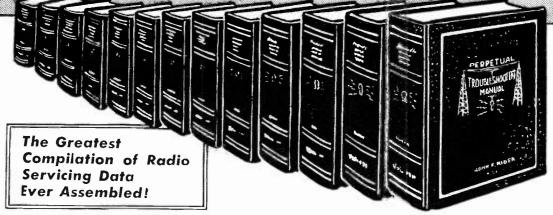
# Thank You!

When writing for additional information or when ordering from sources of supply listed in this book, please mention

RADIO'S MASTER



# A Sign of Successful Servicing

It is more than coincidence that practically every successful servicing shop has a complete set of Rider Manuals. It is the direct result of their profit-making value. Here you will find data on alignment, I-F peaks, operating voltages, parts lists and parts values, voltage ratings of condensers, wattage ratings of resistors, coil resistance data, gain data, and all other necessary information.

- Vol. XIX. (Available May, 1949). Up-to-the-minute coverage on AM, FM, auto and communications receivers. The productions of over 100 manufacturers. Special Record Changer section. "How it Works" book and cumulative index Volumes XVI through XIX.

  Over 2,100 pages, Net Price \$19,80
- Vol. XVIII. Covers AM, FM receivers, auto radio, and record players manufactured between November, 1947, and November, 1948. 115 manufacturers. Combined "How it Works" book and cumulative index Volumes XVI, XVII, and XVIII.

2,036 pages, Net Price \$19.80

- Vol. XVII. More than 100 manufacturers of radio receivers and allied products. FM and AM receivers produced during 1947, as well as record changers and wire recorders are covered. Separate "How it Works" book and cumulative index Volumes XVI and XVII. 1,648 pages, Net Price \$16.50
- Vol. XVI. Diagrams of receivers of 94 manufacturers. Riderexclusive "clarified schematics," breakdowns of multi-band receivers. Covers sets manufactured in late 1946 and early 1947. Separate "How it Works" book and index.

768 pages, Net Price \$8.40

Vol. XV. More than 1200 models and 700 chassis of 121 manufacturers of receivers built during 1946, and earlier. In addition, Rider "clarified schematics" of multi-band receivers. A 181-page "How it Works" book and index.

2,000 pages, Net Price \$19.80

Vol. XIV. More than 1300 models and 750 chassis manufactured during the latter part of 1942 when war halted production.

1,376 pages, Net Price \$16.50

Vol. XIII. In addition to covering the radio receivers manufactured during the latter part of 1941 and the early part of 1942, a separate cumulative index for Volumes XI, XII, and XIII is included. More than 1500 models and 950 chassis.

1,672 pages, Net Price \$16.50

- Vol. XII. Time-seving "clarified schematic" breakdowns of more then 200 complicated models feature another "big" Rider Manual. Coverage up to April 1941. 1800 medels and more than 1000 chassis.
- 1,648 pages, Net Price \$16.50

  Vol. XI. In addition to servicing data on 2,416 models and 1130 cliassis manufactured in the period from August 1839 to June 1940; a vest-pocket manual on push-button data is included. Double-spread pages are provided for complicated diagrams. Index ernel "How it Works" book, including television, facsimile, and FM (developments up to that time).

  1,652 pages, Net Price \$16.50
- Vol. X. Covering 2416 models and 1140 chassis, it takes in receivers built from October 1938 to August 1939. A "How it Works" section is featured, as well as 188-page index for Volumes I through X.

  1,664 pages, Net Price \$16.50
- Vol. 1X. The produce of radio set manufacturers during the year October 1937 to October 1938. More than 1880 models and 1000 chassis. Special "How it Works" section.

1,672 pages, Net Price \$16.50

Vol. VIII. In addition to diagrammatic presentations of 1800 models, and more than 1000 chassis of sets manufactured from October 1936 to October 1937, featured are data on installation and servicing instructions of many types af intercommunication systems. A "How it Works" book is included.

1,650 pages, Net Price \$16.50
Vol. VII. More than 1700 models and 1000 chassis of the manufecturing period from November 1935 to

October 1936.

Vol. VI. Encompossing the period of manufacture from late 1934 to November 1935, this volume features more than 1240 models, and 800 chassis.

1,240 pages, Net Price \$12.50

Vols. I-V. The west widely-distributed receivers manufactured during the 1930-1935 period make up this volume, an abridgement of the original first five Rider Measuals. Bound as a book.

2,000 pages, Net Price \$19.80

A key to the first fifteen Rider Manuals, including the abridged I-V and the Radiotron-Cunningham manual. This 204-page book provides an index to 21,584 pages of Rider Manuals, including 12,303 chastle and 40,000 models.

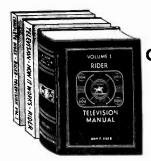
204 pages, Net Price \$1.50

MASTER

INDEX

# MANUALS RIDER

# RIDER'S TV MANUAL VOLUME



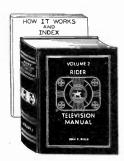
# Complete factory authorized coverage up to early 1948

Net Price \$18.00 Equivalent of 2,000 pages Admiral Andrea Belmont Certified Cleervue Crosley DuMont Electro-Tech Emerson Farnsworth Garod GE GE Gilfillan Hallicrafters Industrial Television Motorola

Philco RCA Remington Republic Scott Sightmaster Stromberg-Carlson Tele-King Television Assembly TV Develop, Labs Tradio Transvision U.S. Television Viewtone Westinghouse

Circuit descriptions—Giant and Double Spread Pages—adjustment of trimmers, traps, transformers, etc.—voltages and resistance readings—complete alignment instructions—schematics, chassis views, patterns, waveforms—Separate 203-page "How it Works" book.

# RIDER'S TV MANUAL VOLUME



Coverage up to January 1949

**Net Price \$18.00** 

Equivalent of 2,300 pages . . . all factory authorized

The 67 Manufacturers Represented in Rider's TV Manual Volume 2 are:

Hallicrafters

Howard

Magnavox

Meissner

34 Manufacturers in Rider's TV Manual Volume 1

Admiral Air King Andrea Automatic Bace Bagdad Belmont Belmont Behdix Bud Radio Certified Crosley De Wald DuMont Dynamic Electro-Tech Emerson Fada Farnsworth Garod GE

Merrick Motorola Multiple National New England Nielsen Olympic Philco Philharmonic Philmore Pilot Radio & Television General Instrument

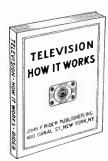
Scott Sears Industrial Television Jerrold Sightmaster Mark Simpson Sonora Standard Coil Stewart Warner Techmaster Tele-Craft Tele-King Tele-Tone Television Assembly TeleVista Templetone Transvision United Motors Vidcraft Video Corp. of Amer. Videodyne

Vision Research

Regal Remington

Zenith

Service Data on Complete Receivers and Kits and Boosters—Double, Triple Spreads and Giant Pages that Unfold to 440 Square Inches—Test Patterns—Waveforms—Schematics—Voltages—Adjustments of traps, complete alignment tables—Parts lists—"Changes" section for up-to-date revisions on previously published receivers—Accumulative index covering TV Volumes 1 and 2.



### **TELEVISION** "HOW IT WORKS"

(Supplement to TV Manual Vol. 1)

### A GOLD MINE OF PRACTICAL FACTS

A GOLD MINE OF PRACTICAL FACTS
Here is practical theory. The first chapter deals with the transmission and reception of television signals in general, giving you a clear over-all picture. The second chapter deals with frequency standards, the next with antennas. Television "How It Works," then goes into descriptions of the various portions of a television receiver: the r-f, oscillator, converter circuits in the front end; the sound channel; the video i-f system and detector; the video amplifier and d-c weep circuits, picture tubes, power supplies. The conclusion covers alignment and servicing problems. The entire book carries the practical right along with the theoretical, ending up with the when and why of certain operations in television receiver

203 Pages . . . Illustrated . . . 81/2" x 11" . . . \$2.70

# TV PICTURE PROJECTION AND ENLARGEMENT by Allan Lytel

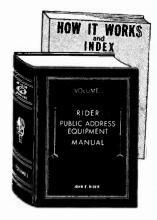
The story behind TV picture enlargement by viewing lenses and by projection systems is important to every serviceman. Read this text, which explains "how" and "why," and you will find adjustments of these receivers can be simple and rapid. It is a combination of theory and practice. Dollar-making-timesaving practice!

Chapters include: Properties of Light . . . Refraction and Lenses . . . The TV Picture . . . Modifications of Schmidt Projection System . . . Refractive Projection . . . TV vs. motion pictures . . . Appendix.

Approx. 250 pages . . . . . . . Illustrated . . . . . . . \$3.30

# RIDER PA MANUAL

# RIDER'S PUBLIC ADDRESS EQUIPMENT MANUAL VOLUME 1



# Coverage from 1938 to 1948

Public Address Systems — Outdoor Announcing — Musical Instruments and Phonographs — Theater, Church Hearing Aids — Electronic Megaphones — Intercommunication Systems — Theater and Home Motion Pictures — School, Hotel, Hospital Sound Systems — Mobile and Portable Sound Systems

SCHEMATICS — VOLTAGE and RESISTANCE TABLES — TUBE and CHASSIS LAYOUTS — INSTALLATION NOTES — OPERATIONAL INSTRUCTIONS — IMPEDANCE MATCHING

2024 Pages Plus a "HOW IT WORKS" and INDEX . . . . Net Price . . . . \$18.00

### Complete list of 147 manufacturers represented:

Admiral Air King Alamo Alamo Allied Altec Lansing American Comm. American Sound Amplifier Corp. Ansley Apex Assoc. Electric Atomite Audar Audio Comm. Audio Development Automatic Musical Automatic Projection Aviola Beam Radionics Bell Belmont Bogen Brown Ebinger Caltron Cavalcade Challenger Clark Collins Continental Commun-A-Phone Concord Crosley Dalmo Victor Decca DeVry Dual Engineering Dynavox Eastern Amplifier Eckstein Electro Acoustic Electromatic Electronic Design Electronic Devices Electronic Labs. Electronic Trading Ellinwood Emerson Epiphone

Espey Fada Federal Mfg. & Electronics Federated Purchaser Gamble Skogmo Garod General Electric General Television General Transformer Gentleman Products Gibbs Goodrich Grant Greene Hamilton Electronics Hammond Inter-Communication Jackson Jefferson Jewel Langevin Laurehk Lewyt Lyman Lyon & Healy Magna Meck Mectron Mellaphone Meissner Mercury Mills Minnesota Montgomery Ward Morlen Motiograph Motorola Movie Mite Musitron National Dobro National Filben Neill Nelae Newark Electric Operadio Optron Packard Bell Philco Philman

Pilgrim PortoMatic Precision Presto RCA Radio Craftsmen Radio Parts Radio Wire Radolek Rauland Regal Remier Rock-Ola Scctt Sears Roebuck Seeburg Setchell-Carlson Sheridan Mark Simpson Sonora Sonotone Sound, Inc. Speak-A-Phone Speak-A-rhone Spiegel Steelman Story & Clark Stromberg Carlson Sundt Engineering Symphonic Talk-A-Phone Telequip Teletran Templetone Thordarson Trav-Ler United Scientific Valco Walker Jimieson Walsh Engineering Watterson
Webster Chicago
Webster Electric
Western Auto
Wilcox Gay
Worner Electronic Wurlitzer Zenith

# AUTOMATIC RECORD CHANGERS AND RECORDERS

Gears, levers, cams—the mechanics needed to service any automatic record changer quickly and profitably are covered in over 60 pages of text. Service problems of specific makes are treated in 654 pages of manufacturers' service data. The small electric motor is covered at length; also records and phonographs.

