

2014 Annual Meeting  
ARRL Board of Directors  
Hartford, Connecticut  
January 17, 2014  
Report of the Chief Operating Officer – Document 8  
Submitted by Harold Kramer WJ1B

2013 was another productive year for the ARRL Operational Department. We experienced an expansion of the majority of programs and services and we improved overall operational efficiency, particularly in the operating awards and sales and marketing departments. We also focused on improving the quality of our news, periodical and on-line content.

Staffing was stable in 2013 with little turnover. We have an excellent staff in place. Note: After I submit this report to the Board, I also share it with the entire staff since they are responsible for our success.

Here are some of the highlights.

- We ended the year with 162,215 members – a 1.2% increase and our seventh straight year of membership growth.
- VEC reported a 7% gain over 2012 for new amateurs; a new record high number of licensed amateurs.
- We reached an all time high of 76% market share of total Amateur Radio exams administered.
- Publication sales exceeded projections driven by the sales of the customized 2014 ARRL Centennial Handbooks.
- Advertising Sales exceeded projections despite a number of *QST* advertisers going out of business or leaving the industry.
- Education Services created a new website for ARISS and implemented new guidelines for ARRL volunteer instructors.
- We successfully launched an Android version of Digital *QST*.
- There were no significant processing delays for paper DXCC applications. Turnaround time averaged 2 weeks or less, even though DXCC applications increased almost 10% over 2012.
- LoTW now has 62,000 users and over half a billion QSO records are in its database. Trusted QSL 2.0 debuted due to the effort of staff and volunteers making it much easier to sign up for LoTW.
- Working with IT, web store orders no longer need to be entered by hand. They flow directly from the e-store directly to the warehouse and accounting.
- The Lab placed a renewed emphasis on resolving RFI problems.
- We continue to work on the 2014 Centennial including creating new publications, exciting new operating events and planning for the 2014 National Convention in Hartford.

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# ARRL VEC PROGRAM

Maria Somma, AB1FM, Manager

## Overview

The ARRL VEC program continues to maintain its dominant position in the Amateur Radio community. We have over 29 years of service, operating as a knowledgeable information source for a wide-range of licensing issues. In 2013:

- New Amateur licenses issued were up by 7% compared to 2012.
- Licensed US Amateur totals as of December 31, 2013 were at a new high of 717,201, a 1% increase over the 2012 year end total of 709,575.
- FCC issued Club station licenses are at an all time high in the FCC database at 11,363.
- The ARRL VEC market share of total Amateur Radio exams administered is at an all time high of 76%. A 2% increase over 2012.
- 37,428 total license application forms were filed compared to 35,486 in 2012 ,up 5%.
- A total of 6,804 exam sessions were administered in 2013 compared to 6,831 in 2012.
- 34,896 exam applicants were served in 2013, up slightly from 32,866 in 2012.
- Exam elements administered increased from 42,473 last year to 45,292 this year.
- 1,946 new Volunteer Examiners (VEs) have been added to our program bringing the total number of ARRL accredited VEs to 37,717.
- Ian Humphreys joined our department as a VEC Service Representative which brings us back to full staffing.

We continue to provide *QST* Exam Info column biannually in January and July, publish the VE Honor Roll quarterly. the Silent Key column monthly in *QST*, distribute VE Newsletters via email and manage the Extra Class certificate program.

## FCC Licensing Statistics

The total number of US Amateurs in the FCC database continues to grow each year. As of December 31, 2013, the amount of licensees reached a high of 717,201.

Technician, General and Extra class licensees are also at an all time high. Note: the table below does not included Novice or Advanced class licensees.

Technicians	349,163	54%
General	167,257	26%
Extra	133,391	21%
Total:	649,811	

New licensees increased by 7% over last year (28,886 in 2013 versus 27,082 in 2012). In 2013 upgrade license activity decreased by 9% over the same period last year from 10,283 in 2012 to 9,325 in 2013. We will continue to monitor this trend.

