

~~Top Secret~~

NOFORN/ORCON

*The Director of the  
National Reconnaissance Office*

REPORT TO THE COMMITTEE  
ON FOREIGN INTELLIGENCE

*MAY 1976*



*Handle via BYEMAN-  
TALENT-KEYHOLE- COMINT Channels  
(PORTAL)*

~~Top Secret~~

BYE 1282376  
4 May 1976

Copy N<sup>o</sup> 29

SECRET  
NOFORN

Warning Notice  
Sensitive Intelligence Sources and Methods Involved  
(WNINTEL)

NATIONAL SECURITY INFORMATION  
Unauthorized Disclosure Subject to Criminal Sanctions

DISSEMINATION CONTROL ABBREVIATIONS

- NOFORN- Not Releasable to Foreign Nationals
- NOCONTRACT- Not Releasable to Contractors or Contractor/Consultants
- PROPIN- Caution—Proprietary Information Involved
- USIBONLY- USIB Departments Only
- ORCON- Dissemination and Extraction of Information Controlled by Originator
- REL . . . - This Information has been Authorized for Release to . . .

Classified by BYE-1  
 Exempt from General Declassification Schedule  
 of E.O. 11652, exemption category:  
 § 58(1), (2), and (3)  
 Automatically declassified on:  
 date impossible to determine

SECRET  
NOFORN

~~TOP SECRET~~

HANDLE VIA

**BYEMAN-TALENT-KEYHOLE**  
CONTROL SYSTEMS JOINTLY

~~(S)~~ NATIONAL RECONNAISSANCE OFFICE  
WASHINGTON, D.C.

OFFICE OF THE DIRECTOR

19 April 1976

MEMORANDUM FOR THE COMMITTEE ON FOREIGN INTELLIGENCE

The attached Director's Report to the Committee on Foreign Intelligence presents the status of the National Reconnaissance Program as of 19 April 1976. It includes a summary of the NRP as revised by recent ExCom decisions and provides additional data which may be pertinent to near-term deliberations affecting the NRP and the total intelligence community budget.

The Overview section of this report is intended to present to the CFI the challenges which must be faced with regard to the future progress and direction of the NRP. Included in other sections are the alternatives which are available, the financial status of the program, the program's technical status, and initiatives which must be considered.

This report essentially provides a preview of the decisions which must be made in July and November 1976. Major decisions are not required at this meeting although guidance concerning several aspects of the NRP would be beneficial in formulating the program to be presented at the July 1976 CFI meeting to review the NRP.

*J. W. Plummer*  
J. W. Plummer

Attachment  
Director's Report



HANDLE VIA  
**BYEMAN-TALENT-KEYHOLE**  
CONTROL SYSTEMS JOINTLY

~~TOP SECRET~~

CLASSIFIED BY BYEMAN 1 EXEMPT FROM  
GENERAL DECLASSIFICATION SCHEDULE OF  
EXECUTIVE ORDER 11652 EXEMPTION CATE  
GORY 5B2 DECLASSIFY ON IMP DET.

CONTROL NO BYE-12823-76  
COPY      OF      COPIES  
PAGE 1 OF 1 PAGES

~~TOP SECRET~~

HANDLE VIA

**BYEMAN-TALENT-KEYHOLE**

CONTROL SYSTEMS JOINTLY

THE DIRECTOR  
NATIONAL RECONNAISSANCE OFFICE

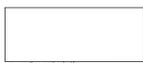
REPORT TO  
THE COMMITTEE ON FOREIGN INTELLIGENCE

4 MAY 1976

HEXAGON/GAMBIT/KENNEN/FARPOD



HANDLE VIA  
**BYEMAN-TALENT-KEYHOLE**  
CONTROL SYSTEMS JOINTLY



COMINT

~~TOP SECRET~~

CLASSIFIED BY: BYEMAN - 1 EXEMPT FROM  
GENERAL DECLASSIFICATION SCHEDULE OF  
EXECUTIVE ORDER 11652 EXEMPTION CODE  
GORY 5B2 DECLASSIFY ON 100P OF 1

CONTROL NO BYE-12823-76  
COPY 1 OF 64 COPIES  
PAGE 1 OF 64 PAGES

~~TOP SECRET~~HANDLE VIA  
**BYEMAN-TALENT-KEYHOLE**  
CONTROL SYSTEMS JOINTLYPREFACE

The Director's Report includes highly sensitive information on a wide range of programs of highest national interest. As such, it is mandatory that essential security requirements for handling the Report be maintained. The need-to-know principle must be strictly followed at all times. Safeguards should therefore be applied to prevent access by persons who do not possess all the requisite compartmented clearances.

The extraction of information from this report, or its reproduction in total or in part is strictly prohibited. Should additional copies be required, a request, with appropriate justification, should be submitted to the NRO.

HANDLE VIA  
**BYEMAN-TALENT-KEYHOLE**  
CONTROL SYSTEMS JOINTLY~~TOP SECRET~~  
CLASSIFIED BY BYEMAN-1 EXEMPT FROM  
GENERAL DECLASSIFICATION SCHEDULE OF  
EXECUTIVE ORDER 11652 EXCEPT WHERE SHOWN  
OTHERWISECONTROL NO. BYE-12823-76  
COPY     OF     COPIES  
PAGE   2   OF  64  PAGES

~~TOP SECRET~~

HANDLE VIA  
**BYEMAN-TALENT-KEYHOLE**  
CONTROL SYSTEMS JOINTLY

TABLE OF CONTENTS

	<u>Page</u>
I. OVERVIEW	5
II. PROGRAM ALTERNATIVES	13
III. FINANCIAL STATUS	21
- Current Approved Program	22
- FY 1976 Financial Status	23
- Transition Quarter Financial Program	25
IV. PROGRAM STATUS	
- Imaging Programs	28
- SIGINT Programs	37
- Other Major Activities	45
- <span style="border: 1px solid black; display: inline-block; width: 60px; height: 15px;"></span>	46
- Space Transportation System	47
- ELINT Interaction Study	48
- <span style="border: 1px solid black; display: inline-block; width: 60px; height: 15px;"></span> Termination Status	49
- Support to DOD Programs	51
<span style="border: 1px solid black; display: inline-block; width: 350px; height: 25px;"></span>	52
- DSP Augmentation	53
- AFSATCOM	53
- <span style="border: 1px solid black; display: inline-block; width: 200px; height: 25px;"></span>	54

HANDLE VIA  
**BYEMAN-TALENT-KEYHOLE**  
CONTROL SYSTEMS JOINTLY

~~TOP SECRET~~

CLASSIFIED BY BYEMAN - 1 EXEMPT FROM  
GENERAL DECLASSIFICATION SCHEDULE OF  
EXECUTIVE ORDER 11652 EXEMPTION CATE

CONTROL NO. BYE-12823-76  
COPY      OF      COPIES  
PAGE 3 OF 64 PAGES

~~TOP SECRET~~

HANDLE VIA  
**BYEMAN-TALENT-KEYHOLE**  
CONTROL SYSTEMS JOINTLY

TABLE OF CONTENTS (CONTINUED)

	<u>Page</u>
V. INITIATIVES	
- [Redacted]	56
- [Redacted]	57
- [Redacted]	59
- [Redacted]	61
- High Frequency Satellite Experiment	64

HANDLE VIA  
**BYEMAN-TALENT-KEYHOLE**  
CONTROL SYSTEMS JOINTLY

~~TOP SECRET~~

CLASSIFIED BY: BYEMAN-1 EXEMPT FROM  
GENERAL DECLASSIFICATION SCHEDULE OF

CONTROL NO BYE-12823-76  
COPY 4 OF 64 COPIES  
PAGE 4 OF 64 PAGES

~~TOP SECRET~~HANDLE VIA  
**BYEMAN-TALENT-KEYHOLE**  
CONTROL SYSTEMS JOINTLYOVERVIEW

The challenges facing the National Reconnaissance Program (NRP) over the next two years provide the Committee on Foreign Intelligence (CFI) unique opportunities to maximize the utility and contribution of overhead assets for years to come. A new era in imaging systems, filling the requirement for a long-life system with continuous near-real-time imaging data return capable of supporting indications and warning, crisis monitoring, and current intelligence needs, will commence with the launch of KENNEN this October. The new challenge facing the CFI is to assess carefully the demonstrated and projected capabilities of KENNEN, the unique capabilities of GAMBIT and HEXAGON, and the projected non-conventional imaging systems, which are incremental to KENNEN, in terms of essential collection requirements in the face of fiscal realities.

This challenge and opportunity are amplified throughout the NRP as a growing pressure for the expanded use of NRP systems in support of military operations--from an emerging awareness through military exercises such as BRAVE CREW, GALLANT SHIELD, and BOLD EAGLE and from demonstrated utility in support of real military needs. SAC has recently used [redacted] P-989 data synergistically with HEXAGON photography to change over 20 B-52 SIOP penetration routes, with plans to continue. Use of this near-real-time SIGINT data along with PHOTINT data is just one example of the payoff available through education of the military on exploitation of NRP resources. Recognizing that NRP assets can support both national security policy needs and military needs, probably in a complementary role to organic resources, the question is to what degree these differing needs should be satisfied with NRP systems.

While our overhead systems have far-reaching, unique capabilities, there are limitations with regard to tactical applications. Satellite systems may be more or less survivable than conventional intelligence-gathering alternatives, depending on scenario, but they are vulnerable to a technically sophisticated enemy. The challenge faced here by the CFI is to reassess the current vulnerability and survivability policy regarding NRP systems in light of the current community study efforts underway.

