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

THE NRO STAFF

November 19, 1968

[REDACTED]

MEMORANDUM FOR COLONEL ALLEN

SUBJECT: Transition Paper for New DOD Officials

DDR&E is putting together one of many transition papers which are being prepared for the benefit of incoming Defense officials. Mr. [REDACTED] preparing one of these papers, having to do with the total U.S. intelligence program. The outline of his paper is attached.

Several days ago, this enterprise and outline was coordinated with Dr. Flax, who concurred in the proposal that the National Reconnaissance Program be included in this document. Dr. Flax's only stipulation was that he personally review the material prepared by the NRO Staff.

My office will prepare Section IB, which consists of a very general description of the NRP. Would you please handle Sections IIB and IVB? The first of these, "Photographic Intelligence RDT&E," is to be restricted to our R&D program for aircraft and satellites; no systems are to be discussed. Mr. [REDACTED] visualizing about two to three pages (double-spaced) for this section. Under "Future Program," Mr. [REDACTED] is asking where we think the NRP is heading. For example, [REDACTED] moving along the lines of 5% extension of the state-of-the-art? or are we moving toward genuine innovation and radical solutions to the reconnaissance problem?

I would appreciate an indication tomorrow as to when you think this material can be finished. DDR&E is hoping that we can wrap up by the evening of the 21st.

[REDACTED]

PAUL E. WORTHMAN  
Colonel, USAF  
Deputy Director

Attachment

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**CONTENTS**

**Introduction and Summary**

**Section I - Uses of Intelligence.**

**Section II - Relations between various kinds of intelligence.**

**Section III - Resources and Capabilities.**

**Section IV - Comments and Recommendations**

**Section V - Tentative FY 64-69 Expenditures for Intelligence.**

**TABS:**

- A - Correlation of Signal Intelligence with Photographic Intelligence. (DIA)
- B - Effectiveness of Overhead Reconnaissance. (SAC)
- C - A Brief Review of Sigint and Its Prospects. (NSA)
- D - Assets to Support the SIOP. (DIA)
- E - Requirements for Collection by [REDACTED]  
[REDACTED] (SIGINT) Sensors. (USIB-COMOR)

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OUTLINE

I. INTRODUCTION AND SUMMARY

A. Description of Intelligence

1. U.S. Needs for Intelligence

a. SIOP

b. R&D

c. Strategic

d. Tactical

2. Organizations and Responsibilities Within Each

Major Functional Area (PHOTINT, SIGINT, etc.)

*Recent capabilities*  
B. Descriptions of PHOTINT, SIGINT, General Intelligence, Tactical

Reconnaissance and Related Efforts (attache, etc.)

C. Financial Summary by Program (since 1962) -- NRP, CCP, CIP, --

Tactical Reconnaissance, Other

D. Descriptions of Collection, Processing, Analysis and Reporting

Systems

E. Financial Summary by Function...

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II. INTELLIGENCE RDT&E

A. Description of Research and Development for Reconnaissance  
and Intelligence Purposes

B. Photographic Intelligence RDT&E

1. Objectives
2. Discussion
3. Problem Areas
4. Alternative Solutions
5. Summary and Recommendations

C. Signal Intelligence

1. Objectives
2. Discussion
3. Problem Areas
4. Alternative Solutions
5. Summary and Recommendations

*2D*  
*fell?*  
*Satt?*  
*no systems*

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D. Electronic Intelligence

1. Objectives
2. Discussion
3. Problem Areas
4. Alternative Solutions
5. Summary and Recommendations

E. General Intelligence

1. Objectives
2. Discussion
3. Problem Areas
4. Alternative Solutions
5. Summary and Recommendations

F. Related Intelligence Activities

1. Objectives
2. Discussion
3. Problem Areas
4. Alternative Solutions
5. Summary and Recommendations

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III. ~~NON-DOD AGENCIES' R&D EFFORTS~~

