

Operating

www.arrl.org/shop = 1-888-277-5289

The ARRL Operating Manual 11th Edition

Item No. 0598 – \$24.95
The ARRL Operating
Manual for Radio Amateurs
is the most comprehensive
guide to Amateur Radio
operating — things you can
do on the air with your gear. In
some cases, you may need to
pick up new software or
another radio, antenna, or
accessory, but in many cases
you already have the tools

you need to get started. Each



topic has been written and updated by experienced hams who are active on the air. They are happy to share what they have learned, so that you can get involved too.

Includes:

Basic Station and Operating Techniques

- Assembling a Station
- Basic Operating Procedures
- HF Digital Communications
- VHF/UHF FM, Repeaters, Digital Voice and Data
- VHF/UHF Beyond FM and Repeaters
- Amateur Satellites
- Image Communications
- Portable and Mobile Operation

Radio Clubs and Public Service

- Group Activities for the Radio Amateur
- Preparing the Next Generation
- ARRL Field Day
- Public Service Operating

On-Air Activities and Radiosport

- Awards Measuring Operating Achievements
- DXing Contacting Those Faraway Places
- Confirming the Contact QSLing
- Contesting Competitive Wireless

Resources for the Active Ham

 A collection of useful information to support on-air operating activities.

Available as a two part e-book, Volumes 1 & 2 and Volumes 3 & 4, for the Amazon Kindle.

Get involved, get active, and get on the air!



Oscilloscopes for Radio Amateurs

Item No. 0976 - \$22.95 ARRL Member Price \$19.95

Filled with practical information you'll need for using a scope. It begins with an overview of the oscilloscope and continues on to discuss characteristics, applications, probes, controls, and input modes. Select an oscilloscope that is right for you!

The digital edition is available in the Kindle format from Amazon.

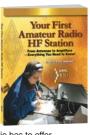
Your First Amateur Radio HF Station Steve Ford, WB8IMY

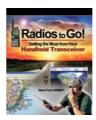
Item No. 0079 - \$22.95 ARRL Member Price! \$19.95

The most complete guide to setting up your station and getting started in HF communications. Whether you're new to Amateur Radio or HF operating, live on open property or in a tiny apartment, this book will show you how to get on the

air and enjoy all that Amateur Radio has to offer.

The digital edition is available in the Kindle format from Amazon.





Radios to Go!

Steve Ford, WB8IMY Item No. 3077 – \$17.95 ARRL Member Price! \$15.95

If you own a handheld transceiver, or trying to decide which one to buy, this is an essential guide! Unlock "hidden" capabilities that aren't described in user manuals.

The digital edition is available in the Kindle format from Amazon.

Amateur Radio on the Move

—from Your Car or RV, Boat, Airplane, Motorcycle or Backpack!

Item No. 9450 - \$19.95

Expert advice for radio operating on the go! Mobile radios, installation, antennas, operating tips. software and more.





FCC Rules and Regulations for the Amateur Radio Service

3rd Edition

Item No. 1173 - \$7.95

Includes the complete Part 97 rules from Title 47 of the Code of Federal Regulations. Rules effective September 3, 2014.

Digital Storage Oscilloscopes for Ham Radio

The modern Digital Storage Oscilloscope is an advanced and rapidly developing instrument that is finding its way into the Amateur Radio station in a number of useful and interesting ways. This is an introduction to the capabilities of the DSO and how to use one in your ham shack.

This book is available in digital format only. To order download the e-book in the Kindle format from Amazon.



THE ARRL



Storm Spotting and Amateur Radio

2nd Edition Item No. 0574 – \$22.95 ARRL Member Price! \$19.95

A resource for Amateur Radio operators who volunteer as trained storm spotters. Includes equipment, safety, storm spotter activation procedures, developing a local storm spotter manual, and the experiences of storm spotters from around the country.

The digital edition is available in the Kindle format from Amazon.

The ARRL Satellite Handbook

Steve Ford, WB8IMY Item No. 9857 – \$24.95

Bring the thrill of satellite communications within your reach! Filled with understandable descriptions and illustrations, this book includes all the tools you need to participate in this exciting field.





Morse Code Operating for Amateur Radio

Item No. 0004 - \$17.95 ARRL Member Price! \$15.95

Discover the advantages to learning and using Morse code, how to set up your station for CW and how to adjust your Morse code key. You'll gain the confidence you need to try out your new skills on the air.

Your Introduction to Morse Code

Item No. 8314 - \$14.95

Don't just learn the code-master it!
This set includes two audio CDs with
nearly 2-1/2 hours of practice. As you
learn Morse code at 5 words-per-minute.
Follow the proven ARRL teaching system.





ARRL Morse Code Oscillator Kit

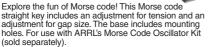
Item No. 0022 - \$24.95

A great "beginners" electronics kit! Ideal for ARRL members, Amateur

Radio newcomers and instructors seeking a classroom kit-building experience.

Morse Code Key

Item No. 0242 - \$15.95



The ARRL Repeater Directory® 2017-2018 Edition

NOW Powered by RFinder!

Item No. 0697 – \$17.95 ARRL Member Price! \$15.95

10,000 more listings than last year... RFinder, the creator of a web and appbased directory of Amateur Radio repeaters worldwide, has supplied all data for the 2017-2018 ARRL Repeater Directory®. This is the most complete listing of on-air repeaters EVER.

- Over 31,000
 listings. World's
 largest printed
 directory of repeater systems.
- Listings for US and Canada, organized by state/province, city, and operating mode.
- Digital repeaters including FM, FUSION, D-STAR, DMR, NXDN, and P25 systems.
- VHF/UHF and microwave band plans included.
- Spiral "lay flat" binding (one size: 6" x 9").

The Biggest Edition Ever!





RFinder – The Worldwide Repeater Directory

JEW.

RFinder is the Worldwide Repeater Directory and the online repeater directory of ARRL.

Get access to listings for 50,000+ repeaters in 170+ countries. RFinder is integrated with EchoLink® on Android™ and iOS. An annual subscription includes access to the directory from the apps, RT Systems, CHIRP, web. rlinder.net, and a growing list of third party applications that use repeater data!

Annual Subsciption

For more information visit Subscibe.RFinder.net

HÄNDBOOK

2017

The ARRL Handbook 2017 Edition

Hardcover. Book with CD-ROM Item No. 0635 – \$59.95

Softcover. Book with CD-ROM Item No. 0628 – \$49.95

The ARRL Handbook is the standard for applied theory and practical information concerning the fundamentals of radio electronics, circuit design and equipment, radio signal transmission and propagation, antennas, construction practices,

and much more. Each chapter is filled with the most up-to-date knowledge representative of the wide and ever-expanding range of interests among radio amateurs. There are practical, hands-on projects for all skill levels, from simple

accessories and small power supplies, to legal-limit amplifiers and high-gain antennas.

Includes:

What is Amateur (Ham) Radio?

- Fundamental Theory
- Electrical Fundamentals
- Analog Basics
- Digital Basics

Practical Design and Principles

- RF Techniques
- Computer-Aided Circuit Design
- Power Supplies
- Modulation
- Oscillators and Synthesizers
- Mixers, Modulators and Demodulators
- RF and AF Filters
- Receivers
- Transmitters
- TransceiversDSP and Software Radio Design
- Digital Modes
- RF Power Amplifiers
- Repeaters

Antenna Systems and Radio Propagation

- Propagation of Radio Signals
- Transmission Lines
- Antennas

Equipment Construction and Maintenance

- Component Data and References
- Construction Techniques
- Station Accessories
- Test Equipment and Measurements
- Troubleshooting and Maintenance
- RF Interference

Station Assembly and Management

- Safety
- Assembling a Station

Operating Supplement — on CD-ROM

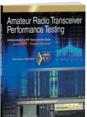
- Space Communications
- Digital Communications
- Image Communications
- 2017 Annual Transceiver Survey

Amateur Radio Transceiver Performance Testing

Bob Allison, WB1GCM Item No. 0086 – \$22.95

Learn the technical terms and parameters presented in QST's Product Review, how published data relates to actual performance, and what the numbers mean. Great for Amateur Radio operators looking to purchase a transceiver.

ARRL Member Price! \$19.95



The digital edition is available in the Kindle format from Amazon.

The Radio Amateur's Workshop

The Radio Amateur's WORKSHOP

You Of Guide for Ham Romatowing

Your DIY Guide to Ham Radio Homebrewing Joel R. Hallas, W1ZR Item No. 0482 – \$22.95 ARRL Member Pricel \$19.95

Your guide to setting up and maintaining an efficient at-home laboratory and work station. It describes the tools you'll need for projects ranging from assembling electronic kits to building and testing antennas.

The digital edition is available in the Kindle format from Amazon.

Hints and Kinks for the Radio Amateur

18th Edition

Item No. 5200 - \$22.95 ARRL Member Price! \$19.95

8 years of the best projects and problem-solving techniques from QSTs Hints & Kinks column, one of the most popular sections of the journal. Projects and practical information you can use every day!



ARRL's Hands-On Radio Experiments

Ward Silver, NØAX

Volume 2

Item No. 3411 – \$25.95 ARRL Member Price! \$22.95

Volume 1

Item No. 1255 - \$19.95

Over 60 short electronics experiments from the pages of QST. Step-by-step Silver expertly leads you through each experiment—and you'll make discoveries along the way. Each book includes a complete parts list!

Hands-On Radio Parts Kit

Item No. 1255K - \$89.95

Use the parts kit to build the experiments in Volume 1 and 2 yourself! Books sold separately.





More Arduino Proiects for Ham Radio Glen Popiel, KW5GP

Item No. 0703 - \$39.95 ARRL Member Price! \$34.95

Build a solid foundation through descriptions of Arduino boards and add-on components. Features 15 Arduino projects for vour ham radio station. Éach project is complete and functional as-is, but room has been left for vou to add personal touches and enhancements

High Speed Multimedia for Amateur Radio

Glen Popiel, KW5GP Item No. 0529 - \$27.95 ARRL Member Price! \$24.95

An introduction to HSMM networking, the basics of how it works, and the various technologies in use today. Learn how to deploy your own HSMM network, along with various applications to put it to work.

