

HANDLE VIA **BYEMAN**

CONTROL SYSTEM



March 12, 1969

MEMORANDUM FOR THE RECORD

SUBJECT: Briefing to Senators Anderson and Smith

On March 4, 1969, I briefed Senators Clinton Anderson and Margaret C. Smith, Aeronautical and Space Sciences Committee, on the NRP. Mr. James J. Gehrig, Staff Director, and William Parker (who has an unofficial title of Minority Staff Director and is Senator Smith's protege) also attended.

I was allotted twenty minutes for my briefing and used the attached charts, trying to keep the briefing simple, direct, and non-technical. I showed the four-board on the J-complex at Tyura Tam.

Senator Anderson had very little to ask. Senator Smith asked several questions about (1) civil earth-sensing and (2) cost of individual systems. Both seemed satisfied with this up-dating.

*Jr.*  
PAUL E. WORTHMAN  
Colonel, USAF

*On the afternoon of 4 March, I briefed  
Mr Parker on History, Organization,  
Policy and where we stand  
/w.*

HANDLE VIA **BYEMAN**  
CONTROL SYSTEM

~~TOP SECRET~~

# National Reconnaissance

~~TOP SECRET~~

HANDLE VIA BYEMAN

CONTROL SYSTEM

TOP VERTICAL

Reverse Remarks on Vertical Mount

**THE PRODUCT:**

Photographic Survey

Photographic Spotting

Photographic Mapping

Signal Intelligence

TOP VERTICAL

# CORONA — SEARCH/SURVEILLANCE PHOTO SYSTEM

## SYSTEM ELEMENTS

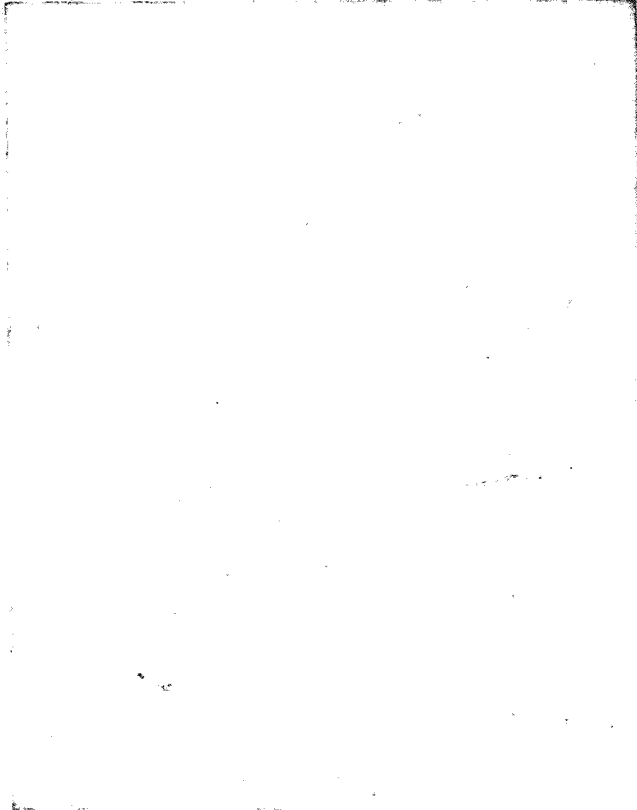
- THORAD/AGENA BOOSTER
- AGENA SPACECRAFT
- 2 ITEK PAN CAMERA
- 1 FAIRCHILD TERRAIN CAMERA
- 2 FAIRCHILD STELLAR CAMERAS
- 4 ITEK HORIZON CAMERAS
- 2 RECOVERY VEHICLES

