



~~SECRET~~
(When Filled In)

FILE INFO

REPRODUCTION PROHIBITED

18 AUG 69 03 22z

ACTION



~~TOP SECRET~~ 182203 AUG 69 CITE [REDACTED]

1107

IMMEDIATE [REDACTED]

(VX FAX ONLY)

NO NIGHT ACTION

COMCOM/RESIDENT OFFICE

ATTN: [REDACTED]

FROM: [REDACTED]

SUBJ: MISSION 1107 (CR-7) MAIN INSTRUMENT FAILURE

1. FAILURE SUMMARY

DURING REV 1 OF CR-7 (MISSION 1107) THE NO. 2 INSTRUMENT EXPERIENCED A CATASTROPHIC FAILURE. JUST PRIOR TO INSTRUMENT SHUT DOWN, THE FILM TRANSPORT FAILED. THE INSTRUMENT COMPLETED THE SHUT DOWN SEQUENCE SATISFACTORILY. BETWEEN REV 1 SHUT DOWN AND REV 9, THE NO. 2 INSTRUMENT DRUM ROTATED THRU 28 CYCLES (OUT OF 85 PROGRAMMED). DURING REV 9, TWO OPERATES WERE COMMANDED WITH RESULTING DRUM ROTATION OF ONE CYCLE AT A VERY SLOW RATE.

2. DATA

A CAREFUL REVIEW OF REV 1 TELEMETRY (T/N) DATA, PRIOR TO THE FAILURE AT THE 12TH FRAME, DOES NOT INDICATE THE INSTRUMENT IS OPERATING OTHER THAN AS EXPECTED. THE FAILURE OCCURRED QUITE ABRUPTLY

Declassified and Released by the N R C

In Accordance with E. O. 12958

on NOV 26 1997

CLASSIFIED MESSAGE

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ACTION	1	6	11	16
	2	7	12	17
	3	8	13	18
	4	9	14	19
	5	10	15	20

PAGE 2 [REDACTED] ~~TOP SECRET~~
AND UNEXPECTEDLY.

THE FOLLOWING IS A BRIEF SUMMARY OF THE T/M:

- A. FAILURE OCCURRED DURING MID-METERING, SCAN HEAD DOWN.
- B. THE FRAME METERING DRIVE, INPUT IDLER, OUTPUT IDLER AND INTERMEDIATE ROLLER ROTATION MONITORS COINCIDENTLY INDICATED A PROBLEM EXISTED WITHIN THE FILM TRANSPORT SYSTEM.
- C. OUTPUT FILM TRANSPORT CEASED APPROX 1 SECOND FOLLOWING INITIAL PROBLEM INDICATION. THE INPUT FILM DRIVE MADE ONE ADDITIONAL ROTATION AND CEASED.
- D. THE LENS ROTATION AND C. F. (CENTER OF FORMAT) MONITORS AND THE MAIN DRIVE SERVO INDICATED APPARENT NORMAL SHUT DOWN ON THE 14TH CYCLE.
- E. CYCLE COUNTER AND A. G. SHUTTER INDICATE BELT DRIVE SYSTEMS INTACT.

TAPE RECORDER DATA OBTAINED FROM THE RECOVERABLE TAPE RECORDER CONFIRMED THE REV 1 MICROWAVE T/M. RECOVERED FILM DID NOT INDICATE ANY MISTRACKING.

3. BASED ON THE ABOVE DATA OUR BEST ESTIMATES (REPEAT ESTIMATES) OF THE FAILURE ARE SUPPLIED BELOW:

- A. FILM STORAGE AT SHUTTLE ASSEMBLY. IT IS HYPOTHESIZED

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	2	7	12	17
	3	8	13	18
	4	9	14	19
	5	10	15	20

PAGE 3 ██████████ ~~TOP SECRET~~

THAT A FILM TRANSPORT FAILURE OCCURRED IN THE SHUTTLE ASSEMBLY AREA DURING THE METERING CYCLE. FILM STOPPAGE IN THE SHUTTLE AREA RESULTED IN INTERMITTENT OVERLOADING ON THE FRAME METERING ROLLER ASSEMBLY AND ITS FAILURE. AS A RESULT OF THE FRAMING ROLLER FAILURE, THE INPUT METERING ROLLER WRAPPED AND FAILED.

FILM STOPPAGE BETWEEN INPUT METERING ROLLER AND SUPPLY CASSETTE. GROUND TEST EXPERIENCE HAS DEMONSTRATED THAT FILM WELDS DUE TO POSITION BETWEEN SUCCESSIVE WRAPES ON THE SUPPLY SPOOL HAVE CAUSED SEVERE TRANSIENT LOADS ON THE FILM TRANSPORT ASSEMBLY.

THE FOLLOWING IS THE THEORIZED CONTINUITY OF THIS FAILURE MODE:

- (1) FILM STOPPAGE AT SUPPLY CASSETTE (S/C)
- (2) FILM SLIPPAGE AT INPUT METERING ROLLER.
- (3) SHUTTLE ACCELERATES TO MECHANICAL STOP AT INPUT SIDE - HALTED BY FRAME METERING ROLLER.
- (4) FRAME METERING HESITATES UNDER LOAD DUE TO LACK OF FILM SUPPLY.
- (5) S/C SURRENDERS BURST OF FILM TO COMBINED PULL OF INPUT METERING AND FRAME METERING ROLLERS.
- (6) FILM (5) REPETITIONS OF STEPS 1 THROUGH 5.
- (7) UNDER EXCESSIVE STRAIN FRAME METERING ROLLER

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ACTION	1		6		11		16
	2		7		12		17
	3		8		13		18
	4		9		14		19
	5		10		15		20

PAGE 4 ~~TOP SECRET~~

SHEARS PIN AT COMPLETION OF 12TH METERING CYCLE.

(8) S/C SURRENDERS BURST OF FILM TO INPUT METERING ROLLER.

(9) DUE TO PREVIOUS LOSS OF FRAME METERING ROLLER, INPUT METERING ROLLER WRAPS AND STALLS RESULTING IN EITHER CLUTCH SLIPPING OR PIN SHEARING.

4. [REDACTED] CONCURS WITH THE ABOVE ESTIMATES.

5. IN VIEW OF POSSIBLE FAILURE MODES - NO REDESIGN ACTION IS RECOMMENDED AT THIS TIME. IT IS RECOMMENDED THAT PLANNED FLIGHT LOADS BE DETERMINED EARLY IN THE PLANNING AND NOT ALTERED EXCEPT FOR EMERGENCY OF HIGH PRIORITY TARGETS. THIS IS AN EFFORT TO ASSURE CONTINUAL USAGE OF FILM WHICH HAS COMPLETED THE NORMAL DELIVERY CYCLE AND NOT EXPEDITED TO THE EXTENT THAT "SHORTCUTS" MAY BE NECESSARY TO MEET AN EARLY DELIVERY DATE.

6. UPON COMPLETION OF MISSION 1127 PET, [REDACTED] WILL CONDUCT AN INVESTIGATION OF THIS FAILURE AND CONTINUE NECESSARY CORRECTIVE ACTION.

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