Stroboscope Disc for Checking Turntable Speed



Coverage up to 1942

### CONTENTS

744 Pages . . Rider Manual Size . . \$9.00

# ucation



# TRANSMISSION RECEPTION

by John F. Rider and Seymour D. Uslan

This new Rider book covers its subject "going and coming," embracing in detail a thorough explanation of all manufacturers' products — both transmitting and receiving, regular broadcast-

ing, railroad, police and "ham" equipment, wide medium and narrow band.

For radio servicemen, who can look to FM as a big part of their future profits—for the "ham" who is considering narrow band FM-for the student who is grooming himself for activity in the electronic field—this new book explains both the theory and servicing of FM receivers. It will serve as a valuable hand-book for engineers. Order Today!

### CHAPTER HEADS

- Fundamental Considerations
- Frequency Modulation
- Essentials of F-M Transmitters
- Transmitters of Today (Wide Band and Narrow Band)
- The Transmission of F-M Signals
- F-M Receiving Antennas
- The F-M Receiver
- Alignment of F-M Receivers
- Servicing F-M Receivers

416 FACT-PACKED PAGES

PROFUSELY ILLUSTRATED

Cloth Cover

Net Price \$3.60

# UNDERSTANDING VECTORS AND PHASE

by John F. Rider and Seymour D. Uslan

Considering the importance of vector presentations as a shorthand method of conveying technical information in the radio field, also the gradually increasing complexities of the developments being offered for public consumption, it behooves every man who plays a part in the technical branch of the radio industry to possess a general appreciation of the significance of vectors. This book develops the subject step by step, finally illustrating its application to everyday radio problems.

160 Pages, Paper Cover 99c, Hard Back Cloth Cover \$1.89

# INSTALLATION AND SERVICING OF LOW POWER P-A SYSTEMS

Here is a book that provides the answers to characteristic problems met in low power public address installations. In short it tells what to do and what not to do with microphones, amplifiers, loud speakers, connecting cables—also how to service such PA systems. This book is all embracing in scope, will prove a boon to all who have occasion to work with such equipment.

208 Pages . . . . . . . . Hard Back Cloth Cover \$1.89

# SERVICING BY SIGNAL TRACING



TRANSMISSION

RECEPTION

MIDSH we USLAS

Signal Tracing is rapidly becoming the most universally applied method of locating defects in communication systems, no mat-ter what the nature of the system if it is a 

360 Pages . . . . . . 188 Illustrations . . . . . . \$4.00 Spanish Edition . . . . . \$4.00

# BROADCAST OPERATORS HANDBOOK

by Harold H. Ennes, Engineer WIRE

Here are co-ordinated facts that result in a general set of rules that can serve as standards of good operating practice—a or good operating practice—a new approach to modern operating technique and a discussion and clarification of existing facts that should lead to a better understanding between studio and transmitter personnel.

Mr. Ennes, an operator, writes in the operators' language. Intended not alone for the new-comer but the "oldtimer" as well. Mr. Ennes book will take the engineer or station operator into the control room and studio, discussing every phase of how, when, where and why of a broadcast operator's problems.

### CONTENTS

PART I: Operating in the Control Room and Studio. Chapter I, What You're Up Against; Chapter 2, Are Mechanical Operations Apparent?; Chapter 3, Keeping Sound "Out of the Mud"; Chapter 4, You're Often a Producer Tool; Chapter 5, Put That Mike There! PART II: Operating the Master Control: Chapter 6, Where Spiit Seconds Count. PART III: Operating Outside the Studio: Chapter 7, Remote Control Problems; Chapter 8, Remote Versus Studio Pickups; Chapter 9, Remote Musical Pickups; Chapter 10, Eye-Witness Pickups and Mobile Transmitters; Chapter II, The Live Symphony Pickup. PART IV: Operating the Transmitter: Chapter I2, Operator's Duties; Chapter I3, Programs ARE Entertainment; Chapter I4, Measuring Noise and Distortion. PART V: We're Off the Air: Chapter I5, Emergency Shutdowns; Chapter I6, Why Preventive Maintenance; Chapter I7, Preventive Maintenance; Instructions. PART VI: Technically Speaking: Chapter I8, Control Room and Studio Equipment; Chapter I9, The Broadcast Studio; Chapter 20, Transmitter and Transmission. Bibliography. Appendix.

288 Pages . . . . . . Well-Illustrated . . . . . . \$3.30

The prices listed on these John F. Rider, Publisher, pages are subject to revision.

# LEARN RIGHT WITH "RIDER"

# INSIDE THE VACUUM TUBE

No other book explains so simply and clearly the theory of the vacuum tube and its operation. In plain language -with fascinating pictures and diagrams that really tell a story—you get a solid grounding in theory and a good working knowledge of basic tube types.

The slight use of mathematics is "painless," says QST. Easily understood are the development and meaning of characteristic curves, and their associated load lines, power amplifiers, use of pentodes as triodes, etc. The final chapter describes the "acorn" type tube, cathoderay tubes, photo-electric cells, gas-filled tubes, etc.



### CONTENTS

Introducing the Electron . . . Electron Emission . . . Movement of Charges . . . Space Charge and Plate Current . . . Fundamentals of Tube Characteristics . . . The Diode . . . The Triode . . . Static Characteristics of Triodes . . . Triode Dynamic Characteristics and Load Lines Dynamic Transfer Characteristics . . . Voltage Amplification . . . Tetrode and Pentode Vacuum Tubes . . . The Cathode Circuit . . . Power Amplifiers . . . Miscellaneous Vacuum Tubes (Indexed).

424 Pages . . Profusely Illustrated . . \$4.50

# **VACUUM TUBE VOLTMETERS**

The vacuum-tube voltmeter has been rapidly forging to the front as a favorite tool of engineers, research workers and servicemen. By its proper use, dynamic measurements can be made under any and all conditions with a minimum of effort and time. Here is a book that is a perfect mine of information for everybody who wants to know all about these important instruments. Not only is the theory explained upon which the functioning of the different types of v-t voltmeters is based, but the practical applications of these instruments are completely described. Like nearly all types of voltmeters, multipliers and shunts are employed with vacuum-tube voltmeters to extend their ranges. These and their uses are explained, as is the calibration of the different types.

For those men who are interested in the construction of v-t voltmeters, adequate information will be found for v-t voltmeters were built in the author's laboratory, and constants are given for the components of many types, as well as a wealth of other useful data.

### CONTENTS

Chapter 1. Fundamentals of Vacuum-Tube Voltmeter. Chapter II. Diode Vacuum Tube Voltmeters. Chapter III. Triode Vacuum-Tube Voltmeters. Chapter IV. Slide-Back Vacuum-Tube Voltmeters. Chapter V. Rectifier-Amplifier Vacuum-Tube Voltmeters. Chapter VI. Tuned Vacuum-Tube Voltmeters. Chapter VII. Audio-Frequency and Logarithmic Vacuum-Tube Voltmeters. Chapter VIII. Vacuum-Tube Voltmeters for D-C Voltage, Current, and Resistance Measurements. Chapter IX. Design and Construction of Vacuum-Tube Voltmeters. Chapter X. Cali-bration and Testing of V-T Voltmeters. Chapter XI. Applications of V-T Voltmeters. Bibliography.



180 Pages 111 Illustrations \$2.50

# UNDERSTANDING MICROWAVES

By Victor J. Young,

Sperry Gyroscope Company

Gyroscope Company

Here you have a foundation for understanding microwave radio and radar. Because mathematics are confined to footnotes whenever possible and early chapters are introductory, it will profit servicemen as well as engineers.

Dr. Young explains basic concepts in the microwave field. He treats of the theory and operation of waveguides and coaxial lines; resonant cavities in magnetrons and klystrons; theory of antennas for transmission and reception of microwaves.

Two useful frequency-spectrum charts, suitable for framing or mounting, are printed inside the jacket.

CONTENTS

CONTENTS

CONTENTS

Section I—The Ultra-High Frequency Concept. Stationary Charge and Its Field
Alternating Currents and Lumped Constants.
Transmission Lines . Poynting's Vector and Maxwell's Equations . Wavequides . Resonant Cavities . Antennas . Microwave Oscillators . Radar and Communication.
Section II—Microwave Terms, Ideas, and Theorems.
"Excellent . Helpful . Microwave terminology is a valuable feature," says General Electric Review.
"Excellent introduction to principles and practice," says the N. Y.
Public Library.

385 Pages . . . . Liberally Illustrated . . . . . \$6.00

# THE OSCILLATOR AT WORK



Do you get your money's worth out of your present-day oscillator? Do you derive maximum utility from that unit? Do you know how to test your oscillator and establish if it is working properly? Would you know how to repair it if it went bad? Do you know how many different types of oscillators can be used in the servicing field? Here is your opportunity to get the true facts about oscillators. Rider's "The Oscillator at Work" is worth many times the price asked because it helps protect the investment you have made in oscillator equipment.

### CONTENTS

I—How an oscillator works. II—Alternating Currents. III—Triode Oscillators. V—Ultra-High Frequency Oscillators. VI—Negative-Resistance Oscillators. VIII—Electro-Mechanical Oscillators. VIII—Relaxation Oscillators. IX—Superheterodyne Oscillators. X—R-F Signal Generators. XI—Audio-Frequency Oscillators. XIII—Modulation of Oscillators. XIII—Wobbulators. XIV—Adjustment of Transmitters. Bibliography.

256 Pages . . . . . . 167 Illustrations . . . . . . \$2.50

### THE METER AT WORK

Here is a practical book for all who employ electric meters in radio and the allied electronic arts.

### CONTENTS

I—General Considerations, II—Moving-Iron Meters, III—Moving-Coil Meters, IY—Electrodynamometer Meters, V—The Electrostatic Meter, VI—Thermal Meters, VII—Components of Meters, VIII—Characteristics of Meters, IX—Rectifiers and Thermocouples, X—Practical

152 Pages . . . . . . 138 Illustrations . . . . . . \$2.00

# A.C. CALCULATION CHARTS

By R. Lorenzen

146 charts 7" x 11" printed in two colors, covering all alternating current calculations from 10 cycles to 1000 megacycles. A tremendous time saver for all engineers and others who work on power, audio, supersonic, high frequency and ultra high frequency problems. Eliminates the slide rule.

