governmentattic.org
"Rummaging in the government's attic"

Description of document:	National Security Agency (NSA) Transcripts from two oral histories of cryptographer Frank B. Rowlett - (NSA OH 1982-05 and NSA OH 1985-10)
Requested date:	24-June-2022
Release date:	19-April-2023
Posted date:	12-June-2023
Source of document:	FOIA Request National Security Agency Attn: FOIA/PA Office 9800 Savage Road, Suite 6932 Fort George G. Meade, MD 20755-6932 Fax: 443-479-3612 Online Request Form

The governmentattic.org web site ("the site") is a First Amendment free speech web site and is noncommercial and free to the public. The site and materials made available on the site, such as this file, are for reference only. The governmentattic.org web site and its principals have made every effort to make this information as complete and as accurate as possible, however, there may be mistakes and omissions, both typographical and in content. The governmentattic.org web site and its principals shall have neither liability nor responsibility to any person or entity with respect to any loss or damage caused, or alleged to have been caused, directly or indirectly, by the information provided on the governmentattic.org web site or in this file. The public records published on the site were obtained from government agencies using proper legal channels. Each document is identified as to the source. Any concerns about the contents of the site should be directed to the agency originating the document in question. GovernmentAttic.org is not responsible for the contents of documents published on the website.

-- Web site design Copyright 2007 governmentattic.org --

NATIONAL SECURITY AGENCY
CENTRAL SECURITY SERVICE
FORT GEORGE G. MEADE, MARYLAND 20755-6000

Serial: MDR-114536
19 April 2023

This responds to your request of 25 June 2022 to have ***the transcript from two oral histories of Frank B. Rowlett (NSA OH 1982-05 and NSA OH 1985-10)*** reviewed for declassification. The material has been reviewed under the Mandatory Declassification Review (MDR) requirements of Executive Order (E.O.) 13526 and is enclosed. We have determined that some of the information in the material requires protection.

Some portions deleted from the documents were found to be currently and properly classified in accordance with E.O. 13526. The information denied meets the criteria for classification, as set forth in Section 1.4 subparagraphs (b) and (c) and remains classified TOP SECRET and SECRET as provided in Section 1.2 of E.O. 13526. The withheld information is exempt from automatic declassification in accordance with Section 3.3(b) (3) and (6) of the Executive Order.

Section 3.5 (c) of E.O. 13526, allows for the protection afforded to information under the provisions of law. Therefore, the names of NSA/CSS employees and information that would reveal NSA/CSS functions and activities have been protected in accordance with Section 6, Public Law 86-36 (50 U.S. Code 3605, formerly 50 U.S. Code 402 note).

Please be advised that the responsive documents include another government agency's information. Because we are unable to make a determination as to the releasability of another agency's information, the subject documents were referred to the appropriate agency for review. At the time of this letter, the response is outstanding. However, we were able to isolate the other agency's equity, so we have protected it using the other government agency (OGA) redaction code.

Since your request for declassification has been denied you are hereby advised of this Agency's appeal procedures. Any person denied access to information may file an appeal to the NSA/CSS MDR Appeal Authority. **The appeal must be postmarked no later than 60 calendar days after the date of the denial letter.** The appeal shall be in writing addressed to the NSA/CSS MDR Appeal Authority (P133), National Security Agency, 9800 Savage Road, STE 6881, Fort George G. Meade, MD 20755-6881. The appeal shall reference the initial denial of access and shall contain, in sufficient detail and particularity, the grounds upon which the requester believes the release of information is required. The NSA/CSS MDR Appeal Authority will endeavor to respond to the appeal within 60 working days after receipt of the appeal.

Sincerely,

Jacqueline M. Amacher
Chief
Declassification Services

Encls:
a/s

PL 86-36/50 USC 3605

OHNR: 05-82 **DOI: 820319**

TRSID: [redacted] **DTR:970919**

INAME: ROWLETT, Frank B.

IPLACE: SAB II, NSA

IVIEWER: H. Schorreck, J. Coates, R. D. Farley

Farley Today is 19 March 1982. Our interviewee: Mr. Frank B. Rowlett. Mr. Rowlett will discuss post-World War II cryptanalytic effort against the Soviet Union and other countries, and will later discuss the Hebern cipher machines. Interview is taking place in the T542 interview room, NSA, at Fort Meade. Interviewers: Henry F. Schorreck and Earl J. Coates. Classification of this tape is ~~Top Secret sensitive~~. This is NSA oral history tape number 5-82.

Schorreck Welcome to Washington (XG)

Rowlett Yes, (XG) behind that, and developed the rationale behind our work on the Bourbon problem. [redacted] In my group, which was called B3, we started to work during the wartime on these non-belligerents, [redacted] and so in B3 we set up, for each of the countries, a small unit and we brought in people with a variety of languages. For example, there was a Major Fish who was in charge of Spanish and Spanish-related problems, and under each we had a country unit. We had, oh, Sy Gordon, who's pretty well known as a Middle East scholar, was one of the "exotic language" types, who was working on the systems used by the Middle Eastern countries. Of course one of these was a unit working on the Russians. Now, from this kind of a start, and I don't remember much of the details of what we had in the early days on the Russians, we had an effort which we hoped would expand, because Russia did seem to be an awfully important target in terms of the postwar intelligence considerations. The main mission of B3 was to learn as much as we could about each one of these countries, because in wartime, there's much better prospect for recovering the system because of the sort of urgency of the situation, so we wanted to exploit the wartime aspects of this, because we felt like in peacetime that our chances wouldn't be so good. This is the kind of general philosophy we operated under and, as people became available, and as interest was expressed, we allocated the people, and we had quite a unit going. As a matter of fact, toward the end of war, B3 was about all that was left after the belligerents were knocked out, because B2 was directed at the Japanese military and the Navy and all of its efforts were directed at the Axis naval communications, so at the end of the war, B3 was the core. It was the active unit that was left, and to sort of look ahead a bit, became the target of both the Navy and Air Force, who wanted to get into the act on the idea that there

EO 3.3b(3)
EO 3.3b(6)
PL 86-36/50 USC 3605

Declassified and Approved for Release by NSA on 04-19-2023 pursuant to E.O. 13526: MDR-114536

would be a third SIGINT service in the Air Force, just like there had been during the war between the Army and Navy. But to go back to the question, one of the things we did to prepare for work on the Russians, was to take advantage of the very unique situation, which I think has a bearing on the discovery of Americans who were later proved to be traitors through the due process of the law. Probably key to this was the fact that we, the Americans, and I believe General Stoner was the one that was involved with the negotiations, provided the Russians with communications facilities from Washington to Ladd Field and then from Ladd Field they went on to the networks in Russia they could communicate with over radio. This service was operated out of the Pentagon, and we had put in circuits to read the traffic on the Ladd Field-Washington circuit into a room in A building over at Arlington Hall station, which was known to very few people because presumably the Russians were allies, and we didn't want to let the cat out of the bag that we had intentions to read their traffic. So this gave us a tremendous volume of intercept -- letter-perfect, and much better than we got from the normal intercepts like the Enigma intercepts or the Japanese Army or Navy; it wasn't mechanical -- it had to be done by hand and all that kind of stuff, whereas the Ladd Field traffic was automatically printed out by teletypes on reams of paper, and it was a case of sorting it according to address and other things. Not to dwell on the details of how we arrived at this, but just right down to the point, we were able to make a pretty good analysis of the kind of systems used for the Russians, categories, machines. I think one of them was called the Albatross, and that was a cipher machine, I'm pretty sure. Then the Russian pad systems -- the Russians liked pads. As a matter of fact, most of their traffic was in pads, and you can look in the files and determine which categories, whether they were military or whatever. The Soviet traffic out of Washington, not the Ladd Field traffic now, but some of the traffic -- the normal diplomatic traffic between the Soviet Foreign Office representative, the Ambassador, here in Washington and the Soviet Foreign Office in Moscow, was also intercepted, and work was put in on that. I don't remember the details of how this happened, but somehow or another, we began to equate the messages in the Ladd Field category with the messages normally transmitted between Moscow and Washington. Once we began to make this equation, the relationship between them evident, we found out what boiled down what I've termed a two-time pad. It boiled down to what I've termed a two-time pad. It was a one-time pad which was used intentionally twice by the Russians in the hope that it would not be discovered by the Americans, and to cut down on the code production problem. It was a mistaken usage, again, just like Wilson talks about in the ability to exploit the German stuff; it was not the Enigma machine they solved, it was the usage of it. We'd had some experience with the GEE (TR NOTE: Spelled out as G, E, E) problem, which the pad generation was the key to our ability to read the German one-time pad system, so this was just another dodge for production of pads and to use them, and this we exploited. Now this was a very difficult thing because it meant that sometimes the underlying code had to be recovered. I don't remember all the details of this, but it's in the records, I'm sure, just what went on. Now this operation was kept pretty quiet because of the attitude around the upper levels of Washington. As I recall, and I hope my memory is correct on this, it was a David K. Niles, who was an advisor to Mr. Roosevelt's administration, and Niles was one of the suspect people that had developed in this traffic. Niles, I believe, had advised Mrs. Roosevelt, through his knowledge that we were able to read some of the... well, particu-

larly the Japanese and the German stuff, he must have had access to that, and the word was that Niles, through Mrs. Roosevelt, had brought pressure or had made the suggestion to the administration that it would not be sort of cricket to try to read the Russian stuff, since they were their allies. As a result of this, it was decided to be in such bad taste that I think we find here a repetition of the American (1G) chambers device concept that we ought to be working on the Russians. Well, Carter Clarke evidently got the word, and came over and discussed this matter with Colonel Hayes and myself, and in the office he told us what had come down through channels to him, and he wanted to know at that time what we were doing. I briefed him as fully as I could, and then he informed us that he had been instructed to stop any work on the Russians, and he told this to Hayes and myself, and then he pointed out that he had not issued any such order to us and that he was going on back to the Pentagon. Since we had received no order to stop, we interpreted that we shouldn't stop, and we didn't. As a matter of fact, I was inclined to -- because of my knowledge that there was a penetration somewhere, and possibly could've been Niles -[redacted]- my inclination was this was a ploy on the part of Niles to protect his name; he was afraid some of these reports would get back and he'd be identified. Now I have nothing to substantiate that, but if I was Niles, that's the way I would react. So we pushed harder on the problem. There was no collaboration with the Navy on this. The reason we were able to get as far as we did -- and I think the records of the unit will explain this better and be a better source than my memory -- was the collaboration we'd set up was a very special type of collaboration with the Bureau who had a lot of information about people who were suspect. He'd come over, (B% Branford) from the Bureau would come over and work with Charlie Gearhart. Not Charlie, but one of the Gearharts, and Meredith Gardner, who were running this facet of the Russian problem. Of course, we were at the same time working on the Albatross and the other stuff. The [redacted] big effort on the thing. The sad part of the consolidation is that in merging the two, we kind of lost some of the continuity on our effort, including the Albatross. So we had to recover from that. This is one of the bad aspects of consolidation that our units gone on without having to absorb some people which were not qualified. We did this under Stone's direction. I've been a little bitter about this because I was not in harmony with Rosie Mason's actions at that time, and we lost ground, I think, on the Russian problem at a time when it was vital that we should have continued it. The interesting thing about this is that, although the Navy had a representative in our "Bourbon section", we were able to cover up this operation. While I didn't deny him access to the problem that Gardner and Gearhart were working on, he never showed enough initiative to go in and find out exactly what they were doing, and the full implications of it. They would brief him on the externals, but leave out the relationship with the Bureau, because we considered that Arlington Hall station with the Bureau as being probably the most sensitive operation we had, because it dealt with the identification of agents within the U.S. governmental structure, and therefore was... well, I can't think of anything more sensitive. And particularly people around the President. This is where the story of Hiss came forth. One of the things I remember, I think, Hiss was a Major in some Russian fake military organization, and received a special medal for his contribution. The Russians did that --

EO 3.3b(3)
PL 86-36/50 USC 3605

EO 3.3b(3)
EO 3.3b(6)
OGA
PL 86-36/50 USC 3605

I don't quite understand why, but it seemed to be a good trick for them. There were many others, whose names I'm sure will show up in the records. [redacted] We had... well, it's quite a complicated story. Now this is what I remember right here at this session on that. I hope this is what you want. I can't contribute much more than that.

