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The Directorate of Science and Technology
Historical Series

The Office of Scientific Intelligence, 1949-68

VOLUME ONE (INCLUDING ANNEXES I, II, AND III)

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OSI-1
June 1972
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THE DD/S&T HISTORICAL SERIES

OSI-1

THE OFFICE OF SCIENTIFIC INTELLIGENCE, 1949-68

VOLUME ONE (INCLUDING ANNEXES I, II, AND III)

by

Karl H. Weber

June 1972

[redacted]

for Carl E. Duckett
Director
Science and Technology

HISTORICAL STAFF
CENTRAL INTELLIGENCE AGENCY

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PREFACE

In preparing this account of OSI's history, full use was made of two earlier compilations. The first covered the period 1949-52 and was prepared by [redacted] who was in OSI at the time of its preparation in 1953. The second was an unofficial document prepared by the O/DCI/ Historical Staff that covered the period 1953-60. These reports contain much detail, a good deal of which probably has limited lasting value.

It was decided after reading the above documents that the present version, covering the period 1949-68, would be written in somewhat different fashion; i.e., that the main body of the history would attempt to highlight only the significant events, trends and features in the life of OSI while annexes would carry the details. In accordance with this format, the following annexes have been prepared by the authors indicated and are attached to the central text:

The Office of Scientific Intelligence, 1949-68

CONTENTS

VOLUME III

[redacted]

The Office of Scientific Intelligence, 1949-68

I. Background

WW II saw the first stirrings of U.S. intelligence interest in the scientific and technical capabilities of foreign countries. Largely under the impetus of German development of radar, missiles and diverse weapons-related technologies, the separate armed services and various committees of the Office of Scientific Research and Development (OSRD) became customers for scientific and technical intelligence on foreign activities. In these wartime years information on such subjects was most often obtained through combat intelligence and the exploitation of captured materiel, with occasional assists from clandestine and intercept operations. British success in fathoming German secret weapons programs contributed to the awakening of interest in U.S. official circles.

In the early 40s, however, no discrete U.S. organization could be labeled an "office of scientific intelligence". Scientific and technical intelligence was more an offshoot of the interests of the research and development (R&D) elements than an entity in its own right. In rather distinct contrast, the British had an identifiable unit under Dr. R. V. Jones in the

[redacted]

Intelligence Branch, Air Ministry which played a major role in the wartime efforts against German aircraft and secret weapons programs.

One exception to this general state of affairs in the U.S. was a foreign intelligence unit, the Foreign Intelligence Branch, in the Manhattan Engineering District (MED), the wartime agency under General Leslie Groves concerned with nuclear weapons development. It may be recalled that considerable fear was felt in some quarters, as the feasibility of nuclear weapons seemed increasingly assured, that the Germans might be carrying on a nuclear weapons program. It was reasoned that the early experiments on atomic fission had been performed by Germans, notably the Nobel Prize winners Otto Hahn and Lisa Meitner, and hence German understanding of the underlying principles of nuclear weapons was as great as ours. Attempts to establish the existence of a German program through clandestine operations were not altogether reassuring. Anxiety continued throughout the war in the West and even into the final stages of the war against Japan.

At the close of the war, while the soul-searching into the Pearl Harbor disaster was taking place, the assets of the Office of Strategic Services (OSS) were transferred in 1946 to an interim agency, the Central

Intelligence Group (CIG), under the general surveillance of a National Intelligence Authority. This was the first attempt to consolidate and centralize the highest level intelligence functions of the U.S. Government.

In CIG the analytical functions were centered in the Office of Research and Evaluation (ORE).* Under the persistent urging of the Joint Research and Development Board (JRDB),** the peace-time successor to the OSRD

Through an agreement between General Groves and General Hoyt S. Vandenberg, the Director of the CIG, the Foreign Intelligence Branch of MED was transferred to

*The Office of Research and Evaluation, organized 22 July 1946, was renamed the Office of Reports and Estimates on 27 October of the same year.

**Eventually an agreement, entitled "Program for JRDB-CIG cooperation in the field of scientific intelligence," was signed by Gen. Hoyt S. Vandenberg and Dr. Vannevar Bush on 10 January 1947. The agreement followed much discussion and investigation by JRDB. It was perhaps the first high-level recognition of the desirability of combining intelligence considerations with scientific and military factors in the planning of weapons R&D in the U.S.

the CIG on 25 February 1947 and assigned to the [redacted] by order of the DDCI on 28 March 1947. [redacted]

As might be expected, [redacted] was seriously hampered by lack of experienced personnel. Of equal importance, it also lacked sources of information and there is evidence to suggest that its support from top management was less than vigorous. [redacted]

Despite these shortcomings of the [redacted] the JRDB persisted in its demands for intelligence support during 1946-47 and into early 1948 with [redacted] and Ralph L. Clark* as the two most outspoken advocates. [redacted]

In its testimony before the Eberstadt Commitee of the Hoover Commission* in 1948, the JRDB voiced its general dissatisfaction with the intelligence support it was receiving. Prompted by this view, which one can imagine was presented with vigor by Dr. Bush (Chairman, RDB) backed up by Ralph Clark, the Eberstadt Committee in turn expressed its view as follows:

> "The Committee is particularly concerned over the nation's inadequacies in the fields of scientific and medical intelligence. There are difficulties peculiar to this situation which the Committee has not overlooked. Yet the vital importance of reliable and up-to-date scientific and medical information is such as to call for far greater efforts than appear to have been devoted to this essential need in the past."

Persistent JRDB prodding of CIG and CIA may well have been the most important external pressure leading to the eventual establishment of OSI.

With the passage of the National Security Act of 1947 and the creation of the CIA, the heretofore uncertain responsibilities of the CIG gave way to the statutorily defined mission of a greatly strengthened and centralized intelligence service, the CIA. The change to a more encompassing role for CIA and the growing capabilities of the military intelligence

* More properly named the Committee on the National Security Organization of the Commission on Reorganization of the Executive Branch of the Government.

agencies prompted Admiral Hillenkoetter, who had succeeded General Vandenberg, to ask Dr. Bush in 1948 whether the old JRDB-CIG agreement should not be supplanted. Bush's reply was both assent and complaint for he felt that the Agency had never really begun to satisfy JRDB's needs. He agreed, however, in a letter of 26 March 1948 to set aside the formal agreement.

In particular, the coordinating and estimate producing functions of the new Agency were more firmly rooted and its resources greatly increased over those of the old. More or less concurrently, the period of uncertainty about the true intentions of the USSR and its threat to the U.S. ended. Doubts about the reality of a U.S. monopoly in nuclear weapons were fed by reports of Soviet interest in the advanced technology acquired from the Germans. There was an increasing sense of urgency about strengthening the U.S. intelligence posture.

At about the same time as the Eberstadt Committee was making its review for the Hoover Commission in 1948 another and separate review was being conducted for the National Security Council (NSC) by a team consisting of Allen W. Dulles, William H. Jackson, and Mathias F. Correa. The latter investigation

resulted in the so-called Dulles Report of 1 January 1949 which had this to say about scientific intelligence:

> "We believe that there is an obvious need for more centralization of scientific intelligence. Where centralization is not practical there should be the closest coordination among the existing agencies through the use of committees such as the present interdepartmental atomic energy intelligence committee which works in consultation with the [redacted] of the Office of Special Operations (. . .). A strong [redacted] as a common service within the Central Intelligence Agency, would be the logical focal point for the coordination and appropriate centralization of scientific intelligence. There appears to be no overriding reason for the segregation of the [redacted] within the Office of Special Operations, and it would be preferable to reattach this Group to the [redacted] even though some insulation may be necessary for security reasons."*
>
> "To fulfill its responsibilities as the chief analytical and evaluating unit for scientific intelligence, and consequently as the principal guide for collection, the Branch would have to be staffed by scientists of the highest qualifications. We appreciate that in such a Branch it would be impossible to obtain a leading scientist for each of the many segments of scientific and technological intelligence,

*We understand that since this report was written steps have been taken to create a separate Office of Scientific Intelligence which is to include the [redacted] (Author's Note: The foregoing sentence was a footnote to the Dulles Report. NSC approval of the portions of the Dulles Report dealing with the strengthening of scientific intelligence did not come until 7 July 1949. CIA in the meantime had moved to establish OSI without waiting for NSC action.)

but we believe that a staff of moderate size and of high quality can cope with the normal research and evaluation, co-opting, where necessary, personnel from such organizations as the Research and Development Board and the Atomic Energy Commission."

Under the impetus of the Hoover Commission and Dulles reports, the pressure on CIA and the DOD to get on with scientific intelligence mounted. The way was paved for a stronger CIA scientific intelligence effort.

II. Establishment of OSI and The Machle Period, 1949-50

A major reorganization of CIA took place in 1948 under the tenure of the then DCI, Admiral Roscoe Hillenkoetter. The process of splitting up the former ORE, which contained political, economic, and scientific units, among others, was begun.*

The activation date for OSI was 1 January 1949.

*In time not only OSI but also the Office of Research and Reports (economic, basic and geographic), the Office of Collection and Dissemination (forerunner of OCR), the Office of National Estimates, the Office of Current Intelligence, and the Office of Intelligence Coordination emerged.

**See Annex I.

Because of mounting frustration and his longing to return to what doubtless were in his view more legitimate professional activities, [redacted] left CIA in fall of 1948 just before the establishment of OSI. His successor in CIA was Dr. Willard Machle, who became the first Assistant Director for Scientific Intelligence on 1 January 1949. Machle was a dynamic person of wide interests with degrees in science and physiology, teaching experience, many years in industrial medicine, a Colonel's commission in the Army, and wartime experience as the Director of Research and Commanding Officer of the Armored Medical Research Laboratory. Faced with a half-filled T/O, Machle set out to recruit staff to implement his new OSI charter.

In 1949 the problem of recruiting qualified scientists and engineers for government service was difficult at best. Not only were such people in short supply as a result of the interruption of educational programs during the War but also many of the younger generation had had enough of government service in the military and were more interested in industry or education under the GI Bill. Thus, the build-up in personnel strength was slow and there were compromises in the qualifications of many of the

[redacted]

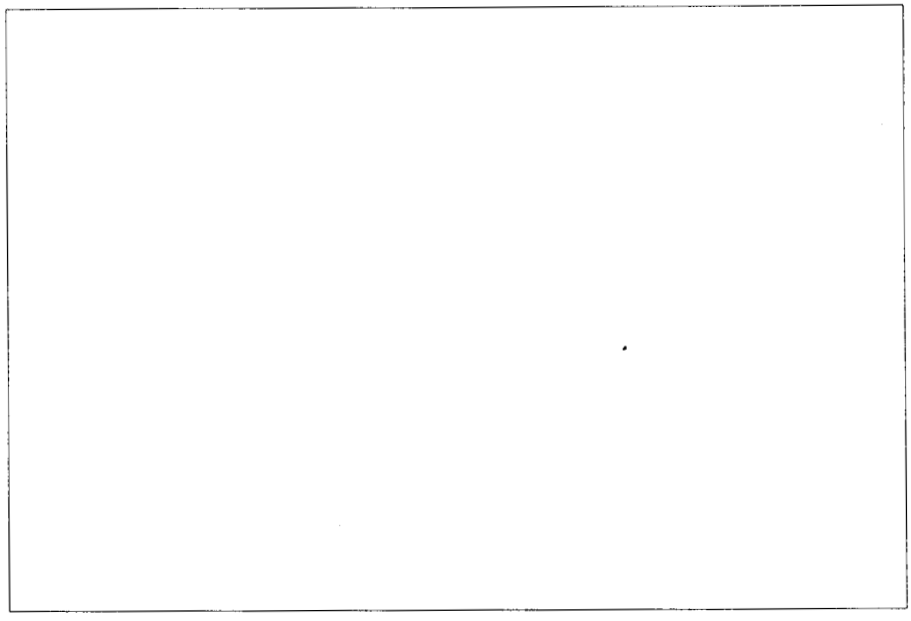
individuals hired. The mounting demands imposed by the ever-worsening Korean situation, however, simply did not permit the more orderly growth that might have led to a scientific intelligence component of greater initial depth and competence.

With a far from ideal fighting force, Machle began to take on the job of carving out a working relationship within the Agency vis-a-vis ORE and OSO [redacted] as well as in the community against the burgeoning technical intelligence units of the departmental agencies. Eventually this over-commitment led to his undoing and departure from OSI after fourteen months of service.

In January 1949 the first organization chart was constructed as a framework against which to allocate the 100 positions assigned to OSI. The organization reflected strongly Machle's concepts of topics deserving emphasis and consisted of four staffs and seven divisions. [redacted]

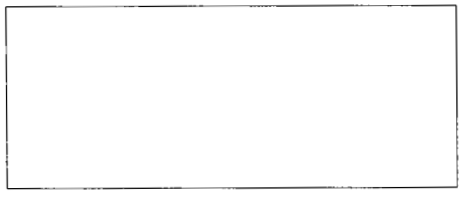
[redacted]

[redacted]



The internal issues besetting OSI involved both the form and the substance of intelligence. On the one hand the current intelligence reporting responsibilities of ORE were in apparent conflict (or so it seemed to Machle and others) with the overall reporting responsibilities of the fledgling OSI which was anxious to establish an image as a strong producer in the eyes of intelligence consumers. In the nuclear energy field, particularly, OSI feeling ran high. Under the

* See Annex I for a series of organization charts whenever significant changes occurred.



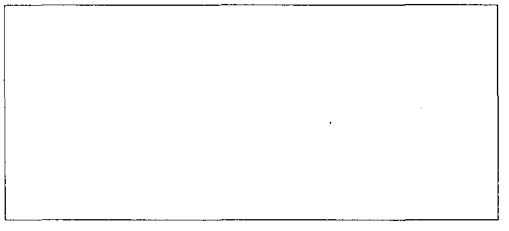
strong leadership of the redoubtable [redacted] using such means as the control of [redacted] and others, OSI maintained its hold on nuclear intelligence. Also in the field of in-depth intelligence research, ORE was performing analyses that at times appeared to OSI to reach too far back into the R&D phases of weapons systems development, clearly an OSI responsibility.

It may be well to consider for a moment such questions as: what constitutes scientific intelligence, at what point does it cut off and economic or military intelligence take over, and what if any are the distinctions between scientific intelligence and technical intelligence? Within OSI the "guardhouse lawyers" were inclined in these early days to take a rather broad and all-inclusive view of the scope of scientific intelligence. Broadly put, it could cover any development in foreign science and technology which could pose a threat, immediate or eventual, to U.S. national security. In another sense, scientific intelligence was held by some to encompass any application of science and technology

[redacted]

to the intelligence process, be it collection or analysis. Obviously, the bounds of the latter concept were almost limitless and well-nigh unmanageable in practice. To some extent, however, both views were implemented, or at least attempts were made at implementation, in OSI operations.

The second question, that concerning the cut-off point in the scope of scientific intelligence, was of considerable concern to OSI and to those producing intelligence on production of military goods and on military capabilities. Such terms as "research and development" were too ambiguous to afford clear-cut lines of demarcation. Many weapons are modified or "developed" throughout their life history and each modification may involve a good deal of science and technology -- in other words "research and development". The British evolved the notion that scientific intelligence would be concerned with technological developments through the stage at which a prototype item is produced, stopping short of the serial production phase. For want of something better, OSI tended to adopt this concept as well but it was frequently found necessary to bolster the understanding with



a specific agreement with ORE on a given field. For a young and prerogative-conscious, but not yet very capable, OSI such specific agreements were perhaps the best solution.

OSI's view on the third question was, of course, of primary interest to the departmental intelligence agencies. In their zeal to confine OSI's attention to non-military fields, it would have been of considerable assistance to them to be able to exclude OSI by definition backed by a directive. This was essentially what they succeeded in doing in DCID 3/4 as will be seen. The DOD concept was that scientific meant basic science and technical meant applied science. Since a military weapon is patently an application of science, they considered themselves to be exclusively responsible for coverage of applied or technical intelligence. OSI, in their view, should be confining its attention to basic science, medicine, and scientific resources not obviously related to a military weapon or weapon system. OSI, of course, wanted a broad interpretation of the "scientific" part of scientific intelligence. The DOD view prevailed in the preparation of DCID 3/4, the directive

that so severely circumscribed OSI's activities. OSI was a long time in undoing this bit of semantic skull-druggery, foisted upon an acquiescent Agency management, that rather completely obscured the statutory responsibilities of the DCI and CIA.

For its part ORE was perturbed by the OSI monopoly on nuclear energy intelligence and made unsuccessful attempts to carve its way into this field. Again using the [redacted] mechanism and others, [redacted] succeeded in fending off ORE. In ONE the fact that the important annual NIE on the Soviet nuclear energy program was drafted in OSI, approved by the Joint Nuclear Energy Intelligence Committee, and presented directly to the Intelligence Advisory Committee without ONE/BNE participation became an increasingly irritating thorn-in-the-side. Despite occasional attempts by Sherman Kent to have the responsibility shifted, it was not until 1965 that ONE assumed the drafting role on the annual nuclear energy NIE.*

Another internal issue, the one that ultimately led to Machle's resignation, concerned the responsibility for the collection of scientific

* See Annex II.

intelligence information. No doubt aided and abetted by the old hands in the [redacted] Machle quickly realized the importance of information inputs to the accomplishment of the OSI mission. In the summer of 1949 he made two trips to Europe to survey collection possibilities [redacted] Armed with some first-hand information, he returned to take on OSO in a struggle to have the OSI charter broadened so as essentially to include the responsibility for the collection, as well as analysis, of scientific intelligence information.

Several months of lively debate and jockeying for position at Machle's level, and lower levels, culminated in the preparation of "white papers" on both sides. Machle, in his, made the point very forcefully that without information to analyze OSI was completely unable to produce the finished intelligence expected of it. The answer, he said, lay in giving OSI a far greater voice in the selection and guiding of operations. The matter made its way

[redacted]

to Admiral Hillenkoetter who made his decision in February 1950. The OSO charter was upheld and, because of his deep personal involvement in the struggle, Machle resigned from the Agency effective 1 March 1950.

Among Machle's moves in his attempt to solidify the OSI position in collection was one that stemmed from his 1949 European trips mentioned above.

[redacted]

While the intra-Agency struggle for position was in full sway on the CIA front in Washington, the DOD was manifesting growing concern about OSI's incursions into what it regarded as its preserve -- weapons intelligence. Machle met the increasing DOD attempts to circumscribe OSI's activities in this field by invoking the DCI's statutory responsibilities for coordination. In 1949 the first DCID governing coordination in the scientific and technical intelligence field was drafted in OSI. This directive reflected OSI's concept of its role as that of planning, supporting and coordinating U.S. scientific intelligence with the assistance of the other agencies of the Intelligence Advisory Committee (IAC). The directive was approved as DCID 3/3 by the IAC on 21 October 1949. Among its provisions was the establishment of a Scientific Intelligence Committee.** The first SIC Chairman was the CIA member, Willard Machle. This first attempt to

* See Annex III.

** See Annex IV.

[redacted]

implement a rather literal interpretation of the CIA charter barely outlived Machle's short stay in the intelligence business.

More or less embattled on all fronts, Machle's brief service in CIA saw only the first faltering steps in the creation of an effective OSI. Hampered by serious deficiencies in the information inputs and in the caliber of its personnel and beset by opponents inside and outside of the Agency, OSI could by early 1950 show little outside the nuclear field that could be said to represent progress.

III. The Chadwell Period, 1950-55

In February 1950 H. Marshall Chadwell from the New York Office of the Atomic Energy Commission became Assistant Director, OSI. In sharp contrast with Machle, who had a distinct flair for intrigue and behind-the-scenes activity, Chadwell was by nature mild-mannered and conciliatory. He was in many respects well chosen for the role of peacemaker. As he took office in 1950 CIA began a massive build-up in response to the requirements for intelligence in support of the Korean War effort. Because of the many implications this conflict held for Soviet and Chinese Communist weapons development programs, and

hence the demand for more S&T intelligence the OSI [redacted] This level was in realism well beyond OSI's ability to recruit and train analysts. Hence, the Office found itself poorly staffed to produce intelligence and at the same time keep its rather precarious hold on a viable mission. For, in the heavily military atmosphere of the time, the DOD was likewise building up its technical intelligence strength -- and increasingly challenging CIA's right to engage in military, and especially technical, intelligence production.

It was perhaps inevitable that a series of head-on clashes should occur between OSI and the DOD forces led by the Joint Intelligence Committee (JIC) of the JCS. At DOD insistence the IAC in early 1952 created an investigative group, headed by Loftus Becker (then DDI of CIA) to review the scientific and technical intelligence scene and make recommendations on the apportionment of responsibilities in this field. Many meetings of the review group were held during the spring and summer of 1952 as OSI and the other participating organizations argued for their views on the proper split of responsibilities.

[redacted]

The result was a new directive, DCID 3/4 dated 14 August 1952. This directive rescinded DCID 3/3 and replaced the SIC with a Scientific Estimates Committee (SEC). In an annex it set forth by disciplines the primary responsibilities of CIA (OSI) and those of the military departmental agencies. The SEC, unlike its predecessor, was to confine its attention to the coordination of contributions to NIEs and was in effect barred from otherwise participating in the business of the member agencies. The many subcommittees of the SIC in fields of military interest, put together under OSI prodding over three years of arduous negotiation, were wiped out. By terms of the Annex to DCID 3/4, OSI was assigned responsibility essentially only for intelligence on the basic sciences, medicine and scientific resources. The military member agencies were assigned primary responsibility for the characteristics of military hardware and precursor developments in applied science (the "technical" in technical intelligence). Even in the nuclear energy field OSI lost ground with the assignment of equal responsibility to all member agencies.

DCID 3/4 was a stunning reversal for OSI. No other single event had a more traumatic effect on

OSI in its formative years, and the righting of this "wrong" -- as it surely was in OSI's view -- consumed more of its energy in the next five years than did any other single issue.

If this view of the impact of DCID 3/4 on OSI seems extreme, one must consider the atmosphere then prevailing. Intelligence was not yet a widely admired calling nor were consumers yet convinced of the integrity of intelligence estimates or their producers. Technical collection means had not yet reached the stage of sophistication permitting spectacular results. The US was at war with Communist forces in Korea. Thus, many pressures faced OSI and the threat to the achievement of its plans, represented by DCID 3/4, was taken with perhaps more than normal seriousness. OSI was literally being excluded from many fields of highest interest to policy-makers. The loss of support which it was feared would result might well mean the end of the Office in its infancy. The immediate effect of DCID 3/4 was a drop in morale of grave proportions.

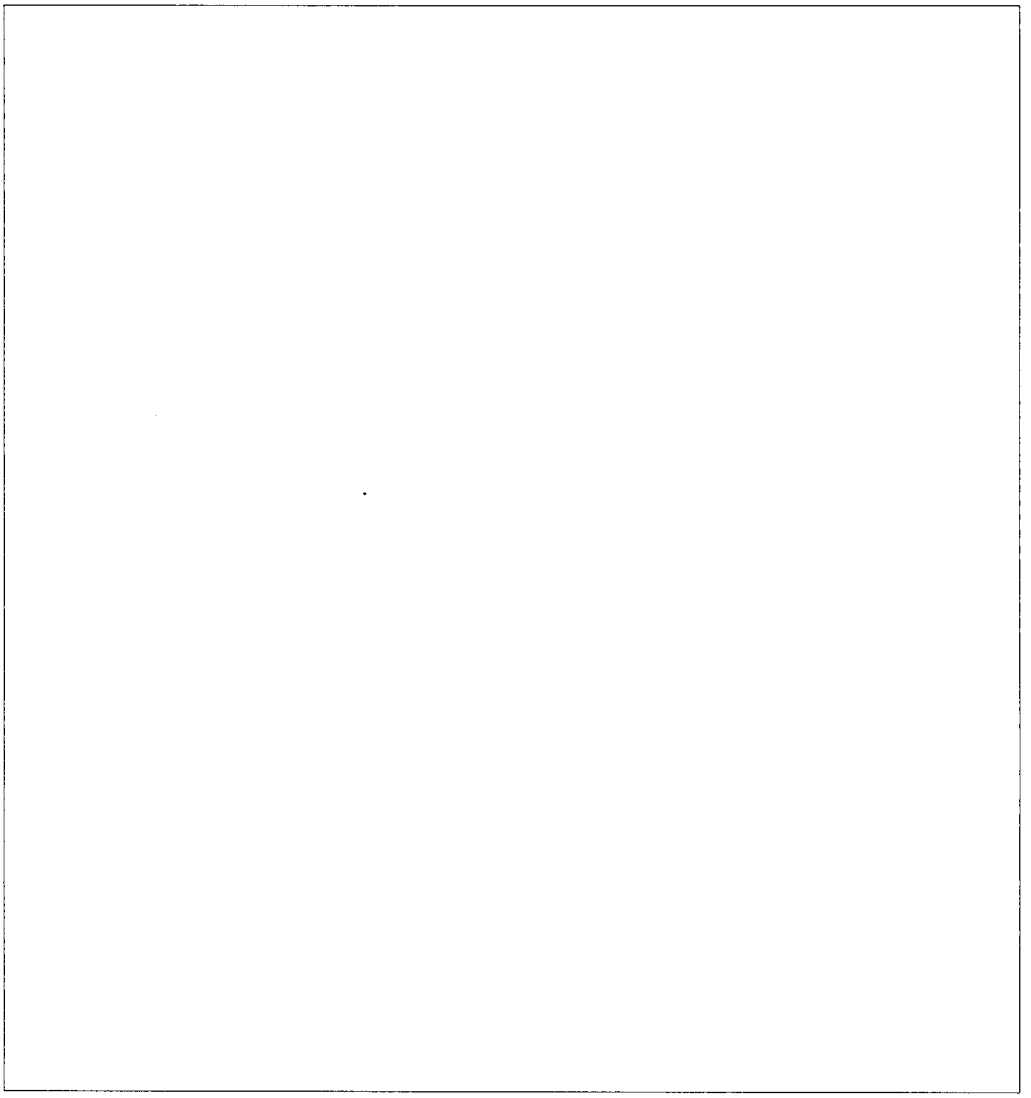
Only in the nuclear energy field did OSI have much to show for its efforts in the early 1950's. To understand the feeling in OSI in these times it

is necessary to back up in history for a moment. Shortly after its transfer to CIG (later CIA) in 1947, the [redacted] became responsible for the issuance through the Joint Nuclear Energy Intelligence Committee twice yearly of an estimate of Soviet nuclear weapons development progress. By mid-1949 the estimate stated [redacted] belief that the first Soviet atomic test could occur no earlier than mid-1951 and more probably not until 1953. Hardly had the mid-1949 estimate been delivered to its consumers than the Soviets tested [redacted] in August 1949. Shaken to its roots, [redacted] OSI looked long and hard at ways of obtaining and analyzing information.

