

~~SECRET / BYEMAN~~



**Declassification Proposal
to the DCI
for
Release of GRAB Project
Information for the
Naval Research Laboratory's
75th Anniversary Exhibition**

~~SECRET / BYEMAN~~

~~SECRET/RYEMAN~~

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BACKGROUND Correspondence

~~SECRET//EYEMAN~~

v2.0/mr3.25



NATIONAL SECURITY AGENCY
CENTRAL SECURITY SERVICE
FORT GEORGE G. MEADE, MARYLAND 20755-6000

14 August 1997

MEMORANDUM FOR DIRECTOR, NATIONAL RECONNAISSANCE OFFICE

SUBJECT: Declassification Activities (U) - INFORMATION MEMORANDUM

~~(S-B)~~ Now that the "fact of" SIGINT from space is public information and a wide variety of declassification activities are in process, I believe that it is time to accelerate putting certain cryptologic systems into the public record. One example of immediate interest is the POPPY program.

(S-B) This program is unique in several important aspects:

- it presents great examples of both the innovative use of satellite technology to extend the Navy's reconnaissance capability and the use of its service laboratory (NRL) in important cryptologic programs, and

- it is also our best early example of service cryptologic professionals being completely integrated into the overhead reconnaissance program.

~~(FOUO)~~ I understand that declassification reviews are in progress within the community, but I think we should put emphasis on this program. I specifically propose that the National Cryptologic Museum (NCM), in coordination with the historical organizations of the Navy, be authorized to tell this story with the public display of selected program artifacts and materials. The NCM is in the process of developing new exhibits and this program would be a perfect object. Hopefully, more would follow this example.

(U) You may wish to consider using knowledgeable individuals associated with the NCM Foundation, Inc., to assist in declassification efforts as I am using them to assist in the creation of new exhibits. There may be other things which can be done to speed up the process. I am sure the Navy is more than willing to help. Please let me know what I can do assist you in this area.

VA
K.A.
KENNETH A. MINIHAN
Lieutenant General, USAF
Director, NSA/Chief, CSS

Copy Furnished:
Naval Security Group Command

DERIVED FROM: NRO Classification Guide
DECLASSIFY ON: X1

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NATIONAL RECONNAISSANCE OFFICE

22 September 1997

MEMORANDUM FOR DIRECTOR, NATIONAL SECURITY AGENCY

SUBJECT: Declassification Activities (U)

Per (S/A) I share your interest in accelerating the placement of certain cryptologic systems into the public record. The EOPBY program is an excellent candidate for declassification consideration and potential public disclosure.

(U) I have appointed [redacted] and [redacted] to cochair a team of stakeholders from all pertinent organizations to investigate the declassification of relevant elements of EOPBY. This team will prepare a comprehensive plan for the public release of this information and will contribute to the planning of any public affairs announcements and activities that may result. Your suggestion of including individuals associated with the National Cryptologic Museum is most welcome. We will include them in our program. Expect an initial plan from the team by 3 November 1997.

vr
Keith R. Hall

Keith R. Hall

TO: [redacted]
BY: [redacted]
REASON: 1.5(a)
NEED ON: XI
CRY FRAX: NRO SCS 4.0
14 October 1995

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DEPARTMENT OF THE NAVY
NAVAL RESEARCH LABORATORY
4655 OVERLOOK AVE SW
WASHINGTON DC 20375-5329

IN REPLY REFER TO
5400
Ser 8013/226
22 September 97

From: Commanding Officer, Naval Research Laboratory
To: Director, National Reconnaissance Office, Keith Hall
Via: Program Manager, Captain Rand Fisher
Subj: DECLASSIFICATION OF DYNO PROGRAM (~~S/RYE~~)
Encl: (1): NRL's Diamond Jubilee Background (U)

1. (U) As described in Encl. (1), The Naval Research Laboratory will be celebrating its 75th anniversary in June of 1998. The laboratory will be hosting three days of events to recognize the contributions of the laboratory to the Navy, DOD, and the Nation. Luminaries of the scientific and technical community will participate along with leaders in government and industry. Major contributions of the laboratory in three areas will be recognized. They are:

- a. Materials
- b. Space
- c. Naval systems

2. (~~S/RYE~~) One of the most significant contributions by NRL in the space area is the conception, development, launch and operation of the USA's first reconnaissance satellite. This was DYNO 1, launched on 22 June 1960 from Cape Canaveral, Florida aboard a Thor-Able-Star launch vehicle. DYNO 1's purpose was to collect ELINT data from the interior and infrequently covered maritime regions of the USSR. Security was provided by adding an NRL scientific cover experiment designed to make measurements of solar activity in X-ray, Lyman-Alpha, and ultraviolet radiation above the earth's atmosphere. This cover experiment became the first of a series of SOLRAD satellite experiments designed and exploited by the Naval Research Laboratory.

3. (~~S/RYE~~) In the interest of openness that the NRO has been fostering over the past several years, the NRL believes it is natural and appropriate that the next step would be to declassify this country's first ELINT satellite. The 75th anniversary of NRL would be an excellent opportunity and forum for the declassification and announcement of this significant achievement in the country's infant space program. If this declassification is approved, We invite you to personally announce the declassification at the Diamond Jubilee.

CL BY: [REDACTED]
CL REASON: 1.5 (c)
DECL ON: X1
DRV FROM: NROSCG 4.8 14 OCTOBER 1995

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~~8013 BYE-0013-97
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TALENT KEYHOLE SYSTEMS JOINTLY~~

~~SECRET~~

4. (S//~~FOUO~~) Two DYNO satellites were orbited before the establishment of the NRO and the deployment of the subsequent satellite series which was code-named POPPY or ██████. We are requesting that the DYNO series be declassified and announced. DYNO 1 achieved orbit on June 22, 1960, and DYNO 2 achieved orbit on June 29, 1961. The Pre-NRO DYNO series provides a convenient announcement and declassification platform in that it was an Office of Naval Intelligence (ONI) sponsored program with program directorship assigned to the Director of Naval Intelligence (DNI) and participation by the Naval Security Group (NSG), the National Security Agency (NSA), the Air Force Security Service (AFSS), the Central Intelligence Agency (CIA), and the Army Security Agency (ASA).

5. (U) It should be noted that within the last year, the relationship between NRL and the NRO has been announced publicly with the NRO announcing the partial sponsorship of the Tether Physics Satellite (TIPS) built and operated by NRL and the Interim Control Module (ICM) which is utilizing salvaged hardware from the NRO sponsored Titan Launch Dispenser (TLD).

6. (S//~~FOUO~~) Mr. Reid D. Mayo of NRL originated the concept of the DYNO ELINT satellite in early 1958. Messrs. Howard O. Lorenzen and ██████ expanded the concept and coordinated with other organizations to provide for multi-agency participation and the use of SIGINT stations for data collection and forwarding of data to NSA for processing and product dissemination. RADM Reed of ONI advanced the NRL proposal through the Navy, ARPA, DOD elements, and the executive branch to secure presidential approval.

7. (U) The NRL would be able to provide all background information, including technical and policy directives from its archives. We would provide staff support to retrieve and process this information and participate in the process necessary to gain approvals for declassification. NRL could also provide publications and public affairs support if needed.

8. (U) Please let us know if this request meets with your approval and if so, how we should proceed.


B.W. BUCKLEY

~~SECRET~~

2.

~~8813-BYE-0013-97
HANDLE VIA EXEMAN AND
TALENT-KEYHOLE SYSTEMS JOINTLY~~

The Naval Research Laboratory, the U.S. Navy's corporate laboratory and one of the federal government's leading scientific centers, will be celebrating its diamond jubilee in 1998. The focus of next year's celebration is the Laboratory's many contributions to the Navy and the nation during its seventy-five year history. NRL is requesting a Presidential Proclamation to help mark this important milestone in the Laboratory's history.

NRL officially opened on July 2, 1923, as recommended by of Thomas Alva Edison and the Naval Consulting Board. A modern industrial-type research facility was to be established for the Navy. In the Laboratory's subsequent seven decades, research efforts have expanded from the two original areas of scientific endeavor, radio and underwater sound, to 19 broad areas that encompass many diverse fields in science and engineering.

Early NRL research achievements were manifold. They included the discovery and explanation of radio skip distance (the foundation of modern wave-propagation theory); the development of the fathometer and early sonar; and numerous contributions to the technology of high-frequency radio communications. The Laboratory holds the first U.S. Patent in Radar (1934).

During World War II, scientific activities concentrated almost entirely on applied research. Ship's electronic countermeasures were devised, the first application of cryptography in radar identification was used, the U.S.'s first Identification Friend or Foe (IFF) radio system, and an innovative method of producing uranium (U-238) were developed.

The postwar era was a time of great expansion for NRL. The Laboratory added to its prewar research program with the introduction of bold new programs in electronics, nuclear studies, optics, materials chemistry, space science and other fields.

NRL pioneered naval research into space from atmospheric probes with captured German V-2 rockets. Successive work included the direction of the *Vanguard* project America's first satellite program -- through such recent projects as the Navy's Global Positioning System and the 1995 *Clementine* moon mission. Additionally, NRL pioneered the transmission of radio signals off the moon using the world's largest parabolic antenna -- a first step toward satellite communications. Since the late 1950s, Laboratory scientists have designed, built and launched more than 80 satellites.

NRL's Laboratory for the Structure of Matter has become internationally famous for its path-breaking work in using electron and x-ray diffraction methods for understanding the structure of complicated organic molecules. NRL's Dr. Jerome Karle received the 1985 Nobel Prize in Chemistry for his research to determine phase information from x-ray diffraction patterns.

Today's Laboratory carries out research from the ocean depths to the depths of space and from the structure of matter to the frontiers of modern computing. Current research includes studies as diverse as the monitoring of the solar corona and its impact on the Earth's atmosphere, biomolecular engineering, artificial intelligence, remote sensing, the oceanic climate, virtual reality and superconductivity.

The results of these research programs have been quickly transitioned into naval systems and to industrial technologies that help make the U.S. Navy and the U.S. industry world leaders. NRL continues to meet its assigned task of bringing the best of modern science and technology to the Navy, making U.S. sea power the best and technologically most advanced in the world.

~~Enclosure (1) To
8013-BYE-8913-97~~

~~SECRET/BYEMAN~~

Proposed MEMORANDUM for DCI

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DRAFT

DATE

MEMORANDUM FOR DIRECTOR OF CENTRAL INTELLIGENCE

SUBJECT: Release of GRAB Programmatic Information for Exhibition Purposes in conjunction with the Naval Research Laboratory's 75th Anniversary Jubilee Event, 15-19 June 1998

REFERENCES: (a) PDD-49/NSC-49, "National Space Policy"
(b) Executive Order 12958, "Classified National Security Information"

ENCLOSURES: (1) Proposed GRAB Exhibition Display.
(2) Project Information of Residual Sensitivity for GRAB Declassification
(3) Guidelines for Review of Programmatic Data Associated with Deactivated and Obsolete ELINT Reconnaissance Programs
(4) Risk Assessment Team Report Summary

Action Requested: (~~SECRET//BYEMAN~~) Pursuant to references (a) and (b), you have the authority to declassify details of intelligence collection from space. We are requesting that you approve recommendations to: (a) release information regarding the general characteristics, external satellite appearance, and identification of distinguished alumni and their parent agencies associated with the GRAB ELINT signals intelligence satellite reconnaissance program; (b) release selective GRAB artifacts and programmatic data; (c) release a description of general category of signals collected by these programs which are of historical significance; and (d) continue to protect certain identified residual product details, and programmatic data that is classified.

