



February 2018

Society of Broadcast Engineers Chapter 24 Newsletter Madison, Wisconsin

Next Meeting

Thursday, February 22

FM IBOC, AOIP, and Managing Plants from Afar & Chapter 24 Officer Nominations

7:00 PM meeting at the studios of WOLX Radio on Madison's far west side. 94.9 WOLX Studio 7601 Ganser Way, Madison

The business meeting will include soliciting candidates for the annual Chapter 24 officers' election in April.

Evening program: Chris Tarr from Chapter 28, Milwaukee, and the Director of Engineering for Entercom Wisconsin, shows us the latest about FM IBOC, Audio-over-IP, and managing your technical plants remotely.

Meet for Dutch treat dinner at 5:30 PM Jason's Deli 7349 Mineral Point Rd, Madison

Visitors and guests are welcome!

Coming Up

- Wed., Mar. 28 Nominations / Recording on-Location with Sound Devices
Thurs., Apr. 26 Elections / NAB Wrap-Up
Wed., May 23 Full Compass Systems

Analog TV Rules Eliminated

>>> by Tom Smith

On January 24 (https://transition.fcc.gov/Daily_Releases/Daily_Business/2018/db0125/FCC-18-3A1.pdf), the FCC eliminated a number of rules pertaining to full-power analog TV stations. These rules are being eliminated nearly eight years after full-power TV stations ceased analog operation. The order repealed all the rules concerning announcements that stations were required to make before the DTV transition that analog transmission was going to end. The FCC also eliminated the analog table of allocations, the rules pertaining to the mileage separations between analog stations including those between full-power and Class A stations, protection requirements of a Class A analog station to an analog full-power station, the rules setting the DTV transition date and coverage requirements of a DTV station to duplicate its analog coverage. Also repealed was the rule covering the children's programming compliance requirement for an analog TV station.

The FCC retained some rules concerning analog standards as they relate to analog low-power TV stations as they are not required to cease analog operation until the end of the repack period. After the end of the repack period, analog television will be history when the final analog LPTV station switch to digital operation or signs off.

Bye-Bye Radio Shack

>>> by Tom Smith

Late last fall, I was driving down Broadway Street in Monona and I noticed construction at the Radio Shack store. I had been in there a few months earlier and was a little shocked it was gone, but not surprised. I checked the Fish Hatchery Road store and found it replaced by a Sprint store. Recently I was driving on University Drive and noted that it looked like the Radio Shack store had been long gone as there was something else in the building which looked like it had been there awhile. I checked if there was still a Radio Shack website as I had read that they were reorganizing and found a very limited website which still carried a few parts and some other items. With the closing of the last three Radio Shacks in Madison, that ends any source of electronic parts in Madison. Over the years we have seen Popkey's, Superior and Satterfield's go out of business and now the source of the last resort, Radio Shack. Several years ago Milwaukee PC left Madison which was a good source of computer supplies.

This is common all over the country as more electronics have become disposable items and have become unrepairable. Unfortunately, it leaves businesses that require timely repair of electronic equipment having to wait for parts to arrive by mail order. Fortunately we still have a number of sources of electronic parts. They include Newark/MCM, Digikey, Mouser and Allied for full service suppliers for service, industrial and manufacturing users. For the hobbyist, there is Parts Express, All Electronics, Jameco and Fry's. Thankfully we can still find phone, Ethernet and TV reception supplies at our local big box home

Radio Shack >>> continued on page 6

In this Issue

Meeting Minutes.....2
Amateur Radio News.....3
Job Recruiting.....4
Certification News.....7
Chapter 24 Sustaining Members.....8



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Visit the updated sbe24.org



Meeting Minutes

from the January 2018 Business Meeting

The Society of Broadcast Engineers Chapter 24 monthly meeting was held on Wednesday, January 17, 2018 at the Wisconsin Public Broadcasting Center in Madison. There were 14 members present, 9 who held SBE certification, and one guest.

Chapter Chair Rich Wood called the meeting to order at 7:03pm, then asked everyone to make quick introductions. There were no additions or changes to the very brief December meeting minutes and they were approved as published in the January *Newsletter*.