## PAYLOAD DATA

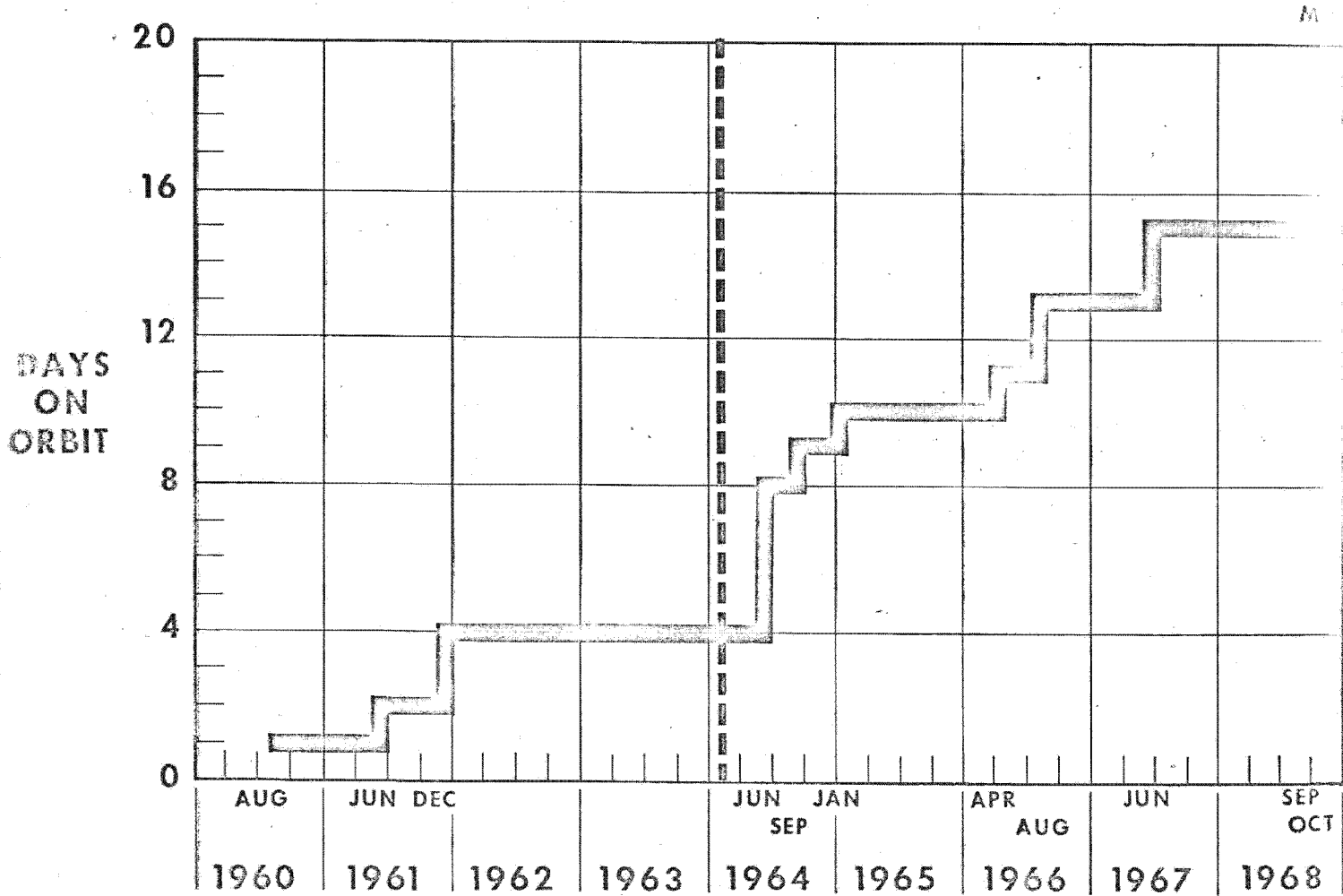
- OPTICS ————— F-3.5, 24" FL LENS
- FILM ————— 46,000' x 70 mm
- FRAME SIZE ————— 7.4 x 119 mm
- RESOLUTION ————— 10'
- COVERAGE — 9.2 x 10<sup>6</sup> sq mi/mission