We believe that a significant amount of Technician licensees were generated through an increased interest in Public Service and Community Emergency Response Team (CERT) classes.

## Membership and Volunteer Programs (MVP)

Dave Patton, NN1N Manager

### Contests

Mike DeChristopher, N1TA

The HF contests continued to show growth, particularly the 80th ARRL Sweepstakes, which may be a recent high-water mark for logs received. The final count is pending adjudication.

The trend of decreased participation in the VHF+ contests continued in 2013.

There were about 100 less unique calls in the June VHF Contest than the previous year. However, the August UHF contest did see an increase to about 200 unique call signs.

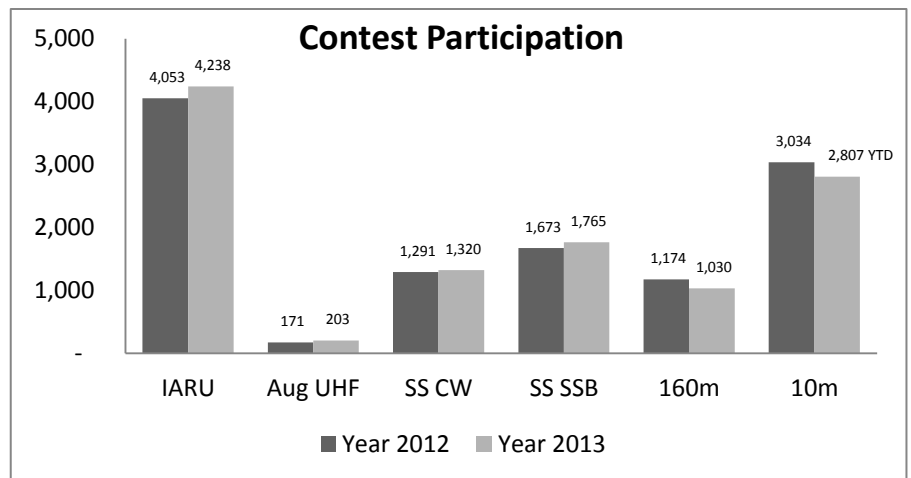
We processed, printed and mailed 10,200 certificates in 2013. This does not include reprints or additional copies. Certificates are issued for 14 contests. The plaque program count for 2013 was 415. These figures do not include additional or duplicate orders.

Work is underway on a new data management system that will streamline the contest adjudication process and decrease result and certificate processing time.

### Clubs and Hamfests

Norm Fusaro, W3IZ, Assistant MVP Manager

The number of ARRL Affiliated clubs ended 2013 at 2,244. After adjusting for inactive clubs, the total dropped by 141 from 2102. We did have 53 new affiliated clubs in 2013 six of which are school clubs. In 2013, we supported 78 sanctioned conventions and 419 sanctioned Hamfests.



## Operating Awards

Sharon Taratula, Awards Operations Manager

The Online DXCC Application continues to provide an online alternative to filling out, mailing and submitting the paper DXCC application forms. In 2013, 3,262 applications were submitted through this platform with 288,240 records. This program now accounts for 22% of all DXCC applications. The changes that were made to the DXCC system in 2012 continue to positively impact operations with processing times at a maximum of six weeks with an average of two weeks for paper cards and three to five business days for Logbook applications. The CQ WPX Award on Logbook almost doubled the number of applications from 2012 to 2013. During 2013 processing continued for the Diamond DXCC Award that celebrated 75 years of DXCC in 2012. When the final scores and the winner were announced in the fall of 2013, many more applicants surfaced. The total # of applications continues to rise above 3500."

Logbook of the World now contains more than half a billion QSO records from 60,962 registered users. Working with a group of dedicated volunteers and the LoTW Board Committee, we launched *TQSL 2.0*, a much improved upgrade of the LoTW client software.

