



PROGRAM MANAGER'S MEETING
13 NOV. 69
A/P TOPICS:

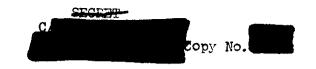
- REVIEW OF CR-8 REQUALIFICATION
- READINESS REVIEW OF CR-9

Declassified and Released by the N R C

In Accordance with E. O. 12958

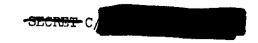
on NOV 26 1997





OBJECTIVE

- O QUALIFY THE UTB MODIFICATIONS INCORPORATED IN THE CR SUBSYSTEM (ASCENT MODE)
 - I/R BOBBLER
 - o SUPPLY CASSETTE TENSION SERVO
 - O SUPPLY CASSETTE BRAKE LOCKED NO POWER DURING ASCENT

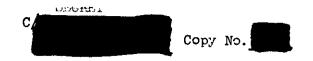


TEST PLAN

- O SYSTEM IN FLIGHT CONFIGURATION EXCEPT DISIC AND TAPE RECORDER SUBSYSTEM NOT INSTALLED
- O SIMULATION 3.5G, 14 TO 20 1/2 HZ, 35 SECOND DURATION

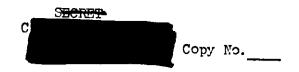
CR-8

- O ACOUSTIC SIMULATION 156 DB, 50 TO 10,000 HZ. (+25% OVER NOMINAL THORAD/AGENA PROFILE), 3 MINUTE DURATION
- O SYNTHESIZED SHOCK 11G MAX, 15 TO 450 HZ PER THORAD/AGENA PROFILE
- O RESONANCE SEARCH 1/4G, 14 TO 50 HZ CONDUCTED PRIOR TO AND AFTER SCHEDULED TEST
- O OPERATIONAL VERIFICATION BETWEEN EACH TEST
- O SYSTEM FUNCTIONAL VERIFICATION AT COMPLETION OF TESTS
- O SYSTEM DISASSEMELY FOR INSPECTION



TEST RESULTS

- O UTB MODIFICATIONS ARE QUALIFIED FOR LAUNCH
 - O DRUMS ROTATED IN BOTH DIRECTIONS BUT NO SLACK LOOPS DEVELOPED
 - O POST TEST OPERATIONS CONFIRMED ACCEPTABLE FILM PATH MAINTAINED
- O ANOMALIES DID OCCUR WHICH COULD CAUSE OPERATIONAL FAILURES



ANOMALY

O ROTARY SWITCH MOUNTING NUTS ON SWITCH PROGRAMMER BACK OFF

CAUSE

INSUFFICIENT LOCKING

CORRECTIVE ACTION

2 INSTALLED SECOND JAM NUT WITH LOC-TITE ON THREADS

ANOMALY

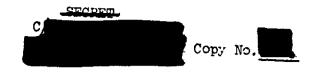
• T3 TIMER IN SWITCH PROGRAMMER TIMED OUT LATE

CAUSE

• WIPER WIRE ON S-3 ROTARY SWITCH BROKEN WHEN MOUNTING NUT BACK OFF

CORRECTIVE ACTION

o SAME AS ADOVE



ANOMALY

O ROLLER GUIDE IN CHUTE ASSEMBLY BROKE

CAUSE

O MACHINED ROD PRODUCED NOTCH SENSITIVE GUIDE

CORRECTIVE ACTION

- O GUIDE REDESIGNED TO GIVE ADDED STRENGTH
- O NEW GUIDE QUALIFIED BY OVERDESIGN

ANOMALY

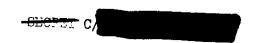
O ROTARY SWITCH GROUND ADJUST KNOB FELL OFF ON SWITCH PROGRAMMER

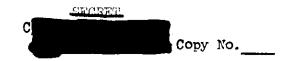
CAUSE

O SET SCREW BACKED OUT

CORRECTIVE ACTION

O INSTALLED SET SCREW WITH LOC-TITE ON THREADS





ANOMALY

O A.O. BOOT CLAMP CAME LOOSE

CAUSE

O CLAMP SCREWS BACKED OUT

CORRECTIVE ACTION

O SAFETY WIRE CLAMP SCREWS

ANOMALY

O BARREL/CONIC INTERFACE BOLT TORQUE INCREASED

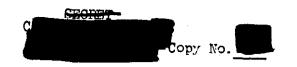
CAUSE

O RE-USED GROUND TEST STEEL BOLTS

CORRECTIVE ACTION

O TITANIUM SCREWS ARE INSTALLED AT FINAL SYSTEM ASSEMBLY (ONE TIME USE)