## ORBITAL PARAMETERS

- INCLINATIONS ————— 65 - 95 deg
- AVERAGE PERIGEE ————— 85 mi
- AVERAGE APOGEE ————— 210 mi
- LIFETIME ————— ~ 16 days



# CORONA



TOP VERTICAL

# GAMBIT (GAMBIT<sup>3</sup>) — TECH INTELLIGENCE, SURVEILLANCE SYSTEM

## SYSTEM ELEMENTS

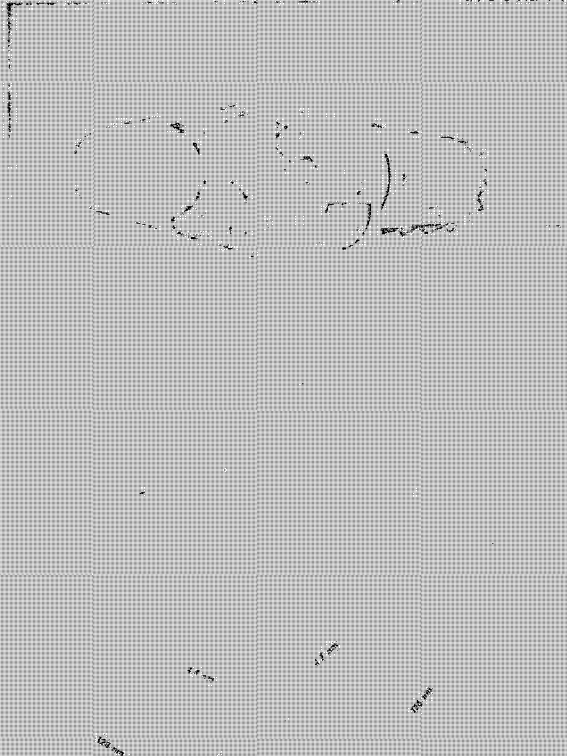
- TITAN III B/AGENA BOOSTER
- AGENA SPACECRAFT
- 1 EK STEREO-STRIP CAMERA
- 1 EK TERRAIN CAMERA
- 2 EK STELLAR CAMERAS
- 1 GE RECOVERY VEHICLE

## PAYLOAD DATA

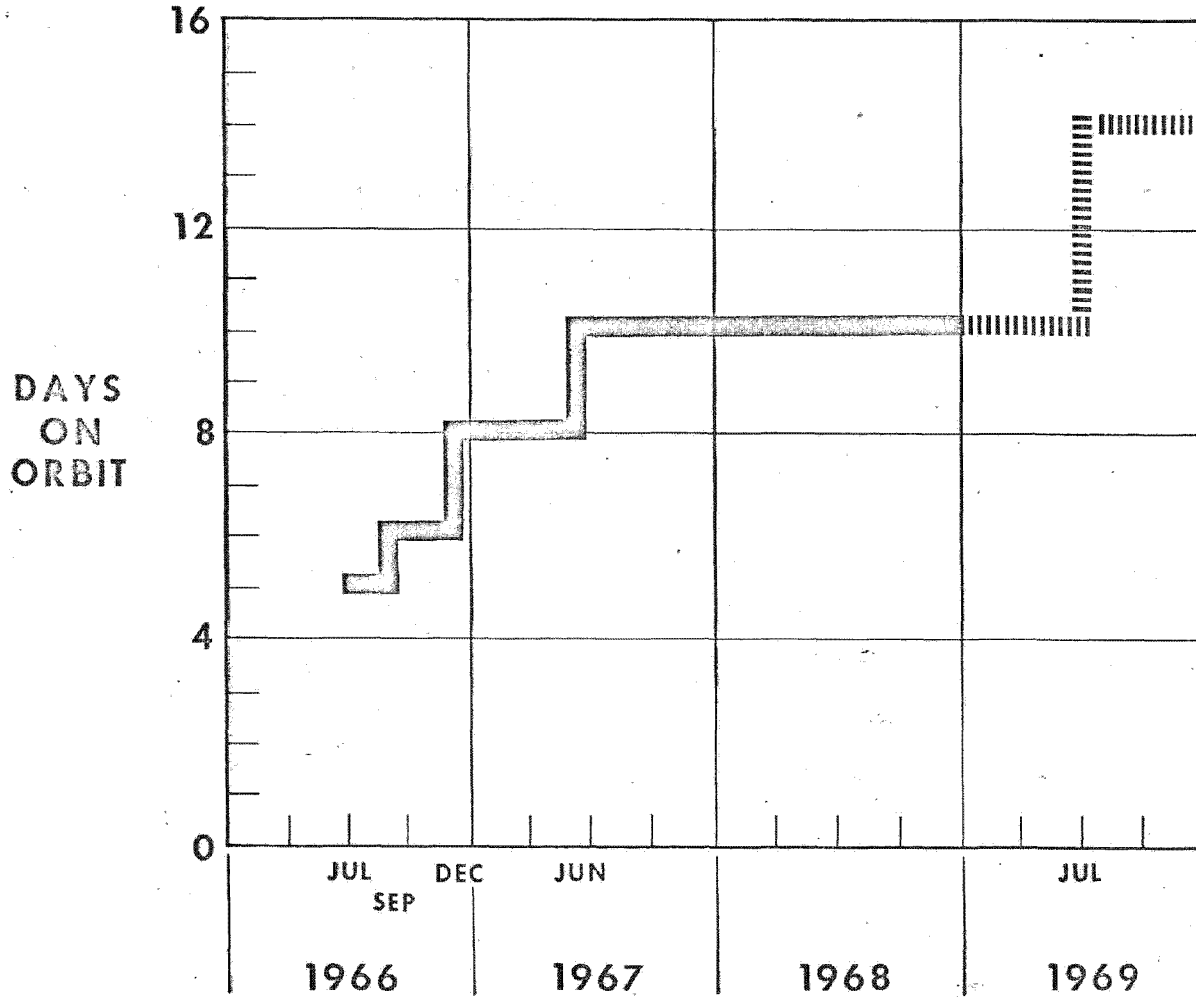
- OPTICS ————— f-3.68, 160" FL LENS
- FILM ————— 4200' x 9.5"
- FRAME SIZE ————— 4.4 x 4.7 mi min
- RESOLUTION ————— [REDACTED]
- COVERAGE ————— 1000 STEREO PAIRS