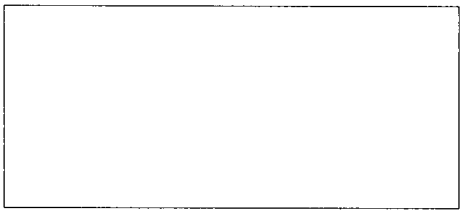
One result, described in some detail earlier, was the frontal attack on OSO by Machle for its failure to provide raw information. [redacted]

[redacted]

[redacted]



It has already been noted in foregoing pages that OSI faced a serious problem in recruiting competent staff members in its early years. More than any other single factor -- save perhaps for the obvious public relations value of influential scientific friends -- this dearth of staff scientists caused the management of OSI to turn to the U.S. scientific community for



support. The number of consultants gradually increased until by the mid-fifties a sizeable group of eminent U.S. scientists had an informal, if not formal, connection with OSI.

Perhaps the most dramatic example of consultantship was the formation of a group known as the Boston Scientific Advisory Panel (BSAP). Late in 1950, one of OSI's consultants in the Boston area [redacted] proposed to Chadwell that a group of cleared and knowledgeable scientists in that area be banded together to form a "Boston Cell". According to him, these men shared a concern about the inadequacies of U.S. scientific intelligence and would be willing to serve their country in support of OSI. The offer was accepted and in early 1951 BSAP began to meet at intervals with Chadwell and his top people. [redacted] During the first few years all BSAP members were given consultant status and BSAP itself served a useful function in evaluating information and acting as a sounding board for OSI finished intelligence output.

In time, however, a number of influences began to work against the BSAP operation. Its members were of course much in demand in Washington and elsewhere

[redacted]

and it became increasingly difficult to assemble enough of them at any given time to make a meeting worthwhile. The burden on OSI from presenting briefings on very involved subjects was considerable. In return OSI received little useable consultation (for obvious reasons when one considers the sketchiness of the evidence and the complexity of the problem against an exposure time of two or three hours!). OSI interest began to wane. By more or less mutual consent the intervals between meetings stretched. After a final meeting in 1959 the BSAP died a quiet death.

In later years it became popular in OSI to speculate about the BSAP and its worth to OSI. By any measure the public relations benefit came foremost for, it should be noted, the first three Presidential Scientific Advisors (James R. Killian and George B. Kistiakowsky -- President Eisenhower, Jerome Wiesner -- President Kennedy) were interested and active BSAP members. That this fact had more than incidental significance may be deduced from the knowledge that Killian was the first Chairman of BSAP and was still active in its affairs when President Eisenhower named him the first Special Assistant to the President for Science and Technology

in November 1957. Both Kistiakowsky and Wiesner retained their interest in OSI throughout their tours in office.

In the early 1950s OSI's involvement in another of its principal fields of activity, ELINT, began in earnest. This story deserves treatment at such length that it can be told fully only in an annex.* The account here will therefore be brief. In the still-short history of U.S. scientific intelligence it may be said that the development of few fields has been accompanied by more pulling and hauling, internal and external to CIA, than that of ELINT. Beginning with a conflict over a definition of the term (was it to be "ELectronic INTercept", suggesting a narrow concept, or "ELectronics INTelligence", connoting a field as broad as electromagnetic radiation itself?) and carrying through to a struggle over what agency should process what product of what field operation, the partisans of ELINT waged the conflict at all levels of government.

Though ELINT began with British attempts to use signals intelligence to understand and frustrate German weapons systems of WW II, active U.S. involvement in the field began in earnest somewhat later. While not involved with what we would now call ELINT,

* See Annex V.

the story of this challenging field of intelligence may be said to have begun with SovBloc jamming of Voice of America broadcasts (as well as those of BBC) in the late 1940s. Efforts of the Western Allies to broadcast behind the Iron Curtain were being frustrated and there was mounting official concern over the blunting of one of the few Cold War weapons in use by the U.S. There were also ominous implications for the viability of U.S. long-haul military communications in the event of war. On 31 March 1950 the IAC established an ad hoc committee to review matters and make recommendations for a course of action to be presented by the DCI to the NSC. As Exhibit One on the subject of the difficulty of obtaining agreement on an ELINT matter, it may be recorded that the ad hoc IAC committee did not report to the IAC until 28 February 1951 and its recommendations were never effectively implemented thereafter.

Despite this uncertain beginning, the place of ELINT in scientific intelligence took shape under the urging of such men as Ralph Clark, who left JRDB and joined OSI in late 1949 [redacted]. For several years after its establishment, the Agency had no direct part in electronic intercept. Quite

[redacted]

early, however, these men recognized the value of electronic intercept contributions to intelligence on Soviet electronics. Unofficial but close working level contacts were established and maintained with the elements of the Department of Defense that dealt with diverse aspects of electronic intercept to ensure that all intercept products were available to the Agency and that the best intelligence use was made of them.

Early in 1951 OSI was convinced that ELINT (now clearly defined as electronic intercept) was one of the most effective intelligence sources on Soviet electronics and that the value of its contributions to national intelligence fully warranted active support of intercept efforts by the Agency.

A progressive build-up of substantive ELINT competence took place within the

Agency, both at the Headquarters and abroad. By 1953 the Agency was involved in ELINT deeply enough to warrant an Elint program of its own, and an Agency Elint Task Force was established to formulate a suitable Agency-wide plan. On 29 May 1954 the first Agency Elint program was approved by the DCI. Thus, by the time the first US national Elint policy was formalized in NSCID # 17 of 16 May 1955, the Agency was ready to join the national Elint community as a full-fledged partner.

Since the early Agency ELINT projects and actions were sponsored and supported by OSI, the Office became the first focal point for Elint activities of the Agency. It retained this role until 1962 when a separate Office of Elint was established within the newly formed structure of the Directorate of Research, later the Directorate of Science and Technology.

OSI's organization during the Chadwell period resembled in many respects a college faculty and consisted of the following Divisions:

[redacted] The result was not only violence to good management concepts regarding span of control by the head of an organization but also a considerable blurring of responsibilities caused by inherent over-lapping of scientific disciplines with their applications to weapons systems. Such organizational weaknesses contributed little to OSI's battle strength in dealing with DOD attacks.

The foregoing remarks about organization, basic as was the effect of the latter on OSI's position, should be amplified. Applied Science in the OSI lexicon was a cover name for weapons system analysis. [redacted] OSI justified the [redacted] effort on the grounds that such work was required to provide proper staff support to the DCI in his coordination role. In later years it became known as 'keeping the Services honest' in their intelligence estimates.

[redacted]

[redacted] OSI was in effect covering the basic sciences as called for in DCID 3/4 with its left hand but using its stronger right hand to cover areas assigned by DCID 3/4 to the military agencies.

[redacted] problems centered around the fact that it too was performing BW analysis (albeit on the medical aspects) at the time DCID 3/4 was enacted but was having difficulty in defining and producing intelligence on other portions of its mission. Thus, the Division was not only in disagreement with the Army Chemical Corps and the Office of the Surgeon General about its production responsibilities but was struggling with the essential infeasibility of producing finished intelligence from a miniscule supply of

[redacted]

usable information as well. Despite a rather strong recommendation for more medical intelligence by the so-called Hawley Committee in 1948, precisely what was called for was not defined explicitly and uncertainty as to its mission continued to harass [redacted] for many years.*

From its earliest days OSI could claim preeminence in at least one field other than nuclear energy intelligence. That field was electronics intelligence. Such men as Ralph Clark, before his nearly total diversion to ELINT, [redacted] early in the game provided the nucleus of analytical strength around which to build a capable staff. [redacted] At first electronics intelligence was combined organizationally with physics, mathematics and even geophysics intelligence but its relative rate of growth in importance led to its being assigned as the sole business of [redacted] in 1955. As

* See Annex VI.

time went on electronics intelligence became increasingly involved with defensive systems, such as air defense and anti-missile systems, and in 1962 [redacted]

In consequence of the wide divergence of views about Soviet scientific capabilities (were they midgets or 10 feet tall?), a good deal of OSI effort went into studies of the Soviet educational system, the numbers of graduating scientists and engineers, and their utilization. Almost alone among OSI divisions, the [redacted] lived in comparative harmony with the DOD intelligence agencies. Its products were well received and during the early 50's there was little outside competition in its field of coverage. Increasing awareness of the Soviet build-up in scientists and engineers led to a full-dress briefing of the NSC on this subject in October 1953. Perhaps the high point of [redacted] life was reached in June of 1954 when Allen Dulles used as his commencement topic at Columbia University "Soviet S&T Manpower" with text supplied by [redacted] With this speech and the declassification of much

* See Annex VII.

[redacted]

information as its aftermath, the problem increasingly slipped into the public domain. More and more scholars and research institutes took on the problems of numerical and qualitative assessment of Soviet scientific and engineering manpower.

[redacted] once preeminent position declined.

[redacted]

Eventually about forty able young college graduates, generally with bachelor level training in the Arts and Sciences, were recruited and given [redacted]

[redacted]

[redacted] published a number of such studies", as they came to be called, and contributed a good deal to the growing fund of knowledge on Soviet S&T capabilities. Inexorably, however, the impingement on the other OSI divisions increased as

[redacted]

[redacted] and as [redacted] analysts dug deeper and deeper into collateral. Gradually the more capable of them were recruited by the other divisions and [redacted] output diminished. In its little more than three years of productive existence [redacted] contributed much, if largely only as a training ground for OSI analysts. It finally passed out of existence in the general reorganization of OSI in 1955-56.

A general lack of cohesiveness in OSI became increasingly apparent in the early 50's. By 1953 the question of programming the Office production activities as a means of reducing overlap and increasing the output of relevant finished intelligence was being extensively discussed at the management level in OSI. Chadwell first commissioned Ralph Clark to organize an effort on this problem and some work was accomplished in late 1953 and early 1954. For many reasons, not the least of which was Clark's ever-growing preoccupation with ELINT matters, the effort bogged down in the sheer complexity of conceptualizing a common matrix for so many fields of potential intelligence interest.

[redacted]

Finally, in mid-1954, Chadwell became convinced that an Office-wide program offered the best chance of strengthening OSI's position in the community. He directed that an accelerated effort be initiated under the [redacted] [redacted] Progress was difficult amidst the prevailing confusion for, among other things, an IG inspection was in progress and all levels of OSI were involved in testimony and discussion of OSI's multitudinous problems. Finally, in June 1955, the first OSI Production Program was sufficiently advanced to be presented for Chadwell's consideration.

The significance of this early programming effort and its favorable effect on Office unity (though some may dispute the latter assertion) may be inferred from the fact that many of the concepts first developed then persist in 1968. The essential elements of the plan were a statement of "Critical Scientific Intelligence Objectives" to define and establish research and production goals, an annual program or listing of research projects to serve as guideposts in the fulfillment of the goals, and the establishment of an OSI Intelligence Board to review substantively proposals for the research program and drafts of finished intelligence.

[redacted]

The programming efforts served to highlight two intelligence problems that were particularly perplexing and persistent in the early 1950s -- did the Soviets have an active offensive BW program and what progress were they making in the development of guided missiles? An organizational experiment was attempted in 1954 in an effort to correct the rather bleak intelligence picture on these subjects; namely, teams of analysts were assembled from various divisions and put under a team leader. These groups were known as Task Force Able on BW and Task Force Baker on guided missiles. The former was headed by [redacted] the latter by [redacted]

Unfortunately, neither Task Force produced startling new conclusions after several months of intensive work. [redacted] They did, however, serve to pull together what was known up to the moment and to teach OSI management lessons of lasting significance. The lessons, simply stated, were that (a) the banding

[redacted]

[redacted]

together of analysts was not a panacea for overcoming gaps in critically needed information and (b) the technique tended to produce serious managerial strains which virtually foredoomed the effort to failure. The key issues in the management problem were the divided loyalty of the analyst between his Division and the Task Force, the uncertainty of the analyst with respect to his fitness rating if he should please his Task Force leader but antagonize his Division Chief, and unwillingness on the part of Office management to give complete authority to the Task Force leaders during the exercise. It is significant that no comparable efforts, even approaching Able and Baker in scope, have ever been attempted in OSI since.

The effort to systematize the programming and production of OSI's intelligence output focussed attention on still another facet of the intelligence process -- the publication of results. Before 1954 finished intelligence issued in a variety of forms and successive reports may or may not have resembled each other in format, style or even cover. The establishment of the OSI Intelligence Board created a mechanism not only for the review of substance but form as well. It was not long before

moves toward standardization, even beautification, occurred. The need to convey judgments in terms understandable to laymen became more and more clear as did the need for stating views convincingly. A publication philosophy began to develop under the critical impetus of the IB.*

It can be seen from what has been said that a good many of the present day characteristics of OSI began to take form in the Chadwell period. The staff was acquiring experience and becoming more confident of its abilities. Information to analyze was still woefully short in many fields but OSI was doing something about it by encouraging the development of collection schemes in more and more areas. Still, the general impression of OSI in those days could best be described as incoherent -- a few strengths, some weaknesses, too many frustrations. Many of its problems stemmed from the inability of its leaders to pull the team together and give greater purpose to its efforts.

IV. The Scoville Period, 1955-62

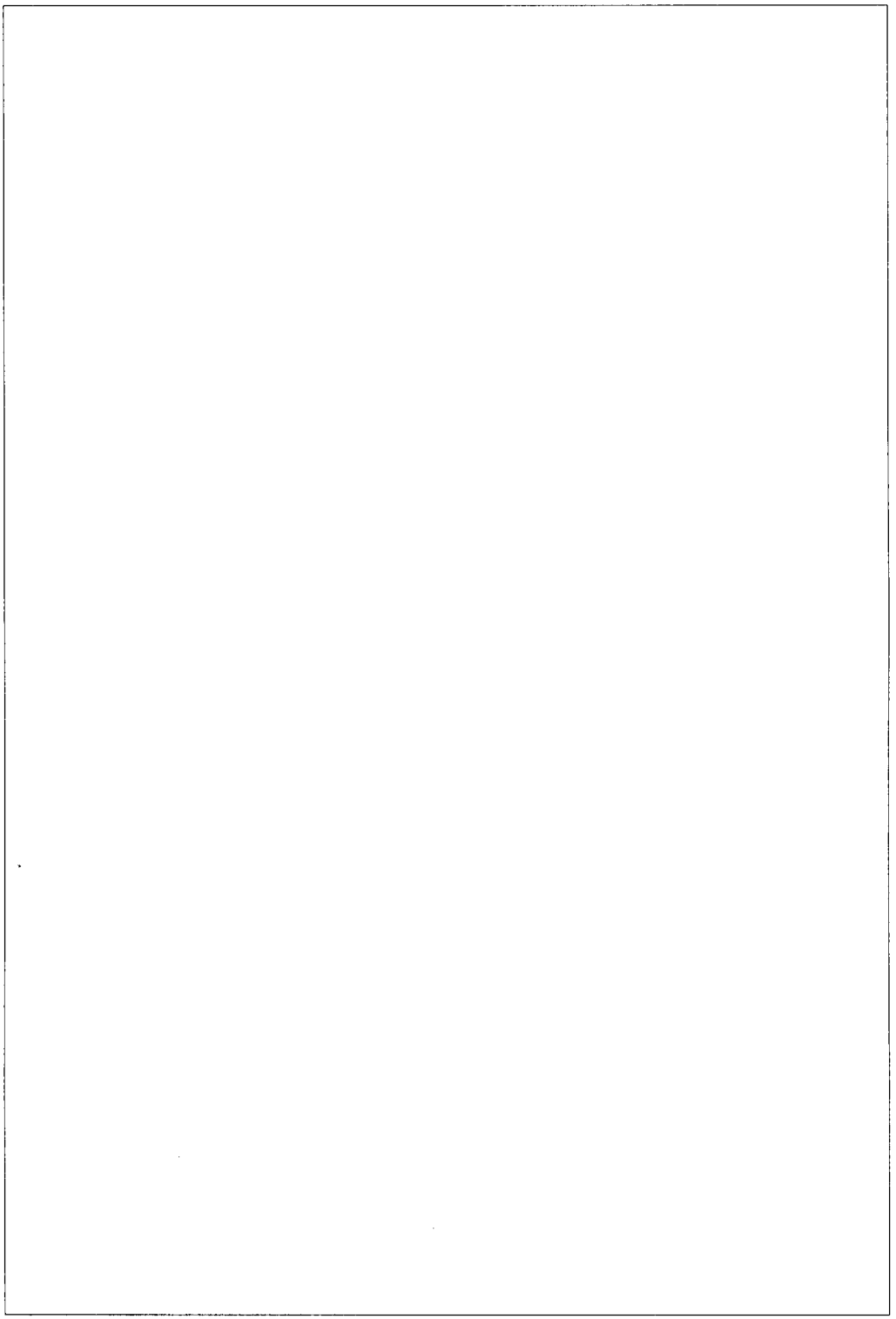
The cumulative weight of external pressures from DOD and internal confusion and weakness eventually made reorganization and strengthening imperative.

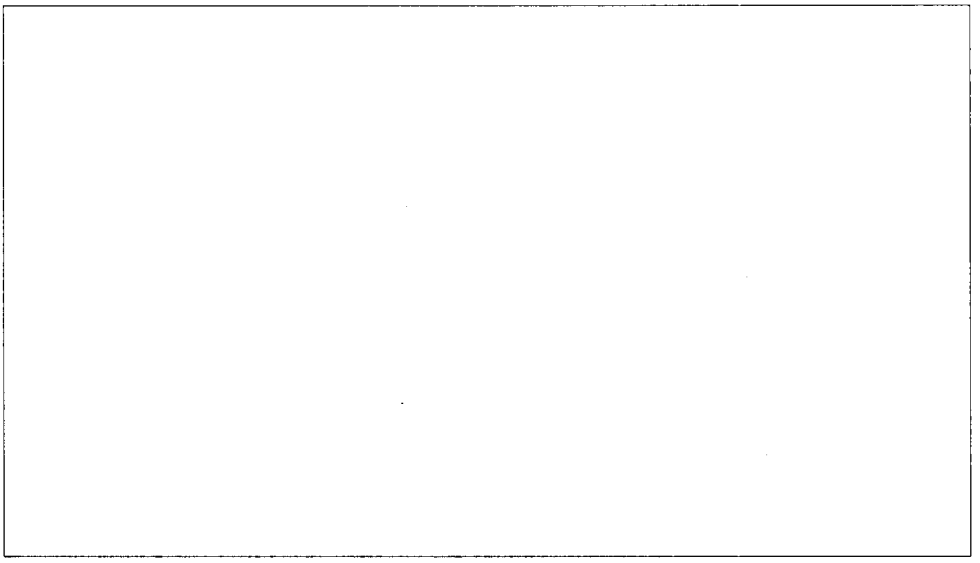
*See Annex VIII.

A critical I. G. report of early 1955 recommended new leadership and thorough overhauling of the OSI structure. [redacted] and Dr. Herbert Scoville, then Technical Director of the Armed Forces Special Weapons Project, became AD/SI in August 1955. [redacted]

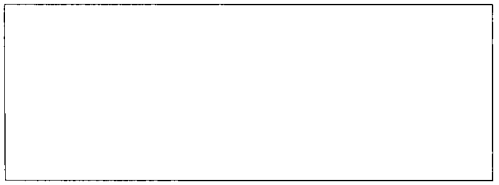
In early 1955 several of the senior members of OSI [redacted] acting largely on their own initiative because of the critical need, drafted a revamped organization chart and presented it to Scoville shortly after his arrival. Upon his approval it was put into effect in October 1955. Primary goals of the reorganization were to strengthen the production capability of the office through the establishment of stronger foci for the analytical work and to reduce the number of persons reporting to the AD/SI so as to free him for such important external chores as coordination and briefings on intelligence findings.

[redacted]





With its internal structure improved and strengthened, OSI turned to the job of eliminating DCID 3/4 in earnest. Staff studies and white papers poured forth. In these, OSI expressed its belief that the arbitrary exclusion of OSI from weapons intelligence in DCID 3/4 was counter to CIA's basic statutory responsibilities. It was argued that limiting OSI to the production of basic scientific intelligence made it impossible for CIA to coordinate S&T intelligence activities in a broad, national sense or to advise and make recommendations to the NSC on intelligence matters relating to the national security. Strict adherence to DCID 3/4 would prevent OSI from discovering gaps in the national intelligence picture arising from deficiencies in the departmental agencies, as required of CIA by law.



Early attempts to argue the OSI position were not conspicuously successful. For example, the Clark Committee Task Force of the Commission on Organization of the Executive Branch of the Government (Hoover Commission), with considerable coaching by OSI it should be noted, recommended in May 1955 that DCID 3/4 be revised so as to reestablish the SIC and permit effective interagency coordination in S&T intelligence. Unfortunately for OSI, these recommendations had little immediate effect on the intelligence community beyond adding a certain amount of fuel to the fire.

It was not until several years had passed, during which the debate flared at times in the IAC under one heading or another, that a general overhaul of DCIDs was undertaken and DCID 3/4 came under review. In 1958 the IAC and the U.S. Communications Intelligence Board (USCIB) were merged into the new USIB and the NSCIDs and DCIDs were drastically revised. In this general flux, DCID 3/4 was superseded by DCID 3/5 (New Series), the SEC was abolished and a rechartered SIC was established.

The language of the two directives points out the change in direction with abundant clarity:

DCID 3/4 -- The SEC should "integrate scientific and technical intelligence, as and when required, for the production of national intelligence" and "concentrate on the integration of intelligence opinion (other than that for which the JAEIC is responsible) as and when required for the purposes of national intelligence, and only incidentally assist in the coordination of production of other intelligence in scientific and technical fields." In its Annex DCID 3/4 delineated fields of primary concern for CIA and the military agencies.

DCID 3/5 (New Series) -- The SIC shall "foster, develop and maintain a coordinated community approach to problems in the field of scientific and technical intelligence (except for atomic energy and guided missiles and astronautics intelligence), to promote interagency liaison and to give added impetus and community support to efforts of individual agencies."

The insufferable Annex to DCID 3/4 was rescinded. The SIC - SEC - SIC struggle had its parallel in the attempts to establish an interagency guided missiles intelligence committee. In the early 1950's the guided missiles account was handled by subcommittees or working groups of the SIC/SEC. The obviously increasing importance of guided missiles intelligence only stiffened the opposition of the DOD agencies to OSI's work in this field. Having little success in preventing such work, however, the representatives of these agencies undertook to prevent CIA from establishing a coordinating committee under the IAC -- reasoning very likely that agreeing to such a committee

was tantamount to agreeing that CIA had a role in this field after all. By 1955 the battle was in full sway.

Feelings ran high. The IAC first asked the SEC in June 1955 to consider the problem of coordinating guided missiles intelligence. The SEC duly reported back that it could with proper strengthening take on the job itself. This suggestion proved to be popular with few, even in CIA. Thereupon, the IAC established a review committee in July 1955 to attempt once again to find acceptable terms for a coordinating mechanism. Predictably, the report of this ad hoc survey committee which called for CIA participation in a community-wide coordination effort could not be accepted by the DOD members of the IAC.

