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A BRIEF HISTORY OF U. S. COMINT ACTIVITIES

1. From the very earliest days of the Republic there were certain cryptanalytic¹ activities. These happened so long ago, and so sporadically, that no more will be said about them herein; attention will be directed immediately to the situation existing just before and during World War I.

2. From the declaration of war, 6 April 1917, until June 1917, no Department or Agency of the Government conducted any cryptanalytic activities whatsoever. From June 1916 to about December 1920 a considerable amount of work along these lines was conducted purely as a patriotic enterprise and at his own expense by Mr. George Fabyan, whose Riverbank Laboratories at Geneva, Illinois, organized and provided training for a small group of self-taught cryptanalysts to work upon such codes and ciphers as were forwarded to him by the War, Navy, State, and Justice Departments. The group soon became somewhat proficient and grew in numbers, at one time reaching about 30 persons. In addition to other duties, I directed the cryptanalytic operations and training at the Riverbank Laboratories from the time of the inception of this work until its close thereat in 1920, except for a period of a year (May 1918 - May 1919) when I was 1st Lieut., MID, serving at GHQ-AEF in a section designated G-2, A-6, the German code-solving section.

3. a. In June 1917 the cryptanalytic activities of the War Department were initiated by Colonel Van Deman, G-2, with the commissioning of H. O. Yardley, a State Department telegrapher who had taken some interest in cryptography and was given two civilian employees to assist him. The work grew rapidly and by the autumn of 1917 the increased staff was organized as a section designated as MI-8, which was subdivided into six subsections:

- Subsection 1. Code and cipher solution
- " 2. Code and cipher compilation
- " 3. Training
- " 4. Secret inks
- " 5. Shorthand and miscellaneous
- " 6. Communications (for MID only).

b. The functions and duties of these six subsections may be briefly outlined:

(1) The code and cipher solution subsection was what would now be called the cryptanalytic subsection. It was the largest of the subsections of MI-8 and performed the cryptanalytic work not only for the War Department but also for all other Government departments, including Navy, State, Justice, and the two censorships--Cable and Postal, which were then separate organizations.

(2) Despite the fact that under Army regulations the compilation and revision of codes was a function of the Chief Signal Officer, compilation activities under the Signal Corps were apparently in a moribund state. Information having been received that the Germans possessed copies of the War Department Telegraph Code, MI-8 deemed it advisable to establish a code compilation subsection, and that subsection produced several codes such as Military Intelligence Codes No. 5 and No. 9, small pocket codes for secret agents, and the like.

(3) In addition to training its own personnel, MI-8 trained the majority of the personnel sent overseas for cryptanalytic duties with field forces, both AEF and Siberia. It must be mentioned, however, that approximately 85 officers were trained at Riverbank Laboratories, where a six-week training course in cryptanalysis was given these officers prior to their shipment overseas.

(4) A laboratory was established for the preparation of invisible inks for use by our own agents. It also examined letters for secret writing and an average of over 2000 letters per week were examined for the military and postal censorship from July 1, 1918 to February 1, 1919.

(5) The shorthand subsection was organized to handle captured documents and texts in various shorthand systems, especially German, which had to be translated. This was, in fact, the first subsection organized in MI-8, when censorship began sending (October 1917) letters and documents supposed to be in cipher but which turned out to be in shorthand. In June 1918 the AEF requested

¹ A word first coined and used by me in 1920.

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15 expert stenographers who could take down verbatim examination of German prisoners. The required number was found and shipped. This subsection also provided trained linguists for MI-8 and the AEF.

(6) The communications subsection was established in MI-8 for handling messages to and from military attaches and intelligence officers serving abroad. In a period of nine months it sent and received about 25,000 such messages, practically all in code.

4. At the height of its development, in November 1918, MI-8 was, for those days, a rather large unit, consisting of 18 officers, 24 civilian cryptographers and cryptanalysts, and 109 typists and stenographers. With peace in sight the time had come for the establishment of a definite policy for the future. The guiding heads of the War Department and Military Intelligence at that time fully recognized the high importance and value of the services rendered by the MI-8 cryptanalytic bureau, because they had been in positions where the products of its daily activities came directly to their notice and they were impressed by the bearing which the work had, not only upon the military and naval, but also upon the diplomatic, political, and economic phases of the war. They therefore had, first-hand, experience in this regard and could bring the weight of their positions of influence to bear upon those in charge of the purse strings, with the result that they were able to obtain funds sufficient to keep a fairly large organization intact for a year or two. An annual appropriation of \$100,000 was recommended in a memorandum for the Chief of Staff from the A. C. of S., G-2, dated May 16, 1919, to be used as follows:

Rent, light and heat	\$ 3,900
Reference books	100
Personnel: Chief (Yardley)	6,000
10 code and cipher experts @ \$3,000	30,000
15 code and cipher experts @ \$2,000	30,000
25 clerks @ \$1,200	30,000
	<u>\$100,000</u>

The item for "rent, light, and heat" is explainable when it is noted that the bureau was to be moved from Washington with a view to hiding its existence. Of the \$100,000 recommended, the State Department was to provide \$40,000; \$60,000 was to be provided for expenditure by the A. C. of S., G-2 on "confidential memoranda" against funds pertaining to "Contingency Military Intelligence Division," that is, by vouchers not subject to review by the Comptroller General, - in other words, a secret fund was to be established. The paper containing the recommendations of the A. C. of S., G-2 to the Chief of Staff was "OK-ed" and initialled by Acting Secretary of State Polk on May 17, 1919, and within three days of the initiation of the paper (May 19) it was approved by the Secretary of War over the signature of General March, Chief of Staff. Next came the question of actually obtaining the secret fund. Just how difficult this turned out to be I do not recollect, if I ever did know. (I don't think there was much difficulty. In the summer of 1919, having returned to Riverbank, I was offered a very good position in the new G-2 organization but, for reasons not pertinent to this paper, was forced to decline.) However, the necessary funds were obtained. The plan was put into effect, the bureau was installed in a private house at 22 East 38th Street, New York City, and all (about 50) personnel together with existing records were moved thereto.

5. The \$100,000 mentioned above took care of the bureau for the FY 1920, but when in June 1920 it came time to set up the budget for FY 1921, the purse strings were already beginning to be pulled tighter. Many of the "old-timers" in G-2 had gone to other assignments; those remaining and the newcomers in G-2 apparently did not have the background of the story, nor the foresight and the influence to press the matter so far as the War Department was concerned. The appropriation was at once cut in half, that is, to \$50,000, of which the State Department share still continued to be \$40,000. It is possible that the G-2 thesis was that since the work then being done by the bureau was primarily, if not solely, for and of interest to the State Department, all or nearly all of the funds should be provided by that department. The War Department overlooked some very important points in the situation -- points which will be brought up and emphasized later in this summary. Near the close of FY 1921, when it appeared that further contraction in funds could be anticipated, an attempt was made to obtain more State Department support; the A. C. of S., G-2 succeeded in getting the Secretary of State to write a strong letter to the Chairman of the Senate Appropriations Committee. The showing must have been impressive, for there was not, in FY 1922, another sharp decline in funds allotted for cryptanalytic work. However, in order not to break the continuity of the

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history at this point, it will merely be stated that year by year the funds provided for the maintenance and operation of the bureau became more and more constricted until by the autumn of 1929 the following tabulation, based upon a letter dated July 17, 1929, shows how the bureau had been permitted to deteriorate:

Rent	\$ 3,000
Books, postage, travel and transportation, misc.	2,370
Personnel: 1 Chief (Yardley)	7,500
1 code and cipher expert	3,660
1 translator (Jap)	3,750
1 secretary	1,800
1 clerk-typist	1,500
1 clerk-typist	1,320
	<u>\$25,000</u>

6. Of the total appropriation of \$25,000, the State Department furnished \$15,000, the War Department \$10,000. The activities of the bureau had by this time become so reduced that it was sending in only occasional translations of a few Japanese and a few Mexican diplomatic messages. No research whatsoever was conducted in cryptanalysis; there were no training activities, no intercept, no direction-finding studies, no secret ink work. The personnel consisted of six persons all told and 37 $\frac{1}{2}$ % of the total payroll went to the section chief, Yardley, who had little interest other than to continue as long as possible to maintain himself in his sinecure. He not only had his well-paying Government position but was engaged commercially in other activities.

