

## 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](http://www.arrl.org/qex) or by e-mail to [qex@arrl.org](mailto:qex@arrl.org).

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Ron Diehl, NQ8W

# Perspectives

One of the enduring strengths of amateur radio experimentation is that it thrives at the intersection of theory, construction, and measurement. None of these alone is sufficient. Theory without hardware risks abstraction. Construction without understanding becomes folklore. Measurement without context can mislead. The articles in this issue of QEX remind us that progress occurs when all three are brought together deliberately.

We begin with a deceptively simple idea: a classic 90-degree corner reflector, reimagined. By tilting the driven element, circular polarization emerges — not through hybrids, delay lines, or complex feed networks, but through geometry itself. This work is a reminder that innovation does not always require new components; sometimes it requires revisiting old ones with sharper questions. The ability to switch polarization sense through a single-feed mechanical rotation is both elegant, practical, and reinforces a central QEX theme: simplicity earned through understanding.

That same grounding in fundamentals carries through our three-part tutorial on coils. Inductors are among the most common components in amateur radio — and among the most misunderstood. At RF, coils are no longer ideal elements drawn on schematics; they are distributed systems shaped by permeability, skin effect, self-resonance, and loss. Whether used as loading inductors, trap elements, or common-mode chokes, their behavior determines antenna efficiency and system performance. By focusing on how coils behave in real hardware, this series bridges textbook concepts and on-the-air results.

Circuit analysis provides a complementary discipline. Nodal analysis is not glamorous, but it is powerful. When multiple sources interact, intuition alone can easily fail. The step-by-step examples presented here show how identifying equal-potential nodes brings clarity where confusion often reigns. This is not math for its own sake — it is a way to think clearly about circuits before mistakes are soldered into copper.

Finally, measurement brings everything home. Using WSPR as a statistical tool to estimate relative antenna gain demonstrates how modern networks can support serious experimentation. By alternating between antennas and applying time-averaged SNR analysis, this work shows both the promise and the pitfalls of real-world data. Propagation, obstructions, and noise all leave fingerprints — but with careful methodology, meaningful conclusions still emerge.

Together, these articles reflect what QEX is about: asking precise questions, building thoughtfully, measuring honestly, and learning something real along the way.

## Writing for QEX

QEX is a forum for the free exchange of ideas among communications experimenters. QEX is published bimonthly.

Please 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](mailto: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](http://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 Margie Bourgoin, ARRL, 225 Main St., Newington, CT 06111.