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INTERVIEW OF FRANK RAVEN 24 January 1980

The interviewee today is Mr. Frank Raven, former Navy officer who served in pre-Pearl Harbor days and early during WWII. The interviewers today are Mr. Dale Marston, Mr. Hank Schorreck and Mr. Robert Farley. Today's interview is being conducted in the SAB 2 of the NSA Records area.

Q: What we're going to do is to try to pick up a few gaps in earlier interviews that you gave, try to fill in a few of ~~the~~ them, or to supplement some of the information.

Dale has about 45 questions on the Enigma and . . .

A: Well I would like to cover the period of the Enigma before April of 1942. I would like to spend a little bit of time on that. Maybe 20 minutes possibly.

(Yeah, we'd love to hear that)

and I think if I cover that I'll answer most of your questions on the Enigma. So what order do you want to do it in?

Q: Well do you want to tell us you know, there's a big gap between the time Currier went over and the time that we began to get I think the summer of 42 and . . . you know . . .

A: I can fill that gap.

Q: Yeah. How about even earlier that that? Did you have occasion to work on ~~a lot~~ something ~~stuff~~ the Coast Guard might even have been working on ~~in~~ in 37.

A: As far as I know the only Enigma problem that was solved early by anybody around the Navy was they went after the German Navy quite early. I think about 1939, 1940 period and they got on to it. They got a whole slug of traffic. A real mountain of traffic and a day's traffic was all in depth and they read it as depth up to about 30 deep feet. After they read the traffic and got it all out they suddenly realized what they had wasn't German Navy. It was the Swiss Navy on Lake Boden. (laughter) That's a true story. They were using the commercial machine with unenciphered windows. As far as I know that is the only early Enigma work that the Navy did. I don't know if you can top that in there. (laughter)

Q: I know - once we recovered the Swiss wirings and.....

A: Oh I know that story.

Q: and they were the same old wirings. (laughter)

A: They changed later.

Q: Yeah they did change but we could not read everybody said that the wiring they cribbed it was just that the wiring had changed.

They cribbed it in and they recovered the wheel, -- ? CHIHUAHUA ?

A: They later went to a ~~real~~ really sophisticated .... (Dm --?)

Q: I know, but this was during, this was during the war, you know, we couldn't read and we actually recovered the wheels again. We did it periodically but ? keep getting wrong ... ?

A: We went to a really sophisticated machine that we got later, much much later.

Q: Yeah, well I that's long past my time.

Well let me start talking and Dale if you've got any questions you cut in as we go.

Let's keep it as informal as we can.

About 1935 Capt Safford told me that he couldn't teach me any more crypt. The war with Germany was inevitable but he wanted me to go out and study the German Navy and brush up and get really good nautical German. Now I had many years of German ~~at~~ in school. My father spoke German at home and I had quite a bit of German, so I spent the last end of the 30s reading every book I could get on the German Navy and learning that Plat Deutsch type of stuff as the German talks. They

don't talk HOCH-- high German. They talk very low German. The number 2 is Zwoo instead of zwei. This sort of thing. So the summer of 19 in the late early let's see in the fall of 1940 I came in for my 2 weeks cruise and at the end of it I was ordered to active duty. As a matter of fact I volunteered. Safford said to me "I need a good last volunteer or the first one ordered. What was my choice?" so I said I would be the last volunteer. When I came in they said we got just the job for you. I said "What is it?" and they said "Purple." I was given the job of organizing the Purple watch. Now I'm not going into this but it is important that as you'll see to the Enigma. I mounted and ran the Navy Purple Watch up until the summer of 1941, organized and set it up, all that sort of thing and later we were on the ?? dans ??. Capt Safford had one real dream. They had read the Naval attaché machine early but they had lost it in the change just like the Red had changed on the diplomatic side, they had got into it and he frankly his primary interest in

Purple was training me or grooming me to take on reading what later became the Coral and which we didn't read until we were well into the war. Oh in the summer of 1941 Safford decided that he had turned the Purple job and all due apologies over to the more routine workers. There wasn't as much crypt in that particula thing and he wanted to organize an all out gang to go after Coral The gang he picked was Pres Currier, Bob Ely and me.

Q: Bobby who?

A: Bob Ely

Q: Oh Ely. E L Y.

A: Bob Ely had just reported, had just come on board. Bob was a mathematician with very little previous experience. A mathematician for a Philadelphia insurance company. Really high in Philadelphia society and I'll never forget his mother. His mother insisted he do everything by the book. The first time they came to visit us at home

she got very indignant because he stayed over half an hour and you never stay over half an hour on the first visit in good society. Very cryptic. He was put into the crew as a mathematician. Pres Currier was put into the crew as a linguist. Now Pres is a very interesting individual no matter how you look at him. As a linguist he is a genius. As an intelligence officer he is a genius. As a cryppie on what I would call linguistic types of ciphers which as a general rule are most of the one-man types of ciphers. or ~~The~~ small ~~group~~ crew- type of ciphers or ~~small~~ ~~one~~ code types of ~~ciphers~~ problems. He doesn't have his equal in the world and he speaks more ~~[illegible]~~ ~~[illegible]~~ languages than you can shake a stick at. No experience whatsoever as far as machines or, you know, the problems So Safford had his dream. A linguist, a mathematician and a cryppie. Put them together and let's see if they can affect each other. Well after we just about had the traffic organized and that's just about the way to describe it, Pearl Harbor happened. Shortly after Pearl Harbor, I would say within a week

or at least 10 days after Pearl Harbor, Lee Parke came around to see me. Of course we're talking about organizations which have no counterparts at all today but the easiest way to describe it to you is to say that Lee Parke was in charge of crypt. The crypt side of the business. He was a lieutenant at that time I believe. That was a very senior rank. Safford himself was either a Lieutenant Commander or Commander then. I still remember the shock that went through the organization when Kramer became Lieutenant Commander. The idea that a specialist, a Japanese linguist, could rise to be a Lieutenant Commander shook the whole damn Navy for one end to the other. This was a junior outfit. Lee told me that Mrs. Driscoll had broken the Enigma machine and they had decided that it was going to take a crew to exploit the break and they had decided as much as they wanted to get out the naval attache machine, they had to put it on ice because here they had a real break. Something to go after

and there was a war on. I was given the problem of running the exploitation effort, if you want to put it like that, of reading the Enigma problem. This is about 15 December of 1941. Obviously, he said "Oh by the way do you know German" which was the common insult those days after all this time I had spent studying the German Navy. Well the idea was I would get about 20 people, 20 sailors walking in off the street. I'd whip them into shape just like I'd whipped the Purple crew in the takeover exploiting the German. That's what they thought it would take.

Q: Now this was after Currier had been to England He had been in....

A: The summer of 41.

Q: Spring of '40?

A: No, You're Wrong!

Q: Spring of '41?

A. Currier went to England.....

Q: Spring of 41, spring of 41.

A: He went to England about Christmas week of 1940. I can still remember the Christmas party, the navy Christmas of 1940. Currier kept running in every few minutes. He was leaving that day to go to England. I think he went on the "Prince of Wales" or one of those big ships but he was leaving to go to England and he was trying to get his papers straightened out, and he was representing the crypt side and a Lt. Weeks was representing the COMSEC side on that. Pres Currier himself of course had been a civilian the week before. He had a reserve commission as an ensign in the naval reserve and they ordered active duty in effect so they could send him to England.

So that was December of 1940 that he left here.

Q: Ok, December of 40

A: He left here.

Q: Yeah, OK.

A: Now it was probably January by the time he got to England.

SINKOV SAYS THE KING GEORGE V LEFT ANNAPOLIS ON 15 JAN '41 AND REACHED SCAPA FLOW ON 29 JAN. (OH-02-04/79, p. 2.)

[illegible] 22/8/91

Q: Yeah, well I think they got delayed and it was probably I think the end of January before they finally left.

A: Ok I don't know.....

Q: Friedman was suppose to go see, and he got sick and He couldn't go.

A: OK

Q: So finally they got Sinkov and Rosen instead and so I think it was the end of January they finally left and yeah okay.

Q: I am not working with Pres. I didn't know him. To me he was that a damn nuisance who ~~and~~ kept breaking into the Christmas party. Every every Danny Boone was Santy Clause and every time that Danny Boone would be getting to one of his punch lines, Pres would come running in with a paper for Safford to sign. (laughter) You know what I mean. Visualize the scene. For some reason or other Weeks had all his papers in order. (laughter) I didn't see him until much later.

Okay, I was to head this decryption watch. Now I knew of ~~A. B~~ Aggie. Driscoll at this point. She was touted as the best cryptanalyst in the world. Much better than a jerk called Friedman over in the Army and a real whiz kid in every sense of the word.

THE ACCIDENT WAS IN OCTOBER 1937 SHE RETURNED TO WORK IN SEPT 1938 (SEE SRH-355, I p. 160)

However, she had an automobile accident. I'm not sure whether it was in 40. The accident must have been in 1940. She had a very bad automobile accident. She was in the hospital for nearly a year. When she went in she was a very strikingly beautiful woman in her early 40s. When she came out she looked like a witch in her 70s who could only walk with a cane and with her sister holding her arm. You can both carry on that description. You probably knew her.

Q: That's about..... I never knew her until probably 45.

A: Well in a period of a year that woman went from a beautiful gal of about 40. If you told me she was 80 at the time I would have believed you. She had a, well she had a reputation as a genius. She also had a reputation of a witch. She ran everybody around her and if she didn't like the look of a sailor he was sent to Hawaii. Period. That's all she had to say, "Get that man out of here." and he was shipped off. She had a very nasty type of reputation. Her sister, Mrs. Hamilton, who is still a very good looking woman, quite handsome till about 40. Everybody always told me that

Aggie looked more beautiful than the sister. You probably knew the sister but in any case, I just couldn't believe that story. She had with her two or three really hack clerks, female. One I think was named Callie. I can't remember the name of the other and they had assigned to her a navy chief named Milton Gash. Do you remember Milton Gash?

