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Interview I with Mr. Francis A. Raven  
Tuesday, 28 March 1972 10-12

CA History

Mr. Raven explained that it was CDR Safford's own idea<sup>1</sup> to train some of his junior officers in cryptanalysis, so that in the event of war, we could always fill in as trained crippies, but he had a little trouble developing cryptanalysts. He devised a course. There were 12 lessons in the first course. We had to sign on our honor that we would not look at any text on CA. Course was geared to teach the more classical ca; to teach you to think, rather than do practical diagnosis. The first 12 lessons were without text. Safford hoped that one student in 100 would be the one he was looking for. You were dropped if you did not finish. This eliminated diagnosticians. (Total course consisted of 2 mono-alphabets; 1st 16 words and last 16 words by 5 regroupings.) Within the set of lessons there was always one which (we found out later) would be impossible to do, but we didn't find it out until we had worked and worked on the set, sending in our finished products to him. Finally, when you had tried everything, he would call to see how you were coming and you'd tell him you just couldn't get this one lesson...he would say that he had'nt expected you to...because it was impossible!

Raven was the first guy to start the secondary crypt course which consisted of six problems of inter-related types; no text; no matches. On the secondary course you were required to turn in answers. Even if impossible, you had to provide diagnosis. Safford would correspond with you for months over a problem.

Out of the six problems, I solved five one of which was the "impossible" one. Do you think I got credit for the one impossible one solved? Of course not, but neither did I get credit for the one I couldn't solve. I did 50-100 classified messages "off the wall" (messages were up on racks on wall) and sent them to him; Safford wanted people who could analyze.

I had known President Roosevelt when, as a kid, I had gone on Saturday evenings to the Roosevelt home, the Governor's mansion (he was then Governor of New York State), to watch movies. Mr. Raven recalled that F.D.R. after each movie showing would ask the children present what they wanted to see the next week...that way he could keep abreast of the "good" movies!

F.D.R. came to Washington (as President of the United States). One weekend Mr. Raven was in Washington on a college weekend, and he saw F.D.R. again for the first time in many years. The President was riding in an open touring car and Raven and his fellow officers (Ensigns) were on a street corner when the car drove by. They all stared, and recalled seeing F.D.R. turn completely around in the car as he passed them, do a "double-take" when he saw them. Mr. Raven has often wondered if he was thinking, "What are those kids doing in the Navy?"

Mr. Raven recalls how extremely hot it was in Washington in those days before air conditioning, so hot in fact that every day in the summer when it hit 90° or over, they would be excused. He was a newlywed...he recalls that many days he would get to the office around 9 and be leaving the office around 9:30.

In 1940 he was sent to NSA, had active duty that fall, the last reserve officer who volunteered! It happened this way. Safford wrote Mr. Raven a letter which said that the next week he "was going to have the authority to order you in. Do you want to volunteer or wait?"

Mr. Raven volunteered and reported to 1629 Nebraska Avenue, the Main Navy Building downtown. CDR Safford was in charge; the EXEC was Densford; Miss Feather was the secretary, and CWO Deffert was in charge of the Machine Installation.

At that time COMINT was considered a branch of Naval Communications but COMINT stopped on decryption. All of the linguists were in ONI, NOT in COMINT community. COMINT produced decryptations; ONI scanned material for what they thought was appropriate

The mail designator changed four times. In ~~the~~ late 1940 the effort was very small. We actually were working on the Japanese Navy problem. It was divided between machine support: Washington and Philippines and Guam and Philippines (Cavite??). Washington people worked systems after they expired 1-2 years; they did search traffic and machine traffic. They would run for two years and try to reconstruct later - known as JN-25.

Pearl Harbor - ADI - MAT

Guam - Weather

Philippines - ?

CDR Harold Chisolm, \*G Group, was in charge of the JN-25 party in Washington. (Here Mr. Raven left conference to personally check with his secretary to see if he could get Chisy' to come talk to us) but it was too late; he had already gone.)

(Other personalities<sup>pl</sup> listed by Mr. Raven were:

Aggie Driscoll

Chief Gasch <sup>worked on</sup> (German Navy)

Mrs. Eunice Rice <sup>worked on</sup> (Italian Navy)

Story re Eunice - she was a very good cryppie, hard core, though, and never let you forget her family was all Navy...when she became pregnant, we called her "Puffed Rice"!

After the Battle of Midway, Japs reached conclusion that we were reading ADI and MAT. We WERE NOT; it was the only one the Chiefs threw out; we divided systems and worked historically.

