Description of document:	National Security Agency (NSA) Oral History of [Redacted], NSA-OH-1988-11, 1988
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Source of document:	Mandatory Declassification Review National Security Agency NSA/CSS MDR Appeal Authority P133 National Security Agency 9800 Savage Road, Suite 6881 Fort George G. Meade MD 20755-6881

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

Serial: MDR-114594
18 August 2025

This responds to your request of 25 June 2022 to have *"Oral History of [redacted]," NSA-OH-1988-11*, reviewed for declassification. The material has been reviewed under the Mandatory Declassification Review (MDR) requirements of Executive Order (E.O.) 13526 and is enclosed. We have determined that some of the information in the material requires protection.

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

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

Please be advised that the responsive document includes other government agencies' information. Because we are unable to make a determination as to the releasability of other agencies' information, the subject document was referred to the appropriate agencies for review. At the time of this letter, the responses are outstanding. However, we were able to isolate the other agencies' equities, so we have protected them using the other government agency (OGA) redaction code.

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

Sincerely,

Jacqueline M. Amacher

Jacqueline M. Amacher
Chief
Declassification Services

Encl:
a/s

OHNR: OH-1988-11 **DOI: 23 Aug 1988**

TRSID: [redacted] **DTR: 24 Sep 1998**

QCSID: [redacted] **Text Review:**

INAME: [redacted] **Text w/Tape:**

IPLACE: NSA, OPS1, Ft. Meade, MD; DEFSMAC Office

IVIEWER: TUCKER, Helen; [redacted] FARLEY, Robert

[Tape 1, Side 1]

Farley: Today is 23 August 1988. Our interviewee: Mr. [redacted] Mr. [redacted] an expert on Soviet rocketry, began his career in the early 1950's as a United States Air Force enlisted man assigned to an overseas site charged with monitoring Soviet missile activity. He later joined NSA as a civilian in an Air Force operations center that was later absorbed by DIA. When the SIGINT Missile and Astronautic Center was established in 1963, Mr. [redacted] joined this fledgling organization, which later expanded into the Defense Special Missile (and) Astronautics Center a year later. Mr. [redacted] has served in a variety of positions in the center. And following his planned retirement from DIA [redacted] he may return as a consultant. This interview is taking place in DEFSMAC in the Operations Building at NSA. Interviewer: Bob Farley with Helen Tucker from DEFSMAC. Mr. [redacted] desires that the classification of these two cassettes be ~~TOP SECRET CODEWORD TK RUFF ZARF~~. And this is NSA Oral History Interview Number 11-88. (TR NOTE: Taping stops briefly. When taping resumes, Farley is speaking as follows:)... give it a go and, as I said, try it.

[redacted] O.K.

Farley: [redacted] what we want to do is, as I said, is sort of run through your career - as it relates to the missile problem.

[redacted] Yes.

Farley: And the establishment of the DEFSMAC... And the daily routine. Anything that would be of interest in Helen working up the history of DEFSMAC.

[redacted] O.K.

Farley: And again, we'll talk at any level that you like. If it's too sensitive, just sanitize it, if you can - so that Helen will have it on record. And we'll also have it on record in the History Department.

[redacted] O.K.

Farley: So [redacted] what we'd like to do is start with sort of a personal background. When you came into the business. Whether you came in from the military. And your first job.

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~~Declassify On: 20291123~~

[redacted] Yes.

Farley: So, if you'd just pick it up right there. We can start off...

[redacted] I certainly did come into the business through the military. In fact, my first exposure to the missile problem was when I was over in Turkey while still in the Air Force. Went back even further, I guess. When I first came in, I was sent to Russian Language Schoo[redacted] And did an overseas tour up in [redacted] in Japan. That, of course, was before the missile era. We watched long-range bombers and fighter aircraft. Came back to the United States after that tour. And went to an advanced Russian School [redacted] for another year. And from there, I was sent over to Turkey. And was immediately assigned to the missile shop in Ankara. I guess it was... [redacted] was there. And while in Ankara, we moved to Karamursel. And that was kind of the beginning of the bigger missile era. The ICBM's were just starting to be fired. In fact, while at Karamursel, the first ICBM was launched and Sputnik I went into orbit. (TR NOTE: Chuckling heard in background.)

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Farley: Were you supporting Sinop and... ?

[redacted] Yes, we were. Although primarily, we were supporting Samsun and Trabzon - which were Air Force bases.

Farley: Air Force. Sinop was Army, I believe. Right?

[redacted] And that... Yeah. And that points out a deficiency we had back then. There was, of course, no DEFSMAC. NSA was starting to, I suspect... We didn't see any evidence of it. But they were starting to build a... some sort of a support operation. Because we were faced with a rather unique situation - where, for the first time, you had tip-off indicators occurring, say, in the western part of the USSR. And then a missile launch and impact - in the case of an ICBM - occurring out Alaska way. And...

Farley: Yeah.

[redacted]

Farley:

[redacted]

Farley: Were you aware of the [redacted] in NSA, at that time? Or whatever they called it?

I guess so, in the sense that... Was that the missile shop then?

Farley: Yes.

We were getting support from them. I remember the was my... one of my big problems there. And we were getting the was passing. There was a lot of interest in that range at the time, because they were developing long-range cruise systems, like on Navajo, I guess, that were going to be competitive with the ICBM. It wasn't that evident. Now, it is in retrospect. But the IC... The ballistic missile people and the cruise missile people were in competition back then. Now, it seems, though, the cruise missile people are going to go back... (TR NOTE: He chuckles.)

Farley: Yeah.

But anyway. - they were developing missiles. The one - And then, we started to see the air-to-surface missile problem develop. And while at Karamursel, we felt we were instrumental in a lot of the development work there. It's... You know, it... If I have ever had any frustration in my career back here - and that is, being away from the collection arena. Because that's where you really have an opportunity to, I think, make a tremendous contribution. Because if you sense that something is going on and I know of many times, we were able to do things that resulted in some unique collection. Particularly, I remember, against the As - where the headquarters of That was something that was hard to prove. We did it through some good collection management out in the field. I was kind of shocked when I came back here and found that the analysts in - I guess it was - didn't believe what we had done. (TR NOTE: Farley chuckles.) And you know, it's kind of... To me, that was... I'm being very candid, Helen. (TR NOTE: He chuckles.)

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Farley: Please do.

Tucker: I'm... Just...

I was very disappointment...

Tucker: Just want to tell you, I will not quote anybody directly.

Yeah. Yeah.

Tucker: I'm just going to have a wrap-around.

Right. Yes. Having worked in the Air Force as a sergeant with a group of very dedicated people that really put in a lot of hours, you know? And were really tied in... into their jobs. (I) Came back here. And I was really disappointed at the... I guess you could say the quality and dedication of a

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lot of the analysts - the civilian analysts - that I ran into. And that's certainly countered by some of the most tremendous minds in the business.

Farley: Yeah.

[redacted] But just kind of run-of-the-mill analysts... That I was really shocked. Because we'd always thought of this as being the "great white palace." And I had really been in the Air Force and worked overseas for eight years before I ever worked anywhere in the United States. So, I always had a very elevated view of what must go on back here. And I was quite disappointed. But that only raises a challenge. Doesn't it?

Farley: Yes.

[redacted] Because I felt that the data's there. And it just... A lot of the people - in their defense - not having worked in the field, it's... I think it's tough as an analyst to really know what you have a hold of for quite a while. Now, I've run into a lot of people in the intern program that have overcome that. But it's a challenge.

Farley: Yeah. I'm sure it is. [redacted] how successful were you against [redacted] in the early days?

[redacted] Yes.

Farley: Do you remember?

[redacted]

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Farley: Yeah. (TR NOTE: He chuckles.)

[redacted] So, it'd tie up a lot of people for a lot of time. (TR NOTE: He chuckles.) But [redacted]

difficult - at least for us at Karamursel - to try to do that job. It really... It showed the need for a centralized center, such as DEFSMAC, to get information in, and then decide what's going on, and then you get it out to the collectors. Rather than having each individual collection site trying to do the whole job themselves.

Farley: Sure. [redacted] do you remember the sequence when these various sites were activated? I'm talking about TTMTR [Tyuratam Missile Test Range], Sary Shagan, Kapustin Yar and Novaya Zemlya.

[redacted] Yes.

Farley: Do you remember the sequence?

[redacted] Well, I think... I didn't have a lot to do with Sary Shagan. But certainly, Kapustin Yar was the first range. In fact, when I went to Karamursel... (I mean) to Ankara and then Karamursel, it was kind of interesting that while at Ankara - and very, very new in the missile business - the first SS-4 was launched. And that was a missile with a 1000-miles' range.

Farley: Yes.

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[redacted] And that made quite an impact in the community. And it... I forgot how [redacted] And it just... It was overwhelming the range of that missile [redacted] Certainly, as that was going on, Sary Shagan had to be there, because that was the impact area where it...

Farley: Yes. Right.

[redacted] So, I suspect about... This would have been, say, in 1957. By that time, Sary Shagan must have been established. I just don't know the...

Farley: That's about right.

[redacted] I guess, probably, the U-2's were flying. Or about that time. But we didn't have access to any of that sort of thing. After that, while I was there, at that same time frame - of course '57 - there had been - again, coming from [redacted] - evidence that another range was being built. And there was activity out in the Kamchatka Peninsula. And activity in Kazakhstan and... with Tyura Tam coming under way. [redacted]

Farley: Yeah.

[redacted]

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[redacted]

Farley: Oh, yeah?

Farley: [redacted]

Farley: I think so.

And it's kind of... Well... That was a challenge. I got off the subject a little bit - what you had asked me, I guess.

Farley: No. That's fine.

O.K.

Farley: The sequence of these elements...

Yes. Right. The establishment of the ranges. The... I have one very vivid memory of the first satellite launch: Sputnik I. And it's... It's kind of funny

[redacted]

Farley: [redacted]

Farley: [redacted]

Farley: The launch was October 5th, 1957.

Yeah. Yes.

Farley: And the Army... The Signal Corps operation at Fort Huachuca...

Were they the first ones to... ?

Farley: (TR NOTE: The following partially blocked by [redacted] speaking:) (C% where... I head that) electronic reconnaissance outfit.

[redacted] Hmm!

Farley: And we intercepted those signals, too.

[redacted] Yeah.

Farley: It was quite a... quite a coup, as they say! (TR NOTE: Both chuckle.)

[redacted]

Farley: Yeah, [redacted] again, I keep returning to the early days.

[redacted] Yes.

Farley: Did we have any sophisticated intercept against the missile ranges? I'm talking about airborne or overhead or ACOUSTINT.

[redacted] Yes.

Farley: Was it too early for any of these?

