



In This Issue

September 2017

Volume 101 Number 9

Tom Gallagher, NY2RF
Publisher

Steve Ford, WB8IMY
Editor

Becky R. Schoenfeld, W1BXY
Managing Editor

Jen Giffort
Caroline Kenney
Assistant Editors

Bart Jahnke, W9JJ
Contest Branch Manager

Rick Lindquist, WW1ME
Happenings

Bob Allison, WB1GCM
Product Review Lab Testing

Mark J. Wilson, K1RO
Al Brogdon, W1AB
Bernie McClenny, W3UR
H. Ward Silver, N0AX
Paul Wade, W1GHZ
Jon Jones, N0JK
Rick Palm, K1CE
Joel R. Hallas, W1ZR
Barry Shackelford, W6YE
Kai Siwiak, KE4PT
Bruce Draper, AA5B
Contributing Editors

Michelle Bloom, WB1ENT
Production Supervisor

Jodi Morin, KA1JPA
Asst. Production Supervisor

Maty Weinberg, KB1EIB
Production Coordinator

Sue Fagan, KB1OKW
Graphic Design Supervisor

David Pingree, N1NAS
Senior Technical Illustrator

Debra Jahnke, K1DAJ
Business Services Manager
QST Advertising

Bob Inderbitzen, NQ1R
Marketing Manager

Yvette Vinci, KC1AIM
Circulation Manager

Diane Szlachetka, KB1OKV
Advertising Graphics Designer

Steve Ewald, WV1X
Field Organization Supervisor

Gail Iannone
Convention Program Manager

Allison McLellan
Digital Media Support Specialist

Technical

The Flag on Ground (FoG) Antenna 30

Charlie Klutz, W4TMR

If you want to operate 160 meters but can't tolerate the background noise, this small, resistively loaded receiving antenna might be the answer.

Questions and Answers about Arc Fault Circuit Interrupters 32

Mike Gruber, W1MG

These circuit breakers are becoming common, but some may cause problems for radio amateurs.

The Flagpole Antenna 33

John Ellis, NP2B

This antenna may work around your homeowners association restrictions.

Portable Keyboard Interface for CW and Data Modes 35

Mike Mussler, AI8Z

Take your keyboard to the field for public service operating or other activities.

An Improved 160/80-Meter Matching Network for your 43-Foot Vertical 39

Steve Masticola, WX2S

Load your 43-foot vertical antenna on two popular "low" bands.

The Nose Knows 42

Steve Ford, WB8IMY

An important tool for diagnosing equipment problems is as near as the nose on your face.

Product Review 43

Mark Wilson, K1RO

K7DYY Super Senior 80- and 40-Meter Legal-Limit AM Transmitter; GOCHANGE Function Generator Kit; Bioenno Power 12 V LiFePO4 Batteries; WEN Rotary Tool Kit with Flex Shaft; OCI VHF and UHF Band-pass Filters; HamGadgets Ultra PicoKeyer Kit.

Page 43



News and Features

Second Century 9

Tom Gallagher, NY2RF

Official Observers: Something's Coming

2016 New York City Marathon Recap 67

J. Gordon Beattie, Jr., W2TTT

Amateur Radio operators volunteer to assist with communications and networking problems in this challenging environment.

Supporting the Department of Defense following a Very Bad Day 69

Paul English, WD8DBY, and David McGinnis, K7UXO

Hams, MARS, and the US military practice protocols for a potential widespread electrical or cyber blackout.

Applying the Lessons of Field Day All Year Long 71

Mike Corey, K1IU

The new strategies, bands, and modes you gained on ARRL Field Day shouldn't be shelved until next year's event. Here are ways to keep skills current and progressing, long before next June rolls around.

Comfort Design for Your Station 73

Norm Fusaro, W3IZ

Get set up for maximum comfort and ease of use.

Maker Faire Bay Area 2017 76

Caroline Kenney

There is a place for radio amateurs at this exciting DIY convention.

2017 Simulated Emergency Test 78

Steve Ewald, WV1X

October 7 – 8 is the main weekend for this event.

Happenings 79

Rick Lindquist, WW1ME

The Amateur Radio Parity Act reaches the US Senate as S. 1534, FCC restores amateur access to 76 – 77 GHz, ARRL CEO Gallagher and Technical Relations Specialist Silverling represent the US at CITEL PCC.II; more.

Our Cover

The 2016 New York City Marathon received communications support from a large group of Amateur Radio operators who set up an Amateur Radio Emergency Data Network (AREDN) mesh network and associated Voice over Internet Protocol (VoIP) telephony services. Read all about it in J. Gordon Beattie, Jr.'s, W2TTT, "2016 New York City Marathon Recap." [Coast Guard Petty Officer 3rd Class David Micallef, photo]



Radiosport

Contest Corral 84
Bruce Draper, AA5B

2017 ARRL International DX Phone Contest Results 85
Chris Tate, N6WM

Participants in this contest got in the game on a competitive level, even from average-sized stations.

ARRL Contest Changes for 2017 – 2018 91
Bart Jahnke, W9JJ



Columns

At the Foundation 99
Classic Radio 102
Correspondence 24
The Doctor is In 59
Eclectic Technology 58
Hands-On Radio 61
Hints & Kinks 63
How's DX? 92
Member Spotlight 13
Public Service 82
Technical Correspondence 65
Up Front 20
The World Above 50 MHz 94
100/50/25 Years Ago 106

Departments

ARRL Member Services 14
ARRL Section Managers 16
Convention and Hamfest Calendar 104
Feedback 75
Field Organization Reports 106
Ham Ads 154
Index of Advertisers 156, 157
New Products 31
Officers, Division Directors, and Staff ... 15
QuickStats 146
Silent Keys 107
Special Event Stations 97
Strays 38
This Month in QEX 57
W1AW Qualifying Runs 98

Digital and Mobile Editions

ARRL members can access the digital edition via a link at www.arrl.org/qst, download our *iOS* app from the iTunes Store, and download our *Android* app from the Google Play Store.

Interested in Writing for QST?
www.arrl.org/qst-author-guide
 e-mail: qst@arrl.org

September 2017
 Volume 101 Number 9

QST (ISSN:0033-4812) is published monthly as its official journal by the American Radio Relay League, Inc, 225 Main St., Newington, CT 06111-1494, USA. Periodicals postage paid at Hartford, CT, USA and at additional mailing offices.

POSTMASTER: Send address changes to: QST, 225 Main St., Newington, CT 06111-1494, 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 the 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:

Canada: Membership in the ARRL, including a 1-year subscription to QST, \$62, payable in US funds. Life Membership, including a subscription to QST is available at \$1,550.* Libraries and institutions, \$62 per year.

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

Copyright © 2017 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.

The 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/.

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@arrl.org or 860-594-0200 immediately. Thank you for your assistance.

Reprints and permissions: permission@arrl.org

Details of our Online Privacy Policy can be found at www.arrl.org/online-privacy-policy. Telephone: 860-594-0200 Fax: 860-594-0259