About that time, LTCDR Safford told Mr. Raven he had taught him all the crypt he could teach him. Mr. Raven then learned, on his own, nautical German for World

\*CDR Harold V. Chisolm, GO3, 4727, retired 23 March, possibly available thru April 72. Esther wrote him letter at his home, 7 April, requesting interview, if possible

War II. When he went on active duty in 1940, they asked him to do Japanese diplomatic - this after he had been studying very diligently on the German. So, Mr. Raven was assigned to the support watch - even days - to do diplomatic traffic; every emphasis was put on Purple.

CDR Saylor, in "gun factory", had built analog machine. It was in a room and Mr. Raven's boss told him to go there and not to come out "until you understand this machine". Raven said he stayed there two and a half days and came out for his boss. He says he understood the machine well - he had taken the whole thing completely apart. (When Mrs. Carroll asked who put it back together - Mr. Raven said CDR Saylor did!)

BACK TO PURPLE

The Army had broken into the Purple machine in the summer of 1940; then there was a bad fire. In this fire the Army COMINT organization almost lost "pants" - sabotage. In late 1940, they did split Jap dip problem between the two services: Army had odd; Navy had even DAYS on all Jap dip - between A and N - intercepted traffic. He recalls Fort Shafter; he recalls intercept being taken on Guam and Philippines; Guam - faster intercept station...U.S. Station.

*I think it was reverse*

COMPETITIVE HOSTILITY

The Army and Navy were both hostile to each other, especially on recoveries of the Purple. Mr. Raven, being Navy, had special 'dispensation' in those days; HE was authorized to discuss laterally with his subsequent counterpart number in the Army problems for clarification on pertinent items/<sup>and just</sup> to keep apprised.

Army was "X"; Navy was "Z"; Mr. Raven mentioned also the Navy ECM - workhorse cipher machine. A little story here - the Army COMSEC Stations did not have one and they thought the Navy should give them their machine!

1934-1935

This was a very interesting period in Washington, Mr. Raven recalled. On the RED machine, they weren't getting to first base...in his book, Mr. Friedmann mentioned this...claiming that the Navy broke systems but never told him. They did break one additive system, Mr. Raven recalls.

On the PURPLE machine we had daily-changing signals. Then there were "jig" systems and SNOO Codes. There were double additive massed ship systems (15 total Jap diplomatic systems; several hundred daily). We had a straight daily watch; it became routine; the three of us working for him then were Chief Turley, Maisie\* and myself.

The mail basket was always full; we were expected to take from it ALL messages and READ them, not just toy with them. So as Mr. Raven remembers, we were in the habit of arriving very early in the office, taking the shortest messages from the basket first! Mr. Raven commented that it was a good way to get people in the office early.

LONG JOHN LETWEILER

Mr. Raven told of the time he was at home in Washington one evening, and about 1 in the morning, a long black limousine drove up to his house, a character in a black suit got out. He was tall, thin and carrying a long cigarette holder. It was saturnine Long John Letweiler who told me I had to get back to work at once; I quickly dressed and took him back to the office. In those days, we wore civvies. At that time, Mr. Raven recalled, precisely, Mattsomoka, Japanese general (?) was visiting Hitler, Germany. All intercept, except Shamrock, came in through Naval communications; CNO came into Navy coderoom early in the evening about 9 p.m. Had one fellow decrypting Jap diplomatic with every FRANTIC designator - Rome to Berlin traffic. Then the CNO called over to say CDR Safford was waiting for the translation. Raven was the Purple Watch that evening, but all his CA materials \*reportedly MacArthur's mistress

were locked up with a time lock not scheduled to open until 6 a.m. All he could do was take frequency counts; he did recover the signals. Finally, the a.m. people arrived for the day. Mr. Raven recalled that "we got the message out and rushed it through for ONI translation. Safford rushed to Naval operations; CNO was on duty all night - 9 p.m. to 6 a.m. The following long-awaited message concerned a FRANTIC to Rome for more liquor for the shindig in Berlin for Hitler and Mattsomoka!" That was more or less the establishment of a 24-hour watch beginning that night and for 7 days a week from then on. However, the Army worked straight days.

First Formal P Watch

The first formal P Watch was formed about December 1940; original P Watch consisted of 1 ensign, 1 chief, assisted by 2-3 clerks on day watch. Mr. Raven recalls Chief Turley, Ensign Wegenan, Mr. Fox, Mr. Perriens and Mr. Lynn.

MR. RAVEN EMPHASIZED THAT EVERYTHING TODAY IN THIS BUILDING (current NSA OPS Building) comes out of the PURPLE WATCH, established then:

On a 24-hour basis in COMINT communications, we established (first thing) through Naval coderoom.

