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SAPC-18390
Copy 2 of 8

9 August 1957

25X1

MEMORANDUM FOR: ELINT Officer - [redacted]

SUBJECT : Redesign and Rebuilding of System III

1. Your memorandum of 7 August (SAPC-18228) on the above matter confirms your statement to me in our conversation a few days ago. In view of the tentative decision to abandon System III altogether (on which I have written a separate memorandum, copy of which will reach you), it would obviously not be worthwhile to embark on an extensive redesign and rebuilding of System III. I believe, however, that with your help, Jim Reber might set in motion a review by the potential customers of System III of the concept of an airborne system of this type and for this purpose to determine whether it would be possible to build a system of this sort that would yield truly valuable results.

2. Unless this review produced an exceedingly powerful requirement, I would not be willing to undertake such a brand new development at the present stage of AQUATONE. On the other hand, there is always the possibility that other organizations and other vehicles will be performing the AQUATONE mission for some time to come and it would be useful to know whether any successor system should include a redesigned System III.

/s/

RICHARD M. BISSELL, JR.
Project Director

RMB:djm
1-Addressee
2-Dep. Pro. Dir w/cy 2 SAPC 18228
3-Dir of D&P
4-Mr. Reber w/cy 1 SAPC 18228
5-Dir of Ops
6-Pro. Dir. Chrono
7-Pro. Dir. FU
8-Pro. Chrono (RI)

LIC LDR
DIC DK

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SAFC 18228
Copy 3 of 7

AUG 7 1957

MEMORANDUM FOR: Project Director

SUBJECT : System III

1. The recent operation that George inquired about (No. 4020) showed a reduction in sensitivity of System III amounting to a 30-40% loss of range or 5 db. A nominal 200 mile maximum range forward against omni-range beacons was reduced to 120 and a rearward range of 140 miles reduced to 100 miles. Although this is a significant loss, it might easily be explained as due to equipment adjustments and maintenance if such data were available.

2. A rough evaluation of System III's range has been possible by using data obtained from recent flights. It is most unfortunate that our sensitivity is still so far from what we need. We have an average range of about 170 miles at best against typical good targets. We need another 10 db. to make full use of System III in our carrier against typical ground targets. We need a second 10 db. to get the full use against airborne targets. The first 10 db. could be obtained if we had a "state of the art" receiver. However, it would require essentially starting over since both the R.F. and I.F. section of the receiver would need to be re-built. The [redacted] 25X1
New York as an example would be mighty red-faced if they built a receiver of the sensitivity of our System III. To get a second 10 db. would probably require an ultimate effort in research and development both for the receiver and its antenna and would be a slow but I believe a practical possibility.

3. I believe you and I agree that no new research and development effort on System III is justified. This paper is for information only and has some application to Herb's work.

25X1 [redacted]

Distribution:
Copies 1 and 2 - Project Director
3 - [redacted] 25X1
4 -
5 and 6 - ESO
7 - Project Chrono

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