Background: (~~SECRET//BYEMAN~~) In the fall of 1997, DIRNSA initiated a proposal to declassify the POPPY ELINT Satellite Reconnaissance System in response to reference (a). DNRO concurred with this recommendation. A joint NRO/NSA team has begun preliminary work in response to that action and determined that the GRAB/POPPY ELINT signals intelligence (SIGINT) satellite reconnaissance programs, developed by the Naval Research Laboratory (NRL), were excellent candidates for declassification. In support of the Navy's desire to present an exhibit of the GRAB program (the proof of concept program that preceded Poppy from 1958 to 1962) during NRL's 75th Anniversary Celebration, 15-19 June 1998, and in view of the short time remaining, a selected declassification of an exhibition package for GRAB is requested now. Upon approval, these will represent the first SIGINT/ELINT satellites to be acknowledged in public. A phased approach is therefore being pursued. The first phase is the declassification of a limited exhibition package for GRAB, in response to the NRL request, followed by a second phase to assess the declassification of the entire GRAB and POPPY programs.

Discussion: (~~SECRET//BYEMAN~~) There is justification to release information associated with the earliest operational satellite reconnaissance program (GRAB). For the most part, the hardware and associated program aspects are considered long obsolete and no longer sensitive. The "fact of" overhead SIGINT collection

~~SECRET/RYEMAN~~

DRAFT

is now unclassified. Release of information concerning the early development and fielding of the GRAB systems would complement the recent release of similar information on the CORONA imagery intelligence satellite reconnaissance program. Historians would then possess a more balanced view of the nation's early reconnaissance efforts, while the pioneers who conceived these systems and enabled them to succeed, will gain long awaited and well deserved recognition.

(S) Only a limited exhibition package of information is being proposed in this request, including a short, summarized history of the GRAB program (1958-1962), selected photos and artifacts, names of distinguished alumni, and summary statements of program results and their impact on national security. Enclosure (1) is a depiction of the proposed exhibit for the NRL 75th Jubilee ceremonies. Enclosure (1) additionally includes a photo of each of the items to be displayed along with a copy of the textual information to be released. All residual GRAB artifacts and information not specifically identified in enclosure(1) will be handled as a part of the Phase II declassification in accordance with the proposed draft guidelines in enclosure(2).

(U) Our approach was to assemble the exhibition package, develop review guidelines and criteria with guidance from the CORONA team and conduct a risk review with a team of technical and security experts. Results of our risk assessment indicate that the proposed exhibition elements and information are long obsolete and pose no risk to national security if released to the public. The risk assessment guidelines that were used are attached as enclosure (3). The risk assessment team's report is attached as enclosure (4).

(S) A more comprehensive review for declassification of the remainder of GRAB and selected aspects of the POPPY program (1962-1973) will follow as Phase II of this declassification effort.

Recommendation:

(S) That you delegate authority to the Director, NRO and direct him, in coordination with NSA and other Agency representatives as appropriate, to release the proposed NRL GRAB Exhibition Package in time for the NRL 75th Anniversary scheduled for 15-19 June 1998.

Director, SIGINT Committee

APPROVED:

Director of Central Intelligence

Date

~~SECRET/RYEMAN~~

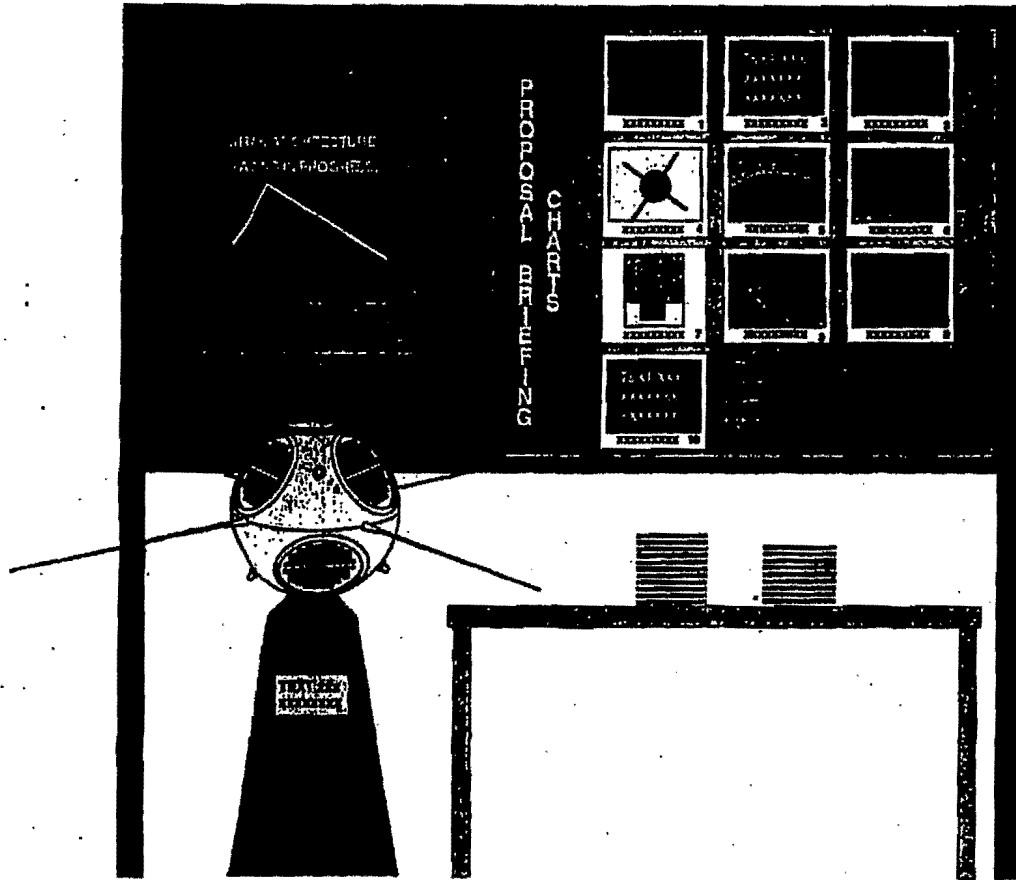
Enclosure (1)

Proposed GRAB Exhibition Display

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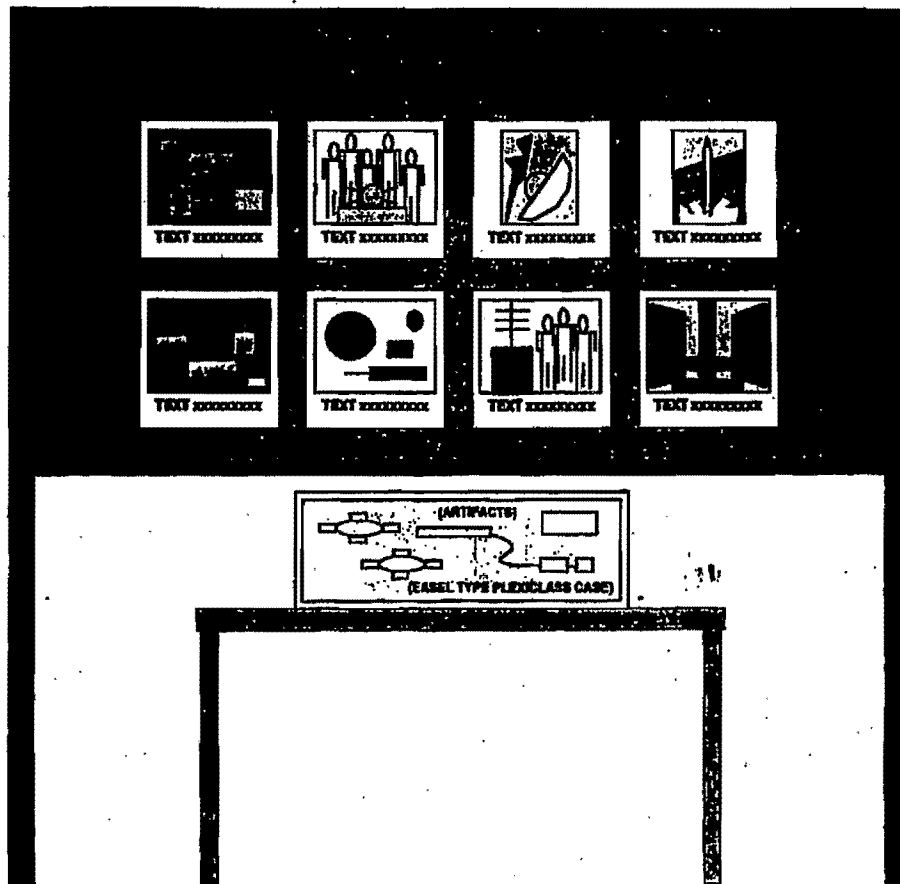
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PANEL 1



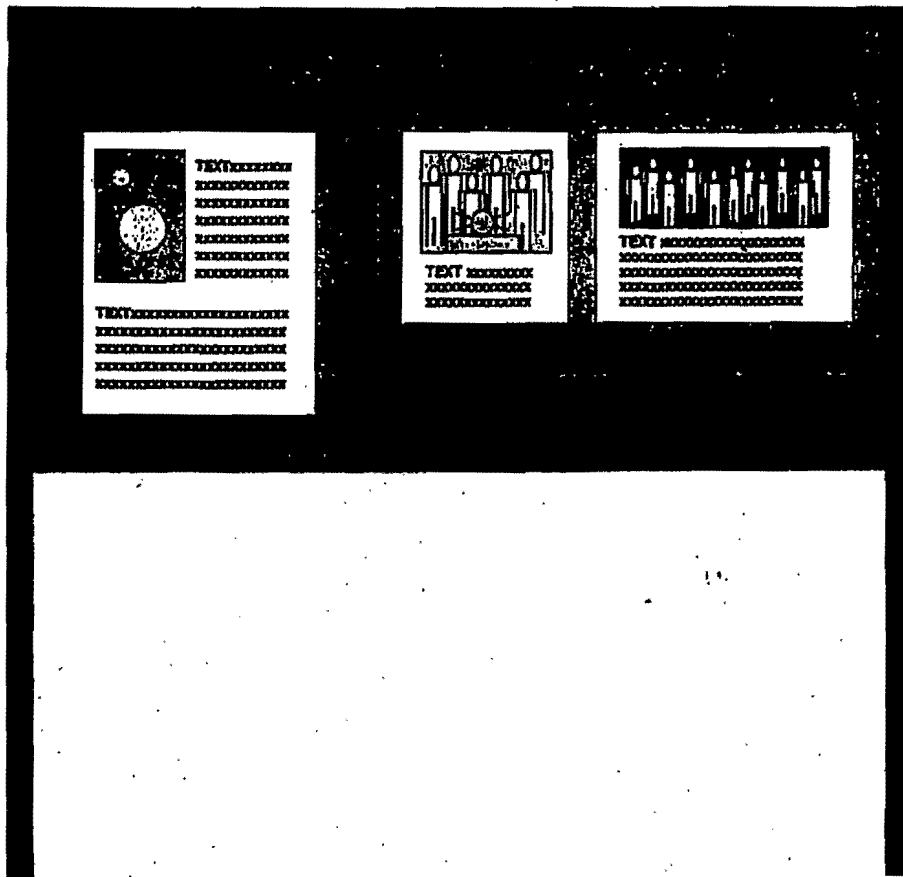
LAYOUT of GRAB DISPLAY
at NRL 75TH Anniversary Jubilee, 15 - 19 June 1998