Schorreck That's fine, Frank. Were you able to identify the Rosenbergs in the traffic as well?

Rowlett I recall that the Rosenbergs were identified. Now it was not easy for them to do this, because they used cover names, and the cover name would appear in the traffic, and then where (B% Branford) and his group came in, was the particulars of each one of the individuals, you see, he tried to equate to the cover names. And that way we'd establish the relationship between the cover name and the individual, and from then on, wherever the cover name appeared, we could get some idea of the kind of information that was being produced by them, and how they were being manipulated by the Russian intelligence operatives.

Schorreck Do you recall if there was ever a time the Justice Department or anybody queried you about the existence of these files?

Rowlett To my knowledge, this was all handled by the Bureau, and the Bureau was very jealous of the source. [redacted]

OGA

Schorreck For years there's been some (2-3G) to the Agency about any knowledge we might have of the Hebern devices. (XG) It seems as though the heirs of E. Hebern are trying to recover some compensation for some of his machines. Could you tell us a little bit about -- I know you have a little before -- but could you elaborate on Hebern and what contributions he made throughout in terms of the development of cipher machines?

Rowlett I'll tell you what I remember today -- It's, I think, pretty accurate. The Navy had a contract with Hebern, and they made specifications for a particular device, and Hebern built it, and submitted it to the Navy. Of course, I think, there was a least one machine, and maybe two, and one of the amusing stories about this -- I don't know how accurate it is, but I think it ought to be told or mentioned -- is that the first delivery of machines made by Hebern to the Navy, they could encipher a message on them all right, but when they tried to decipher with the machines, it was impossible to do so. The Navy objected and Hebern pointed out that the specifications did not require the machines to decipher, so he didn't build it into it. (laughs) Now this is amusing and may have been just a myth they threw up, but it could have happened in those days, so I don't discount it too much. Hebern did build a machine -- this is the famous Hebern machine that Billy Friedman broke. So Hebern got paid by the Navy for his contract for his work on the machines, and after the first machine had been demonstrated as being inadequately secure by Friedman through his work sometime in the '20s. The Navy wrote a contract for the Hebern Mark 2, which was an improved Hebern machine and which was built and used by the Navy. I recall it was used for intercept traffic -- for enciphering intercept traffic about in the period just before Pearl Harbor and maybe into the war. Now this is a rough look down at the Hebern role; I'm not aware of the details of the contract. I do know that Agnes Driscoll left her job in the Navy and went to work for Hebern, and then later when Friedman broke... found out the machine was not secure enough for the Navy, she came back and worked again for the Navy.

Schorreck Was Hebern at all instrumental in making any contributions in the development of machine ciphers?

Rowlett Only in the sense that in his work with the Navy under contract, that he built devices, and these were sort of pioneers, the first machines... well, it was the first workable American cipher machine that I know about, in terms of rotor machines. Now there was a Vernan machine and there were a lot of other kind of pseudo things that were tried. The M94, of course, is not really a machine; it's a cryptograph. But there were two machines: The Hebern machine, which was a rotor machine, and the Vernan machine, which was a sort of teletype enciphering arrangement.

Schorreck But the Hebern was the first one to use the rotor principle.

Rowlett In America. Now the Enigma, of course, is about the same time frame, and it had a rotor. What we called rotors -- they're actually commutators, commutating devices. But now the invention of the rotor goes back to a Swede by the name of Wahnoe (TR NOTE: Spells name). I don't know how to pronounce it. But you look at the patent files and you'll find a patent was issued to him for a sliding commutator; it was like a stick with 26 contacts. Well, 52 contacts on each face with interconnections between these contacts, two duplicated.

Schorreck Was that before Vernan?

Rowlett This goes back to, oh, around World War I dates. You look up the patent specs, you'd get the exact date on it, and the name is w, a, h, n, o, e.

Coates Did you ever look that up?

Rowlett I had copies of that for my files, which somewhere or another have been dissipated since I left NSA. (laughs) Also they destroyed my diaries for both the Red and the Purple, which I kept -- my personal log.

Schorreck Really?

Rowlett Yeah. I don't know why it was ever done, but I raised so much Cain about it... it was done and over with and there was no use trying to kill somebody or otherwise get vengeance on it.

OGA

Schorreck There's another question that's been bothering me for some time -- I think since the first time I saw it. You wrote a report [redacted] Friedman put in a request to purchase two of them in 1929. He received one in 1931, so the story goes. What was learned, by Friedman and yourself and the rest of the unit, studying that Enigma machine, or did you study it?

Rowlett Yes, probably the best way to answer your question is to refer you to the manuscript that I left here. There's a little squib, a little section on our work on the Enigma machine. I didn't go into the analytical details in that, but it mostly tells what we did with it and our conclusions. We worked at it, too; we worked at it very hard. But we never sent down any traffic. We never set down to work on any challenge messages like Friedman had with the Hebern machine. But we had some ideas about how to exploit it, and actually when we worked on the Purple machine, we thought maybe the Enigma might have, well, let me just (end of tape)

Farley Today is 16 March, 1982. The following is a discussion between Mr. Frank B. Rowlett and Dr. Harold C. Deutch, from the Army War College, in Carlisle, Pennsylvania.

Deutch Mr. Rowlett, in the first place, I'd love to ask you some questions concerning the Purple machine which you were so vital in breaking. For one thing, there's a good deal of confusion about whether we ever had hold of a Purple machine. We're told that there's none in existence that we know of at the present time. But I also read somewhere, and I couldn't locate it before I came here, a statement to the effect that there was a Purple machine in our possession after the war, that it disappeared -- in other words, somebody walked off with it. Can you tell us something about whether such a machine, to your knowledge, exists at the present time? Whether we had one in our hands?

Rowlett Let me tell the story as I recollect it and put it in place. We worked on the Purple machine, and on the Red machine as well. We worked at the solution, the recovery, from intercepts and intercepts alone, through the cryptanalytic process as we developed for dealing with both machines. We learned quite a bit about the machines, because of what our cryptanalytic work told us. We knew certain principles had to be

employed. For example, in the Red machine, and when it was replaced by the Purple, we had of course to recover a new set of cryptographic principles, and incidentally -- I think it would be a good time to say this -- that these principles had not been encountered in any other machine anywhere else in the world, in spite of what Winterbotham implies in The Ultra Secret. Most of the British writers, who are very familiar with the Enigma, for example, tend to think that the Purple machine and the Red machines were modifications of the German Enigma. This is absolutely untrue, as any technical person can identify when they look at the more detailed information available on them. But in the public domain, there's just a feeling that the Purple, and possibly the Red, are modifications of the Enigma. Now we recovered the machine, as I said earlier, strictly from an analysis of the intercepts we'd received, and from our knowledge, based on things we discovered about Japanese cryptographic practices followed by the Japanese diplomatic code makers, and from this we were able to produce the machine. Now, at the end of the war, and after Germany had fallen, we had, I like to call them, an intelligence scavenger team that went in to one of the buildings in Berlin, which had been occupied by the Japanese, and found some very suspicious pieces of equipment. At first, these were thought to be pieces of telephone equipment, and when they came over and were examined by the Signal Corps types, there was no question that they were not used for telephone communication purposes, but had some other purpose in life. These pieces, which the scavengers had found, finally wound up on my desk over in Arlington Hall station, and I think for the first time, anybody who was familiar with the cryptanalytic process that produced the Purple machine saw parts, and I emphasize parts, of a Purple machine that had been built by the Japanese. These were original parts. There were four pieces which equated to the parts we'd recovered, and I'm a little nervous about the present rules of classification with regard to what I'm going to say, but I can assure you that, in my estimate, these words are not classified. The first thing we did, of course, was to equate the findings of this scavenger team with the Purple machine that we had reconstructed, and we found out our machine was absolutely correct -- the one we recovered -- except for the interchange of two wires in one of the numerous wires that we'd recovered cryptanalytically. There was no question in our minds that these were identical things. Whether they were spare parts, or whether they were the remains of a Purple machine that had been destroyed by the Japanese in anticipation of the Allies taking over Berlin, or not, I don't know, and I have no way of telling, because it's a little too late now to interrogate the Japanese on this point. That's the way I recollect it, and I think that's essentially an accurate story. I might add, that there was not a one-to-one relationship between the wiring patterns on the Purple machine that the scavengers picked up and the Purple machine that we built when we recovered it, because there was no way of us telling what the base points used by the Japanese were. But ours, with our keying, key settings, and other recoveries, duplicated completely the cryptographic functions of the Japanese Purple machine. And I hope that lays the question to rest -- at least in a small circle.

Deutch Now, with reference to the machine that you constructed, does that exist at the present time?

Rowlett There are copies of that machine. I have seen them -- I saw some Christmas. I think the original machine, which was built mainly by Leo Rosen with some help from others of

us -- Leo masterminded the design of our machine. Of course, there was a lot of drudgery to be done, like wiring the cryptographic components in the machines, which probably were the most complicated of all the mechanical electro-mechanical substitution systems; they're much more complicated than an Enigma wheel or a Hebern wheel, and the Hagelin system. These went far beyond anything that we'd ever...

Deutch How about the SIGABA? Would you say that the Purple machine was tougher to break than our own SIGABA?

Rowlett In my opinion, and of course this is not entirely an objective opinion, because I was involved in the SIGABA, there's no comparison between the security afforded between the Purple machine and the SIGABA. I would rather not go into the reasons why, because this is unclassified.

