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00-12422-348

2 November 1961 Meeting of GRAB Research Planning Group

A second meeting was held at U. S. Naval Research Laboratory with the following personnel present:

[REDACTED]	-	NSA - C-15	
	-	ONI - STIC	
	-	NSG - G-52	
Mr. R. D. Mayo	-	NRL - Code 5435A	
Mr. H. O. Lorenzen	-	NRL - Code 5430	(CHAIRMAN)

Also invited to participate were:

Mr. M. Votaw	-	NRL, Code 5170
Mr. S. H. Hubbard	-	BUWEPS, Code RTPA-31

Rocketry problems associated with the two ball concept were discussed.

Votaw pointed out that shock and vibration problems with Scout will be about five times as severe as with the Thor-Able-Star vehicles.

Hubbard pointed out that Thor-Able-Star was essentially no longer in production and unless an order was placed immediately it would be impossible to obtain this vehicle for the future. He favored Scout even though it was still an untried system because the cost per shot was about 1 million plus compared to five million for the Thor-Able-Star. He stated that the scouts will only have a payload capacity of perhaps 60 to 80 pounds at the start but as they become more refined this will probably rise to about 150 pounds eventually.

Hubbard indicated he saw no chance to launch two balls simultaneously in the near future and later only if the bottom one is built with a center core structural support for the upper ball. He therefore, felt our two ball effort should be confined to launching balls essentially into the same plane and orbit letting their differences in velocity take care of the times when their close proximity will produce two ball data.

Hubbard will continue to explore space available possibilities on other rockets although not too much hope is held for these possibilities.

It is obvious that for the two ball system to be a success we must know if the orbital data presently supplied is sufficiently accurate to provide data which is useful. A meeting has been set up with NSA to discuss this problem with their mathematicians. This meeting will be held 9 November 1961 at NSA.

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Certain recommended plans of action were highlighted at this meeting.

1. After a successful Scout launch we should have a plan to increase the coverage and complexity to utilize the increased weight capability of future Scouts. Scout vehicles will only accommodate a single ball therefore we must utilize its capability fully with successive flight units.

2. The Navy's program must have a series of balls each year so its existence in the Satellite program will be established and maintained.

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Peak Power

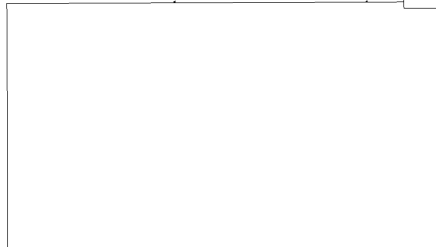
2 megawatts

Pointing Accuracy using monopulse
Techniques

- * Max. Range on a 10 sq meter target 1100 n.m.
- * Max. Range on a 1 sq meter target 625 n.m.
- * Max. Range on 0.1 sq meter target 340 n.m.

U.S. AICBM
Criteria:0.1 sq. meter target
at 1,000 n.m.

3. The attached map shows the approximate ground track of the satellite at the time the unknown signals were detected. It is apparent that there are probably several such radars in existence at the present time. Rough estimates of the probable location of these radars based on known space work activities and Soviet announced tracking stations in the  are as follows:



4. Other sources of information, including take from TOPSOC are being searched to obtain additional information on this radar signal.

* Based on a 5 db receiver noise figure.

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