McDaniel

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989 PROGRAM PLAN

P989

ISSUE: The NRO has presented two program plans for Program 989.

The revised baseline program provides for continuation of URSALA IV and RAQUEL IA but allows no more starts until FY-79. After FY-79, all new vehicles would be of the same type.

The alternative to the baseline provides for alternating URSALA and RAQUEL IA type vehicles.

The revised baseline slows down the 989 Program considerably. This plan provides for a .6 probability of one P-989 on orbit at any time. The plan virtually eliminates any possibility of two P-989 satellites on orbit. In crisis situation, the P-989 revisit time would be degraded. Any special ELINT support could be provided with only one P-989 - thus increasing this burden on [redacted]. The one vehicle on orbit proposed in this plan if left undefined. The implication is that a new satellite will be designed combining features of URSALA and RAQUEL. We cannot yet evaluate this concept since we have no details on it. It does not, however, seem wise to do a lot of R and D in P-989, which is nearing the end of its existence. 25X1

The alternative plan would continue the present mix of URSALA and RAQUEL I type vehicles. This mix has provided very useful ELINT collection. URSALA and RAQUEL have distinct missions. URSALA has been the workhorse of the Operational ELINT problem, providing the majority of overhead EOB update and Time Critical Reporting. RAQUEL I has provided unique collection in support of Search and TI - this has proved especially valuable in the analysis of the newer Soviet Missile Systems. Alternative 1 provides for a continuation of P-989 as it has been for the past several years, and provides a much higher satellite availability than the baseline.

The costs displayed for both plans appear to be very high. RAQUEL IA was begun in FY-76 at a contract cost of $13.6M spread over three years. The proposed cost of RAQUEL IB, begun in FY-77 and spread over three years, is $21M. This represents 54% inflation in just one year. The FY-78 start shows 37% inflation overy FY-77; the FY-79 start shows a decrease; and the FY-80 start shows 18% inflation over FY-79. These numbers are inconsistent. The increase in a FY-80 start compared to FY-76 is 138% - this seems excessive in just four years. The attached table displays the costs of new P-989, using the $13.6M RAQUEL IA cost, factoring in 9% per year inflation, and spreading the cost over three years. We believe these to be more realistic cost estimates.

RECOMMENDATION: We favor the alternative program.

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ELINT INTERACTION STUDY

BACKGROUND: As a result of the November, 1975, ExCOM, [redacted] undertook an ELINT Interaction Study. The stated purpose of the study was to determine the need for P-989 [redacted] Initially NSA was invited to assist in the interpretation of the requirements as stated in the USIB Five Year Guidance for Overhead. The requirements interpretation and the study itself were to be briefed to the SIGINT Committee for approval.

In February, 1976, [redacted] presented a briefing at NSA to describe the capabilities of each of these programs to satisfy ELINT requirements. At this time NSA expressed serious disagreement with the following aspects of the briefing:

1. The original ground rule of [redacted] was abandoned in favor of considering changes to these systems. 25X1

2. The definition of search used in the study. [redacted] defines search as the location of new emitters whereas NSA defines it as the location and characterization of new emitters. Furthermore, the [redacted] concept of collection for search is that of random collection of all RFs (.1 - 18 GHz). The NSA search concept assumes some a priori knowledge of both RF and area of interest. The NSA search definition is also that held by the SIGINT Committee. The [redacted] interpretation includes only a small portion of search.

3. The [redacted] study examines only system capabilities with no assessment of the operational limitations.

From February to May, NSA participated in the study to the extent that NSA personnel went to [redacted] and reviewed and commented on the study as it progressed.

The conclusion drawn from the ELINT Interaction Study was that P-989 is required [redacted] P-989 offers the following advantages which cannot readily be duplicated in any other existing program:

1. Wide instantaneous bandwidth - this allows intercept of RF agile and broadband signals.

2. Sensitivity - P-989 provides better sensitivity than other overhead ELINT collectors. This allows collection of low power emitters.

3. Automatic location of both pulsed and CW signals.

4. Mainbeam measurement - only low orbiting satellites can access mainbeams with the variety of aspect angles required for analysis.

[redacted]

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5. Total earth coverage - P-989 can intercept over any area of the earth at least once a day. This feature coupled with the wide instantaneous bandwidth and sensitivity makes P-989 a highly effective system for scanning large areas of the earth with a large RF coverage.

6. CW pre-detection data

ISSUE: We are largely in agreement with [redacted] on the study as written. The briefing which was given to the community and the program plan which resulted from the study, however, do not reflect the study results.

In presenting the briefing and program plan, [redacted] divided the world into two parts: one being the location of emitters and the second being fine grained TI analysis. The [redacted] conclusion was that fine TI analysis is too expensive and that P-989 should be concentrated on the location of emitters (Operational ELINT).

The [redacted] view is faulty, in our opinion, for several reasons:

1. There is a middle ground between fine TI and simple location of emitters. It is on this middle ground that NSA accomplishes the most in terms of ELINT analysis. While the fine accuracies required by the PEG are necessary for final emitter analysis, the analyst can accept, and in fact the PEG specifies, lesser accuracies for the characterization of the emitter and its associated weapons system. One of the essential aspects of emitter characterization is [redacted] P-989 uniquely provides this. If the program is directed only at operational ELINT, the unique source will be lost. 25X1

25X1

2. The [redacted] view leads to the conclusion that only URSALAs are required. In fact, URSALA and RAQUEL I type payloads have very different missions and both have been extremely valuable to ELINT requirements satisfaction.

3. The [redacted] recommendation concentrates on satisfaction of USIB Guidance, Tab D objectives 3 and 4 at the expense of objectives 1 and 2.

4. ASD(I) reduced P-989 funds on the grounds that timely operational support is not required by P-989. To collect exclusively for Op ELINT seems foolhardy at best.

In addition to proposing an all URSALA 989 Program, [redacted] has recommended a study be initiated by them to define a new low orbiting program to be ready for launch in about 1984. We agree with the study concept but believe it should be a community study with NSA, as the SIGINT authority, taking the lead.

RECOMMENDATION:

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1. We support a 989 Program which provides a mix of URSALA and RAQUEL I type vehicles until such time as a new low orbiting program is operational.

2. We support an ELINT study to define a new low orbiting program [redacted] in the 1980s. The study team should be organized as follows:

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MOVE OF P-989 PROCESSING TO [redacted]

BACKGROUND: Four studies of this proposed move have been conducted over the past two years, none of which indicated that a move was desirable.

ISSUE: Funding for a move of the [redacted] is not programmed. The studies conducted over the past two years indicate the cost of a move would be high ($8M - $20M) and the savings small (maximum $200K per year).

We see no significant intelligence or administrative benefit from a move of the [redacted] There are significant disadvantages.

- Insufficient space [redacted]
- Separation of processing from tasking
- Separation of processing from payload engineers
- Loss of analysis manpower base

RECOMMENDATION: The [redacted] should not be moved. Location of the [redacted] for the follow-on to P-989 should be studied in detail in light of other ELINT processing and analysis operations, e.g., NSA, [redacted]

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