[redacted] Well, certainly no overhead systems. They were a gleam in a lot of people's eyes! After the program got going, yes, we had aircraft... In fact, that was... I don't know exactly in what years... It started, certainly, in... By the early '60's, we were flying aircraft regularly out of Turkey against the various range heads. [redacted] I believe, was one of the programs. I got down to Adana a couple of times. And watched them in operation. It seemed as though aircraft were our primary sophisticated collection system. And that was probably obviated, really, when the TACKSMAN sites came along - that CIA set up in Iran. Because they were able to get

a very early radio horizon on the launches. But the... Until political problems developed, really, we continued to fly the aircraft out of Turkey. And then, I... I think they also operated out of Pakistan, too. We... When I was in the Air Force at... in Turkey, we really weren't privy to that information. It's kind of interesting what... how tightly compartmented things were back then. Because we... Even though it was an Air Force program, we were never aware of any aircraft flying. I never was, until I came back here. Even our radar installation at Diyarbakir was very highly compartmented. And not all of the people working the missile problem in Ankara and Karamursel knew about Diyarbakir. We had to be specially cleared into the program. It was like getting some VRK clearances now.

Farley: Yeah. Right. [redacted] the advent of Sputnik in-space program...

[redacted] Yes.

Farley: Did this force any changes in the Air Force procedures or modus operandi? Or did they add the new type radios? Was there any change because of Sputnik?

[redacted] I guess I didn't really see any evidence of any changes. It heightened, of course, the interest and the exposure to people working the problem. But, so far as equipment... Well, I guess I should take that back. Because at Karamursel, we were a little bit insulated from that - being so far removed from the Soviet command and control sites, say, in the Black Sea. But Sinop and Samsun really saw a big change, in that they were given equipment that could assist them in better intercepting the space target. I don't know at what point the Army got ascendancy over all of that. You know...

Farley: Yeah.

[redacted] The two Air Force sites were [redacted] But eventually were disbanded for probably, primarily, monetary reasons.

Farley: Right.

[redacted] Monetary and political. But... That was the one evidence that I was able to see, today, as they moved into upgrading the various SPACOL sites...

Farley: Good.

[redacted] There have been tremendous changes.

Farley: Did you get any support from (B% NSAEUR) in Frankfurt? Any specialists sent down there to assist your troops? (TR NOTE: He chuckles.)

[redacted] Well, yeah. I guess... I think this would have been the route. We... When we moved to Karamursel - very soon afterward - we received a contingent, actually from Zweibruecken. Theses are... This was another group of people working the Soviet missile problem - primarily Kapustin Yar. And they... They were, quote, "the real experts." And they were sharp people that had been on the problem for a while. [redacted] was one of those. He was a [redacted] - as I recall it. Came

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down and... [redacted] And worked with us. Most of the other team... others in the team that came down ended up going back to Zweibruecken. I think that was... the 6971st was up there.

Farley: Yeah.

[redacted] And they were... I forget. I guess they were our group headquarters.

Farley: Probably.

[redacted] And... But [redacted] We had that material... It was very ill-defined, I think, exactly how our different roles were against the different ranges. In other words, even though, today, the Army might have primary interest in Kapustin Yar at Sinop, the Air Force sites were all working that, too. There were... Again, as I said before, there was a lot of duplication. But it was a lot of... a lot of material to work. With [redacted] and delays and everything. There was always a lot of stuff to work.

Farley: Oh yeah! Right. Helen, do you need more details on the early days?

Tucker: No. No, thank you.

Farley: O.K. [redacted] Did you come back to NSA as an Air Force sergeant?

[redacted] Yes, I did.

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Farley: O.K.

[redacted] Yes.

Farley: Now, again, we talked earlier about... You were speculating and foretelling and foreseeing the need for a central location. And they eventually established the SIGINT Missile and Aeronautical Center.

[redacted] Yes. Right.

Farley: Did you... ? (Did) People in the Air Force say, "Blasted! If we only had a place where we could exchange information or pump it all into a central location?

Tucker: Mr. Farley?

Farley: Yes, ma'am?

Tucker: He came back and went to [redacted] (Addresses [redacted]) Didn't you?

[redacted] Right.

Farley: O.K.

Tucker: It was... Called [redacted] ?

[redacted] Yeah.

Farley: Yeah.

Tucker: You might want to expand on that a little bit. Because that's the predecessor to DEFSMAC?

[redacted] Yeah. That's...

Farley: Yes. O.K. Let's go, then.

[redacted] All righty.

Farley: You reported into [redacted]?

[redacted] Came into [redacted].

Farley: You were welcomed because you had tremendous field experience (TR NOTE [redacted] chuckles) and... You'd been out there!

[redacted] I've heard that they didn't want me to come in there, because I had... I had given them some problems over... I guess I mentioned that one on the [redacted] problem. We had... We had gotten a beautiful... (C% Time... And I know we won't want to) go into a lot of detail. But as an intercept operator... I wasn't an operator, then, anymore. But I was [redacted] And we worked closely with the intercept people. And there was a naval test range down in the Caspian Sea. And there was an [redacted] So, somehow, they knew that I had done that work. And when I came back, they didn't want me to come into that group. (TR NOTE: Farley chuckles.) They were... I don't know. But anyway. I had heard of this from somebody else. But I was assigned to the missile shop. And put in the [redacted] And that's... Some of the people there, I felt, were kind of lacking in their knowledge and dedication. But kind of to answer your question, Mr. Farley, I was, I guess, a little bit surprised. The Tyura Tam missile people were kind of the elite of that group. And they were already setting up this NSA SIGINT ops center to control that larger, developing problem. And we were really kept out of it. We weren't given any exposure to it, at all. And I guess that's justifiable. Again, it was kind of a need-to-know basis. And we just didn't have any reason to participate in that at all. I remember Frank Wanat was a very... very sharp guy. A very good supporter. I kind of always got myself in trouble around there (TR NOTE: Farley chuckles). I guess, because I knew what could be done with [redacted] and how it tied in with the Soviet long range air force, as well as the Soviet naval air force. And I was kind of always running around... I would see a message. Then, I'd suspected that it related to say, naval aircraft coming into the range. And I would go down to [redacted] I guess it was - whatever the equivalent was - and I'd coordinate this. And I'd find out what aircraft flew. And I'd, you

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know... I'd get the story all ready to go. And Frank got after me a number of times, telling me that that wasn't my job. But I didn't see anybody else doing it.

Farley: Yes.

I was still kind of operating like I would in the field. But I... (TR NOTE: Farley chuckles.)

Farley: You have to change your routine when you get back!

Yeah. Just a little bit!

Farley: What was that? ? Or... ?

Yeah was, as I recall, over in the Tyura Tam side. I had a couple of guys... Boy! There was a and a... I can't remember who ran the shop there. I don't know if you have any other names there or...?

Farley: I don't. I have... Fulk?

Yes.

Farley: Estil Fulk.

Ed Fulk. Yeah. Ed was... He was in the Tyura Tam side, too. Ed did a lot of work on the at Tyura Tam.

Farley: there's an operations compartmented X element, which would be Why was that a compartmented area? What... ? Do you remember?

Farley: I see.

The... About that time, it seems like... Oh. I can't remember the... There was... It was, like, subdivisions of GAMMA that that reporting...

Tucker: Yes.

(B% TRIG). TRIG reporting came out then.

Farley: Right.

And that stuff was in the TRIG.

Farley: O.K. Good. I was a little curious. Helen, you have some specific

questions?

Tucker: No.

Farley: No?

Tucker: Coming along just fine!

Farley: O.K. So, how was life in [redacted] Did you gradually settle down... ?

[redacted] Oh, yeah.

Farley: And fit in, so to speak? (TR NOTE: He chuckles.)

[redacted] Yeah. I was... I loved being back here, because you really had access, once again, to a lot of other intercept. At Karamursel, you know, all we really had were our Air Force stations. And I was able to, I think, make some contributions by going... working very closely with the... I guess it was an A... what would be the predecessor of [redacted] an Unidentified shop. They would get all the unidentified materials. And we found a lot of unique intercept that related to the [redacted] in their archives. And I always enjoyed doing that.

Farley: Yeah.

Tucker: O.K. In this [redacted] then - although it was not a centralized collection place, did everything come into there? Or... ? You said, because you had access to a lot of material that you wouldn't have had elsewhere.

[redacted] Well, everything that was properly cased or identified would come in there. So, yes, we would get it that way. But my comment was, really, that - because NSA was the ultimate repository for everything that was intercepted, I would be able to go down and I'd developed some rapport with various analysts in the Unidentified shops. And we would - with their help - you know, find other material that related to the [redacted] [redacted] that had just... was lying there in the (B% RX) category.

Farley: Yeah.

[redacted] And so, I enjoyed having that sort of access. The... We didn't have, really, much collateral access, at that time. I can remember [redacted] - and I'll remember his last name in a few minutes. But anyway. He used to disappear into a little room periodically. And never would reveal what he was looking at. I found out later it was the U-2 photography that they were getting (TR NOTE: Farley chuckles), which... I don't know how much it really told us about the ranges. I guess it told us some big ranges were being built.

Farley: That's about all.

[redacted]

[redacted]

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Farley: Right. [ ] did you folks in [ ] have direct communications with the overseas site(s)? I was in the PIWO, at the time.

[ ] Yes.

Farley: And I remember you people coming in with many, many reports throughout the evening to be sent to the (1B possibly; blocked by [ ] clearing his throat) people overseas.

[ ] Yeah. Well, the only direct communications that I'm aware of were the handful of circuits that were in the embryonic... the beginning portion of DEFSMAC... the NSA... the SIGINT Center.

Farley: O.K.

[ ] Everything else that we sent out to a site, had to go through normal CRITICOMM channels. That was... That's my recollection.

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Farley: That's... I... I think that's true, too, as I recall.

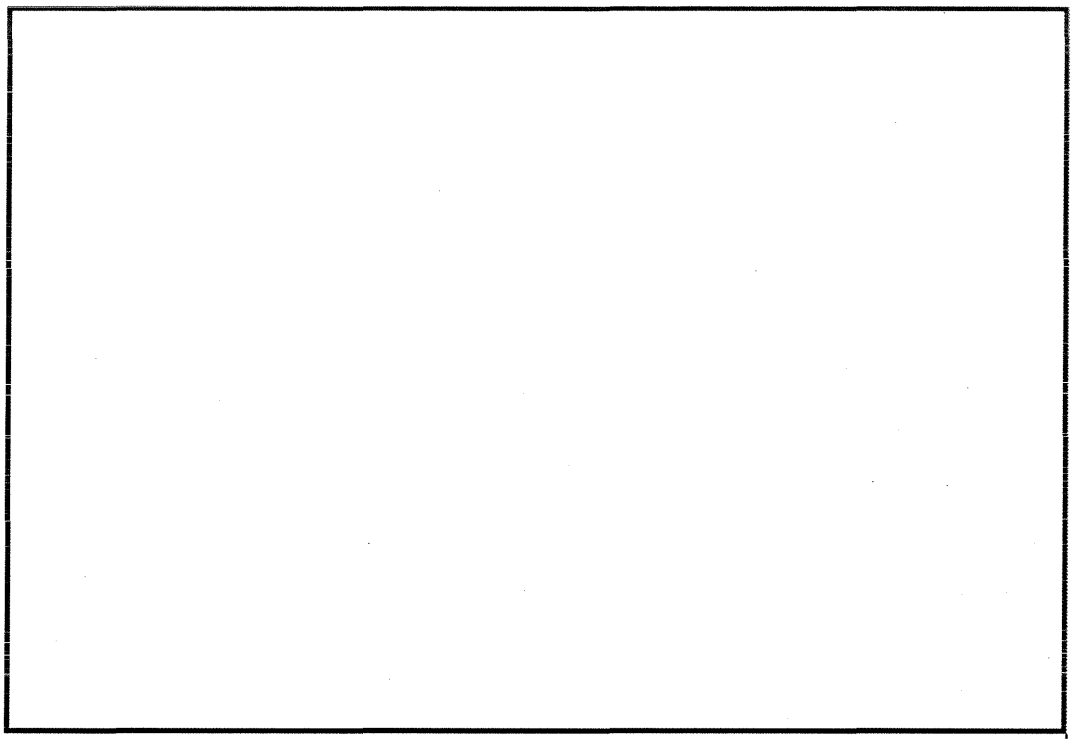
[ ] Yeah. And it... I tell you, it just... It makes you really appreciate what we have today. Because, a lot of the sites... And this is just getting a couple of years down the road, like in the early '60's. Even Shemya and the TACKSMAN sites: We would have a launch. And it would be a good 24 hours before we would get their initial reporting. And so, there was a lot of sitting around and waiting to find out what had happened and then something... You'd see it launched. You'd get that information. But to know when and where it impacted, it was always a...