7. In the summer of 1929 Major O. S. Albright, Signal Corps, was assigned to G-2 to supervise and coordinate the cryptographic and cryptanalytic activities of the War Department. After a careful study of the situation and appraisal of the manner in which the cryptanalytic bureau was functioning, Major Albright came to the conclusion that the entire picture was wrong. He felt that the product, the so-called "bulletin" which the bureau was turning out only intermittently, was indeed of primary interest to the State Department; the War Department had only a secondary interest in it. The primary interest of the War Department in cryptanalytic studies in peace time, he felt, was that such studies should provide scope for research and means for training specialized personnel for immediate war time effectiveness. Major Albright found that not only were research and training being neglected completely, but also that all persons in the bureau, except for one clerk receiving the least pay, were "getting along in years"--their potential usefulness for possible war time service practically nil. Moreover, the bureau was now hidden away in an office building in New York (under cover of the "Code Compilation Company") and far away from direct supervision of the War Department or of G-2, so that no body knew what was going on, how the office was administered, etc. Yardley devoted most of his time to two or three private enterprises, and was having a "field day" at Government expense. There were, in addition, several other factors which motivated Major Albright in recommending that the bureau be taken out of G-2 and its functions transferred to the Signal Corps. Chief among these was the desirability, if not necessity, of placing all cryptographic and cryptanalytic work of the War Department under one agency, rather than distributing it among three (The Adjutant General, for printing, storage, issue, and accounting of codes; the Chief Signal Officer, for compiling codes and ciphers; Military Intelligence, for solution of codes and ciphers). A memorandum on the subject was also prepared by Lieut. Col. W. K. Wilson of the War Plans and Training Section of G-2. The reasons given in the G-2 study and in Colonel Wilson's memorandum were apparently deemed valid by the Chief of Staff, for Major Albright's recommendations were approved in April 1929 and steps were soon initiated by G-2 and the Chief Signal Officer to put them into effect.

8. However, before action leading to the actual transfer of the activity could be taken, a very disturbing factor entered into the picture. In March 1929 a new administration took office, in which Mr. Stimson became Secretary of State. For a few weeks no "bulletins" from the cryptanalytic bureau in New York were given him, the intention being to wait until he had become sufficiently well oriented in the duties of his office to warrant bringing to his attention the highly secret activities engaged in by War and State Departments by means of funds provided in large part by the latter Department. Early in May 1929, however, the time was deemed ripe for this measure, and a few translations of Japanese code messages were placed on Mr. Stimson's desk. Upon learning how the material was obtained, he characterized the activity as being highly unethical and declared that it would cease immediately, so far as the State Department was concerned. To put teeth into his decision he gave instructions that the necessary funds of the State

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Department would be withdrawn at once². At the end of June 1929 the employees were given three months' pay in advance in a lump sum, to tide them over the period in which they might be jobless. Since they had been paid out of "confidential funds" they had no civil service status and no retirement benefits; moreover, they were ineligible for transfer to other Government positions. Of course, the danger was that their dissatisfaction with what must have appeared to them as high-handed, arbitrary action on the part of a new official, and their helplessness in the serious personal situation created for them in the midst of a serious economic depression might lead them to indiscretions which would prove not only embarrassing to the Government but also have serious consequences upon national defense. It turned out that whatever their private feelings, all the discharged personnel, except the chief beneficiary of the old regime, remained loyal and did the best they could to find jobs.

9. In October 1929 I was sent by the Chief Signal Officer to New York to take over the boxed up records and files of the bureau and to oversee their transportation to Washington. Cryptanalytic activities, including research and training now being under the Chief Signal Officer, immediate steps were taken to completely reorganize the War Department's cryptologic activities. The funds available were, of course, very slim -- only what remained of the War Department's contribution of \$10,000 for the FY 1930 was available, because the remainder of the State Department's share of \$15,000 had already been withdrawn by the State Department, as indicated above. Offers of employment were made to certain of the ex-employees of the bureau but none of them was able to accept. An offer of temporary employment was made to Yardley but he refused the tender. Instead, he proceeded secretly to prepare a book extracts of which first appeared in the form of a series of articles in the Saturday Evening Post; the book itself was published in 1931 under the title, "The American Black Chamber." It was highly sensational and made damaging disclosures concerning the most secret activities ever conducted by the Government. Before the appearance of the articles and book, however, Yardley had taken steps to protect himself from possible prosecution for his disclosures, among which was to resign his commission as Major in the MI Reserve. The unfortunate consequences attendant upon the publication of the book need no elaboration herein. Suffice it to say that our amicable relations with the British, who resented the disclosure of certain information obtained from them by Yardley as a commissioned officer, were disturbed; much more serious, our precarious relations with Japan were brought to a boiling point when about 30,000 copies of the Japanese translation of the American Black Chamber were sold in Tokyo in a period of less than a month. The bad odor into which all cryptanalysts and cryptanalytic activities fell, as a result of the embarrassment which the publicity given the matter by Yardley's disclosures occasioned high government officials, had a bad effect upon the attempted reorganization of the cryptanalytic bureau by the Chief Signal Officer. Funds were hard to get, and State Department financial support was lacking; indeed, that Department was opposed to the whole idea. The most serious consequences of Yardley's disclosures, however, came ten years later, and their effects can hardly be estimated. I refer here to the jolt which his book gave the Japanese cryptographers, leading them out of their blissful ignorance and causing them to develop really complex methods which hampered our COMINT operations most seriously before and after Pearl Harbor.