(yeah)

Milton Gash was a rather handsome, in fact he was married, he was young, navy chief. His wife worked in the organization too. Not a good technician in any sense of the word. He was just her ~~youman~~ yeoman, her leg man. Everything that she wanted or anything that she desired he took care of. He was just "Batboy" if you want to call it that. That's what it boils down to. A Helluva nice guy. Well I had considerable trepidations about being up against this gal from what I had heard of her and equally frankly I was intrigued at the idea of getting on with the Enigma. Now, You 'gotta' remember that this is the Navy. Legally my chain of command came out of Lee Park. I was not assigned legally as being under cognizance of Aggie because

a military body could not be under a civilian. This is quite important to the story.

Q: What sort of a rank did she have?

A: Oh she must have been about a P1 or P2 or something idiot of that sort. Believe me grades before the war were insignificant. She of course was a yeomanette ~~yeoman-F~~ in this business in WWI and she had had several brushes through the years with Friedman alternately one or the other coming out on top.

Q: Do you suppose that she attended one of his courses at Riverbank? I know she went to Riverbank.

A: I have no idea.

She could have. She was his generation very definitely, his sparring partner, very definitely. Well when I went in there she had one room. There were about 4 or 5 people in it. She was working. She had her safe. Now I was to get the room next door to build up this crew of 20 sailors. Well frankly, for her, she welcomed me with open arms. Well she had a commercial Enigma, which you ~~she~~ could see how the Enigma worked. As a matter of fact I think when I left the agency that very commercial

Enigma was still in the museum. I remember that old thing when I saw it.

Now from here on, one of the mysteries, and if you can solve it, I wish you would call me and tell me at some later day is who knew what about Currier's visit to England, ~~during~~ and I will come back to this.....

(I think Dale's trying to find ~~it~~ out)

Okay I'll tell you what I know

(particularly in the Navy I) eight?

Aggie very definitely at this point had not. I'd like to make this quite clear.

Aggie had her own solution to the Enigma which required no machine support whatsoever.

It was completely done by hand and roughly about 20 sailors should be able to read about 2/3 of the traffic about 2/3 of the traffic. They should be able to read the traffic of about 2/3 of the days and show that she could recover about 2/3 of the days. I sat down in Aggie's room. No one was permitted to talk. All communications had to be by note and all communications had to go through Aggie. If ~~they~~ 'A' wanted to talk ~~apiece~~ to 'B' you had to give a note to Aggie and Aggie had to approve it, and give

the note back to C. You see what I mean? If they wanted to leave the room to go to the john or something Aggie had to approve it. You wanted to go to the john, you passed Aggie a note and she would nod and you could go. This does not sound relevant but it is, funny as it sounds. (laughter) Now of course with Pearl Harbor on ~~then~~ and a shortage of space we were on 24 hours. Aggie of course was only on 8. This was where the things started to break. I was in a fairly privileged position as I was the man who was to head to build up a crew to exploit her solution to the machine. I went through her solution to the machine. Very bluntly, her solution was using paper models of the machine. You're familiar with the paper models of the machine,

(yeah, yeah, yeah, yeah)

in which you slipshoe the side up and down. Okay using paper models of the machine she would in essence work a rather poor Bombe by hand of the entire machine. You'll start off assuming wheel order 1, 2, 3. Then you you have a crib message of course.

The first assumption, the second assumption gearing toward this was that you had an unsteckered letter. So starting with the assumption of an unsteckered letter which was six chances out of 26. Starting with an assumed window of the machine and an assumed ~~dots~~ notch pattern you would try to recover the secrets sequences see by hand. Well when you didn't get it on one setting which you check off very carefully then you move to the next setting. After you got through the complete cycle of the machine then you changed the outside wheel. It was a trial of exhaustion.

Q: It would take forever to do that.

A: Yeah. That's what I'm trying to tell you. (laughter) And because you start off with the assumption of an unsteckered letter you'd probably miss it. You only have one chance in four of getting it if you've got it. WEll it took me about a week probably because Pearl Harbor was on and everything was confusing and whathaveyou to realize the whole import of what this dame is doing. She can't test one crib, one message in the lifetime of the war, and because we're on 24 hours I get to read everything

that's in her safe which is the 24 hours, the 3 watches. I had to have the keys to the safe to get the materials and as Dale will tell you I was born with sticky fingers. She would have a real headache if she ever knew that I had seen what was in her safe, but I had. I went right through it and she had all kinds of writeups from the British, none of which mentioned any success. I think the more hilarious episodes in the safe and I got this out. I read the British message on the subject and I checked myself and went back and forth. Aggie never understood the motion of the slow wheel. To the day she left the agency she never understood the motion of the slow wheel on the Enigma. She was convinced that the operator reached up and moved the slow wheel at a prearranged point and she sent several messages to the British saying, "what controls the movement of the slow wheel?" And the British on three separate occasions sent back a message that said "Madam, it is an eccentricity of the machine." and I know she told me that week that the British were holding out on her. That they obviously

had this information and they wouldn't tell her what controlled the motion of the slow wheel. At the end of the week, and you got to remember I'm a wet-behind-the-ears youngster. I think I probably just made J.G. at that time, but I got all this brass and Aggie is a power in the Navy. I'd like to make this quite clear. There wasn't a regular Navy officer except Safford, and Safford had left at this point, there wasn't a regular Navy officer except Safford who had the guts to say "boo" to that gal. I'll come back to this later. She knew innumerable Admirals who were down through WWI or during the war and anybody crossed her on anything in the chain of command she would go to one of her Admiral ~~Masons~~ bosom buddies and by God they had clout. So the net result of it is, you got to realize Aggie ran this outfit in the sense that, with all due apologies, Brother Friedman was never able to achieve on the Army side. This gal has real clout with senior officers. Here I am, a reserve officer, wet-behind-the-ears looking at this and I'm brought in to set up this watch so at the end of the first week I went around to Lee ~~Clark~~ Parke. Now Lee ~~Clark~~ Parke is an old southern

gentleman. He belongs before the Civil War. He's not a cryppie or technician in any sense of the word. He was assigned here largely because he was an officer of the deck on on a, I think, it was a destroyer in Havana harbor at anchor and he dragged anchor and was court-martialed so they assigned him to COMINT. But a hell of a nice guy and a real gentleman. I can tell you Lee ~~Clark~~ Parke stories till its coming out ~~of~~ ~~your~~ the ears but I don't think outside of showing his character they really affect the outcome of the Enigma story. I'm stalling a little bit because Dale is out of the room.

Q: How come they didn't commission Mrs. Driscoll?

A: At this point?

Q: Give her a Lieutenant or a .....

A: She's a woman.

Q: That's right.

A: This was long before the WAVES. She was a Yeoman Youmanette in WWI and also she had never even ..... physical? I'm not fooling. You can't believe it today. If you, if this gal came up here as one of the witches in Macbeth without makeup. It's one of the

worst tragedies that I've ever seen in my life. This beautiful woman in a period of a year is a witch. Well in any case I went to Lee ~~Clark~~ Parke and Lee of course was no technician and he wasn't about to cross Aggie and I respectfully pointed out that in my opinion I didn't think she had a solution. I thought she was just spinning her wheels and my job was to organize an encryption watch and what the hell was going on here. Well Lee told me very frankly Aggie would refuse to tell him what the solution was because it was too sensitive. She had refused to tell the senior officials in the Navy what the solution was. This by now, of course, Safford has left. I think it was Wenger at this point. She had refused to tell Wenger what the solution was. Yes she had a solution and it was a valid solution and Lee said who was I ....

Q: But she must have talked to Currier when Currier got back.

A: No she didn't.

Q: Oh this is independent of Currier?

A: This has got nothing to do with Currier. Forget about Currier.

Q: Really?

A: OK. Well Lee said it all. You're the first person whose ever been able to get into that room and to find out what's going on in that room. He said the Enigma is important but for God's sake stay in there and tell me what is going on. I said well this is a farce. That I will stay there as a direct order, if you order me to, but as far as I'm concerned I can do no useful work in there except serve as a spy. He said well look, the Enigma is going to come up. In accordance you stay there theoretically developing your crew but start studying the Enigma yourself, and do any other such jobs as you want to train your crew and to keep their hands busy. Now this was before Christmas of 1941. That's the awkward position that I was placed in. At this point Wenger, like all of the old Navy considered Aggie as sort of a god, some sort of a goddess. Well I stayed. Now I was fairly close to Rowlett at that point as a result of the Purple, having organized the Purple watch for the Navy.

I made a deal with him and I got from him such things as the French Navy communications and I made a deal that I got from him all the French Navy communications that he got from Martinique and together with the stuff we had got from the British we were able to break and read the French Navy ciphers at the time of the Martinique crisis. Remember when the BÉARN was sitting down there?