Dulles' next move was to take the issue to the Secretary of Defense as the penultimate step before requesting the NSC for a ruling. In his letter to Secretary of Defense Wilson, the DCI made it plain that the obstructionism of the DOD members, with the lone exception of the Air Force representative, was preventing the establishment of suitable means for improving intelligence in this most important of subjects. In a triumph of great significance to the still-young CIA, on 9 January 1956

the Secretary of Defense in no uncertain terms supported the DCI and snuffed out the opposition of the dissident IAC members. Thus was the Guided Missiles Intelligence Committee (GMIC) born on 31 January 1956

Interagency coordination in the atomic energy intelligence field was characterized by somewhat less of the pulling and hauling that typified coordination of the other elements of S&T intelligence. Perhaps because authority for U.S. atomic energy activities was lodged in the AEC, not the DOD, representatives of the latter were more often consumers than producers of intelligence with a notable exception or two.

The first of the coordinating groups in atomic energy intelligence was the Joint Nuclear Energy Intelligence Committee (JNEIC) which operated in the 1947-49 period under Directive No. 9 of the National Intelligence Authority. With the establishment of the SIC in 1949, the JNEIC became the Joint Atomic Energy Intelligence Committee (JAEIC) and for a period of about three years (1949-1952) operated as a working group under the SIC (per DCID 3/3). With

this exception JAEIC has existed as an independent committee under the IAC or USIB. Its authority in its field has been well nigh absolute. It survived a very critical review of its functioning at the time of the first Soviet nuclear test in August 1949 - an event that JNEIC had just pronounced unlikely to occur until mid-1951 at the earliest and more likely to occur two years thereafter.

Until the mid-1950's JAEIC was in fact the sole drafting body of one of the most important of the NIEs, that dealing with the progress of the Soviet nuclear weapons program. The procedure was for JAEIC to draft and coordinate a paper which was then submitted to the IAC for approval, by-passing the ONE/Board of National Estimates route taken by all other NIEs. In consideration of the fact that to that time the Soviet program was predominantly in a research and development phase, the JAEIC sinecure did not appear unreasonable to the operating heads of the intelligence community.

Though Sherman Kent (Chairman, BNE) had first raised questions about the propriety of JAEIC's responsibility for the NIE in 1953, it was not until December 1955 that the IAC approved a modification of the JAEIC charter. The procedure for handling the

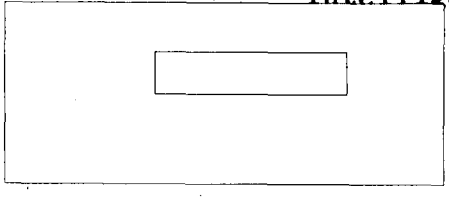
Soviet atomic energy NIE was regularized and at the same time JAEIC was relieved of responsibility for intelligence on delivery systems "other than on the nuclear warheads or nuclear propulsion systems associated therewith." When the new series of DCIDs was issued in January 1959, the JAEIC charter was reissued as DCID 3/3 (New Series) and made to correspond with those of the GMAIC and SIC. As OSI is the component providing the bulk of the support to JAEIC and its operating officials, the atomic energy thread is inextricably woven into OSI. This story is told in greater detail elsewhere.*

Amid the general flux of directives and changing missions that characterized the first half and middle of the decade of the 1950's, it would be easy to miss the very significant improvements in collection and analysis that began to take place. During this time OSI began to mature as an organization. The maturation was reflected in the increasing sophistication of its products and its growing influence in the community as the battle of prerogatives with the DOD subsided.

* Annex II, "OSI and Atomic Energy Intelligence".

OSI and CIA were being pushed to do more about scientific intelligence by such external bodies as the Technological Capabilities Panel (TCP), convened in 1954. The TCP was organized by the Scientific Advisory Committee (SAC) of the Office of Defense Mobilization as a result of a meeting of SAC with President Eisenhower on 27 March 1954. The President was greatly concerned about the rapid increase in Soviet military strength reflected among other ways by their successful thermonuclear weapon test in August 1953. His fear of surprise attack was real and through SAC he sought to enlist the aid of US scientists in minimizing the danger. Dr. James R. Killian (BSAP chairman) was appointed director of TCP and such men as Edwin Land and Edward Purcell served on it. On one of the subpanels was Herbert Scoville who was by a not-so-strange coincidence to become AD/SI about a year later.

The charge to TCP was to make recommendations for greater use of the nation's scientists and scientific resources in determining the realities of the Soviet threat to the U.S. The heavy involvement of U.S. intelligence was arranged through CIA, specifically OSI. The TCP report of 14 February 1955 came down hard on the need for improvement in intelligence and pointed out some directions to follow:



> ". . . . we can use the ultimate in science and technology to improve our intelligence take."
>
> ". . . . the really cute tricks are so close to the frontier of scientific knowledge that they remain unsuspected for months and even for years. A research program producing a stream of new intelligence tools and techniques would be invaluable."

Much of the thrust of the report was aimed at research and development. In its recommendations for an intelligence research laboratory the TCP was in effect advocating the establishment of a DD/R or DD/S&T some seven years before the fact. When Killian as head of the President's Foreign Intelligence Advisory Board convinced McCone in 1962 to establish a DD/R, he was merely following through on the TCP recommendations.

The importance to OSI of the TCP exercise was that for almost the first time top-flight US scientists were asked to support intelligence activities not as judges of its products but as innovators of collection and analysis schemes. The influence of TCP members, and their willingness to commit their own time and to enlist the aid of their fellow scientists, provided a good deal of the push needed to get new activities underway.

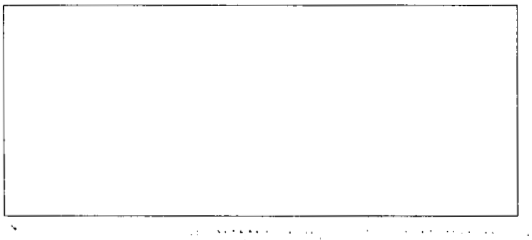
One of the schemes that the TCP strongly supported, the U-2, was then barely under development. By mid-1955 the top officials of OSI were made aware of this fact. As the moment of operational readiness neared, OSI was asked to perform vulnerability studies of the aircraft in the hostile Soviet environment to be penetrated. Under Scoville's leadership OSI was very much a part of the picture. (Earlier, [redacted] had left OSI to become the "ramrod" on the development team under Richard Bissell). By reason of this involvement at an early stage, OSI was better prepared than it would otherwise have been for the onslaught of photographic evidence that this remarkable collection platform began to provide in 1956. It is safe to say that no other body of intelligence information had so immediate and widespread an effect on OSI's substantive efforts.

That this sharp increase in evidence came when it did was fortuitous. Growing concern about Soviet thermonuclear weapons delivered by Bison heavy bombers or ballistic missiles began to be reflected in more and more demands for detailed estimates of Soviet capabilities. In early 1957 another subject began to turn up with increasing frequency in spec-

[redacted]

ulatory articles about the future of science -- earth satellite vehicles (ESV). The pros and cons of investment in such seemingly impractical experiments were being debated in the public press and scientific literature. In June 1957 OSI went on record in a Congressional briefing with notice that the Soviets could at any time thereafter launch an ESV. When in fact Sputnik I burst on the scene on 4 October 1957, however, neither OSI nor government leaders had foreseen the tremendous impact this Soviet accomplishment was to have on the whole question of U.S. investment in science and defense preparations.

More than any Soviet achievement since their first thermonuclear device of 1954, Sputnik I dramatized the resurgence of Soviet scientific - and military - capabilities. There was even a good deal of extrapolation by US defense experts of Soviet ICBM capabilities on the rather meager base of their first ESV experiment. Not since the investigation into causes of the Pearl Harbor disaster that led to the creation of CIA in 1947, perhaps, had so much soul searching into the strengths and aims of the U.S. been carried on.



The effect on OSI of the lively debates and discussions in Congress, Administration circles and the public press was an immediate rise in the requests for briefings and estimates on Soviet S&T capabilities. For almost the first time most components of OSI were stirred to produce papers, support for briefings, and newly scheduled NIEs, or to present their findings to a variety of consumers. The effect on OSI morale was generally salubrious. It was stimulating to most analysts to find that the products of their labors were at last sought after and found applicable to problems of national importance. Scoville responded vigorously to these demands and with great drive and determination supervised the preparation of many important studies and contributions to estimates. As time went on, he became more and more frequently the Agency spokesman in technical fields at White House Staff and congressional levels.

Among the many official groups to be extensively briefed by the DCI, the DD/I, or the AD/SI in the 1958-59 period was the Senate Preparedness Committee, chaired by then Senator Lyndon B. Johnson. The Committee was much concerned about the apparent U.S. gap in numbers of scientists and engineers being

graduated and a possible disparity in ICBM capabilities, not to mention the lag in space exploration which the CIA-adduced evidence indicated. There can be little question that OSI - and the Agency - benefitted from this opportunity to show its wares.

In a more subtle way the extensive exposure of the analytical side of the Agency led to changes of lasting significance in the qualifications demanded of those who were to perform the increasingly complex and scientifically-grounded tasks of collection and analysis. The U-2 was only the first in a succession of intricately engineered platforms that could collect in a short few hours enough information to tax the analytical resources of the Agency and Community for months thereafter. Advances in the [redacted] followed photography so that the need for scientists and engineers in the intelligence business rose steeply. No longer could generalists do many of the tasks now imposed on OSI. Amid a general stimulation of requirements for scientists and engineers in the U.S., OSI was hard put to recruit and retain enough qualified personnel in the early 1960's to do the job. The

[redacted]

aftermath of Sputnik was to a large extent a big headache for OSI in personnel recruitment.

In the late 1950's OSI found itself providing leadership in the technical collection field as well as in analysis. [redacted] Through his association with such groups as the Air Force Scientific Advisory Board, [redacted] was in a position to obtain advance knowledge of new proposals and to influence their development to some extent. Perhaps because it housed one of the larger groups of scientists/engineers in intelligence, OSI throughout its history has been extensively involved in collection support. This story is told in more detail elsewhere.*

Satellites were not long to be just objects for analysis. When the adaptation of the ESV to intelligence collection began in the late 1950s, OSI began preparing for the product, Scoville established a small group [redacted] to consider how requirements for

* See Annex III.

[redacted]

the exploitation of the anticipated photography could be organized and fulfilled by the National Photographic Interpretation Center (NPIC). This bit of foresight paid off. OSI was well prepared to make the transition from the modest flow of U-2 photography [redacted]

With the increasing technical complexity of weapons systems and the rapid expansion of world-wide science - the direct result in many respects of the coming of age of computers and data handling systems - there came a noticeable change in the demands on intelligence to up-date its methodologies in both collection and analysis. The possibilities that opened up for new approaches to old problems in intelligence had their impact on organizational features in CIA.

After some months of study for Mr. Dulles, upon the urging of the President's Foreign Intelligence Advisory Board, Scoville submitted a plan for the establishment of a new directorate in 1961 to be called the Deputy Directorate for Research. The plan was accepted in its principal features by the new DCI, Mr. McCone. On 19 February 1962 Scoville was himself appointed DD/R. The mission of the new

[redacted]

Directorate was to provide a focus for the technological activities of the Agency other than those housed in the Technical Services Division of DD/P, the Offices of Communications and Security of DD/S, and OSI then of DDI. In its first few months of existence, the DD/R consisted of little more than a staff component and [redacted] which had been transferred to it from OSI.

The fledgling DD/R that Scoville had put together was no sooner established than its struggle for position in the Agency and Community began. While the DCI gave it control of the now-compromised U-2 assets of the Agency and a toe hold in ELINT, little else was forthcoming without a knock-down-drag-out battle, either within or outside the Agency and very often both. In June of 1963 a disillusioned and disheartened Scoville resigned from the Agency and Colonel Edward B. Giller, USAF, became Acting DD/R.

The period of more than six years during which Scoville directed the Office can be described as the time of coming-of-age of OSI. Although a number of organizational ideas, procedures and concepts for fulfilling the OSI mission had their genesis before his arrival, it remained for someone with

[redacted]

his enthusiasm and energy to get OSI moving. He convinced Robert Amory (DDI) and Dulles of the need for scientific intelligence and obtained their support. When the time came for OSI to be up front before the White House and Congress, Scoville himself was ready and his subordinates were motivated to back him up. Few in OSI, then, would dispute the fact of his imprint on the Office and its products. If one lesson was learned from these years it was that if OSI was good enough in its job, no one could successfully dispute its right to be doing it. Effective DOD opposition that had so typified the opening of the decade of the 1950s was virtually non-existent at its close.

V. The Wheelon Period, 1962-63

Dr. Albert Wheelon of Space Technology Laboratories replaced Scoville as AD/SI in June 1962.*

As the DD/R was suffering its growing pains, Wheelon was revamping OSI - it may be said in his own image. A very keen and dynamic theoretical physicist in his own right, Wheelon was very demanding of his newly acquired colleagues. The gradually increasing stress on staff personnel with strong

*Weber was Acting AD/SI from February to June 1962.

backgrounds in the physical sciences and engineering, mentioned earlier, was accentuated still further almost overnight. He established training programs in [redacted] primarily for analysts in missiles, space, and nuclear intelligence. He dug deeply into the question of the adequacy of the source material available to OSI and spent countless hours discussing, and all but inventing, new ways of increasing the flow of new data. Eventually he began to challenge the collectors to do better.

Shortly after Wheelon's EOD with CIA, the issue of the chairmanship of GMAIC flared again. It will be remembered that up to this time GMAIC had been chaired by a DOD representative. When Colonel Earl MacFarland, who had been Chairman for four years, was reassigned by the Air Force in 1962, the fight for the chairmanship between CIA and DOD was on again. Although the precedent laid down by Mr. Dulles in January 1956, as part of the price of peace with DOD on the establishment of GMAIC, called for a DOD chairman, CIA now for the first time had a candidate with rather overpowering qualifications in Wheelon and he was duly appointed. Both the internal resources in OSI and the Community mechanism of GMAIC were under his control. Not without strain

[redacted]

and heartbreak, it may be said, he began a forced draft modernization of the staffs, the methods and the products of both.

In the midst of this Wheelon-initiated flurry of remodeling the Cuban missile crisis broke. He, as the Chairman of GMAIC, and many members of the [redacted] spent long hours at the National Photographic Interpretation Center (NPIC) poring over U-2 photographs of Cuban landscape in search of Soviet missiles. A parallel effort was manned by JAEIC under Chamberlain's leadership. This able support to the Kennedy Administration was acknowledged in well deserved commendations.

Wheelon's tenure was little more than a year. Yet his effect on OSI in that short time was rather surprising. His emphasis on strong technical qualifications among staff professionals has been maintained ever since. His insistence on relevance in OSI publications set standards that are still being followed. His persistent demand for scientific integrity in analytical approach, though difficult for the generalists to embrace, certainly had lasting effects on the quality of OSI finished intelligence. These gains were not achieved without cost,

[redacted]

in the form of considerable uneasiness and worry on the part of his subordinates, but their existence is undeniable.

VI. The Chamberlain Period, 1963 --

When it became apparent in the spring of 1963 that Dr. Scoville's tenure as DDR was not to last long, Wheelon emerged as a rather logical candidate for the DDR job. In August 1963 he replaced the Acting DDR, Colonel Giller. Dr. Donald F. Chamberlain, [redacted] replaced Dr. Wheelon as AD/SI at this time.

Only then was it made known that, as part of the understanding between McCone and Wheelon that led to the latter's acceptance of the DDR assignment, OSI was to be transferred from the DDI to the DDR (renamed the DD/Science and Technology). The move of OSI to the DDS&T meant not only its translocation but also a substantial reorientation of its relationship to other Agency components. Throughout its history OSI had been aligned in the Directorate of Intelligence alongside the other finished intelligence components (ORR, OBI, ONE, OCI). It took many years of persistent

[redacted]

effort to establish productive working relationships with these offices, occasionally with the personal involvement of the DDI himself. Many in OSI were concerned about the effect on these arrangements that a crossing of directorate lines might have, especially considering the rather open antipathy between the then DDI and the new DDS&T. A good deal of back room discussion of the merits of the shifting of OSI to the DDS&T took place (and still goes on some five years later).

Other changes began to occur. It will be remembered that, because of the strangeness of science and technology to many collectors, OSI had built up a rather unique collection support capability consisting of such elements as a [redacted] for liaison and requirements purposes, [redacted]

The process of paring OSI down continued. A total of [redacted] was removed from OSI to finance new components of the DDS&T such as the Office of Research and Development (ORD), Special Projects Staff (OSP), Foreign Missiles and Space Analysis Center (FMSAC), and others. The most significant of these, in terms of eventual effect on OSI was FMSAC. [redacted]

[redacted] There ensued a determined effort toward early retirement and out-placement of surplus individuals that successfully removed the excess personnel. OSI could take small consolation in the fact that considerable dead wood was pruned away during this enforced reduction in strength.

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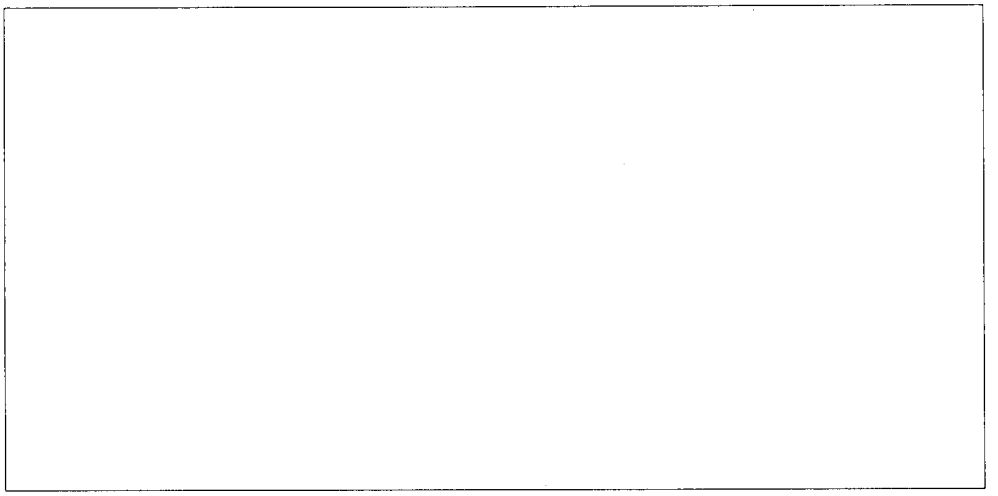
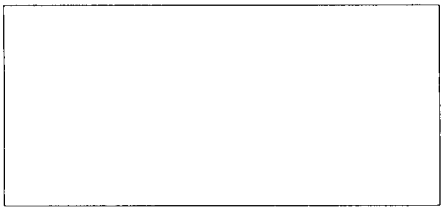


As the general uneasiness in OSI began to subside in 1965, the afore-mentioned transfer of [redacted] to FMSAC was announced by Wheelon to be effective 25 October 1965. With it went a substantial portion of the truly national level subject matter of S&T intelligence. To OSI's problems of learning to work across directorate lines with erstwhile colleagues in the DDI were added the problems of coordinating S&T intelligence relating to ballistic missiles and space intelligence across office lines.

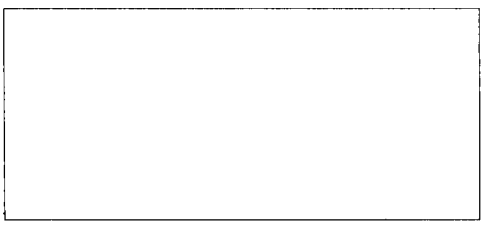
Reductions in size meant reductions in budgets. Wheelon in his short tenure as AD/SI had projected an external analysis program that rose to the [redacted] level in five years. Though he succeeded in selling the concept to CIA planners, federal economy moves overtook the plan before it could be implemented to



any great extent. Hence, in Chamberlain's first year or two he was forced to manage with less external contract money than seemed likely to be available at the start of his tenure.

As can be seen from the foregoing account, the first two years or so of Chamberlain's directorship of OSI were rather discouraging. The loss of personnel and ceiling positions meant less freedom to look into potential new fields of interest and necessitated hard looks at the scope of subject matter to be covered with fewer personnel. Similarly, careful review of external contract programs was required as the OSI budget leveled off. A general tightening up of operations was called for.

A series of moves was initiated by Chamberlain to enable OSI to live within its personnel and budget limitations. Perhaps the most basic was a painstaking examination of the priorities attached to the numerous areas of coverage for which OSI was for one reason or another responsible. A substantial reduction of coverage in geographical and topical areas for which significant customers were not readily identifiable was achieved. This review had many ramifications. For example, in some instances personnel could be



shifted so as to bolster coverage of important topics that were too lightly studied.

Another product of the review was a comprehensive redirection of the external contract program. Low priority projects were dropped and projects of intermediate priority were reduced in scope. Major projects of high priority were given a larger proportion of OSI's external contract dollar than before as the total number of projects dropped. A conscious, and largely successful, effort was made to improve the monitoring of contractor performance by OSI project officers. The net effect of the review of the external contract program, which was actually a gradual process spread over several years, was to make more effective use of the investment and raise the caliber of the contribution by contractors to OSI's production of finished intelligence.

OSI's response to a declining T/O was a critical look at the qualifications of its personnel and a concerted effort to increase the caliber of the technical staff when filling vacancies. Recruitment of the best college graduates was emphasized. In the 1965-66 and 1966-67 academic years particularly programs of assistance to field recruiters were laid on.

Selected OSI staff members went into the field to work with recruiters, tell them about OSI's needs, and assist in conducting the interviews. The number of applicants rose sharply and the best of these good candidates were concentrated upon for eventual hiring. This recruitment effort was highly successful and achieved the desired result of upgrading the level of competence of OSI technical personnel as a whole. The roster of prospective branch and division chiefs was immeasurably strengthened by the addition of sizeable numbers of alert, young scientists and engineers.

The availability of fewer people to do the scientific intelligence job caused a reexamination of sources and methods. The premium on finding the most productive source to supply the most meaningful information increased. The process of shifting from the traditional intelligence approaches involving people and places to technical data from intricately engineered and complex collection devices, set in motion during the late stages of Scoville's tenure and accelerated by Wheelon, was of necessity pushed still further by Chamberlain. It was patently in OSI's best interest to work with collection organizations on requirements and objectives and the develop-

ment of the DDS&T concept brought OSI into a support role vis=a-vis those designing and operating collection devices and programs. The relative reliance on such technical sources increased [redacted] While OSI remained an all-source shop, the inputs from technical collection schemes increasingly out-weighed those from traditional sources.

Like many other facets of OSI's operations, collection support became increasingly relevant -- despite the loss of the OSI [redacted] to the DDI. The simplest explanation for this apparent anomaly is that with fewer people in the requirements system one was required to call his shots more carefully and to be as efficient as possible in the use of support groups such as the [redacted] Then, too, direct working relationships with DDP divisions, always a preferred modus operandi in OSI, were encouraged as a way of cutting out needless intermediaries and conserving time.

One such arrangement, that with FE Division, is worth citing as an example of highly beneficial

[redacted]

collaboration. Beginning in 1965, periodic meetings between the management levels of FE and OSI have been held at which selected topics are reviewed for the purpose of facilitating the understanding of important S&T requirements and selection of the most likely collection operation to satisfy them. These meetings feature briefings by both parties. As time has passed, representatives of FMSAC and other DDS&T offices have participated but the emphasis remains on OSI's interests. Earlier attempts to establish a somewhat similar program with SR Division dwindled away after the first two or three sessions. In 1968 an ex-OSI officer was returned to OSI from [redacted] and assigned the task of improving OSI relationships with DDP generally.

Specialized collection support has always been a part of OSI operations but one arrangement is worth singling out for somewhat greater treatment than the others. This is the relationship between [redacted] and the Office of Special Activities (OSA). This relationship began with the U-2 operations in 1956, as has already been mentioned. A handful of selected OSI officers prepared vulnerability assessments on the U-2 operating in a Soviet environment

[redacted]

for the Developmental Projects Division (DPD), the operating component. When Scoville became DDR, he charged OSI with providing the same sort of support to the continuing U-2 and follow-on operations which were subsequently taken over by OSA. Largely on the basis of a reputation established in this work, in 1967-68 [redacted] was requested by the National Reconnaissance Office (NRO) to do a comprehensive study of a number of systems operated under NRO aegis [redacted] [redacted].