Farley: Yeah. [ ] from your tour in Turkey - the early... two or three years there, and back here... By the time you were active in [ ] had the Soviets sophisticated most of their communications? [ ]

[ ] Yes.

Farley: Had they improved pretty much their techniques?

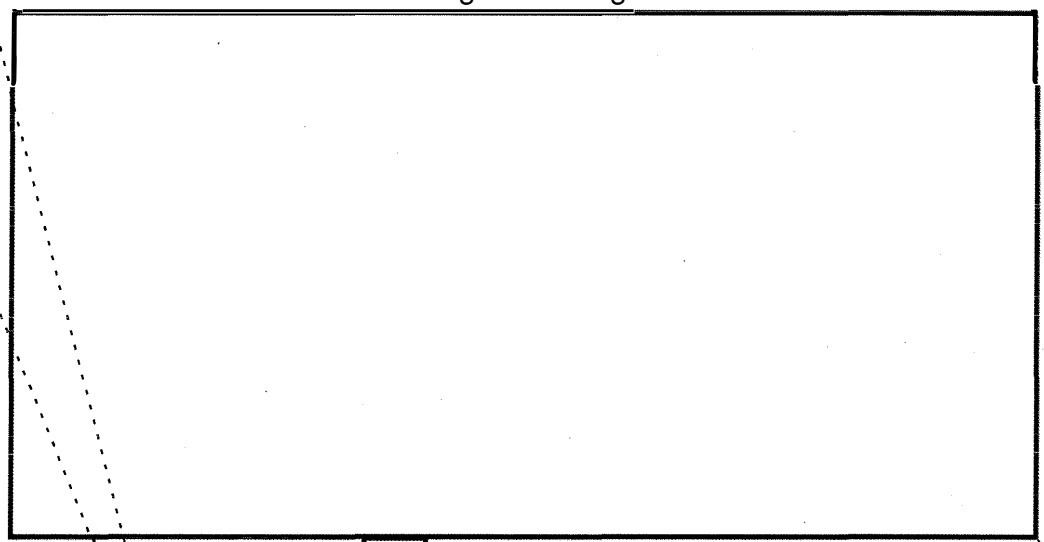
[ ]



Farley: It would be disastrous to them, too!

Yeah. Yeah. I... So, I've never... It's... maybe happened. But I've never been aware of anything that they've passed over the communications that was intended to fool us into doing something.

Farley:



Farley: Helen, you want more on ? Or can we move to the missile center?

Tucker: Move (1-2G; barely audible). O.K.

Farley: you mentioned that, very secretively, some of the people in were forming up something that looked like the forerunner... the predecessor of the SMAC.

Yes.

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Farley: How long before they explained to you folks what was going on and eventually moved you into that area?

[redacted] Well, I never really got into that at all, I guess, to explain how that happened. I was in [redacted] That was my target when I came back here. And we never had any reason to be associated with that early SMAC center - the NSA SIGINT facility. That was strictly for Tyura Tam operations. Well, I finished out two years... This would be '58. Really, '59. And by '61, I was out of the Air Force. And then, converted into NSA. So, I had one year where I stayed on the [redacted] problem. [redacted] was... and [redacted] were my bosses when I came back. Anyway, I stayed on the [redacted] problem. Of course, the space... the missile and space program: they're kind of creeping along. Still, pretty much a... strictly a Tyura Tam operation. I wasn't associated with it. It wasn't until I went down... I was lured away from NSA by an organization called (B% AFSSOP): the Air Force Security Service Op... Whatever it was. [redacted] got me down there. And that was a really... That was one of the best organizations I've ever been associated with. A Lot of... Probably some of the top analysts that you'd ever find in the field. And there was an intelligence organization. They were supporting Air Force Security Service. But we were in this building. And we really had a good rapport with the NSA folks. And while I was down there, we... Because of our responsibilities to Air Force intelligence, we were given access - sometimes, kind of reluctantly... And it ebbed and flowed. [redacted] was kind of jealous. (TR NOTE: He and Farley chuckle.) And he kicked... He kicked [redacted] out of there more than once. But we had kind of access to this new center. So, that was the first time that I ever really was allowed to see what was going on. And again, I was working [redacted] down in AFSSOP. So, I didn't... I still didn't have that much need to know to go up there and work with those people. But by, oh, '63, the... we started to get the rumors that there was something new coming along. DIA had been formed up. And they were, somehow, going to meld with NSA on this new center. And then, we were told that we were going to have a very big role in it. Because... This was my understanding. There may have been other things that were happening. But DIA - when they... When Secretary of Defense McNamara decided that there would be a DEFSMAC, he... DOD went out to all the services. And they were soliciting analysts - missile and space analysts - from Army, Navy and Air Force. And it turned out that the Air Force - AFSSOP - was the only organization here, in this building, that had missile and space analysts. And so, I guess not either getting any response or not finding anyone qualified, they ended up transferring [redacted] and me out of AFSSOP into DIA. And we were just, you know, one day in... and the next day, into the next organization.

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OGA

Farley: I see.

It didn't make the AFSSOP people very happy. But we could kind of see where the problem was going. You know, it seemed to me, it was going to be a lot more dynamic. And already, I had run afoul... I keep getting into trouble, I guess. (TR NOTE: Farley chuckles.) But I had run afoul of some of the Air Force folks downtown. I'll tell you - when you identify something that is contrary to the NIE, for example, people are not very happy with you about it. And I... Working the [redacted] if you don't mind me just telling this little story...

Farley: No. No. Please do.

But I... I still get ticked off at things like this. (TR NOTE: Farley chuckles.)

[redacted]

Farley: [redacted] excuse me.

Yeah. (TR NOTE: Taping stops suddenly.)

[End of Tape 1, Side 1]

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[Tape 1, Side 2]

Farley: All right, Sir. Would you please continue?

And so, I had to admit, I was a little bit disillusioned very early on in the upper echelons of the intelligence world, when we were told to... no longer would we be allowed to write any reports on that subject. I felt vindicated a few years later, when - [redacted] (TR NOTE: Farley chuckles.) And... But anyway. That was... I run into little things like that once in a while.

Farley: You talked about AFSSOP.

[redacted] Right.

Farley: AFSSOP eventually moved to Texas. Didn't they close down here and move to Texas?

[redacted] No. Actually, they were... Soon after I left... In fact, even before I left, they were re-subordinated from Security Service to Air Force Intelligence: AFIN. In fact, that's when I got into trouble. Security Service used to leave... let us have a free hand. But when we got tied in with the intelligence guys downtown, they tried to control us a lot more. And I think they still do. There's still kind of a small organization - (B% AFINA), I believe it is. They've been over at Friendship. But that's the remnants of that AFSSOP organization.

Farley: Oh, yeah.

[redacted] Yeah. So, they still exist. Although, they're not under Security Service anymore, or (I mean) Electronic Security Command.

Farley: O.K. Was DEFS... ? Well, are we up to DEFSMAC yet? Or it's SMAC yet?

[redacted] We're kind of... At that point, DEFSMAC is formed. When was that? Early '64. And the three of us missile and space analysts were transferred from DEFS... (I mean) from AFSSOP or the early AFIN up to DEFSMAC. At that point, I kind of... I continued to watch the [redacted] But DEFSMAC's interest in [redacted] was very, very slim. I... We weren't... I don't think we were even doing much reporting on that. It was strictly the missile... the Tyura Tam and Kapustin Yar missile and space activities.

Farley: O.K.

[redacted] So, I kind of started to branch out into that more.

Farley: Good.

[redacted] Got away from [redacted]

Farley: The original concept or the charter of DEFSMAC was against Soviet missile activities only? Or was it world-wide?

[redacted] Well, the charter says "foreign." But...

Farley: That's about everything, I gather! (TR NOTE: He chuckles.)

[redacted] Yeah. But in point of fact, we just watched the Soviets. And kind of [redacted] arena. And really, there wasn't anything else going on anywhere else. So, the Soviet... Even though it said "foreign missile and space activities," the Soviet problem was the only thing we were really working against.

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Farley: Working against. You've answered a question I (C% sent). How was the center manned? Volunteers? Selectees? (TR NOTE: Chuckling heard.) You answered that already!

[redacted] Yeah. We were... I don't how NSA got their people. They kind of, certainly,

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evolved from that group that... like Ed Fulk and [redacted] that were the drivers on the NSA SIGINT Operations Center. They became part of DEFSMAC. [redacted] was one of the early guys.

Farley: Charlie Gordon and...

[redacted] Charlie Gordon.

Farley: Charlie Tevis.

[redacted] Charlie Tevis. Yeah.

Farley: The old timers. When you walked in there, was there any initial problems that you had to resolve? Or anything that faced you that didn't quite fit right, so to speak?

[redacted] Well, we were... I feel that we were always given pretty... pretty free access to everything that was going on. Our biggest problem was that when you have a new entity established - which essentially, was the intelligence - the ops people - they were really already in place. And they were... It was all an NSA operation, anyway. But here, we had this intel group, which was a mixture of NSA and DIA people. Mostly, DIA at the onset. And getting access... getting distribution... getting that paper flow in there was a challenge. Today, I wish can turn it off a little bit! (TR NOTE: Chuckling heard.) But anyway. It's... That was the biggest problem that I remember: is getting your copy of the information. We used to have to do a lot of running around gathering data in order to write a story. The stuff would come into operations. But it didn't automatically flow across the hall to where we were.

Farley: Yeah.

[redacted] It may not seem like a big problem.

Farley: Oh, it is!

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[redacted] But it was something of a challenge.

Farley: [redacted] do you remember the organization structure? Was it a watch? 24-hour operation watch officer and helpers and various types? Do you remember the overall organization? The breakdown?