(Yes)

Well we were able to tell the well that's a story in itself that's worth putting on here. Lee Parke came to me one day and said that all the way down from the White House they got an order they had to do something about French naval because of the situation in Martinique. Letters went on down from the Secretary of the Navy, Secretary of the Navy down to this and so forth and finally ended up down to Lee Parke and Lee Parke was coming down to me. He said, "For God's sake can you do anything about the French naval problem? You're the most disengaged guy I've got. Can you take it on? I know you can't do anything but can you?" and I said to Lee Parke

"Well, Lee we've been reading the French Navy traffic out of Martinique for the last two months," or whatever I think the last two weeks. "We've been reading this traffic and confidentially you can pass the word back that the Baron has got a foul mouth BAIRN? She's sitting on a mud bank. She's not seaworthy. They only let the U.S. officials see her at high tide because at high tide she's level." I said, "if you want to see the real problem down there take a look at her, get in at her at low tide and see that she's resting on the bottom and not seaworthy. The Baron with her aircraft on board is no threat to the United States. She isn't seaworthy, see." Well of course Lee Park went back to his boss. His boss went up to see his boss and went all the way back to the President of the United States. We didn't want to say anything before, of course, we just wanted to check the current status but just for your information, here is the lowdown on the French Navy. From that point on I could get anything I wanted out of Lee ~~Park.~~ Parke

Q: What happened? Why didn't the traffic go to the Navy intelligence people? The French traffic

A: Well the Army was intercepting it.

Q: Oh it was the Army. OK

A: They were after the diplomatic traffic and it was passing on the same links

Q: So it was just bottlenecked? pigeonholed?

A: Could be Pigeonholed in one of Rowlett's bottom drawers or closets and I'm sure Dale can fill you in on this far better than I can. Well in any case, I started to work including a lot of night work because I was working Aggie's safe and all of the things which were in there. Incidentally at this point I had gone back to both Bob Ely and Currier and gone over exactly what Aggie's solution was in a test to get an independent view that I wasn't nuts and they both agreed with me, and Currier, frankly, was very nervous about my getting Aggie's hackles up. He gave me considerable advice "Whatever you do handle with kid gloves." Then I started to work and I started going through these British writeups and the more I went through these British writeups and read them, believe me, its impossible to sabotage the documents,

~~By~~ and working on my own I came to the conclusion that there was a solution to the Engima. I had a pretty fair idea what the solution was. And I was equally convinced ~~I was equally convinced~~ that the British had it and that the British were reading the Enigma. Now you got to remember at this point I'm in charge of the decryption watch.

Q: But Pres apparently took this very much to heart even though he knew.....

A: But please you're ahead of me. I'm just getting warm. Well,

Q: What were the communications that she had had with the British?

A: All hard copy. ~~All~~ technical written reports describing how the system worked.

Q: This is following the Currier-Weeks visit.

A: That's right. There's nothing about solutions. But they were just descriptions precise descriptions of exactly how the system worked. The key list and things of that sort but reading a key list, I could read any key list and as far as I'm concerned

I don't care whether a guy captured that or not. By God he wouldn't know that if he hadn't read it the hard way. There were Pretty little things. Believe me, Dale will tell you, cryppies get very sensitive to these little things. That's what they live on. I was convinced that the British were reading. I was convinced that I knew the solution and I strongly suspected that the British solution was the same one that I had, and this could be classified as the period of January of 1942. Well I brought in Bob Ely to the problem. You got to remember these are documents that I'm bootlegging at night out of Aggie's safe. I mean this isn't (laughter) I'm sticky fingered. Well Bob went over everything that I said and he agreed with me. Then I brought in Pres Currier and he he because I knew that Pres had been there and he went over everything that I said and he said he didn't well he recognized everything I said but he didn't believe that they were reading it. Well at this point I started to get my hackles up and Bob Ely and I were fairly close at that point. This is a little bit

before I went to the Pacific and he went to the Atlantic and Bob and I and Pres frequently ate lunch together. Coming out of our Coral days and A.T. ? days we still met for lunch and I got Bob to agree with me ~~the principle~~ that Pres was lying. So we mounted an operational, one of the best intelligence operations I ever mounted in my life, and it took us about 10 days to do it. Each of us independently, separately without the other one being present, would ask Pres innocent questions about his trip to England and then we would report back to the other one and we recorded these. - all Pres's answers to questions. About 10 days later we confronted him at lunch one day that he was a liar because these questions were contradictory. He was thinking on ~~his~~ the individual questions. Well we had it worked out like 20 questions see and if you put all the questions in a row and all the answers in a row it you had to add this questions plus this question equals that question and we called Pres a liar to his face. Pres practically had a hemorrhage.

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He practically had a hemorrhage, and at this point he went charging off and obviously something was wrong. Now at this point I was thoroughly pissed off in every sense of the word. We're getting up to about February 1942. At this point I went to Adm. Wenger. I can't remember what his rank was then. Now Adm. Wenger even in this whole period of time regularly came in to see Aggie. He was in there at least one day a week talking to her and she was holding his hand and blowing his nose and telling her how well things were going and what have you. And I was obviously the irritant in the soup. Well, without going through Lee Park and Lee was just as glad that I didn't. I was a civilian, as I say, in uniform and I could get away with some of these things. Lee very frankly later was glad that I could get.... I told Wenger that I wasn't going through Lee. I laid out the whole thing to Adm. Wenger, laid it right on the deck and I said, essentially, I want to fight a war. I don't know whether the British have got the solution or not but something stinks. I said

as far as I'm concerned it's going to take special purpose machinery and 5 million dollars and I wasn't figuring on used, 5 million dollars and probably an all out drive to build equipment to bring this thing under control. That, as far as I'm concerned, to keep on what we're doing you're wasting the crews time. I went on further. I said if you don't want to spend the 5 million dollars, can I work Japanese Navy? Well he hemmed and hawed and fussed all over the place. This session took about two hours, hemmed and hawed and fussed and he said, well, the most absurd thing I've ever heard is the idea of spending 5 million dollars on cryptanalysis. I said "Do I have your permission to work Japanese Navy, sir?" He said "If that's the way you feel, go ahead." He was pissed off as you can tell. He said "If that's the way you feel go ahead." So I walked into the this crew that was working German Navy miscellaneous problems. I said "Boys, as of evening watch tonight you're working Japanese Navy".

Q: So this was the whole group?

A: Yeah

:Q: Not just for you.

A: For the whole group. They were my crew. I was training them. Well we weren't...

I went over and all the effort in the navy right then was trying to get under control the five digit system and a couple of the other frequencies and they had the God damnest big junk box you ever saw in your life of anything that wasn't five digits and I took the crew into that junk box, see. By the end of the week I think we it took us, oh, within a couple of days, we broke our first Japanese Navy system. I can well remember this is a German crew. See our recoveries ---

? Nika, Sō Jii? means ? Nichts Weiter Ausschlagen. ?.

(laughter)

Well in any case, Pres Currier, to carry on the story at this time, I don't know who he went to. To this day I don't know if Adm. Wenger, to this day and that's the

question that I ask you. He went to somebody and pushed the panic button and he swore me by the way to keep my mouth shut until he heard later he came around and saw me but this was after I had seen Adm Wenger, Tilt~~ten~~tman came streaking across the Atlantic because they had a crisis on the Enigma problem. Then, let's see, then a little bit later than this Ingstrom arrived. Just about this time he came on active duty as Math professor from Yale. I had math up at Yale and I knew him. And I remember Ingstrom coming around and talking to me while I was working Japanese ~~and~~ at some ~~link~~ length about the problem. Now you got to remember at this point if you want to be legal and I am a legalistic bastard. I think the way they had it covered was that I was working, I was in the exploitation crew that while they were polishing up some aspects of the solution I was off working Japanese Navy and that's the way I was carried on the muster. Actually the legal way I was carried on the muster. As soon as the solution was shined up however I was to go back on exploiting the German Navy with

JULY 1942 ELY AND EACHUS VISITED GC+CS (NSA TECH JOURN. MURRAY, XX n.4. FALL 1975)
D. McGrath
23 Aug 1991

my German crew. Well as Ingstrom came down and he heard me out and by this point I don't think Tiltman had got here at the point that Ingstrom did.

Q: Do you think that was around February or March?

A: February ~~of~~ or March of 42, which is just going into the periods bothering you. Now Ingstrom became convinced, as I was convinced, that the problem, was ~~doable~~ do-able, and he chuckled at my 5 million dollars figure, because I was about in the area? he was, and he went to bat, practically over Wenger's head. Practically over Wenger's head to get the money to do the problem and, then, as a result of Tiltman's visit, Bob Ely and somebody else went back to England and they really started meshing the ~~their~~ crew together.

Q: (Ely and Weeks I think.)

A: You're right. He was a genius but to get back to a couple of little things I left out. Pres Currier told me that he had been shown the complete solution of the naval Enigma but that he had been sworn to an oath of secrecy.

End of Tape 1, Side 1

Tape 1, Side 2 -- publish it. Still don't know where it is ..

I just can't get a guy to research it. My version of what happened and I have no

script.

(No this is just for Dale's reference)

You can understand some of the problems.

Q: Yeah, You don't think that ~~there~~ in the files that Redman got into do you?

A: I wonder how he got into it at all?

Q: Well apparently he got something and he sent off a message to the British saying

"For Christ sakes send us this machine so we can decrypt the message"

and he sent it outside the channels. He didn't send it in the secure channels.

A: What date?

Q: I could find the date. and

A: Must be military brains ? 44

~~Q: What~~

~~A: military~~

(Must have been February after reorganization because all this happened at the same

time. The reorganization ~~with~~ within OP~~22~~ 20G when Safford was moving over and Redmond and

Wenger coming in was all going on all going on at the same time.)

Well where are we?

(Must have been very confusing)

Are you putting in a new reel or what?

(No. It's on)

(Dale's going to get a copy of the message that Redman sent.