10. Without delay, as indicated in the beginning of the last paragraph, the Chief Signal Officer preceeded, as energetically as possible under the circumstances, to carry out the mission assigned to him. The reorganized code and cipher solving section was placed under the War Plans and Training Division, since the code compilation section was already there. A rather detailed directive, which was prepared by G-2 and approved by the Secretary of War, became the guiding plan of the reorganized service, which was now named the Signal Intelligence Service. Its personnel, consisting of myself and one clerk, soon was augmented by four assistants, including one Japanese linguist. Training literature and courses in cryptanalysis and cryptography were prepared by me and put into good usage at once. A great deal was done in expanding our cryptographic work also, by preparing reserve editions of existing codes, compiling and devising new codes and ciphers, developing cipher apparatus, and so on. Cryptanalytic work was put on a firm basis of research and training, for strange as it may now seem, such solutions of messages as were achieved in the years 1930 to 1935 were shown only with great secrecy to the Chief Signal Officer - they were not turned over to G-2 for fear that a directive from on high would again put an end to this "unethical" activity!

² In his autobiography "On Active Service in Peace and War," Mr. Stimson acknowledges responsibility for closing the "Black Chamber."

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It should also be noted that at this time there existed no real intercept service; such raw material as could be obtained came from extra-curricular activities of a few people; the Signal Officer at San Francisco, for instance, had a personal interest in cryptanalytic work and intercepted messages in his leisure hours at home³. The need for an intercept service became apparent and such a service now was organized but it grew very slowly. In Washington, in the Office of the Chief Signal Officer, all phases of the Army's cryptologic work were unified under one service, the printing, distributing, and accounting of codes being transferred from The Adjutant General to the Chief Signal Officer in 1934. In the depression years, 1930-1934, the organization could, of course, not grow very much - it was fortunate to keep what it had, a unit consisting of a civilian chief (myself) and 4-6 assistants. Repeated attempts to increase the size of the organization were rejected "in view of the financial stringency." However, a school for training officers, the Signal Intelligence School, under the Signal Intelligence Service, was authorized in 1931 - the total student body to consist of one student officer per year! Later, it became two per year and by December 1941 about a dozen officers had graduated from the 2-year course.

11. In 1938, with the clouds of the "gathering storm" in Europe visible in Washington, among the first activities to be expanded with a view to meeting an emergency were those of the Signal Intelligence Service. Not only were the COMSEC activities greatly expanded but also the COMINT. Efforts in the latter field were concentrated on Japanese diplomatic traffic and after 18 months' concentrated research, the highest level Japanese cipher machine and system (to which we applied the cover name "Purple") was solved, the first decrypt being handed in on 27 September 1940. This achievement by the Army's Signal Intelligence Service was hailed by the Navy's homologous service (OP-20-G), with which COMINT collaboration had been initiated a couple of years earlier. The collaboration, however, was in the field of Japanese diplomatic traffic only. How collaboration came about and its extent must be preceded by a brief account of the Navy's COMINT activities antecedent to collaboration with the Army, for in the years 1920-1938 there were no cryptologic relations whatever between the two Services, except that a Joint Army-Navy Cipher System was elaborated in 1926.

12. Cryptanalytic activities in the Navy Department and the Navy were practically non-existent until after the close of World War I, during which, as was noted above, whatever problems they had in cryptanalysis were referred to MI-8 of the Army's G-2. Such cryptographic activities as the Navy conducted at that time were limited to production, distribution and accounting of cryptographic material, these being under the Code and Signal Section, Office of Naval Communications. The Section consisted of an officer-in-charge and two or three clerks. In 1921 or 1922, Naval Intelligence obtained, by clandestine operations, a photo-static copy of the "Imperial Japanese Navy Secret Operations Code - 1918." This was translated and possession of the book became the determining factor in establishing the "Research Desk" of the Section in January 1924. This Japanese code not only was one of the most important tools of the Research Desk but it also served as a constant incentive to build up a COMINT organization to exploit the code. Moreover, it assisted the early efforts of the Navy to a great degree when the Navy's technical staff was very small and inexperienced, since that staff had only to solve the rather simple ciphers employed by the Japanese to superencipher their messages. The work also showed that possession of the code and its translation was not enough and that the Navy had to have qualified Japanese translators as an integral part of their COMINT organization. There were also other lessons drawn from this episode. Funds for the cryptanalytic activities of the Navy, as in the Army, came from secret sources.

