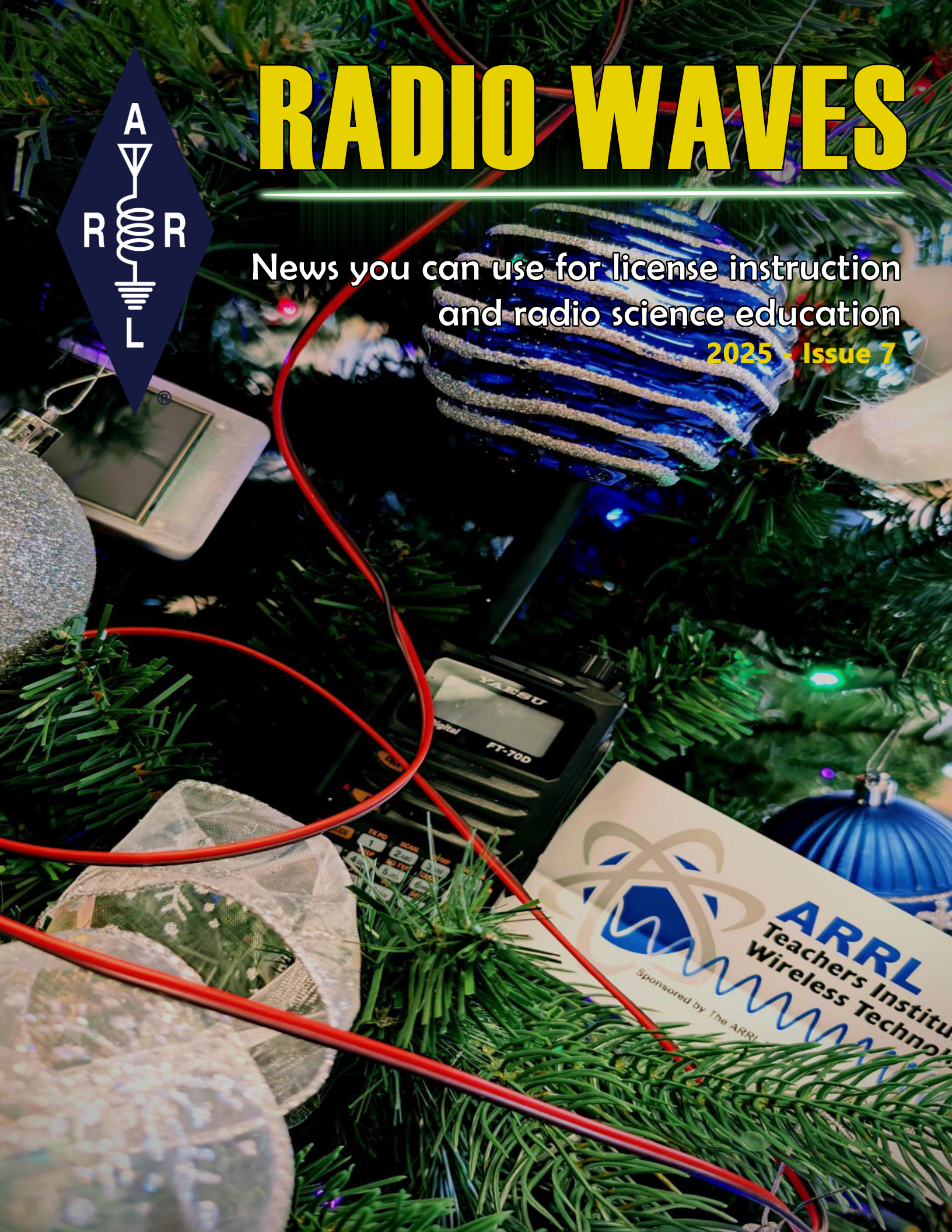




RADIO WAVES

News you can use for license instruction
and radio science education

2025 - Issue 7



To Instructors, Educators, and All Those Who Take an Interest in The Education and Exposure of Amateur Radio to Current and Future Hobbyists:

As the 2025 calendar year comes to an end, this December edition of Radio Waves looks a little different from the usual format of the digital newsletter. The department is keeping busy this season as the year comes to an end, with our 4-person team divided amongst a variety of projects in service of our valued membership base that can be found in the Learning Center and on arrl.org, as well as projects aimed at inspiring interest in radio in up-and-coming generations. In this letter, we have chosen to highlight our progress in a few current and future efforts to increase the awareness of radio technology as a multifaceted hobby for both current fanatics and future generations.