Deutch But our SIGABA is much more difficult to break, then?

Rowlett I might add... let me first answer your question and then add a comment. There is no doubt in my mind, and I base this on observations, not made on any analytical processes that I was involved in, but on independent assessments of the security of the machine made by other cryptanalysts -- there's no doubt in my mind that the SIGABA is many, many times more secure than the Purple machine. I would like to add this: In our postwar interrogations of both the Germans and the Japanese, the TICOM teams, for example in Germany, and the one that went...Hugh Erskine and his group that went to Tokyo, they queried the Japanese and the Germans about the amount of success that they had on the SIGABA, and I think that it's very amusing -- one of the responses, I believe -- well, I'll not mention the name of the member of the team because I'm not sure my recollection is correct, but I was told that the Germans in working on it called it the American big machine -- die grosse Maschine -- and that the cryptanalyst who was in charge of the effort on the big machine probably became a dipsomaniac. (laughs) But there was no evidence that either one of them had any success on our...

Deutch As far as you know, did the Japanese work very hard on it, or did they just throw up their hands and give up after a period?

Rowlett I have no recollection of any evidence that came to my attention, and I would... I just don't know the answer to that question, sir.

Deutch Have you read the book On Guard, The Watchman?

Rowlett Yes, sir.

Deutch You may recall how he emphasizes there that the Enigma was in itself completely unbreakable -- that it was only the cribs that made this possible. Would you say the same for the Purple machine -- that it would have been impossible to break if it hadn't been for failings in transmission that were not adequately monitored?

Rowlett Well, you're implying that the Purple machine was broken because of failings in transmissions; that is incorrect, sir. I would prefer not to answer that question, because we're getting into the classified domain.

Deutch I see.

Rowlett I think we would be better to avoid discussion of this.

Farley Let me switch a moment.

Deutch (XG) that has been promulgated in various areas that the Enigma machine could not have been broken without the cribs, the failings of the people who made the transmissions and so on, and, first of all, do you feel that this is a correct analysis with respect to the Enigma?

Rowlett I think that would apply generally to almost any system that you would encounter.

Deutch Well, if I understand you correctly, you feel that, in effect, failings in transmission were inevitable -- They were bound to happen -- and therefore it is not particular failings, naturally, the less they were monitored, the worse the situation would be. Unless you must assume from the start, that there would be failings and that therefore the machine cannot be called unbreakable.

Rowlett Well, let's use failings in use of the machine, rather than in transmission, because that implies electrical or other failings after the machine has done its operation.

Deutch Yes, yes.

Rowlett We must confine our thinking to the machine itself. Even a good machine, correctly designed, improperly used, will not be secure. I think that is the lesson (XB -- Dr. Deutch speaking simultaneously) I'll repeat it: A good machine improperly used can be vulnerable.

Deutch Let me ask -- Did the Japanese use the Purple machine extensively with code? Now in the case of the Enigma, in almost 90 per cent or more of the cases, everything was transmitted in the clear, and the Japanese... somewhere I read that the Japanese used code more. I mean, what they transmitted was in code as well as in the cipher of the machine itself.

Rowlett David Kahn, in his Codebreakers, has a pretty good rundown on the Japanese cryptographic philosophy, and I think if you would refer to it, you would find that this would be true. The Japanese had about ten Purple machines that they'd issued, and they used them for their most secret communications. They called them (C% go-ku-hi-kan-sho-fu-go-ha-tsu-kai) -- the first phrase in the message, and when you found a message with that in it, you knew it was pretty hot stuff, because (C% go-ku-hi) means strictly secret, and (C% kan-sho-fu-go-ha-tsu-kai) means to be handled by an important official. I don't think Kahn uses this term, but that's... the idea was that the machines were used for the most secret Japanese traffic. Now, since they did not have enough machines to provide every important embassy abroad with a code machine facilities, they had to use supplementary codes, and, at the time of Pearl Harbor, I recall -- and Kahn mentions this in his book, and it's also mentioned in the translations that have been published in this eight volume documentary of the Defense Department -- this code was called the (C% o-ei-tei) code, and in the code destruction message which was sent and broken on the 3rd of December before Pearl Harbor, they instruct the Washington embassy to destroy... to save one code machine, destroy the other, and destroy most of the other codes except

the (C% o-ei-tei) code -- that's the Japanese term o -- accusative term; it's a Japanese kana syllable. The (C% o-ei-tei) code was considered by the Japanese as being a very, very secure code, and it equated, in the Japanese hierarchy of security, to the Purple machine. The Purple machine was much easier to use, of course; the (C% o-ei-tei) code was a rather laborious process, as I recall.

Deutch I mean in the actual Purple messages, did they transmit code on top of it. In other words, (XB -- both speaking at once)

Rowlett I remember several instances, but this was an exception rather than the rule, and the Japanese, and this code is identified in the documentation in SRH001, which was declassified by the Agency here some months ago. Its indicator is the two letters CA, which is not a Japanese kana syllable, and I remember one case... three cases where this code was super-enciphered by the machine, and evidently it was a code that was for the personal use of one of the ambassadors, and in order to keep his code room personnel from knowing the contents of his message, he encoded it in his personal code, and then handed the results of the encodement to the code room personnel to encipher in the Purple machine in the normal manner, so when it was received in Tokyo, it came out as a code message, and then was appropriately handled there -- more securely handled than would otherwise have been the case.

Deutch But this was quite exceptional -- there was no type of traffic that was always handled that way.

Rowlett Quite exceptional. And I think the reason I remember this so vividly is because we had not expected the Japanese normally to super-encipher their code messages with the Purple machine, and we encountered this one, and the people who were dragging... recovering the daily keys could not... they were surprised -- the text that they got was not Japanese plaintext. So I was the guy that finally identified this as... I remember this distinctly, that I was surprised, and we had a big laugh over it, because it was an unusual thing -- the people recovering the keys had not identified this as an enciphered code message. From that point on, we looked for them, and I think there were several other cases. But I don't recall any case where the normal codes used by the Japanese code room personnel were super-enciphered; it was only these special codes -- the auxiliary codes, we called them, or ancillary codes. So there were a limited number of cases, but this was the exception rather than the rule.

Deutch With respect now to the bombes, [redacted] I know from unclassified sources and I can use those, that we did -- contrary to our agreement with the British and the initiative of General Strong -- we did build bombes, which then turned out to be so good that when the British found out, they were angry with us, but still they felt well, they're so very good, we'll use them in the future and that we actually delivered a hundred bombes to them before the end of the war -- 103 is the exact figure; they had ordered over 330. Now, I'm wondering whether the fact that we built better bombes was the result of the fact that we probably already had built very good bombes in connection with the interception and decryption of the Purple machine and Red machines?

PL 86-36/50 USC 3605

Rowlett I can answer that, I think, very simply. Our techniques for the exploitation of the Red and

Purple machines, did not require the use of bombes, so we did not build a bombe for those machines. We had various other cryptanalytic... I don't want to use the word device -- approaches is a better word. We had charts, we had techniques, we had statistical and all sorts of goodies like that which we used instead of going out and building a bombe. Now we could have built a bombe for it, but it wasn't necessary. (XB -- blocked utterance from Dr. Deutch) Now what I recollect about the arrangement between the U.S. and U.K. for bombes is to my mind a very simple and logical thing. In the first place, bombes wouldn't last forever. Second, there was always the fear in the minds of the British that one of these bombe installations that they were using to break the Enigma might be bombed by aircraft and put out of business. (TR NOTE: Spells out bombe and bombed) So in our planning, and I sat in on this with the British, it was considered desirable to have American installations in readiness to take over in case one of the British cryptanalytic bombe installations was destroyed. Now the fact that there was jealousy between the two outfits, I hold no brief for, because I didn't sense it in our discussions. The British were glad for us to build bombes, because they were straining to get the bombes produced. I think if you read Welshman's books, he tells about some of the problems he had. I believe it was... I don't remember... But anyhow, the IBM... the British tabulating machine people were really had a difficult time meeting the requirements at Bletchley Park. There was some difference -- slight differences -- in the design of some of the American bombes and those used by the British. I think we took advantage of some American technology which enabled the bombes to be speeded up. But these bombes were underwritten by the Navy. The Army had a different kind of a bombe called Madame X. It was basically designed by engineers from Bell Laboratory, and while it was not as fast as the British and Navy types of bombes, it did certain things much better than the conventional British/U.S. Navy bombe could do. Now one of the reasons we decided not to go into too drastic a modification in the British bombe was because of the need to keep the bombe similar so there could be an exchange of personnel. For example, if one of the British installations was destroyed and the operators were destroyed at the same time, the retraining process for the remaining operators would not be so difficult to achieve. I mean, you move from the suburbs of Bletchley Park to the suburbs of Washington, D.C.; you just fly them over and put them to work -- that's the idea. Except we didn't want to introduce that long geographical hop between the active operations and the source of the intercept. So it was a very practical thing. Now I had no sense that there was jealousy or hard feelings on the part of the British and the Americans about this. There may have been little islands of it, but from the standpoint of the people who were making the decisions, I sensed none and I would protest if anybody claimed there was any because we were in there to win the war, and we didn't give a hoot who got the credit for it; that's the way we felt about it. And if somebody came in with a good idea, and it was feasible to use it, we used it; we didn't care who produced it, and we didn't care who paid for it. I'm talking about at the ASA level, and the communications security group level over in the Navy. And I might mention that Welshman makes one remark that there appeared to him to be a great difference -- a lack of communication between the Army and Navy cryptanalysts. Welshman... I don't know what caused him to say that because we got along very well with them. Our big trouble with talking with the Navy is that there were so few people on... the intercommunication was limited to the people who had known each other before the war because

there was a great influx. People like Engstrom and others on the Navy part, and the people we had at Arlington Hall who hadn't yet become acquainted, personally acquainted with the Navy cryptanalysts. There may have been some lack of communication there, but so far as... at the level of Friedman and myself, and I stood in for him on a lot of this stuff, there was absolutely no lack of communication.

Deutch Not only Welshman, but a number of other sources have made very positive statements of the effect that the lack of cooperation on the American side between Army and Navy was so bad that when the British were there they were in very embarrassing positions, because they were given a very complete story and fine cooperation, as you have indicated, by both American agencies, but they were forbidden to say to one American agency what another American agency had told them.

Rowlett Well, I can speak for myself on that, and so far as I'm concerned, there was nothing that I knew about that I ever denied the Navy. And so far as I know, there was nothing that the Navy knew about, that they ever denied me as an individual. I think my memory is absolutely 100 per cent solid on that one, because this would have been a thing I would have noticed -- I would have felt slighted if I'd found the Navy holding out anything on me, but they never did. Now we did hold out on the British; we did not tell them about our cryptographic systems, and I was put under pressure a couple of times by... I forget his name, now -- he wrote The Wizard War.

Deutch Oh, Jones.

