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FLIGHT PAYLOAD SYSTEM  
ENGINEERING AUDIT



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*Allyment*

J-20

FTV-1613

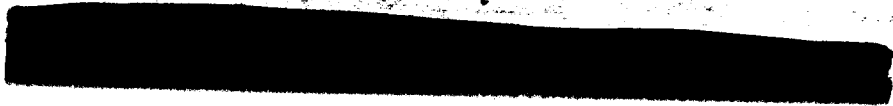
INSTRUMENTS 136 and 137

SRV 672 (A) & 673 (B)

Declassified and Released by the NRC

In Accordance with E. O. 12958

on NOV 26 1997



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J-20 CONFIGURATION

BASIC CONFIGURATION:

T22-300  
T22-500

ELECTRICAL BLOCK DIAGRAM  
INSTALLATION SUMMARY DRAWING

<u>NUMBER*</u>	<u>TITLE</u>	
TD-2032	LIGHTWEIGHT BLOSSOM T/M SYSTEM	
2054	SRV SINK VALVE MODIFICATION	
2088	PRESSURE MAKE-UP SYSTEM	
2098	ACCESS DOORS FOR PAYLOAD TRACKING AND ROLLER ADJUSTMENT	
2099	BACK-UP CUTTER - S.I.	
2100 GE	SIGNAL REDUNDANCY (TRANSFER AND ARM)	
2101B IMSC		
2104	PYRO RELAY RELOCATION -- AGENA TO PAYLOAD	
2106		
2124		
2125		
EJA-2016	FAIRING ACCESS DOORS	
2028	INSTRUMENTATION CHANGES	
2030	BUCKET RESET CAPABILITY FOR R/F ON PAD	
2033	MONO COMMAND SYSTEM	
2034	S.I. COMMAND MONITOR	
2059	SEPARATION SWITCH	
2544	SEPARATION SPRING ON RECOVERY CABLE	
EJA-2565	HOT WIRE CUTTER (and TRANSFER BOX REWIRING)	
EJRT-2699		
EJRT-2522	DRCG TO OPERATE ON REGULATED VOLTAGE ONLY	
2653		
(OTHER)	3840 SECOND V/H PROGRAMMER	
---		COMMUTATOR HARDWIRED ON
---		IMPROVED "B" CASSETTE ROLLER CLEARANCE

\* These are the major changes which make J-20 different from J-5.

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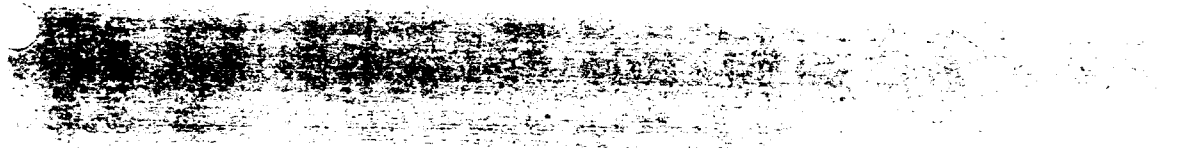
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J-20 CONFIGURATION

THE ONLY MAJOR DIFFERENCE BETWEEN J-20 AND THE PREVIOUS FLIGHT, J-19, IS THAT J-20 DOES NOT HAVE A YAW PROGRAMMER.

