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Prepared by

July 1967

for Dir program

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6 February 1967

Suggested Talking Paper for RADM Fluckey

1. Because of the widespread interest in the Soviet ABM/AES situation (i.e. PSAC and USIB interests) and its high national priority, I feel the Navy should do all it can to be responsive to the present situation.
2. I asked Mr. Lorenzen, who is working with your committee, to bring me up to date on their deliberations.
3. It would appear the Navy is only being delegated a very minor short-term role in the immediate future of the problem.
4. The Navy has a large potential for in-house R and D as well as in the operational support role. What can be done to bring these forces to bear in a long range program?
5. Dr. Frosch, ASN R&D, and Dr. Johnson, DNL, also shares the desire to lend Navy support to the problem.
6. Would it be possible for Dr. Frosch, Dr. Johnson and me to obtain a briefing of what you intend to present to PSAC?
7. I note that the Army has not been included in your study group. Is this consistent with the Army's role in being responsible for coordinating the ABM threat intelligence situation?

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Dec 1966

Background for RADM Fluckey. *Dr. Flax's Program "C" by HAH*

As you know on 6 & 7 December the President's Scientific Advisory Committee asked to review the NRO program in Overhead Reconnaissance. I briefed them on 6 December on POPPY and the same day the Space System Division people of the Air Force briefed them on the Air Force programs P-11 and Multigroup. We had a dry run of the briefing for Dr. Flax the week before and after seeing the extent of the SSD pitch we worked all week end and Monday getting together a more comprehensive and all inclusive briefing.

On the first day questions were raised about the ABM problem and how could the NRO program be more responsive to this. The second day SSD came in with a briefing showing what they could do to P-11 and Multigroup in terms of being more responsive to the ABM problem. I learned from one of the briefing team that they had been alerted to have a back-up briefing to cover this several weeks before. I sat next to Dr. Flax and I made the comment I felt the Navy was not really on their team as we had not been asked to respond to the ABM question. He suggested this was not so and we would be asked for our contributions.

On Friday that week Harry Davis (Dr. Flax's technical advisor) called me and asked if I could come to the Pentagon that afternoon to discuss what we could do to make our program more responsive. I took Mr. Mayo with me and Harry said he wanted us to "Brain Storm" and come back Monday at 9:00 AM to tell him what we could do. Several ideas developed and I proposed modifications of 7105 to cover all the band 153 Mc thru 3300 Mc by adding to the C and D satellites. Also the problem of putting a small computer at [redacted] to sort the data by geographic coordinates for the five most suspect locations.

On Monday at 7:50 AM Harry called to ask that I delay my meeting with him until 12 Noon. When we arrived in the Pentagon with the charts we made up over the week end about 10 NRO and SSD people were standing in the hall waiting to see Dr. Flax. Several of these attached themselves to us as we went in to see Harry Davis. We spent about 10 minutes bringing him aboard on our proposals. He said they look good. We were then interrupted by someone telling Harry that Dr. Flax was ready to see the group. He left with the rest of the group. We packed up our charts and prepared to leave. As we were leaving Harry's office we met General Stewart who greeted us warmly and said "What you got?" I explained we were showing some proposals on how we might be more responsive and he said "Let me see what you have to offer". Several of the people heading into Dr. Flax's office called to General Stewart saying they were waiting for him in Dr. Flax's office. He replied "Go ahead, I want to see what Lorenzen has".

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We gave General Stewart a quick summary and he seemed real impressed. He said "Dr. Flax should be getting this briefing too as he is hearing what SSD is proposing now." I replied, "It is obvious we were not invited to participate in the briefing and I feel we are not wanted and really weren't part of the team". He replied, "Nonsense, I want you to give your material to Dr. Flax". We joined the group in Dr. Flax's office after some pretty cold stares from NRO office personnel especially COL Haig.

The SSD briefing had nothing that could be accelerated to less than 18 months and no modifications were possible. The price tag for what was presented was \$27.9 millions.

