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Nov 1972

MEMORANDUM

To: File
From: L. Hammarstrom

Subj: Summary of Dr. McLucas Visit to []

Attendees:

[]
GEN Bradburn[]
CAPT GeigerMr. Hammarstrom
[]

Mr. Lorenzen

Dr. McLucas

ADM Phillips

Mr. G. Price
[]

1. The briefing was prepared in a joint effort of Mr. Lorenzen, ADM Phillips, Mr. Hammarstrom, Mr. Price, and the [] personnel.

2. Dr. McLucas and his party arrived [] at approximately 9:00 a.m. on Tuesday, November 14, 1972. After a few introductions, LTJG F. Booth, of [] gave the station briefing. The primary aspects were: (1) station staffing, (2) basic operation of the system, (3) tasking of the station in collection, processing, and reporting, (4) S.O.I. Lists and associated statistics, (5) processing capabilities, (6) reporting procedures.

3. Of high interest to the visitors was the capability of tracking Soviet ships using the system. Tracks of a Soviet major combatant were shown, from a number of days during Exercise STRONG EXPRESS, with 3 to 6 location given per day. During November 1972 processing times averaged about 25 minutes for the signals on a pass and total time, from initial intercept to the report going on the communications links, was about 52 minutes. This can be compared with the 90 minutes which was required at the time of initial installation of the SEL-86 in September. The impressive statistics from Exercise STRONG EXPRESS, indicating a Mode IV capability in processing as a result of the augmentation, were contrasted with Exercise OKEAN (which was pre-augmentation).

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	<u>OKEAN (1970)</u>	<u>STRONG EXPRESS (Sep 1972)</u>
Station Hardware	810	PDE/810 - SEL-86
Soviet Combatants	> 30	4
Duration	approx. 42 days	13 days
Reports	400	147 ¹
Time to Report	4 hours	1 1/2 hours ²
Reports/Ship/Day	0.3	2.8

The significance of the System 86/PAPS providing the Navy with a Mode IV processing, reporting, and response capability was exceedingly well received; particularly after it was pointed out that the system's output was no longer processing limited, but rather limited only by the collection opportunities of [] satellites and that all ship data was processed and reported within the 53 minutes between [].

4. The next part was the observation of a collection/processing operation. The visitors watched the pass in the command/receiving area and were impressed by the fact that anything could be determined from the data they heard (due to the density and the multiple RF bands). At the termination of the pass, before the visitors finished their discussion in the receiving room, the first locations were on their way to FOSIF! Dr. McLucas then walked into the computer room and was invited to run the PAPS/86 system to locate the []. He sat at the console and within about 5 minutes he had located the [] collected on the previous pass (one West of Spain and the other in the Eastern Mediterranean). He and GEN Bradburn both expressed amazement at the ease and speed of processing the data. That concluded the formal tour.

5. In the ensuing discussion the following major points were raised:

- A. ADM Phillips made a request to Dr. McLucas to insure that no time period would exist without satellite coverage. He cited the problems of maintaining staffing, morale, experience, etc. at [] during such a gap. Dr. McLucas concurred with the seriousness of the situation and directed the follow-up to GEN Bradburn/CAPT Geiger.

¹ This was 17% of total [] reports during the period of STRONG EXPRESS while in OKEAN the figure was 100% of reports.

² Timeliness in October was 74 minutes; November, to date, 52 minutes.

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B. In GEN Bradburn's concurrence with the seriousness of (A) above, he went into a discussion on satellite reliability, lifetime, and providing an early launch capability. At least three separate times during this discussion he made the strong point that, "the next satellites must be simple!"

5. The visit concluded with all members of the visiting group making very complimentary comments on the level of system performance. The fact that they had actually participated in the system operation at a Mode IV level seemed to be particularly pleasing. They felt that the augmentations of the PDE and System 86 were impressive. They also highly complimented the fact that the entire system is run by naval enlisted personnel which is in sharp (and pleasant) contrast with the \$67.5K/man-year professional staff they had to have at the [redacted] collection operation they had at [redacted] (They must have just visited it as they had the [redacted] project head from [redacted] along!). He provided the actual cost/man-year and also expressed a favorable impression of the operations.)

(As a personal note: Both GEN-Bradburn and Dr. McLucas passed on their compliments on the success of the augmentation development.)

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