PANEL 2

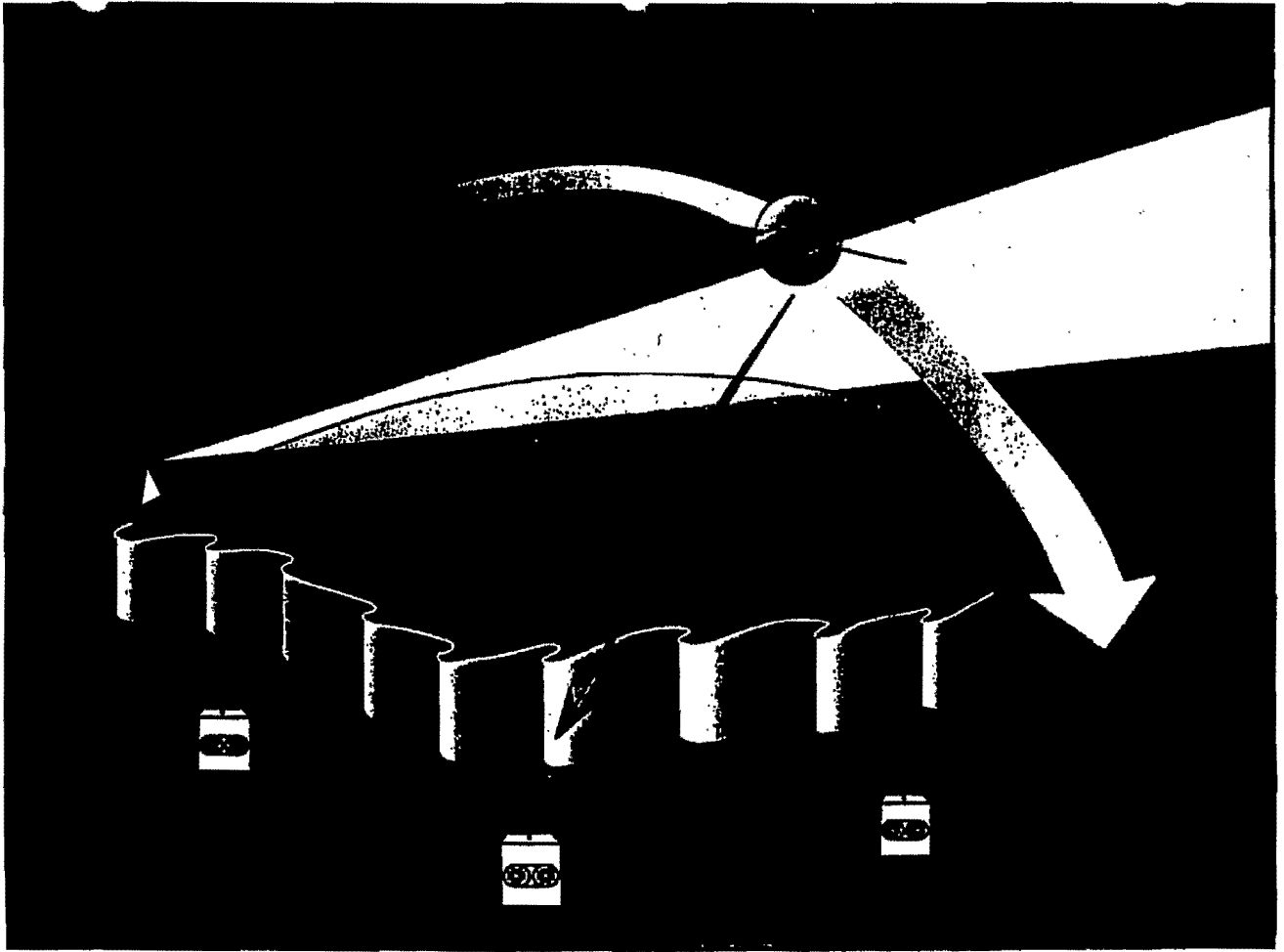


LAYOUT of GRAB DISPLAY
at NRL 75TH Anniversary Jubilee, 15 - 19 June 1998

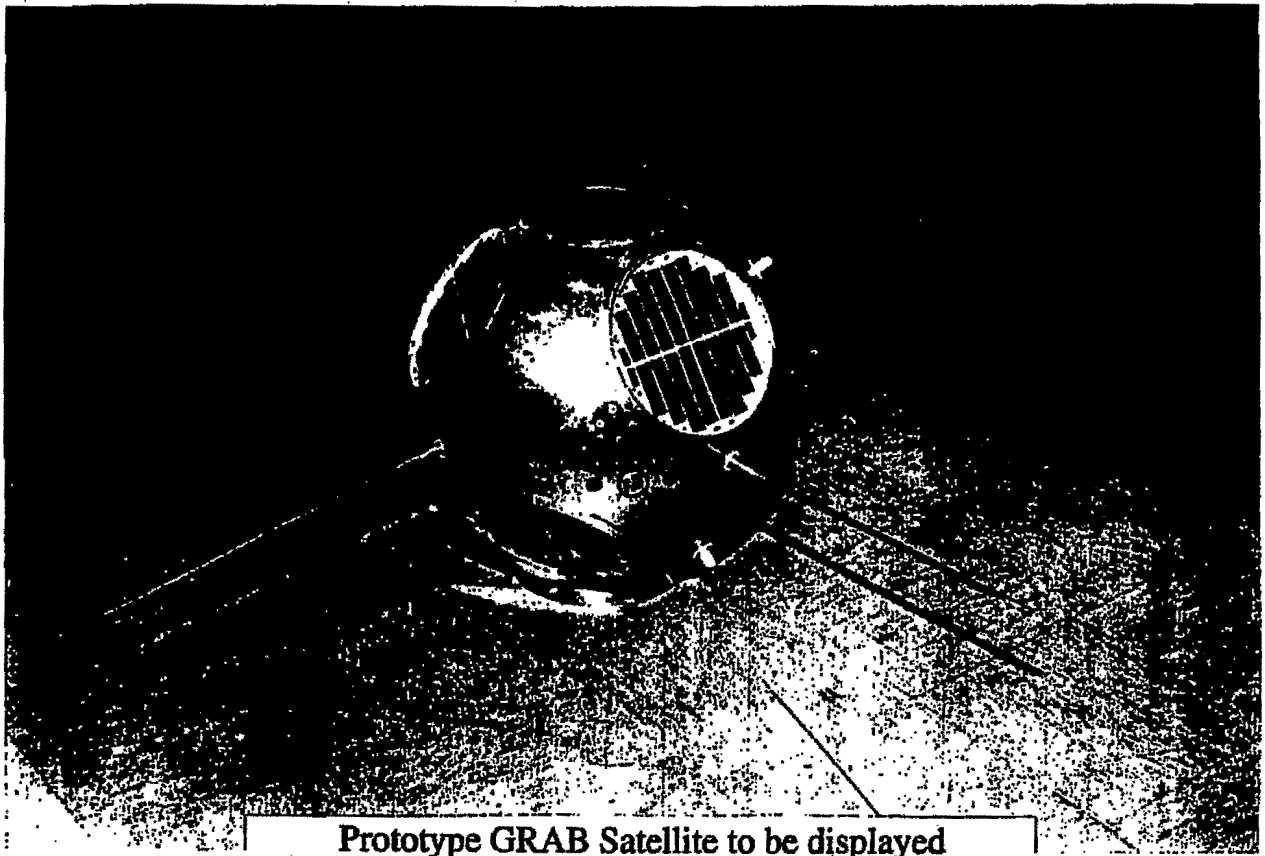
PANEL 3



LAYOUT of GRAB DISPLAY
at NRL 75TH Anniversary Jubilee, 15 - 19 June 1998



Collection Architecture



**Prototype GRAB Satellite to be displayed
at NRL 75th Anniversary Jubilee, 15 - 19 June 1998**

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Textual Information For Release

A U.S. Navy electronic intelligence (ELINT) satellite system became operational in July 1960 and was operated until August 1962. The heretofore classified mission was to obtain information on Soviet air defense radars that could not be observed by Air Force and Navy ferret aircraft flying ELINT missions along accessible borders in Europe and the western Pacific.

The ELINT satellite system was proposed by the Naval Research Laboratory in the spring of 1958. In parallel with exploratory development by the NRL, the Office of Naval Intelligence obtained endorsements of Project Tattletale from elements of the executive and legislative branches. With positive recommendations from State, Defense, and CIA, President Eisenhower approved full development on 24 August 1959. By then, the project had been placed under a tight security control system (Canes) with access limited to fewer than 200 officials in the Washington D.C. area. Development and interagency coordination proceeded as the GRAB (Galactic Radiation and Background) experiment.

After NRL completed development of the GRAB satellite and a network of overseas ground collection sites, a first launch was approved by Eisenhower on 5 May 1960, just four days after a CIA U-2 aircraft was lost on a reconnaissance mission over Soviet territory. The GRAB satellite got a free ride into space on 22 June 1960 with Navy's third Transit navigation satellite. GRAB carried two electronic payloads, the classified ELINT package and instrumentation to measure solar radiation. The SolRad experiment was publicly disclosed in DoD press releases on this and subsequent launches. Total cost to achieve the initial operating capability was [REDACTED]. Four more launches were attempted, and one was successful on 29 June 1961.

The Director of Naval Intelligence exercised overall control. Field sites were operated by elements of the Army, Navy, and Air Force. Data recorded on magnetic tape was couriered back to the NRL, then evaluated, duplicated, and forwarded to the NSA at Army Fort Meade, Maryland, and the Strategic Air Command at Offut Air Force Base Omaha, Nebraska, for analysis and processing. SAC's processing was aimed at defining the characteristics and location of air defense equipment to support building the SIOP (single integrated operations plan), a responsibility of the Joint Strategic Targeting Staff at Offut AFB. In searching the tapes for new and unusual signals, NSA found that the Soviets were already operating a radar that supported a capability to destroy ballistic missiles.

Secretary of Defense Robert S. McNamara formally established the NRO on 14 June 1962 by a top secret directive, and the GRAB technology was then transferred to the NRO.
[REDACTED]

~~SECRET/RYEMAN~~

Charts Depict 30x40-incg briefing boards used by the ONI/NRL team at 14 Project Tattletale briefings in the Pentagon, Main Navy on Constitution Avenue, CIA Headquarters, Capitol Hill, and NASA Headquarters (Nov 59-Apr 59). The charts are national in nature in that they depict the system as originally proposed to senior decision makers.

PROJECT TATTLETALE

PROJECT NAME DURING PROPOSAL STAGE (JUL 58-JUN 59)

