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Historical Section  
Joint Chiefs of Staff

22 November 1957

This Chronology has been prepared by  
the Historical Section, Joint Chiefs of  
Staff in fulfillment of a requirement by  
the Chairman, Joint Chiefs of Staff.

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CHRONOLOGY OF  
SIGNIFICANT EVENTS AND DECISIONS  
RELATING TO THE  
U. S. MISSILE AND EARTH SATELLITE  
DEVELOPMENT PROGRAMS  
MAY 1942 THROUGH OCTOBER 1957

Historical Section  
Joint Chiefs of Staff  
22 November 1957

SECTION I  
GUIDED MISSILE DEVELOPMENT

- ✓ 6 May 42 The Joint Committee on New Weapons and Equipment (JNW) was established by the JCS to facilitate research and development of new weapons and equipment and to effect better coordination of the work of the military services, non-military research agencies, and other governmental agencies concerned. Members were drawn from the Office of Scientific Research and Development and the War and Navy Departments.
- Vernon E. Davis, (S) History of the Joint Chiefs of Staff in World War II, Organizational Development, Vol. II: Development of the JCS Committee Structure, pp. 455-461. (R) JCS 202/18/D, "Charter: Joint Committee on New Weapons and Equipment," 11 May 43, CCS 334 JNW (4-27-42) sec 1.
- 30 Dec 44 Dr. Vannevar Bush, Chairman of the JNW, circulated a memorandum to Committee members expressing his concern over lack of coordination of research and development in the field of guided missiles. Coordination of the wartime missile program was improving, he thought, but long-term development was threatened by uncontrolled duplication of expensive programs. Believing that the missile was "destined to become of great tactical and strategic importance," he urged that the JNW sponsor a study leading to the formulation of a national program for guided missiles.
- (S) JNW 9/18, Note by Secy, "A National Program of Research and Development of Guided Missiles," 5 Jan 45, CCS 471.6 (5-31-44) sec 1.
- 16 Jan 45 In accordance with a suggestion made by Dr. Bush on 30 December 1944, a Guided Missiles Committee (GMC) was established as an agency of the JNW, with members drawn from the Office of Scientific Research and Development, the National Advisory Committee for Aeronautics, the Army, and the Navy. The Committee was to: (1) survey the status of guided missiles then under development and recommend measures for coordination of effort, and (2) recommend a national program for guided missiles, including allocations of responsibility for research and development.
- (R) JNW 32/D, "Formation of a Guided Missiles Committee," 16 Jan 45, CCS 334 GMC (1-16-45) sec 1.
- 25 Oct 45 The Chief of Naval Operations recommended that the JCS propose to the Secretaries of War and the Navy that the two Secretaries establish an interdepartmental committee to correlate the development of the atomic bomb, guided missiles, and related devices. He suggested that this be accomplished by removing the GMC from the JCS and establishing it as the new joint agency. Under this plan, the JCS would be relieved of further responsibility for coordinating the development of guided missiles.
- (U) JCS 1559, Memo by CNO, "Proposed Joint Army-Navy Agency for Correlating Development of the Atomic Bomb, Guided Missiles, and Related Devices," 26 Oct 45, CCS 334 GMC (1-16-45) sec 1.

1942  
1944  
1945

6 Nov 45 The Army Chief of Staff questioned the necessity of establishing the joint committee proposed by the CNO on 25 October 1945, declaring that its suggested functions were being performed by the "Military Advisory Board to the Officer-in-Charge of the Atomic Bomb Project," established by the Secretary of War on 26 October 1945. He recommended that, as an interim measure, the Military Advisory Board be accepted as the agency to effect correlation of the application of atomic power to other military weapons and equipment, and that the GMC continue its work as an agency of the JCS until there was no longer a need for its functions. The JCS approved these recommendations by informal action on 31 December 1945.

(U) JCS 1559/2, Memo by CSUSA, "Proposed Joint Army-Navy Agency for Correlating Development of the Atomic Bomb, Guided Missiles, and Related Devices," 6 Nov 45. (U) Memo of action on JCS 1559/3, same subj, 8 Dec 45. (R) SM-4616, Secy JCS to Asst C/S, OPD, WDGS, et al., same subj, 31 Dec 45. All in CCS 334 GMC (1-16-45) sec 1.

17 Nov 45 The President directed the JCS to study the need for a long-distance testing range for guided missiles.

(U) Memo, Pres to Adm Leahy, 17 Nov 45, Encl to (U) JCS 1576, Note by Secys, "Survey of Requirements for Development of Guided Missiles," 20 Nov 45, CCS 684 (11-17-45) sec 1.

21 Nov 45 The GMC submitted to the JNW its recommendations for a national program for guided missiles. The findings of the GMC were used by the JNW as the basis for a report to the JCS (see item for 22 March 46).

(C) GMC 12/9, "A National Program for Guided Missiles," 21 Nov 45, CCS 334 GMC (1-16-45) sec 1.

1946 The Army Air Forces established Project MX 770 (forerunner of the NAVAHO) and Project MX 774 (forerunner of the ATLAS). The initial aim of MX 770 was to develop a 500-mile rocket by improving the V-2 engine. In 1947 the Air Force decided instead to develop a ram-jet powered strategic missile. The original MX 774 contract with Convair called for work on stabilization, guidance, and power systems for a 5,000-mile ballistic missile. However, a reduced program in 1949 continued contract support only for the guidance studies.

(S) OSD, "Chronology of Significant Events in the U. S. Long Range Ballistic Missile Program," OCJCS files.

1 Mar 46

After considering several proposals by the Secretaries of War and the Navy for coordinating military research and development, the JCS agreed to recommend to the two Secretaries that a Joint Research and Development Committee be established as an agency of the JCS. They approved a draft committee charter modeled after that of the JNW, which the new committee would have replaced. Four days later, Vannevar Bush resigned as Chairman of the JNW, charging that the committee proposed by the JCS "could not . . . create a sound unitary national program of military research, such as is essential for security." In his opinion, there was needed "a body with clear responsibility and authority, having a chairman that can resolve differences." Despite Dr. Bush's action, the JCS on 8 March forwarded to the Secretaries a memorandum setting forth the proposal they had adopted on 1 March. They agreed to take no action on Dr. Bush's resignation until they had received a reply to this memorandum.

(U) Dec On JCS 1559/5, "Proposed Establishment of a Joint Research and Development Committee," 1 Mar and 8 Mar 46, source of (R) Memo, Leahy to SecWar and SecNav, "Coordination of Development of Research of Joint Interest to the Army and Navy," 8 Mar 46, CCS 334 RDB (2-28-46) sec 1. (R) Memo, Bush to JCS, "Relief of Chairman, Joint Committee on New Weapons and Equipment," 5 Mar 46, CCS 334 JNW (4-27-42) sec 1. (R) Memo for Record, sgd McFarland, 8 Mar 46, same file, sec 2.

✓ 22 Mar 46

After considering the recommendations of the JNW on a national program for guided missiles, the JCS agreed "that research and development emphasis should be placed upon fundamentals of value to the long-range program; and that, to make best use of available resources, work on missiles already available should be curtailed." They approved a memorandum to the Secretaries of War and Navy recommending policies for a national program for guided missiles. This memorandum, dated 23 March, listed four types of missiles as ultimate objectives of the program: (1) missiles for area attack guided with precision appropriate to the lethal range of various warheads, and covering ranges up to thousands of miles; (2) accurate missiles for precision attack at short, medium, and long ranges, the accuracy and lethal range being adapted to targets of pinpoint size; (3) missiles for the destruction of high-speed, high-flying aircraft and missiles of the future; (4) coast defense and ship-borne weapons to repel naval and amphibious attacks.

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The following research and development concepts, the JCS memorandum said, should govern the program:

1. Emphasis will be placed on further basic information in both fundamental and applied science.

2. Practical development is by far the most expensive part of the program. Consequently, practical development will not be rushed ahead of sound knowledge.

3. The desirability of competitive efforts on especially difficult problems will be recognized, subject to integrated over-all coordination.

4. Rules of cognizance between the bureaus, corps and departments in the services will be modified as new knowledge of basic problems is obtained. Some duplication is valuable.

5. There will be prompt and complete interchange of scientific and technical information between all agencies and groups working in guided missiles research and development. The best means to accomplish this will be determined by interservice consultation.

Other recommendations were that: (1) countermeasures and counter-countermeasures be studied; (2) groups be established within the Services for constant staff study of the strategic and tactical roles of guided missiles; (3) the Services agree upon a single long-range proving ground; and (4) an efficient intelligence system be established to collect, evaluate and disseminate data on missiles development in potentially hostile countries.

(S) JCS 1620, Rpt by JNW, "A Proposed National Program for Development of Guided Missiles," 5 Feb 46, and (S) Dec Amending JCS 1620, 22 Mar 46, CCS 334 GMC (1-16-45) sec 1. (S) Memo, Leahy to SecWar and SecNav, same subj, 23 Mar 46, same file, sec 2.

✓ 30 Mar 46

The Secretary of the Navy approved the policies recommended by the JCS on 23 March 1946 for a national program for guided missiles. The Secretary of War approved the recommendations on 1 April 1946, adding that immediate action would be taken in the War Department to implement them.

(S) Memo, McDill to Secy JCS, "Proposed National Program for Development of Guided Missiles," 1 Apr 46, and (S) Memo, SecWar to JCS, same subj and date, encls to (S) JCS 1620/3, Note by Secys, same subj, 4 Apr 46, CCS 334 GMC (1-16-45) sec 2.

16 Apr 46

A V-2 rocket was launched at White Sands Proving Ground. It was the first large ballistic missile to be fired by US personnel.

(S) OSD, "Chronology of Significant Events in the U. S. Long Range Ballistic Missile Program," OCJCS files.

6 Jun 46

In reply to the 17 November 1945 memorandum from the President, the JCS stated that a joint board was being formed to study the establishment of a joint long-range proving ground.

(R) Memo of action on JCS 1576/7, "Survey of Requirements for Development of Guided Missiles," 15 May 46, source of (R) Memo, Leahy to Pres, 30 May 46, dlvr'd 6 Jun 46, CCS 684 (11-17-45) sec 2.

3 Jul 46

The Joint Research and Development Board (JRDB) was established as a joint agency of the War and Navy Departments, with authority to act in the name of the two Secretaries. The Board superseded the Joint Committee on New Weapons and Equipment. At its first meeting, the Secretary of War explained that he and the Secretary of the Navy felt that an agency at the level of the JRDB "could better cover the field" of coordination of research and development. Vannevar Bush, former Chairman of the JNW, was named to head the new joint agency, and as soon as he took office on 3 July he requested from JCS the transfer of "personnel, facilities, and subjects of JNW and its subordinate bodies." He desired that, first of all, questions relating to guided missiles be transferred to the JRDB for consideration. The transfer of files, personnel, and equipment was effected by a memorandum on 29 August 1946. Meanwhile, on 15 August, the JRDB had issued a directive establishing a Committee on Guided Missiles, to take over the functions of the Guided Missiles Committee of the JNW.

(U) Charter, JRDB, 3 Jul 46. (U) Mns, JRDB mtg, 3 Jul 46. (U) JRDB Dir, "Formation of a Committee on Guided Missiles," 15 Aug 46. All in CCS 334 JRDB (7-3-46). (U) Memo, JRDB sgd Bush to JCS, "Establishment of Joint Research and Development Board," 3 Jul 46 Encl and App "B" to JCS 1559/6, Note by Secys, "Transfer of Joint Committee on New Weapons and Equipment to the Joint Research and Development Board," 20 Jul 46. (U) Memo, sgd Gibson for JNW and Berkner for JRDB, to JCS and JRDB, "Transfer of Responsibility for Research and Development from JNW to JRDB," 29 Aug 46. Both in CCS 334 RDB (2-28-46) sec 1.

✓ 8 Jan 47

In an estimate of Soviet capabilities in 1956, the Service members of the Joint Intelligence Committee stated that "For the next five years, time will favor the Soviets in the field of guided missiles." "Thereafter," they believed, "time should distinctly favor the United States in direct relation to its continuing awareness of the significance of guided missiles." They estimated that by or before 1956 the USSR could develop a pilotless aircraft with a range of 3,000 miles. They foresaw as a theoretical possibility that the USSR would develop by 1956 a supersonic missile capable of reaching the U. S., but they doubted that it would be accurate or that it would be available in significant numbers.

(TS) App "A" to (TS) JIC 374/2, Rpt by Service Members of JIC, "Capabilities and Military Potential of Soviet and Non-Soviet Powers in 1956," 8 Jan 47, CCS 092 USSR (3-27-45) sec 16.

20 Jun 47

A committee of the JRDB unanimously recommended establishment of a single, joint long-range proving ground for guided missiles and the selection of a site in Mexico and California for that purpose. A range in Florida and the Bahama Islands was suggested as an alternate choice. On 30 December 1947 the Secretary of the Air Force was given responsibility for obtaining a site and constructing the proving ground. After negotiations with Mexico ended unsuccessfully in 1948, negotiations with the British for rights in the Bahama Islands were begun.

(C) JRDB, Rpt of the Committee on Long Range Proving Ground, 20 Jun 47, CCS 684 (11-17-45) BP.  
(C) OSD, "War Council: Agenda for Meeting . . . on 29 March 1949," 23 Mar 49. (U) Memo, SecAF to SecDef, "Joint Long Range Proving Ground Command," 7 Jul 49, App to (U) JCS 1576/8, Note by Secys, "Establishment of a Joint Long Range Proving Ground Command," 14 Jul 49. Both in CCS 684 (11-17-45) sec 2.

26 Jul 47

The National Security Act was approved (although most sections of it did not take effect until 18 September 1947, the day after the first Secretary of Defense took his oath of office). The following provisions of the Act were of central importance in the development of guided missiles: (1) creation of the Air Force as a third Service, within a single National Military Establishment; (2) authorization of the Joint Chiefs of Staff and definition of their duties; and (3) establishment of a Research and Development Board (RDB), composed of a civilian chairman appointed by the President and representatives of the three Services. Among statutory duties of the Board were: "(3) to recommend measures of coordination of research and development among the military departments, and allocation among them of responsibilities for specific programs of joint interest;" and "(5) to consider the interaction of research and development and strategy, and to advise the Joint Chiefs of Staff in connection therewith." The new Board superseded the JRDB.

P. L. 253, 80th Cong, CCS 040 (11-2-43) sec 4.



/ 15 Sep 47

The Army and the Air Force agreed that when the National Security Act went into effect, there would be no change in existing agreements on employment of ground-launched guided missiles. These agreements provided that:

(1) Tactical surface-to-surface missiles would be assigned to the Army. Missiles in this category were defined as those "capable of employment in support of land operation and capable of employment against targets, the destruction or neutralization of which will have a direct effect on current Army tactical operations." They included missiles which supplemented artillery fire or tactical aircraft operating on close support missions. (2) Strategic surface-to-surface missiles would be assigned to the Air Force. Missiles in this category were described as "those designed for employment against targets, the destruction or neutralization of which does not have a direct effect on current Army tactical operations and which are normally the targets of bombers, other than those operating on close-support missions . . . ." (3) Surface-to-air missiles designed for employment in support of Army tactical operations would be assigned to the Army. (4) Surface-to-air missiles designed for employment in area air defense would be assigned to the Air Force.

(U) "Army-Air Force Agreements as to the Initial Implementation of the National Security Act of 1947," 15 Sep 47, CCS 040 (11-2-43) BP pt 1.

18 Dec 47

The Secretary of Defense issued a directive defining the authority and functions of the Research and Development Board. It provided that on matters of major policy the Board should make recommendations to the Secretary of Defense, but with respect to all other research and development matters it should act as his agent with authority to resolve differences among the military departments. Specifically, it was to "allocate among the departments and agencies of the Military Establishment responsibility for the conduct of specific research and development programs of joint interest." The JCS were to provide the Board with strategic guidance and estimates of the strategic value of major weapons systems, and inform it of the relative importance of developing various possible weapons systems.

(U) Dir, RDB, 18 Dec 47, App to (U) JCS 1812/3, Note by Secys, "Directive to the Research and Development Board," 22 Dec 47, CCS 334 RDB (2-28-46) sec 2.

/ 30 Dec 47

The Air Policy Commission, which had been appointed in July 1947 to study national aviation policy, transmitted its report to the President. The Commission was headed by Thomas K. Finletter. Discussing research and development needs, the Commission stated that "The rapid development of long-range missiles for offense, and of accurate, high-altitude target-seeking missiles for defense are of great importance to our national security." It stressed that research in these areas should be given the highest priority and adequate funds. However, it cautioned that because missile development was extremely complicated and expensive, time and money would be wasted unless a reasonable balance could be maintained between research progress and development demand. "Here is a case where making haste slowly will certainly pay," the Commission concluded.

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(U) "Survival in the Air Age," Rpt by the  
President's Air Policy Commission, 1 Jan 48,  
pp. 82-84, JCS Hist Sec files.

2 Apr 48

In reply to a memorandum from the Chairman, RDB, the Secretary of Defense stated that the paper on functions of the armed forces and the JCS, when finally issued (see item of 21 April 48), would not modify or affect the authority or duties of the Research and Development Board as defined in his directive of 18 December 1947.

(U) Memo, SecDef to ChmRDB, no subj, 2 Apr 48, Encl to (U) JCS 1812/7, Note by Secys, "Directive to the Research and Development Board," 6 Apr 48, CCS 334 RDB (2-28-46) sec 3.

√ 21 Apr 48

The Secretary of Defense promulgated a statement of functions of the armed forces and the JCS (the Key West Agreements). Among the duties prescribed for the JCS was "To recommend to the Secretary of Defense the assignment of primary responsibility for any function of the Armed Forces requiring such determination." They were also to provide the Secretary of Defense with statements of military requirements, including research and development programs, based upon agreed strategic considerations. Service functions most relevant to the development of guided missiles were the following:

Army 1. To organize, train, and equip Army forces for the conduct of prompt and sustained combat operations on land. Specifically: a. To defeat enemy land forces. b. To seize, occupy, and defend land areas.

2. To organize, train and equip Army antiaircraft artillery units.

6. To provide Army forces as required for the defense of the United States against air attack, in accordance with joint doctrines and procedures approved by the Joint Chiefs of Staff.

Navy 1. To organize, train, and equip Navy and Marine Forces for the conduct of prompt and sustained combat operations at sea, including operations of sea-based aircraft and their land-based naval air components. Specifically: a. To seek out and destroy enemy naval forces and to suppress enemy sea commerce. b. To gain and maintain general sea supremacy. c. To control vital sea areas and to protect vital sea lines of communication. d. To establish and maintain local superiority (including air) in an area of naval operations. e. To seize and defend advanced naval bases and to conduct such land operations as may be essential to the prosecution of a naval campaign.

2. To conduct air operations as necessary for the accomplishment of objectives in a naval campaign.

8. To provide sea-based air defense . . . .

Air Force 1. To organize, train and equip Air Force forces for the conduct of prompt and sustained combat operations in the air. Specifically: a. To be responsible for defense of the United States against air attack in accordance with the policies and procedures of the Joint Chiefs of Staff. b. To gain and maintain general air supremacy. c. To defeat enemy air forces. d. To control vital air areas. e. To establish local air superiority except as otherwise assigned herein.

3. To be responsible for strategic air warfare.

5. To furnish close combat . . . air support to the Army, to include . . . interdiction of enemy land power and communications.

7. To provide Air Force forces for land-based air defense, coordinating with the other Services in matters of joint concern.

8. To develop, in coordination with the other Services, doctrines, procedures, and equipment for air defense from land areas, including the continental United States.

(U) JCS 1478/23, Note by Secys, "Functions of the Armed Forces and the Joint Chiefs of Staff," 26 Apr 48, CCS 370 (8-19-45) sec 8.

1 Jul 48

The Secretary of Defense approved a JCS memorandum for the record on functions of the armed forces and the JCS. Based on notes taken in March at the conferences that led to the functions paper of 21 April 1948, this memorandum stated that no arbitrary restrictions would be placed on development programs that were considered by the Services to be essential to the proper discharge of their responsibilities as stated in the functions paper. Ultimate use of weapons developed by the individual Services would of course be subject to examination and recommendation by the JCS.

(C) JCS 1478/24, Memo by SecDef, "Memorandum for the Record on the Functions of the Armed Forces and the Joint Chiefs of Staff," 7 Jul 48, CCS 370 (8-19-45) sec 9.

21 Aug 48

Adopting a recommendation of the JCS, the Secretary of Defense issued a supplement to the functions paper of 21 April 1948, stating that "each Service, in the fields of its primary missions, must have exclusive responsibility for programming and planning," but in determining the requirements for performance of a primary function, each Service "must take into account the contribution which may be made by forces from other Services."

(U) JCS 1478/26, Note by Secys, "Functions of the Armed Forces and the Joint Chiefs of Staff," 21 Aug 48, CCS 370 (8-19-45) sec 10.

11 Dec 48

The Secretary of Defense authorized the JCS and the Chairman, RDB, to issue a directive establishing the Weapons Systems Evaluation Group (WSEG). The directive stated that the purpose of the Group was to "provide rigorous, unprejudiced and independent analyses and evaluations of present and future weapons systems . . ." It was issued in March 1949, after Lt Gen John E. Hull had assumed his duties as WSEG Director.

(U) Memo, SecDef to JCS and ChmRDB, "Establishment of Weapons Systems Evaluation Group," 11 Dec 48, Encl to (U) JCS 1812/15, Memo by DJS, "Nomination of a Director for the Weapons Systems Evaluation Group," 15 Dec 48. (U) RDB Directive 150/3, Draft No. 8, App to (U) JCS 1812/13, Note by Secys, "Proposed Directive for Weapons Systems Evaluation Group," 1 Dec 48. Both in CCS 334 WSEG (2-4-48) sec 1. (U) Memo, Lalor for JCS to Lt Gen John E. Hull, USA, "Establishment of Weapons Systems Evaluation Group," 14 Mar 49, same file, sec 2.

~~TOP SECRET~~  
20 Dec 48

A US-UK estimate of Soviet intentions and capabilities in 1949 and 1956-57 was forwarded to the JCS by the JIC. It stated that by 1957 improved versions of the V-1 and V-2 with ranges up to 600 miles were likely to be in quantity production by the USSR. That these missiles would employ atomic warheads was thought to be unlikely.

(TS) JCS 1924/2, Rpt by JIC, "Soviet Intentions and Capabilities--1949, 1956/57," 20 Dec 48, CCS 092 USSR (3-27-45) sec 35.

26 Apr 49

A joint US-UK study of the Soviet guided missile program, dated March 1949, was received by the JIC. The report concluded that the immediate aim of the Soviets was to get a selection of reasonably effective guided missiles into service as soon as possible. Desiring to demonstrate that the USSR was capable of building the most modern weapons, they were prepared, in the opinion of the study group, to accept relatively unsatisfactory weapons which were immediately available rather than wait for greatly improved designs which might not be ready for many years.

(TS) Joint Anglo-American Conference Report, "A Study of the Soviet Guided Missile Programme," Mar 49, CCS 471.6 (5-31-44) BP pt 2, Attachment to (TS) JIC 441/6, Note by Secys, "United States British Technical Study of Soviet Guided Missiles," 26 Apr 49, same file, sec 2, pt 1.

16 May 49

In a memorandum to the Secretary of Defense, the Acting Secretary of the Army stated that duplication in guided missiles programs could best be eliminated by assigning to each Service research and development responsibility for those missiles which it eventually would use in operations. He recommended that: (1) the Army be assigned operational responsibility--and research and development responsibility--for all land-launched surface-to-air and surface-to-surface missiles; (2) the Navy be assigned primary cognizance for research and development in the field of ship-launched surface-to-air and surface-to-surface missiles; and (3) the Air Force be assigned primary cognizance for research and development in the field of air-to-air and air-to-surface missiles.

(C) Memo, ActgSecArmy to SecDef, "Assignment of Responsibility for Guided Missile Operations and Development," 16 May 49, Ann to App "A" to (C) JCS 1620/4, Note by Secys, same subj, 27 May 49, CCS 334 GMC (1-16-45) sec 2.

✓ 20 May 49

The Technical Evaluation Group (TEG) of the Committee on Guided Missiles, RDB, issued a report which concluded, among other things, that there was no "alarming unbalance of effort" in the national guided missiles program and that there should be no major shift of emphasis in the program in FY 1951. On 21 July 1949 the RDB forwarded the report to the JCS, requesting comment on the TEG's list of missiles priorities and its estimate of the current military situation, which had been based on information from JCS, CIA, and other sources. The TEG estimate stated that: (1) the probability of active warfare was expected to increase sharply in the period 1951-52 and be critical after 1955-56 (the dates corresponding roughly to the anticipated development of the first Soviet atomic weapon and to Soviet stockpiling of a moderate quantity of A-weapons); (2) it was probable that any war would be of extended duration, thus permitting tactical use of weapons for which the basic research and engineering development had been accomplished prior to the initiation of hostilities; and (3) the Soviet Union would have a strategic bombardment force using aircraft comparable to the B-29 by 1951-52. Small numbers of higher performance bombers might be expected by 1955-56 and guided missiles by 1951-52.

(S) Memo, ChmRDB to JCS, "Establishment of a Military Basis for Guided Missile Program Planning," 21 Jul 49, and (S) Rpt of TEG, 20 May 49, Encl and App to (S) JCS 1620/6, Note by Secys, "Establishment of a Military Basis for Guided Missile Program Planning," 29 Jul 49, CCS 334 GMC (1-16-45) sec 2.

25 May 49

The Secretary of Defense sent to the JCS and to the RDB copies of the memorandum of 16 May 1949 from the Acting Secretary of the Army, with requests for advice from the JCS on assignment of operational responsibilities for missiles and from the RDB on assignment of responsibilities for missile research and development. On 2 June 1949, the Chairman of the RDB replied that he would defer making final recommendations until the JCS had made a decision on operational responsibilities.

(C) Memo, SecDef to JCS, "Assignment of Responsibility for Guided Missile Operations," 25 May 49, and (C) Memo, SecDef to ChmRDB, "Assignment of Responsibility for Research and Development in the Field of Guided Missiles," same date, Encl and App "B" to (C) JCS 1620/4, Note by Secys, "Assignment of Responsibility for Guided Missile Operations," 27 May 49, (C) Memo, sgd Rinehart for ChmRDB to Sec Def, no subj, 2 Jun 49, App to (C) JCS 1620/5, Note by Secys, "Assignment of Responsibility for Guided Missile Operations," 14 Jul 49. All in CCS 334 GMC (1-16-45) sec 2.

14 Jul 49

The JCS informed the Chairman of the RDB that they felt additional emphasis should be placed on research and development for a guided missile or missiles employing an atomic warhead for use in support of land operations. If this request should materially disturb existing priorities, the JCS said, the RDB should ask them for a new opinion on priorities.

(TS) Dec Or JCS 2012/2, "Research and Development for Weapons for Support of Land Operations," 12 Jul 49, source of (TS) SM-1331-49, Ives for JCS to ChmRDB, same subj, 14 Jul 49, CCS 471.6 (5-31-44) sec 2, pt 1.

20 Jul 49

Responding to the JCS memorandum of 14 July 1949, the RDB said that it preferred to postpone any increase in emphasis on guided missiles with atomic warheads, pending a report by an ad hoc committee that was studying the use of such warheads on missiles (see item for 14 September 1949).

(TS) Memo, ExecSecy RDB to Secy JCS, "Present Considerations with Regard to Guided Missiles Carrying Atomic Warheads," 20 Jul 49, Encl to (TS) JCS 2012/3, Note by Secys, "Research and Development for Weapons for Support of Land Operations--Atomic Warheads for Guided Missiles," 21 Jul 49, CCS 471.6 (5-31-44) sec 2, pt 1.

✓10 Aug 49

The National Security Act Amendments of 1949 were approved. This legislation gave the Chairman of the Research and Development Board "power of decision on matters falling within the jurisdiction of the Board," subject to the authority of the Secretary of Defense. The Board as a whole was now charged with coordination of research and development among the military departments and allocation of responsibility for specific programs, whereas under the National Security Act of 1947, it had been authorized only to "recommend"

measures of coordination and allocation of responsibility. Among other major provisions of the 1949 amendments was the creation of the office of Chairman, Joint Chiefs of Staff.

P. L. 216, 81st Cong, CCS 640 (11-2-43) sec 6.

19 Aug 49

In a memorandum to the Secretary of Defense, the Secretary of the Air Force proposed that the Department of Defense state as policy that new weapons would be considered available for use by "any service whose operational responsibility (i. e. normal functions) is determined by the Joint Chiefs of Staff to establish a requirement therefor."

(C) Memo, SecAF to SecDef, "Assignment of Responsibility for Guided Missile Operations," 19 Aug 49, CCS 334 GMC (1-16-45) sec 2.

31 Aug 49

The JCS informed the Secretary of Defense, in response to a memorandum from him, that they thought it advisable that a Joint Long-Range Proving Ground Command be established under their direction, with the Chief of Staff of the Air Force as executive agent. On 14 September 1949 the Secretary of Defense replied with the suggestion that joint commands be established at all guided missile testing stations. The JCS, however, opposed this plan and reaffirmed their 31 August recommendation in a memorandum on 27 October 1949.

(R) Dec On JCS 1576/9, "Establishment of a Joint Long-Range Proving Ground Command," 30 Aug 49, source of (R) Memo, CJCS to SecDef, same subj, 31 Aug 49, (R) Memo, SecDef to CJCS, 14 Sep 49, Encl to (R) JCS 1576/11, Note by Secys, "Establishment of a Joint Long-Range Proving Ground Command," 24 Sep 49. (R) Dec On JCS 1576/12, "Establishment of a Joint Long-Range Proving Ground Command," 27 Oct 49, source of (R) Memo, CNO for JCS to SecDef, same subj and date. All in CCS 684 (11-17-45) sec 2.

✓ 14 Sep 49

An ad hoc committee headed by Lt Gen John E. Hull, WSEG Director, which had been formed in June 1949 at the request of the Secretary of Defense, completed its study of coordinated development of missiles and atomic warheads. The committee found that four missiles then having development priority could be adapted with reasonable technical effort to atomic warheads--the HERMES A-3, REGULUS, RASCAL, and SNARK. It recommended that close technical liaison be established between agencies responsible for selected missile projects and those responsible for atomic weapons development, and that the Department of Defense, in collaboration with the Atomic Energy Commission, conduct an intensive study of the use and relative effectiveness of missiles with atomic warheads. On 29 September 1949 the report was forwarded to the JCS for comment.

(S-RD) Memo, Lt Gen J. E. Hull, USA, et al., to Deputy to the SecDef for Atomic Energy Matters, no subj, 14 Sep 49, and (S-RD) Memo, SecDef to JCS, "Guided Missiles with Atomic Warheads," 29 Sep 49, Encl and App to JCS 2012/4, Note by Secys, "Guided Missiles with Atomic Warheads," 30 Sep 49, CCS 471.6 (5-31-44) sec 2, pt 1.



