

**David A. Minster, NA2AA**  
Publisher

**Becky R. Schoenfeld, W1BXY**  
Editorial Director

**Dana Kasowitz, KC1SEB**  
Managing Editor

**Leanna Figlewski, KC1RMP**  
Editor

**Amanda Fahy**  
**Sam Shaner**  
Assistant Editors

**Paul Bourque, N1SFE**  
Contest Program Manager

**John Ross, KD8IDJ**  
*Happenings*

**Phil Salas, AD5X**  
**Kai Siwiak, KE4PT**  
**John Stanley, K4ERO**  
Technical Editors

**Dave Casler, KE0OG**  
**Jon Jones, N0JK**  
**Bernie McClenny, W3UR**  
**Rick Palm, K1CE**  
**Barry Shackelford, W6YE**  
**Pascal Villeneuve, VA2PV**  
**Paul Wade, W1GHZ**  
Contributing Editors

**Christopher Dunham**  
Production Supervisor

**Jodi Morin, KA1JPA**  
Assistant Production Supervisor

**Maty Weinberg, KB1EIB**  
Production Coordinator

**David Pingree, N1NAS**  
Senior Technical Illustrator

**Janet Rocco, W1JLR**  
Advertising Sales Manager

**Bob Inderbitzen, NQ1R**  
Director of Marketing & Innovation

**Yvette Vinci, KC1AIM**  
Membership Manager

**Steve Ewald, WV1X**  
Field Organization Supervisor

- 9 Second Century**  
Terrible Tower Lessons
- 30 A High-Power Dummy Load for DC through VHF**  
Stephen Werner, AG4W
- 32 The Dual 1/3-Wavelength Dipole**  
Martin Ruhl, DJ3ZF
- 35 Product Review**  
**Pascal Villeneuve, VA2PV**  
Yaesu FT-710 AESS MF/HF and 6-Meter Transceiver; Icom IC-T10 Dual-Band Handheld Transceiver; MFJ-1898 Portable HF 6-Meter Antenna
- 
- 52 Equalization and Ham Radio**  
Lindy Williams, K6EB
- 55 If You Like Field Day, You'll Love County Expeditioning**  
Glen Brown, W6GJB
- 59 Following in Marconi's Footsteps: Portable Operation at the Navesink Twin Lights**  
David Gold, N2MXX, and Glen Ramsay, KD2FFR
- 62 ARRL at 2023 Hamvention**  
Amanda Fahy
- 73 2023 ARRL International DX CW Contest Results**  
Mark Beckwith, N5OT
- 76 2023 ARRL RTTY Roundup Results**  
Jeff Stai, WK6I
- 78 The 2023 ARRL September VHF Contest**
- 78 The 2023 ARRL International EME Contest**
- 79 The 2023 ARRL 10 GHz and Up Contest**
- 91 Volunteers On the Air Update**
- 92 A Look Back — September 1973**

## Columns

Ask Dave.....	48
Celebrating Our Legacy.....	97
Classic Radio.....	98
Club Station.....	80
Contest Corral.....	72
Correspondence.....	24
Ham Media Playlist.....	82
Happenings.....	66
How's DX?.....	84
Member Spotlight.....	13
Public Service.....	70
Up Front.....	20
Technical Correspondence.....	50
The World Above 50 MHz.....	86
100, 50, and 25 Years Ago.....	100

## Digital and Mobile Editions

ARRL members can access the digital edition via a link at [www.arrrl.org/qst](http://www.arrrl.org/qst), download our iOS app from the iTunes Store, and download our Android app from the Google Play Store.