A: WEll it was a very I mean you got to realize its a real confusion around here. With people pouring through the door and senior officers are really busy and things of this sort but Ingstrom to my point of view was the hero of the early Enigma as far as I was concerned. I'll hold off on Pres until he gets back but to go on a little bit ~~the~~ _____ on Aggie he can hear it. ~~here.~~ As funny as it sounds Aggie was the curse of the Enigma effort well up into 1944. Whoever was involved with the Enigma had to work around Aggie. There could be nothing said or done in any way that would ~~could~~ discredit Aggie in that period of time and nothing would irritate or get her mad although they were awfully close to it on a number of occasions. They set her up into all kinds of phony responsibilities, phony titles on the Enigma but she still had a clout with senior admirals in the U.S. Navy that no regular Navy officer in the Navy dared cross Aggie Driscoll up into 1944. Now as you go over the early organization charts and the early sessions and whathaveyou you will puzzle like

hell as to where Aggie fits in there. It's usually Ingstrom.....

(DM- It was so dim I had to sort of write off myself. I couldn't hardly read the photograph but I think that's fairly accurate of what.... but anyway he got into all kinds of trouble about now that's fourth of March.)

A. Yeah This is roughly the same period.

(but apparently he must have got in the side door or something)

A. Back off a little ---

Pres Currier told me that he had seen the solution of the Enigma and that he had been sworn to absolute secrecy on the solution of the Enigma. He was committed that he was not to say anything unless he became convinced that the U.S. Navy was going to mount a serious attack against the Enigma. That he was honor-bound up to that point not to reveal the solution of it. Now to this day I don't know whether Pres Currier told nobody in the Navy whether he told nobody in the U.S. Navy about the solution of the Enigma.What senior officers he did tell about the solution of the Enigma, I honestly do not think that Adm. Wenger, when I buzzed Adm Wenger, had the slightest idea in the world about the solution to the Enigma.

I honestly don't believe that Wenger knew it and couldn't have acted the way he did. I can sure as hell tell you that Aggie Driscoll and I didn't know it, the solution of the Enigma but in any case, as of about March, late February, March of 1942 all hell broke loose because we trapped Press Currier in a, what was obviously a lie, and we put him in a situation that he from his point of view being a very honorable individual. He was in an intolerable position both with the British and with us and we were calling him a liar to his face and he unconsciously had revealed something that he had an ultra secrecy about and that was very close to late February early March of 42. This was the dividing line. Well then to go on with the story before they could really get the equipment going on the Enigma problem,

96 build ~~the~~ their Bombes, grids ? and all that sort of thing I was leading a merry crew off chasing Japanese Navy. We broke at least one significant Japanese system a week, from the first of March of 1942 to, for the rest of the year. When they really got around to organizing a real German Navy crew with Aggie Driscoll

as some kind of a technical wizard or consultant or something it was decided to leave the German crew in the Pacific because we were so successful with the Japanese Navy then to start out with a new crew.

Q: Well then how did you get over there? You suddenly appear in the Pacific. I assume that.....

A: Just walk upstairs.

Q: Oh I'm sorry. You weren't physically over there.

A: No. Working on the Pacific problem ~~pardone~~ pardonnez. Walked up to where the traffic came in and said what traffic have you got that nobody's looking at? I'd like to back off one more thing and then I'll move to questions. In retrospect I am convinced that Aggie Driscoll is one of the world's greatest cryptanalysts. I am convinced that the same accident that moved her from a beautiful woman to a hag affected her mind and that when she came back she couldn't solve a monoalphabetic substitution. She was non compos mentis or something of that

sort. The only thing way I can look at this period rationally is that all of the Navy officers knew her as she was in her younger days before her accident, knew her as she was and simply could not appreciate what had happened to that gal in that accident. That's the only interrpretation that I can put on there that makes any sense at all. There has to be some interpretation.

Q: Was her personality any different? Or did that change too?

A: Oh yes. Everything changed. She came back a bitter vindictive witch. I mean I'm not kidding. If a sailor was humming and she didn't like it he get his orders to Hawaii the next day.

Q: Well she wasn't like that before?

A: No. She was. I went after this. I talked to people. She was a very pleasant, well-mannered nice educated lady, and the real tragedy is that the Navy could not realize the impact of that accident on her and when she came back and I think she

SEPT. 1938

probably came back in the summer 1941. I know she was out for ~~one~~ a full year but when she came back they couldn't realize that she wasn't a cryppie anymore. She should have been retired on a medical in any sense of the word. Now that the only explanation I can make. Now most of the people you talk to knew her in the 40s when she had a very very bad reputation. If she had never come back from the accident she probably ~~could~~ would go down in history as a great cryptanalyst. It's a very grim, to me it'a one of the real tragedies of the war, but I didn't know that, I was just a young wet-behind-the-ears junior officer coming in trying to get through the war and get home again and ~~[illegible]~~ I was the first person who ever crossed I was the first person who didn't kow tow and had enough guts to say she was nuts. It completely colored my relationships with Wenger for the rest of our lives. Wenger I don't think every talked to me ever talked to me privately or personally from that day on. I mean in meetings and things of this sort he'd talk to me, but Wenger was very, very bitter over my relations with Aggie.

Now this is the hole that you're trying to fill. Now

(Yeah)

Now I'm wide open to any questions you want to ask

Q: Now this is what Wenger says here and I think maybe you could it might it kind of

sounds like Wenger was holding out on you too, but I don't know

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A: The whole damn thing is a (mumble)_____

Q: or Safford was holding out on you?

A: ? It went to the Director of Naval Communications. That's not Wenger. That's

Redm~~ond~~an, Jim Redm~~ond~~an

Q: Yeah. It even says Safford had some information in the fall of 41.

A: I don't believe that on Safford. _____See_____ what is asked for? Want the

experienced cryptanalyst

Q: I thought you'd enjoy that.

A: It was decided to devote at least part of this effort to Japanese cryptanalysis.

I told you the real story how we got ~~it in~~ there.

Q: Yeah.

That was exclusive ofJN25 though wasn't it. When you started working the Japanese

A: Yes. Everybody was working JN 25.

Q: Yes. You started working on other things.

A: Everything else. It was just going into a big box. You call it W in those days.

Q: Some place in there also he says the only two guys he had that were capable of going over and finding out what the hell was going on at GCHQ was Raven and Eachus I think, so I don't know where it says that.

A: Well I really can't, that's a smooth history, and for something that's apt to be published I don't give a damn.

Q: Yeah well this

A: I mean I'm not going to.....

Q: See this was prepared apparently at some request in 45 or so...

A: But if you asked me right now I honestly do not think that Wenger knew.

Q: You don't?

A: I don't think he knew.

Q: When you went to see him and explain to him about what was going on, did you explain the technicalities that Driscoll was doing?

A: I explained it to him.

Q: Did he understand it?

A: I thought he did.

Q: Would you consider him a competent cryptanalyst?

A: No. If you want to know. As a matter of fact I'll go one step further. I never knew ~~why~~ a regular Navy officer who was a competent cryptanalyst at that time. I've known one since but at that time I never knew a competent Navy officer.

Q: Something in here implies that ~~Dire~~ Dyer possibly Capt ~~Dire~~ Dyer fussed with this at one time.

A: Pornographic ~~Dire~~ Dyer (laughter). Pornographic ~~Dire~~ Dyer was very good at puzzle types of ciphers where you take one message and go into a closet. He was very good at using IBM support for things like transposition system and things of that sort. As far as taking on any major cipher which required organization or a large number of people to handle it, he was a farce. I would say though Pappy ~~Dire~~ Dyer on the pre-war type of cipher, the puzzle type of cipher, he was good. Hamm Wright was never worth a damn to me. Hamm always reminds me of Wallace Berry. If that thing is still on censor that out. But the problem that I always had with Pappy ~~Dire~~ Dyer was he had the God damned est collection of pornography as you ever saw and any time that you couldn't

find the security guards you'd always head for Pappy ~~Dire~~ Dyer's office and the security guards would be in there going over Pappy ~~Dire~~ Dyer's pornography. Now you want to take Holtwick . . . He wasn't a cryppie at all. The first time I met ~~Holten~~ Holtwick he came in in the Pacific before Nebraska Ave wearing a monacle and a red velvet vest. I refused to believe he was a Navy officer. I had the watch and I kept him waiting down in the outer officer until I could get two separate individuals to come down and identify him (laughter). I wouldn't take his Navy ID card. (laughter) Do you

220 ~~remember~~ know Holtwick? (yeah!) Well did you ever see him with the monocle and the outfit?

(I saw him with a moustache.)

(Boy he used to wear it all the time)

Yeah. He used to wear a monocle . . all the time.

(He always yeah at a cocktail party he always wore that red vest with his Navy uniform on)

Yeah

(Yeah this was in uniform)

Yeah. A guy walks in in a Navy uniform with a red vest and a monacle and says he is a Navy captain in your secret installation, would you let him in?

Q: How about Fabian and Leitweiler?

JOHN MARION LIETWILER

Lietwiler

A: Fabian I never really knew. Long John Leitweiler was a ~~vicious~~ delicious character.

He was teaching a Japanese class and it took me a long time to realize that he was taking tne same course we were, at the same time, but he was a couple of lessons ahead of us. He would start ~~it~~ off ~~with a~~ the class with two or three students.

"KORE WA NAN? DESUKA HON BESU" (What is this? It's a book.)

