

Under
Contract OEMsr-262

DIVISION 14, NDRC
MASSACHUSETTS INSTITUTE OF TECHNOLOGY
RESEARCH LABORATORY OF ELECTRONICS

FINAL REPORT

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INTRODUCTION

In the years 1943 and 1944, the Administration of the Massachusetts Institute of Technology set aside funds and laid plans to establish a Research Laboratory of Electronics as soon as the end of the War permitted it. This Laboratory was to act jointly with the Departments of Physics and Electrical Engineering to further the research work of the Institute in the broad field of electronics. As such the Laboratory may be viewed as a facility of the Institute where any staff member or student (primarily graduate) may carry on personal research which properly lies in the general electronics field. While the administration of the Laboratory is the responsibility of the Departments of Physics and Electrical Engineering it was early realized that other departments, especially those of Mathematics, Chemistry and Biology, would be interested in the work of the Laboratory and the use of its facilities.

Shortly after V-J Day Division 14 of N.D.R.C., acting in accordance with the expressed wishes of President Truman, set aside funds to continue until June 30, 1946, basic research in the Radiation Laboratory at approximately a peace time rate, with the hope that a permanent agency would take over support of this research after the above date. From the nature of the work of Radiation Laboratory such basic research was either electronics per se, or the application of electronics to basic problems in science and engineering. Accordingly the Director of Radiation Laboratory established the Basic Research Division (of Radiation Laboratory), and turned over its administration to the Research Laboratory of Electronics. Quite naturally the administration and most of the personnel of the Electronics Laboratory were members of the war-time Radiation Laboratory.

The projected work of the Research Laboratory of Electronics has been described in a prospectus issued in October, 1945, and a shorter pamphlet issued in December, 1945. A short status report dated February 11, 1946, and a complete progress report of March 15, 1946, serve to indicate how well the projected research program is being carried out. The agreement is good.

Shortly after the first of the year (1946) negotiations were begun between three service organizations, namely, the Navy Office of Research and Inventions, the Army Air Forces and the Signal Corps, on the one hand, and M. I. T., to continue the work started under O.S.R.D. auspices. Accordingly the mutual interests of the three services named above has culminated in a contract between the Signal Corps and M. I. T. for the continuance of the Research Laboratory of Electronics at approximately the same rate as the O.S.R.D. support. The participation of the three services is equal, but for contractual convenience the legal arrangement is between M. I. T. and the Signal Corps only, (Contract W-36-039-SC-3207, DIC 6468). A technical advisory committee to the Laboratory has been set up consisting of the following service representatives: Mr. John Keto, AAF; Dr. Harold A. Zahl, SC; and Lt. Comdr. E. R. Piore, ORI. It is the purpose of this committee to

meet regularly with and to advise the personnel and management of the Research Laboratory of Electronics on the technical administration of this contract.

In addition to the work outlined in the present report, which is the work to be supported by the Signal Corps Contract, the Laboratory is responsible for the following:

(1) The administration and technical completion of the electronics part of the Bureau of Ordnance Project Meteor, Contract NOrd 9661, DIC 6392.

(2) The administration of the Radiation Laboratory Document Library, sponsored by ORI (Contract under negotiation), DIC 6475.

One project which was reported on March 15, 1946, does not appear here. This is the Synchrotron Project which was transferred to the M.I.T. Laboratory for Nuclear Science and Engineering on March 1, 1946. While the initial stages of this work were mostly electronic in nature it soon became evident that proper support for this project would be better provided by this latter laboratory. Similarly the Cyclotron Project, reported here, will transfer on July 1, 1946, to the Nuclear Laboratory.

The personnel list in this report shows some eighty staff members who are primarily engaged in research work. In addition there are over sixty staff members and employees engaged in administrative work, in aiding in research and in furnishing the services and shops which make research on a large scale possible. These services include:

- (1) Personnel, Contracts and Business Office
- (2) Machine Shop
- (3) Drafting and Mechanical Design
- (4) A complete tube laboratory including glass-blowing
- (5) Computing
- (6) Wiring and technician shops
- (7) Stock rooms
- (8) Instrument Rooms
- (9) Photographic Supplies