There was no separate crypto. We did have teletype but physically we were a day-time operation.

In addition to Jap diplomatic, we were required to scan messages on inside, and if anything looked "hot" we were under orders to call in linguists from ONI. Noone knew Japanese.

We did the cryptanalytic recovery.

We manned tele - incoming traffic.

We ran SHAMROCK.

We did photo.

We ran alternating DF net; plotted the grids.

We sent the recoveries to the British on readable systems.

Every message which went in and out, we often had to personally encipher or decipher.

We handled all intercept control.

We stood War Room Watch in the downtown Navy Department Building, 6th Wing, Third Floor, throughout most of the BISMARCK. (The junior officers stood watch for CNO - 1 officer and 1 enlisted man did all this - up until early summer of 1941.)

PRESCOTT CURRIER

Pres Currier was an ensign in the reserve. In winter, Christmas 1940, Mr. Raven recalled that Currier and Weeks were sent to collaborate with the British. The PURPLE WATCH took over communications with the British; British insisted on using one-time pad and then we had to add an officer to do this...he became TCOM. The British insisted on our conducting business with those they knew, and since Pres Currier had been there and they knew him - he was it. He handled messages TO AND FROM PRESIDENT ONLY, with a copy for CNO. Mr. Raven set up code groups in the book; the British had a book for the Ensign; American book - the CNO worked for two weeks.

(Later Mr. Schorreck and Mrs. Carroll taped a session with RETIRED CAPT PRESCOTT CURRIER)

Summer of 1941

In the summer of 1941, one by one we kept adding officers to the watch, plotting bearings...thus W was formed. We had an officer then for intercept control, forming another unit. That aspect of the PURPLE Watch became so large we added an ensign to take care of it. We did no current work on the Japanese Navy; the Jap Dip was being read faster on the PW than the Chiefs were reading it. However, the PURPLE WATCH never grew oversize because other things kept splintering off, such as:

Here Mr. Raven went into discussion of

DIFFERENCES BETWEEN SAFFORD and ROWLETT

Mr. Raven described CDR Safford and himself as being of the same school of thought with Mr. Rowlett and Mr. Friedmann of another school of thought. Much difference of opinion was noted there; many basic fights with each other over manner of reading systems. There was nothing easy, Mr. Raven related, about target cipher systems. We felt you had to understand the system in order to read it. Rowlett felt "so long as you're reading, you care".

We tried to reconstruct the precise system that the Chiefs were using; we had to know every scratch on the Jap machine, what it looked like. We wanted to understand what the Jap was doing, and not what we were doing. Every two months a change message came out. We wanted to reconstruct every document (OCT 1940) the Japs had in the beginning; Rowlett was right due to the amount of traffic, but in late 1941, Japs went into a lot of tricky changes, and there was no longer straightforward usage of machine.

By the summer of 1940 we could have duplicated that machine; the Army thought we were nuts and told us so. Friedmann and Rowlett listened to us. In closing this segment, Mr. Raven remarked that we would not have read PURPLE if it had not been for Navy research...ASA, however, would have been out of a job. He said the Navy knew the order as/as <sup>well</sup> all recipients.

#### UNISELECTOR and the COCKROACHES

The Japs built a cipher machine out of nothing. It looked like a dial machine; had selector values after 25 stops. In the Pearl Harbor hearings, a machine point was made because a message was three hours late in processing prior to Pearl Harbor. This is what happened, according to Mr. Raven. It was due entirely to cockroaches ON the machine. Believe it or not, the cockroaches were 5-6 inches long in those days; the Navy Department cafeteria was overrun with them. One Arthur Brown was

deciphering message as the #3 wheel flipped over. This occurred because a Navy Department cockroach crossed at that moment and unwound 500 selections. This made it necessary that Brown take out the assembly, clean off 500 contacts, putting them in solution and soaking them, then reassembling them in random order. The #3 wheel was out and back in 3 hours...exactly the time delay in the message!

At this point, interrogator asked if Mr. Raven's group was aware war was about to start - or was imminent? Mr. Raven replied that from April on we knew from the tone of the messages reflected in traffic..

He added that in this period of time there was NO overhead...we were busy. It would be not unusual for Safford to appear at 3 a.m. at the office and if you had an undeciphered message in your basket, you'd better have a good reason why.

(According to Mr. Raven, Mr. Safford is still living and in the area though he is in failing health. He is reportedly doing research for a book he is writing on Amelia Earhart.)