BASIC

ELECTRONICS



The digital edition is available in the Kindle format from Amazon.

ARRL "Basic" Book Series

Arduino for Ham Radio

Glen Popiel, KW5GP

Item No. 0161 - \$34.95 ARRL Member Price! \$29.95

An introduction to Arduino microcontrollers and practical projects for the Amateur Radio station. It starts by building a solid foundation through descriptions of various Arduino boards and add-on components, followed by a collection of ham radio-related practical projects.



Ham Radio

Ham Radio for Arduino and PICAXE

Item No. 3244 - \$34.95 ARRL Member Price! \$29.95

An introduction to the fun of experimenting with microcontrollers. Features projects that will enhance your ham radio station and operating capabilities. Or, use these projects as a launch pad for creating your own projects.

Basic Radio

and fun!

The digital edition is available in the Kindle format from Amazon.

Understanding the Key **Building Blocks**

Understanding

2nd Edition

Basic Electronics

ARRL Member Price! \$29.95

Item No. 0823 - \$32.95

Written in a friendly, easy-

beginners and nontechnical

to-understand style that

readers will enjoy. Real-

world examples and clear

of electronics interesting

illustrations make the study

Joel R. Hallas, W1ZR Item No. 9558 - \$29.95

An introduction to radio for everyone. Reveals the key building blocks of radio: receivers, transmitters, antennas, and propagation. Simple, build-it-yourself projects turn theory into practice



BASIC

ANTENNAS

Basic Antennas

Understanding Practical Antennas and Design Joel R. Hallas, W1ZR Item No. 9994 - \$29.95

A comprehensive introduction to antennas. Includes basic concepts, practical designs, and easy-to-build antennas. You'll learn how to make antennas that really work!

Collect the Entire Set!

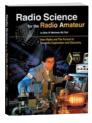
Propagation and Radio Science

Item No. 0277 - \$27.95 ARRL Member Price! \$24.95

Topics range from theoretical exploration to practical application. It explains the phenomenon we observe on the amateur bands and invites you to embark on the journey through the still-unknown radio propagation universe.



The digital edition is available in the Kindle format from Amazon.



Radio Science for the Radio Amateur

Item No. 3381 - \$27.95 ARRL Member Price! \$24.95

Explore the science and technology of the radio universe. You'll find solving long-standing mysteries of radio doesn't require expensive hardware, but a scientific mindset and attention to detail

ARRL's Low Power Communication

4th Edition

Rich Arland, K7SZ

Item No. 5828 - \$27.95 ARRL Member Price! \$24.95

Your guidebook to the fascinating world of low power QRP operating. With only 5 W or less — sometimes much less — you can enjoy conversations over hundreds and even thousands of miles. **Bonus!** Includes the complete assembly manual for the MFJ Cub Transceiver Kit (sold separately).





Get the Book with the Kit!

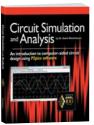
ARRL's Low Power Communication with 40-meter CW Cub Transceiver Kit

Item No. 5828K - \$105.95

Build the kit in just a few hours, and you'll be working the world with low-power fun!

20-meter CW Cub Transceiver Kit

Item No. 0018 - \$89.95



Circuit Simulation and Analysis

Item No. 0055 - \$27.95 ARRL Member Price! \$24.95

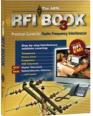
An introduction to designing and testing simple circuits using PSpice software. It discusses the tools you'll need to create simple circuits and understand their behavior. For beginners in PSpice with a background in basic electronics.



Item No. 9655 - \$19.95

Here are more projects and articles for low power radio operating, from the pages of QST and QEX magazines: construction practices, transceivers, transmitters, receivers, accessories, and antennas





The ARRL RFI Book

3rd Edition

Item No. 0915 - \$29.95

Interference solutions covering telephones, power lines, computers and audio equipment. Resources for addressing new realities of digital cable TV systems, over-the-air TV signals, trouble-shooting, and hybrid and all-electric automobiles.

Grounding and Bonding for the Radio Amateur

Ward Silver, NØAX Item No. 0659 – \$25.95 ARRL Member Price! \$22.95

Proper station grounding is important. Build your station with effective grounding and bonding techniques: electrical safety, lightning protection, and RF management.



Antenna Physics: An Introduction

Antenna Physics: An Introduction

Item No. 0499 - \$29.95

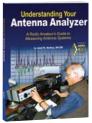
Written to bridge the gap between basic theory and graduate-level engineering texts. Delve deeper into antenna theory, and explore the underlying principles, and mathematics, of antennas and antenna physics.

The digital edition is available in the Kindle format from Amazon.

Understanding Your Antenna Analyzer

Item No. 2889 - \$25.95 ARRL Member Price! \$22.95

An introduction to the various types of analyzers available, their component parts, how they operate and how to utilize them to get the best possible data. Includes product review testing and an in depth look at antenna analyzers available today.





The ARRL Guide to Antenna Tuners

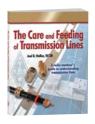
Item No. 0984 - \$22.95

Explore the design, construction and applications of the different types of antenna tuners. You'll gain a better understanding of your antenna system and the way it can be improved through the use of the appropriate antenna tuner.

The Care and Feeding of Transmission Lines

Joel Hallas, W1ZR Item No. 4784 – \$27.95 ARRI Member Price! \$24.95

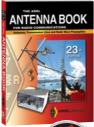
An introduction to the various types of transmission lines, key parameters of coaxial cable and balanced line types. Learn how to select the appropriate transmission line for an application and install it.



The ARRL Antenna Book 23rd Edition

Softcover. Book with CD-ROM Item No. 0444 – \$49.95

The ARRL Antenna Book has everything you need to design your own complete antenna system. Since 1939, it has maintained its place at the forefront—a single resource covering antenna theory, design and construction, and practical treatments and projects. It describes hundreds of antenna designs: wire, vertical, portable and mobile, and new high-performance VHF/UHF Yaqi designs.





Includes:

Basic Antenna Topics

- Antenna Fundamentals
- Dipoles and Monopoles
- The Effects of Ground
- Radio Wave Propagation
- Loop Antennas
- Multielement Arravs
- Log-Periodic Dipole Arrays
- Antenna Modelina

MF and HF Antennas

- Single-Band MF and HF Antennas
- Multiband HF Antennas
- HF Yagi and Quad Antennas
- Broadside and End-Fire Arrays
- Long-Wire and Traveling-Wave Antennas
- HF Antenna System Design

VHF, UHF, and Microwave Antennas

- VHF and UHF Antenna Systems
- VHF and UHF Mobile Antennas
- Antennas for Space Communications
- Repeater Antenna Systems

Special Applications

- Portable Antennas
- Stealth and Limited Space Antennas
- Mobile and Maritime HF Antennas
- Receiving and Direction-Finding Antennas

Transmission Lines

- Transmission Lines
- Transmission Line System Techniques

Building and Maintaining Antenna Systems

- Antenna Materials and Construction
- Building Antenna Systems and Towers
- Antenna and Transmission Line Measurements
- Antenna System Troubleshooting

The ultimate reference for antennas, transmission lines and propagation.

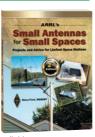
ARRL's Small Antennas for Small Spaces

2nd Edition Steve Ford, WB8IMY Item No. 0512 – \$22.95 ARRL Member Price! \$19.95

A resource for radio amateurs who live in apartments, condominiums, or houses on small lots. Filled with practical advice, you'll find the right

antenna design to fit your space available.

The digital edition is available in the Kindle format from Amazon.





Simple and Fun Antennas for Hams

Item No. 8624 – \$22.95 More than 70 well-tested, fun and entirely useful projects. Hundreds of photos and illustrations. Build your first VHF or HF antenna. Explore dipoles, verticals, beams and more. These antennas really work!

The ARRL Antenna Designer's Notebook

Brian Cake, KF2YN Item No. 1479 – \$34.95

Open a window into the mind of the antenna designer as the design is imagined, perfected, and constructed. It provides a thorough description of new components of antennas and the C-pole – and practical antennas made from them.

CD-ROM included!





Short Antennas for 160 Meter Radio

Item No. 5798 - \$22.95 ARRL Member Price! \$19.95

Intended for amateurs with advanced skills in antenna modeling, this book walks through innovative designs for relatively compact antennas. Enhance bandwidth, minimize loss, and employ other techniques to enjoy 160 meters.

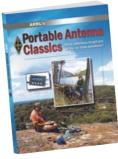
Antenna Zoning for the Radio Amateur

2nd Edition

Item No. 1192 - \$49.95

Techniques and strategies that a ham and his or her attorney can use to obtain an antenna-structure permit. Keep peace with the neighbors and enjoy ham radio!





ARRL's Portable Antenna Classics

Item No. 0345 - \$22.95

ARRL Member Price! \$19.95

A collection of helpful articles gathered from more than three decades of QST. Featuring easily constructed antenna systems that offer adequate performance, this book provides practical ideas and projects to get you on the air from anywhere:

- HF Antennas
 - Single and multiband designs for all bands from 80 through 10 meters.
- VHF/UHF Antennas

Antennas for 6 meters, 2 meters and even 70 centimeters.

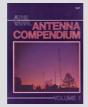
- Masts and Other Supports
- Ingenious ideas for getting your portable antenna off the ground and keeping it there.

The ARRL Antenna Compendium Series

Volume 1

Item No. 0194 - \$20

The premiere volume includes articles on a multiband portable, quads and loops, baluns, the Smith Chart, and more.



Volume 2

Item No. 2545 - \$14

Covers a wide range of antenna types and related topics, including innovative verticals, an attic tri-bander, antenna modeling and propagation.





Volume 3

Item No. 4017 - \$14

Quench your thirst for new antenna designs, from Allen's Log Periodic Loop Array to Zavrel's Triband Triangle. Discover a 12-meter quad, a discone, modeling with MININEC and VHF/ UHF ray tracing.



Volume 6

Volume 4

Item No. 4912 - \$20

38 articles covering a wide range of topics. Includes simple, practical antenna projects, and heavy-duty, theoretical treatments of complex arrays.



