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COMIREX-D-31.2/13

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25 September 1968

MEMORANDUM FOR: Committee on Imagery Requirements and Exploitation

SUBJECT: Program for Planning the Exploitation of Reconnaissance Imagery

REFERENCE: COMIREX-D-31.2/9, 14 May 1968

1. The referenced document requested NRO to provide COMIREX a five-year estimate of the National Reconnaissance Program (NRP) for the period FY 1970-1974. Their response is transmitted herewith (see attachment 1) together with a draft COMIREX document on the subject (attachment 2).

2. It is requested that the COMIREX members review the attached documents and develop comments on the draft COMIREX document for consideration at the 3 October COMIREX meeting. Upon receiving community coordination, the COMIREX document will be published in the TALENT-KEYHOLE Channels as an official planning document for imagery exploitation organizations.

Hayden Channing
Executive Secretary
Committee on Imagery Requirements and Exploitation

Attachments

Copies 2, 3	State TCO
4	DIA (Mr. Hughes)
5, 6, 7, 8	DIA TCO
9, 10	OACSI TCO
11, 12	ONI TCO
13, 14	AFNIN TCO
15, 16	NSA TCO
17, 18, 19	NRO TCO
	IDEALIST/OXCART
	DORIAN/HEXAGON
	CORONA/GAMBIT

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BYEMAN TALENT-KEYHOLE
Control Systems Jointly

NATIONAL RECONNAISSANCE OFFICE
WASHINGTON, D.C.

THE NRO STAFF

10 July 1968

MEMORANDUM FOR THE CHAIRMAN, EXSUBCOM

SUBJECT: FY 1970-1974 Planning for Exploitation of Reconnaissance Imagery

REFERENCE: COMIREX D-31.2/9

Tabs A through F provide the planning information requested by reference document for all National Reconnaissance Program systems planned to be operational during FY 1970-1974.

All of the systems have the inherent capability of collection over the geographic areas listed in Tab A-2 of the reference.

The OXCART System (BLACK SHIELD) is not planned during FY 1970-1974.

The number of satellite recovery buckets is stated on an annual basis rather than quarterly as requested, since a relatively small number of missions are launched each year. Mission intervals throughout the year are generally uniform.

The number of estimated buckets indicated for the maximum and minimum case is based upon collection against present USIB intelligence collection requirements and also upon estimated system capabilities for the FY 1970-1974 period. The schedules will vary proportionately to changes in USIB requirements and the capabilities of individual systems.

Tabs A, B and F provide data on currently operating systems (GAMBIT, CORONA, IDEALIST) and must have the security classification of TALENT/KEYHOLE. Tabs C, D, and E provide data on future systems (DORIAN, HEXAGON, TAGBOARD) and must remain in the BYEMAN System at this time.

JAMES L. AUSTIN
Captain, USAF

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IDEALIST/OXCART
DORIAN/HEXAGON
CORONA/GAMBIT

TAB A

KH-4A AND KH-4B SATELLITE SYSTEMS

		KH-4A	KH-4B
1. Gross Area Coverage Per Bucket: (Sq. N.M.)*	Maximum	3.53×10^6	3.36×10^6
	Minimum	2.28×10^6	2.17×10^6
2. Ground Resolution:	KH-4A:	10 feet at Nadir (maximum).	
	KH-4B:	7 feet at Nadir (maximum).	

3. Type of Imagery: Stereoscopic panoramic photography.

	KH-4A	KH-4B
4. Film Load Per Bucket:**	16,000 feet (STB)	24,000 feet (UTB)

5. Scheduled Buckets Per Year:***	FY-70	FY-71	FY-72 to FY-74
Maximum	14	14	No launches
Minimum	11	11	scheduled

*These figures are based on the range of cloud-free photography which has been obtained by the KH-4A and KH-4B systems.

**The KH-4A system uses standard thin-base film (STB) and the KH-4B system uses ultra-thin-base film (UTB).

***Two KH-4A systems are scheduled to be flown during the first half of FY-70; the remainder are KH-4B systems.

TAB B

KH-8 SATELLITE SYSTEM

1. Target Coverage Per Bucket:* Maximum 1300, Minimum 1000

2. Ground Resolution: [redacted] at Nadir (maximum).

3. Type of Imagery: Stereoscopic and monoscopic photography.

4. Film Load Per Bucket:** 5,000 feet

5. Scheduled Buckets Per Year:***

	FY-70	FY-71	FY-72	FY-73	FY-74
Maximum	16	16	16	16	16
Minimum	13	13	13	13	13

*These figures are based on the range of cloud-free photography which has been obtained by the KH-8 system.

**There are two buckets per launch starting July 1969 (FY-70).

***If new search and surveillance and spotting satellite systems are successful and are launched as presently programmed, the launch schedule could be reduced in FY-72 and beyond.

