

**American Radio Relay League
Proposed 2022**

**Departmental Plans
Revised 12/30/2021**

**BOARD
CONFIDENTIAL**

**American Radio Relay League
2022
Department Plans**

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Membership, Marketing & Communications

Kathleen Callahan, Membership, Marketing & Communications Director

Membership, Marketing & Communications

2021 has been a challenging year with staff turnover, the discovery of silent keys in the database resulting in a reduction of 1,400 Life Members, several staffers still preoccupied with the Personify project, and the delay in integrating our marketing automation software and Learning Center.

To recover from the 2021 setbacks, we will be investing in more aggressive and iterative marketing techniques.

2022 Membership Forecast

Year end 2021 (projected)	157,900
Net Gain (1.97%)	<u>3,110</u>
Year end 2022 (projected)	<u>161,010</u>

2023 Membership Forecast

Year end 2022 (projected)	161,010
Net Gain (2.02%)	<u>3,252</u>
Year end 2023 (projected)	<u>164,252</u>

Increase Acquisition

- *New Ham Mailings-FCC List*
A new series of new ham mailings that started in October 2021 will be refined to keep the messaging fresh. In addition, the first three months of 2022 include a test period supplying each new Tech licensee with a print copy of *On the Air* magazine. This print magazine inclusion will be measured again in previous offerings to see if responses to this mailing increase.
- *Online Advertising*
Funds were added this year to test online advertising and social media paid ads to reach prospective new hams at the start of their amateur radio journey.
- *Outreach to Never Member Hams*
A campaign has been developed to engage never members in all areas of ARRL and collect email addresses. Biannual printed offers (30,000 each) and bi-monthly emails to a smaller audience (17,000) for whom we have email addresses will be consistently targeted.
- *Consistent Contact Form Follow Up*
A number (15) of web-based forms collecting prospect information have been neglected over the past few years, from the Exam Prep leads to LOTW to Website Guest Accounts. In July 2021, we began marketing monthly to these audiences. Currently, these are pulled and processed manually. We expect to have them automated once a data warehouse and Informz integration is complete.

- *ODV, SM, and Club Outreach*
Bi-Annual email reminders to communicate the resources available to these groups will be coordinated with Field Services to increase local recruitment efforts. We will also be actively engaging these audiences to develop resources to communicate the ARRL Membership messages more effectively.

Improve Retention-Renewal & Engagement

- *New Renewal Series*
Added email reminders and promotions to entice earlier, non-incentivized renewals; will begin in January 2022. This includes promotions to acquire members for a three-year term and promote auto-renewal opportunities. Increasing early renewals will help reduce mailing costs. The elimination of free books as part of the renewal process in 2021 has so far not reduced the number of renewals; our Year 2+ renewal rate remains at 72%.
- *Promote auto-renew*
When Personify launches, members will have the ability to sign up for auto-renewal. This will be heavily promoted within our membership renewals, and we hope that this new payment option will increase renewals and reduce the mailing costs of renewal notices.
- *Renewal Reminder Cover Tip on QST*
Began in October 2021 as an added renewal reminder to members 30 days before their membership expiration and will serve as an added reminder to renew.
- *First-time member onboarding*
This campaign will include a series of eight emails to introduce the new ham to ARRL, how they can get involved as a member, and their benefits. It is intended to increase new members' engagement and ultimately first-year conversion.
- *Member engagement*
Requires ongoing, proactive processes to reach members with the relevant connections, content, and benefits for them, at the correct times and in the right ways. For example, we launched *The Current* in June of last year, an enhanced monthly email announcing the digital magazines; opt-in subscribers are now 103,844.
- *Continuous feedback*
We will gather continuous feedback to refine and develop new benefits. This will be accomplished by emailing satisfaction and exit surveys, as well as conversations with members at hamfests.

Win Back More Lapsed Members

A series of routine print and email campaigns will be developed to reach out to more recent and deeply lapsed members. Email campaigns will run 3x a month, and USPS campaigns will run nine months throughout the year. In addition, a postcard mailer vs. letter test is being conducted in the Fall of 2021 to determine if this cost-savings method of mailing will produce the same results.

Staffing Changes & Updates

A new Membership Manager was hired in October. During the position vacancy, the campaigns to recruit and retain members have been developed and executed in collaboration with the

marketing department. This change in structure will allow us to "hold off" rehiring the Assistant Marketing Manager position until after the Personify launch and Informz integration to ensure the position's needs are accurately defined once increased automation and new initiatives are underway.

Assessing Workflows

With the introduction of Personify and the integration of Informz with this system, we can automate some of our communication processes and enhance prospective communication with automated email campaigns.

Automated email workflows that will send, segment, and personalize relevant emails to customers at the right time. Split-testing to improve conversion rates, Mobile-Optimized templates, and Personalization increase marketing opportunities within transactional emails on the Personify platform to cross-sell and engage members beyond promotional emails, demonstrating how we add value and build on the relationship. Increase dynamic content.

Publications & Product Sales

Publication and Product Sales Forecast by Category			
	2020 Actual	2021 Projected	2022 Plan
CLASS 01 HANDBOOKS	\$410,912	\$425,786	\$871,657
CLASS 02 REPEATER DIRECTORY PRODUCTS	\$115,809	\$122,446	\$121,637
CLASS 03 BEGINNER TRAINING PUBS	\$585,419	\$557,874	\$519,471
CLASS 04 UPGRADE LICENSING PUBS	\$498,998	\$415,355	\$346,510
CLASS 05 OTHER ARRL BOOKS	\$784,191	\$750,192	\$650,000
CLASS 07 NON-ARRL BOOKS	\$128,680	\$60,000	\$96,000
CLASS 08 RSGB BOOKS	\$55,510	\$36,000	\$12,000
CLASS 12 ROYALTY BOOKS	\$226,321	\$288,213	\$194,839
CLASS 32 MEMBERSHIP SUPPLIES	\$255,940	\$260,000	\$260,000
e-Book Royalties	\$98,840	\$96,000	\$48,000
PUBLICATION & PRODUCT TOTALS:	\$3,160,620	\$3,011,866	\$3,120,114

Publication Strategy

The new Assortment Planning Committee has been meeting monthly to advance the new publication strategy that focuses primarily on ARRL titles and limits the number of third-party titles to those that are high-quality, profitable, and fill an information gap for our members.

Enhanced marketing of our core titles and development of new products (end-fed antenna) will allow us to cover any lost revenue from the discontinued titles.

New Publications

Planning publications for 2022 include the *Han Radio License Manual*, *Tech Q and A*, *Get On the Air With HF Digital*, *Successful Parks on the Air*, *ARRL Periodical DVD*, *100th Edition ARRL Handbook*, *ARRL Calendar*, and *Repeater Directory*.

2022 Publication Challenges

- A limited number of new titles.
- The anticipation of the 100th Edition ARRL Handbook in 2022 may limit sales of this popular title.
- Plus, the commemorative edition is still in the works, affecting the retail, unit cost, and average selling price.
- Book delays, paper shortages, and staffing issues at printers add significant uncertainty to sales forecasting.
- In 2022, a new Technician Class question pool will prompt new editions of *The ARRL Ham Radio License Manual* and *ARRL's Tech Q & A* in May. Most introductory license manuals are sold through Dealers, notably Amazon, whose ordering pattern is unpredictable.

Direct vs. Dealer Sales -2021 YTD

- 59% of total sales were to members and individual customers.
- 41% to dealers and wholesalers.

Top 10 Grossing Publication Titles and Merchandise Lines Oct 2020 to Sep 2021 (12 months)

Product Description	QTY	Gross Sales	Net Sales
<i>ARRL Handbook</i>	14,835	\$675,508	\$562,092
<i>ARRL Ham Radio License Manual</i>	20,324	\$456,283	\$401,360
<i>ARRL General Class License Manual</i>	8,536	\$194,328	\$166,507
<i>ARRL Extra Class License Manual</i>	6,108	\$141,980	\$112,732
<i>ARRL Antenna Book</i>	3,482	\$123,938	\$95,177
<i>ARRL Repeater Directory</i>	7,375	\$97,251	\$71,548
ARRL Field Day merchandise	9,432	\$90,413	\$60,640
<i>Grounding and Bonding</i>	3,957	\$67,925	\$63,889
<i>Get on the Air with HF Digital</i>	3,902	\$65,551	\$61,220
<i>Portable Operating for Amateur Radio</i>	3,620	\$59,225	\$47,423
TOTAL – Top 10		\$1,972,402	\$1,642,588
TOTAL – All Products		\$3,041,794	\$2,435,621
Top 10 as a percentage of total sales		65%	67%

Non-Publication Products

The new store strategy focused on seasonal products has maintained an active inventory and minimized outdated items in the warehouse. The product mix introduces seasonal, limited-time items to keep the product mix fresh throughout the year.

Evergreen products will produce new photography to freshen the look and be routinely featured in communications to maintain visibility. With the integration of Informz, we will target and segment past purchasers with products that will be most appealing.

Promotional pricing, print advertising (in *QST* and *On the Air*), direct mail campaigns, monthly communications (e-newsletter), and email marketing comprise the primary marketing tactics employed to promote our publication and product offering.

Promotional Changes

The new AMS, *Personify*, prohibits unique individual promotional codes. As a result, we adjusted many of our promotions beginning in 2021, and further adapted our approach by offering distinct member and non-member pricing year-round on most items once *Personify* launches. There will be a learning curve as we switch from the Siebel system to *Personify*'s AMS.

Annual Higher Logic Software Subscription Fee

This email automation software was licensed in October 2020, for a 3-year term. In the year since we have implemented this software, it has provided us with a fuller and more detailed picture of our member's and prospect's behavior. By providing data on deliverability, open and click rates we have refined our prospect lists and messaging. We now can add personalization, analyzing scoring, and create follow-up and drip-email campaigns to maintain interest in our products and services. The software also provides reports and scoring on prospects to help us prioritize communications and drive more segmented marketing campaigns.

When fully integrated with *Personify*, the *Informz* software will streamline, automate, and measure our marketing tasks and workflows, making our efforts more effective and efficient. The estimated integration timeline is six months from the *Personify* "go-live" date.

Forwarding

Our 2022 Forwarding plan anticipates a 3% postal increase that USPS would require and will ultimately take effect in January 2022.

QST Circulation

Print *QST* is fulfilled to most domestic members via a "Co-mail" strategy. Co-mailing ensures the greatest savings (postage and handling) and best delivery times. Print *QST* circulation is decreasing (circulation Sept 2021 = 117,000 copies (Sept 2020 = 127,000 copies; Sept 2019 = 139,500).

With a new surcharge on freight rates and an anticipated postage increase for both domestic and international, *QST* Forwarding will be an additional \$50K from the 2021 Plan.

On the Air Circulation

On the Air is offered as a print magazine option, mailed to domestic members. Print *On the Air* circulation is increasing (circulation Sept/Oct 2021 = 24,100 copies (Sept/Oct 2020 = 19,500 copies).

In late April 2021, the USPS granted authorization for *On the Air* to use Periodical Mailing Privileges. Periodical Class is the lowest rate available and something we have been working to gain for over a year. The savings is approximately \$3,000 per issue.

Convention and Hamfest Program

The return to participating at in-person events began in August 2021 and expectations are that a full slate of Convention and Hamfest Program activities will return in 2022. We are not planning any international travel for 2022 due to continuing international COVID concerns but will participate in the largest five U.S. events and provide exhibit support for the International Exhibition of Radio Amateurs in Germany.

- 2022 ARRL National Convention at Orlando HamCation® (February)
- Dayton Hamvention (May)
- SEA-PAC (June)
- Huntsville Hamfest (August)
- Northeast HamXpostion (September)
- Pacificon (October)

Advertising Sales

Janet Rocco, Advertising Sales Manager

Advertising revenue for *QST* in the 2022 budget is aggressive. New advertiser acquisition is the priority for 2022 and it is reflected in the *QST* numbers.

Items that were introduced in 2021 and are continued in the 2022 budget:

- *QST* Field Day Supplement
- Contest Content Supplement

As OTA gains more popularity, ad rates for 2022 have been increased.