Treasurer Roy Henn gave a report on the Chapter finances and indicated the bank balance remained solidly in the black. Rich then explained that Chapter 24 continues to look for a volunteer to step in as the *Newsletter* editor, as well as someone to act as membership coordinator. There are currently 36 members on the Chapter roster. Fred Sperry forwarded information that there are currently 16 companies who are sustaining member for Chapter 24.

With an overview of upcoming meetings, Rich summarized the program topics that are planned. On February 22, the meeting will be at the WOLX-FM studios, and open officer nominations, cover FM-IBOC, audio over IP, and leveraging IP for remote site management. The March 28 meeting will continue nominations, and focus on audio and video products by Sound Devices. On April 26, elections and the annual NAB Wrap-up will happen at WMTV, while the May meeting will be held at Full Compass Systems.

Jim Hermanson provided a Certification and Education update, and noted one local certification was in process. The next certification exam opportunity will be at the NAB Show in Las Vegas, with an application deadline of March 2. The next local exam window is June 1-11, with an application deadline of April 20. For a Frequency Coordination update, Tom Smith sent in a report indicating the last local requests were for 2GHz microwave and a 450/455 MHz audio channel coordination for airplane aerial coverage of the Nebraska/Wisconsin football game in November.

Leonard Charles presented the National report, and mentioned membership renewal letters should be arriving in mailboxes starting in February. Members can now choose between regular membership or the new MemberPlus option, which includes all SBE online webinars through March 2019. The SBE will hold a membership meeting and reception on Tuesday, April 10 at the NAB Show. The SBE will host a four-part webinar on Broadcast Infrastructure Cybersecurity; which will start January 30 and be presented by Wayne Pecena of Texas A&M.

There was no old business to discuss. In new business, the idea of converting the current Chapter 24 *Newsletter* from a once-a-month .pdf document to an updated web-only page was brought forward. A few related items were discussed, with the goal to revisit this topic next month. Please think about what you would like to see happen and bring your comments and suggestions to the February meeting.

In professional announcements Kevin Ruppert mentioned that he is now the new chief engineer for WISC-TV. As another professional announcement, Russ Awe is the interim chief engineer for WHA-TV.

The meeting was adjourned at 7:17pm, and Clif Groth introduced the SBE webinar on TV White Spaces and Wireless Mics. Comments and discussion followed after the webinar, along with some written issues and opinion items that Tom Smith had sent in.

Submitted by Mike Norton, Secretary



Amateur Radio News

compiled by Tom Weeden, WJ9H

- Amateur Radio played a role in relaying critical information after the erroneous missile warning in Hawaii last month. American Radio Relay League (ARRL) Hudson Division Director Mike Lisenco, N2YBB, testified on January 25 before a session of the Senate Committee on Commerce, Science, and Transportation regarding Amateur Radio's readiness to respond in an emergency. The session, "This is not a Drill: An Examination of Emergency Alert Systems," was called in the wake of the false warning released in Hawaii in January. Lisenco said Amateur Radio played a role not only in responding to the warning but in disseminating word that the missile alert had been issued by mistake.

Lisenco said the Hawaii Radio Amateur Civil Emergency Service (RACES) activated on UHF and via a VHF inter-island repeater network, and amateur stations monitored the alert and cancellation activity, which came less than 1 day after RACES had completed an Amateur Radio communication exercise at the State Emergency Operations Center (EOC). In his written testimony, Lisenco recounted that the situation after the missile warning in Hawaii was chaotic.

"The phone lines into the State EOC were soon overwhelmed and congested, and the website was overwhelmed with public inquiries," he said. Lisenco said that in such situations, Amateur Radio volunteers are typically present at state or county EOCs and at the State Warning Point, the Hawaii Emergency Management Agency. He pointed out that the cancellation of the false warning circulated on various information outlets 13 minutes after the missile warning went out.

"That was picked up and relayed through the Amateur Radio networks," he told the Committee in written testimony. "The cell phone alert system could not be used for the cancellation notice until prior FEMA approval was obtained. Once that was obtained, the cancellation alert went out to the cell phone network after 38

minutes from the initial alert."

"Many people had received the warning first on their cell phones through the Wireless Emergency Alert (WEA) system, but a cancellation on that same



Wicker Highlights Amateur Radio's Role in Hawaii Missile Alert Response

system was substantially delayed," Lisenco said. "The result was that Amateur Radio networks disseminated validated cancellation information long before the cellular networks were able to do so."