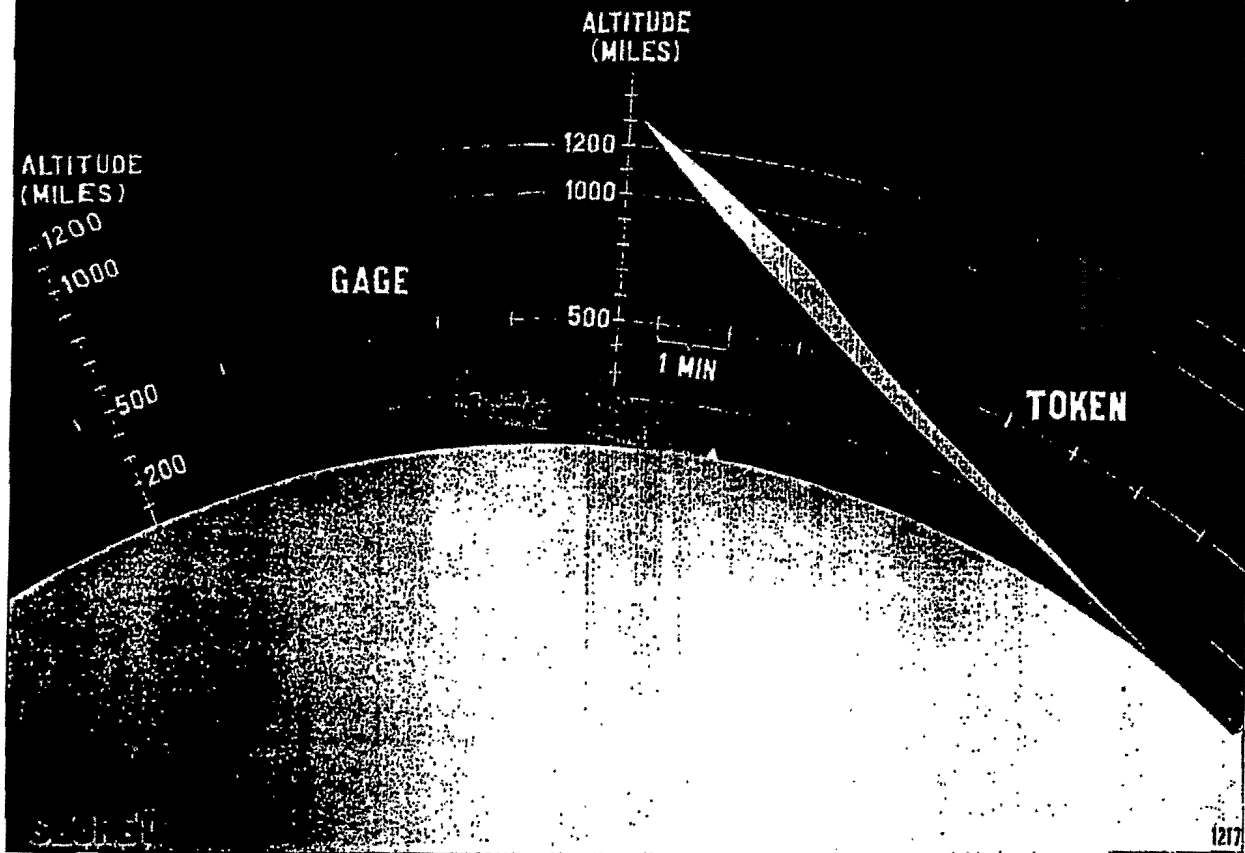
**SPECIFIC INTELLIGENCE WHICH
"TATTLETALE" CAN SUPPLY**

1. INFORMATION CONCERNING CHARACTERISTICS AND LOCATION OF AIR DEFENSE EQUIPMENT
2. EVIDENCE OF NEW 'S' BAND EQUIPMENT
3. INFORMATION CONCERNING LOCATION OF RESEARCH, DEVELOPMENT AND TESTING ACTIVITY
4. INFORMATION CONCERNING LOCATION OF ELECTRONIC MANUFACTURING AREAS
5. INFORMATION CONCERNING AMBIENT ELECTRONIC ATMOSPHERE WITHIN S BAND THROUGHOUT USSR

S-BAND

PARTIALLY COVERED BY FIRST PAYLOAD

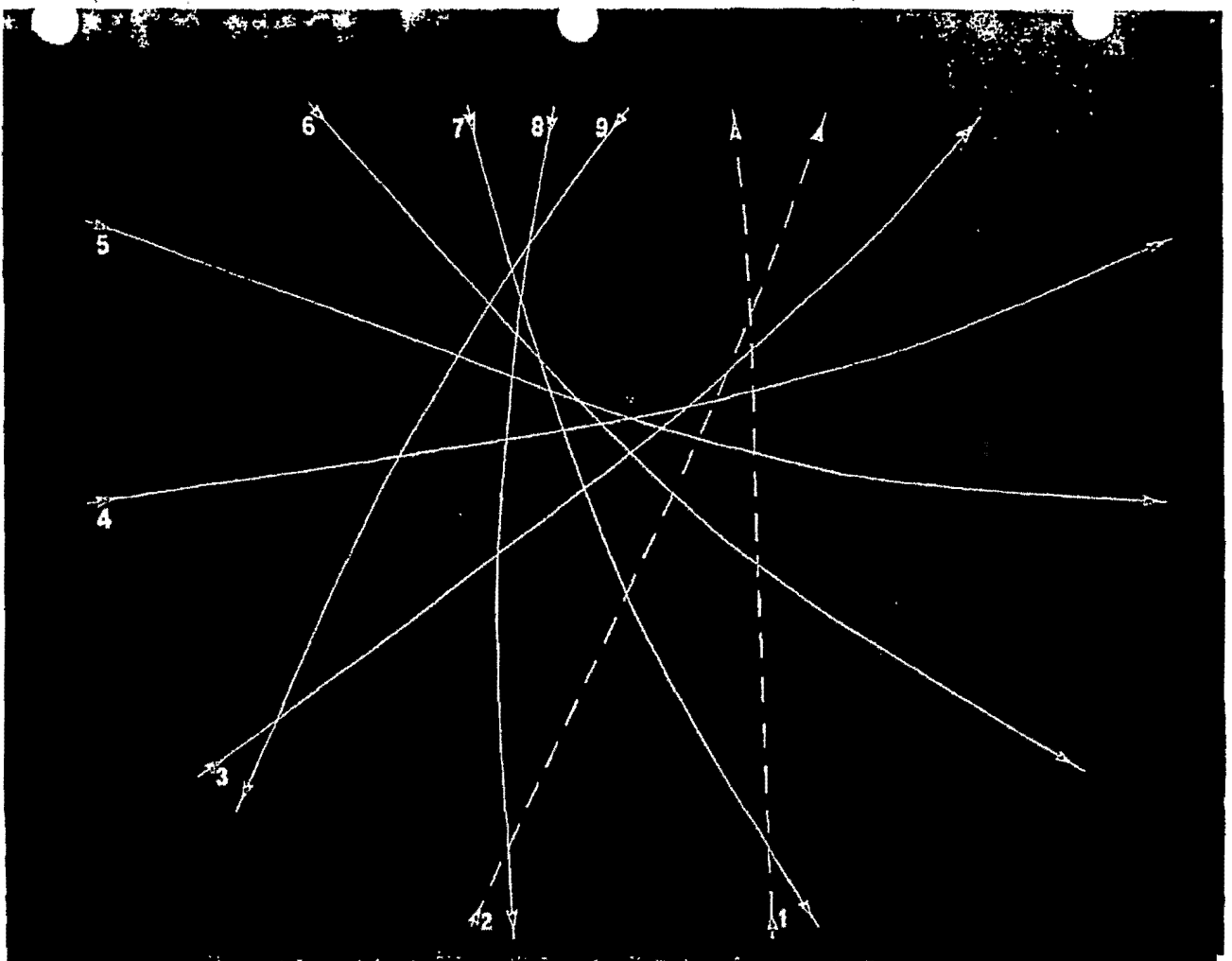
RADAR COVERAGE DIAGRAM



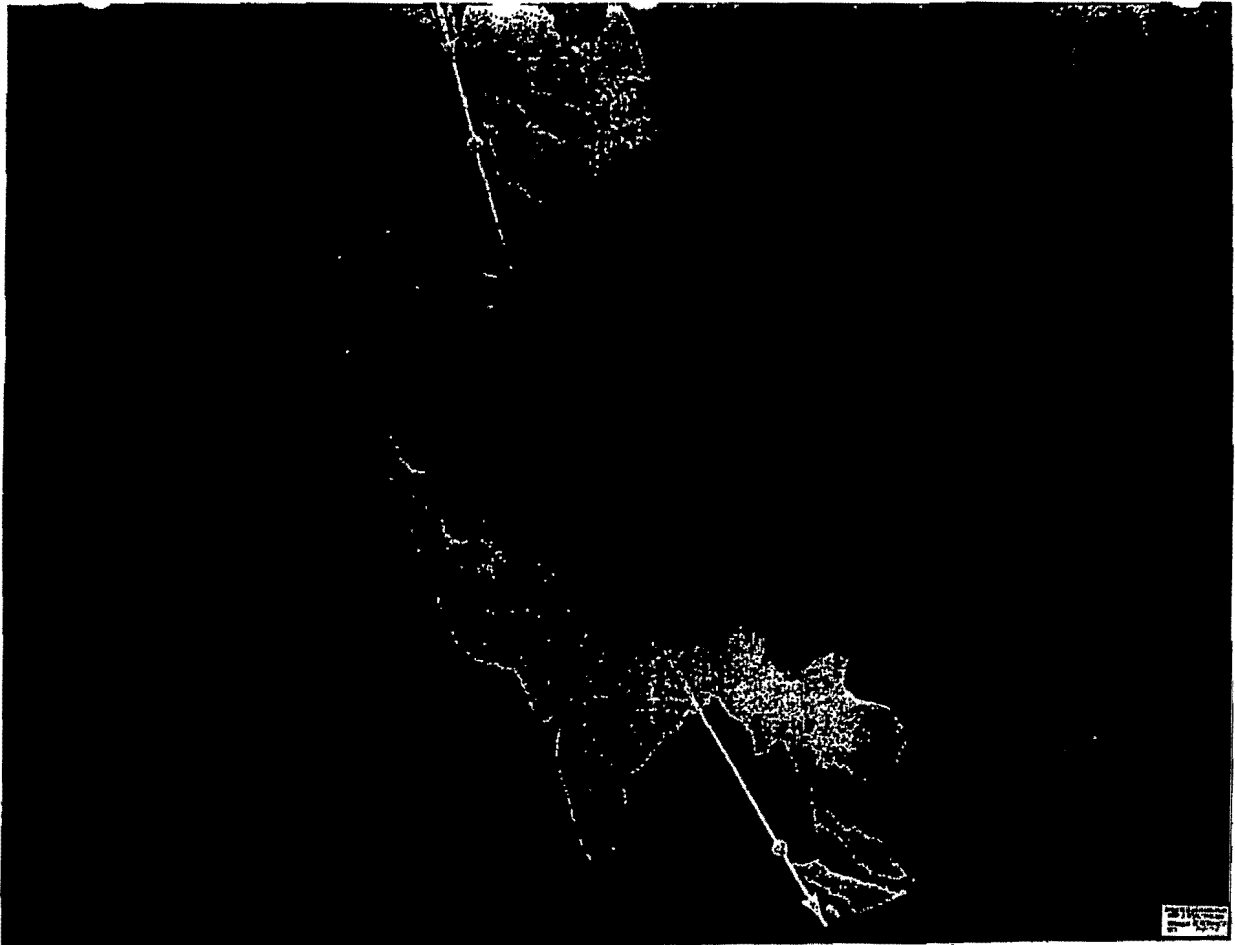
GAGE AND TOKEN WERE NATO DESIGNATORS FOR TWO SOVIET DEFENSE RADARS.



