Civilians, Spies, and Blue Suits:

The Bureaucratic War for Control of Overhead Reconnaissance, 1961-1965

Jeffrey T. Richelson

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ACRONYMS AND ABBREVIATIONS

AFBMD	Air Force Ballistic Missile Division
AFOSP	Air Force Office of Special Projects
ARPA	Advanced Research Projects Agency
ARS	Advanced Reconnaissance System
CIA	Central Intelligence Agency
COMOR	Committee on Overhead Reconnaissance
DCI	Director of Central Intelligence
DDNRO	Deputy Director, National Reconnaissance Office
DDP	Deputy Director for Plans (CIA)
DDR	Deputy Directorate for Research (CIA)
DD/R	Deputy Director for Research (CIA)
DDS&T	Deputy Director for Science and Technology (CIA)
DNRO	Director, National Reconnaissance Office
DOD	Department of Defense
DPD	Development Projects Division (CIA)
DS&T	Directorate of Science and Technology (CIA)
ELINT	Electronic Intelligence
ICBM	Intercontinental Ballistic Missile
MIT	Massachusetts Institute of Technology
NASA	National Aeronautics and Space Administration
NPIC	National Photographic Interpretation Center (CIA)

NRO	National Reconnaissance Office
NRP	National Reconnaissance Program
NSC	National Security Council
NSCID	National Security Council Intelligence Directive
NSRO	National Satellite Reconnaissance Office
NSRP	National Satellite Reconnaissance Program
OMSS	Office of Missile and Space Systems (HQ, USAF)
OSA	Office of Special Activities (CIA)
OSI	Office of Scientific Intelligence (CIA)
OSP	Office of Special Projects (CIA)
PBCFIA	President's Board of Consultants on Foreign Intelligence Activities
PFIAB	President's Foreign Intelligence Advisory Board
SIGINT	Signals Intelligence
SPS	Special Projects Staff (CIA)
TSD	Technical Services Division (CIA)
USIB	United States Intelligence Board

I. INTRODUCTION

In its May 2, 1946 report, *Preliminary Design for an Experimental World Circling Spaceship*, the Douglas Aircraft Corporation examined the potential value of satellites for scientific and military purposes. Possible military uses included missile guidance, weapons delivery, weather reconnaissance, communications, attack assessment, and "observation."[1]

It was not until almost nine years later, on March 15, 1955, that the Air Force issued General Operational Requirement No. 80, which established a high-priority requirement for an advanced reconnaissance satellite. The document defined the Air Force objective to be the provision of worldwide surveillance or reconnaissance of "preselected areas of the earth" in order to provide warning of ballistic missile attack, collect intelligence to support national intelligence requirements as well as emergency war plans, and to determine "the intentions of a potential enemy and the status of his warmaking capability."[2]

Over the next five years the U.S. reconnaissance satellite program evolved in a variety of ways. The Air Force program was first designated the Advanced Reconnaissance System (ARS), then SENTRY. Management responsibility for SENTRY was transferred from the Air Force to the Advanced Research Projects Agency (ARPA), established on February 7, 1958, and then back to the Air Force in late 1959–by which time the program had been renamed SAMOS.[3]

Concern about the length of time it would take to achieve the primary objective of the SAMOS program–a satellite that could return its imagery by scanning the exposed film and returning the recorded data electronically–was expressed by the President's Board of Consultants on Foreign Intelligence Activities (PBCFIA) in an October 1957 report. The board stressed the need for an interim photographic reconnaissance system that would be available before either SAMOS or OXCART, the planned follow-on to the U-2 aircraft, would become operational.[4]

Such considerations led President Dwight D. Eisenhower to approve, also on February 7, 1958, a CIA-led program to develop a reconnaissance satellite. The program, which would soon be designated CORONA, focused on development of a satellite that would physically return its images in a canister–an objective that had been a subsidiary portion of the SAMOS program. The CIA would provide the payload, handle the contracting, and be responsible for security. The Air Force would be responsible for the boosters as well as launch and recovery operations. As was the case with the U-2 project, the CORONA program would be managed by the CIA's Richard M. Bissell, Jr., the DCI's Special Assistant for Planning and Development (who would officially become Deputy Director for Plans on January 1, 1959). Air Force Brig. Gen. Osmond J. Ritland, his U-2 deputy and Vice Commander of the Ballistic Missile Division, would reprise his role as deputy.[5]

In early 1958, there was still great uncertainty and even more concern about the extent of the Soviet missile threat. A November 1957 national intelligence estimate advanced from 1960-1961 to 1959 the date when the Soviets might have ten intercontinental ballistic missiles (ICBMs) available for operational use. While the U-2 overflights of the Soviet Union, which started in 1956, had alleviated concerns about a bomber gap, the flights were too few and covered too little territory to definitively confirm or refute claims of a substantial Soviet missile edge in the coming years.[6]

The urgency attached to developing a successful reconnaissance satellite led, in addition to the approval of the CORONA program, to the creation of a special Air Force office to manage the

SAMOS effort, and ultimately, to the 1961 creation of a top secret National Reconnaissance Program (NRP) and an organization to coordinate that program–the National Reconnaissance Office (NRO).

The NRO was different from most other government organizations in two ways–its very existence was classified and its key components were actually elements of the Air Force, CIA, and Navy. In the five years following their creation, the NRP and NRO were the subject of intense battles between the CIA and the civilian and uniformed Air Force officers who ran the NRO. At first the battles primarily focused on the authorities of the NRO and its director. Subsequently, a major aspect of the conflict involved decisions concerning new reconnaissance systems.

Only now, with the declassification of internal histories and supporting documents, as well as the willingness of key individuals to speak of their roles, is it possible to begin to examine in detail the battles that occurred between 1961 and 1965. The outcome of a number of those disputes had long-term implications for the way in which the NRP was managed for the next several decades as well as the nature of the U.S. reconnaissance systems which orbited the earth.

II. A DIRECT LINE OF COMMAND

On May 1, 1960 Francis Gary Powers took off from Peshawar, Pakistan on the U-2 mission designated Operation GRAND SLAM. The flight was planned to take him over the heart of the Soviet Union and terminate at Bodo, Norway. The main target was Plesetsk, which communications intercepts had indicated might be the site of an ICBM facility.[7] When the Soviet Union shot down his plane and captured him alive, they also forced Eisenhower to halt aerial overflights of Soviet territory and made the requirement for an operational reconnaissance satellite even more pressing.

However, both the CIA and Air Force programs were in trouble. Launch after launch in the CORONA program, eleven in all by May 1, 1960, eight of which carried cameras, had resulted in failures–the only variation was in the cause. (The first successful launch would come in August). Meanwhile, the SAMOS program was also experiencing difficulties, both with regard to hardware and program definition.[8]

In a May 31st meeting with Eisenhower, George Kistiakowsky, the president's Special Assistant for Science and Technology, noted that while both programs were having problems, he was chiefly concerned about SAMOS. He told Eisenhower that if all the requirements being proposed for the system were met the cost would be from five to ten billion dollars per year, a situation he characterized as "simply absurd." The heart of the problem, Kistiakowsky observed, was the lack of control over military intelligence requirements. The Strategic Air Command, he noted, wanted complete weekly, and in some cases daily, photographic coverage of the Soviet Union. After Eisenhower noted that certain aspects of the program, particularly intelligence requirements and scientific feasibility, could be taken up before the National Security Council (NSC), Kistiakowsky suggested setting up an ad hoc committee. His predecessor as science adviser, James R. Killian of the Massachusetts Institute of Technology (MIT), would be a good candidate to chair the panel.[9]

The president then instructed his military aide, General Andrew Goodpaster, to draft a directive to launch a study. The result was a June 10 memo to Kistiakowsky, in which Eisenhower noted that he had "received various items of information giving concern as to the scope, basis and feasibility of our reconnaissance satellite projects." Goodpaster was also instructed to tell Secretary of Defense Thomas Gates that the president wanted to "see a clear delineation of what they [the satellites] are and what needs they are supposed to fill, together with an assessment of feasibility."[10]

The president went on to note that the projects should be brought before the National Security Council (NSC) with particular focus on two particular phases:

a. The intelligence or "surveillance" requirements this program is being designed to fill, including the soundness of the concepts on which these requirements are based, and the resulting validity, as well as the procedures for, and supervisory control over, their preparation.

b. (1) The technical feasibility of the planned systems in relation to the requirements, development schedules and technical direction of the program, together with (2) the effectiveness of control over the scope and characteristics of the operational systems, with particular attention to means for assuring early and efficient utilization of such systems.[11]

The memo went on to assign responsibility for the study of *a* and *b(2)* to Gates, while Kistiakowsky was assigned responsibility for *b(1)*. Gates appointed a team which consisted of Under Secretary of the Air Force Joseph V. Charyk, who had previously served as the Air Force's chief scientist and its Assistant Secretary for Research and Development, and Director of Defense Research and Engineering Herbert F. York (who, after he suffered a heart attack, would be replaced on the panel by his deputy, John H. Rubel).[12]

Kistiakowsky, received assistance from a group of key scientists who served as a Panel on Satellite Reconnaissance. Co- chairing the panel were MIT Corporation chairman Killian and Edwin H. Land, chairman of the Polaroid Corporation. Both had played key roles in the Technological Capabilities Panel, the President's Scientific Advisory Committee, the PBCFIA, and in convincing Eisenhower to approve the CORONA program. Also serving were William O. Baker of Bell Labs, Carl Overhage of MIT's Lincoln Research Institute, Harvard University nuclear physicist Edward M. Purcell, and Bissell, now Deputy Director for Plans as well as CORONA project director.[13]

After Killian became aware of the mandate of the Gates group, he approached the Defense Secretary and they "agreed upon a procedure which achieved full cooperation between the two groups," allowing the two groups to produce a joint report for presentation to Eisenhower.[14]

In mid-July, York was briefed by a defense advisory group headed by Baker. In addition to addressing the technical problems with SAMOS, the group also raised the question of program management. It told York that operational and/or executive control of the SAMOS program should be exercised "by an organization capable of sponsoring both military and civilian peacetime utilization, and of expeditiously and effectively exploiting the results."[15]

It proposed that responsibility for overall direction, operational policies and plans, and priorities for military and civilian applications of SAMOS be assigned to a new or existing office within the Office of the Secretary of Defense–such as the Office of the Assistant to the Secretary of Defense for Special Operations. Their recommendation did allow for continued Air Force research and development activities.[16]

Similar recommendations had been made by agencies inside and outside of the Defense Department. The Air Force viewed the recommendations with concern, recommendations that largely stemmed from the belief that while SAMOS would be a major contribution to national security, the Air Force appeared to want to develop and operate SAMOS largely for its own purposes.[17]

The Air Staff spent much of July and August worrying about and opposing a variety of management proposals that would weaken Air Force control over SAMOS. These included, in addition to creation of a special OSD office, establishment of an interdepartmental agency, and assignment of executive authority to a special committee of the NSC.[18]

Thus, on August 3, Kistiakowsky recorded in his diary that the:

> ... notable event of the day was a series of phone calls from such as Charyk and [Ivan] Getting [President of the Aerospace Corporation], the result of a rumor spreading in the Pentagon concerning the supposed recommendation of our SAMOS panel to transfer its management to the CIA. I assured everybody of my innocence, but urged Charyk that the organization should have a clear line of authority and that on the top level the direction be of a national character, including OSD and CIA and not the Air Force alone.

Kistiakowsky went on to note that, "Quite obviously, the Air Force is trying to freeze the organization so as to make a change more difficult by the time the NSC is briefed."[19]

On August 18, the same day that the first successful CORONA mission began, Kistiakowsky met with Charyk, Land, and Overhage, in Cambridge. Kistiakowsky recalled that "the whole briefing paper was still in such a lousy state that I spoke rather harshly." However, Land and others apparently spent the subsequent weekend working on the paper and came up with a version that, according to Kistiakowsky, came "out very well, because we will make an unanimous presentation, and the Air Force, i.e. Charyk, have been sufficiently influenced by our findings to develop a plan which both technically and in terms of management will be endorsed by our panel."[20]

The joint report was presented to the President and NSC on August 25. Among those attending were Eisenhower, Vice President Richard Nixon, Gates, Goodpaster, Director of Central Intelligence Allen Dulles, Joint Chiefs of Staff chairman Nathan Twining, and Kistiakowsky. Review group members attending included Killian, Land, Rubel, and Charyk.[21]

The essence of the report was provided in a series of presentations by panel members. After introductory remarks by Killian, Charyk briefly outlined the history of the satellite intelligence program. He was followed by Edwin Land, who focused on the technical capabilities and limitations of satellite reconnaissance techniques and made recommendations for technical modifications in the program. Charyk then presented a detailed summary of the new SAMOS development plans and discussed technical, operational, and fiscal aspects of the revised program. The presentation concluded with the joint proposal for a "more simplified management of the Samos program for the purpose of expediting the program and increasing the opportunity for rapid and sure technical progress."[22]

The report from which the presentations were derived observed that the "overriding intelligence requirement at the present time is information on the operational status of Soviet missile launch sites." The panel then asked, "Can we look to Samos to yield results of the necessary quality within a short time?" and concluded that "as far as electronic readout is concerned, the answer is NO."[23]

Killian and his co-panelists then recommended a "carefully planned program with simplified management" that would emphasize high-resolution photography and recovery of film capsules. With regard to the management approach they further specified that "this program be managed with the directness that the Air Force has used on occasion, with great success, for projects of overriding

priority." They further suggested that "this can be best accomplished by a direct line of command from the Secretary of the Air Force to the general officer in operational charge of the whole program."[24]

Eisenhower approved a first SAMOS launch in September, as well as reorientation of the program; with developing high-resolution film-return systems being assigned highest priority while the electronic readout system would be pursued as a research project. With regard to SAMOS management, he accepted the Killian panel's suggestion, duplicating some of their language in his written instructions. In his office, prior to the meeting, he gave Dulles approval to proceed with "a program of improvement" to the CORONA system.[25]

The following day, he signed a memorandum affording special security protection to the product of satellite reconnaissance operations – transforming the TALENT security system, which had been established to protect the product of U-2 missions, into the TALENT-KEYHOLE Security Control System. The memo specified that individuals could only discuss information "within this system" with individuals they knew to be on the list of those authorized to receive such information.[26]

Secretary of the Air Force Dudley C. Sharp wasted little time creating the recommended new structure and procedures. In the following five days, directives to enact the mandated changes were drafted and approved. On August 31st Sharp signed Secretary of the Air Force Order 115.1, establishing the Office of Missile and Satellite Systems (OMSS) within his own office. The office's director was to assist the Secretary "in discharging his responsibility for the direction, supervision and control of the Samos project." He was also made responsible for "maintaining liaison with the Office, Secretary of Defense and other interested Governmental agencies on matters relative to his assigned responsibilities."[27]

With Order 116.1, Sharp designated Brig. Gen. Robert E. Greer, Assistant Chief of Staff for Guided Missiles, as Director of the SAMOS project. Greer was to organize a project office at the Los Angeles headquarters of the Air Force Ballistic Missile Division (AFBMD) as a field extension of the Office of the Secretary of the Air Force and carry out development of the satellite. The order very specifically stated that, "The Director is responsible to and will report directly to the Secretary of the Air Force." Greer was also appointed as deputy commander of the ballistic missile division (Ritland having replaced Bernard Schriever as commander in April 1959) to facilitate coordination between the SAMOS program and relevant AFBMD activities.[28]

Sharp also delivered the message directly to the Air Force's Chief of Staff, in the form of a September 13 memorandum. The memo specified that "no intermediate review or approval channels" would exist between the SAMOS field office and the Secretary's office. In addition, briefings would be given on a strict need-to-know basis to Air Staff and other Air Force representatives as required for SAMOS support purposes or in the coordination of related matters. From a formal standpoint, the only regular contact between the SAMOS organization and the Air Staff would be through the latter's three representatives on the Satellite Reconnaissance Advisory Council that Sharp had established.[29]

The impact of the orders, in practice, was that the director of the SAMOS project would report directly to Charyk, who would report directly to the Secretary of Defense.[30] In addition, Charyk "reunited" the Air Force CORONA effort with the SAMOS effort–apparently placing the West Coast CORONA office under the Director of the SAMOS Project–although the connection was more of a "loose liaison" rather than a structural integration. The objective was to insure a general consistency of objectives and management procedures, rather than to combine the programs. In addition, he established a direct liaison arrangement with Bissell.[31]

No secrecy was attached to the management changes regarding SAMOS, which were reported in matter-of-fact fashion by *Aviation Week*, and listings for both the Director of the SAMOS Project and Office of Missile and Satellite Systems (with a subheading for Satellite Reconnaissance) appeared in the April 1961 issue of the Pentagon's unclassified telephone directory. The existence of SAMOS had been unclassified from the beginning, and Eisenhower had specifically mandated that it would remain so–although specifics of its operations and its product would be classified, as would efforts toward developing high-resolution systems.[32]

III. CREATION AND CONFRONTATION

A National Effort

The organizational changes resulting from the decisions of August 25, 1960 and their implementation left some unsatisfied. In particular, Killian and Land, looking at the successful Air Force-CIA partnerships that had existed with respect to the U-2, OXCART and CORONA programs, pushed for permanent and institutionalized collaboration between the two organizations. They were also concerned that Bissell had taken the reconnaissance portfolio with him when he became Deputy Director for Plans, with his Development Projects Staff becoming the Development Projects Division (DPD) of the Plans directorate. In addition to believing that such activities should be separated from conventional espionage and covert action, they probably were also concerned that Bissell was too involved in traditional covert activities to give reconnaissance operations sufficient attention–a problem Bissell would subsequently acknowledge.[33]

After the Kennedy administration took office the push to establish a permanent reconnaissance organization took on additional life. Charyk recalls that there was an increasing feeling in the new administration, particularly by Secretary of Defense Robert McNamara and his deputy, Roswell Gilpatric, that a better, more formalized relationship was required.[34]

In addition, in the spring of 1961, Charyk became concerned about the status of his authority within the Defense Department–with the Army and Navy expressing interest in obtaining direct control of satellite programs–and raised the issue with McNamara. The Defense Secretary suggested that he prepare a paper on the problem and a proposed solution, and then take the paper to Defense Department General Counsel Cyrus Vance, who was generally agreeable to a consolidation of Defense Department satellite programs under Charyk. Vance urged an even more extensive consolidation with regard to reconnaissance–one that would encompass all overflight programs, aerial and space, and provide for central management of the entire effort.[35]

Furthermore, it had become clear that the CORONA program would not simply be an interim solution until SAMOS became operational, if it ever did. (It didn't). By April 1961 the program to further improve CORONA with a two-camera, stereo, system was sufficiently far along to receive its own codename, MURAL. In March, Charyk recommended that the development be entrusted to "the existing management structure and control"–the Air Force and CIA. The expectation of a prolonged CIA role in satellite reconnaissance, led to further consideration of formalizing the Air Force-CIA arrangement. Charyk discussed the issue with McNamara, Vance, Killian, General Maxwell Taylor, Chairman of the Joint Chiefs of Staff, and Bissell.[36]

In contrast to the other senior officials consulted, Bissell opposed the idea of formalizing the arrangement, and expressed his opposition in a memorandum. He believed that the informal working relationship was working well, and there was no need for change. However, responding to the pressure to revise the management arrangement, Bissell, whose stature had been weakened by the Bay of Pigs fiasco in April, requested special assistant Eugene Kiefer to draft a DoD-CIA agreement. Kiefer delayed, waiting for additional guidance and details.[37]

Before Kiefer could produce a draft, Charyk delivered two drafts of a Memorandum of Understanding (MOU) on the "Management of the National Reconnaissance Program," dated July

20 and July 21, 1961, which had been produced by Col. John Martin, deputy director of the Office of Missile and Space Systems.[38] On the 24th, he sent the draft MOU's, an analysis of the Pros and Cons of the MOU's, a previously prepared "Statement of the Problem", and a cover memorandum, to McNamara.

In his "Statement of the Problem," Charyk noted that since the decisions of August 1960, "several factors have arisen which make imperative the immediate establishment of a new understanding concerning the management of the entire national satellite reconnaissance effort." The first of the three factors was that "key personnel have changed, and with the change, the full impact of the original SAMOS management philosophy has been obscured." As a result of personnel changes, key personnel no longer understood the intentions and objectives which were conveyed by verbal instructions or in "purposely incomplete, vague or misleading directives"–intentions and objectives which were "unequivocally understood by key personnel at the time [August 1960]." It was necessary to reach a "complete understanding" with the newcomers "as to the full intent behind the special SAMOS management structure."[39]

In addition, the entry of mapping and geodesy issues into the reconnaissance program "threaten to expand greatly the number of people and agencies involved in management of these projects." One aspect of the problem was that the covert ARGON mapping satellite project used the same cover (DISCOVERER scientific launches) as CORONA, and competed with it for vehicles and launch pads. In addition, the judgment that higher quality maps could be produced by employing mapping photography along with reconnaissance photography implied that SAMOS and CORONA imagery would be used along with ARGON imagery to produce geodetic and mapping products. As a result, the choice of technical characteristics for mapping and geodetic systems would be influenced by the potential contribution of reconnaissance photography. Consequently, a "close coupling" of the two types of projects would be required, to the point where some satellites might carry both types of payloads at the same time.[40]

Mapping and geodesy also complicated matters because any assignment of such responsibilities separate from satellite reconnaissance responsibilities would result in "two different major Departments becoming involved ..." The resulting management structure for mapping and geodesy would weaken "the streamlined reconnaissance management structure" and greatly expand the number of individuals with knowledge of "sensitive reconnaissance program matters." Charyk gave as an example the proposed establishment of an Army-managed successor to ARGON, designated TOMAS/VAULT.[41]

Third, "international incidents and situations have contributed to a substantial increase in the political vulnerability of [SAMOS]," as its reconnaissance mission had been acknowledged from the beginning. Furthermore, political vulnerability extended to "all over-flight photography for reconnaissance, mapping and geodesy as well as electronic signal collection." To cope effectively with the situation required close coordination between overt and covert projects, and management "characterized by high discipline and response to national direction."

Reducing political vulnerability required a close connection between technical program control of all reconnaissance projects and public information policies, and the same policies must be

applied to both sensitive and non-sensitive satellites–something that was difficult to achieve, Charyk argued, when such projects were run by a multitude of agencies and offices.[42]

To alleviate such problems, Charyk's paper recommended a number of actions, including creation of "a single streamlined authoritative management structure", the National Satellite Reconnaissance Program (NSRP), with the program responsive only to the requirements of the United States Intelligence Board (USIB) for photographic and signals collection.[43]

One alternative for implementing the plan, called for the Secretary of Defense to designate the Under Secretary of the Air Force as his Special Assistant for Reconnaissance and delegate to him responsibility for managing the reconnaissance program. The Special Assistant position would be covert.[44]

In addition, a covert National Satellite Reconnaissance Office (NSRO) would be established. The NSRO would consist of a Director and Deputy Director, each with a very small staff, not totaling over 20. The Under Secretary of the Air Force would hold one of the two top positions, the Deputy Director for Plans, CIA the other.[45]

According to Charyk's original plan, the NSRO would not have a single office for either the Director or Deputy Director. It "would not direct anything as an office; the actions taken would be through the authority which the Director and Deputy held over their respective agencies." The NSRO would "provide a formalized method of effecting a close-knit coordination of the CIA and the DOD, and would greatly enhance the harmonious division of project responsibilities between them."[46]

Charyk went on to suggest a division of responsibilities between the Air Force and the CIA. The former would be responsible for program approvals, R&D management, technical reviews, scheduling, financial management, and overt contract administration. The CIA would handle programming of the satellite, security, communication, and covert contract administration. Specific management procedures would be worked out in detail by the Director and Deputy Director of the NSRO.[47]

In the field, the Director of the SAMOS Project would covertly be designated the Director of Satellite Reconnaissance Systems. He would work directly with field units of the CIA as approved by the NSRO. As a result, "all contracts in the program would be brought under a single, effective, coordinated review and control." In addition, all projects would come under a single security control system.[48]

Charyk also offered an alternative arrangement, based on the premise that the NSRP could not be conducted either solely by the CIA or DoD. While the CIA could not carry out the massive overt operations required, DoD would not be able to effectively manage the covert side of the program. In addition, the interaction with the CIA concerning data analysis and requirements meant that an intimate working relationship was required.[49]

The alternative arrangement envisioned a CIA official as director of the NSRO, with complete program responsibility, and the Under Secretary of the Air Force as deputy director. The

CIA official would also serve, presumably covertly, as a DoD official, exercising his authority over DoD units in the name of the Secretary of Defense. The Air Force undersecretary would direct the actions of Air Force units.[50]

Neither of the MOUs submitted by Charyk was identical in content to either of the proposals contained in his earlier statement of the problem. In the primary MOU, the contents of which Charyk had discussed with Land and Maxwell Taylor, the NSRO became the National Reconnaissance Office (NRO)–a result of the decision, as suggested by Vance, to assign the new office responsibility for aerial overflight programs.[51]

The primary memo also specified establishment of a National Reconnaissance Program (NRP) consisting of "all satellite and overflight reconnaissance projects whether overt or covert," and including "all photographic projects for intelligence, geodesy and mapping purposes, and electronic signal collection projects for electronic signal intelligence and communications intelligence." To manage the program the NRO would be established on a covert basis. The NRO director (DNRO) would be the Deputy Director for Plans, CIA (at the time still Richard Bissell) while the Under Secretary of the Air Force would serve as Deputy Director (DDNRO). The DNRO would be responsible for the management of CIA activities, the DDNRO and the Air Force for Defense Department activities. The DoD, specifically the Air Force acting as executive agent, would be primarily responsible for technical program management, scheduling, vehicle operations, financial management and overt contract administration, while the CIA would be primarily responsible for the targeting of each satellite. The office would operate under streamlined management procedures similar to those established in August 1960 for SAMOS. In addition, a uniform security control system would be established by the NRO for the NRP, and the NRO would be responsive only to requirements and priorities of the USIB.[52]

The draft memorandum combined elements from the earlier "Statement of the Problem"–making the CIA Deputy Director for Plans the Director of the NRO, dividing responsibilities between the CIA and Air Force, directing reconnaissance activities through the *overt* offices held by the Director and Deputy Director, and splitting executive functions–with the Director in charge of CIA activities while the Deputy Director focused on Defense Department functions.

With regard to the key elements concerning the development and employment of the satellite–technical direction, scheduling, and targeting–the Air Force was to be responsible for the first two, although the CIA had been responsible for technical management with regard to CORONA. The CIA would continue to be responsible for targeting in order to fulfill intelligence requirements. Such a proposed division of responsibilities was possible at the time, given the harmonious nature of Charyk's relationship with Bissell. In the future, such issues would be the cause of acrimony.

The secondary MOU was prepared at the suggestion of Cyrus Vance, not discussed with anyone else, and offered a quite different solution to the problem. As with the primary memo, it established a NRP covering both satellite and aerial reconnaissance operations. But rather than a jointly run program, it placed responsibility for management solely in the hands of a covertly appointed Special Assistant for Reconnaissance, to be selected by the Secretary of Defense. The office of the Special Assistant would handle the responsibilities assigned to the NRO in the other

MOU. The CIA would "assist the Department of Defense by providing support as required in areas of program security, communications, and covert contract administration."[53]

The assessment of pros and cons listed five pros for the first solution: it would consolidate responsibilities into a single program with relatively little disruption of established management, it represented a proven solution, no overt organizational changes would be required, both agencies would retain authoritative voices in their areas of expertise, and it provided a direct management structure with a minimum number of echelons. The two cons noted were the division of program responsibility between two people, and that "successful program management depends upon mutual understanding and trust of the two people in charge of the NRO."[54] It would not be too long before that later observation would take on great significance.

