

George F. Howe

The Early History of NSA

Editor's Note: In NSA perhaps more than in most agencies of the Government, the press of current operations tends to focus attention on the present and the immediate future—with little time for the past. Until recently, a large percentage of the cryptologic workforce knew the early history of NSA simply because they were there, but retirement patterns have changed that. This early history of the Agency is here published, therefore, to inform the younger employees—and perhaps refresh the memories of the veterans.

The Origin of the National Security Agency

The National Security Agency acquired its name officially on 4 November 1952. The Secretary of Defense, acting under specific instructions from the President in the National Security Council (NSC), at that time issued a directive which established the Agency. The Secretary conveyed authority and responsibilities to the first Director, NSA, in accordance with a revised version of NSC Intelligence Directive No. 9 (dated 24 October 1952). During the remainder of 1952 the necessary changes pertaining to the production of Communications Intelligence (Comint) were adopted. Parallel rearrangements applicable to Communications Security (Comsec) remained in prospect for about one more year before being determined.

Although protection of the security of U.S. communications by codes, ciphers and other measures can be traced as far back as the War for American Independence, cryptologic activities resembling those of NSA could not originate until the advent of radio communications. During World War I the U.S. Army began deriving intelligence from foreign radio communications. The production of electronics

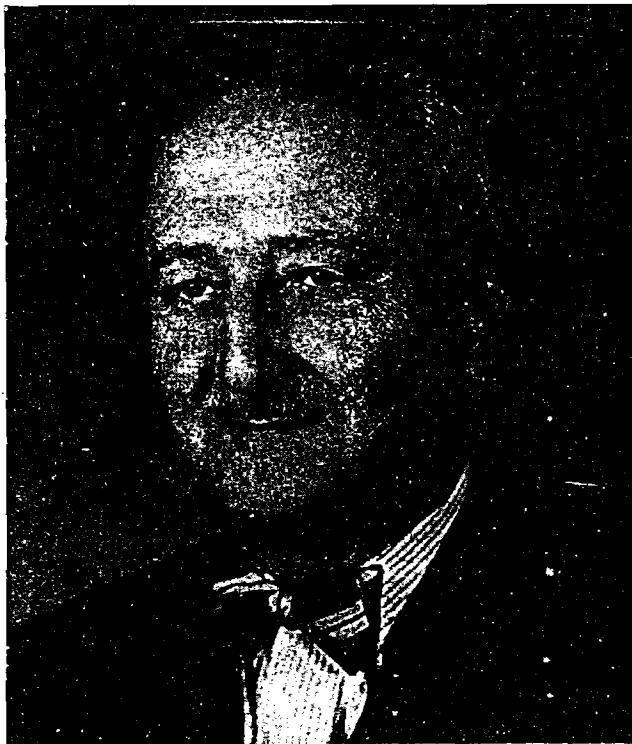
intelligence (Elint) from non-communications signals started after World War II. In 1958, NSA acquired a responsibility for Elint paralleling that for Comint. The U.S. in 1958-9 adopted the term *Sigint* to encompass both Comint and Elint.

NSA's Heritage from the World Wars

In 1917 the U.S. Army created a Cipher Bureau in its Military Intelligence Division (MID) in Washington and used it to assist the radio intelligence units of the American Expeditionary Forces being sent to France. After World War I had ended, that bureau, occupying inconspicuous quarters in New York City, extracted intelligence from copies of foreign diplomatic communications. The Department of State shared the expenses; the War Department thus maintained a valuable technical capability for use in another war.

The Department of State withdrew financial support in 1929 and hastened the termination of the Cipher Bureau. Two years later its operations were described in a published book, *The American Black Chamber*, written by the disgruntled ex-chief, Mr. Herbert O. Yardley. That book has been described as a "monumental indiscretion," damaging to national interests.

The U.S. Army Signal Corps was prepared to offset the loss of the Army MID's Cipher Bureau by creating a new Signal Intelligence Service within the Signal Corps. Mr. William F. Friedman, who had worked for the Army since World War I both as a cryptographer and as a cryptanalyst, recruited a few civilians and began the training of a few young Army officers in cryptology. They became the nucleus of the Army's very large Signal Security Agency of World War II.