SATELLITE DESIGN ADAPTED FROM VANGUARD



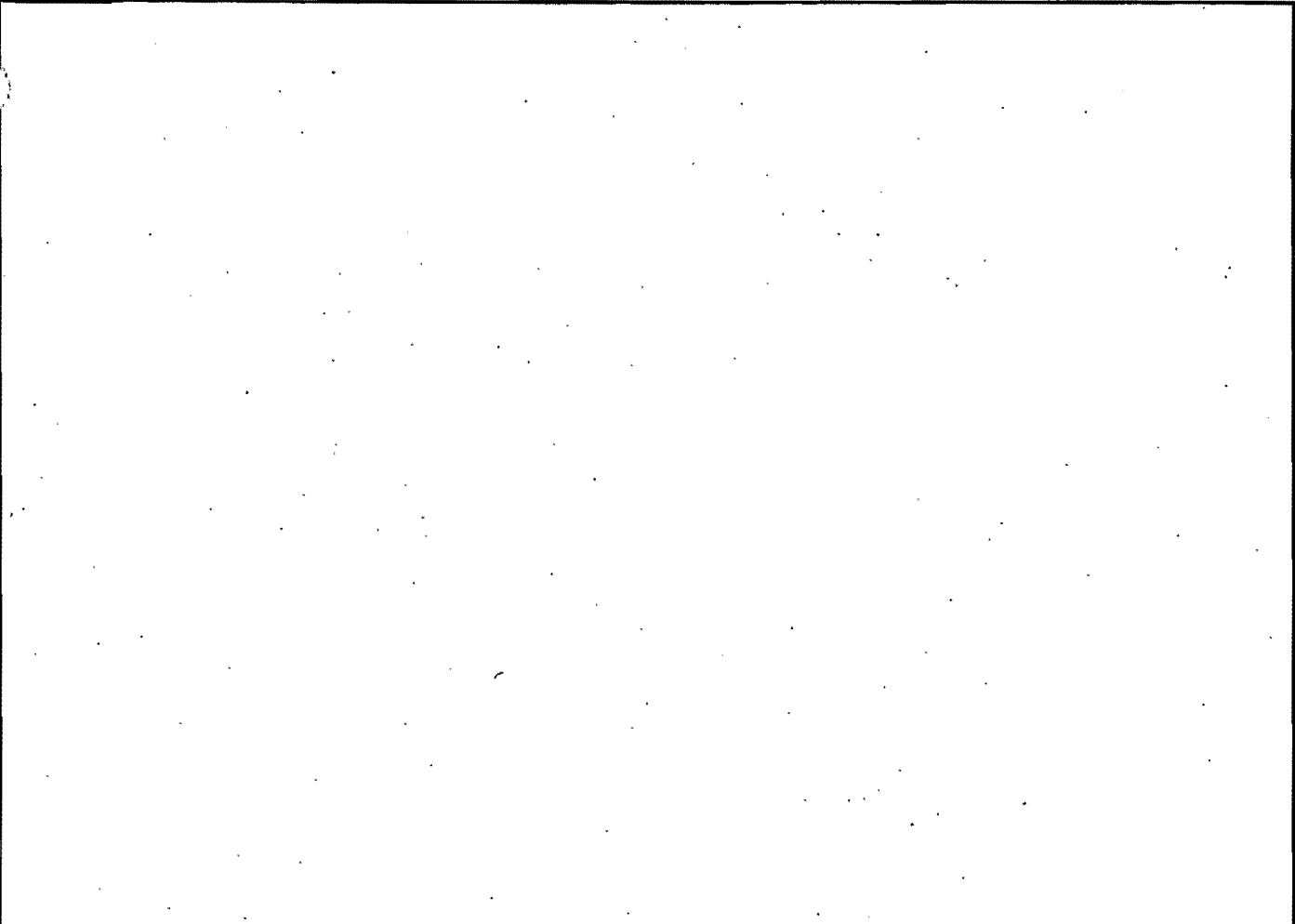
26° WESTWARD PROGRESSION OF EARTH TRACES AT 103 MINUTE PERIOD



3500 NM INTERCEPT SWATH FOR 500 NM, 70° ORBIT



COLLECTION FROM EARTH SATELLITE VEHICLE EQUIPMENT
SHELTERS . DEPLOYED OVERSEAS



NOTIONAL COLLECTION HORIZONS AS FUNCTION OF SATELLITE ALTITUDE

(b) (1)
(b) (3)-50 USC 403
(b) (3)-P.L. 86-36



NSA DATA REDUCTION

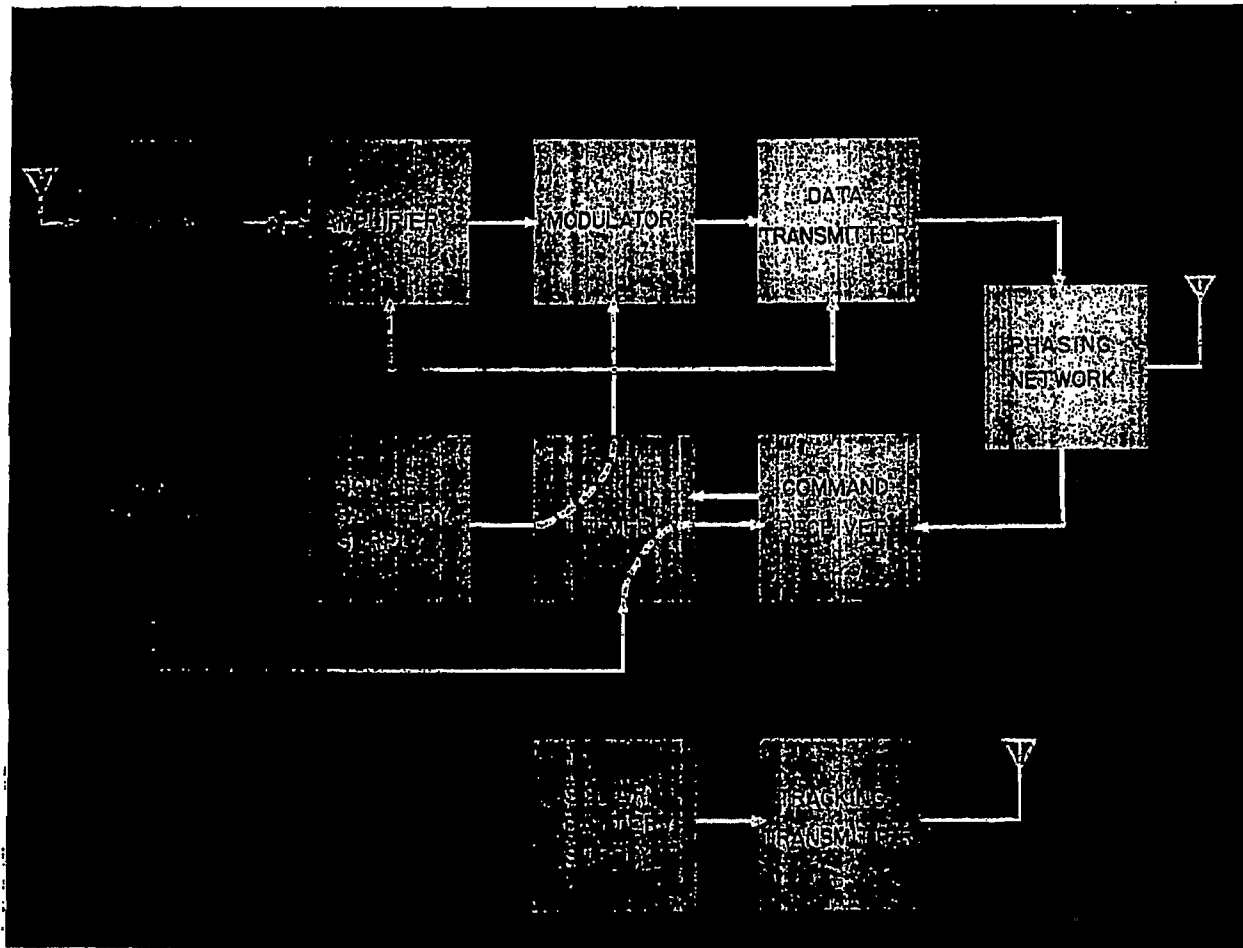
1. ANTENNA SCAN RATE
2. PULSE REPETITION FREQUENCY
3. TYPE OF RADAR
4. RADAR DISPOSITION
5. ANALYSIS OF THREAT
6. LOCATION

ELINT INFORMATION TO BE DERIVED BY PROCESSING THE ^{DOWNLINK FROM THE} SATELLITES

SUMMARY

- 1. SIMPLE TECHNIQUE**
- 2. COMPONENTS EXIST**
- 3. EXISTING VEHICLES CAN LAUNCH**
- 4. LIFE ONE YEAR**
- 5. COLLECTION OF DATA BY EXISTING ELINT STATIONS**
- 6 DATA PROCESSING BY NTPC**
- 7. READY TO LAUNCH IN 6 MONTHS**
- 8. ECONOMICAL**

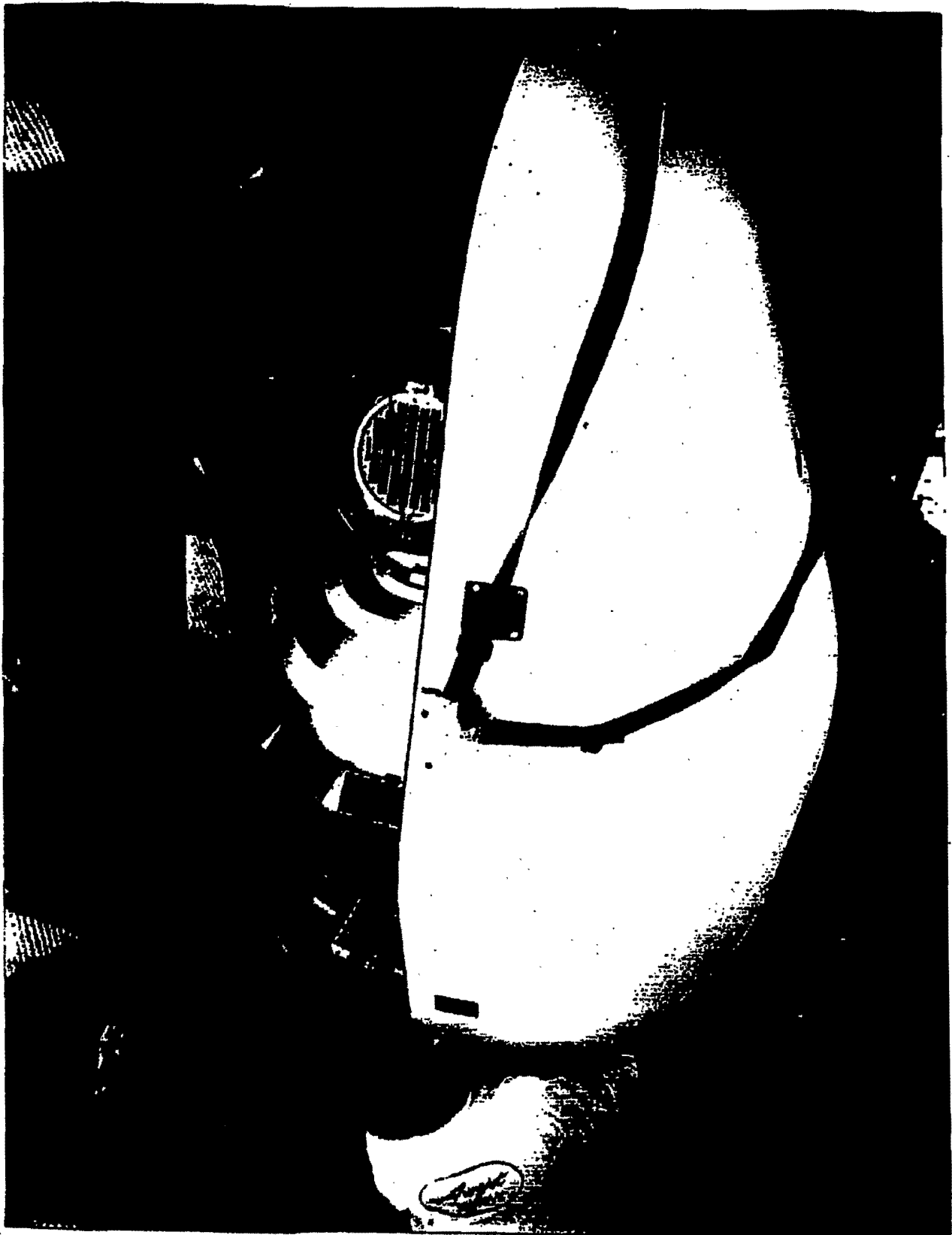
READY TO LAUNCH BY MID-1959 FOR UNDER ██████████



GRAB 1 FUNCTIONAL BLOCK DIAGRAM



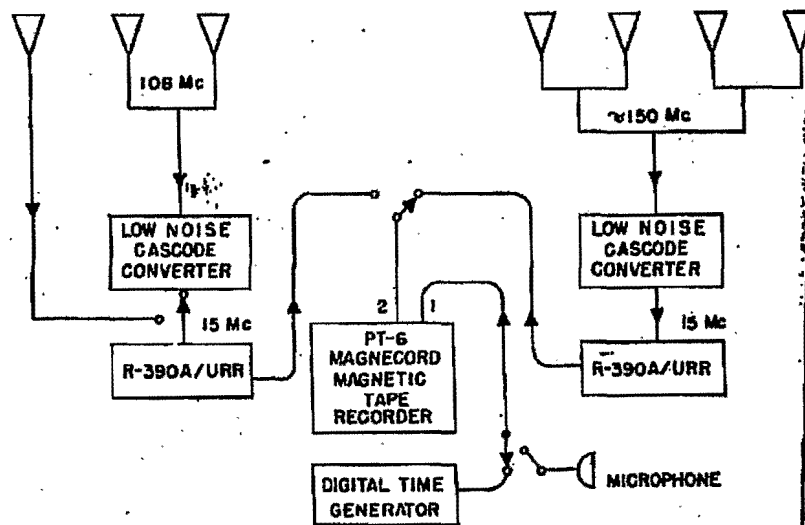
Standing (L/R): Satellite Techniques Branch Head Martin J. Votaw, Structures Design Section Head Louis T. Ratcliffe, Ground Instrumentation Technician Phillip R. McRay, (TBD.....), Systems Design Section Head Edgar L. Dix, SolRad Technician Paul Lester/Atmosphere and Astrophysics Div, Structures Technician Roy A. Harding, Telemetry Systems Section Head Gordon Van Loo
Crouching (L/R): (TBD.....), Electrical Power Section Head Joseph Y. Yuen



