

Declassified and Released by the N R O

In Accordance with E. O. 12958

on NOV 26 1997

[REDACTED]
Copy
2 APR 1969

MEMORANDUM FOR: Chief, Design and Analysis Division, OSP
SUBJECT : Mission 1050 Post-Mission Report

INTRODUCTION

1. Mission 1050 was launched on 19 March for a planned lifetime of 16 days. Perigee and inclination were 100 n.m. and 83 degrees, respectively.

2. Approximately 16,000 feet or 6100 frames of Standard Thin Base (STB) film were loaded for each camera.

3. The vehicle became unstable after revolution 22 as a result of a failure in the attitude control system. This malfunction was described as an uncontrollable yaw rate of 1800 degrees per hour or one-half degree per second. Approximately 990 frames or 16 percent of the payload had been expended at the time of failure. The remainder of the film was expended at a near-maximum rate such that recovery could occur at the earliest opportunity. After review of the photographic material subsequent to the failure, NPIC determined that this film was unuseable and not for distribution to users.

4. The first bucket (1050-1) was recovered on revolution 34, 22 March, and the second bucket (1050-2) on revolution 50, 23 March.

[REDACTED] OPERATIONAL SUPPORT

1. In addition to the normal CALICO software for J-1 systems, the **[REDACTED]** was utilized in a support role for Mission 1051.

2. The **[REDACTED]**

TACO plots (CALICO-4 outputs) were generated

GROUP 1
Excluded from automatic
downgrading and
declassification

~~CORONA RUFF~~
~~TOP SECRET~~

HANDLE VIA
[REDACTED] TALENT-KEYHOL
CONTROL SYSTEMS JOINTL

SUBJECT: Mission 1050 Post-Mission Report

pre-mission and scheduled at three day intervals, i. e., days 4, 7, 10, and 13.

3. The basic difference between the R-201 and TACO plot is the form of the display. TACO highlights areas of interest by a perimeter; the type of area being denoted in this perimeter. Due to the requirement of pre-mission programming and a limited set of camera operation selections, only five and eleven month old Search areas or Holiday are targeted and displayed in CALICO. [REDACTED]

4. [REDACTED]

5. The Daily Status Report (R-205) is a summary of payload consumption, mission coverage by category, and individual HPA coverages. In the CALICO software, there is no capability to generate summary type reports.

MISSION 1050 REQUIREMENTS

1. The Coverage Requirements Summary for Mission 1050 is shown in Figure 1. HPA requirements are listed in more detail in Figure 2.

2. The Accomplishment Status of the Semi-annual and Annual Search areas were 83.9 and 87.8 percent, respectively, at the beginning of Mission 1050, 19 March. It is noted that by the next launch date (Mission 1051, 14 May) Semi-annual and Annual coverage--exclusive of Mission 1050 accomplishment--will have dropped to 65.1 and 78.8 percent. This change in status is illustrated in Figures 3 and 4.

[REDACTED]
Page Two

SUBJECT: Mission 1050 Post-Mission Report

3. Figure 3 is a presentation of mission contribution to the current accomplishment status for the Semi-annual Search area. The plot is also an age distribution; the most recent sighting of a cell is the only one counted. Accomplishment status at launch time of Mission 1050 includes all missions since Mission 1048 or the period of 19 September 1968 - 19 March 1969; whereas status at the launch of Mission 1051 on 14 May will be determined for the period of 14 November 1968 - 14 May 1969. Loss of the contributions from Mission 1048 and part of Mission 1105 will reduce the status to 65.1 percent for the latter period.

4. Figure 4 illustrates the decrease in the status of Annual coverage from 87.3 to 78.8 percent as the sliding period shifts to the next launch date.

5. The Mission Priority paper listed 208 unique HPAs for Mission 1050. Sixty-seven domestic one-cell areas which contain less than .6 percent of the total HPA appeared in this list. Figure 2 provides a description of the LARGE HPAs (Number of cells greater than 100) and the SMALL HPAs are grouped by size. Approximately 92 percent of the HPA is located within the 13 LARGE HPAs.