### Awards Results 2013

	2012	2013	Variance	%
<b>DXCC –Total of all submission methods</b>				
Credits Received	1,337,968	1,347,368	9,400	0.7%
Credits Processed	1,491,661	1,391,848	-99,813	-7.2%
Applications Received	13,325	14,793	1,468	9.9%
Applications Processed	14,301	15,058	757	5.0%
Credits per Application	104	92		
<b>WAS</b>				
WAS Certificates Issued	641	671	30	4.5%
WAS Triple Play Issued	143	182	39	21.4%
<b>CQ WPX Award</b>				
Applications Completed	303	692	389	56.2%
LoTW Credits Issued	149,040	259,181	110,141	42.5%
<b>VUCC</b>				
VUCC Applications Processed	481	502	21	4.2%
Grids Credited	45,462	46,375	913	2.0%
<b>Logbook of the World</b>				
Total QSO Records	467,138,965	548,927,464	81,788,499	14.9%
Active Certificates	82041	93,733	11,692	12.5%
<b>Awards Processing Time</b>				
Average Paper Awards Processing Time	4 weeks	2 weeks		
Average LoTW Awards Processing Time	4 days	2 days		
<b>Outgoing QSL Bureau</b>				
Cards Received	808,500	795,000	-13,500	-1.7%
Cards Shipped	731,440	781,000	49,560	6.3%

## **Field Organization**

Steve Ewald, WV1X, Field Organization Supervisor

Leona Adams, W1LGA, Chuck Skolaut, KØBOG, and Steve Ewald, WV1X, continued as team members in the Field Organization/Public Service branch of the Membership and Volunteer Programs Department.

At the beginning of 2014, there were 7,703 ARRL Field Organization appointees. One new Section Manager, Scott Yonally, N8SY in Ohio, started his term of office by appointment after Frank Piper, KI8GW, announced his resignation toward the end of 2013. Also, during the second half of 2013 there was one balloted Section Manager election in Tennessee.

Leona Adams provided administrative support to our Section Managers and their appointees by keeping the Field Organization data base at Headquarters up-to-date and by receiving and handling Section expenses reports.

With strong support from the entire Headquarters staff, the Field Organization Team hosted ten Section Managers for the New Section Manager Workshop in Newington for four days in September.

During the second half of 2013, Chuck Skolaut represented ARRL Headquarters at the Kansas State Convention in Salina, the Maryland State Convention in West Friendship, and the West Central Florida Section Convention in Plant City. Steve Ewald attended the All Ohio ARES Conference in Columbus.

ARRL Field Organization leaders and ARES members participated in the ARRL Simulated Emergency Test in October and throughout the fall season. Also, ARRL and the National Weather Service co-sponsored the annual SKYWARN Recognition Day in early December.

## **W1AW**

Joe Carcia, NJ1Q, W1AW Station Manager

In 2013, we completed a number of renovations to the station. The upstairs conference room was painted in August. In November, the chain-link fencing around the towers, the outside stockade area and the wire fences were replaced. In addition, doors were also installed on the three tower fences. In December new vinyl trim and soffit panels replaced the old wood trim above the rear doors and gutters. As part of our ongoing maintenance program, in November, XX Towers Inc. performed the spring antenna and tower inspections.

W1AW participated in the November Phone Sweepstakes. 891 contacts were made on 80 through 10 meters. W1AW also participated in the New England region MARS preparation exercise by both transmitting and receiving local weather reports using voice and digital modes. W1AW hosted a number of new Section Managers during the ARRL SM Workshop. In November, ARRL staff hosted a radio merit badge class for Boy Scouts. W1AW assisted the ARRL Lab in the testing of various Arc-Breakers. Hiram Percy Maxim's rotary spark-gap transmitter, Old Betsy, was repaired and made operational again.

