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SEP 13 22 07 '63
ROUTINE

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PRIORITY [REDACTED]

A. 1002

B. FAILURES ON FTV 1162 AND RECOMMENDED FIXED TO FTV 1163 ARE:

1. SINGLE PHASE 400 CYCLE INVERTER FAILURE - EXTENSIVE TESTING HAS NOT DUPLICATED FAILURE MODE. THIS TYPE INVERTER (IA) TESTED ONLY ONCE (FTV 1161) IN DE-ACTIVATE - RE-ACTIVATE MODE. MOST PROBABLE FAILURE MODE OF THIS INVERTER IS AT SHUT-DOWN OR START. SINCE ONLY TWO ACTUAL FLIGHTS TESTS OF THIS INVERTER IN THIS TYPE OPERATION MADE, WE FEEL IT NECESSARY TO FLY REDUNDANT TYPE 1A.

2. REPORTED CUT AND WRAP PROBLEM - ONLY METHOD THAT CAN BE DUPLICATED IN LAB TO GIVE SAME INDICATIONS SEEN IN FLIGHT IS A FAILURE IN THE TELEMETRY MICRO SWITCH ON TAKE UP SPOOL. WE ARE NOW CONVINCED THAT NO CUT AND WRAP PROBLEM EXISTED. NO CHANGES TO SYSTEM ARE CONTEMPLATED EXCEPT SOME SPECIAL CHECKS ON T/M MONITOR DURING LOADING OPERATIONS.

3. SECOND RECOVERY FAILURE - MOST PROBABLE CAUSE IS EXHAUSTED CAPSULE BATTERY DUE TO EXCESSIVE TEMPERATURES ON

Declassified and released by the NRO

In Accordance with E. O. 12958

on NOV 26 1997

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BATTERY. HIGH TEMPERATURES WERE RESULT OF STALLED CASSETTE TAKE-UP MOTORS CAUSE BY INVERTER FAILURE, WHEN "ON" COMMAND GIVEN TO INSTRUMENTS ON RE-ACTIVATE PASS. EFFECT OF HIGH TEMPERATURE SOAK ON THIS BATTERY NOT PROPERLY ACCOUNTED FOR PRIOR TO LAUNCH AND ORBIT OPERATION. DUE TO THIS OVERSIGHT ALL CAPSULE COMPONENTS ARE BEING REVIEWED FOR TEMPERATURE SENSITIVITY. THIS INFORMATION WILL BE ON HAND DURING ALL FUTURE OPERATIONS. NEW LONG-LIFE BATTERY (30 DAYS ON ORBIT) BEING INSTALLED IN SECOND CAPSULE.

4. HORIZON CAMERA FAILURE - FAILURE ANALYSIS CONTINUING AND FINAL RECOMMENDATION FOR 1163 WILL BE MADE SUBSEQUENT TO SC MEETING TO BE HELD AT SUNNYVALE 19 SEPT.

C. ENUMERATED IN PARA B ABOVE.

D. NONE

E. SEE PARA B ABOVE.

F. FINAL WEIGHT TALLEY ON FTV 1163 IS - 37 LBS WITH 5 PERCENT POWER MARGIN AND 7 ACTIVE DAYS. IN THIS 37 LBS IS 11 LBS FOR THE REDUNDANT INVERTER AND 4 LBS FOR THE NEW CAPSULE BATTERY.

BASED ON THESE NUMBERS IT WILL BE NECESSARY TO TAKE OFF 1 TYPE

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VI BATTERY. THIS WILL GIVE A WEIGHT MARGIN OF -11 LBS AND POWER MARGIN OF 14 PERCENT FOR 6 ACTIVE DAYS. A GAIN OF APPROX 7 LBS IS POSSIBLE ON FINAL PAYLOAD WEIGHT AT R-3 DAYS. AT THIS TIME IF IT IS AGREEABLE TO ACCEPT A 30 PERIOD DISPERSION OF PLUS OR MINUS .4 MIN, WE HAVE HIGH CONFIDENCE THAT WE CAN EXTEND 2ND HALF 1 MORE DAY AND STAY WITHIN 5 PERCENT POWER MARGIN CRITERIA. DECISION TO EXTEND WILL HAVE TO BE MADE AFTER RE-ACTIVATION AND WOULD BE BASED ON POWER CONSUMPTION RATES AND BATTERY TEMPERATURES.

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END OF MESSAGE

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