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1968 PERFORMANCE SUMMARY

<u>MISSION</u>	<u>SYSTEM</u>	<u>LAUNCH</u>	<u>ORBIT LIFE</u>	<u>SUPPLY (FT)</u>	<u>% RECOVERED</u>	<u>MIP</u>
1045	J-45	1-24-68	7/7	32,600	95.5	90
1046	J-48	3-4-68	7/8	32,600	100	90/85
1103	CR-3	5-1-68	7/7	33,000	100	95
1047	J-47	6-20-68	8/7	32,600	99.5	85
1104	CR-4	8-7-68	7/8	32,200	100	115
1048	J-49	10-2-68	9/5	32,600	83.9	85
1105	CR-5	11-3-68	8/10	47,550	100	100
1049	J-50	12-12-68	6/5	32,600	100	85

o 8 FLIGHTS IN 1968

o 116 DAYS ON ORBIT

o 97.4% OF FILM RECOVERED

Declassified and Released by the NRC

in Accordance with E. O. 12958

on NOV 26 1997

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J-49
MISSION 1048
SEPT 18 to OCT 2

ANOMALY

- MASTER INSTRUMENT STALLED DURING METERING PORTION OF CYCLE ON REV 181 ✓
- CONTINUOUS 4.7 AMP CURRENT DRAIN

CAUSE

- MECHANICAL FAILURE IN THE MAIN DRIVE ASSEMBLY (ITEK)
 - SHEARED OR LOOSE GEAR PIN MOST PROBABLE CAUSE

CORRECTIVE ACTIONS

- DETAILED INSPECTION OF MAIN DRIVE ASSEMBLY ON ALL REMAINING *-1 SYSTEMS *
- DRIVE ASSEMBLY GEAR PINS EPOXIED IN PLACE ON ALL REMAINING *-1 SYSTEMS *
- INCORPORATED AUTOMATIC POWER SHUTDOWN CIRCUIT TO PREVENT * POSSIBLE STALL-CURRENT DRAIN

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CR-5
MISSION 1105
NOV 3 to NOV 21

*Lot 1234 - received
inspector -
P. J. J.*

ANOMALY

- MAIN INSTRUMENT STALLED AT END OF MISSION ✓
- STALLED SYSTEM CAUSED 9 AMP CURRENT DRAIN ✓

CAUSE

- INSTRUMENT STALLED DUE TO SLACK LOOPS DURING FILM DEPLETION (ITEK)
- OPERATE FUNCTIONS NOT TURNED OFF BECAUSE STOW CYCLE WAS NOT COMPLETED

CORRECTIVE ACTION

- INCORPORATED AUTOMATIC POWER SHUTDOWN CIRCUIT
- OPERATE FUNCTIONS ARE REMOVED BY TIMING CIRCUIT IF STOW CYCLE IS NOT COMPLETED

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CR-5
MISSION 1105
NOV 3 to NOV 21

ANOMALY

- FIRST ALL-UTB SYSTEM PRODUCED DATA OF NON-UNIFORM QUALITY
- MISSION RESULTS VARIED FROM POOR TO EXCELLENT

CAUSE

- UTB FILM WAS NOT FLAT IN FOCAL PLANE THROUGHOUT PHOTOGRAPHIC SCAN (ITEK)

CORRECTIVE ACTIONS

- INVESTIGATIONS OF UTB FLATNESS AND TRANSPORTING PROBLEMS ARE IN PROGRESS
- NEXT UTB FLIGHT WILL HAVE:
 - SUPPLY TENSION SERVO
 - INTERMEDIATE ROLLER BOBBER
 - INCREASED SYSTEM TENSIONS
 - ULTRASONIC OR PERMACEL SPLICES

John
CR-5
Schroeder

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J-50

MISSION 1049

DEC 12 to DEC 23

ANOMALY

- ON ORBIT TEMPERATURES ABOVE NORMAL (A/P)
- 10°F ABOVE PREDICTED NOMINAL

CAUSE

- SYSTEM TUNED TO HIGH SIDE OF PREDICTED TEMPERATURE BAND ✓
- THERMAL SURFACE DEGRADED DUE TO LONG STORAGE LIFE ✓
- LAUNCH OCCURRED LATE IN WINDOW - HIGH BETA ANGLE ✓
- MAXIMUM THERMAL FLUX OCCURS DURING WINTER SOLSTICE ✓

