

Tom Gallagher, NY2RF Publisher

Steve Ford, WB8IMY Editor

Becky R. Schoenfeld, W1BXY Managing Editor

Steve Sant Andrea, AG1YK Jen Glifort 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, NØAX Paul Wade, W1GHZ Jon Jones, NØJK Rick Palm, K1CE Joel R. Hallas, W1ZR Barry Shackleford, W6YE Kai Siwiak, KE4PT Bruce Draper, AA5B Contributing Éditors

Michelle Bloom, WB1ENT Production Supervisor

Jodi Morin, KA1JPA Asst Production Supervisor

Maty Weinberg, KB1EIB **Production Coordinator**

Sue Fagan, KB10KW 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 lannone Convention Program Manager

Allison Barbieri, KC1ARQ Digital QST Coordinator

In This Issue

July 2016

Volume 100 Number 7

Technical

The ZZRX-40 Direct Conversion 40 Meter Receiver 34

Craig Johnson, AAØZZ

Source your own parts or buy the kit either way, it's a fun project!

Auditory Gimmicks and Testers for the Blind 38

Bill Gerrey, WA6NPC

An auditory meter movement indicator, continuity tester, and field strength indicator are invaluable for the sighted as well as for blind hams.

Product Review 43

Mark Wilson, K1RO

Icom IC-7851 HF and 6 meter transceiver: SPE Expert 1.3K-FA solid-state linear amplifier.





News and Features

Second Century 9

Tom Gallagher, NY2RF

Standing on the Shoulders of Giants, and Slightly Lesser Giants

Kavak Portable 64

Curt Walker, W4LKR

One Tennessee ham's maiden voyage into QRP operating.

National Parks Via the Moon 67

Dennis Schaefer, W5RZ

It only took 50 W and a single Yagi antenna for this team to make moonbounce contacts for National Parks on the Air. You can do it, too!

2015 Simulated Emergency Test Results 70

Steve Ewald, WV1X

In 2015, this annual exercise was conducted using a variety of scenarios.

National Parks on the Air — July 2016 73

Sean Kutzko, KX9X

June stats, new NPS appreciation certificates,

Centennial QSO Party QSL Cards 74

The unique, specially designed QSL cards confirming Centennial QSO Party contacts have been sent out.

Happenings 76

Rick Lindquist, WW1ME

ARRL Contest Advisory Committee currently conducting a youth survey; rare de Forest Audion donated to ARRL; FCC news; call for Director and Vice Director nominations; more.

Our Cover

Craig Johnson, AAØZZ, developed the ZZRX-40 direct conversion 40 meter receiver as an enjoyable build for members of his club. You can get in on the fun by sourcing your own parts, or purchasing a kit. [Craig Johnson, AAØZZ, photo]



Contest Corral 84
Bruce Draper, AA5B

2015 ARRL 10 Meter Contest Results 85

Scott Tuthill, K7ZO

Propagation kept things interesting.

2016 ARRL January VHF Contest Results 89

ARRL Contest Branch

Some things change, while others stay the same.





Build

Receiver!

Columns

Amateur Radio World	100
Classic Radio	101
Correspondence	24
The Doctor is In	53
Eclectic Technology	42
Exam Info	103
Hands-On Radio	55
Hints & Kinks	62
How's DX?	93
Member Spotlight	13
Microwavelengths	60
Public Service	82
Technical Correspondence	
Up Front	20
The World Above 50 MHz	
100/50/25 Years Ago	106

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

Departments

ARRL Member Services14
ARRL Section Managers 16
Convention and Hamfest Calendar 104 $$
Field Organization Reports106
Ham Ads154, 155
Index of Advertisers 156, 157
Officers, Division Directors, and Staff \dots 15
QuickStats134
Silent Keys107
Strays37, 56, 105
Special Event Stations98
This Month in QEX37
W1AW Qualifying Runs105
W1AW Schedule99

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.

July 2017 Volume 100 Number 7

QST (ISSN:0033-4812) is published monthly as its official journal by the American Radio Relay League, Inc, 225 Main Street, 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 \$125.* Membership includes \$21 per year for subscription to QST awailable at Si25.* Membership and QST cannot be separated. Libraries and institutions, \$49 per year. Single copies \$6.95

Internationa

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*, 862, payable in US funds. Life Membership, including a subscription to *QST* is available at \$1550.* 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 \$1900.* 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 © 2016 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 canbe found at www.arrl.org/online-privacy-policy.
Telephone: 860-594-0200

Fax: 860-594-0259