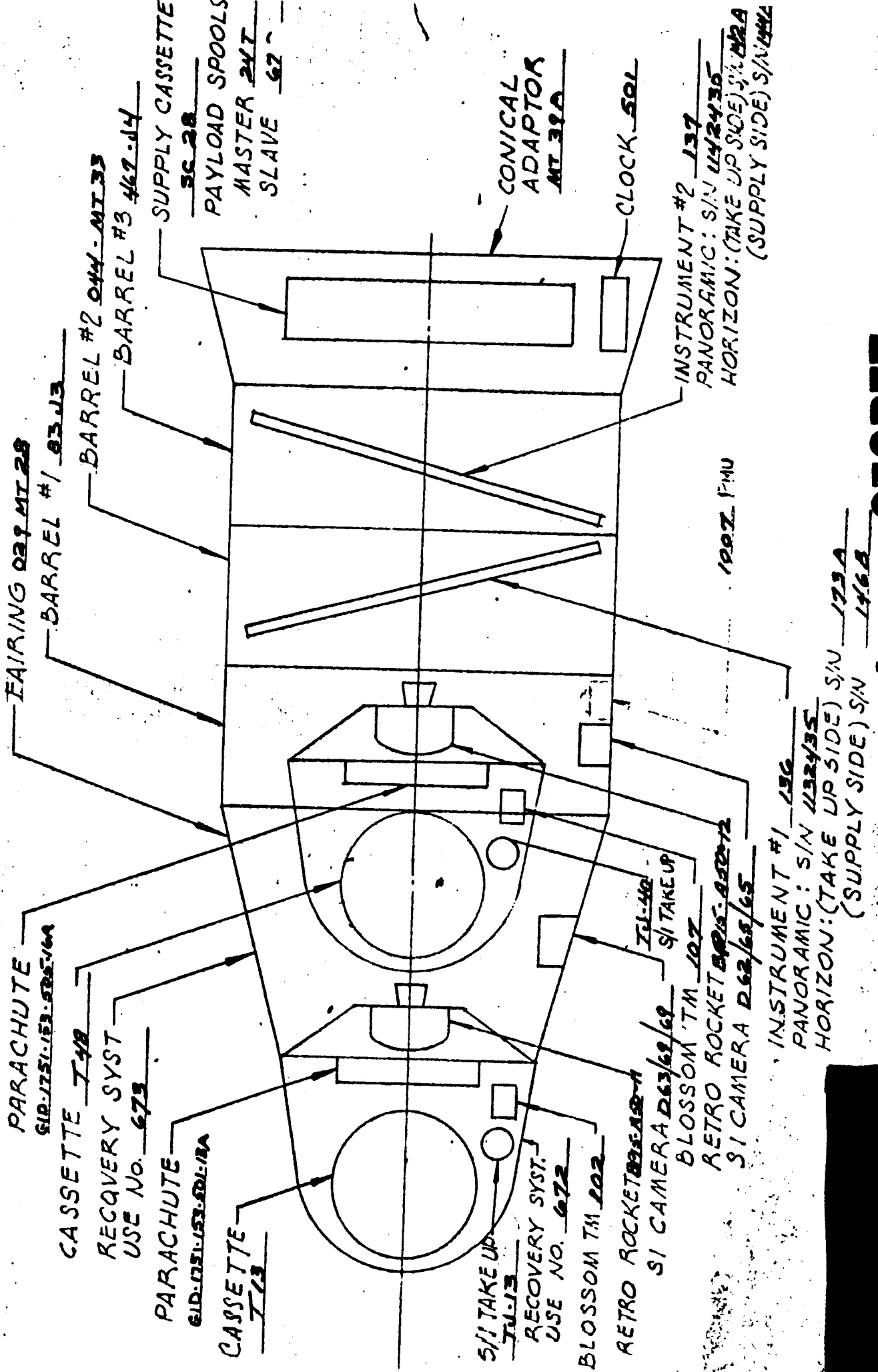
*B. Cassette T.M.*



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CG SERIALIZATION FLIGHT 1613 J20

CG  
JUN 70



CG  
JUN 70

J



**J-20 S.T.I. LIST**

- J-2001 J-20 CHAMBER FAILURE STUDY
- J-2001-1 SUPPLEMENT TO J-2001
- J-2002 VERIFICATION OF CUT & WRAP AND LIGHT LEAK FIXES
- J-2003 REASSIGNMENT OF "A" TAKE-UP CASSETTE
- J-2004 PROCEDURE REQUIREMENT & RELAY PULL-IN VOLTAGE CHECK
- J-2005 PROCEDURE CHANGES (FLIGHT READINESS)
- J-2006 PARTS REPLACEMENT
- J-2007 BATTERY ACTIVATION CHANGE

*in statement*

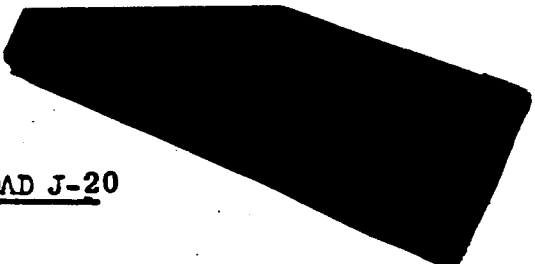
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K-11  
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**J-20 L.E.O. LIST**

- T22-3000 CHANGE K-10 RELAY REQUIREMENT
- T22-639 CHANGE SCREW CALL-OUT
- T22-603 CHANGE STELLER BAFFLE
- T44-661 CHANGE SCREW & CABLE CLAMP CALL-OUT

*11/2 to 511*





MAJOR EQUIPMENT LIST - PAYLOAD J-20

1814

I . ASSOCIATE CONTRACTOR EQUIPMENT

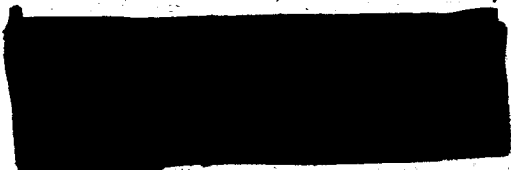
<u>ITEM</u>	<u>PART NUMBER</u>	<u>SERIAL NUMBER</u>	<u>NOMENCLATURE</u>
1	42600	136	Master Instrument
2	42650	137	Slave Instrument
3	5400	D17/19/17	"A" Double Frame Camera
4	5400	D82/85/85	"B" Double Frame Camera
5	T22-731	672	"A" Re-entry Vehicle
6	T22-732	673	"B" Re-entry Vehicle
7	56545	SC28	Supply Cassette

II . A/P MANUFACTURED EQUIPMENT

8	T22-562-505	120	Temp Sensor J Box
9	T22-377-501	120	Aft Pyro J Box
10	T22-548-503	120	Command Box
11	T22-343-513	120	T/M Pwr J Box
12	T22-380-505	120	J Box
13	T22-530-513	120	Transfer Box
14	T22-540-509	120	Fwd Pyro J Box
15	T22-554-505	120	Fairing J Box
16	T22-738-503	1007	Pressure Make-up Unit
17	T44-661	A-254-2/255-2 B-251-2/252-2	Water Seal

III . SUB-CONTRACTOR EQUIPMENT

18	1089-B1	501	DRCG (Clock)
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TEST HISTORY of J-20

1 APRIL, 1965

VEHICLE 1613 \* INSTRUMENTS 136 and 137 \* SRV 672(A) and 673(B)

PRE-CHAMBER TESTS

- (1) Phase I, Receiving Inspection, COMPLETED 23 November, 1964.
- (2) Phase II, Acceptance Testing, COMPLETED 15 December, 1964.
- (3) Phase V, Component Installation, COMPLETED 18 December, 1964.
- (4) Phase VI, Sub-system Compatibility, COMPLETED 4 January, 1965.
- (5) Phase VII, Sub-System Assembly and Functional Testing, COMPLETED 15 January, 1965.
- (6) Start System Functional Tests on 6 January, 1965.
- (7) Completed Vibration Test on 23 January, 1965.
- (8) Completed Pre-TASC preparations on 25 January, 1965.