William F. Friedman

The first Comint-producing element of the U.S. Navy was part of a cryptographic unit, the Code and Signal Section (OP-20-G) of the Office of Naval Communications. It was known within the Section as the "Research Desk," and was so small and obscure that it may have existed as early as 1922, but it certainly was working by 1924 at the cryptanalysis of Japanese Naval communications. During the early 1930s, the Navy Comint unit demonstrated that it could derive both strategic and tactical intelligence of high importance simply from the externals of intercepted radio messages passed during Japanese Navy maneuvers, although it also read several cryptographic systems.

Such results from traffic analysis alone surpassed Naval intelligence gained by other means and won support in the upper echelons of the U.S. Navy. OP-20-G was subsequently enabled to establish intercept stations at several points ashore and afloat, to organize analytic units in Hawaii and the Philippines, and to expand its analytic unit in Washington. Their activities were linked with those of new high-frequency radio direction-finding nets. By the time Pearl Harbor was attacked in December 1941 Army and Navy analysts had been working for several years on the diplomatic as well as counterpart Services' traffic of several countries. A number of reserve officers had been trained. Both Services had developed within their communications components the bases for rapid wartime expansion.

Once the United States was a belligerent in World War II, the Army and Navy each bought a preparatory school in the Washington area as sites for Comint centers. They erected double fences, installed guards, added buildings, and crammed them with personnel and equipment. Early in 1942 the Navy relinquished to the Army responsibility for all wartime work on foreign diplomatic and commercial communications so that all Navy Comint resources could be used in the critical anti-submarine warfare against Germany in the Atlantic and the campaigns against Japan in the Pacific.

Each U.S. Armed Service arranged the terms of Comint collaboration during the war with its British counterpart. Each benefited greatly from the fruits of earlier British experience, including that which the British had gained from the French (and the French from the Poles) before the Nazis overran France in 1940. As the war continued, the scope of U.S. and British collaboration extended to stationing technical cryptologic liaison personnel at each other's analytic centers.

When the Japanese surrendered on the U.S.S. *Missouri*, each U.S. Service Comint agency, manned by thousands, military and civilian, faced inevitable and rapid shrinkage. Congressional hearings on the Pearl Harbor attack soon disclosed considerable information about U.S. Comint operations. Accounts of incidents in which Comint had enabled the U.S. to make effective use of its forces were occasionally published without official sanction. The general understanding in the Services was that Comint had been of enormous value, and that the ability to produce it must be preserved. To make the best uses of Comint resources during the last phase of the war, an Army-Navy Communications Intelligence Board (ANCIB), with a subordinate Coordinating Committee (ANCICC), had been established. They became the instruments for negotiating the terms of joint, post-war arrangements to keep U.S. military Comint capabilities in good order during demobilization and reduction. The Department of State created a new sequestered unit to utilize diplomatic Comint information. The Federal Bureau of Investigation was interested in using Comint information to accomplish its mission, as it had during the war.

Post-War Arrangements, 1945-49

United States and British leaders were aware before the end of hostilities that, as soon as the conditions of peace were being determined, the Soviet Union would act not as an ally but as an adversary. President Truman by executive order authorized the Secretaries of the War and Navy Departments to continue collaborating in Comint

production with the British, and to bring other U.S. Government Departments and Agencies into association with the Armed Services in that arrangement. They formed a State-Army-Navy Communications Intelligence Board (STANCIB) as the top U.S. authority over all aspects of Comint collaboration. A somewhat similar action in the United Kingdom resulted in the creation of a London Signal Intelligence Board (LSIB). In behalf of the two boards a "BRUSA (later changed to UKUSA) Agreement" was negotiated late in 1945, and was ratified in March 1946 after the U.S. Army and Navy had determined the nature of their future association in Comint production.

The Army was ready in 1945-6 for a complete merger. The smaller Navy organization would not go that far but would agree to close coordination on common problems instead of a consolidation. The Navy Comint authorities intended to resume their pre-war work on diplomatic and commercial communications in order to maintain the proficiency of their personnel. The Army Security Agency reluctantly consented to divide tasks between separate organizations in order to avoid duplication. Both Army and Navy representatives agreed, however, that in collaborating with the British a unified U.S. national policy must be applied by a single agent who acted in behalf of both Services and all members of STANCIB.