QEX and *NCJ* advertising remains stable and the budget for 2022 reflects this.

Electronic advertising including E-Newsletters has seen a slight uptick as new and current advertisers are trending to digital ads. Ads on the ARRL website have become more numerous and the 2022 budget reflects this. We will continue to offer services to assist our clients with updating and/or creating new ads and to freshen up the look and content of their ads. A newsletter client who changes his ad each week consistently receives one of the highest overall click-through rates. Having been under consideration for some time, updating the look and feel of the newsletters could possibly garner more interest from our advertisers.

Publication advertising has become less popular in recent years. Advertising dollars are at a premium and as a result book advertising has dropped off in the past few years.

Advertising strategies that can be considered as new or updated revenue streams for 2022, are as follows:

- Training Tracks sponsorship at Hamcation
- Mobile app sponsorship at Hamvention
- ARRL Annual Auction Sponsorship(s)
- ARRL Shopping bag Sponsorship(s)
- Learning Network Webinars Sponsorship Packages
- Acquisition of more European companies as advertisers
- Companies whose products align with Amateur Radio
- Logo placement in *The Current*

Work will continue to engage our business partners in conversations that can potentially assist us in discovering new ways of advertising that will be beneficial to both their bottom line and ours. We are also continuing to explore opportunities with 3rd party advertisers. These are companies offering products and services of tangential interest to our members that may not be directly involved in amateur radio.

Publications & Editorial

Becky Schoenfeld, Publications & Editorial Manager

Personnel

While there are no new staff positions planned for 2022, it's important to remain aware that the organization has an increasing need for content across an increasing number of platforms, and that Publications & Editorial staff also serves other departments in the building. It is likely that the Publications Department will need additional editorial staff, particularly at the Assistant Editor and Copyeditor levels, to keep up with demand.

Some of the increase in editorial workload will come as a result of the retirement of several of the department's contractors — some of which are in progress now, and some that will occur within the next few years. Replacing these contractors is proving difficult, as many of the most qualified candidates are also of retirement age. Mark Wilson, K1RO, who until recently managed ARRL's book projects and *QST*'s "Product Review" feature, has been replaced by a new Publications Department staff member on the books side, and "Product Review" will be handled by a new contractor, with editorial support from department staff (whereas Mark used to handle many "Product Review" editorial duties himself). Replacing Ward Silver, NØAX, will likely require several contractors (a *Handbook* editor, an *Antenna Book* editor, and a series editor for ARRL's suite of licensing exam prep materials), and it is likely that these contractors will need more editorial support from department staff than Ward did.

News contractor Rick Lindquist, WW1ME, and editorial and podcast contractor Steve Ford, WB8IMY, are also talking about reducing or eliminating their commitments to ARRL, citing a desire to be truly retired. Efforts to find a successor for Rick Lindquist have been underway for months but have not yet produced any viable leads. Steve Ford may, like Ward Silver and Mark Wilson, need to be replaced by more than one person. It will be particularly difficult to replace him in terms of someone who can write for *On the Air*.

Books and Magazines

The publishing world is being severely affected by paper shortages as well as worker shortages at printing houses and in the transportation industry. These shortages are driving up the cost of paper, printing, and shipping, as well as causing many publications to miss their printing and shipping deadlines. Several ARRL books have already missed printing and shipping deadlines because of these difficulties.

E-Newsletters

The ARRL Letter continues to be highly successful with more than 110,000 weekly subscribers — a figure that approaches *QST*'s circulation. We have seen steady circulation increases for the *ARES Letter* and *Contest Update* as well. We believe these increases are indicative of a rise in the appeal of focused e-letters generally. In autumn 2021, *Contest Update* moved to the Radiosport Department, as it will now be edited by Paul Bourque, N1SFE. Publications & Editorial staff will still copyedit & fact-check as needed.

Pending the full implementation of the Personify 360 system, the e-letters will be redesigned to increase their reader appeal. Explore the feasibility of creating new targeted e-letters.

Podcasts

The ARRL Audio News, Eclectic Tech, and On the Air podcasts continue to do well, with a weekly listener audience in the range of 3,500-4,500 individuals. Steve Ford retained the bimonthly Eclectic Tech podcast after his retirement in August 2020 and took on the On the Air podcast from Becky Schoenfeld when her workload prohibited her from working on it. News Editor Rick Lindquist took on production duties for ARRL Audio News after Steve's retirement.

2022 Book and Software Projects

<i>Title</i>	<i>Author</i>	<i>To Press</i>
<i>Ham Radio License Manual</i>	TBD	04/01/2022
<i>Tech Q and A</i>	TBD	04/15/2022
<i>Get On the Air With HF Digital, 2nd Ed.</i>	Steve Ford	05/01/2022
<i>Successful Parks On the Air</i>	Don Dickey	June 2021
2021 Annual Report	Publications	06/20/2022
<i>2023 ARRL Handbook - 100th Edition</i>	Ward Silver	07/15/2022
2023 Calendar	Publications	07/22/2022
<i>2023 Repeater Directory</i>	RFinder	09/15/2022
<i>Antenna Towers 2nd Edition</i>	Don Daso	10/01/2022
Periodicals DVD/download	Publications	11/15/2022

The following books are currently in process and will be delivered in 2022.

Antenna Towers (reprint)

Basic Antennas (reprint)

2021 Periodicals

Development

Melissa Stemmer, Development Manager

In 2021, the Development Office continued the focus on building relationships with donors through increased communication. Diamond Club has been a major focus throughout the year with marketing efforts targeting potential members. With the upcoming addition of the Development Director to the Development Office, cultivating estate and major gifts will be the focal point of the department in the upcoming year.

Primary goals of the Development Office in 2022 will be:

- To begin cultivating new estate and major gifts from our current donors.
- To identify new potential major donors from our membership base and begin cultivating those relationships.
- To continue to build Diamond Club through targeted communications and by developing a sense of pride in the program.

The Diamond Club

2022 Goal: \$390,000

2021 Goal: \$380,000

The Diamond Club remains a critical resource for raising unrestricted revenue for ARRL. The goal for 2022 has been increased to reflect the outcome anticipated from plans to grow the program through continued targeted communications, highlighting the value of Diamond Club and building a sense of pride in being a member.

Efforts to gain new and increased Diamond Club members will include soliciting term members during basic membership renewal with promotional material updated with 2021's accomplishments due to unrestricted gifts, targeting long-term ARRL members (five years of membership or more), reaching out to lapsed Diamond Club members, and soliciting Life members, many of whom still want to contribute to ARRL in a meaningful way. Plans are underway to create a new and exclusive Diamond Club Badge that will highlight members' longevity of being a Diamond Club member and building the sense of pride that comes along with such a commitment.

The Diamond Terrace, started in 2007, currently holds 2,508 engraved bricks; 91 engraved bricks have been placed in 2021.

At the end of 2020, there were 1,519 Diamond Club members: 325 Life members and 1,194 Term members. Diamond Club giving totaled \$402,478 in 2020. As of September 30, 2021, there were 1,454 Diamond Club members contributing \$281,000 of unrestricted donations.

The ARRL Maxim Society

The ARRL Maxim Society honors ARRL donors whose cumulative lifetime contributions to ARRL reach \$10,000. To date, there are 326 members in this distinguished group; 29 have been welcomed to date in 2021 and 9 members have moved to a higher Maxim Society class this year.

The Maxim Society continues to be an incentive for individuals to contribute to ARRL. Staff alert donors when they are nearing the \$10,000 threshold so they can attain this special designation. Maxim Society promotional materials have been updated and are included in Diamond Club renewal letters and donation acknowledgement letters.

The Legacy Circle

ARRL continues to be the beneficiary of multiple bequests. To date in 2021, ARRL has been notified of more than \$600,000 in bequests from three estates. The Development Office receives inquiries about planned giving on a regular basis. When a member informs us that ARRL is in their estate plans, a copy of the documentation is requested - which is kept in a confidential file until the gift is realized. While gifts may not be realized for many years, bequests and other planned gifts have tremendous potential to finance ARRL in the future.

The Development Director will play a key role in creating engagement opportunities with major gift donors and prospects to build relationships to connect ARRL with individuals' giving aspirations. It is expected that the Development Director will be on the road travelling to meet with donors and prospective donors. A targeted Legacy Circle mailing is planned for April 2022.

ARRL Funds

The Spectrum Defense Fund:

2022 Goal: \$285,000

2021 Goal: \$285,000

In the fall of 2020, Development sent out one single Spectrum Defense mailing instead of the traditional two mailings, because of the pandemic. Contributions to the Defense Fund in 2020 still met the department's goal as the fund continues to draw many contributors who are passionate about defending our amateur spectrum. In 2021, we have chosen to continue to send one Spectrum Defense solicitation in the fall. A targeted email promoting the Spectrum Defense mugs and pins was sent to consistent Defense donors in the spring. As of September 30, 2021, we have received \$123,000 in donations to the Spectrum Defense Fund, which is in line with donations to this fund at the same in 2020. In 2022 we will continue to send one targeted Spectrum Defense email in the spring and a mailing to a broader audience in the fall.

Development traditionally offers premiums for donations to the Defense Fund: a certificate for any gift amount, a pin for gifts of \$50 or more, and a mug and pin for gifts of \$100 or more. In 2022, we will be in the fourth year of our five year "bistro mug" series. Analysis shows that while a smaller percentage of Defense donors request premiums, their average gift is higher than non-premium donors.

The Education & Technology Fund (ETP):

2022 Goal: \$145,000

2021 Goal: \$145,000

The Education & Technology Fund receives several large gifts from major donors, many of whom have supported the fund at a significant level since the start of the Teachers Institute Program.

Annually, Development produces a direct mail solicitation in the late summer/early fall to approximately 50,000 members. The average gift to the Education & Technology Fund is generally smaller than donations to other funds.

The Legislative Issues Advocacy Fund and The W1AW Endowment:

There is no planned solicitation for the Legislative Issues Advocacy Fund or the W1AW Endowment Fund for 2022. Sporadic contributions will continue to arrive for both funds throughout the year without any planned solicitations.

Additional Development Funds:

Development's other established funds continue to perform well. These funds will continue to be promoted via the website, *QST* ads and the ARRL Current. In Personify, donation funds can be linked to membership products to prompt donations at the end of the join/renew cycle. The funds linked to the membership products will be changed periodically to promote donations to all active funds.

Other Development Activities

ARRL Donor Reception in Dayton:

The annual donor reception in Dayton on the Thursday evening preceding Hamvention is a favorite tradition for our guests. This gathering brings together ARRL Board members and leadership donors, including Maxim Society and Legacy Circle members.

Development has reserved the Schuster Performing Arts Center in Dayton for the 2022 Donor Reception. The guest speaker is yet to be determined.

Radiosport and Regulatory Information

Bart Jahnke, Radiosport & Regulatory Information Manger

Radiosport

HF Radio propagation has remained challenged, but activity on the bands has been strong and contests are continuing to see modest participation increases overall, driven strongly by digital modes. Recently, we have experienced some increase in sunspot activity, and this should help in all aspects of ARRL activities.

An early 2022 Bouvet Island DXpedition was canceled, another expedition has been planned and ARRL re-issued a Colvin Grant of \$5,000 to help support this effort of the #2 most wanted DXCC Country. DXpedition announcements together with the rising sunspot activity has the HF-community hopeful for 2022 and beyond.

Even so, with slow sunspot recovery, propagation lows, and DXpeditions few and far between, FT8, FT4, Q65, MSK144 and other digital modes continued to help spur growth in HF and VHF contests and casual operating, feeding Digital DXCC and DXCC Challenge, as well as WAS and VUCC Awards and Endorsements. Even so, while DXCC award submissions YTD lag projections, WAS and VUCC have exceeded projections (see table).