Rowlett Yeah, Jones.

Deutch A good friend of mine. (XB)

Rowlett I had to sort of insult him once because at lunch he kept bearing down on me to discuss American cryptography, and I said 'Look, I'll talk to you all you want to about what we're doing against the Germans and Japanese, but when it comes to American cryptography, I'm not at liberty to speak, and please don't ask me any more.' I didn't say it as bluntly as that, but pretty soon he left.

Deutch When you said the Navy bombes, are you thinking there of the four-rotor bombe that was built by Engstrom?

Rowlett I believe that's about the only type they built. Engstrom masterminded the Navy bombe, and I don't remember the details. If I did, I probably wouldn't mention it. (laughs)

Deutch Incidentally, with reference to the question of the existing Purple machines, Garlinski, the Pole who wrote this book, in personal conversation with me in London, summer of '80, he told me that (B% Startsinger), the Swiss who's associated with the big outfit there in Switzerland, whom I've also met at the two conferences in Germany, that (B% Startsinger) had shown him a reproduced Purple machine. You have no personal knowledge of this at all?

Rowlett That's news to me -- I hadn't heard that one before. I think it's quite possible he could have shown him a Red machine, but...

Deutch He may have gotten mixed up between the two.

Rowlett That was the idea I was developing. The Red machine was not nearly as sophisticated,

but I have no knowledge -- nowhere in the literature that I've bumped into has there been any evidence that anybody but the Americans violated the Purple machine.

Deutch Coming back to the Enigma, did the Japanese ever use any of the Enigma machines that they had? Now at one point, I'm trying to recall, there's a reference in my notes, you found me some Enigmas at Mechanicsburg, and the implication of my notes was that you had found them among material we had captured from the Japanese, whether these were Japanese Enigmas. Is that correct? And these Japanese Enigmas, were they merely there to examine and to compare and to increase the sophistication of their own Red and Purple operations or did they actually at times use the Enigma?

Rowlett If you'll remember, in the Smithsonian exhibit that was put up last February, there is a machine that was captured from the Japanese -- I believe it's an Army machine. We called it the Green machine, was our cover name for it. So far as I know, that machine was never used for actual traffic. I examined it personally. I can speak with a certain amount of authority based on my recollection of what I saw. It was a modified Enigma. Instead of using wheels, like we found Enigma machines, they used little cup-like wafers that they mounted on a little pedestal with a little shaft that went up the top of the machine. Instead of having them in a basket, you put them on a plate. And the functioning of that machine was identical with the Enigma theoretical circuitry. The particular circuitry was different from... well, it was the Japanese circuitry. Now, what I deduced from this... and I think this is a fair statement because at that time I was reasonably classified as an expert. What I deduced from this, based on my experience with the Purple and the Red, is that the Japanese like to borrow principles -- electrical principles, if you will, or cryptographic principles -- but when they put them into hardware, they used Japanese ideas, and so, although they used the Enigma cryptographic principles circuitry inside this Green machine, it didn't look a bit like a Enigma machine when you examined it, and it didn't like operate like an Enigma. I think that's why they went to the type of substitution they did with the Purple, because they wanted to do something entirely different from anybody else, and they thought because it was different -- this is my deduction -- because it was different, it afforded greater security.

Deutch Well, in part that was true, too, isn't it? It's just a question of how much is greater? (laughs)

Rowlett Yes, and how much effort you can afford to put on the thing.

Deutch Yes. Am I correct in saying that the Red and Purple machine were built on the same principle?

Rowlett No, sir. That is not correct.

Deutch Different principles?

Rowlett Different principles. Different from the Enigma, and different from each other.

Deutch Different from each other -- entirely different. May I ask, how often did the Japanese in general change their keyings, their settings? The Germans, you know, it's usually every 24 hours, and sometimes as much as every 8 hours. Did the Japanese go through that much trouble in order to... of course, they had far more difficulty because they had these distant places to communicate with, and so frequent changes couldn't be made as eas-

ily as the Germans, who had continuous, essentially contiguous positions in Europe.

Rowlett Well, the Japanese changed their... well, you cannot equate the Japanese keys used with the Purple and Red to the keys used by the Germans in their use of the Enigma. You cannot equate them. Therefore, to compare them, you sort of have to stretch your imagination a little bit. I think that's a far enough statement for this conversation, that you cannot equate the practices followed by the Germans with the Enigma with the Japanese practices in using their two machines that they employed for enciphering diplomatic traffic. That would be the Red and the Purple.

Deutch They did change their settings?

Rowlett Yes, sir. But now we're getting into technical details and I'd like to avoid that if I can.

Deutch You'd rather not deal with the question of how often they changed them?

Rowlett Yes, I can deal with that. The most important keying element was changed initially in the Red machine on a 10 day interval, and later changed to a daily interval. And then, when the Purple was introduced, this equivalent component was changed daily.

Deutch That's the point I had in mind. With reference to the Purple and Red machines, you say that they were built on different principles. Was the Purple basically as difficult or more difficult than the Red? A really much more advanced machine?

Rowlett Oh, yes. It took Solomon Kullback and Frank Rowlett, together with some assistance by a couple of other people, about... well, less than a month, after we really got on to the Red machine, to break it. I remember breaking the first message. Kully and I were working together that day; nobody was around but the two of us; it was real quiet, and we got into it. But we had a very, very favorable situation. Now, to recover the Purple machine, based on several things which were favorable to us -- the knowledge of the Red machine, its usage, greater skills in cryptanalytic techniques, and a lot of other things, it took about 18 months. I think the time involved, if you weight it in terms of the extra experience and knowledge we had and capability, means that the Purple was much, much more secure than the Red machine.

Deutch Have you a notion why the Japanese did not then employ the Purple for very important and highly secret messages on the military; they employed it almost only for the diplomatic? When they had a machine as good as that, and that much better than the Red, why the heck did they deal with the Red and the Green at all?

Rowlett I can speculate about that, but I have no answer.

Deutch Your speculation is, to me...(laughs)

Rowlett All right. Let me speculate. In order to appreciate my speculation, you have to have been associated with people who invent ciphers and who have the authority for accepting or the responsibility for authorizing the use of ciphers. I can go back in time to the days around 1930 to '40, well, before the Army and Navy got together on the development of the ECM/M134C, which later became known in the Army as the SIGABA. In that portion of time, the Navy had its special requirements for codes, and I'm going back to 1930, when we used these monstrous codes -- some of them were super-enciphered. The Army had its requirements for its own communications, and the Army had

chosen another kind of a code. And the State Department, which at that time had the greatest volume requirement for encoding and enciphering messages, had a third set of codes, you see. Now, what happened is in that span of time, the Navy and the Army both had come to the conclusion, and Yardley has written some letters -- even Yardley was convinced that the future of cryptography rested in cipher machines. So it took several years to experimentally produce machines would could be acceptable. And the Navy's worked with the Hebern, which I think is now in the public domain -- the early devices that they built. The Army's worked with the 161 and the M134A were preparatory to developing what later on was the joint machine, and it was quite an accident that the U.S. Army and Navy developed the same machine. I'll talk about that this afternoon. I would judge, based on my experience, with the sort of attitudes of people, that the Japanese Army and the Japanese Navy and the Japanese diplomatic service each had their own cryptographic philosophies and there was very little opportunity for exchange of ideas. Now remember, the requirements for field use are entirely different from what you'd get in a nice, cozy code room in the Japanese embassy in Washington, D.C., so you've got a requirements difference there as well as this psychological 'it wasn't invented here' difference. I believe I've done as much as I can in answering that question; I have no strong authority on it. It's a matter of my opinion.

Deutch Well, that's very valuable, and we have no other evidence at all. That's an informed opinion. It just occurs to me -- something I mentioned before and I'd like to go back to it for a second -- that's this question of the Japanese using codes transmitted then by the cipher machine. Now, in the case of Pearl Harbor and the Japanese communication that was supposed to be delivered by one o'clock in Washington. The usual story that we have I think in the (3G) and now elsewhere, is that the Japanese code clerk had such a problem getting things transmitted and then put on paper, that while these diplomats were waiting and going crazy with the anxiety about the passage of time -- in fact, Tora, Tora! shows this in great difficulties with the code, now that message, first of all, was transmitted by Purple, wasn't it?

Rowlett Let me tell you the story as I recollect it. I don't see how this can, under any stretch of the imagination be considered classified, because it's procedure rather than technical. We had a pilot message that announced to Washington the Japanese were sending a 14-part message, which was very important and the instructions when to deliver it. Now there's a copy of this message in that 8-volume Department of Defense package. I think there's also a copy of it in the Pearl Harbor report, but I'm not sure. I do know it's in one of the two. The pilot message was decoded -- it was in Purple, and it was processed Saturday about noontime. When this pilot message was received, both in G-2 and ONI, then everybody started looking for the 14-parter, which it announced is going to be sent, and it was also to be Purple machine. Some of us had gone home. I was called back in. I left at the regular quitting time and I was called back in and got in about two o'clock in the afternoon. Bob Schukraft, who had called me in, had already started, at the behest of G-2, to get the intercept stations alerted to this message, and coordinated the Army action with the Navy people, to make sure their intercept stations were also directed that the circuits on which it was expected this message would be transmitted. So, it was not until sometime after we began to receive the intercepts which contained the text of the first parts of this message. These came in sort of sporadically; they came

in pretty much the same sequence as the message number parts... well, the message number part one, the message number part two. The last part of the message... by midnight, we had most of the messages -- most of the parts in -- most of the intercepted messages which contained the parts. But we did not receive the 14th part of the message until sometime, oh, sometime between five and eight o'clock Sunday morning, because I recollect. I think the logs would show exactly when it came in, and I was so doggone busy doing a lot of things at that time, because we didn't really know what was happening. We thought it was terrible; we knew the war was going to come, but we just didn't know when, where and what and how. So, no action could... I mean we couldn't finalize that message until the last part had been received. This has been questioned, I think, with some of the writers on it -- Why didn't we deliver the first 13 parts and then what was the delay in holding up the 14th part. Well, if I had been up at the White House and somebody had brought in an incomplete message to me and said we're missing the 14th part; it hasn't been received yet, I think I would have said hold it and don't take it in to the boss man until we get the whole thing, which would be a very natural reaction. I think this is probably what happened.

Farley Excuse me, Frank. (TR NOTE: 5 minute, 45 second gap in audio here. However, suspect from context that not much was missed.)

Deutch (XM) search 13 and saw that it just was really in there and still wouldn't (XB -- blocked by Mr. Rowlett)

Rowlett Well, sir, if you will take a look at the texts of those 13 parts, you'll find they are mostly a review of all the things that had been discussed before.

Deutch All the American sins enumerated.