HANDLE VIA  
**BYEMAN-TALENT-KEYHOLE**  
CONTROL SYSTEMS JOINTLY~~TOP SECRET~~CLASSIFIED BY BYEMAN - 1 EXEMPT FROM  
GENERAL DECLASSIFICATION SCHEDULE OFCONTROL NO BYE-12823-76  
COPY \_\_\_\_\_ OF \_\_\_\_\_ COPIES  
PAGE 5 OF 64 PAGES

~~TOP SECRET~~

HANDLE VIA

**BYEMAN-TALENT-KEYHOLE**  
CONTROL SYSTEMS JOINTLY

Another challenging aspect of the NRP is that evolutionary changes have led to a fundamentally different program environment. Once spacecraft reconnaissance programs were considered extremely risky ventures. Now, however, with NRP programs having been characterized in recent years by unusual operational success, there is confidence in the ability to meet even the most advanced technological challenges. In addition, through efficient management and timely improvements to the systems, both the quantity and quality of intelligence products have been increased within a relatively level budget. For example, HEXAGON's success and demonstrated reliability are such that launch rates have been reduced from five planned launches per year to two per year and provide outstanding mission accomplishment at reduced costs. GAMBIT routinely provides more time on orbit in 1976 with two launches than was obtained with eight launches in the late 1960s. The reliability and productivity of [redacted] POPPY and P-989 systems have exceeded design goals in each case. The KENNEN program was initially approved in the fall of 1971, with a planned first launch date of October 1976. The program has now successfully completed the most difficult technological development in the history of the NRP and is still maintaining the original schedule with a cost growth of less than 2½ percent.

The environment in which the NRP programs must be judged has changed drastically. In 1975 Congress cancelled a major NRP program. In 1976, for the first time, routine Congressional review of the NRP budget was instituted. Satellite program maturity has brought a very strong dependence on the part of the product users, creating issues with respect to program and product security versus widespread distribution of this product. The funding level of the NRP over the past three years, FY 1975 through FY 1977, has increased less than 11 percent over a corresponding period ten years earlier. During the same 10-year period, inflation has decreased the buying power of the NRP by approximately 50 percent. Over the past three years, a slight decrease each year in the level of the NRP has occurred, while inflation alone would have dictated an increase in excess of 25 percent. Finally, for the first time, it seems we may be in the position of having to terminate the highest quality image producer, GAMBIT, in order to realize the full benefits of the new dimension, near-real-time, long-life KENNEN, while staying within our budget guidelines.

HANDLE VIA

**BYEMAN-TALENT-KEYHOLE**  
CONTROL SYSTEMS JOINTLY

~~TOP SECRET~~

CLASSIFIED BY BYEMAN-1 EXEMPT FROM  
GENERAL DECLASSIFICATION SCHEDULE OF  
EXECUTIVE ORDER 11852 EXEMPTION CODE  
AND BY NSA DEPT. ACQUISITION POLICY

CONTROL NO. BYE-12823-76  
COPY \_\_\_\_\_ OF \_\_\_\_\_ COPIES  
PAGE 6 OF 64 PAGES

**Page Denied**

**Page Denied**

~~TOP SECRET~~

HANDLE VIA

**BYEMAN-TALENT-KEYHOLE**  
CONTROL SYSTEMS JOINTLY

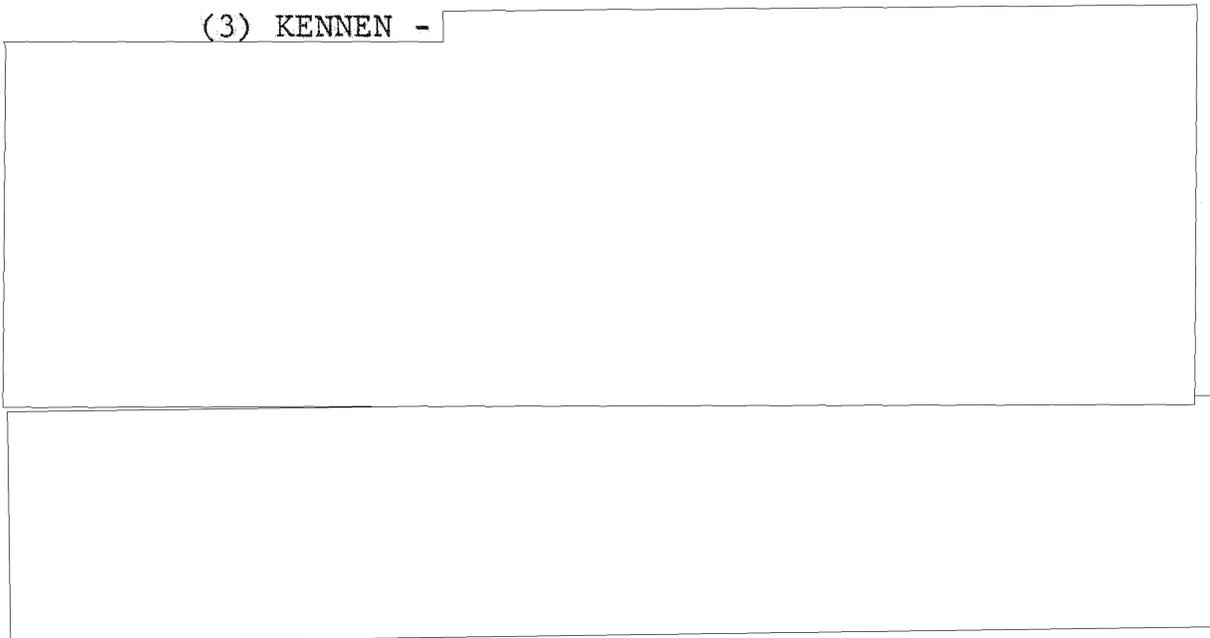
requirements for development and acquisition, the current fiscal plans can only support those which in the judgement of the CFI are most critical.

IMAGERY SYSTEMS - The annual launch rate for both HEXAGON and GAMBIT has been stretched to the point that all follow-on procurements have been delayed as much as possible and no further budget reductions are advisable pending completion of the on-orbit evaluation of KENNEN.

(1) GAMBIT - Currently funded to satisfy high resolution imagery requirements through Vehicle 54 and projected to phase out at that point. Follow-on fund protection is provided to be able to return to a two-launch per year rate should KENNEN develop a major problem in achieving a successful operational capability. If the KENNEN evaluation supports a decision in November 1977 to terminate the GAMBIT program, the budget reduction would not be realized until FY 1979 and subsequent years as indicated in Figure 1.

(2) HEXAGON - Currently funded through Vehicle 18 and fund protected through Vehicle 20 to satisfy broad area search and surveillance imaging requirements through 1984. It appears unlikely that the Block I KENNEN vehicle will support further decreases in the HEXAGON until after FY 1980.

(3) KENNEN -



HANDLE VIA

**BYEMAN-TALENT-KEYHOLE**  
CONTROL SYSTEMS JOINTLY

~~TOP SECRET~~

CLASSIFIED BY BYEMAN 1 EXEMPT FROM  
GENERAL DECLASSIFICATION SCHEDULE OF  
EXECUTIVE ORDER 11652 EXEMPTION CODE

CONTROL NO BYE-12823-76  
COPY      OF      COPIES  
PAGE 9 OF 64 PAGES

**Page Denied**

~~TOP SECRET~~

HANDLE VIA

**BYEMAN-TALENT-KEYHOLE**  
CONTROL SYSTEMS JOINTLY



(5) P-989 - This program has satisfied a host of requirements in the technical intelligence, strategic, and operational worlds. The program is now being subjected to a critical review within the ELINT Interaction Study to determine the unique needs, if any, for this system in light of [redacted] capabilities. Funding is provided for a low-cost 989 satellite commencing in FY 1978.

SPACE SHUTTLE TRANSITION - While not considered a viable candidate for elimination as long as the Space Shuttle is maintained as a national objective, the costs currently identified for transitioning to the Shuttle have been included in Figure 1 for information.

In view of the national commitment to the Shuttle program, a critical examination of the pace of transition, the backup plans, and future NRP exploitation of Shuttle provide a significant challenge to management decision making.

A number of decisions, depicted in the Figure 1, illustrate the fiscal impact of the totality of needs. The key concerns are summarized as CFI "Decisions Required" in Figure 2. These represent the near-term decisions which will establish the trend for the NRP over the next several years.

HANDLE VIA

**BYEMAN-TALENT-KEYHOLE**  
CONTROL SYSTEMS JOINTLY

~~TOP SECRET~~

CLASSIFIED BY BYEMAN 1 EXEMPT FROM  
GENERAL DECLASSIFICATION SCHEDULE OF  
EXECUTIVE ORDER 11652 EXEMPTION CODE  
BYEMAN-TALENT-KEYHOLE