## **Emergency Preparedness Program**

Mike Corey, KI1U, Emergency Preparedness Manager

We continue to maintain good relationships with national level served agencies. In the last half of 2013 the ARRL was represented at the National Public Safety Telecommunications governing board meetings, National VOAD fall meeting, and DHS SHARES meeting. Mike Corey, also took advantage of time in Washington DC in October to meet with representatives from FEMA, Red Cross, and DHS OEC. Mike Corey, KI1U, is working with the Berkman Center for Internet and Society at Harvard Law School on a mesh networking project.

In September Mike chaired the first IARU Region 2 Emergency Communications Workshop at the triennial general assembly in Cancun, Mexico. The workshop was attended by representatives from countries throughout region 2. A final document from the workshop will be made available in early 2014.

The last half of 2013 was relatively quiet in terms of major disasters. ARES saw extensive use during the Colorado floods and during a tornado outbreak in Indiana and Illinois.



## Membership, Product Sales and Marketing

Bob Inderbitzen, NQ1R Manager  
Diane Petrilli, KB1RNF Membership Manager  
Jackie Ferreira, KB1PWB Product Marketing Specialist  
Yvette Vinci, Customer Service/Circulation Manager  
Steve Capodicasa Warehouse Supervisor

### Staffing

In December, Margie Bourgoïn transferred from the Development Department, filling an open position on the Member Services team. Anthony Flores was hired in late December to fill an open position as a warehouse clerk. All positions are filled in the department.

### Membership

ARRL enjoyed membership growth for the seventh consecutive year. There were 162,215 members by the end of December; gains of 1,937 members over 2012. Membership grew 1.21% (1.56% in 2012; 0.86% in 2011). The largest sources of new member acquisition came from segmenting our large databases and developing effective, targeted membership campaigns conducted by mail and email. New licensees are another source of significant membership acquisition, and 4% of all acquisition came from applications received at hamfests and conventions, and through clubs.

Membership acquisition in 2013:

19%	Direct Mail responses (within 120 days of mailing)
18%	Website
12%	Renewal notices
12%	New ham mailings
11%	E-mailings
4%	Field-based recruitment
<u>24%</u>	<u>All other sources</u>
100%	TOTAL

### Digital Edition of *QST*

The Sales and Marketing Department provides support to members using the digital edition of *QST*. The marketing team also leveraged this benefit in appeals and messaging to ARRL members—including prospective, renewing and current members. One of these activities is the monthly notification of the current digital edition of *QST*, emailed to over 113,800 members. We have also increased the number of members who have voluntarily opted to receive digital-*QST*-only to 6,457 (2,304 are international members).

## Marketing/Sales

Publication and product sales were \$1,801,715 for the second half of the year, exceeding the forecast by 2%. Total sales in 2013 were \$3,379,287 (\$3,113,449 in 2012), exceeding the forecast by \$84,314. Direct sales were \$2,000,819 (\$1,849,487 in 2012); dealer sales were \$1,378,468 (\$1,283,962 in 2012).

Sales exceeded revenue projections in many product divisions (*Repeater Directory*, Technician licensing materials, third-party offerings, and membership supplies), helping offset weaker sales in other categories including license upgrade materials. The biggest contributor to the year's gains, however, came from sales of the commemorative 2014 Centennial Edition *ARRL Handbook*. In addition to publishing a significantly revised edition—the hardcover *Handbook* was offered with a gold-foil embossed and serial-numbered cover. Individuals ordering the books directly from ARRL were offered personalization, imprinting their names and call signs on the books. The books were introduced in August, and nearly 10,000 hardcover copies (the entire print-run) were fulfilled by year end. The softcover edition *Handbook* will continue to be offered throughout 2014.

Efforts to promote and service our existing suite of Affinity Membership Benefits continued throughout 2013: Equipment and Club Insurance Programs (Hays), ARRL Visa credit card (US Bank), and group discounted auto and home insurance (MetLife). We renegotiated and renewed our agreement with US Bank in July. Royalties earned for the ARRL Visa credit card totaled \$40,986 in 2013 (\$38,385 in 2012).