CHAMBER TESTS

- (1) Went to TASC (first time) on 26 Jan., 1965. On Orbit #4 the Slave Instrument Fail-Safed and could not be re-set. This prevented diagnostic T/M, so System was returned to A/P on 28 Jan., 1965 for troubleshooting.
- (2) A second TASC Test was run on 1-6 Feb., 1965. The Slave Instrument Fail-Safed three times; twice it was reset and the Test continued, the third failure was at end of Test when all payload had been expended. Refer to "J-20 HISTORY" dated 1-27-65/2-25-65 by [redacted], Manager, Test Dept. 60-64 for more details.

THE FOLLOWING ITEMS WERE REVIEWED AND CORRECTED PRIOR TO THE THIRD CHAMBER TEST:

- A) Scan Cam honed to eliminate roughness.
- B) Fail-Safe Switches repositioned.
- C) Supply Cassette tension was 9 oz., corrected to 13 oz.
- D) Replaced Cassette "A", irregular film transport observed with original.

- (3) A third TASC Test was conducted on 2 to 4 March, 1965. This TASC Test was successfully completed.

POST CHAMBER TESTS

- (1) Block Test on 15 Feb., 1965. Test payload indicated incorrect IMC data. Negator assembly set on "meter" rather than "scan" part of cycle. Boston corrected this, Block test rerun, O.K. on 16 Feb., 1965.
- (2) Boston honed scan head rollers (fifth time) to eliminate scratches on payload.
- (3) System mated for Pre-Ship Functional Test on 11 March, 1965. Shipped to VAFB on 15 March, 1965.

**CONFIDENTIAL**

FEDR/CARD SUMMARY  
 PAYLOAD J 20 VEHICLE 1613  
 FEDRS AGAINST MAJOR PAYLOAD EQUIPMENT

MAJOR EQUIP. & S/N	PART OR ASSEMBLY	S/N	FEDR	DATE AREA FOUND	DESCRIPTION OF DISCREPANCY	REPAIR OR REPLACEMENT DATA & CORRECTIVE ACTION	SUPPLEMENTAL ANALYSIS AND CORRECTIVE ACTION
Commu-ator /M & wr. J Box 22-343 /N 120	Connectors J1 thru J5 T22-343	120	1622	11/9/4 Sys. Test	Functional Test of T/M & Power Box. Connectors J1 thru J5 are mechanically wrong.	<p>12/2/4</p> <p>Retroute wiring &amp; tie bundle that will allow proper instal of commutator &amp; plugs.                      Make wiring dia. T22-352 agree with top assy.                      T22-343.</p>	N/A
instr. 2600 /N 136	Light Shield frame Support 44310	N/A	1553	11/19/4 Rec. Insp	Light shield frame support has cracked radius at point of attach. to boof bridge top strip.	<p>12/2/4</p> <p>This light shield is not load stressed therefore it is recommended that the effected weld area be epoxied with white Hysol. Boston, Mass. Eng. to revise Dwg. to clarify weld info. Rev. "A" CARD required.</p>	N/A
instr. 2600 /N 136	Lens Cell Assy. 57012G1	1132-435	1555	11/19/4 Rec. Insp	No. 3 element has small fracture on inboard edge and a small foreign particle.	<p>11/30/4 : The edge fracture could have been a small particle of foreign material compressed between the bottom edge of the retaining ring &amp; the #3 element. The small foreign particle appears to be a metal shaving, possibly deposited there during lens assy. No corrective action req'd. The small fracture and/or the foreign particle will in no way degrade the photographic imagery.</p>	N/A

**OTOM**



**FEDR/CARD**  
**PAYLOAD J 20**  
**FEDRS AGAINST MAJOR PAYLOAD EQUIPMENT**

A  
Sheet 2

MAJOR EQUIP. & S/N	PART OR ASSEMBLY	S/N	FEDR	DATE AREA FOUND	DESCRIPTION OF DISCREPANCY	REPAIR OR REPLACEMENT DATA & CORRECTIVE ACTION	SUPPLEMENTAL ANALYSIS AND CORRECTIVE ACTION
Instr. 42600 S/N 136	Shaft Frame Metering Roller 35515	N/A	1629	12/4/4 Sys. Test	Acceptance Testing Frame metering roller shaft & gear runout is .00375 Max. runout is .003	12/7/4: - Observe tracking during acceptance testing. If normal, no corrective action req'd. Out of spec. condition (.00075) is approaching test set up limitations.	N/A
Bbl. Assy Inst. #2 Complete T22-605 S/N 044- MT-33	Unit #1 Main Inst. 42650	137	1727	1/11/5 Sys. Test	Installation of new shutter spring & clevis per Boston Stud spring threads were loosened at time of assy. of this Instr. When stud was removed for attaching spring clevis, it was observed that the lock tite had reacted on the stud threads. The stud will screw into the Shutter Assy but will not tighten.	1/13/5: - Install stud with epoxy bead on shoulder of stud to secure to mounting plate. Check epoxy bead after vibration run. Inform personnel that stud should not be removed to facilitate installing shutter spring clevis assy.	N/A
Fairing Assy. Complete T22-609 S/N MT 28	Aux. Film Cutter T22-670- 501	1007	1892	2/8/5 Sys. Test	D.F.C. #1 removal. Top of chute assy. has 3/8" tear in forward edge on right hand side.	2/8/5: Drill 3/32" hole at inner end of tear. Follow with adhesive tape over edge & cover both sides of affected area. (1" x 1.5" A supp. CARD from 60/64 (Sys. Test) for corrective action.	2-17-5 Supplemental. The overhead hoist used to mate & demate has too fast a lift and a coarse control. Should have a finer control & a slower speed on the lift, to eliminate future damage to the chute assembly.