In contrast, there were more cons than pros specified for the second solution. The only two points in its favor were the consolidation of reconnaissance activities into a single program managed by a single individual and the assignment of complete responsibility to the agency (DoD) with the most resources. Foremost of the six cons was the need for DoD to control and conduct large-scale covert operations, in as much as it was an entity "whose normal methods are completely foreign to this task." The other five negatives were the disruption to the existing management of some projects (a reference to CORONA), the departure from successful experience in earlier covert projects, the requirement for overt organizational change, the subjugation of CIA to DoD, "requiring ... DoD to control how some of the special privileges of the CIA are to be used," and a management structure more complex than in the alternative solution.[55]

On July 28, McNamara instructed Charyk to continue his discussions with Killian, Land, Taylor, Vance, and Bissell in order to resolve any organizational difficulties that threatened to impede the satellite reconnaissance effort. Bissell suggested one change in wording. On August 7, Charyk submitted for McNamara's signature a MOU with the same provisions as the primary MOU of July 20–including assigning the CIA's Deputy Director for Plans the position of Director of the NRO.[56]

McNamara had no problems with Charyk's effort and signed it sometime on the 7th. Director of Central Intelligence (DCI) Allen Dulles however, was not pleased, and "felt certain changes were desirable." In a telephone conversation with Bissell on the morning of the 8th, Dulles, in Bissell's view, accused him, as he would write Dulles, with respect to the Bay of Pigs and the NRP agreement, of "making plans or conducting negotiations either without informing you or in a manner to commit you prior to consultation or else involving substantive positions unacceptable to you."[57]

In a letter to Dulles written that same day, Bissell went on to remind Dulles that he had opposed the whole NRO/NRP arrangement to begin with and "consistently made it clear that I was most doubtful about any personal participation, either in the near future or later." However, Killian and Land, "on their initiative" took the matter up with McNamara and later with General Taylor. Bissell continued that he had advised Dulles on every occasion of every conversation in which he (Bissell) was involved.[58]

He went on to explain that he had received Charyk's primary proposal "sometime after it was drafted," and didn't forward it to Dulles because Charyk told him that the draft might change. Bissell

received word on the 7th from Charyk that the wording was final, and the paper was ready for submission to both Dulles and McNamara. Bissell did plead guilty to one "major miscalculation" in believing that since the paper "proposed so little de facto change in the status quo" it would not raise "a major issue in your mind or that it would be so displeasing to you." Bissell went on to offer his resignation.[59]

Bissell did not specify in his letter what Dulles objected to, but based on his subsequent comments and other documentation it is clear that one problem was Bissell's prospective role as NRO director, with authority over the activities of DoD personnel. Dulles would tell Bissell that he could not have a CIA officer in that position, and subject to blame in the case of a fiasco. In addition, Dulles favored specifying the arrangements in a letter rather than an interagency agreement.[60]

McNamara, according to one account, may have had second thoughts about the advisability of entrusting the entire Defense Department reconnaissance program to a CIA official. In addition, there may have been CIA reservations about letting Charyk control the CIA satellite program–which the provisions of the MOU would have permitted, with its assignment of technical program control to the DoD.[61]

As a result of Dulles objections, it would not be until September 5 that a redrawn agreement was concluded. The next day, a letter from Deputy Secretary of Defense Roswell Gilpatric to Dulles, confirmed "our agreement with respect to the setting up of the National Reconnaissance Program."[62]

The letter specified the creation of a NRP, with the same scope as in the MOU signed by McNamara. It also, as in the earlier document, established an NRO, a uniform security control system, and specified that the NRO would be directly responsive to the intelligence requirements and priorities specified by the USIB. And, it specified implementation of NRP programs assigned to the CIA through the Deputy Director for Plans. It designated the Undersecretary of the Air Force as the Defense Secretary's Special Assistant for Reconnaissance, with full authority in DoD reconnaissance matters.[63]

There were, however, two significant differences from the August 7 memorandum. The NRO would be under the direction of the DDP and Under Secretary of the Air Force *acting jointly* – as Dulles had proposed. McNamara had left the acceptability of the DCI's proposal to Charyk, who approved–although both he and Bissell had earlier expressed the view that a single executive was preferable.[64]

The letter also contained no specific assignment of responsibilities to either the CIA or Defense Department, stating only that "The Directors of the National Reconnaissance Office will ... insure that the particular talents, experience and capabilities within the Department of Defense and the Central Intelligence Agency are fully and most effectively utilized in this program."[65]

Thus, it did not formally divide the key responsibilities for current and future reconnaissance programs, leaving that to be worked out by Bissell and Charyk and their successors, either on a case-by-case basis, or by formal agreement.

A Hard Sell

As a result of the September 6 agreement all overflight reconnaissance programs became part of the NRP. Included were the SAMOS (in a variety of forms–electronic readout, film-return, and ferret), CORONA, MURAL, ARGON, and GAMBIT satellite programs. In addition, the NRP included the IDEALIST (U-2), OXCART (A-12), and ST/POLLY aerial reconnaissance programs. Table 1 provides essential data on the programs.

NRO did not as easily take hold of the hearts and minds of many involved in those programs–both in the CIA and Air Force. Many years later, Eugene Kiefer, would write that when Bissell showed him and DPD official John Parangosky the first of the memos on the NRO his first thought was "why do we need this?" Perhaps more revealing was the title Kiefer gave to the portion of a 1988 letter in which he discussed the creation of the NRO: "The Unholy Alliance."[66]

At the CIA, in the aftermath of the agreement, there was some middle management concern, although Bissell's stature in the CIA, particularly with regard to reconnaissance, helped alleviate concerns. However, CIA staffers were aware that Bissell would be gone someday, as he would be sooner than perhaps they anticipated.[67]

Out on the West Coast, there was no joy either. Some recall greeting the news with a shrug.[68] According to one official history, the Air Force CORONA office wondered what was to be gained by transferring CORONA to the NRO. The existing management arrangement with the CIA CORONA Office was "relaxed, friendly, and capable of producing coordinated decisions with unique responsiveness." Paul Worthman, who handled the covert aspects of the Air Force's CORONA work, and Colonel Lee Battle, who managed the program office, both regarded the new NRO with suspicion and concern, fearing it was a first step in transforming CORONA's uncomplicated management arrangement into a rigid classical bureaucracy. The Director of the SAMOS Project, General Robert Greer, was also concerned. Since all was working well, why fix it?[69]

Trouble at the Door

Different concerns were shared by some of those at a higher level of the national security establishment. While the terms of the letter from Gilpatric to Dulles satisfied both McNamara and Dulles, the NSC Special Group, responsible for supervising intelligence activities, was unwilling to ratify the agreement–chiefly at the urging of Maxwell Taylor. His feeling was that the national reconnaissance effort was too important to entrust to divided management. Assigning the directorship to Bissell as originally intended was also unacceptable to the group–whether because of the Bay of Pigs or the prospect of having a CIA official with authority over DoD assets is not clear. At the same time, CIA middle management considered it unacceptable for Charyk to be the sole head.[70]

Little progress toward resolving the issue would be made in the winter of 1961-1962, although both Charyk and some CIA officials confronted the issues. On November 15, three senior Development Projects officials discussed the future of the NRO with a representative of Charyk. The

Table 1: The National Reconnaissance Program: September 6, 1961.

SPACE PROGRAMS

Program	*Executive Agent*	*Mission*
CORONA	CIA	Photorecon/ via Film Recovery
ARGON	CIA	Mapping/via Film Recovery
MURAL*	CIA	Photorecon/via Film Recovery
SAMOS 101A	AFOSP	Photorecon/via Electronic Readout
SAMOS 101B*	AFOSP	Photorecon/via Film Recovery
SAMOS 201*	AFOSP	Photorecon/via Film Recovery
SAMOS FERRET*	AFOSP	ELINT/targeted on radars
GAMBIT*	AFOSP	High resolution Photorecon/via Film Recovery

AERIAL PROGRAMS

Program	*Executive Agent*	*Mission*
IDEALIST (U-2)	CIA	Photorecon/ ELINT
OXCART (A-12)*	CIA	Photorecon
ST/POLLY	CIA	P2V Neptune ELINT flights into China

* = in development

representative told the CIA officials that he "interpreted" Charyk as feeling there were three basic missions to the NRO–to formalize inter-agency relationships regarding existing reconnaissance programs and make them function effectively, to put the full abilities of the Air Force and CIA in a position to get the best job possible done, and to design and embark on effective programs to replace current programs if they failed, were compromised, or became obsolete.[71]

The functions that Charyk's representative suggested the CIA assume included covert contracting, security, cover, and support cover mechanisms for CIA or Air Force covert programs.[72] That was not inconsistent with a proposal completed a week later by Charyk's staff. On November 22, they completed a draft statement of "NRO Functions and Responsibilities," which suggested the transfer of the ARGON, MURAL, and, possibly, the IDEALIST (U-2) and OXCART (A-12) programs to the Air Force/NRO. CORONA itself was not a concern to the drafters because by November there were only a few more of the single-camera CORONAs left. (Subsequently, the MURAL program would be absorbed into CORONA.)[73]

The issue of NRO management remained of concern to both the Special Group and the President's Foreign Intelligence Advisory Board (PFIAB), as the PBCFIA had been renamed, but no actions were taken. Possibly, objections were advanced to any proposed solution. In addition, there was the unsettled situation at the CIA. Dulles left office on November 29th, a departure made inevitable by the Bay of Pigs and announced several months earlier. Bissell was also on his way out, at least as Deputy Director for Plans.[74]

Dulles was replaced by John McCone, a staunch Republican–the type often referred to in the press as "rock-ribbed." McCone came to the CIA with both impressive credentials in private industry and government service. Born in 1902, and trained as an engineer, he went on to become executive vice-president of the Consolidated Steel Corporation and then found his own engineering company, which became a major builder of ships and aircraft during World War II. His government service included stints as the Under Secretary of the Air Force (1950-51), and Chairman of the Atomic Energy Commission (1958-60).[75]

By this time, and going beyond the November statement on organization and functions, Charyk favored consolidating all program functions in the NRO "without regard for previous arrangements," possibly spurred by the expectation that Bissell would not be on the scene for much longer. He was also convinced that funding and contracting authority had to be located in the NRO and that it would be wise to avoid giving the CIA responsibility for either research and development or technical management of NRP projects. Charyk expected that the conclusion of the original CORONA program would open the door to a new era.[76]

By mid-January 1962, his new concept had been reduced to working papers and had become the topic of renewed discussions between Gilpatric and McCone. The proposal from Charyk's staff contemplated a unified program office, with the office headed by an Assistant for Reconnaissance reporting directly to the Secretary of Defense, and a clear delegation of authority from both CIA and DoD.[77]

The reconnaissance function would be concentrated in the person of the Secretary of Defense, who would be the executive agent for both CIA and DoD. The Secretary would delegate

the function to his Assistant for Reconnaissance. The proposed assignment included all NRP projects covert and overt, with authority over fiscal as well as technical and operational matters.[78]

A proposal for a new arrangement was submitted to the CIA on January 17, 1962 and returned in heavily modified form in March. In the CIA version, the NRO would plan, develop, and monitor programs, but the responsibility and authority for program management would be exercised either by the CIA or DoD as required by program proprietorship. In the CIA's view, the NRO should insure some general coordination of independently conducted programs. That view was similar to the arrangement originally suggested by Charyk, at a time when his CIA counterpart was someone with whom he had a smooth working relationship.[79]

By April 11, a NRO Staff revision of the CIA submission was completed. It restated the basic rule of NRO responsibility for managing and conducting the entire reconnaissance program, but allowed for delegation to the CIA of responsibility for administration, procurement, and contracting for covert programs assigned to the agency. In contrast to the CIA draft, which had specified that the Agency must concur in decisions on scheduling, the NRO version provided that the NRO director would assign operational responsibility to the DoD or CIA in accordance with guidance from the Secretary of Defense and DCI.[80]

Enter Scoville

In the midst of the back and forth concerning the future and functions of the NRO, a new CIA directorate was established that would play a key role in the CIA-NRO relationship.

Killian and Land had concluded that two interrelated problems had developed with the CIA's effort in the science and technology area. The first was the promotion that made Richard Bissell responsible for CIA's espionage and covert action operations. As noted earlier, when Bissell assumed command of the Plans directorate in early 1959, he took the U-2, OXCART, and CORONA programs with him and the stand-alone Development Projects Staff became the Plans directorate's DPD.[81] And as also noted earlier, they were probably also concerned that with DPD as but one of a number of divisions in Plans, it would not receive the same level of attention from Bissell or his successor as it had in the past–and that the status of its activities would be reduced.[82]

In addition, both Killian and Land looked at science and technology with reverence, and something to be kept away from "contamination" by the "dirty tricks" activities of Plans. Land was particularly upset at the employment of U-2s in the Bay of Pigs disaster. At one of McCone's first meetings with the PFIAB, he discovered that Killian, Land, and others were concerned that the Agency's scientific and technical efforts might be limited by the continuing association with Plans. To protect and strengthen those efforts they recommended creation of a separate directorate that would focus exclusively on science and technology.[83]

Following the meeting McCone established a three-man working group to review the CIA's organizational structure and activities. CIA Inspector General Lyman Kirkpatrick served as chairman, with PFIAB Secretary Patrick J. Coyne and retired Army General Cortland Schuyler, an adviser to New York Governor Nelson Rockefeller, making up the rest of the committee. Among the

topics discussed was the suggestion that a research and development directorate be established. As part of their study, they asked all deputy directors to comment on the idea. In a still unreleased (and apparently lost) January 10 memo on "Technical Intelligence Collection," Bissell expressed his adamant opposition to the idea, explaining why he believed the DPD's activities should be managed by his directorate.[84]

McCone, at a January 22, 1962 meeting of the PFIAB, told Killian that he planned to establish a deputy director for technical collection under whom all of the agency's scientific activities would be consolidated. Bissell's opposition to the PFIAB's desire to remove DPD from his control, combined with the fallout from the Bay of Pigs, further strained relations with Killian and Land.[85]

But, despite his opposition to the creation of a new directorate, Bissell was the leading candidate to become its first head. In the fall of 1961, McCone and Bissell had agreed that he would resign at the end December. Not long after, McCone's wife died and he requested Bissell stay on until he determined if he would continue as DCI. When he returned to Washington in January, McCone decided that he wanted Bissell to become head of the new directorate. After receiving approval from Attorney General Robert Kennedy and then President Kennedy, McCone extended an offer.[86]

Since the Kennedys had not changed their mind about the need for Bissell to leave the DDP job, it was a choice between the new directorate or departure. Bissell chose to depart. In a letter to his daughter, he explained that he felt the new position would be a demotion; that it would be very awkward to be cut off from the covert operations he had planned. "I have a horror," he wrote "of hanging on here to a job that is not at the center of things, as so many people do."[87]

McCone was apparently under the impression in early February that Bissell was seriously considering accepting the position. In a February 7 letter to the DCI, Bissell wrote that it had become apparent to him that "I have not conveyed to you clearly my feeling with respect to my own future and have allowed a serious misunderstanding to arise." He noted that "you have done me the great honor of urging that I remain ... as Deputy Director (Research)." But, he had already "expressed to you ... my serious misgivings about the organizational validity of this proposal" as well as his "reluctance, as a matter of personal preference, to assume certain of the responsibilities that would be involved."[88]

With regards to reconnaissance projects such as CORONA, OXCART, and SAMOS, he agreed that "responsibility for these special projects could well be placed elsewhere than in the Clandestine Service and that they would benefit from more top management attention than I have been able to give them for the past several years." However, he questioned whether the Agency could expect to play a significant role in the future.[89]

Even if the CIA retained its role in the OXCART program, and played subsidiary roles with respect to CORONA and SAMOS, the officer in charge of such activities for the CIA, even if he also was responsible some portion of TSD [Technical Services Division] and other research and development responsibilities, would more appropriately be an Assistant to the DCI rather than a deputy. That position, Bissell wrote, "would have approximately the same scope as the one I

occupied in this Agency in 1958 ... For me to accept it would mean a long step backward." Shortly afterwards Bissell sent a follow-up letter of resignation, effective February 17.[90]

Bissell's resignation left McCone with the need to find a manager for the CORONA, IDEALIST, and OXCART programs. It also led to renewed pressure from Killian and Land to establish a science and technology directorate, removed from covert activities.[91]

On February 14, McCone approved a "headquarters notice" which announced that Richard Helms would replace Bissell as DDP on the 17th as well as plans to establish a Deputy Director for Research and Development. Two days later, another headquarters notice informed its readers that effective the 19th the agency would have a Deputy Director for Research (DD/R) at the head of a Deputy Directorate for Research (DDR), and that certain activities of the DPD as well other research and development activities would be transferred to the new directorate, "in the interest of strengthening the Agency's technical and scientific capabilities." In addition, it named Dr. Herbert "Pete" Scoville Jr., long-time head of the Office of Scientific Intelligence (OSI) as the first deputy director for research. As head of OSI he was conversant, at least as a consumer, with the product of CORONA and the U-2.[92]

Establishing an organizational structure for the new directorate would be a prolonged process, in part because of continued opposition in other segments of the agency–particularly with regard to plans to transfer OSI and TSD to the new directorate. On April 16, the promised transfer of the reconnaissance activities of the DPD, took place when the division's Special Projects Branch was transferred to the DDR. The branch brought along the responsibility for the CORONA, ARGON, IDEALIST, and OXCART programs.[93]

First Contacts

Among the first documented contacts between Scoville and NRO chief Charyk is an April 5, 1962 memo in which the Research chief addressed one element of the NRO-CIA relationship–the LANYARD program. At Scoville's request, Charyk had agreed to the initiation of a crash program to develop a high-resolution photo reconnaissance satellite for the primary purpose of investigating the possible deployment of an anti-ballistic missile system at Tallinn in Estonia. The basis for the LANYARD camera would be the E-5 camera developed for the defunct SAMOS 101B program.[94]

In the memo, Scoville agreed that the Air Force field element of the NRO (the Office of Special Projects) should assume technical management of all aspects of the program. Noting that while this was "at variance with that followed in the CORONA program," Scoville stated his belief that such an arrangement would be "the most desirable management" solution in view of the Special Projects office's "previous responsibility for the development of the major elements of the LANYARD payload." The CIA, Scoville wrote, would undertake "responsibility for contract administration for the payload and those portions of the recovery system which must be procured covertly."[95]

On the broader subject of the overall NRO-CIA relationship, the CIA responded to the NRO proposal of April 11 on the 19th, accepting the premise of the theoretical authority of the NRO

director, but with the caveat that covert programs then operated by the CIA would remain with the CIA and others assigned by the Secretary of Defense and DCI would be the complete responsibility of the agency. In addition, the CIA would fund "its own covert projects," be the executive agents for those projects, establish NRO security policy, and would have to concur in schedules for its own projects. In addition, the CIA insisted on having a veto on all advance planning for all post-1962 programs assigned to the NRO. Finally, Scoville was to be responsible for seeing that the CIA assignments and related agreements were carried out.[96]

A meeting between Charyk and Scoville on the evening of the 19th, which Charyk recalls as "not all that pleasant," was followed by an exchange of memos on the 20th and 24th. While there was some common ground, there was still disagreement on key issues.[97]

One of the issues that they could not agree on was the appropriate role for Scoville in the NRO structure. In his meeting with Charyk, and in his memo of the 20th, Scoville suggested that rather than becoming Deputy Director, NRO, he be designated the CIA representative to the NRO. While the former position implied subservience to the Director, the later did not.[98] Charyk rejected Scoville's position at the meeting and in his memo of the 24th. He observed that

> In my mind, there would be a substantive difference between an arrangement involving a representative of the DCI to the NRO and the arrangement spelled out in the paper under consideration. This is, first of all, obviously a matter between yourself and the Director. Recommendations of the DNRO, in any event, go to the Director for final approval so you would certainly be involved again before any final action was taken on any recommendations.[99]

Scoville, according to an NRO history, also insisted in his meeting with Charyk that the CIA have a veto on planning, with advanced plans being finalized only after concurrence by the CIA. In his memo of the following day, he suggested a change in wording to the proposed agreement so that it would specify that all NRO advanced planning be coordinated with the DCI's representative to the NRO. Charyk, in his response, noted that "obviously" there would be extensive coordination in the development of advanced plans before their submission to the Secretary of Defense and DCI and the expectation that the DCI, in determining his final position, would request the recommendations of the Deputy Director for Research and his staff.[100]

A NRO historian noted that "the exchange of drafts, modified drafts, re-drafts, corrected drafts, and substitute drafts probably could have continued for months without exhausting the ingenuity of either side. As much could not be said for their patience. The mailing intervals were growing shorter, but there was no evidence that either party was willing to accept the basic viewpoint of the other."[101]

After some additional wrangling, agreement was reached in the form of the May 2, 1962, "Agreement Between the Secretary of Defense and the Director of Central Intelligence on Responsibilities of the National Reconnaissance Office," signed by McCone and Gilpatric. The agreement assigned technical management responsibility for all NRP elements to the DNRO, who

would be selected by and be directly responsible to the Secretary of Defense and DCI. It also specified that, as the CIA had pressed for, the CIA would serve as Executive Agent for covert projects already under its management as well as any additional projects assigned to it by the Secretary of Defense and DCI.[102]

With regard to financial management, the agreement specified that the DNRO would be responsible for funding the NRP–with DoD funds allocated on an individual projects basis, the costs of which would appear "as appropriately classified line items in the Air Force budget." CIA was made responsible for funding covert projects for which it had management responsibility."[103]

Under point 3 of the agreement, the CIA was assigned responsibility for establishing security policy for the NRP, "including provision for a uniform system of security control and appropriate delegations of security responsibility." With respect to scheduling, the sole responsibility was assigned to the DNRO, but subject to coordination with the CIA on covert projects for which it was serving as executive agent and the approval of higher authority in certain instances–e.g. U-2 overflights. Operational control of specific projects might be assigned to either DoD or CIA by the DNRO in accordance with policy guidance from the Secretary of Defense and DCI.[104]

With regard to engineering analysis, the agreement specified that the analysis of collection systems to correct problems or provide information on new systems was the responsibility of the DNRO. However, such analyses would be carried out under the supervision of the CIA for covert projects for which the CIA was the executive agent. The DNRO was assigned responsibility for advanced plans (subsequent to the 1962 calendar year), in support of the NRP. Such planning was to be coordinated with the CIA "in view of the DCI's major responsibility to the NSC for all intelligence programs."[105]

The wording of the agreement established the existence of a single executive. But there was no specification of who that individual would be–either by name or overt position. (Although Charyk was named the next day as DNRO by Gilpatric and formally confirmed on June 14th). The head of the CIA Research directorate was made responsible for seeing that CIA participation in the agreement was carried out, but was not designated as DDNRO or as CIA representative to the NRO.[106]

In the view of a NRO historian, while the agreement constituted "a relatively strong policy statement on NRO purposes," in other respects it "conceded to the CIA the key points at issue"–although it did not include a CIA-desired provision for concurrence with NRO advanced planning, but promised coordination. He also concluded that while the "principle of united reconnaissance program management that Charyk had set out to establish [was] vaguely acknowledged," "there remained enough of a foundation to support hope for successful program management."[107]

One could view the agreement, not in terms of the hope it held out for stronger central management, but in terms of the hope it held out for future amicable relationships between the NRO and the CIA. The key underlying issue was how much authority the DNRO would have in the key areas of technical management, launch scheduling, and engineering analysis. The agreement gave the DNRO substantial authority in those areas, but with an exemption to the CIA for projects it had been managing. And by designating the Secretary of Defense and DCI jointly as the DNRO's

superior, and particularly by assigning to them the responsibility for choosing which future projects would be managed by the CIA and which by the Air Force, it created the possibility that the NRO could come to be viewed by the CIA not as an impediment to the success of the agency's intelligence mission but as a partner. Of course, the solution put the DNRO in the difficult position of having responsibility for the entire NRP, without commensurate authority.

Greenbrier

To deal with a variety of issues involved in implementing the agreement, including establishing a program planning activity, a central operations facility, and a home for the NRO Staff, the first formal meeting of the principal NRO assignees was held on May 22 at Greenbrier, West Virginia. Attendees included Charyk, Scoville, Kiefer, Brig. Gen. Robert Greer (director of the Air Force Office of Special Projects), Col. John L. Martin Jr. (deputy director of the NRO Staff), Colonel Leo Geary (Charyk's deputy for aircraft operations), Col. Stanley Beerli (chief of the DDR's Office of Special Activities), a CIA security official, and probably George Miller, head of the CIA's Office of ELINT, and Brig. Gen. Robert Curtin, head of the NRO Staff.[108]

At the conference it was noted that the National Security Agency (NSA) had expressed dissatisfaction with the provision of the May 1962 agreement that stipulated that the NRO would be responsive only to USIB photographic and electronic signal collection requirements and that NSA argued that it should develop SIGINT satellite payloads under the terms of National Security Council Intelligence Directive (NSCID) No. 6. The CIA and Air Force had no problem agreeing that NRO had "prior rights." Scoville pointed out the Secretary of Defense rather than NSA was the executive agent of the NSC for SIGINT and therefore could assign development of SIGINT payloads to the NRO.[109]

It was suggested by Scoville since NSA had formally raised the issue a Secretary of Defense memorandum to the director of NSA would be required, reiterating the assignment to NRO of the responsibility for developing SIGINT payloads. The memo, Scoville recommended, should suggest assignment of a NSA representative to the NRO, and discuss how the NRO would operate in matters of concern to NSA. In addition, the memo "should point out that the NRO in planning the program will work with NSA but that final action is a NRO responsibility." In addition, it should note that "NRO will look to NSA for guidance and assistance in interpreting the USIB requirements. The NRO will make the decisions and will develop, operate, and turn the collected product over to NSA."[110]

The CIA's role as executive agent for the CORONA, IDEALIST, OXCART and possibly ST/POLLY programs was confirmed at the meeting. It was agreed that Scoville would be the "single focal point for all covert projects, both aircraft and satellite for which CIA is Executive Agent." With regard to OXCART, Scoville asserted that the CIA should be responsible for contracting, contract, monitoring, technical aspects, and development of operational plans for the conduct of missions. The NRO would be kept "continuously informed" and should monitor the program to ensure that it was being managed properly.[111]

Key differences remained however between Charyk and Scoville. In the view of Charyk and the NRO, Scoville would "report directly to DNRO for all NRO matters." Scoville explained that he viewed the reconnaissance office as an organization that would monitor management and review changes in program scope, but would not get involved in the details. The CIA, he proposed, should, for its satellite projects, have complete responsibility for all contracting, contract monitoring, technical aspects, and development of operational plans for the conduct of missions.[112]

Charyk countered that the May 2 agreement made him responsible for approving all contracts, covert and overt, although the covert contracts would be let by the CIA, and Scoville agreed to assign Agency contract people to the NRO. Charyk also made it clear that he planned to be the sole point of contact with the NSC Special Group, the National Photographic Interpretation Center (NPIC), the military service mapping agencies, and the NSA. He added that he would also monitor the engineering analyses carried out by the various program chiefs–which resulted in a discussion of the need for individual agreements of responsibility in each project.[113]

While the meeting has been described as being relatively harmonious, it did not resolve the remaining key differences on the degree of NRO authority over CIA programs. Despite the differences, Charyk began moving immediately to eliminate what he believed to be shortcomings and redundancies in the existing arrangements. One of the first issues he addressed was the need for a unified contingency plan to deal with incidents in which SAMOS or CORONA spacecraft fell into hostile hands.[114]

A Third Try

In June 1962 Charyk began urging that mission planning, on-orbit target programming, and approval of mission targeting options be centralized. While Charyk considered such functions to be natural responsibilities of the NRO Staff, Scoville did not. By late June, the issue came before the PFIAB, which advised Kennedy that:

> ... the actual structure of the documents [of agreement between DoD and CIA] is inadequate to support an efficient organization when the present experienced and distinguished group moves on to other tasks. We therefore recommend a continuing study of a more satisfactory permanent documentary basis for the NRO with particular references to existing NSC directives with which the present NRO plan may be in conflict.[115]

Kennedy endorsed the recommendation without comment. In early July, Special Assistant for National Security Affairs McGeorge Bundy advised McNamara and McCone that a report of progress in carrying out the recommendation was wanted by September 15. On the morning of July 10, McCone and Gilpatric briefly discussed the matter. Gilpatric took the position that the only way to satisfy the PFIAB and particularly Killian, who along with Maxwell Taylor were considered prime movers in the matter, was to produce a new agreement which included the language from the January 1962 draft which made the Secretary of Defense executive agent for both DoD and CIA in

all aspects of the NRP. He suggested that the CIA and Defense Department general counsels collaborate on the necessary modification of the charter. There is no material in NRO files that indicates McCone's reaction to the Bundy memorandum or the meeting with Gilpatric.[116]

On July 23, Charyk issued the fundamental directive on the organization and functions of the NRO. In addition to the Director (there was no provision for a deputy director), there were four major elements to the NRO–the NRO staff and three program elements, designated A, B, and C. The NRO Staff, which used the overt Office of Space Systems, as the Office of Missile and Satellite Systems had been renamed at the time of NRO's creation, as a cover, consisted of 44 individuals. Included were a director of Administration and Security, an Assistant for Plans and Policy, and three deputies–for aircraft projects, satellite programs, and operations. The staff would assist the director in dealing with the USIB and the principal consumers of the intelligence collected. The staff was also charged with "... specifying desired targets to be covered, desired on-orbit target program options ... and approval of the actual mission target program and options which are programmed into each flight vehicle."[117]

The Air Force Office of Special Projects retained that unclassified designation and its California headquarters, but also became NRO's Program A. The CIA reconnaissance effort became designated Program B and the DD/R (Scoville) was named its director. The Navy's space reconnaissance effort, at the time consisting of the operational Galactic Radiation and Background (GRAB) satellite (later designated DYNO by the NRO) and its planned successor, POPPY, which had radar ferret missions, became Program C. Although the GRAB effort was carried out by the Naval Research Laboratory, the director of the Office of Naval Intelligence would serve as Program C director until 1971, when responsibility for managing Program C was transferred to the head of the newly-established Navy Space Program Office.[118] Figure 1 depicts the NRO structure as of July 23, 1962.