CORRECTIVE ACTIONS

- TUNE REMAINING THREE J-1 SYSTEMS LOWER IN PREDICTED TEMPERATURE BAND (43 - 44 - 46)
- INCREASE LEVEL OF SURFACE TESTING TO MORE ACCURATELY PREDICT THERMAL RESPONSE *
- ADJUST LAUNCH WINDOW TO ENSURE MAXIMUM PREDICTED TEMPERATURE DOES NOT EXCEED 90°F ✓
- PAINTED SURFACES ON -3 SYSTEMS ARE EXPECTED TO BE MORE STABLE IN STORAGE

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J-50
MISSION 1049
DEC 12 to DEC 23

ANOMALY

- V/H PROGRAMMER FAILED TO START AFTER REV 68
- 3 TO 4% MISMATCH WITH DMU ADJUST

CAUSE

- CAM ACTUATED MICROSWITCH FAILED TO CLOSE (ITEK)

CORRECTIVE ACTIONS

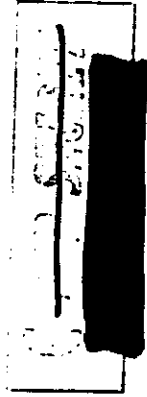
- PULSE CIRCUIT ADDED TO PROGRAMMER TO ALLOW RESTART WITHOUT MICROSWITCH OPENING
- RESET CAM RELOCATED TO REDUCE ERROR IF MICROSWITCH FAILS



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[REDACTED]



J-1 AUDIT SUMMARY

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add [unclear]
2. [unclear]

SCOPE

- DETERMINE THROUGH ANALYSIS OF AGE AND SYSTEM DOCUMENTATION THAT NO FAILURE MODES EXIST
- VALIDATE INTERFACES AND SCHEMATICS OF AGENA, BOSTON, AND PHILADELPHIA

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DISCREPANCIES FOUND

- || ○ DRAFTING ERRORS IN NOMENCLATURE ✓
- PINS MARKED "SPARE" WERE WIRED IN CONFLICT WITH NEW GROUND RULES.
- POWER WIRED TO UNUSED CIRCUITS.

CRITICALITY

- NO ENGINEERING ERRORS WERE FOUND THAT WOULD CAUSE SYSTEM FAILURE

CORRECTIVE ACTIONS

- SCHEMATICS REVISED TO REFLECT UP-TO-DATE NOMENCLATURE AND FUNCTIONS
- PINS MARKED "SPARE" WERE REWIRED TO CONFORM WITH CURRENT GROUND RULES
- POWERED BUT UNUSED WIRING WAS REVISED TO CONFORM WITH CURRENT GROUND RULES



(Wiring removed in [unclear] room)
to [unclear] room
added in [unclear]

J-3 SYSTEM AUDIT

SCOPE

- DETERMINE THROUGH ANALYSIS OF AGE AND SYSTEM DOCUMENTATION THAT NO FAILURE MODES EXIST
- VALIDATE INTERFACES AND SCHEMATICS OF AGENA, BOSTON, NEW YORK AND PHILADELPHIA ✓

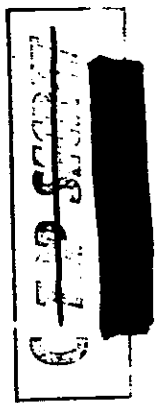
METHOD

- VALIDATE SCHEMATICS WITH WIRING DIAGRAMS ✓
- DETERMINE POSSIBLE SYSTEM FAILURE MODES ✓
- VERIFY AGE COMPATIBILITY ✓
- REVIEW TEST PROCEDURES FOR ADEQUACY OF TESTING ✓

SCHEDULE

- AUDIT BEGAN 2 JANUARY 1969 AND IS SCHEDULED FOR COMPLETION IN MARCH 1969 ✓
- ESTIMATED 92 MAN WEEKS EFFORT ✓

*Actual program under
wiring diagrams (Simons)
+ wires by G.E. kept
+ check to
same*