Rowlett Correct, and it was only... the 14th part was the bottom line of the exercise. Now, I do want to point out two or three things which have a bearing on the basis of the reason you ask the question. In the first place, the message was in English. Evidently the Japanese made the translation in Tokyo, so that the ambassador's staff would not have to convert it into English for the benefit of Mr. Hull and whoever else would be looking at it. That point has been missed, I think, by a lot of historians, and I think it's a very important point.

Deutch I should say so.

Rowlett Second, the problems depicted in Tora, Tora, Tora! that the Japanese had here in Washington may have some basis in fact, but I think the Japanese code room procedures -- and this is a matter of opinion; I can't prove this; and this is the way I would have done it if I'd been operating the machines, and I think it's a pretty good criteria -- I would have taken the text from the cipher machines, I would have prettied it up a bit, and then I would have had a typist produce it in a finished form. Now, this is not too hard a job to do, but also remember that the Purple machine the Japanese were using had seen a lot of use, and that they did not have the interest in maintaining that which the Army and Navy had in maintaining their Purple machines -- the American-built Purple machines. So as each one of these parts came in, we hammered it out to see if there was anything... any difference in any of the parts, and of course we weren't surprised to

find there wasn't. I remember using a Purple machine myself to decipher some of these earlier 13 parts that evening, because we were so anxious to get all the text produced. So my second point, then, sir, repeated a little bit would be that the text did require some editing, but it would have been a very simple thing to do; anybody who knew English in the Japanese Foreign Office installation up here in Washington could have do this, and any good typist could have produced a finished copy; it was just a retranscript, that's all. So there was no difficulty that I can imagine on that. And the third thing is that the timing to deliver of the 14th part would have been just as important to the Japanese as it would to us, and I have a feeling that the people in Tokyo withheld the transmission of that 14th part so that the people in Washington -- and this is pure conjecture on my part -- that the people in Washington did not read the bottom line until the last minute. I think these are important considerations that must be put up against the movie version of Tora, Tora, Tora!

Deutch On the basic question, at least, your answer, then, is that they did not transmit either the message of the previous day --- what is called? The practice message?

Rowlett Pilot message.

Deutch Pilot message. Or the actual final declaration of war -- they didn't transmit these in codes. In plain English and in the clear.

Rowlett Let me make sure you understand what I'm saying. These messages did not come in.The Purple machine was capable of enciphering the English language. Romaji was the normal form of Japanese used in the Purple machine, and so going from Romaji to English is simply another way of spelling the words, if you forget the language aspects. But the Purple machine was capable of enciphering an English text just as securely as it would a Romaji text, which normally was enciphered by it. And it could also be used, as we talked earlier, for an occasional code message, which also had to be in the English letters. It couldn't encipher numbers, because you'd have to spell out the numbers, like one, two, three, four or ichi, ni, san, shi, go or whatever.

Deutch These were not code messages that we're...

Rowlett These were plain English messages in plain language English which had been enciphered by the Purple machine, and they were as securely enciphered as if they had been in Japanese text. I must make that point clear to you, because I think it's a little subtle point that might be missed, because when I say they were in English, it sounds like they might have been in plaintext, but the transmission was not in plaintext -- it had to be processed through the Purple machine, because the English plain language had been enciphered in Tokyo. Incidentally, in your archives here, you have got the code room copy of the message which was filed by the Japanese Foreign Office, and which has the editorial breakout that the code room people applied in breaking it into parts. I'd like to see that some day, when I'm around here.

Farley I'll make a note of that.

Rowlett The reason I know it's that is because Hugh Erskine brought it back, and told me. Incidentally, Hugh died, you know.

Farley Yeah, what a shame.

Rowlett Now, another little interesting thing. John (B% Rogel) once queried me about this when he was Assistant Secretary of Defense. He was very much interested in this 14-part message and I took to him my copy of the Pearl Harbor report, which contains these messages... contains the text of the message. In I believe it was the 13th part, there was a garble. He asked me about this. Well, this garble had bothered us on the night of December the 7th, and I think when we sent it up finally this finished copy to the intelligence people, the garble still remained in it, and so my curiosity and why I remembered the code room text, is what did this garble actually say? And I found out -- of course, it does not appear now in the published texts, because we received that after the Pearl Harbor report was published. I haven't checked the Defense Department 8-volume set to see if that corrected version is in there. But that's a curiosity.

Deutch Yes, it certainly is.

Rowlett I'm sorry -- I'm rambling a little bit on...

Deutch Your rambles are contributions, sir. So that they enlighten and explain in a very useful fashion. As long as you're talking about Pearl Harbor, have you seen the newspaper notices with respect to the book that Toland is to bring out on Pearl Harbor?

Rowlett Yes. I'm very, very curious about that because a couple of years ago, Toland wrote me and asked me for an input into the thing, and I normally ignore these things, and I thought, under the circumstances, maybe I'd better give him some input, so I put together my thoughts on the thing, and sent it up to NSA for them to look it over, and so they agreed that it was not classified and sent it on up to Toland. A curious approach to this problem is that in my correspondence with Toland, he promised to let me see anything he wrote about me before it was put into his text. I have not heard from John Toland about... I therefore conclude that whatever I contributed to him, he didn't consider worthy of incorporating in his book. From my understanding of the book reviews, he is making too much (1B -- Mr. Rowlett is frequently hitting a table for emphasis. In this case, the sound blocks one syllable) out of it. Would you like for me to express, maybe, in just a couple of minutes, my attitude towards the so-called Winds codes?

Deutch I would love to have you do that.

Rowlett Let's keep in mind that we're a bunch of professional intelligence officers with a certain amount of experience and sophistication in the use of codes. Let's look at the kind of things that have caused so much excitement. The Winds code, for example. There were three sorts of things. One was the telephone code that the Ambassador in Washington was supposed to use with Tokyo. We had that code in its entirety because they transmitted it in the Purple machine. A second was the so-called Winds code, which was to be used in connection with the plain language weather broadcast from Tokyo, and the idea was to alert certain of the more important Japanese Foreign Office installations like Washington and London of what was going on in the Japanese thinking over there. And the third was what they called the Hidden Word code; the Japanese for it is (C% ingo den-po) and this also was an auxiliary code that had certain phrases in it indicating the state of relationships between Tokyo and the rest of the world. Now, examine these codes for a minute, if you will, in the light of what the Japanese ordinarily used for their communications with Washington and London and so on and so forth. These codes

were improvisations; their vocabularies were very short. The vocabularies were so short that they couldn't be specific -- there was no name, no time, no place. Just very general statements, and I would encourage you to look these up, because the texts are certainly unclassified now. Now the codes were ambiguous. Now the use of them. If you use a code like the Hidden Word code, the code groups, which carry the hidden meaning, are usually chosen from ordinary words, and these can occur by accident. And this is important -- these can occur by accident in transmissions that have no relation whatsoever with the use of the code. This was true of both the Winds code and the (C% in-go-den-po), the Hidden Word code. And, three, the Japanese, through practice, been accustomed to using the Purple machine and the (C% o-ei-tei) code for specific information. Now, look -- any message that could have transmitted in these three arbitrary codes, these three ambiguous codes could not convey very accurate information. They had limitations imposed on them by the nature of the codes themselves. So my conclusion is that, even if a Winds message had been sent, it could have not conveyed, as a lot of people assumed, the place, the time and the nature of the attack on Pearl Harbor. And I think this is, in mathematical terms, both necessary and sufficient proof that we shouldn't waste any of our time on the Winds code and the (C% in-go-den-po). It was clearly evident from at least two things. One is the long trail of messages that we had been deciphering for months that led us to the conclusion that war with Japan was inevitable, and second -- and this is very important -- the code destruction message. Doctor, you're getting tired; do you want to rest?

Deutch No, I'm not. Not the slightest problem with that (XB) two hours sleep last night, so I'm a little sleepy, but that doesn't mean I'm otherwise tired. I can go for twenty hours running. (laughs) You're getting tired, sir.

Rowlett No, I'm fine.
(TR NOTE: Unidentified speaker says "Time to go eat anyway.")

Deutch Would the message that was supposedly intercepted by us -- Did you see the paper that Genda or Jenda, however it's pronounced, had stated that there was absolute radio silence among the Japanese. Do you happen to know about that? That's for the carrier fleet -- there was no communication and that therefore this is a complete invention of somebody -- not by Toland himself, maybe, but... in any event...

Rowlett Well, look at this in this article... We can talk about this at lunch, I think.

(end of tape)

OHNR: 10 -85
TRSID: [redacted]
QCSID: [redacted]
INAME: ROWLETT, FRANK B.
IPLACE: T542, SAB II, NSA
IVIEWER: R.D. FARLEY, H. SCHORRECK, G. HAINES

DOI: 850514
DTR: 970407
DQC: 970522

PL 86-36/50 USC 3605

FARLEY Today is 14 May, 1982. Our interviewee Mr. Frank B. Rowlett. Mr. Rowlett is a pioneer cryptologist who served with the SIS in the mid 1930's. Mr. Rowlett has been interviewed frequently, but this interview is just an opportunity to fill in a few gaps which have been missed during previous interviews. The interview is being held in the T54 interview room, SAB II, NSA. Interviewers: Bob Farley, Henry Schorreck, and Jerry Haines. The classification of this single tape is ~~SECRET HANDLE VIA COMINT CHANNELS.~~ This is NSA oral history tape number 10-85.

(TR NOTE: Unsure as to the date of this interview)

FARLEY Continuation of the interview is with Frank B. Rowlett. It's delightful again to have you stop by. Your time is tight and all this but let's get going. Henry, you want to start out with some questions.

SCHORRECK Frank, what I would like to do if possible, is to see if we can fill in anything that we don't already have and....I was wondering in the period from '46 until you retirement, I'm specifically concerned with things that we don't have...we don't know, and we are not likely to be told by...by people, that had to do with some events that took place during that period. For instance, maybe there's some things that would not be recorded in relationship to the KOREAN WAR or to the TUNNEL, or to the HUNGARIAN UPRISING, or the BAY OF PIGS, the CUBAN MISSILE CRISIS, even in the (B% CHAMBERS HISS) this, if you want to get into that but something that we haven't already covered. And of course, we don't have...alot of that stuff is still...if anybody knows about it, they are not saying anything. There are not many people left that know anything about it anyway.

ROWLETT Well, somebody (2-3G) you've mentioned. How about if (2-3G) could really be important because. Well, lets take them one at a time and I will sort them out as we go down.

SCHORRECK How about the Korean war.

ROWLETT I have very little recollections of that because most of our involvement here at the agency was from PROD. That was processing the material that had been received from that area. They (2-3G) of course was pretty much routine. We supplied the systems. They were operated by the people in the field. It was more of a back-up operation. As I recollect [redacted] That is about all I can recall.

OGA

FARLEY Was there any problem breaking the transition relationship again to the Korean War, the

Declassified and Approved for Release by NSA on 04-19-2023 pursuant to E.O. 13526: MDR-114536

OGA

transition between AFSA to NSA?

