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Memorandum M-2687

Division 6 - Lincoln Laboratory  
Massachusetts Institute of Technology  
Cambridge, Massachusetts

SUBJECT: BIWEEKLY REPORT FOR FEBRUARY 12, 1954  
To: Jay W. Forrester  
From: Division 6 Staff

CLASSIFICATION CHANGED TO:  
Auth: DD 254  
By: R. R. EVERETT  
Date: 2-1-60

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SECTION I - CAPE COD SYSTEM

1.1 Group 61

1.10 General

(R.J. Horn, Jr.) (CONFIDENTIAL)

Summary

Operation of the Cape Cod System continues with the emphasis upon evaluation of the various functions and stations. Detailed memos describing the various weapons-control functions are now available as part of the M-1815 series. In connection with System operation, it is interesting to note that in the past month 65 per cent of the down time occurred on Tuesdays ( which account for only 30 per cent of the assigned time). This situation probably results from the fact that computer power is turned off all day on Mondays.

Very successful Ground Observer Tests were conducted this period. The northern sector of our surveillance, in which radar returns are poorest, happens to be the sector with the highest density of GOC posts. As many as 33 reports have been received from GOC in a three-hour period.

Assistance in XD-1 programming and equipment continues to be a major activity.

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1.3 Group 65

1.31 Activities of Group 65

(P. Youtz) (UNCLASSIFIED)

A detailed description of the activities of the Group on the electron optics of the Charactron and Typotron tubes was given in the last Biweekly Report.

This work was continued with the construction of Cht 14 and Cht 16. Cht 14 was designed to evaluate methods of reducing registration problems in the Charactron and increasing deflection sensitivity in the Typotron. Cht 16 was used to evaluate convergence-coil designs for Charactron tubes.

A program with Joe Klein of Group 25 was inaugurated to evaluate aluminized phosphor screens.

Group 65 is working with George Sponsler of Group 25 to set up an automatic electron trajectory tracer in cooperation with the MIT Dynamic Analysis and Control Laboratory. This will be used to study the relative merits of helical-type vs. multiple-band post-deflection accelerators.

Work on helical coatings continues. A number of tubes with this type of coating went through the complete vacuum process with encouraging results.

One trip was made to RCA to consider them as a second source of improved 5965 and improved 7AK7 tubes.

Another trip was made to DuMont to consider them as a source of Charactron tubes.

1.33 Research and Development

(J. S. Palermo) (UNCLASSIFIED)

In order to evaluate helical coatings six envelopes were coated with helical dag and processed during this period as per schedule. To date the results seem encouraging.

Settling of phosphor screens by means of a tilt table have been tried. We are presently designing a tilt table which is expected to be hydraulically controlled in order to attain closer control on settled screens.