Lisenco took the opportunity to address how private land-use regulations can preclude Amateur Radio disaster response capabilities.

"There is no substitute for the ready availability of a residential Amateur Radio station in daily operation from a licensee's residence," he said. "The licensee cannot be expected to have the ability to communicate into or from a disaster site unless he or she has a station with an effective outdoor antenna capable of operation on multiple frequency bands at once, which is ready to be pressed into service from the licensee's residence at a moment's notice."

Lisenco reminded the panel members that the Amateur Radio Parity Act of 2017 is now pending before the Committee. "We are in desperate need of this legislation, and without it, the volunteer emergency communications services provided by Amateur Radio will be precluded. We urge the Committee in the

strongest terms to please approve and send this legislation forward without delay," Lisenco said.

Mississippi Senator Roger Wicker, a cosponsor with Connecticut Senator Richard Blumenthal, of the Amateur Radio Parity Act, attended the hearing. Responding to a question from Wicker at the hearing, Lisenco pointed out that an early US Coast Guard warning cancellation notice was relayed to Amateur Radio networks and disseminated quickly, while the State Warning Point waited to obtain FEMA authorization to rescind the warning via cellular phones. As a result, Amateur Radio networks were able to disseminate validated cancellation information long before the cellular networks could. Wicker issued a statement noting Lisenco's testimony and posted a video clip of his exchange with Lisenco. <https://youtu.be/xGq_R5Bkglg>

- In comments to the FCC on a series of Technological Advisory Council (TAC) spectrum management policy recommendations, The ARRL said that while some of the Council's recommendations are valid, it would be "highly inappropriate" to generalize about applying them broadly in all radio services. The comments, filed on January 31, were in response to a December 1, 2017, Public Notice in ET Docket No. 17-340. ARRL took the opportunity to strongly urge the FCC to reinstate a 2016 TAC noise floor study, which, ARRL asserted, was apparently terminated before it even got started.

"Indeed, it is difficult to imagine how the Commission can now...suggest the adoption of specific spectrum management principles, incorporating such concepts as receiver immunity, HCTs [harm claim thresholds], and interference temperature determinations without having...a firm grasp on ambient noise levels in basic RF environments and geographical areas," the League told the FCC.

ARRL reiterated its encouragement for the FCC to incorporate receiver

>>> **Weeden** continued on page 6

Reach the Most Broadcast Engineers for Your Buck When Job Recruiting Online

>>> by Vicki Way Kipp, CSTE, CBNT

It's no secret that the pool of qualified applicants seeking a career in the field of broadcast engineering is not an enormous group. People who have training and experience with RF, transmitter maintenance, tower construction, transmission line and antenna maintenance, FAA tower requirements, terrestrial modulation, mobile modulation, error correction, grounding, microwave links, satellite uplinks and downlinks, IP networking, hexadecimal, PIDs, terminating high-bandwidth cables, bench repairs, en/transcoding, de/multiplexing, 'QC'ing or tech checking broadcast-quality audio and video signals, studio production, Non-Linear Editing, tape and file formats, Network Time Protocol and time code, long-term high-volume content storage, video on-demand website services, streaming, legacy equipment, complying with the FCC's EAS, closed captioning, logging, and public file rules and regulations, writing technical documentation, meeting the needs of technical and non-technical staff, anticipating and preparing for future technology, budgeting, recordkeeping, and a myriad of other broadcast engineering skills is a specialized group.

Hanging a "Help Wanted" sign on the front door is not going to cut it. And as fun as it might be to go recruiting for broadcast engineers at a ham radio festival, it may not be the most efficient use of your time.

To maximize the likelihood of getting applicants who have the experience and training relevant to the job that you're hiring for, post your opening strategically on 'broadcast engineering'-specific websites.

Employment Sources for Broadcast Engineers (as of 01/20/2018)

Audio Engineering Society

<http://www.aes.org/jobs/submit/>
\$250 to post a job online in the Want Ads at <http://www.aes.org/journal/wantads/> \$(AES advertising rate) to publish a job as advertising in the Journal of the Audio Engineering Society (JAES)

\$1,000+ (AES Sustaining Membership annual dues) to post a position online on the AES Job Board and in the Journal of the Audio Engineering Society (JAES) <http://www.aes.org/jobs/> Journal of the Audio Engineering Society (JAES)
Only AES Sustaining Members can post jobs on the AES Job Board.

