

The American Radio Relay League

The American Radio Relay League, Inc., is a noncommercial association of radio amateurs, organized for the promotion of interest in Amateur Radio communication and experimentation, for the establishment of networks to provide communications in the event of disasters or other emergencies, for the advancement of the radio art and of the public welfare, for the representation of the radio amateur in legislative matters, and for the maintenance of fraternalism and a high standard of conduct.



ARRL is an incorporated association without capital stock chartered under the laws of the state of Connecticut, and is an exempt organization under Section 501(c)(3) of the Internal Revenue Code of 1986. Its affairs are governed by a Board of Directors, whose voting members are elected every three years by the general membership. The officers are elected or appointed by the Directors. The League is noncommercial, and no one who could gain financially from the shaping of its affairs is eligible for membership on its Board.

"Of, by, and for the radio amateur." ARRL numbers within its ranks the vast majority of active amateurs in the nation and has a proud history of achievement as the standard-bearer in amateur affairs.

A *bona fide* interest in Amateur Radio is the only essential qualification of membership; an Amateur Radio license is not a prerequisite, although full voting membership is granted only to licensed amateurs in the US.

Membership inquiries and general correspondence should be addressed to the administrative headquarters:

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Officers

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The purpose of *QEX* is to:

- 1) provide a medium for the exchange of ideas and information among Amateur Radio experimenters,
- 2) document advanced technical work in the Amateur Radio field, and
- 3) support efforts to advance the state of the Amateur Radio art.

All correspondence concerning *QEX* should be addressed to the American Radio Relay League, 225 Main St., Newington, CT 06111 USA. Envelopes containing manuscripts and letters for publication in *QEX* should be marked Editor, *QEX*.

Both theoretical and practical technical articles are welcomed. Manuscripts should be submitted in word-processor format, if possible. We can redraw any figures as long as their content is clear. Photos should be glossy, color or black-and-white prints of at least the size they are to appear in *QEX* or high-resolution digital images (300 dots per inch or higher at the printed size). Further information for authors can be found on the Web at www.arrl.org/qex or by e-mail to qex@arrl.org.

Any opinions expressed in *QEX* are those of the authors, not necessarily those of the Editor or the League. While we strive to ensure all material is technically correct, authors are expected to defend their own assertions. Products mentioned are included for your information only; no endorsement is implied. Readers are cautioned to verify the availability of products before sending money to vendors.

Bill Liles, NQ6Z, and Ward Silver, N0AX

Perspectives

This month we acknowledge the long editorship of Kai Siwiak, KE4PT, who is stepping down from *QEX* after eight years. Kai has steered the magazine through all of the recent changes in amateur radio, especially the digital modes.

Where in its initial years, *QEX* chronicled the many inventions associated with AX.25 and other packet radio techniques, today the story has shifted to digital voice, high-speed networking, and the revolution of the *WSJT-X* software suite. Even with all that new material to cover, Kai kept *QEX* balanced with numerous articles about analog topics such as electronics and antenna systems. Pure research like this issue's article by Steve Stearns, K6OIK, on modeling insulated wire has a home in *QEX*, too.

Thank you, Kai, for keeping *QEX* interesting and helpful to hams! And so, we must pass the torch to a new editor or editors. Perhaps one of our readers would like to try their hand at leading *QEX* into the future? Or maybe a small group could take the helm, just as NQ6X and N0AX are doing temporarily.

Summarizing the position, ARRL Director of Publications and Editorial Becky Schoenfeld, W1BXY, is looking for one or more persons with a broad and deep background in the technologies of amateur radio. You'd evaluate manuscripts for publication, check for technical accuracy, and work with authors, along with performing basic editorial tasks. There are six issues per year, and being able to meet the printer deadline every two months is important.

If this sounds interesting, please contact Becky at w1bxy@arrl.org for more of the details. This would be a great opportunity to contribute to the knowledge base for present and future hams. Plus, you get to work with some extraordinary authors as well as the helpful, professional staff at HQ.

Again, thanks to Kai for his long service to the amateur radio community. Self-training is a hallmark of the Amateur Radio Service and since its inception, *QEX* has been a valuable example. It takes dedicated individuals like Kai to make that happen!

In This Issue:

- Mark R. Titchener, ZL4CDE, shows a novel method for deciphering Morse CW.
- Ken Neubeck, WB2AMU, and Daniel J. Emmons use amateur radio observations to track sporadic-E in the 10- and 6-meter bands.
- Michelle Thompson, W5NYV, describes the design and implementation of the Zadoff-Chu AGC burst in the Neptune project.
- Steve Stearns, K6OIK, explains methods for modeling single and multiple-layer wire in modeling programs.
- In his essay series, Eric P. Nichols, KL7AJ, expresses the importance of using proper instrumentation.

Writing for *QEX*

QEX is a forum for the free exchange of ideas among communications experimenters. *QEX* is published bimonthly and is edited by Kazimierz "Kai" Siwiak, KE4PT, who is currently on sabbatical.

Please continue to send full-length *QEX* manuscripts, or share a Technical Note of several hundred words in length plus a figure or two, to qex@arrl.org. We pay \$50 per published page for full articles and *QEX* Technical Notes. Get more information and an Author Guide at www.arrl.org/qex-author-guide. If you prefer postal mail, send a business-size self-addressed, stamped (US postage) envelope to: *QEX* Author Guide, c/o Maty Weinberg, ARRL, 225 Main St., Newington, CT 06111.