MODEL -3

ENG. SCHED. PLAN

ISSUE NO. 1

TITLE --3 SYSTEM INTEGRATION AUDIT TASKS

PREPARED BY [Redacted] DATE 1/6/69

APPROVED BY [Redacted] DATE

REF.	MAN/WEEKS	1	2	3	4	5	6	7	8	9	10	11	% Comp.
1. AP Cable dwg. Verification (48 units)	10												100
2. AP Box Schematic Verification (18 units)	6												100
3. AP AGE Console (Agena Simulator) Schematic Verification	9												100
4. Boe. Schematic Verification (13 units)	5												100
5. Philly. Schematic Verification	2												100
6. N.Y. Schematic Verification (3 units)	2												100
7. Agena Schematic/AP Interface Specification Verification	1												100
8. Blockhouse & Umbilical Cable AGE Verification	1												100
9. Boston/AP Interface Spec Verification	1												100
10. Philly/AP Interface Spec Verification	1												100
11. N.Y./AP Interface Spec Verification	1												100
12. Pwr. Subsystem Schematic Verification	1												100
13. TLM Subsystem Schematic Verification	2												100
14. Command Subsystem Functional Analysis (Instr. Control & A to B xfer)	7												100
15. Command Sys. Functional Schematic (Slave Programmer Section) SW. Prog.	3												100
16. Pyro Subsystem Functional Schematic Analysis	2												100
17. Power Subsystem Functional Analysis	2												100
18. TLM Subsystem Functional Analysis	4												100
19. Payload Simulator Functional Analysis	4												100
20. Blockhouse & Umbilical Cable AGE Functional Analysis	2												100
21. AP AGE Console (Agena Simulator) Functional Analysis	4												100
22. N.Y. Functional Analysis	2												100
23. Pyro Test Procedure (Stray Voltage & Preflight) Review	2												100
24. Command Test Procedure Review	3												100
25. System Operation (HIVOS, Preflight & Sys. Functional) Test Procedure Review	3												100
26. SRV Subsystem Test Procedure Review (Functional & Preflight)	4												100
27. N.Y. Subsystem Test Procedure Review	2												100
28. J Recovery Sequence (T9-3-001) Updating	1												100
29. Reports	3												100
Total	92												

MAN/WEEKS

Total

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CONTRIBUTOR'S SPECIAL COMPANY



Level of Effort

**PROPOSED
EXPANDED LOE**

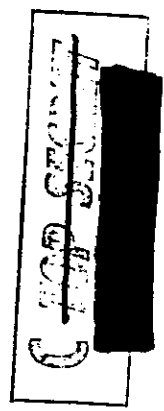
ADDED ENGINEERING AND INTEGRATION RESPONSIBILITIES

- ESTABLISH THE "MASTER PAYLOAD DOCUMENTATION FILE" FOR THE CORONA PROGRAM ✓
- CONDUCT AUDITS AND FAILURE ANALYSIS FOR THE ENTIRE PAYLOAD SYSTEM
- PREPARE AND MAINTAIN COMPLETE SYSTEM SCHEMATIC BOOK
- ESTABLISH AND IMPLEMENT A "SYSTEM CONFIGURATION MANAGEMENT PLAN" AND CHANGE CONTROL PROCEDURE WITH THE RESIDENT OFFICE
- ESTABLISH AND IMPLEMENT FAILURE ANALYSIS AND REPLACEMENT CONTROL PROCEDURES FOR ENTIRE SYSTEM
- ESTABLISH MASTER FILE AND MAINTAIN CHANGE CONTROL FOR ALL SUPPORTING AGE AND GHE DOCUMENTATION

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PROPOSED
EXPANDED LOE

TASKS TO BE COMPLETED BY JUNE 1969

- ESTABLISH MASTER FILE REQUIREMENTS
- WORKING ENGINEERING FILE AND REPRODUCIBLE STORAGE - for A/P.
- ESTABLISH FAMILIARITY WITH ASSOCIATE DOCUMENTATION
- REVIEW DRAFTING PROCEDURES AND REQUIREMENTS
- COORDINATION VISITS TO ASSOCIATE FACILITIES
- ESTABLISH CHANGE CONTROL PROCEDURES
- CHANGE REQUESTS, APPROVALS AND RELEASE
- ESTABLISH REPLACEMENT AND REPAIR PROCEDURES
- ESTABLISH DETAILED FAMILIARITY OF ALL EQUIPMENT THROUGH ASSIGNED RESPONSIBLE ENGINEERS

Access to [Redacted] info
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PROPOSED
EXPANDED LOE

- ADDED EFFORT REQUIRED THROUGH REMAINING FY '69
 - 80 MAN MONTHS
 - ESTIMATED COST [REDACTED]
- EXPANDED LEVEL OF EFFORT TO SUPPORT SUSTAINING ENGINEERING AND INTEGRATION IN FY '70
 - TO BE NEGOTIATED AS A FUNCTION OF RELATIVE POSITION IN JUNE

[REDACTED]

*in person -
discuss with
Tosler New York
etc.*

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[REDACTED]