

**TELEVISION: ITS
METHODS
AND USES**

Published @ 2017 Trieste Publishing Pty Ltd

ISBN 9780649104826

Television: its methods and uses by Edgar H. Felix

Except for use in any review, the reproduction or utilisation of this work in whole or in part in any form by any electronic, mechanical or other means, now known or hereafter invented, including xerography, photocopying and recording, or in any information storage or retrieval system, is forbidden without the permission of the publisher, Trieste Publishing Pty Ltd, PO Box 1576 Collingwood, Victoria 3066 Australia.

All rights reserved.

Edited by Trieste Publishing Pty Ltd.
Cover @ 2017

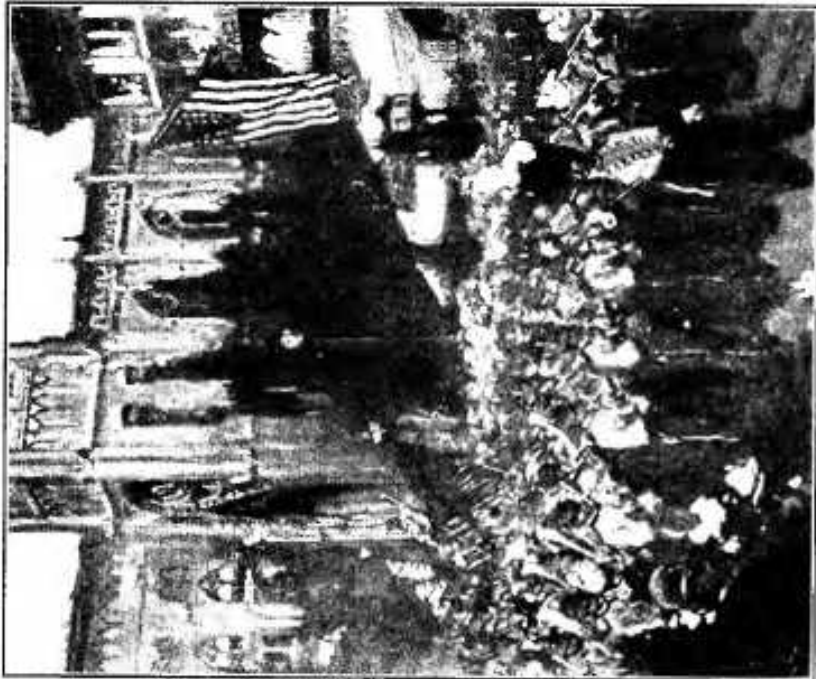
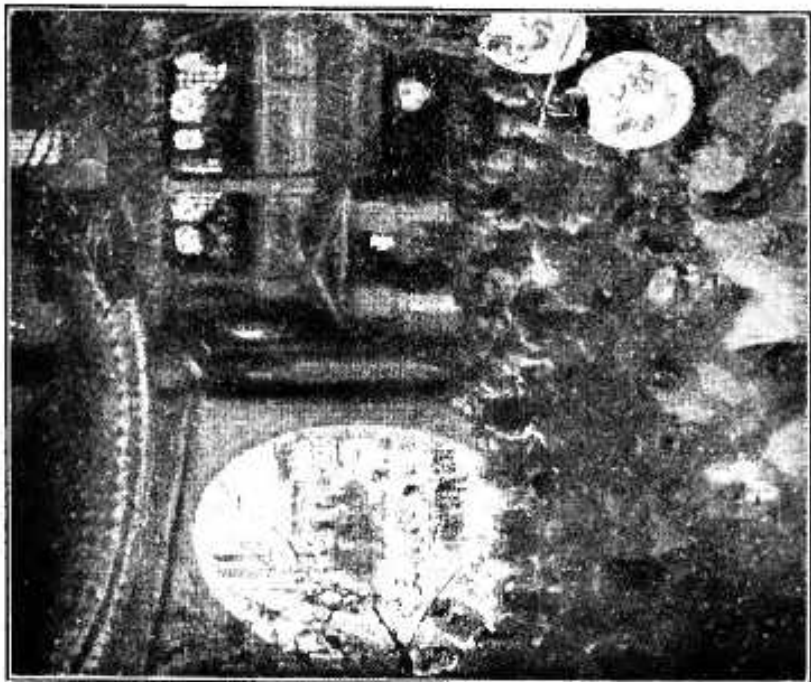
This book is sold subject to the condition that it shall not, by way of trade or otherwise, be lent, re-sold, hired out, or otherwise circulated without the publisher's prior consent in any form or binding or cover other than that in which it is published and without a similar condition including this condition being imposed on the subsequent purchaser.

www.triestepublishing.com

EDGAR H. FELIX

**TELEVISION: ITS
METHODS
AND USES**

TELEVISION



PROXIMATE. — An artist's conception of television broadcasting, published a third of a century ago. (From *Harper's Weekly*, December 29, 1900.)