~~TOP SECRET~~  
28 Sep 49

The JSPC, after attempting to draft a reply to the memorandum of 25 May 1949 from the Secretary of Defense on operational responsibilities for guided missiles, reported to the JCS that it had been unable to reach agreement. Two basic points were at issue, the JSPC said: (1) whether operational responsibilities for guided missiles should be assigned at this time and on what basis, and (2) a definition of "operational responsibility." The Air Force member favored postponing an assignment until missiles development was more advanced. Then, he contended, each missile should be assigned to the Service or Services which, on the basis of agreed functions, were found by the JCS to have an operational requirement for the missile. The Army-Navy view was that an assignment should be made immediately, conforming essentially to the plan proposed by the Acting Secretary of the Army to the Secretary of Defense on 16 May 1949. This would have given the Army and the Navy control over surface-launched missiles, although it was mutually agreed that a decision on responsibility for long-range surface-to-surface missiles should be postponed. The Air Force member maintained that the Army-Navy proposal, by assigning responsibilities for broad categories of missiles, would "create a future function" for a Service by predetermining control over a weapon. The divergence over definition of "operational responsibility" stemmed from the following sentence, which the Air Force member wished to include in the definition and which the Army and Navy members wished to omit: "The Service or Services to which such operational responsibility is assigned will normally have command and control over units employing the weapon." (For resolution of these differences and the JCS reply to the Secretary of Defense, see item of 17 November 49.)

(S) JCS 1620/8, Rpt by JSPC, "Assignment of Responsibility for Guided Missile Operations," 28 Sep 49, CCS 334 GMC (1-16-45) sec 2.

26 Oct 49

The JCS replied to a request from the RDB for comment on the report of the Technical Evaluation Group dated 20 May 1949. They found the TEG's estimate of the military situation satisfactory as a basis for planning of guided missile research and development programs, but recommended that the word "sharply" be deleted from the statement that the probability of active warfare would increase sharply in the period 1951-52. They also provided a statement of enemy missile capabilities that was more detailed, and, in their opinion, more accurate than that of the TEG. Further, the JCS furnished the RDB with a missiles priority list that they said would more clearly express military requirements than that of the TEG.

The top three priorities, in a list totaling 13 items, were given to three different categories of air defense missiles. Long-range surface-to-surface missiles with atomic warheads ranked eighth.

(S) Dec On JCS 1620/9, "Establishment of a Military Basis for Guided Missile Program Planning," 25 Oct 49, source of (S) SM-2161-49, Lalor for JCS to ChmRDB, same subj, 26 Oct 49, CCS 334 GMC (1-16-45) sec 3.

~~TOP SECRET~~  
17 Nov 49

The Joint Chiefs of Staff informed the Secretary of Defense, in reply to his memorandum of 25 May 1949, that "it is impracticable at this time to assign to the several services responsibilities for the entire guided missile field." However, they stated as a general rule that guided missiles would be employed by the Services in the manner and to the extent required to accomplish their assigned functions. They then assigned responsibilities within four categories of missiles, following in general the principle that a missile supplementing or replacing an existing weapons system should be the responsibility of the Service which, on the basis of its assigned functions, had cognizance over that weapons system. For example, in the category of surface-to-air missiles, the JCS stated that:

(1) Guided missiles which supplement, extend the capabilities of, or replace anti-aircraft artillery will be a responsibility of the U. S. Army and the U. S. Navy as required by their assigned functions. (2) Guided missiles which supplement or replace fighter interceptors will be a responsibility of the U. S. Air Force and the U. S. Navy as required by their assigned functions.

Similarly, guided missiles used for air-to-air combat and those used by aircraft against surface objectives were assigned to the Air Force and the Navy. Guided missiles which supplemented or replaced artillery fire (coming under the category of short-range surface-to-surface missiles) were assigned to the Army and Navy. No assignment was made in the category of long-range surface-to-surface missiles. Undesirable duplication in research and development should be avoided by careful screening of projects, the JCS said, and when appropriate, by assignment of research responsibility by the RDB. Finally, they recommended that the Secretary of Defense issue the following policy statement:

Employment of new or improved weapons, and related equipment, resulting from research and development will not be restricted by reason of the interest or responsibility of a particular Service in the development of a weapon. On the contrary, new weapons developed by the programs of the several Services will be considered available for employment by any Service which requires them in the discharge of its assigned functions as determined by the Joint Chiefs of Staff within the structure of the approved "Functions of the Armed Forces and the JCS." The initial determination of such requirement shall be made by individual Services, subject to final approval by the Joint Chiefs of Staff on the basis of its contribution to the overall war effort in any case where conflicts of functions or economy may arise. A Service charged with primary responsibility for development of a weapon shall invite the participation of any other Service having an operational interest in the weapon.

On 6 December 1949, the Armed Forces Policy Council approved the recommendations in this memorandum, with the understanding that the assignments made by the JCS

had covered operational, not developmental, responsibilities. Later, the Council altered the declaration of policy in the final paragraph of the JCS memorandum to state that determination of requirements for new weapons would be subject to "the examination and recommendation" of the JCS rather than "final approval" by them.

(TS dg C) JCS 1620/12, Note by Secys, "Assignment of Responsibility for Guided Missiles," 17 Nov 49, source of (TS dg C) Memo, CJCS to SecDef, same subj and date, CCS 334 GMC (1-16-45) sec 3. (TS) Memo, Secy AFPC to AFPC, "Significant Actions of the Armed Forces Policy Council at Its Meeting of 6 December," 6 Dec 49, CCS 334 AFPC (12-2-47) sec 5. (C dg U) JCS 1620/16, Note by Secys, "Assignment of Responsibility for Guided Missiles," 14 Mar 50, CCS 334 GMC (1-16-45) sec 4.

30 Dec 49

The JCS informed the Secretary of Defense that they concurred in the recommendations of the ad hoc committee headed by Lt Gen John E. Hull (see item for 14 September 1949), and considered it urgent that steps be taken to insure close coordination of the development of guided missiles and atomic warheads. They recommended a program for achieving coordination.

(TS-RD) Dec On JCS 2012/5, "Guided Missiles Atomic Warheads," 30 Dec 49, source of (TS-RD) Memo, CJCS to SecDef, same subj and date, CCS 471.6 (5-31-44) sec 2, pt 1.

✓ 16 Jan 50

The Secretary of Defense replied to a memorandum, dated 8 December 1949, in which the Acting Chairman, RDB, had endorsed the Hull committee's recommendation that HERMES, REGULUS, RASCAL, and SNARK missiles be adapted to atomic warheads (see item for 14 September 1949). The Secretary of Defense concurred in "the need for additional emphasis on research and development of guided missiles employing atomic warheads and in the choice of the four types of missiles which should receive special consideration at this time." He instructed the Chairman, RDB, to request the collaboration of the AEC in the initiation and pursuit of a program to insure coordinated development of missiles and atomic warheads.

(TS-RD) Memo, SecDef to Chm, RDB, "Guided Missiles with Atomic Warheads," 16 Jan 50, Encl to (TS-RD) JCS 2012/11, Note by Secys, same subj, 20 Jan 50. (S) Memo, ActgChm RDB to SecDef, same subj, 8 Dec 49, Encl to (S) JCS 2012/9, Note by Secys, same subj, 19 Dec 49. Both in CCS 471.6 (5-31-44) sec 2, pt 1.

✓ 18 Jan 50

The JCS sent memoranda to the Director of WSEG and to the Chief, Armed Forces Special Weapons Project, explaining steps that had been taken by the Secretary of Defense to insure coordination of guided missile and atomic warhead developments.

They asked WSEG, in collaboration with the AEC, to initiate a study of the effectiveness of missiles with atomic warheads. A major purpose of the study, the JCS said, would be to provide guidance for technical development in cases where military requirements had not yet been made clear. The Chief, AFSWP, was instructed to act as the representative of the Defense Department for effecting liaison with the AEC at Sandia Base.

(TS-RD) SM-123-50, Lator for JCS to Chief, AFSWP, "Guided Missiles Atomic Warheads," 18 Jan 50, and (TS-RD) SM-124-50, Lator for JCS to Dir, WSEG, same subj and date. Both in CCS 471.6 (5-31-44) sec 2, pt 1.

3 Feb 50

A Special Interdepartmental Guided Missiles Board, composed of the Undersecretary of the Navy, Assistant Secretaries of the Army and the Air Force, and the Acting Chairman, RDB, issued its report to the three Service Secretaries. (A copy was received by the JCS on 11 February 1950.) Having studied each of the guided missile projects, the Board recommended which should be continued. It also recommended that separate proving grounds be maintained by each of the Services and that the JCS revoke their recommendation for a Joint Long-Range Proving Ground Command; further, that an Interdepartmental Operational Requirements Group for Guided Missiles be formed with a member from each Service to recommend measures for coordination of the guided missiles program.

Commenting to the Secretary of Defense on the report, the Secretary of the Air Force on 8 February declared that in view of the Soviet menace, the U.S. missile program should be changed from one of "Relatively casual research to one which demands

production hardware at the earliest possible date." But unless very heavy additional amounts of money were to be appropriated for missile research and development, he said, diversified experiments would have to be more efficiently coordinated. He urged that no Service be allowed to pursue more than one of the existing missile projects in any single field of its operational responsibility. This policy would result in elimination of 10 of the 23 projects then being pursued, he stated, adding that savings thus realized should be used to accelerate remaining projects. The Secretaries of the Army and Navy opposed this restrictive policy and supported the recommendation of the Board majority for continuation of nearly all of the 23 projects.

(S) JCS 1620/13, Note by Secys, "Guided Missiles Program," 15 Feb 50, CCS 334 GMC (1-16-45) sec 3.  
(S) Encls 1-4 to Rpt of Special Interdepartmental Guided Missiles Board, same file, BP pt 1.

14 Feb 50

The Chairman of the Munitions Board replied to a request from the Secretary of Defense for suggestions about administration of the guided missiles program. It was, he felt, clear that joint action by the Services could not be expected to eliminate duplication in the field of guided missiles. It seemed to him also that the Research and Development Board had not lived up to its responsibilities in this respect. He therefore recommended that one man, preferably a civilian, be given authority to define and allocate areas of responsibility for guided missile research and development. Initially, this individual should be appointed for six months, he said, but during that time a study should be made to determine whether his work should continue or be returned to the jurisdiction of the Chairman, RDB.

(S) Memo, ChmMB to SecDef, "Guided Missiles," 14 Feb 50, CCS 334 GMC (1-16-45) sec 3.

15 Mar 50

The JCS informed the Secretary of Defense of the results of their review of the report of the Special Interdepartmental Guided Missiles Board of 3 February 1950 and of their own previous recommendations on the assignment of Service responsibility for guided missiles, dated 17 November 1949. The JCS memorandum (1) listed their recommendations regarding guided missile projects to be continued, continued with certain qualifications, or discontinued; (2) endorsed the recommendations of the Special Interdepartmental Guided Missiles Board with respect to assignment of missile testing facilities and the establishment of a Guided Missiles Interdepartmental Operational Requirements Group; and (3) offered a revised statement of Service responsibility for surface-to-surface guided missiles to supersede the one recommended on 17 November 1949. The new statement provided that:

(a) surface-launched missiles supplementing or extending the capabilities of, or replacing the fire of artillery or naval guns would be the responsibility of the Army and Navy as required by their functions; (b) surface-launched missiles

with the same relationship to support aircraft would be the responsibility of the Air Force and Army as required by their functions; (c) ship-launched guided missiles with the same relationship to naval aircraft would be a responsibility of the Navy as required by its functions; (d) surface-launched guided missiles with the same relationship to Air Force aircraft, other than support aircraft, would be a responsibility of the Air Force as required by its functions; and (e) unnecessary duplication would be avoided through a periodic review by the JCS.

(TS) Dec On JCS 1620/17, "Department of Defense Guided Missiles Program," 14 Mar 50, source of (TS) Memo, CJCS to SecDef, same subj, 15 Mar 50. Both in CCS 334 GMC (1-16-45) sec 4.

21 Mar 50 The Secretary of Defense approved the recommendation of the Special Interdepartmental Guided Missiles Board (3 February 1950) and the JCS (15 March and as presented orally on 20 March) that a Guided Missiles Interdepartmental Operational Requirements Group be created in the Defense Department. Consisting initially of an Air Force general officer, an Army general officer, and a Navy Rear Admiral, the Group was appointed by the JCS on 24 March and charged with the "formulation and initiation of such common policies as may be necessary in the fields of guided missiles, for issuance by the respective military departments, to insure the integrated and efficient operation of all guided missiles proving grounds and ranges in such a manner as to serve all three departments." The Group was to formulate and recommend to the JCS by 1 July 1950, for use in the first annual review of the guided missiles program by the JCS, scheduled for September 1950, a requirements program for guided missiles research and development.

(TS) JCS 1620/18, Note by Secys, "Department of Defense Guided Missiles Program," 22 Mar 50, source of (TS) SM-588-50, "Guided Missiles Interdepartmental Operational Requirements Group," 24 Mar 50. Both in 334 GMC (1-16-45) sec 4.

✓ 10 Jul 50 The REDSTONE missile program was begun as a study leading toward development of a weapon system with a range of about 500 nautical miles. In early 1951, when the weight of the REDSTONE warhead was increased, the weapon's range was set at 175 nautical miles.

(S) OSD, "Chronology of Significant Events in the U. S. Long Range Ballistic Missile Program," OCJCS files.

21 Jul 50 The US and UK signed a 25-year agreement providing for the joint operation of a long-range proving ground for guided missiles in the Bahama Islands. The base and launching site would be on the east coast of Florida, and the range would extend southeast over the Atlantic.

(U) New York Times, 22 Jul 50, 4:7.

10 Aug 50

According to the New York Times. Under Secretary of the Air Force John A. McCone, seeing the perfection of guided missiles as the only means of providing an effective continental defense and of supplying the strategic and tactical weapons needed in future warfare, submitted a memorandum to the Secretary of the Air Force that called for a concentrated and sharply accelerated guided missiles program. He judged the progress to date inadequate and blamed the "manner of organization . . . within the three services . . . and the very serious lack of funds." Therefore he called for a single project with the highest priority under the "most capable man who can be drafted . . . with absolute power over the entire effort," with authorization to spend initially at least \$2 or \$3 billion. In a further memorandum on 15 August, Under Secretary McCone made clear he was proposing a Manhattan District-type project. He suggested that the new project director control all funds and contracts for missile development. The using Services would receive funds only for the procurement of operational missiles. Hence the questions of roles and missions and Service responsibility would not arise during the development stage.

(U) New York Times, 5 Nov 57, 30:5.

28 Sep 50

The JCS forwarded to the Chairman, Munitions Board, a brief statement on the potential effect of Soviet atomic attacks on U. S. industrial population centers in mid-1951. While pointing out that a dependable evaluation of the problem would require better intelligence than was available, the JCS nevertheless stated that such attacks "followed and aggravated by sabotage and, as a more remote possibility, by submarine-launched guided missile attack, could probably result in casualties of over one million persons." During the preparation of this statement the JIC had submitted a report to the JCS, on 14 April 1950, that included a detailed study of the Soviet capability to attack the U. S. with guided missiles launched from submarines. JIC had concluded that: (1) by mid-1951 the USSR could deploy 49 guided-missile-launching submarines against the U. S. on D-Day, each carrying two V-1 type missiles with a range of 150 miles and accuracy only good enough, or slightly better, than that required to hit area targets; (2) the use of atomic warheads, radioactive dust, or V-2 type missiles would not be within the Soviet submarine-launched capability during this period; and (3) biological agents could be used in V-1 warheads or otherwise dispersed from submarines.

(TS) Dec On JCS 1630/21, "Strategic Guidance to Facilitate Planning Within the Joint Agencies," 28 Jun 50, CCS 381 (2-18-46) sec 3; source of (TS) SM-2363-50, same subj, 28 Sep 50, same file, sec 4.  
 (TS) JCS 1630/19, Rpt by JIC, same subj, 14 Apr 50;  
 (TS) Dec On JCS 1630/20, same subj, 9 May 50. Both in same file, sec 3.

19 Oct 50

The JCS agreed to note a report by the JIC on "Soviet Intentions and Capabilities, 1950-1954." With reference to guided missiles, the report concluded that

Soviet missiles that might be encountered in quantity up to 1954 would probably be variations of German types.

(TS) Dec On JCS 1924/37, "Soviet Intentions and Capabilities, 1950-1954," 19 Oct 50, CCS 092 USSR (3-27-45) sec 51.

✓ 24 Oct 50

Apparently as an outgrowth of the memorandum of 10 August 1950 by the Under Secretary of the Air Force, the Secretary of Defense established the position of Director of Guided Missiles, OSD, and appointed to the post Mr. K. T. Keller of the Chrysler Corporation. Mr. Keller was to advise the Secretary of Defense on the direction and coordination of guided missile research, development, and production. Mr. Keller was also to act as consultant and advisor to the Research and Development Board and the Munitions Board and, from time to time, advise the AFPC, JCS, and other Defense agencies. On recommendation of the JCS, the order establishing the new position stated that: "This does not modify the statutory responsibilities of any of the agencies of the Department of Defense."

(C) Dec On JCS 1620/27, "Establishment of the Director of Guided Missiles in the Office of the Secretary of Defense," 10 Oct 50, and (C) N/H of JCS 1620/27, 28 Oct 50. Both in CCS 334 GMC (1-16-45) sec 5. (U) New York Times, 5 Nov 57, 30:5.

29 Nov 50

The JCS recommended to the Secretary of Defense that the Army officer who was assisting Mr. Keller as Deputy Director of Guided Missiles, OSD, report to the JCS for additional duty in connection with the Guided Missiles Interdepartmental Operational Requirements Group, and that JCS designate him a non-voting, ex-officio member of that Group. The Secretary of Defense approved these recommendations during the following week.

(R dg U) Dec On JCS 1620/31, "Inter-Action of Guided Missiles Interdepartmental Operational Requirements Group and the Office of the Director of Guided Missiles, Office of the Secretary of Defense," 29 Nov 50, CCS 334 GMC (1-16-45) sec 5, source of (R dg U) Memo, CJCS to SecDef, same subj, 30 Nov 50, same file, sec 6. (R dg U) N/H of JCS 1620/31, 8 Dec 50, same file, sec 5.

✓ 18 Dec 50

After making various amendments, the JCS approved the recommendations in the first report of the Guided Missiles Interdepartmental Operational Requirements Group. The guided missile requirements set forth in the reports were based on the assumption that the U. S. must be prepared for a change from cold war to total war prior to 1 July 1954 and that it was therefore necessary to emphasize those projects which would result in acceptable operational missiles by that date. Among other things, the final JCS paper: (1) listed approved operational requirements for missiles for the three Services; (2) recommended acceleration of eleven guided missile projects--four having estimated dates of possible operational use in



in 1952, four in 1953, and the remaining three in the first half of 1954--with the heaviest emphasis to be placed on NIKE, TERRIER, and SPARROW projects; (3) listed missile projects to be continued at a normal rate; (4) called for development of certain air defense and anti-submarine missiles to fill "serious gaps" in the missiles program; and (5) authorized the Services (a) to change characteristics of approved weapons as necessary to incorporate improvements, without further reference to the JCS, and (b) to introduce, subject to Research and Development Board concurrence, new projects or change established ones to meet previously approved operational requirements, provided inter-Service agreement was reached.

(TS) Dec On JCS 1620/26, "Requirements Program for Guided Missiles," 18 Dec 50, CCS 334 GMC (1-16-45) sec 5.

2 Feb 51 The JCS informed the Chairman of the Research and Development Board that the currently effective strategic guidance on guided missiles furnished by them, which had been in effect since 26 October 1949, was now superseded. The new strategic guidance took the form of the recommendations of the Guided Missiles Interdepartmental Operational Requirements Group approved by the JCS on 18 December 1950.

(TS) Dec On JCS 1620/35, "Strategic Guidance to the Research and Development Board on Guided Missiles," 2 Feb 51, source of (TS) SM-298-51, same subj and date. Both in CCS 334 GMC (1-16-45) sec 6.

✓ 16 Feb 51 The JCS informed the Director of Guided Missiles, OSD, of their concurrence in his recommendation that the NIKE, TERRIER, and SPARROW guided missile projects be accelerated.

(TS) Dec On JCS 1620/36, "Acceleration of Certain Guided Missiles Programs ('NIKE,' 'TERRIER,' 'SPARROW')," source of (TS) SM-447-51, same subj and date, CCS 334 GMC (1-16-45) sec 6.

✓ 21 Mar 51 The JCS informed the Director of Guided Missiles, OSD, the Chairman of the Research and Development Board, and other officials that they had approved BOMARC and SNARK as guided missile weapons projects. In the 18 December 1950 decision of the JCS and in their subsequent guidance to the Research and Development Board (2 February 1951) the SNARK had been listed as a missile guidance system and test vehicle while BOMARC had been limited to the study and component development stage. As approved weapons projects they now took their place on the list of guided missiles to be developed at normal speed.

(TS) Dec On JCS 1620/37, "Status of BOMARC and SNARK Guided Missile Projects," 20 Mar 51, source of (S) SM-755-51, JCS Secy to Dir of Guided Missiles, OSD, et al., same subj, 21 Mar 51. Both in CCS 334 GMC (1-16-45) sec 6.

✓ 30 Mar 51 The Defense Department approved a recommendation by the Director of Guided Missiles that the SNARK project be accelerated--a recommendation that had been made six days before the JCS action of 21 March 51 that partly accomplished the same purpose by designating the SNARK as a weapons project. The Acting Secretary of Defense authorized the Secretary of the Air Force and the Assistant Secretary of Defense (Comptroller) to proceed immediately with implementation of the accelerated program.

(S) Memo, Actg SecDef to SecAf and Asst SecDef (Comptroller), 30 Mar 51, Encl to (S) JCS 1620/40, Note by Secys, "Acceleration of the 'SNARK' Guided Missile Program," 25 Apr 51, CCS 334 GMC (1-16-45) sec 7.

✓ 16 Jun 51 The ATLAS project was reactivated at Convair with new Air Force contracts.

(S) OSD, "Chronology of Significant Events in the U. S. Long Range Ballistic Missile Program," OCJCS files.

TOP SECRET  
/ 12 Sep 51

29 Oct 51

In a memorandum for the JCS, the Chief of Staff, Air Force, declared that there was a serious danger of duplication in the various Service guided missiles programs. He called for a reassessment of Service responsibilities. Asserting that the division of guided missiles into surface-to-surface, surface-to-air, air-to-air, and air-to-surface categories had served "no real purpose" and had "led to confusion," he proposed that these categories be replaced by two new ones that would "identify more accurately" current missile projects. These were: (1) Robot Aircraft, and (2) Guided Rockets, with the former of "primary interest" to the Air Force and Navy, and the latter "of concern" to all three Services. In accordance with these categories, specific responsibility for guided missiles would be divided as follows: (1) With respect to air defense: (a) the Air Force would control "all maneuverable airborne weapons employed in air defense," including Robot Aircraft and Guided Rockets developed for defense of the continental U. S. and other land areas, and would be responsible for surface-launched Robot Aircraft and Guided Rockets employed in air defense of the U. S. and from other land areas; (b) the Army would continue to be responsible for predicted-fire weapons (artillery), but Guided Rockets and Robot Aircraft would not be considered as an improvement in anti-aircraft artillery; (c) the Navy would be responsible for ship-launched Robot Aircraft and Guided Rockets employed in air defense of naval forces at sea; and (d) the Navy and Air Force, consistent with their primary functions, would be responsible for air-launched Guided Rockets employed as aircraft armament. (2) With respect to missile support of Army forces: (a) the Army would be responsible for surface-launched support missiles integrated with the fire and movement of the supported forces and employed within the combat zones of opposing armies (within 50-75 miles on both sides of the line of

contact); and (b) the Air Force would be responsible for Guided Rocket and Robot Aircraft interdiction of enemy land power and communications to the rear of the enemy combat zone. In addition to these responsibilities, the Air Force would procure those guided missiles produced by the aircraft industry for both the Army and Air Force. The Chief of Staff, Air Force, proposed that these views be embodied in a memorandum issued as policy guidance for the Guided Missiles Interdepartmental Operational Requirements Group.

(TS) JCS 1620/42, Memo by CSUSAF, "Policy Guidance for the Guided Missiles Interdepartmental Operational Requirements Group," 30 Oct 51, CCS 334 GMC (1-16-45) sec 7.

9 Nov 51

The Chief of Staff, Army, commented on the memorandum by the Chief of Staff, Air Force, of 29 October 1951, and expressed his strong disagreement. He declared that the Air Force proposal would deprive the Army of the means to accomplish its mission, including the means necessary to prevent its surprise and destruction by hostile forces. Without surface-to-air missiles, he stated, the Army could not combat attacking aircraft and missiles; also, the principle of unity of command, which included the responsibility of a commander for the success of his mission, dictated that surface-to-surface missiles should be under Army command. Moreover, while the assignment of responsibilities proposed by the Air Force would eliminate "certain" duplication, the Army Chief of Staff stated that this duplication could be better eliminated by allowing command to rest with the commander responsible for the land battle and by assigning responsibility for all land-based weapons not actually manned in flight to the Army. He added that the responsibility for procurement should be discussed separately only after operational responsibility was fixed. He proposed that policy guidance for the Guided Missiles Interdepartmental Operational Requirements Group should state that: (1) the Army was responsible for combat operations on land, the Air Force for air operations--defined as including only operations to and from manned aircraft--and the Navy for sea operations; (2) all land-launched surface-to-surface and surface-to-air guided missiles were "inherent to land combat" and were therefore the responsibility of the Army, with certain operational responsibility permitted the Marines; and (3) specific operational responsibility for guided missiles was assigned as follows: (a) land-launched surface-to-air and surface-to-surface missiles to the Army and Marines, (b) ship-launched surface-to-air and surface-to-surface missiles to the Navy, and (c) air-to-air and air-to-surface missiles to the Navy and Air Force as required by their respective functions.

The divergent views of the Chief of Staff, Army, as expressed here, and of the Chief of Staff, Air Force, as expressed in his memorandum of 29 October, were not finally resolved until the JCS decision of 9 September 1954 and its approval by the Acting Secretary of Defense on 13 November 1954.

(TS) JCS 1620/44, Memo by CSUSA, "Policy Guidance for the Guided Missiles Interdepartmental Operational Requirements Group," 13 Nov 51, CCS 334 GMC (1-16-45) sec 7.

23 Nov 51

In a reflection of the differences in Army-Air Force views on guided missiles responsibility, the Guided Missiles Interdepartmental Operational Requirements Group was unable to agree on a report reviewing and recommending a revised requirements program and forecasting the integration of guided missile units into the combat forces of the three Services. The identical views of the Army and Navy members of the Group were in line with those expressed by the Chief of Staff, Army, in his memorandum of 9 November 1951. The Air Force member pointed out that the problem considered in the report was directly related to the divergence in Army-Air Force views and that it could not be solved until these differing views were resolved. The Air Force member therefore reserved comment on the conclusions of the report and did not concur in its recommendations.

The JCS took no further action on this paper or on a succession of similar papers in which the Army-Air Force divergence of views prevented a unanimous conclusion. After the JCS decision of 9 September 1954 all such papers were withdrawn from consideration.

(TS) JCS 1620/46, "Report by the Guided Missiles Interdepartmental Operational Requirements Group to the Joint Chiefs of Staff on Requirements Program for Guided Missiles," 5 Dec 51, CCS 334 GMC (1-16-45)  
BP pt 2.

✓ 4 Feb 52 The JCS established a military requirement for the development of an atomic warhead for the HONEST JOHN rocket. It was contemplated that this would involve adoption of a warhead being developed for the CORPORAL missile. The AEC was requested to coordinate with the Army in the development of this weapon.

(TS-RD) Dec On JCS 2012/22, "Military Requirement for an Atomic Warhead for Large-Caliber Free Rockets," 4 Feb 52, CCS 471.6 (5-31-44) sec 3.

✓ 5 Aug 52 The JCS forwarded to the AEC their decision that the development program for atomic warheads, less nuclear elements, should be accelerated for MATADOR, RASCAL, SNARK, REGULUS, CORPORAL, HONEST JOHN, HERMES A-3B, and REDSTONE. The goal of this accelerated development program was the production of a limited number of proven atomic warheads for these missiles as they became operational.

(TS-RD) Dec On JCS 2012/30, "Interim Military Requirements for Atomic Warheads for Guided and Unguided Missiles," 5 Aug 52, source of (TS-RD) SM-1867-52, same subj and date. Both in CCS 471.6 (5-31-44) sec 4.

✓ 13 Oct 52 The JCS informed the Chairman, Military Liaison Committee to the AEC, that they had established a military requirement for the development of an air-launched, rocket-propelled, atomic-warhead weapon and associated system components for low-altitude delivery by aircraft against tactical targets. The weapon might also be used as an air-to-air missile against mass raids of aircraft. It would deliver a warhead (the XW-7) already in existence. The Navy would develop non-nuclear phases of the weapon; the AEC was requested to provide the warhead and render technical assistance.

(S-RD) Dec On JCS 1620/65, "Military Requirement for the Development of an Air-Launched, Rocket-Propelled, Atomic-Warhead Weapon System," 13 Oct 52, CCS 334 GMC (1-16-45) sec 9, source of (S-RD) SM-2387-52, same subj and date, same file, sec 10.

31 Dec 52 The Director of the Office of Defense Mobilization, in his final report to the President before leaving office with the outgoing Truman administration, stated that U. S. guided missiles were still "largely in the stage of research, development, or limited assembly-line production."

(U) New York Times, 1 Jan 53, 1:2.

- ✓ 27 Jan 53 The JCS established a military requirement for the development of a surface-launched guided missile with an atomic warhead, designed for air defense against formations of aircraft. This would be a modification (TALOS W) of the TALOS. While the Navy proceeded with the non-nuclear phases of TALOS W development, the AEC was requested to make a feasibility study of adopting an existing atomic warhead to the TALOS W.  
(S-RD) Dec On JCS 1823/111, "Military Requirements for Development of a Surface-Launched Guided Missile with an Atomic Warhead, Air Defense Weapon System," 27 Jan 53, CCS 471.6 (5-31-44) sec 4.
- 28 Jan 53 The Chairman of the Research and Development Board established the Committee on Guided Missiles to assist the Board in providing guidance for the research and development activities of the Department of Defense. The Committee consisted of four members appointed by the Chairman, RDB, and two members designated by each of the three Services. The directive creating the Committee superseded RDB Directive, Committee on Guided Missiles, GM 1/4, dated 11 January 1949.  
(U) DOD Directive No. 5128.15 (GM 1/5), "Charter of the Committee on Guided Missiles, Research and Development Board," 28 Jan 53, CCS 334 GMC (1-16-45) sec 10.
- 19 May 53 The Annual Report of the Guided Missiles Interdepartmental Operational Requirements Group called for resolution of the divergent views of the Army and Air Force on the question of missile responsibility. Commenting on this on 22 June, the Chief of Staff, Air Force, expressed his agreement and his conviction that past failures to resolve these divergencies had contributed to the "increasing number" of projects not in conformance with assigned Service functions. He called for a thorough review and clarification of Service differences. On 20 July the Chief of Staff, Army, in his comments on the Report, stated that although existing guide lines were clear, further delineation of responsibilities for guided missiles might be necessary in the interest of progress.  
(TS-RD) JCS 1620/73, "Annual Report of the Guided Missiles Interdepartmental Operational Requirements Group," 19 May 53, CCS 334 GMC (1-16-45) BP pt 2.  
(TS) JCS 1620/75, Memo by CSUSAF, "Annual Report of the Guided Missiles Interdepartmental Operational Requirements Group," 22 Jun 53, same file, sec 10.  
(TS) JCS 1620/76, Memo by CSUSA, "Annual Report of the Guided Missiles Interdepartmental Operational Requirements Group," 22 Jul 53, same file, sec 11.
- ✓ 3 Jun 53 The JCS informed the Secretary of Defense that "diametric points of view" existed on the question of whether to allow the Army to procure REGULUS guided missiles, and that this divergency of opinion precluded a settlement at either the Service or JCS level. The Army-Navy views on the question, as outlined in the JCS memorandum, were in line with the statement of Army responsibilities made by the Chief of Staff, Army, on 9 November 1951; the Air Force view was in

accordance with the memorandum by the Chief of Staff, Air Force, of 29 October 1951. The JCS recommended that the Secretary of Defense make the decision on Army procurement of REGULUS missiles.