In an August 29 memo, Scoville, addressed Charyk's directive. He opened by noting that "in general I concur with the ... paper" and suggested expanding the size of the office of the assistant for plans and policy since he believed that "the most important function of the NRO will be in the planning, programming and evaluation fields"–implying that the NRO's most important function would *not* be in the technical direction of programs. He also suggested that the office of the deputy for operations "maybe somewhat large unless more activities are transferred from the West Coast than presently are believed will be possible."[119]

He then turned to the question of CIA participation in the NRO. In response to Charyk's designation of the DD/R as director of Program B, Scoville transferred the title to the head of the Office of Special Activities, which had been established in July as the successor the DPD Special Projects Branch. Scoville then designated himself "Senior CIA Representative to the NRO." In his memo, Scoville suggested that this designation be made official, since such a position would give him responsibility as the DCI's representative across the entire NRO. He further suggested that his designation of the head of OSA as the Director, Program B also be made official.[120]

Scoville also questioned the provision of Charyk's directive which made program directors of the NRO "responsible directly and solely to the DNRO." Scoville suggested deletion of

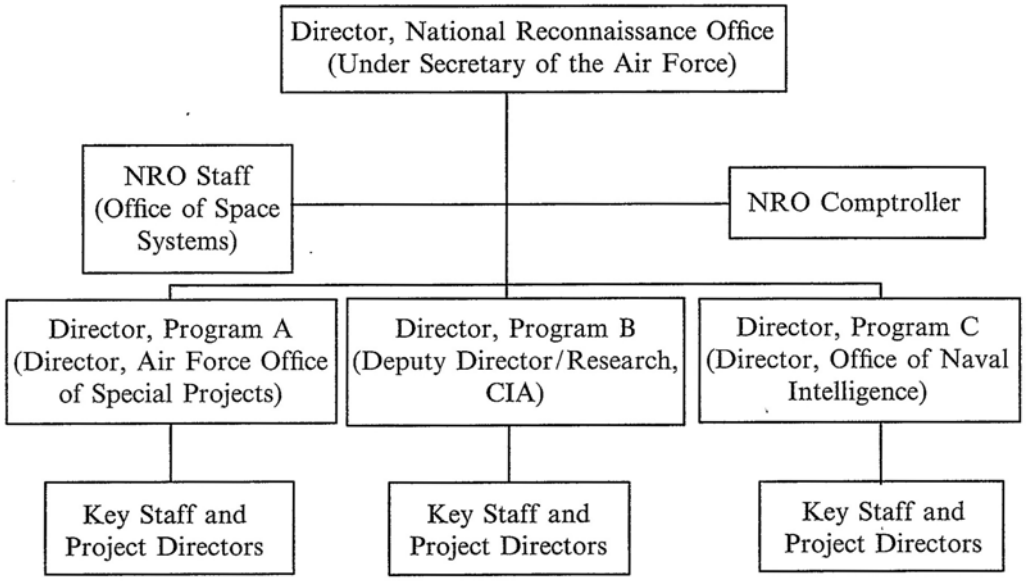

Figure 1. Organization of the National Reconnaissance Office, 23 July 1962.

the "solely"–"since the DCI and the [Deputy Director for Research] must have a direct command responsibility over the programs assigned to the CIA."[121]

Scoville also objected to Charyk's claim that the DNRO had the authority to assign operational control for different collection systems to the DNRO, stating that "I believe that the assignment of operational control to appropriate Program Directors must finally rest with the Secretary of Defense and the DCI"–as had been implied by the May 2 agreement. In place of Charyk's wording, Scoville suggested it be stated that the DNRO "will recommend the assignment" to the Secretary of Defense and DCI."[122]

In late August and early September Scoville announced or proposed two *de facto* alterations of the arrangements made earlier. He told Charyk that the CIA would continue to go directly to the Special Group on matters concerning ongoing projects–which was interpreted to mean that neither new subsystems or "unusual risks" would be involved. This amounted to a rejection of Charyk's May 22 proclamation that he would be the NRO point of contact with the Special Group, a policy he had reiterated in a subsequent memorandum to Scoville.[123]

In addition, Scoville noted his opposition to Charyk's decision to have the CIA award contracts for programs not under its exclusive control. Widespread use of CIA covert contracting methods by the Air Force, he argued, would result in those methods falling under the scrutiny of the Bureau of the Budget and Congress. When it became clear that his argument was not persuasive to Charyk, he added the argument that the CIA's special obligational authority should be employed only "as necessary in order to carry out CIA's responsibilities." He contended that it was inherently undesirable for the Agency to "assume the responsibility for covert procurement" for Air Force projects.[124]

The Reluctant Warrior

In a meeting with Charyk on October 1, less than a month after Scoville's second rejection of the consolidated procurement proposal, McCone agreed that the CIA would assume responsibility for all covert procurement. Charyk was delighted, not realizing that the temporary victory was another warning sign of two problems that would further undermine the CIA-NRO relationship–the relationship between McCone and Scoville and the DCI's indecisiveness.[125]

McCone and Scoville did not mesh personally. McCone was new money, Scoville old money. The DCI was also remote and austere. When Scoville called him "John" he flinched. People just didn't call McCone by his first name, John McMahon recalls, observing that "I don't think even his wife did." Further, McCone was a staunch Republican while Scoville was a liberal Democrat. Scoville was committed to nuclear disarmament, and devoted some of his time to chairing an inter-agency committee on the issue. As a result, McCone felt Scoville was giving less than 100% to his job.[126]

In addition, McCone came to the agency without the conviction that the CIA should be involved in space or aerial reconnaissance. John McMahon recalls that one of McCone's first comments was "what are you people doing in the airplane business?" In addition, the new DCI was a

good friend of Gilpatric and wanted to avoid a fight with McNamara, at the time the proverbial eight hundred pound gorilla of the national security establishment.[127]

Also, while McCone's appearance and demeanor helped generate the appearance of a tough and decisive manager, he often wavered and reversed course. Scoville's deputy Edward Giller recalls that McCone would make instant decisions then reverse himself, leaving people irritated, and requiring deputy DCI Marshall Carter to pick up the pieces. Albert Wheelon, Scoville's successor as head of OSI and then as chief of the CIA science and technology effort has written that while McCone "was regarded as a great manager ... In truth, he was no manager at all... He was reluctant to make and implement organizational decisions ..."[128]

Thus, in June, the NRO had proposed that an operational control facility be established in Washington, close to the NRO Staff, which would have required the assignment of CORONA-experienced individuals. When Scoville was, in Charyk's view, unhelpful, the DNRO turned to McCone, who sided with him. However, the result was also a worsening of the relationship between Charyk and Scoville. Scoville questioned Charyk's willingness to negotiate in good faith, while Charyk concluded that he had a better chance of concessions if he dealt with McCone rather than Scoville. In addition, the episodes demonstrated McCone's willingness to change his position, and do so without warning Scoville. McCone had first strongly opposed a Washington control center, but then quickly accepted Charyk's position. He had also supported Scoville with regard to the covert procurements issue before siding with Charyk. In both cases, Scoville had first assured himself that McCone supported his position, only to be undercut.[129]

McCone's indecisiveness manifested itself in a different way in the summer and fall of 1962. Charyk and Scoville had reached agreement on several issues, mostly minor, only to have the agreements nullified by McCone's refusal to accept Scoville's judgment. In each case, Scoville had to contact Charyk and announce his withdrawal from the agreement in question. Charyk, apparently unaware of McCone's role, took Scoville's actions as a sign of his capriciousness. Charyk believed Scoville to be insincere, and the relationship deteriorated further.[129]

A New Charter

While there was a hardening of hearts, there was also an intensification in discussions over the role of the NRO. In July 1962, the USIB had strongly urged a strengthening of NRO powers. On October 5, 1962, McCone presented McNamara with a proposal for revision of the May 2 agreement. A key element was the creation of a National Reconnaissance Planning Group–consisting of McNamara and McCone–which would make final decisions with regard to procurement policy, program guidance, and managerial direction of the NRP as long as they did not require Presidential approval. With regard to financial management, McCone urged that the NRO director have no more than review and approval authority for the total reconnaissance budget and *de jure* authority to approve the transfer of DoD funds to the CIA as decided by the planning group.[130]

Charyk insisted that the NRO had to have the authority to budget for and administer funds for the entire reconnaissance program, using the CIA as its executive agent in selected projects. He was equally adamant that funds should be made available to the CIA on a project basis, rather than on an

agency basis–that is, the CIA should not be permitted to shift funds from one project to another without the permission of the DNRO. In addition, he objected to changes that would have reduced the authority of the NRO in engineering analysis.[131]

Apparently concluding that there was no immediate prospect of changing Charyk's views with regard to such matters, and no way of inducing McNamara to overrule him, the CIA tried a different strategy. In mid-November, McCone submitted for McNamara's signature a letter to the director of the Bureau of the Budget recommending release to the CIA of all funds required for the conduct of covert satellite projects. Charyk responded by writing Gilpatric that "if the NRO is to function it must be responsible for continuous monitoring of financial and technical program status, must control the release of funds to programs and must be able to reallocate between NRP programs." McCone's proposal would have both allow the agency to shift funds among programs, and prevent the DNRO from shifting funds between CIA and Air Force programs.[132]

The NRO comptroller had advised the CIA that funds were available on a project basis although CIA had not requested their transfer–insisting on receiving the total allocation without any restriction on its use. Charyk was willing to release funds "as requested and justified" and believed the budget bureau to be sympathetic to his position. But rather than accept the principle of NRO control, the CIA was, Charyk understood, using funds from uncontrolled sources to support its NRO-assigned programs–a practice Charyk believed to be in direct violation of law and which certainly ignored agreed procedures.[133]

Charyk concluded that Scoville had originated the proposal, although it was actually composed and submitted without his knowledge. That only added to the hostility, which had been exacerbated a month earlier, when during the Cuban missile crisis, the bulk of U-2s were shifted from the CIA to the Air Force, a move supported by the JCS and Special Group, after lobbying by the Air Staff. By late October, Scoville and Charyk were no longer talking. Written correspondence from one to the other, even of the most formal kind, stopped shortly afterwards.[134]

In December 1962, Charyk received an offer from the COMSAT Corporation, and by January it was known that he would be leaving government shortly. His imminent departure did not stop him from continuing to address the weaknesses he believed existed in NRO's charter and to press for a new one.[135]

One vehicle for conveying his views as to remaining problems in the NRO arrangement and making recommendations was a 36-page document, "A Summary Review of the National Reconnaissance Office," dated February 25, 1963. In that analysis Charyk charged that "despite the basic CIA-DOD Agreement, the agreement at the organizational conference and the basic organizational documents, this arrangement has never been accepted by [Scoville]." Further, "rather than seeking a resolution of his concern through proper channels ... the apparent procedure has been one of resisting the functioning of the organization ..." As a result, "implementation of decisions affecting Agency activities has been difficult, if not impossible, if the Deputy Director (Research) was not completely sympathetic to the action proposed."[136]

Just over 13 pages of Charyk's review were devoted to recommendations. First among his suggestions were revisions to the basic CIA-DoD agreement and related charter documents that

would "clarify the desired nature of the NRO and the responsibility and authority of the Director of the NRO." In addition, "measures should be taken to establish and support internal organizational discipline..."[137]

Specifically, Charyk suggested that "the revised Agreement should reaffirm and clarify that the NRO is intended to be an operating agency, with actual management responsibility for all projects of the National Reconnaissance Program, rather than a mechanism of coordination between agencies separately responsible for parts of this Program." The decisions and directives of the NRO director should be "binding on all applicable CIA and DOD elements unless and until he changes them." Such decisions would include budgeting for the entire NRP and transfer of funds between projects.[138]

Charyk also suggested that "consideration could be given to the addition of a single Deputy Director of the NRO." It would be appropriate, Charyk noted, that such an individual come from the CIA. However, it should be clear that such an individual was not "looking out after the interests of the CIA" or representing the DCI. The deputy's natural responsibilities would be liaison with the USIB and the users of the intelligence gathered by NRP systems. And, Charyk observed "it is essential that personnel selection be made on such a basis that they will function as an effective working team rather than as representatives of the DOD and CIA."[139]

During the last week of February, his last week in office, he completed a revision of a CIA draft, a draft apparently prepared by McCone's immediate staff, rather than by Scoville or his staff. Charyk took the revision to Roswell Gilpatric. It appears that some CIA suggested changes were incorporated sometime after Charyk left office. On March 13, Gilpatric signed the slightly modified version on behalf of DoD. It was sent to the CIA that day and immediately approved by McCone.[140]

The new agreement, while it did not include all the elements Charyk considered important, did substantially strengthen the authority of the NRO and its director. The "Agreement between the Secretary of Defense and the Director of Central Intelligence on Management of the National Reconnaissance Program," named the Secretary of Defense as the Executive Agent for the NRP. The program would be "developed, managed, and conducted in accordance with policies and guidance jointly agreed to by the Secretary of Defense and the Director of Central Intelligence."[141]

A "separate operating agency of the Department of Defense," the National Reconnaissance Office would manage the NRP "under the direction, authority, and control of the Secretary of Defense." The NRO's director would be selected by the Defense Secretary with the concurrence of the DCI, and report to the Defense Secretary. The agreement also settled one issue of repeated contention between Scoville and Charyk, in Charyk's favor–by creating a Deputy Director's position, and specifying that its occupant would be selected from CIA personnel. The Deputy Director, the agreement specified, "shall be in the chain of command directly under the Director NRO"–a sharp contrast to Scoville's view that he should be the CIA representative to the NRO. His duties included supervising relations between the NRO and USIB, supervising all NRP tasks assigned to the CIA by the DNRO, and performing other duties assigned by the NRO director.[142]

The NRO director was charged with presenting to the Secretary of Defense "all projects" for intelligence collection and mapping and geodetic information via overflights and the associated

budgets, scheduling all overflight missions in the NRP, as well as engineering analysis to correct problems with collection systems. With regard to technical management, the DNRO was to "assign all project tasks such as technical management, contracting etc., to appropriate elements of the DoD and CIA, changing such assignments, and taking any such steps he may determine necessary to the efficient management of the NRP."[143]

The charter thus eliminated many of the CIA prerogatives that Charyk and other NRO officials considered obstacles to their vision of a truly national reconnaissance program. Absent from the 1963 agreement were provisions from the earlier agreement that required coordination of mission schedules with CIA, that gave the CIA supervisory authority for engineering analysis of projects for which it was executive agent, and provisions that gave the CIA responsibility for funding and supporting projects for which it was the executive agent. At the same time, on the other key issues, including technical management for research and development, the DNRO could chose to employ (or not employ) CIA resources as he believed best for the NRP.[144]

Thus, the DNRO was in a position, at least on paper, to manage the NRP as a single entity and could insist that the elements under him, even if from different agencies, respond as if they were part of a single unified agency. McCone did not see his agreement to the new charter as the "sell-out" that others in the agency did–or as a barrier to his exerting his influence over satellite reconnaissance issues. In a March 21 meeting with Charyk's successor, Assistant Secretary of the Air Force for Research and Development Brockway McMillan (who would become Under Secretary in June), he noted that he believed the new charter would be more workable than the 1962 agreement. He also, over the course of the meeting, indicated "his displeasure with the present Satellite Reconnaissance Program," obtained McMillan's agreement to present a new launch schedule to the United States Intelligence Board, inquired as to whether "his instructions prior to the last launch had been carried out," and instructed McMillan to involve the NRO in the aircraft portion of the NRP.[145*]

McCone also told McMillan that he would nominate Scoville to be DDNRO, but that did not mean Scoville would be in the line of command, but rather was to be fully informed of all actions of the NRO. This was the type of role Scoville envisioned as CIA representative to the NRO–a role that was at odds with the new charter and with McMillan's preference. The new NRO director wanted neither Scoville nor anyone else from the CIA in that position, which he believed to be unnecessary.[146]

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* Possibly it was such behavior that led McMillan to claim that within a few weeks of signing the March 1963 agreement the "Director of Central Intelligence had challenged the terms of the agreement." (Brockway McMillan, Memorandum for the Secretary of Defense, Subject: Comments on NRO and NRP, September 30, 1965, p.4).

While McCone may have felt comfortable with the new arrangement, others in the CIA, particularly Scoville, did not. The breaking point for Scoville arrived in the person of McMillan. One former NRO staffer suggests that McMillan read the authority given him under the new agreement literally, perhaps as a result of his previous experience at Bell Labs, where written edicts were faithfully implemented. McMillan puts it somewhat differently, recalling that at Bell Labs information was not concealed and that there was a "well-managed team effort." In any case, he assumed that he could make impersonal and rational judgments with the unswerving support of McNamara and McCone.[147]

Thus, it seemed completely rationale to McMillan to transfer technical direction of the CORONA project from the CIA to the Air Force Office of Special Projects, and to place authority over its elements in the head of Program A. McMillan took a number of minor but unilateral actions to accomplish this transfer and was shocked when Scoville strongly protested each one of them. McMillan's response was first to obstruct two of the Air Force officers working for the CIA on CORONA from communicating with Langley, and then transferring the other without coordinating the move with the CIA.[148]

In Los Angeles, the Office of Special Projects was using the Aerospace Corporation to do systems engineering and technical direction for its programs and wished to add CORONA to Aerospace's responsibilities. The CIA considered this to be another take-over maneuver and bitterly opposed it.[149]

McMillan also favored a strict interpretation of his review authority over NRP funds, in the light of an April 5 agreement, signed by McCone and Gilpatric, giving the NRO complete authority over all funds supporting the NRP, regardless of the source–an agreement that McCone saw as means of avoiding huge increases in the CIA budget that might rile Congressional overseers. While Scoville and others continued to believe that funds marked for CIA-managed projects or studies should come to them automatically, McMillan did not.[150]

On April 25, Scoville submitted his resignation - a product both of his poor relationship with McCone as well as with the NRO director. In his resignation letter, Scoville wrote that “I have never been supported and placed in a position where it was possible to direct this [CIA reconnaissance] program in the manner it deserves ... my decisions and recommendations are continuously suspect because of the previous history of the program. This problem might be somewhat less serious were another individual to serve in my position.”[151]

It was, according Scoville deputy Edward Giller, "an emotional parting." Those emotions had not faded two decades later. In 1983, Scoville would describe McMillan as an "incompetent whose only talent was empire-building."[152]

IV. ESCALATION AND RESOLUTION

A New Beginning

Scoville's frustrations with his position had reached the ears of PFIAB chairman James Killian early in 1963. Neither he or Edwin Land had been fully satisfied with the Deputy Directorate for Research, and they decided to press McCone to further strengthen the CIA's technical capabilities. In March, the rest of the PFIAB approved Killian and Land's "Recommendations to Intelligence Community by PFIAB," which spelled out how it should be done, and it was delivered to McCone.[153]

The recommendations included the "creation of an organization for research and development which will couple research (basic science) done outside the intelligence community, both overt and covert, with development and engineering conducted within intelligence agencies, particularly the CIA." It was necessary, they observed, to establish "an administrative arrangement in the CIA whereby the whole spectrum of modern science and technology can be brought into contact with major programs and projects of the Agency." Killian and Land noted that, unfortunately, "the present fragmentation and compartmentation of research and development in CIA severely inhibits this function."[154]

On April 15, McCone informed Killian and Land, through presidential national security adviser McGeorge Bundy, of the progress he had made in implementing their recommendations–which was none at all.[155] Ten days later, Scoville submitted his resignation. Not long after Scoville departed, McCone decided to offer his position to 33-year old Albert Wheelon, who just a year before had replaced Scoville as head of OSI and was now being asked to succeed him for a second time.[156]

Wheelon's year at the helm of OSI was his first inside the CIA, although it was not his first contact. The Illinois-born, California-raised, Wheelon had received a Bachelor's degree in engineering from Stanford, a school he chose after it became clear to him that West Point was "not interested in those with eyeglasses." Stanford was followed by graduate school at M.I.T. After receiving a doctorate in physics in 1952, he worked on guided missiles at the Douglas Aircraft Company, and in 1953 joined the technical staff of Ramo-Woolridge (which would become Thompson-Ramo-Woolridge in 1958 and then TRW) in 1953. In 1960, he was appointed director of the company's Radio Physics Laboratory, which focused on guidance systems for long-range ballistic missiles and satellites.[157]

It was his work on U.S. missile systems that first brought him to the attention of the CIA. In the summer of 1957, a U-2 had photographed the Tyuratam ICBM and satellite-launching complex. In an attempt to extract more information out of those photographs, the CIA and Air Force looked for help from individuals involved in U.S. missile programs–who might notice things in the photography that others would not. Air Force Ballistic Missile Division chief Bernard Schriever appealed to Simon Ramo, the "R" in TRW, for help. When complications arose with the first two TRW choices, Wheelon was next in line.[158]

At OSI, the brash Wheelon was not inhibited by the fact that he was only 33-years old and OSI staffers had to adjust to their new boss. At the upper levels of the agency, Wheelon's work

received favorable reviews. In late February 1963, deputy director Marshall Carter sent a short memo, consisting of two paragraphs to McCone. In it he noted that "I have been singularly impressed over the past months by the calm, unruffled, quietly analytical, and remarkably astute manner in which Bud Wheelon approaches all problems ... He is one our finest assets ..." Carter went on to urge the DCI to "bring him into the family circle at every opportunity and to utilize him as a source of basic judgment ... in areas which trouble you."[159]

But despite his willingness to take charge at OSI, and his awareness of the favorable view of Carter, he was taken aback by McCone's offer of the DD/R job. At the time he was actually thinking of returning to California after just a year at CIA. His California house remained unsold. Also, he was "personally discouraged." He had come to Washington expecting to work for Scoville or Deputy Director of Intelligence Robert Amory, both of whom were gone from the Agency. Further, he was well aware of the frustrations that Scoville had suffered and believed that the position, as constituted, was a no-win situation. He declined the job, telling McCone that "We should not just screw another light bulb into a shorted-out socket."[160]

He did suggest that he could perform a service for the Agency by tracking down Scoville and speaking to him about his reasons for leaving and what needed to be done. Wheelon journeyed to Wood's Hole, Massachusetts, where Scoville was attending a conference. After arriving between 10 and 11 in the morning, he spent 2 or 3 hours with Scoville before returning to Washington that evening.[161]

The theme that Wheelon found in Scoville's comments was that he felt McCone had consistently undermined him. The former deputy director talked about how Killian, Land, and McCone had assured him of his mandate, which was to include the Technical Services Division, only to have McCone fold when Deputy Director for Plans Richard Helms objected. He also noted how McCone similarly backed off his promise to transfer OSI to the Research directorate in the face of opposition from Ray Cline, Amory's successor as Deputy Director for Intelligence. As a result, Scoville began to question McCone's determination as well as his word.[162]

But those events alone did not cause Scoville's departure. The decisive factor, the former DD/R told Wheelon, was McCone's unwillingness to fight the Pentagon over reconnaissance issues. Every time there was a dispute between him and the DNRO (whether Charyk or McMillan), McCone, Scoville charged, either preemptively surrendered or promised to back him and then folded in negotiations with Gilpatric. Since he didn't know how to work in such an environment, he had to leave.[163]

The next day, Wheelon reported to McCone and deputy DCI Marshall Carter. Diplomatically, he told the two of Scoville's disappointment with regard to TSD and OSI, without stressing the issue of broken promises. The two senior intelligence officials were also apprised of Scoville's belief that the Air Force was moving to phase out the CIA's role in satellite reconnaissance. The question of the CIA's function in that activity was the key issue, Wheelon told McCone and his deputy.[164]

When asked what he thought the CIA should do, Wheelon reminded McCone that when he had been head of the Atomic Energy Commission the Air Force had demanded creation of second

national laboratory to speed development of the H-bomb, and that creation of Lawrence Livermore National Laboratory did result in speeding up the pace of H-bomb development. He then advanced the thesis that the only thing more important than nuclear weapon design was good intelligence about the Soviet Union, and that the only means of obtaining it was through overhead reconnaissance. The partnership with the Air Force was over, Wheelon continued, and "you must know it." Since there was no place for the CIA in the Air Force's plans, the alternatives were either to withdraw from the field or become the Livermore to the Air Force's Los Alamos.[165]

Wheelon also told McCone that the stage was set for the rapid dissolution of the research directorate. That was one path McCone could have taken. But, having been convinced of the crucial role of reconnaissance, and possibly concerned about the reaction of Killian and Land if, rather than strengthening the CIA's science and technology mandate, he abolished it, McCone decided on another course. In a second meeting with Wheelon, either that day or the next, McCone again offered Wheelon the job, reminding him of the commitment he had made in 1962 to stay at CIA for at least 3 years. With McCone pledging complete support, as well as agreeing to re-christen the directorate the Directorate of Science and Technology (to emphasize the concept of the directorate managing all CIA scientific endeavors) and accept the PFIAB's March 1963 recommendations as the directorate's new charter, Wheelon accepted.[166]

It became official on August 5, when a memo from Deputy DCI Marshall Carter announced the re-titling of the directorate, along with the transfer of two components from the Intelligence and Support directorates to the science and technology directorate.[167]

The Great Divide

One former CIA official described Wheelon as "the most acerbic ... son-of-a-bitch" he had ever met.[168] Wheelon recalls being "pretty young ... pretty impatient," "brash," and "full of himself." He was "not tactful" with the "committee sitters" at the CIA. As result of his self-imposed time limit at the Agency and the "extraordinary pressure" emanating from the Pentagon with respect to the reconnaissance issue "amenities fell by the wayside."[169]

Nor was McMillan a diplomat–particularly since his reading of the NRO charter convinced him he had been given full authority to manage the National Reconnaissance Program, subject only to the supervision of the Secretary of Defense. To further complicate matters, there was already bad blood between the two. Several years before, McMillan served as referee for a paper Wheelon had submitted to a prestigious technical journal. By the time the process was finished, each questioned the other's intellectual honesty.[170]

The differences between the organizations and their view of their roles that existed during Scoville's tenure carried over to the Wheelon years. That the Air Force element of the NRO was not an intelligence producing organization and had no direct connection to any intelligence producing organization, such as the Defense Intelligence Agency (DIA), continued to be a problem in the CIA's view. In a meeting with McMillan, during the interval between Scoville's resignation and Wheelon's becoming science and technology chief, deputy DCI Marshall Carter suggested that McMillan authorize a symposium for all his program directors and their deputies "to make abundantly certain

that the people running our programs know that their sole purpose is to develop intelligence and not just be shooting another rocket in the air ..."[171]

According to a NRO history, "NRO people generally lacked the CIA's concern for processed intelligence as an end product. [Their viewpoint] was that film properly exposed and promptly recovered was their 'product.' The photographic content of the film was a secondary matter and one in which few had other than a secondary interest." The history went on to note that "In that characteristic lay the core of much of CIA's professional antagonism ..."[172] The differing perspectives would also manifest itself in disputes over launch schedules.

