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DEPARTMENT OF THE AIR FORCE
OFFICE OF SPECIAL PROJECTS (OSAF)
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LOS ANGELES, CALIFORNIA 90009



23 Jul 73

4789

REPLY TO
ATTN OF: SAF/SP-1

SUBJECT: Gambit Mission Summary

TO: DNRO

Attached is the summary for Mission 4339.

David D. Bradburn

DAVID D. BRADBURN
Brigadier General, USAF
Director

1 Atch
Mission 4339 Summary

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EYE-94810-73
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SUMMARY

MISSION 4339

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GAMBIT

MISSION SUMMARY

Mission No. 4339

Vehicle No. Satellite Control Section (SCS) 4789
Payload Adapter Section 1089
Titan IIIB-43
Photographic Payload FM-40

Operation No. 4018

Launch 1700Z, 26 June 1973,
Vandenberg AFB, CA

Recoveries None - Orbit Not Achieved

Probable Impact Point 15.3 Degrees North by 131.0 Degrees West

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MISSION HISTORY AND PERFORMANCE

I. Pre-Launch

A. Satellite Control Section (SCS)

No significant problems were encountered.

B. Photographic Payload Section (PPS)

Optical testing resulted in acceptance resolution of 197 L/mm, 2:1 single pass based on an interferometrically derived modulation curve. To allow summer coverage with the best possible optics, the PPS for Mission 4340 was interchanged and launched on Mission 4339.

C. Titan Booster

No significant problems were encountered.

D. Bell Telephone Laboratory (BTL) Ground Guidance Station

No significant problems were encountered.

II. Flight

Vehicle 4789 failed to achieve orbit. The flight terminated when the main propulsion system fuel tank over-pressurized and ruptured approximately 12 seconds after Main Engine start was commanded. Cause of the over-pressurization is believed to be a malfunction in the fuel valve assembly. Data analysis shows that all other subsystems performed normally, and all stored commands in the vehicle executed normally up to flight termination.

III. Impact Analysis

A detailed impact point analysis has been completed using all available data. The most probable impact point was 15.3 degrees North by 131.0 degrees West. This was in broad ocean area.

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4789

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14-0693-73

BIF-107W-70018-73
Total Pages: 4
Copy 2 of 22

To: Distribution

Date: 6 July 1973

Subject: Preliminary Flight Evaluation Report
For Program A-14 (Vehicle 39)

From: G. W. Smith

Reference: A-14 Letter/AS-73-04984, dated 5 July 1973, "Preliminary Flight Evaluation Report for Program A-14 (Vehicle 39) ~~(Secret)~~"

- Enclosures: 1. BIF003W/2-080838-73, dated 3 July 1973, "BIF-003 Input to the Preliminary Flight Evaluation Report, Flight 39."
 2. BIF-008W-N-600661-OH-73, dated 27 June 1973, "BIF-008W Input to the Preliminary Flight Evaluation Report for Flight 39 (FM-40) of Program 110."

Per BYE Program Office direction, the normal Preliminary Flight Evaluation Report input requirements for Flight No. 39 have been waived. The vehicle was launched on 26 June 1973, but failed to achieve orbit due to a satellite control section Main Engine Propulsion System malfunction.

The two enclosures are statements from the hardware contractors that no other covert vehicle problems were detected during the ascent phase of flight. The Reference contains similar enclosures for overt problems. No other problems have been detected by any hardware contractors.

The BYE has directed that BIF003 publish a special report on the Main Engine malfunction that was the direct cause of the vehicle not achieving orbit.


G. W. Smith

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Subject: Contract (S)
BIF-003 Input to the Preliminary Flight
Evaluation Report, Flight 39 (S)

(b)(1)
(b)(3)

To: G. W. Smith

1. This letter is submitted to satisfy contract data item A027. The normal post flight report for the Payload Adapter Section (PAS) will not be submitted for Flight 39, because the vehicle did not achieve orbit due to a failure in the Satellite Control System (SCS) Main Propulsion System (BIF-003 Overt Report B310748).
2. All PAS parameters were nominal at launch.
3. PAS breakstrip separation and freedom to roll were not observed because of the premature shutdown of the telemetry system caused by the vehicle failure.

R. C. Koche
R. C. Koche

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Page 3

To:

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From:

[Redacted]

(b)(3)

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Subject: BIF-008W Input to the Preliminary Flight Evaluation Report for Flight 39 (FM-40) of Program 110

References: (a) Work Statement for Program 110 Satellite Vehicle, Exhibit BYE-69-47, dated 5 December 1969, Contract [Redacted]

(b) Exhibit "A", Revision 1, Amendment No. 3, Contract [Redacted] DD1423, Line Item AO 48

(b)(1)

(b)(3)

(c) Discussion, G. W. Smith, [Redacted] 26 June 1973

In accordance with the request received in Reference (c), this letter constitutes BIF-008W's input to the Preliminary Flight Evaluation Report for Flight 39 (FM-40) of Program 110 and satisfies the requirements of References (a) and (b).

BIF-008W has reviewed available Flight 39 (FM-40) telemetry data immediately before launch and during ascent and has determined that the Photographic Payload Section/Dual Recovery (PPS/DR) operated normally and as expected. All PPS/DR instrumentation points were included in this review.

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Control System [Redacted]

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The following summarizes data subject, time periods, data sources, and Mode/Blocks reviewed:

<u>Data Subject</u>	<u>Time/System Time</u>	<u>Source</u>	<u>Data(Mode/Block)</u>
Pre-Launch Data Baseline	Samples During Task 4 on R-1 (25 June 1973)	COOK RTS	43.1, 43.2, 43.3, 43.4
Pre-Lift Off	59470 through 61200 (Lift Off)	COOK RTS	2.1
Ascent Data	61200 (Lift Off) through 61633 (Data End)	COOK RTS	2.1, 43.1, 43.2, 43.3, 43.4
Pre-Lift Off and Ascent Data (Oak Mountain Replay)	61028 through 61633	Via COOK RTS	2.1

Note that telemetry data was lost prior to the Hatch eject and APTC covers eject commands. The PPS/DR Baroswitches closed at S/T 61318.

EEW:DLA:BE

PPS
Smith
[Redacted]

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- Copy 001: [Redacted]
- 002: [Redacted]
- 003: [Redacted]
- 004: [Redacted]
- 005: [Redacted]
- 006: [Redacted]
- 007: G. W. Smith
- 008: [Redacted]

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