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03 June 1965

TO: [redacted]  
FM: [redacted]

Subj: Dual Polarized versus Horizontal/vertical antennas.

1. A recording was made a [redacted] during pass #6794-C to determine the degree of effectiveness of the dual polarized antenna system for 7103 intercepts. Both the RED (Primary) and the GREEN (secondary) hut receivers were tuned to Data Link Bravo, receiver two output. Tracks 1 and 3 contained data from the RED position utilizing the dual polarized antenna system. Tracks 5 and 7 used either the Horizontal or Vertical antennas, Horizontal polarization from 0028Z -thru- 0035:49Z, Vertical polarization from 0035:50 -thru- 0040:00Z.

2. As a result of this study and the 38 sample signal/noise measurements made each twenty seconds during intercept conclusions are as follows;

- a. Intercepts made with either the Vertical or Horizontal antenna were in eighty percent of the recording better than data from the dual polarized antenna system.
- b. More effective receiving antenna systems should be surveyed in order to keep high quality output from field sites.

3. Analysis on a twenty second basis of the signal/noise ratios of Track #1 (Primary) versus Track #5 (Secondary) below:

Time	S/N Track #1	S/N Track #5
0028:20Z	0	2/1
0028:40Z	-1/1	1.5/1
0029:00Z	[redacted]	1/1
0029:20Z	1/1	2.2/1

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0029:40Z	1.5/1	4/1
0030:00Z	1.2/1	3/1
0030:20Z	1/1	4/1
0030:40Z	1/1	2.5/1
0031:00Z	1/1	2.8/1
0031:20Z	1/1	3/1
0031:40Z	-1/1	2.2/1
0032:00Z	0	2.5/1
0032:20Z	0	2/1
0032:40Z	0	3/1
0033:00Z	0	2.5/1
0033:20Z	0	2.3/1
0033:40Z	-1/1	2/1
0034:00Z	-1/1	2/1
0034:20Z	1.4/1	1.2/1
0034:40Z	1.3/1	1.2/1
0035:00Z	1.6/1	1/1
0035:20Z	2/1	1/1
0035:40Z	2/1	-1/1
0035:09Z	1.5/1	-1/1
0035:50Z	<del>TOP SECRET</del> [ ]	3/1
0036:00Z	1.6/1	2.7/1
0036:20Z	1.2/1	2.3/1
0036:40Z	1.4/1	3/1
0037:00Z	2/1	2.2/1

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0037:20Z	2/1	2.6/1
0037:40Z	2/1	3.1/1
0038:00Z	1.4/1	3.2/1
0038:20Z	1/1	3.1/1
0038:40Z	1/1	3.6/1
0039:00Z	1/1	2.6/1
0039:20Z	-1/1	2.2/1
0039:40Z	0	3/1
0039:52Z	0	1/1

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