The CIA's connection to the production of intelligence also influenced its approach to the development of new reconnaissance systems. General Lew Allen Jr. served in a variety of NRO posts beginning in 1965, including director of the NRO Staff and director of Program A, and went on to become director of the National Security Agency and then Air Force Chief of Staff. In Allen's view, the engineers from Program A were "substantially more practical and realistic" than their counterparts at Langley. They placed a much higher value on accomplishing a task on time and within the allotted budget.[173]

But the people at Langley had "a different approach to life," Allen recalls. They were "less concerned about cost and schedule," and "more concerned about bringing new capabilities into being." They also "looked further ahead," and were substantially better in terms of new ideas and concepts. A key factor in the different approaches, Allen believes, was the CIA's connection with intelligence production.[174]

There would also be new issues that would further exacerbate the relationship. But whereas Scoville found McCone's support in such battles slippery, Wheelon found it far more reliable. The conviction that he helped instill in McCone of the importance of a substantial CIA role in reconnaissance was evidenced before the end of August 1963. In a meeting with Deputy Secretary of Defense Roswell Gilpatric, Deputy Director of Defense Research and Engineering Eugene Fubini, Carter, and Wheelon, McCone expressed his belief that there had been a departure from the original concept of the NRO as an organization that would combine the reconnaissance operations of the Air Force and CIA under one roof, but not assume direct control of them.[175]

CORONA Battles

It did not take long after Wheelon's appointment as deputy director for the battle to be joined. In the view of CIA historians, McMillan "made a frontal attack with a request to McCone that CIA relinquish all responsibility in regard to CORONA..."[176] As Wheelon recalls, "The Pentagon observed ... my appointment with satisfaction They properly judged me to be quite junior ... and bureaucratically inexperienced. They did not know of McCone's conversion and so they moved quickly."[177]

At the time the reconnaissance program was in a state of turmoil. During the first five months of 1963, four of the six satellite reconnaissance missions failed. In one instance, a KH-4 launch on February 28 ended with the destruction of the Thor booster. Twice, the Agena wound up in the

Pacific rather than outer space. Another time, during a KH-6/LANYARD mission in May, it failed in orbit. After three successful mid-air recoveries, a July KH-6 mission produced a very limited success, but the camera failed before the scheduled end of the mission. In August, the second recovery capsule on a KH-4A failed to separate from the spacecraft.[178]

The impetus for McMillan's action, in addition to his preferences, included a October 22 memo to him from McNamara, which followed discussions the Secretary had with his NRO director and Fubini. The memo noted the roles of the CIA, the interagency Configuration Control Board, and Air Force in the procurement and operation of the CORONA spacecraft. The Secretary then told McMillan that he "consider[ed] the split of technical responsibilities ... unsatisfactory, and the CORONA program will benefit in achievement of full operational potential by placing all functions under a single management system." He instructed McMillan to establish, "a single authoritative CORONA project director, to whom you can assign personal responsibility for successful and efficient technical management of the CORONA system."[179]

Five days later, a memo from McMillan to McCone, noted the NRO director's belief that it was necessary to establish "a single authoritative point of contact between the NRO and contractor." McMillan also informed the DCI of his choice of the director of Program A to fill that role, as well as his expectation that the CIA would continue to supply security and film courier support.[180]

Rather than settling the issue, McMillan's memo served as the catalyst for another round of bureaucratic warfare. In Wheelon's view, the memo "had the beneficial effect of clarifying their objectives, which had been carefully nuanced by Charyk. With the gauntlet down, we faced an early test of McCone's resolve ..."[181]

McCone would not disappoint those who most fervently sought to resist any reduction in the CIA's role in CORONA. At an August 22, 1963 luncheon meeting with deputy defense secretary Gilpatric, deputy CIA director Carter, Eugene Fubini, and Wheelon, McCone expressed three concerns about the NRO. At the top of the list was his belief that there had been a departure from the original concept of the NRO -- that instead delegating reconnaissance missions to the CIA and Air Force it was being managed as a “line organization,” acting as if it had full command over those operations and organizations. McCone also stressed the necessity of fully preserving and utilizing the reconnaissance resources of both the CIA and Air Force. Finally, he expressed concern that NRO was placing “too much emphasis on R&D advances rather than intelligence collection in the programming of its operations.” In late September, he wrote to Deputy DCI Carter and Wheelon, noting that he had received "continual complaints that D/NRO is directing NRO activities so that all satellite reconnaissance is an Air Force mission and the CIA capabilities in this field are being ignored ..." The DCI went on to state that CIA capabilities in the area should be maintained and "we should consider whether we wish to recapture activities recently pre-empted by the Air Force."[182]

McMillan's October memo was followed by a November 27 meeting between him and McCone and a December 10 memo to McCone, noting McMillan's submission of a revised directive. The revision still emphasized the need for a single point of contact, and assigned the Program A director "full responsibility for the successful conduct of the CORONA project."[183]

Sometime on December 10 McCone and McMillan met, whether before or after McCone had read the revised directive is not clear. McCone spoke first, charging that McMillan wanted "to take the whole project over," and according to McMillan, warned that "he would not stand for submersion of the project into the bureaucracy of the Air Force and that he would liquidate the NRO if necessary to prevent this." After McMillan presented his views, the DCI agreed to consider the matter further.[184]

That response came three days later, in the form of a memo, shortly before McCone was due to travel to Saigon. He noted that in several recent discussions with McMillan he had emphasized that both CIA and Air Force resources related to overhead reconnaissance should be preserved, including the "unique contractor capabilities which have been developed at the insistence of the CIA ..." He went on to complain that, according to several sources, "major contractors no longer feel free to meet with CIA officials and discuss problems ... without first securing Air Force permission." Such a limitation, McCone charged, would violate the basic tenet of NRO agreement providing for full utilization of CIA and Air Force resources." He therefore requested that McMillan in the following week, make it "abundantly clear" to the NRO and Program A staffs that "any remark which carried the above policy implications should be corrected forthwith."[185]

As a means of obtaining the CIA's agreement to transfer responsibility for CORONA to the Air Force, Fubini proposed a deal–in exchange for their acquiescence to the transfer, the CIA would be assigned responsibility for development of the next generation search system. But McMillan would not accept the idea, characterizing it as "the trade of a major development responsibility for the job of cleaning up a stinking mess (i.e. CORONA)." McMillan would not agree until "he was satisfied CIA has the development capabilities," and expressed his fear that "CIA lack of responsiveness to DNRO on such a program is a serious possibility."[186]

In February, McMillan, responding to the 1963 CORONA problems, which continued with a launch failure in November, tried again. In another memo to McCone, he noted that "the Government's management of this project is a significant factor contributing to the unsatisfactory record of recent performance." He went on to inform the DCI that he had issued a directive that required "all proposed changes and all significant engineering efforts to be referred to me prior to implementation." The procedures were to be interim ones.[187]

The following month, in a memo to McCone, Wheelon, noted two requests from McMillan that the CIA concur in the transfer of the element of the Space Systems Division (of the Air Force Systems Command), which handled CORONA matters, to Program A. Wheelon went on to inform his boss that new information indicated that the unit was about to be dissolved and its responsibilities recreated under Program A, that the "program is being transferred to [Program A] without our concurrence."[188]

Five months later, the issue was still an irritant. On August 28 Deputy Secretary of Defense Cyrus Vance assured deputy DCI Marshall Carter that a portion of a McMillan memo regarding a meeting earlier that month was not taken as supporting transfer of the contracting responsibility for the CORONA payload from the CIA to the Air Force. "Quite to the contrary, Vance wrote, it was read to show that there was no agreement on this subject as between Mr. McCone and me."[189]

Less pleasing to some officials in the CIA was a letter from Vance to McCone on October 15, in which the deputy Defense Secretary noted their agreement, earlier that month, that "there will be a single authoritative representative of the Government for technical direction on the entire CORONA system ... " That representative, Vance noted, would be the head of Program A. A memo to Wheelon, characterized Vance's note as "a real beauty ... a classic example of de facto negotiation." The key point of contention was, still, which agency was responsible for the CORONA payload and issuing technical directives to the contractors on the subject.[190]

The following month, Jack Ledford, head of the Office of Special Activities, noted that "In two years, the payload responsibility and direction of the CORONA Program has not been resolved. While the NRO and Director, Program A are of the view that they are directing the entire CORONA Program, the Agency still maintains its view that the Agency is responsible for payload management. There have been no formal decisions clarifying this difference of opinion."[191]

On November 17, McCone wrote Vance that at the September 1 NRO Executive Committee meeting (consisting of McCone, Vance, Fubini, and McMillan) "it was agreed that CIA would continue its present responsibility in contracting for all elements of the CORONA payload."[192] That same day a draft of a letter from Carter to McMillan noted areas where the CIA and NRO appeared to be in "complete agreement." Those areas included the need for a "single authoritative program manager for CORONA," who would exercise "over-all technical direction of the program and be responsible to the DNRO for its successful prosecution, who is in turn responsible to Mr. McCone and Mr. Vance." In addition, Carter believed that they had agreed that the CIA would continue, under the auspices of the NRO, continue to handle the Advanced Projects facility at Palo Alto, the camera programming function, and the systems integration contract with Lockheed. In addition, the Agency would serve a project manager for the CORONA payload.[193]

The continuing battle would be the subject of memos from McCone and McMillan in April and June, 1965. On April 21, McCone gave explicit instructions to Wheelon that the CORONA contracts with Lockheed (systems integration), General Electric (reentry vehicle), and Itek (camera), should clearly establish the fact that CIA had the responsibility and authority to provide technical direction for the CORONA payload.[194]

In June, McMillan charged that the CIA had not complied with terms of an agreement reached by McCone and Vance in August concerning the systems engineering and systems integration functions. McMillan's memo alleged that a CIA employee instructed Lockheed personnel not to sign an essential contract due to security issues. Despite resolution of those issues as well as discussions with the DCI, and a written request from McMillan to the deputy DCI, the CIA injunction against signing this contract had not been lifted, according to the DNRO.[195]

Launch scheduling also proved an irritant. In the view of CIA officials the heart of the issue was Program A's detachment from intelligence production. A CIA memo noted that "Personnel from the NRO Staff and Program A who are divorced from the intelligence mission are more interested in launch schedules and recoveries than in the quality of the photography." It noted a meeting in February between Col. Frank Buzard of the NRO Staff and a CIA representative. Buzard was reported to state that 16 CORONA launches had been scheduled by the DNRO for 1965 and those launches would take place according to the established schedule. The CIA representative responded

that "CORONA was an intelligence reconnaissance program and that the missions would be flown in response to intelligence requirements, not in response to pre-established Air Force launch schedules."[196]

Harsh words were also exchanged in 1965 over allegations that the CIA had been withholding data from the Air Force concerning orbiting CORONA payloads. On March 24, McCone placed an urgent call to Vance, requesting that he see Carter as soon as possible. At their meeting the next day, Carter told the deputy Defense Secretary that allegations by McMillan that the CIA was withholding information concerning the functioning of the CORONA payload required to conduct launch or recovery operations were baseless. Carter assured him that all information on the condition and operation of the payload and the payload section of the vehicle that bore on the decision to de-orbit was provided immediately to Air Force representatives. Carter added that he believed such accusations were "just another attempt to get CIA completely out of the satellite business ..."[197]

Carter then went to see McMillan, who had put in a call for him, for a much less amicable meeting. He gave a McMillan a fact sheet on the allegation. It asserted that the CIA had provided the Air Force with "more, repeat more, operational data on the payload" since August 1964 than at any time prior to that date. According to Carter, McMillan became "visibly disturbed" and confirmed that the allegations were misleading.[198]

Carter then told the NRO director that it was apparent to him that "there was a clear-cut effort to run CIA out of the satellite business and make this critical intelligence collection system a complete blue-suit operation." According to Carter, McMillan then attempted to reopen the entire matter, suggesting that the Air Force should receive all the basic telemetry and calibration data. Carter told him that he "would not have it," and had no intention of establishing or allowing to be established a separate diagnostic, analytical function by an agency having no responsibility for the payload."[199]

Things went further downhill when McMillan asked Carter to agree that detailed results of the payload telemetry analysis would be provided to the Air Force Satellite Test Center. Carter ignored the exact phrasing, stating that he didn't see any reason why the results of the analysis should not be made available, but before giving firm agreement he wished to consult with his staff. McMillan proceeded to tell him that he had "the impression that McCone and you are captives of your staff and unable to make decisions." Carter fired back, telling McMillan that "he would do well to learn how to use a staff himself as well as exerting some caution in his use of the English language." Carter closed his memo describing the meeting by noting that "while we have clearly won this skirmish, the battle will continue so long as McMillan, [Col. Paul] Worthman, Buzard ... are in the act."[200]

Eavesdropping from Space

Sometime in 1963 or 1964, Wheelon was reading a story in the *New York Herald Tribune* about Syncom, a NASA-DoD-Hughes satellite program. The article discussed what was then a revolutionary means of communications, first suggested by science and science fiction writer Arthur

C. Clarke, which allowed communications far beyond the horizon–signals were transmitted from a ground station to a satellite and then back down to another ground station.[201]

The Syncom satellites were not low-earth orbiters whizzing around the earth, and thus out of view of one or both ground stations for substantial periods of time. Instead, they resided 22,300 miles above various points on the equator–in geostationary orbit. At that altitude and location, the satellites revolved around the earth at the same speed as the earth turned on its axis. They, in effect, hovered, over a single point on the equator. In addition, at their high altitude about one-third of the earth was in view of each satellite. Such satellites thus represented an efficient and always available means of shuttling communications across large portions of the planet. It occurred to Wheelon that it might be possible to employ such an approach to intercept signals from key targets and relay them to a U.S. ground station.[202]

Targets might include telemetry signals from Tyuratam, Plesetsk, the White Sea, and even Sary Shagan, which was located far enough in the Soviet interior to make it immune from U.S. land- and air-based eavesdropping efforts. A geosynchronous intercept system would also allow the collection of down range telemetry from the impact zone on Kamchatka. In addition, such a system promised to provide launch-pad telemetry from all the sites, which would provide better estimates of thrust and warhead capability.[203]

Wheelon assembled some key CIA officials to further explore such ideas–including George Miller, chief of the Office of ELINT, Carl Nelson, from the Office of Communications, and Leslie Dirks, who had joined the CIA in 1961 after obtaining a B.S. from M.I.T. in 1958 and a Research Degree from Oxford University in 1960.[204] Also brought into the discussions was Lloyd K. Lauderdale, a graduate of the U.S. Naval Academy with a Ph. D. from Johns Hopkins. A veteran of OSI's defensive systems division, he had experienced the frustration of trying to understand the Soviet ABM program, with its main test center at Sary Shagan.[205]

An initial concern was whether such a program was actually feasible. Because the telemetry signals were transmitted at very-high and ultra-high frequencies (VHF and UHF), they would not bounce off the atmosphere, as high-frequency communications did, but leak out into space where the satellites would be waiting to scoop them up. But, it was feared that the noise from other, and unwanted, transmissions such as television signals would drown the telemetry in an ocean of noise. Spending several hundreds of millions of dollars of the taxpayer's money only to wind up with Russian television signals would hardly be a wise investment. Before proceeding further, Wheelon asked William Perry, who had just left Sylvania's Electronic Defense Laboratories to form his own company, to study the matter. Six months later he reported that the idea was a workable one. Many years later Perry's work in determining the feasibility of such a project, would be a key, although unspecified, reason, for his winning the CIA's R.V. Jones Award–named after the British physicist who headed the British Secret Intelligence Service's scientific intelligence effort in World War II.[206]

When presented with the idea, both McCone and Carter were supportive, and Lauderdale was designated manager of the new program, which was designated RHYOLITE–an apparently chance selection of an appropriate designation, as rhyolite is a volcanic rock containing colorful pieces of quartz and glassy feldspar embedded in a mass of tiny crystals. Lauderdale would become the key

figure in transforming the idea into a reality–arriving at work one day with a working model of a French umbrella antenna, which would also serve as model for the RHYOLITE antenna.[207]

Not surprisingly, RHYOLITE became another battle in the prolonged conflict between Wheelon and McMillan. Having no faith that McMillan or the NRO would give RHYOLITE a fair hearing, the program was started using CIA funds, before McCone went to Vance to ask for NRO funding.[208] McMillan recalls having been convinced by Perry's study that his initial skepticism about the feasibility of RHYOLITE was misguided.[209] But in a memorandum to Secretary of Defense McNamara shortly before he left office, McMillan wrote, almost certainly with respect to RHYOLITE, that

> This requirement cites a prior USIB requirement for collecting telemetry from boosters from the time they go into operation on the pad. [Deleted] It is hard for me to believe that a rational analysis of the usefulness of telemetry data, in comparison say, to the direct usefulness of the ROB [Radar Order of Battle] data to be gotten by other SIGINT activities, would justify so large an expense. In any case, no alternative collection schemes were compared, and no ways, other than SIGINT, for getting the basic information desired - booster sizes – were considered.[210]

And, according to Wheelon and John McMahon, the NRO and Defense Department did what they could to derail the program. Eugene Fubini suggested that the mission could be fulfilled by modifying NASA's Advanced Technology Satellite, then in development. In addition, after RHYOLITE won approval from higher authorities, the NRO tried to slow down funding, while money flowed into a competing Air Force program. That program, codenamed CANYON, was to result in placing satellites in geosynchronous orbit to intercept Soviet and other communications.[211]

Meanwhile, the NRO saw the CIA's reluctance to provide details on program specifics or funding as another sign of the agency's unwillingness to accept the authority of the NRO. NRO staffer Frank Buzard recalls that comptroller John Holleran "kept trying to get a handle on money for RHYOLITE and never was able to."[212]

Peace in the Valley

In the midst of battles over hardware, McCone, Wheelon, and other DS&T (Directorate of Science and Technology) officials were also waging a continuing battle concerning the authority of the NRO and its director. The intensity of the battle and the importance of the issues had even produced a 1963 summons from President Kennedy in an attempt to establish a more amicable relationship. Wheelon's impression was that Kennedy was not very well briefed, and the meeting involved little more that a pep talk in which Kennedy told McMillan and Wheelon of the importance of their jobs and how both were held in high regard.[213] It had no lasting, or even temporary, effect.

Thus, in 1964, the CIA-NRO rift was an issue that the Johnson administration still had to confront. On May 2, the PFIAB, chaired by Clark Clifford, delivered its report on the National Reconnaissance Program. The board concluded that "the National Reconnaissance Program despite

its achievements, has not yet reached its full potential." The fundamental cause for the NRP's shortcoming was "inadequacies in organizational structure." In addition, there was not a clear division of responsibilities and roles between the Defense Department, CIA, and the DCI.[214]

The recommendations of the board, represented a clear victory for the NRO and its director. The DCI should have a "large and important role" in establishing intelligence collection requirements and in ensuring that the data collected was effectively exploited, according to the board. In addition, his leadership would be a key factor in the work of the United States Intelligence Board relating to the scheduling of space and airborne reconnaissance missions.[215]

But the board also recommended that President Johnson sign a directive which would assign to the Air Force responsibility for management, systems engineering, procurement, and operation of all satellite reconnaissance systems.[216] The CIA might be assigned to do research on concepts for new systems, but the heavy lifting would be left to the Air Force. In a June 2 memorandum to national security adviser McGeorge Bundy, Vance noted his intention to see that several of the Board's recommendations, including that one, "be promptly pursued."[217]

By June 15, McNamara and McCone had submitted comments on the PFIAB report to Bundy, as the national security adviser had requested in a May 22 memo.[218] Not surprisingly, as indicated by Vance's June 2 memo, McNamara had no problem with the board's recommendations. McCone, however, was not quite so enthusiastic. While McCone found the conclusions "helpful and constructive" in many respects he also believed that the proposed presidential directive contained "certain organizational proposals which do not seem to me calculated to provide the most productive possible utilization of national resources for the reconnaissance effort of the government." He went on to observe that "If these proposals are adopted I do not believe that it would be possible to discharge the responsibilities which the report itself envisages for the Director of Central Intelligence or that the Central Intelligence Agency can perform the mission which the report apparently contemplates for the Agency."[219]

McCone suggested that there should be "clear recognition of the Director of Central Intelligence's *joint* responsibility with the Secretary of Defense for the development of the reconnaissance program." He observed that "The reconnaissance program will be a successful intelligence effort ... only if there is full participation by the Director of Central Intelligence in the development and direction of the program. The role of the [DCI] must include an adequate voice in decisions which affect the utilization of resources, the allocation of responsibilities and funds, and the scheduling and direction of missions."[220]

Specific areas that required participation of the DCI, according to McCone, included assignment of responsibility for research and development to produce new and improved collection systems, allocation of responsibility for specific operational actions, budgeting and programming, and review and correction of operational or technical deficiencies.[221]

With regard to the CIA, McCone argued that the agency should be responsible not only for advanced planning and research, but also for the development and production of new systems. He noted that if responsibility for production is removed from the CIA the "cutting edge" of advanced thinking would not be preserved within the CIA.[222]

The wisdom of the PFIAB's recommendations was also questioned by two NSC staffers. Spurgeon Keeny was simultaneously a senior member of the NSC staff and technical assistant to the president's science adviser. Keeny knew several of the key players–including Wheelon, Fubini, and McMillan–and had served as the Air Force representative on the Joint Atomic Energy Intelligence Committee.[223]

In a July 2 memo to Bundy, Keeny noted that "I have considerable sympathy for a number of Mr. McCone's criticisms of the recommendations. While the CIA has undoubtedly been a contributor to the present difficulties, I believe the basic problem has been that the DNRO and his staff have been trying to force CIA out of the reconnaissance business."[224]

He went on to note that he found the recommendations undesirable for a number of reasons. In Keeny's view, they "would institutionalize the ... breakdown in cooperation between the DOD and CIA rather than correcting the situation." In addition, they "would further reduce the role of the DCI in policy decisions on the NRP." In contrast, Keeny suggested that the role of the DCI be strengthened. Keeny was also concerned that the PFIAB proposals "would place the Air Force within striking distance of achieving complete control of the NRP" which "could have very serious adverse effects a few years hence when there might not be as strong a Secretary of Defense or civilian control ... " Finally, the recommendations "would tend to eliminate CIA as a creative force in developing our reconnaissance capabilities by narrowing its involvement in the program," which would be "self-defeating since CIA has been responsible for much of the success in this field.[225]

Keeny made a number of recommendations, including establishment of a special NSC committee to review and approve major program proposals for the NRP. In addition, he suggested that that "there should be formal recognition of the principle that both CIA and DOD should maintain strong, independent organizations in the recon field capable of undertaking and managing research, development and operations."[226]

Peter Jessup was a NSC staffer on loan from the CIA. In his memo, written at Bundy's request, he attributed the PFIAB report to, among other things, "a slick sales job" by McMillan while the "agency did a poor one." He also noted that NRO was viewed as an Air Force instrument to divest the agency of all its rights and holdings in the overhead reconnaissance field. According to Jessup, Eugene Kiefer, the CIA official who served as DDNRO, was even excluded from the NRO communications routing. Jessup wrote that "when the Air Force has wind that McCone will issue a blast at a USIB meeting, McMillan absents himself and sends Kiefer. The tragicomedy then ensues of McCone blasting his own man."[227]

Bundy directed McNamara and McCone to produce a draft directive, with "a clear delineation of ...roles and responsibilities," which would serve as an agreed charter for NRP. The memo allowed for the possibility that there would be "significant differences" and invited the two officials to offer alternative provisions to the charter reflecting such differences. Bundy requested the work be finished within two weeks.[228]

It would be far longer than two weeks before the work would be completed. In the meantime McCone and Wheelon continued having "significant differences" with McMillan and Fubini. In a

memorandum concerning an August 1964 meeting of the NRO executive committee, McCone wrote "I emphasized again and again that there was absolutely no intention of creating in CIA technical assets to conceive, manage, or direct booster operations involved in reconnaissance programs and that the allegations of Dr. Fubini that our purpose was 'to create another NASA,' were entirely unfounded and I would like him to withdraw them."[229] There was, however, an intention by Wheelon to solidify further the status of a unit he created to handle what he had hoped would be its reinvigorated and extensive satellite operations. On September 1, McCone approved Wheelon's request to formally assign the Special Projects Staff (SPS) the responsibility for satellite matters that technically belonged to the Office of Special Activities–although Jack Ledford had remained as official head of Program B. Jackson D. Maxey had been appointed head of the new staff, which obtained its personnel from the Systems Analysis Staff and OSA. In addition, the technical personnel working on the CORONA program in California, along with four OSA officers were assigned to SPS.[230]

In February 1965, Wheelon took another step towards enhancing the CIA's role in space reconnaissance. A memo from Wheelon to Marshall Carter proposed to transform the "small group of Agency employees," operating "under the euphemistic title Special Projects Staff" into the Office of Special Projects. Wheelon noted an earlier reluctance to establish a full-fledged office until the CIA's role in satellite reconnaissance could be clarified.[231]

One rationale for establishing a new office was that the limited personnel available to the staff were inadequate to cope with the "lively pace" of space reconnaissance activities. There was also the "cumbersome network of satellite activities ... spread throughout the Directorate." Included were functions carried out by the SPS but for which OSA and its chief, Jack Ledford, were technically responsible to the NRO. The proposed office would be responsible for the development, operation, and management of the CIA's satellite activities.[232]

Wheelon also informed Carter that his staff was preparing a memo for the DDCI's signature advising McMillan of the transfer of satellite responsibilities within the DS&T, the creation of the new office, the identity of the head of the new office, and that he would be designated as "Director, Program E"–leaving the aerial reconnaissance functions in Program B, to be managed by OSA.[233] But like the NRO agreement, the creation of a new satellite office within the science and technology directorate would take far longer than anticipated. Towards the end of 1964, another round of discussions between McNamara and McCone had commenced toward a new agreement, which it was hoped, would clearly specify CIA responsibilities in the reconnaissance area and "put an end to the continual struggle within NRO over lines of authority."[234]

But, in early 1965, McMillan, at a meeting of the National Reconnaissance executive committee, demonstrated that he was not a prisoner of his staff–disavowing an agreement concerning CORONA management that had been negotiated by them and the CIA, and signed by Marshall Carter. McMillan stated that he had only agreed in principle and subsequently refused to address the question, although he made several additional efforts to transfer the CORONA systems engineering responsibility from Lockheed to Aerospace, attempts which were blocked by Carter. On April 21, McCone gave Wheelon instructions to write into CIA contracts with Lockheed, General Electric, and Itek language that would clearly establish with the contractors the fact that the CIA had the responsibility and the authority to provide technical direction for the CORONA payload.[235]

Meanwhile, both the CIA and NRO continued formulating and advocating their different positions concerning the DS&T's future role in satellite reconnaissance. In an April 2, 1965 presentation to the PFIAB, McMillan made his case for a strengthened NRO–making reference to the continued absence of a clear decision concerning a follow-on to CORONA. His summary of the management status of the NRO began with the remark that "de facto, NRO does not exist." He also complained that the existence of an executive committee had the effect of elevating almost all NRO matters to the Vance-McCone level. Since the principals were busy with other matters, meetings were infrequent, and decisions were delayed. In addition, McMillan added that "many of the agreements arrived at in the ExCom have not been implemented."[236]

McMillan continued that the CIA found direct management by an "outsider"–in "particular by one who in their eyes is colored AF blue"–to be "galling and hard to accept." The CIA people he had to work with, he said, "have a history of obstructing or defying my control," which "lends confirmation to charges of bias on my part." Cited as examples were changes within Program B that he had never been informed of, and instructions to Lockheed not to communicate with McMillan.[237]

In summing up, the NRO chief stated his belief "in a strong NRO," and that neither "the CIA or the military are capable of accepting effectively autonomous responsibility. Both need the discipline of a central problem-oriented management." He also asserted that the "Unless the situation that now prevails is changed sharply, the DNRO cannot responsibly spend the taxpayer's money without firm management controls over the way it is spent."[238]

The battle continued throughout April. Possibly in response to McMillan's presentation, McCone proposed that the Satellite Operations Center be removed from the custody of the NRO and given to the CIA. The proposal resulted in a long and despairing letter from McMillan to Vance, which concluded with the comment that "I am convinced that if [the Satellite Operations Center] is removed from the NRO, the NRO will be destroyed and the DOD will experience interminable difficulties in getting its requirements recognized. I am further convinced that this fundamental fact is well understood by others and that the final irrevocable destruction of the NRO is the primary intent behind the proposal to separate the Op Center."[239]