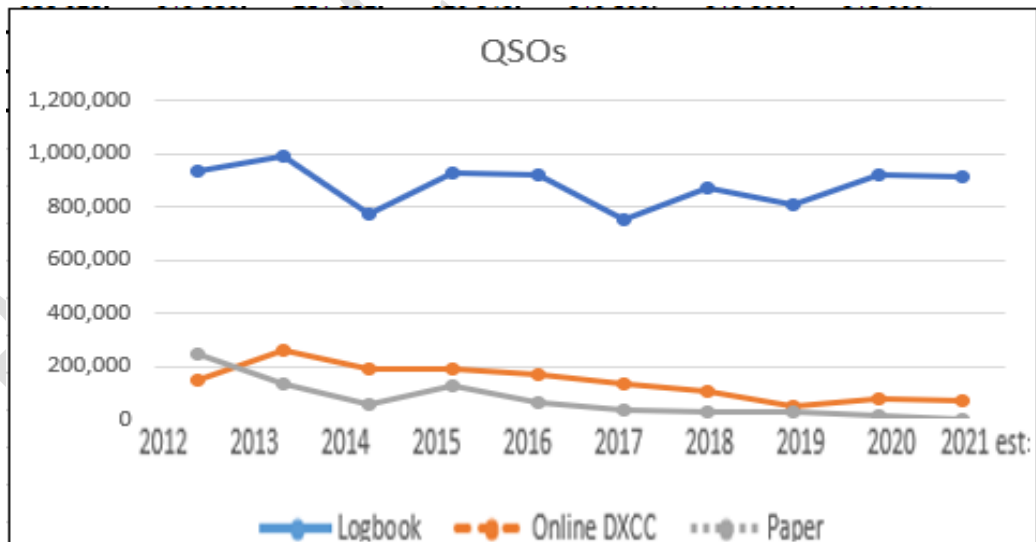
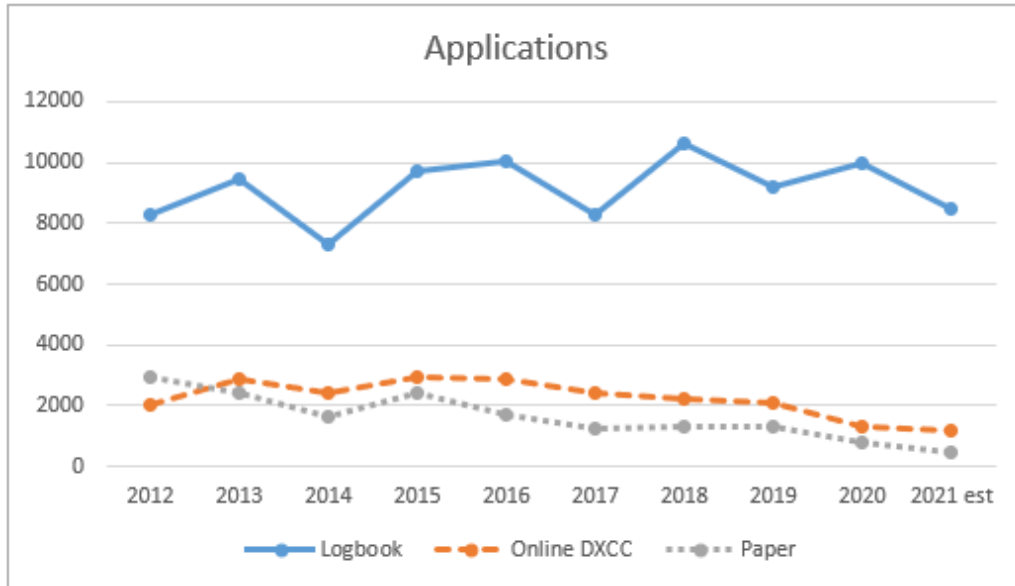
Award Activity

AWARD	2019 Total	2020 Total	2020 YTD thru Sep	2021 YTD thru Sep	2020-2021 % change	2022 Total (Projected)
DXCC	11,624	12,241	8,851	7,629	-13.8%	11,000
WAS	1,996	2,990	2,051	2,455	19.7%	3,400
VUCC	928	1,290	977	1,418	45.14%	2,000
WPX	787	1,099	763	738	-3.28%	1000
WAZ	749	951	686	657	-4.23%	900
WAC	112	167	122	92	-24.6%	125
Mobile DXCC	4	4	2	5	150.0%	5
QRP DXCC	2	0	0	2	200.0%	2

ARRL Award application processing fee volume has not carried over to added revenues as the increased volume was not in new applications, but rather in lower fee endorsement stickers and medallions. Requests for endorsements continue to be in large part due to increased digital mode activity.

Awards Processing

The trend of less paper applications continues, driven by continued interest in LoTW. The graphs below show this continuing decline.



Logbook of The World

LoTW continues to show exceptional activity. While sunspots are showing signs of the beginning of the new cycle, boosts in activity from digital modes continue to fuel activity and interest on the HF (and lower VHF) bands.

LoTW Stats (as of 4 Oct 2021)

1,407,912,029	QSO records have been entered into the system.
295,753,851	QSL records have resulted.
150,673	Users are registered in the system
215,944	Certificates are active
44,338,718	User files have been processed

LoTW is Radiosport's greatest revenue center, and with Project X on the horizon, LoTW can significantly benefit from enhancements planned for development in that initiative. The legacy LoTW platform is not being modified from its current state for other than maintenance updates or fixes that may be identified. This tact has been extremely effective as there has been no LoTW downtime for over 6 months. Each award that might be added would cause the legacy system to process transaction more slowly which is not effective.

Contests

2021 began strong for ARRL-sponsored Contest events. January VHF logs received were up over 25% as compared with 2020, while RTTY Roundup and ARRL DX were up 12% and 8% respectively. June VHF lagged 2020 numbers by about 25% but was higher than 2017-2019 participation.

2021 Field Day again offered accommodations to allow for social distancing: Including club aggregate scoring; allowing Class D and E stations to score points for contacting each other; and 150 watt power limit on Class D and Class E home stations to reduce home station band-width crowding of the bands.

With the CAC reviewing Contest Rules, as well as discussion on the development of a new digital contest, participants may have several changes to embrace as we head in to the 2022 contest season.

QSL Bureau

Paper QSL Card submissions in the first half of 2021 have been significantly lower than prior years. While the second half of the year is typically stronger, overall, the trend is that paper cards submitted will continue to decline as a percentage of total confirmations and LoTW continues to grow. With increased sunspots, a small growth is expected in 2022.

The current trend continues as more transactions with fewer cards are requiring more staff resources to open/sort/process. From 2020 to 2021 there was a 33% reduction in transaction size from about 15 cards to 10 cards per transaction

QSL Bureau Activity

	2019	2020	YTD 9/2021	2021 Projected	2022 Forecast
Total Transactions	2,419	2,247	2,204	2,900	3,000
Total Weight (oz)	28,211	33,914	23,701	29,000	30,000
Avg. Weight Per Transaction (oz.)	11.7	15.1	10.6	10.0	10.0
Total \$ Collected	\$24,120	\$14,002	\$12,178	\$16,400	\$17,000

Volunteer Monitor Program

With Riley Hollingsworth continuing as the face of the program, the Volunteer Monitors have active.

Activity Summary – January through September 2021

Activity	1st QTR	2nd QTR	3rd QTR	Total YTD
Hours Monitoring HF	4,686	3,326	6,371	14,383
Hours Monitoring VHF/UHF/Other	4,772	3,769	8,895	17,436
Incident Reports	75	88	90	253
Incident Reports Actionable	35	40	75	150
(some will be actionable only if repeated)				
Discrepancy Notices/Outreach/Letters/Email	40	40	32	112
Good Operator Letters	1	0	3	4
Referrals to FCC	3	3	3	9
Referrals from FCC	2	1	1	4
FCC Meetings	4	4	1	9
Club/Group Meetings (Virtual or In-person)	10	4	2	16

VM highlights include:

- After the Haiti Earthquake several Northeastern Amateurs received VM notices for not honoring the Emergency Declaration request for certain frequencies to be kept clear. It was noted that no malicious interference was observed, and there was very little HF traffic during the Haiti event.
- A VM from Mission Viejo, CA. received a commendation from Department of Homeland Security and the United States Coast Guard for assistance in resolving a Marine Channel-16 Interference issue in the Los Angeles area.

Looking ahead to 2022, 2023 and beyond:

As the pandemic lifts, Amateur Radio operators will begin to assemble for Hamfests, Conventions, Field Day, Special Events, DXpeditions and other outside activities where socially congregating is safer and offers more group activity, including in-person club activities and mentoring. These events together with increased sunspot activity and more potential DXpeditions, will breathe new life and added excitement into our activities.

While the desire to maintain a healthy QSL Bureau is logical, we recognize that paper QSL card exchanging may continue to be decreasing in volume (overtaken by LoTW and other online QSLing products). Several Foreign QSL Bureaus, and some US Incoming Bureaus, are challenged by the lack of volunteers and an aging volunteer base – leaving the future uncertain for some bureaus.

Remaining current with database/management tools will be important to our forward growth, especially with the new AMS System, Web Page updates with more contemporary features, and Project-X. Project X enhancements to the Radiosport systems (LoTW, DXCC Online, Contest, and Awards) are essential to growth in these programs. Current DXCC Online and LoTW systems are from 10 to nearly 20 years old. LoTW's ability to expand its award offerings is on hold while a new, more scalable, mobile-device supporting system is designed, built, and implemented.

Field Services

Mike Walters, Field Services Manager

The ARRL Field Services department continues to support the field organization, particularly the Section Managers and the Affiliated Club Coordinators. The efforts to improve communication both to and from headquarters and the field organization continues with expanded deployment of Microsoft Office 365 and Teams. This is being done under Non-Profit licensing and does not affect the budget.

Field Services supports all Section Manager elections with ballots and campaign information mailed to the members in respective sections. This varies according to the number of elections held each quarter.

Travel is being kept under control with limited plans for the Field Services Manager to travel to select conventions not covered by other ARRL staff and continue to meet with Section Managers and Affiliated Club Coordinators. Travel is also budgeted for an in-person “New Section Manager Workshop” in September. This will depend on travel and gathering restrictions, but a return to an in-person workshop in place of the virtual version is desired.

Postage expense is planned for Field Day packages for the Section Managers that plan to travel to sites during that weekend. In 2021 we used what was available in the Field Day promotional item inventory and supported twenty-six Section Managers.

Field Services will be working with the new Emergency Management Director to help build a stronger relationship between local clubs, SECs and SMs. This will allow us to promote training as well as exercises within the sections. Building a closer relationship with headquarters and the SECs will allow us to assist with training standards.

Going forward Field Services is also working to improve the resources that are available to clubs. From ARRL logos and registered trademarks for newsletters and websites to the Club Officer Handbook. We are working to improve the resources available to the clubs to help them build a strong membership. The Affiliated Club Coordinators will have their own email distribution that we can direct info to them on new programs as well as allow feedback. The ACCs are becoming more and more essential in the communication process with local clubs. The Club News newsletter will be targeted at Club Presidents, Club Newsletter Editors, ACCs and Section Managers as well as opted in members. Once travel is a bit more open the opportunity to represent ARRL in Division Conventions and larger hamfests will allow us to hold workshops for club officers and ACCs with the intend of training and gathering feedback.

Volunteer Exam Coordinator

Maria Somma, VEC Manager

1. Department Mission and Goals

The ARRL VEC provides licensing examinations for prospective new hams and upgrade examinations for those already licensed. It also assures that enough examination opportunities are available on a schedule that is convenient to the applicants.

The ARRL VEC will provide the examination candidate with tests that meet all applicable requirements of current Federal Communications Commission Rules and Regulations, and ensure each are administered in accordance with those requirements and generally accepted educational testing principles and practices.

The ARRL VEC provides a service level of the highest order to our customers, the Volunteer Examiners.

2. Products and Services

Volunteer Examiners

- Accredits qualified Volunteer Examiner (VE) applicants by soliciting across a broad spectrum of Amateur Radio operators.
- Registers and publicizes the scheduled exam activities of ARRL VE teams.
- Supports VEC services at hamfests/conventions.
- Conducts special mailings to VEs.
- Promotes ARRL membership and publications.
- Provides essential VEC and FCC information in *QST* Exam Info column and VE e-newsletter.
- Stays up-to-date on FCC rules and regulations to ensure VEC and VEs are in compliance.