(TS-RD) Dec On JCS 1620/72, "Army Procurement of 'REGULUS' Guided Missiles and Auxiliary Equipments," 3 Jun 53, source of (TS) Memo, Vandenberg for JCS to SecDef, same subj and date. Both in CCS 334 GMC (1-16-45) sec 10.

4 Jun 53

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16 Jun 53

During a discussion of guided missiles at the Armed Forces Policy Council, it was agreed that: (1) no individual missile project holding promise of creating an acceptable new weapon should be abandoned; (2) constant attention should be given to eliminating duplication in the various Service programs; and (3) a continuous effort should be made to select a single missile for production and use by all Services, within each missile type, wherever standardization appeared to be practicable. The Secretary of Defense requested the Secretary of the Air Force to organize a study group to work with Service representatives to prepare an analysis of guided missiles development. The Secretary of the Air Force delegated this task to his Special Assistant for Research and Development, Mr. Trevor Gardner. The Special Study Group on Guided Missiles began meeting late in June.

(S-RD) Off Asst SecDef (R&D), Coordinating Cmte on Guided Missiles, "Report of Special Study Group on Guided Missiles," 25 Jan 54, p. 1 and Supplements B-1 and B-2, OASD (R&E) files.

26 Jun 53

In a memorandum to the Secretary of Defense, the Director of Guided Missiles, OSD, noted that he considered it his duty to advise the Secretary only on research and development and the production of guided missiles and that he had consistently refrained from addressing himself to problems pertaining to Service roles and missions. Accordingly, with reference to the JCS memorandum of 3 June 1953, he thought it proper only to recommend that the Secretary of Defense "see that decisions are made" clarifying the roles



and missions of the Services in relation to guided missiles. Regarding the Army request that it be allowed to purchase REGULUS missiles and equipment, he recommended that it be denied "at this time" and that the Army be limited to participation in and observation of the Navy and Marine REGULUS test program pending clarification of guided missile roles and missions.

(S) Memo, Dir Guided Missiles, OSD, to SecDef, "Army Procurement of REGULUS Guided Missiles and Auxiliary Equipments," 26 Jun 53, App to (TS) JCS 1620/78, Note by Secys, same subj, 19 Aug 53, CCS 334 GMC (1-16-45) sec 11.

30 Jun 53

Under Reorganization Plan No. 6, the Munitions Board, the Research and Development Board, and some other Defense agencies were abolished and the Secretary of Defense was authorized to appoint Assistant Secretaries of Defense to take over their functions. On the same date, Mr. Wilson established the posts of Assistant Secretary of Defense (Research and Development) and Assistant Secretary of Defense (Applications Engineering). He appointed Mr. Frank Newbury ASD (AE) on 18 August and Mr. Donald A. Quarles ASD (R&D) on 1 September. Mr. Newbury's functions included the preparations of policies and procedures in the field of applications engineering relating to the production and maintenance of weapons and equipment. Mr. Quarles' functions included the development of policies and procedures for integrating and correlating the research and development program within the Department of Defense.

(U) Reorganization Plan No. 6 of 1953 (67 Stat. 638), copy filed in CCS 040 (11-2-43) sec 10.

(U) DOD Directive No. 5105.1, "Reorganization of the Office Secretary of Defense," 30 Jun 53, same file, sec 11. (U) DOD Directive No. 5128.7, "Responsibilities of the Assistant Secretary of Defense (Research and Development)," 12 Nov 53, same file, sec 14. (U) DOD Directive No. 5129.1, "Responsibilities of the Assistant Secretary of Defense (Applications Engineering)," 8 Dec 53, same file and sec. (U) DOD Press Release No. 909-57, "Fact Sheet," 14 Sep 57, OPI, DOD files.

18 Sep 53

Commenting on the memorandum of 26 June 1953 by the Director of Guided Missiles, OSD, the JCS informed the Secretary of Defense that a JCS review and analysis of "concepts, strategy, and implementing programs" was under way and that they intended to make the necessary clarifying decisions on Service employment of guided missiles. They also stated their acceptance, "without prejudice to any ultimate decision" on roles and missions, of the 26 June recommendation by the Director of Guided Missiles that the Army request for REGULUS missiles and equipment be denied.

(TS) Dec On JCS 1620/79, "Army Procurement of 'REGULUS' Guided Missiles and Auxiliary Equipment," 18 Sep 53, source of (TS) Memo, CJCS to SecDef, same subj and date. Both in CCS 334 GMC (1-16-45) sec 11.

~~TOP SECRET~~  
/ 24 Sep 53 [

✓ Oct 53 [ ]

A major breakthrough that greatly increased the feasibility of ICBM development was noted by Dr. John von Neumann and the USAF Scientific Advisory Board, who reported that thermonuclear weapons of small weights and sizes could be produced.

(S) OSD, "Chronology of Significant Events in the U.S. Long Range Ballistic Missile Program," OCJCS files.

1 Oct 53

The Secretary of Defense promulgated a statement of the functions of the armed forces and the JCS. Among other things, the Secretary declared that: "Technological developments, variations in the availability of manpower and natural resources, changing economic conditions, and changes in the world politico-military situation may dictate the desirability of changes in the present assignment of specific functions and responsibilities to the individual services. This determination and the initiation of implementing action are the responsibility of the Secretary of Defense."

(U) "Functions of the Armed Forces and the Joint Chiefs of Staff," 1 Oct 53, Encl "A" to (U) JCS 1478/48, Note by Secys, same subj, 21 Jan 54, CCS 370 (8-19-45) sec 44.

30 Oct 53

The JCS agreed to accept a report by the JIC on the "Magnitude and Imminence of Soviet Air Threat to the United States - 1957." In this report the JIC stated, with reference to guided missiles, that: (1) there was no evidence of Soviet guided missile capability beyond the stage of the German V-1 and V-2; (2) it was known, however, that the USSR had been conducting an intensive guided missile research and development program;

(3) it was considered that the USSR would not have available by 1957 a guided missile that could endanger the U.S. if launched from Soviet-controlled territory; and (4) while there was no positive evidence of Soviet experimentation in the field of submarine-launched guided missiles, it was estimated that by 1957 the Soviets could equip a limited number of submarines to launch V-1 type missiles with a probable range of 200, and a maximum range of 500, nautical miles.

(TS) Dec On JCS 1924/76, "Magnitude and Imminence of Soviet Air Threat to the United States - 1957," 30 Oct 53, CCS 350.09 USSR (12-19-49) sec 5.

12 Nov 53

The Secretary of Defense cancelled the DOD memorandum of 24 October 1950 that had established the position of Director of Guided Missiles, OSD. Mr. K. T. Keller, who had held that post, had recommended to the President and the Secretary of Defense in June that it be abolished in view of the advanced state of guided missile development. The Secretary also cancelled related memoranda prescribing procedures for obtaining release of procurement funds contained in Service budgets in the guided missile field. He authorized the Service Secretaries to "approve the guided missile programs of their respective Departments within the framework of and consistent with established policies and procedure for interservice coordination, apportionment and control of funds, and production scheduling," such approval to "constitute the necessary authority of their Departments to obligate funds and proceed with the implementation of the programs."

(U) Memo, SecDef to SecArmy, SecNav, and SecAF, "Administration of Guided Missile Programs," 12 Nov 53, Encl "C" to (C) JCS 1620/82, "Increase in Monthly Production Rate of the 'NIKE' Surface-to-Air Guided Missile," 15 Dec 53, CCS 334 GMC (1-16-45) sec 11.  
(U) DOD Press Release, 18 Sep 53.

6 Jan 54 The Assistant Secretary of Defense (R&D) established the Research and Development Coordinating Committee on Guided Missiles, which superseded the Committee on Guided Missiles Research and Development Board, established 28 Jan 53.

(U) DOD Directive No. 5128.15, "Coordination of Research and Development of Guided Missiles," 6 Jan 54, CCS 334 GMC (1-16-45) sec 11.

25 Jan 54 In a letter to the Assistant Secretary of Defense (R&D), Mr. K. T. Keller, former Director of Guided Missiles, OSD, expressed his approval of the way in which the ballistic missile program was being conducted. He urged that more than one organization be used for the work, "not from the standpoint of getting competition but getting it opened up for a cooperative endeavor of the best scientists and people you can get into it." He further recommended that, "at this stage, this ballistic job should be headed up with people who are primarily interested in it from the standpoint of developing the system rather than getting some hardware to make in a factory."

(S) OSD, "Chronology of Significant Events in the U. S. Long Range Ballistic Missile Program," OCJCS files

✓ 25 Jan 54 The Special Study Group on Guided Missiles, headed by Trevor Gardner, presented its report on the development of guided missiles. It covered all projects except long-range strategic missiles, which were reviewed concurrently by a separate civilian study group, the Strategic Missiles Evaluation Committee (see item of 10 February 1954). The Special Study Group reviewed in great detail and generally approved all missile programs (except long-range missiles) then under way, and offered its unanimous belief that these programs would insure fulfillment of the three aims agreed upon by the Armed Forces Policy Council on 16 June 53. The Group also: (1) recommended that the CEP, payload weight, and payload diameter requisites of missiles for which nuclear warheads were planned be re-examined in the light of the higher yield nuclear weapons that would be available in the time period in which the missiles might become operational; (2) observed that studies were under way or already completed to improve the reliability and "producibility" of guided missiles, but suggested that Service interchange of information might materially improve matters in this "most pressing technical problem area"; (3) urged technical integration of surface-to-air missile systems with other elements of the Continental Air Defense; and (4) emphasized the major areas where lack of program activity was causing serious concern: (a) the anti-missile missile, (b) missile countermeasures and effective counter-counter-measures, (c) atomic air-to-air missiles, and (d) low-altitude air-defense.

(S-RD) Off Asst SecDef (R&D), Coordinating Cmte on Guided Missiles, "Report of Special Study Group on Guided Missiles," 25 Jan 54, OASD (R&E) files.

10 Feb 54

The Strategic Missiles Evaluation Committee, which had been working concurrently with the Special Study Group on Guided Missiles (see second item of 25 January 1954), presented its report on intercontinental missiles and recommended improvements in the SNARK, NAVAHO, and ATLAS programs, important aspects of which were viewed as unsatisfactory. The Committee emphasized particularly that recent progress toward larger-yield nuclear warheads had rendered "thoroughly out-of-date" the CEP specifications of all three missile systems. For each missile the report recommended that the current 1500-foot CEP be extended to two or three miles. The Committee also called for careful study of both missile design and the layout of base facilities with a view to providing an optimum combination of low vulnerability, high firepower, and short starting time.

The report recommended a major redirection of the SNARK program in order to develop a simplified, early-operational missile. The simplified SNARKs could be used as reconnaissance vehicles, area decoys, local decoy and saturation missiles, dispensers of chaff ahead of and around a manned bomber, carriers of automatic ECM, and carriers of bombs, radio-commanded by a mother bomber that could stay 100 to 200 miles away from the local target defenses. The Committee noted that such use would extend and prolong the usefulness of SAC manned bombers and would also achieve an operational capability within four or five years, unattainable without such a simplified program.

For various reasons the Committee believed the NAVAHO should be regarded as a complementary weapon to the ATLAS, and not as an interim approach. While believing that the time had not come for acceleration of the entire NAVAHO program, the Committee recommended intensified effort in certain of its aspects. In particular the Committee favored emphasizing the development of a medium-range (about 3500 mile) NAVAHO, remarking that insistence on 5500 miles as the operational range might delay the availability of a highly valuable lesser-range missile.

With regard to the ATLAS, the only ballistic missile of the three discussed, the Committee stated that a radical reorganization and redirection of the ICBM program was required if a militarily useful vehicle was to be had within a reasonable time. The ICBM design must be based on a new and comprehensive weapons system study, together with an exploration of alternate approaches to several critical phases of the problem. Further, certain outdated military specifications must be reviewed in the light of current warhead technology. To supervise these basic studies and to devise and administer a redirected, expanded, and accelerated ICBM program, the Committee urged the appointment of a new ICBM development-management agency, manned by an unusually competent group of scientists, engineers, and executives, "drafted," if necessary, from civilian life. If unhampered by "excessive detailed regulation by existing government agencies" and adequately supported with funds and project priorities, this new agency should be able to achieve the beginnings of an operational ICBM capability within six to eight years.

The Committee estimated that if its recommendations were followed, the date of first production and of production in operational numbers for each missile system would be: Simplified SNARK, 1957 and 1958-59; 3500-mile NAVAHO, 1958-59 and 1960-61; 5500-mile NAVAHO, 1960-61 and 1962-63; and ICEM, 1960-61 and 1962-63.

(TS) "Recommendations of the Strategic Missiles Evaluation Committee," 10 Feb 1954, encl to (TS) Memo, Asst SecDef (R&D) to CJCS, "Report entitled 'Recommendations of the Strategic Missiles Evaluation Committee' RD-CGM 200/8," 10 Mar 1954, CJCS 471 (Guided Missiles) 1954, CCJCS files.

✓ 16 Feb 54

In a memorandum to the Assistant Secretary of Defense (R&D), Mr. Trevor Gardner raised the question of certain "problem areas" in the missiles field that had not been considered by the OSD Special Study Group on Guided Missiles or the Strategic Missiles Evaluation Committee. Mr. Gardner: (1) noted that the question of roles and missions was "an extremely important and still unresolved problem," with a major bearing on the missiles programs; (2) recommended a careful study, to be followed by the necessary revisions, of missile production and procurement quantities; (3) suggested an exploration of "alternate methods" for accomplishing the purposes for which the various missiles were designed; and (4) stated that an operations analysis study of ground-to-ground missiles, comparing them with catapult-launched disposable manned aircraft, atomic cannon, and various rocket weapons, might provide "a substantially new approach" to the ground-to-ground missile problem. Further, Mr. Gardner noted that the members of the Strategic Missiles Evaluation Committee agreed that the quality of U.S. technical intelligence concerning the Soviet capability was open to substantial improvement. He cited four "substantially different" intelligence estimates that gave the overall impression that the USSR was significantly ahead of the U.S. in the field of strategic missiles, and called for an intensive interpretation of available intelligence data on other missile types in order to obtain more accurate technical estimates than were then available.

On 16 February, the Assistant Secretary of Defense (R&D) forwarded Mr. Gardner's memorandum to the Chairman, JCS, with the suggestion that WSEG initiate an operational analysis similar to the one suggested by Mr. Gardner and that the Assistant Secretary present to the Armed Forces Policy Council a specific proposal for a "coordinated attack" on the problem of strategic intelligence. On 24 February Admiral Radford stated that he agreed with these suggestions and also noted that the JCS recognized the importance of the roles and missions question and were in the process of resolving it.

(TS) JCS 1620/85, Note by Secys, "Department of Defense Study Group on Guided Missiles," 5 Mar 54, CCS 334 GMC (1-16-45) sec 11.

19 Feb 54

The Assistant Secretary of Defense (R&D) agreed to the broad reorientation of the ICBM program proposed by the Strategic Missiles Evaluation Committee (10 February 54), and gave the Air Force responsibility for evolving a definitive plan. The Air Force established the Gillett Group, which studied existing regulations and procedures and recommended the necessary reorganization to support effectively an accelerated ICBM program. On 23 March the Chief of Staff, Air Force, approved a decision of the Air Force Council to reorient and accelerate the ICBM program.

(S) OSD, "Chronology of Significant Events in the U.S. Long Range Ballistic Missile Program," OCJCS files.

Mar -  
May 54

Tests at Operation CASTLE in the Pacific confirmed the feasibility of developing small, lightweight, high yield thermonuclear weapons.

(S) OSD, "Chronology of Significant Events in the U.S. Long Range Ballistic Missile Program," OCJCS files.

2 Apr 54

The Joint Chiefs of Staff established a military requirement for the development of a high velocity, air-to-air rocket with a nuclear warhead for use by interceptor aircraft. The AEC was requested to undertake the warhead development in coordination with the Air Force.

(S-RD) Dec On JCS 2012/44, "Requirement for Development of a High Velocity Air-to-Air Rocket with Nuclear Warhead," 2 Apr 54, source of (S-RD) SM-287-54, same subj and date; both in CCS 471.6 (5-31-44) sec 6.

16 Apr 54

The Assistant Secretary of Defense (R&D) informed the Chairman, JCS, it was his feeling that better coordination was needed between his office and the JCS in order to clarify roles and missions of the Services as they related to research and development projects. Pointing out that inadequate coordination of such matters was resulting in projects for missiles of essentially the same tactical requirements under different Services, he suggested that where necessary the mission problem be settled by consultation between his office and the JCS before the initiation of research and development projects that might involve duplication.

(S) JCS 1620/86, Memo, ASD(R&D) to CJCS "Research and Development vs. Roles and Missions," 16 Apr 54. (C) N/H of JCS 1620/86, "Corrigendum," 27 Jul 54. Both in CCS 334 GMC (1-16-45) sec 11.

25 Jun 54

The Chairman of the JCS replied to the memorandum of the Assistant Secretary of Defense (R&D) of 16 April 54, concerning roles and missions of the Services in their relation to research and development projects. The JCS agreed that mission responsibilities should be settled in the manner suggested by the Assistant Secretary and would be glad to have any difficulties

on that subject referred to them for their consideration and advice.

(C) Dec on JCS 1620/89, "Research and Development vs Roles and Missions," 10 Jun 54, source of (C) Memo, CJCS to SecDef, same subj, 25 Jun 54. Both in CCS 334 GMC (1-16-45) sec 12.

28 Jun 54

The JCS appointed an ad hoc committee, consisting of a Major General each from the Air Force and the Army and a Rear Admiral from the Navy, "to develop for consideration by the Joint Chiefs of Staff a more definitive assignment of responsibilities for guided missiles . . . within presently assigned Service functions." The basic premise for the existing assignment of responsibility was that "Service responsibility for guided missile development, procurement, and employment should be based on the assigned functions and missions of that Service." Overlapping areas of responsibility between Service assignments based on this premise showed that the consideration of additional factors would be necessary to clarify the assignments. The ad hoc committee was to develop, for consideration by the JCS, Service assignments clarified in this way.

(S) JCS 1620/90 Note by Secys, "Terms of Reference for the Assignment of Responsibility for Guided Missiles," 28 Jun 54, source of (S) SM-593-54, SJCS to Maj Gen. Samuel R. Brentnall, USAF, et al., same subj and date. (TS) SM-600-54, SJCS to same, "Assignment of Responsibility for Guided Missiles," 30 Jun 54. All in CCS 334 GMC (1-16-45) sec 12.

20 - 21  
Jul 57

According to a chronology prepared in the Office of the Secretary of Defense, the Scientific Advisory Committee of the Air Force held its first meeting on the ICBM. The Committee recommended an allocation of systems responsibility for the ICBM, an experimental re-entry program, and "an additional propulsion contractor and development facilities."

(S) OSD "Chronology of Significant Events in the U.S. Long Range Ballistic Missile Program,"

✓ 12 Aug 54

The Assistant Secretary of Defense (R&D), in a memorandum to the Chairman, JCS, said that the US should designate a single point of contact for exchange of missile information with the UK, which, as a result of discussions with the US, was going to undertake high priority development of an IRBM. Noting that the Air Force had been performing this function, he stated nevertheless that the situation vis-a-vis the UK would be clarified if the JCS would "define the boundary between the Military Departments in missiles of the Corporal, Redstone, Snark, Navaho, and Atlas varieties." He especially urged assignment of the IRBM to one service.

(S) Memo, ASD (R&D) sgd Quarles to Adm Radford, "Roles and Missions--Ballistic Missiles," 12 Aug 54, Encl to (S) JCS 1620/93, Note by Secys, same subj, 23 Aug 54, CCS 334 GMC (1-16-45) sec 12.



25 Aug 54

The ad hoc committee appointed by the JCS on 28 June 54 to develop a more definitive assignment of Service responsibilities for guided missiles submitted a report containing a number of divergent views. The divergent views were resolved by General Charles L. Bolte, USA, and General Thomas D. White, USAF, who submitted their revision of the committee's report on 30 August 1954 for the consideration of the JCS. (See item for 9 September 1954.)

(S) JCS 1620/94, Report by the Ad Hoc Committee . . . "Assignment of Responsibilities for Guided Missiles," 25 Aug 54. (S) JCS 1620/95, Note by Secys, same subj, 30 Aug 54. Both in CCS 334 GMC (1-16-45) sec 12.

9 Sep 54:

The JCS informed the Secretary of Defense that they had agreed on an assignment of Service responsibilities for guided missiles better suited than the existing assignment for integrating guided missiles into the combat forces and "designed to avoid undesirable duplication in research and development." They recommended that this new assignment of responsibilities be used by the Department of Defense as a basis for coordinating its guided missile program. According to the agreement, which was subject to periodic review, the Air Force and the Navy would develop, procure, and employ such guided missile systems of the air-to-air and air-to-surface categories as were required by their assigned functions. The Army, Navy, and Air Force would develop, procure, and employ such surface-to-surface missile systems as were required by their assigned functions; but those of the Army, though having no arbitrary limit on their range, would be designed for use against "tactical targets within the zone of Army combat operations that are the responsibility of the ground force commander, as differentiated from strategic targets," while the Air Force was specifically given responsibility for developing, procuring, and employing "very long-range surface-to-surface guided missile systems of the inter-continental type." The Army, Navy, and Air Force would also develop, procure, and employ such surface-to-air guided missile systems as were required by their assigned functions. However, the Army's surface-to-air missiles would be designed for use against enemy aircraft and missiles within a horizontal range of approximately 50 nautical miles, at altitudes expected for such targets; in general, they would be designed and located for optimum defense of specified geographical areas, cities, or vital installations. The Air Force's surface-to-air guided missiles would be designed for use against enemy aircraft and missiles beyond a horizontal range of approximately 50 nautical miles, at altitudes expected for such targets, and in general would be employed with ground equipment designed and located for blanket defense over wide areas to intercept enemy aircraft and missiles en route to attack important areas. The JCS considered that the use of

new or improved guided missiles was not restricted because of the interest or responsibility of a particular Service in the development of such weapons; developed missiles were available to any Service (including the US Marine Corps) if required in the discharge of its assigned functions. The initial development of any requirements for new missiles would be accomplished by the Service requiring them, subject to the approval of the JCS, but a Service charged with the primary responsibility for the development of a missile should invite the participation of any other Service having an operational interest. This assignment of Service responsibilities for guided missiles superseded that announced by the JCS on 17 November 1949, as amended by their memorandum of 15 March 50.

(S) Dec On JCS 1620/95, "Assignment of Responsibilities for Guided Missiles," 9 Sep 54, source of (S) Memo, CJCS to SecDef, same subj and date. Both in CCS GMC (1-16-45) sec 12.

9 Sep 54

The Assistant Secretary of Defense (R&D) informed the JCS that the Science Advisory Committee of the Office of Defense Mobilization, at the request of the President, had set up a Technological Capabilities Committee (later Panel) under the chairmanship of James R. Killian, Jr., President of the Massachusetts Institute of Technology. The task of the committee was (1) to assess the impact of scientific research and technological developments on the ability of the US to guard against and to resist surprise attack, and (2) to suggest ways in which the resources of science and technology might further enhance the defense capabilities of the US against surprise attack.

(TS) Memo w/atchmts, Asst SecDef (R&D) to JCS et al., "Science Advisory Committee Study," 9 Sep 54, CCS 040 (11-2-43) sec 15.

23 Sep 54

The Secretary of Defense directed the Chairman, JCS, to participate, with three Assistant Secretaries of Defense, in the preparation of a report on the guided missile program, to be submitted to the Senate Committee on Appropriations by 15 January 1955. The Senate Committee in requesting the report, had commented that testimony at its hearings on the Department of Defense Appropriations Bill, 1955, had focused its attention on "what appears to be a disorganized situation relating to the guided missile program" and that almost all Service witnesses had praised the missiles of their own particular Service while tending to disparage those of the other Services. The Secretary of Defense directed that the report should review the missile systems according to general types of targets to be destroyed and the basic conditions of launching, without regard to existing spheres of responsibility or the classification of projects. The data and recommendations of the report should be concerned with such matters as total long-range cost of missiles, their effectiveness in terms of cost for results achieved, standardization, general program management, any special requirements of

specific missiles or groups of missiles, and "the desirability of continuing alternate approaches to the same general objectives."

(U) Memo, SecDef to CJCS et al., "Report on Guided Missiles," 23 Sep 54, Encl to (U) JCS 1620/97, Note by Secys, same subj, 28 Sep 54, CCS 334 GMC (1-16-45) sec 13.

✓ 28 Sep 54

The JCS forwarded to the Chairman, Net Evaluation Subcommittee, National Security Council, separate estimates by the Army, Navy, and Air Force on the relative emphasis the USSR would give by 1957 to various methods of attack, including guided missiles, on US installations overseas. In the Army's opinion, the Soviets would place primary emphasis on weapons other than guided missiles for delivery of atomic warheads outside the combat zone but would probably make considerable use of short-range missiles against tactical targets in Europe. The Navy estimated that the principal Soviet naval effort would be made with submarines using mines or torpedoes, though it believed (with the Army and Air Force concurring) that submarine-launched guided missiles would probably be used also against various targets. The Air Force estimated that by mid-1957 the Soviets would be capable of developing numerous types of guided missiles and of using atomic warheads on some of them, but considered that the principal threat to USAF overseas installations would be surprise attack by Soviet light or medium jet bombers.

(TS) Dec On JCS 1899/153, "Estimates required for the National Security Council Subcommittee on Soviet Selection of Methods and Relative Emphasis of Attack Against Key Overseas Installations," 28 Sep 54, source of (TS) SM-858-54, SJCS to Chm Net Cap Eval Scmte NSC, "Information and Estimates Required for the National Security Council Net Capabilities Evaluation Subcommittee," 28 Sep 54. Both in CCS 381 US (5-23-46) sec 48.

✓ 5 Oct 54

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22 Oct 54

2 Nov 54

In a memorandum to the Chairman of the Net Capabilities Evaluation Subcommittee of the NSC, the JCS forwarded Service comments on the Subcommittee's estimate of the Soviet strategy and plan of attack on the continental U.S. and key U.S. installations overseas, assuming war occurred in mid-1957. Prepared with the cooperation of the Services and the JCS, the study indicated that the USSR would place almost exclusive reliance on aircraft for the delivery of nuclear weapons. It was assumed that the following targets were to be hit by submarine-launched guided missiles: San Diego, Seattle, Bremerton, Hawaii, the Azores, the Panama Canal, and Guam. These assumptions were not questioned in the Service comments.

(TS) Dec On JCS 1899/162, "Information and Estimates Required for the National Security Council Net Capabilities Evaluation Subcommittee," 2 Nov 1954, source of (TS) SM-956-54, SJCS to Chm Net Cap Eval Scmte NSC, same subj and date. (TS) Enclosures to SPGM-83-54, "Requirements for NSC Net Capabilities Evaluation Subcommittee," 1 Oct 1954. All in CCS 381 US (5-23-46) secs 50, 51, and 48 resp.

13 Nov 54

The Acting Secretary of Defense issued a memorandum approving the JCS assignment of Service responsibilities for guided missiles as set forth in a memorandum to the Secretary of Defense on 9 September 1954.

(S) N/H JCS 1620/95, 18 Nov 1954, CCS 334 GMC (1-16-45) sec 12.

10 Dec 54

Referring to a memorandum of 12 August 1954 from the Assistant Secretary of Defense (R&D) to the Chairman, JCS, the JCS informed the Secretary of Defense that they considered: (1) that the Air Force should be the point of contact for exchange of information with the UK on the IRBM, and (2) that guidance on the assignment of responsibility for missiles of the CORPORAL, REDSTONE, SNARK, NAVAHO and ATLAS varieties was contained in their memorandum of 9 September 1954 on "Assignment of Responsibilities for Guided Missiles."

(S) Dec On JCS 1620/101, Rpt by GMIORG, "Roles and Missions--Ballistic Missiles," 10 Dec 1954, source of (S) Memo, CJCS to SecDef, same subj, 10 Dec 1954, CCS 334 GMC (1-16-45) sec 13.

4 Jan 55 According to a chronology prepared in the Office of the Secretary of Defense, the ICBM Scientific Advisory Committee to the Secretary of the Air Force recommended that, to avoid interference with the ICBM program, the Air Force should consider integrating an IRBM program, if one should be undertaken, into the ICBM program.

(S) OSD, "Chronology of Significant Events in the U.S. Long Range Ballistic Missile Program," OJCS files.

2 Feb 55 The Chairman, JCS, assured a House Appropriations Subcommittee that the guided missiles program was "receiving all the attention that we can give it." He added, "There is very little more that we can do to improve our program, and not waste money."

(U) US Cong, HR, "Department of Defense Appropriations for 1956," Hrgs before Subcmte of Cmte on Appropriations, p. 151.

✓ 9-10 Feb 55 In classified testimony before the House Appropriations Committee, the Air Force Chief of Staff, General Twining, said it was likely that the Soviets already had a missile with a range of about 350 miles, carrying a warhead of 2,000 pounds. It was estimated that by 1957 they could produce a missile with a range of more than 900 miles, carrying a warhead of about 3,000 pounds. Possibly by 1960 and more probably by 1963, he said, the Soviets could have an ICBM with sufficient range to destroy targets in the U.S.

(S) Proposed Remarks for Gen Twining before Committee on Appropriations, HR, (dlvrd 9-10 Feb 55), folder of (S) Twining speeches, Dec 54-Feb 55, OJCS files.

✓ 14 Feb 55 In its report to the President, titled "Meeting the Threat of Surprise Attack" (Killian Report), the Technological Capabilities Panel surveyed the entire range of U.S. military weapons and programs. Among its recommendations were the following: (1) The National Security Council should formally recognize the Air Force program for developing an ICBM (with a maximum range of 5500 nautical miles and a megaton warhead) as a nationally supported effort of the highest priority. (2) An IRBM (with a range of 1500 nautical miles and a megaton warhead) should be developed, consideration being given to both land-based and ship-based types. (3) Nuclear warheads should be adopted as the major armament for U.S. air-defense forces, and the development, procurement, and deployment of sufficient weapons to provide a high kill capability should rapidly follow. (4) An intensified effort should be made to create effective defenses at low and very high altitudes, accompanied by a broadened attack on the basic technical problems involved. Important elements of this program included, among others: (a) further development of air-to-air and ground-to-air nuclear weapons; (b) drastic revision of the function and traditional form of interceptor aircraft to fit them as launching platforms for guided

missiles; (c) a strong, balanced program of theoretical and experimental investigation of the basic problems in intercepting and destroying hostile ICBMs.

(TS-RD) Report of the Technological Capabilities Panel, ODM, to Pres, "Meeting the Threat of Surprise Attack," 14 Feb 55, JCS C&E Sect files.

✓ 16 Mar 55

The Assistant Secretary of Defense (R&D), in a memorandum to the Chairman, JCS, stated that he had recently proposed the transfer from the Army to the Air Force of "primary responsibility for financing and general administration of the program for developing a land-based TALOS system," in accordance with the assignment of Service responsibilities for guided missiles announced in the JCS memorandum of 9 September 1954. He had learned, however, that the Army opposed the transfer and felt that a review or clarification of the range limitation applying to the Army's anti-aircraft mission might be required at this time. Therefore, he was withholding final action on the transfer pending information from the JCS on whether existing roles and missions responsibilities were being revised in any way that would affect this case.