GRAB 1 ATOP TRANSIT 2A INSIDE PAYLOAD FAIRING

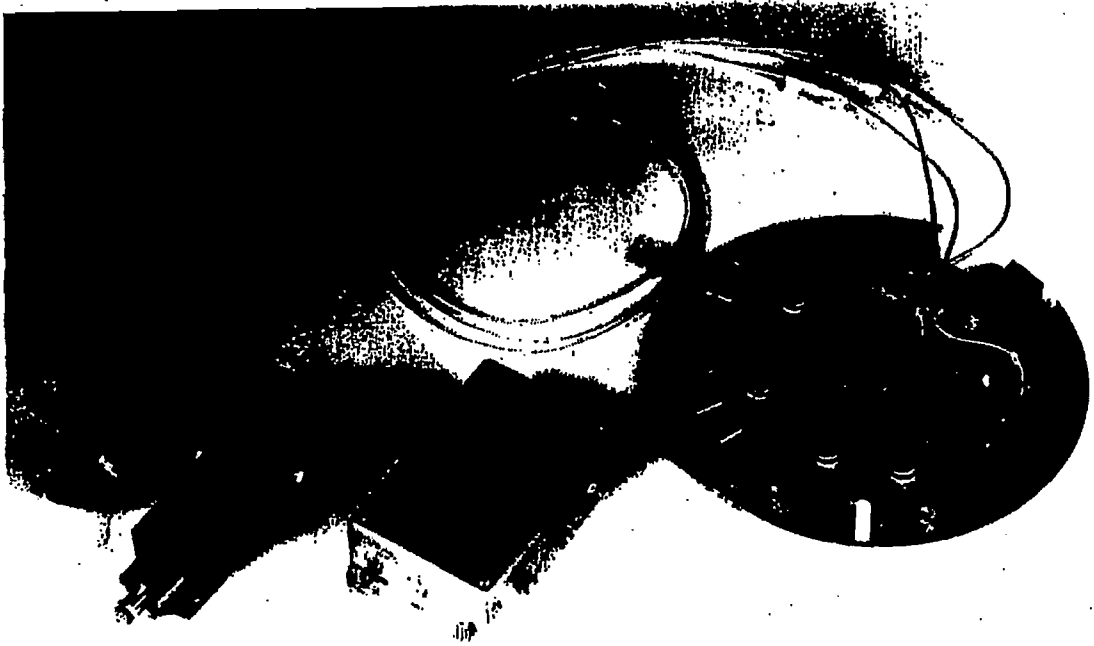


THOR ABLE STAR #283 LIFTOFF FROM CAPE CANAVERAL

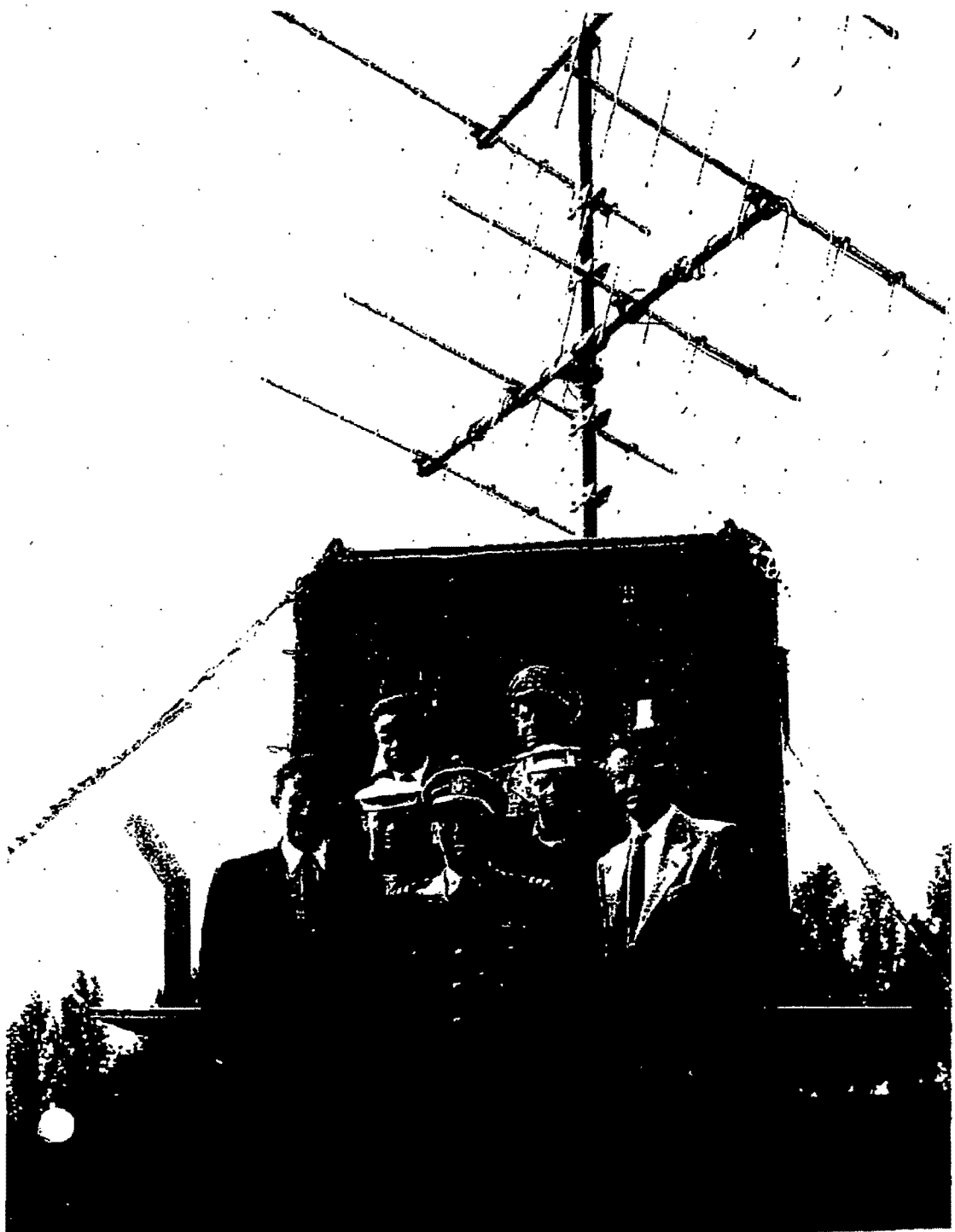


SIMPLIFIED BLOCK DIAGRAM FOR INTERCEPT AND RECORD H&T

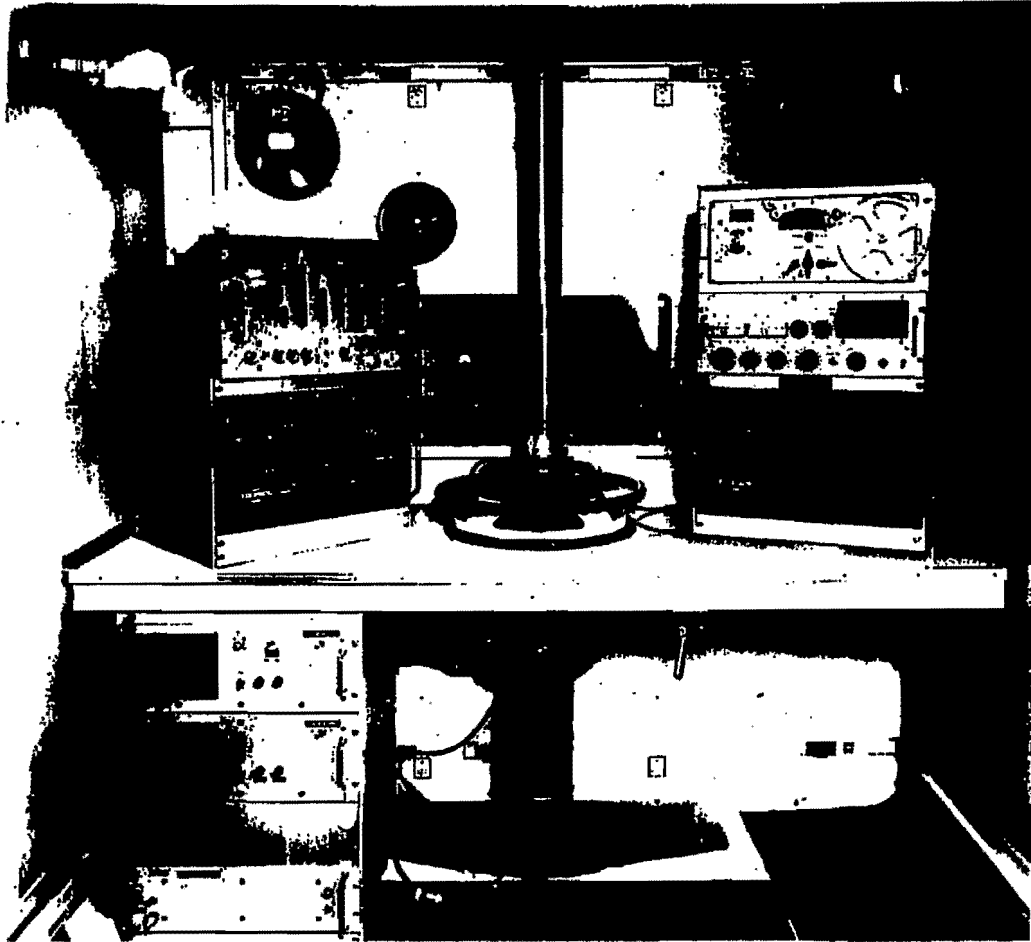
GROUND EQUIPMENT FUNCTIONAL BLOCK DIAGRAM



PAYLOAD CRYSTAL VIDEO RECEIVER ASSEMBLY



(Bottom L/R) Countermeasures Branch Head Howard O. Lorenzen, NSGA Executive Officer CDR I(TBD.....). E. Willis, Radio Control Hut Engineer William Edgar Withrow; (Middle L/R) Interrogation Operators CTT2 Lee and CTT1 Hilbert R. Hubble; (Top L/R) GRAB Project Engineer Reid D. Mayo, NSGA Operations Officer LT John K. Wulfhorst



INTERIOR OF RADIO RECEIVING HUT

THE WASHINGTON POST Thursday, June 23, 1948

Piggy-Back Satellites Hailed As Big Space Gain for U. S.

By Charles Cordry
United Press International

Two new American satellites circled the earth today after a spectacular "double-header" launching with a single rocket. Officials hailed their success as proof that America is "moving into space for real."

The rockets, launched piggy-back fashion from Cape Canaveral, Fla., at 1:54 a. m. EDT Tuesday, were sent aloft to provide the world a precise all-weather navigation system, to improve the accuracy of its clocks and to measure the sun's radiation.

The larger satellite also carried a space experiment for Canada—a receiver to study background radio noises from the galaxies.

America now has 11 satellites in orbit around the earth, compared with Russia's two.

New Space First

The feat of putting up a pair of satellites simultaneously with a single booster was a new space "first" for the United States. This has not been attempted, so far as is known, by Russia.

A two-stage, Thor-able-star, an Air Force rocket, accomplished the feat.

The Transit II-A satellite, the navigational aide and time-measuring sphere, soared into a near-circular orbit that will carry it over all of the earth's land masses—including Russia—except certain arctic and antarctic points.

As soon as orbit was achieved, this 223-pound aluminum space probe gave birth to the smaller basketball-sized satellite, which checks on solar radiation. It was ejected by spring action.