Under STANCIB the two Services in turn supplied a Coordinator of Joint Operations (CJO) with a one-year term—an officer who was at the same time the head of the Army or the Navy Service Comint agency. The CJO was chairman of a Coordinating Committee; his Deputy for Joint Liaison became the one authorized point of contact in Washington for a British liaison officer representing the LSIB. In London, a U.S. Liaison Officer was similarly accredited to LSIB and its processing center. The CJO had two other deputies—one responsible for dividing processing tasks between the two U.S. Comint agencies, the other, for exercising intercept control and thus minimizing duplicate coverage. Each year when the CJO's position passed from one man to the other, three different persons became the deputies.

In June 1946 when the Federal Bureau of Investigation temporarily joined the first three constituents of STANCIB, the Board's name was altered to the U.S. Communications Intelligence Board (USCIB). Even though the FBI dropped out, it remained USCIB because of the addition of the U.S. Air Force and the Central Intelligence Agency to the membership during 1947. The Coordinating Committee became "USCICC" but was abolished finally on its own recommendation. From 1946 to 1949, U.S. Comint activities were thus governed by the Joint Operating Plan.

U.S. and U.K. cooperation was close. Methods for the conduct of day-to-day collaboration between U.S. Comint centers and the British "Government Communications Headquarters (GCHQ)" were standardized. The broad terms of the BRUSA Agreement underlay a growing series of more detailed Appendices and Annexures. They were formulated in annual conferences (alternately in London and Washington) and were formally approved by the two national boards.

The National Military Establishment, 1947-8

Congressional legislation in 1947 had important effects upon the conduct of U.S. Comint activities. The President acquired a National Security Council (NSC) as an instrument of Federal executive power. A new civilian Secretary of Defense was placed at the head of a "National Military Establishment." The Joint Chiefs of Staff, previously created as an entity only by an Executive Order in wartime, were now named by statute as the principal military advisory body under the President and his Secretary of Defense. They were to be assisted by a small Joint Staff. The War Department was replaced by Departments of the Army and of the Air Force which, with the Department of the Navy, dropped to a level below that of the Department of Defense. Only the Secretary of Defense thereafter was a member of the Cabinet.

In the National Security Council the President included the Secretary of State and the Secretary of Defense with other representatives of the National Military Establishment and with individuals whom he invited to attend because of their competence to advise him concerning specific matters. Directly under the NSC, with the mission of coordinating all intelligence activities of the Federal Government that were concerned with national security, was a new Central Intelligence Agency (based on an older Central Intelligence Group), to be headed by a Director of Central Intelligence.

USCIB remained the highest national Comint authority but it obtained a new charter in the form of an NSC Intelligence Directive (NSCID No. 9), dated 1 July 1948. All Comint operations, unless specified explicitly in an NSC order, were exempted from the controls applied to other intelligence activities. Even when so specified, NSC controls over Comint were to be exercised through an authority represented on USCIB. The CIA held exclusive control over all *covert* collection of foreign intelligence; such an inter-governmental arrangement as the BRUSA Agreement, though classified, was not considered to be covert.

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The newly independent Department of the Air Force intended to have a cryptologic organization of its own instead of relying for cryptologic support, as in the past, upon an Air segment of the Army Security Agency. In October 1948, Air Force officers and airmen were withdrawn from ASA to serve as the nucleus of the new USAF Security Service. Headquarters of that new agency soon moved from Arlington Hall Station to Brooks Air Force Base near San Antonio. The prospect that an expanding USAFSS would be very costly at a time when the Administration was trying to reduce defense expenditures invited strong resistance to a third SCA.

The Secretary of Defense (James V. Forrestal) considered creating one unified national cryptologic agency to obtain the desired results at the least cost. He appointed a special board under the chairmanship of Rear Admiral Earl E. Stone, USN, Director of Naval Communications, to formulate a plan for merging all military Comint and Communications Security (Comsec) activities and resources in a single agency. Only the Army officially favored the recommendations for such a merger when they were submitted by the "Stone Board." No action was taken in 1948.