That's the way the first lesson started. Well in any case by the time he'd get to the fourth lesson two or three more characters would come in. Long John would be faced with a problem, should he go back and start the class all over again with the now its seven or eight people or should he start a second class. The result of this was I went through the first five lessons at least six or seven times and at one point I could recite to you the first five or six lessons. My favorite Long John story if you want to tape on that. Purple watch for the Navy had not yet gone on 24 hours. I was training the crew and organizing and what have you and they were dribbling in one or two a week. Now believe me this isn't the manpower that you've

got today. I was home in South Arlington one night, had just gone to bed. When we ~~were~~ lay in bed you could look out the window, you could see the front of the house, a long black limousine ~~pulled~~ drew up in front of the house. I got out and a knock came on the door and I went to answer the door, my wife behind me. There was this tall saturnine looking character standing in the doorway with a long cigarette

253 holder, a Russian cigarette, like a ? . He looked just exactly like Ned Sparks if you're old enough to remember Ned Sparks and he said "You're needed immediately". My wife was having fits at this point as to who this character was. He sure as hell looked like a gangster. I mean he belonged in well today in one of the late TV shows. Well I explained to her that I knew him. He was Long John Leitweiler. A responsible Navy officer. I think he was a Lieutentant at the time. He was a linguist teaching me Japanese. Wouldn't tell why. Just come on back. So I told my wife that I'd be out all night. That it was safe. That he was a reliable Navy officer. I knew him by sight. He took

me into the Navy and he explained to me the crisis. They had a crisis. In those days our Purple traffic used to come through the regular Navy code room, super-enciphered over the regular Navy systems. Chief of Naval Communications during the evening had walked through the coderoom. Now this was from Matsuoka who was in Berlin, and there was a message being reduced through the American system to the Purple see. Now one of the machines with every degree of franticity that you can think of. An international communications urgency is expressed in English. So I mean I can't remember it all but "frantic frantic, super frantic" and whathaveyou was on the front on this message and it was between Berlin and Rome from Matsuoka in Berlin. Chief of Naval Communications turned to the duty officer and said, "who does what with that?" which he obviously knew, and he said, "its Captain Safford's responsibility, sir. obviously ~~guard~~ you've gotta convert ranks and that sort of thing." and he said "is it readable?" and the duty officer said I think so sir. And he said that's okay. I'm going down to my office. I've got a little work to do. Tell Safford

to bring me up the translation as soon as he gets it. The duty officer said, "I'm very sorry sir but Safford's outfit doesn't work nights." He said "I am going up to my office and tell Safford to bring me the translation." This is a crisis in the Navy so the only guy they could think of was me and Long John was sent to pull me in. I got there and I immediately explained to them the obvious problem. All my stuff was on a time lock which wouldn't go off until 6 o'clock in the morning. Well they said it didn't make any difference so Safford went bumbling up to the front office and he came back and said he's going to wait for it. So I made the old 25 counts and things of that sort which I could make on ~~a~~ cross section ~~bit~~ paper and set up in the comm center and swapped stories about the king of Siam and things of that sort all night and 6 o'clock in the morning I went down and broke open the safe. Matter of fact they tried about 3 times before the lock went off

30'

and fortunately I was able to to formally sew some "?" the _____ in a hurry and get the message on It wasn't a long message. I rushed in to Phil Cate, Phil Cate. In those days they wouldn't let us see the translations. Well Phil rushed it through and then Kramer rushed

it into to Safford and Safford rushed it up to the Chief of Naval Communications and I'd gotten ahold of Phil Cate and said "What the devil was that message? I've been up all night. I know I'm not supposed to see it. Wouldn't you let me see it. Just curious." This was really a, Phil was a nice guy so he showed it to me. I can't remember it verbatim but the guts of it was ~~they got~~ that all the big diplomatic entertainment that was going on in Berlin they had run out of liquor. (laughter) They had a crash requirement in for all the liquor that Rome could lay its hands on. (laughter) Well Safford came back from seeing the Chief of Naval Operations and he said "Well I know you've been up all night but as of tonight you are on 24 hour watch and I don't give a damn how many people you have." That so help me is a true story of how the Navy crew went on 24 hour watch.

Q: What date was this? Do you remember?

A: You can date it because ~~Max Welter~~ Matsuoka was in Berlin and he only made one visit there. I would say off hand, oh boy, it must have been very early in 41. Yeah, I would put

about January or February 1941.

Q: That early?

A: Yeah. That's the night we went on 24 hour watch. And as I say steady here? boy it was

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? S. Stel in Washington. Safford did back me up. He produced the weirdest

assortment of chiefs to ~~perf~~form ~~our~~ that watch I've ever seen. At least one of them my own?

I was always convinced was subnormal. He could only work in ? Sal. om ? ? SLOW-MO!

But that's Long John Leitweiler. A great man. A hell of a fine gentleman.

Cryptanalytically I don't know. Did you know him?

Q: No except I know he was a real fine guy.

A: A real fine guy.

Q: Who did you consider were the good cryptanalysts in the Navy at that time?

A: At that time? I would have ~~had in~~ rated Pres Currier and Safford. Now again as Dale

will tell you there's all kinds of cryppies. The bulk of the problems then were linguistic.

I think Pres was unfortunately the best cryptanalyst that they had on on a breaking,

not exploitation. Now when the problem is all known and it's a question of pulling

keys ~~were~~ where the original work is done they had a number of people but most of that at that date was done by chiefs. Regular Navy officers didn't dirty their hands with technical work. That's where the reserve got caught when they came in. The regular Navy officer supervised. The chief did the work. When the reserve came in the reserve came in and ~~he~~ expected to do the work but the regular Navy officer and the chief were mad at him, and he was caught in the middle until enough reserve officers came in to make a difference.

(That's a good point)

Now, essentially if you go over it. You don't think of it from this point of view. In WWII the regular Navy dominated TA. The reserve took over crypt. I don't think by the time that we really got into the war certainly in Washington that there was a regular Navy officer who really was in a key place in cryptanalysis, but they dominated TA everywhere. No reserve ever got to first base in TA. Very funny

dichotomy.

Q: Oh it was a long time even in the field itself before anybody was full time. Safford was the only one until and that ~~was only~~ wasn't until 36.

A: You know one of the things that ~~you have to list~~ you're apt to miss in your histories is that the Navy COMINT was essentially a shore duty for submarine officers. The result of this was that the Navy knocked itself out to support submarines. This is one of the reasons why that, the, no matter where you turn, you will find unbelievable support in that direction. The hell with MacArthur. Support the submarines. Also, you'll find that an awful lot of the submarine officers ~~of the~~ out in submarines, were COMINT cleared which was a reverse problem and some of those bastards used to write things into their logs. I mean they'd be bitching because a ship was late. So and so Maru was due here at 5 o'clock and how the hell can I get over to the next Maru boat if this guy is running late? That sort of thing. I've seen some of those ~~navy~~ Navy logs from ~~some of those~~ submarines, and those logs should have been classified.

Q: You're talking about submarines commanders. What about cruiser commanders? At one time in an earlier tape you mentioned that one skipper, one CO of a cruiser was courtmartialed because he disregarded COMINT?

A: Yeah. That was very early in the war. There was an episode with the landing of a couple of, I think we called them battle cruisers in those days, and COMINT sent the guy a warning that the Japanese were on their way to attack him. It was quite early in the war, and he sent out his planes to look for them. The planes came back and reported that there is absolutely nothing out there. Period. And he was clobbered. Somehow or other his planes missed ~~with~~ the Japanese planes coming in at him, and he was courtmartialed, and it led to, ~~a~~ led to a decision. A very funny decision. I forget about the phraseology, but the guts of it was that you as Commanding Officer you were legally liable if you didn't take COMINT seriously. I think there was a law put out on that subject. I'd said that was about April 1942. So that exists.

Q: Does it? So there was a directive saying if you disregard COMINT you're in trouble.

A: Yes.

(HS: I've been looking for it for six years and haven't found it)

A: It's an ALNAV. Yeah. I remember that episode well. I thought we classified all that. What we got back, because it referred it to the cryptanalysis success and it was addressed only to very senior officers, but there was such a message. But we considered it a triumph at the time. So, Senior officers at that date would read his COMINT ~~comment~~ and then just play it the same old way.

Q: Could we get back and try to clarify a little bit more? What happened on the ENIGMA

(DM: Yeah, Do you want to take a break?)

A: No I don't want to take a break. I want to go headhunting out here.

(DM: I'll have to show you when you get ready). laughter

Q: We had left it then, it was in 42, now, and you were working on the Japanese, and they were still muddling around with the Enigma and the Navy Department

(DM: Yeah that was like like February or March of 42)

and OP20G

A: That was February or March of 42. That ~~was a~~ period of time as I say I came back to

the Enigma much later. Obviously I had friends over there. Again a funny dichotomy that developed The Navy had production and research and no matter what they called it, research was the Atlantic and production was the Pacific. Now Wenger spent most of the war trying to get research into the Pacific. I could talk several hours on Wenger's problems of getting research into the Pacific. They were hilarious, and they were interesting, but research never successfully got into the Pacific, and we just sat there and thumbed our nose. I'll tell you a story about the recovery of Coral that may amuse you if you take a look at early history. I ran a group a mere group of at this point there's couple hundred. Three or four hundred WAVES. Very very few males. It was essentially WAVES and they were damn good gals. Here you got to remember in writing your history is that Washington was female and the field was male, and this was no minor problem particularly when you wanted to rotate personnel. I think when they handed out awards they had over 5,000 WAVES at Nebraska Avenue during the war. If you got a cab downtown and you wanted to get out to Nebraska Ave, you ask for the Comm Station and they'd laugh at you. Nobody knew where it was.
Ask for WAVE barracks D which was across the street and any cabbie in town would take

you there. Well, in any case, my responsibility during the war was any Japanese Naval system that wasn't assigned to somebody else. Now the new system appeared. I got it immediately. When it came into production they would normallly, if it were big enough, they'd form a crew to exploit that particular system and then I'd shake their hand and they'd go their way and we would go on, so practically everyone of the Navy problem types of organizations came out of my outfit. Well, we always knew in advance when Japanese systems were going to change because they sent out the change messages in the systems. "NANANI SHO SHO WA NANANI TSUKI NANANI HI KAIGUN ANGO SHO" so and so would be changed, see. And we used "HI KI" to keep it right on the wall. This system will change this date. This system will change that date. We had them all in advance. I had one WAVE, that's Colby who used to throw wild parties. I wouldn't call them orgies. They weren't because at least they were decent but one of the standing orders on the boards was that she had to get approval from me before she had a party because ~~she~~ she'd take the crew out of action for ten days. She'd come and say she wanted to throw a party, what dates were available?

and we'd look up at the wall and say, well, you've got to have it ten days before this particular change, but this there's a hole in here, You can have your party in there.