[redacted] Well, as I recall, really, we only had operations and intelligence. There was a standard watch. But it was, oh, I would say... It probably had no more than three people per... Three or four per watch. And it's kind of funny, but as... Because of the volume of COMINT data we would get for a launch... We were getting still a lot of [redacted] And so, they would, characteristically, call in people to man the circuits on the watch. So, you'd end up with, oh, probably, an additional 10 people whenever there was a countdown underway. And then, one or two of us from intel would be called in, too. And so, you'd have a situation for an SS-7 ICBM... Early in the countdown, we'd be called in. And so, [redacted] you'd sit there and you'd watch the countdown. And the missile would go. And the communications with the sites were pretty poor - at the TACKSMAN

sites, especially. And it would... It would really be a... quite a while before

[redacted]

Farley: Right.

[redacted] I remember many [redacted] sessions there just for an [redacted] ICBM.

Farley: [redacted] the equipment in place: was most of it off-the-shelf? (TR NOTE: [redacted] chuckles.) Or was R&D tasked with coming up with some unique equipment to service you people?

[redacted] State-of-the-art! (TR NOTE: He chuckles.)

Farley: That's why they...

[redacted] Yeah. They had the old KW-26's.

Farley: O.K.

[redacted] Everything was... I... You know, I just don't know where you go when you're building something like that. Certainly, the center was the pride and joy of the people who put it together. But the equipment - the old teletypes - they certainly were nothing new or different. I don't know what they had in comms centers. I never worked in a comms center. But I guess they had KW-26's there, too.

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Farley: Yeah.

[redacted] All I can remember: there was an awful lot of punched paper tape (TR NOTE: Farley chuckles) - you know, being transferred from one machine to another. You'd... Boy! (TR NOTE: Farley chuckles.) The mission... the watch officer - whatever... You know, we decided that there was going to be something launched. And we would keep everybody apprised as: "X minus [redacted] and "X minus... " So, all these things would be written up. And then, he'd give it to his comms guy. And the comms guy would have to go over to a KW-26 and poke out the message. Punched paper tape. And then, you'd start running at all the different circuits. And getting it out to everybody. And paper tape tears sometimes. And it has to patched. (TR NOTE: Tucker chuckles.) It was...

Tucker: Just getting it around through the Agency was a problem sometimes.

Farley: Right. It was pretty primitive at that time with the... (TR NOTE: He chuckles.)

[redacted] Yeah. And looking at what we have now...

Farley: Compared to what it is today...

[redacted] Yes.

Farley: It's unbelievable.

[redacted] Yeah.

Farley: [redacted] was there any second party or third party role at all in the... ? I don't want to say establishment of DEFSMAC?

[redacted]

Yes.

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Farley: [redacted]

But working with DEFSMAC after it got rolling?

You know, I... It's kind of interesting. I can't... I don't want to sound short.

Farley: [redacted]

[redacted]

by manual Morse. They still do that. But I can't... Second party? Third Party: no. I would say there was none at all in the early days.

Farley: [redacted]

Yes. Sure.

And second party: you know, with the Brits and the Canadians: I don't remember any association at all.

Farley: [redacted]

The policies, I guess, weren't that far along...

No...

Farley: [redacted]

To really become involved.

Yeah. I don't think there was any.

Farley: [redacted]

O.K. [redacted] the primary users of intelligence on Soviet missiles: who were they, beside the local - as we used to call them "the ZICON": the "Zone of Interior Consumers"?

[redacted]

(TR NOTE: He chuckles.) Yes. Well, I guess I don't... I don't really know. It's kind of funny... I should have been more aware of who all of our recipients were. It's... Some... I don't know. I guess the most recent NSA director has been quoted as saying, "You know, you intelligence guys - you just talk to one another." And (B% Fred [redacted]) - he'll probably back me up on that some time! (TR NOTE: He and Farley chuckle). (TR NOTE: [redacted] is a colonel affiliated with DEFSMAC at that time. He will be heard later in the interview.) But really, it's interesting you ask. But... The people that we worked with and that we got feedback from... I

guess that's the main reason I'm reacting the way I am. We got feedback from CIA, FTD...

Farley: Right.

[redacted] Much later on, DIA. Well, DIA was kind of a little slow in coming along. Even though they were the participant in DEFSMAC, DIA has never impressed me that much. Boy, this is going to be something! In terms of...

Tucker: I'm not going to quote you! (TR NOTE: [redacted] and Farley chuckle.)

[redacted] They've always been a little... Maybe it's their mission, but they moved slower in the arena. They relied on FT...

Tucker: By the time they get approval, it's over with.

[redacted] Yeah. If you want a... If you want a technical assessment of something, you don't go to DIA, you go to FTD. And so, that's the reason I have that impression of them. But...

Tucker: My impression of DIA was there's too much paperwork. Too much chain of command.

[redacted] Yeah.

Tucker: Even when you just had to find out somebody's clearances, you know, you had to go through a lot of red tape.

[redacted] Yes.

Farley: That's one question I'm coming to, Helen. I was...

[redacted] Yeah. But I...

Farley: Excuse me.

[redacted] I got another comment that slipped...

Farley: Please...

[redacted] (TR NOTE: Pause while he tries to remember.) Oh! People we work with. The only other organization that I can ever remember really working very closely with was NASA. They were interested in the manned program, the interplanetary... things of that nature. So, we did a lot of interfacing with them. And then, as NORAD... Of course, we got into the space arena. We were working very, very closely with all the predecessor organizations to Space Command. And they were really the only operational user that I'm ever aware of, you know, that we were... But it's kind of funny how parochial a person can get. We... At least, I always kind of looked at them, in the early years, more as supplying data for the problem that I was... You know, they would have the trajectory... the track data. And that was very critical for our analysis of what a system might have been. I mentioned: you have a launch. And our big job was to identify what the missile was. Well, we could - through the trajectory data that we would get from Shemya [redacted] Something like that. So, they were a big input to us. Later on, of course, I became... I personally became more aware of their big role in

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terms of threat assessment. Because we would do this identification. But also, we were tied in closely with them, because their big job... When they have a launch, they've got people looking at them: You know, "Is this a threat to the United States or is it not?"

Farley: Right.

So, those two externals: the Space Command and NASA: they're the only ones I'm really aware of that we... I know there's a lot of other people all over the world that read our stuff. But...

Farley: I was thinking of second party again.

O.K.

Farley:

Farley:

Farley:

can you pin down the year that the Soviet missile testing activity accelerated or increased? And any explanation as to the reason?

Farley:

[redacted]

Farley: Good.

[redacted]

Farley: Were you involved in the early days of the Soviet space system, [redacted]

[redacted] Yes, I...

Farley: Remember that?

[redacted] You're right. I was. Well, Yuri Gagarin was launched before we were... before I was associated with the center. But I... I came in... This is, to me, was an achievement. I guess I was kind of a fledgling space analyst, if you

[redacted]

emergency escape system removed. Can you imagine that? They were firing these guys with no... (TR NOTE: Farley chuckles.) There was no

launch escape tower on the booster itself. And the capsule had no way of getting out. So, they put up three guys. And then, two guys. Leonov did the first EVA out of that capsule - out of the Voskhod capsule. He had some interesting stories to tell. I guess this was kind of... came out during our ASTP missions, when they were candidly talking to some of our astronauts. And he said that he got out of there... the tube - the EVA tube. And his suit ballooned on him. And he spent the rest of the time - I don't know how long; a half hour or whatever - just trying to get back into the capsule. And it was... It was... (TR NOTE: Farley laughs.)

Farley: O.K. I didn't realize that the Russians had a (1G) kamikaze operation! Pretty much what it would be, if you couldn't get out.

[redacted] See, they were... They've always been very... I never ascribed them as taking big risks to beat us. But they've always been very attuned to the timing of our programs. And that's, I think, why Yuri Gagarin went up very early. We were coming along with our project Gemini at that time, which was going to routinely carry a crew of two and do a lot of EVA work. And they were just, evidently, determined to beat him. I think Khrushchev was the guy, back then. And there are a lot of horror stories, really, about the demands he placed on Sergei (B% Korolev), their first design... the chief designer back then. And he insisted that the Soviets fly a multi-man spacecraft before we did. And so, they kind of jury-rigged this thing. They flew just two missions. The... I guess it was the second mission, I believe, that overshot the recovery area by a considerable distance. Landed way up in the woods up near Perm. That was the only time I ever remember the Soviets lying in an announcement - a press announcement - that TASS would release. Usually, they... You can't depend on them always telling all the truth. I mean, can't... telling the whole story. But they do say is usually true. So, you have to kind of use that as a good input to your intelligence assessment. But this time, they indicated that the capsule had... initially, had landed. And everything was fine. And the crew was with friends.

[redacted]

Farley: Yeah.

[redacted]

Farley: He probably landed on the hard ground, rather than the water.

[redacted] Right.

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Farley: Is that because of the vast expanse of territory there?

[redacted] Well, in part. They got a lot of real estate to work with. But this... This is, again, a... something that I've... kind of... I think it's more than an

inference. I've had a mass of people tell me this. But the Soviets have had more weight to work with in their payloads. And so, they have been able to develop - what they call - soft landing systems. As these spacecrafts come down, they actually fire solid rockets that are able to cushion the landing. And I've been told that, yeah, early on with Mercury and Gemini and Apollo, we would have liked to have landed on the ground. It's certainly a lot easier to recover your spacecraft. But we didn't have the extra weight where we could put these additional recovery systems on. So, we, you know... We chose the water, which is less demanding. And certainly, there's more area to work with. And... Maybe we weren't quite as confident early on in our ability to hit a certain spot.

Farley: Yeah.

[redacted] The Soviets, again, had a... have a lot bigger expanse, where they don't have to worry about high tension wires and stuff. We would have probably have been pretty limited to somewhere in the south... southwest.

Farley: Yeah. There was a news item the other day about trying to recover Gus Grissom's capsule - the one that flipped over and sunk.

[redacted] Hmm. Yeah. Hmm. That's interesting.

Farley: Yeah. I saw that. I don't know why.

[redacted] (TR NOTE: He chuckles.) Yeah. The Soviets do have a water recovery capability. In fact, they always rehearse any new crews they... We've seen them - pictures, you know, out in the Black Sea - with the Soyuz capsule bobbing around. And in fact, at least one time I'm aware of, a manned capsule did land in a lake. But... In the... Kazakhstan. In the central (1-2B by Farley speaking), where they... they don't have pinpoint accuracy all the time. (TR NOTE: Farley chuckles.)