TAB C

DORIAN

1. Target Coverage Per Bucket:*	Manned	2500	
	Unmanned	333	
2. Ground Resolution: [redacted] at Nadir (maximum).			
3. Type of Imagery: Stereoscopic and monoscopic photography.			
4. Film Load Per Bucket:** Maximum	Manned	17,500 feet	
	Unmanned	4,666 feet	
5. Scheduled Buckets Per Year:***	FY-72 (3 manned msns)**	FY-73 (2 unmanned msns)	
Maximum	3	12	
Nominal****	3	8	

*Based upon target accesses during 30-day mission and an average 50% factor for weather, augmented by an estimated 25% increase in cloud-free photographs by using the crew to select clear alternate targets.

**In the manned system all film is returned with the crew in the GEMINI B capsule; the unmanned system assumes 6 buckets per launch.

***No launches are scheduled for FY-70 and FY-71; no launches have been projected beyond FY-73.

****Based upon a mean mission duration of 40 days. The unmanned system can operate for 56 days, but is not fully qualified for that length of time.

TAB D

HEXAGON

1. Gross Area Coverage Per Bucket* (Sq. N.M.)		Maximum	4.25×10^6
		Minimum	2.75×10^6
2. Ground Resolution:		Maximum	2.4 feet at Nadir
		Minimum	8 feet at 60^o obliquity

3. Type of Imagery: Stereoscopic and monoscopic photography.

4. Film Load Per Bucket:** 52,000 feet

5. Scheduled Buckets Per Year:***	FY-71	FY-72	FY-73	FY-74
Maximum	20	24	24	24
Minimum	15	19	19	19

*These figures are based on the range of cloud-free photography which has been obtained by present search systems.

**There are 4 buckets per launch.

***No systems are scheduled for FY-70; systems shown as scheduled for FY-73 and FY-74 are projected and have not been approved.

TAB E

TAGBOARD

1. Gross Area Coverage Per Mission (Sq. N.M.)

Maximum	84,500
Minimum	62,400

2. Ground Resolution: 1.5 feet at Nadir.

3. Type of Imagery: Stereoscopic and monoscopic photography.

4. Film Load Per Mission: 4500 feet.

5. Schedule: No reasonable estimate of number of missions for FY-70-74 can be made at this time.

TAB F

TALENT (CHURCH DOOR SYSTEM)

1. Gross Area Coverage Per Mission (Sq. N.M.)

Maximum monoscopic coverage	189,000
Maximum stereoscopic coverage	126,000

2. Ground Resolution: Less than 1 foot at Nadir.

3. Type of Imagery: Stereoscopic and monoscopic photography.

4. Film Load Per Mission: 10,500 feet

5. Schedule: No reasonable estimate of number of missions for FY-70-74 can be made at this time.

D
R
A
F
T

MEMORANDUM FOR: COMIREX
Director, NRO
Director, NPIC

SUBJECT: Program for Planning the Exploitation of Reconnaissance Imagery: National Reconnaissance Program FY 1970--FY 1974

REFERENCES:

a. The National Tasking Plan for the Exploitation of Multi-Sensor Imagery (NTP), January 1967

b. JIIRG Report, Appendix N, A Concept of Imagery Interpreter Resource Allocation, September 1966

1. In accordance with reference a, the COMIREX has developed an estimate of the projected magnitude and characteristics of the National Reconnaissance Program (NRP) for the period FY 1970-1974. This forecast can be used by organizations tasked under the National Tasking Plan (NTP) as a uniform basis in applying the approved methodology (reference b) to identify imagery interpreter resource needs.

2. During the period FY 1970-1974, the NRP will employ up to eight different collection projects or systems, which have the inherent capability of collecting imagery over any denied territory. The estimated number of missions for the projects over the five-year period are set forth in Tab A, and their technical characteristics are summarized in Tab B. Supporting data on each project or system follows:

a. KH-4A: This satellite collection project, employed primarily to satisfy area search requirements, has two recovery buckets or missions for each launch. The project will terminate after the two launches in FY 1970.

b. KH-4B: This satellite collection project is also characterized by two missions for each launch, and is also employed primarily against area search requirements. The future of this project depends primarily upon the introduction and success of the KH-9 collection project during FY 1971. At present, however, no launches are scheduled after FY 1971.

c. KH-9: This satellite collection project will not become operational until sometime during Fy 1971. The project will have four recovery buckets or missions with each launch and will be employed primarily against area search requirements and certain surveillance requirements. A single mission or bucket will provide usable imagery of about the same geographic area and targets as a single bucket of the currently operating KH-4B project and will have the ground resolution characteristics of the old KH-7 collection project. As a result, there will be about a two-fold increase in the volume of film over that currently received from a single KH-4B mission bucket.

d. KH-8: This satellite collection project is currently operating as a high resolution spotting system, employed primarily against surveillance and technical requirements. Beginning in FY 1970, each launch will consist of two recovery buckets or missions. The future of this project during FY 1972 and beyond depends primarily upon the introduction and success of the KH-10 series, and to a lesser extent the KH-9 project.