## THE SAFFORD DOG STORY

Safford had a pet fox terrier which he dearly loved; it was the "apple of his eye". He was going to be away for two weeks and asked us at the office, had the terrier with him at the time, if we would please put the terrier in "such and such a kennel" for him, after he departed. Well, Mr. Raven related, after Safford left, none of the other guys nor myself could remember which kennel he had said. We looked in the phone books, and at one point, thought of calling to see which one he had used previously, and then, light dawned: "Why not keep the dog in the office for two weeks?" So we did. After the two weeks were up, and we had taken very good care of the terrier - took him walking several times a day, fed him, etc., and really he was a good dog, so we didn't mind - Safford returned, came into the Office, and there was his doggie. He sat down and CRIED. When he finally stopped, he explained that he had been in the Navy a long time but that no one (no other staff) had thought so much of him to have his doggie there when he returned, and he was just overcome with happiness. WE NEVER TOLD HIM THE DOG HAD NOT BEEN IN A KENNEL, and I charged him \$10 for the fee!

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~~CONFIDENTIAL~~

Mr. Raven's Recollections re the Famous WINDS Message

Everyone in the world had an open code message which meant something, Mr. Raven explained. If the BBC had an item on the aircraft production in the Midlands, it meant that we were at war with Japan; if the Dutch announced the birth of a new crown princess, it meant we were at war with Japan; for weather configurations you had a series of 12, each meaning the same thing: War with this country.

Then there was the yellow chrysanthemum code (by cipher) explained during one of the Pearl Harbor hearings.

Mr. Raven said he asked at GCHQ about this...there was a WINDS message by the British which confirmed my impression. Mr. Raven firmly believes there was a WINDS message. In fact, when he came into the office on that particular (he didn't specify) day, he asked whether or not there had been a WINDS message...it had been expected because everyone got such messages as a matter of course.

From here Mr. Raven launched into the FRANCIS BROTHERHOOD Story (which may partially explain):

In charge of the PURPLE Watch Officers at that time was one Francis Brotherhood, to quote Mr. Raven, "a stupid jackass", who prided himself on being a Chief Linguist (who later got onto the Purple Watch). Later on during World War II he developed code recovery validity factors. To make a long story short, he said: "There were Washington recoveries, Pearl Harbor recoveries, and 'Brotherhood recoveries'." WINDS messages did come in but Francis Brotherhood missed "the one". When it was discovered three hours later, then, Mr. Raven questioned, "What do you do with it?" You're in a work situation - you either have it or you don't. And anyway, "Why would you translate this?" He answered, "you DON'T; there is NO REQUIREMENT to translate it." Wenger said he never saw it. Safford tried to twist this into a great production. As a technician he was brilliant, but he tried to make intelligence determinations which was none of our business. Later Safford transferred out.

More on BROTHERHOOD

Brotherhood was a lousy linguist, per Mr. Raven. He was working on regrouping a codebook, using a captured Japanese codebook. Francis was a scholarly oriented type. My favorite story re Brotherhood was the Hepplewhite sideboard story:

Mr. Raven himself is a collector of Hepplewhite but will not have anything less than the genuine thing in his home. He was told of a sideboard which he and his wife went to see; when he checked it over he found it was veneer and they were asking \$700. Mr. Raven said he would not have given them even \$300 because it was not solid. Anyway, later, Mr. Brotherhood came to Mr. Raven and was ecstatic because he, who also dearly loved antiques, had found and purchased a genuine Hepplewhite sideboard; he wanted Raven to come see it. So, Raven thought he'd have a little fun with Brotherhood. So everyday for a couple of weeks; Raven would (at Brotherhood's request that he determine the validity of the piece) ask Brotherhood, "Does it have such and such a number on the back" (Raven knew the exact number having already checked it out in the store); or "Does it have certain type of brass drawer pulls?" Brotherhood, after one of these innumerable questions, would go home and check the sideboard out, and return the next day excitedly saying everything so far was in the affirmative. The payoff came when Brotherhood said he'd paid, and Raven said, "Let me guess - \$700?" Mr. Raven said he could never have told him it was not genuine.

About 20 years later, Mr. Raven attended the Ambassador's 4th of July Party  
British  
with many/notables being present, including the Lord Mayor of London. When Mr. Raven was introduced to him, the Lord Mayor said, "Raven, oh yes, aren't you the Hepplewhite expert?"

Mr. Brotherhood went on to a job in the State Department (COMSEC) business.

SAFFORD

1. CDR Safford always got the three of us mixed up - George Lynn, Schultz and Raven - we were all in the same building. He confused our names; we never knew whose fitness reports we really got. Once he wanted one of us for a certain position. He went to COMSEC and asked for George Lynn, but meant me, Frank Raven. So when Lynn reported to him, he looked completely dumbfounded.