A continuing problem in OSI, alluded to in earlier pages, is that of presenting timely intelligence in a form most useful to the consumer. A number of experiments have been tried in the never-ending search for the best format. One such experiment began in the summer of 1964 when a five-day-a-week publication, known as the SURVEYOR, was inaugurated. At first purely an internal CIA organ, the SURVEYOR was an attempt to cull selected items of recognizable significance (up to a total of 5 or 6) from the daily flow of raw information and publish a gist and comment on them for the information of appropriate officials. The SURVEYOR caught on quickly and became an important outlet for S&T intelligence. With occasional improve-

[redacted]

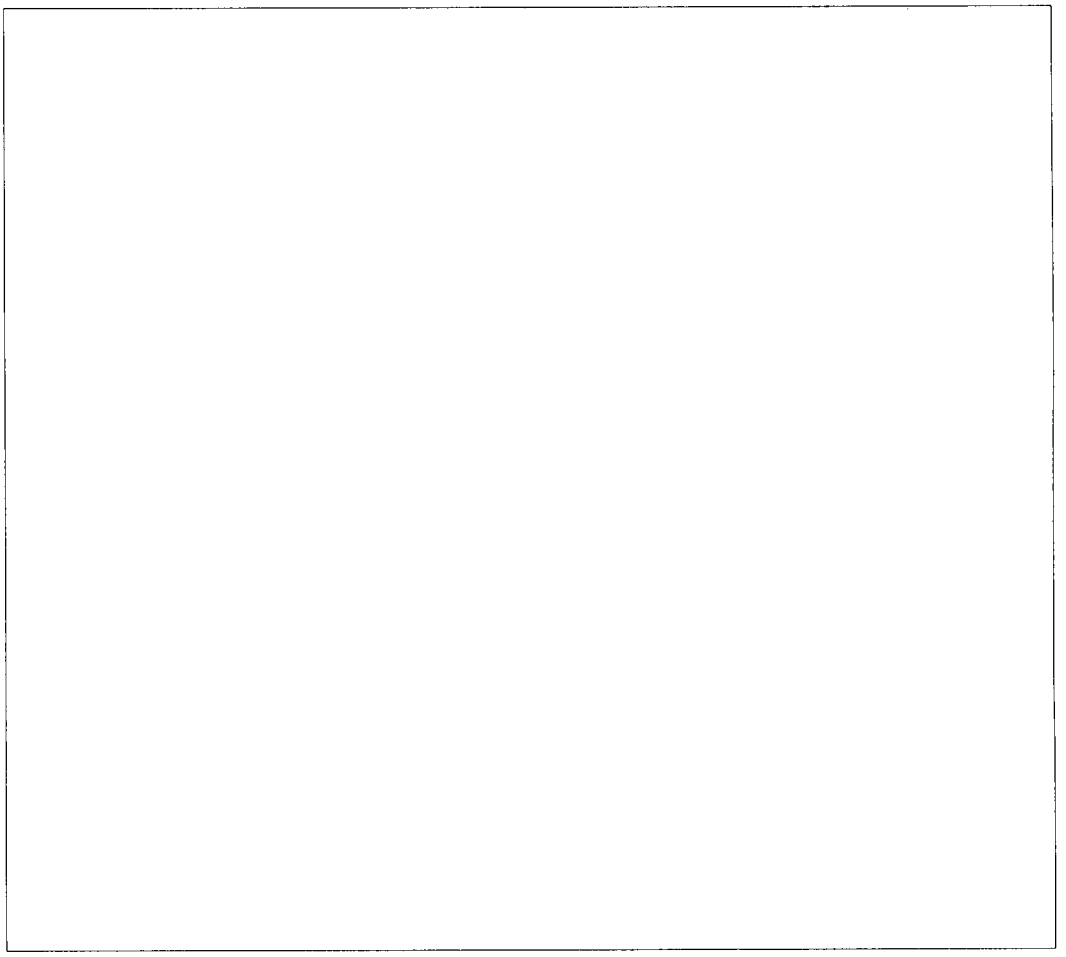
ments it is in 1968 distributed widely in daily and weekly form at two levels of classification to both domestic and overseas recipients. At Chamberlain's insistence the Scientific Intelligence Digest (SID) has been strengthened to maintain its place as the primary monthly issuance from OSI. Some [redacted] Scientific and Technical Intelligence Reports (STIRs) complete the roster of series-produced OSI publications. This family of publications represents probably the highest level of productivity ever achieved in OSI in terms of timeliness and pertinence to the needs of policy makers.*

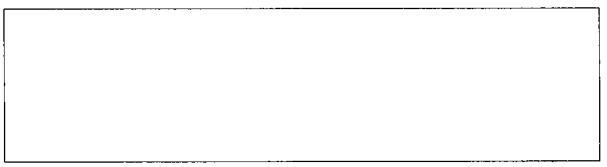
Perhaps because of preoccupation with intra-CIA matters, OSI came through a period that might have seen another round of prerogative battles with the Defense Intelligence Agency (DIA) with very little perturbation. When the DIA was established in 1963, there was some concern in OSI that the struggle over the division of S&T intelligence responsibilities, still fresh in the memories of many OSI officers, might be repeated. The problems of getting organized and establishing a working relationship with the Service intelligence agencies appear to have so occupied DIA, however, that few quarrels have been

* See Annex VIII "OSI Publications"

[redacted]

engaged in with CIA and none of consequence to OSI. In JAEIC and SIC only minor difficulties have arisen that are attributable to DIA and the general functioning of these two committees as of 1968 has been as smooth as at any time in their history. Both have been remarkably successful in recognizing and accommodating the needs of the participating agencies, notably DIA.





This account of the history of OSI was completed in its present form at the end of 1968. As the year ended, the early phases of reading in a new administration were being implemented by the intelligence community, the Agency and OSI. Mr. Nixon had made known his intention of reinstituting the National Security Council procedures for review of national policy issues, forecasting the direct involvement of intelligence considerations in the workings of the NSC machinery. Moves toward cutbacks in resources for intelligence purposes were well underway. OSI proposes to do an annual addendum to this review of its history in order periodically to record the most significant events, activities and trends in its existence.

~~TOP SECRET~~

ANNEX I

Personnel, Budget, Organization

CONTENTS

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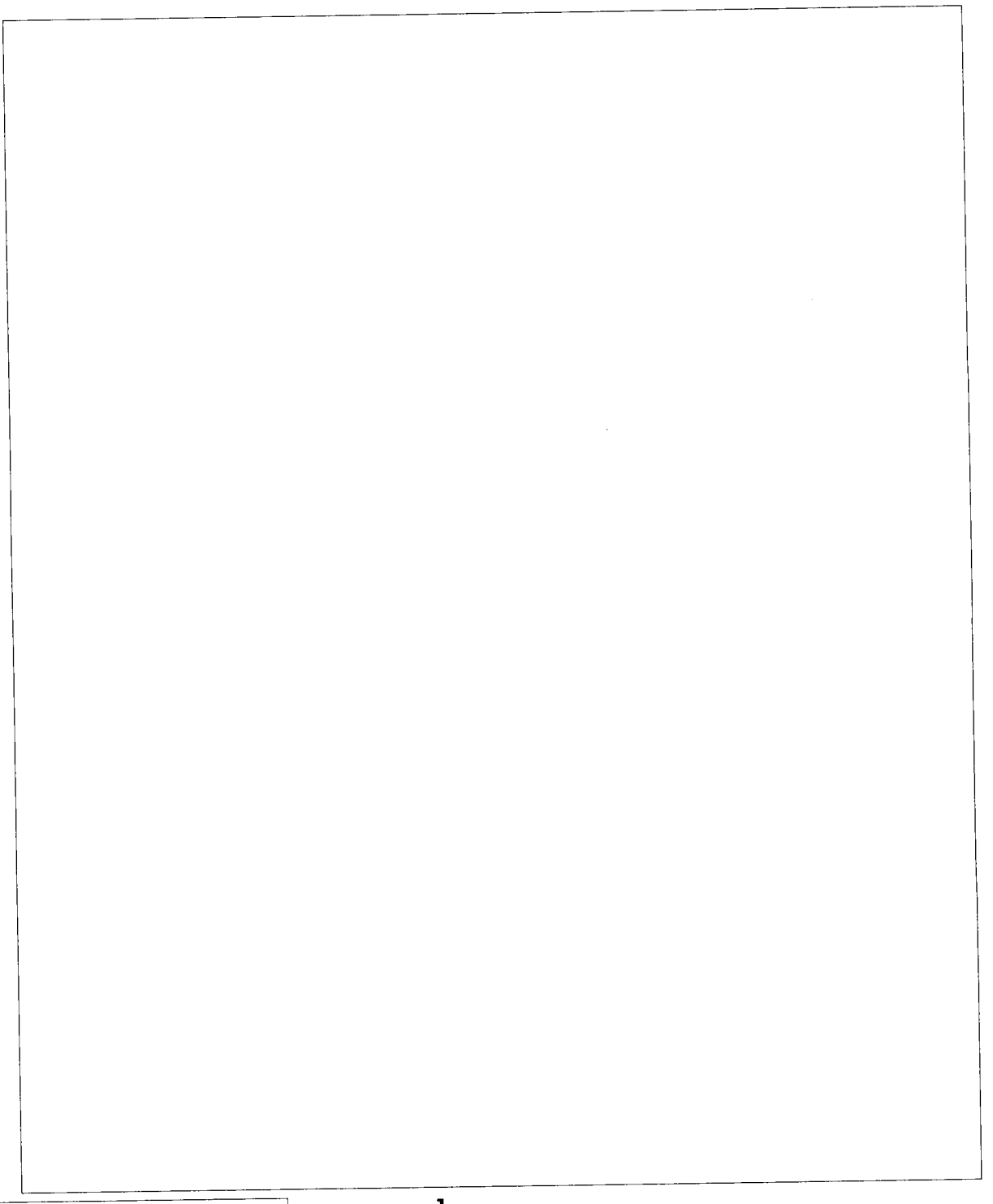
ANNEX I

Personnel, Budget, Organization



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ANNEX II

OSI and Atomic Energy Intelligence

including the

Joint Atomic Energy Intelligence Committee

CONTENTS

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ANNEX II

OSI and Atomic Energy Intelligence

including the

Joint Atomic Energy Intelligence Committee

I. Atomic Energy Intelligence in the Manhattan Project 1944-1946

Atomic Energy Intelligence in the U.S. had its beginnings in the Manhattan Project. In early 1944 General George C. Marshall, Army Chief of Staff, directed General Leslie Groves, Director, Manhattan Engineering District, (MED) to establish the necessary organization within the District to cover foreign intelligence in the atomic energy field. The intelligence unit that was formed, as part of the MED Security Office, followed the prevailing practice in MED of being tightly compartmented and isolated from other governmental organizations due to security regulations. For the most part it concerned itself with an exhaustive counter intelligence-espionage effort. The main reporting function was accomplished directly to and by General Groves, personally.

In May 1945 the intelligence unit was separated from the Security Office and began to function directly under General Groves. During World War II the concentration of effort was on Germany. Near the end of the war the emphasis shifted to activities and scientists with atomic energy knowledge who were Soviet or might

be brought under Soviet control. Thus, the USSR began to supersede Germany as the prime target for intelligence exploitation.

Operation ALSOS was a major Manhattan Project intelligence operation as the war in Europe came to an end. ALSOS teams manned by scientific personnel and given priority assistance by the field forces, moved into Germany with and in some cases ahead of the combat forces. Their dual objectives were to determine conclusively how far the Nazi atomic effort had progressed and to seize German atomic facilities, records, and key scientists. These objectives were accomplished. By the fall of 1945 it became clear that the Soviets were successfully pursuing the same objectives in the German sector occupied by Soviet troops.

Apart from the MED effort, the Office of Scientific Research and Development during World War II carried out as part of its duties a general study of the scientific literature to isolate names, locations and activities of all scientists in the Axis countries. This effort

aided in developing bombing targets and revealing sources of military information. Additionally, some effort was expended on the USSR, and this material provided a valuable tool when the intelligence community turned its attention to the USSR after the war.

Although rigorous security measures and special classifications instituted by the Manhattan Project largely prevented the flow of information, intelligence components outside the Project became aware of the significance of uranium, Norwegian heavy water and other materials of atomic energy importance. Also, almost overnight, with the US explosion of nuclear bombs and the publication of the Smyth report, the subject of atomic weapons was no longer taboo.

During the 1946-1949 period the intelligence organizations of the military services and other govern-

mental departments, because of their departmental requirements, concerned themselves with their parochial interests in atomic energy intelligence. As a result, intelligence information and estimates emanated from a number of organizations. Although there was some working-level liaison, the interchange of raw atomic energy information and evaluations was spotty and sporadic at best and widely divergent estimates of foreign atomic capabilities appeared. The task of intelligence analysis was greatly complicated by the countless and persistent rumors concerned with atomic weapons and detonations in the USSR. Each required thorough analysis and had to be evaluated against a growing body of information, including an effort to discount a Soviet inspired propaganda campaign.

Until its deactivation in 1946, the Manhattan Project was the focal point for an effort to exploit the potential for remote detection of unique tell-tale radioactivity emanating from atomic energy plants as well as supporting activities in Germany and German-controlled areas. The interest in remote detection

was amorphous with little or no organization. A steady flow of suggestions were self-initiated within the Manhattan Project. General Groves kept a personal file on detection possibilities, but presumably preferred not to pursue these in any way that might divert the scientific effort of the Project from the primary objective of producing atomic bombs.

[redacted] It is not clear whether the concern was over potential health hazards from Manhattan Project operations or purely the development of technical knowledge on the behavior of released radioactivity or the development of detection techniques for targeting purposes.

[redacted]

[redacted]

II. The Beginning of CIG-CIA Involvement

A new factor of major consequence was the 1946 legislation that created the Atomic Energy Commission to take over from the Manhattan Project the direction and operation of the US atomic energy program. The AEC Chairman, David Lilienthal, insisted from the outset that AE intelligence should be in the AEC. He never became reconciled to the eventual location of the AE responsibility in CIA and remained a vocal and acid critic of the AE intelligence effort.

In early August 1946 General LeMay, Deputy Chief of Staff for Research and Development, Army Air Force, forwarded to the Intelligence Coordination and Planning

Staff (ICAPS) a memorandum noting that the AF was engaged in [redacted] experimentation. He proposed the initiation of a world-wide system of various means for detecting a foreign atomic explosion. In September General Samford wrote the Director, CIG about the LeMay proposal and suggested that the matter be considered a proper subject for CIG supervision and coordination.

General Hoyt Vandenberg, Director, CIG, addressed a memorandum to General Groves in late September outlining the needs of the CIG for information on foreign atomic explosions and proposed that CIG coordinate interdepartmental activities for acquiring the information. General Groves was reluctant to accept the proposal since the new AEC was shortly to take over Manhattan Engineering District. In early October, General Vandenberg and the Acting Chief of ICAPS met with General Groves to review the proposal. On 30 December 1946, General Groves responded to General Vandenberg's memorandum emphasizing the need for improved detection hardware and improved communications. He expressed his beliefs that, if the US atomic energy program was not to remain under the military as seemed to be a foregone conclusion, weapons development and the intelligence aspects of atomic energy should not

[redacted]

be turned over to the AEC. General Groves and Secretary of War Patterson had just concluded a compromise with AEC Chairman Lilienthal providing that the AEC would be merely a participating agency in coordinated atomic energy intelligence.

On New Years Day 1947 Secretary of War Patterson wrote the Chairman AEC that it was his understanding that the Manhattan intelligence personnel and files were to be transferred to the CIG. This action took place on 25 February 1947. In mid-March the CIG notified ICAPS and the Service Chiefs that the MED Group was now integrated within the CIG and would function as the

[redacted]

III. The First Atomic Energy Detection System

On 14 March 1947 General Vandenberg in a memorandum to War, Navy, the AEC and the Joint Research and Development Board urged the prompt establishment of a committee to formulate an over-all [redacted]

[redacted]

plan. This special committee produced its report in June 1947. On 30 June, Admiral Hillenkoetter, who had succeeded General Vandenberg as Director, CIG sent the other four agencies the committee report requesting their comments or concurrence with the conclusions and recommendations of the committee.

The Joint Research and Development Board favored the National Science Foundation or some other non-military agency for detection responsibility. The Armed Forces Special Weapons Project felt it should have the responsibility for analysis and evaluation rather than the Army Air Force. The AEC concurred in the report, noting only that the [redacted] should be assigned to a single agency. The Secretary of War's concurrence included a statement that the Army Air Force would assume the [redacted] responsibility. The Secretary of Navy concurred with the report and also the responsibility assignment to the Army Air Force. Two days before the latter became a separate Service, General Eisenhower issued a directive that assigned it the over-all responsibility for the program but provided neither priority nor funds. Two days later the Air Force assigned the detection program to the Deputy Chief of Staff, Materiel where it became the [redacted]

[redacted]

Following the Eniwetok tests, [redacted] established an Interim Surveillance Research Net to design and plan a detection system rather than itself become an operational network. [redacted] AWS was also responsible for operating the associated ground-level sampling equipment. A second element was a network of acoustic stations operated by the Army Signal Corps. The Coast and Geodetic Survey provided seismic data from its dispersed US-based stations and various contacts with foreign stations. The Naval Research Laboratory undertook to develop a radio-chemical analysis of rain water samples and to build several large scale collection stations. All surveillance reporting was funneled into a Data and Analysis Center set up by [redacted] in Washington. Late in 1948 the Signal Corps installed a second acoustic station in [redacted] joining the first that had been established [redacted] earlier. As a result of these actions a minimum detection network was in being before [redacted] and provided a valuable shake-down period for collecting and handling data.

The critical problems of funding of research and the related role of the Joint Research and Development

[redacted]

Board rapidly became evident. Although the AF was assigned titular responsibility for [redacted] they could control certain flights and utilize other assets at hand only so far. The balance of the program rapidly became bogged down in the many uncertainties and ambiguities of jurisdiction, prerogatives and bureaucratic interplay. Not only was the JRDB involved as a focal point but in varying ways at different times the Joint Chiefs, the Services and their Secretaries, the new echelon of the Secretary of Defense, the AEC, Bureau of the Budget and CIA were also involved.

For the next two years the controversy over funding, program guidance, research, and scope of activity was waged among the Agencies. It was not until the aftermath of [redacted] that some resemblance of a coordinated detection program began to emerge.

IV. National Intelligence Authority Directive No. 9 and the Establishment of Joint Nuclear Energy Intelligence Committee

During the time that the special committee was preparing its report [redacted] the National Intelligence Authority issued its Directive No. 9 on 18 April 1947. This Directive was designed to establish once and for all the authority of the CIG to assume the intelligence function formerly held in the Manhattan Project and to regularize the coordination of all intelligence related to foreign atomic

[redacted]

energy developments including collection, correlation, evaluation and dissemination within the Government.

By May 1947 three estimates on the Soviet AE program had been issued by the Manhattan Project and the [redacted] in CIG. Some Agencies took issue with the conclusions in these estimates and were highly critical of the handling of AE intelligence. The [redacted] had sought coordinated views of all interested agencies through an informal inter-agency group but was hampered by the fact that the participants were permitted to speak only as individuals and not for their agencies. Concurrently, the AEC Chairman forwarded to the National Intelligence Authority for action a report prepared for the AEC by Admiral Souers. The report contained specific criticism of the assignment of AE intelligence to the CIG and recommended that the AEC establish an intelligence component headed by a director who would become a permanent member of the Intelligence Advisory Board. The NIA saw no conflict with its Directive No. 9 and thus concurred in the recommendations. However, some very basic elements of conflict remained as far as Chairman Lilienthal was concerned and he related his misgivings to Mr. J. Edgar Hoover. About a year later Chairman Lilienthal pursued the matter again with Mr. Hoover, telling him that unless things

[redacted]

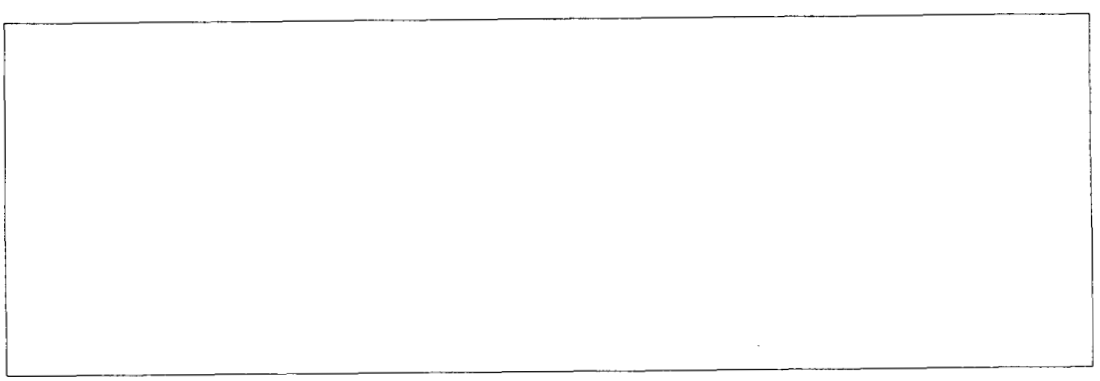
improved he "thought the President ought to consider some drastic changes in the set-up."

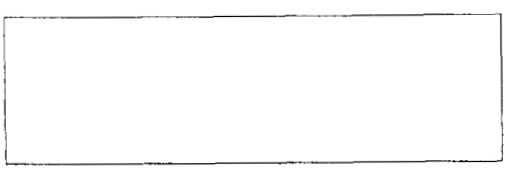
On 7 August 1947, Senator B. B. Hickenlooper, Chairman of the Congressional Joint Committee on Atomic Energy, requested the Secretaries of Defense and State, the Attorney General and the Chairman of the Atomic Energy Commission to provide a combined judgment as "to the earliest date by which any nation, without our aid, may be expected to produce its first atomic bomb," Secretary of Defense Forrestal referred the request to the Central Intelligence Group as a matter falling under its coordinating responsibility. The various Agencies continued to complain and discuss the handling of intelligence. A 3 October 1947 memorandum to the DCIG, from the Chief [redacted] noted his concern with the Souers AEC report that implied that CIA was incapable of evaluating AE intelligence. He also reported that the Department of State was not supplying incoming AE information and that the AEC was not forwarding information, although it was now a full-fledged member of the IAB, and it was not responding to CIA draft papers. The Chief, [redacted] feeling that CIA personnel could no longer work effectively in view of the withholding of essential information and the

[redacted]

aggressive moves of other agencies into intelligence, recommended a high-level determination of responsibility.

As a result, the Director of Central Intelligence initiated on 6 November 1947 under National Intelligence Authority Directive Number 9, the establishment of the Joint Nuclear Energy Intelligence Committee (JNEIC).* The CIA was to furnish the Chairman and the permanent staff of the Committee. The proposed membership of representatives from the Departments of State, Army, Navy and Air Force, the Atomic Energy Commission, the Research and Development Board and the CIA. The action by the Director of Central Intelligence stated that the JNEIC was established "to assist in guidance of collection agencies in this field and to conduct detailed evaluation of all resulting information." Thus, the JNEIC became the first interagency scientific committee within the intelligence community.





In the spring of 1948, when it was thought that the tight security and other characteristics of the Soviet AE program put a particular premium on covert operations, the [redacted] was transferred to the Office of Special Operation (OSO). This action added burdens to the security classification problems and further removed the Group from its original point of attachment in [redacted] ORE.

Under the National Security Act of 1947 the CIG became the Central Intelligence Agency. Upon the reorganization of CIG into the newly formed Central Intelligence Agency the responsibility, functions and personnel of the [redacted] were transferred to the Office of Reports and Estimates (ORE). This action brought together the nuclear energy intelligence activities with all other scientific intelligence responsibilities into one component, the [redacted] of ORE.

A reply to Senator Hickenlooper's request was sent on 15 December 1947. He then requested that a further report be made on or before 1 July 1948 or earlier if any substantial change in the situation took place.

Although the AEC concurred in the coordinated estimate sent to Congress on 15 December 1947 in reply

[redacted]

to Senator Hickenlooper, Dr. Fine and Dr. Shercliff of the AEC in January 1948 sent a memorandum to the Staff of Senator Hickenlooper's Committee stating that the CIA report was "seriously misleading." In April 1948 the AEC re-emphasized to the committee its reservations regarding the CIA report. Thereupon, Senator Hickenlooper wrote that he was "in a state of confusion as to whether or not we (the Committee) have any reliable information on the question involved." He added "I am truly concerned that the various agencies have apparently not been able to make a coordinated examination of this question and to present the Committee with a reliable and satisfactory evaluation thereof."

From this time on the JNEIC proved to be the mechanism for coordinating AE intelligence. The Committee began in 1947 its semi-annual estimates on the Soviet Atomic Energy Program. With its semi-annual estimate dated 1 January 1950 the Committee initiated the practice of obtaining the approval of the Intelligence Advisory Committee before publication. These semi-annual estimates continued until 1952 when the estimate was made annually. The Committee retained the sole responsibility for the preparation and publication of the Soviet estimate until 1965 when respon-

sibility for it was placed in the Office of National Estimates mechanism. The National Intelligence Survey program has also been supported by the Committee with appropriate contributions on atomic energy matters. The Committee has also sponsored scientific and technical intelligence collection programs. Although the Committee has itself had no collection responsibilities, it has provided significant guidance and assistance to the collectors. The responsibility for collection has remained with the individual agencies represented on the Committee. Detailed responsibilities for the production of atomic energy intelligence were specified in Annex C to DCID 3/4 in 1956, later revised in the new series, DCID 3/3 dated 23 April 1965.