## Fulfillment and Warehouse

The warehouse processed 52,647 packages for individual and dealer orders in 2013.

During the second half of the year, our staff worked with members of the IT and Accounting staff to complete planning and testing of the new direct ordering and fulfillment system. The new system, successfully cut-over to in December, integrates ordering and fulfillment across the ARRL Information System (AIS), accounting system, and ARRL web store. Since the system has been implemented, e-store orders now pass-through to the fulfillment system without keyboarding the orders. New web-based data-entry screens have been developed to support manually-entered orders received by mail or phone. Packing slips, formerly printed here at headquarters, now print at the warehouse. We are pleased that this effort has connected the dots between online orders and fulfillment.

## Special Events

This period included a significant amount of planning for next year's National Centennial Convention and related Centennial activities including the selection of an exhibit services company, preparing the convention registration system (to be introduced in January), the selection of Centennial-themed merchandise, and promoting the convention. A new version of the ARRL membership certificate commemorating the 100th anniversary was introduced during the summer. Members can generate the certificates online: <http://www.arrl.org/membership-certificate>.

During the second half of the year, we supported an increased membership presence at the following events:  
ARRL Alabama State Convention (Huntsville, AL) – August  
ARRL North Carolina Section Convention (Shelby, NC) – August/September  
Pacificon (San Jose, CA) - October

## HQ Volunteers

In anticipation of next year's Centennial Convention, an effort was undertaken to recruit additional volunteers to help lead tours of our headquarters. There are 35 volunteers today—all ARRL members from throughout Connecticut.

## The ARRL Lab

Ed Hare, W1RFI Manager

### Product Review

Testing of 37 devices for Product Review was completed in the ARRL Lab in 2013. Two additional units were tested for advertising acceptance. Bob Allison and Steve Ford continue to produce video overviews of many review items for the digital edition of *QST*. Earlier this year, two of our HP/Agilent spectrum analyzers were not able to be calibrated. The Lab had the newest spectrum analyzer repaired, without any test disruptions. Since our newest spectrum analyzer and our phase noise test set are 20 years or older, we are looking into purchasing modern equivalents.

### Technical Information Services

In the 2013, the Lab staff provided, through their TIS (Technical Information Services), support for more than 4,000 member questions. The use of the ARRL technology forums has been steady, replacing some part of the individual service provided one-on-one to members by allowing members to answer each other's questions.

<http://www.arrl.org/forum>.

Lab Engineers Bob Allison and Mike Gruber held tested convention attendees' 2-meter and 70cm handheld radios at the Dayton Hamvention. As seen last year at Pacificon, approximately 10% of all Chinese manufactured HTs failed FCC emission tests. Martin Ewing, AA6E, is a Lab Volunteer who has retired from a career in radio astronomy and IT administration. He has been working in the area of SDR and applications for tiny Linux computers. He recently developed a facility for remote receiver operation to enable the W1HQ Club station to operate during W1AW operations.

Zack Lau worked with Lori Kosior, KB1ZML, a volunteer in the Lab, to fix a large file of *QST* archive error reports that needed attention—there were page omissions in the *QST* Print Archive 1915–2011. Many of the old articles downloads had page continuation issues that prevented readers from reading the entire article. She entered in missing data and made sure that the downloads are complete.

Bob Allison and Mike Gruber held conducted testing of handheld transceivers at the Dayton Hamvention.

### Radio Frequency Interference

During 2013, Mike Gruber, W1MG, fielded 225 new inquiries from members about RFI problems, including 51 power-line cases. Based on ARRL Lab staff estimates, about 65% of the reports ARRL receives continue to be referred to ARRL information on the subject, with no further inquiry by the member. About 35% of our cases do involve ARRL contact with the utility, and approximately 20% of the total power-line cases are referred to the FCC. Of these, only approximately 20% are resolved by the FCC, resulting in an ever-growing number of FCC cases.