**REWORK**

FEDR/CARD SUMMARY

PAYLOAD J 20 VEHICLE 1614  
 FEDRS AGAINST MAJOR PAYLOAD EQUIPMENT

MAJOR EQUIP. & S/N	PART OR ASSEMBLY	S/N	FEDR	DATE AREA FOUND	DESCRIPTION OF DISCREPANCY	REPAIR OR REPLACEMENT DATA & CORRECTIVE ACTION	SUPPLEMENTAL ANALYSIS AND CORRECTIVE ACTION
Payload Install. T22-800	Payload Assembly Complete T22-600	J20	1898	2/6/5 Sys. Test	Recovery Bbl. skin in area of D. F. C. under door shows evidence of electrical arcing causing plating crazes and pits in skin.	2/8/5:-Burnish pits in affected areas. Engineering will issue a Supp. CARD for if needed any additional disposition. Dept. 60/64 (Sys. Test) is to issue a Supp. CARD for corrective action.	2/19/5:-Supplemental This CARD directs rework in addition to that directed by the original CARD. This is applicable to the R barrel for J20 only (As per SK 2055)
Fairing T22-802 S/N 029-MT28	Baffle Assy. (SI) T22-648	N/A	1874	2/18/5 Sys. Test	1)T22-475 curtain torn. T22-320-1 springs are weak. 2)S/E no tears in curtain, springs should extend baffle fully.	1)Install patch of 5040 Fairprene, using DuPont 4678 adhesive. 2)Condition is acceptable. Baffles open fully.	
Instr. 42850 S/N 137	Payload Assy. Comp. T22-600	J20	1557	1/28/65 TASC Testing	Instr. S/N 137 went into a "fail safe" condition on Prog 7 Br. 42 at 22 635secs orbit 4. S/B Normal instr. operation	Reference CARD 1899 & 1899-1	

COPY

FEDR/CARD SUMMARY  
 PAYLOAD J 20 VEHICLE 1614  
 FEDRS AGAINST MAJOR PAYLOAD EQUIPMENT  
 (DISCREPANT PART REMOVED FROM SYSTEM)

PART OR ASSEMBLY (REMOVED)	S/N	FEDR	DATE AREA FOUND	DESCRIPTION OF DISCREPANCY	REPAIR OR REPLACEMENT DATA & CORRECTIVE ACTION	SUPPLEMENTAL ANALYSIS AND CORRECTIVE ACTION
W5 Cable Assy. 221E806G2	H9	1756	10/6/4 D. R. C.	Torn rubber insert in W5P4 rubber insert is separated between pins 2 & 7 of P4.	11/20/4:-Replace defective cable assy. from spares. Due to mis-mating of connectors return to G. E. for repair & return or replace.	
Housing Baffle 56807-2	N/A	1626	11/16/4 Sys. Test	Checking shutter setting. Light seal mt. screw hole has stripped threads.	12/214 Cause from over torquing the nut screw. Replace housing with like item from stores and discard damaged item. Dwg. 56807G was changed to up the mt. base thickness from 3/32 to 5/32.	N/A
Lamp Assy. 44383	N/A	1630	12/4/4 Sys. Test	Component Test. Serial number and Index lamps are open.	12/7/4:- +28 jumper used in breakout box accidentally touched scope causing lamps to burn out. 1) Replace S/N and index lamp from stock. 2)Informed people in Accep. Test of proper test setup for setting pulse to lamps. 3)Discard removed lamps.	N/A

**DISCREPANT PART**

FEDR/CARD SUMMARY

PAYLOAD J 20 VEHICLE 1614  
 FEDRs AGAINST MAJOR PAYLOAD EQUIPMENT

(DISCREPANT PART REMOVED FROM SYSTEM)

MAJOR EQUIP. & S/N	PART OR ASSEMBLY (REMOVED)	S/N	FEDR	DATE AREA FOUND	DESCRIPTION OF DISCREPANCY	REPAIR OR REPLACEMENT DATA & CORRECTIVE ACTION	SUPPLEMENTAL ANALYSIS AND CORRECTIVE ACTION
USE 22-731 /N 672	Eject. Program'r 731D365	5778- 020	1805	12/9/64 D.R.C.	All P-6 & questionable type prog. are to be sent to GE for mod. Retest & return as per [REDACTED] 12/9/4.	12/11/4: Replace Progr.: S/N 5778020 with updated one from stores. Return obsolete prog. to G.E. for modification to U.C I. 28- 731-D365.	N/A
USE 22-732 /N 673	Eject. Program'r 731D365	5778-	1806	12/9/4	Same as above FEDR 1805	Same as above CARD 1805	N/A
nstr. 2600 /N 136	Potential meter 300-66	N/A	1635	11/14/4 Sys. Test	Live P/L Lamp Check. Bit #23 density cannot be ad- justed down, due to faulty wiper on pot R1023.	12/16/4:- Faulty wiper is the problem. 1)Replace pot with a new one from stores & adjust for proper lamp density. 2) Hold faulty wiper for analysis. Rev. "A" CARD required.	1635A: 1-28-5:- Was unable to find any mal- function either mechan- ically or electrically.
nstr. 136	Transistor Q 109	-	1638	12/16/4 Sys. Test (Lamp Test)	Processed payload shows blinking pulse to be inter- mittent. S/B every cycle of instrument.	Transistor Breakdown. 1)Replace transistor Q109 with like item. 2)Make another live payload run to check for blanking pulse. 3)Scrap defective transistor.	