TELEVISION

Its Methods and Uses

BY

EDGAR H. FELIX

*Broadcast Consultant; Member Institute of Radio Engineers;
Author, "Using Radio in Sales Promotion"*

FIRST EDITION

McGRAW-HILL BOOK COMPANY, INC.

NEW YORK AND LONDON

1931

COPYRIGHT, 1931, BY THE
MCGRAW-HILL BOOK COMPANY, INC.

PRINTED IN THE UNITED STATES OF AMERICA

*All rights reserved. This book, or
parts thereof, may not be reproduced
in any form without permission of
the publishers.*

THE MAPLE PRESS COMPANY, YORK, PA.

PREFACE

The author of a book on television and in fact any book describing a technical science approaching commercialization has his choice of several points of view. He may disregard the present imperfect status of the science by simply not mentioning or totally disregarding existing shortcomings and problems; he may smother existing difficulties with rosy predictions and expression of enthusiasm; or he may treat them with the utmost frankness believing their conquest can come only through accurate understanding and comprehending research.

The present author has chosen the latter course, perhaps in reaction to the overabundance of optimistic treatments of television. He feels that a conservative attitude is particularly helpful at this time, because television has been treated to an excess of premature and unwarrantedly hopeful publicity. The author, of course, realizes that an exacting analysis of television as it exists today may be significantly altered by a development of tomorrow.

Even as he examines the proofs of this book, the publisher inquires whether an invention, just announced with considerable gusto and rewarded by tremendous publicity, has not indeed made all the conclusions therein hopelessly obsolete. But this announcement, like so many of its predecessors, is accompanied neither by technical proof nor by open demonstration. I have the satisfaction of knowing that readers of this book (if any) will be able to place an accurate valuation upon any announced invention

PREFACE

based entirely upon its potential contribution to the progress of television.

My purpose in writing this book has been to develop a clear understanding of how existing television systems work, the basic processes involved in any television system, the standards of performance essential to the rendition of a commercial service, the limitations of certain features of existing methods standing in the way of the attainment of commercial performance standards, and the nature of the developments still necessary to bring performance of public-service quality.

It is hoped that this volume will be of benefit to those desiring to establish television as a service, either by contributing to its technical advancement or by financing its progress, and to those planning to participate in its commercial development as manufacturers and broadcasters.

This volume has had the benefit of rather widespread collaboration and generous assistance from many of the leaders in the television field. I regret that my approach to the subject has not permitted me to give credit, but my purpose has been not so much to distinguish the contributions of individuals as to set forth the present and future status of the science. The manuscript has been reviewed by competent physicists and radio engineers directly engaged in television problems. Unfortunately, because of their connections, it is not practicable to give them credit, but I am glad to be able to mention my appreciation to Professor Arthur Dickson of the College of the City of New York, who has reviewed the manuscript.

RIDGEWOOD, N. J.,
June, 1931.

EDGAR H. FELIX.

CONTENTS

| | PAGE |
|---|------|
| PREFACE | v |
| CHAPTER I | |
| THE PRESENT STATUS OF TELEVISION | 1 |
| Television Long Predicted—Nature of Recent Developments— When Will Television Arrive?—Fundamental Definitions | |
| CHAPTER II | |
| HEARING, VISION AND TELEVISION | 7 |
| Communication—Comparison of Sound and Visual Communica- tion—Visual Information Essential to Television—Reduction of Extent of Field of View—Minimum Repetition Rate | |
| CHAPTER III | |
| THE SIX PROCESSES OF TELEVISION | 21 |
| Scanning—Light Sensitive Element—Picture Signal—Light Producing Element—Receiving Scanning Disc—Commercial Standards for Television of Entertainment Value—A Typical Television System | |
| CHAPTER IV | |
| SCANNING THE FIELD OF VIEW | 30 |
| Purpose of Scanning—Lines and Picture Elements—Progressive Observation—Progressive Illumination—Effect of Large Scan- ning Disc Apertures—Distortion Introduced by Coarse Scanning —Progressive Illumination Installations—Limitations of Scan- ning Disc—Prismatic Discs—Rating the Quality of Scanning Systems—Scanning of Motion Pictures—Television Compared with Motion Pictures | |
| CHAPTER V | |
| THE LIGHT SENSITIVE ELEMENT | 56 |
| Photoelectric Phenomena—Selenium—Photoelectric Tube— Characteristics of Commercial Photoelectric Tubes—Coupling with Amplifier Systems | |
| CHAPTER VI | |
| TRANSMISSION OF TELEVISION SIGNALS | 73 |
| Limitations of Broadcast Receivers—Transmission Band | |