Mike also tested over 40 LED and CFL light bulbs. He used the results of this testing as part of a *QST* article on the interference potential of these products, which appeared in the October issue. Mike also wrote an article on emergency generator hookups, which appeared in the November issue.

Mike investigated reports of tripping AFCI circuit breakers. Specifically, some AFCI breakers were reported to trip in the presence of a nearby amateur radio transmitter. With assistance from W1AW Station Manager, Joe Carcia, he tested every major AFCI breaker. The problem was traced to a specific model of breaker. Mike was able to successfully resolve this matter with assistance from the manufacturer. Complete details appeared in the November 19, 2013 ARRL news story, ARRL Helps Manufacturer to Resolve Arc Fault Circuit Interrupter RFI Problems.

### **Museum Space and Historical Committee**

The processing of our historical hardware collection continued in 2013 with the oversight of the ARRL Historical Committee.

### **Advocacy**

Lab Manager, Ed Hare, continued his involvement with a number of industry committees. He is the ARRL representative on the ANSI accredited C63<sup>®</sup> EMC Committee, the Secretary of the IEEE EMC Society Standards Development and Education Committee and was elected to the IEEE EMC Society Board of Directors for a two-year term.

Ed has also consulted with General Counsel Chris Imlay on various rulemaking and compliance matters including the petition to obtain access on LF, the pending RF exposure regulation changes and the newly proposed receiver performance standards being considered by the FCC.

## Publications:

Steve Ford, WB8IMY, Manager

### Staffing

The first half of 2013 saw a major realignment of our editorial staff resources, and this situation has matured throughout the remainder of the year.

Our new strategy of using freelance editing talent has been a resounding success. Barry Shackelford, W6YE and Kai Siwiak, KE4PT, have performed superbly as our freelance *QST* technical editorial team. Not only are they highly productive, they are also extremely thorough. As a result, the number of technical articles published in each issue of *QST* has increased while the number of technical errors has declined sharply.

We also focused on improving the quality of our news, periodical and on-line content. Rick Lindquist, WW1ME, has also turned in outstanding performance as our freelance News Editor. From his home in northern Maine, Rick has maintained a steady flow of well-written and timely news for the ARRL web, the ARRL Letter and *QST*.

### QST

Satisfaction with *QST* magazine remains strong. The influx of articles continues and despite tighter editing to conserve space in the magazine, we still have an article backlog that reaches well into 2015. For the ARRL Centennial we have also scheduled a number of historical features for print *QST* with additional content (such as video and audio) for the digital edition.

### Books and CDs

In the first half of 2013 we published several new books. The new titles include *Radios to Go!*, *Radio Science for the Radio Amateur*, *Ham Radio for Arduino and PICAXE*, *Understanding Your Antenna Analyzer*, *Morse Code Operating for Amateur Radio* and *Hands on Radio Experiments, Volume 2*.

In the second half of the year the star was clearly the 2014 “Centennial” *Handbook*. Thanks to an excellent effort by our freelance book team of Ward Silver, NOAX and Mark Wilson, K1RO, we have a book that appears to be extremely popular in the amateur community and beyond. With the Centennial in mind, we also published two *History of QST* books: *Volume One*, which concerns advancements in technology, and *Volume 2*, which chronicles *QST* advertising. These are also “Centennial” books. In fact, all books produced for sale in 2014 will carry Centennial branding.

We also completed *Circuit Simulation and Analysis*, a tutorial on circuit modeling through software, and ARRL’s *Amateur Radio Transceiver Performance Testing*, a guide to understanding the data presented in *QST* “Product Reviews.”

The 2013 ARRL Periodicals DVD went to press just before the holidays and should be available by January 15.

The 2014 ARRL Calendar was completed in late September and it carries an attractive Centennial design based on the historical “timeline” devised by Allen Pitts, W1AGP.

The Digital *QST* app for Android was released in autumn 2013 and was a major success. Between the iOS and Android versions, many readers are now enjoying *QST* on mobile devices.