Item No. 5625 - \$20

Enjoy excellent coverage of baluns, an HF beam from PVC, low-band Yagis, quads and verticals, curtain arrays, and more!



All new articles covering lowband antennas and operating, 10-meter designs, multiband antennas, propagation and terrain assessment, CD-ROM included with propagation prediction software!

Item No. 7431 - \$22.95

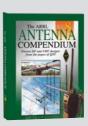




Volume 7

Item No. 8608 - \$24.95

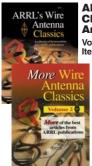
Proven, practical antenna designs from the world of Amateur Radio. This volume includes even more articles on low-band antennas and operating, and great designs for operating on the road—from cars, vans or motor homes.



Volume 8

Item No. 0991 - \$24.95

60 articles from QST featuring practical ideas, tips and some of the best antenna projects. You'll find designs such as the Handy Yagi Antenna, Compact 40 Meter HF Loop, 20 and 40 Meter Verticals on "Autopilot" and much more.



ARRL's Wire Antenna Classics and More Wire Antenna Classics

Volume 1 Item No. 7075 - \$14

> Volume 2 Item No. 7709 - \$17.95

So many wire antenna designs have proven to be first class performers! Here are two volumes devoted to wire antennas, from the simple to the complex. Includes articles on dipoles, loops, rhombics, wire beams and receive antennasand some time-proven classics!

ARRL's Even More Wire Antenna Classics

Volume 3

Item No. 0239 - \$22.95 ARRL Member Price! \$19.95

The best antenna projects and innovative designs from QST, from 2002 through 2013. Features more than 40 practical designs for a wide range of wire antennas. Discover new ways to experiment with wire antennas and why they are so rewarding to use.



International Antenna Collection

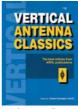
Volume 1

Item No. 9156 - \$19.95

Volume 2

Item No. 9465 - \$21.95

Collections of antenna designs from around the world-from 136 kHz to 1.3 GHz, receiving and transmitting, fixed and mobile designs.



Vertical Antenna Classics

Item No. 5218 - \$12

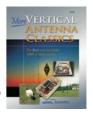
Vertical antennas are everywhereon cell phones, broadcast towers, portable radios and vehicles. And for good reason! Here are the best articles from ARRL publications in one book. Vertical antenna theory and modeling, VHF and UHF. HF. directional arrays, radials.

product suppliers and more.

More Vertical Antenna Classics

Item No. 9795 - \$17.95

This second edition includes updated material on the art and science of the vertical antenna. Designs for a variety of operating preferences and bands, ground systems, portable antennas, phased vertical arrays, and more.



ntenna lassics

ARRL's Yagi Antenna **Classics**

Yagis, Quads, Loops and other Beam Antennas

Item No. 8187 - \$17.95

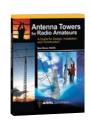
Includes some of the best articles written about beam antennas, from ARRL publications. Will provide the reader with new and ambitious ideas, and computer-optimized designs for

all-around best performance.

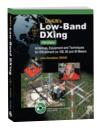
Antenna Towers for **Radio Amateurs**

Item No. 0946 - \$34.95

With years of experience as a professional tower climber, Don Daso, K4ZA, leads you through designing and building your own antenna tower. You'll learn the skills, tools, climbing techniques, and safety measures necessary to improve your antenna system.



The digital edition is available in the Kindle format from Amazon.



ON4UN's Low Band DXing

5th Edition John Devoldere, ON4UN Item No. 8560 - \$44.95

Includes antenna designs, operating guidelines, and an insider's scoop on low-band DXing. There's something for every active low-band operator, contester, and DX chaser! This edition features new insights and new design techniques for receiving antennas, dipole antennas and phased arrays. Fully searchable. CD-ROM included!

> Antennas, Equipment and Techniques for DXcitement on 160, 80 and 40 Meters

Level 1 - Technician

Get Licensed!

The most popular introduction into the world of Amateur Radio!



The ARRL Ham Radio License Manual

All You Need to Pass your Technician Class Exam! 3rd Edition

Softcover

Item No. 0222 - \$29.95

Spiral Bound Item No. 0475 - \$32.95

Easy-to-understand "bite-sized"

- sections. Use this book, and pass the 35-question test.
- Includes the latest question pool with answer key, for use through June 30, 2018.
- Use with ARRL's online Exam Review for Ham Radio.
- Designed for self-study and for classroom use. Intended for newcomers, instructors and teachers



Upgrade from Technician

Level 2 - General

Enjoy the thrill of high-power communications on all HF bands!



eneral Class icense Manual

The ARRL General Class License Manual

All You Need to Pass your General Class Exam! 8th Edition

Softcover

Item No. 0307 - \$29.95

Spiral Bound Item No. 1904 - \$32.95

■ Pass the 35-question

- General Class exam. All the Exam Questions
- with Answer Key, for use through June 30, 2019
- Use with ARRL's online Exam Review for Ham Radio.
- Detailed explanations for all questions, including FCC rules.



ARRL's Tech Q & A

6th Edition

Item No. 0178 - \$17.95

- Pass the 35-question test
- Includes the latest question pool with answer key, for use through June 30, 2018
- Brief, clear explanations for all questions.



ARRL's General Q&A

5th Edition

Item No. 0338 - \$17.95

- Pass the 35-question test.
- Includes the latest question pool with answer key, for use through June 30, 2019
- Brief, clear explanations for all questions.



Level 3 - Amateur Extra

Extra Class License Manual

Upgrade from General! Achieve the highest level in Amateur Radio!



The ARRL Extra Class **License Manual**

11th Edition Softcover Item No. 0451 - \$29.95

Spiral Bound

Item No. 0550 - \$32.95 ■ Pass the 50-question Extra Class exam.

- All the Exam Questions with Answer Key, for use through June 30, 2020.
- Use with ARRL's online Exam Review for Ham Radio
- Detailed explanations for all questions, including FCC rules.



ARRL's Extra Q&A

4th Edition

Item No. 0567 - \$17.95

- Pass the 50-question Extra test
- Includes the latest question pool with answer key, for use through June 30, 2020.
- Brief, clear explanations for all questions.

Online Review and Practice Exams Use ARRL's online Exam Review for Ham Radio in

addition to ARRL license manuals to help prepare you for exam day. This web-based service uses the question pool to construct chapter-by-chapter reviews. Take practice exams with the same number and variety of questions you'll encounter on exam day.

ARRL License Manuals and Q&A's are available in the Kindle format from Amazon.

More Licensing References

Flash and Pass Card Sets

Flashcards are the fastest, most most efficient way to learn! You get the actual test questions that will appear on the exam. Simply read the question, decide on an answer, and flip the card over for the correct answer.

Flashcards allow you to break up the learning task into smaller, more manageable segments. Save time by focusing on the questions you don't know. When you've mastered all of the cards, you're ready to take the test!

- Technician Class Flash Card Set Item No. 1345 - \$24.95
- General Class Flash Card Set Item No. 1357 - \$39.95
- Extra Class Flash Card Set Item No. 1366 - \$39.95

HamTestOnline[™]

Web-based online training for the Amateur Radio licensing exams. This convenient format allows you to study when you want, at your own pace. All platforms are always up-to-date with the latest question pools. Guarantéed – pass the exam, or get a full refund!

- **Technician Class Course** Item No. 0132 - \$24.95
- General Class Course Item No. 0141 - \$29.95
- Extra Class Course Item No. 0150 - \$34.95



Volunteeer Examiner Supplies

ARRL Volunteer Examiners give so generously of their time, energy and skill. Celebrate your dedication to Amateur Radio with these popular supply items designed specifically to honor the service of ARRL VEs. If you are interested in becoming a Volunteer Examiner and serving the Amateur Radio community, it's easy and free!



ARRL/VEC Volunteer Examiner Manual

9th Edition

Item No. 1328 - \$10

A complete guide to the ARRL Amateur Radio Volunteer Examiner program. Whether you have ever thought about becoming a VE or you are a seasoned VE, this is everything ARRL VEs need to know.



This commemorative ARRL VEC challenge coin is in the second in the series. The ARRL diamond and words "Amateur Radio Service" are depicted on the back. 1-1/2" round



VE Polo Shirt Black

Item No. 0281 - \$19.95

Black polo shirt embroidered with the words "Volunteer Examiner" on the front left chest. Superior wrinkle and shrink resistant. Sizes. S-4XL.

VE ID Badge Lanyard

Item No. 1342 - \$3.95

Designed specifically for ARRL VEs, this lanyard is imprinted

with the words "ARRL Volunteer Examiner" and "Amateur Radio". Great for identifying volunteers at VE exams!



VE Pin

Item No. 0023 - \$5.00

Symbolize your involvement as an ARRL Volunteer Examiner with this attractive black and gold pin. Wear it proudly! Size 1" round.



Item No. 0121 - \$2



Become an ARRL Volunteer Examiner today!

10 Public Service

www.arrl.org/shop = 1-888-277-5289



The Amateur Radio **Public Service** Handbook

Item No. 4845 - \$39.95 ARRL Member Price! \$34.95

For all hams that volunteer their time and skill to serve their communities. It provides knowledge needed for communicating quickly and effectively during disasters, emergencies, and

community events, as well as an opportunity to learn more about the Amateur Radio Service and its unique role in supporting the public.

The digital edition is available in the Kindle format from Amazon.

ARES® Field Resources Manual

Item No. 5439 - \$12.95

A quick trainer and field resource guide for the emergency communicator.

The digital edition is available in the Kindle format from Amazon.



ARES Magnetic Sign



Item No. 9413 - \$12.95

Perfect for use at public service and emergency communications support activities. Size 8 x 18 inches.



"When All Else Fails..." Supplies

These items are a great reminder that Amateur Radio provides immediate high-quality communications that work every time, when all else fails. While supplies last.

WAEF t-shirts, pins, stickers and more are available at www.arrl.org/shop.



ARES Pin

Item No. 0241 - \$6

This colorful pin will symbolize your involvement in the Amateur Radio Emergency Service (ARES). Wear it proudly! Size 1" round.