Exam Administration

- Supplies printed exam materials and/or software to meet the VE team's examination needs.
- Receives and processes the completed exam session results and electronically files successful applicant license data to the FCC.
- Answers exam and license related inquiries regarding the licensing process.
- Files all test session data electronically to the FCC within three (3) business days or less.
- Maintains the highest degree of service and integrity in ARRL VEC examinations.
- Participates as a member of the National Conference of VECs Question Pool Committee.

Call Sign Administration

- Manages the FCC Club Call Sign Administrator program for FCC and ARRL, as one of four such coordinators, to provide an electronic filing mechanism for FCC Club Station License applications.
- Receives and processes the completed exam session results and electronically files successful applicant license data and club license data to the FCC.

- Administers the 1x1 Special Event call sign program for FCC and ARRL, as one of five such coordinators.
- Provides FCC-license renewal notices to ARRL members. We will process license renewal requests received from members at no charge. Non-members will be charged a fee.
- Provides FCC-license renewal notices to clubs.
- Manages the electronic filing mechanism for FCC License modifications (changes in name/call/address). The service is available to ARRL members for free and to non-members for a fee.

Additional Services

- Manages and maintains the *QST* Silent Key column.
- Administers the License Class Certificate Program.
- Administers the International Amateur Radio Permit (IARP) program for FCC and ARRL.
- Successful organizational presence at yearly NCVVEC conference and fosters connections with other VEC organizations.
- Provides consistently reliable information to customers and delivers superb customer service.
- Assists with field-based membership recruitment by providing Volunteer Examiners with flyers promoting membership to newly licensed hams at VE exam sessions.
- Maintain, update, and improve areas of the website for which we are responsible.
- Liaison between licensees and the FCC, resolving difficult and multifaceted individual and club licensing issues.
- Collaboration with the Education and Learning department to create an ecosystem for customers; attract them as members and serve them at every licensing step and beyond.

VEC Program Results

Remote video-supervised online testing has been steady since April 2020 and more Volunteer Examiner (VE) teams are being trained every month. Table 1 compares 2021 program results and projections over the past few years. When comparing 2021 with 2019 program results, exam applicants served are comparable to pre-COVID results. Sessions conducted are much higher than 2020 totals because remote video sessions are one examinee to one team of three VEs (1:1 ratio). The remote session numbers will be skewed on the high side because most teams are only examining one or two candidates per session, while conducting multiple sessions per day.

There continues to be less in-person exam sessions because of the pandemic. Many VE teams suspended in-person sessions in March 2020 and never restarted testing in their communities. Some teams are finally beginning to explore the possibility of restarting testing in their local areas if candidates follow safety protocols (e.g.: masks and vaccine proof required). Most VEs fall into the at-risk category and are being cautious about resuming in-person testing. Further, the average number of examinees per in-session has dropped significantly over previous years due to social distancing and gathering restrictions. Teams continue to evaluate as to whether further exam sessions will be possible this year depending upon conditions and the availability of safe/suitable testing locations.

TABLE 1: ARRL VEC RESULTS AND PROJECTIONS

ARRL VEC ACTIVITY	2019 through August	2020 through August	2021 through August	2021 Projection	2022 Projection	2023 Projection
Exam Sessions Conducted	4,603	4,406	5,943	7,000	7,500	7,500
Exam Applicants Served	22,889	18,985	22,498	31,100	32,000	34,000
Elements Administered	30,516	23,268	27,989	37,000	42,000	43,000
New VEs Accredited	1,377	1,069	1,267	1,700	2,000	2,000
New and Upgraded License forms transmitted to FCC	20,202	16,629	20,880	29,100	30,000	31,000
License Renewals and Changes transmitted to FCC	4,600	5,187	6,102	6,750	6,000	6,000
Total Club License applications transmitted to FCC	1,117	939	895	1,400	1,700	1,700

ARRL VEC's market share is currently 67% (table 2). Our market share declined at the beginning of the pandemic, and we are attempting to recapture the loss by shifting in-person paper session teams to online sessions. Despite the downturn in our market share level and our exam fee being the most expensive at \$15, we had the largest number of conducted sessions and applicants served in the ExamTools system through August.

The ARRL VEC continues to maintain its position as the largest VEC in the nation. A significant challenge facing our VEC is to remain competitive in the examination market as our competition modernizes their operations and offers reduced or free license examinations. We must continue to train teams to conduct remote video sessions and lead candidates to our teams in the online sessions system.

VEC program levels are projected to remain steady through 2022 as we move more teams to electronic testing. We anticipate growing our business in 2023 as we expand online examinations and e-filing sessions from the field. It will become increasingly more difficult to meet projections and retain our market share as the examination industry continues to consolidate. We hope VEs are willing to take on this assignment which is vital to the amateur radio community's growth.

TABLE 2: ARRL VEC MARKET SHARE

FCC LICENSES ISSUED	2019	2020	2021 through August	2021 Projection	2022 Projection	2023 Projection
NCVEC License Activity	39,776	39,066	31,375	43,000	43,500	43,500
ARRL VEC License Activity	29,427	26,712	20,880	29,100	30,000	31,000
ARRL Market Share of Exams Given	74%	68%	67%	68%	70%	71%

FCC Activity

In-person exam session activity remains weakened due to the pandemic. Many of our teams are requiring proof of being vaccinated or having a negative COVID test within the last 72 hours to attend the session. The shortage of in-person sessions is being effectively handled by VE teams conducting remotely proctored sessions.

The upside of most of the country staying home and social distancing is a heightened interest in Amateur Radio. Candidates are extremely prepared to take their exam because they've had plenty of time to study. The pass rate is notably elevated for all exam levels in 2021. The natural disasters are also having an impact on inquiries about Amateur Radio and how operators can help in local communities.

Successful new applicants are running ahead of the last few year's results through the end of August and should exceed the original 2021 year-end prediction (original 30K versus reforecast 32K). Upgraded licenses were stronger than predicted and will end slightly higher than the original year-end target (original 9,500 vs. reforecast 11,000). It's important to note, the fourth quarter of the year is always challenging because of the usual drop in license activity. However, this year could potentially see a bump in the final quarter's activity levels because of the more than enough remote video exam opportunities. Additionally, chatter in the field may indicate a desire to test before a potential FCC application fee is implemented.

Amateur Radio interest and examination requests should remain stable in the coming year and we therefore, forecast 32,000 new licensees and 11,000 upgrade licensees in 2022 (table 3).

TABLE 3: NEW AND UPGRADED FCC LICENSES BY YEAR

FCC ACTION	2017	2018	2019	2020	2021 through August	2022 Projection	2023 Projection
New Licenses							
Technicians	28,509	27,984	26,503	26,589	20,443	28,500	27,500
Generals	3,089	3,147	3,101	2,958	2,408	3,000	3,000
Extras	598	445	408	364	284	500	500
Total New	32,196	31,576	30,012	29,911	23,135	32,000	31,000
Upgraded Licenses							
To General	7,304	7,288	7,698	6,528	5,964	8,500	7,500
To Extra	2,272	2,168	2,066	2,627	2,276	2,500	2,500
Total Upgraded	9,576	9,456	9,764	9,155	8,240	11,000	10,000
GRAND TOTALS	41,772	41,032	39,776	39,066	31,375	43,000	41,000

3. New Technology, Initiatives, and Services

The VEC exam fee will remain at \$15 in 2022. VE Teams are claiming more exam session administration expense recoupment. Technology fees such as Zoom and PayPal to conduct remote sessions and personal safety supplies and increased venue costs for in-person sessions are driving up reimbursements. With increasing shipping and supply costs to conduct business and reimbursement requests, expense control will be a priority.

The ARRL VEC market share of total Amateur Radio exams administered normally fluctuates between 72 and 76 percent. A significant challenge facing us is to remain competitive in the Amateur Radio examination market as our competition modernizes their operations. Remote video online exams have played a large role in the amalgamation of the industry. Our market share may decline as teams and candidates choose VECs in ExamTools that offer reduced or free license examinations.

As other VEC organizations digitize their operations, and the examination industry continues to integrate in the ExamTools online examinations system, this will have important implications on the future of our VEC. We must remain competitive in this marketplace.

Continue to Modernize ARRL VEC

AIS System: The entire VEC program migrated from a legacy computer system to a web-based application in December 2020. New processes and programming for reporting continue to be created. The desired outcome would be to improve and streamline functionality for VEC staff, implement electronic badges and certificates, and to import completed exam session files into our FCC data entry program, thereby reducing errors, and shifting some of the data entry workload to the field.

E-File Session Documents from the Field: The ARRL VEC's highly sought after, and lauded program feature is our session documents upload webpage. The interactive upload page allows users to submit a variety of electronic documents such as PDF, DOC, DOCX, JSON, quickly and easily. Uploading session files allows for quicker processing to the FCC. We are averaging 100 to 150 uploaded session files (both in-person and remote) per week. VE teams and candidates are thrilled that the average wait time for a license has plummeted to a few days instead of a few weeks. New and upgraded licenses are issued within 1 to 2 business days for weekend sessions and are usually issued on the same day for weekday sessions. We will continue to promote this widely popular and marketable program benefit.

ExamTools Online Examinations System: Since June 2020, we have been moving our VEs over to the ExamTools online examinations program which is a more sophisticated web-based system. This system replaced the legacy ARRL VE Exam Maker test generating software (produced in-house in the 1990s) which was discontinued at the end of 2020. ExamTools works well for online or printed examinations and manages almost everything needed to conduct a test session.

We have thousands of VEs trained to use the ExamTools system with that number slowly growing every month. VE teams have been using the system for online examinations for remotely proctored video sessions and at in-person sessions.

The program also creates printed exams that utilize GradeCam for grading tests. GradeCam will automatically grade exams in seconds using the camera on a phone or computer, which eliminates the need to manually score the tests. Alternatively, ARRL VEs have the option to match ARRL VEC's overlay grading template designs to the printed exams for manual grading.

The system automatically generates output files at the conclusion of the session which are immediately ready for upload to the coordinating VEC. The program manages almost everything needed to conduct a test session. This comprehensive program also has exam questions analytics which is being shared with the NCVEC question pool committee.

Adapting our teams to online examination administration is a challenge, but one we are undertaking in order to advance the VEC program and improve services. Teams will be trained to administer online examinations in the ExamTools system and to use the session documents upload webpage.

We will continue to advertise and deploy remote session procedures, authorizing and expanding the number of teams using these program service enhancements. We are aware of the significant time commitment for our VEs and of the potential for higher reimbursement fees during the transition to online testing (video platform yearly costs and e-payment transaction fees). As we expand remote video supervised exam sessions, we must be especially mindful of examination integrity as we promote this process.

Conversely, we have a number of teams that do not want to take on this endeavor or cannot because they lack the technological tools. A few mentioned that they live in a very rural, remote areas where cell phone service and wireless is very limited and does not support any video or remote viewing. These teams consistently coordinate exam sessions with our organization from year to year. Additionally, many candidates have indicated they prefer in-person sessions and were

waiting for locations to open. Therefore, we must ensure we continue to serve these types of customers as we shift our business towards automation.

The pandemic served as a catalyst to accelerate changes that were already happening. We know that we must keep an eye to our future and to new technology, and we must be poised to thrive in the post-COVID world.

4. Acquisition and Retention

ARRL should be the industry leader for FCC and VEC information, attracting both ARRL and non-ARRL VEs to our program. The more we understand our customer's wants and needs and meet those needs at our exam sessions, on our website, and in our marketing, the better we will attract and serve them.

ARRL VEC will maintain regular contact with the ExamTools developer and programmers and offer product improvements where needed. We will head off potential market share and revenue losses due to industry consolidation of the examination software system used in online examinations. We will continue to aggressively leverage space and examinees on the ExamTools system and take actions to head off possible losses. We will develop a mechanism to collect examinee contact information for membership recruitment.

We will identify and build on new capabilities made possible by the AIS / FCC data entry systems integration. We will continue to fine tune and improve the connectivity between the backend system and the web. Online video exam sessions conducted in ExamTools will be uploaded directly into our FCC data entry program from JSON files created by the program. Shifting the 605 application form data entry function from HQ staff to VE teams in the field would shorten the field response time from examination to license issuance. New efficiencies will be attained and examinees and VEs will enjoy quicker turn-around times on license issuance.

