

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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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 Street, 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.

Kazimierz "Kai" Siwiak, KE4PT

Perspectives

Constraints

It should not surprise you Dear Reader, that your Editor does not write the all of the articles that appear on these pages. You do, or at least a fraction of your colleagues do! The Editor and a capable Support Staff quite simply edit the content. That means we tend to the technical accuracy of articles, and we set the text, equations and figures to the *QEX* template. It is not unlike the bi-monthly tile-matching puzzle video game Tetris, with game over on the publishing deadline. Articles, ads, and announcements must fit within the publisher's page constraints. Page count must be a multiple of 4 pages, or better yet, a multiple of 8 pages.

I bring this up because we've received requests for *limiting* the technical content and for *expanding* technical content, as well as for *covering* and *avoiding* some topics, and for *limiting the length* articles. In an ideal world we would conjure up a perfect balance of content. In reality the supply of articles is quite limited. In May 2017 we added a *Technical Notes* column to help fill the queue with short-length technical articles and observations that would be of interest to the communications experimenters. We've run several, and several more are queued up.

You, Dear Reader/Author, not the Editor, are in charge of the *QEX* content, by submitting articles and short technical exchanges. Review the handiwork of your colleagues in the 2017 Annual Index, herein, and please, join them with your contributed article.

In This Issue

Our *QEX* authors contributed to the communication's experimental arts in a wide variety of Amateur Radio topics.

George R. Steber, WB9LVI, uses variable capacitance diodes to replace expensive mechanically adjustable capacitors in an RF project.

Dr. Sam Green, WØPCE, relates the technical challenges in modifying coupler and higher frequency logarithmic detectors to extend frequency range of his SWR meter up to 4 GHz.

Michelle Thompson, W5NYV, and Howie DeFelice, AB2S, discuss the challenges of uncertain launch schedules, development schedules and justification for the projects that face next generation AMSAT satellites.

Tom Apel, K5TRA, applies his designs of evanescent mode circular waveguide 10 GHz filters with bandwidths up to 5% to his microwave test set.

Rick Campbell, KK7B, designs square four-element antennas for VHF and UHF.

Keep the full-length *QEX* articles flowing in, but if brevity is your forte, share a brief **Technical Note** of perhaps several hundred words in length plus a figure or two. Expand on another author's work and add to the Amateur Radio *institutional memory* with your technical observation. Let us know that your submission is intended as a **Note**.

QEX is edited by Kazimierz "Kai" Siwiak, KE4PT, (ksiwia@arrl.org) and is published bimonthly. *QEX* is a forum for the free exchange of ideas among communications experimenters. The content is driven by you, the reader and prospective author. The subscription rate (6 issues per year) in the United States is \$29. First Class delivery in the US is available at an annual rate of \$40. For international subscribers, including those in Canada and Mexico, *QEX* can be delivered by airmail for \$35 annually. Subscribe today at www.arrl.org/qex.

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Very best regards,

Kazimierz "Kai" Siwiak, KE4PT