Our mission: To promote and advance the art, science and enjoyment of Amateur Radio.

**In This Issue**

October 2012  Volume 96  Number 10

---

**Technical**

**Solid State 1 kW Linear Amplifier for 2 Meters**  32  
James Klitzing, W6PQL  
Tubes can be expensive and hard to find, so why not try this efficient and compact linear amplifier?

**Those Mysterious Signals**  37  
Arch Doty, W7ACD  
There's more to cosmic and atmospheric noise than meets the ear.

**Satellite CAT Interface for Working the Analog Birds**  40  
Mark Spencer, WA8SME  
Control your VHF SSB transceiver to simulate full duplex operation.

**The Shared Apex Loop Array**  44  
Mark Bauman, KB7GF  
An easy way to combine loop antennas to improve performance.

6 + 2 = 1  49  
Steve Ford, WB8IMY  
This easy-to-build dipole is perfect for two popular VHF bands.

---

**News and Features**

**It Seems to Us**  9  
Remembering Joel Kleinman

**This Just In**  12  
Joel P. Kleinman, N1BKE  
Inside HQ; Media Hits; more.

**Five-Nine-Nine, I Presume?**  68  
H. Ward Silver, N0AX  
The behind-the-scenes story of one of the most famous DXpeditions ever mounted — the 1948 Gatti-Hallicrafters Expedition to the Mountains of the Moon.

**The Evolution of DX Spotting**  71  
Murray Green, K3BEQ  
How it began — and where things stand today.

**Malpelo Island DXpedition 2012 — HK0NA**  73  
Bob Allphin, K4UEE  
One of today's top DXpeditioners tells the story of how a group of hams activated an island of vertical, barren rocks.

**DX Determination**  76  
J. Robert Eshleman, W4DR  
A teenaged ham's recounting of 1954 DXpedition to a tiny island off the coast of Haiti.

---

**DXpedition to the Future**  78  
Paul S. Ewing, N6PSE  
The 3D2R DXpedition makes the effort to reach out to Rotuman youngsters.

**Ontario Times Four**  80  
H. Ward Silver, N0AX  
It just got a little harder to make a “Clean Sweep” in the ARRL November Sweepstakes.

**Zombie Bands**  81  
Steve Sant Andrea, AG1YK  
The bands are dead. Or are they?

---

**Happenings**  82  
S. Khrystyne Keane, K1SFA  
President Craigie appoints a new Vice Director in the Southeastern Division; Heathkit goes under; the new Serbian Prime Minister is a ham; FCC News; more.
Our mission:
To promote and advance the art, science and enjoyment of Amateur Radio.

RadioSport
Contest Corral 87
H. Ward Silver, N0AX

2012 ARRL November Sweepstakes Announcement 88
H. Ward Silver, N0AX

Departments
Convention and Hamfest Calendar ..... 101
Field Organization Reports ............. 104
Guide to ARRL Member Services ..... 14
Ham Ads ................................... 162
Index of Advertisers ..................... 164
New Products ........................... 36, 56, 100
Next Issue of QEX ..................... 40
QuickStats ............................... 144
Silent Keys ................................ 105
Special Events ............................ 91
Strays ...................................... 92, 95, 100
W1AW Schedule ......................... 100

Digital Edition
ARRL members can access the digital edition via a link at www.arrl.org/qst
Interested in Writing for QST?
www.arrl.org/qst-author-guide
e-mail: qst@arrl.org

October 2012
Volume 96  Number 10
QST (ISSN:0033-4812) is published weekly by 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 #40612680. Canada Returns to be sent to Bleuchip International, PO Box 25542, London, ON N6C 6B2.

US & Possessions: Membership in the ARRL, including a one year subscription to QST, is available to individuals at $35. Licensed radio amateurs age 21 and under and the eldest licensee in the household may qualify for the rate of $20. Life Membership, including a subscription to QST is available at $475.* Membership includes $15 per year for subscription to QST. Membership and QST cannot be separated. Libraries and institutions, $39 per year. Single copies $5.

International
To compensate for additional postage for mailing outside the US, the following rates apply:
Canada: Membership in the ARRL, including a one year subscription to QST, $49, payable in US funds. Life Membership, including a subscription to QST is available at $1225.* Libraries and institutions, $49 per year.

All Other Countries: Membership in the ARRL, including a one year subscription to QST, $62, payable in US funds. Life Membership, including a subscription to QST is available at $550.* Libraries and institutions, $62 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 $8 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.

Copyright © 2012 by the American Radio Relay League, Inc. Title registered at the US Patent Office. International copyright secured. All rights reserved. Quédan reservados todos los derechos. Printed in the USA.

QST®, DXCC®, VUCC®, DX Century Club®, ARES®, Amateur Radio Emergency Service® and ARRL, the national association for Amateur Radio® are registered trademarks of the American Radio Relay League, Inc.
The ARRL and QST neither warrant the products described or reviewed herein.

QST is available to blind and physically handicapped individuals on audio cassette from the Library of Congress, National Library Service for the Blind and Physically Handicapped.
Call 1-800-454-8667.

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
See page 14 for detailed contact information.
Telephone: 860-594-0200
Fax: 860-594-0259

QST® – Devoted entirely to Amateur Radio  www.arrl.org
October 2012 5