegible]
Sync.	13-1-58	5.5	± .2	13-1-60	5.5	± .2
N_2 Bottle Pressure	13-1-37	3.0 or greater	--	11-1-11	3.0 or greater	

All Command Selector points as listed per launch requirements list in Appendix - I.

[redacted]

9.0 HOMING OF CAMERA STOVES

9.1 Both camera stoves 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 prior to terminal count. (See Appendix - I)

11.0 FILM CONSUMPTION PRIOR TO LAUNCH

11.1 Minimum film consumption prior to launch shall be 100 cycles on both Instruments.

11.2 Should the Payload System stay on the pad for an extended period, the System shall be operated 10 cycles per applicable procedure [redacted]

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.

[redacted] [redacted]

LAUNCH REQUIREMENTS - VEHICLE 1180/16 (Continued)

12.1.1 Final System Weight, in Lbs._____

12.1.2 Cycle counter film footage pot and leader length readings for both instruments, in accordance with J1210 Para. 18, Item 5.4.1.

	MASTER	SLAVE
a. Cycle Counter	_____	_____
b. Film Footage Pot in Volts	_____	_____
c. Leader Lengths in Feet	_____	_____

12.1.3 Cycle counter, film footage pot and leader length readings for both instruments, in accordance with J1210, Para. 18, Item 5.4.10.

	MASTER	SLAVE
a. Total length of leader from "A" bucket hub to flight payload splice.	_____Ft.	_____Ft.
b. Cycle Counter Readings	_____Cts.	_____Cts.
[redacted]	_____V	_____V

12.1.4 Cycle counter and film footage pot readings for both instruments, at launch, in units.

	Cycle Counter	Film Footage Pot
a. Master	_____	_____
b. Slave	_____	_____

12.1.5 Clock error, static run, in microseconds:_____

12.1.6 Length of off-spool of both instruments, including control strips, in feet:

a. Master _____Ft.
b. Slave _____Ft.

12.1.7 Length of off-spool of both S/I Instruments, in feet:

a. S/I A Stellar _____Ft.
Index _____Ft.

b. S/I B Stellar _____Ft.
Index _____Ft.

[redacted]

[redacted] [redacted]

LAUNCH REQUIREMENTS - VEHICLE 1180/J16 (Continued)

12.1.8 DOOR MONITOR CALIBRATIONS:

CONDITION	T/M VOLTAGE INST. NO. 1	INST. NO. 2	[illegible]
DOOR ON (CLOSED)	_____	_____	_____
DOOR OFF (OPEN)	_____	_____	_____

12.1.9 SEPARATION MONITOR CALIBRATIONS:

CONDITION	SRV-A-B	SRV A (ONLY)	T/M VOLTAGE SRV *	[illegible]
MATED	_____	_____	_____	_____
SEPARATED	_____	_____	_____	_____

* = AFTER FIRST RECOVERY

12.1.10 CONTINUITY LOOP MONITOR CALIBRATIONS:

CONDITION			T/M VOLTAGE		
CONTINUITY LOOP	S/I SEAL	MAIN SEAL	[illegible]	SRV A	SRV B
CLOSED	OPEN	OPEN	1.84 ± 5%	_____	_____
CLOSED	OPEN	CLOSED	4.30 ± [illegible]	_____	_____
CLOSED	CLOSED	CLOSED	5.38 ± [illegible]	_____	_____
OPEN	CLOSED	CLOSED	4.[illegible] ± 5%	_____	_____
OPEN	CLOSED	OPEN	2.14 ± 5%	_____	_____
OPEN	OPEN	OPEN	.75 ± 5%	_____	_____
OPEN	OPEN	CLOSED	3.42 ± 5%	_____	_____
CLOSED	CLOSED	OPEN	3.12 ± 5%	_____	_____

[redacted]

LAUNCH REQUIREMENTS [redacted]
-COMMAND SETTINGS-

APPENDIX - I
PAYLOAD LAUNCH
REQUIREMENT LETTER
SHEET 1 OF 4

LAUNCH REQUIREMENTS: The following Command Settings are specified for the 1180/J-16 payload. Date of issue _____ (R-20) 11/10/64 (R-7)