160 Pages ... 91/2 x 12 inches ... Cloth Binding ... \$7.50

# HIGH FREQUENCY MEASURING TECHNIQUES USING TRANSMISSION LINES

By E. N. Phillips, W. G. Sterns, N. J. Gamara

The authors, members of the Collins Radio Company Research Laboratory, develop the thesis that a shielded transmission line with a continuous slot along its axial length is the most convenient tool for measurements in the frequency spectrum above 100 megacycles per second. Properly conductors, the equipment described in this monograph can be used to measure wavelength, velocity of propagation, impedance, electrical length and attenuation in four-terminal networks.

64 Pages . . . . . . 8½ x 11 . . . . . . Illustrated with Photographs, Charts, Tables . . . . . . . . \$1.50

Public Library.

# ucations





# THE CATHODE-RAY TUBE AT WORK

A new era in the servicing of radio receivers, public - address systems, transmitters, etc., is here. By learning the proper use of the cathode-ray tube, the efficient servicing of modern radios and electronic equipment is assured.

assured.

The theory underlying the functioning of the cathode-ray tube and the circuits that accompany it receives full consideration in this book.

The second half of the volume is devoted to specific and practical applications of oscilloscopes to servicing problems.

### CONTENTS

CONTENTS

1—The Theory of the Tube. A complete explanation of the different types of eathode-ray tubes. How the sput is focused and how the beam of electrons is deflected. II—Sweep Circuits. How and why the spot moves across the screen and forms the image. III—A.C. Voltages on Both Sets of Plates. An explanation of the patterns formed on the eathode-ray tube screen when ac voltages are applied. IV—Commercial Cathode-Ray Oscillographs. A detailed description of the various cathode-ray oscillographs that are on the market. V—Practical Application of the Cathode-Ray Oscillograph. General directions of adjusting the cathode-ray oscillograph for all tests. VI—Alignment of Tuned Circuits. Understandable explanation of the theory of the frequency modulated oscillator and how it is used in testing with the cathode-ray oscillograph. VII—The A-F Frequency Modulator. How overall a-response curves of audio units are developed and what they mean. VIII—Auto Radio Vibrator Terting. The connections for testing vibrators with the cathode-ray tube oscillograph. IX—Transmitter Adjustment. How the cathode-ray tube oscillograph. IX—Transmitter Adjustment. How the cathode-ray tube oscillograph. How is measured and the trapezoidal pattern is developed on the screen. X—Other Applications of the Cathode-Ray Oscillograph. Beat patterns. c.-w. reception and detection.

338 Pages ... Profusely Illustrated ... Net Price \$4.00

338 Pages . . . . Profusely Illustrated . . . . Net Price \$4.00



# SERVICING SUPERHETERODYNES

No other circuit in the radio field has undergone all the changes that have been incorporated in the superheterodyne. In order to service these receivers with profitable speed, you must be able to analyze the different portions of the circuit quickly and this is just what Rider tells you how to do in this book. Not only is the theory of all types of Superhets thoroughly covered, but actual servicing details are most complete.

### CONTENTS

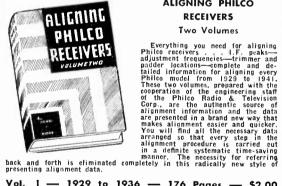
I—The Principles Underlying the Operation of the Superheterodyne Receiver. II-The Generation of and the Relation Between Harmonics. III—Explanation of the different Types of Superheterodyne Circuits. IV—Function and Characteristics of Individual Parts of the Superheterodyne Receiver. V—Special Circuits and Tube Applications. VI-Troubles and Symptoms Encountered in Superheterodynes. VII-Application of Test Oscillators, VIII—Vibrator Units, Appendix— Intermediate Peak Frequencies of Commercial Receivers with Model Numbers.

288 Pages . . . . Profusely Illustrated . . . . Net Price \$2.00

### SERVICING RECEIVERS BY MEANS OF RESISTANCE MEASUREMENT

Take the guesswork out of servicing by using an ohmmeter in your trouble shooting. This book tells you how to make and correctly interpret point to point resistance measurements. It will simplify your servicing problems and enable you to use the resistance data furnished in RIDER MANUALS to the best advantage. Now that more manufacturers are supplying resistance data, you need this book to speed up your servicing with preater a speed up your servicing with preater and the service of the service o

203 Pages . . Net Price \$2.00



### ALIGNING PHILCO **RECEIVERS**

Two Volumes

Vol. I — 1929 to 1936 — 176 Pages — \$2.00 Vol. II — 1937 to 1941 — 200 Pages — \$2.00

### **AUTOMATIC FREQUENCY** CONTROL SYSTEMS

From the simplest type of A.F.C. circuit to the most complicated push pull control circuit... you will find them all clearly explained in Rider's book. The first part of the book is devoted to a review of the combination of D.C. voltages, review of the combination of D.C. voltages, the phase relations in Inductive, capacitive, and transformer circuits, with particular reference to the manner in which these principles appear in A.F.C. circuits. The remaining chapters cover the operation of all types of discriminator circuits, the operation of all types of discriminator circuits, the operation of the various types of control tube circuits, including the push-pull type, the reflected reactance type, and the mutual inductance type. Let Rider tell you all about A.F.C. in this up-to-the-minute book that combines theory and mactice

144 Pages . . Net Price \$1.75

### AN-HOUR-A-DAY WITH RIDER SERIES

96 Pages Each . . Hard Covers . . \$1.25 Each ALTERNATING CURRENTS IN RADIO RECEIVERS

Are you familiar with the different forms of alternating currents which are present in a radio receiver? When once you understand the basic facts relating to the cycle—frequency—sine waves—harmonics—complex waves—modulated waves—phase relations—you will have no trouble in understanding the servicing problems which involve these factors.

### D.C. VOLTAGE DISTRIBUTION

Only a casual glance at the schematics of any of the multi-tube sets will convince you that the distribution of the D.C. voltage to the tube elements is complicated. The many different forms these systems take should be recognized and understood. You should know thoroughly how the value of resistance and wattage rating of each resistor is calculated and why.

### RESONANCE AND ALIGNMENT

Oo you know what happens when you tune a circuit to resonance? In order to align a receiver, oscillator, or transformer properly, so that maximum efficiency is attained, you must be familiar with more than just the mechanical operation. Are you familiar with I.F., oscillator, R.F. and detector alignment for all types of circuits—single, double and triple tuned systems?

### AUTOMATIC VOLUME CONTROL

Automatic volume control has now become a standard feature of every well made receiver. Are you familiar with every type in use and can you recognize one system from another by ex-mining the schematic? Do you know how various types of tubes are used in each circuit? Noise suppression systems, time delay circuits—audio-frequency volume expander systems and other such networks have greatly increased servicing problems.

### RADAR: What it is

### Easy-to-Grasp Explanation for Only \$1.00

by John F. Rider and G. C. Baxter Rowe

No tangling with technicalities! It's easy to understand what radar is and how it works, when Rider and Rowe unravel this knotty subject.

Cartoon sketches, diagrams and photos — sometimes three illustrations to a page—help make the story clear. Rider and Rowe describe different types of gear used by ground, sea, and air forces, and the different uses made of each.

CHAPTER HEADINGS

Underlying Principles of Radar . . . The Basic Radar Set . . . Antennas and Indicators . . . How Ground Troops Used Radar . . . How Radar Is Used at Sea . . . How the Air Forces Used Radar . . . Radar IFF (Identification of Friend or Foe) and Countermeasures . . . Future

72 Pages . .  $8\frac{1}{2}$  x 11 Inches . . Flexible Cover . . \$1.00 RADIO AMATEUR'S BEAM POINTER GUIDE

By John F. Rider (W2RID)

Eliminate map work. Merely consult the lists in this book and you can accurately point your antenna to any country in the world, so the maximum of energy is going in the direction you want it.

32 Pages . . . . 81/2 x 11 inches . . . . . \$1.00



MURRAY HILL BOOKS, Including

# **GHIRARDI RADIO BOOKS**



TECHNICAL DIVISION of MURRAY HILL BOOKS, INC., 232 Madison Ave., New York 16, N.Y.



The equivalent of 36 Radio books

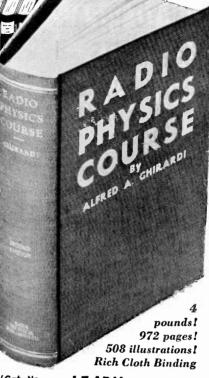
Thizacdi's

Famous

# Famous RADIO PHYSICS COURSE

The world's greatest collection of radio knowledge gathered together in one huge 972-page inexpensive volume. A complete radio course so head-and-shoulders above anything in the field that it is used as the basic text by thousands of students and schools in 82 different countries.

Ghirardi gives you everything you want to know—the most simple, complete and comprehensive book published on the fundamentals of radio, electricity and sound. Everything is explained clearly, and is easy to understand for quick study and reference.



(Cat. No. LEARN
RADIO-ELECTRONIC
FUNDAMENTALS
from This Book!



# EVERYTHING about RADIO, SOUND and ELECTRICITY

1. Radio Broadcasting System.—2. Sound, Speech and Music.—3. Electron Theory; Electric Current.—4. Electrical Units; Ohm's Law; Resistance.—5. Electrical Circuits; Batteries.—7. Electromagnetism. 8. Electro-magnetic Induction. — 9. Inductance and Inductors.—10. Capacitance and Condensers.—11. Alternating Current Circuits.—12. Electric Filters.—13. Electrical Measuring Instruments.—14. Electromagnetic Radiations.—15. Radio Transmission; The Broadcasting Station.—16. The Receiving Station.—17. Elementary Study of the Vacuum Tube.—18. Vacuum Tube Characteristics. —19. Construction Features of Vacuum Tubes.—20. Vacuum Tube Detector and Amplifier Action. 21. Radio Frequency Amplification.—22. Superheterodyne Receivers.—23. R.F. Amplifier and Tuning Coils. — 24. Audio Amplification. 25. Loud Speakers.—26. Battery-operated Receivers.—27. Power Supply Units.—28. Electric Receivers.—29. Auto-radio and Aircraft Receivers.—30. Phonograph Pickups and Public Adress Systems.—31. Short-wave Receivers.—32. Vacuum Tube Applications and Photoelectric Cells.—33. Television.—34. The Antenna and Ground.—35. Testing and Servicing.—36. Sound Motion Pictures.—Appendixes.—856 Review Questions for Self-Study.



# Your Service Work

with GHIRARDI'S GADGETS

You'll marvel at these ingenious "TWIN GADGETS." Handlest little time-savers you ver saw! They'll "trouble-shoot" radio sets with lightning speed—just a flip of a card and there before you are the "remedies" and "tests" to make for whatever "trouble" symptoms you find. They'll cut you trouble-shooting time in half and earn back their small cost on a couple of calls.

ORDER THEM TO-DAY!