We will provide a superior overall experience for our customers and potential customers by creating videos targeting volunteer examiners and examinees, which will increase traffic to our website and improve our acquisition rates. The extraordinary demand for online exams during the pandemic forced the quick transformation and advancement of the Amateur Radio testing industry. The number of VEs using web-based services, the online exam system, and upload web page must continue to grow. We will promote online examinations ease of use to our VEs, highlighting those who are using the system to attract new volunteers and convince established VEs to switch to electronic testing who may be apprehensive about it. We must stay committed to offering quality programs and services and emphasize our new web-based services to remain competitive in the electronic testing market.

We will continue to advertise online examinations and rapid licensing to examinees and VEs. Established teams will train new teams to administer electronic sessions in the ExamTools system and to use the session documents upload webpage. This will strengthen our relationship with our internal customers (VEs) and our external customers (examinees) to draw attention to our new products (online exams) and market our program to draw potential VEs to ARRL. By steering VEs toward online exams we will decrease spending on shipping and printed materials.

There is immense potential in creating new mechanisms and systems to enhance our customers' satisfaction and improve their examination experience. Taking these steps may mark the beginning of encouraging new teams to use our VEC and enticing migrated teams to transfer back. It will demonstrate our mutual commitment to delivering a fast, easy, and affordable solution that allows teams to speed up FCC license issuance for customers who expect to see their FCC licenses quickly. Hopefully, heading off a further market share decline and giving us traction to grow our customer base. Stronger business results will be attained by meeting our VE teams' expectations, being less dependent on USPS and paper applications, and achieving higher customer satisfaction due to the shorter wait times for license issuance.

Summary of 2022/23 Action Items

- Expand our advertising and identify further opportunities for promotion of VEC services and products.
- Collaborate with the Education and Learning department.
- Create videos targeting volunteer examiners and examinees.
- Strengthen and galvanize our volunteers' commitment to serving the community.
- Update CSCE form and other pertinent session documents to effectively solicit or gather contact information from examinees.
- Fine tune programming and reporting in AIS; shift from printed paper credentials to electronic.
- Increase visibility in current and new mediums to attract new VEs, examinees, and members.
- Continue to improve the connectivity between the AIS system, the FCC EBF system, and customers.

Therefore, in 2022, as we continue to modernize the ARRL VEC department, these strategies will help our program remain strong and active in the Amateur Radio community. By 2023, the desired outcome would not only be to remain competitive but to regain our market share and session activity, improve our customer relations, and decrease expenses.

Product Development/Innovation

Bob Inderbitzen, Director of Public Relations and Innovation

Overview

Fostering a culture of innovation requires a Product Development function that ensures structure, process, and management where innovation can flourish. For ARRL, “products” include member and mission-related benefits, services, published content, programs, and experiences. The mission of Product Development is to create, through effort and experimentation, products that have value for our members and other stakeholders and are relevant and attract members. This is accomplished by enabling and developing ideas, examining and improving the effectiveness of existing programs, and most importantly -- cultivating collaboration; between staff, business units, member-volunteers and other stakeholders. Creating value relies on a regular source of ideas from everyone. Small, cross-functional agile teams develop worthy ideas, and the Management Council provides additional review and oversight.

2022-2023 Goals

Product Development provides ongoing management, development, and contribution to a variety of products, programs, and partnerships. The following is a summary some of the initiatives already underway. Since we have an iterative and agile product development culture, this list is intended as a snapshot of current and foreseen interactions. This work is subject to rapid and flexible response to changes made throughout new product discovery and planning.

ARRL Ideation (ongoing). In conjunction with CEO Minster’s April 2021 *QST* editorial, we established a web page to support idea-collection from members: ARRL Ideation www.arrl.org/ideas. Currently, ideas are regularly received, acknowledged, and shared for additional consideration and possible development. A goal is to develop a process for categorizing and organizing them, determining the feasibility of each idea, prioritizing them based on metrics (such as impact, cost, time, ARRL resources, etc.), and then planning and executing them.

New Products (ongoing).

- Books. A cross-functional assortment planning team meets monthly to evaluate core titles, to consider and evaluate new publication opportunities, and to discontinue or sunset titles.
- Kits. We will build on our successful offering of some basic kits. In 2021, through third-party partnerships, we introduced an end-fed half-wave antenna kit, and an easy-to-construct radio receiver kit. These efforts support our goal to engage members more deeply in project building, experimentation, and experiences that lead them to being (more) radio-active. The kits are also a basis for additional content creation including magazine articles, videos, and hands-on experiences at hamfests and club meetings.
- Other Products. We want to have a good merchandise mix that will interest, and even inspire, members. The introduction of certain products may also contribute to member loyalty and help us respond to current trends. Recent examples that have been discussed

include an ARRL-branded Raspberry Pi case, custom Morse code key or paddles, and special event items for the 100th anniversary of the Transatlantic Tests.

Developing Member-Volunteers (ongoing). We are increasingly developing more effective ways to enlist the help of member-volunteers to contribute their knowledge, experience, and time – especially in areas that will help us increase resources for new and inexperienced hams. For example, our engagement with video content creators of popular ham radio YouTube channels has increased ARRL’s exposure with their subscribers and followers – helping us reach active hams who were previously unaware of ARRL. The ARRL Learning Network webinar series and the ARRL Learning Center are also connecting members and prospective members with subject matter experts and specially tailored content intended to move more licensees to the spectrum of active hams.

Partnerships (ongoing). ARRL has many partnerships that help us achieve our mission. Partner relationships increase the visibility of ARRL and amateur radio while creating mutually beneficial opportunities. Some examples include the following:

- *Experimental Aircraft Association (EAA).* We are exploring a future STEM education partnership with representatives from EAA and the EAA Museum which supports a learning laboratory for youth.
- *Courage Kenny Handiham Program.* We have recently revisited our partnership with Handiham as we endeavor to improve access to our content by members and other radio amateurs with disabilities. In 2021, we introduced the ARRL Letter in text-only accessible format for individuals who are blind and visually impaired.
- *QSO Today Virtual Ham Expo.* We have participated in three of the fully interactive, virtual QSO Today online conventions since the inaugural event in August 2020. As we move back to in-person hamfests and conventions, our continued partnership and participation with QSO Today acknowledges the hybrid-nature of ARRL’s event presence and our interest in engaging (and finding) the many active hams who have never attended an in-person hamfest.
- *MAGLITE.* In 2021, ARRL and Mag Instrument, the manufacturer of the MAGLITE® Flashlight, announced a partnership that helps ARRL introduce amateur radio to more people through MAGLITE’s highly visible consumer selling channels. ARRL shares this recognition with MAGLITE’s other well-known partnerships including the National Association for Search and Rescue, St Jude Children's Research Hospital®, and American Veterans Center. ARRL members are also offered a 20% discount on Maglite products.

ARRL Radio Lab (ongoing). In 2021, the room that had supported the Laird Campbell Memorial HQ Operators Club was renovated to become the new ARRL Radio Lab, WIHQ. The Radio Lab is an extension of the ARRL Laboratory. It is being outfitted to demonstrate ham radio station innovation and to serve as a test and research station. For example, when the Lab completes a comprehensive product review test for a transceiver, the radio can then be installed at one of the operating positions in the Radio Lab for further on-air testing and additional content creation. Current projects in the new Radio Lab include:

- a ‘wireless’ aesthetic supported by rack-mounted hardware, unique wire management, and low-profile, uncluttered station desktops
- rig and station control using the low-cost, and highly configurable Raspberry Pi nano computer
- the application of Node Red low-code programming for amateur radio
- increased use of high-definition displays to support multiple video streams including radio interface, spectrum scope and waterfalls, and other visual ham radio software applications

Club News (new). Under the leadership of the Field Services Department, an effort is underway to relaunch the ARRL Club News e-newsletter by November 2021. The effort meets our goal of reinvigorating ARRL’s relationship with affiliated radio clubs. The newsletter will include spotlights on vibrant clubs, best practices, event calendars, and features covering youth and collegiate clubs.

W1AW. Longtime members have a strong affinity with W1AW. Members have enjoyed W1AW for ham radio news bulletins, Morse code practice, visitor tours, and guest operating. As we look forward to using W1AW to engage a second century of members, we will evaluate its present use and explore opportunities to transform the station for the future. In 2021, the station was reconfigured (and decluttered) to refresh its long-time purpose to showcase the very best in amateur radio commercial gear, supported by our outreach to manufacturers. We expanded the daily guest operating hours and enlisted an all-volunteer team to greet and support visitors. Additional considerations include encouraging greater use of the station by local volunteers, radio clubs, and staff; and developing a program to support new licensees and their first radio contacts.

Expand Digital Media. ARRL must increase publication of information and content in the digital realm if we expect to attract and retain tech-savvy members. Additionally, as we increase our digital publishing competency, we will increase the likelihood of prospective members to find, from ARRL, the information they need to expand their knowledge of radio technology and radio communications. Most new ARRL books already follow parallel print-and-digital publishing paths. Additional areas of development include further expansion of digital media using ARRL’s vast library of previously published content, more mobile apps, and use of mobile optimized platforms for content delivery such as a blogging platform.

Portfolio Analysis. As we set our sights on trying new things, it is important to identify opportunities to shed legacy programs, services, and products that no longer provide enough value to members and/or contribute to the organization’s strategic needs. This will require developing efficient methodologies for evaluating products on an ongoing basis. Ultimately, discontinuing some products will free up resources, including staff, creating opportunities to support new products. There are many examples of existing products that have outlived their usefulness, and which can be discontinued or sunset:

- Books with few sales.
- Programs with disappointing participation.
- Services with weak penetration.
- Benefits that do not have strategic underpinnings.

Events and Exhibits. In 2022, ARRL will support exhibits and related participation at the following major amateur radio events. These events are among the largest and best-organized conventions, and attract participation from the leading equipment manufacturers and dealers (our advertisers):

- 2022 ARRL National Convention at Orlando HamCation® (February)
- Dayton Hamvention (May)
- SEA-PAC (June)
- International Exhibition of Radio Amateurs, Germany (June)
- Huntsville Hamfest (August)
- Northeast HamXpostion (September)
- Pacificon (October)

2022 ARRL National Convention. In October 2020, with the approval of the Executive Committee, we made a joint announcement with the Orlando Amateur Radio Club (OARC) to postpone the 2021 National Convention and Orlando HamCation® until February 10 – 13, 2022. A cross functional team has been developing a National Convention program and exhibits. A convention theme has been committed: *reDiscover Radio*. Our planning includes a series of day-long ARRL-sponsored Training Tracks and a National Convention luncheon on Thursday, February 10 preceding HamCation's 3-days at the fairgrounds. We have an agreement with the DoubleTree by Hilton Hotel Orlando SeaWorld for our team's lodging and to host the day-long National Convention program.

Public Relations and Outreach

Bob Inderbitzen, Director of Public Relations and Innovation

Overview

Following the early 2020 departure of the Communications Manager, we have had the benefit of re-examining our public relations functions. With this lens, including considerations offered by PR Committee members, we established a new department in 2021, named Public Relations and Outreach. The new department includes a Public Relations and Outreach Manager (reports to the Director of Public Relations and Innovation) and a Social Media Strategist.'

The mission of Public Relations and Outreach is to (1) increase the awareness and value of the Amateur Radio Service to the public at large, (2) to promote the value of ARRL and the contributions of its member-volunteers, and to (3) develop outreach opportunities that support awareness and growth of amateur radio and ARRL.

Staffing Updates and Changes

A new staffing model was introduced in 2021. The department includes a Public Relations and Outreach Manager and a Social Media Strategist. Both positions are expected to be filled by year-end 2021.

- The *Public Relations and Outreach Manager* comprises the role of previous PR and media managers, with additional areas of responsibility that include oversight for social media, developing resources and support for amateur radio recruitment, and an increased emphasis on making effective use of volunteers to meet our PR and outreach goals.
- The *Social Media Strategist* is responsible for developing and administering social media content that is aimed at engaging users and creating an interactive relationship with our audience, and continually highlighting the enthusiasm and passion of amateur radio with ARRL's community and beyond.

