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Memorandum M-2053

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Electronic Computer Division
Servomechanisms Laboratory
Massachusetts Institute of Technology
Cambridge, Massachusetts

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1.0 GENERAL

(C. R. Wieser)

It has been decided that a magnetic tape recorder will be provided to record the frequency-multiplexed radar data received on the telephone line. The data can then be played back through the demultiplexer into WWI. This will provide a means of (1) operating WWI without the radar and (2) studying WWI operation with exactly reproducible radar data.

The most suitable recorder is the "Magnecord", which will record 1 hour of data with an auxiliary spool mechanism. The most stringent recorder specification is constant tape speed, because very little frequency drift will be tolerated by the narrow-band filters in the demultiplexer. Magnecord specifies a maximum flutter (speed variation) of $\pm 0.3\%$, which should be satisfactory.

(D. R. Israel)

A coded program has been written for the evaluation of the sine and cosine. This program uses four terms of the series expansion for the cosine, with a truncation error of less than 2^{-10} . A total of 39 storage registers are used for order storage, with an additional nine registers for data storage. Of the latter, four can be used for variable storage in other programs, and three contain constants likely to be useful for other applications. This would seem to indicate a permanent allotment for this program of 41 registers. Evaluation of the sine and cosine takes from 35 to 39 machine operations.

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