COMMAND SELECTOR			VERIFICATION					
			PRIMARY			SECONDARY		
NO.	FUNCTION	POSITION	CH-LK-Pt	Volts	Tol ±	CH-LK-Pt	Volts	Tol ±
6	V/H Ramp Level	6	13-1-2	2.0	0.10	8-2-24	2.0	0.10
			13-1-3	2.0	0.10	8-2-26	2.0	0.10
8	V/H Ramp Amplitude	6	13-1-5	2.0	0.10	8-2-28	2.0	0.10
			13-1-6	2.0	0.10	8-2-30	2.0	0.10
9	Program	4	13-1-8	1.0	0.05	8-2-32	1.0	0.05
			13-1-9	4.0	0.20	8-2-34	4.0	0.20
10	V/H Ramp Delay	5	13-1-12	2.0	0.10	8-2-44	2.0	0.10
			13-1-13	1.0	0.05	8-2-45	1.0	0.05
11	Instrument Mode	1	13-1-15	1.0	0.05	8-2-48	1.0	0.05
			13-1-16	1.0	0.05	8-2-50	1.0	0.05
12	Intermix Position	11	13-1-18	4.0	0.20	8-2-52	4.0	0.20
			13-1-19	4.0	0.20	8-2-53	4.0	0.20
15	Intermix Mode	4	13-1-20	4.0	0.20	8-2-55	4.0	0.20

LOADING MONITORS

The following representatives have been designated responsible during loading of the flight system; ref. memo Webb to [redacted]

HEADQUARTERS Prime: Col. V. Webb
Alternate: Col. Conway

A/P Prime: [redacted]
Alternate: [redacted]

BOSTON Prime: [redacted]
Alternate: [redacted]

[redacted]

[redacted]

LAUNCH REQUIREMENTS
-CAMERA SYSTEM-

APPENDIX - I
PAYLOAD LAUNCH
REQUIREMENTS LETTER
SHEET 2 OF 4

LAUNCH REQUIREMENTS: The following settings/requirements are specified for the 1180/J-16 payload. Date of issue _____ (R-20) _____ (R-[illegible])

PANORAMIC LENS SETTINGS:

	Instrument No. 1 (Master)	Instrument No. 2
Slit Dimensions	.250 x 2.278	.175 x 2.278
Filter Type	Wratten 25	Wratten 21

NOTE: SLIT LENGTH AND WIDTH MUST BE MEASURED AT TIME OF INSTALLATION

Measured by _____

Verified by _____

HORIZON OPTICS SETTINGS:

	Instrument No. 1 (Master)	Instrument No. 2 (Master)
Supply Horizons:		
Aperture	F 6.8	F 8.0
Speed	1/100 Sec.	1/100 Sec.
Filter	Wratten 25	Wratten 25
Take-up Horizons:		
Aperture	F 8.0	F 6.8
Speed	1/100 Sec.	1/100 Sec.
Filter	Wratten 25	Wratten 25

STELLAR INDEX OPTICS SETTINGS:

	Stellar Index A	Stellar Index B
Stellar Lens:		
Aperture	F 1.8	F 1.8
Speed	2.0 Sec.	2.0 Sec.
Filter	None	None

[redacted]

LAUNCH REQUIREMENTS
-CAMERA SYSTEM-

[redacted]

APPENDIX - I
PAYLOAD LAUNCH
REQUIREMENTS LETTER
SHEET 3 OF 4

LAUNCH REQUIREMENTS: CONTINUED Date of Issue _____ (R-20) _____ (R-[illegible])

STELLAR INDEX OPTICS SETTINGS:

	Stellar Index A	Stellar Index B
Index Lens:		
Aperture	F 4.5	F 4.5
Speed	1/500 Sec.	1/500 Sec.
Filter	Wratten 21	Wratten 21

FILM NOMENCLATURE:

Panoramic Instruments:

	Instrument No. 1 (Master)	Instrument No. 2 (Slave)
Primary:		
Type	7J - 40 - 16000	7J - 40 - 16000
Emul. Date	77 - 7 - 9 - 4	77 - 7 - 9 - 4
Wt. & Spool No.	88.4 - 79.4 - 4S - 33T	88.5 - 79.1 - 4S - 69 B
Box No.	2	2
Secondary:		
Type	7J - 40 - 16000	7J - 40 - 16000
Emul. Data	76 - 8 - 9 - 4	77 - 3 - 10 - 8 - 9 - 4
Wt. & Spool No.	88.6 - 79.2 - 4S - 105T	88.6 - 79.0 - 4S - 106B
Box No.	5	5

PANORAMIC OFFSPOOLING REQUIREMENTS:

	Master	Slave
Original Length - Ft.	16,000	16,000
Length to Offspool - Ft.	0 ± 10	0 ± 10
Length to Load - Ft.	16,000	16,000

[redacted]

LAUNCH REQUIREMENTS: CONTINUED Date of Issue _____ (R-20) _____ (R-7)

FILM NOMENCLATURE: CONTINUED

Stellar Index:

	Stellar Index A		Stellar Index B	
	Stellar	Index	Stellar	Index
Primary:				
Type	3J-34-75	7J-33-135	3J-34-75	7J-33-135
Emul. Date	44-30-7-4	31-4-7-4	44-30-7-4	31-4-7-4
Secondary:				
Type	3J-34-75	7J-33-135	3J-34-75	7J-33-135
Emul. Date	44-30-7-4	31-4-7-4	44-30-7-4	31-4-7-4

STELLAR INDEX FILM OFFSPOOLING REQUIREMENTS

	Stellar Index A		Stellar Index B	
	Stellar	Index	Stellar	Index
Original Length - Ft.	75	135	75	135
Length to Offspool - Ft.	30 +1 -0	45 +1 -0	30 +1 -0	45 +1 -0
Length to Load - Ft.	45	90	45	90

CYCLE RATIO STELLAR INDEX TO PANORAMIC 1 to 7

STELLAR BAFFLE TYPE:

Stellar A	Stellar B
11.500	11.500

LAUNCH WINDOW: 1945 Z - 2045 Z

[redacted]

[redacted]

[redacted]

[redacted]

13 November 1964

TO: DISTRIBUTION

SUBJECT: LAUNCH REQUIREMENTS - VEHICLE 1180

[redacted] - Please replace Page 4 of Appendix - I Payload Launch Requirements Letter with Page 4 - Revision "A" attached.

[redacted]

OPERATIONS AND ANALYSIS [redacted]

[redacted]

[redacted]

LAUNCH REQUIREMENTS: CONTINUED Date of Issue _____ (R-20) 11/13/64 (R-7)
REVISION "A"

FILM NOMENCLATURE: CONTINUED

Stellar Index:

	Stellar Index A		Stellar Index B	
	Stellar	Index	Stellar	Index
Primary:				
Type	3J-34-75	7J-33-135	3J-34-75	7J-33-135
Emul. Date	44-30-7-4	31-4-7-4	44-30-7-4	31-4-7-4
Secondary:				
Type	3J-34-75	7J-33-135	3J-34-75	7J-33-135
Emul. Date	44-30-7-4	31-4-7-4	44-30-7-4	31-4-7-4

STELLAR INDEX FILM OFFSPOOLING REQUIREMENTS

	Stellar Index A				Stellar Index B			
	Stellar		Index		Stellar		Index	
Original Length - Ft.	75		135		75		135	
Length to Offspool - Ft.	30	+1 -0	45	+1 -0	30	+1 -0	45	+1 -0
Length to Load - Ft.	45		90		45		90	

CYCLE RATIO STELLAR INDEX TO PANORAMIC 1 to 7

STELLAR BAFFLE TYPE:

Stellar A	Stellar B
5.000	5.000

LAUNCH WINDOW: 1945 Z - 2045 Z

cc: [redacted]

[redacted]