CONTROL NO BYE-12823-76  
COPY \_\_\_\_\_ OF \_\_\_\_\_ COPIES  
PAGE 11 OF \_\_\_\_\_ PAGES

~~TOP SECRET~~

HANDLE VIA

**BYEMAN-TALENT-KEYHOLE**

CONTROL SYSTEMS JOINTLY

DECISIONS REQUIRED

	1976			1977	
	MAY	JULY	NOV	JULY	NOV

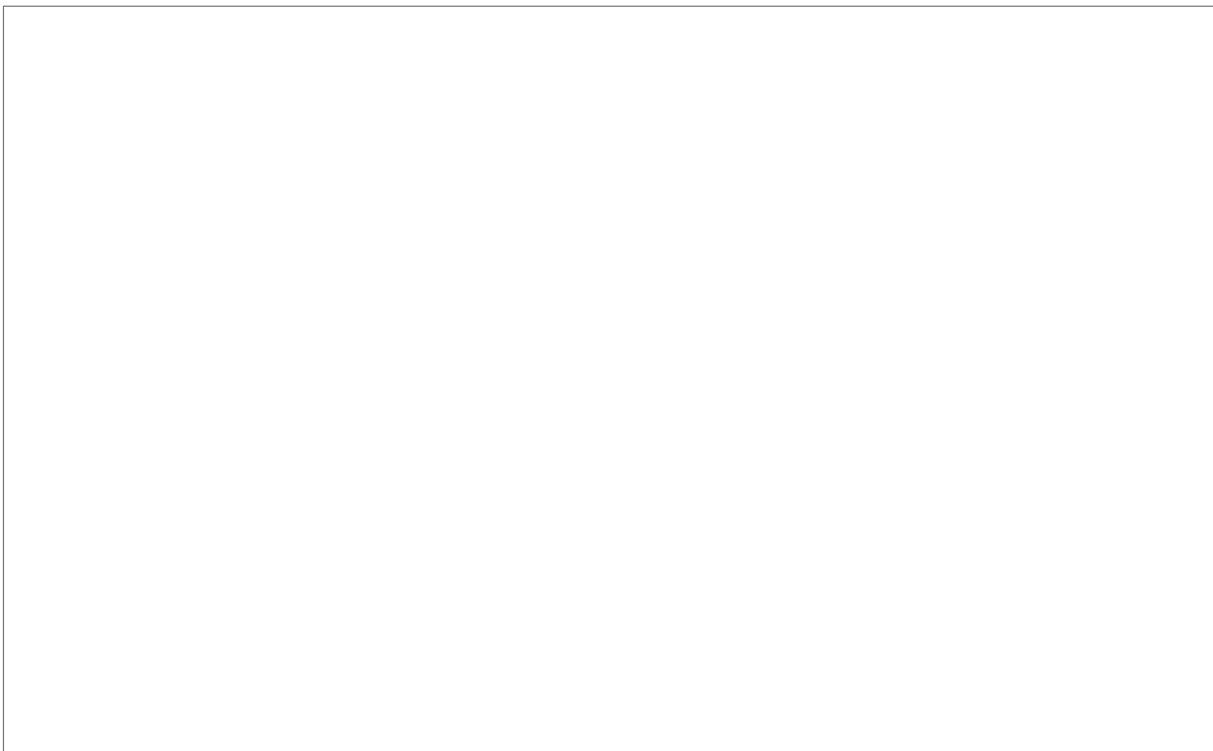
HEXAGON

Baseline Follow-On (Veh 19 & 20)	B	X
Termination After 14		X

GAMBIT

Termination After 50		X
----------------------	--	---

KENNEN



P-989

Follow-On		X
-----------	--	---

HF EXPERIMENT

Definition Study		X
------------------	--	---

B - FY 78 Budget Issue

X - CFI Decision

HANDLE VIA

**BYEMAN-TALENT-KEYHOLE**

CONTROL SYSTEMS JOINTLY

(Figure 2)

~~TOP SECRET~~

CLASSIFIED BY BYEMAN : 1 EXEMPT FROM  
GENERAL DECLASSIFICATION SCHEDULE OF  
EXECUTIVE ORDER 11652 EXEMPTION CODE  
GORY 5B2 DECLASSIFY ON IMP DET.

CONTROL NO BYE-12823-76

COPY      OF      COPIES

PAGE 12 OF 64 PAGES

~~TOP SECRET~~HANDLE VIA  
**BYEMAN-TALENT-KEYHOLE**  
CONTROL SYSTEMS JOINTLYFINANCIAL STATUS

The financial data for the May 76 CFI meeting presented in this section outlines the approved NRP Fiscal Program as of December 1975. This is followed by the FY 76 projected obligations, by program, with the net projected excess. Additional sheets detail the financing of FY 76 and TQ and provide a current estimate of the funds which will be in excess of the Dec 75 Approved Program.

The FY TQ funding sheet details the projected requirements, by line item, and outlines the projected requirements with respect to the Dec 75 Approved Program. The excess

available to carry forward into FY 77. These funds, when added to the FY 77 Congressionally approved budget, constitute the total funding program for FY 77. Also included is an outline which defines the FY TQ funds that we expect to receive from agencies outside the NRP.

HANDLE VIA  
**BYEMAN-TALENT-KEYHOLE**  
CONTROL SYSTEMS JOINTLY~~TOP SECRET~~  
CLASSIFIED BY BYEMAN | EXEMPT FROM  
GENERAL DECLASSIFICATION SCHEDULE OF  
EXECUTIVE ORDER 11652 EXEMPTION CODECONTROL NO BYE-12823-76  
COPY      OF      COPIES  
PAGE 21 OF 64 PAGES

~~TOP SECRET~~

HANDLE VIA

**BYEMAN-TALENT-KEYHOLE**

CONTROL SYSTEMS JOINTLY

### PROGRAM ALTERNATIVES

Based on the results of the December 1975 NRP ExCom, the DNRO issued Fiscal Guidance to the NRO Field Offices in January 1976. The guidance calls for the Directors of NRO Program Offices A, B, and C to submit their FY 77 and FY 78 requirements, the FY 78 Budget Recommendations and FY 79-82 Planning Estimates. These field recommendations, following review by the DNRO, will provide the framework for CFI considerations at a meeting in July 1976.

In each of the NRP programs the "BASELINE", as addressed in the following pages, briefly describes the program approved by the December 1975 ExCom. In responding to the guidance, the Directors of Program Offices A, B, and C will present baseline schedule and cost details to support the approved programs.

Recognizing the significant increase in funding requirements for FY 78 as compared to FY 77, the fiscal guidance requested "ALTERNATIVES" for most of the major programs. Generally speaking, these alternatives address reductions in program scope or a delay in planned procurements and result in decreased pressure on FY 78 funds at the expense of some future collection capability. This programmatic information is designed primarily to support the CFI in establishing the FY 78 NRP Budget as well as assess the FY 78 impact on FY 79-82 funding levels. Additionally, the Program Directors are given the flexibility in submitting their responses to the guidance to recommend for consideration any alternatives they deem appropriate.

Also included in the fiscal guidance is the solicitation of defined and undefined "ADDENDA". These addenda, which will be additive to the baseline program, allow the Program Office Directors to propose capability and reliability improvements. The DNRO, after review, recommends to the CFI those improvements or changes that support high priority intelligence requirements satisfaction or cost effective trade-offs.

HANDLE VIA

**BYEMAN-TALENT-KEYHOLE**

CONTROL SYSTEMS JOINTLY

~~TOP SECRET~~

CLASSIFIED BY BYEMAN 1 EXEMPT FROM  
 GENERAL DECLASSIFICATION SCHEDULE OF  
 EXECUTIVE ORDER 11652 EXEMPTION CODE  
 25XU 500 0000 0000 0000 0000 0000 0000

CONTROL NO. BYE-12823-76

COPY      OF      COPIES

PAGE 13 OF 64 PAGES

~~TOP SECRET~~

HANDLE VIA

**BYEMAN-TALENT-KEYHOLE**

CONTROL SYSTEMS JOINTLY

FISCAL GUIDANCE

Baseline Program Definitions, Requested Alternatives and Addenda.

IMAGERY PROGRAMSGAMBIT

a. BASELINE. Two missions per year thru FY 77 and one mission per year thereafter until current procurement thru Vehicle 54 is exhausted in FY 82. Protect funds for long lead items related to a follow-on procurement. FY 77 long-lead funds will not be expended if KENNEN maintains the Oct 76 launch date and has no major problems. No funds protected for a follow-on acquisition beyond Vehicle 54.

## b. ALTERNATIVES.

(1) Return to two missions per year in FY 78 and continue thru FY 85.

(2) Maintain one mission per year, starting in FY 78, thru FY 85 and protect a continuing follow-on.

(3) Assume a Nov 77 decision to terminate the baseline program upon the completion of Vehicle 50 mission or not later than mid-CY 78.

## c. ADDENDA - None identified.

HEXAGON

a. BASELINE. A current two missions per year program stretching to one per year by FY 78 and a continuing program thru Vehicle 20. Assume program phase-out after Vehicle 20. The cost of Vehicles 19 and 20 separately identified.

## b. ALTERNATIVES - None requested.

## c. ADDENDA.

(1) Solid State Stellar Camera capability.

(2) Fund protection for FY 80 follow-on to Vehicle 20.

HANDLE VIA

**BYEMAN-TALENT-KEYHOLE**

CONTROL SYSTEMS JOINTLY

~~TOP SECRET~~

CLASSIFIED BY BYEMAN 1 EXEMPT FROM  
GENERAL DECLASSIFICATION SCHEDULE OF  
EXECUTIVE ORDER 11652 EXEMPTION CODE

CONTROL NO BYE-12823-76COPY      OF      COPIESPAGE 14 OF 64 PAGES

~~TOP SECRET~~

HANDLE VIA

**BYEMAN-TALENT-KEYHOLE**

CONTROL SYSTEMS JOINTLY

KENNEN



HANDLE VIA

**BYEMAN-TALENT-KEYHOLE**

CONTROL SYSTEMS JOINTLY

~~TOP SECRET~~

CLASSIFIED BY BYEMAN 1 EXEMPT FROM  
GENERAL DECLASSIFICATION SCHEDULE OF  
EXECUTIVE ORDER 11652 EXEMPTION-CATE  
COPY 582 DECLASSIFY ON IMP-DET

