

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

Digital DXCC

Counting countries worked has been a passion among hams since the beginning of Amateur Radio. That passion spawned the ARRL DXCC Awards program, which is currently available in four mode flavors: CW, phone, digital and mixed modes. Digital-mode DXCC was for a long time practiced using RTTY, which itself evolved over the years to the currently popular ham version of two alternating carriers separated by 170 Hz, using 5-bit Baudot code plus one start and one-to-two stop bits, each bit 22 ms long. The DXCC award mode was called "RTTY" but the ARRL counts just about any digital mode for the RTTY award. The award is now known as the "DXCC Digital Award."

We've noted before in this column that the use of digital modes in Amateur Radio has grown dramatically in recent years. Indeed, according to the ARRL, "For newcomers, data emissions are far more popular than telegraphy" (Petition to FCC for Rule Making, February 2018). Today, a simple 'SDR System' comprising a recent transceiver plus a sound card — or an SDR radio — plus a computer running *WSJT-X* or *fldigi* or other software, enables a multitude of digital modes including FT8 and RTTY. FT8 is rapidly gaining popularity in the DX community.

Today some hams are asking for a separate DXCC FT8 award category. As this editorial is being written, the ARRL DX Advisory Committee is surveying the wishes of the ham radio community regarding the FT8 DXCC question. Insofar as *QEX* is concerned, we are a forum for communications experimenters, so tell us how you are evolving into this exciting digital world!

In This Issue

We feature a range of topics in this issue of *QEX*.

David M. Collins, AD7JT, designs an innovative CW keyer.

Bob Simmons, WB6EYV, introduces additional PIC programs for his VoIP board.

Thomas M. Allread, VA7TA, builds a portable wide dynamic range RF field strength meter.

Paul Wade, W1GHZ, finds a range of measurement uses for an antenna analyzer.

Virgil Leenerts, WØINK, describes an experimental impedance measuring instrument based on the Howland current source.

Maynard Wright, W6PAP, revisits trimming the wire dipole antenna using remote measurements.

Keep the full-length *QEX* articles flowing in, or share a **Technical Note** of several hundred words in length plus a figure or two. Let us know that your submission is intended as a **Note**. *QEX* is edited by Kazimierz "Kai" Siwiak, KE4PT, (ksiwiak@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