13. a. Some time during the period 1917-1920, a secret fund of \$100,000 was made available to the Director of Naval Intelligence. The Research Desk of the Code and Signal Section was apparently the chief and almost sole beneficiary of this fund, from which expenditures such as the following were made:

- (1) Special bonuses and other expenses in connection with obtaining the Japanese Naval Operations Code mentioned above;
- (2) Compensation of the two linguists who translated that code and of decrypted messages in it;

³ Yardley had been able to get only a small amount of material from the cable companies after 1922 or 1923, and this source had practically dried up by 1929, because of the reluctance of the companies to engage in strictly illegal activities.

~~TOP SECRET~~

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(3) Purchase and repair of special typewriters for Japanese, and of Japanese grammars, dictionaries, year books, etc.

b. In June 1931, possibly as a result of embarrassments following the publication of Yardley's "Black Chamber," the custodian of the fund turned the unexpended balance back to the Treasurer of the U. S., in spite of earnest appeals from the Chief of the Code and Signal Section and the Director of Naval Communications. However, it appears clear that despite the loss of the secret fund, the Navy was soon able to obtain funds from the more usual channels, for it began building up a large unit in Washington, with several echelons in the Pacific area. The Director of Naval Intelligence agreed with the Director of Naval Communications that the COMINT organization should come under Naval Communications, at least in peace-time. In return, Naval Intelligence was given authentic secret information (COMINT) that could not be obtained from any other source. In particular, the Navy and Naval Intelligence obtained extremely valuable information from the solution of the Japanese traffic in Grand Maneuvers in 1930, which disclosed not only important features of Japanese Navy war plans but gave a basis for the formulation of U. S. Navy war plans. The successful cryptanalytic operations disclosed the value of and necessity for establishing a strategic D/F network as a part of the COMINT organization, the urgency of developing and obtaining proper high-frequency direction finders; the real importance of enlarging the Asiatic Decrypting Unit (at that time consisting of one officer) and of establishing a similar unit in Hawaii; and the need for building a rather large organization of technicians, both enlisted and commissioned personnel.

c. In 1930 the Japanese put out a new edition of the Navy Secret Code, which remained in effect until 31 October 1938. The Code and Signal Section (now under a new designation, OP-20-G) acquired this new code the "hard way" - that is, by cryptanalysis. Moreover, the cryptanalysis was impeded by the fact that the new code was never used without superencipherment, so that the Navy had the apparently impossible task of solving the code and the superencipherment simultaneously. Attack on the new system began about September 1931, after it had been in effect for 8 months. The work was aided by the use of IBM tabulating machinery, a milestone in cryptanalysis. A dramatic incident connected with the work was the solution, in 1939, of a message reporting the NAGATO's post-modernization trials, which indicated that the new speed was 26 + knots - the same as the four Kongo-class battle-cruisers. By inference, this was the prospective speed of the modernized MITSU and the new Japanese battleships about to be built. U. S. battleships in the blueprint stage were to have a speed of only 24 knots. After verifying the solution of the message many times, the information was referred to the Navy General Board, with the result that the maximum speed for the new battleships was raised to 27 knots, and the 12 new U. S. battleships thus had a superiority of 1 knot rather than a deficiency of 2 knots, compared with the Japanese ships.

d. Continuing its work, on traffic of Japanese Navy maneuvers, the results of the study of the traffic of Minor and Grand Maneuvers in the years 1931-35 proved exceedingly valuable not only technically for the young Navy cryptanalysts but also generally for the high command in the U. S. Navy, when the Research Desk reconstructed the Japanese maneuvers, thus serving the Navy's War Plans Division. The 1933 Grand Maneuvers followed the magnitude and general pattern of those of 1930 and confirmed the belief that they were a rehearsal of Japanese war plans. By 1934 the Navy's Asiatic Comint organization consisted of 1 officer and 30 men, as compared with 9 men who covered the 1930 Maneuvers. The Navy's study of the 1933 Maneuvers consisted of three phases, one of which was traffic analysis, in order to test how much information could be obtained from "methods short of cryptanalysis" and how accurate this information could be. It may be added that the 3-phase study of these Grand Maneuvers continued for a period of three years until every possible bit of information had been extracted from the intercepted traffic. The COMINT success of the Navy's Asiatic unit was such that from 1934 on the C-in-C, Asiatic Fleet looked upon the Radio Intelligence Unit as the most important facility under his command. On 7 December 1941 that unit, located in a bomb-proof tunnel on Corregidor, consisted of 9 officers and 61 men, functioning with very high efficiency. It worked primarily against the Japanese Navy but it also covered diplomatic messages between Far East points, using keys furnished by the Navy unit in Washington. There was also a Navy unit in Hawaii by this time, consisting of 15 officers, 24 cryptanalytic clerks, and 60 intercept operators. This unit tracked Japanese ships and worked on Japanese naval traffic exclusively.