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ANOMALY

O THERMO SHIELD FASTENERS POPPED OUT OF RETAINERS

CAUSE

O IMPROPER INSTALLATION & POSSIBLE RE-USE OF FASTENERS

CORRECTIVE ACTION

- O SELECTIVE INSTALLATION AND 100% INSPECTION TO VERIFY PROPER INSERTION
- O INSTRUMENT SHIELDING REDESIGNED FOR IMPROVED INSTALLATION
- O RESTRICT USE OF FASTENERS TO ONE-TIME ONLY

ANOMALY

O LOOSE DEERIS IN SYSTEM

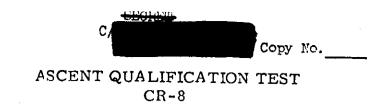
CAUSE

O DUST, METAL SHAVINGS, STRING NOT REMOVED BY PRE-TEST CLEANING

CORRECTIVE ACTION

- O REDUCE MODIFICATION WORK AFTER SYSTEM VIDRATION
- O PE-STRESS CLEANING PROCEDURES IN SYSTEM ASSEMBLY





ANOMALY

OSFG PROGRAMMER INOPERATIVE

CAUSE

o TERMINALS BROKEN ON TRANSFORMER MODULE

CORRECTIVE ACTION

o POT TERMINALS WITH RTV

ANOMALY

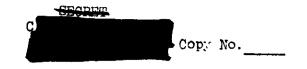
• ECCENTRICITY FUNCTION OUTPUT HAS DISCONTINUITY IN OUTPUT SIGNAL

CAUSE

O POTENTIOMETER WIPER LOSES CONTACT AT ONE SPOT IN CYCLE DUE TO INSUFFICIENT WIPER PRESSURE

CORRECTIVE ACTION

- ALL POTENTIOMETERS TO BE REFURBISHED
 - INCREASE WIPER PRESSURE
 - o INCREASE WIPER CONTACTS FROM 2 TO 3



ANOMALY

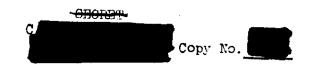
O CABLE CONNECTOR CAME LOOSE CAUSING LOSS OF T/M MONITORS

CAUSE

IMPROPER INSTALLATION

CORRECTIVE ACTION

O ADD ITEM IN FINAL ASSEMBLY PROCEDURE TO VERIFY EACH CONNECTOR IS FULLY ENGAGED IN DETENT



ANOMALY

O SCREW BECAME LOOSE IN #2 SCAN HEAD ASSEMBLY

CAUSE

• SCREW REMOVED FOR SPECIAL TEST - IMPROPER INSTALLATION AFTER TEST

CORRECTIVE ACTION

O ALL INSTALLATIONS TO BE MADE PER FLIGHT STANDARDS WITH SCREWS GLYPED IN PLACE

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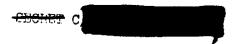
o SHIM WASHER FOUND INSIDE #2 DRUM

CAUSE

• SHUTTLE ASSEMBLY SHIM LODGED IN DRUM DURING MANUFACTURING ASSEMBLY

CORRECTIVE ACTION

• VERIFICATION MADE THAT SHIM DID NOT COME FROM CR-3 SHUTTLE ASSEMBLY





ANOMALY

O DRUM ROLLER SEPARATED FROM SUPPORT BLOCKS

CAUSE

o POOR EPOXY EOND ON INSTALLATION

CORRECTIVE ACTION

• INSPECT ALL ROLLERS UNDER MAGNIFICATION TO VERIFY EPOXY BOND

ANOMALY

O SLIT WIDTH MECHANISM BINDING ON INSTR #1 AS INDICATED BY T/M MONITOR

CAUSE

o NOT DETERMINED BY INSPECTION

CORRECTIVE ACTION

• TO BE INVESTIGATED IN BOSTON TEST LAB



SPECIAL TEST PLAN - PRE-FLIGHT

- O INCORPORATE CORRECTIVE ACTIONS RESULTING FROM THE ASCENT
 QUAL TEST
- O THOROUGHLY CLEAN
- O ASSEMBLE SYSTEM IN ENVIRONMENTAL TEST CONFIGURATION
- O CONDUCT ACCEPTANCE LEVEL VIBRATION TEST
 - o INPUTS 1G, 14 TO 20 HZ