(S) Memo, ASD(R&D) to CJCS, "Proposed Transfer of Responsibility for Development of a Land-Based TALOS System," 16 Mar 55, Encl to (S) JCS 1620/105, Note by Secys, same subj, 22 Mar 55, CCS 334 GMC (1-16-45) sec 13.

17 Mar 55

✓ 5-6 Apr 55

Secretary of the Air Force Talbott and Air Force Chief of Staff Twining, in public statements before a Senate Appropriations Subcommittee, warned that the Soviets had been making progress on an ICBM, and declared that the U.S. must be first to develop this weapon. "I believe that development of this ballistic missile is probably the most critical problem that faces our country today," Secretary Talbott said. Asked if the Air Force had sufficient funds for missile research, General Twining said that it did.

(U) US Cong, Sen, "Department of Defense Appropriations for 1956," Hrgs before Subcmte of Cmte on Appropriations, 84:1, pp. 140, 166, 171.

13 Apr 55

The JCS replied to the memorandum of the Assistant Secretary of Defense (R&D), dated 16 March 1955, regarding his proposal to transfer responsibility for developing the land-based TALOS system from the Army to the Air Force. The Chairman, JCS, the Chief of Naval Operations, and the Chief of Staff of the Air Force reaffirmed the assignment of responsibilities for guided missiles defined in the JCS memorandum of 9 September 1954 to the Secretary of Defense and

stated that the guidance set forth therein fully supported the proposed transfer. On the other hand, the Chief of Staff of the Army objected to the proposed transfer, and recommended that the memorandum of 9 September 1954 be amended by deletion of the passages relating to surface-to-air missiles that limited the horizontal range of the Army's anti-aircraft mission to approximately 50 nautical miles and defined missions beyond that range as Air Force interception missions.

(S) JCS 1620/106, Note by Secys, "Proposed Transfer of Responsibility for Developing a Land-Based TALOS System," 13 Apr 55, source of (S) Memo, CJCS to SecDef, same subj and date. Both in CCS 334 GMC (1-16-45) sec 13.

18 Apr 55

The JCS forwarded to the Secretary of Defense their comments on the report of the Technological Capabilities Panel (see item for 14 February 1955), concurring, in general, in the recommendations relating to guided missiles (see item for 2 June 1955).

(TS) Dec On JCS 1899/200, "Technological Capabilities Panel Report," 18 Apr 55, source of (TS) Memo, CJCS to SecDef, same subj and date, CCS 040 (11-2-43) sec 17 pt 1.

✓ 28 Apr 55

The JCS informed the Secretary of Defense of the recommendation of the Chief of Staff, Army, that an atomic capability for the NIKE I weapons system be achieved at the "earliest possible date" in view of the need for an increased air defense effectiveness to counter the growing Soviet capability. The Joint Chiefs also noted, however, that the Chief of Naval Operations and Chief of Staff, Air Force, did not agree with this recommendation. The CNO and CSUSAF held that the earliest attainable warhead for the NIKE I would have to utilize gun-type nuclear components. The gun-type warhead, they stated, would be relatively inefficient and would reduce the atomic stockpile. Moreover, the NIKE I with an atomic warhead would compete with other, more efficient missiles (DING DONG, NIKE B, and TALOS-W) for critical material. Nevertheless, the CNO and CSUSAF agreed that a program for the development of a small-diameter implosion-type warhead, compatible with air-to-air and surface-to-air weapons (including NIKE I) should be pursued, with the decision on which weapons would use this warhead to be made later.

On 29 June the Secretary of Defense informed the JCS that, in line with the recommendations of the Technical Advisory Panels on Atomic Energy and Aeronautics and the advice of the Assistant Secretary of Defense (R&D), he had concluded that the "earliest practicable" atomic capability for the NIKE system could be achieved through the priority development of the implosion-type warhead for NIKE B, and that the feasibility of developing a warhead more efficient than a gun-type for NIKE I should be studied for this and other applications.

(TS) Dec On JCS 2012/62, "Requirement for an Atomic Capability for the NIKE I Weapons System," 28 Apr 55, source of (TS) Memo, Ridgway for JCS to SecDef, same subj and date; (TS) N/H of JCS 2012/62, 26 Jul 55. All in CCS 471.6 (5-31-44) sec 7.

~~TOP SECRET~~  
12 May 55

In a speech before the Industrial College of the Armed Forces General Twining warned against underestimating Soviet technology. In the question period, however, when asked to comment on the progress of the U.S. and the USSR on the ICBM, he stated: "I think that the United States is well in the lead. That would be my diagnosis. We have to be. Certainly we have the best brains in this country working on that program. We must get that weapon first."

(S) Address by Gen Twining, 12 May 55, Industrial College of the Armed Forces Pub No. L55-140, in folder of (S) Twining statements, Mar-May 55, OCJCS files.

20 May 55

In a memorandum to the Secretary of Defense the Secretary of the Army stated the opinion that if the Air Force were given responsibility for development of the land-based TALOS system it would constitute an invasion of the mission of the Army.

(TS-RD) Rpt by Surveys and Investigations Staff, U.S. House of Rep, "A Report to the Committee on Appropriations, U. S. House of Representatives, on Guided Missiles, Department of Defense," Jan 57, p. 81, CCS 334 GMC (1-16-45) sec 17, BP pt 6.

✓ 24 May 55

An Air Force document, prepared for use by Gen Twining and Secretary Talbott in answering questions anticipated at a Congressional hearing on this date, said: (1) It was estimated that the Soviets could have by 1960, at the earliest, a ballistic missile with a range of 5,500 nautical miles and carrying a 3,000-pound warhead. It was considered that a more probable date of availability was about 1963. (2) There was no evidence that any ballistic missiles were available to the USSR for operational use. In view of development of the Army's REDSTONE, it was believed that the U.S. had a capability equal to or better than that of the Soviets in the field of ballistic missiles with a range of 100-500 miles. (3) It was believed that it would be 1957, and more probably 1959, before the USSR would have available ballistic missiles with a range of 1,300 nautical miles. It was considered that the U.S. was not behind the USSR in development of missiles of intermediate range. (4) The Air Force had given the ICBM program the highest possible priority. (5) The ICBM program had not encountered any major problems of procurement, nor was time being lost as a result of difficulties in acquiring facilities. (6) There was no way in which Congress could help speed development of the ICBM. (7) The Air Force did not favor issuance of a special Presidential directive assigning the ICBM a unique priority among national defense programs.

(TS) Tabs A-23 through A-29, filed w/(S-RD) Ltr, Sen Jackson to SecAF, 20 May 55, in folder of (TS) Statements by Gen Twining, 1954-56, OCJCS files.

2 Jun 55

The Department of Defense forwarded to the National Security Council its comments on the report of the Technological Capabilities Panel (see item for 14 February 1955). Stating the concurrence of both the Secretary of Defense and the JCS in the Panel's



recommendation that the ICBM development be made a nationally supported effort of the highest priority, the Department pointed out that that program had been greatly accelerated in the past year, with an increase in its planned funds for FY 1955 from \$32 million to \$180 million. The JCS and the Secretary also concurred in the Panel's recommendation that a 1500-mile IREB be developed, with consideration to both land-basing and ship-basing; however, it pointed out that a decision whether or not to undertake a separate U.S. program would have to await the outcome of talks then in progress with a view to a collaborative US-UK IRBM program. Further, the JCS and the Secretary concurred in the Panel's recommendation that nuclear warheads be adopted as the major armament for U.S. air defense forces, and in the recommendation that an intensified effort be made to create effective defenses at low and very high altitudes. The Secretary agreed that the design of interceptor aircraft would have to change as speed and maneuverability were transferred from the aircraft to the air-to-air missile launched by it, but observed that the existing promise of performance of air-to-air missiles made capability for high-altitude performance in interceptor aircraft greatly desirable for the next five years. The Secretary also concurred in the recommendation that theoretical and experimental investigations should be conducted into the basic problems involved in the interception and destruction of hostile ICBMs. The formation of a full-time technical group to study the whole question, as recommended by the Panel, was under consideration.

(TS) "Department of Defense Statement in Regard to the Report of the Technological Capabilities Panel," 1 Jun 55, w/atcd memo of 3 Jun 57 fwdg a copy to Dir JS and stating date of submission to NSC, CCS 040 (11-2-43) sec 17.

✓ 7 Jun 55

The Secretary of Defense issued a memorandum transferring primary responsibility for financing and general administration of the program for developing a land-based TALOS system from the Army to the Air Force. This transfer did not affect the existing responsibility of the Navy for technical development of the land-based TALOS system. The Assistant Secretary of Defense (R&D) was to review the project at discretionary intervals and report, with appropriate recommendations, any significant changes in the premises on which this decision was made.

(C) N/H of JCS 1620/106, 9 Jun 55, CCS 334 GMC (1-16-45) sec 13.

✓ 16-17 Jun 55

The ICBM Scientific Advisory Committee to the Secretary of the Air Force (1) recommended to the Secretary that the ICBM program be exempt from the national industrial-dispersal policy because it was interfering with the program, (2) expressed concern that a satellite program would interfere with the earliest possible attainment of an ICBM operational capability, (3) agreed that a multiple approach in the ICBM program was necessary,

and (4) agreed on the need for "an additional guidance contractor."

(S) OSD, "Chronology of Significant Events in the U.S. Long Range Ballistic Missile Program," OCJCS files.

24 Jun 55 The Office of the Assistant Secretary of Defense (AE) produced a document titled "Review of Guided Missile Program," which included 35 recommendations for improvement of the program. (See item of 25 January 1956 for comments by DOD agencies on the more important recommendations.)

(S) OASD(AE), "Review of Guided Missile Program," 24 Jun 55, OCJCS files.

16 Jul 55 Senator Henry M. Jackson, Chairman of the Military Applications Subcommittee of the Joint Congressional Committee on Atomic Energy, said that development of an intercontinental missile should be placed on a "crash basis," similar to the Manhattan Project of World War II. Otherwise, he said, the USSR "stands a good chance of developing one before we do."

(U) New York Times, 17 Jun 55, 29:1.

28 Jul 55

✓ 4 Aug 55

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15 Aug 55

The Guided Missiles Report Committee sent a memorandum to the Secretary of Defense interpreting its assignment (see item 23 September 1954) as consisting of two parts: (1) the preparation of a report responsive to the request of the Senate Committee on Appropriations as made in that Committee's report on the Department of Defense appropriations bill for 1955, and (2) an analysis of and report on the guided missiles program and its management, for the use of the Secretary of Defense. The Guided Missiles Report Committee considered that the first part of its assignment had been completed, the Secretary having forwarded the Committee's report to the Chairman of the Senate Committee on Appropriations on 16 February 1955. As to the second part, the Committee observed that the existing management organization and procedures for the guided missile program, including the Joint (AE-RD) Coordinating Committee on Guided Missiles, had been established so recently that further time would be necessary to "test fully" the effectiveness of the new structure. For this reason, and because progress was being made, the Committee did not recommend any further changes "at this time," but suggested that certain staff studies prepared within the offices of the respective Committee members would be useful to agencies of the Office of the Secretary in carrying out their responsibilities in the guided missiles field. With the understanding that the Chairman, JCS, and the interested Assistant Secretaries of Defense would make timely and appropriate reports to the Secretary on progress achieved in resolving various questions raised by the mentioned staff studies, the Committee recommended that it be discharged.

(U) Memo, GMR Cmte to SecDef, "Report on Guided Missiles Pursuant to the Secretary of Defense Memo of 23 Sept. 1954," 15 Aug 55, CJCS 471 (Guided Missiles) 1955-56, OCJCS files.

27 Aug 55

Referring to the memorandum of 15 August 1955 from the Guided Missiles Report Committee, the Secretary of Defense discharged the Committee, subject to the understanding, mentioned in the memorandum, that he would be kept informed of progress in resolving various outstanding questions.

(U) Memo, SecDef to CJCS et al., "Guided Missiles Report Committee - Discharge of," 27 Aug 55, CJCS 471 (Guided Missiles) 1955-56, OCJCS files.

2 Sep 55

The JCS informed the Secretary of Defense that a proposed NSC action to give the ICBM program a status of the "highest priority" to be prosecuted with all "practicable speed" by the Secretary of Defense was acceptable from a military point of view.

(TS) Dec On JCS 1899/230, "Intercontinental Ballistic Missiles Program," 2 Sep 55, source of (TS) Memo, CJCS to SecDef, same subj and date, CCS 040 (11-2-43) sec 18. (TS) Memo, ExecSecy NSC to NSC, "Intercontinental Ballistic Missiles Program," 30 Aug 55, Encl to (TS) JCS 1899/228, same subj, 31 Aug 55, same file, sec 17.

✓ 6 Sep 55

[ the Deputy Secretary of Defense directed the Assistant Secretary of Defense (R&D) to prepare, in collaboration with the Military Departments, a report for the NSC on the five IRBM development possibilities being considered by the Defense Department. These possibilities were: (1) development of an IRBM as a by-product of the ATLAS program, (2) establishment of a separate Air Force IRBM project, (3) U.S. participation in a U.K. IRBM program, (4) development of a ship-based IRBM, and (5) continuation of the Navy's TRITON as an interim program. The report was to discuss, primarily for the period 1958-65, (1) the relationship of the proposed employment of the IRBM to that of other major weapons systems under development at the same time, particularly that of other guided missiles, nuclear-propelled aircraft, and the ICBM; (2) the strategic potential of the IRBM in relation to basic national security policy; (3) the technical feasibility of producing the IRBM within the above period; and (4) specific development plans recommended, including funding.

(TS) Memo, Dep SecDef to Asst SecDef(R&D) et al., "1500-Mile Ballistic Missile," 6 Sep 55, Encl to (TS) JCS 1899/231, Note by Secys, same subj, 9 Sep 55, CCS 040 (11-2-43) sec 18.

✓ 13 Sep 55

17 Sep 55

[ Deputy Secretary of Defense directed the Secretary of the Air Force to prosecute, within his assigned responsibilities, the ICBM research and development program "with maximum urgency."

(TS) Memo, Dep SecDef to SecAF et al., "Intercontinental Ballistic Missiles Program," 17 Sep 55, Encl to (TS) JCS 1899/234, Note by Secys, same subj, 21 Sep 55, CCS 040 (11-2-43) sec 18.

- 20 Oct 55 Stating that the need for an IRBM was "now recognized to be critical" and that plans were under way to initiate the urgent development of such a missile with a range of approximately 1500 nautical miles, the Secretary of Defense requested the JCS to prepare a recommendation on the proper Service assignment of an initial IRBM capability.  
(TS dg S) Memo, SecDef to CJCS, "Definition of Mission Requirements of the Military Services for the Intermediate Range Ballistic Missile," 20 Oct 55, Encl to (TS dg S) JCS 1620/113, Note by Secys, same subj and date, CCS 334 GMC (1-16-45) sec 14.
- 25 Oct 55 The JCS informed the Secretary of Defense that they had established an operational requirement for an atomic capability for the LITTLE JOHN (formerly termed HONEST JOHN, Jr.) surface-to-surface free rocket delivery system. This delivery system was being developed by the Army to deliver a small implosion warhead of approximately 11.5 inches in diameter. The JCS asked the Secretary of Defense to notify the Chairman of the Atomic Energy Commission and request his cooperation in the furtherance of the project.  
(S-RD) Dec On JCS 1620/112, "An Atomic Capability for the 'LITTLE JOHN' Weapons System," 25 Oct 55, source of (S-RD) Memo, CJCS to SecDef, same subj and date. Both in CCS 334 GMC (1-16-45) sec 14.
- ✓ 2 Nov 55 Referring to the memorandum from the Secretary of Defense dated 20 October 1955, the JCS stated that they had been unable to agree on a recommendation for the Service assignment of an initial IRBM capability. The Chief of Staff of the Army, maintaining that "all Services have a requirement for the IRBM in support of primary missions," observed that each Service had a current ballistic missile program that could be converted into a development program for the IRBM and pointed out that the use of new or improved guided missiles was not restricted (under the 9 September 1954 assignment of roles and missions) because of the responsibility of a particular Service in the development of such weapons. He concluded that "the matter of roles and missions with respect to primacy of interest in this weapon should not be the controlling factor in the assignment of its development to a particular Service." Because of the Army's capability for developing a land-based IRBM, resulting

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from its facilities at the Redstone Arsenal and its experience with the REDSTONE missile, he recommended that the Army be assigned joint responsibility with the Navy for developing the IRBM, the Navy to work on a sea-based version.

The Chief of Naval Operations and the Chief of Staff of the Air Force agreed that the Navy should work on a sea-based version but believed that neither "the roles or missions presently assigned, nor those which might logically be assigned in the foreseeable future, can be interpreted as constituting a valid requirement for assignment of an IRBM capability to the Army." They recommended that responsibility for developing the land-based version be assigned to the Western Development Division of the Department of the Air Force, because of the high probability that an IRBM would "fall out" of the development of the ICBM, on which that Division was already working. They further recommended the appointment of an Advisory Board, consisting of the Assistant Secretary of Defense (R&D) and one Assistant Secretary from each of the three military departments, to be responsible for reviewing the programs for the land-based and sea-based IRBMs and the ICBM. The Chairman, JCS, concurred in the recommendations of the Chief of Naval Operations and the Chief of Staff, Air Force.

(S) JCS 1620/115, Note by Secys, "Definition of Mission Requirements of the Military Services for the Intermediate Range Ballistic Missile," 2 Nov 55, source of (S) Memo, CJCS to SecDef, same subj and date. Both in CCS 334 GMC (1-16-45) sec 14.

6 Nov 55

Appearing on the National Broadcasting Company television program Meet the Press, Secretary of the Air Force Donald A. Quarles stated that, though it was "always possible" that the USSR was ahead of the U.S. in developing an ICBM, he was "quite confident we are ahead."

(U) New York Times, 7 Nov 55, 13:6.

✓ 8 Nov 55

The Secretary of Defense directed, as "part of the process of streamlining organizational alignment, management controls and administrative procedures" connected with the ICBM and IRBM development programs, the establishment of an OSD Ballistic Missiles Committee (OSD-BMC). He appointed to the Committee the Deputy Secretary of Defense as chairman, the Assistant Secretary of Defense (R&D) as vice-chairman, three other Assistant Secretaries of Defense as additional members, and an executive secretary. The Air Force was to present its annual program for the ICBM and IRBM #1, and the joint Army-Navy Committee was to present its annual program for IRBM #2, to the OSD-BMC for review and approval by 1 October of each year. The OSD-BMC was to give immediate consideration to the financial plans for FY 1956 and the proposed plans for FY 1957, the review of which was to be accomplished by 1 December 1955. The Bureau of the Budget had been asked to assign a representative as a member of the Committee to assist in expediting the

special financial and budgeting arrangements required by the programs to be reviewed by the Committee. The Secretary of Defense requested a progress report following each meeting of the OSD-BMC.

(S) Memo, SecDef to CJCS et al., "Establishment of the OSD Ballistic Missiles Committee (OSD-BMC)," 8 Nov 55, Encl to (S) JCS 1620/117, same subj, 16 Nov 55, CCS 334 GMC (1-16-45) sec 15.

- 8 Nov 55 According to a chronology prepared in the Office of the Secretary of Defense, the Secretary of Defense informed the Services that IRBM programs would be funded independently of the regular Service budgets.  
(S) OSD, "Chronology of Significant Events in the U.S. Long Range Ballistic Missile Program," OCJCS files.
- 8 Nov 55 The Secretary of Defense issued a memorandum that:  
(1) assigned to the IRBM program a priority second only to that of the ICBM program, pending clarification by the National Security Council; (2) assigned management responsibility for a land-based IRBM (IRBM #1) program to the Air Force, which already had management responsibility for the ICBM program; and (3) assigned jointly to the Army and the Navy an IRBM (IRBM #2) program with the dual objective of developing an early shipboard capability for the missile and a land-based alternate to the Air Force program. The IRBM #1 and ICBM programs were to be coordinated through the Western Development Division under the supervision of an Air Force Ballistic Missiles Committee headed by the Secretary of the Air Force. The IRBM #2 program was to be monitored by a joint Army-Navy Committee with the Secretary of the Navy as the chairman and the Secretary of the Army as vice-chairman. Liaison was to be established immediately between the Air Force and joint Army-Navy programs to assure full interchange of information. Any conflicts among themselves that the Services could not resolve were to be referred to the Chairman of the OSD Ballistic Missiles Committee.  
(TS) Memo, SecDef to CJCS et al., "Intercontinental Ballistic Missile (ICBM) and Intermediate Range Ballistic Missile (IRBM) Programs," 8 Nov 55, Encl to (TS) JCS 1620/116, same subj, 16 Nov 55, CCS 334 GMC (1-16-45) sec 15.
- 25 Nov 55 According to a chronology prepared in the Office of the Secretary of Defense, the Joint Army-Navy Ballistic Missiles Committee approved a plan providing for (1) a "preliminary IRBM system description," and (2) a development program calling for (a) testing JUPITER components on REDSTONE missiles beginning in March 1956 and (b) firing the first JUPITER configuration in May 1957.  
(S) OSD, "Chronology of Significant Events in the U.S. Long Range Ballistic Missile Program," OCJCS files.
- 30 Nov 55 The JCS replied to a memorandum from the Assistant Secretary of Defense (R&D) notifying them that one of the periodic reviews of the TALOS land-based system development required by the Secretary of Defense

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was in progress and requesting information on any change in the assignment of Service responsibilities for guided missiles set forth by the JCS on 9 September 1954 that would affect this case. The Joint Chiefs of Staff stated that there had been no change pertinent to the review in question.

(C) Memo, ASD(R&D) (sgd Macauley) to CJCS, "Review of TALOS Land Based System Development," 16 Nov 55, Encl to (C) JCS 1620/118, Note by Secys, same subj, 23 Nov 55. (S) Dec On JCS 1620/119, same subj, 30 Nov 55, source of (C) Memo, CJCS to SecDef, same subj and date. All in CCS 334 GMC (1-16-45) sec 15.

1 Dec 55

1 Dec 55

2 Dec 55 According to a chronology prepared in the Office of the Secretary of Defense, the Army and the Navy approved terms of reference for a program to produce a 1500-mile missile. The terms covered military characteristics and performance for a single missile, produced by the Army Ballistic Missile Agency, suitable for both land- and sea-based use. The sea-based requirements were not to be compromised by any consideration of obtaining an early land-based capability, except by joint agreement or direction of higher authority.

(S) OSD, "Chronology of Significant Events in the U.S. Long Range Ballistic Missile Program," OCJCS files.

5 Dec 55 According to a chronology prepared in the Office of the Secretary of Defense, a REDSTONE missile using a complete guidance system with an air-bearing gyroscope made a successful flight. (The same type gyroscopes are now used for the JUPITER missile.)

(S) OSD, "Chronology of Significant Events in the U.S. Long Range Ballistic Missile Program," OCJCS files.



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20 Dec 55 [

21 Dec 55 Secretary of Defense Wilson told a Pentagon press conference that a recent reorganization and speed-up of the over-all guided missiles program in the three military departments was due to advances in technology rather than concern over Soviet progress. He did not know whether the U.S. was ahead of or behind the USSR in guided missiles.

(U) New York Times, 21 Dec 55, 16:5.

28 Dec 55 The Assistant Secretary of Defense (R&D) informed the Secretary of Defense that the Joint Coordinating Committee on Guided Missiles had concluded that there was no reason to reconsider the 7 June 1955 action of the Secretary of Defense transferring primary responsibility for the TALOS system from the Army to the Air Force.

(TS-RD) Rpt by the Surveys and Investigations Staff, U.S. House of Rep, "A Report to the Committee on Appropriations U. S. House of Representatives on Guided Missiles Department of Defense," Jan 57, p. 82, CCS 334 GMC (1-16-45) sec 17, BP pt 6.

~~TOP SECRET~~  
11 Jan 56

The Joint Chiefs of Staff informed the Secretary of Defense that they concurred in continued AEC development of the components necessary to adapt the Mark 7 warhead to the NIKE B missile on a time scale consistent with production of NIKE B missiles, and also in the waiver of the requirement for complete warhead interchangeability in this instance. The JCS also stated that the rate of introduction of optimized weapons into the stockpile was not adequate to meet military requirements, and warned that failure to accelerate this rate would delay modernization of the stockpile.

(TS-RD) Memo, JCS to SecDef, "Interchangeability of Mark 7 Warhead," 11 Jan 56, OCJCS file, JCS Memos to SecDef, Jan 56, OCJCS files.

17 Jan 56

The Joint Chiefs of Staff informed the Secretary of Defense that, in the light of his decision of 8 November 1955 establishing two IRBM programs, they had reviewed their recommendation of 10 December 1954 that the Air Force be the point of contact for exchange of information with the UK on the IRBM. The Chief of Staff of the Army and the Chief of Naval Operations recommended that this Air Force function be canceled and that exchange of information be carried out in accordance with normal, established procedures. The Chief of Staff of the Air Force opposed this recommendation because, in his opinion, the designation of other points of contact than the Air Force (1) might be considered a violation of the Wilson-Sardys agreement, which had established the existing arrangement; (2) would adversely affect the status and work of the Joint US-UK Advisory Committee on ballistic missiles, also established under the existing arrangement; (3) could be a source of confusion to the British; (4) would be a departure from normal U.S. practice in similar cases; (5) would complicate the managerial problem of assuring adherence to security policies and preventing duplication of effort. He recommended that the Air Force be directed to establish the necessary arrangements for including both U.S. IRBM programs in the exchange of information with the UK.

(S) Memo, SM-26-55, Phillips to Gen Twining, Gen Taylor, and Adm Burke, "Exchange of Information Between US-UK Concerning the Development of the Intermediate Range (1500-mile) Ballistic Missile (IRBM)," 16 Jan 56, w/encl. (S) JCS 1620/123, Note by Secys, same subj, 17 Jan 56. (S) Memo, Twining for JCS to SecDef, same subj, 17 Jan 56. All in CCS 334 GMC (1-16-45) sec 15.

20 Jan 56

According to a chronology prepared in the Office of the Secretary of Defense, the Scientific Advisory Committee was transferred from the Air Force to the Secretary of Defense.

(S) OSD, "Chronology of Significant Events in the U.S. Long Range Ballistic Missile Program," OCJCS files.

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24 - 25  
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Discussing missiles programs before a House Appropriations Subcommittee, Secretary of Defense Wilson stated that missiles were just one part of the total military program and should not be overemphasized. "I think the importance of these missiles at this time is possibly as much in the psychological area as in their actual total addition to military power," he said. However, when Committee members pressed him for assurances that long-range missiles were receiving sufficient attention he replied: "We will make sure that the money is not limiting us in this area, which is one way of saying it has top priority. We are doing everything we can." He declined to state that the U.S. led the Soviets in development of an ICBM. "We cannot say with great certainty that we are going to be ahead of the Russians in everything," he observed. "It depends upon what they concentrate their efforts on," the Secretary added, after having observed that they had been concentrating on missiles since World War II.

(U) US Cong, HR, "Department of Defense Appropriations for 1957," Hrgs before Subcmte of Cmte on Appropriations, 84: 2, pp. 53, 84-85.

✓ 25 Jan 56.

As directed by the Secretary of Defense, the three Service Secretaries and the Assistant Secretaries of Defense for Research and Development, Applications Engineering, and Comptroller completed their joint study of the "Review of Guided Missile Program" that the Assistant Secretary of Defense (AE) had submitted on 24 June 1955. Their joint report, from which the Comptroller abstained, reproduced and commented on all 35 recommendations of the original "Review," including the following:

(1) Recommendation. Since TALOS-GB was in existence, the other two weapons under development for air defense (BOMARC and X-7B) should be carefully evaluated.

Comment. TALOS-GB was not programmed as an interim weapon, but as a complement to BOMARC.

(2) Recommendation. The REDSTONE should be discontinued as a weapons project and retained only as a test vehicle for inertial guidance systems.

Comments. After careful review, the Army was proceeding with its program to weaponize the REDSTONE, in order to fill the requirement for a dependable jam-proof missile with a range falling between SERGEANT and the IRBM. REDSTONE's expected availability in 1958 would provide a high yield weapon at least two years before the IRBM.

(3) Recommendation. The planned operational date for SNARK was believed to be hopelessly optimistic. Accordingly, funds for use after 1 January 1956 should be withheld until that date, when a decision whether or not to continue the SNARK project could be made on the basis of its progress compared with other ICBM projects.

Comment. Fund restrictions previously placed on the Air Force for the SNARK program had been lifted, the decision having been made in the belief that SNARK could provide the first truly intercontinental capability. Proceeding under continued scrutiny, the SNARK project could be discontinued if schedule slippage occurred that indicated the weapon would not be perfected appreciably ahead of other ICBM systems.

(4) Recommendation. The adequacy of both effort and coordination in the anti-missile field should be reviewed.

Comment. When attempting to determine responsibility for anti-missile development the Research and Development Policy Council had concluded that the question involved Service roles and missions and was not, therefore, within the purview of the Council. In order not to delay the Army's development program, funds previously held back had been released, but the need for a roles and missions decision was recognized.

Regarding a number of other recommendations of the review the joint report observed that the problem highlighted had been recognized and that useful studies were under way or other appropriate action had already been taken. Recommendations disposed of by such comments included those related to the need for unbiased operational analysis studies of competing systems and components, of missiles as alternatives to manned aircraft and to anti-aircraft guns and rockets, and in several other areas. The joint report also commented in this manner on recommendations that either HAWK or TARTAR be selected for use by both the Army and Navy, that the IRBM program be planned to benefit to the maximum from the other ballistic missile projects of the Army and the Air Force, that a long range research program directed at providing guidance systems for weapons ten or more years in the future be instituted, and that both missiles systems reliability and missile countermeasures should receive increased emphasis.

(S) Memo, OASD (R&D) to SecDef, "Comments on Report Entitled 'Review of Guided Missile Program' - OASD (AE)", 25 Jan 56, OCJCS files.

1 Feb 56

Senator Jackson, Chairman of the Military Applications Subcommittee of the Joint Congressional Committee on Atomic Energy, proposed that the US ballistic missile project should be carried out with the maximum effort of which the nation was capable, and that, as a first step, the program should be placed under a full-time civilian administrator who would report directly to the Secretary of Defense and to the President. A few hours later Secretary of Defense Wilson announced that he would soon appoint such an administrator, or missiles 'czar,' though he also said that the Department of Defense was already "working quite effectively in the missile field" and had been doing so for some years.

(U) New York Times, 2 Feb 56, 1:5, 10:7.

✓ 3 Feb 56

According to the New York Times, Trevor Gardner submitted his resignation as Assistant Secretary of the Air Force (R&D). His letter of resignation "expressed strong disagreement with budgetary and research development policy," according to the press report, which noted that Gardner had twice sought extra research and development funds but had been turned down by Secretary of the Air Force Harold E. Talbott and his successor, Donald A. Quarles.

(U) New York Times, 3 Feb 56, 1:7.

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5 Feb 56

On the television program Meet the Press, Senator Stuart Symington issued a warning concerning Soviet progress in missile development characterized by the New York Times as the "first of such positiveness by any prominent Washington figure." The senator said that he did not merely "believe" the Soviets were ahead of the U.S., but stated flatly that "they are ahead of us in ballistic missiles." The U.S. was dropping behind, he charged, because its program was "on a five-day week," and he criticized the Administration for putting out what he called misleading and overly optimistic statements on the situation.

(U) New York Times, 6 Feb 56, 1:7, 10:6.