e. In Washington, the Navy's COMINT organization was, of course, also studying Japanese diplomatic traffic. By skillful clandestine operations, Naval Intelligence succeeded in obtaining photographs of Japanese codes and cipher keys,

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so that the difficulties of cryptanalysis of certain systems were more or less eliminated or greatly reduced. Practically every message of the Japanese Foreign Office was being read (except for the "Purple" which was not solved, as noted above, until September 1940 by the Army).

f. First steps in COMINT collaboration between the two Services were somewhat gingerly undertaken some time in 1938. The importance of these steps warrants a paragraph or two.

14. a. As noted above, collaboration between the Army and the Navy in the cryptologic field was extremely scanty in the early formative years of the cryptologic organizations in both Services. Indeed, there was no collaboration but a bit of rivalry, going back to 1920, as evidenced by the following extract from a report dated 9 November 1920 to the Director, Military Intelligence on the subject of code and cipher work:

"5. Just now it appears very desirable to arrange for the interception of as many messages as can be obtained in the Japanese Naval Code. This will enable a study and probable breaking of this code and will greatly simplify the work at a later date should it be necessary to read such messages for military or naval use. If this work is delayed until an emergency arises, it will require weeks--perhaps months--to make the first solution and during this time information of vital importance will be unavailable. If the Navy is requested to furnish the desired messages now they will naturally wish to know for what purpose and to what extent they are used. It is very desirable to confine information of this character to the fewest possible persons, but on the other hand it must be made known to some in order to make it useful.

"6. Should the Navy organize a code and cipher section to work independently of ours, it would result in great duplication of effort. On the other hand a free exchange of information between the separate Army and Navy sections would facilitate the obtaining of valuable information by unauthorized persons.

"7. In view of the above I wish to recommend a radical change in the relations of this office to the Navy Department. Objections offered by Major Collins and others, however, seem to indicate that such change is inadvisable at the present time. I am therefore forced to the conclusion that it will be better to make the best use of available Army facilities and await a more favorable time for gaining the cooperation of the Navy. I have prepared and filed in the office safe a proposed agreement with the Navy which will be submitted for your consideration should circumstances seem to warrant."

b. Collaboration in the COMSEC field was limited to the production of the Joint Army-Navy Cipher System, in 1926, as mentioned above; collaboration in the development of the SIGABA/ECM, the machine used by the Army and the Navy, began only in the winter of 1936-1937.

c. Except for a brief collaborative effort to solve a large batch of AMTCRG messages submitted by a member of Congress to the Navy in 1930 (both Services were unsuccessful, however), there was no collaboration in COMINT activities in the years 1920-1935, but only more or less friendly rivalry in the solution of test messages. The following is quoted from an Army history:

"D. Relations with the Navy

"The entrance of the United States into the War had increased the amount of diplomatic traffic between the Axis capitals and their representatives abroad and intensified our interest in the interception of that traffic. In peace time the Army and Navy, by unwritten, informal, and loose agreement, had shared the responsibility for intercepting and processing diplomatic traffic, and, from an initial lack of cooperation and coordination, close daily collaboration for this purpose had gradually developed between the signal intelligence organizations of the two services. The question of the division of the work had been raised at a time when the two services were collaborating and coordinating quite closely in interception but were competing in the exploitation of the intercepted material; no agreement for a permanent division of responsibility for processing could be reached. Rivalry between the services had reached a point where, whenever an important message was intercepted and read, each service would rush forward immediately to the White House a copy of

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the translation in an effort to impress the Chief Executive with the accomplishments of the signal intelligence facilities of the department which had translated the message. This competition was not only unseemly but was a useless and costly duplication of effort as well. To end the situation, it was suggested by the Chief Signal Officer (then Major General Joseph O. Mauborgne) that the Army and the Navy should share responsibility for processing the intercepted traffic on an alternate daily basis: that is, the Army would receive and process all intercepts bearing an even date of the month, the Navy, all those bearing an odd date. In this way it was believed that neither service would have an unfair advantage over the other from the point of view of number and value of the translations produced. The suggestion was accepted by the Navy (Admiral Noyes), and the arrangement lasted until 25 June 1942, though the arrangement was never satisfactory in operation. While each of the services possessed all of the traffic intercepted by both, it was expected to solve only that part of the traffic which was its responsibility and to translate only messages sent on the days assigned. It happened, however, that there were some technical and practical difficulties in carrying out the agreement, and, in addition to occasional duplication of translations, there was still a very real duplication of effort in that at a time of great scarcity of trained cryptanalytic personnel, both the Army and the Navy were maintaining diplomatic cryptanalytic sections for processing identical material--a duplication hard to justify. Had these two sections been amalgamated into one, there would have been not only an appreciable saving of personnel but also the incalculable advantage of having the necessary number of highly skilled experts concentrated in a single well integrated team, leaving the remaining experts free to work on problems requiring a considerable amount of skill and experience."