Payloads Function

Rear Adm. T. F. Connolly, chief of the Navy Bureau of Weapons, told a news conference here that the payloads of the two satellites were functioning properly.

"There are no problems," he said.

Cmdr. R. F. Freitag of the Weapons Bureau said Navy officials are confident now that a system of four Transit satellites, to be in operation by 1952, will be able to fix positions on land and sea within one-tenth of a mile.

The first Transit, launched last April, is giving fixes within a quarter of a mile, they said, and the one launched yesterday will do better.

When all four Transits are in orbit, ships at sea can interrogate them by radio at any time regardless of weather and



Associated Press
The drawing above shows how the Transit II-A satellite and its "piggyback" package, a solar radiation measurement satellite, appeared just after separation in outer space yesterday. The larger satellite was developed by the Applied Physics Laboratory of Johns Hopkins University at Silver Spring and the smaller vehicle by the Naval Research Laboratory here. At right: the double-header satellite rocket takes off at Cape Canaveral.

the satellites will give them "fixes" in code that will tell them where they are.

Moving for Real

Connolly said the launching of a pair of satellites with a single rocket showed that space operations are becoming "something we can count on." "We are rapidly moving into space for real," he said.

R. D. Karshner of the Johns Hopkins Applied Physics Laboratory said the navigation satellite's orbit was taking it to a maximum of 863 miles from earth and bringing it to within 400 miles.

Its orbiting time is 101.5 minutes. The orbit is inclined 85 degrees to the equator.

The smaller, 43-pound solar radiation sphere probably has fallen behind Transit II-A, Karshner said. It will settle into a somewhat larger orbit and circuit the earth more slowly.

The II-A, in addition to the

Canadian experiment, carries a new feature not on the first Transit satellite—an electronic

or "digital" clock which the Navy said could "lead to a new global time system."



DIAGRAM SHOWS ORBIT ... of "mother and daughter" satellites



Standing (L/R): Satellite Techniques Branch Head Martin J. Votaw, Structures Design Section Head Louis T. Ratcliffe, Ground Instrumentation Technician Phillip R. McRay, (TBD.....), Systems Design Section Head Edgar L. Dix, SolRad Technician Paul Lester/Atmosphere and Astrophysics Div, Structures Technician Roy A. Harding, Telemetry Systems Section Head Gordon Van Loo
Crouching (L/R): (TBD.....), Electrical Power Section Head Joseph Y. Yuen

~~SECRET/RYEMAN~~

Enclosure (2)

GRAB Residual Sensitivity Declassification and Guidelines

~~SECRET/RYEMAN~~

v2.0/mr3.25

* Continues to be in coordination with the community

(b) (1)
(b) (3)-50 USC 403
(b) (3)-P.L. 86-36

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PROJECT INFORMATION OF RESIDUAL SENSITIVITY
for
GRAB/DYNO DECLASSIFICATION
SUPPORTING
THE NRL'S 75TH JUBILEE

1. References to and information about follow-on programs, sensitive collection operations, complementary collection missions, and related covert activities, including:

a. Information revealing any association with the POPPY ELINT reconnaissance satellite program or other successor programs.

b. All references to specific frequencies targeted by GRAB/DYNO other than generic references to the S-band frequency range [REDACTED] MHZ partially covered by the first payload.



Rationale: Although the GRAB/DYNO project evolved into the NRO POPPY program, the latter and other successor programs remain classified at this time. The other information in this category requires protection in the interests of national security.

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2. Any information revealing locations where the Earth Satellite Vehicle (ESV) huts were deployed for receiving the transponded radar signals from the satellite.

Rationale: ESV huts were deployed in foreign countries that the U.S. or the host country may not want to acknowledge. ESV engineering hut locations in the CONUS remain associated with classified successor programs.

3. Any launch related information revealing an Air Force Program (AFP) number associated with a GRAB/DYNO launch.

Rationale: Although the association of AFP numbers associated with launches of some NRO payloads as of March 1997 is no longer classified, [REDACTED]

[REDACTED]

4. Details about security techniques, methodology, and cover techniques.

a. Specifics of cover story planning, although it is a releaseable "fact" that GRAB/DYNO was an unacknowledged co-flyer with a publicly recognized legitimate solar radiation (SOLRAD) scientific payload;

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b. Details of security plans;

c. BYEMAN security terminology (e.g. the terms "BYEMAN", "BYE", or "B"), but *not* the following releasable code names associated with the project.

CANES GRAB MOON BOUNCE TRANSIT
CANIS GREB SOLRAD WALNUT
DYNO INJUN TATTLETALE

Rationale:

(1) Methodology is applicable to certain protection requirements that continue to be relevant today (e.g., covert or protected contracting arrangements, program deception, and security techniques).

(2) Open knowledge could facilitate detection and penetration of cover arrangements.

(3) If compromised, current implementation of security programs could be greatly complicated, or the concepts could become ineffective when adapted to future activities.

5. Compromising contractor information that indicates plans and identification of specific contractors for involvement in future programs. For GRAB/DYNO, this entails information

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██████████ built the payload's radio crystal video receiver assembly, as well as building the receiver assemblies for the follow-on POPPY, ██████████ payloads.

Rationale:

(1) *Compromise could increase the risk of penetration or overt disruption that could reduce the company's ability to covertly build programs in the future.*

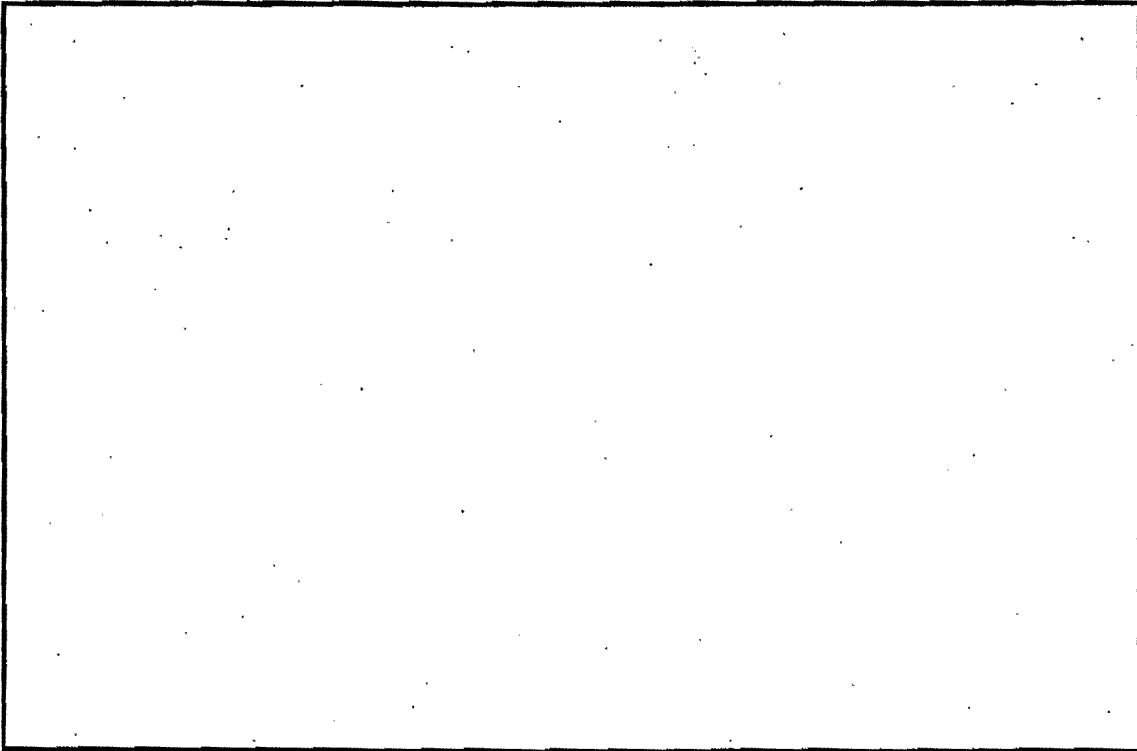
(2) *Compromise could result in negative customer reactions that could affect the company's economic soundness and impair its capability to support USG reconnaissance requirements.*

(3) *Negative consequences for the company could result in the company's reluctance or inability to enter into future covert contracts, thereby making a particular intelligence source and method unavailable.*

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(b) (1)
(b) (3) - 50 USC 403
(b) (3) - P.L. 96-36

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* - NSA's recommended change to paragraph
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Enclosure (3)

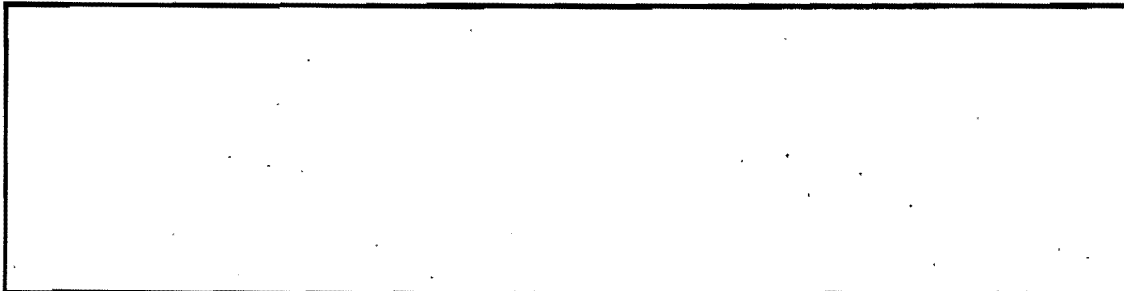
Risk Assessment Guidelines

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v2.0/mr3.25

**GUIDELINES FOR REVIEW OF PROGRAMMATIC DATA ASSOCIATED WITH
DEACTIVATED AND OBSOLETE ELINT SATELLITE RECONNAISSANCE
PROJECTS ⁽¹⁾**

- 1. Objective:** To outline guidelines for use in identifying releasable material associated with the GRAB ELINT satellite reconnaissance projects.
- 2. Scope:** These guidelines are applicable to the information and material that are associated with the exhibition version of the GRAB ELINT satellite reconnaissance project being proposed for the NRL 75th Anniversary on 15-19 June 1998. For Phase I, a limited exhibition package of information is being proposed, which includes: a summary history of the GRAB project (1958-1962) in pamphlet form and press release, selected photos and artifacts, names of distinguished alumni, and general statements of program operational results and their impact on national security. A more comprehensive guideline for declassification of the remainder of GRAB/DYNO and selected aspects of the POPPY project (1958-1977) will be prepared in Phase II.
- 3. First Principle:** The Intelligence Community must continue to protect from disclosure any ELINT satellite reconnaissance information which, if disclosed, could reasonably be expected to reveal sensitive intelligence sources and methods, or otherwise to reveal sensitive collection systems. This specifically includes information and material associated with the older, retired and obsolete systems. There are three categories of information that potentially could have such an impact:



⁽¹⁾ These guidelines were derived from guidelines used during the CORONA imagery program declassification activity. The NRO declassification office concurs with the use of these to guide the GRAB declassification process.

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4. Guiding Principles:

a. Any decision which would permit the release of satellite reconnaissance material must be consistent with the Director of Central Intelligence's statutory responsibility to protect sources and methods associated with our current programs and activities.

b. The NRO is the Executive Agent for providing guidance for the protection of non-product aspects of ELINT satellite reconnaissance. (This includes all BYEMAN-controlled material and any other classified information related to the development, funding, and operation of these satellite systems.) Phase I GRAB is being treated as a BYEMAN-controlled project, even though overall control was exercised by the Director of Naval Intelligence during the initial development and operations of the GRAB project before the establishment of the NRO in June 1962.

c. The Director, NSA is the Executive Agent for providing guidance for the protection of SIGINT and SIGINT derived products collected by SIGINT satellite reconnaissance systems.

d. Any declassification actions for NRO-controlled program information must be evaluated and decided upon on a case-by-case basis for different categories of information associated with each system (e.g., hardware, funding, contractual relationships, etc.)

e. Comprehensive guidelines for older material are essential in order to ensure the continued protection of any sensitive, current satellite reconnaissance material.

