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Division 6 - Lincoln Laboratory
Massachusetts Institute of Technology
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SECTION I - CAPE COD SYSTEM

1.1 Group 61

1.10 General

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

The Track-While-Scan Section has submitted proposals for equipment changes for the 1954 Cape Cod System and is still considering program changes. In connection with current operations, programs to give past history of data or tracks are now available.

The evaluation of data concerning current Cape Cod operations by the Weapons Direction Section is nearing completion. Detailed plans for each station of the 1954 Cape Cod System are being prepared.

Tests during this period indicate a limited ability to do raid-size discrimination with current equipment.

Work concerned with assisting in XD-1 specifications, console design, and layout continues. An equipment layout for the Direction Center has been prepared.

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1.3 Group 65

1.31 Activities of Group 65

(P. Youtz) (UNCLASSIFIED)

Most of the effort of the Group continues to be expended on problems concerning the 19-inch Charactron and the 5-inch Typotron tubes.

Three tubes were constructed this period to improve the electron optics for better registration. One tube, Cht 17, was designed to evaluate the optics of the Typotron. This was to include a study of deflection difficulties and a comparison of pin-cushion distortion mis-registration in the projection optics and in the shadow-graphic optics. The second tube, Cht 21, was a Typotron designed around the most recent Hughes convergence coil with its electrode dimensions optimized to give best registration and deflection characteristics with the matrix centered in the convergence coil. The third tube, Cht 19, was a Charactron tube designed around a new convergence coil with its electrode dimensions optimized to give best registration characteristics with the matrix centered in the convergence coil. These tubes are undergoing evaluation and analysis by Frank Rodgers and Peter Tandy. On the basis of this analysis, new tubes will be designed for further studies.

Hughes Aircraft constructed two more tubes. John Koda of Hughes will bring these two new Typotron tubes East, so that they will be available for the test and evaluation period on 16 March 1954. These tubes will be similar to the Typotron tube 319 that I brought back on 26 February 1954.

The program with Joe Klein of Group 25 to evaluate aluminized phosphor screens continues. A trip was made to the General Electric Cathode-Ray Tube Division at Syracuse, New York, for technical discussions on aluminized screens, P7 and P19 phosphors, and nonreflective coatings.

Group 65 has continued to work with George Sponsler of Group 25 to set up an automatic electron-trajectory tracer in cooperation with the MIT Dynamic Analysis and Control Laboratory.

Work on helical coatings continues.

One trip is scheduled for next week to Sylvania to review their progress on the improved 7AK7 tube.

1.3 Group 65 (Continued)

1.33 Research and Development

(J. S. Palermo) (UNCLASSIFIED)

During the past period I visited the General Electric plant in Syracuse, New York, together with P. Youtz and J. Klein of Group 25, for a conference on cathode-ray-tube techniques and the present status of the indicator art.

Work on lacquer films for aluminized screens is now in progress in our Chemical Laboratory together with our program for the evaluation of helical-dag coatings.

In view of an increased demand for P₄ phosphor screens for research and experimental tubes, we are expediting the construction of a tilt table to facilitate the handling of 5-inch to 19-inch round cathode-ray tubes.