**CRFT**  
**ONLY**

FEDR/CARD NUMBER  
 PAYLOAD J 20 VEHICLE 1614  
 FEDRE AGAINST MAJOR PAYLOAD EQUIPMENT

(DISCREPANT PART REMOVED FROM SYSTEM)

MAJOR EQUIP. & S/N	PART OR ASSEMBLY (REMOVED)	S/N	FEDR	DATE AREA FOUND	DESCRIPTION OF DISCREPANCY	REPAIR OR REPLACEMENT DATA & CORRECTIVE ACTION	SUPPLEMENTAL ANALYSIS AND CORRECTIVE ACTION
str. Bbl. 1 Assy. complete 22-604 /N 467 - J4	Unit #1 42600	136	1562	1/20/5 Sys. Test	G3 roller did not turn freely, emitted noise when rotating.	1/21/5:-1)Replace bearing with like item from stores. 2)Scrap defective bearings.	N/A
hrust one 18K360G3 /N 58 SE 673 20 B	Eject. Prog 5406-731D365G5 987		2006	1/22/5 D.R.C.	Test Procedure J131021. Out of Spec: Was 9.05 sec. at 26VDC. S/B 10.21 to 11.29 sec. at 26 VDC.	1/24/5:-Appears to be a potentiometer which is probably biased on the low side, but not locked on. Return to vendor for repair & analysis & return or replacement.	
str. 137	LightShield - Boot 44345		1636	11/5/4 Sys. Test	Visual inspection. Boot surface shows cracks. Cure date & age unknown.	12/16/4:- Condition appears to be a result of aging. Apply R. T. V. 732 to the fold areas where the surface cracks are the most predominant.	1636-1 This CARD cancelled. 1)Replace light shield boot with like item. 2)Return defective boot to Boston for analysis. 3)Rev. "A" CARD req'd See 1637-1A Rev.
str. 136	LightShield N/A Boot 44345		1637	12/15/4 Sys. Test	Visual inspection. Boot surface shows cracks. Cure date & age unknown.	12/16/4:- Condition appears to be a result of aging. Apply R. T. V. 732 to the fold areas where the surface cracks are the most predominant.	1637-1, 1-19+65 -This CARD cancels CARD 16 1)Replace light shield boot with like item. 2)Return defective boot to Boston for analysis. 3)Rev. "A" CARD req'd. Is: Boots deteriorated from age. If changed boot mat'l to Bu "S" rubber laminated. 3-2-65

FEDR/CARD SUMMARY  
 PAYLOAD 20 VEHICLE 1614  
 FEDRE AGAINST MAJOR PAYLOAD EQUIPMENT

B

Sheet 4

(DISCREPANT PART REMOVED FROM SYSTEM)

LAJGT. QIP. S/N	PART OR ASSEMBLY (REMOVED)	S/N	FEDR	DATE AREA FOUND	DESCRIPTION OF DISCREPANCY	REPAIR OR REPLACEMENT DATA & CORRECTIVE ACTION	SUPPLEMENTAL ANALYSIS AND CORRECTIVE ACTION
Supply Spool 3545/N. 28	Wiring Harness #2 Supply Spool 50999	N/A	1872	2/11/5 Sys. Test	Investigation of noise by S. C. P-L-H-M-N- & K female pins compressed to one side of connector pin holes by male pins of P1102.	2/12/5:- Because of inaccessibility, mating of J/P1102 connector is quite difficult. Replace damaged connector. Scrap defective conn. Request redesign and/or connector type replacement from Boston Eng.	Rev. "A" CARD require 2/25/65. Change connectors to Winchester type MRAC-14 with larger size pins.
payload st'l. 2-800	Payload Instr. Assy. Comp T22-600	Instr. 137	1559	2/10/5 Sys. Test	At "Instr. OP" command instr. S/N 137 went into "Failsafe" after one sec. of operation. Unreg. ammeter indicated 20 amp load. S/B: Normal instr. operation with 7 amps average current.	2/11/5:- A 20 amp short on caused by T/M monitor wires Panel were reversed with respect to system. Replace K108 relay (Relay hi-current it was replaced to increase reliability.) Scrap relay that was replaced.	contacts of relay 108 was going to Console. Patc
apsule 8R356 3E 672	Aft Cover T22-736	82	2019	2/9/5 D. R. C.	Cover Buildup, W/S, dimple motor installation. Screw head twisted off in Lever Assy. of main W/S.	2/11/5:- Replace screw with substitute LS8701T-04-5. Applied gyptol to threads. Dwg. T44-661G is being revised for this sub.	2/17/5:- Supplemental Due to the inability o removing the broken scr the Lever Assy. shall be replaced. The discarded Lever Assy. shall be scr
wiring 22-602 N 029- T28	Double Frame Camera 50400	D/17 /19/ 17	1875	2/18/5 Sys. Test	TASC Test. Fiducial lamps blooming on processed payload. S/B: no blooming of lamps	2/18/5:- Return D/F S/N D17 & control unit DB119 to Boston for evaluation & corrective action. Rev. "A" CARD required.	