8 Feb 56

President Eisenhower, in response to a request to comment on the views of Senators Symington and Jackson that the U.S. was seriously lagging behind the USSR in its missile program, said that he was "always astonished at the amount of information that others get that I don't." He added that he was sure the U.S. was ahead in some fields in missile development and that he thought the Soviets were probably ahead in certain other fields, but these were "limited fields in a great big field."

(U) New York Times, 9 Feb 56, 16:5.

8 Feb 56

The Joint Chiefs of Staff requested the Weapons Systems Evaluation Group to study the following subjects, among others, in the order in which listed: (1) evaluation of the threats to be expected in 1960, and of the SAGE system; (2) the operational kill effectiveness of present and planned surface-to-air and air-to-air missiles; (3) the tactical employment and effectiveness of individual defense weapons against air-to-surface missiles and intercontinental ballistic missiles.

(TS) Dec On JCS 1899/248, "Schedule of Continental Defense Study Programs," 8 Feb 56, source of (TS) SM-102-56, SJCS to Dir WSEG, same subj, 8 Feb 56. Both in CCS 381 US (5-23-46), secs 65 and 66, resp.

✓ 9 Feb 56

In classified testimony before a House Appropriations Subcommittee, the Air Force Chief of Staff, General Twining, said that the Soviets could have a 1,400-mile ballistic missile ready for series production as early as 1957 and a 1,600-mile version by 1957 or 1958. He estimated that they could have an ICBM ready for series production by 1960-61. The test program of the Air Force IRBM would begin in late 1956 or early 1957, he said, and that of the ICBM in early 1957. The schedule called for the first IRBMs for emergency use in late 1958 and the first ICBM for emergency use in 1959. ICBMs were to be introduced into operational units in 1960. There was no guarantee that these schedules could be met, General Twining emphasized. He testified in open session that the Air Force could not effectively use more money for missiles research and development.

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(TS) Statement of Gen Twining before the Subcommittee on Department of Defense Appropriations of the Committee on Appropriations, HR, 9 Feb 56, in folder of (TS) Twining Statements, 1954-56, OCJCS files. (U) US Cong; HR, "Department of Defense Appropriations for 1957," Hrgs before Subcmte of Cmte on Appropriations, 84:2, p. 772.

10 Feb 56 In a joint memorandum to the Chairman, OSD Ballistic Missiles Committee, (summarized in a missiles chronology prepared in OSD) the Secretary of the Army and the Secretary of the Navy stated that the funding of the IRBM program within budget ceilings imposed by the Department of Defense would considerably reduce the amount of funds available for other essential programs, and appeared to be inconsistent with the provisions of the 8 November 1955 memorandum of the Secretary of Defense.

(S) OSD, "Chronology of Significant Events in the U.S. Long Range Ballistic Missile Program," OCJCS files.

11 Feb 56 The Scientific Advisory Committee made its first report to the Secretary of Defense on ballistic missiles. According to a chronology prepared in OSD, the Committee recommended that IRBM programs 1 and 2 be continued, but with some adaptation of the Joint Army-Navy program (#2) to meet Navy requirements for a submarine-launched missile. It also recommended that the Navy's development of a solid-propellant IRBM be given priority equal to that of the other IRBM programs.

(S) OSD, "Chronology of Significant Events in the U.S. Long Range Ballistic Missile Program," OCJCS files.

✓ 13 Feb 56 Appearing before a House Appropriations Subcommittee, Trevor Gardner, who had just resigned as Assistant Secretary of the Air Force (R&D), testified: "The [missile] program has not been fund-limited within the Air Force or within the Department of Defense. Mr. Wilson, Mr. Talbott, and Mr. Quarles have supported it with all the funds that we needed." He added, "Unfortunately those funds all came out of other funds and [that] has had the net result of reducing our air-plane program."

(U) US Cong, HR, "Department of Defense Appropriations for 1957," Hrgs before Subcmte of Cmte on Appropriations, 84:2, p. 876.

16 Feb 56 As a result of a recommendation of the Scientific Advisory Committee on Ballistic Missiles, the Secretary of Defense requested the Joint Chiefs of Staff to undertake a study of the tactical and strategic uses of missiles with a range of more than 750 miles. The JCS were to submit their recommendations "at an early date" on (1) the families of desirable weapons and their interrelated characteristics of range, mobility, mode of use, and probable circular error with related warhead-yield requirements; and (2) the number and production scheduling of the various missiles required.

(S) Memo, SecDef to CJCS, 16 Feb 56, encl to (S) JCS 1620/124, Note by Secys, "Recommendations Concerning Ballistic Missiles," 23 Feb 56, CCS 334 GMC (1-16-45) sec 15.

16 Feb 56 Anastas Mikoyan, First Deputy Premier of the Soviet Union, said, among other things in a speech to the Twentieth Congress of the Communist Party in Moscow, that the USSR had the ability to deliver atomic and hydrogen bombs by aircraft or rockets "to any spot in the world."

(U) New York Times, 18 Feb 56, 2:4.

✓ 17 Feb 56 The Joint Chiefs of Staff informed the Secretary of Defense that they had established an operational requirement for an atomic capability for the TRITON surface-to-surface, ship- and submarine-launched guided missile.

(S-RD) Dec On JCS 2012/72, "Atomic Capability for the TRITON Guided Missile Weapon System," 17 Feb 56, CCS 471.6 (5-31-44) sec 7; source of (S-RD) Memo, CJCS to SecDef, same subj and date, same file, sec 8.

21 Feb 56 The Joint Chiefs of Staff informed the Secretary of Defense that they: (1) had established a military requirement for the development of a guided air-to-air rocket capable of delivering a low yield, small diameter atomic warhead; (2) desired the Department of the Air Force, with AEC cooperation, to develop such a rocket; and (3) would advise the Secretary of Defense at a later date concerning the establishment of a requirement for an atomic warhead for this rocket.

(TS-RD) Dec On JCS 2012/73, "Military Requirement for Development of a Guided Aircraft Rocket Capable of Delivering an Atomic Warhead," 21 Feb 56, source of (TS-RD) Memo, CJCS to SecDef, same subj and date; both in CCS 471.6 (5-31-44) sec 8.

15 Mar 56 The Chairman of the Military Liaison Committee requested information from the Joint Chiefs of Staff on the number of ICBM and IRBM warheads required through at least FY 1961. He needed this information for the Director of Military Application, Atomic Energy Commission, who had pointed out the necessity for careful planning well in advance in order to avoid a shortage of tritium, an element being increasingly used in atomic warheads.

(S-RD) Memo, CMLC to CJCS, "Request for Information on ICBM and IRBM Warhead Requirements," 15 Mar 56, w/app, encl to (S-RD) JCS 1620/125, Note by Secys, same subj, 20 Mar 56, CCS 334 GMC (1-16-45) sec 15.

27 Mar 56 The Joint Chiefs of Staff informed the Secretary of Defense that they had established an operational requirement for an atomic capability for the LACROSSE and SERGEANT surface-to-surface guided missiles. They stated that feasibility studies of atomic warheads for these missiles were underway.

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(S-RD) Dec On JCS 2012/77, "An Atomic Capability for the LACROSSE and SERGEANT Missiles (Confidential)," 27 Mar 56, source of (S) /sic7 Memo, CJCS to SecDef, same subj and date; both in CCS 471.6 (5-31-44) sec 8.

27 Mar 56 The Secretary of Defense issued a directive creating the Office of Special Assistant to the Secretary of Defense for Guided Missiles (SAGM). The SAGM was given responsibility for the direction and coordination of all activities in the Department of Defense connected with the research, development, engineering, and production of guided missiles, except for those types already adopted for Service use. It was expected that the SAGM would devote major attention to missiles of the long-range variety, particularly ballistic missiles. In the same directive the Secretary of Defense appointed SAGM as Chairman of the OSD Ballistic Missiles Committee.

(U) DOD Directive 5105.10, 27 Mar 56, CCS 334 GMC (1-16-45) sec 15.

3 Apr 56 CINCONAD, in a letter to the Chief of Staff USAF, as Executive Agent for the JCS, wrote that Soviet development of ICBMs and IRBMs posed "a threat which cannot be countered by the existing air defense system." He stated that the means available, and soon to be available, to counter the air-breathing missile threat would be of limited value against ballistic missiles. There was, therefore, a need for a vast improvement in the detection and destruction capabilities of the air defense system in an extremely short time. "In the interest of economy, time, and limited resource facilities," and in view of the over-all Air Force responsibility for the air defense of the U.S., CINCONAD recommended that the development of the ICBM defense system be made the responsibility solely of the Air Force.

(S) Ltr, CINCONAD to CofS, USAF, "Assignment of ICBM and IRBM Defense Responsibility in CONAD," 3 Apr 56, CCS 381 U.S. (5-23-46) sec 77.

4 Apr 56 According to a chronology prepared in OSD, the OSD Ballistic Missiles Committee approved a Navy plan to conduct, within IRBM program #2, system studies and component development, including propulsion flight testing, to determine the feasibility of a solid-propellant missile.

(S) OSD, "Chronology of Significant Events in the U.S. Long Range Ballistic Missile Program," OCJCS files.

16 Apr 56 The Assistant Secretary of Defense (R&D) sent a letter to the Chairman of the Atomic Energy Commission defining the "level of effort" considered appropriate by the Department of Defense for the nuclear rocket propulsion program. He requested a level of effort sufficient to demonstrate by January 1959 the technical feasibility of developing a nuclear rocket motor. The AEC should proceed on the expectation



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that the Department of Defense would have a program pointing toward achievement of a flight test in 1962, but should also plan budgets and facilities so as to permit AEC support of an earlier flight capability if such should later be deemed necessary and feasible. The Assistant Secretary stated his understanding that this level of effort would not affect adversely the AEC's planned weapons development program during the period in question.

(S-RD) Ltr, ASD (R&D) to Chm AEC, 16 Apr 56, app to encl to (S-RD) JCS 1620/127, Note by Secys, "AEC Work on Project 'Rover,'" 26 Apr 56, CCS 334 GMC (1-16-45) sec 15.

20 Apr 56 Referencing a memorandum from the Secretary of Defense dated 16 February 1956 and one from the Chairman of the Military Liaison Committee dated 15 March 1956, the Joint Chiefs of Staff provided the Secretary of Defense with tentative estimates of ICBM and IRBM warhead requirements for 1 October 1958, 1 January 1959, 1 July 1959, and 1 January 1960. Observing that the earliest possible achievement of ICBM and IRBM capabilities appeared to make appropriate the provision of emergency capability with engineering prototype missiles, the Joint Chiefs of Staff pointed out that on this basis the initial warhead requirements for the missiles were limited by development considerations rather than tactical and strategic needs. The tentative estimates given, though not extended as far into the future as was requested, were believed sufficient to meet the most urgent requirements of the Atomic Energy Commission for production guidance regarding atomic warheads currently under development.

(TS-RD) Dec On JCS 1620/126, "Recommendations Concerning Ballistic Missiles," 20 Apr 56, source of (TS-RD) Memo, JCS to SecDef, "Recommendations Concerning Ballistic Missile Warheads," 20 Apr 56. Both in CCS 334 GMC (1-16-45) sec 15.

23 Apr 56 Nikita S. Khrushchev, Secretary of the Communist Party in the Soviet Union, said in a speech at Birmingham, England, that the USSR would make a guided missile with a hydrogen-bomb warhead capable of hitting any target in the world. Though some accounts reported him as saying this would be "quickly" or "very soon" the New York Times denied that Khrushchev had indicated when the USSR would have the missile described.

Commenting on the speech, Secretary of the Air Force Quarles said that he thought the US and the USSR would require five to ten years to perfect intercontinental missiles, and that the manned bomber would be the preferred method of delivering the hydrogen weapon during the next five years and undoubtedly important during the next ten years.

(U) New York Times, 24 Apr 56, 1:6,8.

24 Apr 56 The Joint Chiefs of Staff informed the Secretary of Defense that the Services had developed high-power radar systems for antimissile defense using frequencies in the 216-225 MCS band.

(S) Memo, JCS to SecDef, "The Provision of Radio Frequencies for Military Early Warning and Control Radars," 24 Apr 56, CJCS file, JCS Memos to SecDef, Apr 56, OCJCS files.

✓ 26 Apr 56 The Deputy Secretary of Defense informed the Chairman, JCS, that in implementation of an agreement with the Secretary of the Air Force on the acceleration of the NAVAHO Program, he was approving the inclusion of 23 NAVAHO missiles, and the facilities necessary for these missiles in Category "S" of the Department of Defense Master Urgency List. The development testing phase of NAVAHO also was to be accelerated.  
 (S) Memo, Dep SecDef to CJCS, "Military Urgencies (Navaho Program)," 26 Apr 56, OCJCS.

2 May 56 The Joint Chiefs of Staff recommended that planning for IRBM bases on foreign soil proceed on the assumption that these bases would be required in 1958. Of the seventeen countries they felt should be considered as possible sites for the IRBM, six were listed as "most desirable": Turkey, Norway, the UK, Japan, Okinawa, and France.  
 (TS) Memo, JCS to SecDef, "Base Rights and Megaton Missiles," 2 May 56, CJCS file, JCS Memos to SecDef, May 56, OCJCS files.

3 May 56 [ ] n

✓ 8 May 56 According to a chronology prepared in OSD, the Scientific Advisory Committee, in its third report to the Secretary of Defense, expressed concern that OSD had not yet authorized the Navy's development of a solid-propellant IRBM as a full-fledged missile project.  
 (S) OSD, "Chronology of Significant Events in the U.S. Long Range Ballistic Missile Program," OCJCS files.

15 May 56 In an article in Look magazine, Trevor Gardner, former Assistant Secretary of the Air Force (R&D), charged that the U.S. missile program was being hampered by "an intolerable rivalry" among the Services, poor administrative procedures, confusion of program priorities, and excessive reliance on management personnel rather than scientists. He recommended the appointment

of a missiles boss with authority to solve all missiles problems, establishment of a clear order of priority among missiles programs with the ICBM in first place, clear definition of Service roles and missions with respect to missiles, appropriation of missiles money to a special fund, to be administered by the missiles boss, and establishment of a joint Congressional committee to monitor the missile program.

(U) Trevor Gardner, "Our Guided Missiles Crisis," Look, XX (15 May 56), 46-52.

✓ 18 May 56

General Donald L. Putt, Deputy Chief of Staff for Development, Hqs, USAF, told the Symington Committee (Air Force Subcommittee of the Senate Armed Services Committee) that he doubted that additional funds would expedite development of the ICBM. He had testified on 17 May, however, that in the past research and development funds had not been sufficient to maintain an adequate missiles program. Additional funds could have been spent wisely on both the SNARK and the NAVAHO, he said. General Putt opposed any changes in the organization of the ICBM program, declaring that it was "immeasurably better than the Manhattan type of organization that was used to develop the atomic bomb."

(U) US Cong, Sen, "Study of Airpower," Hrgs before Subcmte of Cmte on AF of Cmte on Armed Services, 84:2, pp. 585-587, 672, 689-690.

31 May 56

The National Security Council noted the President's statement that the Department of Defense, the National Science Foundation, and the Department of Health, Education and Welfare should devise programs of action in their respective spheres of responsibility to meet the problem of maintaining free-world technological superiority over the Soviet bloc.

(TS) NSC Action No. 1566, 31 May 56.

13 Jun 56

The Joint Chiefs of Staff advised the Secretary of Defense that they believed that the promise of nuclear rocket propulsion warranted pursuit of the program objectives outlined by the Assistant Secretary of Defense (R&D) to the AEC Chairman on 16 April 1956, provided that the program did not interfere significantly with development of weapons. The Joint Chiefs of Staff desired to be kept informed of the status of the program.

(S-RD) Dec On JCS 1620/128, "AEC Work on Project 'Rover'," 13 Jun 56, source of (S-RD) Memo, CJCS to SecDef, same subj, 13 Jun 56, CCS 334 GMC (1-16-45) sec 15.

✓ 14 Jun 56

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29 Jun 56 ]

Jul 56 According to a chronology prepared in OSD, a test shot in Operation REDWING at the Pacific Proving Ground established the fact that a high-yield warhead could be built within the weight carrying capacity of an IRBM.

(S) OSD, "Chronology of Significant Events in the U.S. Long Range Ballistic Missile Program," OCJCS files.

7 Jul 56

Commenting on Mr. Stassen's proposal of 29 June 1956, the Joint Chiefs of Staff warned that, without a comprehensive and effective inspection system, ostensibly peaceful research into outer-space missiles and travel could easily be adapted to the clandestine production of weapons.

(TS) JCS 1731/199, "Disarmament Policy," 7 July 57, source of (TS) Memo, JCS to SecDef, same subj, same date, CCS 092 (4-14-45) sec 64.

11 Jul 56

In a memorandum to the Chairman, JCS, the Deputy Secretary of Defense noted that both the Army and Air Force were programming surface-to-air guided missile defenses for the same overseas areas and that no coordinated or jointly agreed worldwide anti-aircraft requirements had been established. Therefore, to allow Department of Defense development of a program for overseas deployment and employment of surface-to-air guided missile weapons, he requested the JCS to

provide him with their views and recommendations on the nature of and concepts for employment of surface-to-air guided missiles in overseas unified commands (exclusive of CONAD requirements for Alaskan and North-east Areas) and for Military Assistance Programs.

(S) Memo, Dep SecDef to CJCS, "Overseas Anti-aircraft Defense (Surface-to-Air Guided Missiles)," 11 Jul 56, CJCS file, SecDef Memos to JCS, CCJCS files.

16 Jul 56

The Senate Committee on Armed Services amended the bill authorizing construction for the Military Departments by deleting the authorization for "certain TALOS land-based operational facilities." The object of the Senate Committee was to deny authorization for the land-based TALOS sites until the relative merits of the NIKE and TALOS systems had been "positively tested" and the roles and missions question clarified. The Committee desired that a scientific test be made as soon as possible, and suggested that "an impartial board be established, composed of professionally qualified members who, on an unbiased basis, are competent to evaluate the two systems and produce a recommendation consistent with the best interests of the Nation." As subsequently passed by Congress and approved by the President on 3 August 1956, the bill authorizing construction for the Military Departments contained no authorization for land-based TALOS sites.

(U) Sen Rpt No. 2775, 84th Cong, 2d sess, "Authorizing Construction for Military Departments," 16 Jul 56. (U) P.L. 968, chap 939, 84th Cong, 2d sess, approved 3 Aug 56 (70 Stat 991).

16 Jul 56

The House Committee on Appropriations instructed its Surveys and Investigations Staff to inquire into certain aspects of the national guided missiles program with special attention to: (1) alleged interservice rivalry and duplication in (a) the military mission of each Service in relation to the various missiles each had under development; (b) research and development activities on similar missiles; and (c) assignment of certain missiles for operational use; (2) the nature and extent of activities of the Office of the Secretary of Defense in the guided missiles programs, including possible duplication between this office and the Joint Services as well as between offices within OSD; (3) the status of development of each missile, including a check of the evaluations of the present and prospective capability of each; (4) total fund allocations, by type of missile, during 1956 and 1957, and proposed for 1958; (5) present and eventual production cost of each missile; (6) required lead-time for volume production of each type of missile; and (7) the estimated total investment and annual cost (including number of personnel) of operating ground installations for certain comparable types of missiles when they were made operational. (See item of 24 January 1957)

(TS-RD) Rept by Surveys and Investigations Staff, US House of Reps, "A Report to the Committee on Appropriations, U.S. House of Representatives, on Guided Missiles, Department of Defense," Jan 57, p. 1, CCS 334 GMC (1-16-45) sec 17, EP pt 6.

- 18 Jul 56 The Scientific Advisory Committee's fourth report to the Secretary of Defense, according to a chronology prepared in OSD: (1) reaffirmed the Committee's approval of alternate approaches in ballistic missile development, at least until complete systems had been tested in flight; (2) recommended that Navy development of a solid-propellant missile be given program status, independent of the Army's JUPITER; and (3) recommended consideration of a missile with a range less than that of the IRBM.  
(S) OSD, "Chronology of Significant Events in the U.S. Long Range Ballistic Missile Program," OCJCS files.
- 19 Jul 56 Appearing as a witness before the Symington Committee, General Twining was asked if he thought the U.S. was ahead of the USSR in development of an ICBM. He replied: "I feel we are, and in pushing that weapon we are strides ahead of them. I don't think the margin is great, but we are a little ahead of them."  
(U) US Cong, Sen, "Study of Airpower," Hrgs before Subcmte on AF of Cmte on Armed Services, 84:2, p. 1835.
- 24 Jul 56 In a memorandum to the Chairman of the Joint Chiefs of Staff, the Secretary of Defense reaffirmed his designation of the Air Force as the sole point of contact between the U.S. and the UK for exchange of information on ballistic missiles. Noting that there must be "full and frank exchange of information within the terms of the agreements between the U.S. and U.K., on all aspects of the ballistic missile programs," including the Army and Navy IRBM activities, he stated that he had requested the Air Force to augment the U.S. membership on the Joint US-UK Advisory Committee with Army and Navy personnel. The Air Force would also establish the necessary procedures for and expedite the handling of Army-Navy ballistic missile information useful to the UK in the achievement of a 2500-mile ballistic missile capability.  
(S) N/H of JCS 1620/123, 26 Jul 56, CCS 334 GMC (1-16-45) sec 15.
- ✓ 16 Aug 56 In a conference in the office of the Deputy Secretary of Defense, and in a memorandum on 17 August, the Department of the Army protested action by the Assistant Secretary of Defense (Comptroller) to hold up its \$1.5 million apportionment request for weaponization of the REDSTONE. The Army view was that denial of this request would jeopardize the entire program, for which an additional \$65 million in procurement funds had been allotted for FY 1957. The Chief of Staff, Army, pointed out that: (1) halting development of the REDSTONE would force him to revise his concept of streamlining divisions; (2) the Army required the REDSTONE, since the Air Force was drastically decreasing the number of its Tactical Air Support wings; (3) the Army intended to organize six REDSTONE battalions, the first to be ready by FY 1958, the last by FY 1960; (4) of the \$65 million procurement money, about half would be for the REDSTONE missile itself and the rest for REDSTONE support of JUPITER; and (5) the employment of

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the REDSTONE was in accord with the concepts of the JSCP, 1960. The Comptroller commented that the main reason for his action in holding up the \$1.5 million apportionment request was his desire to avoid duplication.

✓ 17 Aug 56 (S) Memo, Griffin to CJCS, "Tactical REDSTONE Missile for the Army," 4 Sep 56, CJCS 471 (Guided Missiles) 1955-56, OCJCS files. The Secretary of Defense forwarded to the Chairman, JCS, a memorandum, dated 14 August 1956, in which the Secretary of the Air Force had outlined his recommendations for settlement of certain issues in dispute between the Army and the Air Force, including several relating to responsibilities for missiles. He recommended, among other things: (1) that the Army be encouraged to continue development of surface-to-surface missiles for close support of field operations, but that the range of such missiles be limited to 200 miles, and (2) that if it were deemed "inexpedient" to place the entire air defense system under the Air Force, a compromise be adopted limiting the Army's air defense role to point defense.

He stated that there had been "gross over-emphasis" on development of a land-based IRBM and suggested that Army development of this weapon cease. If, as the Air Force believed, its own IRBM project was more advanced, it should be continued until limited deployment was achieved. Thereafter, the Secretary of the Air Force said, the IRBM should be reduced in priority and its production and deployment carefully controlled. The Secretary of Defense asked the JCS to comment on these recommendations as a matter of urgency.

(S) Memo, SecDef to CJCS, no subj, 17 Aug 56, and (S) Memo, SecAF to SecDef, "Adjustment of Army/Air Force Differences," 14 Aug 56, encl and app to (S) JCS 1478/67, Note by Secys, same subj, 20 Aug 56, CCS 370 (8-19-45) sec 55.

29 Aug 56 In response to a letter from the Chairman, Atomic Energy Commission, requesting that a priority be set for the nuclear rocket project (see item of 16 April 1956) in relation to the ICBM project, the Deputy Secretary of Defense informed him that the nuclear rocket project had a lower priority than the ICBM/IRBM project. However, he added that a joint AEC-DOD committee had been established to make a comparison of nuclear and chemical rocket propulsion, and that the results of this comparison would permit establishment of a schedule for future development of a nuclear rocket system.

(S-RD) Ltr, Dep SecDef to Chm, AEC, 29 Aug 56, reproduced as N/H of JCS 1620/128, 10 Sep 56, CCS 334 GMC (1-16-45) sec 15.

✓ 5 Sep 56 The Deputy Secretary of Defense authorized the FY 1957 program for the REDSTONE missile (see item of 16 August 1956) to proceed "on an expedited basis" with the understanding that: (1) the \$1.5 million in R&D funds would be allotted for weaponization of the REDSTONE; (2) orders would be placed at once, and apportionment immediately requested, for \$31 million worth

of missiles to be used as test vehicles within the framework of the JUPITER program as approved by the OSD Ballistic Missile Committee; and (3) as a result of the REDSTONE program, there would be a "substantial and measurable reduction" in the Army's requirement for tactical air support. The Deputy Secretary requested that the Army provide him, as soon as possible but not later than 1 October, with an estimate of the amount by which its need for tactical air support would be reduced, in order to reflect this in the Air Force's program. He also directed the Army to prepare to order the balance of missiles and equipment for the REDSTONE program, but pointed out that final decision on the apportionment of the remaining \$34 million would be made on receipt of the estimate of the Army's reduced need for tactical air support.

(C) Memo, Dep SecDef to SecArmy, no subj, 5 Sep 56, CJCS 471 (Guided Missiles) 1955-56, OCJCS files.

14 Sep 56

In response to a request from the Deputy Secretary of Defense (5 September), the Acting Secretary of the Army forwarded information concerning the expected reduction in the Army's need for tactical air support arising from implementation of the REDSTONE program. He explained that, while it had been agreed that there would be reductions in fighter bomber support for the Army as surface-to-surface missiles were phased into its organization, no precise relationship had been established between fighter bomber reduction and missile phase-in on a year to year basis. However, it was planned (JSOP, 1960) to reduce fighter bomber wings from 17 in FY 1957 to 13 on 1 July 1960 and to have six Army REDSTONE missile battalions by that date. The Army believed that annual reductions in fighter bomber support for the Army should be determined by the Air Force once final guidance was received from the Secretary of Defense, subject to JCS approval of Service force goals. The Army also believed that phasing-in of its REDSTONE and other missiles should reduce Army dependence on tactical air support, from other Services, by missiles as well as aircraft. In conclusion, the Acting Secretary pointed out that the Army was prepared to order the balance of REDSTONE missiles and equipment, and he urged OSD approval of the remaining \$34 million in procurement funds.

(S) Memo, Actg SecArmy to Dep SecDef, "Tactical REDSTONE," 14 Sep 56, CJCS 471 (Guided Missiles) 1955-56, OCJCS files.

✓ Mid -  
Sep 56

According to a chronology prepared in OSD, Atomic Energy agencies estimated that a 600-pound, one-megaton warhead could certainly be achieved by 1965, and that there was an even chance of achieving it by 1963. This reduction in warhead weight led later in the year to approval of the Navy's POLARIS, which became the only active ballistic missile project taking advantage of the anticipated improvements in warheads.

(S) OSD, "Chronology of Significant Events in the U.S. Long-Range Ballistic Missile Program," OCJCS files.



20 Sep 56 According to a chronology prepared in OSD, the JUPITER-C, a missile designed to test recovery procedures, was successfully fired. It attained a range of 3,355 miles, an altitude of 662 miles, and a velocity of Mach 18.

(S) OSD, "Chronology of Significant Events in the U.S. Long Range Ballistic Missile Program," CCJCS files.

3 Oct 56 The Joint Chiefs of Staff informed the Secretary of Defense that, in their opinion, a State Department proposal of 31 August 1956 to announce a unilateral suspension for one year, of large-scale nuclear-weapons tests was militarily unacceptable. Such a suspension would (1) have a pronounced degenerative effect on the entire weapons development program; (2) prevent proof-testing of large-yield stockpile weapons, thus freezing programs for high-yield weapons in their existing state and seriously damaging the ICBM/IRBM and the anti-ICBM/IRBM programs; (3) cut off collection of certain effects data essential to passive-defense measures and the development of operational delivery techniques.

(TS-RD) JCS 1731/210, "Limitations on Nuclear Testing," 3 Oct 56, source of (TS-RD) Memo, CJCS to SecDef, same subj and date, CCS 092 (4-14-45) sec 65.

4 Oct 56 [

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✓ 9 Oct 56 [

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- 10 Oct 56 The Chairman of the Science Advisory Committee, ODM, informed the Director of Defense Mobilization that the Committee was "concerned" that the implementation of the Technological Capabilities Panel's recommendation for the development of an IRBM was proceeding on too narrow an interpretation with respect to missile range and warhead yield. A broader interpretation, permitting greater design flexibility and therefore profiting from advance in nuclear warheads and solid propulsion systems, could lead to the development of effective missiles of lesser range but more suitable for launching from ship or submarine as well as from the ground.  
(S) Memo, Chm Sci Adv Cmte to Dir Def Mob, 10 Oct 56, CCS 040 (11-2-43) sec 20.
- 15 Oct 56 At the request of the Secretary of the Army, the Secretary of Defense clarified his memorandum of 24 July 1956 and designated the Air Force as the sole point of contact between the U.S. and UK in matters relating to the exchange of information on intermediate as well as long range ballistic missiles.  
(S) Memo, SecDef to CJCS, "Exchange of Ballistic Missile Information Between the United States and the United Kingdom," 15 Oct 56, CJCS file, SecDef Memos to JCS, Oct 56, OCJCS files.
- 23 Oct 56 According to a chronology prepared in OSD, the Scientific Advisory Committee, in its fifth report to the Secretary of Defense, expressed a belief that both THOR and JUPITER could meet their initial operational capability dates if base rights were obtained. The Committee also reiterated its recommendation that the Navy's solid-propellant missile be given priority equal to that of other IRBMs, and urged that design of submarines capable of handling solid-propellant missiles be pushed at high priority.  
(S) OSD, "Chronology of Significant Events in the U.S. Long Range Ballistic Missile Program," OCJCS files.
- 25 Oct 56 In reply to the 17 August 1956 memorandum of the Secretary of Defense, the JCS provided him with their views on two of the issues in dispute between the Army and the Air Force. In one memorandum they discussed development and use of IRBMs. In another they discussed Air Force tactical support of the Army, involving as a central issue the range of Army surface-to-surface missiles. In both cases, the views of the Chairman, JCS, and of each of the three Service Chiefs were presented separately.  
All four concluded that both IRBM projects should be continued with high priorities, but the Chairman of the JCS and the Chief of Staff of the Air Force believed that the joint Army-Navy project should be directed toward achievement of a shipboard capability, and that the Air Force should be assigned sole responsibility for the land-based IRBM. The Chief of Staff of the Army did not propose any change in the objectives of the Army-Navy project, and maintained that the Army, on the basis of its capabilities and

requirements, should employ the land-based IRBM. The Chief of Naval Operations took the position that the Navy should be assigned "full responsibility to acquire a ship-borne IRBM weapon system." Furthermore, he declared that after IRBM flight tests had met the U.S. need for a propaganda demonstration, priority on achievement of a land-based capability should be removed.