This year, our very own Wayne Greene, KB4DSF, began hosting a monthly 1-hour On the Air Live series. The new series, hosted on Zoom and archived in our Learning Center, has already garnered a cumulative 1,136 virtual attendees. The series has touched on topics such as SSTV imaging, APRS, POTA®, and an introduction of National Preparedness Month for September. A comprehensive summary of each monthly stream will be available in On the Air. Wayne is also heading ARRL's new Live Licensing Courses, again accessed through the Learning Center, beginning in December 2025. The program will start with the Technician license courses, and a General license course will debut later in 2026.

Additionally, Wayne was the first to instruct classes for two brand new TI Elective courses: TI-Balloons and TI-Space. Wayne is leading the development of a new TI Elective offering aptly named TI-RF Wireless Security. The course, which is scheduled to be held at headquarters next year, will focus on analog and digital modulation and signal analysis. The class will then have some fun running replay attacks.

Max Freedman, N4ML, joined the team in early February and has been collaborating with other ARRL departments across multiple initiatives. Notably, he has produced a 12-part video course entitled "Fundamentals of Amateur Radio Contesting." The course is available on our Learning Center, ARRL's digital collection of courses, webinars, and presentations about amateur radio topics for learners of all ages. Max's course is ideal for someone wishing to try out new contests and includes short guides on the various amateur radio contests, as well as tips for success.

The Director of Education and Learning, Steve Goodgame, K5ATA, has attended 9 conferences across the country this year to raise awareness of our department's educational initiatives. Notably, he arranged a TI-1 to be hosted in the Applied Physics Lab at Johns Hopkins University, and we will be returning to hold another session next summer. Steve is also currently overseeing the development of a national-learning standard-aligned STEM curriculum to be beta-tested and rolled out in the next year. This effort will include a STEM activity kit made available for classrooms that can be ordered by individual teachers or schools to supplement student learning with materials for hands-on activities.

In 2025, we held thirteen professional development sessions for the Teachers Institute (TI) on Wireless Technology. Our entire team worked to prepare the materials, ready the space, lead the workshops, and send each session's cohort home

with new learning and resources for their students. Eliza Croarkin, KC1TAP, worked to create visual flyers and posters to generate interest in school settings and at convention halls. She also created our post-session survey and analyzed the feedback of over 100 teachers. It's clear that our instruction, hands-on methods, and collaborative atmosphere across the 4-day sessions are making a positive impact on teachers and their school communities. In the post-session survey, 92% of teachers who responded felt that attending TI was impactful on a personal level for their understanding of amateur radio and wireless technology, and 91% of the 2025 TI graduates said that they would recommend the ARRL Teachers Institute to a friend or colleague. A TI-1 graduate, Mary Jean Hall, KY4FB, lamented that cost was one of the biggest barriers to incorporating ham radio into her classroom. "I love that you actually sent the initial materials with us," Hall added. "I can't express how much of a gamechanger it is to at least have one set of materials as a teacher demo. I have attended other workshops that teach awesome activities, but the supplies are expensive, and teachers do not get anything. I also love that there is a grant available for supplies. It makes me so happy to see that ARRL has figured out how to offer that. This will be critical in helping teach ham radio and similar skills to the next generation. This all makes it possible."

This winter, we are excited to announce that we will be awarding nearly \$25,000 worth of equipment and materials to educators across the US who applied for the Education and Technology Program (ETP) School Station and Progress Grants. A projected 1,200 students will be directly engaged in the grantees' plans and clubs. Eliza will be ensuring the timely delivery of materials to the

grantees and collecting all data sent back to ARRL from the grantees’ classrooms. Be sure to check out upcoming newsletter issues to see how teachers and students are making “radio waves” in their Science Technology Engineering and Mathematics (STEM) classrooms and radio clubs.

Our department has had time to reflect on and plan to improve our TI program for next year. Our last TI session ended in late October, and the department is already hard at work to promote and prepare instruction and materials for over 21 Teachers Institute sessions next year. We’re keeping our fingers crossed that we’ll ultimately be able to add even more sessions to the 2026 roster. Furthermore, we are collaborating with selected TI alumni who are being trained to lead TI sessions themselves as our program grows. These “On the Road” TI sessions will be held in other US locations away from headquarters in order to engage with even more teachers and schools and maximize the power of each donated dollar in the budget. The TI program is made possible with generous donations from donors who give specifically to The ARRL Education and Technology Program. Thank you.