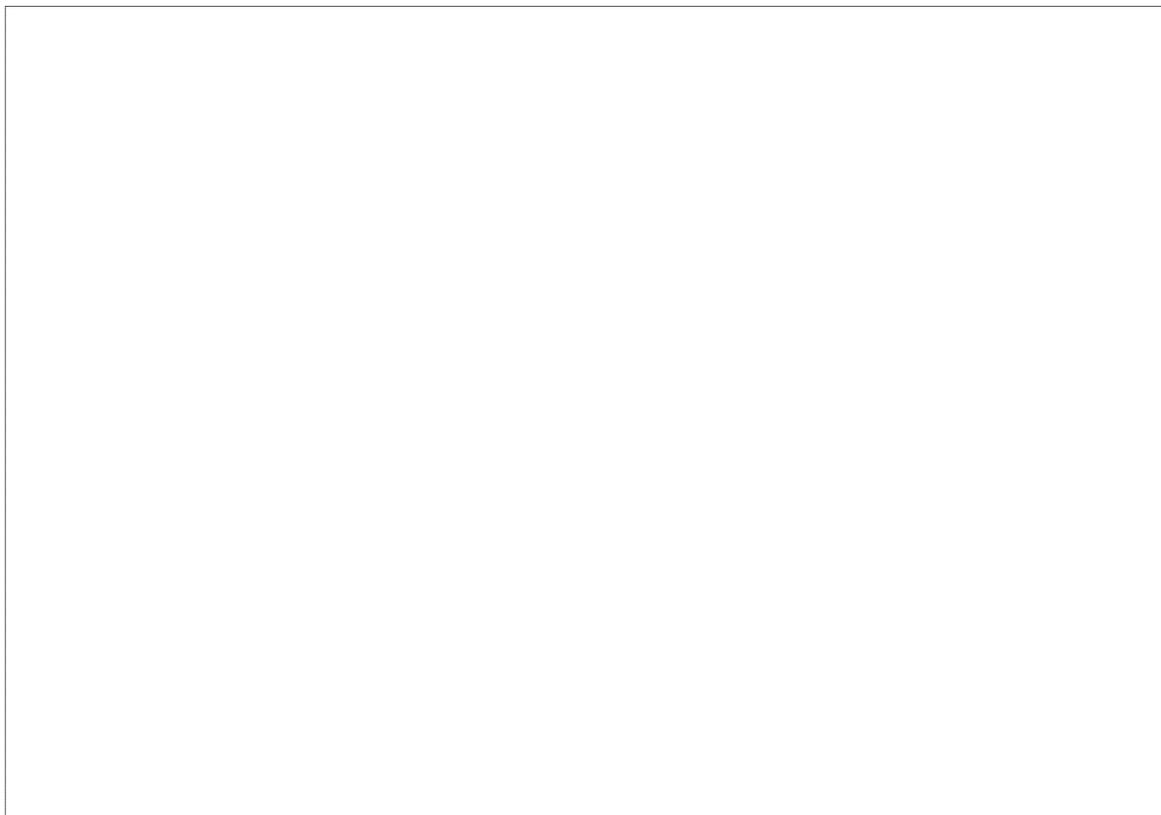
CONTROL NO BYE-12823-76

COPY 15 OF 64 COPIES

PAGE 15 OF 64 PAGES

**Page Denied**

**Page Denied**

~~TOP SECRET~~HANDLE VIA  
**BYEMAN-TALENT-KEYHOLE**  
CONTROL SYSTEMS JOINTLY

c. ADDENDA. None identified.

P-989

a. BASELINE. Provides for the procurement of RAQUEL 1A initiated in FY 76 with no additional new starts planned until FY 78. Provides for a study effort to define the future of the P-989 program and a July 76 decision.

b. ALTERNATIVES. Results of study effort.

c. ADDENDA. Not applicable.

SIGINT EXPERIMENT

a. BASELINE. Fund protection for a SIGINT Experiment to be initiated in FY 77.

b. ALTERNATIVES.

(1) Extremely High Frequency Search Experiment.

HANDLE VIA

**BYEMAN-TALENT-KEYHOLE**

CONTROL SYSTEMS JOINTLY

~~TOP SECRET~~CLASSIFIED BY BYEMAN 1 EXEMPT FROM  
GENERAL DECLASSIFICATION SCHEDULE OF

Approved for Release: 2025/06/16 C05139211

CONTROL NO BYE-12823-76COPY      OF      COPIESPAGE 18 OF 64 PAGES



~~TOP SECRET~~

HANDLE VIA  
**BYEMAN-TALENT-KEYHOLE**  
CONTROL SYSTEMS JOINTLY

will be subject to a definition program which defines the scope and schedule of changes required to implement this transition. Funds are not protected to design and procure a Shuttle compatible spacecraft.

HANDLE VIA

**BYEMAN-TALENT-KEYHOLE**

CONTROL SYSTEMS JOINTLY

~~TOP SECRET~~

CLASSIFIED BY BYEMAN 1 EXEMPT FROM  
GENERAL DECLASSIFICATION SCHEDULE OF  
EXECUTIVE ORDER 11652 EXEMPTION DATE

CONTROL NO BYE-12823-76

COPY      OF      COPIES

PAGE 20 OF 64 PAGES

**Page Denied**

~~TOP SECRET~~

HANDLE VIA  
**BYEMAN**  
CONTROL SYSTEM

PROGRAM YEAR 1976 FUNDING - NRP TOTALS: (Millions)

	<u>EXCOM APPROVED TOA</u>	<u>CURRENTLY PROJECTED FY 76 OBLIGATIONS</u>	<u>EXCESS (DEFICIT)</u>
<u>SATELLITE PROGRAMS:</u>			
<u>IMAGING PROGRAMS:</u>			
HEXAGON	154.7	154.0	0.7
GAMBIT	139.2	139.2	0
<u>SIGINT PROGRAMS:</u>			
P-989	18.7	18.7	0
<u>MISSION SUPPORT:</u>	112.1	112.1	0
<u>R&amp;D SUPPORT:</u>	27.6	27.7	(0.1)
<u>SHUTTLE STUDIES:</u>	4.7	3.7	1.0

HANDLE VIA  
**BYEMAN**  
CONTROL SYSTEM

~~TOP SECRET~~

CLASSIFIED BY BYEMAN 1 EXEMPT FROM  
GENERAL DECLASSIFICATION SCHEDULE OF  
EXECUTIVE ORDER 11652 EXEMPTION CODE  
GDRY 582 DECLASSIFY ON IMP DET

CONTROL NO BYE-12823-76  
COPY      OF      COPIES  
PAGE 23 OF 64 PAGES

**Page Denied**

**Page Denied**

~~TOP SECRET~~

FY 19TQ FINANCING (\$ Millions)

NOA

TOA

NOV 74/JAN 75 EXCOM APPROVAL AND FY 76  
PRESIDENT'S BUDGET

NOV/DEC 1975 EXCOM:

- FY 19TQ President's Budget
- FY 19TQ Congressional Reduction
- FY 1976 HEXAGON Carryover

Nov/Dec 75 EXCOM Approved Program

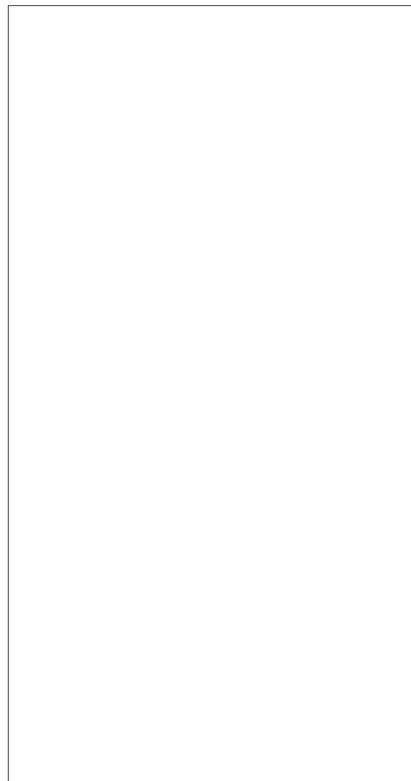
MAY 1976 CFI:

Funds Available:

- FY 19TQ President's Budget
- FY 19TQ Congressional Reduction
- FY 1976 Forecast Carryover to FY 19TQ

Total Available

FY TQ FUNDS EXCESS TO NOV/DEC 75  
EXCOM APPROVED TOA



~~TOP SECRET~~

CLASSIFIED BY BYEMAN 1 EXEMPT FROM  
GENERAL DECLASSIFICATION SCHEDULE OF  
EXECUTIVE ORDER 11652 EXEMPTION CODE  
GORY 5B2 DECLASSIFY ON IMP DET

**Page Denied**

~~TOP SECRET~~

HANDLE VIA  
**BYEMAN-TALENT-KEYHOLE**  
CONTROL SYSTEMS JOINTLY

IMAGING SYSTEMS

PROGRAM PLAN

The current imaging systems, GAMBIT and HEXAGON, provide a highly successful complementary mix of HEXAGON's medium resolution and wide area coverage for search, surveillance, and current intelligence, and GAMBIT's high resolution for technical intelligence, surveillance, and current intelligence. Both of these film-return systems, however, lack the timeliness of imagery return required for effective support of indications and warning, crisis reconnaissance, and tactical applications. The introduction of the electro-optical KENNEN system in late 1976 will provide the near-real-time capability needed.

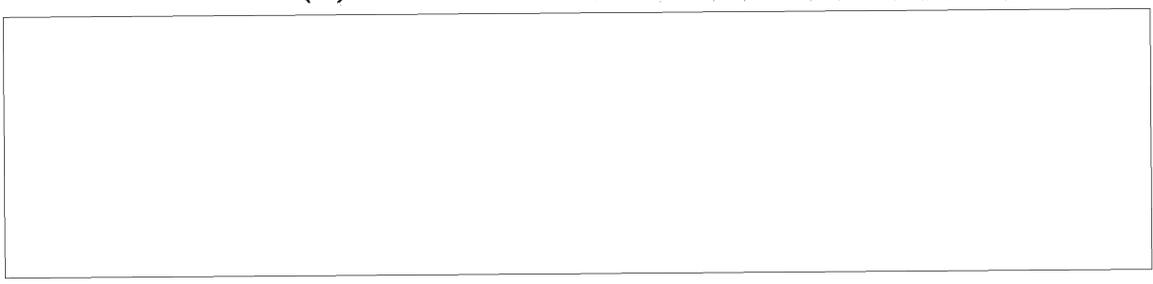
Much of the imagery returned by KENNEN should be comparable in resolution to all but the best GAMBIT imagery. It is not likely, however, that KENNEN will be able to perform a significant portion of the HEXAGON's search mission

Therefore, since performance predictions are based on simulated KENNEN images which cannot be guaranteed to duplicate actual KENNEN performance, CFI decisions must wait for the intelligence community evaluation of actual imagery from KENNEN on orbit.