Did you ever know Bets. Real brilliant gal. Well, in any case, one day we found ourselves in the awkward position of a full crew reading everything and nothing due to change for about two weeks and I just sat there and looked around and what the hell are we going to do for two weeks? Well, we authorized a party for Bets, and we told anybody that wanted to take his leave to take leave, because he had to be back by this date, set it up and then I remembered Coral. Now what I hadn't known, you gotta remember Aggie Driscoll was in research. Good place for her. About a year before Ingstrom had a brainstorm. Ingstrom had gone to Wenger and got Aggie Driscoll assigned to work Coral, to get her off his back on the Enigma. I heard of this at the time and I went to Ingstrom and protested it that sooner or later the Navy is going to want to get that system and you're putting Aggie on it, putting it on ice, and he said look I've got to get rid of that gal so he assigned her to work Coral. Okay so here I'm sitting

with two weeks without a damn thing to do, and my thoughts went back to Coral. Well, I said well, we got to do something for two weeks. We can't just sit here. Half the crew was gone but we got half a crew left, and this so help me is a true story. I remember that we didn't, when we turned the problem over I had copies of my notes, there had been a couple of cribs on these messages, early New York messages. Now the cribs while they were cribs, were in code, and we had to convert them into Romaji, and I had a couple of good linguists, Jack Hall was one of them, Ruth Haggen was another, said "let's go after ~~those~~ these." Through my old friend Milt Gash, we bootlegged copies of the original ~~cipher~~ ciphers and the material without Aggie knowing it. They sat down and went to work on these cribs. Now you got to remember that these are going from code to Romaji and to Romaji faces that we did not know. I mean well you know what Purple looked like, Well, these guys had a similar type of thing but not the Purple. Much more plain language. ~~It~~ and it was bisected. Well Jack Hall brought this over and he said that guy's from AHLMANADO. This is the way they talk up in AHLMANDO This is about what about it I think ~~they~~ would ~~talk~~ look like. It's pretty close and I marked all

the problem areas. I said OK. If you bisect it where would you bisect it? He looked it over and said "bisect it right there." I said "why?" He said "well it gives you a funny pun, a play on words. In short, by bisecting this particular combination right in the middle it completely changes the meaning when you put the front end on it, see." I said "OK." Sat a couple of my kids down, Gifford was one of them, the fellow was killed out in the Pacific later. He was the son of the head of AT&T. I sat him down on it. This is all the first day that we got all these things. I said "Giff, assume that this thing is like the Strowger machine, telephone selectors lapped the square wire. You couldn't lap a square wire around on yours. Put it on." Well he went away and about one o'clock he wandered back to me and he said I think I got it on. I said "You're nuts. You haven't even had time to look at it." "No. I think I got it on." I said "Go on out to lunch and when you come on back I'll take a look at it". This is still Day 1. He brings the thing back and by God, he's got it on. He's placed the crib, and again it was a favorable motion of the machine and I'm sitting there drooling. Well, to

Howard Campaigne

make a long story short, we got hold of Howard Compaign and Ingstrom. Now Howard

554 Compaign and Ingstrom, Ingstrom I _____ and Howie I swear by that Aggie

was a cripple to them and that we were in a ~~dilemia~~ dilemma and Ingstrom said "Look...

Oh, I did a dirty trick on Howie. I should put that in. Early in the morning, about

8 o'clock in the morning, I'd gone to Howie and said we got a crew without too much

to do. You're working on this Coral. How would you like us to make a study on what

the plain language looks like under it. Well Ingstrom viewed this as a real hand ~~to~~ of

friendship from production to research. He gleamed. Oh he was beamed. See he told

this old friend of his it's the best idea I ever heard. Maybe we can get production

and research together for a change. The only thing I didn't tell him was the only

way I can study the nature of the underlying text was to look at it. That meant I

had to recover the system. He never thought of that. He didn't think that far.

Well late that afternoon I went back to Ingstrom. I thought Ingstrom would have

kittens but he said by God, it's important to the war. To hell with Aggie. Get it out."

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But this when Aggie doesn't know nothing. In all fairness I can sympathize with her.

Well, that day, late that evening because we were ~~on~~ running 24 hours, we ordered the machine from National Cash Register and we told them exactly how we wanted the machine built and said we'll give you the wiring of the maze later (laughter).

End of Tape 1, Side 2

That day, well then - - -

Tape 2, Side 1

But the last line was missing. But there was no sixes ??, in none of that stuff. Well, in any case, we ordered the machine that night from National Cash and set up a hot line to National Cash, which they had there, and every few hours we'd send more wiring out to National Cash. To make a long story short, within one week of the day we started, don't forget we only had two weeks before the Navy system changed, within one week of the day we started, National Cash delivered the machine on the deck and we were able to decrypt the traffic.

On the seventh day. I always took my hat off to Engstrom. Now let me tell you the other side of this story. A guy named Hugh Alexander in England was very interested in this machine and he was trying desperately to get research to put a serious effort on it. He had no views on any thing either. He agreed with me that it was probably Latin squared wired, and he worked up a statistical attack on the machine that if you wanted to turn practically every IBM machine in England and United States on to the thing might make a dent in it.

Hugh Alexander left England to come here to try to sell the Americans on ~~the~~ this major assault by machine. He left England the day we started the attack. He walked in and Howie Campaigne walked him up to my office, and the machine was sitting there running (laughter). This was where I met Hugh Alexander for the first time. Now, we have the interesting situation. We had the machine in my office, running. They had to tell Aggie about it at this point. Aggie demanded that I be courtmartialed. (laughter) This isn't a joke. Aggie demanded that I be court-martialed for wasting government materials and going against orders. Secondly, she refused to turn over the current traffic. That was her responsibility, and we had a stand off for about three days ~~here~~ there where the Navy brass was backing Aggie. Now I'm going back to this Navy brass. This is much later in the war, that I should be courtmartialed. What the Navy brass didn't know and what Aggie didn't know was we had tapped the line that the current traffic was coming in on (laughter) and we were processing the current traffic up in my office with the full cooperation of Ingstrom and Howie Campaign, see. Well, if you could visualize

a ludicrous position, see, with the Navy brass, the regular Navy, and Aggie screaming for my scalp, Hugh Alexander over here trying to sell the Americans to do something about the problem, and us in the position where we are processing the traffic up in my office, with no mission to do it, and our system due to change the next week. Now that was one of the funniest periods of the whole damn war. Did you ever hear that story?

(No)

Q: How did you get out of it?

A: What?

Q: How did you get out of it?

A: They gracefully backed out and the regular Navy finally backed off because we had some hot messages going through there and that's the story of the breaking of Coral.

Q: That must be the time when the business with Driscoll stops.

A: ?

Q: That must be the time when she loses a lot of support then?

A: That was what really broke the back, right there.

Q: Did she ever recognize that you had done the right thing?

A: No. Never.

Never, actually, I never talked to Aggie again but I found myself in a rather

amusing situation after WWII of defending her. Some of her old Navy friends, these characters who licked her boots, were really out to do her in, and I was so pissed off that I found myself in the position of seriously defending her. A couple of these famous names we got around here. When she was down and out they were prepared to kick her teeth in. A little fragile old lady of, she should have been put out to pasture years before, but, seriously, that was what I was doing in the 4th BD shop?. I was told, that.

Q: Breaking the Coral?

A: Breaking the Coral. Because this happened, this really had much more of an impact than the thing. That's one of the reasons I wish somebody would declassify the Coral traffic, because Vice Admiral Aube? Aubay? there in Berlin used to send the military specs on all of the German links. Those are wonderful ~~items~~ Aube messages. But that wall map in Tokyo which went on for a couple of weeks, where he followed every unit, he only had one pin wrong on the entire Western front, one pin, and that was a unit that went on manoeuvers the night before, the only pin that was out of place. But good old Aggie. You see I crossed Aggie twice and I was

lucky. I walked away from the first one unscathed. I don't know what would have happened to me if I had stayed.

Q: Did you go overseas after that?

A: No.

Q: Did you go to Hawaii?

A: No. Spent the whole war in Washington.

Q: Desk Commanding they called it. Desk Commander they called ~~him~~ it in the Army.

A: Oh yeah. As a matter of fact when they tried to bring me on active duty I was rejected because my feet were too big. (laughter) And believe it or not, Safford got an affadavit on me. The affadavit certified that my feet would fit under a desk (laughter). Now there is a common story that you see quite frequently attributed to a wide number of people. I will certify to you under oath that the story belongs to Safford and that is the guy who is rejected when he was ordered to active duty and Safford turned in an affadavit to the old Bureau of Navigation, that's who used to handle it in those days, certifying that he didn't want ~~them~~ him for breeding purposes (laughter). Safford is the man who wrote that affadavit. I saw it. The funniest episode that I've known was

when he took a group of 12 Japanese linguists in to get commissions and they had to go through the eye examinations, and the eye doctor wouldn't believe that 12 people ~~would~~, collectively, could have that bad vision, and he was convinced that they were trying to get out. (laughter) That they were ~~schaming~~ shamming.

Q: Well, how did we get back to a position on the Enigma of such that the British would write to us later on in the war and say you, being the American Navy, have done such a wonderful job on the four wheel Enigma that we aren't even going to bother with it anymore. Were you back on it by then?