In the memorandum on Air Force tactical support of the Army, the Chairman of the JCS, the Chief of Staff of the Air Force, and the Chief of Naval Operations maintained that Army surface-to-surface missiles should be regarded as tactical weapons, to be employed by tactical units against comparable enemy ground forces that engaged them in the land battle and directly threatened accomplishment of the missions of ground force commanders. This concept of employment would justify Army missiles with a range of about 200 miles (in the opinion of the Chairman, JCS, and the Air Force Chief of Staff) or 200-250 miles (in the opinion of the Chief of Naval Operations). The Chief of Staff of the Army maintained that the advent of long- and medium-range missiles with atomic warheads had tended to blur the distinction between the terms "tactical" and "strategic," and that the ranges of these weapons had greatly enlarged the combat zone. Hence there should be no arbitrary limitation placed upon the range of the Army's surface-to-surface missiles, he said. The greater the range of these missiles, the greater would be the Army commander's ability to perform successfully his fundamental mission of destroying enemy ground forces.

All three Service Chiefs and the Chairman agreed that in view of the Army's development of missiles, certain reductions in tactical air forces should be effected, and that the Air Force should continue to furnish close air support as required by the Army against targets beyond the reach of organic Army weapons.

(TS dg S) Dec On JCS 1478/71, "Adjustment of Army/Air Force 'Differences'; Intermediate Range Ballistic Missiles," 25 Oct 56, CCS 370 (8-19-45) BP pt 7, source of (TS dg S) Memo, CJCS to SecDef, same subj and date, same file, sec 57. (TS) Dec On JCS 1478/70, "Adjustment of Army/Air Force 'Differences'; Air Force Tactical Support of the Army," 25 Oct 56, CCS 370 (8-19-45) BP pt 7, source of (TS) Memo, CJCS to SecDef, same subj and date, same file, sec 57.

7 Nov 56

The Chairman of the Joint Chiefs of Staff appointed General Carl A. Spaatz, USAF (Ret), General Thomas T. Handy, USA (Ret), Admiral John J. Ballentine, USN (Ret), and Dr. Albert G. Hill, Director of Research, WSEG, as members of an Ad Hoc Committee to study and submit recommendations to the JCS on the general problem of defense of North America against air attack. (For the report of the committee see item of 30 June 1957)

(TS) Memo, CJCS to General Spaatz et al., "Establishment of Ad Hoc Committee on Air Defense of North America," 7 Nov 56, App "A" to Encl "A." "A Report and Recommendations to the JCS," Ad Hoc cmte on Air Defense of North America, 30 June 57, CCS 381 U.S. (5-23-46) BP pt 10.

✓ 14 Nov 56

The JCS furnished the Secretary of Defense with their views on Army-Air Force differences over air defense, in reply to his memorandum of 17 August 1956. (For earlier responses to the same memo, see item of 25 October 1956.) The Chief of Staff of the Army declared that the Army should be assigned responsibility for the development, procurement, and employment of all elements of land-based surface-to-air missile systems, with the exception of those required in naval operations. The Chief of Staff of the Air Force held that the Air Force should be charged with responsibility for development, procurement, and employment of all elements of land-based air defense weapons systems, with the exception of those required for self-defense of Army units in the field and those required in naval operations. The recommendations of the Chief of Naval Operations represented a compromise between these two positions. The Chief of Staff of the Army and the Chief of Staff of the Air Force also recommended compromises to be adopted in case their basic recommendations were rejected.

The Chairman of the JCS proposed that the Army be given responsibility for the development, procurement, and manning of land-based air defense weapon systems required for point defense. The Air Force, he said, should be assigned comparable responsibility for manned interceptors and land-based surface-to-air missile systems for use in area defense. He added that development of an anti-missile weapon system should be carried out under a joint program with high priority.

(TS) Dec On JCS 1478/69, "Adjustment of Army/Air Force 'Differences'; Air Defense," 9 Oct 56, CCS 370 (8-19-45) sec 56, source of (TS) Memo, CJCS to SecDef, same subj, 14 Nov 56, same file, sec 57.

21 Nov 56

The final version of Mr. Stassen's memorandum of 29 June 1956 was approved as national policy by President Eisenhower. The section dealing with missiles, as amended on 5 December, stated that the U.S. should seek to assure that the sending of "objects" into outer space should be solely for peaceful and scientific purposes and that production of "objects" designed for travel in or projection through outer space for military purposes should be prohibited. Therefore, contingent upon the establishment of an effective inspection system, the U.S. should propose international inspection of and participation in all tests of outer space "objects."

(TS) Annex to NSC Action No. 1553, 21 Nov 56.

26 Nov 56

In a memorandum to the Armed Forces Policy Council, the Secretary of Defense announced his decision on several interservice issues relating to roles and missions, including the issues discussed in the JCS memoranda of 25 October and 14 November 1956. He also sent memoranda to the Chairman of the JCS dealing separately with each problem. As a result of the Secretary's action: (1) The Army was assigned responsibility for the development, procurement, and manning of land-based surface-to-air missile systems for point defense. (Among missiles in this category was the

land-based TALOS, development of which had been an Air Force responsibility since 7 June 1955.) (2) The Air Force was assigned responsibility for the development, procurement and manning of land-based surface-to-air missile systems for area defense. (3) The Navy was assigned responsibility for development, procurement and employment of ship-based air defense weapon systems for the accomplishment of its assigned functions. (4) The Marine Corps was authorized to adapt to its organic use such surface-to-air weapons systems developed by the other Services as might be required for the accomplishment of its assigned functions. (5) The Army was to continue its development of surface-to-surface missiles for close support of field operations, but a range limitation of about 200 miles was placed on such weapons. Tactical air support beyond the capabilities of Army missiles remained the function of the Air Force. (6) Operational employment of the land-based IRBM was made the responsibility of the Air Force. (7) Operational employment of the ship-based IRBM was made the responsibility of the Navy. (8) The Army was prohibited from planning for the operational employment of the IRBM or any other missile with a range beyond 200 miles. Feasibility studies in this area, however, were to be permitted.

Addressing himself to the Chairman, JCS, the Secretary of Defense asked for JCS recommendations on elimination of some Air Force tactical wings and their replacement by Army guided missile and rocket units. He stated that, for the time being, he considered that development of an anti-missile weapon system should be carried forward jointly by the Army and the Air Force. The Office of the Secretary of Defense would monitor and coordinate the programs of the two Services to prevent unwarranted duplication. The Army, he said, would be responsible for anti-missile missiles for point defense and for equipment needed at the defending point. The Air Force would be responsible for all other developments for defense against missiles.

(U) Memo, SecDef to AFPC, "Clarification of Roles and Missions to Improve the Effectiveness of Operation of the Department of Defense," 26 Nov 56, Encl to (U) JCS 1478/81, Note by Secycs, same subj, 15 Mar 57, CCS 370 (8-19-45) sec 58. (C) N/H of JCS 1478/69, 27 Nov 56, same file, sec 56. (C) N/H of JCS 1478/70, 27 Nov 56, same file, BP pt 7. (C) N/H of JCS 1478/71, 27 Nov 56, same file, BP pt 7.

✓ 30 Nov 56

The Director of WSEG forwarded to the Chairman, JCS, an abstract and summary report of WSEG's evaluation of the NIKE B and TALOS systems, prepared for the Special Assistant for Guided Missiles. A principal conclusion of the study was that neither system had as yet demonstrated "sufficiently pronounced over-all advantages" to warrant elimination of either system from the surface-to-air development programs. WSEG recommended that the development of both the NIKE B and TALOS systems be continued, that emphasis be given to the continued study of both systems to insure the most effective use of components and techniques of each system, and that a composite operational deployment program including both systems be developed and implemented when appropriate.

(TS-RD) Rpt by WSEG, "Volume I, WSEG Report No. 19, A Study of NIKE B and TALOS IM-70 Systems," 29 Nov 56. (C) Memo, Dir WSEG to CJCS, "NIKE B - TALOS Evaluation," 30 Nov 56. Both in OCJCS.

1 Dec 56 [

8 Dec 56

According to a chronology prepared in OSD, the Secretary of Defense authorized the Navy to terminate participation in the Army's JUPITER project and to proceed with development of the solid-propellant POLARIS.

(S) OSD, "Chronology of Significant Events in the U.S. Long Range Ballistic Missile Program," OCJCS files.

13 Dec 56

According to a chronology prepared in OSD, the AEC, in response to an Army request of 1 November 1956, informed the Military Liaison Committee that starting in January 1958, the XW-28 warhead could be provided for the JUPITER. (RD)

(S) OSD, "Chronology of Significant Events in the U.S. Long Range Ballistic Missile Program," OCJCS files.

21 Dec 56

During his briefing of the NSC on USAF Force structure and the FY 1958 budget, General Twining said that although a high development rate for ICBMs and IRBMs was being maintained, some slow-up in production deliveries of these missiles was planned. It was anticipated that the IRBM would be introduced into Air Force units by the end of FY 1960, and that the ICBM would be introduced shortly thereafter. The SNARK program had been held to one wing, to be equipped with at least 60 missiles by the end of FY 1960.

(TS) sec 1 and (S) sec 2 of Remarks by Gen Twining before NSC, 21 Dec 56, in untabbed folder of (TS) statements by Gen Twining, 1954-1956, OCJCS files.

2 Jan 57

10 Jan 57 In referring to U.S. policy on disarmament in his State of the Union message to Congress, President Eisenhower expressed U.S. willingness to make any "reliable agreement" that, among other things, would "mutually control the outer space missile and satellite development." His mention of outer-space missiles and satellites in connection with disarmament was the first public reference of this sort by any world statesman.

(U) New York Times, 11 Jan 57, 1:6-7; text, State Department Bulletin, Vol. XXXVI, No. 918 (28 Jan 57), pp. 123-126.

11 Jan 57

14 Jan 57 As part of his presentation of new U.S. disarmament proposals before the UN Political and Security Committee, Ambassador Lodge proposed that experiments on outer-space objects should be "devoted exclusively to peaceful and scientific purposes," under "international inspection and participation."

(U) DPC Note No. 108, "Opening Statements at First Committee," 18 Jan 57, CCS 092 (4-14-45) BP pt 7.

15 Jan 57 According to a chronology prepared in OSD, the OSD/SAC recommended that both the THOR and JUPITER programs be continued, with JUPITER considered as a backup to the THOR. This recommendation was based on the assumption that neither JUPITER nor THOR would fail, but that insurance against failure was desirable, and that JUPITER would provide basic information for future ballistic missile development.

(S) OSD, "Chronology of Significant Events in the U.S. Long Range Ballistic Missile Program," OCJCS files.

24 Jan 57 The JCS provided guidance for the forthcoming US-UK defense talks, recommending, among other things, that the IRBM weapon system (less nuclear warheads) be provided to the UK at the earliest practicable date. These defense talks were held in Washington from 28 January through 1 February.

(TS) Dec On JCS 2116/109, "Visit of U.K. Minister of Defense, 28-29 January 1957 (U)," 24 Jan 57, source of (TS) Memo, CJCS to SecDef, same subj, same date, CCS 337 (4-19-50) sec 17. (TS) JCS 2116/110, "U.S.-U.K. Talks, January 28-February 1, 1957 (U)," 18 Feb 57, same file.

24 Jan 57 The Surveys and Investigations Staff of the House Committee on Appropriations provided the committee with a long, detailed report on the guided missile programs of the Department of Defense. (See item for 16 July 1956.) The Staff report included discussions of: (1) inter-service rivalry and "examples of past, present, and potential duplication" (NIKE B-TALOS, THOR-JUPITER-POLARIS Ballistic Missiles, TARTAR-HAWK, SPARROW-FALCON, REGULUS I-MATADOR, REGULUS II-RASCAL II, and anti-missile missiles); (2) activities of OSD in guided missile programs; (3) the status of development of each missile and the evaluation of the existing and prospective capability of each missile by category (air-to-air, air-to-surface, surface-to-air, surface-to-surface); and (4) total fund allocations by type of missile, existing and eventual production costs, lead time for volume production of each missile, and estimated total investment and annual cost of ground installations for comparable types of missiles.

According to the Staff report, service rivalry and duplication stemmed from the allocation or lack of allocation of service roles and missions. New concepts of warfare and improvement in missile performance capability had "rendered obsolete any general pronouncements which allocated roles and missions." Each service had striven to assure that it would not suffer in the reallocation of responsibilities, and the costly duplication of missiles had resulted. Expressed in the report was the view that the problems of inter-service rivalry and duplication might be solved by "(1) the best possible, however imperfect, assignment of roles and missions, with its inevitable weakness compensated for by (2) strong and effective control and administration by the Office of the Secretary of Defense."

The Staff also found evidence of overlapping responsibilities and duplication within OSD (especially in the offices of the Assistant Secretaries of Defense for Research and Development and for Applications Engineering), lack of effective review action at the OSD level, and duplication between OSD and the Services. The report indicated that "probably the greatest single weakness in the missile program is the failure of OSD to have an effective organization for the evaluation of missiles"; it was through the failure of the evaluation process that duplication had occurred and obsolete programs had been permitted to continue. Competent and thorough evaluation, stated the report,



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was essential, for it might very well mean the "difference between an effective defense which can be tolerated by the Nation's economy and an utter dissipation of both national resources and National defense." Perhaps the single major conclusion of the Staff survey was that in the guided missile program the Department of Defense had not exercised its authority effectively.

Finally, referring to the 24 June 1955 review of the national guided missile program produced by the Assistant Secretary of Defense (AE), the Staff found that the recommendations in the review had resulted in "little, if any, impact on the guided missiles programs." (See item of 25 January 1956.)

(TS-RD) Rpt by Surveys and Investigations Staff, House of Reps, "A Report to the Committee on Appropriations, U.S. House of Representatives, on Guided Missiles Programs, Department of Defense," Jan 57, CCS 334 GMC (1-16-45) sec 17, BP pt 6.

✓ 24 Jan 57

According to a chronology prepared in OSD, the OSD Ballistic Missiles Committee noted that the Secretary of Defense had assigned high DOD priority to the POLARIS program, but not the highest research and development priority. The Committee agreed that in order to maintain effective liaison between the POLARIS project and other ballistic missile programs, the organizational channels that had been set up to govern Navy participation in the JUPITER program should continue to be used for the POLARIS.

(S) OSD, "Chronology of Significant Events in the U.S. Long Range Ballistic Missile Program," OCJCS files.

28 Jan -  
1 Feb 57

Secretary of Defense Wilson and British Minister of Defense Duncan Sandys held talks in Washington concerning the mutual US-UK defense posture, with the following among the results: (1) The British were given information on the THOR and the JUPITER, without commitment by either side but looking toward possible deployment of a U.S. IRBM in the U.K.; conditions under which nuclear warheads for the IRBM could be made available to the U.K. were also discussed. (2) Arrangements were made for the British to examine the TALOS with a view to its possibly replacing the British BLUE ENVOY missile, production being at British expense. (3) The U.S. agreed to study the British air-to-air missile BLUE JAY and the British ground-to-ground missile RED ROSE, and report its findings to the U.K.

(TS) Memo, Asst SecDef (ISA), (sgd Fox), to CJCS et al., "US-UK Talks, January 28-February 1, 1957," 14 Feb 57, Encl "A" to (TS) JCS 2116/110 (18 Feb 57), Memo by CJCS, same subj, 15 Feb 57, CCS 337 (4-19-50) sec 17. (TS) Tabs A, B, D, E, and F to preceding, same file, BP pt 6.

20 Feb 57

In a prepared statement before the House Committee on Appropriations, General Nathan F. Twining, Chief of Staff, USAF, compared USAF capabilities with those of the USSR. Concerning guided missiles, he said that "we believe we are ahead in some areas of development. Nevertheless, the sum total of evidence indicates that the Soviets are making considerable progress." It was estimated that by 1960 the Soviets could have thousands of missile launchers in their air defense system, and already industrial complexes were ringed by air defense missile sites; Moscow alone had 60 such installations. Advances in the development of air-to-air missiles could also be expected to enhance the Soviet air defense. Turning to Soviet offensive capabilities, General Twining estimated that by the end of 1957 the USSR could have an effective air-to-ground missile with a range of 55 miles, extended to 100 miles by 1960, and that high yield warheads were already available for this weapon. He predicted that defense against Soviet surface-to-surface missiles would become a major problem within a very few years. It was believed that "right now" the Soviets probably had ballistic missiles with 350 and 800 mile ranges, carrying relatively low yield warheads. By 1959, however, the USSR might have an IRBM of 1600 mile range, and "by 1960-61, the Soviets could have achieved the ICBM and actually be producing these 5500 mile weapons," with high yield warheads.

During his discussion of U.S. missiles, General Twining said that plans called for the SNARK to become operational by mid-1958, the THOR IRBM in 1959-60, and the ATLAS ICBM by 1960. He emphasized that the ballistic missile program was continuing to receive top priority, that all Air Force projects were substantially on schedule, and that he knew of nothing further that could be done to accelerate the development of operationally effective ballistic missiles. (General Twining gave substantially the same information to the Senate Armed Services Committee at hearings held 4-5 April 1957, and to the Senate Committee on Appropriations on 29 May 1957.)

(TS) Draft of Statement by General Twining before the House Appropriations Committee, 20 Feb 57, CVC TS 34-57, TS Speech File - 1957, CJCS files. (TS) Statement by General Twining Before the Senate Armed Services Committee, 4-5 Apr 57, CVC TS 64-57, same file. (TS) Statement of Gen Twining to Senate Appropriations Committee, No. 14, Speeches April 1957 - June 1957, CJCS files.

✓ 27 - 28  
Feb 57

In hearings before the House Committee on Appropriations, the Deputy Secretary of Defense, Mr. Robertson, and the Special Assistant to the Secretary of Defense for Guided Missiles, Mr. Murphree, discussed, explained, and defended the Defense Department's management of the guided missiles program. Much of their prepared statements and testimony was concerned with questions raised by the report of the Surveys and Investigation Staff of the House Committee on Appropriations; the report had been provided to the Defense Department well in advance of the hearings. (See item of 24 January 1957.)

Concerning the overlapping and duplication in OSD mentioned in the House report, Mr. Robertson stated that it had occurred mostly in the development stage, where the contributions of the researchers were being phased out and the engineering efforts were picking up the project. The Defense Department had been aware of the problem for some time and had recently acted to eliminate it by combining the Office of the Assistant Secretary of Defense (Research and Development) and the Office of Assistant Secretary of Defense (Applications Engineering) into one: the Office of Assistant Secretary of Defense for Research and Engineering. It was Mr. Robertson's belief that competition among the military departments had been beneficial in stimulating progress in the early stages of missile development. He believed, too, that the over-all rate of progress was "consistent with the growth of our basic technology and that it has not been limited by lack of financial support." However, the U.S. had now reached a point where clearer definitions of roles and missions were necessary, and Mr. Wilson's recent decisions on this question represented a major step in this direction. (See item for 26 November 1956.)

On the question of duplication of missiles, Mr. Murphree stated that there had been only one case of undesirable duplication--MATADOR-REGULUS. In other cases of duplication the Department of Defense had felt that the duplication was either "desirable to insure success" or "the time factors were such that it was not feasible to eliminate parallel developments." The THOR and JUPITER programs were a case of deliberate duplication to insure success. After flight-test information on the two missiles became available, THOR and JUPITER would be evaluated, and only one would be continued, as an Air Force responsibility. Concerning the NIKE B (HERCULES)-TALOS situation, Mr. Murphree stated that it had been recognized that the development of a land-based TALOS system would be difficult and expensive, but the Air Force had felt that the acquisition of such a system would not only be a valuable complementary weapon to the air-defense force, but would also provide a valuable stepping stone toward the BOMARC system. In the past year the Department of Defense had taken four basic steps to resolve future questions concerning the NIKE B-TALOS systems: (1) operational responsibilities had been reviewed, and the concept of a point defense system defined; (2) fundamental review of both systems had been completed, and recommendation aimed at optimizing both systems had been made; (3) the Army had been reassigned the responsibility for evaluation and determination of requirements for the land-based TALOS; and (4) the development flight-test program and evaluation programs were being very carefully monitored for indications of the relative rate of progress and effectiveness of the two systems. Turning to the question of anti-missile missiles, Mr. Murphree stated that the Antiballistic Missile Committee was currently engaged in determining the amount of effort that could be applied effectively to

this weapons system. It was expected that the managerial problems involved would be resolved within a few weeks, and that a "coordinating mechanism between the services" would be functioning satisfactorily in the very near future.

Questioned on the statement in the House report to the effect that an outstanding weakness of the guided missiles program was the failure of OSD to evaluate effectively the different missiles, Mr. Robertson stated that he believed OSD had conducted "very tight reviews" of missile duplications. The Department of Defense was attempting to provide strong staff supervision and control while keeping the operational and development aspects decentralized to the Services.

(U) Hearings on Dept of Def Apprns for 1958 Before the Subcmte of the Cmte on Apprns, HR, 85th Cong, 1st sess, pt 2, pp. 1333 ff.

28 Feb 57

The JCS informed the Secretary of Defense that an operational requirement existed for a low-yield atomic warhead for the HAWK I surface-to-air missile. They stated that, if practicable, the warhead selected should be one of a type already under active development for use in other weapons of comparable size.

(S-RD) Dec On JCS 2012/85, "Requirement for an Atomic Warhead for the HAWK I Surface-to-Air Missile (S)," 28 Feb 57, source of (S) [sic] Memo, JCS to SecDef, same subj and date. Both in CCS 471.6 (5-31-44) sec 9.

7 Mar 57

In a letter to the Chief of Staff, USAF, CINCONAD reiterated his "deep concern" over the future Soviet ICBM threat to the U.S. It appeared, he said, that the USSR could achieve an ICBM capability as early as 1959, and certainly by 1961. Evaluation of available information on the current U.S. anti-ICBM program made it apparent that a "successful defense system" would not be available to counter this threat unless a greatly accelerated and intensified program were undertaken. Such a defense system was the "most urgent future CONAD requirement." CINCONAD concluded by stating that it was of the "utmost importance that full recognition be accorded this critical requirement for ballistic missile defense and that immediate and definitive action be taken to bring an adequate defense system into being in time to meet the calculated threat."

(S) Ltr, CINCONAD to CofS, USAF, "Defense Against Ballistic Missiles," 7 Mar 57, CCS 381 U.S. (5-23-46) sec 77.

✓ 12 Mar 57

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14 Mar 57

The Secretary of Defense recommended to the President that he approve deployment of IRBMs to the U.K. and suggested that the necessary arrangements be concluded with the British at the forthcoming meeting of the President and Prime Minister at Bermuda. The Department of Defense, with the concurrence of the State Department, believed that the entire planned IRBM production of the U.S. through mid-1960 should be deployed to the U.K. However, both Departments agreed that it would be undesirable and unnecessary for the U.S. to commit itself to placing all of the deployed missiles in British hands by the end of 1960, as previously proposed. They recommended instead that two squadrons (30 missiles) be transferred to the British, leaving two squadrons under U.S. control. The following political understandings should be obtained from the British, they said: (1) The IRBMs to be transferred to them would be deployed only in the U.K. (2) They would be used only against the Communist bloc in case of general defensive war against the Soviet Union. (3) Their use would be the subject of joint determination by the two governments. (4) Selection of targets for IRBMs in British hands would be coordinated with over-all U.S.-U.K. target plans. (5) The U.K. would give sympathetic and prompt consideration to future requests by the U.S. to deploy additional IRBMs in the U.K. or U.K.-controlled territory.

(TS) Memo, SecDef to Pres, "Intermediate Range Ballistic Missiles for the U.K.," 14 Mar 57, OCJCS files.

18 Mar 57

In a move to eliminate overlapping and duplication of function within the Department of Defense, the Secretary of Defense combined the positions of Assistant Secretary of Defense (R&D) and Assistant Secretary of Defense (Engineering) into the single position of Assistant Secretary of Defense (Research and Engineering). (The position of Assistant Secretary of Defense (Applications Engineering) had been redesignated Assistant Secretary of Defense (Engineering) on 4 October 1956.)

(U) DOD Directive No. 5129.1, "Responsibilities of the Assistant Secretary of Defense (Research and Engineering)," 18 Mar 57. (U) DOD Directive No. 5129.4, "Responsibilities of the Assistant Secretary of Defense (Engineering)," 4 Oct 56. Both in CCS 040 DDD (3-2-56), secs 2 and 1, resp.

✓ 21-24  
Mar 57

President Eisenhower and Prime Minister Macmillian and their staffs conferred at Bermuda and, among other things, discussed the transfer of U.S. missiles to the U.K. The U.S. and the U.K. tentatively agreed to the stationing of four squadrons of IRBMs in the U.K., two to be turned over to the British, and two to be U.S. units. Details on funding and other technical matters remained to be worked out. Also, it was agreed that the British would obtain approximately \$30.5 million worth of CORPORAL missiles from the U.S. The U.K. agreed to commit the CORPORAL units to SACEUR. Warheads for both the IRBMs and the CORPORAL missiles would remain under full U.S. control.

(TS) Memo, Dep SecDef for SecArmy, et al., "Summary of Items Covered at the Bermuda Conference of Major Interest to the Department of Defense," 1 Apr 57, CJCS file, SecDef Memos to JCS, Apr 57, OCJCS files.

28 Mar 57

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1 Apr 57

In a briefing given to the White House Staff, General Twining stated that not only must the U.S. have an effective air force-in-being, but it must keep this force modern with new weapons "in order to keep ahead of the improvements the Communists are making." Important among these new weapons was the missile. While missiles were expensive and difficult to produce, once they were integrated into the inventory of weapons, they should be less costly to operate than the manned aircraft force. General Twining did not

anticipate that missiles would replace "manned aircraft to a great extent for a long, long time." Eventually, however, missiles could be made accurate and effective enough to take over a significant share of the offensive air tasks. Until, he said, these offensive missiles were proven weapons, and until they could be relied upon as an effective delivery system, "we must, in effect move down two different roads at the same time." For the next four or five years the Air Force must divide its efforts and resources between two major systems, the manned aircraft force-in-being and the long range guided missiles. "Solving this problem within the practical limits of the resources available is the greatest single problem we face today . . . . If we allow our missile development program to fall behind, we could be conceding our enemies a technological victory of grave importance. If-in the meantime-we neglect the manned aircraft force, we weaken our deterrence and invite even worse dangers. . . .It is essential, if not vital, to our security that we travel both of these roads successfully."

(S) Presentation, Gen Twining to White House Staff, "Presentation to White House Staff," 1 Apr 57, Speeches April 1957 - June 1957, CJCS.

9 Apr 57

In response to the request of the Secretary of Defense made at the 19 March 1957 meeting of the Armed Forces Policy Council, the Air Force presented data it had developed on the advantages and disadvantages of siting the ICBM inside, as compared with siting it at various places outside, the continental U.S. The Air Force concluded, on the basis of ten major criteria, that selected locations in the north central U.S. would be more advantageous than locations in Alaska, northern Canada, or selected islands in the Pacific like Saipan or Tinian. Admiral Radford commented that there was undue emphasis on the disadvantages of locations outside the U.S. and pointed out that dispersal of ICBM sites outside the U.S. would complicate enemy planning, and that enemy attack on such locations would be a form of early warning. The Secretary of Defense directed that JCS request the Weapons Systems Evaluation Group to make a thorough study of the advantages and disadvantages of alternative ICBM deployments, and that no decision should be made by the Air Force to deploy both ATLAS and TITAN until more performance data were available.

(S) Advice of Action, Spec Asst to Members, AFPC, "ICBM Siting and Deployment," 12 Apr 57, CCS 334 GMC (1-16-45) sec 17.

10 Apr 57

With reference to their memorandum of 21 February 1956, the JCS informed the Secretary of Defense that they had established a military requirement for the development of an atomic warhead for the SPARROW-X air-to-air guided missile.

(S-RD) Dec On JCS 2012/89, "Military Requirement for Development of an Air-to-Air Guided Missile Capable of Carrying an Atomic Warhead (C)," 10 Apr 57, source of (S-RD) Memo, CJCS to SecDef, same subj and date. Both in CCS 471.6 (5-31-44) sec 9.

12 Apr 57 The Chief of Staff, USAF, brought to JCS attention the expression of concern by CINCONAD regarding U.S. defense against ballistic missiles. CINCONAD had pointed out that while the USSR might achieve an ICBM capability in the period 1959-1961, it did not appear that a successful system of defense would be available by that time unless a greatly accelerated and intensified development program was undertaken.  
 (S) JCS 1899/322, Memo by CSAF, "Ballistic Missile Defense," 12 Apr 57, CCS 381 (1-24-42) sec 72.

19 Apr 57 According to a chronology prepared in OSD, the Secretary of the Army recommended to the Secretary of Defense the initiation of a program to adapt the XW-28 warhead to the IRBM to provide the U.S. with an early emergency IRBM capability by late 1957. He argued that cancellation of the XW-28 warhead requirement would make impossible overseas deployment of the IRBM before 1959. In another memorandum on 9 May, the Secretary of the Army repeated and expanded on his 19 April recommendation.  
 (TS-RD) OSD, "Supplement to Chronology of Significant Events in the U.S. Long Range Ballistic Missile Program," OCJCS files.

✓ 19 Apr 57 According to a chronology prepared in OSD, the Secretary of Defense replied to a memorandum of 4 March 1957 in which the Secretary of the Navy had requested that the POLARIS be given a priority equal to that of other ballistic missile projects. (On 16 April 1957, the Scientific Advisory Committee had again repeated its recommendation that such a priority be granted.) The Secretary of Defense stated that the POLARIS was properly a part of the ICBM-IRBM program, but it was not to interfere with accomplishment of the earlier capability dates set for the land-based IRBM and ICBM. All other factors being equal, conflicts would be adjudicated in favor of the IRBM and ICBM programs that had earlier capability dates.  
 (S) OSD, "Chronology of Significant Events in the U.S. Long Range Ballistic Missile Program," OCJCS files.

25 Apr 57 The UN Disarmament Subcommittee, meeting in London, turned to a discussion of missiles and outer-space objects. In a general restatement of U.S. policy, Mr. Stassen called for international inspection of and participation in all tests of outer-space objects. He emphasized the importance of achieving early control over missiles and rockets. Soviet representative Zorin called for coupling missile control with a ban on nuclear weapons, and said that the general discussion should be expanded to include all missiles, rockets, and atomic artillery.  
 (S) Msg, London (Whitney) to SecState, 5816, 25 Apr 57, R&RA Sect. (U) New York Times, 26 Apr 57, 6:2.

25 Apr 57 In memorandums to the Secretaries of the Army and Navy the Special Assistant for Guided Missiles informed them that the Anti-ICBM Committee had reviewed the Anti-ICBM program and submitted its recommendations on the program to the Secretary of Defense on 7 March 1957. After



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"re-wording" one of the recommendations, the Secretary had on 12 April approved the recommendations. These recommendations were as follows:

(1) That the Air Force proceed with research and development directed toward a systematic development of an early warning system as planned.

(2) That the Air Force carry out research and development directed toward the advanced acquisition radars required for the active defense system against the ICBM. The Committee also agreed that the Air Force should carry out studies on the communication problems involved in transmitting information to the active defense system.

(3) That the Army carry out research and development work on local acquisition and target tracking radars along with a moderate effort on the defense missile for the active portion of the ICBM defense system at a level about that now planned.

(4) That an Army-Air Force Coordinating agency be established to work out ways and means to insure that all effort was directed to the common aim of achieving proper phasing of all portions of the Anti-ICBM system and the compatibility of the portions of the system with each other as well as with other parts of the Continental Air Defense system.

(S) Memo, SAGM to Secys Army and Navy, "Anti-ICBM Program," 25 Apr 57, CCS 381 U.S. (5-23-46) sec 78.