## **Digital Content**

Allison Barbieri, KC1ARQ  
Digital Content Coordinator

### **Digital QST**

From 2012 to 2013, the amount of new visitors to ARRL.org increased by 13% for a total of 7,578,999 visitors. From July 2013-December 2013, visitors to the “What-is-ham-radio” web page increased 114%. During this time period, unique visitors to the “Getting-Licensed” web page increased by 79%.

### **ARRL Website**

After the Home page, the Logbook of the World page was the second most viewed. Returning users to ARRL.org were at 61%, while 39% were new visitors. This is a slight increase from the 36% of new users reported in July. The top three browsers used to access ARRL.org for 2013 are: Internet Explorer: 30%, Firefox: 25% and Chrome: 22%. Chrome seems to be increasing steadily in use as it increased 18% since July. Internet Explorer decreased in usage by 5% and Firefox remained the same.

The ARRL Centennial pages were added to the website in 2013. Since being added, the Centennial pages have been uniquely viewed 6,502 times.

The IARU.org website ([www.iaru.org](http://www.iaru.org)) continues to be updated with new content. The home page is the most visited web page, followed by QSL Bureaus and Member Societies. Google is the number one site for referring viewers to the IARU website, however ARRL.org is a very close second.

HK Note: Thanks to Alli for completing this report after only two weeks on the job!

## **Business Services Department**

**Debra Jahnke, K1DAJ**

### **Advertising Sales**

Our 2013 goal for advertising revenue was \$2,542,585. Despite many challenges in the market, we exceeded our goal by \$45,000. We added 33 new advertisers to our rolls, 41 advertisers increased their advertising levels, and 50 advertisers held to their 2012 levels. We also lost 38 advertisers. Some of these losses were due to company closings, a disturbing trend often prompted by retirements from “mom and pop” businesses. Others companies decided to drop out as equipment manufacturers curtailed their co-op advertising programs that are used to assist in paying for a retailer’s advertisements.

### **Publication and Product Wholesale Sales**

Our 2013 wholesale book sales exceeded 2012 revenue by over \$95,000. Sales to Amazon.com grew to 49% of dealer sales versus 42% in 2012. They remain our number one client in terms of gross revenue. Other book dealers also fared somewhat better in 2013 than in 2012. Sales of the hard-cover Handbook provided a major sales boost.

### **ARRL On-Line Auction**

The 2013 Auction listed 248 items up for bid and 227 items were ultimately auctioned off with the bids totaling \$31,051. All product review equipment up for bid was successfully sold at close to current retail prices and, in several cases, over retail. In addition to product review, bidders had a variety of other items to bid on, from old and rare books to “boat anchors.” One outstanding bid was \$600 for the new ARRL Hardcover Handbook with the serial number of 00001.

### **ARRL Centennial Exhibits**

By the end of 2013, we had recruited 40 exhibitors purchasing a total of 82 booth spaces. All major manufacturers are on board and a number of exhibitors will be traveling across the country for this event. As we continue to add exhibitors, their logos can be viewed at [www.arrl2014.org](http://www.arrl2014.org) under the Exhibitors tab.

## Education Services

Debra Johnson, K1DMJ, Manager

### Staffing

In January 2014 we are reconfiguring the administrative role for this department to transfer administrative support for the Continuing Education Program to the Public Service and Emergency Communications Department.

### License Instruction and Instructor Support

In October 2013 we re-launched a newsletter distributed to instructors and teachers, under the title “Radio Waves.” It was well-received and resulted in a resurgence of instructor registrations and dialog with instructors. In coordination with the Education sub-committee of the PSC we established some guidelines for instructor qualifications which are now posted on the ARRL website. In preparation for the development of new instructor materials for instruction of the Technician license to be republished in 2014, and also in response to the Board’s request for us to investigate non-traditional, shorter duration formats for Technician license preparation classes, I conducted a series of interviews with a cross-section of active license instructors and circulated an online survey to our registered license instructors. A summary of those findings will be provided in a separate report.