## ORBITAL PARAMETERS

- INCLINATIONS ————— 65-145 deg
- AVERAGE PERIGEE ————— 85 nm
- AVERAGE APOGEE ————— 175 nm
- LIFETIME ————— ~ 10 days



# GAMBIT



DAYS  
ON  
ORBIT

TOP VERTICAL

# HEXAGON — SEARCH AND SURVEILLANCE SYSTEM

## SYSTEM ELEMENTS

TITAN III D BOOSTER  
SATELLITE BASIC ASSEMBLY  
2 P.E. PAN CAMERAS  
SI/TERRAIN CAMERA  
4 RECOVERY VEHICLES

## PAYLOAD DATA

OPTICS ————— F-3, 60" FL LENS  
FILM ————— 208,000' x 6.6"  
RESOLUTION ————— 2.4'  
COVERAGE — 20 x 10<sup>6</sup> SQ MI MISSION

## ORBITAL PARAMETERS

INCLINATIONS ————— 70-145 DEG  
AVERAGE PERIGEE ————— 82.5 NM  
AVERAGE APOGEE ————— 144 NM  
LIFETIME ————— 30 DAYS



# POPPY — EOB AND GENERAL SEARCH

## SYSTEM ELEMENTS

- BOOSTER - THOR/AGENA
- ORBITAL CONTROL - GRAVITY GRADIENT
- ANTENNA - MULTIPLE (STUBS, HORNS)
- RECEIVERS - 8 TO 10
- DATA READOUT - PERIPHERAL GROUP OF STATIONS ONLY

## PAYLOAD DATA

- OPERATING FREQUENCY RANGE  
1.3-15.7 MHz
- ACCURACY -  $\pm 10$  MHz
- MODE  
FM-SSB
- DATA  
ELEVATION -  $\sim 70^\circ$   
FOOT -  $\sim 500$  NM CIRCULAR  
RANGE -  $\sim 1000$  NM

~~TOP SECRET~~**STRAWMAN — EOB AND TECHNICAL INTELLIGENCE****SYSTEM ELEMENTS**

BOOSTER - THORAD/AGENA

ORBITAL CONTROL VEHICLE - AGENA

ANTENNAS _____	<u>THRESHER (AIL)</u>	<u>REAPER (LTV)</u>
	FOUR 4-ARM _____	10 HORN _____
	CAVITY-BACKED _____	INTERFEROMETER ARRAY _____
	FLAT SPIRALS _____	WITH 2 FLAT SPIRALS _____