# POCKET TROUBLE SHOOTERS

Only 50c Each—\$1 for the Pair (Cat. No. UC49-4)

HOME-RADIO GADGET (Cat. No. UC49-2)

Spots 400 different "traubles" in Power Unit, Receiver Circuits Proper, Tubes, Loudspeaker, Antenna, Ground, "A" Battery, "B" Battery, etc. for such symptoms as "Hum," "Weak," "Noisy," "Inoperative," "Intermittent Reception," "Fading," "Oscillation," and "Distortion." It not only tells you exactly what test to make to definitely locate each trouble, but actually suggests the "Remedy" for it.

AUTO-RADIO GADGET (Cat. No. UC49-3)

Spots 444 special auto-radio "troubles" in all possible trouble-sources for 11 common symptoms: 1. "Hum": 2. "Weak": 3. "Nolsy" when both car and engine are at rest; 4. "Nolsy" when car is a trest with engine idling; 5. "Nolsy" when car is driven normally; 6. "Nolsy" when car is coasting with ignition off; 7. "No Reception"; 8. "Intermittent Reception"; 9. "Fading"; 10. "Distortion"; and 11 "Oscillation."

# Coming in 1949!

GHIRARDI'S
MECHANICS OF

# MODERN RADIO and TELEVISION SERVICING

250 pages — profusely illustrated
Probable price \$4 (Cat. No. UC49-5)

Here, by the well-known author of RADIO PHYSICS COURSE, MODERN RADIO SERVICING and dozens of other books and articles, is a new book that explains fully and plainly how to perform the wide variety of purely mechanical work involved in modern radio and television receiver repair. Also describes the selected group of regular and time-saving tools and accessories required; tells how to select, care for and use service tools; and how to lay out the shop for most efficient work. A long-neglected subject now clearly explained by radio's outstanding author.



MURRAY HILL BOOKS, Including

# BOOK



TECHNICAL DIVISION of MURRAY HILL BOOKS, INC., 232 Madison Ave., New York 16, N.Y.

SHOWS EXACTLY HOW TO REPAIR OVER

**4800 RADIO RECEIVER MODELS** 

Ghirardi's "Radio Troubleshooter's Handbook"

Over 400 pages in Ghirardi's big manual-size RADIO TROUBLE-SHOOTER'S HANDBOOK contain specific common Trouble Symptoms, their causes and remedies for practically every radio receiver in use today. This feature alone means that it enables modern service shops to eliminate useless testing, save time all along the line, and double their output of work! Not a "study" book. You simply refer to it when you need specific help on a specific problem. Goes right to work for you the minute you get it!

In addition, there are hundreds of other pages of essential service data including i-f alignment peaks for over 20,000 superhets; a big data section on i-f transformer troubles; the most up-to-the-minute tube chart you've ever seen; dozens of tips on tube substitutions; auto radio data; plug-in and ballast

resistor replacement charts; condenser charts; coil, transformer, and wire data-and a wealth of other material to save you time and help you make more money.

> A. A. GHIRARDI -the man who makes Radio work easy to learn.



Get both Modern Radio Servicing and the Troubleshooter's Handbook — over 2030 pages of essential servicing data — at our special combination price of only \$9.50 for the two. (Cat. No. UC49-8)

# SERVICING THE MODERN CAR RADIO

By A. L. HURLBUT



JUST OUT!

A new book that makes auto radio repair TWICE AS EASY!

Covers all auto radio types from mid-1930's to present, including FM

2nd Edition, 702 pages,  $8\frac{1}{2} \times 11$ 222 illustrations, over 500 circuit diagrams, (Cat. No. UC49-9) \$7.50

Here, by a well-known auto radio expert, is everything needed to help the serviceman gain profitable auto radio servicing skill, Describes installation, testing and repair methods fully. Also contains needed special facts on car radio circuits; differences between car and home radio servicing problems; shop set-up and business getting ideas, and over 500 diagrams that give circuit details of the most commonly used auto radio models of dozens of makes.

### PRACTICAL FACTS AND METHODS ON:

Getting into the car radio business; dif-

ferences between mobile and home radios; antenna installations; loudspeaker problems; antennas and input circuits; power supplies; auto radio circuit features; auto electrical systems; setting up shop; car set installations; remedying interference; servicing procedure; vibrator maintenance; auto radio alignment; push-button tuning - and many other subjects.

# A COMPLETE RADIO-ELECTRONIC SERVICING EDUCATION Ghirardi's "Modern Radio Servicing"

Once in a blue moon a technical book is written that is so important,

Once in a blue moon a technical book is written that is so important, so complete, and so easy to understand that it is used almost universally by members of a profession—and Ghirardi's MODERN RADIO SERVICING is that kind of a book!

It is the only single, inexpensive book giving a complete course in modern Radio repair work in all its branches. Written so simply you can understand it without an instructor. Read from the beginning, it takes you step by step through all phases of the work. Used as a reference book by busy servicemen, it serves as a beautifully cross-indexed volume for "brushing up" on any type of work that may puzzle you. that may puzzle you.

Included is a thorough explanation of Test Instruments, how they

should be used and why—and even how to build your own; Receiver Troubleshooting Procedure and Circuit Analysis; Testing & Repair of Components; Installations; Adjustments, etc., etc.—also How to Start a Successful Radio-Electronic Service Business. 1300 pages; 706 helpful illustrations, only \$5 (\$5.50 foreign).

# FREQUENCY MODULATION



Fundamentals — Apparatus — Servicing

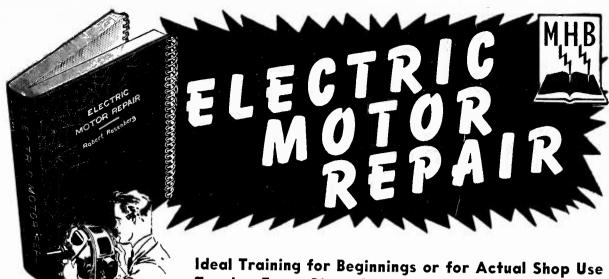
Fundamentals — Apparatus — Servicing By NATHAN MARCHAND 448 pages, 6 x 9, over 300 illustrations, \$5 (Cat. No. UC49-10)

This new book by a well known radio consultant helps you understand FM clearly. Equally important, it tells how to handle FM service work. Basic theory, circuits, transmitters, receivers amobile equipment are fully explained—with emphasis on modern methods of installing, adjusting and repairing FM receivers. From FM circuit peculiarities, tuning indicators, antennas, FM test units, receiver alignment to general service procedure and dozens of other subjects, this book is a practical, intensely helpful guide.

H-8

Net

Copyright by U. C. P., Inc.



# What to do — How to do it!

Complete repair, rewinding and maintenance data on:

Split-phase motors Capacitor motors Repulsion-type motors Polyphase motors Alternating-current motor control Direct current motors Direct-current, armature winding Direct-current motor control Universal motors Shaded-pole motors Fan motors D-C generators

Essential motor data, etc., etc.

and electronic

Synchronous motors and generators Motor Control—mechanical, electrical Teaches Every Step of the Work . . . only \$5 complete

Based on what can be learned quickly at home from this big 553-page book, ELECTRIC MOTOR REPAIR, you can train for prompt, profitable installation, servicing, repairing and even complete rewinding of practically any

Every subject is clearly and simply explained in text and ALSO by more than 900 clear-cut illustrations. You read what to do. You actually SEE how it is done. Quick reference guides tell how to handle specific jobs on specific motor types.

ELECTRIC MOTOR REPAIR book is fully complete, intensely practical. It covers the entire motor field—from A-C to D-C motors and generators to mechanical, electrical and electronic control systems. Unique Duo-Spiral Binding divides book into two sections so that both text and related illustrations can be seen together. An instructor standing by your side could hardly do better! Right down the line, this big book explains every detail of the work in a way you can easily understand. Thousands already in use in motor repair shops and for home study!

# A "Natural" for Radio Men... Opportunities Everywhere

There are more motors in use than any other type of electric equipment! Statistics show that the average small home has 11 motor-driven appliances — in washers, ironers, fans, oil burners, radio-phonographs, clocks, refrigerators, mixers and dozens of other appliances.

Large homes have many more—and there are millions of motors used daily throughout industry. The expert who can install and repair them is a valuable man in this Electrical Age! ELECTRIC MOTOR REPAIR tells what to do, how to do it . . . every step of the way.



# PRACTICAL TELEVISION SERVICING



# NEW, DIFFERENT. **DOWN-TO-EARTH!**

The ideal book for servicemen who want to cash in on Television!

By J. R. JOHNSON and J. H. NEWITT 375 pages, 6 x 9, over 230 illustrations, \$4 (Cat. No. UC49-12)

At last you can get a book that really gives you the low-down on television servicing - one that tells exactly what to do and also guides you on precautions to take and mistakes to avoid. PRACTICAL TELE-VISION SERVICING is a complete, down-to-earth working manual for those who want to understand television servicing, get straightened out on the vast amount of MISinformation that exists about television, and really be able to handle television servicing work.

### MAKES TELEVISION REPAIR EASY TO UNDERSTAND

This isn't a book of theory, mathematics and general discussions. The authors - one a radio editor, the other a well-known service engineer - actually owned and operated a television service shop to get the specific, how-to-do-it information they now pass along to you in easily understood form. Besides explaining how television components, construction and operation differ from radio, they show how to perform all specific operations in television receiver troubleshooting, diagnosing and repair. You don't bother with needless theory. You are actually shown how to do the work!

# **FACTUAL** SERVICING DATA ON:

How to test for an Intermittent peaking coll or transformer

How to get a signal over a mountain

What to do when picture linearity is poor

How to guy a mast properly

Checking video response with a sauare wave

When to use mica capacitors in place of other types . . . . . and scores of other practical problems



# THE MURRAY HILL MANUALS IN

# **APPLIED ELECTRICITY**

Practical guides to industrial electrical equipment — installation —operation — repair maintenance

By E. S. LINCOLN

Formerly published by Essential Books, these famous manuals have now been added to the Murray Hill technical book list. As long as the present small supply containing the previous publisher's imprint lasts, we offer the books at the following reduced prices.