2022-2023 Goals

Develop and implement a public relations strategy that builds a positive public image for amateur radio and ARRL. Create and schedule effective PR and media campaigns for traditional media (print, broadcast, online) and social media. Devise several ways to measure impact and effectiveness.

Develop and implement a social media strategy. This includes planning and publishing ARRL's social media posts, monitoring and measuring each of our social media outlets, and engaging all our business units and program areas in the same. Of key interest is driving traffic to ARRL websites and to establish metrics to determine the success and return on investments of our social media efforts.

Develop and empower member-volunteers to extend the effectiveness and reach of ARRL's PR and outreach messaging and materials in the field. ARRL has 55 Section-appointed Public

Information Officers (PIOs) and 456 Public Information Coordinators (PICs). We will focus on creating tools and training to support and develop these volunteers through a monthly newsletter, annual calendar, online resources and course, and webinars.

Implement an outreach strategy and interface with volunteers conducting outreach and recruitment for amateur radio. Outreach goals include producing messaging and materials for general recruitment, and for engaging likeminded communities and groups with overlapping interests. We rely on having a healthy pool of new entrants to amateur radio to grow our membership. We are also examining opportunities to increase the visibility of amateur radio and ARRL among organizations and communities promoting STEM education by leveraging our Teachers Institute on Wireless Technology, ARISS, ARRL Foundation scholarships, Collegiate Amateur Radio Initiative, and instructional resources.

Ongoing Activities

Supporting external public relations, including media outreach and following-up on press inquiries. Included is rapid response to breaking news stories, crisis management, and writing statements on behalf of senior leaders.

Curating media hits and media mentions to maximize exposure for positive messaging that raises the awareness and visibility of ARRL and amateur radio, both internally and externally. This effort also furthers ARRL's legislative and advocacy goals. Each week, the ARRL Letter includes a feature supported by this work; "Amateur Radio in the News."

Increasing our engagement using video. Our commitment to developing an in-house video production capability and competency is ongoing. In 2021, we outfit the ARRL media room with 4K video recording cameras and related equipment. Our goal is to become more prolific at creating high quality video content that engages members and prospective members who seek amateur radio instruction and training across a wide variety of topics and interest areas.

Providing interface with the Public Relations Committee (PRC). The PRC is an ARRL ad-hoc board committee, and members are appointed by the President for one-year terms. The mission of the PRC is to recommend strategies for promoting amateur radio, for attracting new hams, and for recruiting and retaining ARRL members. Additionally, the PRC supports and encourages the development of Public Information Coordinators and Public Information Officers. The PRC is currently chaired by the Director of Public Relations and Innovation. The PRC is also responsible for recommending the annual PR/media awards: the ARRL Philip J. McGan Memorial Silver Antenna Award for volunteer public relations, and the ARRL Bill Leonard Award for professional journalism.

Collegiate Amateur Radio Initiative and Colleges on the Air. Established for ARRL in 2017 by the WIYSM Snyder Family Collegiate Amateur Radio Endowment Fund, the program helps network college radio clubs, and explores opportunities to bolster student interest in radio communications for practical experience and career connections. Bob Inderbitzen provides staff liaison, and program support comes from member-volunteers Andy Milluzzi, KK4LWR, and Tony Milluzzi, KD8RTT.

Regular areas of interface include monthly web meetings and an ARRL Discord group (group-chatting platform) with participation from dozens of active or budding ham radio programs at colleges. We have included ARRL-sponsored collegiate exhibits and forums at Dayton Hamvention and Orlando HamCation, increasing the visibility of young hams. The Milluzzi's organize the annual Collegiate QSO Party (October), for which ARRL provides editorial support and donates winner plaques (funded by the program's endowment). Throughout 2021, our interface with college radio clubs contributed a regular source of content for ARRL publishing outlets including *On the Air* magazine.

In 2022, we will prepare a yearlong recognition and celebration of amateur radio at colleges and universities for the 2022/23 school year. This effort was postponed from 2021 due to the pandemic. The centerpiece of the planning will include a yearlong operating event, *ARRL Colleges on the Air*. The event will be organized much like *National Parks on the Air* (NPOTA) in 2016. The event will be an exciting activity for college radio club members and their new student-hams and will attract all members to join the fun as university stations are "activated." Support for submitted logs, leaderboard, and certificates/awards will be developed and administered by ARRL.

Other parallel activities are being considered to further engage collegiate ham radio including a project-building competition, a student competition (individual challenge), and an ARRL student-membership booster.

Transatlantic Centenary

In September 2021, we announced jointly organized events with the Radio Society of Great Britain to commemorate the 100th anniversary of the achievement of transatlantic communications by radio amateurs. Included is the Transatlantic Centenary Marathon, which will be held in December 2022. The multiband HF operating event will include activated stations in both the US and UK, and an opportunity for each IARU member society to activate a station. Worldwide participants will be encouraged to work (chase) the activations, and high-scoring will favor transcontinental contacts. Support for submitted logs, leaderboard, and certificates/awards will be developed and administered by ARRL.

Education and Learning

Steve Goodgame, Education and Learning Manager

Overview

The department will focus on expanding the Learning Center and continuing to improve other educational programs. Content development is a major component, and additional resources will continue to be needed to increase capacity, especially for dynamic digital content which includes videos, courses, and webinars. Education & Technology Program (ETP) offerings also require additional resources.

Staffing

To assist with the development of educational content, an instructional design position was added in 2021. As the need for production capacity of content continues to increase, additional resources will be needed in 2022 for video production and editing. This work can be contracted on an as-needed basis throughout the year, and work can be done remotely. This approach reduces expenses and eliminates a position from the on-staff head count.

ARRL Learning Center

Efforts will be focused on these key areas in 2022:

- *Managing the ARRL Learning Center:*
As usage by members and prospective members grows, bandwidth will need to be expanded accordingly. The plan includes resources for both additional users and video storage.
- *Ongoing development of digital learning content:*
The development of high-quality learning content will continue on an ongoing basis, so resources will be needed for a variety of tasks, including contracting with external Subject Matter Experts (SME), creating dynamic multimedia content, and refreshing existing content. Ongoing recruitment of new SMEs through attendance/observing sessions at regional and national hamfests, as well as through social media outlets will be necessary to bring more content creators on board.
- *Administration & support for the Learning Center and Learning Network:*
Technical support and user training will be provided by Education and Learning staff, who will work with the various vendors and ARRL's IT department as needed.
- *Learning Network Webinars:*
The ARRL Learning Network was started in 2020, to help introduce more members to the variety of activities and opportunities that radio amateurs enjoy. The webinars and recordings are available for viewing by members and ARRL-affiliated radio clubs, have become a popular member-benefit and an integral element of ARRL's digital expansion, and will remain a priority in 2022. In addition, the department will be taking over the budget for the GoToWebinar platform. We will migrate away from the GoToWebinar platform upon our contract expiration. We are still investigating what platform to move to.

Education & Technology Program (ETP)

- *Teachers Institute (TI):*

With effects from the pandemic still being felt, the 2021 Teacher's Institute (TI) was offered virtually for the first time. The team put together a schedule with 19 sessions delivered across 4 days to more than 30 teachers from across the country. Each session was recorded for later viewing. To optimize recording capabilities, the media room at HQ was upgraded significantly with new cameras and other equipment needed to ensure high-quality video production. Additional equipment and software may be necessary to continue this digital upgrade. Ideally, the plan for 2022 is for the Teachers Institute to resume as an in-person event, with the 4 one-week sessions, which may also be enhanced with a virtual component.

Two additions have been made to the ETP budget for 2022:

- Teacher Presentation Grant: A grant to help support teachers who present about amateur radio at educational conferences classroom efforts.
- Instructor Trainees: resources to add 3 instructor trainees (1 per session), who will attend one session to learn from current instructors, thereby increasing the instructor pool and bring new skills & knowledge to Teachers Institute. Trainees will be provided travel expenses to attend their training.

- *ETP Grants:*

The ETP Fund offers two grants to support amateur radio in the classroom:

- 1) ETP School Station Grants: are awarded to schools that provide a plan to use Amateur Radio as part of an enrichment program and/or as part of their classroom instruction
- 2) ETP Progress Grants: offer further support to those teachers who are currently using Amateur Radio in their classrooms as an instructional tool, and who need additional resources to enhance their current configuration

ARISS (Amateur Radio on the International Space Station) Support

The department will continue to serve as a resource for ARISS, by providing financial support for ARISS administration, maintaining ARISS resources on the ARRL website, and managing the ARRL Ground Station Loan Program, for groups in need of the appropriate equipment required for making an ARISS contact.

License Instruction

The department will continue to maintain and update the instructional materials and web resources which support license instruction, along with approving instructor affiliations and license class listings.

Lab

Ed Hare, Lab Manager

MISSION STATEMENT

The ARRL Lab provides ARRL members and the Amateur Radio community with technical information services, trusted product-review testing, spectrum-protection engineering, professional industry contact and a comprehensive RFI/EMC program.

MAJOR ACTIVITIES AND PROJECTS

- **Product Review Testing**

The Lab expects to test approximately 40 pieces of equipment for Product Review in 2022. A typical multi-band, multi-mode HF through VHF (and up) transceiver may take as much as 10 days of testing, with some units requiring some re-testing due to problems discovered during the review process. Most of the smaller units take one to two days of testing time. The Product Review testing program also requires interface with the Product Review editor, the individual doing the review and possibly with a manufacturer to help resolve technical deficiencies encountered during the review.

- **Other Support of Publications**

The Lab will continue to author and/or review ARRL publications material. This is done on an as-needed and as-requested basis. The Lab also reviews the technical content of all advertisements that appear in ARRL publications and assists the Advertising Department as needed.

- **Technical Information Service (TIS) and the Technology Web Pages**

The Lab responds to member technical inquiries by phone call, email or letter. During 2021, staff continued to make incremental changes to the Technology pages. In 2022, this work will focus on adding new pages and on making the wording of all the pages more focused on “How do I...?” approaches that new hams and old timers alike need.

As requested, the ARRL Lab and W1AW staff regularly support the creation of videos, podcasts and webinars. The Lab and W1AW will continue to do virtual “club talks” from the Lab facility, as well as attend ARRL conventions virtually and in-person, as appropriate.

- **RFI Program**

A top priority in 2022 will be to train a new RFI engineer.

There are six areas of significant concern that will be addressed in 2022:

- 1) *Interference from power lines and other noisy electrical devices*

Power-line cases continue to dominate the ARRL’s RFI work. The Lab will continue to work directly with Laura Smith and other FCC enforcement personnel, under the scope of our informal agreement with the FCC on the resolution of power-line noise cases.

2) *Identification of noisy devices and formal FCC complaints*

In response to interference reports, The Lab is continuing to identify and test various noisy devices. These cases are either handled as a harmful interference complaint or, if devices exceed the FCC noise limits, a formal complaint to FCC is initiated. This work was begun in 2020 but put on hold due to staff not being able to be in the HQ building to do the needed testing. This will be ongoing throughout 2022, driven by complaints, opportunity and the identification of noisy devices.

3) *Wireless Power Transfer and Electric-Vehicle Charging*

There are two major classes of wireless-power transfer (WPT) devices available. One type includes small wireless “pad” chargers used to charge some cell phones. These typically operate at low power and have not posed any specific interference problems to Amateur Radio. WPT chargers are also being developed for use in charging automotive electric vehicles (EVs). These may operate at power levels of up to 20 kW in residential environments and greater than 100 kW for some commercial installations. Evaluation by the Lab staff and IARU volunteers indicates that these pose a significant interference to Amateur Radio. As driven by regulatory activities in this area and industry opportunities, the Lab staff will continue to study this in 2022.