### Continuing Education Program

During 2013, we enrolled 338 students in 12 online and one hybrid (combination of classroom and online) sessions of the *Introduction to Emergency Communication* course. 171 of these enrolled students have successfully completed the course thus far (the November and December sessions have not yet concluded.. During the second half of the year 17 mentors have been active supporting the online course. 31 field exam sessions for the course were offered, with 178 receiving certificates of successful completion. 9 field classes were conducted with 91 students participating. 23 students successfully completed the final assessment for the *Public Service and Emergency Communications Management for Radio Amateurs* (EC-016) course. 74 completions of the PR-101 course were recorded during 2013.

### Education & Technology Program

We offered three sessions of the Teachers Institute in 2013, including two sessions of the TI-1 and one session of the new TI-2 on the topic of *Remote Sensing and Data Gathering*, sponsored by DARA. New curriculum rolled out during the new advanced TI on *Remote Sensing* included resources for teachers to explain analog to digital conversion and the translation of analog sensor readings of the environment into digital data. A total of 34 teachers participated in the three Institutes. A total of 5 School Station grants and 3 Progress Grants were awarded through the ETP grant program in 2013. Ham Radio Outlet continues their generous support by providing equipment for the program at significant discount.

In addition to the resources developed during the first six months of 2013 that elaborate research projects planned for upcoming AMSAT Fox Cubesat launches and provide resources for teachers to introduce these projects to their students, ARRL’s ETP Director Mark Spencer, WA8SME has been working with the recently launched FUNCube satellite to develop applications for teachers to employ data from the Materials Science experiment on board as an educational payload. He has also been working on refining the sea buoy vehicle designed to carry a sensor pack that stores and transmits data via packet radio. This will be featured at the next TI-2 on *Remote Sensing and Data Gathering* as a classroom resource that teachers can use to involve students to do environmental research.



## Amateur Radio on the International Space Station (ARISS)

The international program team successfully executed 21 US and 68 international school contacts during 2013. The breakdown of direct vs. telebridge contacts is as follows:

	Direct	Telebridge	Total
USA	14	7	21
International	32	33	65
Total	46	40	86

In December ARISS released its new website at [www.ariss.org](http://www.ariss.org) developed by ARRL Education Services. Education Services will continue to be responsible for updating the website with information about current activities.

The program experienced many challenges during the year. Early in 2013 the main ISS radio station used for school contacts failed. Fortunately, school contacts could continue using the low power Ericsson VHF radio that is located in the Columbus module of the ISS. During the year it became apparent that across the board budget cuts to NASA programs has closed the door to any hope that NASA will support any future testing and upmass requirements necessary to replace and upgrade amateur radio equipment on the ISS. Other US government requirements to meet online user testing requirements shut down the online proposal process for the ARISS program sponsored by NASA on their website, which meant the US partners have had to use other means to recruit schools to participate in the program. It does not appear that the necessary approvals will be forthcoming from the US Office of Management and Budget any time soon, so the new proposal process initiated with NASA in 2011, which had been working well, continues to be in limbo. Additional efforts from ARRL and AMSAT will be necessary to sustain a pipeline of schools into 2014.

The HamTV project which was initiated by the ARISS European partners has taken shape during the year but has required enormous investment of time from program volunteers. It promises to be a technical achievement for interested radio amateurs, but does not offer a utility for the school program in the US due to the complexity of operation and equipment requirements. Unfortunately it has proved to be a distraction from the more important priority for educational purposes of replacing and updating equipment needed to support school contacts and other classroom radio activities.

During the last quarter of 2013, Education Services has focused more attention to working more closely with the ARRL Public Relations Department and ARRL news staff to increase and improve publicity about ARRL and AMSAT partnership with NASA in the ARISS program.

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