

STANDARD FORM NO. 64

~~SECRET~~
CONFIDENTIAL

Office Memorandum • UNITED STATES GOVERNMENT

TO : The Files

DATE: 10 May 1957

FROM :

DOC	22	REV DATE	1 APR 1960	BY	064540
ORIG COMP	033	OPI	56	TYPE	02
ORIG CLASS	5	PAGES	2	REV CLASS	C
JUST	22	NEXT REV	2010	AUTH:	HR 70-2

SUBJECT: (RD 107, Task Order 3)

MEETING HELD (1 MAY 57)

1. On 1 May 1957 a meeting was held at to discuss the subject contract. Present at the meeting were:

2. This Task Order was completed on 30 April and the final report has been written. This study was directed at determining the value of ferrite antennas whose length is short compared to a wave length at frequencies above 1 mc. This study has produced the following conclusions:

a. There are no ferrites available at this time which are suitable for frequencies above 30 mc.

b. The diameter of a loop antenna can be reduced without a loss in gain or sensitivity by adding a ferrite core, but the required length of ferrite rod will be greater than the diameter of the original loop.

c. If the maximum dimensions of the two antennas are made equal, the gain of the air core loop will be greater than that gain of the ferrite loop.

d. Ferrite core loop antennas should be used in applications where a compact package is required. More convenient packaging is the principle advantage provided by the ferrite antennas.

e. No evidence was found to indicate that a loop antenna would be less susceptible to electrostatic interference or proximity effects than a straight wire antenna (except for the directional pattern of both Ferrite and air core loop antennas.) There is no advantages in using loop configurations for antennas

~~SECRET~~
CONFIDENTIAL

3. These conclusions are equally valid for transmitting antennas. Moreover, the ferrite core would tend to heat under the high antenna currents in transmitting antennas. Thus for transmitting or receiving, [redacted] a wire 6 inches long ~~or a wire~~ or an air core loop 6 inches in diameter will be a better antenna than a loop wound in a ferrite core 6 inches long.

25X1

4. It was suggested that [redacted] could perform a service to the electronic field if they would present these conclusions in a paper since these conclusions are contrary to the general belief. The project engineer believes he will write such a paper and has agreed to submit it to this Agency for approval before submission to any journal.

25X1

[redacted]

25X1