On April 12th, McMillan learned that McCone–frustrated by President Johnson's seeming indifference to intelligence reports, except when annoyed at bad news, would be leaving office shortly. On April 22, McMillan formally presented, and recommended quick adoption of, a directive composed by Fubini for the signature of the President. The directive, as an NRO history put it, "would have resolved all outstanding issues by enforcing the lines of agreement urged by PFIAB in May 1964–the recommendation from which so much had been expected and from which nothing had come." The proposal would have limited CIA influence to maintenance of a research and development group reporting to the Director, NRO.[240]

On April 26th, McCone, who would leave in a matter of days, fired back with a formal proposal to dissolve the NRO. That proposal was in the form of a draft "Agreement for Reorganization of the National Reconnaissance Program." The preamble observed that "the national character of this essential intelligence enterprise must be maintained through a joint endeavor on the part of DoD and CIA," and that "a new organizational framework is required …" Under the

proposed framework there would be no NRO, but a Director of National Reconnaissance (DNR) who would be responsible to an executive committee composed of the DCI and Deputy Secretary of Defense. The committee would assign reconnaissance projects to either CIA or DoD. The DNR would have no management authority for CIA programs, but could be delegated authority for Defense Department programs. He would be permitted to review, but not modify budgets, and would deal with the operating head of the CIA in all matters of policy, coordination, and guidance. He would have no staff.[241]

Two days later, McCone departed, taking his deputy out the door with him. At his last staff meeting he told, Wheelon and others that "My only regret is not having done more to straighten out the NRO mess."[242] McCone and Carter's positions were filled by Vice Adm. William F. Raborn, who had managed the development of the Polaris missile, and Richard Helms, who had been serving as Deputy Director for Plans since 1962. The departure of McCone and Carter undoubtedly further delayed the conclusion of a new agreement. The main task of negotiating that agreement fell to Raborn, Helms, and long-time Agency official John Bross, at the time deputy to the director for National Intelligence Program Evaluation, whose primary function was to coordinate the activities of the intelligence community.[243]

The CIA's basic thesis in support of its continued role was the argument by McCone and Wheelon that:

> The acquisition of intelligence by overhead reconnaissance is a responsibility of the Director of Central Intelligence. Satellite photography makes a most important input into the intelligence inventory. The DCI in discharging his statutory responsibilities for producing estimates concerning the security of the United States must direct this intelligence-acquiring facility to meet his needs. To do this the DCI, directly or through subordinates responsible to him, and with the continuing advice of the United States Intelligence Board, should determine the frequency of satellite missions, the targets and priority in which they must be treated, and the control of the satellite when in orbit to insure coverage of the targets and therefore the acquisition of information considered essential by the DCI.[244]

In addition, a paper Wheelon prepared in May, "A Summary of the National Reconnaissance Problem," reviewed various options. He noted that the March 1963 NRO agreement "gave the Air Force virtual control over all CIA programs and established NRO as an operating organization with implied line authority over those elements of CIA involved in reconnaissance."[245] He also observed that an NRO funding agreement signed one month later eliminated direct Congressional appropriations to the CIA for its overhead programs, "and thereby passed budgetary control of the total effort to DoD."[246]

The "present arrangement," Wheelon wrote, "has been neither a happy nor productive one. External program control has frustrated many CIA activities or forced their development outside the terms of the agreement. Everyone who is aware of the NRO situation is properly concerned about it, and many believe that the present arrangement is basically unworkable."[247]

Wheelon then considered several alternatives for managing the national reconnaissance effort. Responsibility could be assigned to a single agency (NASA, the Air Force, the CIA), which would handle all aspects of the effort–from payload design to launch, operations, and recovery. That alternative was not viable, Wheelon argued, because while the CIA should have significant responsibility in regard to the procurement, tasking, and operation of reconnaissance systems, it needed the Air Force to conduct the launch, tracking, and recovery operations.[248]

Wheelon went on to contend that since launch, tracking, and recovery were clearly DoD functions, and there was agreement at the highest level in DoD that targeting and orbit selection should be handled by the CIA, the only remaining question was who should develop payloads. He noted two alternatives–assigning the CIA the task of developing all payloads, on the grounds that it had to be done secretly and because the design should be responsive to national intelligence needs, or assigning the task to the Air Force. The second alternative was unacceptable because "it would give the Air Force complete control over all satellite reconnaissance," and "its success would depend on continuing, faithful Air Force responsiveness to truly national intelligence needs."[249]

A third possibility was to divide the task. Indeed, Wheelon proposed that there be "an orderly assignment of satellite payload development to the various agencies"–possibly with the Navy handling SIGINT payloads, the Army geodetic and mapping payloads, the Air Force high-resolution photographic systems, and the CIA search systems. Assignments would be made by the DCI and Deputy Secretary of Defense jointly.[250]

A fourth possibility, which Wheelon rejected, would be to assign basic research role for satellite systems to the CIA, and leave development and procurement to the Air Force. The problem with such an arrangement, he argued, was that the aerospace industry was responsive to procurement agencies that had a large number of dollars at their disposal. It would be unreasonable to expect the aerospace companies to give their best efforts to a group with only a few million dollars to spend, when a half billion dollars would be available from the procurement agencies. In addition, it would be "unreasonable to expect the development and procurement agency to have deep, continuing enthusiasm for another's concepts and become a loving foster parent."[251]

All-out competition represented a fifth alternative, which Wheelon rejected because it "would be difficult to keep such a competition orderly, especially with a limited technical and industrial base in which to establish such a competition." He concluded by noting that, hopefully, the CIA proposal would be accepted, but if that were not possible, "the assignment of all reconnaissance payloads to CIA is the only way to preserve dedication of these satellite collection systems to national intelligence needs."[252]

In early summer, before much work was done on the ultimate agreement, it became known to the NRO Staff that McMillan would be leaving in a few months. (He had in fact been fired by Vance). Agreement was essentially reached by Vance and John Bross on August 6, and the resulting document was signed by Raborn and Vance on August 13, 1965. Vance apparently relied on the advice of Fubini, who may have been its principal author, in accepting the agreement. It incorporated several concepts he had discussed with various members of the NRO staff in the preceding weeks. Final details were worked out by Vance and Raborn.[253]

The agreement assigned responsibilities to the Secretary of Defense, DCI, and NRO, as well as formally establishing a National Reconnaissance Program Executive Committee (NRPEC). The Secretary was to have "the ultimate responsibility for the management and operation of the NRO and the NRP," choose the Director, concur in the choice of the Deputy Director, and review and have the final power to approve the NRP budget. The Secretary also was empowered to make decisions when the executive committee could not reach agreement.[254]

The DCI was to establish collection priorities and requirements for targeting NRP operations, as well as establish frequency of coverage, review the results obtained by the NRP and recommend steps for improving its results if necessary, serve on the executive committee, review and approve the NRP budget, and provide security policy guidance.[255]

The NRP Executive Committee established by the agreement would consist of the DCI, Deputy Secretary of Defense, and Special Assistant to the President for Science and Technology. The DNRO was to sit with the committee, but in a non-voting capacity. (A provision, which had been in an earlier draft, and reinserted by Raborn, thus eliminating the provision in the DoD draft he received that would have made the DNRO a voting member of the NRPEC).[256]

The committee was to recommend to the Secretary of Defense the "appropriate level of effort for the NRP," approve or modify the consolidated NRP and its budget, approve the allocation of responsibility and the corresponding funds for research and exploratory development for new systems. It was instructed to insure that funds would be adequate to pursue a vigorous research and development program, involving both CIA and DoD.[257]

The executive committee was to assign development of sensors to the agency best equipped to handle the task, while all other engineering development tasks–such as design of the spacecraft, reentry vehicles, and boosters–were assigned to the Air Force, with the proviso that development had to proceed on a coordinated basis to ensure "optimum system development in support of intelligence requirements." At Raborn's suggestion the agreement also included the provision that "To optimize the primary objective of systems development, design requirement of the sensors will be given priority in their integration within the spacecraft and reentry vehicles."[258]

The Director of the NRO would manage the NRO and execute the NRP "subject to the direction and control of the Secretary of Defense and the guidance of the Executive Committee." His authority to initiate, improve, modify, redirect or terminate all research and development programs in the NRP, would be subject to review by the executive committee. He could demand that all agencies keep him informed about all programs undertaken as part of the NRP. An annex to the agreement specified assignments of four optical sensor subsystems to specific agencies. The CIA was assigned responsibility for development of CORONA improvements and development of the new sensor for a new search system once the concept for the full system was selected.[259]

Former CIA and NRO officials concur on at least one matter–the agreement significantly reduced the independent authority of the NRO director. They disagree on its wisdom. In his memo to September 1965 memo to McNamara, McMillan objected that the agreement was "less definitive about the authorities of the DNRO, and circumscribes those which it does not define." In addition,

McMillan wrote "it has considerably weakened considerably the structure provided by that prior agreement, and has, I believe, introduced a number of potential further sources of friction. Or as McMillan put it many years later, it was "a victory for the wrong guy."[260]

At the CIA there was a different perspective. While the DCI didn't "really have a job under the agreement," in Wheelon's view, the agreement was "a triumph of people who cared about the program," and "provided adult supervision" for the DNRO. The NRO director's subordination to the three senior officials who made up the executive committee meant his decisions were subject to review, and he "could not act unilaterally." The intent was "to stop adventurism on the part of the DNRO." Frank Buzard, a member of the NRO staff at the time, has noted that "the creation of the ExCom certainly tied the hands of the DNRO as far as new systems were concerned. In any case there was peace in the valley for a while after it was issued."[261] But that peace would not prevent intense competition between the CIA and Air Force elements of the NRO over the rights to build new generations of imagery and signals intelligence systems.

New Arrangements

On September 9, 1965, with the new agreement in place, Wheelon, in a memorandum to DDCI Richard Helms, again requested approval for the creation of an "Office of Special Projects." Wheelon argued that in view of the August NRO Agreement, which reaffirmed the CIA responsibility as a participant and assigned to CIA definite program areas, the time had come to implement the planned organization. The office was established on September 15 and John Crowley, who had joined the agency about a year earlier as CORONA program manager, was chosen as the first chief of the new office.[262]

On September 15, Raborn also designated Huntington D. Sheldon, a graduate of Eton and Yale College and former head of the Office of Current Intelligence, as Director of Reconnaissance, CIA. Sheldon was responsible to Wheelon for the activities of the Office of Special Projects (OSP) and related activities within the science and technology directorate. He was to provide the DNRO with a single point of contact with the CIA for all reconnaissance programs. As a CIA history of OSP noted, "the assignment of Mr. Sheldon was in the nature of adding a diplomatic negotiator to balance the aggressiveness of the DDS&T in handling NRP matters." It was also, Wheelon recalls, a way of "stiff-arming the NRO"–highlighted by Sheldon's title as "Director of Reconnaissance, CIA" rather than "Director, Program B, NRO."[263]

The Next Generation

On August 25, 1963, only weeks after Wheelon had assumed command of the Directorate of Science and Technology, the first of the KH-4A CORONA spacecraft blasted off from Vandenberg Air Force Base. The primary difference between the KH-4A and its immediate predecessor was not in terms of resolution–the new camera would produce photographs with resolutions in the 9-25 foot range, a trivial improvement on the 10-25 foot resolution of its predecessor. Rather, the new cameras carried a greater film load–enough to fill two reentry vehicles. Missions could be extended to 15

days in contrast to a maximum of 7 for the KH-4, and a greater number of targets could be photographed.[264]

Through the end of 1964, a total of 15 KH-4A missions would be flown. In early 1965, Eugene Fubini and John Crowley agreed that studies should be made concerning the weaknesses and limitations of the KH-4A system. On June 29, after the completion of the studies, formulation of recommendations, and a CIA-Air Force Office of Special Projects briefing, McMillan approved development of an improved version of CORONA–which when launched in September 1967 as the KH-4B would improve CORONA's resolution to approximately 6 feet.[265]

By that time Wheelon had completed his stay at the CIA, returning to private industry. But, in addition to RHYOLITE, his legacy included a technically demanding and ambitious program to develop a next generation search system. Because the DS&T first began to explore the possibility of a follow-on system in the fall of 1963, and started early development work in 1964, the questions of what, if any, system to develop and whether the CIA should do the developing became a major issue in the NRO-CIA battles of 1963-1965. It would, in the words of one former NRO staffer, turn into a "real donny-brook."[266]

In July 1964, McMillan had instructed the Itek Corporation to stop work on what was to be a follow-on to CORONA–the M-2–and to concentrate on improving the capability of the existing systems. His instructions followed a report from the Panel for Future Satellite Reconnaissance Operations, whose members included Edward Purcell, the chairman, Richard Garwin, Edwin Land, and NPIC director Arthur Lundahl.[267]

The panel had been briefed by various contractors, military and governmental personnel as to what systems were in design development or under consideration. James Reber, chairman of the interagency Commmittee on Overhead Reconnaissance (COMOR), which selected targets for the spy satellites, discussed the latest COMOR requirements. Lundahl covered the relationship between the resolution of an image and a photo interpreter's ability to extract intelligence from the photo. There was no difference, the CIA's chief photo interpreter told them, in the intelligence that could be derived from photographs with 10-foot resolution than those with 5-foot resolution. The Purcell group concluded that development of a new search system, with resolution between 4 and 6 feet was not justified. [268]

McMillan's emphasis on improving CORONA was also based on the findings of the reconnaissance panel. Their report had noted that the KH-4 system operated at its ultimate photographic capacity only about 10% of the time, partially as a result factors which were understood. The panel observed that "it seems entirely feasible to bring most of these factors under control so that one could count on peak resolution from the ... system on 90% of the exposed film." The consequence would be "an enormous gain in information acquisition."[269]

But the vision of least one member of the Purcell panel went beyond 5-foot resolution. Edwin Land concluded that a system was needed which covered as much territory as CORONA, but with the resolution of GAMBIT–the Air Force's new high-resolution satellite whose images had a resolution of 18 inches. A study by Wheelon's Systems Analysis Staff noted that there was an absence of plans for developing such a system.[270]

A high-resolution search system, would address one of Wheelon's concerns–that photo-interpreters were "drowning in data," and having an extraordinarily difficult time in detecting new items of interest with CORONA photography. They were failing to find the needles in the haystack. With too much to look at, they were "getting bleary eyed."[271] In October 1963, Wheelon established the Satellite Photography Working Group "to explore the whole range of engineering and physical limitations for satellite photography ..." Chaired by Stanford physicist Sidney Drell, with Robert Chapman, deputy director of the DS&T's Office of Research and Development, serving as their CIA contact, the group was to look at possible ways to improve CORONA and set guidelines for the development of new systems. Wheelon views that effort as marking the "resurgence of CIA activity in the satellite business."[272]

The project had been approved by McCone and Gilpatric during an October 22 meeting, and on November 5, a letter from Wheelon to McMillan provided a detailed outline of the group's agenda and requested NRO funding. McMillan responded on November 18, noting that establishment of the working group "affords an excellent opportunity to achieve a more basic understanding of the reasons for the variations in quality and resolution we have experienced to date with the CORONA system," although he discouraged an analysis of systems still under development. He agreed to provide NRO funds to cover the costs associated with outside consultants.[273]

Wheelon asked Drell's group, which included Rod Scott of Perkin-Elmer, and two representatives from Itek to determine how far CORONA's resolution could be improved, as well as how much intelligence could be extracted from wide-area photos of higher and higher resolution. In an attempt to determine the intelligence value of increasingly sharp images, the group degraded aerial reconnaissance photographs to five different levels of resolution and gave them to photo interpreters at NPIC to see how much intelligence could be extracted at each level.[274]

Drell and his colleagues concluded that CORONA had been pushed about as far as it could be, and that to achieve significantly better resolution a new system would be required. Meanwhile, NPIC's photo interpreters demonstrated that a wide-area system with 2-foot resolution would dramatically improve their ability to spot new facilities and extract intelligence about them. As a whole, the exercise resulted in the realization that, according to Wheelon, "something a lot better was needed."[275]

McMillan's willingness to fund a research effort did not mean a willingness to fund a satellite to be developed on the basis of the findings and recommendations of the group. Wheelon recalls that "from the outset McMillan did everything in his power" to stop that program, including refusing to provide funds.[276]

But McMillan's decision did not prevent McCone from authorizing the use of CIA funds for the same project. With the Land Reconnaissance Panel and PFIAB suggesting that the expenditure of $10 million would be worthwhile to investigate the feasibility of a new wide-area, high-resolution system, McCone approved the expenditure.[277]

DS&T representatives talked to both Itek and Perkin-Elmer about the possibility of working on the program. In February 1964, using personnel from various offices and staffs within the science and technology directorate, the systems analysis group began a study in conjunction with Itek, whose ideas were preferred to those of Perkin-Elmer, to determine the feasibility and potential intelligence value of using several individual sensors or combination of sensors in a satellite system. The study led to a camera design believed to be capable of producing high-resolution over a wide swath-width.[278]

It was not until June that McMillan discovered the CIA effort, codenamed FULCRUM, which the agency had not only concealed from the Soviet Union, but from the NRO. Going beyond the initial phase of the project would require funding through the NRP. Wheelon initially proposed a six-month design effort. At the beginning, a project office of five to seven people, reporting directly to Wheelon would be established within the CIA, and be responsible for system engineering and technical direction. The proposal, according to a NRO history was "precise, carefully detailed, seemingly quite accurate, technologically conservative, and–on the whole–exceptionally well constructed.[279]

But, McMillan believed that to approve the proposal would allow the CIA to establish "an independent capability for full scale development of space systems," even though the feasibility of the system had yet to be determined. To establish such a capability the CIA would have to recruit a substantial technical establishment in McMillan's view. Not surprisingly, the NRO director was thoroughly opposed to the idea.[280]

He also believed that he had Fubini's support. The deputy director of defense research and engineering had observed that over the past two years no committees had recommended a new search system. Also, Fubini had technical reservations about whether the very high-speed film flow envisioned in the FULCRUM system was attainable. He also argued that proceeding toward a new broad-coverage system was unwise so long as reasons for variable performance in CORONA remained unknown.[281]

McMillan attempted to head off any fait accompli by turning McNamara's attention to the matter. With Fubini's support and Vance's approval he submitted a McNamara-to-McCone memorandum for the Secretary's signature, but in the end it was revised and signed by Vance. It proposed that the CIA be authorized to do only those tests needed to establish FULCRUM's feasibility, while the NRO simultaneously undertook comparative studies. By January 1965, Vance suggested, a determination of development desirability and a selection of a system should be possible. He added, "At that time we can discuss the assignment of responsibilities for development and operational employment."[282]

Wheelon, according to an NRO history, "either did not await DoD action or, more probably, had advance notice of Vance's intentions." On July 9, before Vance's letter could reach McCone, the science and technology chief sent McMillan an outline of "the various tasks for which we require immediate NRO funding." Wheelon's task description, according to the history, went beyond feasibility studies, to include funding for spacecraft, booster, and "assembly, integration, and checkout" contracts.[283]

That same month, the United States Intelligence Board formally called for development of a new search system–which still left open the question of the system's characteristics and which agency should manage its development. On August 11, a meeting of Vance, McCone, Fubini, and McMillan addressed the CIA's proposal. McCone accepted in principle a funding level of about $30 million and a set of Vance instructions on FULCRUM issued a week earlier, which was expanded to provide for some system design study work, but under the aegis of the NRO.[284]

In a late 1964 presentation to the PFIAB, McMillan noted the Purcell Panel Report, and apparently referred to its suggestion that the best thing to do was stay with CORONA. In a memo, the DS&T's John McMahon contended that such an argument was misleading. He noted the contents of the briefings given by Reber and Lundahl as well as the panel's being told that the new search system proposed as a follow-on to CORONA was a "10,000 lb. monster" which would require a Titan IIIC booster. Thus, "the panel felt that rather than bankrupt the US Treasury .... we turn to CORONA and make [it] work all the time" at 9 foot resolution. McMahon argued that the Purcell report failed to explain the documentation and presentations upon which it based its recommendations, and suggested that if they were briefed on the current systems underway and the resolutions required they would reach different conclusions than they did in July 1963.[285]

In any case, McMillan and the NRO were determined that if there were to be a successor to CORONA, FULCRUM, about which the CIA would tell them little, not be the only candidate. A contract to begin studies for a system designated the S-2 was issued to Eastman-Kodak, whose approach McMillan recalls as "fairly conventional." Some attention was also devoted to a proposal, for a smaller system, designated MATCHBOX, that was advertised as being capable of producing equally detailed imagery.[286]

Then, on February 24, 1965, Itek made an announcement that stunned Wheelon and "the NRO Staff found hilariously enjoyable"–that it would undertake no further work on the FULCRUM program.[287]

Since Itek began serious work on FULCRUM it had been faced with a requirement from the CIA that it felt unnecessary and unreasonable–that the camera be able to be employed against targets up to 60 degrees to the left or right of the satellite's path above the earth–from horizon to horizon. Because the farther a camera is moved "off axis" the more the atmosphere degrades its resolution, a 35-degree capability in each direction had been the most demanded of any CORONA camera. As Walter Levison, a camera designer and senior Itek official at the time, recalled, Itek thought the decline in resolution that would result would be too great to justify attempting to produce a system that could scan 120 degrees.[288]

The difference in viewpoints had apparently led to some hard feelings between Special Projects Staff head, Jack Maxey, and Itek's FULCRUM program manager, John Wolfe. But the event that triggered Itek withdrawal, Levison recalls, occurred at the February 23rd meeting in Boston of the Land Reconnaissance Panel, attended by, among others, Levison, Itek president Frank Lindsay, Wheelon, and McMillan. The meeting featured a briefing by Leslie Dirks on FULCRUM. According to Levison, Dirks insisted that the requirement for the new satellite to scan 60 degrees in each direction was the result of an Itek recommendation and not the CIA's insistence. Levison's reaction, in "the heat of the moment," was "that tears it." Later, that afternoon, a meeting between

Levison, Lindsay, and other Itek executives resulted in the decision to withdraw from the FULCRUM program.[289]

Following the meeting, Levison called NRO staffer Paul Worthman. In a memo Worthman described Levison's voice "as shaking throughout the conversation." Levison informed Worthman of Itek's decision and requested advice on how to handle the situation. Worthman suggested the first thing to do was inform McCone, which Levison said Itek president Frank Lindsay was trying to do at that moment. When McCone could not be reached, Lindsay called John Bross to give him the bad news.[290] Worthman then called McMillan and told him to call Levison immediately. A meeting between Levison, Wolfe, McMillan, and Land followed, which left the latter two "stunned." Levison told them that Itek felt it could not survive under "the domination of the CIA" and that the CIA had fostered an "immoral environment."[291]

Itek's announcement that it would no longer work on FULCRUM, "hit us like a ton," John McMahon recalls. It also led to suspicions on the part of several CIA officials that McMillan or Fubini had offered Itek an inducement to withdraw from the CIA program–such as a guarantee of an NRO contract to build the next search system. McMillan denies any previous arrangement with Itek, and Levison recalled that "nobody made any promises to anybody." McMillan did transfer the S-2 program from Eastman-Kodak to Itek after its withdrawal from FULCRUM. According to Levison, McMillan wanted to keep Itek working in the reconnaissance field and Eastman-Kodak had plenty of work–including working on the KH-10 optical system for the Air Force's Manned Orbiting Laboratory. Part of McMillan's decision was apparently the result of the technical discussion about a new search system that took place at the February 24 meeting.[292]

Back at Langley, McCone and Wheelon decided that they would have to find another contractor, possibly Perkin-Elmer. Meanwhile, McMahon, along with two other CIA officials–Jim MacDonald and Henry Plaster–were sent to Itek, where they seized all their records, brassboards, and engineering notebooks related to FULCRUM.[293]

During a visit to Perkin-Elmer, Wheelon asked Rod Scott if they had any ideas. Scott explained the idea of the "twister," which would allow images to be recorded on film that was see-sawed back and forth–a radical departure from the practice of advancing the film frame by frame past the focal plane. The twister would allow the cameras to be placed in the satellite so that they would be parallel to the satellite's motion rather than perpendicular – which in turn would allow the satellite to carry cameras of sufficient size to achieve the CIA's resolution and scan objectives. (In other words, the placing cameras of sufficient size across the *width* of the spacecraft would require building a spacecraft that would be too big for the nose of the launch vehicle, whereas placing them across the length would be workable).[294]

Wheelon next consulted Land, who preferred the Perkin-Elmer design to the Itek one. McMillan attributes Land's support to his not being a systems engineer, but a scientist who "liked nothing more than an innovative, clever device." The twister "just knocked him off his chair." McCone then put up $10-$30 million of agency money to keep the project going.[295]

In mid-July, McMillan made one last effort to slow down FULCRUM, sending Vance and Raborn a report in which he asked for a deferred review of progress . McMillan reported to Vance

that the original S-2 system still appeared to be the most promising approach, adding that he proposed to select either Itek or Eastman-Kodak to develop an alternate camera configuration.[296]

The reaction from Raborn was similar to the reactions of McCone, Carter, and Wheelon to comparable proposals on similar occasions in the past. First, he politely protested McMillan's apparent intention of unilaterally selecting a specific search system for development. Then he invoked the pending Land Panel report as reason for not rushing to judgment. Finally, he made the point that only he and Vance could make the final judgment on any specific search system.[297]

Vance had earlier cautioned McMillan to proceed most cautiously in making program commitments to Itek**,** but McMillan, who was convinced that the S-2 system was by far the best prospect, had continued to invest in the Itek approach. The Land Panel, had proposed no solution, only further study. Raborn suggested that McMillan had exceeded the authority entrusted to him.[298]

According to an NRO history, the Land Panel's non-choice was a disappointment for the NRO and McMillan. They had "hoped for selection of some system other than [FULCRUM], "a development that would tend to choke off the CIA's involvement in the creation of new satellite systems."[299]

As a result of the August 1965 agreement the CIA was given responsibility for managing the development of the new search system. But, in September a McMahon memorandum charged that McMillan had indicated that Itek had been selected to build the new search system, despite the fact that the competition was still ongoing.[300]

Perkin-Elmer would wind up winning the competition, probably because of the coverage provided. The criteria for evaluation were written by McMillan's successor as NRO director, Al Flax, and it gave the scan angle a high priority. Its optical bar system provided horizon to horizon coverage, even though a majority of the time it was never used, because the resolution was, as Itek warned it would be, severely degraded at the extremes. Normally, the camera was used at plus or minus 30 degrees to the side rather than 60 degrees. The system was intended to yield 3' resolution at the nadir (when the target was directly underneath), but was capable of no better than 6-foot resolution at the extremes.[301]

On April 22, 1966 the USIB gave its blessing to development of a new search system, along the lines of FULCRUM rather than its main competitor the S-2. A new codename, possibly AQUILINE, was assigned to the program that same day, and eight days later it was replaced, by the name that it would be subsequently known by, at least by those with the proper clearances– HEXAGON.[302*]

* A former CIA official believes that the initial codename was AQUILINE and that it was replaced when it was discovered that had been assigned to another project – an unmanned aerial vehicle.

V. ASSESSMENT

While personal hostility helped make the relationship between Charyk and Scoville, as well as between the CIA and NRO, more bitter, there were also fundamental institutional viewpoints involved, which had nothing to do with personality issues or the particular acts of the principals and their subordinates.

In the view of a NRO historian, "Scoville was the embodiment of CIA esprit de corps in an organization which–with considerable justification–considered itself uniquely more efficient and effective than any other element of the government." That view was fueled not only by the success of programs such as CORONA and the U-2, but the Air Force's SAMOS failures and the problems being experienced in the development of the GAMBIT close-look satellite.[303] While the Air Force element of the NRO would go on to manage a number of valuable imagery and signals intelligence satellite programs, including GAMBIT, at the time, success was elusive.