A. CIA

1. Objectives :
2. Discussion
3. Problem Areas
4. Alternative Solutions
5. Summary and Recommendations

IV. ANALYSIS OF THE TOTAL INTELLIGENCE PROGRAM

A. Present Program

1. Deficiencies
2. Areas of Concern
3. Current Study Effort
4. Alternative Proposals

→ B. Future Program

1. As presently described
2. Deficiencies
3. Areas of Concern
4. Studies and Analyses which should be Undertaken to Develop

Alternative Solutions

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V. RECOMMENDED SOLUTION APPROACHES

- A. As a Result of Integrated Analyses
- B. Correlated to Final Reporting Needs
- C. By Major Functional Areas
- D. Solution Impact on Organizations, Major Program, and Financial

Posture

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DEPARTMENT OF THE AIR FORCE  
OFFICE OF THE SECRETARY  
MEMORANDUM

*[Redacted]*

*Wally, here are some NRO  
suggestions for your  
transition paper. Call  
if you need "more,  
different," etc.*

*[Redacted]*

*22 Nov*

HANDLE *[Redacted]* SEC *[Redacted]* 568-68

*[Large redacted block]*



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**FUTURE PROGRAMS (RDT&E)**

There are a number of potential problem areas within the satellite photographic collection program which tend to determine the course of future RDT&E efforts. It is not now anticipated that there will be extensive effort in the NRP for improved aircraft photo systems due to the increasing concern over the survivability of aerodynamic systems over denied areas.

The photographic satellite systems of the 1970's compared with those of the 1960's, are characterized by much higher quality of imagery, much longer on-orbit duration, and therefore, quantity of coverage, more efficient on-orbit operation and greater cost and complexity. One result of these characteristics is that collection requirements can be met with much lower launch rates. One penalty is that the responsiveness of the system is much less and the ability to provide timely data during periods of tension is less. Emphasis will be placed on developments leading to improved capabilities for quick response systems, perhaps with features of survivability. The techniques used may be near real time electronic return of imagery from a satellite with a [REDACTED]. Although such techniques are not presently [REDACTED], there are promising approaches which may yield future capability.



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## PHOTOGRAPHIC INTELLIGENCE RDT&E (NRP)

### Introduction

Within the NRP there are several types of RDT&E activities. There is an area of Exploratory Development and Advanced Development of components. This area has expended at about [REDACTED] annually or about 4% of the NRP and will be discussed further in this paper. There is a much larger area of RDT&E funding for the development of approved systems for operational uses; this area will not be discussed further.

### Objectives

The exploratory efforts of the NRP are executed by SAFSP and by CIA (OSP) elements of the NRO. The efforts are addressed to both photographic and electronic collection, but the majority of past efforts have been for photographic purposes. Individual tasks are applicable to either satellite or aerodynamic vehicle collection platform, but within recent years, the majority of the effort has been addressed to techniques applicable to satellite collection. There is no attempt to conduct a complete exploratory effort, but rather the activity is restricted to those which are unique to the NRO, and therefore, the majority of the effort is covert. The NRO relies heavily on the much broader RDT&E activities of the DoD for technological progress in areas such as launch vehicles, spacecraft technology, ground support equipment. In addition, the NRO conducts almost no fundamental research but supports only activities leading in an identifiable way to improved capability in mission areas endorsed by USIB.

### Discussion

To illustrate the nature of exploratory activities within the NRP, it is useful to consider a specific area which is unique to the NRO and where the NRO attempts to establish the