1 May 57

Referring to a memorandum from the Secretary of Defense dated 28 March 1957, the JCS informed the Secretary that they had reviewed the proposal by the Secretary of the Army that the Army be designated the official point of contact between the U.S. and allied nations for exchange of information relating to land-based surface-to-air missiles. The JCS considered that the designation should be in conformity with the 26 November 1956 memorandum of the Secretary of Defense clarifying roles and missions of the Services. Accordingly, they recommended that (1) the Army be designated the official point of contact regarding land-based surface-to-air missiles used for point defense, and (2) the Air Force be designated the official point of contact for land-based surface-to-air missiles used for area defense. (See item for 11 June 1957.)

(S) Dec On JCS 1620/145, "Exchange of Surface-to-Air Missile Information Between the United States and Allied Nations (U)," 1 May 57, source of (S) Memo, JCS to SecDef, same subj and date. Both in CCS 334 GMC (1-16-45) sec 17.

22 May 57

In providing the Secretary of Defense their comments on Mr. Stassen's "latest disarmament proposal," the JCS, among other things, repeated their objections to a 12 months' suspension of nuclear testing (see item for 3 October 1956) included in the proposal, because such a suspension would "stagnate" development programs for high-yield weapons and be "seriously detrimental" to the ICBM/IRBM and the anti-ICBM/IRBM programs.

(S) Encl (p. 6) to (S) Memo, CJCS to SecDef, "Disarmament," 22 May 56, JCS Memos to SecDef (May 57), OCJCS files.

3 May 57

The Secretary of Defense directed his Special Assistant for Guided Missiles to exercise specific coordination within OSD over the following programs: anti-ballistic missile development, guided missile range extension and utilization, NAVAHO, SNARK, TRITON, REDSTONE, and any other ballistic missile with range equal to or greater than REDSTONE (but excepting ATLAS, TITAN, THOR, JUPITER, and POLARIS).

(U) Memo, SecDef to SpecAsst for GM, "Functioning of the Office of Special Assistant to the Secretary of Defense for Guided Missiles," 3 May 57, Hist Sec, JCS.

21 May 57

24 May 57

The JCS considered WSEG Report No. 23, "The Relative Military Advantages of Missiles and Manned Aircraft," prepared as the result of NSC Action No. 1690, 28 March 1957. The report pointed out that, ideally, a weapon system to be employed as a counterforce should have (1) a suitable CEP/warhead-yield combination, (2) fast reaction and fast delivery time, (3) low susceptibility to destruction by surprise attack, (4) high penetration capability (through enemy defenses), and (5) good over-all operational flexibility. The weapon systems considered in the report included ballistic missiles (ATLAS, TITAN, THOR, JUPITER, and POLARIS), aerodynamic missiles (NAVAHO, SNARK, MATADOR B, REGULUS II, and TRITON), and manned aircraft (B-47, B-52, B-58 with and without powered pod, A3D, A4D, A3J). None of these weapon systems had all the ideal characteristics mentioned above. Manned aircraft had the required accuracy and pay-load characteristics, and constituted the only system with the necessary operational flexibility; however, they had the defects of slow delivery time,

decreasing penetration capability, and increasing base vulnerability. Ballistic missiles would provide a great improvement in reaction/delivery time and penetration capability, and a potentially large gain toward base invulnerability; but their CEP/yield combination was inadequate for many military targets and their effectiveness was largely dependent on the quality and completeness of the guidance and targeting data. Aerodynamic missiles had better penetration capability and shorter delivery time than manned aircraft but lacked the operational flexibility of the latter and also were inferior in accuracy/pay-load combinations. Aerodynamic missiles had better accuracy/yield combinations than ballistic missiles, but their delivery times and vulnerabilities were greater. The JCS: (1) noted the report's recommendation that a mixed system of ICBMs, IRBMs, manned aircraft, and aerodynamic missiles be developed for employment by the U.S. during the period under consideration, 1961-67; (2) noted the recommendation that missile sites and air bases be "hardened" and dispersed as much as possible; (3) authorized WSEG to review this report a year later; and (4) instructed the Director, WSEG, to prepare a written presentation, based on this report and additional guidance provided by the JCS, for submission to the Secretary of Defense and for presentation before the National Security Council.

(TS) Dec On and Encl to JCS 1620/146, "Transmittal of WSEG Report No. 23 (U)," 24 May 57, CCS 334 GMC (1-16-45) sec 17.

4 Jun 57 The JCS forwarded to the Secretary of Defense WSEG Brief No. 3, "The Relative Military Advantages of Missiles and Manned Aircraft," 28 May 1957, based on WSEG Report No. 23 (see item for 24 May 1957). The substance of the brief was the same as that of the report, but the recommendations were omitted and the conclusions were to be considered as preliminary.

(TS) Dec On JCS 1620/149, "Transmittal of WSEG Brief No. 3 (U)," 4 Jun 57, source of (TS) Memo, CJCS to SecDef, "Ballistic Missiles Programs (U)," 4 Jun 57. Both in CCS 334 GMC (1-16-45) sec 18.

11 Jun 57 Concurring in the recommendation made in the JCS memorandum of 1 May 1957, the Secretary of Defense (1) designated the Army the official point of contact for exchange of information between the U.S. and allied nations concerning land-based surface-to-air missile systems used for point defense, and (2) designated the Air Force the official point of contact for similar exchange of information concerning land-based surface-to-air missile systems used for area defense.

(C) Memo, SecDef to CJCS et al., "Exchange of Guided Missile Information Between the U.S. and Allied Nations," 11 Jun 57, quoted in N/H of 1620/145, 14 Jun 57. CCS 334 GMC (1-16-45) sec 17.

✓ 11 Jun 57 According to a chronology prepared in OSD, the Secretary of Defense answered the memorandum of 19 April from the Secretary of the Army by affirming the cancellation of the XW-28 warhead requirement. He stated that the XW-35 warhead was scheduled for availability

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in October 1958. EC XW-35 would coincide with the fully operational IRBM and ICBM programs, and the Secretary of Defense did not feel that further consideration should be given to adapting the XW-28 for interim use with the IRBM. He did not believe it was the intent of the NSC that the U.S. achieve some form of early IRBM operational capability at the expense of possible delay in the achievement of a truly operational IRBM.

(TS-RD) OSD, "Supplement to Chronology of Significant Events in the U.S. Long Range Ballistic Missile Program," OCJCS files.

11 Jun 57

According to a chronology prepared in OSD, the first flight test of the ATLAS missile took place. The missile was tested in operational configuration minus the sustainer engine. Following successful launching, a random valve malfunction in the propulsion subsystem resulted in failure of one of the booster engines causing violent missile maneuver, after which it was destroyed by the range safety officer. The missile attained a height of 9,500 feet.

(S) OSD, "Chronology of Significant Events in the U.S. Long Range Ballistic Missile Program," OCJCS files.

✓ 15 Jun 57

The Secretary of the Army recommended that the Secretary of Defense authorize the Army to modify the existing REDSTONE missile with a view to developing a weapon effective against targets at ranges of 100 to 500 nautical miles. The recommendation was based on two significant achievements by the Army: (1) the successful firing of an unstable missile by means of a new control device, the angle-of-attack meter, which would permit substantial reduction of the weight of the REDSTONE's pay load without reduction of its thrust section to retain balance; (2) the successful pouring and operation of solid-propellant rocket motors of an unprecedented size. The new missile would probably be less than one-fourth the size of the existing REDSTONE, would be transportable by air and otherwise highly mobile, and would permit maximum economy in the attack of targets in ranges between 100 and 500 nautical miles.

(S) Memo, SecA to SecDef, "REDSTONE Modernization Program," 15 Jun 57, Annex to App A to Encl to (S) JCS 1620/154, Note by Secys, same subj, 7 Aug 57, CCS 334 GMC (1-16-45) sec 19.

15 Jun 57

The Secretary of Defense told newsmen that the U.S. would continue development of the ICBM regardless of any international disarmament agreement banning nuclear tests.

(U) New York Times, 16 Jun 57, 1:8.

18 Jun 57

The Director of the Weapons Systems Evaluation Group presented WSEG Brief No. 3 (Revised), "The Relative Military Advantages of Missiles and Manned Aircraft," before the Armed Forces Policy Council. Otherwise essentially the same as WSEG Brief No. 3 (see item for 4 June 1957), the revised brief recommended that

(1) a mixed system of ICBMs, IRBMs, FBMs, manned aircraft, and aerodynamic missiles be developed for employment during the period 1961-67, and (2) WSEG be authorized to review this report a year later. After making several technical changes, the AFPC agreed that the report was ready for presentation to the National Security Council.

(S) Advice of Action, Spec Asst to Members, AFPC, "Relative Military Advantages of Missiles and Manned Aircraft," 21 Jun 57, Encl to N/H of JCS 1620/151, 26 Jun 57. WSEG Brief No. 3 (Revised), "The Relative Military Advantages of Missiles and Manned Aircraft," 17 Jun 57, App to Encl to (S) JCS 1620/151, Note by Secys, "Transmittal of WSEG Brief No. 3 (Revised (U)," 19 Jun 57. All in CCS 334 GMC (1-16-45) sec 18.

18 Jun 57 According to a chronology prepared in OSD, the Scientific Advisory Committee's eighth report to the Secretary of Defense recommended that serious attention be given to expanding fundamental physical knowledge, in order to provide a basis for important military developments.

(S) OSD, "Chronology of Significant Events in the U.S. Long Range Ballistic Missile Program," OCJCS files.

20 Jun 57

30 Jun 57

The Ad Hoc Committee on Air Defense of North America (see item for 10 October 1956) submitted its report and recommendations to the Chairman, JCS. The committee stated that "Soviet accelerated development and production relative to our own has resulted in their achieving capabilities which we are now unprepared to counter effectively." Included among these capabilities were the possible Soviet use of air-to-surface missiles, decoys, and other deceptive measures to saturate U.S. defense, and "a near future ballistic missile . . . against which, in the time period of this report [through FY 63], there does not appear to be much chance of achieving an effective active air defense." Such a defense was technically feasible, but the U.S. was not currently organized to press its development. Hence the committee recommended that

the U.S. "accord priority to the research and development program for ballistic missile defense second only to that given to the ICBM and IRBM programs, and create an organization capable of prosecuting a program to provide the earliest capability." The committee also recommended that the U.S. move beyond theoretical study and initiate an intensive test program to determine the effects of nuclear detonations on atomic warheads, since the development of effective "weapons kill" was "an absolute must" in the defense against ballistic missiles.

(TS) "A Report and Recommendations to the Joint Chiefs of Staff by the Ad Hoc Committee on Air Defense of North America," 30 Jun 57, Encl to (TS) JCS 1899/339, "Air Defense of North America," 8 Jul 57, CCS 381 U.S. (5-23-46) BP pt 10.

✓ 3 Jul 57

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10 Jul 57

According to a chronology prepared in OSD, the Ballistic Missile Committee, in accordance with instructions from the Secretary of Defense of 22 May, reviewed the results of studies made by the Services to determine the amount of overtime required to meet the current ballistic missile program schedules. It was determined that the use of overtime was justifiable only for the purpose of resolving critical bottlenecks in meeting approved ballistic missile program schedules, and that the ratio of overtime hours to total hours should not exceed 8% on a program basis by 1 January 1958.

(S) OSD, "Chronology of Significant Events in the U.S. Long Range Ballistic Missile Program," OCJCS files.

11 Jul 57 The Secretary of the Air Force announced cancellation of the NAVAHO as an economy measure.  
(U) DOD Press Release, 11 Jul 57.

✓ 1 Aug 57 [

2 Aug 57 The JCS replied to the 26 June 1957 request of the Secretary of Defense for their views on two questions: (1) Was there an existing operational requirement by the Army for a missile in the 500-nautical-mile range? (2) If such a missile were developed by the Army, was there an operational requirement for it on the part of any other Service? The Chief of Naval Operations and the Chief of Staff of the Air Force, with the concurrence of the Chairman, gave a negative answer to both questions. The Chief of Staff of the Army contended that there would be many targets of interest to both the Army and the Air Force in the range gap between the Army's 175-mile REDSTONE and the 1500-mile IRBM. Such targets at present could be struck only with manned aircraft and air-supported missiles, both obsolescent. Therefore, there was an over-all national need for a 500-mile ballistic missile. In addition, the Army had a specific need, for (1) Army Intelligence believed the Soviet Army had such a weapon operational and (2) it would be useful as a deterrent to surprise attack on forward airfields and missile sites. The quickest and cheapest way to develop a 500-mile ballistic missile, he asserted, would be through modification of the existing REDSTONE.

(S) JCS 1620/154, Note by Secys, "REDSTONE Modernization Program (U)," 7 Aug 57, source of (S) Memo, CJCS to SecDef, same subj, 2 Aug 57. (S) JCS 1620/155, Note by Secys, "Army REDSTONE Modernization Program (U)," 9 Aug 57, source of (S) Memo, CSA to SecDef, same subj, 2 Aug 57. All in CCS 334 GMC (1-16-45) sec 19.

8 Aug 57

According to a chronology prepared in OSD, a major milestone in missile development was reached with the flight test and recovery of a one-third scale JUPITER nose cone, designed for heat protection of payload upon re-entry into the atmosphere. The pre-calculated trajectory called for a nose cone range of approximately 1,100 nautical miles, and the missile followed the predicted trajectory closely. Upon recovery of the nose cone by Naval units, as planned, it was determined that ablation was only one-fourth to one-third of expectation. Future nose cone tests were planned on full scale JUPITER missiles.

(S) OSD, "Chronology of Significant Events in the U.S. Long Range Ballistic Missile Program," OCJCS files.

10 Aug 57

In a memorandum to the President, the Secretary of Defense summarized his views on Army development and use of ballistic missiles with ranges of 200 miles and more. He enclosed the 2 August 1957 memoranda in which the JCS had expressed their views on operational requirements for a 500-mile missile. The Secretary listed the arguments against developing and employing such a missile and against modifying the REDSTONE to achieve a 500-mile capability. (The Army had proposed to accomplish this by altering the warhead and guidance system of the REDSTONE.) Recognizing, however, that the Army needed a lighter, more mobile missile than the REDSTONE, the Secretary stated that he was prepared to initiate development of a solid propellant missile weighing 10,000-15,000 pounds, carrying a 1,500-pound warhead, and having a range of about 200 nautical miles. It could be expected that such a missile, with a 600-pound warhead and other anticipated improvements, would have a range up to 500 miles. Thus, if a 500-mile missile were ever needed, it could be obtained without excessive additional costs. The Secretary asked the President's approval for this plan.

(S) Memo, SecDef to Pres, "Army Ballistic Missile Program," 10 Aug 57, OCJCS files.

13 Aug 57

According to a chronology prepared in OSD, the Secretary of Defense, in separate memoranda to the Secretaries of the Army and of the Air Force, announced the formation of a three-man committee for the purpose of working out a single land-based IRBM program, and directed that certain actions be taken to limit or reduce long lead time commitments. In the case of the THOR program, the maximum production rate was limited to two missiles per month, and in the case of the JUPITER the rate was limited to one missile per month until such time as a decision was made concerning a single land-based IRBM approach.

The Secretary of Defense further limited allowable overtime for both programs to 3 per cent and such overtime was to be solely for the purpose of resolving critical bottlenecks. A reasonable amount of overtime in excess of 3 percent was permitted in direct support of the static and flight tests.

(S) OSD, "Chronology of Significant Events in the U.S. Long Range Ballistic Missile Program," OCJCS files.



- 14 Aug 57 According to a chronology prepared in OSD, the Secretary of Defense ordered a 5 per cent reduction in the POLARIS program, which--along with the rising cost of test vehicles--forced a stretchout of 4 to 7 months in the program.  
(S) OSD, "Chronology of Significant Events in the U.S. Long Range Ballistic Missile Program," OCJCS files.
- 15 Aug 57 CINCONAD recommended that a Manhattan District type project be established to develop an anti-ICBM weapons system.  
(TS) Ltr, CINCONAD to CSAF, "Defense Against the Intercontinental Ballistic Missile (AICBM)," 15 Aug 57, Encl to (TS) JCS 1899/351, Memo by CSAF, "Ballistic Missile Defense," 4 Sep 57, CCS 381 U.S. (5-23-46) sec 85.
- 27 Aug 57 The Soviet Union announced the successful testing, several days earlier, of an intercontinental multi-stage ballistic missile. On 30 August, Defense Department officials stated that the USSR had tested at least four, and probably six, intercontinental ballistic missiles in the spring of 1957.  
(U) New York Times, 27 Aug 57, 1:8, 31 Aug 57, 1:2-3.
- ✓ 30 Aug 57 WSEG forwarded to the JCS a copy of a WSEG report on defense against ICBMs, prepared at the request of the Assistant Secretary of Defense (R&D). The report noted that an early warning system against ICBMs would not be available before 1963, and that therefore the U.S. early warning capability was out of phase with the alert capability by at least one year and with the estimated Soviet threat by at least two. Moreover, while proposed active defense systems were technically feasible and could provide an effective defense against ICBM attacks uncomplicated by decoys and ECM, by the time the earliest of these systems could be made operational (estimated 1965), the USSR could probably incorporate decoys and/or ECM into its ICBMs. Therefore, until a systematic study of counter-countermeasures could be undertaken, it would be dangerous to sacrifice flexibility in the active ICBM defense program by committing the U.S. to a single system or concept. The report also declared that existing weaknesses in this program were largely due to the lack of a centralized agency for its direction.  
In the light of these points, WSEG recommended that: (1) prompt action be taken to accelerate the early warning program and, if possible, bring it into phase with the expected threat; and (2) a single agency be designated to direct the active ICBM defense program through the development phase, which should include: (a) determination of the technically feasible countermeasures which could be incorporated into ICBMs, (b) development of counter-countermeasures, (c) development of the critical components needed by active defense systems, (d) determination of what was to be

defended and with what priority, and (e) development of systems designs that would provide an effective defense system.

(C) Memo, WSEG to CJCS, "Transmittal of WSEG Interim Report No. 21, 'Defense Against Intercontinental Ballistic Missiles' (C)," 30 Aug 57, Encl to (C) JCS 1899/356, same subj, 19 Sep 57, CCS 381 US (5-23-46) sec 85. (S-RD) WSEG Interim Report No. 21, "Defense Against Intercontinental Ballistic Missiles," 30 Aug 57, same file, BP pt 12.

5 Sep 57

In a memorandum to the Secretary of Defense the Secretary of the Army called attention to the "urgent requirement for an anti-ICBM system as soon as practicable." At some time during the 1960-65 period, he said, the USSR probably could acquire militarily significant quantities of ICBMs. U.S. ballistic missile development was on a comparable timetable, although the recent unverified firing of a Soviet ICBM might indicate that Soviet development was ahead of the estimated schedule. Should both the U.S. and the USSR attain militarily significant quantities of ICBMs at about the same time, a relative advantage might accrue to the side that first developed an active operational anti-missile missile system. [The Army believed that it was "technically and economically feasible" to develop a defense against the ICBM, and that the U.S. should "proceed aggressively" to provide an active defense system as soon as possible. Finally, the Secretary of the Army requested that the Secretary of Defense "recommend to the National Security Council the assignment of a 'National Priority' to the anti-ICBM development equivalent to the priority now accorded to the US intercontinental ballistic missile development."

(S) Memo, SecA to SecDef, "Anti-ICBM Development," 5 Sep 57, CCS 381 U.S. (5-23-46) sec 85.

9 Sep 57

The new Chairman of the JCS, General Twining, responded to the verbal request of the Secretary of Defense for his views on the Army's proposal to develop a 500-mile missile through modification of the REDSTONE. General Twining stated that he supported the views of the previous Chairman on this question. (See item of 2 August 1957.) After listing the arguments against the proposed development, he concluded that a better program for the Army would be "to take advantage of recent advances in the solid propellant program and to design a truly lightweight, highly mobile missile with a maximum range of 200 miles."

(S) CM-6-57, CJCS to SecDef, "REDSTONE Modernization Program," 9 Sep 57, OCJCS files.

✓13 Sep 57

The Secretary of Defense forwarded to the JCS a copy of the Secretary of the Army's memorandum of 5 September 1957 on the need for an anti-ICBM system, and requested the JCS to provide him with their comments on the recommendations contained in the memorandum. Also, the Secretary of Defense informed the JCS that he had requested the Special Assistant for Guided Missiles

to prepare a presentation for the NSC on the problems involved in the development of an anti-ICBM, and to recommend a course of action.

(S) Memo, SecDef to CJCS, "Anti-Intercontinental Ballistic Missile Developments," 13 Sep 57, CCS 381 U.S. (5-23-46) sec 85.

16 Sep 57 According to a chronology prepared in OSD, the Secretary of Defense increased from 3 per cent to 5 per cent the allowable overtime at the Army Ballistic Missile Agency in support of the JUPITER program.

(S) OSD, "Chronology of Significant Events in the U.S. Long Range Ballistic Missile Program," OJCS files.

17 Sep 57 The Navy announced cancellation of the TRITON surface-to-surface missile program.

(U) DOD Press Release, 17 Sep 57.

19 Sep 57 In response to the 13 September 1957 memorandum of the Secretary of Defense the JCS advised him that they concurred with the Secretary of the Army's view that the development of an anti-ICBM system was an urgent requirement, and one which called for "greater emphasis on some aspects of the problem than now accorded the Service programs in this field." The JCS also stated that they were studying the status of these programs with a view to making, at a later date, specific recommendations on ways and means of accelerating the development of an effective defense system.

(S) Memo, JCS to SecDef, "Anti-Intercontinental Ballistic Missile Developments," 19 Sep 57, CCS 381 U.S. (5-23-46) sec 85.

19 Sep 57 In a memorandum to the JCS, the Chief of Staff, USAF, stated his views on the problem of ballistic missile defense. In his view it was essential to the security of the U.S. and to the nation's economy that all ballistic missile defense efforts be consistent with the national strategic concept of deterrence through a secure air offensive force, with the state-of-the-art in ballistic missile defense and with anticipated defense budget levels. The existing division of responsibility in the field of ballistic missile defense was "rapidly becoming an unacceptable deficiency," and "acting to foster premature decisions which could lead to irretrievable commitment to BMD systems which are prohibitively costly, technically unsound, or operationally ineffective." The Chief of Staff concluded by recommending that the JCS approve and adopt the following statement of policy on ballistic missile defense:

a. Functional responsibility for air defense, including defense against the ICBM, must not be divided.

b. The immediate implementation of passive ballistic missile defense measures, comprising an operational ballistic missile warning system, coupled with improvement in SAC response, dispersal and hardening, must be supported.

c. A vigorous but sound R&D and component construction program, necessary for an active ballistic missile defense system, which would be effective against the advancing ballistic missile threat, must also be supported

d. Any active ballistic missile defense system must:

- (1) Be employed to support the national strategic concept of offense/deterrence.
- (2) Offer an effectiveness that justifies its cost.
- (3) Have an inherent growth potential to cope with an advancing threat.
- (4) In itself not be highly vulnerable to enemy action.

(TS) CSAFM 230-57, CSAF to JCS, "Ballistic Missile Defense," 19 Sep 57, CCS 381 U.S. (5-23-46) sec 85.

23 Sep 57

The Director of the Weapons Systems Evaluation Group forwarded to the JCS WSEG Report No. 26, "Geographical Location of ICBM Units," with a copy to the Assistant Secretary of Defense (R&E). This report was responsive to the discussion at the 9 April 1957 meeting of the Armed Forces Policy Council concerning the relative merits of locating the initial ICBM units inside or outside the U.S. The report concluded that (1) sitings outside the U.S. were excessively vulnerable to enemy attack in addition to being more expensive, thus increasing the cost of the ICBM while lessening its deterrent effect; (2) the north central region of the U.S. in and around North Dakota would be highly satisfactory for the initial ICBM sites; (3) the serious enemy ICBM threat could be greatly reduced by "hardening" of U.S. bases. The report made recommendations in line with these conclusions. (On 23 October 1957 the JCS forwarded a copy of WSEG Report No. 26 to the Chief of Staff, U.S. Air Force, for use in connection with his responsibility concerning the establishment of an initial ICBM capability, and informed the Secretary of Defense of action taken up to that point.)

(TS) JCS 2277, Memo by Dir WSEG to JCS, "Transmittal of WSEG Report No. 26, 'Geographical Location of Initial ICBM Units' (U)," 23 Sep 57, CCS 334 GMC (1-16-45) BP pt 7. (TS) Dec On JCS 2277/1, "WSEG Report No. 26 (U)," 23 Oct 57, same file, sec 19, source of (TS) Memo, SJCS to CSAF and (TS) Memo, CJCS to SecDef, both same subj and date, both in same file, sec 20.

30 Sep 57

The JCS advised the Secretary of Defense that, in their opinion, Mr. Stassen's proposal of 23 September 1957 to separate from the Four Power Joint Proposals of 29 August 1957 for independent consideration the provision calling for suspension of nuclear testing was

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"inconsistent with the security interests of the United States."

(S) Memo, CJCS (sgd Austin) to SecDef, "Disarmament (U)," 30 Sep 57, JCS Memos to SecDef (Sept 57), OCJCS files

2 Oct 57

Secretary of Defense Wilson told a news conference that the choice between the THOR and JUPITER, which he had hoped to make before leaving office, had been put off. He added that a combination of the two missiles was unlikely. On 10 October the new Secretary of Defense, Neil H. McElroy, announced that testing of the two missiles would continue. Defense officials were quoted as saying no decision between the two would be made for "several months."

(U) New York Times, 3 Oct 57, 1:5, 11 Oct 57, 8:5.

4 Oct 57

The Joint Chiefs of Staff informed the Secretary of Defense that they had established a requirement for the use of the already programmed XW-40 atomic warhead in the CORVUS air-to-surface antiradar missile. They further stated that if modification of the warhead were required, they desired to be informed of the impact this modification would have on the use of this warhead in the LACROSSE and BOMARC systems in order to determine if such an impact was acceptable.

(S-RD) Dec On JCS 2012/104, "Military Requirement for CORVUS Air-to-Surface Guided Missile Low Yield Atomic Warhead (C)," 4 Oct 57, source of (S-RD) Memo, CJCS to SecDef, same subj and date; both in CCS 471.6 (5-31-44) sec 10.

✓ 4 Oct 57

The Soviet Union successfully launched the first earth satellite. The satellite, circling the earth at an altitude of about 560 miles and a speed of approximately 18,000 miles per hour, was twenty-two inches in diameter, weighed 184 pounds, and carried radio equipment sending signals to ground stations. The Soviet announcement of the launching stated that the USSR would launch more satellites in the future.

(U) New York Times, 5 Oct 57, 1:8; text of the Soviet announcement, same, 3:3.

5 Oct 57

According to a chronology prepared in OSD, the Secretary of Defense approved the Air Force plan for the production of ATLAS and TITAN missiles for test, training, and initial operational capability, in accordance with schedules which were presented in a 12 September 1957 briefing. The Secretary approved production schedules beyond calendar year 1959 for planning purposes only. These schedules provided for an eventual level production rate of four per month of ATLAS missiles, beginning with March 1959, and, for TITAN, an increase from two missiles per month to three per month in April 1960, with an eventual level production rate of four per month, beginning in January 1961.

(S) OSD, "Chronology of Significant Events in the U.S. Long Range Ballistic Missile Program," OCJCS files.

✓ 8 Oct 57

According to a news report, President Eisenhower discussed the U.S. missile and satellite programs with the Secretary of Defense, the Director of the National Science Foundation, the Deputy Secretary of Defense, and the Special Assistant to the Secretary of Defense for Guided Missiles.

(U) New York Times, 9 Oct 57, 1:5.

8 Oct 57

The Staff of the Preparedness Investigating Subcommittee of the Senate Armed Services Committee, charged with investigating the role of the Defense Department in the U.S. missile program, requested the Department to prepare and forward a complete report on that subject. On 11 October, in a letter to the Secretary of Defense, the Subcommittee broadened the scope of its request to include the satellite program and outlined in detail the specific subjects on which it desired information. In response to this letter, on 18 October, the Special Assistant for Guided Missiles, OSD, requested the Joint Chiefs of Staff to prepare a report on the Soviet satellite and missiles program. (See item of 23 October 1957)

(U) JCS 1620/159, Note by Secys, "Missile Report for Senate Preparedness Investigating Committee (U)," 19 Oct 57, CCS 334 GMC (1-16-45) sec 20.

8 Oct 57

According to a chronology prepared in OSD, the Secretary of Defense rescinded the 5 per cent cut in the POLARIS program that had been ordered on 14 August 1957. Restrictions on overtime at the Army Ballistic Missile Agency were also removed.

(S) OSD, "Chronology of Significant Events in the U.S. Long Range Ballistic Missile Program," OCJCS files.

9 Oct 57

President Eisenhower told his news conference that he wished the U.S. were further ahead in developing long range missiles, but that he did not know what more could have been done to this end.

(U) New York Times, 10 Oct 57, 1:1, text, p. 14.

/ 10 Oct 57

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In approving the foregoing actions on 11 October, the President directed the Secretary of Defense to report to the National Security Council as soon as more adequate test information was accumulated on the THOR and JUPITER programs, but not later than 31 December 1957.

(TS) NSC Action No. 1300, 10 Oct 57.

12 Oct 57 The Deputy Secretary of Defense sent the British Minister of Defense a revised draft agreement on deployment of IRBMs to the UK, expressing the hope that final negotiation of the agreement would be undertaken even though the U.S. was not able to give precise answers to all of the questions that had been raised by the British.

(TS) Ltr, DepSecDef to UKMinDef, no subj,  
12 Oct 57, OCJCS files.

16 Oct 57 The JCS informed CINCONAD that they were currently examining the status of the existing anti-ICBM programs with a view to making recommendations to the Secretary of Defense at an early date. (The Chief of Staff, USAF, as Executive Agent for the JCS, had on 10 April 1957 informed the JCS of CINCONAD's concern with regard to defense against Soviet ballistic missiles and of CINCONAD's urgent future requirement for an adequate and timely system of defense against this threat; on 26 July 1957 the JCS had received CINCONAD's memorandum outlining CONAD's anti-ICBM and other requirements; and on 3 September 1957 the Chief of Staff, USAF, had forwarded to the JCS CINCONAD's memorandum concerning the defense against the ICBM.)

(TS) Memo, JCS to CINCONAD, "Ballistic Missile Defense," 16 Oct 57, CCS 381 U.S. (5-23-46) sec 87.

16 Oct 57 The Secretary of Defense requested the Joint Chiefs of Staff to study the base structure and dispersal effects of the deployment of IRBM's to the UK and to comment on such matters as reaction time and vulnerability of these early missile deployments. He also requested the recommendations of the Joint Chiefs concerning future deployments of IREBMs in excess of the four squadrons already scheduled for the UK, covering such matters as location, whether U.S. or foreign personnel would man the missile units, the general views of the Joint Chiefs on the ultimate number of such missile units, and any other matters considered pertinent.

(C) Memo, SecDef to CJCS, "Deployment of Intermediate Range Ballistic Missiles to United Kingdom," 16 Oct 57. (C) Memo, SecDef to CJCS, "Future deployments of the Intermediate Range Ballistic Missiles," 16 Oct 57. Both in SecDef Memos to JCS Oct 57, OCJCS files.

22 Oct 57 According to a chronology prepared in OSD, the Navy submitted to the Secretary of Defense a plan for accelerating development of the POLARIS.

(S) OSD, "Chronology of Significant Events in the U.S. Long Range Ballistic Missile Program," OCJCS files.

SECTION II  
EARTH SATELLITES

Dec 48 In the first annual report of the Secretary of Defense, James V. Forrestal stated that the Earth Satellite Vehicle Program, which was being carried out independently by each military service, had been assigned for coordination to the Committee on Guided Missiles.

(U) First Report of the Secretary of Defense, 1948, (Washington, 1948), p. 129.

