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Graphical Constructions for Vacuum Tube Circuits

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Graphical Constructions for Vacuum Tube Circuits

BY

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TO

Edith, Rita and Cynthia

PREFACE

This book is designed to fill a gap in the literature on vacuum tubes, *viz.*, graphical constructions. By graphical constructions are meant those geometric manipulations by which are obtained solutions to problems on nonlinear circuits, particularly those involving vacuum tubes. It is therefore evident that ordinary graphs and charts, used for the easy solution of analytical formulas, are not the subject matter of this book.

While the author realizes that the engineer and scientist usually favor the analytical method of approach, he is also aware that many practical problems are amenable solely to graphical or experimental methods of attack, and he feels that this book may serve a useful purpose in presenting the former of these two methods. However, he has not hesitated to employ analytical methods in conjunction with the graphical where such procedure was of value, and thus the reader will often find an analytical derivation in the body of the text, as in the chapters on balanced amplifiers and on detection.

Much of the material incorporated here is original, and a good deal of this appeared in the *RCA Review* and in *Communications*. The author is indebted to these periodicals for permission to include this material in the present text. However, in many instances the discussion has been expanded and also revised, as in the chapter on balanced amplifiers.

In order to forestall any criticism regarding the bibliography at the end of each chapter, the author hastens to explain that his choice was governed by the following considerations:

1. Only those articles which he had read and digested were included.
2. Is the reference basic and still correct?
3. Is the article the most recent, and does it correct errors in previous articles?
4. Is it readily available to the American public? (Only in rare instances are foreign references cited.)

While such a choice may result in a list far less imposing than those found in other texts, it is hoped that the reader will find the references more readily available, less repetitious, and also less contradictory and confusing.

There has been no attempt to make this book a complete exposition of graphical methods. If it gives the reader a fundamental grasp of the subject and proves of value to him in his work, its purpose will have been achieved.

No work, no matter how humble, is due solely to one man's effort. I am only too happy to acknowledge the aid and encouragement given me by my wife, who helped greatly in the typing and preparation of the manuscript. I also wish to acknowledge the assistance given me by Dr. Alfred N. Goldsmith, who was also instrumental in obtaining the comments and criticisms of others, particularly E. W. Herold, who reviewed the third chapter and furnished me with many helpful suggestions and criticisms. And finally I wish to express my thanks to those other members of the Radio Corporation of America who passed on the merits and value of this book.

ALBERT PREISMAN.

SILVER SPRING, MD.,
August, 1943.

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