Memorandum M-2576

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

SUBJECT: BIWEEKLY REPORT FOR DECEMBER 18, 1953

To: Jay W. Forrester

From: Division 6 Staff

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SECTION I - CAPE COD SYSTEM

1.1 Group 61

1.10 General

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

Summary

Three extra demonstration days - two of them for Divisions 2 and 6 - limited the experimental work this biweekly period. Thirty-three hours of operations, including two 9-hour sessions, were involved this period. The System performed very well.

In a test of System antiaircraft capacity, 12 simulated tracks were passed on, and neither the Cape Cod AA Talker nor the Antiaircraft Operations Center showed signs of overloading.

Memos giving proposals for XD-1 Digital Information Displays and Track Situation Displays are being prepared. Material describing the XD-1 order code will be prepared soon.

1.3 Group 65

1.31 Activities of Group 65

(P. Youtz) (CONFIDENTIAL)

One Charactron tube was reprocessed with a small-angle electrostatic-deflection system in the deflection-yoke region for character compensation, character position, and making vectors. This tube was evaluated by C. L. Corderman.

The work on the helical dag coating which permits a low voltage in the deflection region and a very high voltage at the phosphor screen has been progressing very satisfactorily.

Work on transparent phosphor films and electroluminescent coatings for Group 25 was continued during this period. Two research tubes were made for Dr. W. L. Gardner of Group 25 to evaluate self-sustained emission from magnesium-oxide films.

The IBM Tube Group at High Street worked two days with us at Cambridge the week of 7 December. During the week of 14 December one day was spent at Tung-sol on the 5998 tubes. One day was also spent at the Evans Signal Corps Lab on the 2D21. Two days were spent with the Tube Group of High Street at Poughkeepsie. We worked on reliable-tube problems.

1.33 Research and Development

(J. S. Palermo) (UNCLASSIFIED)

A 1/16-inch wide spiral line, five turns per inch, was successfully inked onto a 2-inch-diameter glass cylinder during this past week. The continuous length of this line approximately 35-ft long was limited only by the length of the cylinder used. The resistance of the line measured 800 megohms. Two samples were prepared to investigate effects of bakeout and application of chromic oxide onto this ink. An infinity reading of this line after bakeout indicated that the ink had been standing too long before application onto the glass. It was also noted that best results were obtained from baking the ink at 350 C before applying the chromic oxide. Therefore, additional samples will be prepared in our laboratory. We will use the lathe that has been recently obtained and readied for the purpose of applying ink helices onto the funnels of the Charactron tube blank.

Samples of phosphors and cadmium-sulphide sprayed onto stannic-oxide-coated plate have been prepared by a spray technique and will be available for evaluation after bakeout.