WPT is also being addressed at the ITU level. There are proposals on the table to create an ISM allocation for WPT that could overlap the lower Amateur bands. In 2022, Ed will continue to have regular teleconferences with IARU volunteer and participate in an IARU reflector to allow coordination between IARU societies on how to respond to the ever-changing WPT regulatory environment. This work will consist of field strength measurements when systems are publicly available to test, working with manufacturers and regulators and analyzing several technical papers provided to the ITU.

4) *Solar power*

ARRL has continued to receive complaints of interference from solar-power installations. Currently, Solar Edge and Generac constitute most of the complaints. Solar Edge has retrofitted about 300 systems across the country, resolving most, but not all, of the noise from its systems. ARRL is continuing to work with Solar Edge to improve the noise performance of its systems. Generac has had fewer complaints, and it is working with EMC engineers to improve its products to perform much better than the standards set by the FCC. This work will continue in 2022 as part of the Lab’s ongoing work with manufacturers to improve the design of consumer products.

5) *Noise studies*

There is an ongoing interest in knowing more about the impact of noise on radio communications. Both the FCC and ITU have been looking at various ways to determine whether noise levels have changed or are changing. In 2021, the ARRL Lab began the process of collecting existing noise studies and related articles. In 2022, the Lab will continue this process and will analyze the studies to determine how they can be compared to create a timeline of the changes in noise levels over time.

The ARRL Lab is also working with the EMC Committee to make measurements of man-made ambient noise levels at various locations. Ned Stearns, AA7A, has arranged for ARRL to have remote access to a quiet contest location in New Mexico. This will allow ARRL to obtain noise data over a long-term basis at a quiet rural site. This work is primarily an activity of the EMC Committee, so the timeline and measures of success are-driven by external circumstance. The Lab will continue to support this effort throughout 2022.

The Lab will also continue to make drive-around measurements of noise levels across a relatively large geographical area. ARRL will seek to have some of these results published in IEEE peer-reviewed journals, adding to the body of knowledge about man-made radio noise.

6) *Individual responses to help members with interference problems*

Helping members with RFI problems will continue to be the lion's share of the Lab's work. This ranges from answering questions about RFI to actual RFI cases to helping forward cases to the FCC for further action. This is an ongoing responsibility of the Lab that is expected to continue at its present levels into the future.

- **Support of ARRL Spectrum-Protection Activities**

In addition to its RFI programs and ARRL involvement with industry standards and industry contact, as needed, the ARRL Lab will respond to various regulatory and other threats that may arise during 2022. Although it is not possible to predict the exact nature of various FCC and other regulatory threats, the Lab will continue its historical precedent of generating engineering studies and/or measurements as requested to support ARRL's responses to FCC rulemaking actions.

The Lab is also more heavily involved with the IARU than it has been in years past. This includes the work with IARU on wireless-power transfer systems as described below and Ed Hare's service as the ARRL representative to the IARU Region 2 EMC coordination activities.

- **IEEE and Other Industry Contact**

The Lab staff will continue to improve ARRL's relationship with the industry, in areas ranging from local Section and Regional participation to EMC. Ed Hare will continue to serve on the IEEE EMC Society Board of Directors, with a third term extending to 2022, as its elected Vice President for Standards. This highly visible position adds significantly to the credibility of Amateur Radio and ARRL in its dealings with industry and regulators. He also continues to serve as a member of the EMC Society Standards Development and Education Committee, as its Standards Representative, overseeing the development and maintenance of 31 IEEE standards on EMC, plus 6 other standards being co-sponsored with other IEEE Societies. He also coordinates the work that ARRL consultant Jerry Ramie (ARC Technical Resources) is doing for the EMC Committee with the IEEE groups developing standards for smart grid, ensuring that sufficient immunity is built into the

design of smart-grid technology. This will prevent routine Amateur and other transmissions from having a negative impact on power grids.

- **Promote the use of high-speed digital networking within Amateur Radio (AREDN)**

High-speed digital communication is becoming more widespread in Amateur Radio communications. The Lab has begun to work with a group of Amateurs doing this work, the Amateur Radio Emergency Data Network (AREDN) project, with the goals of familiarizing ARRL staff with the technology behind mesh networking and its potential use in routine and emergency Amateur communications and then helping to implement high-speed digital communication into routine and emergency Amateur communications. The lack of access to the Lab during part of 2021 due to COVID-19 restrictions, the lack of in-person access to volunteers, changes in personnel in the area of emergency-communications management and the re-direction of Lab staff to the remodeling of W1HQ has significantly changed what could be accomplished for this project in 2021. In 2022, this will undergo a reset, in collaboration with a new Director of Emergency Management and the Field Services Manager.

- **Maintenance of Lab facility**

In 2022, the Lab will continue to make improvements to the W1HQ operating station. The Lab staff will learn more about Node Red and other station automation and remote-operating applications and integrate its findings into the station and into ARRL's Technology web pages.

- **ARRL Board Committees**

The Lab staff will continue to serve as staff liaison to the EMC Committee, the RF Safety Committee and the Historical Committee.

- **W1AW**

W1AW transmits code practice and bulletins on 160, 80, 40, 20, 17, 15, 10, 6, and 2 meters. This is done using CW – with speeds ranging from 5 to 35 WPM – as well as digital modes Baudot, BPSK31, and MFSK16. There is also one (1) voice bulletin daily. In 2022, we expect to transmit a minimum of 260 bulletins, based on bulletin counts from previous years.

In general, the number of visitors to W1AW varies, depending on the time of year and weather. It is not uncommon to see anywhere from 500 to 700 visitors each year. Now that COVID-19 restrictions have been essentially removed for W1AW visitors, 2021 saw the return of visitors. This will continue to pick up in 2022.

W1AW is considered an EOC (Emergency Operations Center) based on those definitions set forth in the ARRL Field Day rules. This allows the station to be called into operation for communication operating events – such as any weather system adversely affecting the US - or SHARES/MARS communications exercises, or any operating exercise that incorporates Amateur Radio.

Washington

Jon Siverling, Senior Technical Relations Specialist

ARRL Participation at International Meetings - 2022

The following international meetings will require ARRL participation in 2022.

ITU-R Working Party 5A, 5B, 5C, 5D and Study Group 5 (WP 5ABCD, SG 5)

ITU-R Working Party 1A, 1B, 1C and Study Group 1 (WP 1ABC, SG1)

ITU-R Working Party 4A, 4B, 4C and Study Group 4

ITU-R Radiocommunication Advisory Group (RAG)

ITU-D World Telecommunication Development Conference 2022 (WTDC 2022)

ITU Plenipotentiary 2022 (PP-22)

ITU-R WRC-23 Inter-Regional preparatory Meeting

CITEL PCC.I, PCC.II, COM/CITEL

Fraternidad de Radio Aficionados de Centro América y Panamá (FRACAP)

The amateur and amateur satellite services must continuously defend Amateur Radio allocations to avoid being blindsided at each step along the path toward a possible allocation action. The World Radiocommunication Conference (WRC) calendar drives the process.



International Telecommunication Union (ITU)¹

The ITU World Radiocommunication Conference 2019 (WRC-19) and the Conference Preparatory Meeting 23-1 (October 21 – November 26, 2019) in Sharm El Sheikh, Egypt set the agenda and assigned the work within the ITU for the World Radiocommunication Conference 2023 (WRC-23).

Issues that may impact Amateur Radio at WRC-23 include additional consideration for the future development of International Mobile Telecommunications (IMT) (agenda item 1.2). This agenda item includes 3300-3400 MHz, 3600-3800 MHz, 6425-7125 MHz, and the 10-10.5 GHz bands. WRC-23 “Topic” 9.1 b addresses additional measures to protect Radio Navigation Satellite Service (RNSS) (Space-to-Earth) in the 1300 – 1350 MHz band and for GALILEO - both hold potential impact to the 1240 – 1300 MHz Amateur band. This is of particular concern due to the “weak signal” Earth-Moon-Earth (EME) (“moonbounce”) operations at 1296 MHz. Other WRC-23 agenda items that may impact Amateur Radio include “Spectrum Needs” for non-safety Aeronautical Mobile RES. 430 (agenda item 1.10), Earth Exploration Satellite Service (EESS) (Active) Spaceborne Radar Sounders “around” 45 MHz, RES. 656 (agenda item 1.12), “Spectrum Needs” for Mobile Satellite Service - “Potential New Allocations” RES. 248 (agenda item 1.18).

The WRC is held approximately every 4 years to discuss changes to the allocation of frequencies in the RF spectrum. Broadcasters, government agencies, satellite users, and emerging technology information providers all want a piece of this finite property. ARRL actively participates in many of these meetings in defense of Amateur Radio interests. Each issue is projected over years of domestic preparatory meetings and international meetings.

¹ *ITU-R groups in which we participate:*

- ◆ Radiocommunication Advisory Group (RAG), advises the Director on management of the radio sector
- ◆ Study Group 1 (spectrum management and monitoring), also its Working Parties 1A (spectrum engineering), 1B (spectrum administration) and 1C (Spectrum Monitoring)
- ◆ Study Group 5 (Terrestrial Services - Systems and networks for fixed, mobile, radiodetermination, amateur and amateur-satellite services.)
- ◆ WRC-23 Inter Regional Preparatory Meetings
- ◆ WRC-23 Conference Preparatory Meetings (CPM)

ITU-R Radiocommunication Advisory Group (RAG)

The Radiocommunication Advisory Group (RAG) is tasked to:

- review the priorities and strategies adopted in the Sector
- provide guidance for the work of the Study Groups
- recommend measures to foster cooperation and coordination with other organizations and with the other ITU Sectors.

The RAG provides advice on these matters to the Director of the Radiocommunication Bureau. The RAG provides an overview of all of the ITU-R groups and allows for an “early warning” of possible issues that may impact Amateur Radio from groups where we do not participate on a regular basis.

ITU-R Study Group 5 (SG 5)

(Terrestrial Services - Systems and networks for fixed, mobile, radiodetermination, amateur and amateur-satellite services.)

Four Working Parties (WPs) carry out the studies on Questions assigned to Study Group (SG) 5 and conduct studies to prepare for WRC-23.

ITU-R Working Party 5A (WP 5A)

(Land mobile service *excluding* IMT; amateur and amateur-satellite service)

Working Party 5A is the “home” for the Amateur Radio Services within ITU-R Study Groups. WP 5A meets between five to ten working days; SG 5 meets for two days typically. Internationally, WP 5A is divided into smaller groups - key to us is WG 5A – 1 (Amateur Services). ARRL also participates in other meetings to learn who may be interested in our frequencies and to keep abreast of new technologies. WRC-23 assigned future agenda items/issues to WP 5A. Jon Siverling (USA/ARRL) is Alternate Chairman, Working Group 5A-1 Amateur and Amateur Satellite Services. Most work on 1240 – 1300 MHz (Galileo)(RNSS), WRC-23 “Topic” 9.1 b. (5A/4C relationship).

ITU-R Working Party 5B (WP 5B)

(Maritime mobile service including the Global Maritime Distress and Safety System - GMDSS; the aeronautical mobile service and the radiodetermination service)

WP 5B is responsible for studies related to the maritime mobile service, including the Global Maritime Distress and Safety System (GMDSS), the aeronautical mobile service and the radiodetermination service, including both radiolocation and radionavigation services. It studies communication systems for the maritime mobile and aeronautical mobile services and radar and radiolocation systems for the radiodetermination service.

ITU-R Working Party 5C (WP 5C)

(Fixed wireless systems; HF systems in the fixed and land mobile services)

WP 5C is responsible for studies related to fixed wireless systems and HF systems in the fixed and land mobile services. It studies performance and availability objectives, interference criteria, RF channel/block arrangements, system characteristics and sharing feasibility. ((Note that for fixed wireless access (FWA) systems, work related to public access systems for potentially large deployment coverage is carried out in WP 5A)).

ITU-R Working Party 5D (WP 5D) - IMT Systems

Working Party 5D is responsible for the overall radio system aspects of International Mobile Telecommunications Systems (IMT). WP 5D is considering the future development of International Mobile Telecommunications (IMT) (agenda item 1.2). This agenda item includes 3300-3400 MHz, 3600-3800 MHz 6425-7125 MHz, and the 10-10.5 GHz bands.