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FEDR/CARD SUMMARY  
 PAYLOAD J20 VEHICLE 1613  
 FEDRS AGAINST MAJOR PAYLOAD EQUIPMENT

B

(DISCREPANT PART REMOVED FROM SYSTEM)

Sheet 5

MAJOR EQUIP. S/N	PART OR ASSEMBLY (REMOVED)	S/N	FEDR	DATE AREA FOUND	DESCRIPTION OF DISCREPANCY	REPAIR OR REPLACEMENT DATA & CORRECTIVE ACTION	SUPPLEMENTAL ANALYSIS AND CORRECTIVE ACTION
12-605	Instr. 42650	137	1901	2/20/5 Sys. Test	Torque Motor & Brake re-mains energized after 7 sec. drop out on #2 supply. S/B: De energize after 7 sec. drop out.	2/22/5:-K104 contacts #1 & 7 were welded together due to excessive current breaking. Ref. FEDR 1559 for cause (2/10/5.) 1)Remove relay control S/N 5127 & replace with R. control S/N 175. 2)Return S/N 5127 to Boston for disposition. 3) Rev. "A" CARD required.	Rev. "A" CARD req'd. Is: Discard relay chassis S/N 5.127 fail safe action explained by CARD 1899-1559-1557 & 2024
12-600	Lens Rotation Switch 11SMI-T	Instr. 137	1888	2/19/5 Sys. Test	Switch function did not appear on Sanborn records when instr. operated at low speed. S/B:-Positive switch actuation at all speeds.	2/23/5:-Actuator arm of switch was replaced on a squawk & problem was persistent. Replace defective Sw. Adjust Sw per Dwg. 63358. Run instr. at both low & hi speed to check Sw. Scrap discrepant Sw.	Rev. "A" CARD req'd.

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FEDR/CARD SUMMARY

PAYLOAD 20 VEHICLE 1614

FEDRS AGAINST MAJOR PAYLOAD EQUIPMENT

(DISCREPANT PART REMOVED FROM SYSTEM)

B

Sheet 6

MAJOR EQUIP. & S/N	PART OR ASSEMBLY (REMOVED)	S/N	FEDR	DATE AREA FOUND	DESCRIPTION OF DISCREPANCY	REPAIR OR REPLACEMENT DATA & CORRECTIVE ACTION	SUPPLEMENTAL ANALYSIS AND CORRECTIVE ACTION
payload instl.	Payload Assy. Comp. T22-600	N/A	1899	2/6/5 Sys. Test	Instr. S/N 137 went into fail safe mode during Revs 9-11 & 12. S/B Shuttle will not actuate Fail Safe switches.	2/22/5:- 1)Payload was pulsing due to S/C being set at 9 ozs. 2)Take up T35 does not randomly stop rotation during 7 sec. reduced torque mode. (Ref. T35 problem history sheet) 1)Replace T35 with T-13. 2)Return T-35 to Boston for evaluation & disposition 3)Rev. "A" CARD req'd on T-35. 4) Reset S/C tension + 13 ozs + 1 at 4V DC. 3/1/5	2/24/5: (CSE) Statement ;(1) that pulsing was due to S/C setting is questionable.
payload Assy. complete 22-600	Unit #1 42600	Instr. 136	1876	3/1/5 Sys. Test	Sanding of output metering roller to obtain proper slip tension. Taper pin on output side of coupling sheared. Pin was 7/0 size. S/B: 6/0.	1)Wrong size pin installed P/B call for 6/0. 2)Ream hole for 6/0 pin & install. 3)Unit #2 same problem. same fixes. 4)Scrap discrepant item.	
airing assembly 22-602	Index Pin T2-840	N/A	1887	3/2/5 Sys. Test	Fairing to SRV - a inating procedure (Pre TASC #3). Phenolic insulator cracked off T2-840 guide.	3/2/5:- 1)Replace T2-840 index pin. (accomplished). 2)Dept 60/64 (Sys. Test) is to issue a supp. CARD correcting the condition which caused this defect.	

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FEDR/CARD SUMMARY  
 PAYLOAD J 20 VEHICLE 1603  
 FEDRE AGAINST MAJOR PAYLOAD EQUIPMENT

B

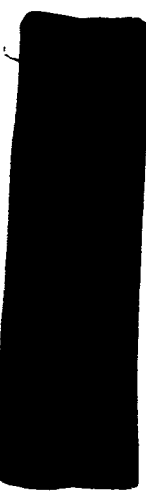
Sheet 7

(DISCREPANT PART REMOVED FROM SYSTEM)

MAJOR EQUIP. & S/N	PART OR ASSEMBLY (REMOVED)	S/N	FEDR	DATE AREA FOUND	DESCRIPTION OF DISCREPANCY	AIR OR REPLACEMENT DATA & CORRECTIVE ACTION	SUPPLEMENTAL ANALYSIS AND CORRECTIVE ACTION
Supply Cassette 56546 S/N 8C 28	Cover 56351	N/A	1889	3/10/5 Sys. Test	Removal of GHE fixture Helicoll (left side of top index hole aft cover) started backing out when GHE mt. bolt was removed.	3/12/5: It was necessary to install a shorter Hell-coll (PN3181) and a 3183-4CN x 0.500 bolt.	Rev. "A" CARD req'd.
Recovery Capsule USE 673	Flash Tube 113B9169F P1	189	V3845	3/18/5 VAFB	Capsule GSE Checkout. There is conductive paint inside the plug. This could cause a short between the pins of the connector.	3/22/5: Install new Lamp S/N 115 Return lamp S/N 185 to A/H to clean if possible, if not scrap. Lamp was not removed when painting. Paint procedure should call out, strip cover of all components.	
Conic Adpt. T22-506 S/N MT 39A	Pyro J Box Aft T22-377	120	V3950	3/23/5 VAFB	Pyro Continuity. Relay K10 had high resistance between Pin 6 & 8 intermittently from 2.6 ohms to infinitive. S/B: 0.0 ohms.		