I gave our presentation calling for a 7-week delay in 7105 and giving complete coverage from 153 to 3300 Mc. Also I proposed the additions of a computer at [redacted] (all Navy Stations) to process the data in the field based on geographic sort at a cost of \$350 K per station. NSA representative Ray Potts objected to processing in the field (later he withdrew his objection). Dr. Flax acted most pleased because it offered the only immediate reaction which NRO could show to the PSAC request of updating. Later POPPY modifications and the geographic sort by the computer at [redacted] were presented in a paper from NRO as the first item in the reaction paper.

Dr. Flax exorcised the SSD people to be more responsive. He said he could not go back to PSAC with only this token. (He did, however, in his first memo.)

Everything was strangely quiet until I received *adm Fluckey's* [redacted] *Poppy Mgr.* call that you wished me to serve on a Committee chaired by Harry Davis to review the proposals to be made to PSAC. Since the 4th of January I have spent almost full time on the Committee work in the Pentagon. We have reviewed all the programs existing and the proposed ones extensively.

In the beginning POPPY was one of the major systems being considered as being responsive to the ABM threat. Our 100% probability of detecting any radar that illuminates the satellite was considered as an excellent candidate. Other systems give very interrupted looks at the radar due to frequency scanning or satellite antenna rotation.

The NRO Office brought in a SSD mathematician to prepare a probability paper for the various systems and in the beginning his numbers were very friendly to POPPY. Each time he produced a paper he was asked to go back and re-do it with more restrictions which would make the other systems (their characteristics were constantly being modified to make them look better) look better. POPPY really looked good when I found out from NSA that only in POPPY data (4 times total) the BUGH signal had been received and it had been pinpointed to the Sara Shagan complex. The next couple of days there was extensive back room work and finally they announced the reason neither Multigroup or P-11 had received the signal was because the

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frequency scan rate in Multigroup was too fast for the PRF and in P-11 the Spin Rate for the antenna was too fast to permit recognizing [] to accept the signal. (Further modifications in P-11 and Multigroup resulted and new probability curves were drawn by the expert to show their capability to deal with this signal.)

I had never felt in spite of the obvious stacking of the cards that we had a worry, because the briefing team had always included my name as briefing POPPY and I felt I could put in enough details to cover the points where our strength lay, such as location accuracies of 4 to 4½ miles average, and after 7105 this should come down to less than a mile due to improvements.

On last Thursday, suddenly Harry Davis decided the briefing crew was too large and SSD would brief all existing programs, and either he or SSD would brief any new programs, thus taking two people off the briefing team.

Next he announced all P-11 and Multigroup modifications had been approved so they would be moved to the present programs, leaving only 7107 in the intermediate program 12 to 18 months. Meanwhile proposals for Sun Synchronous Satellites with elliptical orbits 4400 to 400 miles were briefed as being capable in 15 months. Also synchronous satellites of elaborate design were being briefed as being capable of design in 18 months. The intent here is to steal boosters from other existing programs to meet the launch dates.

After brief conversations with [] USN (Ret.), ex-ONI and DIA, we decided the Navy was being shuffled out of the program by the obvious maneuver of the Air Force approving all competitive programs and putting us in competition with the far out proposals. We met with [] [] to discuss Navy strategy.

Since the Elliptical and Synchronous Satellites require big boosters, the briefings proposed costs on the minimum side of \$86 millions to \$108 millions to get a token effort underway; it is obvious the Air Force hopes to broaden its program in this area by using PSAC to endorse its program outside the usual COMOR and USIB reviews.

Unless we desire to let the Air Force effect another "take over" the Navy must express interest in the problem and in addition to you, Dr. Frosch must express interest in having the Navy "look good" (responsive) and be represented at the PSAC briefings.

In attendance at the last PSAC briefings was Dr. Flax, Dr. Tordella of NSA, Dr. Koslov of DDR&E and many others of similar standing.

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