d. This "odd and even date" arrangement, while inefficient from a technical point of view, worked fairly well in practice and was in effect even after the Pearl Harbor disaster; it continued indeed, until 25 June 1942, when at the request of the Navy, the Army took over all diplomatic COMINT operations, leaving the Navy more time and facilities to devote to Japanese and German naval traffic. It should be noted that the Navy had not conducted COMINT operations on any diplomatic traffic except Japanese, whereas the Army sections were at work at this time on Japanese, German, Italian, French, Spanish, Portuguese, and Latin-American diplomatic traffic.

e. During the years 1930-1940, the Navy kept to itself all the details of operations and results of its work on Japanese Navy traffic; to the Army's Signal Intelligence Service this was indeed a closed book and remained so more or less until closer collaboration was established after Pearl Harbor.

15. a. At about this time both Services began to be disturbed by factual evidence and rumors of numerous agencies actually engaging in or about to undertake COMINT activities. For reasons of security it was clear that some limitations ought to be placed upon official work of this sort. Space forbids a detailed account of how this was accomplished but the following facts may be of interest:

(1) As a result of a directive issued by the President on 25 June 1939, and of a study made by a subcommittee of the Joint Intelligence Committee, the Joint Chiefs of Staff recommended to the President on 6 July 1942 that only the Army, the Navy, and the FBI be permitted to conduct COMINT activities. The recommendation was approved by the President two days later.

(2) The COMINT activities of Government agencies were allocated among the three following:

1. Diplomatic: Army
2. Enemy Naval Operations: Navy
3. Enemy Military Operations: Army
4. (a) Western Hemisphere Clandestine: FBI-Navy (Coast Guard)⁴
5. Trade Codes: To be assigned by committee
6. (a) Army Weather: Army
- (b) Navy Weather: Navy
7. Domestic Criminal: FBI
8. Voice Broadcast: FBI
9. Cover Text Communications: FBI
10. Miscellaneous: To be assigned by committee

(3) An informal standing committee composed of one representative from the Army, the Navy, and the FBI was appointed to meet at frequent intervals for (1) an

⁴ See Para. 3 of covering memorandum.

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exchange of information, (2) eliminating duplication, and (3) passing upon any questions of allocation or pooling of efforts which might arise.

b. This informal committee met only two or three times and its allocations were never formally approved by higher authority. However, from this very informal and loosely-organized body there grew up an organization that later came to exercise a profound influence upon the COMINT activities of the Government - the Army-Navy Communications Intelligence Co-ordinating Committee (ANCICC); then, the Army-Navy Communications Intelligence Board (ANCIB); then, when the Department of State was taken into the fold, STANCIB and STANCICC; then when the FBI and CIA were taken into the fold, the United States Communications Intelligence Board (USCIB). USCICC (the Co-ordinating Committee) was abolished.

c. The history of these organizations constitutes a story all of its own and space forbids giving any further details thereto in this condensed history. Suffice it to say that ANCIB, STANCIB, and USCIB have served more or less effectively to control and to guide the COMINT activities of the Services. There were, however, lengthy meetings, discussions and arguments, sometimes acrimonious, as a study of the minutes of the various bodies will show.

d. These bodies had from time to time committees and sub-committee, both ad hoc and standing, which did the basic work for the Board. One, quite important during World War II, was the Army-Navy Cryptanalytic Research and Development Committee (ANCRAD).

e. Even before the close of hostilities in World War II, the Navy brought up the question of its re-entering the field of diplomatic COMINT work; the Navy took the quite warranted position that the transfer to the Army of all Navy diplomatic COMINT activities in June 1942 had merely been a war-time expedient to permit it to concentrate on purely naval COMINT operations and, moreover, that the allocations made by the informal committee mentioned in para. 15.a (1) above had never been approved officially. The Navy view prevailed and shortly after V-J Day, agreements for dividing up the diplomatic COMINT field were made between the Army and the Navy.