The current imagery program baseline is structured to be responsive to decisions resulting from an orbital evaluation of KENNEN. Referring to Figure 3, the baseline provides:

A. For KENNEN:

- (1) One vehicle on orbit in FY 1977.



HANDLE VIA

**BYEMAN-TALENT-KEYHOLE**  
CONTROL SYSTEMS JOINTLY

~~TOP SECRET~~

CLASSIFIED BY BYEMAN 1 EXEMPT FROM  
GENERAL DECLASSIFICATION SCHEDULE OF

CONTROL NO BYE-12823-76  
COPY 28 OF 64 COPIES  
PAGE 28 OF 64 PAGES

HANDLE VIA  
**BYEMAN-TALENT-KEYHOLE**  
CONTROL SYSTEMS JOINTLY

~~TOP SECRET~~  
CLASSIFIED BY BYEMAN-1 EXEMPT FROM  
GENERAL DOWNGRADING AND  
DECLASSIFICATION SCHEDULE  
DATE 11/11/01

CONTROL NO BYE-12823-76  
COPY 29 OF 64 COPIES  
PAGE 29 OF 64 PAGES

NRP IMAGING PROGRAM

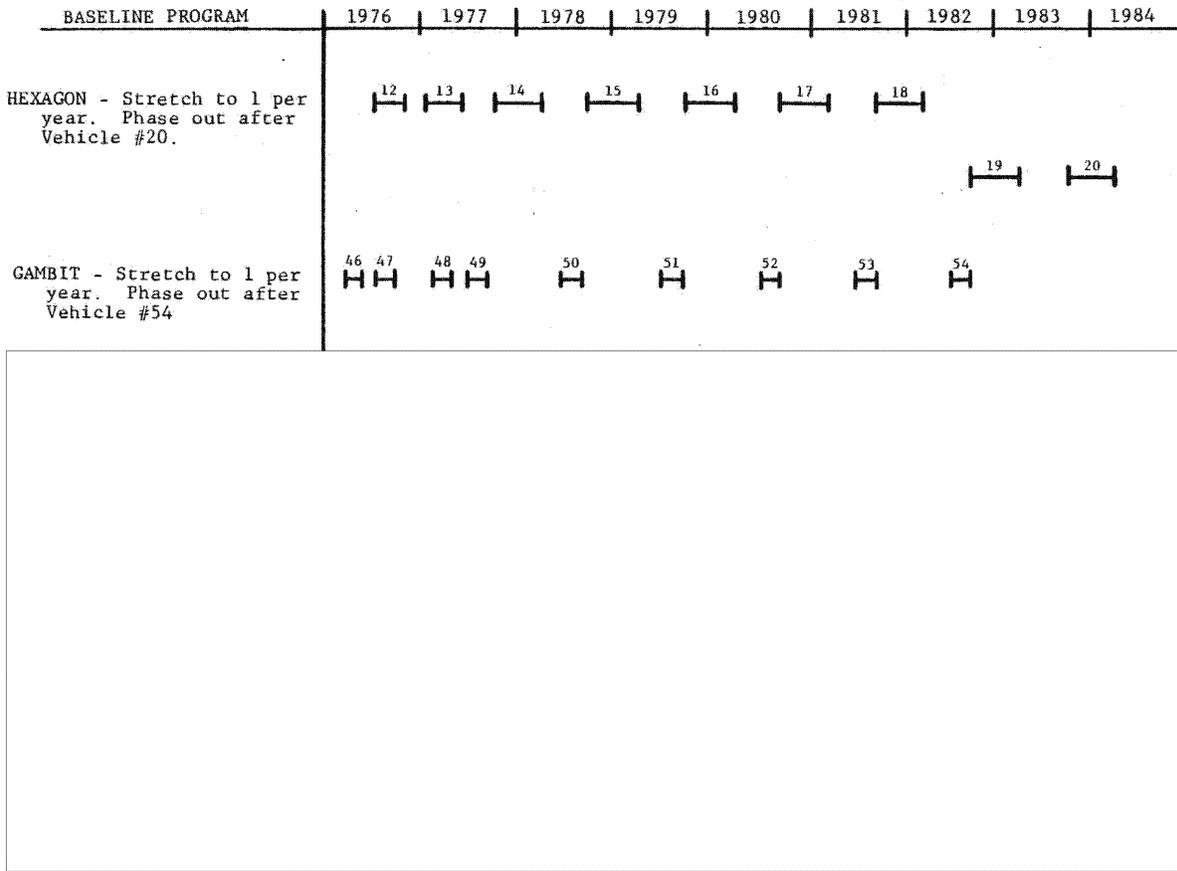


Figure 3

~~TOP SECRET~~

HANDLE VIA  
**BYEMAN-TALENT-KEYHOLE**  
CONTROL SYSTEMS JOINTLY

~~TOP SECRET~~

HANDLE VIA  
**BYEMAN-TALENT-KEYHOLE**  
CONTROL SYSTEMS JOINTLY

B. For GAMBIT:

(1) A reduction from the current two launches per year to one launch per year in FY 1978, based on the portion of the GAMBIT mission KENNEN is expected to fulfill.

(2) Protection of long-lead procurement to allow return to two launches per year until successful KENNEN launch and operation are demonstrated.

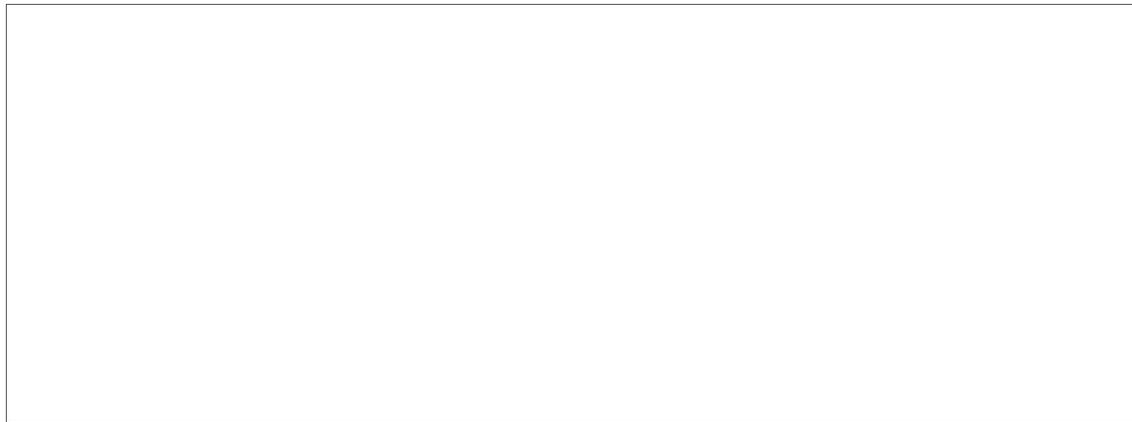
(3) After a suitable KENNEN-GAMBIT overlap evaluation period, termination of the GAMBIT program based on successful mission satisfaction by the KENNEN system.

C. For HEXAGON:

(1) Reduction of the launch rate to one per year in FY 1978 based on planned HEXAGON improvements and high confidence in KENNEN's ability to satisfy the target surveillance portion of the HEXAGON mission.



The baseline program will be followed only if the following assumptions are correct; none of them can be verified with certainty at this time.



HANDLE VIA  
**BYEMAN-TALENT-KEYHOLE**  
CONTROL SYSTEMS JOINTLY

~~TOP SECRET~~

CLASSIFIED BY: BYEMAN-1 EXEMPT FROM  
GENERAL DECLASSIFICATION SCHEDULE OF

~~TOP SECRET~~

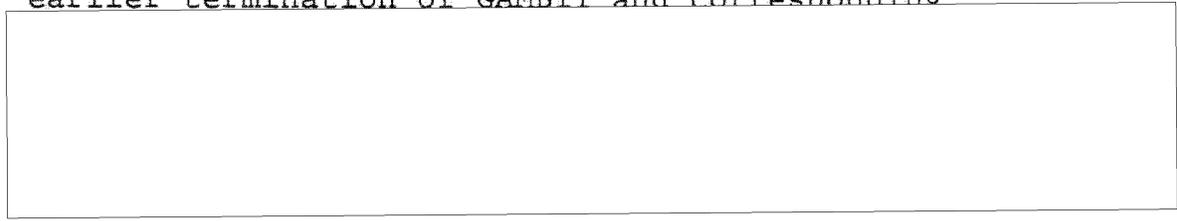
HANDLE VIA  
**BYEMAN-TALENT-KEYHOLE**  
CONTROL SYSTEMS JOINTLY

EVALUATIONS TO SUPPORT CFI DECISIONS

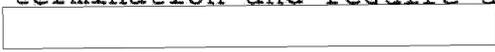
Community evaluations are planned which will allow verification of the above assumptions after KENNEN is operational. In addition to the possible verification of the baseline assumptions, any of the following could also result from the evaluation:

A. KENNEN having a major problem forcing a return to two GAMBITs per year and a corresponding slip in the KENNEN program.