While preparing the defense budget as Chairman, Management Committee, early in 1949, General Joseph T. McNarney, USAF, acting for Secretary Forrestal's successor, Louis Johnson, sought to chop back proposed outlays. He looked into the "Stone Board's" recommendations. The first Chief of Staff, USAF (General Hoyt S. Vandenberg), personally reversed the Air Force's opposition to a unified cryptologic agency after having obtained assurance that each of the Armed Services would be allowed to have its own agency for the cryptologic operations peculiar to its requirements. Despite the Navy's opposition, the Secretary of Defense acted on the basis of the new two-to-one vote in favor. On 20 May 1949 he directed the JCS to establish an Armed Forces Communications Intelligence Agency (AFCIA) and an Advisory Council (AFCIAC) which would have certain responsibilities, powers, and limitations. The JCS so acted at once.

The Navy then cooperated fully with the other two Services in drafting charters for the new Agency and its Advisory Council, and in organizing them in accordance with subsequent instructions from the JCS. The names of Agency and Council were soon changed by substituting the word, "Security," for "Communications Intelligence." The new entities became known as "AFSA" and "AFSAC."

From motives of economy and efficiency the Joint Chiefs of Staff combined responsibilities for Comsec and Comint in AFSA's charter. Up to that time, although an SCA might combine the two, inter-Service and Allied

collaboration in Comsec had been achieved through separate channels. USCIB's province did not include Comsec; AFSAC's did.

Beginnings of the Armed Forces Security Agency (AFSA).

On 15 July 1949, RADM Earl E. Stone, USN, became AFSA's first Director, appointed by the Joint Chiefs of Staff. By January 1950, the Army and Navy cryptologic organizations had transferred enough civilian and military personnel, plus equipment and real estate, so that AFSA could operate. The Air Force, striving to develop its own USAF Security Service (USAFSS), was responsible at first for only a token quota of personnel in AFSA. The three SCA's retained their intercept and direction-finding stations, and the Services provided all the communications channels between the U.S. and the U.K. that were needed to conduct day-to-day collaboration.



RADM Earl E. Stone, USN

AFSA's charter limited its centers within the United States to two. They were at the Naval Security Station (NSS) on Nebraska Avenue in Washington and Arlington Hall Station in Virginia. Neither property was acquired by AFSA, which therefore slipped into the

position of a major tenant. At NSS were the offices of AFSA's Director, his staff, the Office of Communications Security, and that portion of the Office of Research and Development engaged on tasks related to Comsec. New construction at NSS adapted existing structures and added new ones to accommodate AFSA's activities there. At AHS were the Office of Comint Operations and related elements of the Office of Research and Development. Between the two centers, secure communications were accomplished by courier, teletypewriter circuit and eventually by microwave telephone, but they were never enough to prevent a sense of separateness.

AFSA was directed to relocate at a new site less vulnerable to nuclear attack, in quarters which would bring together its different components. After Fort Knox, Kentucky, had been approved by the JCS, they reversed that action, on orders of the Secretary of Defense, in favor of another site that would be less remote from the consumers. On 1 February 1952, the Secretary of Defense approved the Director's choice of an area on the edge of the Fort George G. Meade, Maryland reservation. In 1954 a construction contract was awarded by the Army's Corps of Engineers, which held responsibility for its execution. Interim arrangements for an advance party were made by modifying barracks buildings, which were first occupied in January 1955. During the autumn of 1957, the new Operations Building was ready; the Director moved his headquarters there in November.

In the intervening years, AFSA had lived its short life. During the last quarter of 1949 and the first six months of 1950, personnel from similar portions of ASA and the Navy's SCA combined to form operating and staff units of AFSA. The motives of economy and efficiency which animated the Secretary of Defense in directing that AFSA be established also prevailed in defining its powers and relationships with other elements of the Armed Forces. AFSA looked to the three Services for officers and enlisted personnel to fill many billets at the two Washington centers. AFSA obtained assistance from Service organizations which specialized in support of different kinds.

Communications Security

Before continuing with the history of AFSA, it is necessary to return to World War II and its aftermath, for consideration of the treatment of communications security (Comsec) matters. During World War II, the military communicators of both the United States and the British Commonwealth, coordinated their policies and activities, and established a large area of cooperation.

They adopted a common cryptographic system for high-level communications and agreed upon protective measures, cryptographic keying materials, and security procedures at other levels, too. Those actions were accomplished through units in the sub-structure of the U.S./British Combined Chiefs of Staffs, and they continued after the war, even after the termination of the Combined Chiefs of Staff in October 1949.