- 1. INDUSTRIAL ELECTRIC WIRING Construction, operation and maintenance data on a-c and d-c wiring systems. 336 pp., over 100 illus. (Cat. No. UC49-13) Was \$3, Now only \$2.75
- 2. CONDUCTORS and WIRING LAYOUTS A handbook of wires, conduits, insulations, etc., with instructions for wiring motors, switchboards, lighting systems and other industrial equipment. 342 pp., over 175 illus., etc. (Cat. No. UC49-14) Was \$3, Now only \$2.75
- 3. INDUSTRIAL ELECTRIC CONTROL All about control equipment for all industrial electrical apparatus. 374 pp., over 200 illus. (Cat. No. UC49-15) Was \$3, Now only \$2.75
- 4. SWITCHBOARDS and PANELBOARDS Construction, operation and maintenance "know how" for all types in common industrial use. 150 pp., profusely illustrated. (Cat. No. UC49-16) Was \$3, Now only \$2.25
- 5. INDUSTRIAL ELECTRICAL HEATING and ELECTRICAL FURNACES Resistance, infra-red and induction heating principles with complete data on selection, installation and operation. 192 pp., profusely illustrated. (Cat. No. UC49-17) Was \$3, Now only \$2.25
- 6. ELECTRICAL PROTECTIVE EQUIPMENT and POWER FACTOR CORRECTION A handbook of electrical protective and power factor correction electric with handy tables and codes. 242 pp.. (Cat. No. UC49-18) Was \$3, Now only \$2.50 7. PRIMARY and STORAGE BATTERIES Selection, use, maintenance of all types; also details of charging generators, rectifiers and control equipment. 168 pp., profusely illustrated. (Cat. No. UC49-19) Was \$3, Now only \$2.25 8. ELECTRICAL MEASURING INSTRUMENTS (Measurements and Surveys). Operating principles and details of all industrial types including quick reference guides to instrument selection and use. 284 pp., over 200 illus. (Cat. No. UC49-20) Was \$3, Now only \$2.50

- 9. INDUSTRIAL ELECTRIC LAMPS and LIGHTING An on-the-job handbook covering all types, including fluorescent, black light and bactericidal. 342 pp., over 200 illus. (Cat. No. UC49-21) Was \$3, Now only \$2.75
- 10. ELECTRIC MOTORS and GENERATORS and RELATED DRIVES

   Completely covers both d-e and a-c motors of every type. 382
  pp., over 200 illus. (Cat. No. UC49-22) Was \$3, Now only \$2.75



# **ELECTRICIANS'** POCKET COMPANION

By BENJAMIN GOLDBERG

(Formerly Electrical Inspector, N. Y. City) 440 pages, 4½ x 7, Hundreds of charts, diagrams and tables. Price \$2.50

(Cat. No. UC49-23)

Here, in handy pocket size, are hundreds of needed electrical working facts and data. It answers your questions; gives Code and Underwriters' requirements; helps you plan and work more efficiently. Tables, charts, diagrams and data cover modern electrical work and equipment. Practical short cuts are described. Covers conduit, cable, open wiring, meters, motors, controllers, transformers, lighting and signal circuits, domestic heating systems and dozens of other subjects. A book no one who works with electricity can afford to miss!

This big book shows what the oscilloscope is, what it does, and how to use this versatile electrical instrument in the field of electronics, in industry, in radio and television receiver servicing, in radio transmitting, in teaching, etc. The ideal book to help you learn all about the engineering essentials of oscilloscopes, their tubes, circuits, operation and application. Contains complete details of methods of applying the oscilloscope to radio and television problems in a way you can easily understand.

# Coming in 1949! MODERN OSCILLOSCOPES AND THEIR USES

By JACOB RUITER
of Allen B. DuMont Laboratories
400 pages, illustrated. Price \$6
(Cat. No. UC49-24)

# FLUORESCENT AND OTHER GASEOUS DISCHARGE LAMPS

By W. E. FORSYTHE AND E. Q. ADAMS

304 pages, 152 illustrations, \$5 (Cat. No. UC49-25)

Anyone who installs, manufactures or services modern fluorescent lighting will find this book invaluable. Included are complete discussions of basic theory, lamp characteristics, component parts, practical discussions of the advantages and disadvantages of lamps of different types, delayed phosphorescence, fluorescence and television, short duration discharge and many other subjects.

# THE ELECTROLYTIC CAPACITOR By ALEXANDER M. GEORGIEV Over 200 pages, 80 illus., price \$3 (Cat. No. UC49-26)

All the Facts on a Little-Known Subject

Don't buy, specify, use or replace capacitors blindfolded! Save time, save money and increase your service efficiency by knowing all about this vital radio-television subject. This book explains the entire problem — where, when and how to use different capacitor types; replacement and emergency repairs; operations at low and high voltages and frequencies and many related subjects. at low and subjects.

# Coming in 1949! MAGNETIC RECORDING By S. J. BEGUN

320 pages, illustrated. Price \$5 (Cat. No. UC49-27)

A thorough engineering treatment of the entire subject of mag-A thorough engineering treatment of the either surject of magnetic recording — its theory, various types and makes of recorders, their applications, their performance, measurements and advantages. The book is detailed and authoritative in its discussion of the fundamentals and components of efficient magnetic recording devices, and includes a chapter on the important research problems still facing this new industry.



# The Radio Amateur's Handbook

Over a period of more than twenty years *The Radio Amateur's Handbook* has grown from a small manual of amateur operating to the world's most valuable and widely-used radio book. Just as amateur techniques and developments have often been forerunners of professional engineering, and the amateur body itself become a training ground in providing executives, engineers and technicians for the radio industry, so has this standard manual of amateur communication become the all purpose volume of radio.

The 1949 edition retains the material on theory, principles and design which made the Handbook so valuable, but it has been revised and integrated with constructional data. This is not only of value to the practicing radioman but to the student as well, for it gives him practical applications and examples of the theory he is learning. As a text, the Handbook is probably more used in radio schools and colleges than any other single volume.

In constructional material, no publication equals the *Handbook* in practical utility, its treatment of radio communications problems in terms of how-to-do-it rather than by abstract discussions and abstruse formulas. There are few radio manufacturers, schools, engineering firms, experimental laboratories and military communications units which do not possess at least one copy of this valued and modern reference work.

Text, data book, constructional manual, operating reference book — it is all these and more. Its annual rewriting assures a modern up-to-date text, so necessary in a science so fast moving and progressive as radio. Yet in this virtually continuous modification there has always been the objective of presenting the soundest and proved aspects of current engineering practice rather than the merely new and novel.

\$2.00 U.S.A., Its Possessions and Canada Buckram Bound \$3.00 U.S.A., Its Possessions and Canada

Elsewhere \$2.50 Buckram Bound \$4.00

H-11

# A Course In Radio Jundamentals

The prime function of the book is to help the individual home student. The radio amateur is essentially a practical man. He has to be, because usually he builds his own equipment and he must make it work. His guide in that work is usually The Radio Amateur's Handbook, published by the League. Splendid as that famous book has proved, there has been a wide-spread need for a guide which would assist in studying it and which would facilitate a real absorption of radio principles. Such a course of study is contained in this book. It is a highly-developed application of the time-tested principle of "learning by doing." Written around the ARRL Handbook, the course has been so thoroughly proved and has helped so many people that the individual student undertaking it may be assured that, if he follows its precepts literally and exactly, performs the experiments, and examines himself honestly by the test questions, he cannot fail to learn the principles of radio.

Price 50c

# Hints & Kinks

Amateurs are noted for their ingenuity in overcoming by clever means the minor and major obstacles they meet in their pursuit of the chosen hobby. An amateur must be resourceful and a good tinkerer. He must be able to make a small amount of money do a great deal for him. He must frequently be able to utilize the contents of the junk box rather than buy new equipment. Hints & Kinks is a compilation of hundreds of good ideas which amateurs have found helpful.

It will return its cost many times in money and savings—and it will save hours of time. Price 50.25

Possessions, and Canada

# AMERICAN RADIO RELAY LEAGUE, INC.,



# The A.R.R.L. Antenna Book

The present edition of the ARRL Antenna Book represents an accumulation of ten more years of the amateur's experience in both war and peace in making the all-important ever fascinating "sky wire" carry signals to the ends of the earth. The data contained in this book are the result of practical experience both of the authors and hundreds of amateurs who have

contributed to the practical know-how that this book expresses.

The book has two principal divisions. Chapters 1 through 5 deal with the principles of antennas and transmission lines, wave propagation and its relationship to antenna design, and the performance characteristics of directive antenna systems. These five chapters might be called a textbook on antennas; they enable the reader to design a system of his own to fit his particular needs. Beginning with Chapter 6, there is a series of chapters in which complete data are given on specific designs for the various amateur bands. The amateur who has not studied the first section, or who wishes to avoid the necessity for making his own calculations, will find in these chapters the information necessary for putting up the system that appeals to him. The remaining chapters deal with the highly important mechanical features of construction and related subjects such as determining geographical directions.

This required twice as big a book as the previous edition but we are sure you will find it well

worth more than the nominal cost.

\$1.00 U.S.A., Its Possessions and Canada \$1.25 Elsewhere

# How To Become A Radio Amateur

Universally recognized as the standard elementary guide for the prospective amateur. Features equipment which is simple in construction. The apparatus is of a thoroughly practical type capable of giving long and satisfactory service — while at the same time it can be built at a minimum of expense. The design is such that a high degree of flexibility is secured, making the various units fit into the more elaborate station layouts which inevitably result as the amateur progresses. Complete operating instructions and references to sources of detailed information on licensing procedure are given.

Price 25c

# The Radio Amateur's License Manual

To obtain an amateur operator's license you must pass a government examination. The License Manual tells how to do that — tells what you must do and how to do it. It makes a simple and comparatively easy task of what otherwise might seem difficult. In addition to a large amount of general information, it contains questions and answers such as are asked in the government examinations. If you know the answers to the questions in this book, you can pass the examination without trouble.

Price 25c

# Learning the Radiotelegraph Code

This booklet is designed to train students to handle code skillfully and with precision. Employing a novel system of code-learning based on the accepted method of sound conception, it is particularly excellent for the student who does not have the continuous help of an experienced operator or access to a code machine. It is similarly helpful home-study material for members of code classes. Adequate practice material is included for classwork as well as for home-study. There are also helpful data on high speed operation, typewriter copy, general operating information — and an entire chapter on tone sources for code practice, including the description of a complete code instruction table with practice oscillator.

Price 25c

# AMERICAN RADIO RELAY LEAGUE, INC.,

# HOWARD W. SAMS PUBLICATIONS



# **PHOTOFACT** FOLDER SETS

Keep your service data up-to-date the easy, economical way! Subscribe now to Photo-FACT Folder Sets, issued monthly—the service that keeps you ahead of the game, that tells you everything you need to know about modern radio and television servicing. Thousands of progressive servicemen all over the country are increasing their earnings and making their work easier and more efficient by using PHOTOFACT. It pays for itself over and over again. There's nothing else like it-subscribe at your Jobber's now-so you can get your PHOTOFACT Folder Sets regularly. 160 pages each issue. \$1.50 Per Set.

Subscribe to Photofact for Continuous Coverage of Television, AM, and FM Receivers—Plus Amplifiers, Tuners, Auto Radios, etc.

### FREE **PHOTOFACT** CUMULATIVE INDEX



Here-yours for the asking-is the latest complete index to all PHOTOFACT Folder Sets. Arranged alphabetically and by model numbers, it tells you instantly the PHOTOFACT Set Number containing the data you want. Makes

it easy for you to get the information you need for jobs in your shop. Get this valuable FREE Index to all postwar models from your Jobber today.