Farley: [redacted]

[redacted]

Farley: [redacted]

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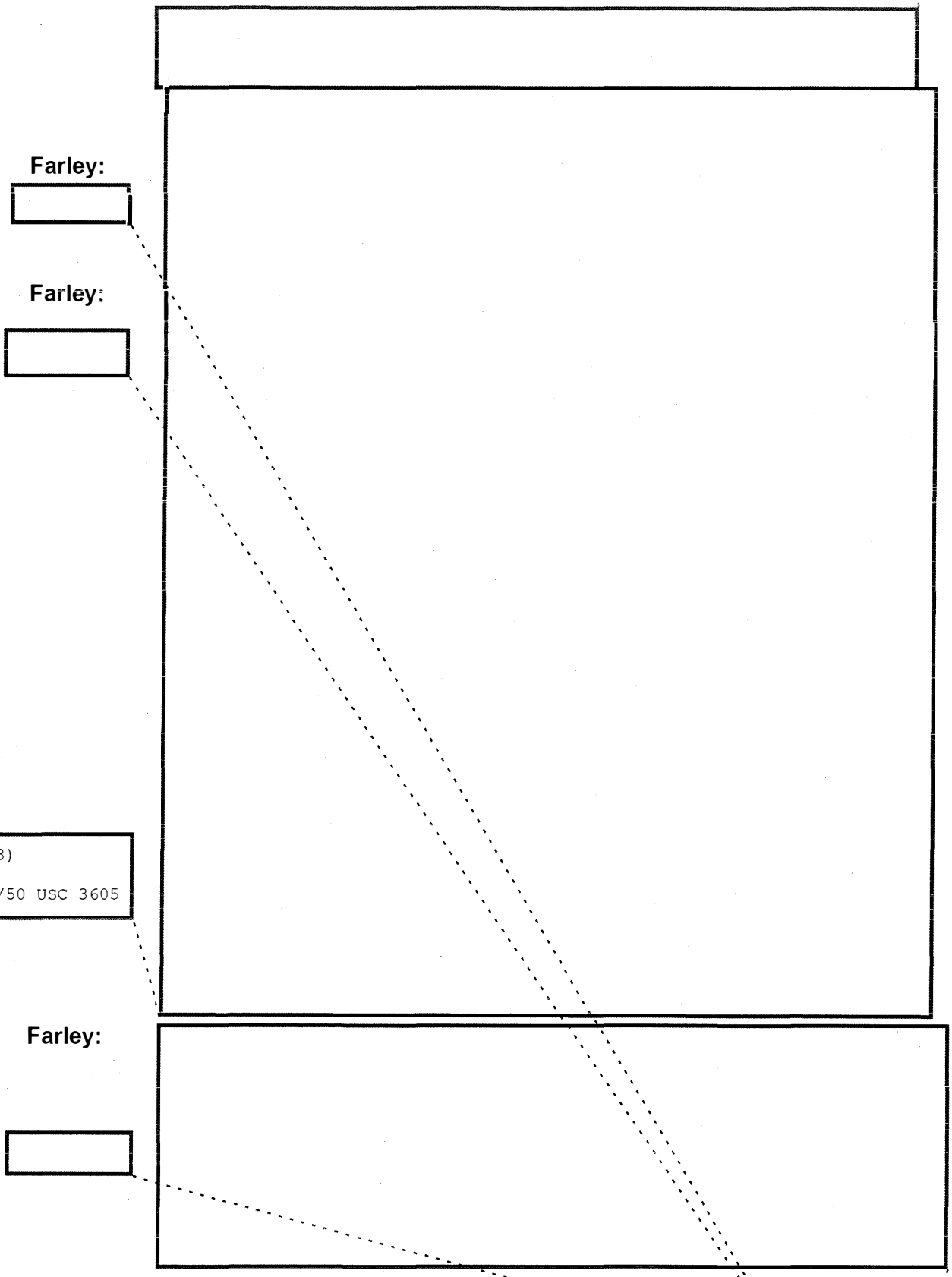

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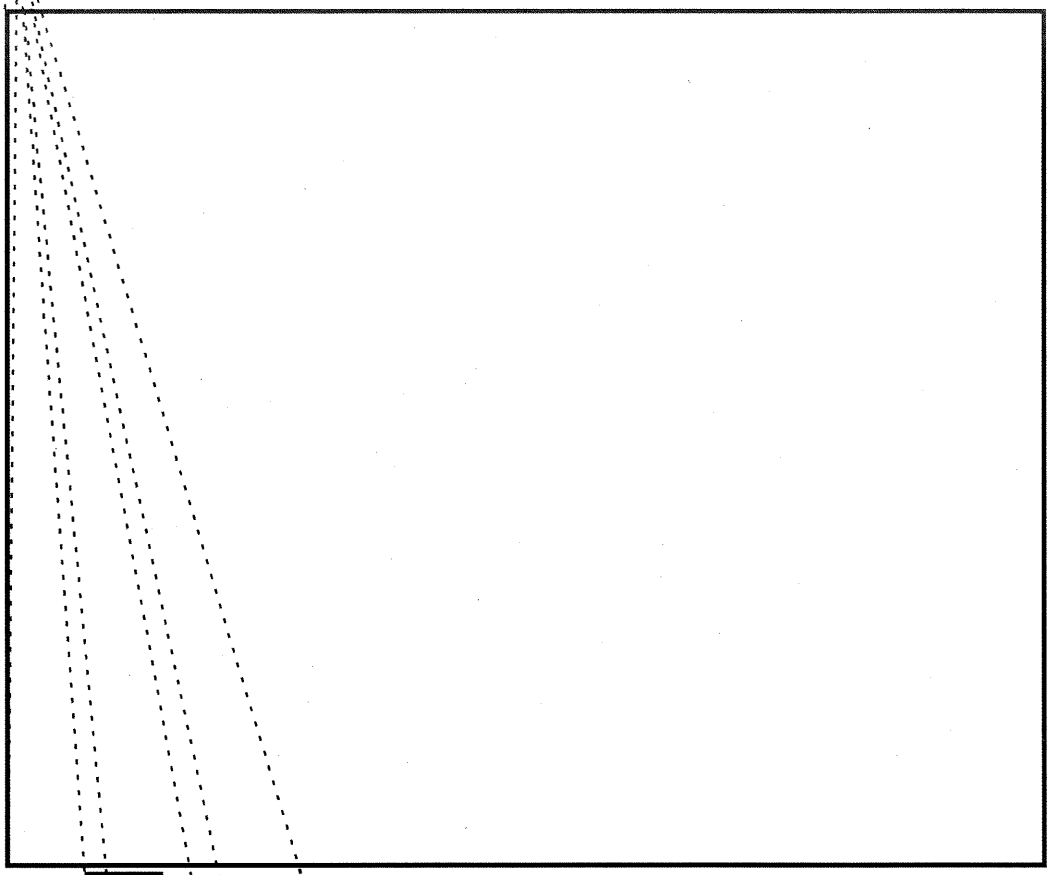


Farley:

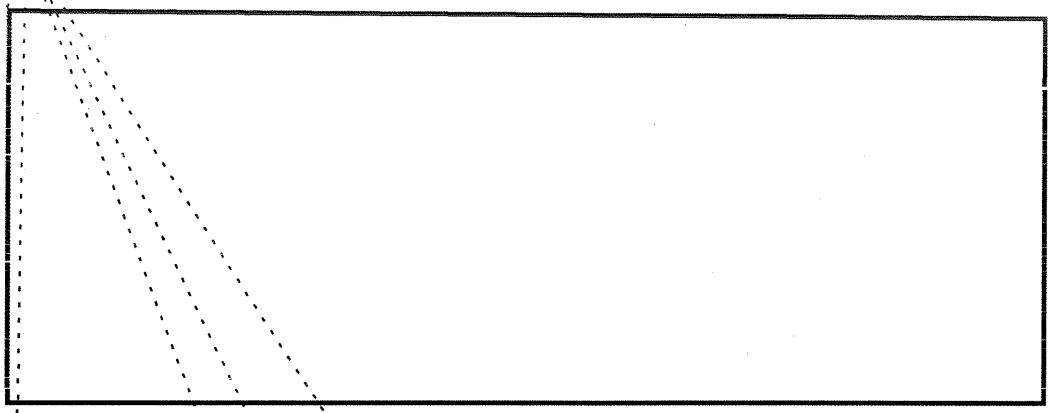
[redacted]

Farley: Right [redacted] after the center was established - went through a break-in period and began to function fairly smoothly - was there any need to adjust the organizational structure? Did anybody see that something was not the way it should be in order to get a smooth flow of information? Do you remember any discussion on that?

[redacted] Well, it's kind of interesting. Maybe something will come to mind. But... The center that I came into from the Air Force organization - which, of course, was the evolution of the old NSA center - that whole thing stayed pretty much intact. I don't remember any major changes. Even today, we're operating on, basically, the same way we were back then: with a guy... a couple of guys in control of tasking the world-wide sensors - whatever they are. A handful of people manning the circuits. Now, they're PC's, rather than KW-26's. But if there's been any change, [redacted]

Farley: Yeah.

[redacted] And that bothers me. [redacted] you can sympathize with this. (TR NOTE: Apparently, [redacted] is addressing a [redacted] who is now sitting in on the interview. [redacted] will be heard later in the interview.) I've, frequently... You know, would come in and see what went out over the circuit to Space Command in a response to a query that they'd had.



Farley: It's a national center, too.

[redacted] Yeah.

Farley: Which, you have to keep going. Colonel, if you want to interject any questions or any comments, feel free.

[redacted] (TR NOTE: Faintly, in the background:) No.

Farley: No?

[redacted] Go right ahead.

Farley: All right.

[redacted] Yes. It's very... To have [redacted] here, it's, I think, really appropriate. Because he's been at the other end for a number of years, looking at us. Expecting our support. And so, he probably would have some interesting comments some times, too. But, you know, you can... I think, you would certainly support what I... And the same is true out there. They have a big turnover of people.

[redacted] Very inexperienced.

[redacted] And, you know, sometimes, we'll go out and ask a question. And don't get, really, the response that we feel we...

Farley: Sure.

[redacted] Although, they... Just like we here, they have a cadre of old-timers. And we have a cadre of old-timers. And so... But when you're kind of outside that group, you're often working with very inexperienced...

Farley: We're getting older and older and closer to retirement! (TR NOTE: [redacted] chuckles.) You know?

[redacted] Yeah. Yeah.

Farley: [redacted] what new electronic equipments were developed and maybe, later, installed in DEFSMAC as time went on? Something that may have been developed by NSA technicians or engineers. (TR NOTE: [redacted] chuckles.) I know a lot of the equipment has been improved.