6. A point of interest is that the HPA requirement (2,350,000 sq. n.m.) is approximately double the Semi-annual overdue area and fifty percent greater than the combined Semi-annual and Annual overdue area.

7. The Mapping and Charting requirement has been separated into four priorities of coverage. Approximately one-half of the 11,780,000 sq. n.m. area is designated priority 2.

MISSION RESULTS

Film Consumption

1. Approximately 905 frames had been expended in 22 camera operations at the time of the attitude control system failure on revolution 22. The on-pad consumption of 83 frames increased the total film expenditure based on telemetry data to 988 frames.



Page Three

~~CORONA RHEE~~
~~TOP SECRET~~

HANDLE VIA
~~TALENT KEYHOLE~~
CONTROL SYSTEMS JOINTLY

SUBJECT: Mission 1050 Post-Mission Report

Area Coverage

1. The photographic coverage by requirement category is presented in Figure 5. [REDACTED]

[REDACTED] All photographed cells appear in one of three groups according to cloud-free probabilities which are .85-1.00, .70-.84, and 0-.69. The cloud-free assessment distribution is expected to reveal an estimate of clear photography. Another quantity, the mean cloud-free probability of all cells photographed of a particular category, is utilized in estimating clear photographic coverage of LARGE and SMALL HPA. [REDACTED]

2. Semi-annual Requirement. Photographic coverage of the Semi-annual requirement area was 305,000 sq. n. m. of which 75,000 sq. n. m. had cloud-free probabilities of .85 or higher. Approximately one-third of the area photographed or 102,000 sq. n. m. was overdue.

3. Annual Requirement. Approximately 448,000 sq. n. m. of the Annual requirement area was photographed; twenty-two percent or 99,000 sq. n. m. of this coverage was overdue. Forty-five percent of the Annual photographic coverage had cloud-free assessments greater than .85.

4. High Priority Area Coverage. Approximately 158,000 sq. n. m. of HPA were photographed during Mission 1050. Twenty-five percent or 39,000 sq. n. m. of this area had cloud-free assessments greater than .85. The expected cloud-free coverage was 78,000 sq. n. m. Seven of the thirteen LARGE HPAs (Number of cells greater than 100) were partially photographed prior to failure. The LARGE HPA on film was 146,000 sq. n. m. of which 34,000 sq. n. m. had cloud-free assessments greater than .85. Expected cloud-free coverage of LARGE HPA was 71,000 sq. n. m. Ten of the eighty-four SMALL HPAs were totally photographed to yield 7,000 sq. n. m. of expected cloud-free area of the 12,000 sq. n. m.

[REDACTED]
Page Four

~~SUBJECT: Mission 1050 Post-Mission Report~~

on film. The cloud-free distribution of SMALL HPA indicated 5,000 sq. n. m. had assessments greater than .85. Only two of the ten SMALL HPAs photographed have an expected accomplishment of .70 or better. Figure 6 lists the HPA photographic coverage for Mission 1050.

~~5. Mapping and Charting Coverage. Mission 1050~~ photographed approximately 566,000 sq. n. m. of Mapping and Charting Area. About 50 percent of the area on film or 281,000 sq. n. m. had cloud-free assessments greater than .85. This Mapping photographic coverage is approximately double that of Mission 1106.

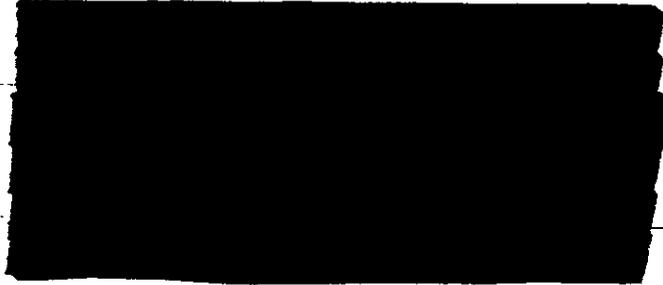

OAS/MAB

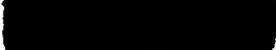
Attachments: a/s


Page Five

~~SUBJECT: Mission 1050 Post-Mission Report~~

Distribution:



ORIG:D&AD/OSP  2 April 1969



Page Six

~~CORONA RUFF~~
~~TOP SECRET~~

HANDLE VIA
 ~~TALENT KEYHOLE~~
CONTROL SYSTEMS JOINTLY

MISSION 1050

Attachment to: [REDACTED]

COVERAGE REQUIREMENTS SUMMARY

	<u>AREA</u> (10 ⁶ SQ.N.MI.)	<u>NO. OF</u> <u>CELLS</u>	<u>PERCENT</u>
o SEMI-ANNUAL SEARCH	7.52	37,510	100.0
OVERDUE THIS MISSION		6,040	16.10
OVERDUE NEXT MISSION		15,667	41.77
o ANNUAL SEARCH	3.26	16,399	100.0
OVERDUE THIS MISSION		1,995	12.17
OVERDUE NEXT MISSION		3,486	21.26
o HIGH PRIORITY AREA	2.53	12,826	100.0
SMALL HPA		1,077	8.4
LARGE HPA		11,749	91.6
o MAPPING AND CHARTING	11.78	57,940	100.0
PRIORITY 1		10,627	18.3
PRIORITY 2		29,804	51.4
PRIORITY 3		13,602	23.5
PRIORITY 4		3,907	6.8

~~TOP SECRET~~ FIGURE 2
CORONA RUFF MISSION 1050

HIGH PRIORITY AREA SUMMARY

<u>HPA SIZE (No. CELLS)</u>	<u>NUMBER OF AREAS</u>	<u>NUMBER OF CELLS</u>	<u>PERCENT OF TOTAL</u>
1	151*	151	1.2
2-10	12	39	0.3
11-20	9	140	1.1
21-30	10	257	2.0
31-40	5	165	1.3
41-50	7	325	2.5
51-100	0	0	0
<hr/>			
SOUTH CHINA		3088	24.1
MIDDLE EAST		2013	15.7
MIDWEST US		1634	12.7
SOVIET BORDER		1441	11.2
MONGOLIA (EAST OF 105°)		832	6.5
CAM., THAIL., LAOS		825	6.4
SKIRMISH AREA		520	4.1
BURMA/BORDER		293	2.3
NUKIH VIETNAM		277	2.2
NORTH KOREA		239	1.9
CHINA (SPECIAL SEARCH)		233	1.8
ABM (KUYBYSHEV)		181	1.4
ABM (MOSCOW)		173	1.3
			(8.4)
			(91.6)

* INCLUDES 67 DOMESTIC TARGETS

Attachment to:

Page Two

~~CORONA RUFF~~

HANDLE VIA
~~TALENT KEYHOLE~~

TOP SECRET

CORONA RUFF

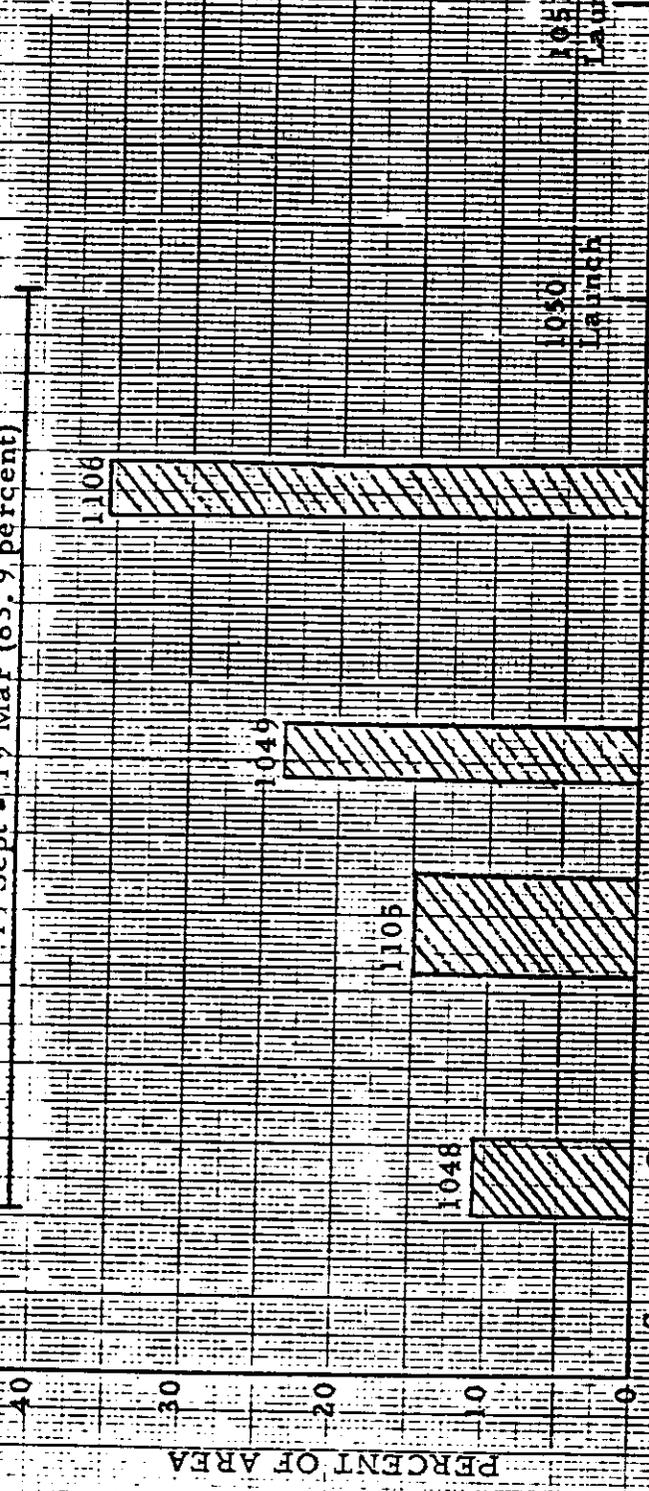
FIGURE 3

SEMIANNUAL SEARCH AREA

ACCOMPLISHMENT STATUS

14 Nov. 14 May (65.1 percent)

19 Sept - 19 Mar (83.9 percent)



Attachment for [REDACTED]

Page Three

UNCLASSIFIED
EXEMPT FROM
AUTOMATIC
DOWNGRADING AND
DECLASSIFICATION

CORONA RUFF

TOP SECRET

~~TOP SECRET~~

~~CORONA RUFF~~ FIGURE 4

~~ANNUAL SEARCH AREA~~

ACCOMPLISHMENT STATUS

14 May 1968 - 14 May 1969 (78.8 percent)

19 March 1968 - 19 March 1969 (87.8 percent)

PERCENT OF AREA

30

20

10

0

1046

1047

1048

1103

1104

1105

1049

1106

1050

1051

Launen Launch

Mar Apr May Jun Jul Aug Sep Oct Nov Dec Jan Feb Mar Apr May Jun Jul

Attachment to:

Page Four

HANDLE VIA

~~CONTROL SYSTEMS JOINTLY~~

~~CORONA RUFF~~

~~TOP SECRET~~

FIGURE 6

HPA COVERAGE SUMMARY

<u>Unique Cells</u>		<u>Cells with</u> <u>Cloud-Free</u> <u>Probability</u> <u>(.85-1.00)</u>	<u>Probable</u> <u>HPA</u> <u>Accomp.</u>
<u>Total</u>	<u>Photo.</u>		

SMALL HPA

(Expected cloud-free: 33.7 cells or 6740 sq.n.m.)



20	20	12	0.72
29	29	11	0.58
1	1	0	0.10
1	1	1	0.90
1	1	0	0.35
1	1	0	0.30
1	1	0	0.50
1	1	0	0.10
1	1	0	0.05
1	1	0	0.20

LARGE HPA

(Expected cloud-free: 357 cells or 71,400 sq.n.m.)

Cam., Thail., Laos	825	101	101	0.11
North Korea	239	48	0	0.02
North Vietnam	277	113	27	0.12
South China	3088	376	0	0.06
Skirmish Area	520	27	0	0.0
Soviet Border	1441	10	0	0.0
ABM Moscow	173	56	42	0.25

Attachment to:

Page Six

~~CORONA RIFT~~
~~TOP SECRET~~

HANDLE VIA
~~TALENT KEYHOLE~~
CONTROL SYSTEMS JOINT.