V. [redacted] and its Aftermath

In 1948 the Air Force Materiel Special Weapons-One, which had responsibility for [redacted] Secretary of Defense Forrestal issued a memorandum in mid-1948 specifically calling for "a fully operational routine surveillance," system to be installed by January 1950. The Research and Development Board, the focal point for many problems of [redacted] concluded on the other hand, despite

[redacted]

Mr. Forrestal's memorandum, that a fully operational surveillance system could not be achieved before mid-1953. In spite of all the problems that beset [redacted] it was responsible for the detection of the first Soviet nuclear test conducted on 29 August 1949.

A special Panel meeting under the Chairmanship of Vannevar Bush was called on 19 September to evaluate the data collected. On 20 September the Chairman of the Military Liaison Committee of the AEC reported to President Truman the results of the analysis and details of the information collected. At 1100 hours on 25 September, Mr. Truman briefed the Cabinet and released a public statement that the USSR had conducted a nuclear explosion.

On 29 September the DCI called for the convening of an ad hoc committee "to consider recent atomic developments," to examine the atomic energy estimate producing process and the overall atomic energy intelligence situation. A report was to be submitted to a Special Committee of the National Security Council.

In early October 1949 the JRDB requested the JCS to re-evaluate its guidance on atomic energy surveillance, giving consideration to both detection and Soviet rates of production. At this late date the JRDB had concluded that an extensive research and develop-

[redacted]

ment program would be necessary. Concurrently, the JNEIC submitted to the Director of Central Intelligence through the Intelligence Advisory Committee mechanism a memorandum on the need for mission reorientation and for technical collection to support that mission.

The DCI endorsed the memorandum to the JCS, which in turn referred the matter to the Military Liaison Committee. In January 1950 the Committee advised the JCS of its recommendations on the "predominating consideration" in atomic energy surveillance.[2/] On 20 January the JCS approved the Committee's recommendations and charged the Air Force with establishing, operating and maintaining a surveillance system. The JCS specified that the Research and Development Board was to monitor the development of scientific means for determining rates of production. Although later the AEC was formally charged with the development of such means, as a practical matter this became a cooperative

effort in which the [redacted] CIA and the JAEIC have continued a major role in initiating and monitoring advanced technological developments.

VI. The Establishment of the Joint Atomic Energy Intelligence Committee

DCID 3/3 of 28 October 1949 established the interdepartmental Scientific Intelligence Committee (SIC). At its first meeting on 21 November 1949 the SIC disestablished the JNEIC and formed the Joint Atomic Energy Intelligence Committee (JAEIC) as a working committee of the SIC.[3/] This action was a change in name only and did not affect the membership or functions and responsibilities of the Committee.

The ad hoc committee established by the DCI in September 1949 presented its report on 9 June 1950. The report was a comprehensive and realistic summary of the intelligence collecting and producing mechanisms then in existence. The committee formulated eight specific recommendations. These recommendations included the establishment of priority for collection, maintaining and actively supporting the technical surveillance systems, rotation of technical intelligence personnel to overt collection activities abroad, augumentation of personnel of the Armed Forces Security Agency, direct and continuous consultation between

groups concerned with collection, and the consolidation of certain NSC directives to simplify interlocking committee structure and eliminate unanimous consent. These were reviewed by the IAC and specific comments on each were forwarded to the DCI. A summary of the Committee report and the IAC comments was made by the DCI to the National Security Council.

Some changes had already been made, others were undertaken immediately and others took place over a period of years. [redacted] The JAEIC approach to the AE intelligence problem, endorsed by the IAC, resulted in [redacted] becoming the continuing focal point. The atomic energy intelligence experience of many personnel in the [redacted] that dated back to the Manhattan Project, the integration of AE intelligence in a comprehensive scientific intelligence program, and the direct access to assets of CIA were coupled with the JAEIC as a going operation. Through this mechanism representatives of other agencies could bring to bear specialized agency capabilities and interest without duplicating the working level research of the [redacted] It is substantially on this basis that AE intelligence has continued ever since.

[redacted]

In the aftermath of [redacted] atomic energy information was clearly established in the highest priority category for intelligence collection and analysis.

[redacted]

[redacted] Research and development proceeded with some proposals that would lead to solving the formidable security surrounding the Soviet atomic energy program. [redacted]

[redacted]

Soviet nuclear testing in the early years from 1949 to 1952 increased the pressure on the Intelligence Community for information on production, stockpiling and delivery systems. Every effort was expended to exploit each source in an effort to penetrate the Soviet AE program. From the various programs, results begin to show, leads were developed, bits and pieces of information begin to fit together.

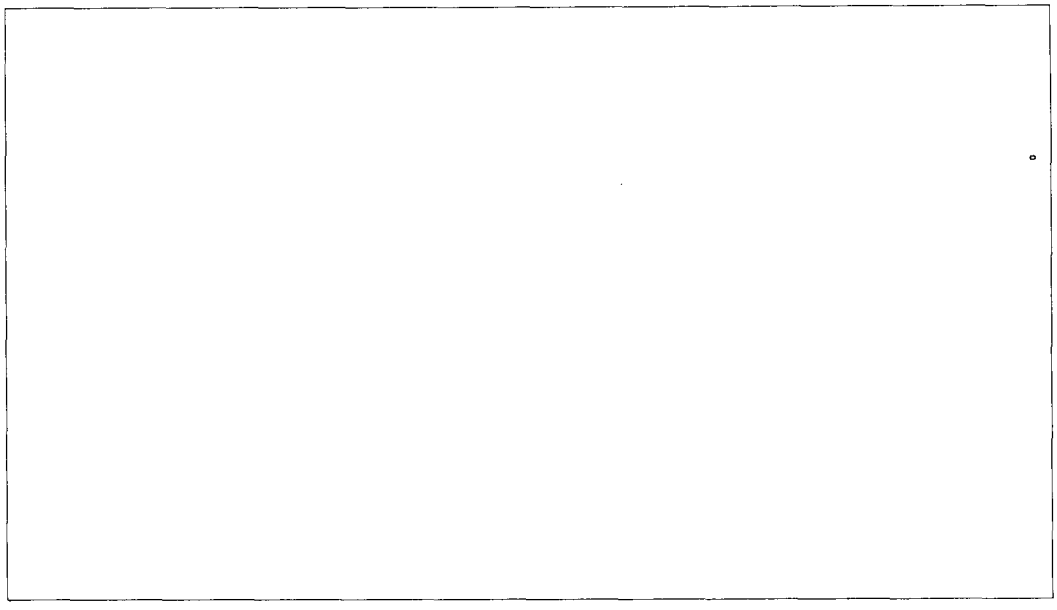
VII. The Webster Panel

The JNEIC (later JAEIC), was the sole coordinating body and producer of all National Estimates on the Soviet AE Program from 1947 to 1965. Although individual agencies represented on the JAEIC performed analysis of AE information and coordinated the results within the JAEIC framework, there was some feeling that an impartial review should be made of the work of JAEIC and the national estimates being produced. As a result, in 1951, a panel of consultants was established by the DCI. The panel was to assure that the best possible intelligence estimates were being made on the Soviet AE program and to advise the DCI (and initially the IAC, later USIB) on the value of analyses done and the pertinence and validity of the conclusions

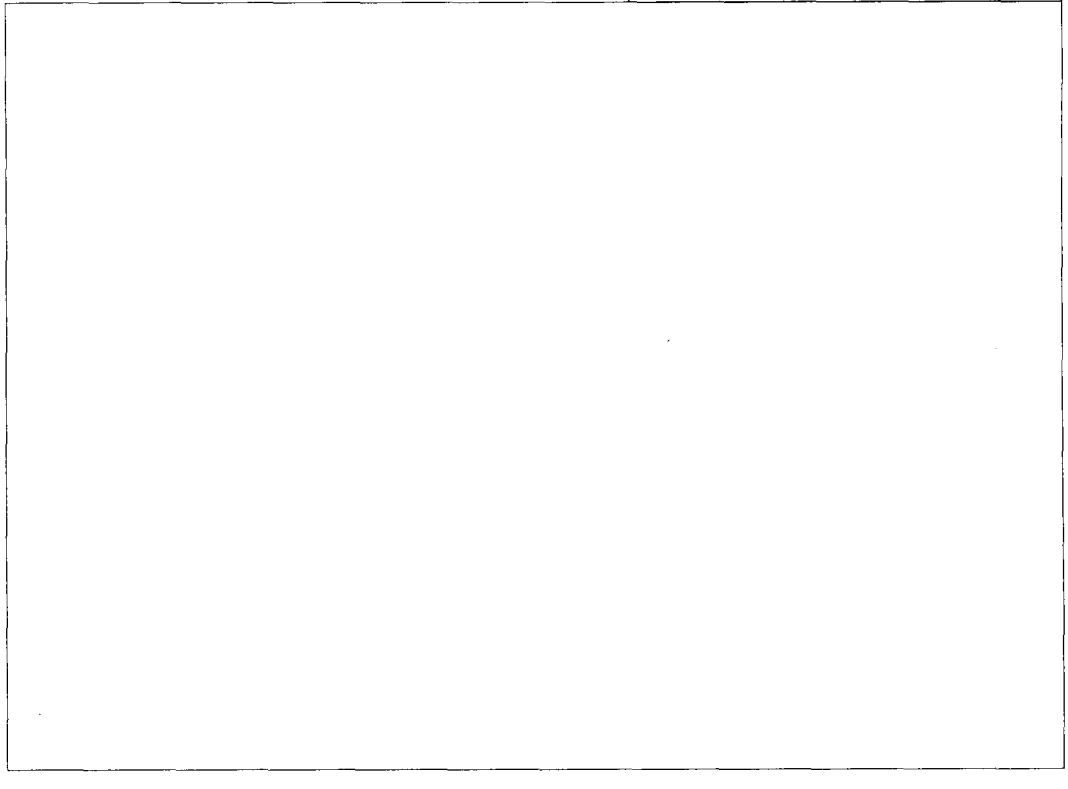
reached in the estimates. This panel became known as the Webster Panel, so named after its Chairman, Mr. William Webster, then Executive Vice President of the New England Electric Company. The panel has remained in existence since 1951. Its responsibilities were expanded in 1965 to include the work done on estimates concerning the Communist Chinese Atomic Energy Program and at that time its name was changed to the Director's Nuclear Intelligence Panel.

VIII. Progress in the Early Fifties

The German scientists and engineers whom the Soviets had taken to the USSR for work in their AE program were being returned to Germany. The flood of information as a result of interrogations, conducted by personnel and members of other intelligence services provided the corner stone for analysis of the Soviet program.



It was also during this time that unique analytical techniques were attempted.

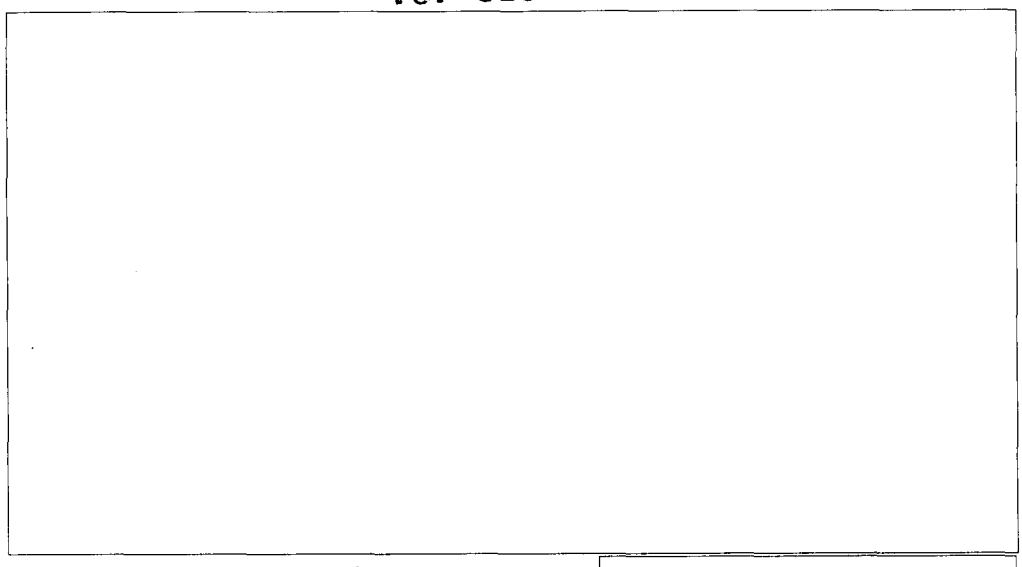


Because of the tight security and sensitivity of many of the programs initiated under guidance, strict compartmentation developed within OSI and the Agency. The Atomic Energy Act of 1954, under which clearances for AE information came under tighter administrative control throughout the Government, compounded the compartmentation. Since was responsible for information within the Agency, he was able to isolate its people and information from the rest of the Agency. Since clearances required his personal approval, he was able to limit the flow of information and gain personal control of all AE intelligence. The result was that at times operated his Division outside the purview of his immediate superiors and maintained a direct channel with the DCI.

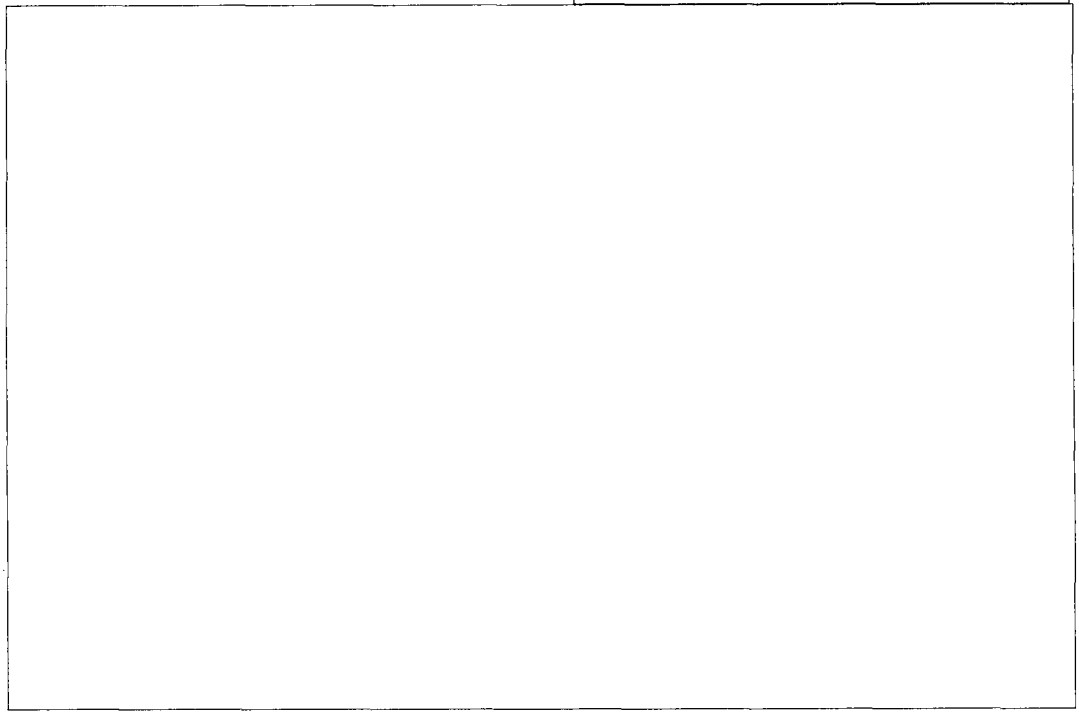
IX. DCID

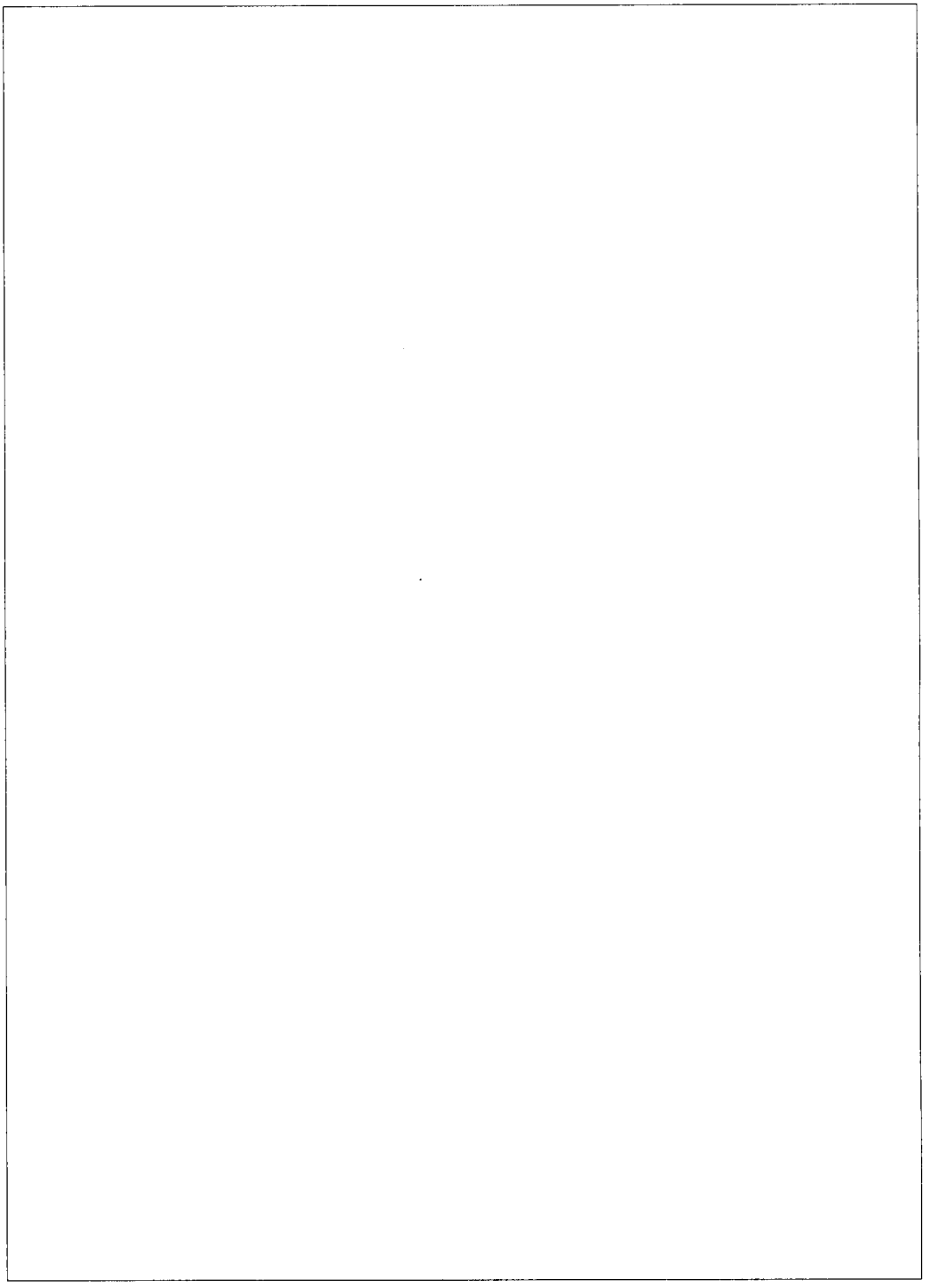
X. The Period From 1955 to Date

In August 1955, [redacted] was reassigned to an important role in the development of the U-2 reconnaissance system. [redacted] At about the same time, Dr. Herbert Scoville, Jr. became Assistant Director of OSI and was designated Chairman of the JAEIC. Under the direction of Scoville, a new era in the handling of atomic energy information and method of operation of [redacted] began. An expansion in terms of personnel took place and the cross feeding of information and normal lines of command were reinstituted.

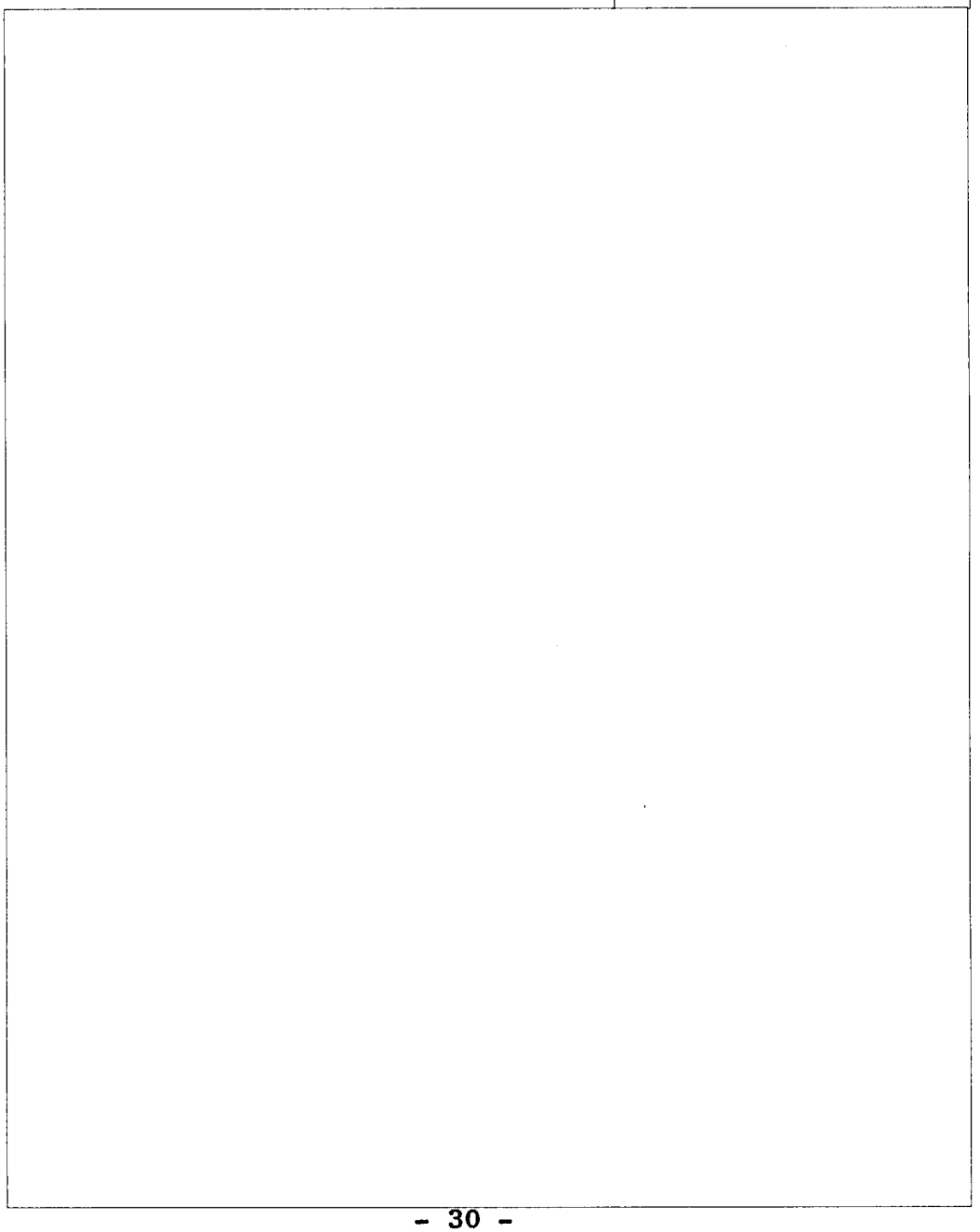


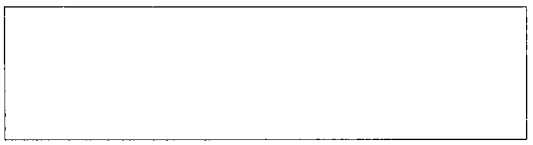
During the 1956-60 period, [redacted] Soviet AE installations in the Urals and in the Far Eastern USSR were [redacted] analyzed with more conclusive results. [redacted]





Beginning in the fall of 1961 and through the fall and winter of 1962 the Soviets conducted their most extensive series of nuclear tests.





In August 1962 [redacted] was designated Chairman, JAEIC vice [redacted] Soon thereafter the JAEIC assumed a major role in providing intelligence support during the Cuban missile crisis. The JAEIC met in almost continuous sessions around-the-clock issuing intelligence summaries and briefings for the DCI.

In August 1963, [redacted] was named Director, OSI [redacted] The period from 1964 to 1968 has been marked with improvement in analytical techniques and further expansion of collection efforts.