Scoville and others in the CIA viewed the NRO as a means by which the Air Force was attempting to hijack a highly successful CIA program to substitute for the Air Force's failed program. In addition, some felt that the Air Force, stung by its loss of the lunar mission to NASA, was seeking to insure that it did not lose another vital space mission. There was also the memory of the Air Force attempt to take over the U-2 program after the CIA successfully managed development of the aircraft. As the deputy director of OSA would note in early 1963, "the ... relationship has deteriorated to the point where mutual trust is now hesitant and there is speculation on either side of 'power grabs' by the other."[304] As Scoville's successor as head of the CIA's science and technology effort would write many years later: "After their initial mistakes in rejecting the U-2 and botching the SAMOS Program, the Air Force knew a good thing when it saw it."[305]

Charyk and his staff had a drastically different viewpoint. It took a year and a half and over thirteen launches before CORONA had experienced its first success. The overhauled SAMOS program had been in existence a little more than two years, and had not yet had a chance to prove its worth. Charyk and the Air Force were confident that eventually it would.[306]

In addition, Charyk and others in the NRO viewed the office as a national instrument that only incidentally made use of Air Force resources. They saw the NRO as "the embodiment of a new spirit in the national defense establishment"–similar to the creation of the National Security Agency a decade earlier, and more recently of a number of centralized defense agencies. Charyk also believed that his conception of a national reconnaissance program was much more comprehensive in scope than that of the CIA.[307]

Many in the CIA saw things differently. After all, the CIA was also a national organization, indeed, *the* national intelligence organization. Its components reported to the Director of Central Intelligence, who was charged by the NSC, via National Security Council Intelligence Directive No. 5, with coordinating the collection of intelligence through clandestine means, which included covert reconnaissance.[308]

In addition, the DCI was responsible, largely through the CIA, for producing national intelligence for the president and other key decision makers–and reconnaissance data made a vital contribution to such products. If the DCI and CIA agreed to abdicate a major role in directing the

national reconnaissance effort they would be endangering their ability to insure that the required data was collected. In other words, national reconnaissance must be the servant of national intelligence, not its master.

CIA officials were also unlikely to buy into the concept of an NRO whose use of Air Force assets was only "incidental"–no matter how deeply Charyk or other NRO officials did, and even though there were Air Force officers assigned to the CIA who did not let their Air Force affiliation compromise their work for the CIA. It was not just that the other key program in the NRO was an Air Force program, but that the Director was the Undersecretary of the Air Force, and his staff largely consisted of Air Force officers. It did not matter if the regular Air Force distrusted NRO, or if Air Force officers serving with the NRO were treated as outcasts by the rest of the Air Force.[309] To those in the CIA, blue suits were blue suits. Or, in the language of photographic interpretation, the differences between Air Force personnel in the Pentagon were too small to resolve from Langley.

It is not surprising therefore that in 1963, deputy OSA chief Cunningham, in considering the issue of the NRO-CIA relationship, recommended, as a means of improving the relationship, a full-time NRO director with no collateral duties, a CIA-employee as deputy director, removal of command functions from the NRO Staff, and the location of the Director and his staff in a separate building.[310]

Of course, both the CIA and NRO had always been willing to have the other play *some* role in space reconnaissance. The CIA had no objection to the Air Force conducting launch, satellite tracking, and recovery operations–indeed there was no alternative. The Air Force and NRO were willing or needed the CIA to deal with covert contracting and security arrangements. But each set of functions alone only guaranteed junior partner status, and did not allow the fulfillment of each organization's vision. And key CIA officials, including ultimately McCone, felt that was not acceptable. The alternative was the bureaucratic war that continued through 1965.

VI. NOTES

Notes

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2. Headquarters, United States Air Force, "General Operational Requirement for a Reconnaissance Satellite Weapon System," March 15, 1955 (Revised September 26, 1958), p. 1.

3. See Jeffrey T. Richelson, *America's Secret Eyes in Space: The U.S. KEYHOLE Spy Satellite Program* (New York: Harper & Row, 1990), pp.27-30; Curtis Peebles, *High Frontier: The United States Air Force and the Military Space Program* (Washington, D.C.: U.S. Government Printing Office, 1997), p.33; Lee Bowen, *The Threshold of Space: The Air Force and the National Space Program, 1945-1959* (Washington,D.C.: Air Force Historical Liaison Office, 1960), pp. 32-33; Letter Thomas S. Gates to Dwight D. Eisenhower, July 13, 1959, DDEL, White House Office, Office of the Staff Secretary: Records, 1952-61, Subject Files, Alphabetical, Box No. 15, Folder: Intel Matters (12).

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5. Richard M. Bissell Jr. with Jonathan E. Lewis and Frances T. Pudlo, *Reflections of a Cold Warrior* (New Haven, CT.: Yale University Press, 1996), p.135; Richard Bissell Jr., CIA, "Project CORONA," April 15, 1958; A.J. Goodpaster, "Memorandum of Conference with the President, February 7, 1958," February 10, 1958; Department of the Air Force, "Biography of Major General Osmund Jay Ritland," n.d.; Cargill Hall, "Postwar Strategic Reconnaissance and the Development of CORONA," in Dwayne A. Day, John M. Logsdon, and Brian Latell (eds.), *Eye in the Sky: The Story of the CORONA Spy Satellites* (Washington, D.C.: Smithsonian, 1998), pp. 86-118 at pp. 112-113.

6. Director of Central Intelligence, NIE 11-4-57, *Main Trends in Soviet Capabilities and Policies 1957-1962*, November 12, 1957, p. 27; Interview with Richard M. Bissell Jr., Farmington, Connecticut, March 16, 1984.

7. Michael R. Beschloss, *Mayday: Eisenhower, Khrushchev and the U-2 Affair* (New York: Harper & Row, 1986), pp.241-42; John Ranelagh, *The Agency: The Rise and Decline of the CIA, From Wild Bill Donovan to William Casey* (New York: Simon & Schuster, 1986), p. 319; Gregory W. Pedlow and Donald Welzenbach, *The Central Intelligence Agency and Overhead Reconnaissance: The U-2 and OXCART Programs, 1954-1974* (Washington, D.C.: CIA, 1992), pp. 170-93.

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Force Chief of Staff to General Thomas S. Power, Commander in Chief, Strategic Air Command, June 29, 1960, Thomas D. White Papers, Library of Congress, Box 34, Folder "2-15 SAC."

9. A.J. Goodpaster, Memorandum of Conference with the President, May 31, 1960.

10. Ibid.; Dwight David Eisenhower to George Kistiakowsky, June 10, 1960, White House, Office of the Staff Secretary Records, 1952-61, Subject: Alphabetical, Box 15, Intel Matters (13), DDEL.

11. Dwight David Eisenhower to George Kistiakowsky, June 10, 1960.

12. Ibid.; Carl Berger, *The Air Force in Space Fiscal Year 1961*, (Washington, D.C.: Air Force Historical Division Liaison Office, 1966), pp.34-35; R. Cargill Hall, "The Eisenhower Administration and the Cold War: Framing American Astronautics to Serve National Security," *Prologue*, 27, March 1995, pp. 59-72.

13. "Report by the Special Panel on Satellite Reconnaissance to President Eisenhower," in Edward C. Kiefer and David M. Mabon (eds.), *Foreign Relations of the United States, 1958-1960, Volume III National Security Policy; Arms Control and Disarmament* (Washington, D.C.: U.S. Government Printing Office, 1996), p.458; James R. Killian Jr., *The Education of a College President* (Cambridge, MA.: MIT Press, 1985), pp.433-34.

14. "Introductory Remarks by Dr. J.R. Killian Jr., August 25, 1960, DDEL.

15. Berger, *The Air Force in Space Fiscal Year 1961*, p.38.

16. Ibid., p.39.

17. Ibid.

18. Ibid., pp.39-40. In 1959, the Army and Navy had proposed creation of a Defense Aeronautical Agency. Their suggestion was rejected by the Secretary of Defense. See Bowen, *The Threshold of Space*, p. 32.

19. George B. Kistiakowsky, *A Scientist at the White House: The Private Diary of President Eisenhower's Special Assistant for Science and Technology* (Cambridge, MA.: Harvard University Press, 1976), p. 382.

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26. Dwight D. Eisenhower, Memorandum for The Secretary of State et. al., August 26, 1960 in Ruffner (ed.), *CORONA*, p.75.

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32. "USAF Strengthens Samos Effort," *Aviation Week*, September 12, 1960; *Telephone Directory, Department of Defense* (Washington, D.C.: U.S. Government Printing Office, April 1961), p.C-81; Memorandum for the Chairman, Joint Chiefs of Staff, Subject: SAMOS Program, October 21, 1960; G. B. Kistiakowsy, Memorandum for Record. Subject: Notes on Meeting with President, 9:30 a.m., September 28, 1960, September 28, 1960.

33. Richard M. Bissell Jr. to Allen W. Dulles, August 8, 1961; Donald Welzenbach, "Science and Technology: Birth of a Directorate," *Studies in Intelligence*, 30, Summer 1986, pp. 13-26; Albert Wheelon, "CORONA: A Triumph of

Technology," in Day, Logsdon, and Latell (eds.), *Eye in the Sky*, pp. 29-47.

34. Telephone interview with Joseph Charyk, June 1, 1999.

35. Perry, *A History of Satellite Reconnaissance, Volume V*, p. 33.

36. Ibid., pp. 20, 34-35: Joseph V. Charyk, Under Secretary of the Air Force, Memorandum for the Director, Defense Intelligence Agency, Subject: MURAL (now CORONA-M) Background Summary, February 14, 1962.

37. Charyk interview; Bissell to Dulles; Perry, *A History of Satellite Reconnaissance, Volume V*, p. 69.

38. Gerold K. Haines, *The National Reconnaissance Office: Its Origins, Creation, & Early Years*,(Washington, D.C.: NRO, 1997), p.18.

39. Joseph V. Charyk, "Statement of the Problem," n.d. (but early 1961).

40. Ibid.

41. Ibid.

42. Ibid.

43. Ibid.

44. Ibid.

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46. Ibid.

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49. Ibid.

50. Ibid.

51. Perry, *A History of Satellite Reconnaissance, Volume 5*, p. 36; Joseph V. Charyk, Under Secretary of the Air Force, Memorandum for the Secretary of Defense, Subject: Management of National Reconnaissance Program (TS), July 24, 1961; Memorandum of Understanding, Management of the National Reconnaissance Program, July 20, 1961. DRAFT.

52. "Memorandum of Understanding, Management of the National Reconnaissance

Program," July 20, 1961. DRAFT.

53. Charyk, Memorandum for the Secretary of Defense, Subject: Management of the National Reconnaissance Program; Memorandum of Understanding, Management of the National Reconnaissance Program, July 21, 1961. DRAFT.

54. "Pros and Cons of Each Solution," no date.

55. Ibid.

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57. Perry, *A History of Satellite Reconnaissance, Volume 5*, p.40; Bissell to Dulles.

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62. Roswell L. Gilpatric, Deputy Secretary of Defense, to Allen W. Dulles, Director of Central Intelligence, Re: Management of the National Reconnaissance Program, 6 September 1961.

63. Ibid.

64. Ibid; Perry, *A History of Satellite Reconnaissance, Volume 5*, pp. 40-42.

65. Gilpatric to Dulles.

66. Eugene P. Kiefer to Donald Welzenbach, March 16, 1988.

67. Perry, *A History of Satellite Reconnaissance, Volume 5*, p. 73.

68. Interview with Frank Buzard, Rancho Palos Verdes, Ca., June 11, 1999.

69. Perry, *A History of Satellite Reconnaissance, Volume 5*, p. 73.

70. Ibid., pp. 42,51; Charyk, "A Summary Review of the National Reconnaissance Office," p. 4.

71. [Name deleted], Assistant Chief, DPD-DD/P, Memorandum for the Record, Subject: Conversations with [Name deleted] of [Deleted] Office on 15 November Regarding Background and Structure of NRO, 17 November 1961, NRO CAL Records: 1/E/0003.

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74. Ibid., p. 47; Ranelagh, *The Agency*, p. 375-76.

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76. Perry, *A History of Satellite Reconnaissance, Volume 5*, p. 47.

77. Ibid.

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79. Ibid.

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81. Donald E. Welzenbach, "Science and Technology: Origins of a Directorate," *Studies in Intelligence* 30, 2 (Summer 1986): 13-26 at p. 22; CIA, N-120-2, Organization and Functions: Office of the Deputy Director (Plans), Establishment of the Development Projects Division, 18 February 1959, NARA, RG 263, 1998 CIA Release, Box 44, Folder 14.

82. U.S. Congress, Senate Select Committee to Study Governmental Operations with Respect to Intelligence Activities, *Final Report, Book IV: Supplementary Detailed Staff Reports on Foreign and Military Intelligence* (Washington, D.C.: U.S. Government Printing Office, 1976), p. 77.

83. Welzenbach, "Science and Technology: Origins of a Directorate," p. 22; Albert D. Wheelon, "Genesis of a Unique National Capability," Address at CIA, December 19, 1984, p. 9.

84. Welzenbach, "Science and Technology," p. 22. The CIA was not able to locate Bissell's memo in response to a FOIA request.

85. Ibid.

86. Richard M. Bissell, Jr. with Jonathan E. Lewis and Francis T. Pudlo, *Reflections of a Cold Warrior: From Yalta to the Bay of Pigs* (New Haven, CT.: Yale University Press, 1996), p. 203.

87. Evan Thomas, *The Very Best Men: Four Who Dared–The Early Years of the CIA* (New York: Simon & Schuster, 1995), p. 272.

88. Letter, Richard M. Bissell to John McCone, February 7, 1962.

89. Ibid.

90. Ibid; CIA, HN 1-18, February 14, 1962, NARA, CIA Historical Review Program 89-2 RG 263, NN3-263-94-010, Box 1, HS/HC 706, Folder 7.

91. Welzenbach, "Science and Technology," p. 23.

92. John A. McCone, HN 1-8, February 14, 1962; John A. McCone, HN 1-9, February 16, 1962; Information provided by CIA Public Affairs Staff; Welzenbach, "Science and Technology," p. 23.

93. Lt. Gen. Marshall Carter, DDCI, HN 1-15, "Transfer of Special Projects Branch," April 16, 1962, NARA, CIA HRP 89-2, NN3-263-94-010, Box 5, HS/HC 706, Box 7.

94. Herbert Scoville Jr., Deputy Director (Research), Memorandum for: Under Secretary of the Air Force, Subject: Management of LANYARD, April 5, 1962, NRO CAL Records: 1/B/0064; Dwayne A. Day, "A Failed Phoenix: The KH-6 LANYARD Reconnaissance Satellite," *Spaceflight* 39, 5 (May 1997): 170-74.

95. Scoville, Management of LANYARD. While Scoville was willing to let the Air Force take the lead with respect to LANYARD, some officials of the new directorate had a different slant on the issue. On the 19th a memo from the head of the Special Projects Branch of DPD, which had been transferred to Research four days earlier, based on a report concerning a meeting between a CIA representative and a senior NRO official, addressed the issue. According to the author, an Air Force Colonel, throughout the report there was "evidence that [NRO] regards the LANYARD program as one in which the Central Intelligence Agency has a supporting rather than a joint role." The author was alarmed at the possibility that the camera system work would be done on the West Coast, i.e. under Air Force OSP auspices. He noted that in the original agreement, the Agency in Washington was charged with planning, direction, and control of the camera program–"the method of operation in all DPD programs." Involvement of personnel from the Office of Special Projects and NRO Staff, and the assignment of the CIA's West Coast CORONA technical officer as liaison to the Air Force OSP LANYARD effort (which had been agreed to by Scoville) "could have far reaching effects in present and future programs now under CIA control and in which the USAF has management interests." The author raised the specter that the end result would be to "effectively remove CIA/DPD from operational control of satellite overhead reconnaissance as it pertains to future programs," and closed with the comment that "It then remains to be seen if such control becomes retroactive and includes CORONA." See, Chief Special Projects Branch, DPD to Acting Chief, DPD, Subject: Operations in the LANYARD Program, April 19, 1962.

96. Perry, *A History of Satellite Reconnaissance, Volume 5*, p. 49.

97. Charyk interview.

98. Perry, *A History of Satellite Reconnaissance, Volume 5*, pp. 49-50; Herbert R. Scoville Jr., Deputy Director (Research), Memorandum for Dr. Charyk, Subject: SecDef-DCI Agreement on NRO, April 20, 1962; Joseph V. Charyk, Memorandum for Mr. Scoville, Subject: SecDef-DCI Agreement on NRO, April 24, 1962.

99. Scoville, Memorandum for Dr. Charyk, Subject: SecDef-DCI Agreement on NRO; Charyk, Memorandum for Mr. Scoville, Subject: SecDef-DCI Agreement on NRO.

100. Charyk interview; Perry, *A History of Satellite Reconnaissance, Volume 5*, pp. 50-51; Scoville, Memorandum for Dr. Charyk, Subject: SecDef-DCI Agreement on NRO; Charyk, Memorandum for Mr. Scoville, Subject: SecDef-DCI Agreement on NRO.

101. Perry, *A History of Satellite Reconnaissance, Volume 5*, p. 50.

102. "Agreement Between Secretary of Defense and the Director of Central Intelligence on Responsibilities of the National Reconnaissance Office," May 2, 1962.

103. Ibid.

104. Ibid.

105. Ibid.

106. Ibid.; *Office of Special Projects, 1965-1970, Volume Four: Appendices B, C, D & Annex I* (Washington, D.C.: CIA, 1973), p. 6, NRO CAL Records: 2/A/0077; Roswell Gilpatric, Deputy Secretary of Defense, Memorandum for The Secretaries of the Military Departments et. al., Subject: (S) National Reconnaissance Office, June 14, 1962.

107. Perry, *A History of Satellite Reconnaissance, Volume 5*, pp. 51-52.

108. Ibid., p. 52; Col. John L. Martin Jr., Memorandum for the Record, Subject: 22-23 May Conference on NRO, May 24, 1962.

109. Martin, Memorandum for the Record, 22-23 May Conference on NRO, p. 1.

110. Ibid., p. 2.

111. Ibid., p. 3.

112. Perry, *A History of Satellite Reconnaissance, Volume 5*, p. 53.

113. Ibid., pp. 53-54; Martin, Memorandum for the Record, Subject: 22-23 May Conference on NRO, pp. 4-5.

114. Ibid., pp. 55-59.

115. Ibid., p.60.

116. Ibid., p. 61; Roswell Gilpatric, Memorandum for Mr. McCone, Subject: National Reconnaissance Office, July 10, 1962.

117. Joseph V. Charyk, Memorandum for: NRO Program Directors, NRO Staff, Subject: (S) Organization and Functions of the NRO, July 23, 1962.

118. Ibid.; *GRAB: Galactic Radiation and Background* (Washington, D.C.: NRL, 1997); Dwayne A. Day, "Listening from Above: The First Signals Intelligence Satellite," *Spaceflight*, 41, 8 (August 1999), pp. 339-346; NRO, *Program Directors of the NRO: ABC&D*, 1999. In 1971, the directorship of Program C was assigned to the head of the Navy Space Project Office at the Naval Electronic Systems Command. In early 1963, apparently in accord with a January 29, 1963 Department of Defense memorandum to the Secretary of the Air Force and the Director of the NRO on "Strategic Reconnaissance Aircraft," Program D had been established. The program initially encompassed what was then designated the R-12, and which subsequently became known as the RF-12 and then SR-71–the Air Force version of OXCART. Program D also assumed responsibility for the TAGBOARD/D-21 reconnaissance drone. It also provided support to CIA U-2 and OXCART operations. It was disestablished in 1974, when the CIA's U-2 operations were turned over to the Strategic Air Command.

119. Herbert Scoville Jr., Memorandum for: Director, National Reconnaissance Office, Subject: Comments on Organization and Functions of the NRO, August 29, 1962.

120. Ibid., *Office of Special Projects, Volume One: Chapters I-II*, p. 103.

121. Charyk, Organization and Functions of the NRO; Scoville, Comments on Organization and Functions of the NRO.

122. Scoville, Comments on Organization and Functions of NRO.

123. Perry, *A History of Satellite Reconnaissance, Volume 5*, p. 61.

124. Ibid., pp. 63-64.

125. Ibid., p. 64.

126. Wheelon interview; McMahon interview.

127. Wheelon interview; Interview with John McMahon, Los Altos, California, November 17, 1998.

128. Interview with Edward Giller, June 29, 1999; Wheelon, "Genesis of a Unique

National Capability."

129. Perry, *A History of Satellite Reconnaissance, Volume 5*, p. 67.

129. Ibid.

130. Ibid., p. 69.

131. Ibid., p. 70.

132. Ibid., p. 71.

133. Ibid.

134. Ibid., pp. 72-73.

135. Perry, *A History of Satellite Reconnaissance, Volume 5*, p. 78.

136. Charyk, "A Summary Review of the National Reconnaissance Office," p. 20.

137. Ibid., p. 22.

138. Ibid., pp. 24, 26-27.

139. Ibid., pp. 27-29.

140. Perry, *A History of Satellite Reconnaissance, Volume 5*, pp. 93, 96-97. Whether Allen Dulles would have been willing to sign off on the agreement is an interesting question. Despite his reputation as being mainly interested in espionage and covert action, and despite his initial reluctance to involve the CIA in the U-2 program, in the succeeding years he strongly defended the CIA's role in such activities. In addition to his role in the original CIA-NRO agreement, he opposed Air Force attempts to take over the U-2 program and plans to reduce the number of launches in the CORONA program, and argued in favor of the CIA managing the National Photographic Interpretation Center.

141. John A. McCone, Director of Central Intelligence and Roswell Gilpatric, "Agreement between the Secretary of Defense and the Director of Central Intelligence on Management of the National Reconnaissance Program," March 13, 1963, p. 1.

142. Ibid., pp. 1-2.

143. Ibid., pp. 3-4.

144. Perry, *A History of Satellite Reconnaissance, Volume 5*, pp. 94-96.

145. Col. Edward Giller, Assistant Deputy Director, Research, Memorandum for the

Record, Subject: Meeting Between Mr. McCone and Dr. McMillan-21 March 1963, March 22, 1963, NRO CAL Records: 1/E/0011.

146. Ibid.; Oder, Fitzpatrick, and Worthman, *The CORONA Story*, p. 92.

147. Oder, Fitzpatrick, and Worthman, *The CORONA Story*, p. 92; McMillan interview; Buzard interview.

148. Oder, Fitzpatrick, and Worthman, *The CORONA Story*, p. 92.

149. Ibid.

150. Ibid.

151. Letter, Herbert Scoville Jr. to John A. McCone, Director of Central Intelligence, April 25, 1963.

152. Oder, Fitzpatrick, and Worthman, *The CORONA Story*, p. 92; Interview with Herbert Scoville, Jr., McLean, Va., 1983.

153. Welzenbach, "Science and Technology," p. 24.

154. Ibid., pp. 24-25.

155. Ibid., pp. 25-26.

156. Ibid., p. 26; Albert D. Wheelon, "Genesis of a Unique National Capability," December 19, 1984, Address at CIA, p. 12; CIA, HN 20-49, "Announcement of Assignment to Key Position Deputy Director (Intelligence)," June 4, 1962.

157. Central Intelligence Agency, *R.V. Jones Intelligence Award Ceremony Honoring Dr. Albert Wheelon*, December 13, 1994; Central Intelligence Agency, "Biographic Profile, Albert Dewell Wheelon," May 10, 1966; Interview with Albert Wheelon, Montecito, California, November 11-12, 1998.

158. Wheelon interview; Wheelon, "Genesis of a Unique National Capability," pp. 7-8.

159. MSC [Marshall S. Carter], Memorandum for the Director, February 22, 1963.

160. Welzenbach, "Science and Technology," p. 26; Wheelon, "Genesis of a Unique National Capability," p. 12; Wheelon interview; Interview with Albert Wheelon, Montecito, California, June 14, 1999.

161. Wheelon interview, June 14, 1999.

162. Ibid.

163. Ibid.

164. Ibid.

165. Ibid.

166. Wheelon, "Genesis of a Unique National Capability," pp. 12-13; Wheelon interview, June 14, 1999; Welzenbach, "Science and Technology," p. 26; At the time each CIA directorate was known as the "Deputy Directorate for." In 1965, each became the "Directorate of." Since that occurred in the midst of Wheelon's tenure, from hereon the later titles will be employed.

167. Lt. Gen. Marshall S. Carter, Acting DCI, HN 1-36, August 5, 1963, NARA, CIA HRP 89-2, RG 263, NN3-263-94-010, Box 5, HS/HC 706, Folder 7.

168. Interview with a former CIA official.

169. Interview with Albert Wheelon, Washington, D.C., April 9, 1997.

170. Interview with Albert Wheelon, Montecito, California, November 11-12, 1998; Robert Perry, *A History of Satellite Reconnaissance, Volume 5: Management of the National Reconnaissance Program, 1960-1965* (Washington, D.C.: NRO, 1969), pp. 123-124n in NRO CAL Records, 2/A/0066.

171. Lt. Gen. Marshall S. Carter, DDCI, Memorandum for the Record, Subject: Meeting with Dr. Brockway McMillan, July 23, 1963.

172. Perry, *A History of Satellite Reconnaissance, Volume 5*, p. 120.

173. Office of Public Affairs, Secretary of the Air Force, "General Lew Allen Jr.," September 1981; Interview with General Lew Allen Jr., Pasadena, California, June 10, 1999.

174. Ibid.

175. Roswell Gilpatric, Memorandum for the Record, Subject: Mr. McCone's Concerns Regarding NRO, August 22, 1963.

176. *Office of Special Projects, 1965-1970, Volume One, Chapters I-II* (Washington, D.C.: CIA, 1973), pp. 105-106.

177. Letter, Albert D. Wheelon, June 17, 1999.

178. Jonathan McDowell, "Launch Listings," in Day, Logsdon, and Latell, *Eye in the Sky*, pp. 235-246 at p. 238.

179. Robert S. McNamara, Secretary of Defense, Memorandum for the Director, National

Reconnaissance Office, Subject: Policy Guidance on Management Control over Reconnaissance Programs, October 22, 1963, NRO CAL Records, 1/A/0043.

180. Brockway McMillan, Memorandum for the Director of Central Intelligence, Subject: Management of the CORONA Project, October 28, 1963, NRO CAL Records, 1/A/0044.

181. Wheelon letter.

182. Roswell Gilpatric, Memorandum for the Record, Subject: Mr. McCone's Concerns Regarding NRO, August 22, 1963; John A. McCone, Memorandum for: General Carter, Dr. Wheelon, September 20, 1963.

183. Brockway McMillan, Director, National Reconnaissance Office, Memorandum for Director of Central Intelligence, Subject: Management of CORONA Project, December 10, 1963, NRO CAL Records, 1/C/0062; Brockway McMillan, Director, National Reconnaissance Office, Memorandum for Director, NRO Program A, Director, NRO Program B, Subject: Responsibility for Operating Management of the CORONA Project, December 10, 1963, NRO CAL Archives, 1/A/0045.

184. Perry, *A History of Satellite Reconnaissance, Volume 5*, p. 134.

185. John A. McCone, Director, to Dr. Brockway McMillan, Director, National Reconnaissance Office,, December 13, 1963, NRO CAL Records, 1/A/0047.

186. Albert D. Wheelon, Deputy Director (Science and Technology), Memorandum for: Director of Central Intelligence, Subject: Recommendation re Fubini's proposal, February 3, 1964, NRO CAL Records, 1/C/0067.

187. Brockway McMillan, Director, National Reconnaissance Office, to John McCone, February 4, 1964.

188. Albert D. Wheelon, Deputy Director (Science and Technology), Memorandum for: DCI, DDCI, Subject: Dissolution of CORONA Project Office, March 13, 1964, NRO CAL Records 1/C/0070.

189. Cyrus Vance, Deputy Secretary of Defense, to Lt. Gen. Marshall S. Carter, DDCI, August 28, 1964, NRO CAL Records 1/A/0063.

190. Cyrus R. Vance to John McCone, October 15, 1964, NRO CAL Records; [Deleted] to Albert Wheelon, 22 October 1964, NRO CAL Records, 1/C/0064.

191. [Name Deleted], USAF Assistant Director, Special Activities, Memorandum for the Record, Subject: Unsolved Management and Relationship, November 9, 1964, NRO CAL Records, 1/C/0087.

192. John A. McCone, Memorandum for: Honorable Cyrus R. Vance, Deputy Secretary

of Defense, Subject: CIA Program B Participation in CORONA, November 17, 1964, NRO CAL Records, 1/A/0079.

193. Lt. Gen. Marshall S. Carter, Deputy Director, to Dr. Brockway McMillan, Director, National Reconnaissance Office, November 17, 1964, NRO CAL Records, 1/A/0080.

194. Directorate of Science and Technology, CIA, *CORONA Program History, Volume II: Governmental Activities*, May 19, 1976, p. 1-19, in NRO CAL Records, 2/A/0089.