A: No. I never had back on the landing Enigma. I knew the people who were working on it very well. Personally I had a number of good friends there.

Q: Who was that?

A: Well Joe Eachus was on it then.

(Yeah well basically it was under Engstrom I guess)

Yeah it was all Engstrom. Bob Ely of course ? rehabbed the wheels. ?? I never thought of Ely as much of a cryptanalyst. Nice Guy. Good mathematician, probably good on machinery, I don't know, I can't judge on that, but not a cryppie.

Q: Well, it got better ~~then~~ evidently ~~when~~ they Mrs. Driscoll left?

A: Oh hell. ? _____ E Ingstrom walked in. (DM overtalk - "apparently..)

(DM: I wasn't aware of it

E Ingstrom walked in and really set that thing up. To me the father of the American

Navy Enigma afterward is Howard E Ingstrom and to me, Wenger delayed it, but maybe

four months to a year, depending on how you want to judge _____ ? (DM...)

Q: Do you recall having any conversations with any Army people on the Enigma

A: We didn't talk to the Army in those days.

Q: You didn't talk about only on Purple. That's the only thing.

A: When the thing was set up originally on the split between the Army and the Navy on Purple as a result of that

(DM... ?)

Q: (DM) Well I remember when I was working on it, you know, I remember you, and I remember

~~Ed~~ at night ~~and~~ once in a while we'd get together on sequences and that kind

of thing where we ~~had no~~ were having a little problem.

A: Well, what happened very bluntly. I don't know how much you know about the real

early ? days ??

(Not much. only what I've read)

They got into this weird split between the Army and the Navy on the

Purple as a result of a flyer in the summer of 1940 and they, the Army and Navy,

frankly didn't talk to each other, and the Purple watch officer on the Navy side and Rowlett on the Army side had special permission as long as they were discussing technical matters to have a free exchange. Now this special permission was ~~we~~ We got into all kinds of weird things. I mean, I would go over to the Army, and get all their French Navy traffic and not tell anybody about it and be working on the French Navy, as a result of my special permission, although I wasn't working Purple anymore. Up at, well, let's take the Jade machine. When we broke the Jade machine, that's another talk-on subject, that's the five row wheel job? (that's the five row) selector machine? which was 25 x 25 Latin wired, we broke that. We were in an amusing situation we couldn't get the parts to build it out of and I got hold of Rowlett, because its the same parts that you have in the Purple. I got ahold of Rowlett and he invited me out to his house and we went down to his basement and down behind a woodpile in his basement he had cached enough spare parts to build a couple Purple machines, in case he ever got blitzed. Well he gave me his cache of spare parts for Purple machines. This

was illegal as hell, I trust you realize. I wasn't authorized to tell him I was reading Jade, but I took this back to the Navy and told them I was out the other night and found these. The first Jade machine was built of Purple parts from the cache in Rowlett's basement.

..... The hearings on the Pearl Harbor I was in England and I asked the Director of GCHQ, and I can't remember who it was today, way back about Winds message. He said that he that they had it. That they had seen it. I walked into the Purple watch on Monday morning after Pearl Harbor. I asked the Purple watch officer if there had been a Winds message and he said yes. well there were several false alarms. I recognize this but knowing Safford and knowing the personalities that were involved in those back rooms, I wouldn't believe him.

Q: Well, you know an interesting point about all that is that you told me about nine years ago you told me that it didn't make an awful lot of difference

A: No it doesn't

Q: whether they had it or not. It didn't tell them where they were going to attack.

A: Well, the only importance of the Winds message is who's lying.

Q: That's right.

A: That's the only importance.

Q: That's exactly right.

A: One of the real tragedies, of course, ~~is~~ was that we were not reading Coral at the time of Pearl Harbor. We just didn't have the resource. If we had been reading Coral I think we would have had much more information.

(DM: Well the thing about I was reading this thing that Brown, Col. Brown was in Corregidor or in Philippines and even after Pearl Harbor had happened they left ~~the~~ their damn planes sitting on the ground. That was after it had happened.)

and they had radar information that they were coming and they left the God damn planes sitting on the ground)

You know what they would do today. They had trouble convincing the right people.

(Yeah. Maybe somebody could have said Pearl Harbor, maybe not, but Philippines, Christ, they had to go to the Philippines if they were going anywhere.

DM (Yeah I, you know, they figured if they hit anyplace ~~but~~ than the Philippines in the first place not ____?____)

What else do you want to ask about the Enigma?

Let's bury this now.

Q: Ingstrom comes into the picture and he runs it.

(DM) Let me get this note of Rosen's . . . . that's one phase I can't quite

A: That's right. Ingstrom to me is the God of Enigma as far as the Navy is concerned.

He came in, he had enough clout, enough knowledge to really organize an Enigma

effort, to really go out to get the money which is no minor point, which is was necessary to finance it and to put it through to a certain degree over Wenger's dead body or in spite of Wenger. And I can underline that!

Now the principle reason that I'm in here is some of the cracks that I've heard about what Wenger has said about this particular period. I know what Wenger stood for in this period.

Q: There must have been some agreements between Ingstrom and the British which nobody else knew about. ~~Wrixxingxxrom~~ regarding solution to Enigma.

A: Well, Ingstrom arrived just about the point that Tiltman was streaking in, and led to Ely, and whoever it was, going back, going back over there, and you've got to remember across this entire period even Ingstrom is staying on ~~the~~ his ear not to get Aggie mad.

Q: I didn't realize the important the role that Aggie played in

A: That's the principle of how this came out.

Q: That's always been very ambiguous. What she did during the war. She kind a, really it looks like, she kinda really screwed

A: Aggie is the key to the Navy story.

Q: She kinds, really screwed things up, if you want to be blunt about it. Yeah. she held things back.

Q: How long ~~did her delay~~ did her presence delay the solution of the Enigma? A couple of years?

A: Delay the solution?

Q: Well, probably a year - - 43?

A: No, let's look at it from this point of view, if Currier had come back when he came back and if the Navy had decided to take on (action??) ? at that point by the time of Pearl Harbor we would have been reading it. I can't conceive of that vintage spending that kind of money, and that kind of research, assuming that the Navy would have been inspired to go after it by about Pearl Harbor day, she probably delayed us four months, three or four months. I may be overly cynical.

Q: Time. You know from the time they really put their mind to working the Bombe these are the questions I asked here and these are the responses so I should retype those so I get the question and response together.

A: Good old A. B. Clark

Q: You know, Frank Rowlett said we couldn't have done anything even if they had given it to us. (DM: No. well, on the Army side, but see we not only didn't have,

you know, we started but, you know, we didn't have any traffic at all and we were in no position to intercept traffic (that's what Frank said) until, you know, we got some intercept operators out in the field and that kind of thing and we weren't really getting any traffic (plus machinery to work), well, but we did start on the machine earlier than the Navy did (Well that's the importance of Rosen) (yeah.) But Rosen makes a statement in there that they agreed with the Navy, that the Navy would go the mechanical route and we would go the relay route, some place in there.

A: You're into the later period that I probably don't know too well.

Q: Yeah. But see when he's saying, see he's saying that the Navy, you know, that the Army started working on the Bombe within weeks after he got back from England with Pres, and there must have been conversations between maybe Akin and Safford in that period of time. Now Akin left very soon after this, like July of 41 so if he did anything it had to be within days after Rosen and Sinkov came back.

(Could it be, Dale, that the British Army told different things to Rosen than the British Navy told to Currier.?)

A: Possibly. Only Currier could tell you that.

(DM: Possibly. According to Tiltman they were, you know, briefed at the same time.

That Tiltman was there when they were briefed and

A: (We could go get those reels) (Tiltman's in town.)

(DM: Oh yeah I've talked to Tiltman about it and he says that he, you know, he was

(That's Right - they weren't

the one who actually got permission to brief Rosen and Pres and so they at first

going to tell us at all)

had a story in which they would not mention anything much about reading ~~of~~ the

traffic, just how the machine worked, certainly not the Bombes or anything and then he got

permission from Churchill to)

I ~~know~~ heard Churchill was involved in that. Pres told me that when he finally did

break down.

(DM: and then they went back and briefed them and Rosen said he saw the Bombes

and, I talked to him on the phone in additional to this, but he saw ~~them~~ the equipment and he

did know how they worked. Now which apparently Pres was not quite...)

He saw the equipment.

(DM: he saw the equipment but not, must not)

He wouldn't have understood it.

(DM: and apparently that was one of the keys up and they even started building

the stuff, Engstrom started building the stuff. The reason he sent Eachus

and Ely to England was that they didn't understand this cold-point

test which was the key to in the reciprocal board

and Eachus had invented a little different technique, which might have been useful

in that what he had used a generalized stecker~~t~~s and essentially got around the

rotation of the fast wheel, which saved the factor, but it didn't save the equipment,

then, you had to try different steckers so you, you know.

A: Those two guys are leaders of ? weakest ? by far

(DM: but apparently when they started building the Bombe they didn't know how

this cold point testing worked and apparently Eachus says, or Rosen implies

that, yeah, they knew how this worked, and the Bell Labs people, they they're the ones

that took over and did the design.

A: I'll tell you a story about this Dale. Day after Pearl Harbor he spent the whole

day swapping desks for steel tables with our RB outfit. He'd been in England during

the blitz and he wanted things that were steel that he could get under! (great

loud laughter).

Capt Safford spent the day trying to find his war plan. He never did find it.

Q: Did you ever, in one of your earlier interviews you mentioned, you said you'd never admit what you did with it. No you didn't say that. You said you'd never admit what happened to it.

A: I probably did! You're not going to get me on a rug on what happened to the Navy plan.

(Pause called for)

John Toland?