ARES decals, stickers, and patches are also available at www.arrl.org/shop.





Item No. 2606 - \$6 Symbolize your involvement in the National Traffic System (NTS). Wear it proudly! Size 1" round.

NTS stickers, patches and mugs are also available at www.arrl.org/shop.

Emergency Power for Radio Communications

2nd Edition Michael Bryce, WB8VGE Item No. 6153 - \$27.95 ARRL Member Price! 24.95

Explore the various means of electric power generation, from charging batteries, to keeping the

lights on. Covers the foundation of any communications installation — the power source.

ARES Deployment Gear

Great for ARES volunteers. emergency and public service use. One size fits most. ANSI/ISEA 107-2004 Class 2 compliant.

- Neon Mesh Vest (M-3XL) Item No. 0128 \$15.95
- Neon Solid Vest (M-3XL) Item No. 0136 - \$24.95
- Neon Hat Item No. 0099 - \$14.95



MERGENCY



Personal Emergency Communications

Item No. 0081 - \$14.95

Staying in touch post-disaster! Learn modern communications technologies and how to implement a realistic backup communication system.

Solar Crank Flashlight

Item No. 0173 - \$40

Be prepared for any emergency with this powerful LED flashlight. Charge with the solar panel, hand crank, or AC/DC input.

Eton Microlink FR160 Radio

Item No. 1150 - \$35

Self-powered AM/FM/NOAA weather radio with built-in LED flashlight, solar power and USB cell phone charge. Get one radio for your disaster supplies kit and another for your ham radio "go kit".



ARES Paracord Bracelet

Item No. 1003 - \$4.95

Small 8.5", Large 9.25".

Hand-designed and custom-crafted out of parachute cord, this blue and red paracord bracelet features the ARES logo on a black clasp. Useful in the field or in an emergency as it unravels.



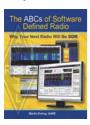
Get on the Air with HF Digital

Steve Ford, WB8IMY Item No. 6016 – \$25.95 ARRL Member Price! \$22.95

A step-by-step guide that will get you started in the fascinating world of HF digital technologies. Written in an easy to understand style, learn how to set up and operate your own HF digital station. A fun and easy way for beginners to get on the air!



The digital edition is available in the Kindle format from Amazon.



The ABCs of Software Defined Radio

Item No. 6320 - \$22.95 ARRL Member Price! \$19.95

An introductory guide to SDR and Digital Signal Processing (DSP) technologies. Discover the basic principles of SDR, advantages to SDR technology, and ways to utilize it in Amateur Radio operation.

RTTY/PSK31 for Radio Amateurs

2nd Edition

Item No. 5003 - \$15.95

Fully updated, this edition provides everything you need to know to get the most out of this fascinating area of Amateur Radio. CD-ROM included. 48 pages.





Wireless Receiver Design for Digital Communications

2nd Edition

Item No. 0080 - \$139

A reference for electrical engineers and radio communication experimenters. Includes proven concepts, illustrations, and design examples that help clarify each component within the system design.

Digital Communication Systems Using SystemVue

Item No. 1084 - \$44.95

An essential guide for anyone wishing to understand digital communication systems through simulations using SystemVue.



Experience the Excitement of Digital Communications!



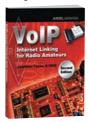
Work the World with JT65 and JT9

Steve Ford, WB8IMY

Item No. 0437 – \$17.95 ARRL Member Price! \$15.95

Assemble an effective station and configure the software for best performance. Learn how to make contacts, and how to use these modes to test your station and study HF propagation.

The digital edition is available in the Kindle format from Amazon.



VoIP: Internet Linking for Radio Amateurs

2nd Edition

Jonathan Taylor, K1RFD Item No. 1431 – \$21.95 ARRL Member Price! \$19.95

Your complete guide to the most widely-used VOIP systems used by hams; with particular attention **EchoLink** and and the Internet Radio Linking Project, or **IRLP**.

Nifty E-Z Guides



Nifty E-Z Guide to D-STAR Operation

Item No. 0125 - \$13.95

Using easy to understand explanations and illustrations, this book is an ideal resource for discovering the full range of operating modes and opportunities available to D-STAR users. 135 pages.

Nifty E-Z Guide to PSK31 Operation

Item No. 0370 - \$12.95

Learn how to setup your station for PSK operation. Light on theory, this book concentrates on the practical issues of getting things connected and making PSK31 QSOs. 70 pages



Nitry E-Z Guide to Exhaultak Operation

Nifty E-Z Guide to EchoLink Operation

Item No. 1094 - \$13.95

Your complete guide to EchoLink installation and operation. Discover how to use your radio or personal computer to make EchoLink contacts anywhere in the world! 140 pages.

Nifty E-Z Guide to Adventures in DXing

Item No. 3065 - \$17.95

Use your radio transceiver, logging software and Internet resources to experience the thrill communicating anywhere in the world!



NEW ARRL Publication!



Arduino Projects for Ham Radio

Glen Popiel, KW5GP



Popular author and experimenter

Discover MORE Amazing Projects for Your Station!

Arduino Projects for Ham Radio

15 **New Projects** for Your

Glen Popiel, KW5GP

Station!

ARRL The national association for AMATEUR RADIOs

Building on the success of Arduino for Ham Radio, this book — More Arduino Projects for Ham Radio — includes 15 completely new practical and functional Arduino projects for your station. Each project is complete and functional as-is, but room has been left for you to add personal touches and enhancements.

Projects

- Auto On/Off Mobile Power Control
- Station Power Monitor
- AC Current Monitor
- Load Tester
- Voice Memory Keyer
- Wireless Remote Coax Switch
- Wireless Remote Telemetry
- GPS-Based Ethernet Network Time **Protocol Server**
- 1 to 30 MHz DDS VFO
- Antenna SWR Analyzer
- 40 Meter QRP CW Transceiver
- 40 Meter QRP JT65 Transceiver ...and more!

More Arduino Projects for Ham Radio ARRL Item No. 0703

ARRL Member Price! Only \$34.95 (retail \$39.95)

Also available:

- Arduino for Ham Radio by Glen Popiel, KW5GP
- Ham Radio for Arduino and PICAXE

Available from ARRL and ARRL Publication Dealers everywhere!



www.arrl.org/shop Toll-Free US 888-277-5289, or elsewhere +1-860-594-0355

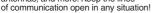
14 Marketplace

www.arrl.org/shop = 1-888-277-5289

Ham and Shortwave Radio for the Electronics Hobbyist

Item No. 0097 - \$25.00

Practical guide perfect for those interested in shortwave listening. Covers communications modes, frequency ranges, details on fixed, mobile, and portable ham stations, antennas, and more. Keep the lines







MATEUR RADIC

Arduino Projects for Amateur Radio

Item No. 5007 - \$30

Microcontroller projects you can accomplish on your own, no programming experience necessary. Provides detailed instructions, helpful diagrams, and hardware and software tips that make building your own equipment even more enjoyable.

Raspberry Pi 2 Workshop Manual NEW

Item No. 1022 - \$30.95

The perfect introduction to the affordable small computer. This edition covers the Raspberry Pi 2 (model B) and is aimed at those switching on their Pi for the first time, guiding them through the full process of setup and configuration.





Tower Climbing Safety & Rescue

4th Edition

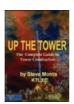
Item No. 1108 - \$29.95

Essential for Tower Riggers and Technicians, Radio Amateurs, Supervisors and Project Managers. Includes environmental hazards, structure hazards, tools and tasks, safety equipment, rescue and more.

Up the Tower

Item No. 1260 - \$35

The complete guide to tower construction. Over 220 pages of facts, techniques, hardware and lots of answers to your tower construction questions.





Marine Amateur Radio

Item No. 9723 - \$12.95

Use ham radio for coastal, high-seas, or worldwide communications. Select, install, and operate a ham radio system on any boat, power or sail. Produced by United States Power Squadrons.

Magnetic Loop Antenna

Item No. 2002 - \$29.95

Explains the theory, mathematically of the antennas magnetic and electric field principles. A variety of magnetic-loop antennas are included.



Heil Ham Radio Handbook

Bob Heil, K9EID Item No. 7238 - \$15.00

Shares experiences and experiments that legendary author has had since being first licensed in 1956. Technical

JEW!

material is made easy and fun to understand. Photos and drawings guide you along the way.

Arduino Sketches

Item No. 1005 - \$35

Get the most out of your Arduino setup with expert programming instruction and hands-on practice to test your skills. You'll find coverage of the various Arduino boards, detailed explanations of each standard library, and guidance on creating libraries from scratch.



MAGNETIC

ANTENNA

LOOP

Practical Antenna Handbook

Practical Antenna Handbook

5th Edition

Item No. 0371 - \$52

Design and build your own antennas! Provides clear answers to questions frequently asked by hobbyists and electronics technicians, while bending theoretical concepts with hands-on experience.

Build Your Own Transistor Radios

Item No. 1367 - \$50

A hobbyist's guide to designing and building high-performance and low-powered radios. Includes complete projects and detailed schematics.





Contact Sport

Item No. 4199 – \$22.95 J.K. George, N3BB

A story of champions, airwaves, and a one-day race around the world. It guides you through the exciting world of amateur radio competition and the intriguing characters of the 2014 World Radiosport Team Championship.

"For Dummies" Series

Ham Radio for Dummies



Ward Silver, NØAX 2nd Edition

Item No. 0502 - \$24.99

This beginner guide reflects the operational and technical changes to Amateur Radio over the past decade. Includes licensing requirements, changes in digital communication, and using e-mail via radio.

Raspberry Pi for Dummies

Item No. 2945 - \$24.99

Embrace the exciting new technology of Raspberry Pi! You'll quickly discover how to download and install the operating system, use the installed applications, and much more.





Raspberry Pi Projects for Dummies

Item No. 0034 - \$24.99

Join the Raspberry revolution with fun and easy Pi projects. This book introduces Raspberry Pi basics and gives you a solid understanding of all the essentials you'll need to take on your first project.