195. Brockway McMillan to [Deleted], June 14, 1965, NRO CAL Records, 1/A/0010.

196. "Examples of the Air Force Impacts on the CORONA Program," March 31, 1965, NRO CAL Records, 1/C/0010.

197. Marshall S. Carter, Lt. Gen. USA, Deputy Director, Memorandum for the Record, Subject: Meeting with Mr. Vance and Dr. McMillan, on Thursday, 25 March, March 26, 1965, NRO CAL Records, 1/A/0096.

198. Ibid; Jackson D. Maxey, Chief, Special Projects Staff, Memorandum for the Record, Subject: Fact Sheet Regarding the Allegation that Since August 1964 CIA Has Been Withholding Payload Data from the Air Force in the CORONA Program, March 25, 1965, in NRO CAL Records, 1/C/0099.

199. Carter, Memorandum for the Record, Subject: Meeting Mr. Vance and Dr. McMillan.

200. Ibid.

201. Wheelon interview, November 11-12, 1998.

202. Ibid.

203. Interview with Archie Burks, North Potomac, Maryland, May 10, 1999.

204. United States of America, Plaintiff v. William Peter Kampiles, Defendant, United States District Court, Northern District of Indiana, Hammond Division, Testimony of Leslie Dirks, November 13, 1978, p.4.

205. Burks interview; Wheelon interview, November 11-12, 1998.

206. CIA Public Affairs Staff, "Biographical Information on William J. Perry," April 15, 1999; Wheelon interview, November 11-12, 1998; CIA Public Affairs Staff, "DCI Tenet Presents Dr. William J. Perry With Prestigious R.V. Jones Intelligence Award," April 15, 1999; In presenting him with the award, DCI George Tenet would note Perry's "leadership in promoting, modifying, and upgrading our national SIGINT capabilities are legendary." In August 2000, the NRO designated Perry as

one of the "founders of national reconnaissance" and noted his service in advising the CIA on overhead SIGINT collection. (CIA Public Affairs Staff, "DCI Tenet Presents Dr. William J. Perry With Prestigious R.V. Jones Intelligence Award," April 15, 1999; NRO, "NRO Honors Pioneers of National Reconnaissance," August 18, 2000).

207. Wheelon interview, November 11-12, 1998; Desmond Ball, *Pine Gap: Australia and the US Geostationary SIGINT Satellite Program* (Sydney: Allen & Unwin, 1988), p. 13; Desmond Ball, *A Suitable Piece of Real Estate: American Installations in Australia* (Sydney: Hale & Iremonger, 1980), p. 73; Philip Klass, "U.S. Monitoring Capability Impaired," *Aviation Week & Space Technology*, May 14, 1979, p. 18; Telephone conversation with Albert Wheelon, February 8, 2000; Wheelon recalls being told by some subordinates that they were going to establish a committee to pick a codename for the project. Wheelon told them that by the time the name was chosen, the system would be built. Wheelon notes that he was "impatient, intolerant" with regard to such "traditional timewasters." (Albert Wheelon, Washington, D.C., April 9, 1997).

208. Wheelon interview, June 14, 1999.

209. McMillan interview.

210. Brockway McMillan, Memorandum for the Secretary of Defense, Subject: Comments on NRO and NRP, September 30, 1965, pp. 8-9.

211. McMillan interview; Wheelon interview, November 11-12, 1998, Christopher Anson Pike, "CANYON, RHYOLITE and AQUACADE: U.S. Signals Intelligence Satellites in the 1970s," *Spaceflight*, 37, 11 (November 1995): 381-383; Wheelon telephone interview, April 2, 1997; Interview with John McMahon, Los Altos, California, November 17, 1998; Both CANYON and RHYOLITE satellites were to orbit the earth once every twenty-four hours–which is what made them geosynchronous. What made RHYOLITE, but not CANYON, geostationary, was that while RHYOLITE, with virtually a 0 degree inclination, essentially hovered over a single point at an altitude of 22,300 miles, CANYONs traced a figure eight—drifting from about 10 degrees below the equator to 10 degrees above. In addition, the perigee and apogee of the orbit were approximately 19,000 and 24, 000 miles.

212. Buzard interview.

213. Wheelon interview, April 9, 1997; Telephone conversation with Albert Wheelon, October 12, 1999.

214. President's Foreign Intelligence Advisory Board, Memorandum for the President, Subject: National Reconnaissance Program, May 2, 1964, p.2, NRO CAL Records, 6/B/0044.

215. Ibid., p. 2.

216. Ibid., p. 3.

217. Cyrus Vance, Memorandum for McGeorge Bundy, Subject: Memorandum for the President, by the President's Foreign Intelligence Advisory Board, re National Reconnaissance Program, June 2, 1964, LBJ Library, National Security File, Intelligence File, NRO, Box 9.

218. McGeorge Bundy, Memorandum for the Secretary of Defense, the Director of Central Intelligence, Subject: National Reconnaissance Program, May 22, 1964, LBJ Library, National Security File, Intelligence File, "NRO," Box 9.

219. J. Patrick Coyne, Memorandum for Mr. Bundy, Subject: National Reconnaissance Program, June 15, 1964, LBJ Library, National Security File, Intelligence File, "NRO," Box 9, p. 1.

220. Ibid., p. 2.

221. Ibid., p.

222. Ibid., p. 6.

223. Interview with Spurgeon Keeny, July 10, 2000.

224. Spurgeon M. Keeny Jr., Memorandum for Mr. Bundy, July 2, 1964. LBJ Library, National Security File, Intelligence File, "NRO," Box 9.

225. Ibid.

226. Ibid.

227. Peter Jessup, "Some Borborygmous Rumblings from the Innards of the NRO," no date, LBJ Library, National Security File, Intelligence File, "NRO," Box 9

228. McGeorge Bundy, Memorandum for the Secretary of Defense, the Director of Central Intelligence, Subject: National Reconnaissance Program, no date, LBJ Library, Intelligence File, NRO, Box 9.

229. John A. McCone, Memorandum for the Record, Subject: Discussion at the NRO Executive Meeting, Attended by McCone, Vance, Fubini, and McMillan, August 12, 1964, NRO CAL Records, 1/A/0062.

230. Directorate of Science and Technology, *CORONA Program History, Volume II: Governmental Activities*, p. 1-18; NRO, *Program Directors of the NRO: ABC&D* (Chantilly, Va.: NRO, 1999), n.p.; Wheelon interview, April 2, 1997. Wheelon recalls his first having established the SPS in the fall of 1963, shortly after having become Deputy Director for Science and Technology. A CIA listing of DS&T staff and office heads gives July 1964 as the official beginning of the staff. The *CORONA*

Program History, cited above, gives September 1 as the date at which its existence became official.

231. Albert D. Wheelon, Deputy Director for Science and Technology, Memorandum for: Deputy Director of Central Intelligence, Subject: Establishment of a Satellite Office Within the Science and Technology Directorate, February 26, 1965, NRO CAL Records, 2/A/0078.

232. Ibid.

233. Ibid.

234. *Office of Special Projects, 1965-1970, Volume One, Chapters I-II* (Washington, D.C.: CIA, 1973), p. 116.

235. Ibid., p.118.

236. Perry, *A History of Satellite Reconnaissance, Volume 5*, pp. 186-187.

237. Ibid., p. 187.

238. Ibid., p. 188.

239. Ibid.

240. Ibid., p. 189.

241. Ibid., pp. 174-175, 189; ; CIA, *[Draft] Agreement for Reorganization of the National Reconnaissance Program*, April 26, 1965.

242. Wheelon letter.

243. Ranelagh, *The Agency*, pp. 413n, 730-731; *Office of Special Projects, 1965-1970, Volume One, Chapters I-II*, p. 120.

244. *Office of Special Projects, 1965-1970, Volume One, Chapters I-II*, p. 6.

245. Albert D. Wheelon, "A Summary of the National Reconnaissance Problem," May 13, 1965, p.5, NRO CAL Records, 1/D/0008.

246. Ibid., pp. 5-6.

247. Ibid., p.6.

248. Ibid., pp. 7-10.

249. Ibid., pp. 19-21.

250. Ibid., p. 21.

251. Ibid., pp. 21-22.

252. Ibid., pp. 22-23.

253. Perry, *A History of Satellite Reconnaissance, Volume 5*, p. 195; W.F. Raborn, Director to Honorable Cyrus R. Vance, Deputy Secretary of Defense, August 13, 1965, NRO CAL Records, 2/A/0078.

254. Cyrus Vance, Deputy Secretary of Defense and William F. Raborn, Director of Central Intelligence (signators), "Agreement for Reorganization of the National Reconnaissance Program," August 13, 1965.

255. Ibid.

256. Ibid.; W.F. Raborn, Director of Central Intelligence to Honorable Cyrus R. Vance, Deputy Secretary of Defense, August 13, 1965, NRO CAL Records, 2/A/0078.

257. Raborn to Vance, August 13, 1965.

258. Ibid.

259. Ibid.; *Office of Special Projects, 1965-1970, Volume One, Chapters I-II*, p. 122.

260. Brockway McMillan, Memorandum for the Secretary of Defense, Subject: Comments on NRO and NRP, September 30, 1965, p. 4; McMillan interview.

261. Telephone interview with Albert Wheelon, May 19, 1997; Letter from Frank Buzard to author, January 16, 1997.

262. Directorate of Science and Technology, *CORONA Program History, Volume II, Governmental Activities*, p. 1-20; Frederic C.E. Oder, James C. Fitzpatrick, and Paul E. Worthman, *The CORONA Story* (Washington, D.C.: NRO, November 1987), p. 108; Burks interview.

263. Oder, Fitzpatrick, and Worthman, *The CORONA Story*, pp. 103, 105; Ludwell Lee Montague, *General Walter Bedell Smith as Director of Central Intelligence, October 1950-February 1953* (University Park, Pa.: Pennsylvania State University Press, 1992), pp. 168-169; Wheelon interview, November 11-12, 1998.

264. McDowell, "Launch Listings," p. 238; "Appendix A," in Day, Logsdon, and Latell, *Eye in the Sky*, pp. 231-233 at p. 233.

265. Oder, Fitzpatrick, and Worthman, *The CORONA Story*, p. 109; "Appendix A," in Day, Logsdon, and Latell, *Eye in the Sky*, p. 233.

266. Buzard letter to author.

267. Perry, *A History of Satellite Reconnaissance, Volume 5*, p. 106; Actions Under Way Responsive to Purcell Panel Report Recommendations," attachment to Brockway McMillan, Memorandum for the Director, CIA, Subject: Implementation of the Purcell Panel Recommendations, September 11, 1963; Brockway McMillan, Memorandum for the Director, CIA, Subject: Implementation of the Purcell Panel Recommendations, September 11, 1963.

268. John N. McMahon, Memorandum for [Deleted], Subject: References to the Purcell Panel, December 14, 1964; Perry, *A History of Satellite Reconnaissance, Volume 5*, p. 106; 'Actions Under Way Responsive to Purcell Panel Report Recommendations," attachment to Brockway McMillan, Memorandum for the Director, CIA, Subject: Implementation of the Purcell Panel Recommendations, September 11, 1963

269. Purcell Panel Report, p. 3.

270. Interview with a former CIA official; *Office of Special Projects, 1965-1970, Volume One, Chapters I-II*, p. 2.

271. Wheelon interview, April 9, 1997; Wheelon interview, November 11-12, 1998.

272. Perry, *A History of Satellite Reconnaissance, Volume 5*, pp. 130-131; Albert D. Wheelon, Deputy Director (Science and Technology) to Dr. Brockway McMillan, Director, National Reconnaissance Office, November 5, 1963; Telephone conversation with Albert Wheelon, December 26, 1999.

273. Wheelon to McMillan, November 5, 1963; Brockway McMillan, Director, National Reconnaissance Office, to Dr. Albert D. Wheelon, Deputy Director (Science and Technology), November 18, 1963; The picture of the episode in an NRO history is significantly different from that indicated by the above memos. The history claims that by late November, McMillan had become aware of and annoyed about the Drell group's activities, and his reaction was a barbed comment that he would appreciate receiving more advance notice of such activities affecting NRO's mission. He also is reported to have objected to several of Wheelon's concepts as well as the scope of the group's task and therefore would provide no funds for the project. (Perry, *A History of Satellite Reconnaissance, Volume 5*, pp. 131; 206n.77).

274. Wheelon interview, November 11-12, 1998; Wheelon interview, April 9, 1997.

275. Ibid; Wheelon interview, November 11-12, 1998.

276. Wheelon letter.

277. Ibid; *Office of Special Projects, 1965-1970, Volume I, Chapters I-II*, pp. 2-3; Interview with John McMahon, Los Altos, California, November 17, 1998.

278. *Office of Special Projects, 1965-1970, Volume One, Chapters I-II*, pp. 2-3; McMahon interview.

279. Perry, *A History of Satellite Reconnaissance, Volume 5*, pp. 156, 159.

280. Ibid., pp. 159-160.

281. Ibid., p. 160.

282. Ibid., p. 161.

283. Ibid.

284. Ibid., pp. 162, 176; Wheelon letter.

285. John N. McMahon, Memorandum for: [Deleted], Subject, References to the Purcell Panel, December 14, 1964; Not everyone in the CIA involved in CORONA believed it was necessary to build a new search system. Archie Burks, the field technical director for CORONA at the time, questioned whether it would be possible to replace both the CORONA and GAMBIT systems with a single high-resolution search system. Technical intelligence analysts would not be satisfied, and the difference in going from 4' resolution to 3' was hundreds of millions of dollars. If the intelligence community was going to retain the high-resolution system in any event, he believed it made sense to keep the cost of the search system down, by extending the focal length of CORONA and staying with the THOR booster. He feared that two very expensive systems would not be affordable. (Interview with Archie Burks, North Potomac, Maryland, May 10, 1999).

286. Telephone interview with Walter Levison, September 17, 1999; McMillan interview; Perry, *A History of Satellite Reconnaissance, Volume 5*, p. 177; McMillan recalls MATCHBOX as having been proposed by someone from IBM. The promise of attaining high resolution with a smaller optical system, would allow for smaller, and less expensive boosters–which greatly appealed to the Pentagon's Office of Systems Analysis. However, according to McMillan, the physics was "crazy."(Interview with Brockway McMillan, September 15, 1999).

287. Perry, *A History of Satellite Reconnaissance, Volume 5*, pp. 176, 180; Wheelon interview, November 11-12, 1998.

288. Levison interview.

289. Interview with a former CIA official; Levison interview; Thirty-five years later Levison wondered “what the hell difference did it make?” and noted how the amount of film that a satellite could carry, in the case of CORONA, had gone from 20 to 180 pounds. With that much film onboard, the sensible reaction to wasting a few frames of film would be "who cares?" (Levison interview).

290. Col. Paul Worthman, Memorandum for the Record, Subject: Telephone Conversation with Representatives of the Itek Corporation, February 24, 1965.

291. Col. Paul E. Worthman, Memorandum for the Record, Subject: Itek Discussions with Dr. McMillan and Mr. Land, February 25, 1965.

292. McMahon interview; Burks interview; Wheelon interview, November 11-12, 1998; Perry, *A History of Satellite Reconnaissance, Volume 5*, p. 179; McMillan interview, Levison interview; Interview with a former CIA official; Brockway McMillan, Memorandum for Mr. Vance, February 25, 1965. Jonathan Lewis gives a somewhat different account of the events involving Itek's withdrawal from FULCRUM, particularly with respect to whether Itek was already involved in the S-2 program at the time of the FULCRUM decision. See Jonathan E. Lewis, *Spy Capitalism: Itek and the CIA* (New Haven: Yale University Press, 2002), pp. 219-261. Missing from his account is any reference to Itek's involvement in the M-2 project. Given its purpose (providing a follow-on to CORONA) and its designation, the project may be a source of confusion to both historians as well as individuals involved in the FULCRUM controversy; According to a May 1965 McMahon memo, the CIA discovered in February that McMillan had approved full-scale development of the S-2, without CIA or USIB approval. (John N. McMahon, SPS/DDS&T, Memorandum for: Deputy Director for Science and Technology, Subject: Dr. McMillan's Paper re NRO Activities in the General Search Satellite Field, May 6, 1965, NRO CAL Archives 1/E/0040.

293. McMahon interview.

294. Telephone conversation with Albert Wheelon, April 13, 2000.

295. Wheelon interview, November 11-12, 1998; Telephone conversation with Albert Wheelon, February 8, 2000; McMillan interview; Wheelon telephone conversation, April 13, 2000.

296. Perry, *A History of Satellite Reconnaissance, Volume 5*, p. 195.

297. Ibid., pp. 196-197.

298. Ibid., p. 198.

299. Ibid., p. 194.

300. McMahon interview; John N. McMahon, Memorandum for the Record, Subject: Meeting with Mr. Reber [ ] re NRO Problems and Issues, Subject: Participation by [ ] and [ ], 13 September 1965, 1/E/0045.

301. Burks interview.

302. Perry, *A History of Satellite Reconnaissance, Volume 1: CORONA*, (Washington,

D.C.: NRO, 1969), p. 162.

303. Ibid., pp. 73-74.

304. Oder, Fitzpatrick, and Worthman, *The CORONA Story*, p. 91.

305. Perry, *A History of Satellite Reconnaissance, Volume 5*, pp. 74-75; Albert Wheelon, "Genesis of a Unique National Capability," Address to CIA Directorate of Science and Technology, December 19, 1984.

306. Perry, *A History of Satellite Reconnaissance, Volume 5*, p. 75.

307. Ibid.

308. National Security Council, NSCID No. 5, "U.S. Espionage and Counterintelligence Activities Abroad," January 18, 1961.

309. Telephone interview with Brockway McMillan, September 15, 1999; Buzard interview.

310. Oder, Fitzpatrick, and Worthman, *The CORONA Story*, p. 91.

VII. NRP AGREEMENTS

~~TOP SECRET~~

~~SPECIAL HANDLING~~

THE SECRETARY OF DEFENSE
WASHINGTON

6 SEP 1961

The Honorable Allen W. Dulles
Director of Central Intelligence
Washington, D. C.

Re: Management of the National Reconnaissance Program

Dear Mr. Dulles:

This letter confirms our agreement with respect to the setting up of a National Reconnaissance Program (NRP), and the arrangements for dealing both with the management and operation of this program and the handling of the intelligence product of the program on a covert basis.

1. The NRP will consist of all satellite and overflight reconnaissance projects whether overt or covert. It will include all photographic projects for intelligence, geodesy and mapping purposes, and electronic signal collection projects for electronic signal intelligence and communications intelligence resulting therefrom.

2. There will be established on a covert basis a National Reconnaissance Office to manage this program. This office will be under the direction of the Under Secretary of the Air Force and the Deputy Director (Plans) of the Central Intelligence Agency acting jointly. It will include a small special staff whose personnel will be drawn from the Department of Defense and the Central Intelligence Agency. This office will have direct control over all elements of the total program.

3. Decisions of the National Reconnaissance Office will be implemented and its management of the National Reconnaissance Program made effective: within the Department of Defense, by the exercise of the authority delegated to the Under Secretary of the Air Force; within the Central Intelligence Agency, by the Deputy Director (Plans) in the performance of his presently assigned duties. The Under Secretary of the Air Force will be designated Special Assistant for Reconnaissance to the Secretary of Defense and delegated full authority by me in this area.

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~~SPECIAL HANDLING~~

4. Within the Department of Defense, the Department of the Air Force will be the operational agency for management and conduct of the NRP, and will conduct this program through use of streamlined special management procedures involving direct control from the office of the Secretary of the Air Force to Reconnaissance System Project Directors in the field, without intervening reviews or approvals. The management and conduct of individual projects or elements thereof requiring special covert arrangements may be assigned to the Central Intelligence Agency as the operational agency.

5. A Technical Advisory Group for the National Reconnaissance Office will be established.

6. A uniform security control system will be established for the total program by the National Reconnaissance Office. Products from the various programs will be available to all users as designated by the United States Intelligence Board.

7. The National Reconnaissance Office will be directly responsive to, and only to, the photographic and electronic signal collection requirements and priorities as established by the United States Intelligence Board.

8. The National Reconnaissance Office will develop suitable cover plans and public information plans, in conjunction with the Assistant Secretary of Defense, Public Affairs, to reduce potential political vulnerability of these programs. In regard to satellite systems, it will be necessary to apply the revised public information policy to other non-sensitive satellite projects in order to insure maximum protection.

9. The Directors of the National Reconnaissance Office will establish detailed working procedures to insure that the particular talents, experience and capabilities within the Department of Defense and the Central Intelligence Agency are fully and most effectively utilized in this program.

10. Management control of the field operations of various elements of the program will be exercised directly, in the case of the Department of Defense, from the Under Secretary of the Air Force to

the designated project officers for each program and, in the case of the Central Intelligence Agency, from the Deputy Director (Plans) to appropriate elements of the Central Intelligence Agency. Major program elements and operations of the National Reconnaissance Office will be reviewed on a regular basis and as special circumstances require by the Special Group under NSC 5412.

If the foregoing is in accord with your understanding of our agreement, I would appreciate it if you would kindly sign and return the enclosed copy of this letter.

Roswell L. Gilpatric
Deputy Secretary of Defense

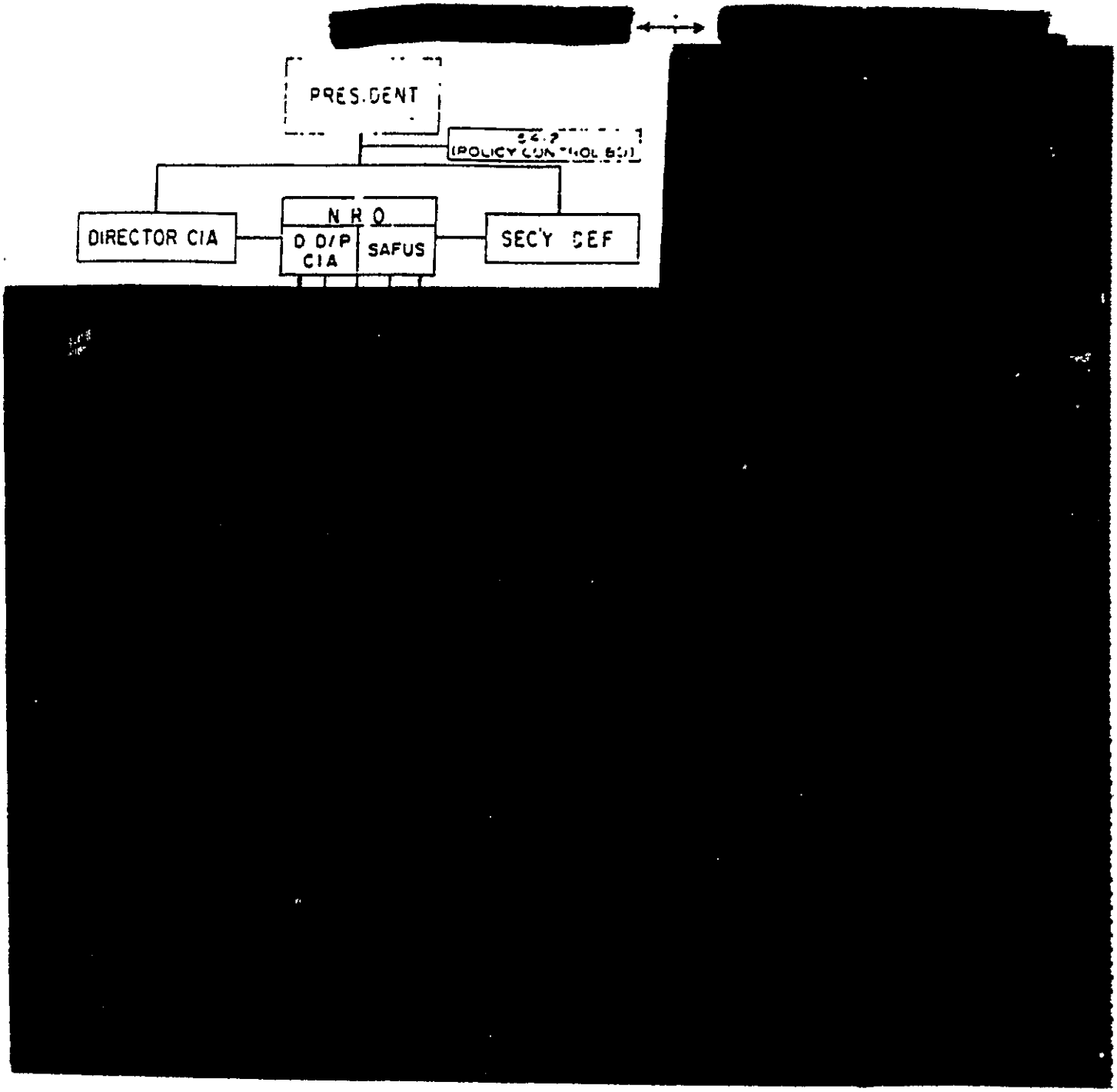
1 Atch:
Chart "Single Mgmt for National Reconnaissance Programs" (TS)

CONCUR:

C. P. Cabell 6 SEP

~~XXXXXXXXXX~~ C. P. Cabell, General, USAF
Acting Director
Central Intelligence Agency

SINGLE MANAGEMENT FOR NATIONAL RECONNAISSANCE PROGRAMS



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2 May 1962

Agreement Between

Secretary of Defense and the Director of Central Intelligence

on

Responsibilities of the National Reconnaissance Office (TS)

Definitions:

NRO - National Reconnaissance Office

NRP - National Reconnaissance Program, to consist of all overt and covert satellite and overflight projects for intelligence, geodesy and mapping photography and electronic signal collection.

DNRO - Director, National Reconnaissance Office

Policy:

The following plan outlines basic policy for the establishment of functions and responsibilities within the National Reconnaissance Office to insure that the particular talents, experience and capabilities within the Department of Defense and the Central Intelligence Agency are fully and most effectively utilized in the establishment, management and conduct of the National Reconnaissance Program. The DNRO will be designated by the Secretary of Defense and the Director of Central Intelligence, and will be responsible directly to them for the management and conduct of the NRP.

1. Requirements and Priorities:

The NRO will be directly responsive to, and only to, the photographic and electronic signal (SIGINT) collection requirements

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and priorities established by the United States Intelligence Board and will develop the over-all reconnaissance program to satisfy these requirements.

2. Management:

a. The technical management responsibility for all the NRP is assigned to the DNRO. Under this over-all responsibility for NRP, DNRO will utilize existing resources in the following manner:

(1) CIA will be the Executive Agent for DNRO for those covert projects already under its management and such additional covert projects as are assigned to it by the Secretary of Defense and the Director of Central Intelligence.

(2) To provide for full use of available capabilities and resources, and to provide for interface with data exploitation equipment development by agencies outside the NRO, personnel of Army, Navy, Air Force, and CIA, will be assigned, on a full-time basis, to appropriate positions within the NRO under the DNRO.

(3) A firm liaison channel between the NRO and the NSA will be established as an adjunct to the technical management structure of signal collection projects, and the conduct of such projects carried out in accordance with the exploitation responsibilities of the NSA.

(4) Planning will encompass maximum utilization of the technical and operational resources of the DOD, the Army, Navy, Air Force, NSA, and the CIA to support all collection programs, including, but not limited to, electronic signal and photographic collection programs.

b. Financial Management:

(1) The DNRO will be responsible for funding the NRP. DOD funds will be allocated on an individual project basis and will appear as appropriately classified line items in the Air Force budget. CIA will be responsible for funding covert projects for which it has management responsibility under paragraph 2. a. (1) above.

(2) DNRO will have responsibility for all NRP contracts in accordance with the assignment of technical management responsibility in paragraph 2. a. Consistent with paragraph 2. a. (1), CIA will be the Executive Agent of the DNRO, responsible for administering procurement and contracting for covert projects for which it is assigned responsibility under paragraph 2. a. (1), and for covert contracting necessary for the support of overt projects.

3. Security:

In accordance with the basic responsibility of the Director of Central Intelligence for protection of intelligence sources and methods, CIA will establish security policy for the NRP, including provision for a uniform system of security control and appropriate delegations of security responsibility.

