

~~SECRET~~  
CLASSIFICATION

PAGE 14 000 29580

TO: [REDACTED]

23 00 48 '66

ACTION: PRIORITY

INFO: [REDACTED]

ACTION: *Priority*

SLUG: [REDACTED]

CITE: [REDACTED]

REF A

B

C

ATTN:

FROM:

SUBJ: MSV 1031 FLIGHT PROBLEMS ANALYSIS STATUS

1. THESE FLIGHT MALFUNCTIONS OCCURRED DURING MISSION 1031. THESE FAILURES WERE:

- 1.1 THE SLAVE CAMERA FAILED AT THE START OF THE "B" MISSION.
- 1.2 THE "A" CAPSULE TELEMETRY DID NOT RADIATE
- 1.3 THE "A" CAPSULE IMPACT POINT WAS 90 N.M. BEYOND THE NOMINAL POINT, EXCEEDING THE 3 SIGMA DISPERSION PREDICTION.

2. TELEMETRY DATA WERE OBTAINED FROM THE LAST CAMERA OPERATION PRIOR TO RECOVERY ([REDACTED] REV 111), FROM THE CUT AND WRAP OPERATION DURING RECOVERY, AND FROM AN ENGINEERING OPERATION AFTER APPROXIMATELY 650 CYCLES HAD BEEN PROGRAMMED THROUGH BOTH PANORAMIC INSTRUMENTS. THESE DATA COVER THE TIME IMMEDIATELY BEFORE, DURING, AND SOMEWHAT AFTER SLAVE INSTRUMENT FAILURE. THESE DATA ARE BEING THOROUGHLY REVIEWED AND TESTED AGAINST SEVERAL POSSIBLE MODES AND FAILURE. IT IS PREMATURE TO STATE ANY DEFINITE CONCLUSION AT THIS TIME CONCERNING THE *Failure*

COPY TO [REDACTED]

Yes No

Declassified and Released by the N R O

In Accordance with E. O. 12958

on NOV 26 1997

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THE SLAVE UNIT, OR THE "SILENT" OVERSHOOT.

3. THE FAILURE OF THE "A" CAPSULE TO RADIATE WAS CONCLUSIVELY FOUND TO BE THE RESULT OF A BATTERY FAILURE. AT THE TIME THE BATTERY IS ENERGIZED, A PYROTECHNIC DEVICE IS FIRED TO FORCE THE STORED ELECTROLYTE (AFTER RUPTURING TWO DIAPHRAGMS) INTO A DISTRIBUTION MANIFOLD AND THEN IN TO THE BATTERY CELLS.

THE RECOVERED BATTERY WAS DISSECTED BY THE MANUFACTURER, FINDING THAT THE PYRO GAS GENERATOR HOUSING FAILED, SEPARATING THE PYRO FROM THE CHAMBER PRIOR TO RUPTURE OF THE SECOND DIAPHRAM AND THUS NO ELECTROLYTE REACHED THE CELLS. THE GAS GENERATOR HOUSING IS A DUAL CHAMBER UNIT CONTAINING 2 PYROS.

THIS FAILURE MODE HAD BEEN RECOGNIZED BY THE BATTERY MANUFACTURER, BUT CORRECTIVE ACTION HAD NOT BEEN IMPLEMENTED BECAUSE OF THE EXISTING RELIABILITY (.9997) OF THE UNIT. THE CORRECTIVE ACTION IS A REDESIGNED GAS GENERATOR CHAMBER, RESULTING IN A SINGLE CYLINDRICAL CHAMBER WITH A SINGLE PYRO (DUAL BRIDGE WIRES). THE STRUCTURAL INTEGRITY IS GREATLY IMPROVED, PARTICULARLY IN THE MANNER IN WHICH THE PYRO IS INSTALLED AND SECURED.

4. IT IS ANTICIPATED THAT THE ANALYSIS WILL BE COMPLETED DURING THE WEEK OF APRIL 25, AND THE CONCLUSIONS SUBMITTED TO THE ADDRESSEES.

END OF MESSAGE



~~I DON'T THINK WE SHOULD SEND OUT A MESSAGE UNTIL WE ARE READY TO IDENTIFY THE POSSIBLE FAILURE MODES AND CORRECTIVE ACTIONS~~