# **PHOTOFACT**

# WORLD'S MOST PRACTICAL RADIO SERVICE DATA!



# THE INVALUABLE POST-WAR RECEIVER DATA THAT SAVES YOU TIME AND HELPS YOU EARN MORE

You can't afford to be without this complete Service Data Library covering postwar models up to the present! There's nothing like these DeLuxe Volumes for easy reference and completeness. Each Volume is in rugged, easy-to-use DeLuxe Binder, perfect for shop reference. Have all the data you need for quicker, easier servicing of postwar models. These PHOTOFACT Volumes give you the finest service data library in existence; they increase your earning power; they're the smartest investment you can make. Place your order for PHOTOFACT Volumes today!

# EXCLUSIVE PHOTOFACT FEATURES!

- Accurate, Complete, Uniform, Original—based on study of the actual equipment.
- **Exclusive Standard Notation Schematics.**
- Exclusive Oscilloscope Wave Forms.
- Complete Alignment, Stage Gain, Circuit Voltage and Resistance Analysis for each model.
- Complete Parts Listings and Proper Replacements for each model.
- Dial Cord Stringing; Disassembly Instructions.
- · Record Changer Analysis and Service Data.
- Exclusive "Keyed" Data for instant reference.
- Thousands of Exclusive Photos.

Volume 1—Covers postwar models up to January 1, 1947 Volume 2—Covers models from January 1, 1947 to July 1, 1947 Volume 3—Covers models from July 1, 1947 to January 1, 1948 Volume 4—Covers models from January 1, 1948 to July 1, 1948 Volume 5—Covers models from July 1, 1948 to December 1, 1948 Volume 6—Covers models from December 1, 1948 to May 1, 1949 Volume 7—Covers models from May 1, 1949 to October 1, 1949

Your Price Each Volume, § in DeLuxe Binder

### ORDER THESE DELUXE BOUND VOLUMES TODAY

(Inquire About the "Pay-As-You-Profit" Plan)

The Radio Service Publications that Pay for Themselves Over and Over Again

# HOWARD W. SAMS PUBLICATIONS

# Indispensable to the Radio Service Technician!



# Radio Industry RED BOOK Replacement Parts Buyer's Guide

The RED BOOK tells you in one volume what you need to know about replacement parts for approximately 17,000 sets made from 1938 to 1948. Eliminates wasteful hunting through dozens of individual parts manuals. Includes complete, accurate listings of all 9 major replacement components—not just one. Lists correct replacement parts made by 17 leading manufacturers — not just one. Covers original parts numbers, proper replacement numbers and valuable installation notes on: Capacitors, Transformers, Controls, IF's, Speakers, Vibrators, PhonoCartridges. Plus—Tube and Dial Light data, and Battery replacement data. 448 pages. 8½ x 11 inches, sewed \$395 binding. Only



# POST-WAR AUDIO **AMPLIFIERS**

and Associated Equipment

This is the book that's wanted by custom-builders, audio men and sound engineers. Covers a wide variety of well-known au-dio amplifiers and FM and AM tuners, plus data on important



# PHOTOFACT TELEVISION COURSE

Gives you a complete, clear understanding of modern TV principles, operation and practice. Covers Cathode Ray Beam Formation and Control; Beam Deflection Systems; Beam Modulation and Synchronization. Includes analysis of Cathode Ray tube construction, camera tubes, voltage supplies, sawtooth generators, sync circuits, control functions, receiving antenna circuits, RF input tuning systems, IF systems, AGC, DC restoration, video amplification, contrast, etc. Includes glossary of terms, bibliography. 216 pages; profusely illustrated; sturdily bound, 8½ \$300 x11 inches. Only



# TELEVISION ANTENNAS

Design, Construction, Installation, Trouble-Shooting

Own the first practical guide to everything you need to know about Television antennas. Written by Donald A. Nelson; based on actual experience in the field. Shows you what type of antenna to se-lect, how to install it, how to solve troubles. Gives you short-cuts that save time and help increase your installation profits. Chapters cover: receiving antenna principles; antenna construction; analysis of all types of commercial antennas; complete antenna installation data; installation problems and trouble-shooting. Over 192 pages; 124 clear illustrations. \$125 Handy pocket size. Order today.

### POST-WAR Automatic Record Changer Manuals COMMUNI-

Volume 2, 1948. Covers 45 models made in 1948, including new LP and dual-speed changers, plus leading Wire and Tape recorders. It's easy to service record changers when you have the PHOTO-FACT Record Changer Manual handy. Complete, accurate data—based on analysis of actual equipment. Gives full change cycle data, information on adjustments, needle landing data, hints and kinks, complete parts lists, exclusive "exploded" diagrams. Includes data never before available. Have this timesaving, money-making book in your shop, 432 pages; deluxe bound, \$675



Volume 1, 1947. Automatic Record Changer Manual. Covers more than 40 different post-war changer models manufactured up to 1948. Includes full hard-to-get data on leading Wire Ribbon, Tape and Paper Disc Recorders. 400 pages; fully illus- 5495 trated; 8½ x 11 inches, hard cover. Only



# New! Invaluable to Amateurs and Short Wave Listeners. Complete technical analysis of more than 50 of the most popular communications sets on the market. An invaluable service aid, a perfect buying guide for purchasers of communications receivers. All data based on actual examination and study of each unit. 264 pages; profusely illustrated; durably bound. \$300 8½ x 11 inches. Only RADIO RECEIVER TUBE PLACEMENT GUIDE

CATIONS

RECEIVER

MANUAL

Shows you exactly where to replace each tube in over 5,500 radio receiver models. Covers receivers from 1938 to 1948. Each tube layout is illustrated by a clear, accurate diagram, with each tube identified. Saves valuable time—especially where tubes have been removed from the set. No more risky hit-and-miss methods—you'll work faster, more profitably. A handy, pockersized volume, completely indexed. 5125 Only



# DIAL CORD STRINGING GUIDE



# POST-WAR AUTO RADIO MANUAL

You can tackle any car receiver when you have a copy of this specialized Photofact volume in your shop. Covers everything you need to know—gives you complete service data based on analysis of the actual receivers. Covers 100 different post-war medels (practically every auto radio made since 1946); represents the products of 24 different manufacturers. More than 300 pages; profusely illustrated; each model treated uniformly, completely, accurately. Durably bound; \$495

Last Word on SOUND

THE RECORDING AND REPRODUCTION OF SOUND

A complete authoritative treatment of the entire subject of Sound, written by Oliver Read, editor of Radio News. Complete, informative, invaluable, 304 pages; 6 x 9 deluxe binding.

500

The Radio Service Publications that Pay for Themselves Over and Over Again

### **ELEVENTH EDITION FEATURES:**

- Dozens of transmitters for all bands, and all powers up to 1 kw. Six chapters on Antennas, Transmission Lines and Propagation. One entire chapter on rotary array construction and feed methods. One large chapter on the conversion of widely-distributed military surplus equipment to amateur and other practical use. New constructional data on beam-tetrode amplifiers.
- fiers.
  One chapter on determing the operational characteristics of all types of amplifiers.
  New, simple FM exciter designs.
  New data on transmitter control by improved methods.

- control by improved ods. New V-F-O designs. Simplified impedance matching and antenna tuning devices. The most extensive tube tables of any book not devoted entirely to such



- **Extensive Revisions** 
  - Many New Chapters
  - Better Photographs
  - Larger Page Size

COPY IN U.S.A.

Clothbound, Gold Stamped

OUTSTANDING

antenna manua

 The most comprehensive antenna book yet published, with all the old tried-and-true standards, and many a new one.

Among the new, "hot" antennas described in this book are:

- The BOBTAIL CURTAIN and the YERTICAL TRIAD, a couple of dx-dandies for 75 and 40.
  The OCTAPUSH, a single array for 40, 20, and 10!
  The X-CURTAIN, an improved "Lazy-H."

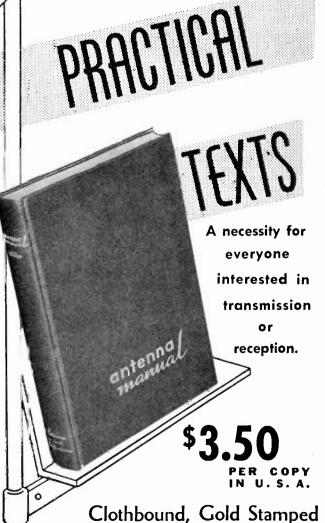
- The ELECTROTATOR, an electrically rotated broadside curtain.

The ANTENNA MANUAL has the same happy combination of practical how-to-build-it data and simple underlying explanations that make the "Radio Handbook" one of the largest-selling radio texts in existence.

"Sugar-coated radiation, propagation, antenna, and transmission line theory help you understand what's going on.

Comprehensive practical data (including dimensions of course) on all the more popular antennas—and on some brand-new ones which have never before appeared in print, but about which you are going to hear a lot on the air in the near future.

WRITTEN BY W. W. SMITH, W6BCX, Editor of the pre-war "Radio" and "Radio Handbook."



# THE RADIO AMATEUR NEWCOMER

The only comprehensive book for the beginner!

YOU need no other book to get your license and get on the air. Ideal for those just getting started, or getting interested, in amateur radio

### ABSOLUTELY COMPLETE

- · How-to-build simple equipment for a complete station on all newcomers bands.
- · Operating instructions.
- · Simple theory.

The World's Radio Tubes

("Radio Tube Vade Mecum")

PH. BRANS

SURPLUS RADIO

CONVERSION MANUAL

SURPLUS RADIO

CONVERSION MANUAL

1040

C C. EVENSON AND O R. BEACH

- · Complete section of study questions, including those needed to pass the license exams.
- U. S. A. Amateur radio regulations. Written by those masters of making-it-plain, the editors of the "Radio Handbook" and the prewar "Radio."

PER COPY IN U. S. A.

# THE WORLD'S RADIO TUBES

("Radio Tube Vade Mecum")

The Only Book of its kind in the world - and one of the world's largest selling radio books.

# Characteristic Tube Data of

- BRITISH • FRENCH
- CZECH
- SWISS
- GERMAN
- AUSTRALIAN ITALIAN
- RUSSIAN
- JAPANESE

**SCANDINAVIAN** and all other available types

More listings that ever before • New, larger page size • Better paper and appearance.

Of the previous, smaller edition, Electronics said "Here at last is the radio tube handbook radio engineers have dreamed of ... in many carefully prepared tables and charts."
"Probably the most complete and authoritative set of tube data in existence," said Radio Craft.

PER COPY IN U.S.A.