Arduino for Dummies

Item No. 7000 - \$24.99

Leap into the fascinating world of physical computing. You'll discover how to build a variety of circuits that can sense or control real-world objects, prototype your own product, and even create interactive artwork. What you make is up to you!



Arduino Projects for Dummies



Item No. 8102 - \$29.99

Featuring an array of projects, this beginner guide walks you through each one so you can acquire a clear understanding of the different aspects of the Arduino board. Turn everyday electronics and simple old projects into incredible innovations!

Electronics for Dummies

3rd Edition

Item No. 0196 - \$24.99

Make something fascinating of electronics. Learn how electricity functions, how to put it to work, what tools you need to build circuits, what you can make with them.



THE HEAT WINDLES WAS

The Secret Wireless War

Softcover Edition

Item No. 0262 - \$39.95

The most complete book yet written on Britain's secret radio communications during WWII. It's an extraordinary story that includes hams among those patriots that undoubtedly helped the allied war effort.

Edgar Harrison

Soldier, Patriot and Ultra Wireless Operator to Winston Churchill Item No. 0270 – \$29.95

A remarkable story of Edgar Harrison and the adventures he encountered throughout WWII.





Inside Enigma

Item No. 0611 - \$19.95

Secrets of the Enigma machine! Enigma expert Professor Tom Perera, W1TP, provides a history of these fascinating machines, how they were used, how the messages were coded and why the code was unbreakable.

More Marketplace Publications

	AC Power Interference Handbook. Item No. 1103	
•	A Year of DX. Item No. 0040	\$20
	Amplifiers. Item No. 8196	\$50
	Antennas: Fundamentals, Design, Measurement.	
	Standard Edition. Item No. 0320	
•	Batteries in a Portable World. Item No. 1156	\$29.95
•	Circuit Analysis for Dummies. Item No. 1001	\$22.95
•	Crystal Clear. Item No. 0353	\$39.95
•	Discrete Signal Analysis and Design. Item No. 0140	\$125
•	Don C. Wallace, W6AM. Item No. 0016	
•	Electromagnetic Compatibility Engineering. Item No. 0192	
	Electronics All-in-One for Dummies. Item No. 1892	\$34.95
	Frozen in Time. Item No. 0098	\$14.95
	Full Circle Item No. 0152	\$13.95
	Hiram Percy Maxim. Item No. 7016	\$19.95
	Instruments of Amplification. Item No. 9163	\$19.95
	Keys II: The Emporium. Item No. 1372	\$16
	Keys III: The World of Keys. Item No. 1381	\$18
	Mouse Code. Item No. 0116	\$12.95
	Oscar's Amateur Radio Adventure. Item No. 0341	\$19.95
	Perera's Telegraph Collectors Guide. Item No. 1277	\$19.95
	Perera's Telegraph Collectors CD. Item No. 1282	\$15
	Personal Emergency Communications. Item No. 0081	\$14.95
	QRP Romps. Item No. 0160	\$18
	Relic. Item No. 0115	\$9.95
	Riding the Shortwaves. Item No. 1210	\$18.95
	Shortwave DX Handbook. Item No. 9953	\$34.95
	The Complete DX'er. Item No. 9073	\$19.95
	The Day After. Item No. 3006	\$12.99
	The Road Home. Item No. 0427	
	The Story of the Enigma CD. Item No. 1296	\$15
	Transmitter Hunting. Item No. 2701	\$30
	Two-Way Radios & Scanners for Dummies. Item No. 9696	\$21.99
	World of Amateur Radio. Item No. 0257	\$29.95
	Your Guide to HF Fun. Item No. 0153	\$16
	Zone of Iniquity. Item No. 0243	\$12.99

16 RSGB Catalog

www.arrl.org/shop = 1-888-277-5289

Radio Communication Handbook

13th Edition

Item No. 3607 - \$59.95

A guide to Amateur Radio theory and practice. Includes explanations from basic components to semi-conductors through oscillators, amplifiers, mixers, ransmitters, receivers and a complete transceiver project. 864 pages.



Six & Four Park I was a second of the second

Six and Four

Item No. 3764 - \$24.95

Explore the excitement of the "magic band" with this complete guide to 6 meters, as well as 4 meters. With new countries gaining temporary or permanent access on a regular basis, you'll discover both bands are exciting and fun! 288 pages.

HF SSB DX Basics

Item No. 8826 - \$15.95

Contacting far parts of the world on the high frequencies on single side-band is one of the most fascinating areas in Amateur Radio. This is a practical guide to getting started and making the most out of this area of operation. 96 pages.





Amateur Radio Astronomy

2nd Edition Item No. 0388 - \$32.95

Explore the science of radio astronomy and how the average amateur can make and set up equipment to study the signals coming from space. 384 pages.

Radio Nature

Item No. 0240 - 24.95

A fascinating look at naturally originating radio signals. Includes signal descriptions, explanations of where they come from, and the proper way to receiving and analyzing them. 256 pages.





Item No. 0232 - \$24.95

Features a number of construction projects including receiver designs, simple circuits, and SSB transmitters. Projects use simple techniques with obtainable components.

208 pages.



Backyard Antennas

Item No. RBYA - \$34.95

With simple techniques, you can build high performance antennas. Create compact multi-band antennas, end-fed and center-fed antennas, rotary beams, loops, tuning units, VHF/UHF antennas, and morel 208 pages.



An Introduction to Antenna Modeling

Item No. 9500 - \$19.95



Learn how to input antennas designs into MMANA-GAL, adapt designs you are given and optimize your designs for the best performance. Learn how to model a whole host of antennas including dipoles, the G5RV, the W3DZZ trapped dipole, verticals, magnetic loop antennas and more. 80 pages.

Novel Antennas

Item No. 0033 - \$24.95

Radio Amateurs experiment with antennas to get the best performance they can. Few have ever considered anything beyond basic antenna designs - this book tries to set that right with a myriad of 'novel' antenna designs from around the world. 192 pages.



\$ Sive (s) Wite Antennas

Successful Wire Antennas

Item No. 0363 - \$24.95

Packed with the latest wire antenna designs and developments, this book is a must-have for wire enthusiasts of all levels. Part of the popular family of *Practical Wire Antennas*. 240 pages.

Antennas for VHF and Above

Item No. 0501 - \$29.95

Discover what can be achieved on the VHF, UHF, and microwave bands. Includes all the details you need for understanding and experimenting with antennas. 144 pages.





HF Antennas for Everyone

Item No. 0145 - \$24.95

Divided into horizontal, vertical and loop antennas, this book features a combination of both the traditional and most recent designs. 366 pages.

Antennas Mastered

Item No. 0008 - \$24.95

A fascinating look at the practical side of antennas. Covering a breadth of material, readers will find practical solutions for all bands, antenna types, meters, software and more. 288 pages.





Stealth Antennas

2nd Edition

Item No. 0219 - \$24.95

Practical solutions for hams unable to put up large antenna towers and get on the air! Expanded and updated! 224 pages.

Elimination of Electrical Noise

2nd Edition

Item No. 0036 - \$13.95

Learn about the various types of noise radio operators experience, how noise is generated, and practical way to deal with it. 64 pages.





LF Today

3rd Edition Item No. 0387 - \$24.95

All the information you need to succeed on 136 & 500 kHz. Advice for amateurs just starting out, and reference information for those who already have some experience in LF. 192 pages.

Morse Code for Radio Amateurs

12th Edition

Item No. 0163 - \$15.95

Learn Morse code and get the maximum enjoyment from using it. Includes how to get started, learning techniques, increasing your speed and more.

CD-ROM included. 64 pages.





International Antennas

Item No. 0042 - \$19.95

A collection of antenna articles from around the world. It is intended for everyone who is interested in Amateur Radio antenna design or is just looking for practical antennas to study and build. 176 pages.

Computers in Amateur Radio

2nd Edition

Item No. 6193 - \$24.95

An insight into the Amateur Radio uses for the home computer. Includes material on the possibilities of Raspberry Pi and the wide variety of data modes now available. CD-ROM included. 256 pages.





VHF/UHF Handbook

2nd Edition

Item No. 1229 - \$29.95

Your guide to theory and practice in the VHF and UHF bands. Topics include getting started, antennas, constructing your own equipment, satellite operation, local nets, and specialized modes such as data and TV.



RadCom Magazine

Subscriptions are available for the UK's biggest and best radio magazine, published by the Radio Society of Great Britain (RSGB). Enjoy 15 monthly issues for the price of 12 (new members only).

For details, contact ARRL: 1-888-277-5289 • circulation@arrl.org



Amateur Radio Mobile Handbook

Item No. 5225 - \$19.95

For hams who regularly "go mobile" or are interested in doing so. Covers all the basics, installing equipment and antennas in a vehicle, maritime mobile, bicycles mobile, and more. 128 pages.

Test Equipment for the Radio Amateur

Item No. 1027 - \$24.95

Learn how to measure the performance of your station. You'll find it's easy to make useful test equipment yourself. 256 pages.





Microwave Know How

Item No. 0303 - \$21.95

A compilation of articles for building equipment for the Amateur Radio microwave bands. All projects use modern techniques and up to date components. 192 pages.

International QRP Collection

Item No. 0020 - \$24.95

A compilation of the art and science of QRP. Contains articles from many Amateur Radio magazines including RadCom, *QST*, Sprat, Break In, as well as new material. 176 pages.





IOTA Directory

Item No. 4008 - \$19.95

An essential guide to participating in the Islands on the Air (IOTA) award program. Includes details of the award rules, the IOTA contest, the IOTA honor roll, and fascinating reports of IOTA operations. A must-have for every island chaser! 128 pages.

Prefix Guide

12th Edition

Item No. 0209 - \$19.95

Complete guide to call sign prefix identification and information. DXCC listings, award details and more. 80 pages.