[redacted]

[redacted] With the signing of the Nuclear Test Ban Treaty in 1963, more attention was given to methods of monitoring nuclear tests. [redacted]

[redacted]

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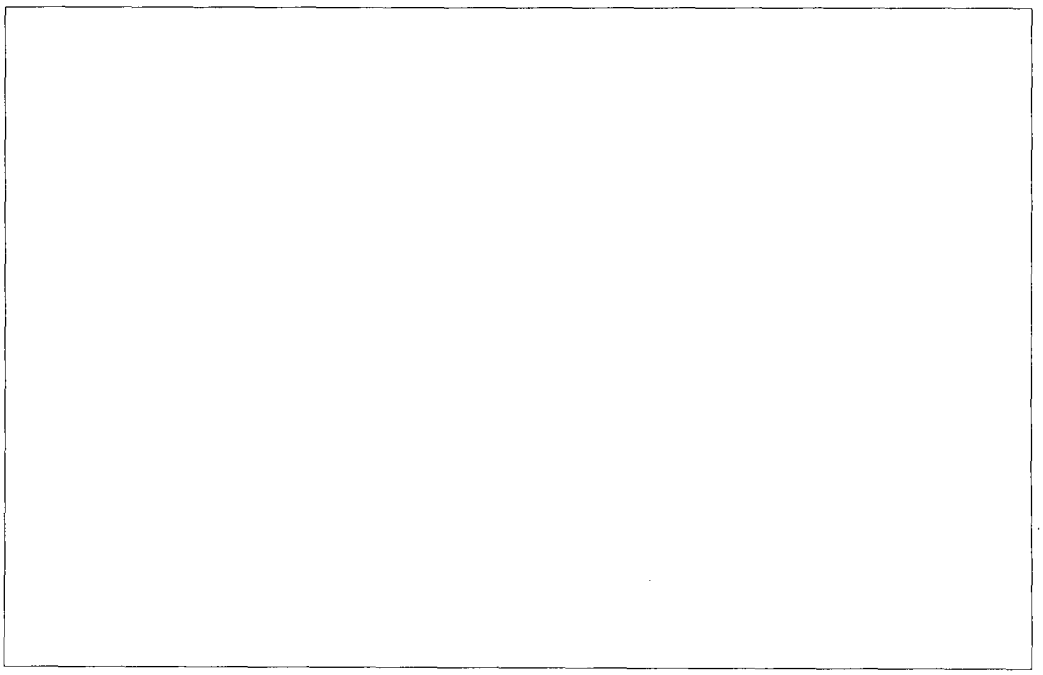
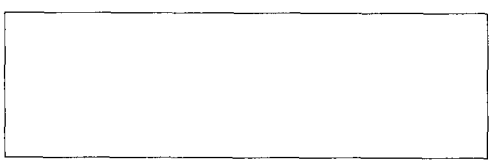
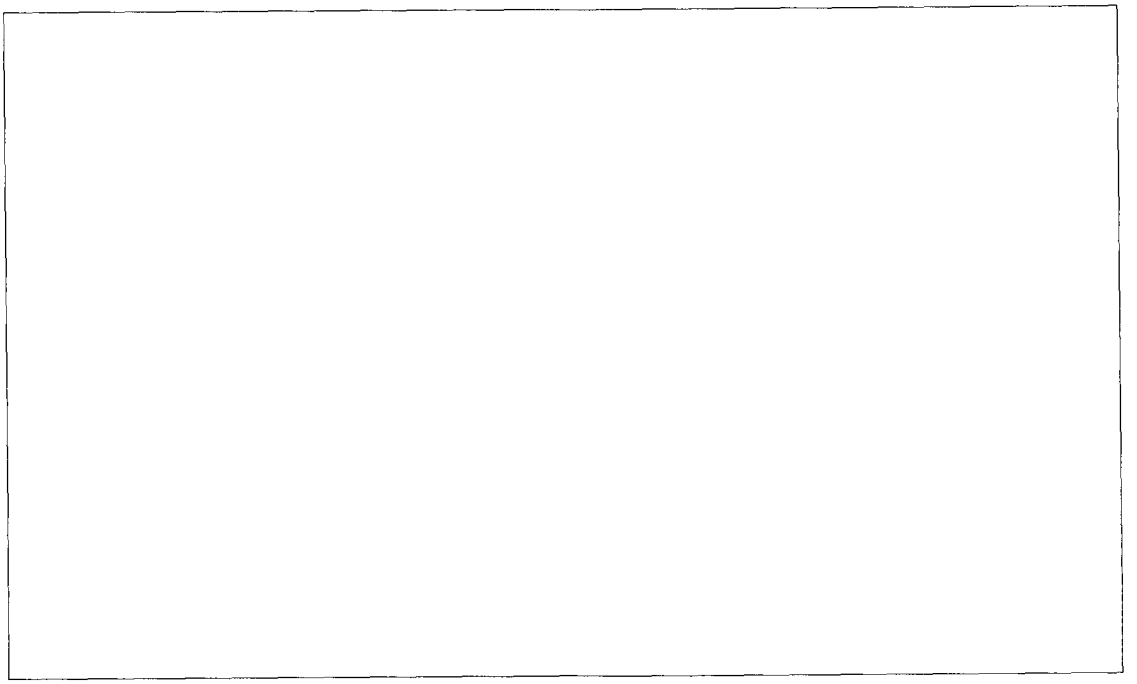


As this chapter on OSI's role in atomic energy intelligence comes to a close at the end of 1968, OSI continues its dominant role in this field. Its position within the community, vis-a-vis the other intelligence agencies as well as the USIB, is well established. The principal topics of interest are monitoring of nuclear testing under the Test Ban Treaty, proliferation of nuclear weapons capabilities among Nth countries, details of the Communist Chinese nuclear program, and new techniques of analysis and collection to be applied to atomic energy intelligence.





Annex III

Collection Support Activities of OSI

CONTENTS

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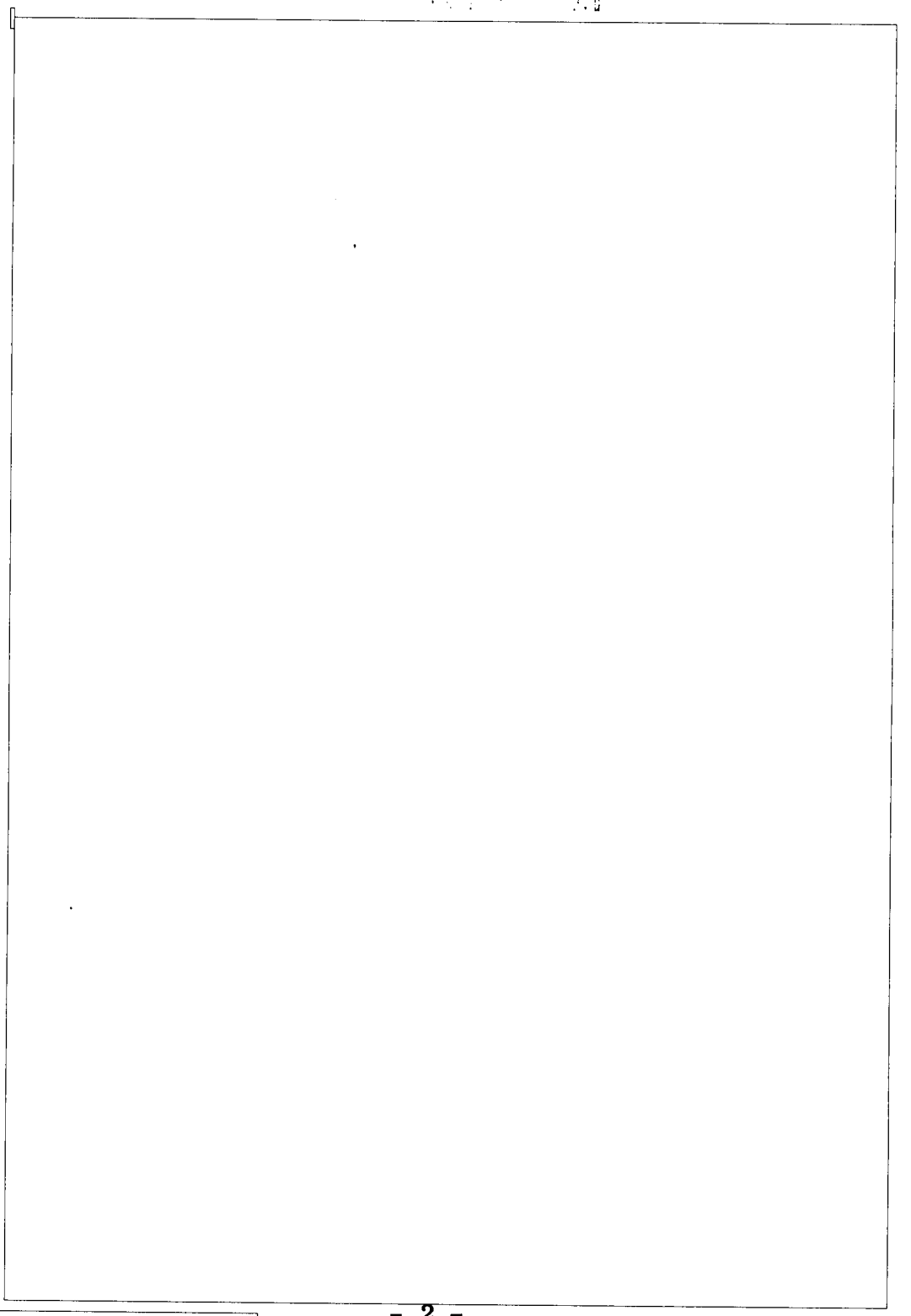
Annex III

Collection Support Activities of OSI

I. INTRODUCTION

U.S. efforts to obtain needed information on foreign scientific and technical R&D can be traced to World War II days and the foreign intelligence activities of the Office of Strategic Service (OSS) and the Manhattan Engineering District (MED). In 1944-45, after determining that existing intelligence organizations (G-2 and ONI) were unable to satisfy its needs for information on foreign AE developments, the MED fostered special overseas collection operations by the OSS, briefed field commanders and staffs, and assigned a few selected military officers to overseas theaters -- for the purpose of improving the collection of AE-related information.



With its establishment OSI assumed responsibility for the formulation of requirements for the collection and exploitation of scientific intelligence information and endeavored to insure receipt of all materials necessary for the fulfillment of production requirements. At the same time, however, OSO and its Technical Guidance Staff (TGS) continued its activity in the planning and conduct of operations aimed at the gathering of scientific intelligence information.

II. EARLY INVOLVEMENT IN COLLECTION OPERATIONS

Of the various categories of intelligence supplied to the highest government levels in the late 1940s-early 1950s, scientific intelligence was considered to be the weakest. The importance of scientific intelligence, especially atomic energy intelligence, was recognized in all quarters. Organizations specifically concerned with the collection and production of S&T intelligence were established, staffed and funded. But, the fact remained that without high quality information, the required intelligence was not being produced.

[redacted] Efforts to secure published scientific information were hampered by the lack of sufficient competent representation abroad. In addition, the scientific information that was coming into Washington was not sufficiently organized so as to permit readily the evaluation of deficiencies and the preparation of explicit requirements and continuous guidance for overseas collectors. Except for the development of systems for the detection of foreign nuclear activities and its limited success in the procurement of publications containing information on Soviet scientific developments, the US intelligence community efforts to acquire information on science and technology in the USSR were clearly inadequate.

A. OSI-OSO Conflict -- The lack of rapport between the top echelons of OSI and OSO during the late 1940s-early 1950s contributed significantly to the failure of the Agency to plan, develop, and carry out effective collection operations aimed at major S&T intelligence targets. On the one hand, OSI endeavored to establish the philosophy within its Office and CIA that the scientific and technical analyst should be in the closest possible contact with those controlling the sources of information.

[redacted]

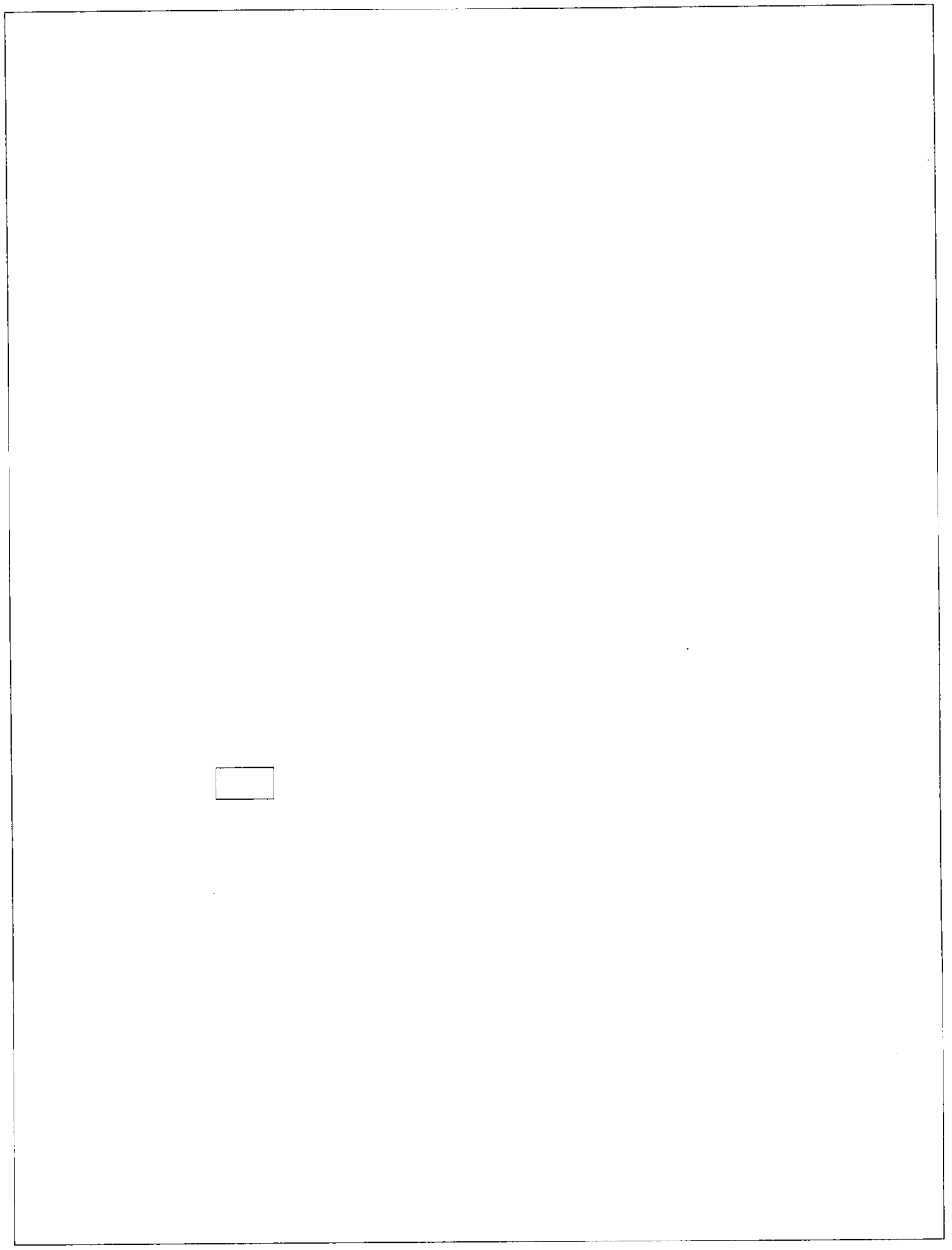
OSI viewed its position as that of coordinator of all scientific intelligence requirements wherein the OSI analyst in each field would know the community needs and would provide clearly stated requests for needed information directly to the collectors.

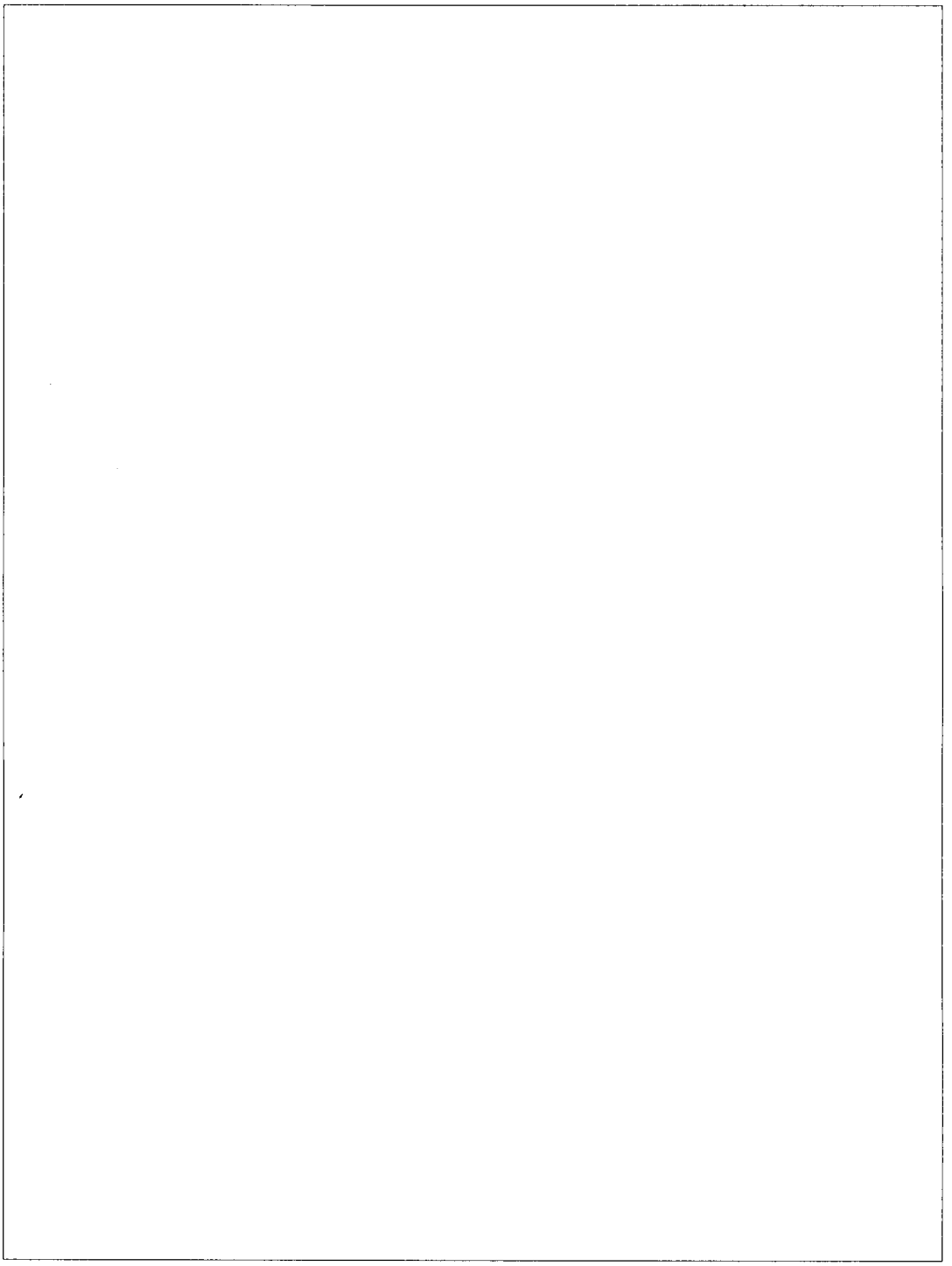
OSI believed that direct contact with the collectors was necessary to the fulfillment of its responsibilities for S&T intelligence and very much in harmony with reports being prepared in the early 1950s by committees assigned to review Agency operations. For example, the Eberstadt Committee reported in 1950 that "vigorous action is imperative to improve all facilities for evaluating and stimulating the collection of scientific intelligence. Outside the field of atomic energy, this must be done by increasing the authority and support given to the official responsible for scientific intelligence within CIA."[1/] On the other hand, the OSO scientific and technical group and the S&T group which served to advise OPC on scientific matters including R&D activities both operated independently of OSI and effectively frustrated the attempts of the AD/SI, Dr. Willard Machle, to bring about a coordinated and integrated scientific intelligence effort.

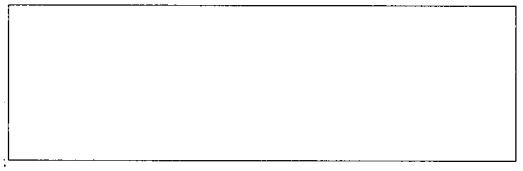
OSI relations with the covert side of the Agency were at their lowest ebb in 1950. The Office's continuing disagreement with the scientific and technical group in OSO, the Technical Guidance Staff, over responsibility for collection support becomes significant [redacted] because of the resultant decisions which affected the direction and quality of support to S&T information collection operations during ensuing years [redacted]

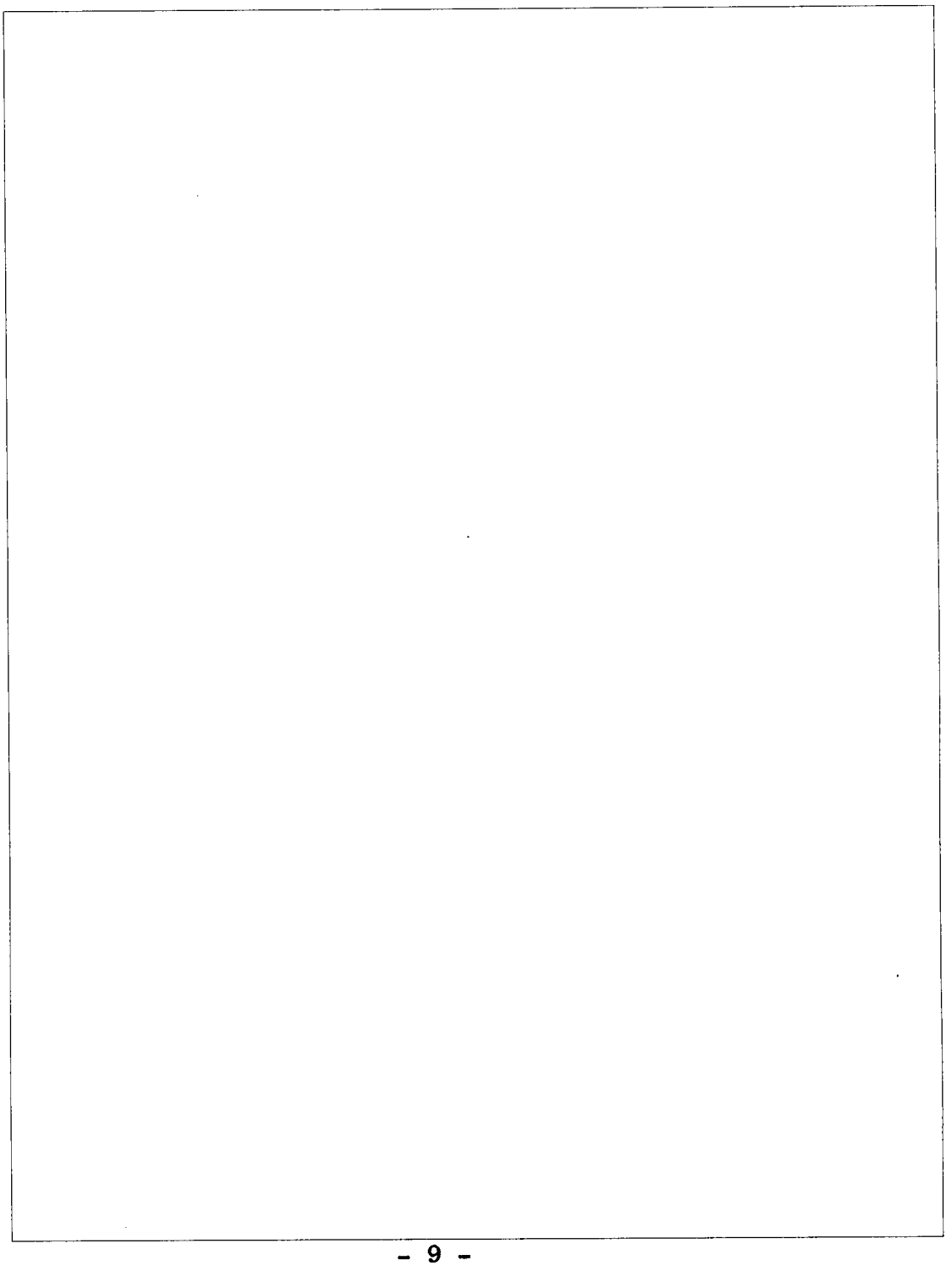
[redacted]

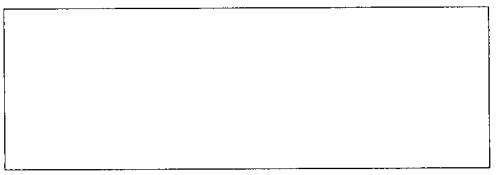
[redacted]