# SURPLUS RADIO CONVERSION MANUAL COMPLETE IN TWO VOLUMES

Now available is this set of reference data which has become standard for most commonly used items of surplus electronic equipment. All conversions shown are practical and yield a useful item of equipment; all have been proven by testing on several units. ful item ... eral units. VOLUME I VOLUME II

BC-221 Frequency Meter

BC-342 Receiver BC-312 Receiver BC-348 Receiver

BC-412 Oscilloscope as a test scope or as a television receiver

420-Mc. Transmitter/ Receiver

Receiver BC-453A Series Receivers BC-457A Series Transmitters SCR-522 144-Mc. Transmitter/

Receiver TBY Transceiver with Xtal Con-

PE-103A Dynamotor BC-1068A V-h-f Receiver Electronics Surplus Index Cross Index of VT-Number ARC-5 and BC-454 Receivers for 28 Mc. ARC-5 and BC-457 Tx for 28-Mc. Mobile ART-13 and ATC Xmitter Surplus Beam Rotating Mech-

anisms

anisms
Selenium-Rect. Power Units
Hi-Fi Tuner from BC-946B Receiver
ARC-5 V-h-f Transmitters
GO-9 and TBW Xmitters
9.W Amplifier from AM-26
TA-12B & TA-12C Xmitters
AVT-112A Aircraft Xmitter
BC-375 & BC-191 Xmitters
Model LM Freq. Meter
Primary Power Requirements
Chart
ARB Recvr. Diagram Only

FOR EITHER VOLUME IN U. S. A.

# RCA TECHNICAL LITERATURE

AUTHORITATIVE REFERENCES OF THE RADIO INDUSTRY



# "RECEIVING TUBE MANUAL." (RC-15)

Replaces RC-14. Completely new and brought up-to-date. Features tube theory written for the layman, expanded section on tube and circuit theory, formulas and examples for calculation of power output, load resistance, and distortion for A1. AB1. AB2, and B classes of service; augmented section on resistancecoupled amplifiers; latest data on RCA receiving tubes including miniatures and kinescopes. 256 pages. Price: 35 cents each.



**RC-15** 

# ."QUICK SELECTION GUIDE, 287 RCA TRANS-MITTING & INDUSTRIAL TUBES" (NRT-120)

Compact, four-page folder listing essential technical data for 287 RCA Power Tubes, Phototubes, Cathode-Ray Tubes, Special Tubes, Ignitrons, Rectifiers, and Thyratrons. Includes latest RCA Tube price list and complete interchangeability tables. Free.



# "RECEIVING TUBES FOR AM, FM, AND TELEVISION BROADCAST." (1275-D)

Gives characteristics and socket connection diagrams for all RCA receiving tubes—Rectifiers, Detectors, Oscillators, Converters, Mixers, Voltage and Power Amplifiers, and Kinescopes. Also includes identification of miniature and metal types; discontinued types are keyed for the benefit of radio servicemen. 24 pages. Price: 10 cents each.



NRT-120

1275-D

# "POWER AND GAS TUBES FOR RADIO AND INDUSTRY." (PG-101)

Sixteen colorful pages of tabulated technical data, base diagrams, photographs, and "thumb-nail" sketches of the current RCA line of power and gas tubes for communication and industrial use. Includes more than 150 RCA Vacuum Power Tubes, Voltage Regulators, Rectifiers, Thyratrons, and Ignitrons in easy-to-read tabular form. Price: 10 cents each.



# "PHOTOTUBES, CATHODE-RAY TUBES, AND SPECIAL TUBES." (CRPS-102)

Sixteen pages packed with authentic, detailed technical information and descriptions of more than 100 RCA Gas, Vacuum, and Multiplier Phototubes; Cathode-Ray Tubes; Camera Tubes; Monoscopes; Low-Microphonic types and other small tubes for special applications. Spectral response curves are given for all phototubes. Price: 10 cents each.



CRPS-102

# "QUICK REFERENCE CHART, MINIATURE TUBES." (MNT-30B)

Four-page folder containing descriptions, dimensions, ratings, socket connection diagrams, uses, and other detailed technical information on 64 RCA miniature tubes. Listed are Rectifiers, Diode Detectors, Triode Amplifiers, Diode-Triode Amplifiers, Pentode Voltage Amplifiers, Pentode Power Amplifiers, Beam Power Amplifiers, Pentagrid Converters, Thyratrons, and Voltage Regulators. Free.







"RCA TUBE HANDBOOK." (HB-3)

The "bible" of the industry. Over 2000 pages of data on uses, ratings, characteristics, operating conditions, dimensions, terminal connections and curves for RCA Receiving and Transmitting Tubes, Cathode-Ray Tubes and Phototubes, Thyratrons, Ignitrons and Special types. Supplied in three, deluxe, loose-leaf binders. Available on subscription basis. For details see Bulletin HBF-1-47. Handbook price: \$10.00 each.



**HB-3** 

# "RADIOTRON DESIGNER'S HANDBOOK".

Edited by F. Langsford Smith of Amalgamated Wireless Valve Company Pty Ltd. in Australia. Of value to anyone interested in fundamental principles of practical circuit design. Discusses audio- and radio-frequency applications, rectification, filtering and hum, components, tests and measurements, tube chartening and hum. acteristics, general theory and miscellaneous data. Copiously illustrated. 356 pages. Price: \$1.25 each.



RCA Technical Publications are available at your local RCA Distributor's or from Commercial Engineering, RCA Tube Department, Harrison, N. J. Prices shown apply in USA and are subject to change without notice.

# MALLORY LITERATURE



# MALLORY RADIO SERVICE ENCYCLOPEDIA (6th EDITION)

• It's the book you insisted on . . . the most complete Mallory Radio Encyclopedia ever published. You'll find over 600 pages of pre-war and post-war service data, up-to-date in every detail. And you'll find it all in one handy volume! You get complete tube complements, I.F. Peaks, circuit references, and original part numbers at your fingertips. Bigger and better than ever before—that's the 6th Edition Mallory Radio Service Encyclopedia! It will help you do a more thorough service job—more quickly—more profitably. Get your copy now from your nearby Mallory Distributor.

PRICE **\$2.00** 

# TELEVISION PARTS REPLACEMENT GUIDE

• Here's another Mallory "first"—the only complete television parts replacement guide available to radio servicemen. You get complete tube complements, I.F. alignment data, circuit references, original and replacement part numbers, Rider's references. This is a companion book to your 6th Edition Mallory Radio Service Encyclopedia.

PRICE S.25



## TECHNICAL MANUAL

- Here is the latest in radio theory and technical information, written so you can apply it to your everyday problems.
- Loud Speakers and Their Use
- Superheterodyne First Detectors and Oscillators
- Half-Wave and Voltage Doubler Power Supplies
  Vibrators and Vibrator Power
- Supplies
- Phono-Radio Service Data
- Automatic Tuning
- Frequency ModulationFundamentals of Television
- Dry Electrolytic Capacitors
- Practical Radio Noise Suppression
- Vacuum Tube Voltmeters
- Useful Servicing Information
- Receiving Tube Characteristics

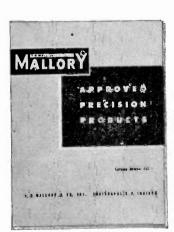
PRICE \$2.00



# VIBRATOR DATA BOOK

• Shared with you in this book are sixteen years of the most highly specialized power supply experience in the trade. It cannot be duplicated anywhere else. The Mallory Vibrator Data Book answers your questions about vibrators and vibrator power supplies. It's complete information original easy to read. So get your copy without delay.

PRICE \$1.00



### Mallory Catalog 549

Colorful, profusely illustrated, indexed for easy reference. Ample application data and descriptions for each item. A special television section has been included for your convenience. There's a separate price list so your catalog will always be upto-date.



### Mallory Vibrator Guide

One of the most useful publications in the radio service field. Up-to-date, completely organized for quick, accurate reference. Contains all available information through 1947 automobile and battery-operated home radio receivers as well as vibrator power supplies.

**PRICE \$.15** 

SPECIAL LITERATURE "DEAL" • Here's a "library" of books for radio servicemen, each of which is a classic in its field. You get all of these six publications from your Authorized Mallory Distributor for only \$5.00, a saving to you of \$.40.

ALL FOR ONLY \$5.00

# MALLORY "GOOD SERVICE FOR GOOD BUSINESS" PLAN



Handsome Electric Sign for Your Shop

# YES! "Good Service is Good Business." So . . .

tie in with the Mallory Plan—Mallory advertising—the Mallory policy—the Mallory guarantee. You get attractive signs and decals that identify your store with Mallory in the eyes of the public that reads Mallory ads each month. And you get a carefully thought-out follow-up system that will enable you to keep close tabs on your customers and secure more repeat business from them.





Easy-to-Use Customer Follow-Up System



PRIMALLORY & CO., INC.

PRIMAL

Colorful Decal for Your Window





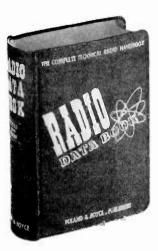


# SIGN UP WITH YOUR DISTRIBUTOR

● You approve a plain statement of the principles of "Good Service for Good Business." Pay \$2.50—a fraction of the cost of the material supplied to you—and you become an Authorized Mallory Radio-Electronic Service account—with the prestige of Mallory advertising behind you, the Mallory Consultation Service at your command, and the Mallory business builder customer check-up method working to produce more jobs for you from the customers now on your books!



# THE LEADERS IN RADIO AND TELEVISION PUBLICATIONS!



THE RADIO DATA BOOK

Everything in Radio and Electronics in One Book!

The only radio handbook of its kind . . . over 900 pages . . . 12 sections, each covering a radio subject more completely than any other book!

Used by Engineers, Servicemen, Designers, Laboratory Technicians, Draftsmen, Operators, Inspectors, Amateurs, Experimenters, Research Development, Consultants, Broadcast Technicians, Planners, Installation Men, Military, Marine, Police, Fire, Forestry and Railroad Communications.

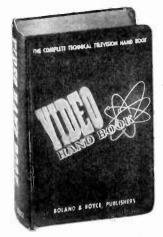
ANYONE and everyone in radio and electronics can use this book!

Section 1, 150 Basic Circuits. Section 2, Test Equipment. Section 3, Testing and Measuring. Section 4, Antennas. Section 5, Sound Systems. Section 6, Recording. Section 7, Tube Manual. Sections 8 & 9, Charts, Formulas, Codes, Graphs, Symbols. Section 10, 50 Tested Circuits. Section 11, Dictionary of Electronic Terms. Section 12, Ribliography.

12 COMPLETE BOOKS IN ONE, only \$5,00 Less than 42c per book!



H-20



# THE VIDEO HANDBOOK

The Complete Television Manual
Over 900 pages . . . 14 sections, covering

Receiver.

Section 1, Television, Past, Present and Future. Section 2, Fundamentals of Electronic Television. Section 3, The Television Station — Pick-Up — Control — Transmission. Section 4, The Television Receiver. Section 5, Television Antenna Systems. Section 6, Creating a Television Rhow. Section 7, Description of Modern Television Receivers. Section 8, Installing Television Receivers. Section 9, Servicing Television Receivers. Section 10, Television Test Equipment; Howto Use It — How to Buy It. Section 11, Building a Television Receiver. Section 12, Data Section 13, Television Terms. Section 14, Bibliography. THIS IS THE NEWEST. MOST Receiver.