More RSGB Publications

■ Antenna File. Item No. 8129	\$29.95
■ Building a Transceiver. Item No. 6959	\$24.95
■ HF Antennas for All Locations. Item No. 4300	\$34.95
■ Power Supply Handbook. Item No. 9977	\$29.95
■ Practical Wire Antennas 2. Item No. 9563	\$24.95
■ QRP Basics. 2nd Edition. Item No. 6401	\$24.95
■ Radio Auroras. Item No. 1208	\$12.95
■ Radio Orienteering. Item No. 0131	\$19.95
■ Radio Propagation. Item No. 9328	\$29.95
■ SWR Explained. Item No. 8910	\$15.95
■ Weekend Projects for the Radio Amateur, Item No. 0123	\$24.95

A History of QST - Volume 1: Amateur Radio Technology 1915-2013



Edited by Ward Silver, NØAX Item No. 0003 - \$34.95 ARRL Member Price! \$29.95

Discover the technical contributions made throughout Amateur Radio's first century. Begin in the era of spark and continue through advances in radio electronics, antenna design, and the dawn of satellites and digital communications.

50 Years of Amateur Radio Innovation

Joe Veras, K9OCO Item No. 0228 - \$39.95

A guided tour of more than 400 legendary radios from 1930 - 1980, the "golden age" of American Radio Technology. This span saw the introduction of receivers. transmitters and transceivers that would become famous throughout the world.



The Gil Cartoon Book

Item No. 0364 - \$15.95

The work of Philip "Gil" Gildersleeve, W1CJD, became a tradition. In tribute to this talented, creative and devoted artist and ham, the ARRL presents in this book a reprint of a portion of the best of his work.



World's **Best Hobby**

Item No. 9898 - \$22.95

A memoir by Dave Bell, W6AQ, of his life in the fascinating hobby of Amateur Radio, Written in a fun. entertaining style readers will be certain to enjoy.

The World of Ham Radio: 1901 - 1950

Item No. 0257 - \$29.95

Explore the history of ham radio operators, their social history and their many contributions to the technological development of worldwide communications. This book highlights ham radio in major events of the half century exploration and aviation "firsts".



Revisit the Ham Radio of Yesteryear!

A History of QST - Volume 2: Advertising 1915-2013



Joe Veras, K9OCO Item No. 0048 - \$34.95 ARRL Member Price! \$29.95

Trace the history of receivers, transmitters, antennas, and other station gear through this collection of QST pages and advertising. It's a nostalgic journey, as told through the creative marketing, advertising and photography or yesteryear.

100 Years of QST Special Reissue Item No. 0369 - \$9.95

Celebrate 100 years of ARRL's membership journal, with a commemorative reissue of the first QST-the December 1915 issue.



The ARRL Film Collection DVD

Dave Bell, W6AQ Item No. 3725 - \$15.95

Take a journey back as ARRL presents a seriés of videos beginning in the late 1950s. From the original "Hams Wide Word" to "Amateur Radio Today", you will watch the evolution of Amateur Radio unfold before your eyes. 130 minutes.

The Story of the Queen Mary and W6RO DVD

Item No. 1344 - Only \$15.95

A story about W6RO, the Amateur Radio station located aboard the historic Queen Mary. With 35 years of continuous operation, W6RO has presented a positive image to millions of visitors. 28 minutes





Where Discover Sparks **Imagination**

Item No. 1660 - \$34.95

Examine the early history of radio and electricity, with a collection of over 600 photographs. Anyone who appreciates the amazing workmanship and artistry of old technology will love this book.

ARRL Amateur Radio Hat

- Black Hat Item No. 5004 \$12.95
- Khaki Hat Item No. 4094 \$12.95

Medium profile cap with sandwich visor feature contrasting undervisor, mesh lining and adjustable cloth strap closure. Available in black and khaki. One size fits most.



- Royal Blue Polo \$22.95 Men – Item No. 3108 (S-4XL) Ladies – Item No. 3108W (S-3XL)
- Red Polo \$22.95 Men - Item No. 7319 (S-4XL) Ladies - Item No. 7319W (S-3XL)

Designed for ARRL Members, this sport polo features the ARRL diamond logo with the words "ARRL, Amateur Radio" on the front left chest. Available in royal blue and red



ARRL Fleece Jacket

Item No. 3066 - \$39.95 River's End fleece jacket embroidered with the words "ARRL, Amateur Radio" on the front left chest Perfect for summer evenings. Size, S-3XL. Color, Riverblue.





ARRL Jacket

Item No. 0149 - \$59.95

Elevate softshell jacket. Thanks to the durability in the fabric, it's a jacket that will last you a long time, giving you plenty of repeated use. Embroidered with the words "ARRL, Amateur Radio" on the front left chest. Size, S-4XL. Color, Olympic Blue.

ARES Polo Shirt

Item No. 0006 -\$22.95

ARRL

BARRI

Designed for public service and ARES volunteers, this sport polo is embroidered with the Amateur Radio Emergency Service® (ARES) logo on front left chest. A perfect way to symbolize your commitment to Amateur Radio and the Emergency Service program.



Size, S-4XL. Color, Navy.

ARES T-Shirt

Item No. 1331 - \$12.95

ARES® t-shirt, featuring the logo on the front left chest and "Radio Communications" on the back. Perfect for public service events. Size, S–4XL. Color, Navy.



ARRL T-Shirts



Full zip hoodie, embroidered with the words "ARRL, Amateur Radio" on the front left chest. Perfect for the fall and winter seasons Size, S-4XL. Color, Black.



20 Station Resources

www.arrl.org/shop = 1-888-277-5289

Pocket Ref



Thomas J. Glover Item No. 1148 - \$12.95

All the information you need in one essential reference book. The cover is embossed with ARRL's logo—making this a particularly special edition of this popular quide.

RFI Pocket Guide

Item No. 5008 - \$20.00

Pocket reference offers essential data on radio frequency interference for advanced ham radio operators, wireless engineers and technicians.



Amateur Radio Station Log Book

Item No. 1250 - \$7.95

52 log pages with room for 25 contacts per page (1,300 total log entries). Spiral bound (8.5 x 11")



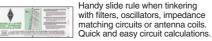




L/C/F and Single-Layer **Coil Winding Calculator**

Item No. 9123 - \$12.95

MINILOG





2017 Shortwave Frequency Guide 21st Edition

Item No. 5006 - \$59.95

The latest schedules of worldwide broadcast and utility radio stations

2017 Super Frequency List CD-ROM

Item No. 6017 - \$44.95

More than 40,000 entries cover both broadcast and utility stations. Hundreds of fascinating new digital data decoder screenshots! Requires Windows.



DXCC List

The ARRL DXCC List

2016 Edition

Item No. 0604 - \$5.95

The official source of DXCC awards information. Record the DXCC Entities you've worked and QSLed. A "must have" for every DXer!

Radiograms For Traffic Handlers

Item No. 1310 - \$2

Message Delivery Cards (package of 20) Item No. 1320 - \$2

Message Pad with 70 sheets





Radio Setup Guides

Consider step-by-step guides that simplify setup and operation. Mini-manuals and pocket

reference cards available are available for select Kenwood, Icom, Yaesu, Baofeng and Wouxun models. Order Nifty! Ham Radio Guides online at www.arrl.org/shop.



HT Radio Desk Stand

Item No. 7325 - \$34.95

Convenient desk-top holder for all hand-held radios. Holds your radio upright and steady at a comfortable viewing angle. Use to hold your Android phone, iPhone, iPod and more.



ARRL All Weather Pen

Item No. 6108 - Only \$13.95

All weather click pen writes on wet paper, upside down and in temperatures from -30F to 250F. Flat black metal barrel, ink black. Size: 5 1/4" long.



222222222



Grandy B.

Notebook

Item No. 5580 - Only \$6.95

Pocket notebook conveniently sized to take with you-anywhere, anytime, in any weather! Features the ARES logo on a Polydura cover. 100 waterproof writing pages (50 sheets). Size: 3" x 5".

All Weather Minilog

Item No. 1374 - Only \$8.95

Waterproof logbook made of synthetic paper. Ideal for harsh field conditions, and mobile use. 50 pages. Size: 3" x 5".



2016 ARRL Periodicals on DVD

Fully-searchable collections of popular ARRL journals, *QST*, *QEX*, and *NCJ*. Every word and photo published throughout the year is included!

SEARCH the full text of every article by entering titles, call signs, names—almost any word.

SEE every word, photo (including color images), drawing and table in technical and general-interest features, columns and product reviews, plus all advertisements.

PRINT what you see, or copy it into other applications.

Item No. 0680 - \$24.95

System Requirements: Microsoft Windows". 1999-2014 editions support Windows and Macintosh system using the industry standard Adobe" Acrobat" Reader "software. The Acrobat Reader is a free download at www.adobe.com (included on CD through 2007).



Additional sets available on CD.

2015 Edition, Item No. 0505 - \$24.95
 2014 Edition, Item No. 0325 - \$24.95
 2013 Edition, Item No. 0093 - \$24.95
 2012 Edition, Item No. 3152 - \$24.95
 2011 Edition, Item No. 5651 - \$24.95
 2010 Edition, Item No. 2001 - \$24.95

2009 Edition, Item No. 1486 - \$24.95
 2008 Edition, Item No. 9406 - \$24.95
 2007 Edition, Item No. 1204 - \$19.95
 2005 Edition, Item No. 9574 - \$19.95

2003 Edition, Item No. 9124 - \$19.95
 2002 Edition, Item No. 8802 - \$19.95
 2001 Edition, Item No. 8632 - \$19.95
 1999 Edition, Item No. 7881 - \$19.95

ARRL at 100: A Century of Ham Radio DVD

Item No. 0109 - \$10.95

ARRL Membership DVD promoting the art, science and enjoyment of Amateur Radio for 100 years. By being an ARRL member you not only reflect the commitment and enthusiasm of American hams, but also provide leadership as the voice of Amateur Radio in the USA.

The Story of the Enigma: History, Technology and Deciphering

Item No. 1296 - \$15.00

The complete story of the Enigma cipher machine, the primary device used by the German Military during WWII. It begins with the history of codes and progresses through the development of code machines, the Enigma, and other cipher machines.



Radio Amateur Callbook CD-ROM

Summer 2017 Edition Item No. 9212S - \$49.95

Feature-packed CD-ROM contains the call sign and address information of the Amateurs Radio stations all over the world. With more than 1,600,000 licensed radio amateurs, it lets you find the data you are looking for in a fast and easy manner. Bonus USB drive included!