RECEIVER BANDS \_\_\_\_\_ 4 \_\_\_\_\_ 2

DATA READOUT \_\_\_\_\_ SCF STATIONS

**PAYLOAD DATA**

RECEIVER FREQ RANGES \_\_\_\_\_ 125 - 2,100 MHz \_\_\_\_\_ 1,800 - 3,300 MHz

LOCATION ACCURACY \_\_\_\_\_  $\pm 10$  NM \_\_\_\_\_  $\pm 7.5$  NM

RECORD/DUMP MODE

ANALOG/DIGITAL DATA \_\_\_\_\_ 2 DSU'S, 3 CSU

**ORBITAL DATA**INCLINATION \_\_\_\_\_  $-75^\circ$ 

ORBIT \_\_\_\_\_ 275 NM CIRCULAR

LIFETIME \_\_\_\_\_ 6 MONTHS MINIMUM

~~TOP SECRET~~

TOP VERTICAL

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# CALENDAR YEAR 69 LAUNCH SCHEDULE

Reverse Remarks on Vertical Mount

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
CORONA THORAD			*		*				*			
GAMBIT-3 P-III B/AGENA												
ANTICROUPE/ THORAD												
THORAD P-III B/AGENA					*							
[REDACTED]												

NOTE: \* INDICATES P-III PASSANGER PAYLOAD

TOP SECRET

# IDEALIST — U-2 HIGH ALTITUDE PHOTO, COMINT AND ELINT AIRCRAFT

## SYSTEM ELEMENTS

- LOCKHEED SINGLE PLACE AIRCRAFT
- PRATT & WHITNEY J-75-P-13 ENGINE
- HYCOM SPLIT VERTICAL FRAME CAMERA
- TRK PAN STEREO CAMERA (alternate)
- TEXAS INSTRUMENTS IR CAMERA

[REDACTED] ELINT RECEIVERS

ECH SYSTEMS

## PAYLOAD DATA

- FRAME CAMERA ————— 36" FL, 1.5" RES  
7200 9" x 18" FRAMES
- IR CAMERA ————— 24" FL, 1" RES  
2700 x 70 NM STEREO COVERAGE
- IR CAMERA — 0.5 MILLIRADIAN RES, +50 DEG SWATH  
5000 NM COVERAGE
- COMINT ————— 50 - 10,000 MHz

## RANGE DATA (U-2-R)

- MAX RANGE ————— 68 - 77, 000 NM
- MIN RANGE ————— 10,000 NM
- MAX RANGE ————— 1000 NM
- (EXTEND WITH ACTUAL DEPTH/ALT)

SR-71

HIGH ALTITUDE, HIGH SPEED RECONNAISSANCE

SYSTEM ELEMENTS

LOCKHEED SINGLE ENGINE COAST  
2 F101A WITH J-59  
PE PAN CAMERA  
EK PAN CAMERA  
HYCON FRAME CAMERA  
WESTINGHOUSE S.L. RADAR  
ECM SYSTEMS

PAYLOAD DATA

PE PAN CAMERA ——— 18" FL, 1.1' RES  
69 x 2500 NM COVERAGE  
EK PAN CAMERA ——— 21" FL, 1.3' RES  
66 x 4200 NM COVERAGE  
FRAME CAMERA ——— 48" FL, 1.0' RES  
6300 9" x 9" FRAMES  
S.L. RADAR ——— 25' RES, 20 NM SWATH  
(CAN CARRY S.L. RADAR & ONE OF ABOVE CAMERAS)

PERFORMANCE DATA

ALTITUDE ——— 78 - 84,000'  
MACH ——— 3.2  
RANGE — 2900 (EXTEND WITH AERIAL REFUELING)



# 147 DRONES -- HIGH OR LOW ALTITUDE PHOTO RECON DRONES

## SYSTEM ELEMENTS

- RYAN DRONE
- CONTINENTAL JET ENGINE
- HYCON FRAME CAMERA (147-H)
- FAIRCHILD PAN CAMERA (147-J)
- LOCKHEED DC-130 LAUNCH PLATFORM
- UH-500 HELICOPTER AIR RECOVERY