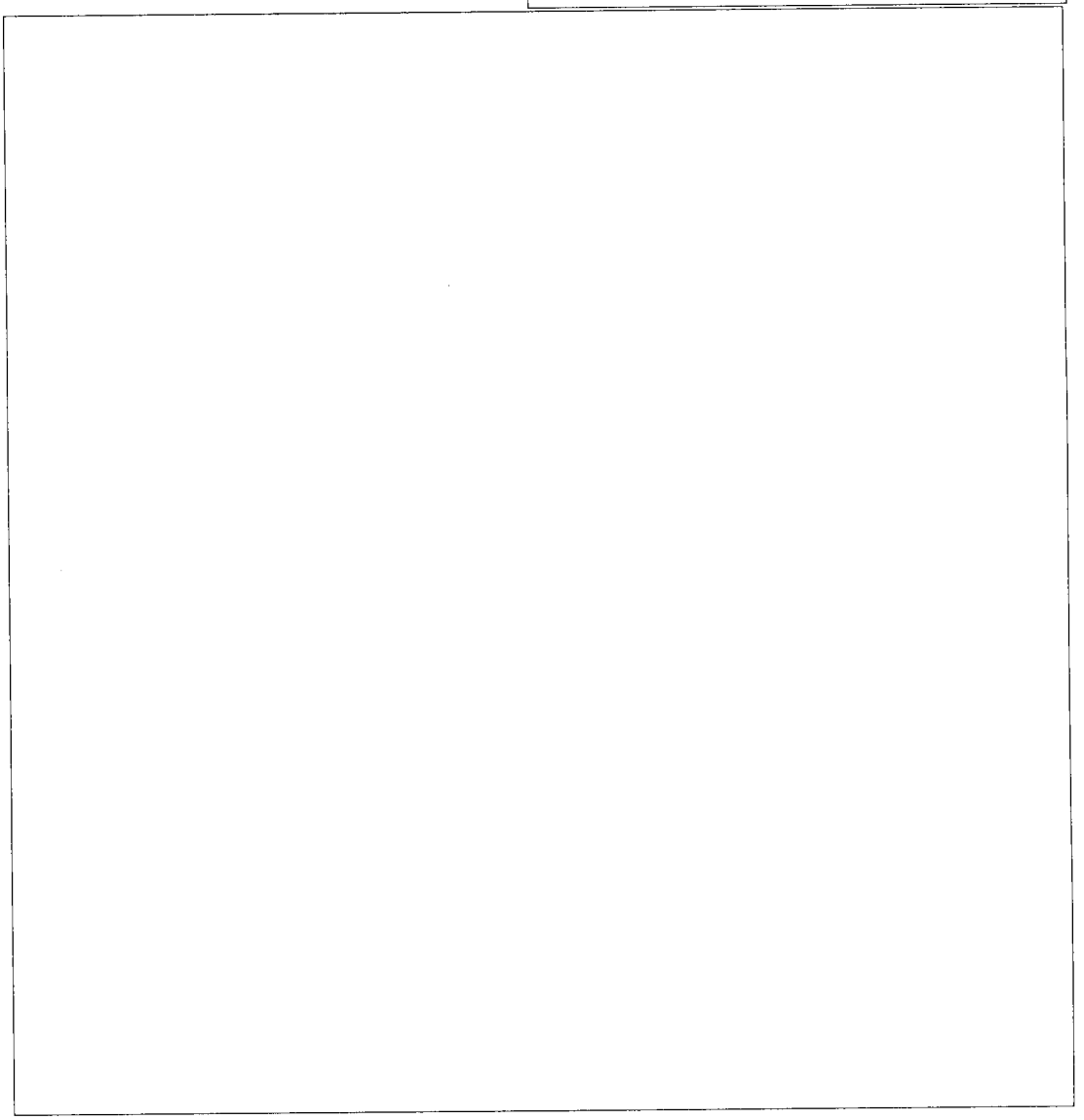


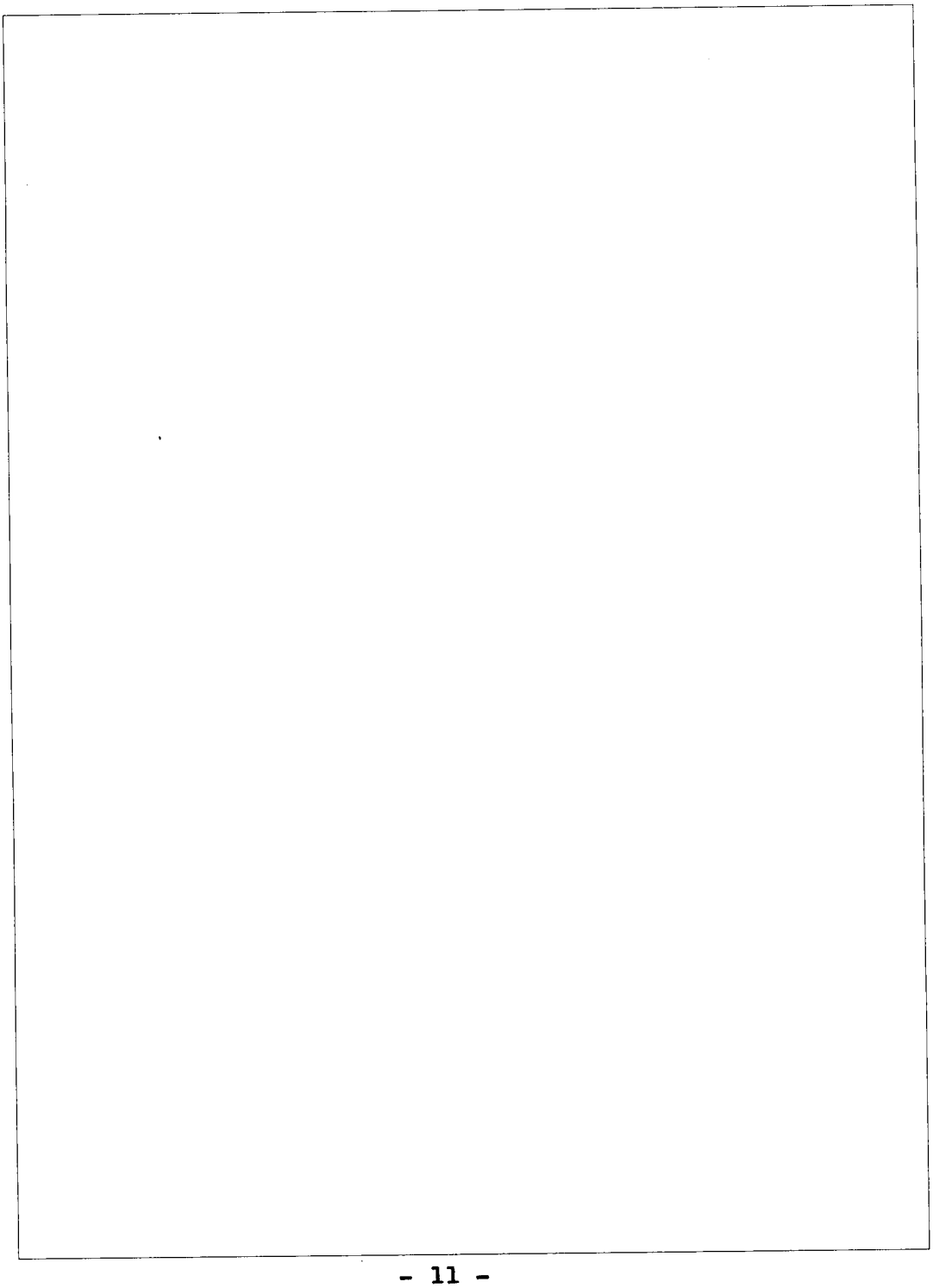


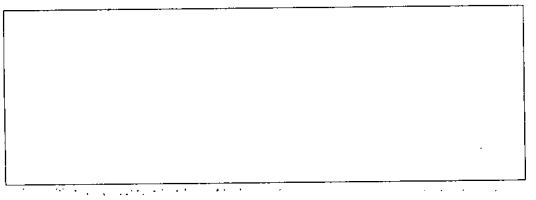


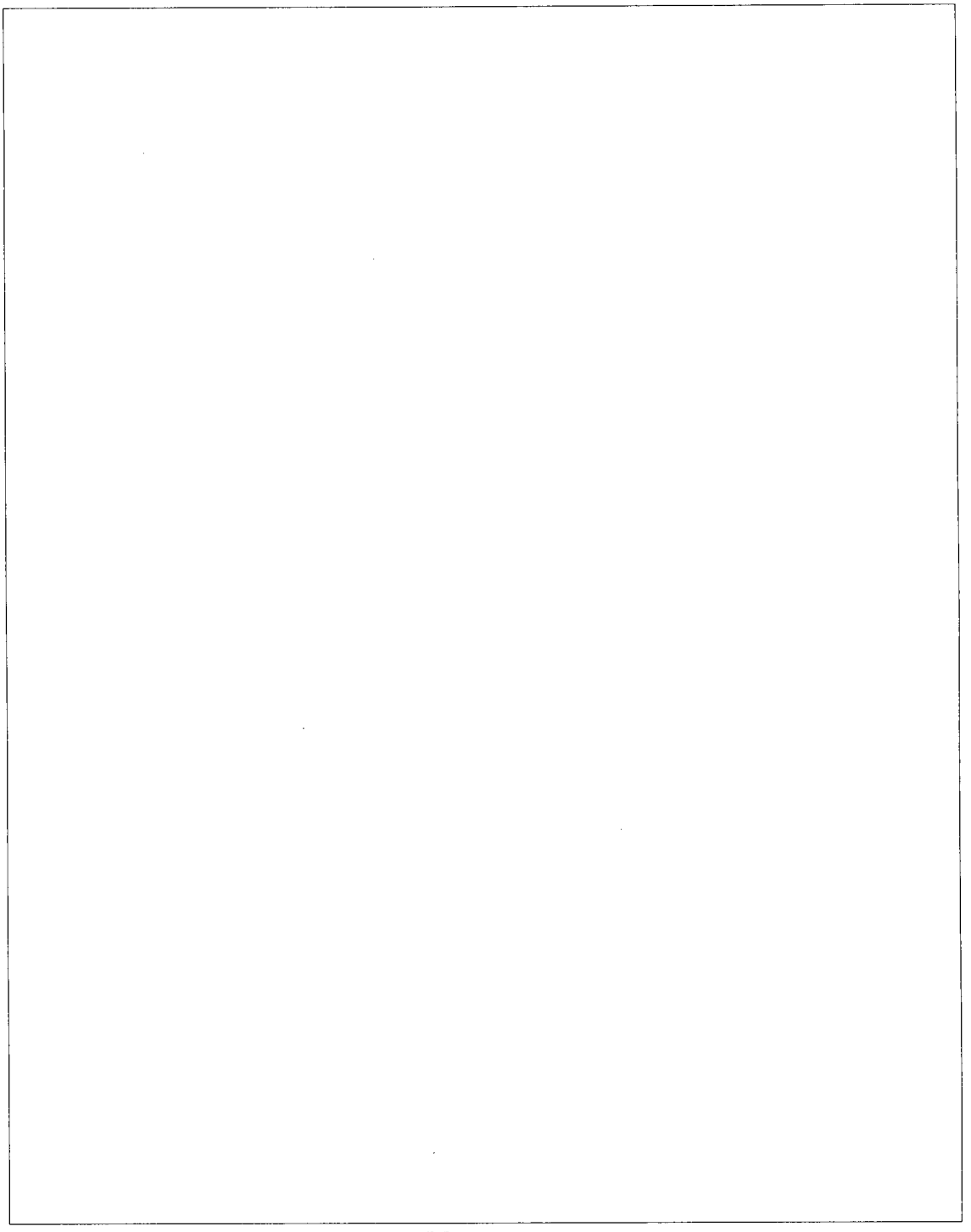


C. Nuclear Detection -- At the end of World War II and with the emergence of the USSR shortly thereafter as the prime U.S. intelligence target, the need for information on Soviet atomic energy developments became highly significant.









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III. CENTRALIZED COLLECTION SUPPORT EFFORT

A. Organization

The lack of well-defined production goals and plans made it difficult for OSI to carry out its responsibilities for collection support in the early 1950s. The independent actions taken by individual analysts together with the lack of centralized control over the various functions which contributed to that support were major limiting factors. Many analysts, while highly qualified in their specialized field of science or technology, were not schooled in the proper procedures for requesting and obtaining information. They often made their needs known in broad statements in highly technical language and failed to discriminate between what was requested and what was already known.

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B. Programs

Throughout its existence, OSI has recognized the necessity of providing support to S&T information collection operations. It generally has devoted considerable time and effort in support of pertinent activities High-quality scientific information, as compared to other information of intelligence interest, has always been in short supply. This can be attributed to the inaccessibility of the many significant and sensitive S&T targets, especially in the USSR and Communist China; the relative lack of interest and competency on the part of many collectors (why collect the hard-to-get S&T information when political and economic information is more readily available);

OSI has always considered all likely methods for the collection of worthwhile S&T information

including the use of human resources, [redacted] photography, and other technical collection methods. In attempts to improve the collection of S&T intelligence information, the OSI support has taken many forms. [redacted]

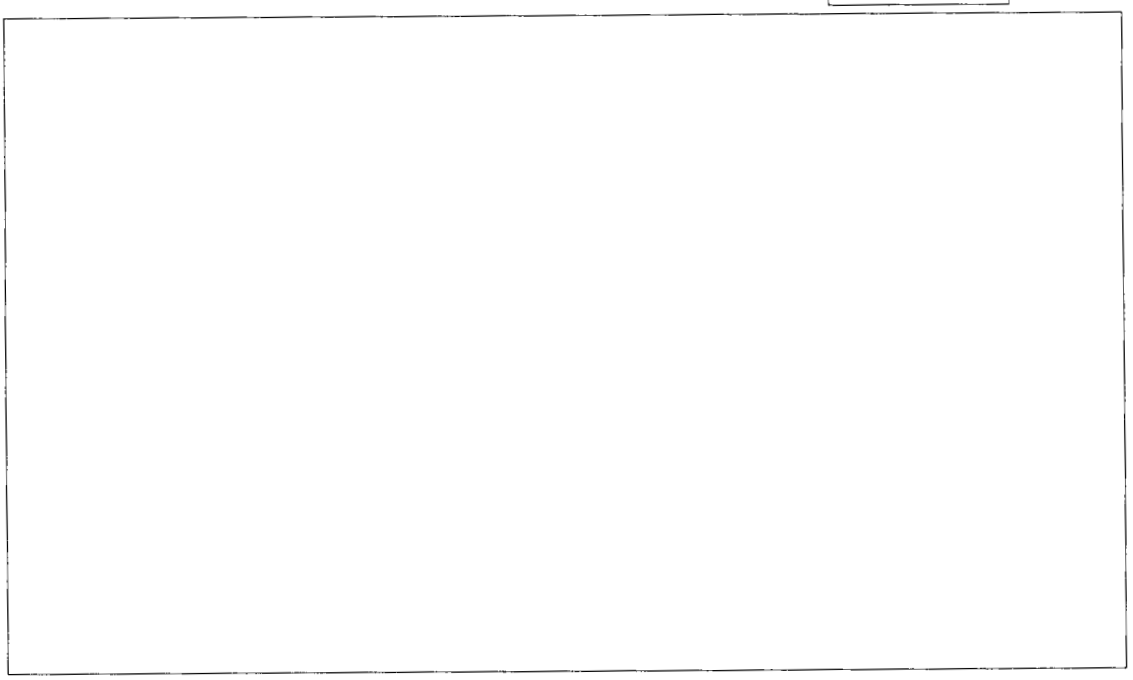
Of particular note were the evolution of a more useful approach for making known its intelligence information requirements to the collectors and the continual efforts of the OSI [redacted] to improve the collection requirements and information evaluation processes. Until the late 1950s, OSI devoted considerable time and effort to the preparation and dissemination of general or guide-type requirements. Such requirements were prepared on a variety of S&T subjects of interest to OSI. They were most comprehensive and replete with broad statements; also, they were directed toward all possible collectors but tailored to the capabilities of no specific organization. While the general requirements served to educate many collection-associated intelligence officers,

[redacted]

they were not suitable for serving on highly qualified, special-type sources. Also, they required considerable time to prepare and review and usually became outdated very quickly. By the late 1950s and especially during 1960-62, the Office recognized the futility of general requirements and gradually eliminated their use in favor of specific requirements which were better tailored to the capabilities and opportunities of the potential collectors

In addition to influencing the preparation of more meaningful requirements, the Office, through its instituted procedures for monitoring collector progress toward satisfying OSI requirements, terminating requirements that became outdated and worthless, and insuring that responses to Office requirements were indeed responses and not merely the reporting of low-grade information of little value to the Office. Also, in the area of information evaluations the OSI strived to motivate Office analysts to be responsive to requests for high quality assessments. The Staff's personnel were successful in reducing the amount of duplication involved in Office preparation of evaluation reports as well as in bringing about a more healthy attitude on the part

of the analysts toward the necessity for good evaluations. No completely satisfactory procedure for evaluating collection programs has emerged during the past 20 years. Hence, each collector regularly calls upon his consumers for assistance in determining the worth of his activities. Collectors vary in the quantity of information they wish evaluated, frequency of reviews, and in the evaluating criteria to be followed. In view of the diversity of OSI's responsibilities and the many collection programs upon which it is dependent, its analysts have expended considerable effort and time in recalling, reviewing, and assessing multiple collection activities



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V. TECHNICAL COLLECTION

The paucity of Soviet military R&D-related information available from human sources and open literature and the low potential of agent operations for providing high quality scientific and technical information forced OSI from its beginning to be very much concerned with technical collection programs. The OSI interest in many such programs often was more than that of a consumer of raw intelligence. As an office continually concerned with the need for improving its scientific intelligence estimates in a variety of fields, successive OSI chiefs directed Office personnel to assist fully in the development of those collection projects having a potential for providing worthwhile S&T intelligence information. OSI willingly compiled and made available information on target areas as well as participated in the development of pertinent information requirements. In addition, Office specialists -- electronic engineers, mathematicians, physicists, and others -- participated extensively in reviewing proposed collection projects; contributing to the development of such projects through participation in technical discussions, meetings, and visits to contractor and military R&D facilities

OSI guidance and support to the development of technical collection methods during the 1950s and early 1960s, as natural and logical functions of the Office, were substantial. Its personnel had become increasingly competent in a wide variety of fields pertinent to the production of S&T intelligence. Also, no single organization responsible for all R&D on potential collection systems existed in the Agency to exclude OSI's participation in collection systems development.

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OSI has actively supported the [redacted] in assessing S&T intelligence objectives and assembling technical data pertinent to the use of special instruments for collection. In addition, the Office has maintained an even closer relationship with the Office of Research and Development since its establishment in the Directorate of Science and Technology in the early 1960s.