## Departments

ARRL Section Managers.....	16
ARRL Special Service Clubs.....	81
Certificate of Code Proficiency Recipients.....	47
Convention and Hamfest Calendar.....	88
Feedback.....	34
Field Organization Reports.....	71
Guide to ARRL Member Benefits.....	14
Ham Ads.....	124
Index of Advertisers.....	126, 127
New Books.....	91
Officers, Division Directors, and Staff.....	15
QST Cover Plaque Award.....	58
Silent Keys.....	101
Special Event Stations.....	90
This Month in QEX.....	61
Volunteer Monitor Program Report.....	79
W1AW Qualifying Runs.....	47
W1AW Schedule.....	28

## Write for QST

[www.arrrl.org/qst-author-guide](http://www.arrrl.org/qst-author-guide)  
email: [qst@arrrl.org](mailto:qst@arrrl.org)



## Our Cover

In 1899, the Navesink "Twin Lights" Lighthouse in Highlands, New Jersey, was the site of Guglielmo Marconi's first public US demonstration of the wireless telegraph. In 2022, the New Jersey Emergency Communications Team honored Marconi by activating Navesink for the 2022 International Lighthouse and Lightship Weekend, an event that comes up every August. Learn more about the lighthouse and Marconi's history with it, as well as details about last summer's activation, in "Following in Marconi's Footsteps: Portable Operation at the Navesink Twin Lights," by David Gold, N2MXX, and Glen Ramsay, KD2FFR.



QST (ISSN:0033-4812) is published monthly as its official journal by the American Radio Relay League, Inc., 225 Main St., Newington, CT 06111-1400, USA. Periodicals postage paid at Hartford, CT, USA and at additional mailing offices.

POSTMASTER: Send address changes to: QST, 225 Main St., Newington, CT 06111-1400, USA. Canada Post: Publications Mail Agreement #90-0901437. Canada returns to be sent to IMEX Global Solutions, 1501 Morse Ave., Elk Grove Village, IL 60007.

**US & Possessions:** Membership in ARRL, including a 1-year subscription to QST, is available to individuals at \$49. Licensed radio amateurs age 21 and under and the eldest licensee in the household may qualify for the rate of \$25. Life Membership, including a subscription to QST, is available at \$1,225.\* Membership includes \$21 per year for subscription to QST. Membership and QST cannot be separated. Libraries and institutions, \$49 per year. Single copies \$6.95.

### International

To compensate for additional postage for mailing outside the US, the following rates apply: Membership in ARRL, including a 1-year subscription to QST, \$76, payable in US funds. Life Membership, including a subscription to QST, is available at \$1,900.\* Libraries and institutions, \$76 per year.

Membership without QST is available to the immediate family of a member living at the same address, and to anyone who is legally blind, for \$10 per year.

Foreign remittances should be by international postal or express money order or bank draft negotiable in the US and for an equivalent amount in US funds.

Membership in ARRL, including a 1-year subscription to Digital QST only, is available to Canadian and International members at \$49.

Copyright © 2023 by the American Radio Relay League, Inc. Title registered at the US Patent Office. International copyright secured. All rights reserved. Quedan reservados todos los derechos. Printed in the USA.

QST®, DXCC®, VUCC®, DX Century Club®, ARES®, Amateur Radio Emergency Service®, Logbook of The World®, LoTW®, and ARRL The National Association for Amateur Radio® are registered trademarks of the American Radio Relay League, Inc.

ARRL and QST in no way warrant the products described or reviewed herein. QST is available to blind and physically handicapped individuals from the Library of Congress, National Library Service for the Blind and Physically Handicapped. Call 1-800-424-8567 or go to [www.loc.gov/nls/](http://www.loc.gov/nls/).

Indexed by Applied Science and Technology Index, Library of Congress Catalog Card No: 21-9421.

\*Payment arrangements available. Please write for details.

In order to ensure prompt delivery, we ask that you periodically check the address information on your mailing label. If you find any inaccuracies, please contact the Circulation Department at [circulation@arrrl.org](mailto:circulation@arrrl.org) or 860-594-0200 immediately. Thank you for your assistance.

Reprints and permissions: [permission@arrrl.org](mailto:permission@arrrl.org)

Details of our Online Privacy Policy can be found at [www.arrrl.org/online-privacy-policy](http://www.arrrl.org/online-privacy-policy).

Telephone: 860-594-0200  
Fax: 860-594-0259