THIS IS THE NEWEST, MOST UP-TO-DATE BOOK ON T-V!..... \$5.00



### RADIO MAINTENANCE MAGAZINE

Each month RADIO MAINTENANCE brings you the latest developments in television, radio and electronics by top experts in the field. Each article, each department is carefully edited and presented to help you in your daily work. All these articles are invaluable as reference material; and all the articles together will form a complete reference library on everything in the radio servicing business. In the coming year, RADIO MAINTENANCE will bring you a complete series on each of the following: AM — FM — Television — Signal Tracing and All Test Equipment — Low Cost Business Promotion Methods — Sales Techniques for Servicemen — How to Make Huge Profits in the Sound Installation Business. Each articles in a series will be a compact unit in itself — combined with the others of its series, they form a complete education — a complete service library — to bring you prestige, profit and security in your own radio servicing establishment. RADIO MAINTENANCE month

Binders in beautiful green simulated Binders in beautiful green simulated leather stamped in gold are now available for your RADIO MAINTENANCE magazines — see the current issue of RADIO MAINTENANCE for information.

For Manufacturers and Government Agencies

### TECHNICAL MANUALS

Custom designed to your specifications. Planned, written and illustrated by a select staff. . . experts in creating radio and electronic manuals for civilian and military use.

military use.
When you call upon Boland & Boyce to create your manuals you are relieved of every detail in their preparation. The entire operation is taken over and completed by a specialized staff with years of experience in publishing books and propulate.

Roland & Royce manuals incorporate only the most modern editorials and il-lustrative style. Each project is treated

with individual attention in technique with individual attention in terminute of presentation and editorial approach. The Boland & Boyce military and civilian manuals now in use throughout the world are our best recommendations.

U.S. Navy; U.S. Signal Corps; Sylvania Electric Products, Inc.; The National Company; Western Electric Co.; Bell Telephone Laboratories; Maguire Industries, Inc.; Allen B. Dumont Laboratories, Inc.; General Electric Co.; Mine Safety Appliance Co.

Write or wire Boland & Boyce today for more information.

The RADIO DATA BOOK, VIDEO HANDBOOK, THE RADIO & TELEVISION LIBRARY and RADIO MAINTENANCE MAGAZINE may be obtained at your local radio jobber's store or direct from BOLAND & BOYCE INC., MONTCLAIR 1, N. J.

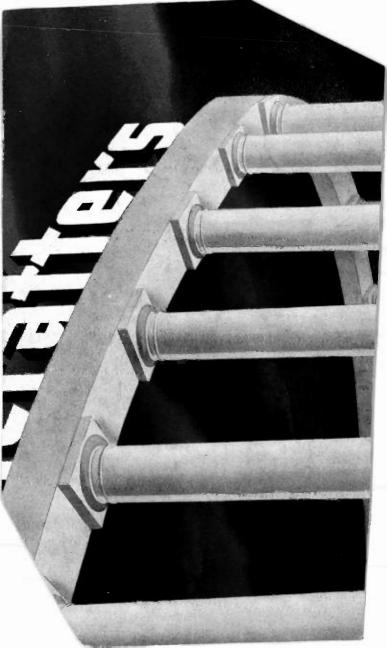
# THE RADIO & TELEVISION LIBRARY

A complete library on radio and video in two books packed with vital information for everyone in these fields! THE RADIO DATA BOOK and THE VIDEO HANDBOOK together, in a handsome slip-case, giving everything that you would otherwise require a dozen or more books for!

COMPLETE, only .....\$9.00

BOLAND & BOYCE INC., PUBLISHERS





# Here are the REASONS behind the SX-42's greatness

- 1. Continuous frequency range-540 kilocycles to 110 megacycles in six bands.
  - Band 1-540 to 1620 kilocycles. Band 2-1.62 to 5 megacycles.

Band 3-5 to 15 megacycles. Band 4—15 to 30 megacycles.

Band 5-27 to 55 megacycles.

Band 6-55 to 110 megacycles.

Adequate overlap is provided at the ends of all bands.

- 2. Wide vision main tuning dial accurately calibrated. 3. Separate electrical bandspread dial calibrated for amateur
- 3.5, 7, 14, 28, and 50 megacycle bands. 4. Beat frequency oscillator functions throughout entire range
- of receiver. CW nitch adjustable from panel. 5. Four-position switch selects mode of operation, PHONO,
- FM, AM, or CW. 6. RECEIVE/STANDBY switch.

7. Series type automatic noise limiter.

- 8. Push-pull final audio stage delivers over 8 watts with less than 8% harmonic distortion.
- 9. Audio amplifier response curve is essentially flat from 60 to 15,000 cycles.
- 10. Red markings for broadcast reception and green markings for FM reception simplify operation for general use.
- 11. Connections for coordinated operation with Hallicrafters transmitters. 12. Separate SENSITIVITY (RF) and VOLUME (AF) controls.
- 13. Four-position tone control provides LOW, MED, HI-FI, 14. Special socket for use of external power supply.
- 15. High-frequency oscillator temperature compensated to reduce drift.
- 16. "Micro-set" permeability-adjusted coils in RF section.
- 17. AVC switch. 18. "Airodized" steel top provides full ventilation and swings
- open on full length piano hinge for greatest accessibilty. 19. Wide band FM, AM, or CW available from 27 to 110 megacycles.
- 20. Six-position selectivity switch with crystal filter operates on frequencies between 540 kilocycles and 30 megacycles.

# R-42 SPEAKER



tages of the bass reflex principle. Heretofore the famous Jensen-originated bass reflex reproduction has been available only in large cabinet speakers. Now in this sleek, highly functional design, matching the new line of Hallicrafters receivers, the bass reflex feature is available in a compact speaker that offers a new high quality of reproduction. The R-42 was designed as a companion piece to the SX-42 receiver but it may be used with any other receivers such as the SX-28 and the SX-13. The speaker size is 8 inches. Two-position switch on front panel for communications or high fidelity reception. Terminals on rear for 500-ohm line. R-42 size: 12½" deep, 11¾" high, 17" wide.

THIS is the first speaker of its

size to offer the splendid advan-

- 21. Combination carrier level meter and FM tuning indicator. BFO tube performs dual function as FM tuning indicator amplifier.
- 22. New FM band marked with channel numbers in addition to megacycle calibration. 23. Dual intermediate frequency transformers. 455 kilocycle
- IF for standard operation, 10.7 megacycle IF for VHF and 24. "Split-stator" tuning makes possible superior performance
- in VIIF range. 25. Chassis and panel can be removed as a unit for rack mounting.
- 26. Crystal phasing control. 27. Antenna input impedance matches 300 ohm line.
- 28. New Hallicrafters Type HA-6 crystal used in crystal filter circuit, Holder of Mycalex, non-hygroscopic and unaffected by temperature. 29. Two limiter stages for maximum quieting on FM.
- 30. Two tuned RF stages using miniature tubes for superior VHF performance.
- 31. Phonograph input connections on rear of chassis. 32. Type VR-150 voltage regulator tube provides maximum stability in high frequency oscillator, converter, BFO, and
- FM tuning meter circuits. 33. MAIN and BANDSPREAD tuning controls and dial lock are mounted coaxially as a single precision-built unit.
- 34. Main tuning knob provided with precision vernier scale, separately illuminated through small window in one-piece Lucite dial housing.
- 35. Listed by Underwriters.

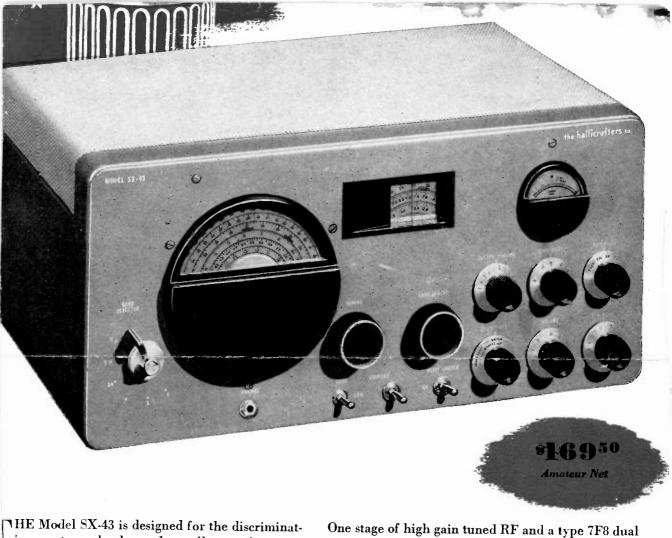
TUBES: 1-6AG5 1st RF amplifier: 1-6AG5 2nd RF amplifier; 1-7F8 converter; 1-6SK7, 1st amplifier; 1-6SG7, 2nd IF amplifier: 1—6H6 AM rectifier and noise limiter: 1—7H7 1st FM limiter amplifier; 1—7H7 2nd FM limiter; 1—6H6 discriminator: 1-6SL7 audio inverter: 2-6V6 audio output tubes; 1-7A4 beat frequency oscillator and FM tuning meter

amplifier; 1-VR-150 voltage regulator; 1-5U4G rectifier.

OPERATING DATA: The standard Model SX-42 is designed for operation on 105-125 volts 50/60 cycle alternating current. The universal Model SX-42U may be operated on 110, 130, 150, 220 or 250 volts, 25 to 60 cycle, alternating current. The standard model draws 110 watts at 117 volts. When operated from batteries through the auxiliary power supply socket it requires 5 amperes at 6 volts DC for heater current and 150 milliamperes

at 270 volts DC for plate current. DIMENSIONS: Model SX-42. Cabinet only, 20 inches wide by 93/4 inches high by 16 inches deep. Overall, 20 inches wide by 101/4 inches high by 18 inches deep.

WEIGHT: Model SX-42. Receiver only, approximately 52 pounds. Packed for shipment, approximately 65 pounds. Model B-42, adjustable base, packed for shipment, approximately 5 pounds.



ing amateur who demands excellent performance id wide frequency range at a medium price. This we member of the Hallicrafters line offers continuis coverage from 540 kilocycles to 55 megacycles id has an additional band from 88 to 108 megacles. AM reception is provided on all bands except ind 6, CW on the 4 lower bands and FM on frequences above 44 Mc. In the band of 44 to 55 Mc., wide ind FM or narrow band AM just right for narrow ind FM reception is provided. The RECEPTION

itch on the panel selects any of these and also con-

triode converter assure an exceptionally good signal-to-noise ratio. Image ratio on the AM channel on band 5 (44 to 55 Mc.) is excellent as the receiver is used as a double superheterodyne on this band. The new Hallicrafters dual IF transformers provide a 455 kilocycle IF channel for operating frequencies below 44 megacycles and a 10.7 megacycle IF channel for the VHF bands. Two IF stages are used on the 4 lower bands and a third stage is added above 44 megacycles. Switching of IF frequencies is automatic. The separate electrical bandspread dial is calibrated for the