## 2. HIS WAR PLAN

Safford had made up his own war plan; it was SECRET, and he was all prepared for war. The day after Pearl Harbor, he started searching for his war plan. When the smoke had died down, he went to pull out his war plan to implement it, but he couldn't find it. He tried to find it, we all tried to find it. Miss Feather, his secretary, who followed him notebook in hand, hanging onto his every word, couldn't find it. One by one Safford had us empty out every piece of paper in our desks in FRONT of him, looking for the War Plan. HE NEVER FOUND IT. (Mr. Raven had such a twinkle in his eye and chuckle when he told this story, that one felt he knew perfectly well what had happened to the war plan, but when we asked him, he said he'd never tell!)

## 3. ALLNAV 1942 EPISODE

Heavy cruisers in early 1942 off island in South Pacific (COMINT warning on attack) were attacked and sunk. Safford suggested that this was COMINT and that Senior Naval Officers will be held responsible for not taking action. There were 2 or 3 heavy cruisers; the CO was court-martialed.

~~UNCLASSIFIED DISTRIBUTION~~

Then there was the Navy War Plan which contained information on what we would have to do, changes re Pearl Harbor, post Pearl Harbor, etc.

#### PERSONALITIES and RELATIONSHIPS

Various units which existed had strong and sometimes strange relationships between the Atlantic and Pacific Theatres - the principal channel for information to the fleet with through Hawaii, Admiral Nimitz, etc. People who developed the product claimed credit for solution but the better crypt work was done in Australia. Mr. Raven added that with our limited resources at our disposal, all effort was put on diplomatic. Information re Pearl Harbor was in Attache's - NOT READ - for three years. Nemurra (sp?) "kept in the tunnel"; none of the really sensitive messages went through diplomatic ciphers. Manpower was very simple; if you were married, you stayed in Washington; if you were single, you went to Corregidor.

Ensign Schultz, later ADMIRAL Schultz was message courier; he would stand while Roosevelt read the messages. KRAMER was polished Japanese linguist, a perfectionist - wonderful on dip traffic, not on Naval traffic. Became in 1941 a LTCDR when he was promoted.

Mr. Schorreck asked Mr. Raven if he remembered signing anything like security-type papers. Negative, he said, not aware of legislation of that type then; never been cleared, but at that time if you were an officer in the Navy, you were automatically cleared as an officer and a gentleman, and you did not have to sign anything.

Dr. Engstrom did not have but Navy SAFFORD had concept of U.S. COMINT Organization he wanted a National COMINT Service, but because of cost and complexity, it should become national. Billy Friedmann fought "tooth and nail" to keep it <sup>??</sup> as a Service -

Revised in 1945 with Safford fighting tooth and nail to become Navy time conscious more so than the Army. After doing even days, our orders were to process any Army mail \*Malinta Tunnel on Corregidor built on funds appropriated for possible barracks by Congressmen; and we couldn't understand why we hadn't more facilities!

Larry McKellar, now G7, April 1941 was taught by Mr. Raven to use the PURPLE Machine. He handcarried it to Corregidor; was Chief of PURPLE Watch on Corregidor; the CRITICOM system in those days was a rock dropped on tent with message attached to it. You could call it "local coast support", to General Willoughby, G2 tent.

Judd Meyer (now retired - presently in Alaska on leave for 1-2 months) and CDR Chisolm (now retired - Esther wrote to both of these gentlemen), worked on MAGIC. An original and a carbon were made up; the President lost one message; we found it, retrieving it from his wastebasket, and cut him off distribution!

#### THE GEORGE LYNN STORY

To this day I (Mr. Raven) owe a debt of gratitude to George Lynn that I can never repay. After a talk with Safford, 1 December 1941, George relieved me; he outranked me, and in the best Naval tradition, he was put in charge as Chief of the Purple Watch. Mr. Raven then was detailed to another job, with George Lynn under his instruction still. Consequently, Raven's name does not appear on any roster of the Purple Watch. George Lynn went through six or seven Pearl Harbor hearings, was crucified in the hearings, but never indicated once that he was not on the watch at the time of Pearl Harbor.

At this point Mr. Schorreck asked Mr. Raven if he was aware of the forthcoming Pearl Harbor attack in any way. Mr. Raven replied that it was obvious from the traffic that the Japs would attack somewhere soon; 'original' order was 28 November and war was only a "matter of hours". In the diplomatic traffic we were reading, Mr. Raven said, NOTHING said we <sup>(meaning JAPS)</sup> would attack Pearl Harbor at dawn - no, nothing of that sort.