B. Early KENNEN utility validation allowing earlier termination of GAMBIT and corresponding

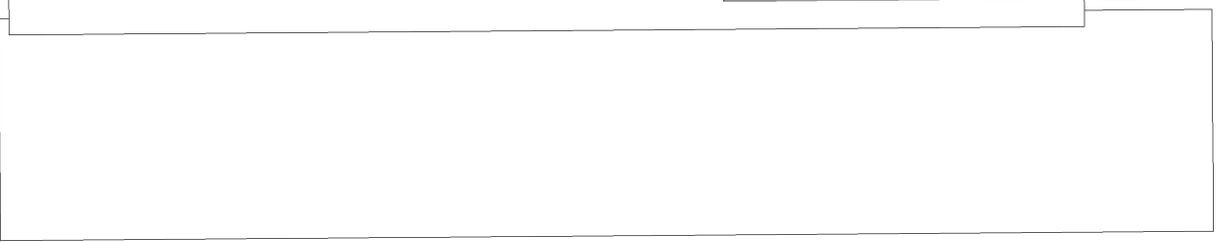
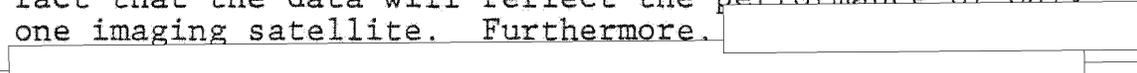


D. A determination that KENNEN, without a major change, cannot replace GAMBIT. This would delay GAMBIT termination and require a corresponding delay in proceeding



Planning is underway for the evaluations required to provide data to support the DNRO's recommended imagery program and the CFI decision. The IC Staff is coordinating the overall evaluation plan, the NRO IRARS-SWG will conduct the KENNEN image quality assessment, and the COMIREX will conduct the intelligence utility assessment.

The KENNEN evaluation will be complicated by the fact that the data will reflect the performance of only one imaging satellite. Furthermore,



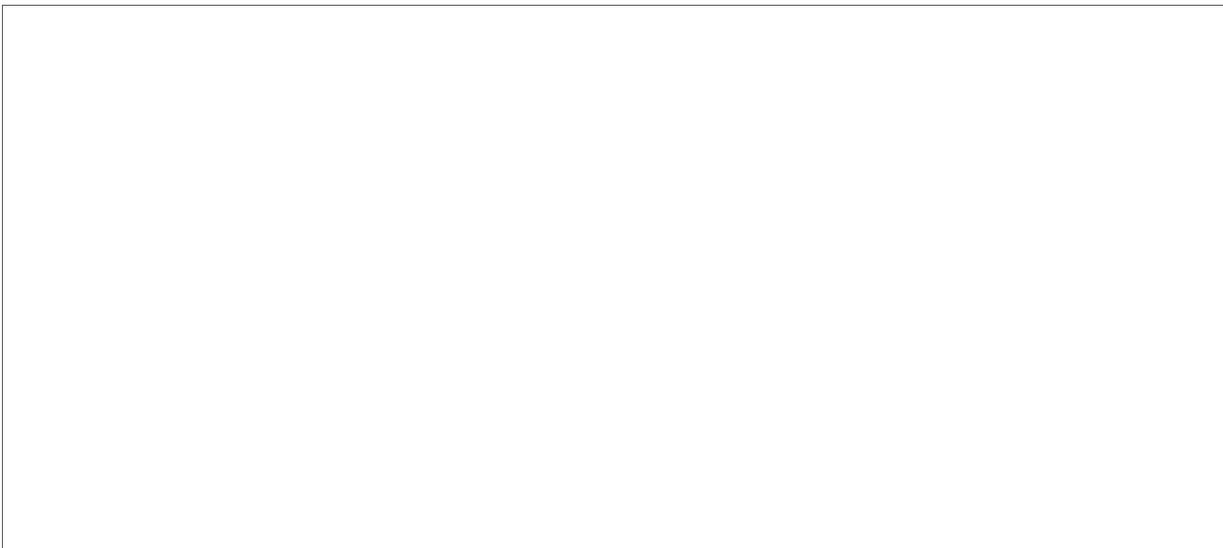
HANDLE VIA  
**BYEMAN-TALENT-KEYHOLE**  
CONTROL SYSTEMS JOINTLY

~~TOP SECRET~~

CLASSIFIED BY BYEMAN 1 EXEMPT FROM  
GENERAL DECLASSIFICATION SCHEDULE OF

~~TOP SECRET~~

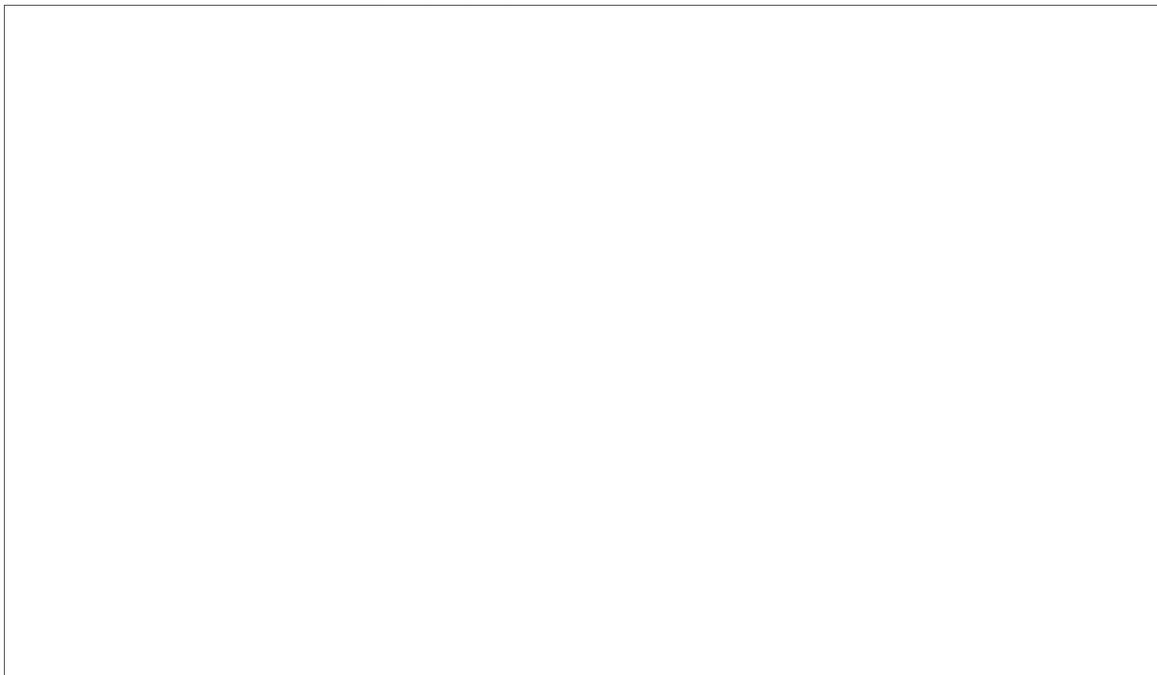
HANDLE VIA  
**BYEMAN-TALENT-KEYHOLE**  
CONTROL SYSTEMS JOINTLY



ADVANCED PLANNING

In addition to the planning for the KENNEN evaluation, long-range planning for the imaging portion of the NRP as embodied in the National Imagery Plan for Satellites (NIPS) is in the final coordination stage.

IMAGING SYSTEMS TECHNOLOGY



HANDLE VIA  
**BYEMAN-TALENT-KEYHOLE**  
CONTROL SYSTEMS JOINTLY

~~TOP SECRET~~

CLASSIFIED BY BYEMAN: 1 EXEMPT FROM  
GENERAL DECLASSIFICATION SCHEDULE F OF  
E.O. 13526

~~TOP SECRET~~

HANDLE VIA  
**BYEMAN-TALENT-KEYHOLE**  
CONTROL SYSTEMS JOINTLY

PROGRAM STATUS

1. HEXAGON

HEXAGON Mission 1211 was launched on 4 December 1975 and completed 116 days of operation. The film in the last three recovery vehicles was mostly used in the monoscopic mode, as the forward camera had been inhibited due to a problem which developed in late December 1975. The optical bar tachometer provided false RPM information causing the forward camera's film platen to hit the mechanical stop and stow. As a result, the forward camera was disabled to preclude inducing a failure in the aft camera. The aft camera was then operated normally until all of its film was depleted on 13 March. At that time, the forward camera was enabled and operated normally with limited tasking until recovery of the final RV on 29 March 1976.

The impact of having monoscopic instead of stereoscopic coverage for so much of the mission is under investigation with EXSUBCOM and ICRS. The current estimate is that monoscopic coverage impacts mensuration and interpretability, and probably is only 70 to 85 percent as effective as stereoscopic coverage depending on the measure used. The investigation will take several months to reach a final conclusion.

The mapping mission of 1211, which spanned the first 60 days of the operation, was completed without incident. All seven mapping missions attempted to date have been entirely successful, with the accuracy of the product far exceeding specifications.

Mission 1211 successfully photographed the special Middle East Peace Treaty area between Israel and Egypt on 22 February 1976.

The launch of HEXAGON Mission 1212 is scheduled for July 1976, with a planned mission lifetime of 150 days which would be a new record.

The current approved HEXAGON program provides for six months between launches through Vehicle 13 (FY 1977), ten months between Vehicles 13 and 14 (FY 1978), 11 months between Vehicles 14 and 15 (FY 1978), and 12 months between launches thereafter. Fund protection is

HANDLE VIA  
**BYEMAN-TALENT-KEYHOLE**  
CONTROL SYSTEMS JOINTLY

~~TOP SECRET~~

~~TOP SECRET~~HANDLE VIA  
**BYEMAN-TALENT-KEYHOLE**  
CONTROL SYSTEMS JOINTLY

provided for a follow-on procurement of two more HEXAGON vehicles to fly in 1982 and 1983.

Mapping frame cameras are being procured for each HEXAGON through Vehicle 16. Provisions for mapping beyond these mapping cameras are funded by DMA. GEOPACs, consisting of geodetic receivers which work with TRANSIT satellites for precise determination of the HEXAGON orbit, are approved for Vehicles 13 through 18 to further improve the accuracy of the mapping product. A Solid State Stellar (S<sup>3</sup>) camera system is approved for Vehicles 17 and 18. S<sup>3</sup> will allow DMA to use the HEXAGON main camera panoramic imagery for precision mapping purposes, vastly improving the system's utility over the mapping frame cameras.