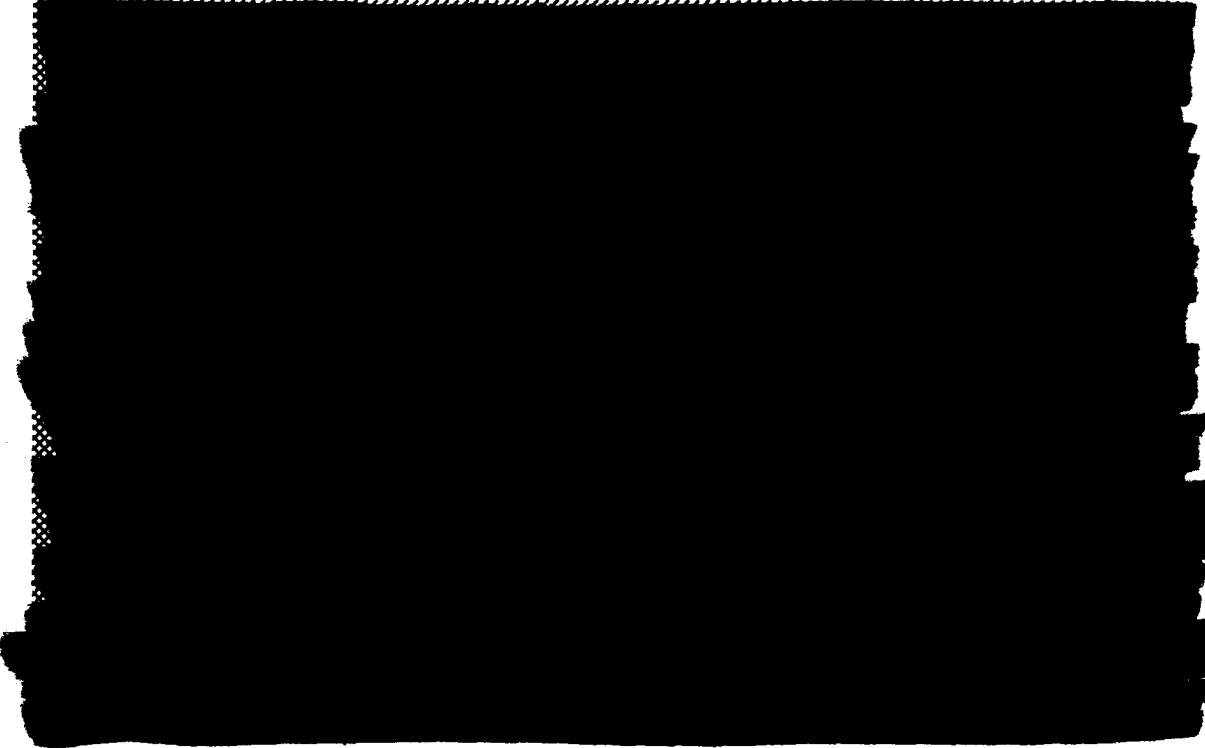
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base of national competence. Such an area is the technology



Another area of current emphasis relates to techniques for electronically transmitting imagery to ground stations. Such techniques are now seriously limited by the performance of the sensor but several possible approaches to a useful solution are being explored.

Other activities relate to development of fuel cells for electric power supplies, improved navigation and pointing techniques and methods for attitude control.



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The National Reconnaissance Program (NRP) is a single national program, under the executive management of the DOD, to meet the intelligence needs of the United States Government for the development, management, control and operation of all projects for the collection of intelligence and mapping and geodetic information obtained through overflight of denied foreign territory. The NRP commits its resources solely and directly in response to requirements and priorities established by the United States Intelligence Board. The plans and schedules for both satellite and aircraft reconnaissance overflights are submitted directly to the 303 Committee of the National Security Council for approval. The President's Foreign Intelligence Advisory Board regularly reviews and provides guidance on NRP plans and activities.

The NRP resources consist of aircraft and satellites covertly performing the following missions:

- A. Broad coverage photographic reconnaissance.
- B. High resolution photographic reconnaissance.
- C. Electronic signal intelligence collection.



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- 4. Electronics order-of-battle determination
- 5. Communications intelligence collection.

A typical broad coverage satellite mission provides

photography of an area with a ground resolution of five to eight feet

The satellite electronic signal intelligence collection vehicles provide repetitive coverage, and assure constant surveillance, of electronic transmissions emanating from within the Sino-Soviet bloc.

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