## LOAD DATA

- 147-H ——— 24" FL FRAME CAMERA, 2.5" RES  
175 9" x 9" FRAMES
- 147-J ——— 6" FL PAN CAMERA, 3" RES  
3000' x 120 NM COVERAGE

## PERFORMANCE DATA

	<u>147-H</u>	<u>147-J</u>
ALTITUDE —	63 - 70,000'	1500' OVER TARGET 55,000' RETURN
SPEED —	430 KTS	430 KTS
RANGE —	2,000 NM	650 NM

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# THE NRP ORGANIZATIONAL ENVIRONMENT

THE PRESIDENT

NATIONAL SECURITY COUNCIL

FOREIGN INTELLIGENCE  
ADVISORY BOARD

PRESIDENT'S SCIENCE  
ADVISORY COMMITTEE

UNITED STATES  
INTELLIGENCE BOARD

303 Committee

Gen Taylor, Chmn  
Dr W O Baker  
Mr Gray  
Dr Land  
Dr Langer  
Mr Murphy  
Mr Pace  
Adm Sides  
Mr Coyne, Exec Secy

(Panel on NRP Matters)  
Dr Land, Chmn  
Dr J Baker  
Dr Drell  
Dr Garwin  
Dr Ling  
Dr Puckett  
Dr Purcell  
Dr Shea  
Dr Goldberger

Mr Helms, Chmn  
V Adm Taylor, CIA  
Mr Sullivan, FBI  
Mr Brown, AEC  
Lt Gen Carroll, DIA  
Lt Gen Carter, NSA  
Mr Hughes, State

Dr Kissinger, WH  
Mr Helms, DCI  
Mr Johnson, State  
Mr Packard, DOD

DIRECTOR  
CENTRAL INTELLIGENCE  
Mr Helms

SECRETARY OF DEFENSE  
Mr Laird  
DEP SECRETARY OF DEFENSE  
Mr Packard

NRP Executive Committee  
Mr Packard, Dep Sec Def  
Mr Helms, DCI  
Dr Dubridge, WH

NRO Director  
Dr Flax  
Deputy Director  
Mr Reber

BYEMAN  
Control System

~~TOP SECRET~~

# 11 AUGUST 1965— DOD/CIA AGREEMENT

SECRETARY OF DEFENSE ULTIMATELY  
RESPONSIBLE FOR MANAGEMENT  
AND OPERATION OF NRO AND NRP

## ○ SEC DEF WILL:

- ▲ REVIEW AND FINALLY APPROVE NRP BUDGET

## ○ DCI WILL:

- ▲ ESTABLISH COLLECTION PRIORITIES AND REQUIREMENTS
- ▲ REVIEW AND APPROVE NRP BUDGET
- ▲ PROVIDE SECURITY POLICY GUIDANCE

## ○ EXECUTIVE COMMITTEE WILL:

- ▲ RECOMMEND APPROPRIATE LEVEL OF EFFORT TO SEC DEF
- ▲ APPROVE OR MODIFY NRP
- ▲ APPROVE ALLOCATION OF RESPONSIBILITY AND FUNDS FOR R&D AND SPECIFIC RESEARCH PROGRAMS
- ▲ ASSIGN OPERATIONAL RESPONSIBILITY FOR MANNED OVERFLIGHTS
- ▲ REVIEW MAJOR NRP ELEMENTS

## ○ DNRO WILL:

- ▲ MANAGE THE NRO
- ▲ EXECUTE THE NRP
- ▲ INITIATE, APPROVE, MODIFY, REDIRECT OR TERMINATE ALL NRP R&D PROGRAMS
- ▲ PREPARE COMPREHENSIVE NRP BUDGET

Reverse Remarks on Vertical Mount

Reverse Remarks on Vertical Mount

**REQUIREMENTS**

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A National Group

The U.S. Intelligence Board

(USIB)

**OPERATIONS**

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A National Office

The National Reconnaissance  
Office

(NRO)

**EXPLOITATION**

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A National Center

National Photographic  
Interpretation Center

(NPIC)\*

\*CIA-DI

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A National Agency

National Security Agency

(NSA)

The three elements of reconnaissance are organized and managed nationally to serve national needs.