[redacted] Right. Well, I guess... (TR NOTE: He chuckles.) My first... When you first asked that, you know... We've never... For some reason, DEFSMAC has

never enjoyed a really... evidently, a high enough priority to get all the whiz-bang type stuff. We had something... It was going to be called a time event correlator. And this was a... Not an attribution. I think Charlie Tevis was... He... Charlie was always... was looking, of course, for things that would help us. And we had this... It was a big... It was a 24-hour clock, if you will. It was a linear arrangement that would have covered a whole wall. And it was going to, I guess, have some sort of a time line that would move across the 24-hour clock. And all of our indicators and events and everything were going to be depicted there. And I think (B% Moseler) was building this thing for us. And all I can remember is hearing the wheezing and... It never came to fruition. We never got our time event correlator. But the most advanced things that we've gotten in the center, really, would be the simple little thing. The PC. As I say, simple little thing. We can do so much now with those computers that just... that every analyst has now in our intel shop. And there's a lot of them out on the watch floor, too. When I think of how difficult it used to be to calculate an orbit on a satellite: you know, take an element sent from Space Command and... It was a half-a-day operation to take it over to [redacted] and ask them to run it and see what the apogee and perigee were. And today, I can get that instantaneously right from my little PC. The... In the area of the manned space operations center, when we first started collating all the [redacted] and putting them into a database, we had some of the most archaic machines you can imagine that would... You know, somebody would spend hours putting this stuff in. And before they could get it transferred into some database, it would go down. And everything would be lost. And we had many revolutions on our hands! And that's... Really, that's not too old that that sort of thing happened there. Our PC's are only a few years old now, that we've had that capability. But it has so revolutionized... I can remember (B% [redacted], you know, as our secretary, preparing a report. We would... All of our analysts would hand-write a report. And some of these things were pretty long. It might be 15, 20 pages. And then giving it to our secretary. And she would type it on a typewriter. Six-ply paper. You know, all these carbons. Then, it would go back to the analyst. And you'd do all your editing. And some new data would come in. And you'd add a couple of paragraphs. Maybe something inserted - and that she'd have to re-type a big part of it. It was hours and hours doing that sort of thing. And then, you'd finally get it. And you'd take it up to the comms centers. And then, somebody in the comms center would type it all out. And send it out. And so, you know, it was a couple-of-day operation getting a report out. Today, we're turning out about [redacted] from that center.

Farley: My goodness!

[redacted] And, you know, it boils down to the analyst composes his reports right on that PC, which, you know, a word processor. And takes a look at it. And had somebody review it for him, just to make sure there's no grammatical or spelling errors. And then, hits the button. And boom! It's gone. It's

transmitted to the world.

Farley: Is that right?

[redacted] And so, that... That is our... the biggest... It's so incredible a revolution that I can't even express it. But it is... enabled us to do a lot more reporting a lot quicker. The only objection I had to that - and I guess it's really been overshadowed by all these (C% advantages) (TR NOTE: tape recorder malfunctions here) - and that is that it turns all of our reporters into the typists on their reports. But not... I don't see very many people handwriting a report out anymore and then... They compose it right on the PC. And so, it's a big, big time saver.

Farley: [redacted] you're... So, you're saying receipt of new equipment and state of the art... and all that: Do you... ? Were sort of second fiddle to NSOC? NSOC got all the best?

[redacted] Very definitely. And the real, I guess, illustration of that - the biggest one I can think of - is there's a... Our graphics capability. For instance, we like to be able to fly satellites graphically. View them flying in real time or extrapolate forward or backward. Put satellite networks and look at how they interact with one another. And so, we've always had that requirement. The graphics terminals that we wanted were never designed, really, to do that. They were designed to plot aircraft and ships for NSOC. But we were given a couple of OMNIBUS terminals. And they're in ops right today. And never really been well supported. They've been time-sharing things. So, quite often, they're very, very slow. In other words, NSOC has got the controller that drives the whole system. And if they're in the middle of a big air exercise or something, for us to try to fly a satellite, is tediously slow quite often. And the equipment is... It's... By now, it's old, old, old. Antiquated. Dead most of the time. I used to - whenever I gave DEFSMAC briefings - liked to sit down and tell people that this illustrates how closely we work with Space Command. Because I can sit down right here. And I can call up a... any satellite... active satellite element set. And instantaneously fly it. See where it is now. Where it will be tomorrow. Whatever I want to do. And... But for three times running - and it happened once with a general - every time I would sit down and do that and I'd get it all set up and I'd hit the button to fly it - and the whole system would go down. And then they'd look at me, you know, like, "Is Space Command still out there?" You know, "Is the whole... ? What has happened? Has the whole world... ?" (TR NOTE: Farley chuckles.) And so, I never do it anymore. (TR NOTE: He and Farley chuckle.)

Farley: Let me switch (tapes), [redacted] (TR NOTE: Taping stops.)

[End of Tape 2, Side 1]

[Tape 2, Side 2]

Farley: O.K. This is a continuation of the interview with Mr. [redacted] Do you have any more comment on that... on the equipment?

[redacted] Oh... Yeah. We're getting...

Farley: I'm sorry. I was going to ask... Helen, do you have a question on NSOC? The relationship between DEFSMAC and NSOC?

Tucker: No. I don't really want to get in to NSOC.

[redacted] O.K.

Farley: (TR NOTE: He pauses, then says:) Oh... Oh, I... You're talking about MSOC!

[redacted] Oh. MSOC.

Tucker: MSOC.

[redacted] MSOC. Yeah. MSOC.

Farley: I beg your pardon!

Tucker: MSOC. That's the Manned Space...

[redacted] Yes.

Farley: I beg your pardon.

Tucker: O.K.

[redacted] Yeah.

Tucker: When it came into the DEFSMAC area.

Farley: I thought...

Tucker: We have a little room in there that those people sit in.

[redacted] Yes.

Farley: O.K.

[redacted] Yes.

Farley: NSOC: Do we have any relationship at all with the NSOC (C% people)? (TR NOTE: partially blocked by [redacted] clearing his throat.)

[redacted] Yeah. We keep them apprised, of course, of any new launch activity. They interface with us in the area of, say, [redacted] They are the first recipient of that type of information. And so, they... Yeah. We work closely together. We're not subordinate to them at all.

Farley: No.

[redacted] But we have a ring-down phone. And have a very frequent occasion to get information from them. And then, in turn, supply them with what's happening in the missile and space arena. But we've continued to operate, historically, as two independent centers. And I... Every time I hear of... thoughts about combining us, it may seem like a good, logical idea. But we've... As we've really looked at it, we can't find any reason why it'll make our job any easier or better. In other words, anything we need from them, we can get via a telephone. And, I guess, one advantage might be if we

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were tied in with them, we might get a five-team watch, rather than a four-team watch - which we have right now. (TR NOTE: Farley chuckles.) It's...

Farley: Right [redacted] are you in competition with collateral sources? That is, reporting the launch of the missile: you want your SIGINT reports to get on the street before the collateral sources come out. Is that always a battle? A challenge, as you say?

[redacted] No. No, I don't really see that, at all. Because, basically, everyone else - there are some exceptions and I'll point those out. But everyone else really has to rely on us to tell them what happened. [redacted] So, we're... Our watch is normally the first out on the street with an end-product. And... Now, the exception, of course, is [redacted] And this is growing, because there are more and more missile launches - it doesn't apply to space, really - but more missile launches now that are on a (C% telemeter). And so your... Certainly, your initial indication and sometimes, your only indication of launch will be [redacted] And so, that whole story... I don't know that we're in any competition. But [redacted] (TR NOTE: Addressing [redacted]) They don't put out anything really current on missile launch, do they?

OGA

[redacted] (TR NOTE: Faintly, in background:) No. (3-4B by [redacted] speaking.)

[redacted] Yeah. So they're... In the case of a space launch, [redacted] has customers. And they'll go out early with a... the fact that a space operation has occurred. And they'll give their assessment of what they think the mission is. I've never really considered us in a time... a competitive thing, like... I don't know. You know, I guess, I don't even know who goes out first. I suspect sometimes they may beat us. Our watch officer: his first priority is, of course, to get all the collectors alerted that a launch is about to occur or has occurred. And [redacted] would be included in that group. We, then... As the data starts coming in, - [redacted] - they will, then, feed that mission identification information to the collectors that can handle it or would have use for it. [redacted] would, again, be included in that. We're not always... Getting an end-product report out is not a high priority with us. If we get it out in the first 30 minutes or something, that's satisfactory. There's just... Today, in the real world, there's just nobody that has an over... a very timely requirement for that, other than [redacted] And we do... We handle our satisfaction of their requirements through the circuit that we have rather than end-product reporting.

Farley: Good. [redacted] what would you say the batting average of the center is in predicting new families of missiles and their initial firings?

[redacted] Well, I think it's [redacted] The... And the reason is, the Soviets

[redacted]

Farley: O.K.! (TR NOTE: He chuckles.)

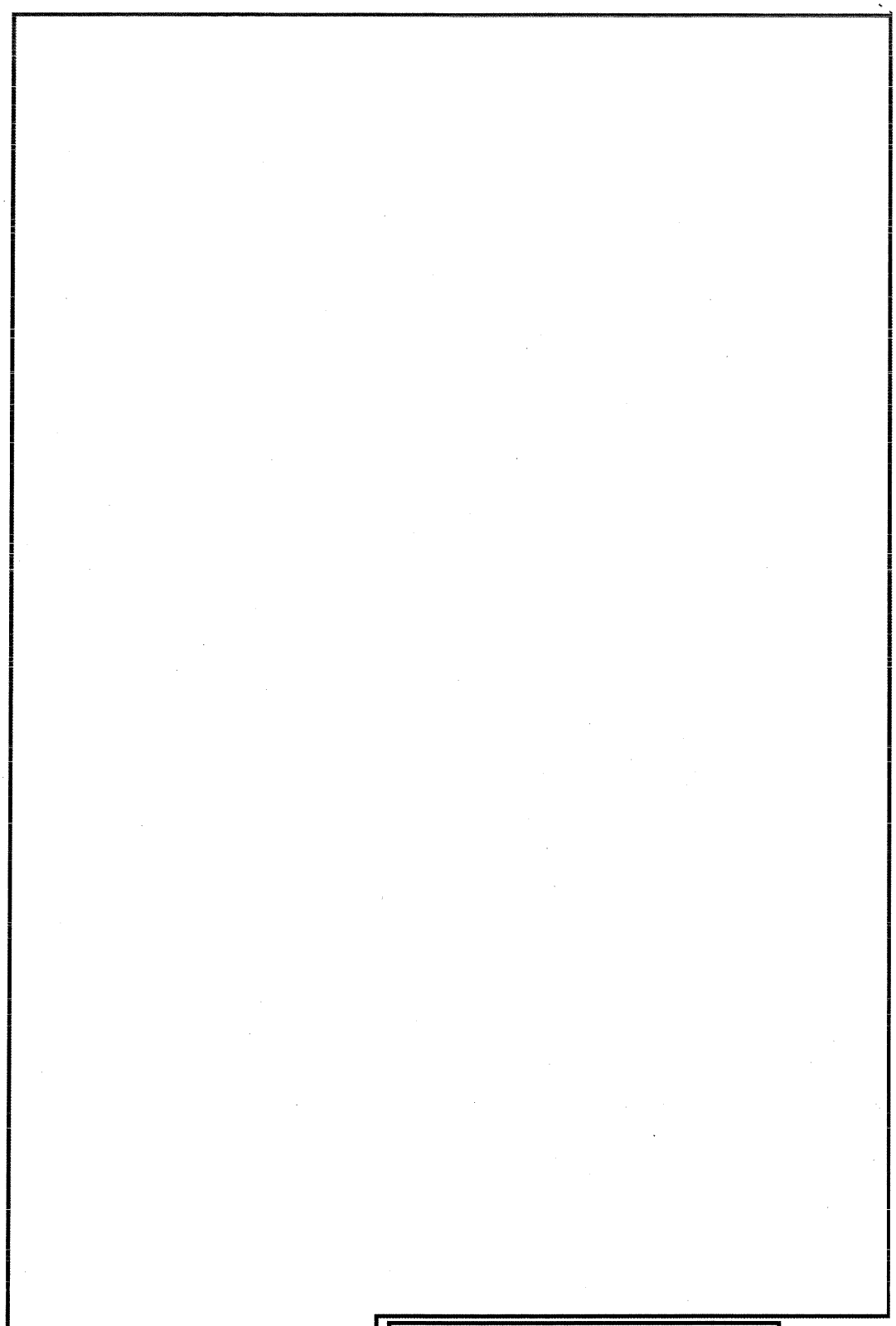
[redacted]

We don't think it's something else. But we can tell, usually - almost always - with a space launch, if we know what the thing is... or if it's a new program.