ITU-R Study Group 1 (SG 1) (Spectrum Management)

Spectrum management principles and techniques, general principles of sharing, spectrum monitoring, long-term strategies for spectrum utilization, economic approaches to national spectrum management, automated techniques and assistance to developing countries in cooperation with the Telecommunication Development Sector.)

Three Working Parties (WPs) carry out studies on Questions assigned to Study Group (SG) 1:

WP 1A Spectrum engineering techniques

WP 1B Spectrum management methodologies and economic strategies

WP 1C Spectrum monitoring

The goals of ITU-R Working Parties 1A, 1B and 1C activities are to develop and maintain ITU-R Recommendations, Reports and Handbooks relevant to spectrum engineering techniques, spectrum management fundamentals and spectrum monitoring, respectively. Potential impact to Amateur Radio in these working parties include continued work on Wireless Power Transmission (WPT), both for Electric Vehicles and for mobile devices, and photovoltaics.

ITU-R Working Party 1A (WP 1A) (Spectrum engineering techniques)

Spectrum engineering techniques, including unwanted emissions, frequency tolerance, technical aspects of sharing, spectrum engineering, computer programs, technical definitions, Earth-station coordination areas and technical spectrum efficiency. Working Party 1A addresses bands from 275 GHz and above.

Issues that impact Amateur Radio in WP 1A include Wireless Power Transmission (WPT), the coexistence of telecommunication systems with wires and radiocommunication systems and related matters, including power line telecommunications (PLT) and smart grids. Updating of Report ITU-R SM.2451, *Assessment of impact of wireless transmission for electric vehicle charging on radiocommunication services*.

Question ITU-R 210-3/1 addresses “Wireless power transmission (WPT) and related issues” and will be dealt by ITU-R WP1A and WP1B.

Wireless Power Transmission (WPT) has been identified as “Urgent studies required in preparation for the World Radiocommunication Conference 2019” (Resolution 958 WRC-15).

- 1) Studies concerning Wireless Power Transmission (WPT) for electric vehicles:
 - a) to assess the impact of WPT for electric vehicles on radiocommunication services

- b) to study suitable harmonized frequency ranges which would minimize the impact on radiocommunication services from WPT for electrical vehicles.

These studies should take into account that the International Electrotechnical Commission (IEC), the International Organization for Standardization (ISO) and the Society of Automotive Engineers (SAE) are in the process of approving standards intended for global and regional harmonization of WPT technologies for electric vehicles.

2) Studies to examine:

- a) whether there is a need for possible additional measures to limit uplink transmissions of terminals to those authorized terminals in accordance with No. **18.1**;

- b) the possible methods that will assist administrations in managing the unauthorized operation of earth station terminals deployed within its territory, as a tool to guide their national spectrum management program, in accordance with Resolution ITU-R 64 (RA-15).

3) Studies on the technical and operational aspects of radio networks and systems, as well as spectrum needed, including possible harmonized use of spectrum to support the implementation of narrowband and broadband machine-type communication infrastructures, to develop Recommendations, Reports and/or Handbooks, as appropriate, and to take appropriate actions within the ITU Radiocommunication Sector (ITU-R) scope of work.

ITU-R Working Party 1B (WP 1B)

(Spectrum management methodologies and economic strategies) Spectrum management fundamentals, including economic strategies, spectrum management methodology, national spectrum management organization, national and international regulatory framework, alternative approaches, flexible allocations and long-term strategies for planning.

ITU-R Working Party 1C (WP 1C)

(Spectrum Monitoring)

Spectrum monitoring, including the development of techniques for observing the use of the spectrum, measurements techniques, inspection of radio stations, identification of emissions and location of interference sources.

ITU-R Study Group 4 (SG 4) (Satellite Services)

Systems and networks for the fixed-satellite service, mobile-satellite service, broadcasting-satellite service and radiodetermination-satellite service.

ITU-R Working Party 4A (WP 4A) - Efficient orbit/spectrum utilization for the fixed-satellite service (FSS) and broadcasting-satellite service (BSS)

Small satellite handbook. Dr. Ali Ebadi (Malaysia) editor. ARRL is collaborating with IARU R1 Hans Blondel Timmerman (PB2T), Amateur Satellite coordination.

ITU-R Working Party 4B (WP 4B) - Systems, air interfaces, performance and availability objectives for the fixed-satellite service (FSS), broadcasting- satellite service (BSS) and mobile-satellite service (MSS), including IP-based applications and satellite news gathering (SNG)

Working Party 4B carries out studies on performance, availability, air interfaces and earth-station equipment of satellite systems in the FSS, BSS and MSS. This group has paid particular attention to the studies of Internet Protocol (IP)-related system aspects and performance and has developed new and revised Recommendations and Reports on IP over satellite to meet the growing need for satellite links to carry IP traffic.

**ITU-R Working Party 4C (WP 4C)
(Spectrum Monitoring)**

Working Party 4C – Efficient orbit/spectrum utilizations for the mobile-satellite services (MSS) and the radiodetermination-satellite service (RDSS)

For WRC-23, WP 4C is expected to conduct sharing and compatibility studies for the 1300 – 1350 MHz band; of course, this is a concern to Amateur Radio due to the adjacent 1240 – 1300 MHz band, especially for the 1296 MHz “weak signal” operations (EME). CPM 23-1 decided that Working Party 3M (point-to-point and Earth-to-space propagation) and Working Party 4C (MSS and RDSS) will *Review of the amateur service and the amateur-satellite service allocations in the frequency band 1 240-1 300 MHz to determine if additional measures are required to ensure protection of the radionavigation-satellite (space-to-Earth) service operating in the same band in accordance with Resolution 774 (WRC-19)*. WRC-23 agenda “topic” 9.1 b

The World Telecommunication Development Conference 2022 (WTDC-22)

World Telecommunication Development Conferences (WTDCs) are typically convened in the period between two Plenipotentiary Conferences to consider topics, projects and programs relevant to telecommunication development. (WTDC-22 is an exception, due to the impact of the COVID pandemic). WTDCs set the strategies and objectives for the development of telecommunication/ICT, providing future direction and guidance to the ITU Telecommunication Development Sector (ITU-D). WTDC-22 will be the first WTDC Chaired by BDT Director Doreen Bogdan-Martin (KD2JTX). At the ITU Plenipotentiary Conference (Sep-Oct 2022), the U.S. Government will propose the candidacy of Ms. Bogdan-Martin for the elected post of ITU Secretary General.

ITU Plenipotentiary Conference 2022

The Plenipotentiary Conference is the highest policy-making body of the International Telecommunications Union (ITU). Held every four years, it is the key event at which ITU Member States decide on the future role of the organization, thereby determining the organization’s ability to influence and affect the development of information and communication technologies (ICTs) worldwide. The Conference:

- sets the Union’s general policies
- adopts four-year strategic and financial plans; and
- elects the senior management team of the organization, the Member States of the Council, and the members of the Radio Regulations Board.

The Plenipotentiary Conference 2022 (PP-22) will be held in Bucharest, Romania, from September 26 to October 14, 2022.



Inter-American Telecommunication Commission (CITEL)²

- ◆ CITEL PCC.II (radiocommunications including broadcasting) mirrors the ITU Plenipotentiary Conference, CPM and WRC-23 preparations
- ◆ Rapporteurship on Disaster prevention, response and mitigation, ICT and climate change, environmental protection and circular economy **Chair: USA (ARRL/Jon Siverling)**
- ◆ COM/CITEL meets once each year - critical to continue to participate in this exclusive management body.

- Establishing the policies for achieving the objectives and functions set out in Article 3 of the CITEL Statute.
- Electing the members of COM/CITEL.
- Establishing the Permanent Consultative Committees.
- Approving the request for membership in CITEL of American States that are not members of the Organization subject to ratification by the General Assembly of the Organization.
- Proposing amendments to the Statute for approval by the General Assembly of the Organization.
- Approving the CITEL Regulations.

CITEL Assembly

The CITEL Assembly is the highest body of the Inter American Telecommunication Commission and meets every four years. It will next meet in February 2022 in Colombia. The Assembly will determine the structure of CITEL and elect Chairs for each body.

² CITEL is the regional telecom organization for the Americas, part of the Organization of American States (OAS), with secretariat in Washington, DC

- ◆ Jon Siverling participates in CITEL as a member of the US Delegation
- ◆ IARU Region 2 is a recognized observer, usually represented by an Area Director
- ◆ The CITEL Assembly is the highest body
- ◆ COM/CITEL, its executive committee, usually meets annually
- ◆ Permanent Consultative Committee I (Telecommunications/Information and Communication Technologies) (PCC.I) meets 2 or 3 times annually
- ◆ Permanent Consultative Committee II (Radiocommunications) (PCC.II) meets twice annually; three times in years with a World Radiocommunication Conference

Permanent Consultative Committee – I

(Telecommunications/Information and Communication Technologies) (PCC.I)

Permanent Consultative Committee I (PCC.I) serves as the advisory body of CITEI in the area of telecommunications/ICTs, especially with regard to matters of telecommunication/ICT policy, regulatory aspects, standardization, cybersecurity, international Internet-related public policy matters—insofar as those matters involve telecommunication networks or ICT infrastructure—, universal service, economic and social development, environment and climate change, infrastructure development, and new technologies.

PCC.I Rapporteurship on Disaster prevention, response and mitigation, ICT and climate change, environmental protection and circular economy

This Rapporteurship, chaired by the United States (**Chairman: Jon Siverling/ARRL**) is a part of the Working Group, **Working Group on Deployment of Technologies and Services (WGDTS)**. The Rapporteurship provides a unique opportunity to promote Amateur Radio throughout the Americas; and to ensure continued support by administrations of Amateur Radio. The Rapporteurship supports disaster preparedness and serves as a means for Member States to channel their telecommunication needs regarding natural disaster early warning, mitigation and relief. Terms of reference for this Rapporteurship include:

1. To identify suitable technologies for emergency communications.
2. To improve communication, liaisons, and exchange of emergency communications to maximize resources and give way to innovative, effective programs for the region, promoting, among others, coordinated actions in border areas.
3. To help in the design of national and sub-regional emergency communications plans and early warning systems, paying special attention to SIDS and LDC.
4. To contribute to the development of public policies and regulatory frameworks that take into account international best practices in emergency communications, the impact of climate change, environmental protection, and the circular economy.
5. To foster, among the Member States, greater deployment, updating and maintenance of the emergency communications infrastructure.
6. To promote the temporary availability of emergency communications equipment in the region during the initial disaster intervention stage, as part of ITU's cooperation in cases of emergency.
7. To follow up on the implementation and achievement of the objectives related to the AMS1 Regional Initiative, adopted during the 2017 World Telecommunication Development Conference.

Permanent Consultative Committee – II (Radiocommunications) (PCC.II)

The CITEI Permanent Consultative Committee II: Radiocommunications (PCC.II) typically meets twice each year. **Impact to Amateur Radio: *all* Americas regional proposals for WRC-23 are developed in PCC.II.**

CITEI Working Group to Prepare for the ITU Conferences

The CITEI Working Group to Prepare for Conferences is the responsible group to prepare Inter American Proposals (IAPs) for World Conferences, to include World Radiocommunication Conferences, World Telecommunication Development Conferences, and the Plenipotentiary. This is where consensus is reached on agenda items which are then submitted to the ITU as regional

proposals. Impact to Amateur Radio: formation of positions and proposals for the Americas region are developed here. Once regional consensus is reached for each agenda item, the Inter American Proposal (IAP) is sent to the ITU. Proposals that favor Amateur Radio positions must be developed in this Working Group and support developed for favorable proposals sought from Member States throughout the process leading up to world conferences.

FRACAP

Federation of Radio Amateurs of Central America and Panama

(Spanish: *Federación de Radio Aficionados de Centro América y Panamá* or *FRACAP*)

FRACAP is the largest gathering of Radio Amateurs representing all Central America. ARRL participation promotes Amateur Radio in the region and affords unique opportunities to maintain close relationships with Amateur Radio activities and their respective regulators in six countries. ARRL participation often results in support for Amateur Radio issues at world conferences. ARRL participates each year in their convention and this participation should be continued.

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