e. KH-10A: This satellite collection project should be initiated during FY 1972. It will be an ultra-high resolution spotting system, employed primarily against surveillance and technical requirements. There will be only one recovery bucket or mission for each launch. There will not be any launches during FY 1973, and none have been projected beyond that period.

f. KH-10B: This satellite collection project should be initiated during FY 1973. It is identical to the KH-10A except each launch will have six recovery buckets or missions. There are no launches projected beyond FY 1973.

g. TALENT/CHURCHDOOR: These projects involve an airborne platform. At present, no reasonable launch schedule can be projected for these projects.

h. T-X-1: This is also an airborne project for which no reasonable launch schedule can be projected.

William A. Tidwell
Chairman
Committee on Imagery Requirements and Exploitation

Attachments A and B

Program for Planning the Exploitation of Reconnaissance Imagery
Estimated Number of Missions*
National Reconnaissance Program FY 1970--1974

Collection Project	Estimated Magnitude of Reconnaissance Effort										Remarks
	FY 1970		FY 1971		FY 1972		FY 1973		FY 1974		
	Launches	Missions	Launches	Missions	Launches	Missions	Launches	Missions	Launches	Missions	
1. KH-4A	2	4	0	0	0	0	0	0	0	0	Launch to be during first half of FY 1970.
2. KH-4B	4-5	7-10	6-7	11-14	0	0	0	0	0	0	The bulk of these launches will be during the second half of FY 1970.
3. KH-9	0	0	4-5	15-20	5-6	19-24	5-6	19-24	5-6	19-24	Those launches scheduled for FY 1973 and 1974 have not been approved.
4. KH-8	7-8	13-16	7-8	13-16	4-8	7-16	4-8	7-16	4-8	7-16	If the KH-9 and KH-10 series are successful, the lower side of the range may be more likely
5. KH-10A	0	0	0	0	3	3	0	0	No Schedule		
6. KH-10B	0	0	0	0	0	0	2	8-12	No Schedule		
7. TALENT/ CHURCH DOOR	-	-	-	-	-	-	-	-	-	-	No reasonable schedule can be estimated at this time.
8. T-X-1	-	-	-	-	-	-	-	-	-	-	Same as above

* The term "mission" means the following:
a. Satellite Projects: Each reentry vehicle or "bucket."
b. Airborne Projects: Each sortie.
c. Ground Projects: Each package of film or IR containing imagery.

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Program for Planning the Exploitation of Reconnaissance Imagery
Single Mission* Characteristics
National Reconnaissance Program FY 1970--1974

Collection Project	Net** Useable Area Cover (Million sqnm)	Net Target Coverage	Imagery Data					Camera Type	Film Data		
			***. Type	Collection Mode	Grnd Resol (Feet)	Useable Frame Size	Number of Frames		Cross Footage	Width	Type
1. KH-4A	2.42- 2.75		B/W	Stereo-Mono	10-15	2.15" x 29.3"	6,000	Pan	16,000	70 mm	STB
2. KH-4B	2.69- 4.17		B/W CD BC	"	7-12	"	9,000	"	24,000	"	UTB
3. KH-9	2.98- 4.40		B/W C CD BC	"	2.4-3	0.5' x 2.63' to 0.5' x 10.5'	~~10,000~~ to 10,675 ~~2,500~~ to 4187	"	52,000	6.6"	"
4. KH-8	0. 55-0.072		B/W C	"	[redacted]	8.5" x Variable	Variable	Strip	5,000	9.46"	"
5. KH-10A	0.008-0.010	2,500-3,000	B/W C IR	Stereo Multi-Stereo Mono		9.4" diameter	17,500 ~~13,570~~	Frame	15,300 ~~13,570~~	9.5"	"
6. KH-10B	0.001	300-400	B/W C IR	"		"	3,340 ~~2,933~~	"	2,920 ~~2,933~~	"	"
7. TALENT/ CHURCH DOOR	0.126-0.189		B/W	Stereo-Mono "	1.5'-? 1.0'-?	9" x 18" 2.15" x 29.3"	7,200 6,000	" Pan	13,000 16,000	9.5" 70 mm	"
8. T-X-1	0.062-0.085		B/W	"	1.5 -?	9" x 9"	5,600	Frame	4,500	9.5"	Not Determined

* The term "mission" means the following:
a. Satellite Projects: Each reentry vehicle or "bucket."
b. Airborne Projects: Each sortie.
c. Ground Projects: Each package of film or IR containing imagery.

** Includes both stereo and mono coverage, and is based on the range of cloud-free imagery obtained in the past by current or comparable collection projects.

*** Normally only Black and White (B/W), with Camouflage Detection (CD), Color (C), Bi-Color (BC), and Infrared (IR) on a selective basis as required.

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