Farley: Good. [redacted] you can probably give me two dozen examples. But can you think of two or three outstanding successes achieved by the DEFSMAC people in predicting or beating the clock or however you want to phrase it?

[redacted]

Well, I think... And this is... I hate to say it's all of a DEFSMAC coup but it



And it was when we were approaching our first Apollo

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launches. The Soviets had just started developing this J vehicle, which, of course, turned out to be a disaster. But they were intent on beating us to the Moon in some manner. And so, they had this program. It was the Zond or the Probe program - that they called it. And they were, in essence, launching a portion of the Soyuz manned capsule. Putting it on an SL-12, which was their biggest booster, at the time. And their intent was to fly it to the Moon and not land or even go into orbit. But just use the Moon's gravitational force to swing it around, and if you will, sling-shot it back to Earth. And then, have it come up over the Indian Ocean and recover in the Soviet Union. And we watched... First of all, the SL-12 booster was having a lot of problems. They were... A very poor success rate. And we felt that this is what they were doing. That this Zond program: it wasn't manned-related.

But at any rate, the first one that the Soviets got off successfully - it was Zond 5. And it slingshotted around the Moon. Came back. And they had... They were configured to recover it in the Soviet Union or in the Indian Ocean. They... If it came in ballistically, it was going to be Indian Ocean. And if it came aerodynamically, it was going to skip on in to the Soviet Union. And I... We don't think that they really knew what they were going to get. It was... It's a very... very tight window that they had to hit in order to skip on into the Soviet Union.

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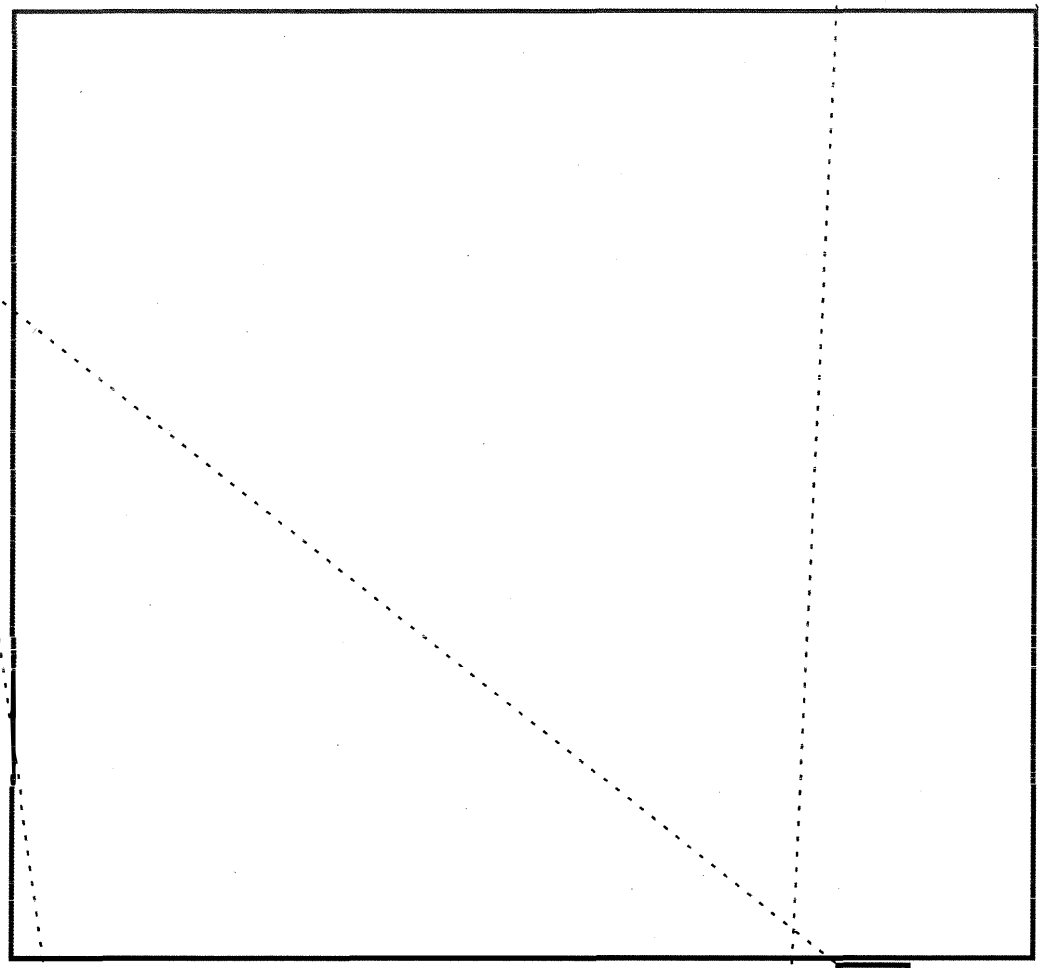
So, you knew that they had a lot of Kentucky windage on that thing! (TR NOTE: Farley chuckles.) As it turned out, it came in ballistically. Landed in the Indian Ocean.



Farley: [redacted]

Farley: [redacted]

Farley: Good. Those are excellent examples. Thank you very much, [redacted] One quick one before we move on. We're doing pretty well. Helen? Are we doing pretty well?

Tucker: Still want to get to MSOC.

[redacted] MSOC. O.K.

Farley: O.K.

Tucker: Yeah. Have to get that from you.

Farley: All right. We will. Let me... A quick one...

Tucker: [redacted] what time does your shift end?

[redacted] I... I'm not on a shift. So, I don't... Whatever...

Farley: O.K. Good. Yeah. I have less than 10 questions, Helen. I could throw this out. First women in space: how did you tell it was a woman? (TR NOTE: He and [redacted] laugh.) Remember that one?

[redacted] Yeah. That was, of course, during the Vostok days.

Farley: Right.

[redacted] And that's, you know, [redacted]

Farley: Oh. O.K.

And you could...

You know, it's... Leonov: that guy... He was described as "the bull" by our astronauts that worked with him during the Apollo-Soyuz test project. The guy's incredibly strong. You know, he's a physical fitness nut.

Farley: Wow! (TR NOTE: He chuckles.)

And normally that would... In fact, it... When we saw it the first time, it caused a lot of consternation.

Farley: (TR NOTE: He chuckles.) (C% Sweat) that out to keep him alive!

Farley: You've pretty well covered this one, but maybe you want to expand on it. Does DEFSMAC assist or cooperate... ? No. I'm sorry. How closely does DEFSMAC work with the NASA at Greenbelt and Houston and Cape Canaveral and the other space centers?

Well, we've always had a very close relationship with an organization at

It's headed up by... I think it's a two-star general normally. But anyway. We don't work with him, of course. But he's got a couple of guys.

It used to be

But we've always had a close relationship with those people. Usually, it's us giving them information. But it's worked the other way around, too. For instance, when... Oh! Who's the... ? (B%

program. He came out a number of times and he enjoyed working with our manned space analysts. And he found it useful for things he was doing. And he invited us to send people down to

the visitor area for two or three days at a time. Just kind of sit there and watch what's going on. It was very... It was a good learning experience for our manned space operations people. We sent both DEFSMAC people as well as the linguists and the spacecraft analysts down there for different periods of time.

Farley: Right [redacted] want to move a little faster. Does DEFSMAC assist or cooperate with any friendly countries in their missile or space effort? And I'm thinking of anybody who wants to develop their own satellite program or any space efforts?

[redacted] Well, I'm not... I guess, I'm not aware of DEFSMAC being involved in that aspect at all.

Farley: O.K.

[redacted] I'd have to say "no." It... I know you want to hurry. This is kind of one little thing that kind of surprised...

Farley: No hurry.

[redacted] O.K.

Farley: I'm here all day, if you want.

Tucker: Yes.

[redacted] Fine. This is one thing that has kind of surprised me as I've worked or had exposure to the U.S. program. I never had any exposure to the working level on any foreign program. But the U.S. program... Even in the air-to-surface... You know, down at Eglin... And you go down to Patrick. And you talk to the other engineers. And they seem to be, generally, oblivious to what the Soviets are doing. That may be changing a little bit. But it's... Back when we were there, I was just shocked with the lack of interest that people at NASA had in the Soviet manned space program, for example. When we were down in Eglin. And we're kind of talking... Oh, we had some, I guess, fully cleared people. And we were talking to them about how their air-to-surface missiles were telemetered. And, you know, why don't they do this or that? And they all but laughed at us, when we even suggested that anybody could copy the telemetry from a SIDEWINDER or any other air-to-surface missile... or air-to-air - and figure anything out from it. They said, you know, "How would you scale the channels?" And "These are all unique engineering things." You know, it's all... To them it was all gobbledy-gook, unless you had the manual sitting there. But I was really surprised that they would have that impression: that they're... that they were immune to any intelligence penetration. (TR NOTE: Farley chuckles.)

Farley: [redacted] are there ever any slack periods in DEFSMAC? Where the guys can relax a little bit?

[redacted] Yeah. May Day. (TR NOTE: Farley laughs.) The Soviets, historically, take off certain periods. Their big holidays for them: the New Year's holiday. And May Day. And the October Revolution. So, those are always a few days when there's not going to be any launches. Period.

Farley: Good. Good. Helen, we have a question on MSOC?

Tucker: Yes. That's the manned space effort over there in DEFSMAC.

[redacted] Yes.

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Tucker: How did that come about?