16. a. However, a new element was now added to the situation: the question of "unification" of the COMINT services. Observation by the Army of the way in which the British COMINT activities were organized and a belief that efficiency and economy would be promoted by a unification, rather than by the existing co-ordination mechanisms, led the Army to insist upon such unification.

b. Space forbids any discussion of events leading to the establishment of the so-called "Stone Board," the nature and content of the deliberations of that Board, and the results thereof. Suffice it to say that the Armed Forces Security Agency (AFSA) was established by a directive dated 20 May 1949 (JCS 2010). Most of the facilities and personnel of the Army Security Agency (ASA) and of the Navy Communications Supplementary Activity were transferred to AFSA, putting them under a single head. The Air Force, which had just become a separate Service, and had only recently established the beginnings of its Air Force Security Service (AFSS), had little or nothing to put into AFSA. On 1 July 1949 AFSA was activated under the Directorship of Rear Admiral Earl E. Stone.

17. This brief history should include some information about the Army and the Navy COMINT organizations during World War II; the sizes to which they grew, both in the field and in Washington; the close relations which were established with the British; relations with field and theater commanders and with consumer agencies; and the brilliant achievements of the U. S. COMINT organizations. Here again, space forbids such treatments in any detail; however, a few comments may be made.

18. a. As to growth, the following data will give some idea. From 1930 to 1936 the Army's cryptologic organization in Washington consisted of 7 persons; at the outbreak of the war in Europe, it had only 19. How many persons were in the field, in intercept work, is not available at the moment but the number certainly did not exceed 100. On 7 December 1941 the Army had:

Category	In Washington	In the Field	Total
Officers	44	1	45
Warrant Officers	0	0	0
Enlisted Men	28	149	177
Civilians	109	0	109
Total	181	150	331

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and on 14 August 1945 it had:

<u>Category</u>	<u>In Arlington</u>	<u>In the Field</u>	<u>Total</u>
Officers	661	116	777
Warrant Officers	4	11	15
Enlisted Men	565	2139	2704
Enlisted Women	957	257	1214
Civilians	5661	0	5661
Total	<u>7848</u>	<u>2523</u>	<u>10,371</u>

The latter figures do not include, of course, the more than 17,000 officers and men engaged in COMINT activities under overseas theater commanders.

b. In the Navy, a parallel expansion took place and breakdown figures are not immediately at hand. However, the following gives the picture: In 1939 the total personnel in both Services devoted to COMINT activities was about 300; in 1945 it was about 37,000.

19. a. COMINT discussions with the British began in the summer of 1940. Early in 1941 a mission consisting of two officers from the Army COMINT organization and two from the Navy COMINT organization went to London, taking with them two "Purple" machines, data for employing them in reading the Japanese highest-level diplomatic traffic (which the British had been unable to read), and certain other material. In exchange, we got from the British much valuable information in connection with German and Italian systems. Collaboration began on an active basis soon thereafter and reached the point where in 1944 the Army was in touch by radio, on a continuous basis, with the British organization, the Government Code and Cypher School, (GC&CS), located at Bletchley Park, about 50 miles from London, and assisted in solving German Army and Air Force Enigma traffic. In a similar way, the Navy was in touch with the British in regard to Axis naval traffic. Agreements were entered into between GC&CS and the Army on one hand, and the Navy, on the other, whereby the U. S. was to have primary responsibility for COMINT activities in the Pacific, the U.K. was to have similar responsibility in the Atlantic and in Europe. Results and technical data were to be exchanged freely, under certain strict controls.

b. After V-J Day, more formal agreements (BRUSA) were drawn up, and collaboration with the British continues to be very close. A similar agreement has been made with the Canadians (CANUSA).

20. Relations with field and theater commanders were established on a practical basis that conformed with the requirements of the two Services; space does not permit indicating the differences in this regard between the Army and the Navy, although control regulations for the protection of COMINT sources were quite similar. The Army employed for dissemination purposes a system (SSO) analogous to the one the British used; the Navy preferred to use the normal command channels with special cryptosystems. Relations with consumer agencies in Washington were not as extensive, of course, as with field commands and were conducted almost entirely by the Intelligence agencies, not by the COMINT-producing agencies. There were, from time to time, technical-information exchanges with the FBI COMINT organization, which was restricted to studying internal clandestine traffic.

21. Finally, as to achievements of the U. S. COMINT services during World War II, a good picture is given in the famous letter from General Marshall to Governor Dewey, 25 September 1944, a letter the contents of which were disclosed during and by the Joint Congressional Investigation of the Attack on Pearl Harbor, a copy of which is appended.

19 February 1952

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