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5 April 1960

MEMORANDUM TO CDR [redacted]

Subj: Upper Atmosphere Reconnaissance Program

1. Assuming a Navy Reconnaissance Program based on vehicles, which would exploit the Navy's unique capability for launch by Polaris type Submarines, especially equipped ships or air launch from carrier based aircraft, a useful and feasible program could be developed.

2. The program would be based on two types of vehicles:

a. A simple satellite capable of carrying a payload of from 40 to 100 pounds, have the operational objective of being launched at sea by any of the three methods mentioned above, utilizing simple readout techniuqes in real time utilizing the existing ELINT stations capability (established for the present project) and additional ground or shipboard units as required for special problems, having a low order of sophistication but by virtue of this simplicity give minimum life of at least a year against specific limited intelligence objectives.

b. Simple operational probes capable of a single or partial circumnavigation of the globe, with a payload of 10 to 25 pounds on a vertical or horizonal trajectory, providing readout in real time from the existing ELINT stations already established, or additional ground or ship stations as required. These probes would have a short life of the order of one to two hours and be instrumented especially for each application having no recovery and having positive destruction in case of no burn-up on re-entry.

2. Readout capability would be provided by those stations already in existance for ELINT work, now distributed on a world-wide basis, supplimented by special unit required for special problems aboard Naval ship units.

3. Preliminary mission objectives would include typical tasks such as survillence of radar situations in all foreign complexes, checks of types of range instrumentation being utilized for Missile testings, sampling of changes in electronic ambient atmosphere under normal and operational alert conditions, location of foreign Naval units, disposed at sea under typical operational conditions by ELINT search, up dating of electronic intelligence in preparation for the launching of attack required for certain types of targeting, updating of radar order of battle for fleet commanders, provide tactical electronic order of battle on a current basis, provide back up for ASW operations utilizing this technique coordinated with other source inform [redacted] etc.

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4. In support of this program the following items would have to be considered in NRL's portion of the program.

a. Research and Development Costs

(1) Continuing Research and Development in the Satellite techniques field and in the complimentary application in ELINT Intercept techniques would be required at NRL in two major groups. Estimated funding is shown:

FY 1961 - $500K

FY 1962 - $600K

FY 1963 - $700K

(2) This would assure earmarking the required crew to keep the project adequately supported with the requisite technical talent.

b. Satellite Construction and Development based on a modification fo the present technique to meet the requirements of other frequency ranges. An estimate of two successful shots per year with a back up of a total of six units to cover this capability is estimated. These launchings would eventually be transferred to sea as rapidly as possible.

	Est. weight per package	Cost
FY 1961	40 bls.	$640K
FY 1962	60 lbs.	$960K
FY 1963	100 lbs.	$1,600K

c. Probe Construction and Development

(1) Probes would be developed for each specific requirement. In general the techniques would be similar but each unit would be different. All launches would be at sea utilizing any of the three approaches, submarines, ship and air. Four successful probes per year are estimated.

	Est. weight per package	Cost
FY 1961	10 lbs.	$200K
FY 1962	15 lbs.	$300k
FY 1963	20 lbs.	$500K

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d. Ground Stations

(1) Additional ground stations for readout would be planned as required ashore or afloat to suppliment the existing ELINT stations.

	Est. Additional Stations	Cost
FY 1961	1	$75K
FY 1962	2	$150K
FY 1963	2	$150K

5. Summary

The numbers presented a reasonable program, however, acceleration could be injected on a proportional basis but these represent nominal figures which would support the program adequately.

	TOTALS
FY 1961	$1,415K
FY 1962	$2,010K
FY 1963	$2,950K

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