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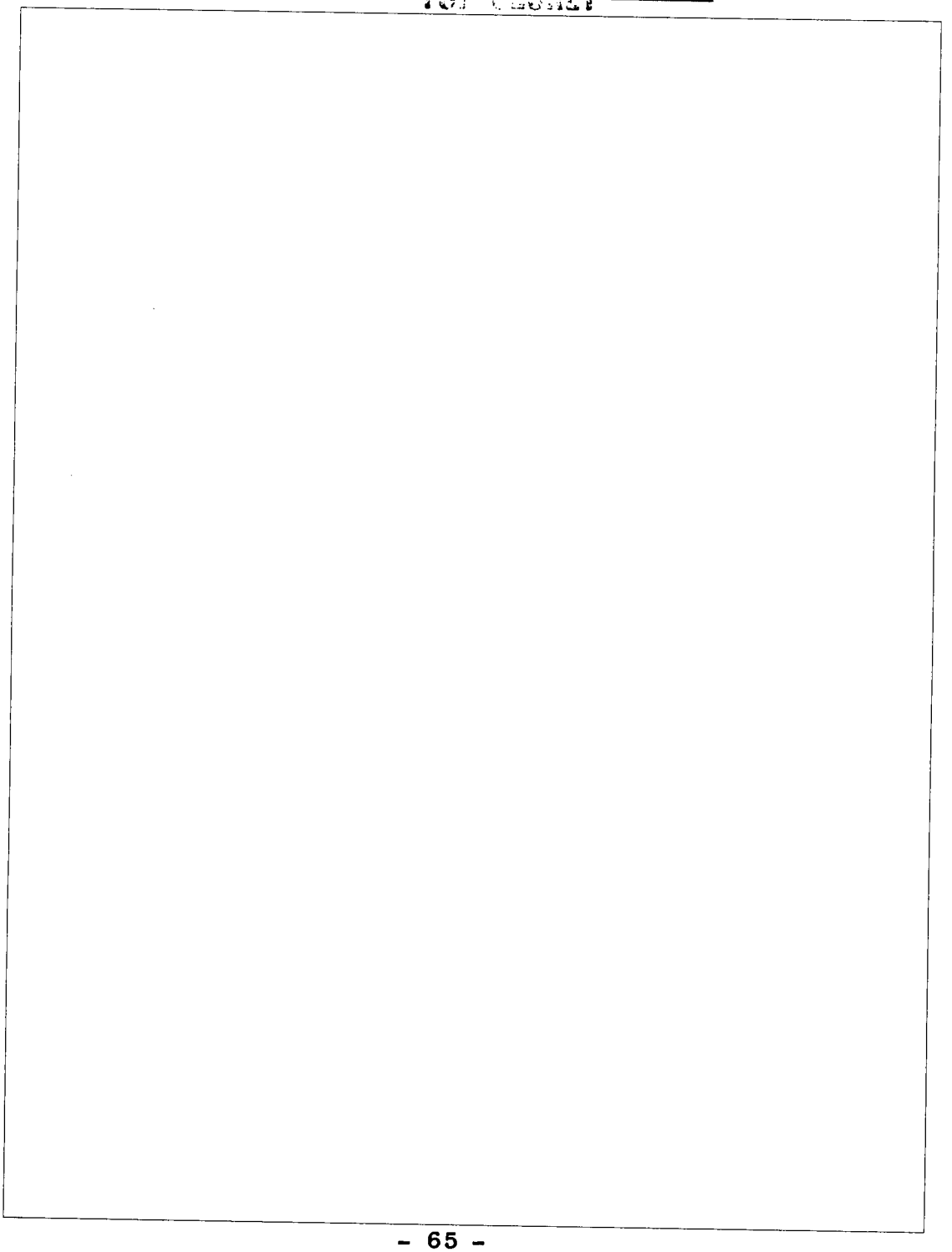
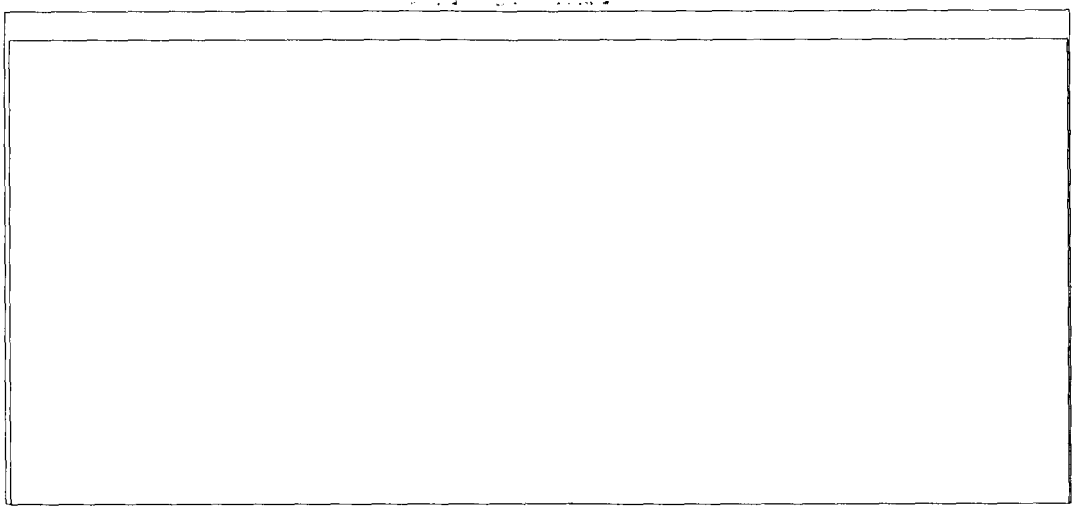
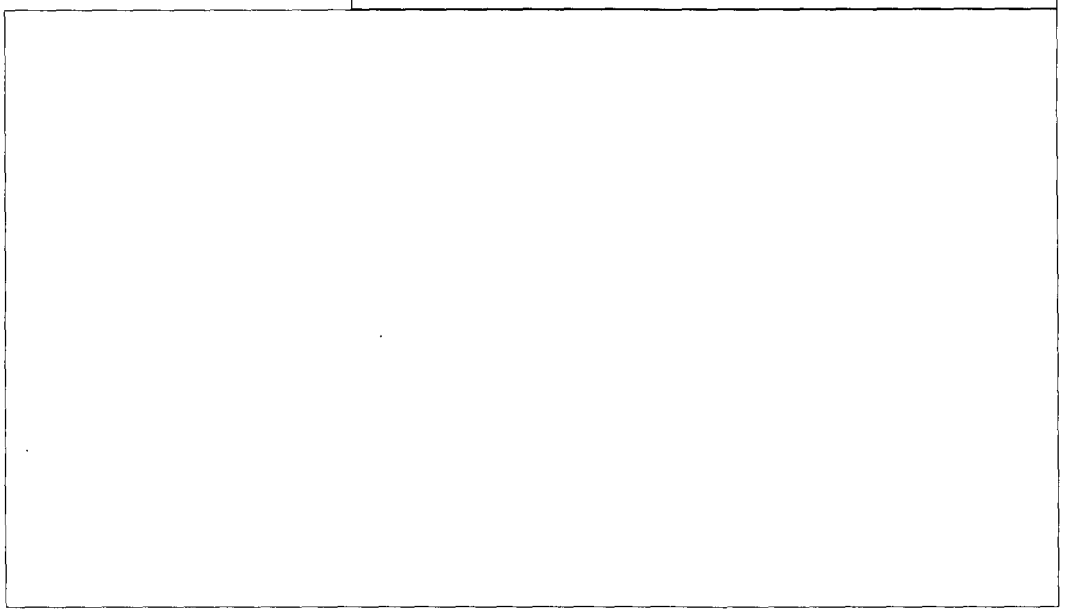
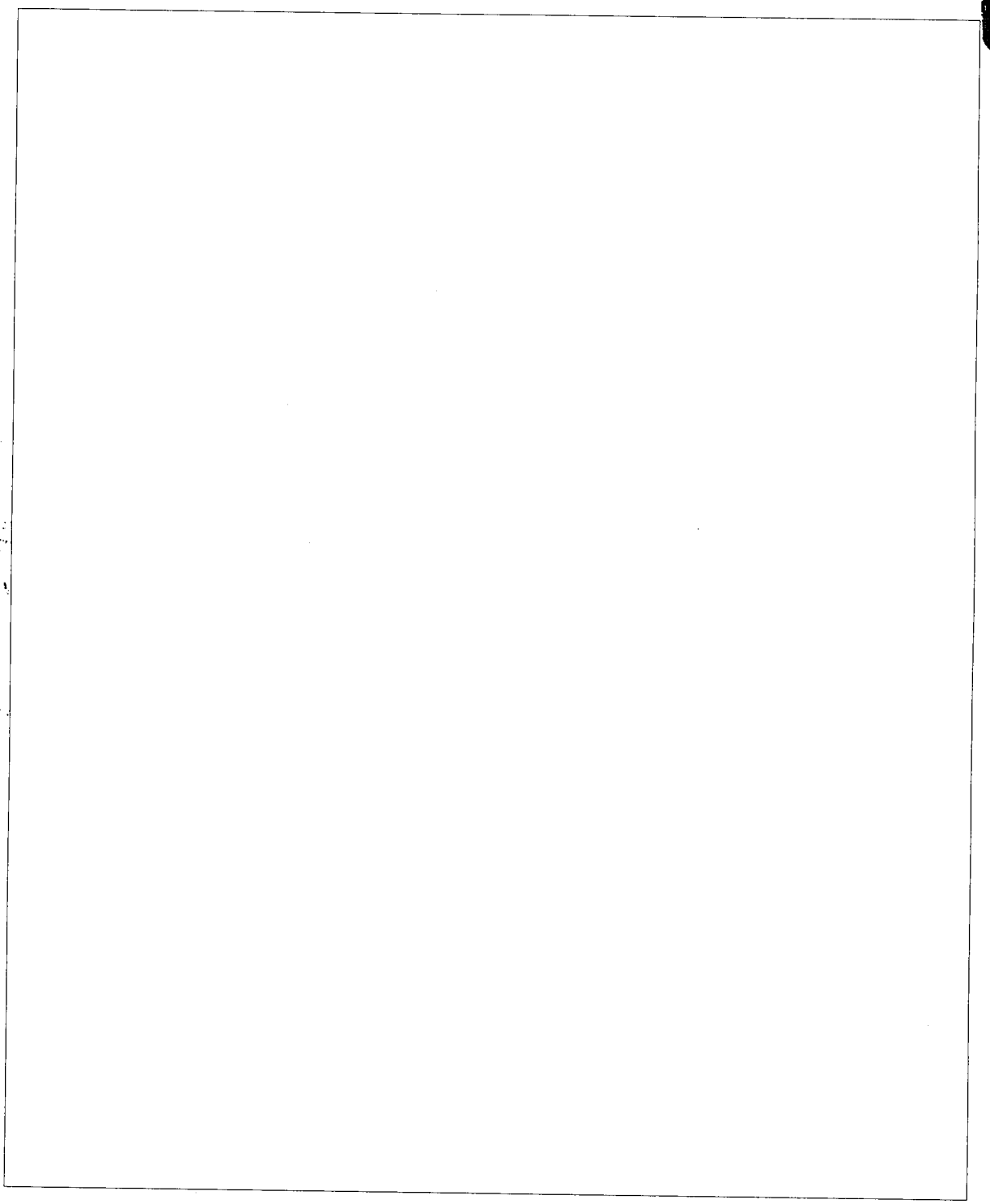
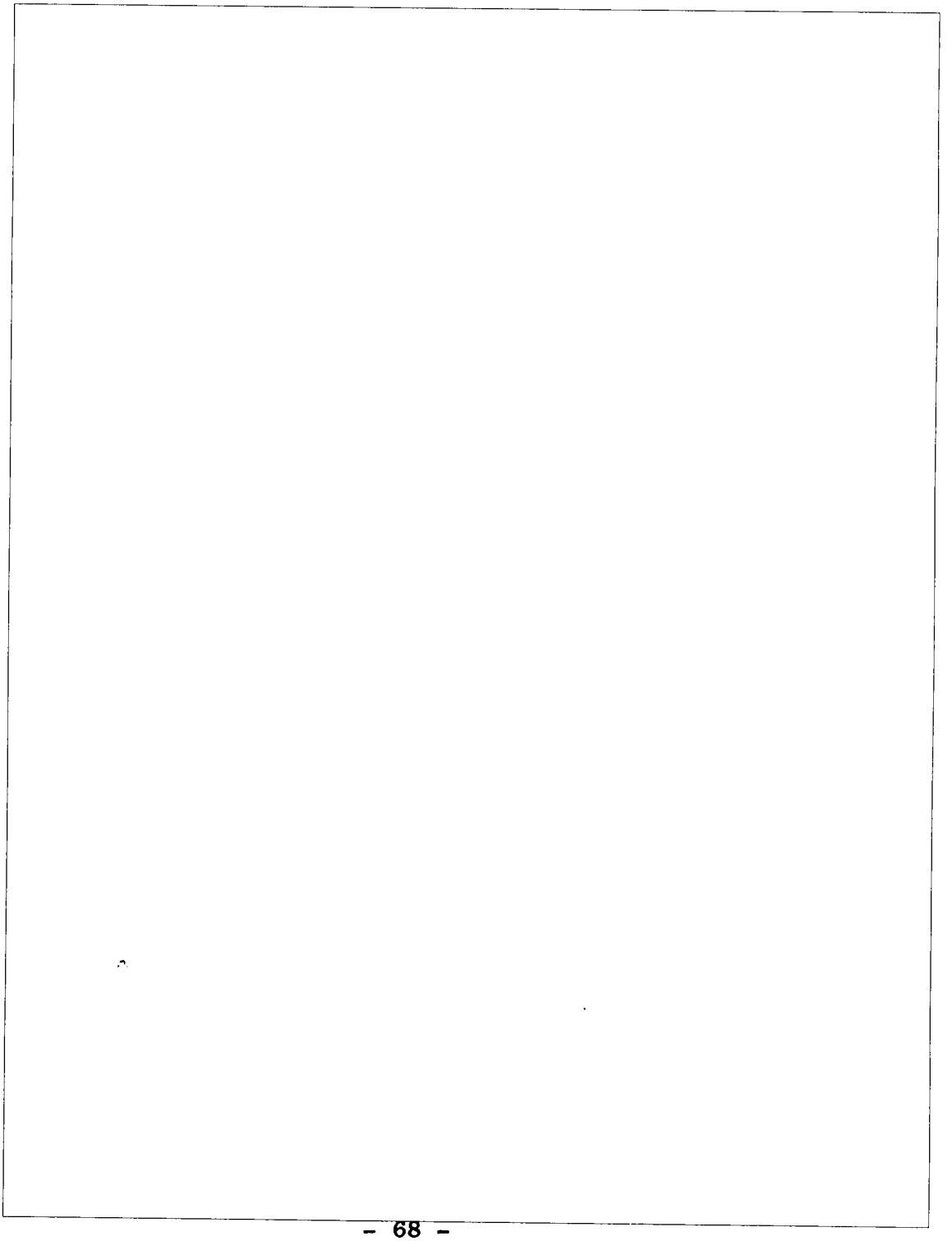




The close Office relationship with ORD which has developed during the past five years has permitted OSI to contribute more effectively than in the past to the research and development of worthwhile equipment and systems.







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CIA's Part in the Initiation of the U.S. Space Program

The idea of a vehicle in space orbitting the earth had for many years been a favorite topic for science fiction writers and the subject of at least cursory study by scientists of many countries. Following World War II and the advent of the V-1 and V-2 rockets, the science of rocketry came of age and particularly in the U.S. and USSR vast amounts of money, time and energy were allocated to the development of long-range missiles. Concurrent with this increased emphasis came more serious and concentrated work by a number of scientific and technical groups on concrete studies not only of possible earth satellite vehicles (ESV's) but also of what such vehicles could do to justify their large expense and what would be world reaction to such an accomplishment. In 1950 and 1951, the Rand Corporation published a series of studies on the subject which received close attention in OSI the focal point of CIA interest in this field. These included among others:

The Satellite Rocket Vehicle: Political and Psychological Problems

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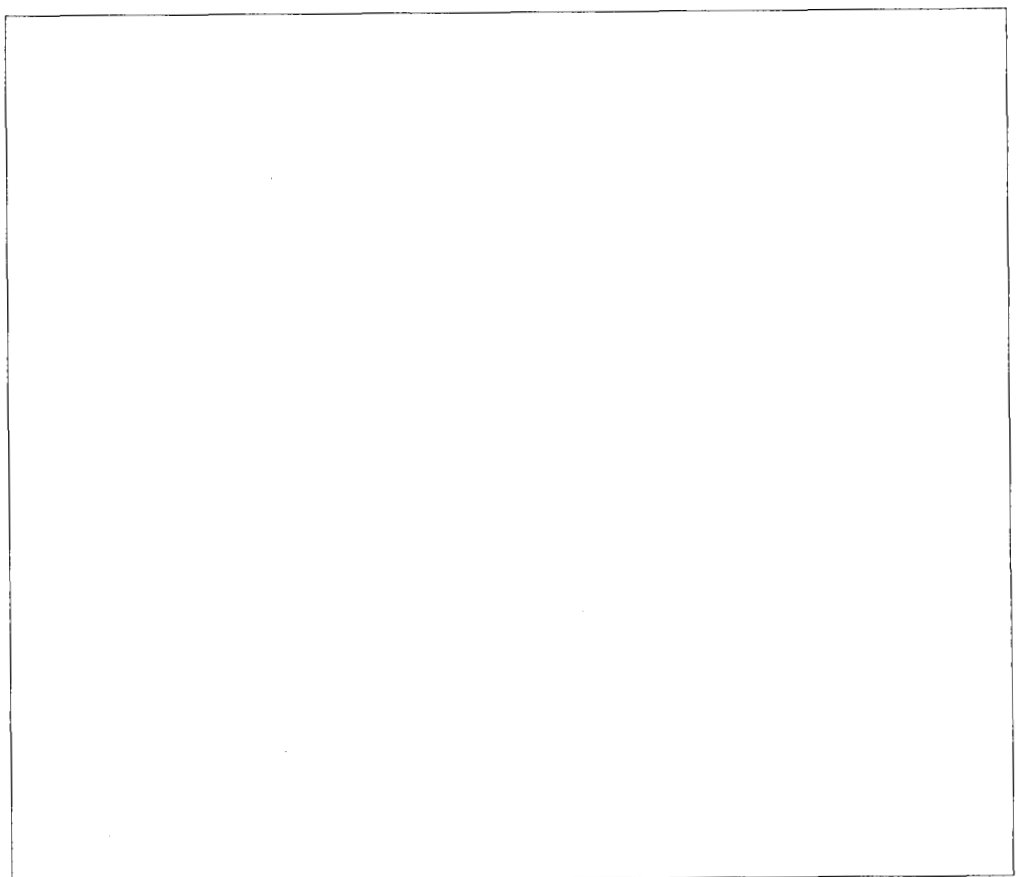
A Satellite Rocket for Reconnaissance

Inquiry into the Feasibility of Weather Reconnaissance from a Satellite Vehicle

Over the next two or three years, active study work toward creation of an earth satellite system went forward in both military and civilian organizations. The AD/SI designated the DAD/C and his staff to monitor this effort and its implications for and applications to Intelligence. Initially, [redacted] assisted the DAD/C and close working relations were established with DOD, ONR, the National Science Foundation, State, National Academy of Sciences, the American Rocket Society, Redstone Arsenal and others concerned in this field. By mid-1954, definite proposals had been developed nationally including: ONR's Project SLUG, to put an inert body with dipole or corner reflector into earth orbit (later renamed Project ORBITER); a proposal by the American Rocket Society to the National Science Foundation; Werner von Braun's Project "Alabama" using a Redstone missile with Loki clusters on the second and third stages; and Project MOUSE (Minimum Orbital Unmanned Satellite of the Earth) by Dr. Fred S. Singer, Professor of Physics, University of Maryland. The U.S. Air Force was

considering possible use of its developing Atlas missile in such an application. Besides its potential use for reconnaissance purposes, it was realized that major scientific advances could be made in such fields as meteorology, geodesy, radio communications, biology, astronomy and others. It was, however, apparent that, before any such project would be initiated and financed in necessary amounts by the government, a vast amount of disbelief and inertia at the top level of government must be overcome--informal discussions normally brought the reaction "That's for Buck Rogers." By coincidence, planning for the International Geophysical Year (IGY 1957-8) was at that time going forward rapidly both in the United States and abroad and it occurred to the OSI working group that this would provide an ideal sponsor for the first U.S. attempt at an earth satellite vehicle launching.



It was now apparent that interest both in the government at senior working level and in the scientific community in an ESV program had not only developed to a high point but also was being well coordinated both within government and with the scientific community. It was also equally evident that the effort would get nowhere if the policy level of the government was not brought in, convinced of the feasibility and desirability of such a project, and finally stimulated to action to get it started and literally

off the ground. Based on past experience, it seemed to the OSI group that the best approach to top level approval would be through Mr. Richard M. Bissell, Jr., Special Assistant to the DCI for Plans and Coordination. Therefore, in early August 1954, discussions were held [redacted] Bissell's staff. Later that month, Mr. Bissell was briefed in detail, expressed very favorable interest and recommended that the necessary papers for Presidential consideration be prepared jointly by his staff and the OSI group. It was agreed that Bissell's office would assume responsibility for coordination with State while liaison with Defense and the scientific community would be continued by OSI. It was understood that a completely solid case would have to be prepared and informal top level support gained in advance to insure ultimate success for the proposal. It was agreed that, if he approved the initial papers, the DCI would take the matter up with the Secretary of State, with Mr. Robert Cutler, Special Advisor to the President, and with the Secretary of Defense. In the meantime, DAD/C initiated discussions with Mr. Donald Quarles, Assistant Secretary of Defense for Research and Development and other Defense officials to secure their support.

[redacted]

On 15 September 1954, there went forward to Mr. Dulles, DCI, a memorandum signed by Mr. Bissell with a staff study of the then comparable U.S. and USSR technical capabilities for launching an ESV which stressed the keen Soviet interest and also emphasized the enormous psychologic advantage to the nation first in space. An accompanying draft letter to President Eisenhower recommended that a national requirement be established for the development of an ESV in conjunction with the IGY; and that a select scientific group under the Scientific Advisory Committee of ODM render an official decision on the feasibility of the project, and implement this decision, if favorable. It was suggested that these actions be implemented by Presidential Directive. At that time, it was contemplated that the National Science Foundation would be the responsible agent with the Department of Defense as its executive agency for the development of actual hardware and for the launching hoped for by 1957.

[redacted]

As matters developed in the ensuing months, however, discussions at top levels of the government brought the project into the purview of the Operations Coordinating Board and of the National Security Council which would be the senior instrument to advise the President and express his decision. Concurrently, the Office of Secretary of Defense referred the matter for advice to his Coordinating Committee on General Sciences. Similarly, a new American Rocket Society proposal to the National Service Foundation went to the IGY National Committee whose conclusions were to be referred by NSF to the OCB. Both of these actions brought strong support for the ESV proposal. Shortly thereafter, the Technical Capabilities Panel of the President's Science Advisory Committee recommended to NSC that intelligence applications of a small ESV warranted an immediate such program, and the Joint Chiefs of Staff endorsed the idea, provided that work on the small scientific satellite did not impede development of a large surveillance vehicle for military reconnaissance purposes. There was general agreement on the major advances that

[redacted]

could be made in scientific research as well as in the fields of military communications and missile development. A very real stimulus was given to the program by a Soviet announcement on April 16, 1955 of the establishment in the USSR Academy of Sciences of a "permanent, interdepartmental commission for interplanetary communications" and by our own estimate that a group of Russia's top scientists was working on a satellite program. This latter belief was based largely on analysis of Soviet technical literature and a number of Russian articles and broadcasts dealing with space travel. The Soviet Academy had already announced in September 1954 the establishment of the Tsiolkovsky Gold Medal to be awarded every third year for outstanding work in the field of interplanetary communications--the Soviet all inclusive term covering the entire scope of exoatmospheric and outerspace research.

On May 27, 1955, the President approved the National Security Council policy paper NSC 5520, "U.S. Scientific Satellite Program." This called for initiation of a program to develop the capability of launching a small scientific satellite by 1958, with the understanding that the program would not prejudice continued research directed toward large

instrumented satellites for additional research and intelligence purposes. It should be endeavored to have the launching take place under international sponsorship, such as the IGY, in order to emphasize its peaceful purposes--provided that such auspices were so arranged that U.S. freedom of action in the field of satellites and related programs was preserved and such programs not be impeded; that security of U.S. classified information, such as launching techniques, would be protected; and that there be no implication of a requirement for prior consent by any nation over which the satellite might pass in its orbit and thereby did not jeopardize the concept of "Freedom of Space." The President directed implementation of NSC 5520 by all appropriate executive departments and agencies of the government, under the coordination of the Secretary of Defense in consultation with the Secretary of State and the Director of Central Intelligence.

It is interesting to note that on May 17, 1955 prior to issuance of NSC 5520, Governor Nelson A. Rockefeller (Special Advisor to President Eisenhower) wrote to James S. Lay, Jr. (Executive Secretary of the NSC), "I am impressed by the psychological as well as by the military intelligence advantages of having the first successful endeavor in this field

result from the initiative of the United States, and by the costly consequences of allowing the Russian initiative to outrun ours through an achievement that will symbolize scientific and technological advancement to peoples everywhere. The stake of prestige that is involved makes this a race that we cannot afford to lose." These were prophetic words.

While the main thrust of the OSI and Bissell effort had been aimed at an eventual U.S. reconnaissance system, the psychologic aspects had not been lost sight of and considerable study and intelligence research had been devoted to Soviet, U.S. and World probable reaction. Past reactions gave some indications of what might be expected. In December 1948, Secretary Defense Forrestal, in his Report on the Unification of Services, made reference to the possibility of an "atomic satellite vehicle" which brought forth such world press comments as "Will America possess Moons of War?"; "Will the Elbe frontier be defended from the Moon?"; and Liberation (a French pro-Communist paper) characterized the statement as part of a "campaign calculated to terrorize the peoples." The New Times, in late 1949, referred to "the mad man Forrestal's idea of an earth satellite as an instrument of blackmail."

These and many other expressions of concern over the military implications of earth satellites made it seem imperative to our government that any publicity of our intention to launch such a vehicle should clearly and unequivocally state the civilian and peaceful intentions and control of the program. It also seemed advisable to start informing the public long in advance of the actual launching, thus making it possible to establish the "peaceful" and non-destructive nature of the satellite. Toward this end, the OCB established the Ad Hoc Working Group on Public Information Aspect of NSC 5520, chaired by Dr. Alan Waterman, Director of NSF with representation from State, Defense, CIA (DAD/C/OSI), USIA, and the White House. This group was charged with drawing up an appropriate announcement of U.S. plans to launch an ESV and develop the procedures by which such an announcement would be made. The procedure finally agreed upon was two-pronged--the initial public break of the plan to be made at the sixth annual Congress of the International Astronautical Federation (IAF) in Copenhagen in late July 1955, the second through a much more detailed outlining of the plan in a letter from Dr. Joseph Kaplan, Chairman of the U.S. IGY Committee to

Professor Sydney Chapman, President of the (international) Special Committee of the IGY to be made public immediately thereafter at the meeting of the latter in Brussels.

[redacted]

29 July 1955

The White House announced today that plans by this country are going forward for the launching of small, unmanned earth-circling satellites as part of the U.S. participation in the International Geophysical Year which takes place between July 1957 and December 1958. This program will, for the first time in history, enable scientists to make sustained observations in regions beyond the earth's atmosphere.

The President has expressed his personal gratification that the American program will provide the scientists of all nations this important and unique opportunity for the advancement of science. Additional information

[redacted]

on the earth satellite is being made available today by the National Academy of Sciences and the National Science Foundation.

The world reaction was tremendous as it was realized that a totally new era had opened. U.S. scientific prestige rose immeasurably. On 3 August, the following cable was received [redacted] "President Eisenhower has asked me to extend his thanks to you for your cordial message received today relating to the announcement of the satellite vehicle project in conjunction with the International Geophysical Year . . . . . (signed) Sherman Adams, the Assistant to the President." Concurrent with the Copenhagen and Brussels announcements, the White House statement was given to the Press here as were the joint detailed ammouncement by the National Science Foundation and the National Academy of Sciences and a press release from the Department of Defense, all stressing the peaceful scientific purposes of the project.

[redacted]

EPILOGUE

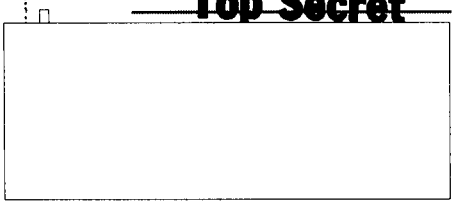
A number of factors and considerations affected the subsequent history of the space program. First, the psychological impact of the announcement to be maintained by the U.S. required actually being first in space. As it turned out, few at the top-level of government had any real concept of the world wide public impact of the first successful earth satellite launching and no amount of forewarning changed this situation. Second, the U.S. was committed to a "peaceful scientifically-oriented" effort. At this time, a committee, under Dr. Homer J. Stuart was constituted by the Department of Defense to develop the actual plans for the program. Three projects were considered by the committees: an NRL proposal based on the Hermes rocket; the Air Force proposal based on the Atlas missile; and a joint Army Ordnance-ONR (Air Branch) project using the Redstone missile. The Stuart Committee reviewed these not primarily from a political or psychological warfare viewpoint but rather as to which would provide the most valuable research tool for the least money. Time was a secondary factor! Emphasizing the peaceful aura to be maintained, the committee essentially vetoed the use

of all three as having too much military implication and instead the Navy, which was given responsibility for technical development and overall management of the program, established Project Vanguard under a contract with the Martin Company--in essence, a program to "reinvent the wheel." Progress on Vanguard was slow and fraught with problems and failures. Meanwhile, OSI was receiving continuing evidence of a major space effort by the Russians and in the Spring 1957, while Vanguard was still faltering, OSI warned that the USSR might well orbit a vehicle by October or November of that year. On October 4, 1957, Sputnik I was launched--as anticipated by the Intelligence Community, a massive shock to the American people, the Administration and the Western World.

In the Spring of 1954, Kelly Johnson of Lockheed Aircraft Corp. presented to the Air Force, a design (CL 282) for an advanced reconnaissance aircraft. The proposed design was studied by the Air Force and rejected on a number of grounds i.e., single engine for over-water flight, wing landing factors, not multiple purpose, etc. This rejection disturbed a number of senior civilian officials of the Air Force in view of the existing need for some craft of this category and in early summer, Garrison Norton, Special Assistant to the Secretary of the Air Force, telephoned DAD/C/OSI to arrange a meeting on the subject. Present beside Norton and Strong was Frederick Ayers, Special Assistant to Trevor Gardner, Assistant Secretary USAF for R&D. The peculiar design characteristics of CL 282 - long-range and extreme high altitude capabilities - were discussed in the light of the US reconnaissance requirements and it was decided that Strong should take the matter to Richard M. Bissell, Jr., Special Assistant to the DCI for Plans and Coordination, as the best point for positive action. This was done by DAD/C and received a favorable and interested reaction from Bissell who asked if Strong could get for Bissell two top-flight scientists to advise on the matter. Dr. Edwin Land of Polaroid and Dr. James Baker, an optical

physicist of Harvard who were co-members with Strong on the Air Force Scientific Advisory Board, were contacted and agreed to meet with Bissell. This was the start not only of the U-2 program (new designation of CL 282) but also of a long series of "Land Panels" which served the Agency and the country as advisors on many advanced intelligence techniques and problems.

Top Secret



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