

Tom Gallagher, NY2RF
Publisher

Steve Ford, WB8IMY
Editor

Becky R. Schoenfeld, W1BXY
Managing Editor

Jen Glifort
Caroline Kenney
Allison McLellan
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
Assistant 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

- 9** **Second Century**
Tom Gallagher, NY2RF
The New Protection Game: What it Could Mean for You
- 30** **Fan Controller for Your Classic Radio**
Mike Bryce, WB8VGE
- 33** **Live Trees Affect Antenna Performance**
Kai Siwiak, KE4PT, and Richard Quick, W4RQ
- 38** **An Audio Switching Unit**
Gene Hinkle, K5PA
- 41** **5 and 10 MHz WWV TRF Receivers for Frequency Counter Calibration**
Don Kirk, WD8DSB
- 46** **Product Review**
Mark Wilson, K1RO
TYT MD-2017 Dual-Band Analog and DMR Handheld Transceiver; Heil PR 10 Home-Station Microphone Package; Elenco DT-100 Diode/Transistor Tester Kit; HamGadgets Universal Keying Adapter 3+ Kit; AlexMic Speaker/Microphone for the Elecraft KX2 and KX3; SOTABEAMS Click2Tune Accessory for Icom Transceivers
- 64** **The CIA, the Cold War, and Amateur Radio**
Rick Lindquist, WW1ME
- 69** **The Future of AMSAT: A Discussion with Joe Spier, K6WAO**
Steve Ford, WB8IMY
- 71** **WW1 USA: A Series of Truly Special Events**
Randal R. Schulze, KD0HKD
- 75** **Nominations Sought for Annual Philip J. McGan Silver Antenna Award**
- 76** **Split Decisions**
Steve Ford, WB8IMY
- 88** **2017 ARRL 10 GHz and Up Contest Results**
- 89** **2017 ARRL 222 MHz and Up Distance Contest Results**
John Kalenowski, K9JK



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

Columns

Classic Radio.....	84
Contest Corral.....	87
Correspondence.....	24
The Doctor is In.....	58
Eclectic Technology.....	63
Exam Info.....	86
Hints & Hacks.....	60
Happenings.....	78
How's DX?.....	91
Member Spotlight.....	13
Public Service.....	82
Up Front.....	20
The World Above 50 MHz.....	93
75/50/25 Years Ago.....	100

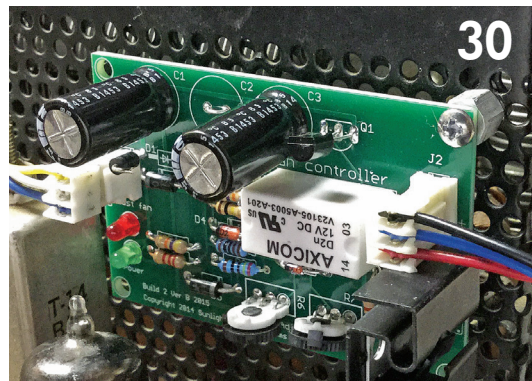
Departments

Amateur Radio Band Chart.....	99
ARRL Member Services.....	14
ARRL Section Managers.....	16
Convention and Hamfest Calendar.....	97
Feedback.....	90
Field Organization Reports.....	100
Ham Ads.....	140
Index of Advertisers.....	142, 143
New Products.....	37, 40
Officers, Division Directors, and Staff.....	15
QuickStats.....	132
Silent Keys.....	101
Special Event Stations.....	96
Strays.....	40, 45, 85, 98
W1AW Qualifying Runs.....	98



Our Cover

Hams' love/hate relationship with trees is as old as Amateur Radio itself. We love the trees that are there for us when we need a means of raising an antenna, and we hate the ones that are in the way of our signal getting out effectively. Kai Siwiak, KE4PT, and Richard Quick, W4RQ, explore the relationship more deeply in this month's article, "Live Trees Affect Antenna Performance," on page 33.



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 © 2018 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