OTOP  
 WAFB

FEDR/GARD SUMMARY  
 PAYLOAD J 20 VEHICLE 1614  
 FEDRS AGAINST MAJOR PAYLOAD EQUIPMENT  
 (WORKMANSHIP DEFECTS)



MAJOR EQUIP. & S/N	PART OR ASSEMBLY	S/N	FEDR	DATE AREA FOUND	DESCRIPTION OF DISCREPANCY	REPAIR OR REPLACEMENT DATA & CORRECTIVE ACTION	SUPPLEMENTAL ANALYSIS AND CORRECTIVE ACTION
	Recovery Barrel 135-3803	803 J23	2564	7/30/4 Mfg.	Sunnyvale Inspection FEDR 234811. One hole 2.00 x 1.76 at Z axis. B/P shows no hole.	Doubler shall be added to reinforce area around hole as per SR 103. 8/4/4	N/A
	Fairing 135-3029	029 MT 28	2579	8/12/4 Mfg.	1) Access Door has gap of .073. 2) Bath tub door has gap of .080. 3) Tear Drop door has gap of .045 & .048.	8/17/4: 1 - 2 & 3 acceptable. No rework required.	N/A
	Fairing 135-3029	029 MT	2594	8/31/4 Mfg.	Mounting on J10 fixture for first operation in house (This condition from Sunnyvale) Mating hole in aft ring has been elongated.	9/1/4 Remove bath tub fittings, rebush holes and redrill.	N/A
	After Barrel 135-3044	MT 33	2625	9/29/4 Mfg.	Fab. Inspection. Mating holes are as shown in diagram on FEDR 2625. S/B .315 + .007 - .000 (Ref. T22-611C).	10/7/4: Barrel has been mated with adjoining structure with no problems. Condition is acceptable.	N/A
Conic 22-606	Weldment Assembly T22-227-501	N/A	2626	9/30/4 Mfg.	Process Inspection. Index pins located approx. 35° S/B 31° 18 min. from center line as located on B/B.	10/1/4: Remove nut plates, weld holes closed and radiographic inspect. Relocate holes for nutplate per print, install nutplate (2 places).	N/A

**AT&T**  
 COMMUNICATIONS



MAJOR EQUIP. & S/N	PART OR ASSEMBLY	S/N	FEDR	DATE AREA FOUND	DESCRIPTION OF DISCREPANCY	REPAIR OR REPLACEMENT DATA & CORRECTIVE ACTION	SUPPLEMENTAL ANALYSIS AND CORRECTIVE ACTION
Mount Inst. T22-612	Mount Assembly T22-219	029 MT 28	2630	10/1/4 Mfg.	Process Inspection T22-612E-1 spacer is disbed to .030 and out of flat to .015. S/B .002	10/5/4:- Replace mount assy. T22-219. Scrap spacer T22-612. Salvage light trap vent. 10/8/4	2630 Supp. 10/16/4 This Supp. supersedes original CARD. 1)Remove spacer T22-612. 2)Provide liquid shim, using Methesive F #2005. 3)Re. spacer & compress to p dim.
Payload Assy. 22-600	Fwd. Bbl 1354467	467-J24 MT 33	2636	10/7/4 Mfg.	Mating Inspection: Gaps in 7 places as shown per sketch on FEDR # 2636.	Remove hight mat'l from aft surface of fwd. bbl. mating ring. Gap not to exceed .003 after rework. 10/9/4	N/A
	Conic 135-1786	MT 39A	2637	10/7/4 Mfg.	Process Inspection. 1)Aft mating hole 1 o'clock .430 deep x .438 dia. S/B .300 deep x .438 dia. 2)Mating holes at 1-4-7 & 8 o'clock not concentric with tol. .002. Mating bolt will not seat.	1)Acceptable. 2) Hand rework the .375 dia. hole until the mating bolt passes and seats properly. Leave surface of holes smooth.	
Payload Assy. 22-600	Conic 135-1786	MT 39A	2640	10/8/4 Mfg.	Process Inspection. T22-225-1 fittings Sec A-A print T22-607 have scribe lines across holes for rivets on fittings.	10/9/4 Burnish scratch line between rivet leads with glass eraser to smooth out sharp scratch. No finish over required.	N/A
	Fairing 135-3029 Rec. Bbl. 135-3803	MT 28 803-J23	2644	10/12/4 Mfg.	Mating Inspection. Gaps as shown .016 max. (On FEDR #2644) in 8 places.	10/13/4:- Remove "hight" material from aft ring of fairing per established shop practices. Gap to be max. of .015 after rework.	N/A



FEDR/CARD SUMMARY  
 PAYLOAD 120 VEHICLE 1614  
 FEDR AGAINST MAJOR PAYLOAD EQUIPMENT  
 (WORKMANSHIP DEFECTS)

MAJOR EQUIP. & S/N	PART OR ASSEMBLY	S/N	FEDR	DATE AREA POUND	DESCRIPTION OF DISCREPANCY	REPAIR OR REPLACEMENT DATA & CORRECTIVE ACTION	SUPPLEMENTAL ANALYSIS AND CORRECTIVE ACTION
Sec. Bbl. Assy. Complete T22-647 /N 803-J23	Conic 135-3029 Aft. Bbl. 135-8044	MT 39A MT 33	2645	10/12/4 Mfg.	Mating Inspection. Mis-match between X & -Z 16" long .030 at deepest.	10/13/4:- Fair in mis-match by removing skin material as shown in sketch CARD 2645.	N/A
	Aux. Film Cutter T22-671-501	1006	1560	1/15/5 Sys. Test (Tracking)	Epoxy broken loose from top of chute on left edge above S/N.	1/19/5:- 1)Disassemble unit. 2)Replace 3 wires per 2. 3)Insert metal-hesive in areas where epoxy is defective. 4)Re-assemble unit.	
payload assembly complete T22-600	#2 Bbl. Assy. Complete T22-611	N/A	1975	2/15/5 Sys. Test	Preparing for Photo Optical testing. T44-213-1 & 3 doublers are chipped in areas as shown in sketch on CARD #1975	2/16/5:- Condition is acceptable. The defects are minor and will not affect the retention or release of the door.	
payload assembly complete T22-600	#1 Bbl. Assy. Complete T22-610	N/A	1976	2/15/5 Sys. Test	Preparing for Photo Optical testing. Doublers T44-213-1 & 3 are chipped in areas as shown in sketch on CARD # 1975	Same as above CARD	