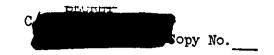
1/4G, 20 TO 50 HZ

iG, 50 TO 2000 HZ

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- o DURATION APPROX. 3.5 MINUTES
- o LIMITING INSTR. SUESYSTEM 6G
 - DISIC SUBSYSTEM 3G
- O CONDUCT SYSTEM FUNCTIONAL VERIFICATION
 - ο 3 REV'S ORBITAL SIMULATION WITH A TO B TRANSFER
- O DISASSEMBLE SYSTEM FOR INSPECTION
- O BEGIN FLIGHT PREPS





O CONFIGURATION DIFFERENCES

- o FROM CR-6
 - PULSATING PRESSURE MAKE-UP SYSTEM
 - o PAN INSTRUMENT SUPPLY CASSETTES HAVE SERVO TENSION CONTROL
 - O INTERMEDIATE ROLLER ASSY HAS TENSION EOBBLER
- o FROM CR-7
 - o S/C TENSION SERVO
 - o I/R BOBBLER
 - o ASCENT CONFIGURATION
- o FROM CR-8
 - o STB MATERIAL UTILIZED
- o FROM CR-6, CR-7, CR-8
 - o SPLIT LOAD ON #1 INSTRUMENT (800' SO242/3404)
 - o PMU LOW LEVEL DISABLED





O SPECIAL SYSTEM VIBRATION TEST

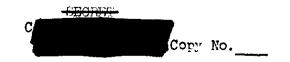
- RTV APPLICATION STICK FOUND-STICK IS NORMALLY USED IN MANUFACTURING SHOP
- O NO OPERATIONAL FAILURES ATTRIBUTED TO VIBRATION TEST

O SYSTEM VERIFICATION TEST ANOMALIES

- O DELAY TIMER IN SLOPE PROGRAMMER TIMED OUT EARLY (SINGLE CHANNEL HAYDON TIMER)
- O SWITCH PROGRAMMER TIMER #1 TIMED OUT BUT FAILED TO START TIMER #2 AND #3 (FOUR CHANNEL HAYDON TIMER)
 - CAUSE OF BOTH ANOMALIES ATTRIBUTED TO NOISE SENSITIVITY AND SUSCEPTABILITY OF HAYDON TIMER
 - O CORRECTIVE ACTIONS REPLACE HAYDON TIMERS, CONDUCT SUBSYSTEM THERMAL ALTITUDE TESTS, VERIFY SYSTEM PERFORMANCE
 - ADDITIONAL ENGINEERING ANALYSIS IN PROCESS
 - O ALTERNATE TIMER PROCUREMENT
 - IMPOSE SYSTEM EMC TESTS
 - CONSTANT TENSION ASSEMBLY S/C TENSION SERVO
 - OPERATIONS

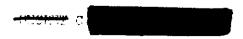
 ERRATIC LINEAR MOTION OBSERVED DURING DYNAMIC
 - CAUSE SIDE LOADING BY NEGATOR SPRING
 - CORRECTIVE ACTION STRAIGHTEN END OF NEGATOR SPRING TO REDUCE LOADING FROM CURL

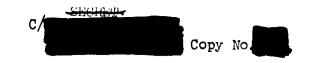




PRE-FLIGHT SCHEDULE

- O INSPECTION AND MODIFICATIONS COMPLETE OCT 16
- O SYSTEM VIBRATION OCT 17
- O POST VIBRATION SYSTEM VERIFICATION OCT 18
- O INSTRUMENT CLEANING OCT 24
 - O PYRO INSTALLATION NOV 4
 - O SRV PRE-FLIGHT ASSEMBLY NOV 12
 - O INSTRUMENT READINESS TEST NOV 12 1
 - O SYSTEM ASSEMBLY & FLIGHT LOAD NOV 17
- O FINAL OPERATIONAL VERIFICATION NOV 19
- O RECEIVING CHECKCUT AT VAFB NOV 20
- O AGENA MATE AND CONFIDENCE TEST NOV 21
- O LAUNCH CHECKOUT NOV 26





- O CHANGES TO FOR MISSION 1108
 - O ALL MAJOR PROGRAMS MODIFIED TO ACCEPT ASCENDING / DESCENDING MODE OF OPERATION
 - O DAILY SUMMARY REPORTING PROCEDURES CHANGES TO BETTER HANDLE CASE WHEN ONE CAMERA FAILS
 - O DAILY SUMMARY REPORTS CHANGED AS DESIRED BY SOC
- O TESTS OF FOR MISSION 1108
 - O CPX INVOLVING ONLY HQ. COMM CENTER AND HQ. COMPUTERS RUN 1 NOV. '69
 - O RESULT OF CPN: READY FOR MISSION 1103