..... is working on a book on the Pearl Harbor period with ~~the big~~ particular emphasis, I gather, on what really did happen and what's happened to the people who were involved later.

Now, he takes a point of view, which I happen to support, that everyone of the Pearl Harbor inquiries was biased in some direction, and to a certain degree prejudged for what the answers were going to be. Taking all of them in focus simultaneously and the information which was later available both here and in Japan, he is ~~going~~ trying to sort out the true story of what happened. I frankly am interested in this. I have seen

a number of books put out recently on the Pacific War. The Atlantic WAR board they covered fairly well. The Pacific war, on the other hand, is really coming out with a number of books and some that I've heard of, that are in the mill, that are absolutely downright lies, in every sense of the word. I'm still boiling over the Van Der Rhoer book. It's vicious in every sense of the word. Now from my point of view, I think the time has come when the Pacific War, not the great sophisticated techniques of the years or your hot points, or things of that sort, but the day-in-day out war, can really come out in the open. I tried a test in NSA in which I wrote reviews for a couple of books in a article on Japanese Navy cipher machines. It was a very carefully designed test to see just exactly how far NSA was willing to go. Now Jack Harney had a meeting in which I was attending on this subject and what he told me bluntly in summing up the whole meeting (he wrote a memo for the record on this) was they were worried about me personally being involved. As I pointed out to him, nobody in the outside world knew me

and secondly, the things that I'm doing, my name wouldn't be associated. I'd be providing raw material into John Cohen but I got a kind of a general offer that anything that I wanted to write about the World War II period, as far as they were concerned, was quite okay, that they wouldn't object to it, but they would prefer to see it first. But they wouldn't object to it. I myself add a caveat under it. There are things about the WWII period, many things that I would prefer not to see out, that I don't think should get out. I'm a little more cautious than they were. Now I don't think that NSA, in all due apologies, can get itself into a position of official releases on the war. I do think that NSA could work with, or support or provide backing, to authors like John Cohen who want to make serious studies and to what went on from the historical point of view without in any way, annointing, blessing or condoning it, but from the Navy's point of view, everything that was done by the U.S. Navy in World War II was done by Hamm Wright and Pappy Dire in Hawaii, between swims with Admiral Nimus, and if you knew these

two gentlemen as well as I happen to know these two gentlemen you'd appreciate the humor of it, but this is the way that it is going to get recorded in the history books, and I feel more kindly about Friedman then I do about these two clowns. And that's saying a lot (laughter). But the Navy story of WWII is not a story of individuals. I went over this in my book review, which I think you said you read. There was a system and it was a faceless system. While there were a number of prominent individuals, you can't credit any individual with winning the Battle of Midway, or of breaking any major cipher system. ~~They~~ These were crew jobs. Christ, some of the things which we used to break, well, let me give you an example. Japanese Navy had a lookout position on Motupena (Motsupena) Point, Bougainville. Now who gives a good God-damn about a lookout on Motupena Point on Bougainville except for one thing. He was the only guy in the entire Japanese Navy who thought that midnight was four zeros. Everybody else in the Japanese Navy had been raised that midnight was 2400. Now, being a weather station, as well as a lookout, all

lookout's had to put on weather? stations, he had to come in with a midnight weather, in which he used tomorrow's keys. Well, because of the callsign system, and the system in which he used, if you could hit MOTUPENA's lookout at midnight, when he came up, see, you could ~~pick~~ set up all your callsign banks for the next day and you wouldn't get another single message for five hours until it was daylight somewhere in the Pacific. If you got MOTUPENA's by the time the first ship came up in daylight you could read his call immediately and you're reading the entire Japanese Navy for the whole day. Good old MOTUPENA lockout. You always used to put weather when he gave a report and we had a long ballad ~~because of the~~ which goes into hundreds of verses on MOTUPENA lookout. "It's raining now at MOTUPENA (MOTSUPEN UN RIO TEN SOKU EIGHT). upon the sea has just been seena TEKI KAN TI DAU SHI EIGHT"

Well we guarded this guy Jealously. All our COMINT in the whole God damn Pacific was dependent on this guy who thought the four zeros was midnight and

and a bastard named MacArthur shot him up and wiped him out and occupied the point.

The whole U.S. Navy was under orders. "Don't do anything to disturb MOTUPENA lookout." (Sounds like lack of coordination!) (laughter) ~~It seems like~~ It's things like that-that _____ won the war. Believe me, at midnight, Tokyo time, every COMINT station in the Pacific, no matter what their intercept assignment was, was calling ~~on~~ MOTUPENA lookout. Now, seriously, we ~~were~~ ran in a completely fused effort. I mean another similar one was JI SAKU SEN BUTAI up the Yangtze River. The only guy who could hear the _____ Butai up the Yangtze River was the outfit at ~~of~~ Happy Valley. This was way up in low voltage but he had routine proforma messages, which we knew, so any time a system would change, Washington would immediately ~~assign~~ slap everything we had on the _____ Butai. Then we'd break the system, give the keys to Pearl, see. Pearl would read the traffic and Hamm Wright would go down in history from reading his COPECK (KOPECK) messages. This is what I'm getting at. The history of the Navy in the Pacific is the history of a system, and must be written up as a system. I think the Army had much more in the way of prima donna's

with all due apologies again, than the Navy in the Pacific and Wenger never understood this. He was always coming over to try and do the Pacific scientifically. You couldn't do the Pacific scientifically because the Japanese weren't scientific. You had to out think them in Japanese logic. We had a crisis late in the war at a critical point late in 1944, when a system was compromised and they knew it was compromised, and I went to Rufe Hendon ? who was one of my team, Japanese thinkers. I said what's going to happen, and he looked it over and he said well ? DIN SHIN KAPSHO ? in Tokyo is a lazy bastard. Faced with this situation he's going to remember that back in 1942 had exactly the same situation so he'll go back to 1942 and find out what he did then, see, and he'll get the same message out and all he'll do is change the dates. That's what he'll do. So we went back to 1942, got the message, changed the dates, we changed the JŌ WAN (CHŌ) and we changed the TSU KI and the HI and used it as a crib. We broke the new system. You get a mathematician to take an attack like that. Do you see what I'm getting at here?

(Yes. A little analysis)

Knowing your target was a very appreciable part of the Pacific war. Oh there's wonderful stories about Engstrom's efforts to bring mathematicians into the Pacific.

(chatter)

Gleason Gleason.

Andy Greeson. Oh stories we could tell you on Andy Greeson. Incidentally another one on the same general subject. I said that production was largely female WAVES and largely Pacific. Nothing else outside of the Pacific. Research was almost exclusively male and was ~~Army~~ on the Atlantic. To be a Bombe operator, by the way, you had to have sub-normal intelligence. This was a requisite. They tested it. Anybody whose intelligence . . .

(DM: Anyone who knows too much. They didn't want them to do routine work.

No. they didn't want them to realize that zero to twenty-five totaled 26, which could represent ~~the letters of~~ the alphabet. At the end of the war when they applied for civilian jobs, all you had to do was to write "Bombe Operator" and you were out. In any case, we had all these Waves, who were mostly just graduated from college and the really good colleges. Damn pretty gals and R&E had all these boys also just graduated from college and a little bit brainy, and Engstrom used to send up these gals to these boys to try to figure out how they could mechanize our operations and such ? kids

like Andy ~~Greeson~~ Gleason, and such, and Oh boy. We had one episode and so help me, Boy Scout honor, this is a true story. We set up one of bright young boys, brilliant mathematician, who immediately became enamored ~~with~~ of a couple of our Waves. He just sat there with his eyes all popping out, but, in any case, one day he didn't show up for work, ~~after~~ after about two weeks, and I called Engstrom, and said "What happened to your boy. He hasn't shown up?" and they started an investigation. They caught him out in Bethesda. He was in the nut ward out there. He had a complete breakdown and Engstrom went out to see, to see what the trouble was and he said "~~You're~~ They're awfully nice to me, they're pleasant to me, and, boy, those girls are really something, but they listen to everything I say and when I give them advice, they listen to me very carefully, and then they go out and ~~they~~ do exactly the opposite and it always works. (laughter) We were just irrational, and I'm not kidding. He went off his rocker.

Engstrom is dead himself isn't he?

(Yeah)

You should get Engstrom if he were alive.

(Is he alive?

No, he's dead)

What about Ely?

(Ely? Don't know about Ely.)

I don't know either.

Q: What about Eachus?

(He's well. He's up in Boston area)

A: Eachus is a man to take your hat off to.

(Yeah, Joe he was, he worked like a dog)

Yeah I put him in the near genius category. Individually there are some awfully nice guys on the Atlantic side but Wenger was always trying to force research into the Pacific and everytime he'd get it he got into trouble.

(I don't know when Joe started in the business. Do you know?)

I would put him as coming in about the same time as Engstrom and I'm not too sure just

(Yeah well you know I figured he had only been there three or four months and he really picked the thing up fast.)

No No.

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No. He was one of the great brains, but to get back to me, as far as the American Navy is concerned, the real and only hero is Engstrom and Engstrom personally. He was a guy with vision and imagination and leadership, if you want to call it that, and anything that happened before Engstrom is better forgotten, except that I resent some of these cracks that Wenger makes about my role in that particular period.

I notice that he doesn't refer to Aggie, except that remark as the "best cryptanalyst." (Yeah. This is why we're doing it, number one, is to set this record absolutely straight even if it's only for us.)

You can't, you can't visualize the climate around Aggie.

(I had no idea)

Right up into 1943 she wielded that power. By 1947 all her Admirals had left, had all retired. She lost her clout and then these bastards who were licking her boots were ready to kick her out because she kicked them. They didn't have enough guts to say boo to her when she was in power. Now all kidding aside Friedman never

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End of interview