ROWLETT Well, I can't help you on that because I didn't stay at AFSA very long. I was over at CIA, and of course, my knowledge of that period of time is remote. I didn't get too close to NSA [redacted] Just let it be said that...unless I thought about it, or you had more specific questions, I doubt if I could make any contributions.

SCHORRECK Given the success in World war II by intelligence elements, was there a feeling at all that somehow we had failed in the Korean war and therefore brought on the BROWNELL report and the creation of NSA?

ROWLETT I can answer that. There was no sense at all of failure in connection with the BROWNELL report. The BROWNELL report was generated by higher authority. You see, AFSA was farmed. As was all the several (B% deliberations) which took place in the (B% STILLWELL) committee. The (B% STILLWELL) committee in turn was set up because GENERAL MARSHALL and ADMIRAL CAIN had agreed at a very high level by correspondence that there should be a centralized organization. The three services, Army, Navy, and Air Force had to move in some direction after the war to be able to continue. The decision had to be taken. It was a very important decision: whether or not to have one organization or three organizations. The Army wanted one organization. The key (2-3G) that was CARTER W. CLARK, GENERAL CLARK. The Navy and the Air Force strongly resisted the Army's proposal to have one organization and proposed three organizations with, and I shudder to think about it, a continual rotation of responsibility for the problems of the crypto-analytical organizations. The Army report that was (2-3G) report was a split report. Two of the services, Air Force and Navy wanted the three organizations. The Army refused to accept this concept, and turned in a minority report. This was sent to FORESTALL. FORESTALL, of course committed suicide sometime after the report was received. SECRETARY JOHNSON, LOUIE JOHNSON had an Army general come in and look over the actions that had not been completed under FORESTALL. JOHNSON was given this report which finally got to him. I think it was GENERAL MCNARNEY wasn't it? MCNARNEY recommended to JOHNSON that this would be a good item for the President because the Army (1-2G), (1-2G) report stressed the efficiency and economy aspects of the consolidation. This was what PRESIDENT TRUMAN was anxious for. Now, the BROWNELL report, after TRUMAN approved this, the BROWNELL report brought validity of whether this a good move or not. It embarrassed us as I recollect. I'm sorry, I'm wasting too much time with this maybe. I think this is a pretty good concise statement of the philosophy behind it. I didn't go into details. We could talk two days.

FARLEY Just one question on ADMIRAL STONE. You met him, you knew him. In his position as director of AFSA, does history show that he was much maligned, that he was criticized as being a weak person? Or was he just a victim of fate? That is, he told me he was accepted because he was a great administrator. He made WANGER the deputy and WANGER handled all the operational elements of the agency, but STONE took all the abuse. Do you have any thoughts on that at all?

ROWLETT Yes. (TR NOTE: Interviewers laugh). He'd be very good. STONE deserved it. He was an incompetent administrator. Regardless of what the navy said about him. I sat and listened to the guy. He didn't understand anything at all about what we were trying to

do. His administrative decisions were obviously political. They debated by his work with the navy. I can say this and I would say it ADMIRAL STONE (XG).

SCHORRECK Good. Fine.

ROWLETT But he was incompetent as an administrator and had no knowledge of the technical things he was trying to administrate.

FARLEY (Do you) think he admitted that?

ROWLETT It was a terrible mistake. The only reason he got it, I think, was that he worked so hard against the consolidation that he was chosen as the first chief of AFSA, sort of as a (1G) to him. That is my honest opinion. I have thought about this quite a bit. I think he was an obstructionist. Had no vision at all.

SCHORRECK Glad we have that on the record sir. Thank you.

ROWLETT I'd go on the (1-2G) at any time on that.

FARLEY We have talked about the tunnel at some length in previous interviews, I just have one final question about that tunnel. It has come to light in a few recent books and so forth that the suggestion has been made that the Soviets knew about that tunnel from the inception of it. They used it to feed us disinformation.

ROWLETT There was no possibility that the Soviets used that tunnel as a deceptive apparatus. I think they knew about it. PHILBY. Of course, he and his group, what was the name.....GEORGE BLAKE. GEORGE BLAKE sat at conference table once when I was over in LONDON. [redacted] He was well aware of what we were doing. I have no doubt that BLAKE passed this information on to Soviet intelligence. (2-3G) [redacted] I think it was eleven months, eleven days, and eleven hours that the thing spewed out tape after tape after tape. It's just about that eleven months, eleven days, eleven hours makes a good time limit you see. I couldn't deal with the dates.

EO 3.3b(3)
EO 3.3b(6)
OGA
PL 86-36/50 USC 3605

EO 3.3b(3)
OGA
PL 86-36/50 USC 3605

SCHORRECK It was in the winter time wasn't it when it was found? Because of the shorting of the equipment due to the melting of the snow? Or was that later on?

ROWLETT [redacted]

SCHORRECK

ROWLETT

EO 3.3b(3)
EO 3.3b(6)
OGA
PL 86-36/50 USC 3605

SCHORRECK You mentioned a relationship with the British. When do you suspect that PHILBY and BLAKE and everybody is feeding information to the Soviets. When do we get to the point where we say this is really what is happening?

ROWLETT [redacted] This was some time after the tunnel. BLAKE was of a different....PHILBY and BURGESS and MACLEAN were one unit of penetration and BLAKE was another. BLAKE was recruited, I think, in the far east. PHILBY, BURGESS, and MACLEAN were developed whille they were still students. I didn't think there was any possibility of the Soviets using the tunnel and the tunnel operation to feed back false information. [redacted] You just read the newspaper reports about that.

EO 3.3b(3)
OGA
PL 86-36/50 USC 3605

SCHORRECK Was there anything associated with the Berlin airlift that we could use in terms of SIGINT?

ROWLETT Not that I recall. I believe at that time, I was over at CIA.

FARLEY [redacted]

ROWLETT

FARLEY

ROWLETT

FARLEY

ROWLETT

FARLEY

ROWLETT

FARLEY

ROWLETT

SCHORRECK

EO 3.3b(3)
OGA
PL 86-36/50 USC 3605

ROWLETT [redacted]

FARLEY How many were there? Of these kinds of incidents?

EO 3.3b(3)
OGA
PL 86-36/50 USC 3605

ROWLETT I don't remember.

FARLEY A lot?

ROWLETT I don't remember. (TR NOTE: Interviewers laugh). I don't remember.

FARLEY Surely there was a few of them.

ROWLETT Really I don't remember, and I don't want to answer anything unless it is accurate because what you folks are doing, I think, is very important. I'm not going to speculate. I think I'd give you an idea. Let's....other questions.

FARLEY O.K. Good. How about the BAY OF PIGS or the CUBAN MISSILE CRISIS. Were we involved with our SIGINT in those?

ROWLETT Those were self contained operations. Of course NSA followed its natural role in the missile crisis. Everything was on, as they say in Star Trek, "Red Alert".

FARLEY What we're concerned about was....

ROWLETT It was a lonely operation. Of course (2-3G) equipment and a big operation, but NSA just did what it was suppose to hopefully.

SCHORRECK We're concerned in terms of trying to track down the role that the SIGINT world played in the decision making process at the highest levels. That we are finding difficult to get.

ROWLETT This is speculation. The role of SIGINT, what it played, would be awful hard to discover because of the nature of the organization that used SIGINT. The real long studies...time wasn't sufficient to promote any long studies to be made of the intelligence information that was being presented from our sources, including NSA's. This would have been analyzed, and recommended maybe without being recorded in some instances. Usually the way CIA operated in its evaluation of own information from all sources, would have been to combine them and present a briefing paper. This could have been done verbally to the person.

SCHORRECK I have another one for this, did he talk about the CUBAN MISSILE CRISIS? Wasn't MARSHAL CARTER involved in briefing the President during that crisis?

ROWLETT I was in London talking with the Brits at that time. I don't know.

SCHORRECK Because he was chairman of the watch committee. I remember him talking about briefing KENNEDY on the SIGINT .....

ROWLETT Maybe that some of my summary came from CARTER.

SCHORRECK Probably did.

FARLEY How good did you think the Soviets were at disguising that Cuban missile, the bringing of missiles over. Obviously there were indications in some SIGINT that this was under-

way. In reality, it comes down to a refugee who finally blows the whistle on them. Again, does it look as if we are a failure at our intelligence effort? or is NSA saying "We had it, you just didn't use it."

ROWLETT That's a pretty rough question. You've got about fourteen different subjects in that question. Look, before NSA can report intelligence information, it has to be put on the air. If it is on the air, it has to be readable. This can be either ELINT, which of course is interpretation, or COMINT, which of course is in the sense of the translation of the intercept, if you can read it. Now how much do you think the Soviets would have put on the air about introducing those missiles into Cuba?

SCHORRECK Not much but we picked up SIGINT which showed a couple of Soviet missile specialists there. Why they were there?

ROWLETT Yeah, but that's NSA picking it up. The evaluation is done by somebody else, not NSA.

SCHORRECK Does that show a weakness then in our intelligence effort? Should they be combining, in your view?

ROWLETT No. In my view, they should never be combined sir. The reason is that if you do a good job of collecting and producing information from signals, you've got enough to do. There are lots of other things that have to be brought into the picture in order to make a proper interpretation of that information which comes from the signal. I think NSA...and I believe this based on my experience...I believe NSA should never get into the intelligence evaluation business. If they do, they send in experts to the evaluation organizations and they provide the expertise sometimes about signal intelligence production that is required by the evaluator. NSA, the director of NSA nor any of his people should evaluate intelligence and then send it over. This is an antagonistic position I'm taking here to what a lot of people in the agency believe. I think you should bring the source as close as possible to the evaluation. I think NSA should do everything in the world to produce that kind of a situation. But I don't think NSA should itself evaluate information except in the sense, it's required from a totally equal stand point to eliminate the information it produces. The evaluation must be done by people who are fully aware of all other sources, if you are going to get a good evaluation job. So you see, I'm a little bit biased. I'm going to give you a good answer to you question because I am biased.

SCHORRECK That's an interesting point Frank, because crisis histories are beginning to show a trend. That trend is that in the middle of a crisis, all NSA is doing is reporting the intelligence. What is happening is that we are swamping the evaluator and he is coming back and saying "listen, I can't handle all the stuff that you are giving me. Give me a synopsis of the intelligence, tell me what's happening." That is creating problems.

ROWLETT Yeah. It is a problem, and it has to be solved. But you don't solve it by NSA taking all of the burden. The director of NSA must be insulated from the decision. He provides the information. It's evaluated by people who have access to the other information. Now if you need that information, this can be done because it's inside NSA. That again is thought about but (2-3G) the source and the evaluation should be as close as possible together. This is imperative. Now, how you do this is going to vary with the situation. The Cuban missile crisis is one kind. I think the classic example is the person who is reading the (B% fourteen) part typed messages you see. But the selection of informa-

tion given to him within the time that he had to apply to it, left out a heck of alot of other things like the (B% Curb) instruction message. Of course I'm an old timer. These are old-fashioned ideas, so they should be accepted as such.