Wishing everyone a joyous and “radio-active” end to their year!

73,

The ARRL Education Department

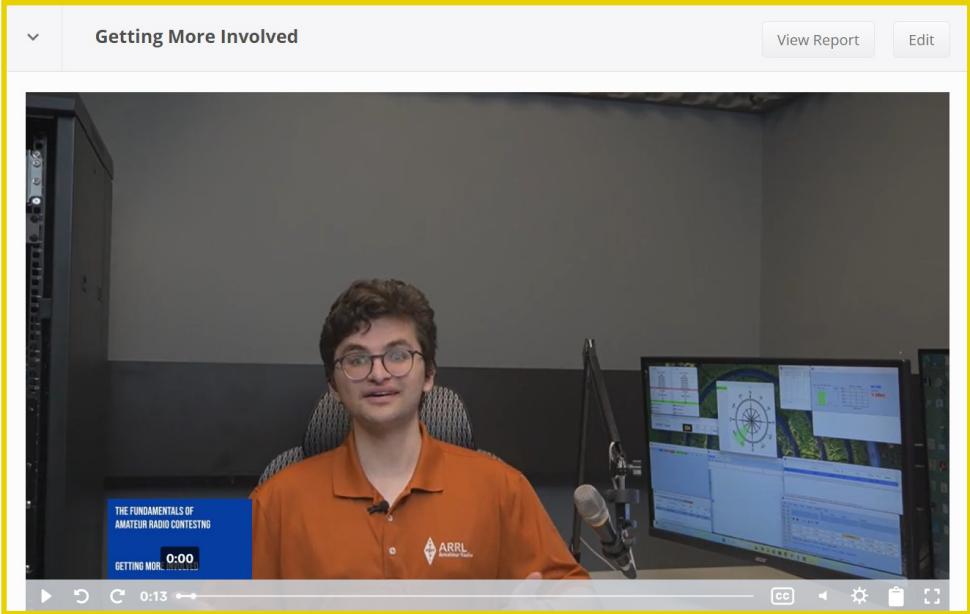
- Steve Goodgame*, K5ATA, Education and Learning Director
- Eliza Croarkin*, KC1TAP, Education and Learning Coordinator
- Wayne Greene*, KB4DSF, Education and Learning Specialist
- Max Freedman*, N4ML, Education and Learning Support Specialist



Sneak Peek: Wayne is testing out some equipment for the new elective course, TI RF (top) A YARD Stick One software-controlled radio and (bottom) a wireless infra-red alarm.



Steve Goodgame, K5ATA, attending the National Science Teachers Association Conference in Minneapolis, MN this year.



In the second half of the video series, “Fundamentals of Amateur Radio Contesting,” Max explains how you can get more involved.



On The Air Live logo. Come join Wayne in a 1-hour live streams on new ham radio topics each month. Register on the Learning Center early – seats have been known to go fast!

As seen in this issue of *Radio Waves...*

Did you know that open enrollment for all 2026 Teachers Institute on Wireless Technology Sessions has begun? To qualify, TI applicants must be an active U.S. schoolteacher at an elementary, middle, high school or at a college or university, or in a leadership or enrichment instruction role in an after-school or collective homeschool program. Take a look at our newly expanded 2026 [TI Brochure](#) or explore more [about the TI program](#) here.

A big thank you to all those who made this edition possible.

Radio Waves aims to showcase how educators and license class instructors are getting their students and local communities involved in ham radio. These efforts deserve to be documented and shared. The contributors are teachers and instructors who are currently bringing amateur radio into the classrooms and beyond, just like you.

Many instructors and teachers made mention of materials and resources created by ARRL. Click any bullet to learn more about the item.

- [ARRL Teachers Institute](#)
- [ARRL Scholarships](#)
- [ARRL Instructor Resources](#)
- [ARRL Teaching Lesson Plans](#)

Add Your Voice: Write a short narrative about a specific teaching struggle, success, or learning breakthrough. We are seeking submissions of 300 – 500 words, and you are highly encouraged to send any pictures of yourself, your students, and the activities you introduced. Submissions can be sent to our email: radiowaves@arrl.org. Please use our [Model Release Form](#) for photos. Explore our [previous publications](#).

By submitting writing or photographs with completed model release forms, you grant ARRL permission to edit and use these materials for any publication purpose.

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