## 2. GAMBIT

GAMBIT Mission 4345 was launched on 9 October 1975 and operated successfully for its planned life of 50 days primary and two days solo, the longest mission life of any GAMBIT to date. This mission provided the best example of geometric mean CORN target resolution for any US photographic satellite- [redacted] This was the first sun synchronous (96° inclination) GAMBIT flown. US intelligence indicated that the Soviets were possibly deceived by the inclination and considered this GAMBIT to be a HEXAGON mission.

The current GAMBIT mission, planned for a 55-day mission life, was launched on 22 March 1976, and is performing well.

The current approved GAMBIT program provides for two missions per year through Vehicle 49 (FY 1977) and one vehicle thereafter through Vehicle 54 (FY 1982). Long-lead procurement to protect the capability to return to two vehicles per year by launching Vehicle 55 in FY 1980 is approved through FY 1977. No protection for a follow-on buy is provided.

Progress of Vehicle 48, incorporating a block change which includes the dual-platen camera, is proceeding on schedule towards a launch in March 1977.

HANDLE VIA  
**BYEMAN-TALENT-KEYHOLE**  
CONTROL SYSTEMS JOINTLY~~TOP SECRET~~

CLASSIFIED BY BYEMAN - 1 EXEMPT FROM

Approved for Release: 2025/06/16 C05139211

CONTROL NO BYE-12823-76  
COPY        OF        COPIES  
PAGE 34 OF 64 PAGES

~~TOP SECRET~~

HANDLE VIA  
**BYEMAN-TALENT-KEYHOLE**  
CONTROL SYSTEMS JOINTLY

3. KENNEN



HANDLE VIA  
**BYEMAN-TALENT-KEYHOLE**  
CONTROL SYSTEMS JOINTLY

~~TOP SECRET~~

CLASSIFIED BY BYEMAN - 1 EXEMPT FROM  
GENERAL DECLASSIFICATION SCHEDULE OF

CONTROL NO BYE-12823-76  
COPY      OF      COPIES  
PAGE 35 OF 64 PAGES

**Page Denied**

**Page Denied**

**Page Denied**

**Page Denied**

**Page Denied**

~~TOP SECRET~~

HANDLE VIA  
**BYEMAN-TALENT-KEYHOLE**  
CONTROL SYSTEMS JOINTLY



POPPY

The last of the POPPY series, POPPY 7, was launched on 14 December 1971 with all four payloads successfully deployed. Normal power system degradation has reduced tasking severely. In addition to its general search mission from 154 to 18,000 MHz, the POPPY system is currently a primary collector for ocean surveillance of Soviet naval activities.



HANDLE VIA  
**BYEMAN-TALENT-KEYHOLE**  
CONTROL SYSTEMS JOINTLY

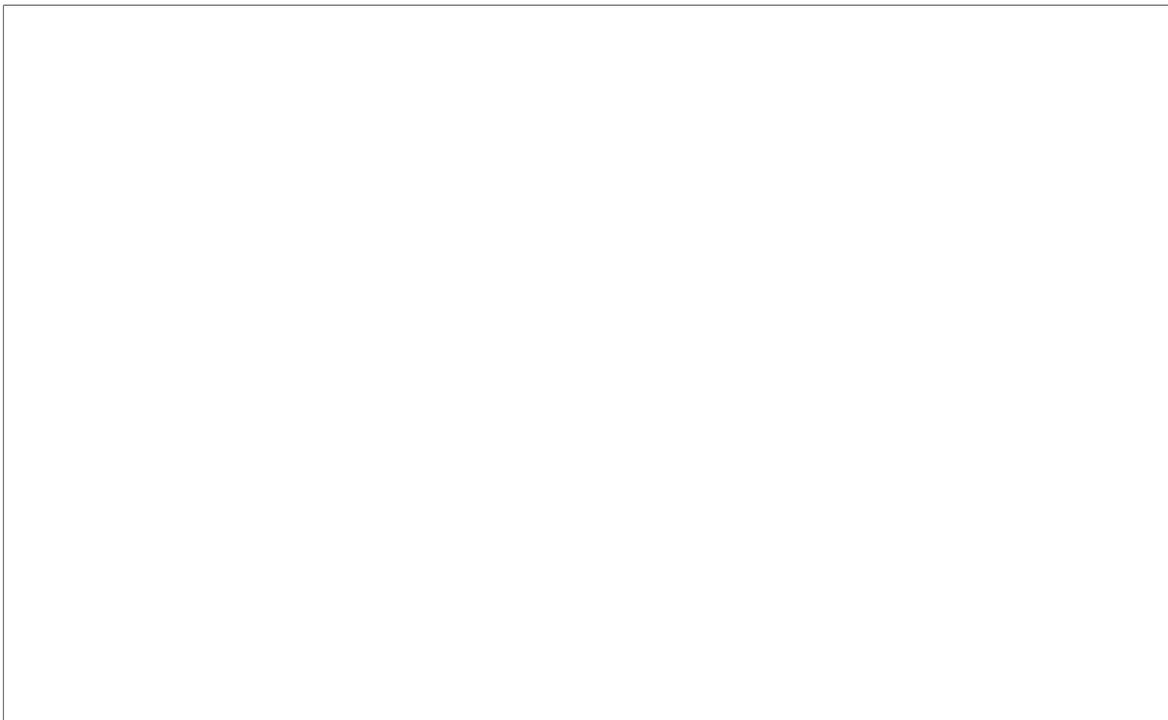
~~TOP SECRET~~  
CLASSIFIED BY BYEMAN 1 EXEMPT FROM  
GENERAL DECLASSIFICATION SCHEDULE OF  
EXECUTIVE ORDER 11652 EXEMPTION CODE

CONTROL NO BYE-12823-76  
COPY      OF      COPIES  
PAGE 41 OF 64 PAGES

**Page Denied**

~~TOP SECRET~~

HANDLE VIA  
**BYEMAN-TALENT-KEYHOLE**  
CONTROL SYSTEMS JOINTLY



PROGRAM 989

The low-orbiting P-989 satellites augment the high altitude systems by performing ELINT and COMINT collection which is difficult or not practical to accomplish from synchronous or highly elliptical orbits. All payloads are carried to orbit as piggyback satellites by HEXAGON.

The approved P-989 program supports the continued development of URSALA 3 and 4 and RAQUEL 1A. URSALA 3 and 4 are follow-on vehicles in the URSALA series. URSALA 3 is currently planned for launch with the HEXAGON mission in July 1976 as the replacement for URSALA 2. URSALA 4 is the planned replacement for URSALA 3. RAQUEL 1A, a vehicle duplicating RAQUEL 1 collection capabilities, will be available in October 1977.

No new program starts are planned before FY 1978, pending CFI review in July 1976 of the recommendations resulting from the ELINT Interaction Study.

The individual status of payloads currently on orbit is described in subsequent paragraphs.

HANDLE VIA  
**BYEMAN-TALENT-KEYHOLE**  
CONTROL SYSTEMS JOINTLY

~~TOP SECRET~~

CLASSIFIED BY BYEMAN-1 EXEMPT FROM

~~TOP SECRET~~HANDLE VIA  
**BYEMAN-TALENT-KEYHOLE**  
CONTROL SYSTEMS JOINTLY

URSALA 1 (Mission 7378), an ELINT payload, was launched in July 1972. It has successfully performed as an EOB collector, providing location accuracy of emitters to within six nautical miles. It has detected and located communication links, thereby also functioning as a COMINT mapper over its frequency range of 2 to 12 GHz. The intelligence mission of this vehicle was terminated in December 1975 due to poor health and to save funds. The satellite was recalled in February 1976 in an effort to recover pulse collection after a partial failure of URSALA 2.

URSALA 2 (Mission 7342) was launched in November 1973 and is identical in capability to URSALA 1. The pulse receiver failed in February 1976 and the vehicle has been reoriented to optimize [redacted] in response to COMINT mapping requirements. URSALA 3 is scheduled for launch in July 1976 aboard HEXAGON Mission 1212.

RAQUEL 1 (Mission 7341), an ELINT technical intelligence payload, was launched in October 1974, and is collecting [redacted]. It has experienced two anomalies which are a loss of the 10 to 12 GHz band and failure of the [redacted] receiver.

MABELI (Mission 7339), a technical intelligence payload, was placed in orbit in January 1972. It provides main beam collection for the large ABM radars. MABELI is restricted to 30 minutes of collection per day due to tape recorder limitations. Band 4 (1500-2500 MHz) is inoperative.

TOPHAT 2 (Mission 7340) was launched in April 1974 and is intended to collect and may tropospheric-scatter communication signals operating in the 450-1000 MHz frequency range. An anomaly in the fine-tuned receiver has apparently cleared and the system is being tasked for a high interest special signal.