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Farley:

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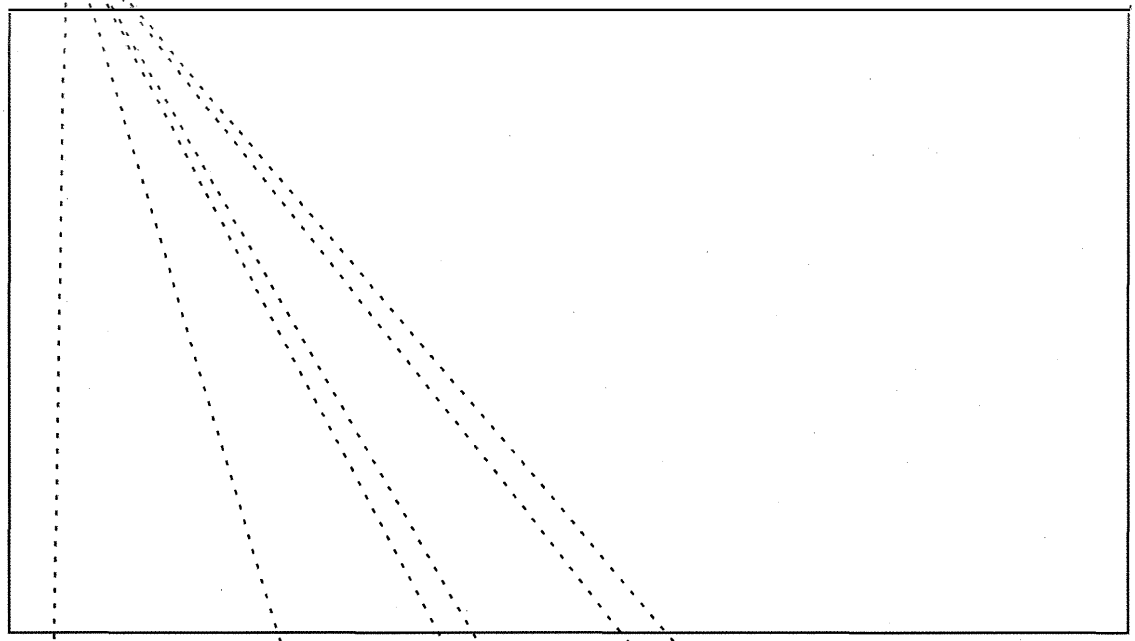

Tucker: O.K. Now, this MSOC center?

[redacted] Yes.

Tucker: It isn't DEFSMAC people. These are people from [redacted] and others.

[redacted] Well... And DEFSMAC.

Tucker: MSOC?

[redacted] Those are the three organizations. It's... As far as an entity, it's pretty loose. Administratively controlled by the individual organizations [redacted] and us. But we have... They've been melded into a team. They all work together. And I've never been aware of any big problems that that's created.

Tucker: I didn't notice any problems. I just couldn't find any hard and fast facts to document it.

[redacted] Yes. Yeah. Well, it's...

Tucker: I came across a memo where it went down... what we proposed.

[redacted] Yes.

Tucker: And then, nothing.

[redacted] Yeah.

Tucker: It's (C% blank; partially blocked by [redacted] clearing his throat.) But they're there. And they're working. And they're very good at it. (TR NOTE [redacted] chuckles.) And somewhere along the line - and you just explained it - that they tried to expand it on... And as... I would say, we wouldn't be somebody else's turf. And it just kind of... probably got buried.

[redacted] Well, I guess, justifiably, every time we get, like, a new chief of W11 and they start thinking about this, they want to get the documentation for [redacted]

commitment to support us there. And it just doesn't exist. And every time we've tried to get it, it started to cause big problems. And I... It's not the way to do it. I'd like to have a formal agreement, but... As long as the requirements are there... I guess, it really boils down to... It would be actually superfluous, I think, because the requirements to do what they're doing in there, are very high-level NSRL validated requirements. And it's just unconscionable that [redacted] for example, would say, "We're not going to this anymore." They may say that, "We're going to do a little less of it." But that's just... I don't think going to happen. In fact, the personnel commitments are going to increase in the years ahead. And that's probably our biggest challenge. If... We're virtually overwhelmed now. We've had a mission - continuous mission - up there for, what? A year and a half now. And the people... I mean, we're experiencing burn-out with a lot of our people. And again, you don't have people you can pump through there to relieve them. And so, that's a big problem that we've really been dreading for a long time. But aware that it's going to happen. What's going to happen when they get the... ? Ten years ahead, they're going to have a huge station up there with 15 to 20 people full-time. What's going to happen in the next few years, when they start putting these modules up? And they have a half a dozen people up there? And [redacted] frankly don't know how we're going to handle it. Already, we're trying to cut back on some of the ways we look at that stuff. But because of leaks - compromises and such over the years - [redacted] But, as a result, we have to really kind of comb through that stuff with a fine comb, to try to cull out the little things [redacted] that give us some insight as to what it is they're doing. And so, the problem has gotten a lot tougher.

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Farley: Any more on that, Helen?

Tucker: No. That filled in that hole.

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Farley: O.K. Good.

[redacted] The... If I could just add one other little thing.

Tucker: Yes.

[redacted] I felt that using the MSOC, you can't... The correlator is not 100 percent. But using the MSOC is kind of a prototype [redacted]

[redacted]

Farley: Right.

Tucker: Well, that's like Charlie Tevis. Years and years ago, he said that we were going to see the Soviets using these spacecraft for military reasons. And that we'd better find some way to counteract it.

[redacted] Yes.

Tucker: And somebody must be doing something. But I don't see that DEFSMAC knows about it. I mean... You know, I mean, we know that it's... that's something's going to happen. But we don't know what "the good guys" - quote, you know, "us" - would be doing to counteract it.

[redacted] Yes.

Farley: Right. [redacted] one final question. Your long association with DEFSMAC. Years and years and years. Do you sense or did you sense that there were certain shortcomings in the way DEFSMAC was organized and functioning? And if so, how would you change or would you improve the system?

[redacted] Well, I guess the... First of all, the center, I think... The organization has always been very, very good. Because it's very simple. You know, we're not complex in our arrangement. Our lines of control or subordination, initially, I felt, were very, very good. Because DEFSMAC... Looking at the NSA side, we had... Our director...

Farley: Let me switch (tapes), [redacted] please.

[redacted] Sure. (TR NOTE: Taping stops.)

[End of Tape 2, Side 2]

[Tape 3, Side 1]

Farley: Good. Please continue, [redacted]

[redacted]

[redacted]

Farley: Right.

[redacted] So, I don't if I really answered your question. But the...

Farley: You did.

[redacted] The DEFSMAC organization itself: I'm very happy with - with the [redacted]

Farley: Good.

[redacted] And some other organizations.

Farley: Good answer, [redacted] any fond... final recollections or comments before we click it off? (TR NOTE: He and [redacted] chuckle.)

[redacted] Well, it's... Obviously, I've enjoyed working here. Because I've been here 24 years.

Farley: Yeah.

[redacted] It's... There's pro's and con's of that, of course. You get a lot of experience and longevity in a problem. The only problem is that it hurts your ability to diversify and progress. DIA has never... You don't quote me, right?

Farley: No.

Tucker: No.

[redacted] DIA has never had any areas down there that I've really been interested in. (TR NOTE: He and Farley chuckle.) But I guess that's why I've never pushed to go down there. But that's... That's the one, I guess, problem that we have: our strength has been the... our retention ability on people. We've kept them a long time. And there's a real value in that. Because of that, we can take somebody pretty new and make them productive right away. Because you can set them down to [redacted] and the guy can be writing reports the next day, because he's got somebody looking over his shoulder that really knows the score and everything. But if you don't... I see people come... As they're coming on now - the intern programs and such... And DEFSMAC's a great place to stay for two or three years. You know? And then you've got to move on. And the Agency management encourages that sort of thing, in order to blossom out your career.

Farley: Right.

Tucker: Let me make a point on that. Now, you're leaving: October.

[redacted] Yes.

Tucker: Who are they training to replace you? Anybody at DIA?

[redacted] Well, no. See, DIA... I'm sure they've given absolutely no thought at all to anyone coming out here to replace me. I was asking Don a while back if we couldn't start advertising. He said that they can't legally... They can't advertise the job until I'm gone.

Tucker: And you're between a big (1G) billet. But they (1-2B by [redacted] speaking) our field.

[redacted] But... You know, we've been looking around. We got a couple of people here that are interested. They're NSAers that would like to be converted to DIA. But I haven't... just, say, come up to this point, "You're responsible," because I've... We've recruited [redacted] out of that AFSSOP or that AFIN organization. He used to be with NSA on the watch. And in the military, too. But [redacted] a sharp guy. (B% Bill Barnes) we recruited to get him back into SMAC. And... Because all the people... It's kind of funny: all the people that I've had... kind of felt would be my successors, like [redacted] Barnes, they all... You know, they... You know, they're here for a number of years. And then, they get... They're told, "Hey, if you really want to progress beyond GS-13 or get a chance at a (GS-)14, you've got to go to another assignment. So, away they go. But Bill Barnes, of course, was pulled away like that. But we were able to get him back, now. And... So, Bill's going to be really key. He's our best historical source, by far. Because we're going to be losing [redacted] again, too. He's...

Farley: Is he retiring?

[redacted] Well, he's... He could have retired about three, four years ago. And I kind of expect him to leave, you know...

Farley: Sure.

[redacted] Some time in the near future.

Farley: Helen, any more questions?

Tucker: I think that's all the questions...

Farley: How shall we classify these two cassettes?

[redacted] I think it... I guess it should be ~~TOP SECRET RUFF ZARF UMBRA~~. I think that would do it. I don't... I never got into any ~~GAMMA~~ stuff or ~~VRK~~ stuff.

Farley: ~~O/K. TOP SECRET RUFF ZARF.~~

[redacted] ~~UMBRA.~~

Farley: ~~UMBRA.~~

Tucker: ~~That makes it TK.~~

Farley: ~~And TK.~~

Tucker: O.K.

[redacted] Yeah.

Farley: O.K.

Tucker: That's going to be the...

[redacted] (TR NOTE: Faintly in background:) [redacted]

[redacted] Right.

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Farley: Yeah, that's right.

[redacted] [redacted]

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Tucker: Yeah.

[redacted] Yes.

Farley: Well, [redacted] I want to thank you very much for your time. It's been most enjoyable. And most informative.

[redacted] Yes. My pleasure. (TR NOTE: He chuckles.)

Farley: And I learned more about the space program than I have in the past... four interviews, Helen?

[redacted] (TR NOTE: Following partially blocked by Farley speaking:) (C% Four hundred years!) (TR NOTE: He chuckles.)

Farley: Four interviews?

Tucker: [redacted] ells a very good, concise story.

Farley: He sure does.

Tucker: He gives...

Farley: Well, he was there.

Tucker: Well, he gives examples that fills you right in on it.

Farley: Yeah.

Tucker: The other people talk and you have a general idea. But he puts you right there.

Farley: Right.

[redacted] Well, thank you. Thank you.

Farley: I thank you much again. Really enjoyed it.

[redacted] Certainly.

Farley: Colonel, (do) you have any final comments at all or... ?

[redacted] (TR NOTE: Faintly, in the background:) Yeah. If we can just figure out a way to get [redacted] hired on as a professor of air (1-2G). (TR NOTE: [redacted] and Farley chuckle.)

Farley: Oh, you are! Good. Bring him back as a consultant.

Tucker: I don't... [redacted] is not leaving the work force. He's just leaving government service. He... We may have him as a consultant.

[redacted] A consultant!

Farley: Good.

[redacted] Very good! (TR NOTE: Inaudible voice speaking in background.)

Tucker: Well, you never can tell. He's not leaving the work...

Farley: O.K. Thanks very much, again, [redacted] And I'll click her off. Colonel, you have

any comments? (TR NOTE: [redacted] presumably gestures a "no" response.) All right. Thanks again.

[redacted] Thanks for letting me sit in.

[End of Interview OH-1988-11 [redacted]