22 Mar 52 Collier's featured a lengthy symposium of well-known experts in space research and related fields. Urging the U.S. to embark immediately on a long-range development program to secure "space superiority", the lead editorial speculated on announced Soviet interest in a space station and cautioned against underestimating the capabilities of Russian scientists who had produced an atom bomb years earlier than anticipated. Like the atom bomb, "a sentinel in space" in the hands of the West would be a powerful deterrent to war; but unlike the Manhattan project, a technical gamble at the outset, the claim that a space station could be created stood unchallenged by any serious scientist.

Articles, probing specialized subjects related to the proposed space program, were contributed by Dr. Wernher von Braun, Technical Director of the Army Ordnance Guided Missiles Development Group, and other prominent scientists.

Dr. Braun's article stressed the rocketry aspects of a project to establish and maintain a wheel-shaped satellite orbiting the earth 1075 miles in outer space. The project would require ten years of effort and the expenditure of \$4 billion. Being an effective "watchdog of the peace," by virtue of its surveillance and atom bomb-missile carrier capabilities, a space station would serve as a springboard for the exploration of the solar system and would advance many currently "earthbound" sciences.

(U) Collier's Vol 129, Jan-Mar 1952, 23-39.

4 Oct 54 The Special Committee for IGY of the International Council of Scientific Unions (CSAGI) meeting at Rome adopted the following resolution:

In view of the great importance of observations during extended periods of time of extra-terrestrial radiations and geophysical phenomena in the upper atmosphere, and in view of the advanced state of present rocket techniques, CSAGI recommends that thought be given to the launching of small satellite vehicles, to their scientific instrumentation, and to the new problems associated with satellite experiments, such as power supply, telemetering, and orientation of the vehicle.

(U) Kaplan, Joseph, "The IGY Rocket and Satellite Program," National Academy of Sciences-National Research Council, Washington, Sept 1956, p. 13.

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16 Nov 54 Secretary Wilson said, at a Department of Defense press conference, that he knew nothing about U.S. military scientists working on plans for a space platform or earth satellite and that he would not be alarmed if the Russians built one first.

(U) New York Times, 17 Nov 54, 15:4.

22 Dec 54 An article in the New York Times reported that the Defense Department had made available a two-sentence comment following a recent news conference at which Secretary Wilson stated that no space ship studies were being conducted by his department. The comment said that the combined efforts of the military services were being devoted to studies of earth satellites, that the studies were being coordinated in Mr. Wilson's office, and that he had approved the comment.

(U) New York Times, 22 Dec 54, 10:4.

✓ 14 Feb 55 The Report of the Technological Capabilities Panel (Killian Report) to the President stated that at modest cost "a small artificial satellite, weighing 5 to 25 pounds, can be launched by the use of existing rocket components." The Panel believed that the intelligence value of the ultimate product of effort in this field--a large satellite capable of exercising continuous surveillance--justified an immediate program leading to the placing of small satellites in orbits around the earth. Further, the prestige that the world would accord to the nation first to launch an earth satellite "would better go to the U.S. than to the USSR." Besides being dependent on the solution of "extraordinary technical problems," the construction of large surveillance satellites "should wait upon development of the intercontinental ballistic missile rocket propulsion system." Concerning the doctrine of freedom of space, the Report pointed out that the early launching of a small satellite would establish a precedent for distinguishing between "national air" and "international space." This distinction could be advantageous to the U.S. at some future date when the use of larger satellites for intelligence purposes might be undertaken.

(TS-RD) Report of the Technological Capabilities Panel, ODM, to Pres, "Meeting the Threat of Surprise Attack," 14 Feb 55, JCS C&E Sect files.

14 Mar 55 Having concluded that the construction, launching, and observation of instrumented satellites, as proposed by the CSAGI resolution of 4 October 54, was scientifically important and feasible, the US National Committee of the IGY transmitted its general recommendation for a satellite program to the President of the National Academy of Sciences and the Director of the National Science Foundation. (On 6 May the US National Committee forwarded to the U.S. Government, through the National Science Foundation, preliminary plans developed by the Committee's special satellite group for this satellite program.)

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(U) Joseph Kaplan, The IGY Rocket and Satellite Program (Washington, 1956), p. 13. Hugh Odishaw, "The Satellite Program for the International Geophysical Year," Department of State Bulletin, vol XXXV (13 Aug 56), p. 281.

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15 Apr 55

An article in the newspaper Vechernaya Moskva (Evening Moscow) announced Soviet determination to launch the first earth satellite. The article stated that a committee of top scientists had been established to devise a space satellite somewhat similar to the one outlined by U.S. officials. More than a year earlier, in January 1954, the President of the Soviet Academy of Sciences had stated that sending a space ship to the moon and creating an artificial earth satellite were "entirely feasible operations." According to published sources, intensive Soviet work on interplanetary flight began at this time.

(U) New York Times, 30 July 55, 1:5.

18 Apr 55

In the comments submitted by the Joint Chiefs of Staff to the Secretary of Defense on the Technological Capabilities Panel Report they observed that a precedent distinguishing between "national air" and "international space" would "no doubt follow automatically" the first launching of an earth satellite, regardless of the country of origin. While noting that small satellites, being developmental vehicles, were without intelligence potential, the JCS stated that intelligence applications strongly warranted the construction of a large surveillance satellite..

(TS) Dec On JCS 1899/200, "Technological Capabilities Panel Report," 18 Apr 55, source of (TS) Memo, CJCS to SecDef, same subj and date, CCS 040 (11-2-43) sec 17, pt 1.

26 May 55

8 Jun 55

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The Science Advisory Committee, recommending to the Secretary of the Air Force ways of speeding up the ICBM program, expressed concern that a satellite program "would interfere" with the earliest attainment of an ICBM operational capability.

(S) OSD, "Chronology of Significant Events in the U.S. Long Range Ballistics Missile Program," OCJCS files.

29 Jul 55

A White House press release announced that the President had approved plans for "the launching of small unmanned earth-circling satellites" as part of the U.S. participation in the International Geophysical Year. Also, he had expressed personal gratification that the American program would provide "scientists of all nations this important and unique opportunity for the advancement of science."

(U) White House Press Release, 29 Jul 55, OCJCS file "NSC 5520 US Scientific Satellite Prog."

- 2 Aug 55 Professor Leonid Ivanovich Sedov, head of the Satellite Project Commission, USSR, asserted that the first Soviet satellite might possibly be launched in two years by a two or three-stage rocket.  
(U) New York Times, 3 Aug 55, 6:3.
- 14 Aug 55 The New York Times reported on the first detailed disclosure of Soviet plans for an earth satellite which were revealed by Soviet scientist Dr. A.G. Karpenko, to a correspondent of Moskovskaya Pravda. The first satellites would probably circle the earth at a height of from 125 to 625 miles, while subsequent vehicles could rise to a height of 935 to 1250 miles. The scientist declared that construction of an earth satellite in the Soviet Union would begin in the "comparatively near future."  
(U) New York Times, 15 Aug, 3:2.
- 9 Sep 55 In a memorandum implementing responsibilities of the Department of Defense under NSC 5520, Deputy Secretary Reuben B. Robertson, Jr., approved a joint three-service technical program to produce and launch a satellite based on the Navy's proposal to use a combination of the improved Viking (booster), the Aerobee-H1 (second stage), and the solid-propellant modified Sergeant (third stage). The Navy would manage the program and provide, on a reimbursable basis, the required funds. The Army and Air Force would participate in the technical program and assign work priorities necessary to meet the schedule established by the Navy. The Technical Advisory Group already established by the Assistant Secretary of Defense (Research and Development) would continue to advise him and the three Military Departments on the technical program. Separate action was being taken to establish a coordinating group under the chairmanship of the Assistant Secretary of Defense (R&D) to handle inter-agency matters and facilitate the exchange of information.
- Because of the special security problems posed by the "international scientific purposes, the classified military-related rocketry, and the political and propaganda aspects" of the program, Mr. Robertson laid down the following guide lines: (a) rocketry and launching techniques and equipment common to military weapons systems would have an equivalent security classification; (b) the satellite vehicle, its instrumentation, and items related to the scientific program would be unclassified, at least by launching time; (c) all news releases would be cleared by the Office of Security Review. In this regard Defense would work under the specific guidance of the Operations Coordinating Board. Information about military participation in the program and possible relationship to military programs would be kept to a minimum.
- (S) Memo, Dep SecDef to SecA, SecNav, and SecAF, "Technical Program for NSC 5520 (Capability to Launch a Small Scientific Satellite During IGY)," 9 Sep 55, CCS 381 US (5-23-46) sec 61.

6 Oct 55

The Defense Department announced that a preliminary contract had been awarded for the production of a man-made satellite which the U.S. expected to launch into outer space in 1957 or 1958. The initial contract was for over \$2 million. Other contracts would be let as the project developed. The satellite, the announcement added, would definitely contain data reporting instruments. The objective of Project VANGUARD was purely basic research on the nature of the outer atmosphere.

(U) New York Times, 7 Oct 55, 16:3. (Anthony Leviero)

20 Dec 55

5 Apr 56

7 Apr 56

In a memorandum commenting on the four alternatives proposed by the Secretary of Defense on 5 April 56, the Director of the National Science Foundation strongly recommended that every effort be made to provide funds for a 12-satellite program during the IGY. Stressing the greater assurance of achieving a successful orbiting satellite from 12 launchings than from 6, and in any event the greater range of data that could be obtained by a larger number of satellites, he pointed out that "the possibility of a 'world first' in this unique pioneering venture will not occur again."

(C) Memo, Director, National Science Foundation, to DirBOB, "Funding of Earth Satellite Program, International Geophysical Year," 7 Apr 56, Encl to (S) Memo, Exec Secy to NSC, "NSC 5520," 13 Apr 56, OCJCS file "NSC 5520 US Scientific Satellite Prog."

- 7 Apr 56 The Science Advisory Committee, which had been transferred from the Air Force to the Secretary of Defense in January 1956, recommended the establishment of policies to control possible interference, resulting from public interest in VANGUARD, with the high priority ballistics missile programs at the Air Force Missile Test Center.  
(S) OSD "Chronology of Significant Events in the U.S. Long Range Ballistics Missile Program," OCJCS files.
- 11 Apr 56 James H. Smith Jr, Assistant Secretary of the Navy, told a House Military Appropriations Subcommittee that the first attempt to launch an earth satellite would be made in the "early part of 1958." This was several months later than originally planned. The delay had been reported in secret testimony on 16 March, and made public 11 April 1956.  
(U) New York Times, 12 Apr 56, 33:7.
- 13 Apr 56 After surveying the rising cost estimates of the earth satellite program, the Director of the Bureau of the Budget asked for NSC consideration of the four alternative courses listed by the Secretary of Defense in his letter to the President on 5 April 1956.  
(S) Memo, DirBOB to Dillon Anderson, "NSC 5520," 13 Apr 56, Encl to (S) Memo, Exec Secy to NSC, same subj and date, OCJCS file "NSC 5520 US Scientific Satellite Prog."
- 25 Apr 56 The Operations Coordinating Board formalized a previous agreement to establish a "Working Group on Certain Aspects of NSC 5520," and concurred on the working group's terms of reference. The working group was to be comprised of representatives of the Departments of Defense and State, CIA, USIA, OCB Staff, and the National Science Foundation; the Defense member was to act as chairman. The Working Group was to devote close attention to: (1) public announcements on the satellite, its instrumentation, and orbit; (2) the impact of Soviet satellite programs; (3) international inspection of the satellite prior to its launching; (4) international witnessing of the satellite launching; and (5) arrangements for international tracking of the satellite vehicle in orbit. In the following week the Assistant Secretary of Defense (R&D), Mr. Clifford Furnas, was designated Chairman of the Working Group.  
(C) OCB, "Terms of Reference for Working Group on Certain Aspects of NSC 5520" 2 May 56, CCS 381 U.S. (5-23-46) sec 67. (S) OCB "Weekly Status Report" 7 May 56, CCS 334 OCB (3-26-54) sec 17.
- 25 Apr 56 Mr. Wilson informed the Chairman of the Joint Chiefs of Staff that the Assistant Secretary of Defense (Supply and Logistics) had recommended that Project VANGUARD be included in highest priority Category "S" of the current DOD Master Urgency List and requested the Chairman's views, particularly in regard to the military importance of VANGUARD.

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(S) Memo, SecDef to C/JCS, "Military Urgencies (Project VANGUARD and the Weapon System 125A," 25 Apr 56, Encl to (S) JCS 1725/287, Note by Secys, same subj, 27 Apr 56, CCS 004.04 (11-4-46) sec 75.

3 May 56

17 May 56

Lt. Gen. D.L. Putt, Deputy Chief of Staff for Development, USAF, testified before the Symington Airpower Committee that the Air Force had been working on satellites and related matters since 1946 but that sufficient funds were not available for 1957 to continue the work at an adequate level of activity.

(Portions of Gen. Putt's closed session testimony were censored by the DOD for security reasons.)

(U) US Congress, Sen, "Study of Airpower," Hearings before the Subcommittee on the Air Force of the Committee on Armed Services, 84th Cong, 2d sess (Washington, 1956), vol. I, p. 588.

23 May 56

In response to Secretary Wilson's request (25 April 1956) for their views on the military importance of VANGUARD, the JCS stated their belief that the project was "closely related to the military missile programs and of immediate value thereto." The JCS requested that, in the event that the assignment of priorities to VANGUARD conflicted with priorities assigned to other projects, they be given the opportunity to recommend appropriate revisions to the Master Urgency List.

1956

[One of the "facts" considered by the JCS in the preparation of their views was that "NSC 5520 states that considerable prestige and psychological benefits will accrue to the nation which first is successful in launching a satellite. The inference such a demonstration of advanced technology and its UNMISTAKABLE RELATIONSHIP TO INTERCONTINENTAL BALLISTIC MISSILE TECHNOLOGY might have important repercussions on the political determination of free world countries to resist Communist threats, especially if the USSR were to be the first to establish a satellite."]

(S) Dec On JCS 1725/289, "Military Urgencies (Project VANGUARD and the Weapon System 125A)," 23 May 56, source of (S) Memo, JCS to SecDef, same subj and date. CCS 004.04 (11-4-46) sec 75 and 76.

29 May 56

After considering the views of the Joint Chiefs of Staff with respect to the military importance of Project VANGUARD, the Secretary of Defense advised the Assistant Secretary of Defense (S&L) that the project would be included on the Master Urgency List as Item 1 in Category I.

(S) N/H of JCS 1725/289, "Military Urgencies (Project VANGUARD and the Weapon System 125A)," 18 Jul 56, CCS 004.04 (11-4-46) sec 75.

16 Sep 56

During the meeting of the Special International Committee for the International Geophysical Year at Barcelona, 10-16 September, the delegates of all participating countries approved a resolution that compatible tracking instrumentation be used in all earth satellites so that the same ground receiving equipment would be effective in all cases. Testifying before a Congressional subcommittee in May 1957, two U.S. delegates to the Barcelona meetings confirmed that Soviet representatives had joined in this action. One of them stated that the Soviets had agreed "to use the same radio frequency so that we might receive their telemetering signals and tracking signals and they might receive ours with their stations."

(U) New York Times, 16 Sep 56, 30:5. (U) US Congress, HR, "National Science Foundation," Hearings before the Subcommittee on the Committee on Appropriations, 85th Cong, 1st sess (Washington, 1957) pp. 8, 14-15, 98.

3 Oct 56

The Defense Department submitted the progress report on the earth satellite program requested by the NSC on 3 May 1956. It stated that the technical program was on schedule and that the DOD contemplated the launching of 6 test vehicles by September 1957 and the attempted launchings of 6 satellites at about 2-month intervals beginning not earlier than 31 October 1957. The report also stated that, in view of the satisfactory progress with the Navy's VIKING and other considerations, it was undesirable to apply any effort toward development of alternate missiles as the basis of the launching vehicle. It was also believed undesirable to plan additional satellites beyond the 6 currently programmed.



(S) Department of Defense, "Progress Report on the U.S. Scientific Satellite Program (NSC 5520)," 3 Oct 56, OCJCS file "NSC 5520 US Scientific Satellite Prog."

10 Oct 56 The Science Advisory Committee of ODM disagreed with the statement in the Defense Department progress report of 3 October 1956 that it was undesirable to plan additional satellites beyond the 6 currently programmed. The committee stressed the opinion that a 12-vehicle firing program was more certain of achieving a successful launching than a 6-vehicle program and, if successful in its early phases, would provide far greater scientific benefit through the gathering of more types of data.

U.S. failure to launch satellites successfully during the IGY would result in the loss of U.S. scientific prestige. Should the Soviets succeed in launching a satellite before the U.S., a further loss of U.S. prestige would result. In any event, there was a long-range need for a continuing program of outer-space exploration, that could most economically be met by extending the existing project.

(S) Ltr, Chm Science Advisory Cmte to DirODM, 10 Oct 56, Ann A to (S) Memo, Exec Secy to NSC, "U.S. Scientific Satellite Program," 9 Nov 56, OCJCS file "NSC 5520 US Scientific Satellite Prog."

22 Oct 56 The National Science Foundation, as well as the Science Advisory Committee of ODM, disagreed with the Defense Department position that planning additional satellites beyond the 6 currently programmed was undesirable. (See item of 3 October 1956.) The scientific value of the program was directly related to the number of successful launchings. Even with a 12-satellite program only high priority experiments could be carried out. The scientific knowledge so obtained would not only advance pure science but would have a direct bearing on communications, weather forecasting, and the ballistic missile program. Since certain outlays remained basically the same for the 12- as for the 6-satellite program, there was no point of diminishing scientific returns as long as average costs would be reduced. The National Science Foundation comments also emphasized that it was probable the USSR would attempt to be first to launch a satellite and to surpass in every way the U.S. effort. The prestige and psychological setbacks inherent in an earlier and larger Soviet satellite could be at least partially offset by a more effective and complete U.S. program. However, even if the U.S. achieved the first success, a stronger scientific program by the Soviets would overcome the initial U.S. advantage.

9 Nov 56

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- 20 Nov 56 The JCS advised the Secretary of Defense that they had noted and had no comments to offer on the National Security Council Planning Board's draft report of 9 November 1956 relating to the Defense Department's progress report on the earth satellite. (See item of 3 October 1956.)  
(S) Dec On JCS 1899/299, "U.S. Scientific Satellite Program," 20 Nov 56, source of (S) Memo, CJCS to SecDef, same subj and date. Both in CCS 381 U.S. (5-23-46) sec 74.
- 11 Dec 56 Dr. John P. Hagen, Director of the Naval Research Laboratory's VANGUARD project, said at a press briefing that the project was on schedule. He said he expected the "big shoot" sometime between July 1957, and December 1958. In answer to the question whether the U.S. was "trying to beat the Russians to the punch on the satellite," he replied: "We do not consider we are racing with anyone. We are not attempting in any way to race with the Russians." He noted that the information obtained from the space observations of the satellite would be available to the USSR and the other nations cooperating in the IGY.  
(U) New York Times, 12 Dec 56, 41:8.
- 20 Dec 56 A Navy Department news release announced plans for a giant chain of scientific "eyes" to track the first man-made space satellite. Most of the tracking would be done by "Minitrack" radio equipment. The path of the satellite would be automatically calculated by an IBM electronic computer.  
(U) New York Times, 21 Dec 56, 1:5.

~~SECRET~~

10 Jan 57 In referring to U.S. policy on disarmament in his State of the Union message to Congress, President Eisenhower expressed U.S. willingness to make any "reliable agreement" that, among other things, would "mutually control the outer space missile and satellite development." His mention of outer-space missiles and satellites in connection with disarmament was the first public reference of this sort by any world statesman.

(U) New York Times, 11 Jan 57, 1:6-7; text in State Department Bulletin, Vol. XXXVI, No. 918 (28 Jan 57), pp. 123-126.

14 Jan 57 As part of his presentation of new U.S. disarmament proposals before the UN Political and Security Committee, Ambassador Lodge suggested that the first step toward assuring that experiments on outer-space objects would be "devoted exclusively to peaceful and scientific purposes" would be to open them to international inspection and participation. He referred to the U.S. earth satellite as an example of such a project, "developed with the knowledge and approbation of the scientists of the nations represented in the "International Geophysical Year."

(U) Department of State, Bulletin, Vol XXXVI (11 Feb 57), p. 227.

24 Jan 57 [

30 Jan 57 The Operations Coordinating Board approved "Guide Lines for Public Information on the Scientific Earth Satellite Program," formulated because of high public interest and growing pressure from the press to obtain broader coverage of the program. The agreed statement provided that all releases were to emphasize the "international, cooperative scientific purposes" of the program. Though all unclassified information should be released as soon as practicable, all publicity should avoid "unwise commitments, undue optimism or particular target dates," and speculation "as to probability of success, future programs, or possible military application." Also to be avoided was any commitment concerning international witnessing ]

of the satellite launching until the Department of Defense was able to determine that such would be compatible with national security interests. The National Science Foundation, the National Academy of Sciences and the Department of Defense were given responsibilities for the review, coordination, and release of information relating to those aspects of the program in which they had primary interest. With respect to the international aspects of the satellite program, State was to review all releases which might involve U.S. policy and USIA was to publicize and review releases in accordance with its assigned functions.

(C) Minutes of OCB, 23 Jan 57 as approved 30 Jan 57, and attached "Guide Lines For Public Information on the Scientific Earth Satellite Program," 30 Jan 57, CCS 381 US (5-23-46) sec 77, BP pt 9.

19 Feb 57

Testifying before the House Appropriations Subcommittee concerning the plans and progress of the U.S. earth satellite project, Rear Adm R. Bennett, Chief of Naval Research, stated that the "major purpose, the real, true purpose of the whole satellite program is strictly scientific . . ." Since only the military had the required rocketry knowledge, they were acting as "contractors to the scientific community of the United States" in respect of this rocketry knowledge. The project was progressing approximately according to tentative schedules, but, in view of its experimental nature, complete success within the time limits could not be guaranteed. Dr. John P. Hagen, the Director of Project VANGUARD, also testified, answering technical questions posed by members of the Subcommittee.

(U) US Congress, HR, "Department of Defense Appropriations for 1958," Hearings before the Subcommittee of the Committee on Appropriations, 85th Cong, 1st sess. (Washington, 1957), pp. 888, 892, 893, and 889-897.

30 Apr 57

The Director of the Bureau of the Budget advised the President that \$40 million in addition to the \$70 million already available would be needed to meet the objectives of the earth satellite project. Furthermore, technical difficulties might develop that would necessitate substantial expenditures even beyond this \$110 million total. The Department of Defense had stated that it did not have sufficient interest in the program to finance its continuation, and had suggested that supplemental funds be appropriated to the National Science Foundation for that purpose. The NSF, on the other hand, maintained that DOD should provide the funds. After receiving this memorandum, the President asked that the satellite program be discussed by the NSC on 10 May 1957. The Defense Department was asked to prepare a report as a basis for the discussion.

(S) Memo, DirBOB to Pres, "Project VANGUARD," 30 Apr 57, Encl to (S) Memo, ExecSecy to NSC, "U.S. Scientific Satellite Program," 3 May 57, Encl to (S) JCS 1899/328, same subj, 7 May 57, CCS 381 U.S. (5-23-46) sec 78.

~~TOP SECRET~~  
12 Mar 57

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- 19 Mar 57 The Assistant Secretary of Defense (Comptroller), W.J. McNeil, told a subcommittee of the House Committee on Appropriations that the cost of Project VANGUARD was running "far, far beyond any estimates," in spite of the fact that the Defense Department had held the project to half the scope desired by others. Mr. McNeil said that Defense funds had been advanced for the project in the belief that the Defense Department was acting as the agent of the National Science Foundation, the sponsor of the project, and would therefore be reimbursed or receive a supplemental appropriation. However, it now appeared that the Defense Department had become a "financial partner" of the National Science Foundation.  
(U) US Congress, HR, Department of Defense A Appropriations for 1958: Hearings Before the Subcommittee of the Committee on Appropriations, 85th Cong, 1st sess (Washington, 1957), pt 2, pp. 1902-3.
- 25 Apr 57 At a meeting in London of the UN Disarmament Subcommittee, Mr. Stassen, in a general restatement of U.S. policy, called for international inspection of and participation in all tests of outer-space objects. He emphasized the importance of achieving early control over missiles and rockets. Soviet representative Zorin called for coupling missiles control with a ban on nuclear weapons, and said that the general discussion should be expanded to include all missiles, rockets, and atomic artillery.  
(S) Msg, London (Whitney) to SecState, 5816, 25 Apr 57, R&RA Sect. (U) New York Times, 26 Apr 57, 6:2.
- 2 May 57 The Secretary of Defense informed the Service Secretaries, the Chairman, JCS, and the Assistant Secretary of Defense (Research and Engineering) that the satellite program would be discussed at the forthcoming NSC meeting, on either 8 or 10 May. Responsibility for preparing a Department of Defense report on the program for presentation at the meeting was assigned to the Secretary's Special Assistant for Guided Missiles, in collaboration with the Secretary of the Navy. The report was to indicate ways of effecting economies in the program without serious detriment to the objectives outlined under NSC 5520.  
(S) Memo, SecDef to SecArmy et al., "U.S. Scientific Satellite Program," 2 May 57, Encl to (S) JCS 1899/326, Note by Secys, same subj, 6 May 57, CCS 381 U.S. (5-23-46) sec 78.

3 May 57

Secretary of Defense Wilson directed that the earth satellite program be handled by the Ballistic Missiles Committee, OSD, of which his Special Assistant for Guided Missiles was Chairman. The Special Capabilities Panel (Stewart Committee) would continue to monitor the project, reporting to the Special Assistant for Guided Missiles. Project VANGUARD, however, would not be accorded the same priority as the ICBM and IRBM programs.

(U) Memo, SecDef to Spec Asst GM, "Functioning of the Office of the Special Assistant to the Secretary of Defense for Guided Missiles," 3 May 57, JCS Hist Sec files.

✓ 10 May 57

After discussing a Defense Department presentation on the satellite program, along with comments by the Director of the National Science Foundation and the President of the National Academy of Sciences, the NSC noted the President's directive that the program under NSC 5520 "should be continued on no more elaborate basis than at present" and under the following conditions: (1) Representatives of the Defense Department and the National Science Foundation should meet with the appropriate Congressional committees to discuss the use of Defense Department emergency funds to continue the program through 1 August 1957, and the appropriation of additional FY 1958 funds to the Defense Department to complete the program should not exceed \$110 million; (2) before Congress was asked for additional appropriations, scientists working on the project should seek ways to reduce costs without jeopardizing objectives under NSC 5520; and (3) the Defense Department should submit a report to the NSC immediately if one of the test vehicles was successfully orbited as a satellite.

(TS) NSC Action No. 1713, 10 May 57, OCJCS file "NSC 5520 US Scientific Satellite Prog."

17 May 57

The Secretary of Defense informed the Chairman, JCS, and others of NSC Action No. 1713 (10 May 1957) on the satellite program, and of approval of that Action by the President. The President had stated that in their meetings with Congressional committees, Defense Department and National Science Foundation representatives should "tell the whole story as to costs"--that is, the costs were expected to remain within \$110 million but might be raised by some unforeseen development to \$150 million. The President had also asked to be given by 1 June 1957 a summary of the scientists' report on ways to reduce satellite expenses.

(S) Memo, SecDef to CJCS et al., "U.S. Scientific Satellite Program," 17 May 57, Encl to (S) JCS 1899/330, Note by Secycs, same subj, 23 May 57, CCS 381 U.S. (5-23-46) sec 79.

7 Jun 57

The Secretary of the Army publicly denied reports that the Army was "eager to move into the earth satellite program." According to the UP, Secretary Brucker had said, "The Department of the Army is privileged to carry out its mission of providing the telemetry (measuring devices) for the satellite program, and we do not desire nor intend to go beyond that important requirement."

(U) New York Times, 8 Jun 57, 2:5.

✓ 17 Sep 57 Radio Moscow announced that Soviet scientists "will shortly take the first step into cosmic flight by launching an artificial earth satellite."

(U) New York Times, 18 Sep 57, 15:1.

✓ 4 Oct 57 The Soviet Union successfully launched the first earth satellite. The satellite, circling the earth at an altitude of about 560 miles and a speed of approximately 18,000 miles per hour, was twenty-two inches in diameter, weighed 184 pounds, and carried radio equipment sending signals to ground stations. The Soviet announcement of the launching stated that the USSR would launch more satellites in the future.

(U) New York Times, 5 Oct 57, 1:8; text of the Soviet announcement, 3:3.

✓ 8 Oct 57 Major General Holgar N. Toftoy, Commander of Redstone Arsenal, and Brigadier General John A. Barclay, Deputy Commander of the Army Ballistic Missile Agency, who were in Barcelona as U.S. representatives to the Eighth Congress of the International Astronautical Federation, told newsmen that the United States could have had an earth satellite in the sky as long as two years ago if the Army had not been ordered to halt its program. The two officers stated categorically that in 1954 the Army could have put at least a 15-pound satellite into orbit "in a year or so" if it had been allowed to combine components of existing missiles to form a launching vehicle. General Toftoy was quoted as saying, "We said we could do it. But shortly after our proposal we were told that it was not a race. It was not simply a case of getting a satellite going. The idea was to get as much information as possible out of the satellite. So, the VANGUARD proposal was made and accepted."

(U) New York Times, 9 Oct 57, 12:3.

✓ 9 Oct 57 A statement by the President, released at the White House, declared that the U.S. satellite program had "never been conducted as a race with other nations." Congratulating Soviet scientists on their achievement, the President made clear that the U.S. program had been designed only to promote scientific research and had been closely coordinated with scientists of all countries engaged in the IGY. In order to accent its scientific purposes as well as to avoid interference with high priority missile projects, the satellite program had been deliberately separated from the ballistic missile program. Merging of scientific and military efforts could have produced an orbiting U.S. satellite at an earlier date, but to the detriment of scientific goals and military progress.

(U) White House Press Release, "Statement by the President; Summary of Important Facts in the Development by the United States of an Earth Satellite," 9 Oct 57, OCJCS file "NSC 5520 US Scientific Satellite Prog."

10 Oct 57

✓ 23 Oct 57

In reply to a request of 18 October 1957, the JCS forwarded to the Secretary of Defense a "Compendium of Intelligence on Soviet Satellite and Missile Programs," for use in responding to the letter from the Preparedness Investigating Subcommittee of the Senate Committee on Armed Services dated 11 October. Regarding Sputnik I, a summary statement in the compendium said, "The launching of the Soviet satellite on 4 October 1957 confirms previous estimates of their capability in this respect" and "enhances their capability for orbiting larger and more complex satellites." Further statements included the following details. The launching vehicle used to place the satellite in orbit might or might not have been of ICBM proportions, but it was probable that the Soviet satellite and ICBM programs were closely associated. Further, it was believed likely that the USSR was capable of orbiting satellites larger than the announced 184-pound weight of the first sphere. Preliminary analysis indicated that the Soviet satellite was not highly complex in design or instrumentation. If it included telemetry, the system was probably limited to two or three channels, which could furnish basic environmental data such as temperature and meteorite density.

(TS) Dec On JCS 1620/162, "Missile Report for Senate Preparedness Investigating Committee," 23 Oct 57, source of (TS) Memo, CJCS to SecDef, "Compendium of Information on Soviet Missile Programs for Senate Preparedness Investigating Committee," same date, CCS 334 GMC (1-16-45) sec 20.

✓ 23 Oct 57

A Defense Department release stated that "the Vanguard rocket that will carry this country's satellite into the sky was put through a successful test in Florida this afternoon."

(U) New York Times, 24 Oct 57, 1:5.