4. Operations:

a. Scheduling: The mission schedule for all NRP efforts will be the sole responsibility of DNRO, subject to coordination with CIA on covert projects for which it is Executive Agent and the obtaining of appropriate clearances where required from higher authority. Operational control for individual projects under the NRP will be assigned to the DOD or to the CIA by the DNRO in accordance with policy guidance from the Secretary of Defense and the Director of Central Intelligence. DNRO will be responsible to assure that mission planning will make full use of all intelligence available in the community.

b. Format: The DNRO will be responsible for the format of the collected NRP product as follows:

(1) Photographic format will include the initial chemical processing, titling, production and delivery to the users as specified by the USIB.

(2) Electronic signal data format will include the decommutation, conversion, technical correction and reconstruction of the collected signal data to yield a usable collection product. DNRO will deliver the collection product in proper format together with associated data necessary for exploitation, to the NSA or other user as specified by the USIB.

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c. Engineering Analysis: The DNRO will be responsible for engineering analysis of all collection systems to correct the problems that exist on the operating system as well as to provide information for new systems. In connection with covert projects for which CIA is Executive Agent, this responsibility will be carried out under the supervision of CIA.

5. The DNRO is responsible for advanced plans (post CY-1962) in support of the NRP. In view of the DCI's major responsibility to the NSC for all intelligence programs, all NRO advanced planning will be coordinated with CIA.

6. Public releases of information will be the responsibility of the DNRO subject to the security guidance of CIA.

7. The Deputy Director (Research), CIA, will be responsible for seeing that the participation of CIA in this Agreement is carried out.

SIGNED 2 MAY 1962

John A. McCone
Director of Central Intelligence

SIGNED

Roswell L. Gilpatric
Deputy Secretary of Defense

#1-DOD
#2-CIA
#3-DOD
#4-CIA

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97-SI-035

AGREEMENT BETWEEN THE SECRETARY OF DEFENSE AND THE DIRECTOR OF CENTRAL INTELLIGENCE ON MANAGEMENT OF THE NATIONAL RECONNAISSANCE PROGRAM

I. Management of the National Reconnaissance Program

[redacted]

A. To insure that the particular talents, experience and capabilities within the Department of Defense and the Central Intelligence Agency are fully and most effectively utilized in the establishment, management and conduct of the National Reconnaissance Program, the Secretary of Defense and the Director of Central Intelligence hereby agree that the Secretary of Defense shall be the Executive Agent for the National Reconnaissance Program, which shall be developed, managed and conducted in accordance with policies and guidance jointly agreed to by the Secretary of Defense and the Director of Central Intelligence.

B. To carry out his responsibilities as Executive Agent for the National Reconnaissance Program, the Secretary of Defense will establish as a separate operating agency of the Department of Defense a National Reconnaissance Office under the direction, authority and control of the Secretary of Defense.

C. In the execution of their respective responsibilities the Secretary of Defense and the Director of Central Intelligence may designate appropriate officials of the Office of the Secretary of Defense and the Central Intelligence Agency to examine and monitor on their behalf the activities of the National Reconnaissance Office.

II. Organization and Command of the National Reconnaissance Office

The National Reconnaissance Office shall consist of:

A. A Director appointed from among the officers and employees of the Department of Defense by the Secretary of Defense with the concurrence of the Director of Central Intelligence, who shall devote a major portion of his time to the business of the National Reconnaissance Office.

B. A Deputy Director appointed from among the officers and employees of the Central Intelligence Agency by the Director of Central

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Intelligence with the concurrence of the Secretary of Defense. The Deputy Director NRO shall be in the chain of command directly under the Director NRO and shall at all times be kept fully and currently informed as to all activities of the National Reconnaissance Program. Under the direction of the Director NRO he shall be responsible for:

1. Supervising relations between the NRO and the United States Intelligence Board and its subcommittees, and the intelligence exploitation community.

2. Supervising all NRP tasks assigned by the Director NRO to the Central Intelligence Agency.

3. Performing such other duties as may be assigned by the Director, NRO.

The Deputy Director shall act for, and exercise the powers of the Director, NRO, during his absence or disability.

C. Such personnel of the Army, Navy, Air Force, other components of the Department of Defense and the Central Intelligence Agency as shall be assigned on a full time basis to appropriate positions within the National Reconnaissance Office.

D. The chain of command shall run directly from the Secretary of Defense as Executive Agent to the Director, NRO. Guidance to the Director, NRO, shall be furnished by the Secretary of Defense as Executive Agent hereunder and by the United States Intelligence Board.

III. Functions and Responsibilities of the National Reconnaissance Office

Subject to the direction, authority and control of the Secretary of Defense, the National Reconnaissance Office, under the operational direction and control of its Director, is responsible for the management of all aspects of the NRP, including but not limited to:

[redacted]

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A. Development on a continuing basis for the approval of the Secretary of Defense and the Director of Central Intelligence of a single National Reconnaissance Program of all projects for collection of intelligence, mapping and geodetic information [redacted] F(b)(1) (T) by collection systems exclusive of normal peripheral operations. Maximum use will be made of appropriate technical and operational capabilities and resources of the Department of Defense, NSA and CIA to support all collection and processing projects.

B. Responding directly and solely to the intelligence collection requirements and priorities established by the United States Intelligence Board.

C. Scheduling all missions for overflights in the National Reconnaissance Program, obtaining appropriate clearances where required from higher authority.

D. All NRP flights F(b)(1) (T) [redacted] employing appropriate capabilities, facilities and resources of the Department of Defense and the Central Intelligence Agency.

E. Initial imagery processing, titling, production and delivery of the collected product to the users as specified by the USIB.

F. Decommutation, conversion, technical correction and reconstruction of the collected electronic signal data to yield a usable collection product, and delivery of such collection product in proper format together with associated data necessary for exploitation to the NSA or other user as specified by the USIB.

G. Engineering analysis of all collection systems to correct the problems that exist on the operating systems as well as to provide information for new systems.

H. Planning and conduct of research and development of future NRP projects, utilizing appropriate resources and capabilities of the DoD, CIA and private contractors.

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I. Presentation, as required, of all aspects of the NRP to the Special Group and the President's Foreign Intelligence Advisory Board.

J. Maintenance of a uniform system of security procedures and control in accordance with security policy established for the NRP by the Director of Central Intelligence.

K. Preparation of budget requests for all NRO programs, and presentation and substantiation of such budget requests to the Secretary of Defense and the Director of Central Intelligence, the Bureau of the Budget and Congressional Committees. CIA will include in its budget presentation to the Bureau of the Budget and Congressional Committees the funds for those NRP tasks which are assigned to CIA and which are to be financed from NRO resources.

L. Direction and management of the application of, and administration of all funds made available for the National Reconnaissance Program. Funds expended or obligated under the authority of the Director of Central Intelligence under Public Law 110 will be administered and accounted for by CIA.

M. Rendition of status of funds reports and analyses.

N. Release of public information subject to the security guidance of CIA.

IV. Authorities

The Director, National Reconnaissance Office, in connection with his assigned responsibilities for the National Reconnaissance Program, shall be authorized to:

A. Organize, staff and supervise the National Reconnaissance Office.

B. Establish, manage and conduct the National Reconnaissance Program.

C. Assign all project tasks such as technical management, contracting, etc., to appropriate elements of the DoD and the CIA, changing such assignments, and taking any such steps he may determine necessary to the efficient management of the NRP.

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D. Issue appropriate instructions and procedures implementing this agreement.

V. Relationships

A. In carrying out his responsibilities for the National Reconnaissance Program, the Director, National Reconnaissance Office shall:

1. Report directly to the Secretary of Defense and shall keep him and the Director of Central Intelligence currently informed on the NRO and the NRP. In addition he shall keep such officials of the Department of Defense and the Central Intelligence Agency as the Secretary of Defense and the Director of Central Intelligence may respectively designate under the provisions of paragraph I. C. to examine and monitor the National Reconnaissance Program on their behalf, personally informed on a regular basis, or on request, on the status of projects of the National Reconnaissance Program.

2. Establish appropriate liaison between the National Reconnaissance Office and the United States Intelligence Board, the Joint Chiefs of Staff, the Defense Intelligence Agency, and the National Security Agency.

3. Where appropriate make use of qualified personnel of the Department of Defense and the Central Intelligence Agency as full-time members of the National Reconnaissance Office.

4. Make maximum utilization of appropriate technical and operational capabilities and resources of the Department of Defense, the National Security Agency and the Central Intelligence Agency to support all collection and processing programs including but not limited to, electronic signal and imagery programs.

B. Officials of all elements of the Department of Defense and the Central Intelligence Agency shall provide support within their respective authorities to the Director, National Reconnaissance Office, as may be necessary for the Director to carry out his assigned responsibilities and functions. Streamlined management procedures shall be utilized whereby individual project directors will report directly to the Director, National Reconnaissance Office. The Director, National Reconnaissance Office, shall be given support as required from normal staff elements of the

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military departments and agencies of the Department of Defense and of the Central Intelligence Agency concerned, although these staff elements will not participate in those project matters except as he specifically requests, and these projects will not be subject to normal Department of Defense or Central Intelligence Agency staff review.

VI. Effective Date

This agreement is effective upon signature and supersedes the DoD-CIA NRO Agreement dated 2 May 1962.

13 March 1963

John A. McCone
Director of Central Intelligence

Roswell Gilpatric
Deputy Secretary of Defense

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26 April 1965

AGREEMENT FOR REORGANIZATION OF THE
NATIONAL RECONNAISSANCE PROGRAM

I. PREAMBLE

Set forth below are certain basic assumptions which determine the organization appropriate for the administration and direction of the National Reconnaissance Program (NRP).

A. The national character of this essential intelligence enterprise must be maintained through a joint endeavor on the part of DoD and CIA.

B The potentialities of U.S technology must be aggressively and imaginatively exploited to develop systems for the collection of intelligence which are fully responsive to intelligence needs and objectives. In the development of new systems maximum use must be made of the experience, resources, facilities and technical competence of appropriate components of the Defense Department and CIA.

C. Scheduling and targetting of satellite and manned aircraft reconnaissance missions over denied areas shall be the ~~final~~ responsibility of the DCI and the United States Intelligence Board (USIB).

D A new organizational framework is required which, particularly in the field of satellite reconnaissance operations and systems development, will: (1) provide a clearly established delineation of the roles and responsibilities of components of the Government engaged in these activities, and (2) ensure effective coordination of these activities under centralized policy guidance and control.

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II. ORGANIZATIONAL FRAMEWORK:

A. THE EXECUTIVE COMMITTEE:

An Executive Committee, consisting of the Deputy Secretary of Defense and the Director of Central Intelligence, will be established to formulate, guide, and regulate the NRP. Specifically the Executive Committee will:

1. Establish an appropriate level of effort for the NRP in response to reconnaissance requirements provided by USIB and in the light of technical capabilities and fiscal limitations.

2. Approve or modify the consolidated NR program and its budget.

3. Acting through the DNR, allocate responsibility and the corresponding funds to CIA and/or DOD for research and preliminary design studies for new systems.

4. Allocate development responsibilties and the corresponding funds for specific reconnaissance programs to DOD or CIA, and establish guidelines for mutual support where appropriate. It shall be free to use technical advisory groups as necessary.

5. Assign operational responsibilities to either DoD or CIA for various types of manned overflight missions, subject to the concurrence, of the 303 Committee.

6. Review periodically the essential features of the major program elements of the NRP.

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B. ROLE OF THE DIRECTOR OF NATIONAL RECONNAISSANCE:

To insure the coordination of CIA and DOD reconnaissance activities a Director of National Reconnaissance Program will be appointed by the Secretary of Defense with the concurrence of the Director of Central Intelligence. The D/NR will serve for a four-year term and will be selected by the Secretary of Defense and concurred in by the Director of Central Intelligence from CIA, DOD, or from other sources. He will be responsible to and carry out the directives of the Executive Committee. He will devote his activities exclusively to the NRP and will have no other official duties. Specifically he will:

1. Provide a single point of integration for the planning and budgeting of the National Reconnaissance Program and will be responsible to the Executive Committee for the execution of the program.

2. Be kept fully and completely informed of all reconnaissance activities in CIA and DOD.

3. Schedule the use of the space launching, tracking and recovery facilities.

4. Review budget proposals submitted by appropriate elements of CIA and DOD and prepare and submit a consolidated budget for examination and approval by the Executive Committee.

5. Ensure the flow of funds from the NRP appropriations to CIA and appropriate DOD elements in lump sum transfers each fiscal year. Incremental funding from reserve or reprogramming sources will be used for supplemental programs approved by ExCom.

6. Deal with the operating head of the CIA or his designated alternate on all matters of policy, coordination, or guidance. He will not exercise command control over subordinate elements of CIA or its personnel, however, the DCI will insure that the fullest measure of cooperation is afforded the D/NR.

7. Sit with the USIB for the matters affecting the NRP.

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8. Appear before the 303 Committee to the extent desired by the DCI or the Deputy Secretary of Defense to secure approval for overhead reconnaissance missions.

C. MANNING OF THE REORGANIZED NATIONAL RECONNAISSANCE PROGRAM:

To insure that the National Reconnaissance Program is truly a national entity, it will be manned in a balanced way by personnel from DOD and CIA. An appropriate plan to rotate DOD and CIA personnel into key positions of the NRP will be developed and approved by the ExCom. (Attached is chart showing key senior positions of NRP.)

III. OTHER ASPECTS OF THE NRP:

A. RESEARCH AND PRELIMINARY DESIGN:

1. Research on reconnaissance technology and preliminary design of new systems will be encouraged and supported in both CIA and DOD. It will be supported by a lump sum allocation from NRP budget line items to each group at a level to be recommended by the DRP and approved by the Executive Committee. It is intended that these funds and their products represent the flexible cutting edge of the NRP.

2. A prescribed amount of these resources will be allocated for support of basic research on reconnaissance technology to stimulate and assure the future vigor of this field. The DNR will be kept fully informed of all activities and developments in this connection for the purpose of ensuring appropriate coordination and preventing unwitting duplication as well as encouraging joint exploitation of new techniques.

3. Preliminary design and small technical feasibility demonstrations of new reconnaissance systems will also be funded from this innovation resource. Such work can grow out of requirements originating with USIB, the ExCom or the DNR for improvements in existing capabilities, or can result from spontaneous initiative in the CIA and DOD participating elements. However, it is important that the DNR and ExCom receive each month a comprehensive report on the initiation, status, or conclusion of such efforts. In this way, competitive study efforts will be recognized, approved or discouraged, and synchronized for later decision actions.

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B. SYSTEMS DEVELOPMENT:

1. When a new reconnaissance system concept has been approved for development by ExCom, with appropriate recommendations by the D/NR, it will be assigned as a specific program of the NRP in whole or part to either CIA or DOD. This assignment will include the transfer of funds necessary for the development, production, and procurement envisioned, in whatever increments ExCom considers are appropriate to the proper management of the program.

2. The element of CIA and/or DOD assigned such development, production and procurement responsibility for a new system will be responsible for selecting and supervising contractors; for establishing such systems engineering support as they deem necessary; for rendering periodic reports on program progress to the D/NR and ExCom and generally for the implementation of the program.

C. SATELLITE RECONNAISSANCE OPERATIONS:

1. When a satellite reconnaissance payload has been developed, it becomes a part of the operational assets of the NRP. Such payloads, together with appropriate rocket boosters, launch facilities, tracking/communication networks, and recovery forces must be combined in an orderly program to acquire intelligence information in response to USIB requirements. The conduct of this operational satellite reconnaissance program will be the responsibility of the D/NR.

2. The D/NR will establish a launching schedule for all satellite reconnaissance payloads in response to expressed USIB requirements. The D/NR will ensure that adequate launch vehicles and payloads are procured to meet this schedule and recommend budget levels in CIA and DOD

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to support this procurement. He will also support payload development flights with launch support and schedule such tests so as to be compatible with the basic operational schedule for acquisition of intelligence.

3. The DOD will create a single satellite reconnaissance operational organization which will be responsible for the launch, command and tracking and recovery phases of all satellite operations.

4. Satellite payloads for the program will be procured by the agencies responsible for their development and improvement. The components of these payloads will be accepted, assembled, tested, and programmed by the developing agency at suitable facilities near the launching site. These payloads will then be provided to the launching organization as certified equipment ready for flight on the schedule established by the D/NR.

5. The Satellite Requirements Program Center, formerly known as "Satellite Operations Center," shall be responsive to USIB requirements and will function as the responsibility of CIA. It has the responsibility of providing the operational mission intelligence guidance, i.e., final orbit choice, camera programming, etc.

D. MANNED OVERFLIGHT OPERATION:

1. Covert manned overflights of denied areas will be the responsibility of the Central Intelligence Agency. These missions will be planned in the Air Operations Center of CIA in response to USIB target coverage requirements with the approval of the 303 Committee. The D/NR will be kept fully informed of such planning and operations. Within the constraints established by the 303 group, these missions will be executed by CIA in the light of target and terminal weather, negotiations for overseas base use and defensive tactics necessary for operational survival. The DOD will continue to support such operations with airlifts, tankers, and base equipment in accordance with the basic U-2 and OXCART agreements.

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2. Overt manned overflights of denied territory or overt missions covering friendly territory will generally be executed by the DoD to meet established intelligence requirements unless otherwise directed by the 303 Committee. The Joint Reconnaissance Center of the JCS will plan the missions in response to USIB and/or field command target requirements. JRC will be responsible for executing such missions with the approval of the 303 Committee. The JRC will keep the D/NR fully informed on all such mission planning and execution. The CIA will support JRC in negotiations on overseas bases, providing secure communications, and security support as requested.

3. The designation of particular classes of manned overflight operations as overt or covert will be the responsibility of the ExCom in consultation with the 303 Committee, as noted above.

E. SECURITY:

The Director of Central Intelligence, in accordance with his statutory responsibilities for protection of intelligence sources and methods, shall be responsible for the overall security policy of the NRP. The D/NR will be responsible for the coordination of security matters within the respective elements of the NRP in accordance with the guidelines set forth by the Executive Committee. Release of public information shall be coordinated with the DCI. The CIA shall maintain a central record of all security clearances related to the NRP.

F. BUDGETING:

A separate National Reconnaissance Program funding agreement will be entered into and made a part of this agreement.

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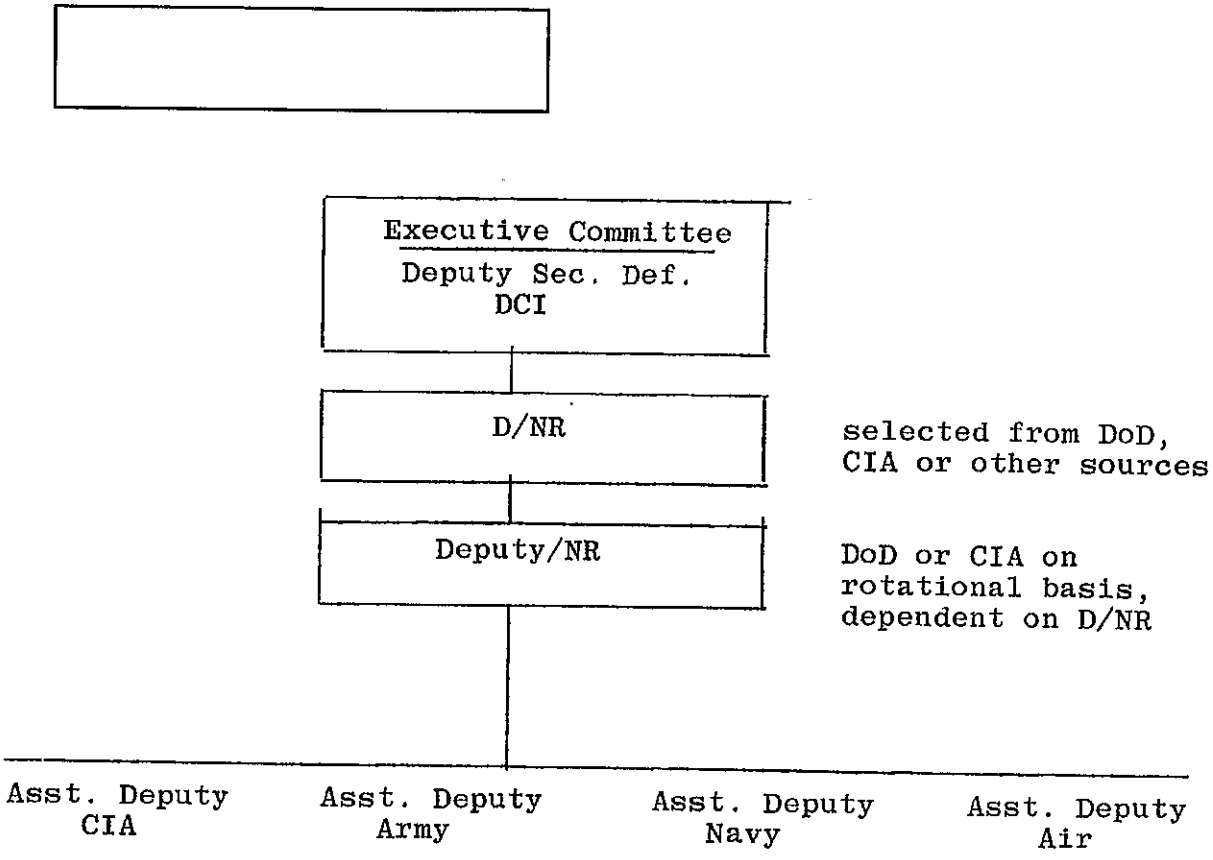

The Assistant Deputies would constitute the action and information channels to their respective parent services.

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AGREEMENT FOR REORGANIZATION OF THE
NATIONAL RECONNAISSANCE PROGRAM

A. The National Reconnaissance Program

1. The NRP is a single program, national in character, to meet the intelligence needs of the Government under a strong national leadership, for the development, management, control and operation of all projects, both current and long range for the collection of intelligence and of mapping and geodetic information obtained through overflights (excluding peripheral reconnaissance operations). The potentialities of U. S. technology and all operational resources and facilities must be aggressively and imaginatively exploited to develop and operate systems for the collection of intelligence which are fully responsive to the Government's intelligence needs and objectives.

2. The National Reconnaissance Program shall be responsive directly and solely to the intelligence collection requirements and priorities established by the United States Intelligence Board. Targeting requirements and priorities and desired frequency of coverage of both satellite and manned aircraft missions over denied areas shall continue to be the responsibility of USIB, subject to the operational approval of the 303 Committee

B. The Secretary of Defense will:

1. Establish the NRO as a separate agency of the DoD and will have the ultimate responsibility for the management and operation of the NRO and the NRP;

2. Choose a Director of the NRO who will report to him and be responsive to his instructions;

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3. Concur in the choice of the Deputy Director of the NRO who will report to the DNRO and be responsive to his instructions

4. Review and have the final power to approve the NRP budget

5. Sit with members of the Executive Committee, when necessary, to reach decisions on issues on which committee agreement could not be reached.

C. The Director of Central Intelligence will:

1. Establish the collection priorities and requirements for the targeting of NRP operations and the establishment of their frequency of coverage;

2. Review the results obtained by the NRP and recommend, if appropriate, steps for improving such results;

3. Sit as a member of the Executive Committee;

4. Review and approve the NRP budget each year;

5. Provide security policy guidance to maintain a uniform system in the whole NRP area.

D. National Reconnaissance Program Executive Committee

1. An NRP Executive Committee, consisting of the Deputy Secretary of Defense, the Director of Central Intelligence, and the Special Assistant to the President for Science and Technology, is hereby established to guide and participate in the formulation of the NRP through the DNRO. (The DNRO will sit with the Executive Committee but will not be a voting member If the Executive Committee can not agree on an issue the Secretary of Defense will be requested to sit with the Committee in discussing this issue and will arrive at a decision. The NRP Executive Committee will:

a. Recommend to the Secretary of Defense an appropriate level of effort for the NRP in response to reconnaissance requirements provided by USIB and in the light of technical capabilities and fiscal limitations.

b. Approve or modify the consolidated National Reconnaissance Program and its budget.

c. Approve the allocation of responsibility and the corresponding funds for research and exploratory development for new systems. Funds shall be adequate to ensure that a vigorous research and exploratory development effort is achieved and maintained by the Department of Defense and CIA to design and construct new sensors to meet intelligence requirements aimed at the acquisition of intelligence data. This effort shall be carried out by both CIA and DoD.

d. Approve the allocation of development responsibilities and the corresponding funds for specific reconnaissance programs with a view to ensuring that the development, testing and production of new systems is accomplished with maximum efficiency by the component of the Government best equipped with facilities, experience and technical competence to undertake the assignment. It will also establish guidelines for collaboration between departments and for mutual support where appropriate. Assignment of responsibility for engineering development of sensor subsystems will be made to either the CIA or DoD components in accordance with the above criteria. The engineering development of all other subsystems, including spacecraft, reentry vehicles, boosters and booster interface subsystems shall in general be assigned to an Air Force component, recognizing, however, that sensors, spacecraft and reentry vehicles are integral components of a system, the development of which must proceed on a fully coordinated basis, with a view to ensuring optimum system development in support of intelligence requirements for overhead reconnaissance. To optimize the primary objective of systems development, design requirement of the sensors will be given priority in their integration within the spacecraft and reentry vehicles.

e. Assign operational responsibility for various types of manned overflight missions to CIA or DoD subject to the concurrence of the 303 Committee.

f. Periodically review the essential features of the major program elements of the NRP.

2. The Executive Committee shall meet on the call of either the Deputy Secretary of Defense or the Director of Central Intelligence. All meetings will be attended by the DNRO and such staff advisors as the Deputy Secretary of Defense or the Director of Central Intelligence consider desirable.

E. National Reconnaissance Office

1. To implement the NRP, the Secretary of Defense will establish the NRO as a separate operating agency of the DoD. It shall include the SOC which shall be jointly manned.

2. The Director of the NRO shall be appointed by the Secretary of Defense. The Director NRO will:

a. Subject to direction and control of the Secretary of Defense and the guidance of the Executive Committee as set forth in Section D above, have the responsibility for managing the NRO and executing the NRP.

b. Subject to review by the Executive Committee, and the provisions of Section D above, have authority to initiate, approve, modify, redirect or terminate all research and developme programs in the NRP. Ensure, through appropriate recommendations to the Executive Committee for the assignment of research and development responsibilities and the allocation of funds, that the full potentialities of agencies of the Government concerned with reconnaissance are realized for the invention, improvement and development of reconnaissance systems to meet USIB requirements.

c. Have authority to require that he be kept fully and completely informed by all Agencies and Departments of the Government of all programs and activities undertaken as part of the NRP.

d. Maintain and provide to the members of the Executive Committee records of the status of all projects, programs and activities of the NRP in the research, development, production and/or operational phases.

e. Prepare a comprehensive budget for all aspects of the National Reconnaissance Program.

f. Establish a fiscal control and accounting procedure to ensure that all funds expended in support of the National Reconnaissance Program are fully accounted for and appropriately utilized by the agencies concerned. In particular, the budget shall show separately those funds to be applied to research and exploratory design development, systems development, procurement, and operational activities. Funds expended or obligated under the authority of the Director of Central Intelligence under Public Law 110 shall be administered and accounted for by CIA and will be reported to DNRO in accordance with agreed upon procedures.

g. Sit with the USIB for the matters affecting the NRP.

3. The Deputy Director NRO shall be appointed by the DCI with the concurrence of the Deputy Secretary of Defense and shall serve full time in a line position directly under the Director NRO. The Deputy Director shall act for and exercise the powers of the Director, NRO during his absence or disability.

4. The NRO shall be jointly staffed in such a fashion as to reflect the best talent appropriately available from the CIA, the three military departments and other Government agencies. The NRO staff will report to the DNRO and DDNRO and will maintain no allegiance to the originating agency or Department.

F. Initial Allocation of Program Responsibilities

1. Responsibility for existing programs of the NRP shall be allocated as indicated in Annex A attached hereto.

(signed) Cyrus Vance Deputy Secretary of Defense	(signed) W. F. Raborn Director of Central Intelligence

ANNEX A

The following assignments for the development of new optical sensor subsystems are made to take full advantage of technical capability and experience of the agencies involved.

1. The CIA will develop the improvements in the CORONA general search optical sensor subsystems.

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The Director, NRO will, in managing the corresponding over-all systems developments, ensure that:

1. The management of and contracting for the sensors is arranged so that the design and engineering capabilities in the various contractors are most efficiently utilized.

2. The sensor packages and other subsystems are integrated in an over-all system engineering design for each system, with DNRO having responsibility for systems integration of each over-all system.