SCHORRECK (B% Yeah, but the problems are today's).

ROWLETT But Hank, you are going to have problems every day that NSA exists and they are going to have to be solved by intelligence and knowledge. Not by politics.

FARLEY Well what do you think....Let me ask....Since you brought that up, let me jump a minute. What do you think about the nature of the business now with the explosion in the numbers of people, the explosion in management, the explosion in the bureaucracy, the explosion in computers, and the relative decline in the number and importance perhaps of the cryptanalyst?

ROWLETT When did I retire?

SCHORRECK '65.

ROWLETT 20 years ago. I'm not competent to answer that question. I am not aware of all that is going on. I don't know the dimensions, I don't know the stresses. A good feeling is...there are two parts to that. One, If you don't watch out (B% she'll) get too big. Then you become clumsy, you don't respond. The other (1G) is: that a new generation has to be born. The people who are competent. Who are (1G) competent let's say, like take me for example. I was very competent over the period...as a cryptanalyst over the period 1930 to 1942. And then in the business, my job got so dog-gone big, I had to...I couldn't be a cryptanalyst anymore, I had to become an administrator. I had to help provide policy. I got deeply involved in consolidation. The organization, not only ASA but the Navy and the Air Force after the war...this is something I had to become involved in...I had to pick out the people that we were willing to keep in ASA. There just wasn't time for me to continue as a cryptanalyst. Another thing, the kind of systems that were in use at that time. It was a very distinct line...I wouldn't (1G) no code books. And using electro-mechanical devices that came in with WWII takes another kind of cryptanalyst. Of course (B% that dragged on) (2-3G) so it was annoying that they didn't come (XG). In some cases, like in your own case, we'd (2-3G) some code books to cipher machines at the beginning of WWII. To get back to the question, what about today with computers and other things coming in? You are just going to have to breed a new breed of experts who are knowledgeable in new techniques. Who are able to develop and apply those techniques to the intelligence production problems confronted by NSA. This, as you say, might not require cryptanalyst at all. It requires a new type of technician. Cryptanalysis could be incidental to it because there is always be encryption. There got to be a (1-2G) of encryption that is so dog-gone technical in nature, that the average linguist that we used to know (1-2G) is going to feel helpless there until the problem....his problem can be outlined for him and the way that he can operate on it. This is going to be a tricky tricky situation to deal with. That's based on a limited knowledge, 20 year gap. But I can see enough...If I had used my computer that...you've seen it...If I had those two computers, I could do the work of two hundred people, as we had to do at the beginning of WWII. For encryption purposes....I'd have a ball. I am afraid to think about it. I'd be violating security if I think too much about it. (2-3G). I certainly

won't put anything in writing. Because I can see the advantages of these computers in the encryption field...which is just mind boggling. I am not close enough to it to do anything but speculate, so I had better not say anymore about that (1G). But it does look like you are going to have to breed a new...some new strains of technicians, and they're going to...and you will never be able to covert the old ones. It would be impossible to take alot of guys in PROD as we used to define it, and make these updated technicians out of them. It is going to take an entirely different group.

SCHORRECK So what you're really saying is that there is a definite need to create a two track system...a technical track to maintain the technical expertise, and a management track. You could interpret that to mean that. As long as they work very closely together, that would be a pretty good way to go.

ROWLETT Let me say it a little differently. They (2-3G) and with imaginative administrative decisions. To find the fields that are important, and know that you have got to hire people who have abilities in these fields. Then you'd have to acquaint them, train them in the requirements of NSA's responsibility. Then you would have to give them the research and development support for them to come up with new ideas for A: number one most important is to provide us with systems that are the ultimate in security. Then B: to provide the techniques and the equipment, and do the research and development to attack other people's systems. But primarily we must protect our own systems,

EO 3.3b(3)
PL 86-36/50 USC 3605

It's that simple. I don't think cryptanalysis was known in the breaking of the PURPLE MACHINE, or what the British did on the ENIGMA the kind of cryptanalysis that your folks will be doing in the future. I think that's pretty obvious at this point in time.

SCHORRECK The cryptanalyst with the pencil and the cross patch paper is gone forever?

ROWLETT Cross section paper.

FARLEY That was gone in '36 '37.

ROWLETT That went with the GEE WHIZZER.

SCHORRECK The only problem with that...there was an article in the CRYTPTOLOGIC QUARTERLY that they did a study where they took their students and they gave them all the information that they had in the 30's and told them to use computers and break the German and Japanese codes, and they couldn't do it.

FARLEY Could we give Frank that article to take home?

ROWLETT It's in the CRYPTOLOGIC.....

SCHORRECK It's in the CRYPTOLOGIC QUARTERLY. (TR NOTE: Several speaking)

ROWLETT Oh, I would like to have it.

FARLEY Let's see if we can give him a copy.

ROWLETT They probably know what they're talking about...I don't agree with ...look we had a device known as the GEE WHIZZER which we invented to break the J19 Japanese

PL 86-36/50 USC 3605

code. With my computer, an IBM PC, and with the program [redacted] plus a few other little slick tricks of cryptanalysis, three of us could of matched the work of 50 people, and done it much faster. Now there's response....Who did this study?....I don't know.

FARLEY There was a woman at the school.

SCHORRECK One of the teachers.

ROWLETT Don't publish articles like that. The PURPLE MACHINE...what we did for that, was an accumulation of intercepts over a period of time because in order to develop your refined chemical, you have to have alot raw material sometimes.

FARLEY I think that is what they concluded, that they didn't have enough raw material for the computer to ....

ROWLETT Well then, they just sit and wait and keep on intercepting until they get a pile of it.

SCHORRECK Except that some individual managed to do it without that mass of information. You guys did it based on what you had accumulated at the time.

ROWLETT That's all we needed, we had enough. That's why it took 18 months we had to find the right messages. (2-3G) some messages are easy to break and some are hard. The hard messages, if you discover you've got one, you say "I'm not going to waste any-more time with it" and go look for an easier one. Now you have to sweep through maybe, 18 months intercept. That's 18 times 40 is how many days? 500 and some? I didn't mean to be rough on you (XG) I assume you have got some more questions.

SCHORRECK [redacted]

ROWLETT [redacted]

SCHORRECK [redacted]

ROWLETT [redacted]

FARLEY [redacted]

ROWLETT Well, that's different. Again, that's when I was over at CIA.

SCHORRECK The only other point I would want to I guess reassure ourselves about is the Soviet agent traffic stuff (XG) ROSENBERG stuff.

EO 3.3b(3)
OGA
PL 86-36/50 USC 3605

ROWLETT Had that been busted open yet?

SCHORRECK No. It is sitting right back there in the back (XG) compartment.

ROWLETT Nope. You still have to have a special thing to get into it. I had it the day that they closed the program...I mean the problem, because they took me over and showed me

EO 3.3b(3)
EO 3.3b(6)
OGA
PL 86-36/50 USC 3605

the problem. But, it's still back there. We've talked about that and various things....

SCHORRECK Have you seen BOB LAMPHERE'S manuscript?

ROWLETT BOB LAMPHERE was a FBI agent who was handling the HISS case. He's written a book. The book has not been....He's submitted it for review, but it has not been released. If you could get a hold of that book, you would have a dog-goned good source of information about the application of....the HISS story's got the...well it will be shown from the viewpoint of the people who took action on the information. And the kind of information that they received which was useful.

FARLEY What bothers us Frank is whether or not we think the agency has... well, we think the agency has the responsibility to know what's in those files in case the Justice Department should ask the agency what's in them. Or does the Justice Department already know.

ROWLETT The Justice Department knows all that we can know.

FARLEY O.K.

ROWLETT [redacted] That there wasn't alot of other information that they didn't receive. And it took some very, very close corroboration between the two, the producers, the cryptanalytic group who were (1-2G) information, and BOB LAMPHERE and his group in order to achieve the success that they did.

SCHORRECK Does that mean that the FBI may be holding records that we provided?

ROWLETT We all need to have the output. (XG) wrong. Would have been incorrect administrative action for us to withhold that information from the bureau. So, our work was to produce as much as we could, give it to them, and sometimes give them the information that we were reluctant to give them because we couldn't validate it. The problem (3-4G) shakey. I'm sorry, I'm not trying to debate (XG), I'm just....

SCHORRECK This is...We've cleared up a bunch of things today, so far.

ROWLETT The history of NSA is to provide information to the users. And we did that. And we provided everything we had. Now that's what the Justice Department has. In the case of this material, we would have provided something [redacted] And sometimes, in the evaluation of the accuracy of the information, as a footnote sort of, we would have to say what the difficulties were which, because of the nature of the problem, it isn't exposed. [redacted]

SCHORRECK Was there a sense of fear that the FBI might disclose something that they shouldn't? What was the feeling here about the competency of the FBI?

ROWLETT You want my personal opinion because I was right in the middle of this? The FBI would have blown the whole operation if they had (2G). They were more anxious to keep it quiet than we were. They had greater motivation to keep it secret than we had.

SCHORRECK Why would that be?

ROWLETT Because it would be the destruction of a source which was vital to the successful pur-

EO 3.3b(3)
EO 3.3b(6)
OGA
PL 86-36/50 USC 3605

suit of the case. Does that make sense? Now if you've got a defector over there, that's a different set of rules that you are going to have to apply. At that time there wasn't...it wasn't likely there was a defector. Now, oh there were two or three early on in the bureau that (2-3G). There was (1G) type of thing but RUMFORD had screened his (1G) very carefully. As a matter of fact, I don't recall any correspondence between the two outfits on this. We just held it that close.

SCHORRECK Did you ever have any direct dealings with HOOVER himself?

ROWLETT On this? Oh, no. Not at Hoover's level, I don't think he would have been much more than (2G) on this. There would be no records in the bureau. Of course he to be told something about what went on. But he didn't have to be told details of our exchanges with the bureau, [redacted] ..which I think are still pretty sensitive.

FARLEY I was just thinking of an article in the paper and I was telling Hank earlier that ADMIRAL TURNER had the same argument yesterday saying that BOBBY INMAN withheld information from the CIA that was vital to the national security.

SCHORRECK

ROWLETT

FARLEY

[redacted]

PL 86-36/50 USC 3605

SCHORRECK I only have one last question. That's in reference to the meeting that you had...I think it must have been in 1946...when you were sitting with HAYES in his office and CARTER CLARK came in and said that he wasn't going to tell you to stop working on the (1-2B).

ROWLETT Oh, yeah. I think I remember telling you about that.

SCHORRECK Yeah, and I wanted to make sure that you thought that the information or that CLARK's directive came from where?