HANDLE VIA

**BYEMAN-TALENT-KEYHOLE**

CONTROL SYSTEMS JOINTLY

~~TOP SECRET~~CLASSIFIED BY BYEMAN-1 EXEMPT FROM  
GENERAL DECLASSIFICATION SCHEDULE OF

Approved for Release: 2025/06/16 C05139211

CONTROL NO. BYE-12823-76

COPY \_\_\_\_\_ OF \_\_\_\_\_ COPIES

PAGE 44 OF 64 PAGES

~~TOP SECRET~~

HANDLE VIA  
**BYEMAN-TALENT-KEYHOLE**  
CONTROL SYSTEMS JOINTLY

INDEX

OTHER MAJOR ACTIVITIES

	<u>Page</u>
- <input type="text"/>	46
- Space Transportation System	47
- ELINT Interaction Study	48
- <input type="text"/>	49

HANDLE VIA  
**BYEMAN-TALENT-KEYHOLE**  
CONTROL SYSTEMS JOINTLY

~~TOP SECRET~~

CLASSIFIED BY BYEMAN-1 EXEMPT FROM  
GENERAL DECLASSIFICATION SCHEDULE OF

**Page Denied**

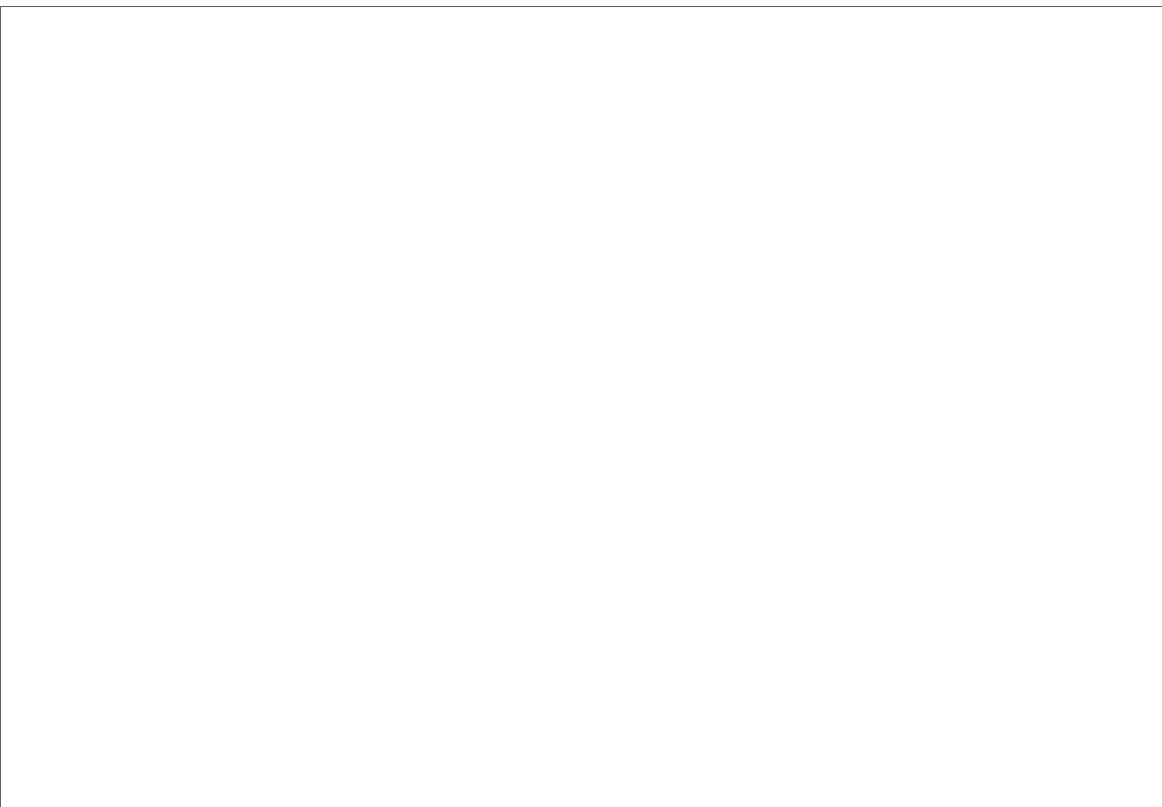
~~TOP SECRET~~

HANDLE VIA  
**BYEMAN-TALENT-KEYHOLE**  
CONTROL SYSTEMS JOINTLY

SPACE TRANSPORTATION SYSTEM

The NRO Space Transportation System (STS Program) is separated into the three major phases shown below. Overall, there is no change in the Transitional Quarter (TQ) funding requirements, however, some of the line item titles have been changed to more accurately reflect how the money is being used:

Shuttle Exploitation Studies. This effort is directed toward investigation of the use of the STS to more effectively accomplish NRO missions. This phase specifically includes Aerospace support and general concept studies performed by other contractors.



NRO STS Transition Design and Build Program. This phase encompasses the necessary effort to design, build, test, integrate and launch each selected NRO program on the STS. The figures shown in the Financial Summary identify the costs associated with the minimum modifications to make the spacecraft compatible with the STS while maintaining compatibility with expendable launch vehicles.

HANDLE VIA  
**BYEMAN-TALENT-KEYHOLE**  
CONTROL SYSTEMS JOINTLY

~~TOP SECRET~~

CLASSIFIED BY BYEMAN 1 EXEMPT FROM  
GENERAL DECLASSIFICATION SCHEDULE OF

~~TOP SECRET~~HANDLE VIA  
**BYEMAN-TALENT-KEYHOLE**  
CONTROL SYSTEMS JOINTLY

A joint NASA/NRO Payload Accommodations Working Group (PAWG) has been established and is meeting monthly. The PAWG provides a direct BYEMAN level interface between the key NASA Center personnel and the NRO Program Offices. The PAWG is charged with resolving payload transition and joint space operation issues. This will facilitate the transition of NRP systems to the Space Shuttle with minimum impact on both NRO mission accomplishment and the normally unclassified NASA operating procedures.

### ELINT INTERACTION STUDY STATUS REPORT

On the basis of discussions at the November 1975 ExCom, the NRO began a study to support programmatic decisions relating to the acquisition of future ELINT systems. The

This study is oriented toward providing recommendations to a July 1976 CFI meeting regarding these missions. An essential aspect of this effort has been to provide the SIGINT Committee with periodic briefings to maintain requirement community interaction with the study.

In parallel with this study effort, a determination is being made as to the cost effectiveness

As a first step in this study effort, the SIGINT Committee was requested to validate the ELINT requirements of the USIB Five-Year Guidance as analyzed and integrated by the study group. Subsequently, the SIGINT Committee updated ELINT Tab D to assist the study group in their understanding of current requirements. This validation was completed during January 1976. During February 1976, status briefings were provided within the community regarding the capabilities of the current systems to satisfy the requirements of the approved ELINT Tab D.

HANDLE VIA

**BYEMAN-TALENT-KEYHOLE**  
CONTROL SYSTEMS JOINTLY~~TOP SECRET~~CLASSIFIED BY BYEMAN 1 EXEMPT FROM  
GENERAL DECLASSIFICATION SCHEDULE OF

Approved for Release: 2025/06/16 C05139211

CONTROL NO BYE-12823-76  
COPY      OF      COPIES  
PAGE 48 OF 64 PAGES

**Page Denied**

**Page Denied**

~~TOP SECRET~~

HANDLE VIA  
**BYEMAN-TALENT-KEYHOLE**  
CONTROL SYSTEMS JOINTLY

INDEX

SUPPORT TO DOD PROGRAMS

	<u>Page</u>
- <span style="border: 1px solid black; display: inline-block; width: 300px; height: 20px; vertical-align: middle;"></span>	52
- DSP Augmentation	53
- AFSATCOM	53
- <span style="border: 1px solid black; display: inline-block; width: 200px; height: 20px; vertical-align: middle;"></span>	54

HANDLE VIA  
**BYEMAN-TALENT-KEYHOLE**  
CONTROL SYSTEMS JOINTLY

~~TOP SECRET~~

CLASSIFIED BY BYEMAN-1 EXEMPT FROM  
GENERAL DECLASSIFICATION SCHEDULE OF  
EXECUTIVE ORDER 11652 EXEMPTION CATE  
GORY FOR RECLASSIFICATION

CONTROL NO BYE-12823-76  
COPY 51 OF 64 COPIES  
PAGE 51 OF 64 PAGES

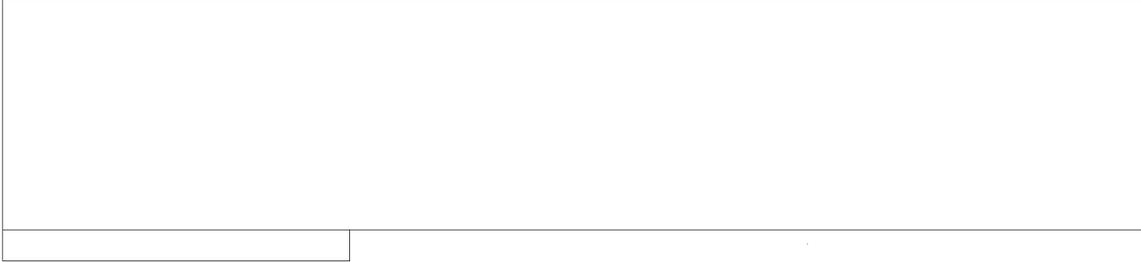
**Page Denied**

**Page Denied**

**Page Denied**

~~TOP SECRET~~

HANDLE VIA  
**BYEMAN-TALENT-KEYHOLE**  
CONTROL SYSTEMS JOINTLY



HANDLE VIA

**BYEMAN-TALENT-KEYHOLE**  
CONTROL SYSTEMS JOINTLY

~~TOP SECRET~~  
CLASSIFIED BY BYEMAN 1 EXEMPT FROM  
GENERAL DECLASSIFICATION SCHEDULE OF

CONTROL NO BYE-12823-76  
COPY      OF      COPIES  
PAGE 55 OF 64 PAGES

**Page Denied**

~~TOP SECRET~~

HANDLE VIA  
**BYEMAN-TALENT-KEYHOLE**  
CONTROL SYSTEMS JOINTLY

HIGH FREQUENCY EXPERIMENT



HANDLE VIA  
**BYEMAN-TALENT-KEYHOLE**  
CONTROL SYSTEMS JOINTLY

~~TOP SECRET~~  
CLASSIFIED BY BYEMAN | EXEMPT FROM  
GENERAL DECLASSIFICATION SCHEDULE

CONTROL NO BYE-12823-76  
COPY \_\_\_\_\_ OF \_\_\_\_\_ COPIES  
PAGE 64 OF 64 PAGES

~~Top Secret~~



~~Top Secret~~