

# Electron Tube Design

**Electron Tube Division  
RADIO CORPORATION OF AMERICA  
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# FOREWORD

The fifty-three articles in this book were written by RCA engineers and scientists to acquaint RCA tube engineers, particularly those of limited tube experience, with the terminology, objectives, problems, and techniques peculiar to electron tubes. The articles are intended to provide the basic principles underlying the design, manufacture, and application of the many present-day varieties of tubes.

Because this book is a compilation of articles by authors, each writing more or less independently, duplication will be encountered. In this kind of material, however, duplication is desirable. First, some duplication is necessary to help keep individual articles complete in themselves; second, some repetition may assist the reader in acquiring information faster; and, most important, different treatments of similar subjects illustrate how tube design is affected by the different design objectives and the different environments of individual authors.

In general, the treatment is non-mathematical and free of detailed descriptions which often are subject to change. For more detailed treatment, the reader is referred to the references and bibliography at the end of most articles. References to published material list the publications; those to unpublished information show a code, the key to which is available to authorized persons through RCA Electron Tube Division librarians.

Because the preparation of these articles extended over several years, some authors are no longer associated with the design activities which they discuss. In such cases, however, the authors' names are shown in the article captions with the locations where the preparation of the articles took place. Most articles involved the cooperation of associates of the authors. These contributions are gratefully acknowledged by the authors.

This book is the result of a strong management desire, supported by the Engineering Education Committees at Harrison and Lancaster, to bring the original Vacuum Tube Design book up to date. It was recognized that the earlier book had played a very important role in the orientation, training, and development of RCA tube-design engineers, that a revised edition would supplement and strengthen the programs conducted by the education committees, and that engineering supervision would benefit greatly if new engineers had access to basic tube-design know-how written by RCA authorities.

An early step in implementing the program for the revised book was the formation by Dr. G. R. Shaw, then chief engineer of the Electron Tube Division, of a steering committee under the chairmanship of J. F. Hirlinger. From the first, this committee worked closely with the education committees, who had the responsibility of choosing subject matter, selecting and appointing authors, and guiding and encouraging authors in the completion of their assignments.

Much progress was made, but a greater and more concerted effort was needed to carry the program through to prompt completion. As a result, R. S. Burnap, Manager of Commercial Engineering, on his retirement, was appointed a consultant to the RCA Electron Tube Division with his most important and essentially full-time assignment the completion of the Electron Tube Design book. With the establishment of new schedules and through the special efforts of committeemen, authors, and reviewers to complete their commitments, the job was finished.

The names of contributing committee members during the preparation of the book, together with the names of those who reviewed or edited articles follow. The contributions of these people and of the men who carried the heaviest load, the authors, are hereby acknowledged with the sincerest of thanks.

R. S. Burnap

*Consultant to the Electron  
Tube Division*

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