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 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.

Kazimierz "Kai" Siwiak, KE4PT

Perspectives

Re-cycling, Adapting, Adopting

The January / February 2022 *Perspectives* on "Re-cycling Electronics" drew several responses, including one from Bob Simmons, WB6EYV, who also laments (we paraphrase and quote his remarks), that "the days of salvaging televisions is gone forever... and that extracting resistors and capacitors from phenolic terminal strips and Bakelite tube sockets was about as genteel a process as a wisdom tooth extraction." Bob further notes that "rather than trying to salvage parts and save mere pennies, we might better encourage and cultivate new alternative technologies, and skills that would better benefit home brewers. At one time, the only skills a good ham needed were the ability to copy [Morse] code, and to use a soldering iron. Everything else involved skills that you could find in a carpenter's shop."

Bob gave examples of his projects where he employed materials like Kapton®, Delrin® and older standbys like acrylic plastic (PLEXIGLAS®), using modern techniques like computer controlled laser cutting technologies. We can add 3D printing to the list of modern techniques, and the widespread application of single board micro-controllers, and writing of micro-controller code, to the list of modern technologies and skills.

We asked, "what can today's home brewer recycle into a ham project?" It's now about adapting and adopting new technologies, and new skills.

In This Issue:

- Rick Muething, KN6KB, Tom Lafleur, KA6IQA, and Tom Whiteside, N5TW, describe IONOS, an ionospheric simulator for ARQ protocols.
- Barry Chambers, G8AGN, builds and operates simple 30 THz equipment.
- Arlen Young, K6KZM, builds a loop array for receiving low-band signals.
- Eric Nichols, KL7AJ, in his Essay Series, investigates ac electronic behavior.
- Brian Callahan, AD2BA, repurposes portions of a transmitted image to carry other information.

Writing for *QEX*

Please continue to send in full-length *QEX* articles, or share a **Technical Note** of several hundred words in length plus a figure or two. *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. All members can access digital editions of all four ARRL magazines: *QST*, *On the Air, QEX*, and *NCJ* as a member benefit. The *QEX printed edition* is available at an annual subscription rate (6 issues per year) for members and non-members, see **www.arrl.org/qex**.

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Very kindest regards,
Kazimierz "Kai" Siwiak, KE4PT
QEX Editor