## Volume I

(1935-1941)

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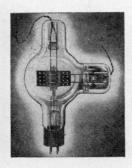
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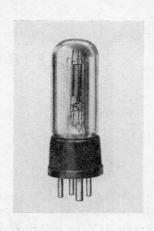
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1920's



EARLY 1940's



ELECTRON TUBES
PAST AND RECENT

#### Volume I

(1935-1941)

#### PREFACE

The wealth of material on the general subject of vacuum tubes and thermionics which was originally published during the years 1935-1948 has required more than one volume for its presentation even though a very stringent selection process has been followed by the editors. Accordingly, two volumes are being published at this time.

This book, ELECTRON TUBES, Volume I, is the ninth volume in the RCA Technical Book Series and the first devoted exclusively to tubes. It covers the period 1935-1941; the companion book, ELECTRON TUBES, Volume II, carries the series through 1948.

Papers are presented in four sections: general; transmitting; receiving; and special. As additional sources of reference, the appendices contain a bibliography on vacuum tubes, thermionics, and related subjects and a reference list of Application Notes. The bibliography has been included to insure that applicable material on tubes is available in this volume—at least in reference form. Papers concerning tubes which relate to specific applications or fields such as television, facsimile, UHF, or frequency modulation, are listed in the bibliography; they are covered, however, in other volumes of the Technical Book Series.

RCA Review gratefully acknowledges the courtesy of the Institute of Radio Engineers (Proc. I.R.E.), the American Institute of Electrical Engineers (Elec. Eng.), the American Institute of Physics (Phys. Rev. and Physics), the Society of Motion Picture Engineers (Jour.Soc. Mot.Pic.Eng.) and the McGraw-Hill Publishing Company (Electronics) in granting to RCA Review permission to republish material by RCA authors which has appeared in their publications. The appreciation of RCA Review is also extended to all authors whose papers appear herein.

Since the days of the earliest discoveries of Fleming and De Forest, electron tubes have been one of the foundations upon which the entire

structure of modern radio, electronics and television has been built. Progress in tube design and technique has often controlled the rate of advance in various applications in the communications, entertainment and industrial fields.

ELECTRON TUBES, Volume I, is, therefore, being published for scientists, engineers and others whose work involves the design of tubes or their application with the sincere hope that the material here assembled may serve as a useful background text and basic reference source to help speed new tube developments and thus advance the science and art of radio-electronics.

The Manager, RCA Review

RCA Laboratories, Princeton, New Jersey March 4, 1949

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