5. Discussion: When determining whether or not an ELINT satellite reconnaissance program contains sensitive information, the process is to evaluate the components or categories of the program in terms of the relevant sensitivity factors.

a. Categories of Programmatic Material and Information. There are six categories of material and information associated with the development and operation of satellite reconnaissance systems. Each of these must be evaluated on a case-by-case basis, and the assessment must consider the impact on the other categories, i.e., would the subsequent disclosure of one category compromise a sensitive aspect of any of the other categories?

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(1) Hardware: The actual physical equipment involved in the operation of the reconnaissance system. It includes the four subcategories of: launch vehicle, spacecraft, sensor, and mission ground station equipment.

(2) Software: The computer programs used to operate the hardware. It also includes three subcategories: launch, spacecraft maintenance, and sensor operations.

(3) Documentation: The engineering design, operation manuals, and reference documents for the various subcategories of hardware and software.

(4) Management & Organizational Relationships: The management structure and identification or organizational relationships. It includes the main subcategories of government and contractor. Particular attention needs to be given to any formerly covert relationships involved in the building and operation of the reconnaissance systems. Each contractor and government component is to be considered as an individual case.

(5) Funding: The overall and detailed funding profile for both the development and operation of the satellite reconnaissance system.

(6) History of Program Development: Documentation that describes how the program was developed and integrated into an operating system. This specifically includes research, manufacturing and test facilities; logistics arrangements; and the cover/security methods used to protect any and all elements of the program. The main focus in assessing this category is to evaluate sources and methods implications. Specific consideration must be given to the possibility that disclosing a security or cover approach used in the distant past may highlight or foreclose use of a similar or related method in the future.

b. Sensitivity Factors. There are four factors that are indicators of the potential damage that could result from unauthorized disclosure. Asking questions about these factors will suggest the degree of national security damage that could be expected if the particular category of reconnaissance information were to be publicly disclosed.

(1) Technology: The degree of technological sophistication associated with the material. Is the reconnaissance material unique and highly sensitive because it approaches state-of-the-art technology? Or, is it common and without sensitivity because it reflects commercial off-the-shelf products?

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(2) Methodology: The degree that the material or information reflects current, unique, intelligence methodology. Does the information or material provide insight into the intelligence methodologies that are essential to current intelligence activities? The degree that the information would impair U.S. cryptologic systems and activities. Does the information or material reflect a unique way in which the US would in a secure/covert way integrate technology into a current, successful, ELINT collection system?

(3) Foreign Policy: The degree to which public disclosure would damage US arrangements with its allies or damage US relationships with governments and international organizations. Would foreign governments acquire unacceptable economic, military, or intelligence advantages over the US because of the disclosure? Would the disclosure embarrass other governments or otherwise cause them to retaliate against the US? Would disclosure put the US at a distinct disadvantage in international organizations (e.g. United Nations)?

(4) Age: The degree to which the age of the material has made it irrelevant to current national security issues. Has sufficient time elapsed to cause the information or material to lose its operational and policy significance?

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Enclosure (4)

Risk Assessment Team Report

Summary

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v2.0/mr3.25

~~SECRET/RYEMAN~~

2 April 1998

From: [REDACTED]

To: [REDACTED]

Subj: RAST Summary Report (GRAB Text)

1. In response to your request, the Risk Assessment (RAST) preliminary summary of the GRAB PAO TEXT is provided below.
2. This summary represents our analysis of the GRAB PAO Text. We are currently in the process of evaluating the final caption words of the exhibit photographs and will provide the final report on 7 April 1998.

Copy to:

[REDACTED]

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MARCH 1998

Risk Assessment Draft - Brochure Text - GRAB

SUMMARY AND CONCLUSIONS: The document entitled Brochure Text - GRAB has been reviewed with the intent of detect any disclosures that would be sensitive with respect to the technology involved, methods and sources of intelligence, foreign policy damage potential, advantage to, or embarrassment of, foreign countries, and age of information. The sensitivities were examined with respect to the categories of: Hardware, Software, Documentation, Management and Organization, History, and Funding. The technology and technology related issues are obsolete; there was no software or documentation discussed; the management and organization relationships, the program history, and the funding are of general interest, but without current operational or policy significance due to age. With one exception, which deals with specifics of the formation of the NRO, which is referred to NRO Security, there is no quantifiable level of unacceptable risk associated with the release of the Brochure Text.

CATEGORY: HARDWARE

Disclosures: GRAB (Galactic Radiation And Background) Experiment, Elint Payload with solar radiation payload on GRAB, Navys third Transit navigation satellite, network of overseas ground collection sites, data recorded on magnetic tape and couriered back to NRLduplicated.

Discussion: The fact of Elint satellite systems has been released. This GRAB release establishes the time-frame of the early development of the Elint capability. The GRAB name, and the words supporting the acronym, are without risk regarding technology or methods, and are age obsolete.

The release of the method of concealing classified equipment and payloads with legitimate science payloads in the early space age is deemed risk acceptable. All early space ventures were, by necessity, conducted in the open. Launches and science or open technology satellite development, (navigation, communications, etc.) couldnt be hidden. The method of hiding classified payloads, dual purpose missions, is not now used and is age obsolete information. The fact of classified spacecraft launches and classified payloads is now open information, eliminating the need for covert missions hidden in science mission cover. In fact, the situation is now oddly reversed, with the NRO classified satellites providing piggy back science payloads a ride into space, e.g., TIPS, MPTB, etc. Risk is deemed acceptable from technology, methods, and age viewpoint.

GRABs free ride with the Navys third Transit navigation satellite was under cover of the Solar Radiation multiple launch, which was announced. No current

methods or technology implications are released with this announcement, and the release is risk acceptable from an age perspective.

Overseas Field sites are unnamed and locations not identified, except by: along accessible borders in Europe and the Western Pacific. This type of identification is technically obvious for the satellite mission, not damaging or embarrassing to any foreign nation, and is age obsolete with respect to this mission.



The method and technology of recording data on analog magnetic tape and couriering the tapes is obsolete, the method no longer required or necessary, and deemed risk acceptable by reason of age.

CONCLUSION: No unacceptable risk is taken with the release of Hardware and Hardware related disclosures contained in the Brochure Text.

CATEGORY: SOFTWARE:

This category is not applicable. No software was employed in the program, other than rudimentary machine processing of data. Analysis was primarily manual. Programs from the infancy of the analysis process are lost, and none are divulged.

CATEGORY: DOCUMENTATION:

This category is also not applicable. No documentation is released in the GRAB brochure text. Some documents relating to the operation and maintenance of the ground collection sites are available, were classified Secret, Limited Distribution, and could probably be releasable, after review, since the technology is obsolete and risk acceptable based on age.

CATEGORY: MANAGEMENT AND ORGANIZATION:

Disclosures: U. S. Navy, Naval Research Laboratory, (NRL), Office of Naval Intelligence/ Director of Naval Intelligence, Army, Navy, Air Force and CIA Field sites, relationship to Elint satellite system, Project Tattletale, Canes Security control system, NRO.

Discussion: General knowledge of the U. S. Navy using Elint with search aircraft, such as P-3s, is open. The NRL history of satellite work from the late 1950s Vanguard program and forward, is unclassified and open information. Release of the fact of relationships between Navy organizations, other services, and the CIA with regard to 1958-1962 Elint, the Project Tattletale name, and the Canes security system name,

are risk acceptable based on the age of the information. No foreign implications, technology or methods are discernible.

The operation of Field sites by Army, Navy, Air Force and CIA organizations at that time, provides no threats to technology, methods, or foreign policy, and release is risk acceptable based on age.

Technology transfer to the then newly formed NRO from NRL does not necessarily infer a current relationship. It could be argued that the transfer was similar in operation to the transfer of the Vanguard program to NASA, and to the formation of the nucleus of Goddard Space Flight Center. No continuing formal relationship persisted between NASA and NRL after the transfer. If one assumes that the inference is that a Navy/NRL to NRO relationship continued, such a relationship would not be inconsistent with the relationship of other military services, i.e. Air Force, with the NRO. Given today's environment, admitting a continued relationship would not reveal further sources or methods, adversely affect foreign policy or divulge technology. Management of the NRL is not adverse to an admitted relationship between NRL and the NRO. In fact, limited fact of the relationship has been released with regard to the TIPS spacecraft program, executed by NRL for the NRO.

CONCLUSION: No unacceptable risks are taken with the release of the Management and Organization disclosures of organizational relationships and previously classified names, contained in the text of the brochure. Speculation on continued NRL/NRO relationships after GRAB, if any, is acceptable regardless of assumptions.

CATEGORY: HISTORY OF PROGRAM:

Disclosures: Involvement of Departments of Defense and State, President Eisenhower, and CIA; the Presidents launch approval 4 days after the CIA U-2 aircraft was lost on a reconnaissance mission over Soviet territory; dates of events, launches, and approvals; Targeting of Soviet air defense radars for the Strategic Air Command at Offut Air Force Base, Omaha, Nebraska; SACs use of data for the SIOP, (Single Integrated Operations Plan), and the Joint Strategic Targeting Staff at Offut AFB; Soviet radar supporting a capability to destroy ballistic missiles and satellites discovery date and occasion of use related to Vostok 2 carrying Russian Cosmonaut Gherman Titov; and the date and establishment of the NRO by Top Secret directive from Secretary of Defense Robert S. McNamara.

Discussion: The involvement of the CIA and Cabinet Departments with the President is of historical significance, but without harmful foreign policy, technology or sources and methods implications. In fact, it tends to confirm that undue risk was not taken, nor was risk taken lightly at this period of the Cold War. Age alone alleviates risk in releasing this information.

The fact of the loss of a CIA U-2 aircraft on a reconnaissance mission over Soviet territory, and its relationship in time to the Presidents approval of the launch of

an Elint satellite four days later, is of historical significance, but releases no technology, methods or sources, and based on the age, should be risk acceptable for release. Certainly, at this time, no foreign policy or foreign country damage or retaliation is foreseeable. The former Soviet Union exploited the U-2 incident and Gary Powers to maximum political gain immediately after the U-2 loss. Release of these statements are risk acceptable.

Dates of all events are now only of historical interest, and are risk acceptable, based on age.

The use of Soviet air defense radar identification for Air Force, Strategic Air Command, and the Joint Strategic Targeting Staff at Offut AFB for SIOP, is now risk acceptable for release, based on age. No foreign policy implications, technology or methods are divulged.

The release of the fact of the identification of a radar with specific capability inferences, and the date and circumstances of the discovery of that radar, is of historical significance; but is without damaging foreign policy implications, or releases of useful technology or methods. Based on age, the release of the information is deemed risk acceptable.

The circumstances relating to the formation of the NRO are referred to NRO Security. The fact of the release of the Corona Program, and the NROs relationship with Corona in the early 1960s, suggests that no risk would be associated with the release of the circumstances of the NROs formation.

CONCLUSION: No unacceptable risks are taken with the release of the History of the GRAB program, or the involvement of the highest levels of government in that history, as disclosed by the Brochure Text, with one exception. Specifics relating to the formation of the NRO, as disclosed by the Brochure Text, is referred to NRO Security.

CATEGORY: **FUNDING:**

Disclosures:

Discussion: The costs revealed are not comparable to any current or planned satellite program or payload. The limited scope of the mission, the nature of concept demonstration, the ground equipment fielded, payload technology and simplicity, and shared launch costs are reflective of the low dollar investment; even if escalated into today's dollars, and judged by today's standards. Cost relationship to the U-2 is for comparison at the time and place of the events, and is without meaning in today's environment. All of the cost data has no reference to contractors, past or present, and is deemed risk acceptable to release, based on age and technology.

CONCLUSION: No unacceptable risks are taken with the release of the Funding information disclosed in the Brochure Text.