ARRL Software Library for Hams 5.0 Download

Item No. 1205D - \$19.95

Quick access to utilities, applications and information:

- Videos
- Image Editor
- DX Cluster client software (CC USER)
- Software Defined Radio
- HF digital software for PSK31, MFSK16, MT63, RTTY and JT65
- WSJT software for meteor scatter and moonbounce and more!

The DIY Magic of Amateur Radio DVD

Item No. 6047 - \$10.95

Directed toward the "Do It Yourself" movement, this video features innovative and fun ways hams use radio technology. 8 minutes 32 seconds.



Perera's Telegraph Collectors Reference CD-ROM

Item No. 1282 - \$15.00

A complete source of information for those interested in telegraph keys, from beginner to avid collector. It explains the history and technology of telegraph keys and gives their current values. Over 7,000 photographs, and an array of descriptions, prices, books, and more.





ARRL National Centennial Convention Presentations DVD

Item No. 1241 - \$12.95

The ARRL National Centennial Convention in 2014, was a once-in-a-lifetime celebration. This DVD includes convention presentations from three special guest speakers: Rick Roderick, K5UR, W. Craig Fugate, KK4INZ and Joe Taylor, K1JT

Buckmaster's HamCall™ CD-ROM

Item No. 8991 - \$49.95

Look up hams by call sign, name, street address, city, state, postal code, county, and country. Over 2,300,000 worldwide call sign listings.



For more CD's & DVD's visit www.arrl.org/shop



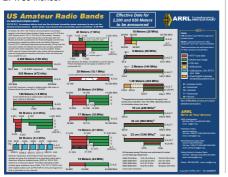
ARRL Map of the World Azimuthal

Item No. 7717 – \$15 27 x 39 inches.



ARRL Map of North America

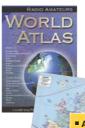
Item No. 8977 – \$15 27 x 39 inches.





ARRL Map of the World Robinson

Item No. 8804 – \$15 26 x 34.5 inches.



Radio Amateurs World Atlas

Item No. 5226 – \$12.95 Booklet of full-color maps, call-sign prefixes and more.

- ARRL World Grid Locator Atlas Item No. 2944 – \$5.95
- Grid Locator (US Grid Squares) Item No. 1290 \$1
- Polar Map (for OSCAR) Item No. 1300 \$1



US Amateur Radio Bands Chart

Item No. 1126 – \$3 ARRL Worked All States (WAS) map on backside. 11x17 inches.

Ham Oval Stickers

(set of 25)

Item No. 0169 - \$30

These stickers are a great way to get the word out! Ideal for the bumper or rear window of your car, van or RV (vinyl with adhesive on the back).



I'm a Member... **Stickers** (roll of 100) Item No. 1037 - \$5.00

1 3/8" diameter.

ARRL Magnets (set of 25) Item No. 0124 - \$12

Full colored magnets imprinted with "Advancing the Art, Science and Enjoyment of Amateur Radio" and the ARRL five pillars. The perfect give-away for all ham radio events! Size 3.5" x 2".



Amateur Radio Bookmark and Ruler (set of 25)

Item No. 1063 - \$8

A bookmark on one side and ruler on the other. A great recruitment tool for scouts and young hams.

ARRL Ribbons (set of 25)

- **ARRL Member Ribbons** Item No. 1123 - \$15
- ARRL Life Member Ribbons Item No. 0280 - \$15

ARRL Members and ARRL Life Members, show off your support with an attractive ARRL ribbon!



(set of 25)

Symbolize your participation in the traditional ham ritual with these antique copper plated pins. Perfect for Clubs





Handouts Available in Packs of 25

- What is Ham Radio flyer. Version A. Item No. WIHR-A What is Ham Radio flyer. Version B. Item No. WIHR-B
- DIY Magic of Amateur Radio flyer. Item No. DIYF
- Serving Your Community flyer. Item No. SRVE
- Take the Next Step flyer. Item No. TINS
- Ham Radio Youth flyer. Item No. YTHF
- ARRL Membership brochure. Item No. MEMB
- Scouting and Amateur Radio leaflet. Item No. SARL
- Amateur Radio Emergency Service leaflet. Item No. ARESL
 Wireless Excitement Amateur Radio leaflet. Item No. WARL

ARRL Pens (set of 25)

Item No. 0170 - \$15

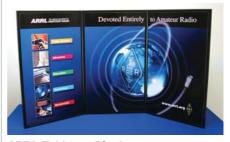
Red push pen imprinted with "ARRL the national association for AMATEUR RADIO". The perfect give-away for all ham radio events!



ARRL Banner

Item No. 1302 - \$50

Nylon fabric banner imprinted with "ARRL The national association for AMATEUR RADIO". Size 3' x 8'.



ARRL Tabletop Display

Item No. 0185 - \$220

Three panel "Dedicated Entirely to Amateur Radio" display, featuring the ARRL five pillars. A great addition to any trade show or exhibit! 54" x 30" x 3/4".



ARRL Banner Stand Display

Item No. 0310 - \$150

Vibrant banner imprinted with "Advancing the Art, Science and Enjoyment of Amateur Radio" and the ARRL five pillars. Includes carrying case. A striking visual for all your ham radio events! Size 29.50" x 69".