U.S. Army-Navy cooperation in Comsec was achieved through a U.S. Joint Communications Board until it was superseded in May 1948 by the tri-Service Joint Communications-Electronics Committee (JCEC). Until the formation of AFSA, each Service separately attended to its own Comsec requirements, but for purposes of Joint operations exchanged information in an atmosphere of wary caution. In 1949, the assignment to AFSA of military Comsec responsibilities for the first time placed a single agency in charge of meeting U.S. military cryptographic requirements. At the same time, AFSA assumed the role in international Comsec collaboration to which the top military authorities of both countries had committed themselves.

AFSA's responsibilities for Comsec passed to NSA in 1952 on an interim basis; NSA was to meet them in the same ways with the same resources pending a permanent revision by action of the National Security Council. The next year, NSC 168 instituted, on a provisional basis, a new organizational approach to Comsec which resembled that applicable to Comint. This continued until 25 April 1957, when NSC 5711 established more lasting arrangements. The NSC created a Special Committee for Comsec (with the same members as its Special Committee for Comint) and declared Comsec a national responsibility. The Secretary of Defense became executive agent for the Government for Comsec, subject to policy decisions by a new U.S. Comsec Board (USCSB). Membership on that Board reflected the intention to provide for the security of communication of the non-military as well as military elements of the Government. The Secretary of Defense delegated his Comsec powers and responsibilities to the Director, NSA, who acquired considerable discretion over methods of protecting the security of Federal communications. His implementing orders were DoD Directive C-5200.5, dated 27 October 1958.

In AFSA and NSA, the Comsec component was one of the three operating elements. Whether its clientele was the U.S. National Military Establishment, the entire U.S. Government, British Commonwealth allies, other NATO allies, or SEATO allies, it was concerned with cryptographic security as a central aspect of Comsec. It was involved in the development of crypto-principles and their embodiments, on the one hand, and in testing and

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analysis of proposed crypto-systems, on the other. It produced crypto-materials for delivery in bulk to the Services and other users, for individual distribution according to Comsec plans which it devised and which the Director approved. To be prepared for emergencies, it adopted plans and accumulated reserve stocks of needed equipments and materials, including manuals of operation and maintenance, and spare parts. To offset obsolescence, it provided for replacements as well as maintenance. For current operations, it scheduled production and delivery of crypto-materials, and after determining that a crypto-system had been compromised, it prescribed the necessary remedies.

[Redacted]

Its officials furnished informal Comsec counsel to the U.S. member of that part of the Standing Group, NATO, which arranged for the security of NATO communications. In meeting NATO's requirements, NSA devised plans which would enable intercommunication by U.S. Services with each other and with U.K. counterparts, as well as with NATO commands and between NATO Governments.



Maj. Gen. Ralph J. Canine, USA

Conditions Contributing to AFSA's Death in 1952

Admiral Stone's two-year term as the first Director, AFSA, ended with the succession of Maj. Gen. Ralph J. Canine, USA, by appointment of the JCS, on 15 July 1951. Both Directors experienced great difficulty in obtaining the Advisory Council's approval of proposed courses of action or acceptance of a suitable compromise because of AFSAC's habitual dependence upon unanimity before acting. The Joint Chiefs of Staff, confronted by the need to decide a question involving technical cryptologic matters, normally referred the problem to the AFSAC for recommendations, and itself acted according to the principle of unanimous agreement.

AFSA was being organized when the ability of the Soviet Union to produce an atomic bomb became known to the United States. AFSA was at an early stage of the controversial division of responsibilities between it and the Service Cryptologic Agencies when war erupted in Korea. Measures to implement the North Atlantic Treaty of 4 April 1949 led to action by AFSA. The "cold war" emphasized the need for Intelligence. The shrinkage of the SCA's stopped in 1950.

New methods of radio transmission altered the equipment and training needed for successful interception, and required the placing of intercept stations and direction-finding facilities as near as was reasonably

possible to the emitters. AFSA prepared original and revised Intercept Installations Deployment Plans which the JCS approved in full recognition that they would oblige the SCAs to increase their overseas establishments.