ROWLETT DAVID K. NILES was an advisor to the WHITE HOUSE. MRS. ROOSEVELT accepted his recommendations. (1-2G) with that question. As a result of this, and certain other things, reports on our work on RUSSIA, she became aware of it, and possibly...notice I use the word possibly, discussed this with NILES. As a result, MRS. ROOSEVELT took the attitude that it was a breach of faith with the Russians to work on their traffic. See, we...obviously were not working on British traffic during the war, and she thought that principle should be extended to include the Russians. As a result, word came down through channels, jumping some echelons of course, that we were not to expend any effort on the Russian problem. CLARK called and came over to my office with HAYES and reported this. I think I asked him the question "Are you directing us, GENERAL CLARK, to stop work on the Russians. He said "No, I have been directed to stop work."

SCHORRECK Good for him.

ROWLETT HAYES and I said "Yes Sir." After CLARK left of course, we sort of increased the effort. We didn't let up one bit. Not a very loyal employee, was I? (TR NOTE: Interviewers laugh) (1-2G) we sat there. I mean, it stopped in my office, it didn't go any further down. There's nothing in any writing about this either.

SCHORRECK Was it compartmented up to that point?

ROWLETT Oh, yes.

SCHORRECK Up to that point, or after that point?

ROWLETT Well, there were several types of compartmentation Hank. There is where ....you have to note through working on the Russian problem and (2-3G) set a basis for the success in the compartmented problems. So, we would isolate those things which were most sensitive and compartment them. The rest of the work, of course, you couldn't compartment the fact that you were intercepting Russian messages. It's kind of a neat trick to do compartmented work and do it in such a way that you don't expose the fact that you're compartmented. I think one of the best examples of this is found....the Navy had sent over a liaison officer to ARLINGTON HALL STATION to report....to ensure that there was a full reporting of successes and lack of successes between the Navy and the Army organization. We didn't feel like we needed to send anybody over there, but they sent somebody over. He sat in the Russian wing, and he never, never did learn about what we were doing in the terms of the HISS case and other things. It was done so quietly right out in the middle of the wing.

FARLEY Frank, what can you tell me about BLACK FRIDAY, WILLIAM WEISBAND, and the passing of information, obviously to the Soviets when they changed all of their systems within a few days?

ROWLETT WILLIAM WEISBAND, unfortunately, because he was in uniform, had not been checked out by the security people. COLONEL HAYES cleared him. He had known WEISBAND in other capacities, so he brought WEISBAND into the organization. WEISBAND had access to information on the Russian problem. Fortunately, WEISBAND was not too clever as a technician, and the kind of information...the bulk of the information he provided was more general in nature than it was specific. I believe, however, there were some specific items in there that made us sweat blood when we found out that they had been included. Did I answer the question, or do you want more...?

SCHORRECK I think that will do with this.

FARLEY Was it surprising to you that the Soviets were able to change hundreds of systems on one day? On a Friday, the BLACK FRIDAY the information supposedly was filtered in. And all systems changed on the following Monday.

ROWLETT Idon't believe that because you can't trip that many switches with one twist of the finger. It takes...Well, in the first place, you've got to have a system to (1-2G). You've got to keep it strict and the operators have to be trained in their use. What you would do, maybe two or three months before, you'd pick the BLACK FRIDAY. Then you would ensure that you were prepared for it, and then you would make the change. And, if you were going to make the change, it's better to make them all at once instead of doing one at a time. That's where the Japanese were weak, they didn't like their changes all at one time...

FARLEY So the WEISBAND affair did not bring about the compartmentation of the Soviet problem?

ROWLETT We were compartmenting certain parts of it even before WEISBAND was known to be

an agent. Keep in mind now, we had BURGESS and MACLEAN, and PHILBY. And PHILBY was over here...I know JOHN TILTMAN brought him down to my office. For some reason, I didn't like the son of a gun. I turned him over to KIRBY to deal with. I just didn't like the fellow. I felt uneasy with him around. Maybe I should have been a little bit more cautious, but I was busy, and he was a pain in the neck to me. He was asking too many questions I thought, for me to bother with him. I thought if I gave him to KIRBY, who's area of responsibility was not quite as big as mine, would be a better way of dealing with him because you one of us turn him (B% out). Of course he was not GCHQ, he was MI6.

FARLEY British secret service?

SCHORRECK One question that goes back to 1930, and this is asking for confirmation of how the Army received intercept in the early 1930's. There is some talk that the Navy provided the intercept to the Army.

ROWLETT They did. That's one of the biggest contributions the Navy made to us. They had a pretty good intercept service operating out in the Far East. The first message that KULLY (TR NOTE: Possible nickname for KULLBACK) and I read...were working on when we broke the RED MACHINE was Navy intercept. It was beautiful copy. That's why we chose it, because it was such good copy. Now you see, The Army intercept service didn't get off the ground until about 1932 or '33. It was just being organized, being put into place. The Army didn't need an intercept service. We had little field units go out and do the boy scout kind of stuff, but intercept (1G)....

FARLEY There wasn't even (2-3G) '36 and '37 that KULLBACK and SINKOV were just going out to make sure that HAWAII and PANAMA were operating correctly.

ROWLETT When they went out.

FARLEY Yeah, when they went out.

ROWLETT I don't remember the dates.

FARLEY And we wouldn't have...the Army wouldn't....the system wasn't really functioning until about '37 or '38.

ROWLETT (2-3G) We never did (1G) to get onto (XG) because the Japanese transmitters, two-way transmitters (3-4G) it was easy in Asia for them to use landlines. Now this wasn't true of the diplomatic and the Navy. You put a ship out at sea and it's got to have a high powered radio transmitter. They expanded intercept from the Navy standpoint. With landlines and the fact that the Japanese were all close together and that the Army transmitters were kind of low power....of course under peak conditions, you could pick up these transmitters, but you couldn't a scheduled intercept operation on them at all. It wasn't until after the war started that there was enough for us to on them. Does this make sense now.?

FARLEY Yeah, you and I had talked about that at some length. I had just came back from the 1976 interview...we did alot on that.

SCHORRECK Talking about intercepting Japanese military, why there was a lag?

ROWLETT Well, let me lay one on you folks now. It's been quid pro quo, Do you know anything

about a NAVY RED MACHINE?

SCHORRECK I don't.

FARLEY A NAVY RED MACHINE?

ROWLETT Yeah.

FARLEY No. There was an M1 wasn't there? That preceded the diplomatic machine. And it operated on somewhat similar principles, but not the same.

ROWLETT (B% I won't put) LOU TORDELLA down. You heard what I said about the RED MACHINE?

FARLEY Yes sir.

ROWLETT Well, LOU comes over, gets my manuscript (2-3G) over and says "You ought to put this DIPLOMATIC RED MACHINE in here. It was the NAVY RED MACHINE. I was too tired to get into an argument with him so I just let him make his speech. But I've been thinking about it. Now, I had heard of NAVY RED MACHINES, but so help me, I have never talked to anybody who identified for me a NAVY RED MACHINE before they named the DIPLOMATIC MACHINE the RED MACHINE and the only reference I had to it has been fairly recent. It looked to me like somebody in the Navy had confused the Army solution of the Japanese DIPLOMATIC RED MACHINE and so there, that was the (B% early warning). You know JACK (B% HOLTWICK). It's alleged that he built a Navy machine...that's the one with the (B% FIFTY COUNTER) machine. I know JACK HOLTWICK very well personally, and I don't thing JACK was enough of a cryptanalyst to master this thing. So, I think that is a myth too.

FARLY: Well, we'll show you a picture of that M1 machine, and the NAVY MACHINE.

ROWLETT I think we have seen it.

FARLEY Well, that's not a RED MACHINE.

ROWLETT Well, I don't think the Navy every used your term RED MACHINE.

FARLEY No, they didn't.

ROWLETT I think LOU was ... has been misinformed (XG) did I miss something?, but you are comprehending what I recollect?

FARLEY Yes sir.

ROWLETT Another part that I recollect is that the cryptographic principles used in the Japanese RED MACHINE and the one in which you...

FARLEY The M1?

ROWLETT Maybe you better look at that picture. Our (1-2G) code was just the (1-2G) alphabet that was different.

FARLEY We had that machine here.

ROWLETT Oh yeah.

FARLEY We had it on exhibit.

ROWLETT It used a VIGENERE SQUARE type of substitution. The diplomatic machine used sixes and twenties, a (B% thousand) consonants, and the Navy machine used something different. Well, let's not waste any more time on that.

SCHORRECK I don't have any more questions Frank. Gerry?

HAINES: No.

FARLEY I don't either, except every time we have talked....

SCHORRECK You probably want to look around and get a copy of that article and maybe meet some of the people again.

ROWLETT Well, I sure would. If you ever run across a picture of the GEE WHIZZER, I'd sure like to have one.

FARLEY I've heard that term so many times but I've never seen a picture.

SCHORRECK Don't we have a picture of it in his article?

ROWLETT the GEE WHIZZER? ...No.

SCHORRECK In the old tech journal article on the GEE WHIZZER.

ROWLETT Maybe I don't have a copy....

FARLEY (XG).

SCHORRECK I'll look and see.

FARLEY Why don't we cut it short and then... Thank you very much sir...

ROWLETT Well, I'll always be at your service if .... I'm sorry if I talked down to you but...

SCHORRECK Well, what I want to talk about, he doesn't want to talk about.

ROWLETT Well, I don't fool easy Henry, and unless somebody up at the very first level tells me to spill my guts on this...

SCHORRECK Jerry and I have talked about this for some time and ... we are concerned that we get ahold of the document that will verify what is being done at this agency period. I mean everything that's being done, I think we need to know that. Whether we....we're not going to sell it on a street corner, but we need to verify what this agency has done in the past. That goes all the way.

FARLEY You will never get it Henry, you will never get it.

ROWLETT I agree with Rob. If I'm sitting up there where I used to sit and the director says "What do you think Frank?", I'd say ...."Don't". The first principle of true compartmentation is to limit the number of people who have access to those who can contribute to it or can take action on it.

SCHORRECK ...When it won't be...when there won't be a need for it to be as compartmented, or as classified?

ROWLETT That, Hank will depend on the attitudes of people up in the directorates office. There is no mathematical line which you can draw. It'll be a matter of judgement, and they may make the judgement "yes" or they may make it "no". I would make the judgement to

keep it compartmented. What I would do, I'd do this, and I think this is just as important as the compartmentation, because there are two benefits that you get from a compartmented problem: One is the information contained in it. Two is technical information. Now this may be a unique problem, but the techniques that are used in this problem, can be used in other problems that are uncipherable with the techniques available. Now what you must do is to figure out how to manipulate those techniques in such a way that you don't discourage (2-3G) for the compartmented problem. That's how the word would get around to the benefit of the agency...the agency's technical people. I think that's a viable solution to this sort of odd situation you find yourself in.

FARLEY What do you think Henry?

SCHORRECK Good.

FARLEY Thank you very much sir, appreciate it.

//End of Interview//