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LAUNCH READINESS REVIEW

J-20 / 1613

Approved:

[REDACTED]

, Manager  
VAFB A/P Payload Operations

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SECTION I

MILESTONE CHRONOLOGICAL EVENTS

J20/1613

Received Payload from Advanced Projects	16 March 1965
System Run	
Phase I (with Simulator)	24 March 1965
Phase II	26 March 1965
Payload Readiness	2 April 1965
System Assembly	5 April 1965
Romance	5 April 1965
Mate	
Confidence	
R-1 Configuration	

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SECTION II



VAFB WORK SUMMARY CHART

J20/1613

FUNCTION	STP	ATPW	LEO	SQUAWK	FEDR
Receiving Disassembly	J2001				
Paint Payload	J2002				
Relay Pull-In Voltage Test	J2007				
Replace 1A14 Module	J2009				V3842
10 Relay Replacement		J2005	T22-3000	No. 33	V3950
Sold Dollar Rework		J2006	T22-639		
Thermal Paint Change			T22-824		
W. S. Cable Clamp Change			T44-661	No. 32	
affle Change - "R" Barrel			T22-603		
Flashing Light Change					V3845
ent Seal Change		J2010			V3920
op-Off Valve Change		J2010			V3921
op-Off Valve Change		J2010			V3922
ent Seal Change		J2010			V3923.



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SECTION III

J20/1613

PAYLOAD LIMITED LIFE COMPONENTS

COMPONENT Name and Number	No. Req. per P/L	USED IN:	Shelf Life (Months)	Shelf Life EXPIRES (Date)
6-11 Squib	42	8 - Horizon Doors 8 - S/I Doors 4 - Fairing Elect Disc 4 - "A" Spin and Despin 4 - "B" Spin and Despin 6 - Fairing Sep PP 8 - N/C Release PP	24	1-1-67 1-1-66
6-130 Squib	4	Main Doors	12	7-1-65
Squib 102B7560P4	4	P28A and P28B Disc	12	10-1-65
Squib 102B7560P5	4	W1P1 (A and B) Disc	12	6-1-65
Squib (Adapter Charge Nut) 111C5581P2	8	A and B N/C Pistons	12	1-1-66
Explosive Bolts 825C844G2	4	A and B T-C/Forebody Sep	12	5-1-65
M Battery GAP4007B	2	A and B Capsules	12	6-1-65
Thermal Battery 887C787G2 or G3	4	A and B Thrust Cones	30	1-1-66

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SECTION III

J20/1613

PAYLOAD LIMITED LIFE COMPONENTS

COMPONENT Name and Number	No. Req. per P/L	USED IN:	Shelf Life (Months)	Shelf Life EXPIRES (Date)
Pro-Rocket 863C772P3	2	A and B Thrust Cone	15	7-2-65
-Harness 937C302G2	2	A and B Main Water Seals	12	4-1-65
2-Harness 922C706	2	A and B S/I Water Seals	12	4-1-65
ness 922C705	1	Payload Door	12	7-1-65
ing Line Cutter 887C482P1	8	A and B Parachutes	12	Oct 65 Nov 65
Line Cutter 887C491P1	4	A and B Parachutes	12	June 65 Oct 65
yard Assembly T44-733-501'	2	A and B Capsule Beanie Cap	12	12-1-65
tery 5 AH 731D344P1	1	A Capsule	36 (Inactive)	Oct 64 Oct 67
			30 Days (Activated)	4-2-65 5-2-65
tery 8 AH 221E727	1	B Capsule	18 (Inactive)	Aug 64 Feb 66
			60 Days (Activated)	3-23-65 5-22-65

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SYSTEM TEST PERFORMANCE EVALUATION

SECTION IV

SYSTEM TEST Phase 2

VEHICLE J20/1613 RUN DATE 26 March 1965

SUBSYSTEM

PREPARED BY

ORGN. Dept 77-11

MEAS. NO.	CHANNEL LINK-PIN	MEASUREMENT	PROBLEM (INCLUDE DESCRIPTION OF NORMAL OPERATION)	RESOLUTION	FURTHER ACTION REQUIRED
1	CEC	Channel 31	CEC Channel 31 deflects during Felt Door operation rather than Channel 32 as required in the Test Procedure at Arm 5005.9.	Connectors were swapped. Channel 32 connected to Monitor signal instead of Channel 31. Not a problem.	NONE
		Channels 5 and 6	Both channels displayed voltage change indicating Commutator or Payload movement at T + 10800 to T + 10820.	Apparently commutators were in a position where any vibration would have caused a change in level. No Payload or Agena functions occurred during this time. Not a problem.	NONE
		Channel 11	S/I DID NOT meter during the first operate at T + 1380 although it operated normally during prior Alpha Test. <i>SI's aground</i>	Cause of problem still unknown. ATPW J2012 was performed to investigate problem.	Further investigation necessary.
2	Payload	Fiducial on Instrument No. 1 Payload	One (1) Fiducial missing on Instrument No. 1 Input H.O.	Clean Fiducial and re-check during Instrument Readiness.	NONE

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