Advocacy Membership Public Service Education Technology

24 ARRL Product Listing www.arrl.org/shop • 1-888-277-5289

Licensing Technician Class		ARRL Antenna Compendium. Volume 3. Item No. 4017ARRL Antenna Compendium. Volume 4. Item No. 4912	\$20
Exam: 35-question Technician test (Element 2)		ARRL Antenna Compendium. Volume 5. Item No. 5625	\$20
The ARRL Ham Radio License Manual. 3rd Edition.	600.05	ARRL Antenna Compendium. Volume 6. Item No. 7431	\$22.95
Softcover Book. Item No. 0222	\$32.95	ARRL Antenna Compendium. Volume 7. Item No. 8608ARRL Antenna Compendium. Volume 8. Item No. 0991	\$24.95
ARRL's Tech Q & A. 6th Edition. Item No. 0178	\$17.95		
General Class (upgrade from Technician)		QST on CD-ROM and DVD	
Exam: 35-question General test (Element 3) The ARRL General Class License Manual. 8th Edition.		2016 ARRL Periodicals on DVD. Item No. 0680 2015 ARRL Periodicals on DVD. Item No. 0505	\$24.95
Softcover Book. Item No. 0307	\$29.95	2015 ARRL Periodicals on DVD. Item No. 0505	\$24.95
Spiral Bound. Item No. 1904	\$32.95	2014 ARRL Periodicals on DVD. Item No. 0325 2013 Periodicals on DVD. Item No. 0093	\$24.95
ARRL's General Q & A. 5th Edition. Item No. 0338	\$17.95	2012 Periodicals on DVD. Item No. 3152	.\$24.95
Extra Class (upgrade from General) Exam: 50-question Extra test (Element 4)		2011 Periodicals on CD-ROM. Item No. 5651 2010 Periodicals on CD-ROM. Item No. 2001	\$24.95
The ARRL Extra Class License Manual. 11th Edition.		2010 Periodicals on CD-ROM. Item No. 2001	\$24.95
Softcover Book. Item No. 0451	\$29.95	Technical	
Spiral Bound. Item No. 0550	\$32.95	The ARRL Handbook. 2017 Edition.	
ARRL's Extra Q & A. 4th Edition. Item No. 4494	\$17.95	Softcover. Book with CD-ROM. Item No. 0628	.\$49.95
Operating		Hardcover. Book with CD-ROM. Item No. 0635	\$59.95
The ARRL Operating Manual for Radio Amateurs. 11th Ed	lition.	Understanding Basic Electronics. 2nd Edition.	
Item No. 0598	\$24.95		. \$32.95
Item No. 0598 The ARRL Repeater Directory®. 2017/2018 Edition. Item No. 0697 ARRL Member Price \$17.95 Your First Amateur Radio HF Station.	610.05	ARRL's Hands-On Radio Experiments, Item No. 1255	\$19.95
Your First Amateur Radio HF Station.		ARRL's Hands-On Radio Experiments. Volume 2. ltem No. 3411ARRL Member Price \$22.95	
Item No. 00/9 ARRL Member Price \$19.95	\$22.95	Item No. 3411 ARRL Member Price \$22.95	. \$25.95
Radios to Go!	647.05	Hands-On Radio Parts Kit. Item No. 1255K The ARRL RFI Book. 3rd Edition. Item No. 0915	. S89.95
Item No. 3077ARRL Member Price \$15.95 The ARRL DXCC List. 2016 Edition. Item No. 0604	\$5.05	Arduino for Ham Radio	. 329.93
Oscilloscopes for Radio Amateurs.	90.30	Arduino for Ham Radio. Item No. 0161ARRL Member Price \$29.95	\$34.95
Item No. 0976 ARRL Member Price \$19.95	\$22.95	More Arduino Proiects for Ham Radio.	
Oscilloscopes for Radio Amateurs. Item No. 0976 ARRL Member Price \$19.95 The Radio Amateur's Workshop. Item No. 0482 ARRL Member Price \$19.95	622.05	Item No. 0703ARRL Member Price \$34.95 Ham Radio for Arduino and PICAXE.	900.00
Hints & Kinks for the Radio Amateur. 18th Edition.		Item No. 3244 ARRL Member Price \$29.95	\$34.95
Item No. 5200 ARRL Member Price \$19.95	\$22.95	ARRL PIC Programming Kit. Item No. 0030	\$149.95
FCC Rules and Regulations. 3rd Edition. Item No. 1173	\$7.95	L/C/F and Single-Layer Coil Winding Calculator.	\$12.95
ARRL Software Library for Hams 5.0 Download. Item No. 1205D	\$19.95	ARRL's Low Power Communication. 4th Edition.	
Amateur Radio on the Move. Item No. 9450		ltem No. 9123 ARRL's Low Power Communication. 4th Edition. Item No. 5828 ARRL Member Price \$24.95 ARRL's Low Power Communication with CW Kit.	\$27.95
Dropogation and Dadio Science		Item No. 5828K	\$105.95
Item No. 0277 ARRL Member Price \$24.95	\$27.95	More ORP Power Item No. 9655	\$19.95
Radio Science for the Radio Amateur. Item No. 3381	\$27.95	Circuit Simulation and Analysis.	607.05
Storm Spotting and Amateur Radio. 2nd Edition. Item No. 0594ARRL Member Price \$19.95	004.05	Transceiver Performance Testing.	. 921.33
The ARRL Satellite Handbook.	524.95	Circuit Simulation and Analysis. Item No. 0036 ARRIL Member Price \$24.95 Transceiver Performance Testing. Item No. 0086 ARRIL Member Price \$19.95 Grounding and Bonding for the Radio Amateur.	. \$22.95
Item No. 9857	\$24.95	Item No. 0659 ARRL Member Price \$22.95	\$25.05
Morse Code Operating for Amateur Radio.		100 100 100 100 100 100 100 100 100 100	020.00
Item No. 0004 ARRL Member Price \$15.95		Digital Communications	
Amateur Radio Station Log Book. Item No. 1250 Amateur Radio Station Minilog. Item No. 7539		International Microwave Handbook. 2nd Edition.	
ARRL VEC Volunteer Examiner Manual. Item No. 1328		Item No. 0330	.\$29.95
		Get on the Air with HF Digital. Item No. 6016ARRL Member Price \$22.95	605.05
Maps		Remote Operating for Amateur Radio. Item No. 0922	\$22.95
ARRL Map of North America. 27" x 39". Item No. 8977		The ABCs of Software Defined Radio.	
ARRL Map of the World (Azimuthal). 27" x 39". Item No. 7717	7 \$15	Item No. 6320 ARRL Member Price \$19.95	. \$22.95
ARRL Map of the World (Robinson). 26" x 34.5". Item No. 880 ARRL Worked All States (WAS) Map. 11" x 17". Item No. 112	04 \$15	VoIP: Internet Linking for Radio Amateurs. 2nd Edition.	604.05
The Radio Amateur's World Atlas. Item No. 5226		Item No. 1431 ARRL Member Price \$19.95	. 921.00
The Hadio Amareai 3 Horia Atlasi ilem No. 5220		Item No. 0437 ARRL Member Price \$15.95	£17.95
Antennas		High Speed Multimedia for Amateur Radio.	
The ARRL Antenna Book. 23rd Edition.		Item No. 0529 ARRL Member Price \$24.95	\$27.95
Softcover. Book with CD-ROM. Item No. 0444	\$49.95	Dublic Comice	
Basic Antennas, Item No. 9994 The ARRI, Antenna Designer's Notebook, Item No. 1479	\$29.95 \$34.95	Public Service	
The ARRL Antenna Designer's Notebook. Item No. 1479 Short Antennas for Small 160 Meter Radio. Item No. 5798ARRL Member Price \$19.95		The Amateur Radio Public Service Handbook. Item No. 4845ARRL Member Price \$34.95	\$39.95
Item No. 5798 ARRL Member Price \$19.95	\$22.95	ARES Field Resource Manual. Item No. 5439	\$12.95
Antenna Physics: An Introduction. Item No. 0499 ON4UN's Low-Band DXing. 5th Edition. Item No. 8560		Emergency Power for Radio Communications, 2nd Edition.	
ARRI's Small Antennas for Small Spaces 2nd Edition	\$44.95	Item No. 6153 ARRL Member Price \$24.95	. \$27.95
ARRL's Small Antennas for Small Spaces. 2nd Edition. Item No. 0512ARRL Member Price \$19.95	\$27.95	ARES Hat. Item No. 0099 ARES Mesh Vest. (M-3XL available) Item No. 0128	\$14.95
Antenna Towers for Radio Amateurs. Item No. 0946	\$34.95	ARES Solid Vest with Pockets. (M-3XL available)	
The ARRL Guide to Antenna Tuners. Item No. 0984	\$22.95	Item No. 0136	.\$24.95
Item No. 2889 ARRI Member Price \$22.95	605.05	The DIY Magic of Amateur Radio DVD. Item No. 6047 ARES Polo Shirt. (S-4XL available). Item No. 0006	\$10.95
Understanding Your Antenna Analyzer. Item No. 2889 ARRL Member Price \$22.95 The Care and Feeding of Transmission Lines. Item No. 4784 ARRL Member Price \$24.95		ARES T-Shirt. (S-4XL available). Item No. 1331	.\$12.95
Item No. 4784 ARRL Member Price \$24.95	\$27.95		, .2.00
ARRL's Yagi Antenna Classics. Item No. 8187 ARRL's Portable Antenna Classics.	\$17.95	History	
Item No. 0345 ARRL Member Price \$19.95	\$22.95	A 10-1	
Simple and Fun Antennas for Hams. Item No. 8624	\$22.95	A mateur Radio Technology 1915 - 2013. Item No. 0003 ARRL Member Price \$29.95	
ARRL's Wire Antenna Classics. Item No. 7075	\$14	Item No. 0003ARRL Member Price \$29.95	\$34.95
More Wire Antenna Classics. Volume 2. Item No. 7709	\$17.95	A nistory of QST volume 2: Advertising 1915 - 2013.	
Even More Wire Antenna Classics. Volume 3. Item No. 0239ARRL Member Price \$19.95	\$22.95	A nistory of usi Volume 2: Advertising 1915 - 201 ARRL Member Price \$29.95. S0 Years of Amateur Radio Innovation. Item No. 0228. Hiram Percy Maxim. Item No. 7016. 200 Meters and Down. Item No. 0011. The Gil Cartoon Book. Item No. 0301. The ARRL Film Collection DVD. Item No. 3725.	\$34.95
More Vertical Antenna Classics. Item No. 9795	\$17.95	50 Years of Amateur Radio Innovation. Item No. 0228 Hiram Percy Maxim, Item No. 7016	\$39.95
Vertical Antenna Classics. Item No. 5218		200 Meters and Down. Item No. 0011	\$12
ARRL Antenna Compendium. Volume 1. Item No. 0194ARRL Antenna Compendium. Volume 2. Item No. 2545		The Gil Cartoon Book. Item No. 0364	.\$15.95
A A CHI INC. 2040	φ ι τ	A. JIE I IIII CONCOLON DEDI NO. 0/20	

International Mail

Service

2-3 weeks delivery

\$25.00

\$35.00

\$45.00

n/a

Add the foliolating nates.

Add the foliolating macual states will be shipped via a ground addinery method. O'rd. US orders will be shipped via a ground addinery method. O'rd. So orders outside of the US will be shipped via international Mail Services. Express delivery options and other specialty foreign for macual services are available. Please call, write or

US

\$7.50

\$10.50

\$12.50

First Class Mail

\$2.75

Join ARRL or Renew!

ARRL Membership dues:

US rates:	☐ 1 Year¹ \$49	☐ 2 Years² \$95	☐ 3 Years³ \$140
Date of Birt	th/	/	

Membership includes \$21 per year for subscription to QST. Dues subject to change without notice and are nonterfundable. Blind and youth rates are available. Contact ARRL for more details. Additional membership options a

ARRL Subscriptions for one year (US rates):

- ☐ QEX-Forum for Communications Experimenters, \$24 (non-ARRL members \$36)
- □ NCJ-National Contest Journal, \$20

Subscription amount \$	

Name	Call

Order ARRL Publications:

City	State	ZIP	

Contact ARRL for shipping options and rates: orders@arrl.org

Shipping and Handling Rates:

email for more information

Order

Value Up to \$20.00

\$20.01 to \$50.00

\$50.01 to \$250.00

Single CD-ROM

Over \$250

CT add 6.35% state sales tax (including S/H). VA add 6% sales tax (excluding S/H). Canada add 5% GST (excluding S/H).

____ Apt

Save time-order by credit card:

Toll-free: 1-888-277-5289 Mon-Fri, 8 AM to 5 PM ET www.arrl.org/shop

Name_ _ Call_ Address Apt#

City __ _____ State ____ ZIP ____

☐ Check here if gift. Gift from _

Shipping Address:

Thank you for your order!

Item Nunber	Quantity		Title or Item Name	Price Each	Total
CAT 5/2017				Subtotal	
Charle have if you do not wish your name and		ame and	Enter Shipping and Handling fee (see fee schedule)		
Check here if you do not wish your name and address made available for non-ARRL mailings.		L mailings.	Delivery to CT, VA and Canada, add applicable tax (see note)		
If joining ARRL or subscribing to QEX or NCJ, please insert total here					
				Total	\$
	Method of payment: Check/Money order payable to ARRL\$ Discover Discover American Express				



Credit Card Number: ______

Your Signature



1-888-2777-5289

MM/YY Expiration ____/ ___

Daytime Phone



www.arrl.org/shop



Grounding and Bonding

for the Radio Amateur

H. Ward Silver, NØAX

Proper Station Grounding is Important! **Build Your Ham Radio Station with Effective**

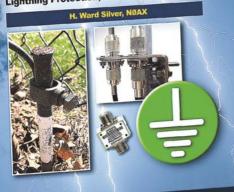
Grounding and Bonding Techniques:





for the Radio Amateur

Good Practices for Electrical Safety, Lightning Protection, and RF Management



- AC safety: protects against shock hazards from ac-powered equipment by providing a safe path for current when a fault in wiring or insulation occurs.
- Lightning protection: keeps all equipment at the same voltage during transients from lighting and dissipate the lightning's charge in the Earth, routing it away from equipment.
- RF management: prevents unwanted RF currents and voltages from disrupting the normal functions of equipment (also known as RF interference or RFI).

Grounding and Bonding for the Radio Amateur shows you how to make sure your station follows current standards for lightning protection and communication systems, not to mention the National Electrical Code. You'll learn effective grounding and bonding techniques for home stations, including condos and apartments, portable and temporary stations, as well as towers and outside antennas.

Grounding and Bonding for the Radio Amateur ARRL Item No. 0659 ARRL Member Price! Only \$22.95 (retail \$25.95)



www.arrl.org/shop Toll-Free US 888-277-5289 or elsewhere +1-860-594-0355