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The necessary enlargement of U.S. cryptologic facilities involved a difficult and expensive effort by each of the Services and by AFSA, an effort justified by the relative merit and great potentialities of Comint.

The potentialities could not always be realized. During the Korean War the quality of strategic intelligence derived from Comint information fell below that which had been provided during World War II. Consumers were naturally disappointed and critical. The protection of Comint obtained from intercepted messages in plain text seemed to restrict dissemination unduly. By December 1951 AFSA had clashed with the SCAs, with Service intelligence consumers, with CIA, and with the Department of State, though not with all of them at once or over the same problem. AFSA had become a fourth military cryptologic agency which, though large, had responsibilities exceeding its ill-defined powers. Consumers were restive.

On 13 December 1951 President Truman ordered that a searching analysis be made by a special committee to be named by the Secretaries of State and Defense, aided by the Director of Central Intelligence. Headed by Mr. George A. Brownell, a "Brownell Committee" conducted a survey, weighed possibilities, and in June 1952 recommended, in effect, that the unified Comint agency receive greater powers commensurate with clearly defined responsibilities. It advised that the agency be freed from the crippling line of subordination through AFSAC to the JCS and, instead, be directly subordinate to the Secretary of Defense, acting with the Secretary of State in behalf of the NSC. The "Brownell Committee" further proposed that the unified agency be controlled in policy matters by a reconstituted USCIB, under the chairmanship of the Director of Central Intelligence, in which the representation of military and non-military intelligence interests would be evenly balanced.

NSA's Charter

The President and National Security Council in October 1952 adopted most of the "Brownell Committee's" recommendations and issued a revised version of NSCIB No. 9 on 24 October 1952.

A mingling of military and non-military interests was expressed in the word "national." The production of Comint was declared to be a national responsibility. In place of an *Armed Forces Security Agency* the U.S. Government was to have a *National Security Agency*, an organization with the same resources plus a new charter. The AFSA Council, while not specifically abolished, thus had the agency pulled out from under it. The Joint Chiefs of Staff were no longer in the chain-of-command; The Director, NSA, reported to the Secretary of Defense through a unit in the latter's office which dealt with sensitive operations. The Secretary himself was declared to be Executive Agent of the Government for Comint, and subordinate to a Special Committee for the NSC, of which he and the Secretary of State were the two members, and the Director of Central Intelligence was an advisor.

The Secretary of Defense was instructed to delegate his Comint responsibilities to the Director, NSA, and to entrust to him operational and technical control of *all* U.S. Comint resources. The Director, NSA, was ordered

to exercise those controls designed to bring about the most effective, unified application of all U.S. resources for producing national Comint to meet requirements approved by USCIB.

The issuance of NSCIB No. 9, revised, thus opened the gate to a series of important adjustments. The Comint community remained interdependent but long-term trend put good results ahead of individual Service prerogatives in obtaining them.

The Directors of the Armed Forces Security Agency (15 July 1949 to 4 November 1952) and the National Security Agency have been the following individuals:

AFSA

- RADM Earl E. Stone, USN
15 July 1949 to 25 July 1951
- Maj. Gen. Ralph J. Canine, USA
15 July 1951 to 4 November 1952

NSA

- Major Gen. Ralph Canine, USA, Acting
4 November 1952 to 21 November 1952
- Lt. Gen. Ralph J. Canine, USA
21 November 1952 to 23 November 1956
- Lt. Gen. John A. Samford, USAF
24 November 1956 to 23 November 1960
- VADM Laurence H. Frost, USN
24 November 1960 to 30 June 1962
- Lt. Gen. Gordon A. Blake, USAF
1 July 1962 to 31 May 1965
- Lt. Gen. Marshall S. Carter, USA
1 June 1965 to 31 July 1969
- VADM Noel Gayler, USN
1 August 1969 to 31 July 1972
- Lt. Gen. Samuel C. Phillips, USAF
1 August 1972 to 14 August 1973
- Lt. Gen. Lew Allen, Jr., USAF
15 August 1973 to

George F. Howe retired in 1971 after serving over fifteen years as NSA Historian. He is the author of many studies and histories of cryptologic operations, a biography of Chester A. Arthur, a history of the United States, and the official Army history of U.S. operations in Northwest Africa in World War II.