Access to website job listings is open to the Internet.

Broadcasting & Cable magazine, NewBay Media, LLC.

<https://broadcastingcable-jobs.careerwebsite.com/>
\$235 to post a job on broadcastingcable-jobs.careerwebsite.com for 30 days.
\$299 to post a job on broadcastingcable-jobs.careerwebsite.com for 60 days.

Job Posting Enhancements:
\$345 to post a job online as one of the First jobs seen by job seekers for 30 days.
\$460 to post a job online as one of the First jobs seen by job seekers for 30 days and in additional section.
\$685+ to post a job online as one of the First jobs seen by job seekers for 30 days and in additional section, along with secondary exposure for your job posting on all sites in this Job Board Network.

Current newspaper, a source of news about Public Television and Public Radio, and other public media.

<https://jobs.current.org/jobseeker/search/results/?quick=function|Technology%2F%20Engineering>
\$299 to post a job online at jobs.current.org for 30 days.

Job Posting Enhancements:
\$359 to post a job online at jobs.current.org as one of the First jobs seen by job

seekers for 30 days.

\$429 to post a job online at jobs.current.org as one of the First jobs seen by job seekers for 30 days and have *Current* email it to professionals.
\$649+ to post a job online at jobs.current.org as one of the First jobs seen by job seekers for 30 days, along with secondary exposure for your job posting on all sites in this Job Board Network.

15% discount on job posting available to organizations who have a group subscription to *Current*.

Access to website job listings is open to the Internet.

List serve of national broadcasting network that your broadcast station is affiliated with.

Radio World magazine, NewBay Media, LLC.

<http://www.radioworld.com/content/jobs/38Need>
\$50 minimum (\$2/word) to post a job on [radioworld.com](http://www.radioworld.com) and in print magazine. Access to website job listings is open to the Internet.

The Society of Broadcast Engineers (SBE)

http://www.sbe.org/sections/jl_listings.php
\$0 to post a job online on SBE JobsOnline page for 60 days. Posting can be renewed.

Access to website job listings is open to the Internet.

The Society of Broadcast Engineers (SBE) Local Chapter

http://www.sbe.org/membership-directory/Chapters_by_State.php
Some local chapters have a newsletter, website, or list serve that will post job openings. Contact a local SBE chapter in your area.

The Society of Broadcast Engineers (SBE) Certified Schools

See http://www.sbe.org/sections/cert_schools.php for broadcast engineering contact at each school. For more

>>> **Jobs** continued on page 5

>>> **Jobs** continued from page 4

information about SBE Certified Schools, please contact Certification Director Megan Clappe at mclappe@sbe.org.

*Except for schools with additional CBT Certification requirements listed here, students who complete the program at a SBE Certified School with a grade B or better, who apply for certification, are awarded the classification SBE Certified Broadcast Technologist (CBT) upon receipt of verification from faculty. Students must apply within one year of graduating.

Bates Technical College, Tacoma, WA 98405

www.bates.ctc.edu

*For course completion, certification applicants must take the SBE Certified Broadcast Technologist (CBT) exam.

Cayuga Community College, Auburn, NY 13021

www.cayuga-cc.edu

*The local Chapter Certification Chairman meets with the proper faculty member at Cayuga and evaluates an applicant's status. Upon verification, applicants who apply for certification are awarded the classification SBE Certified Broadcast Technologist (CBT).

Cuyahoga Community College, Cleveland, OH 44115

<http://www.tri-c.edu/programs/engineeringtechnology/Pages/Default.aspx>

Cleveland Institute of Electronics, Cleveland, OH 44114

www.cie-wc.edu

Georgia Piedmont Technical College, Clarkston, GA 30021-2397

<http://www.gptc.edu/>

Loyalist College of Applied Arts and Technology, Belleville, ON, Canada
www.loyalistcollege.com

Mitchell Technical Institute, Mitchell, SD 57301

www.mitchelltech.edu

SAIT Polytechnic, Calgary, Alberta, Canada

<http://www.sait.ca/>

SBE Certified Training Facilities in the Military, AFRTS (American Forces Radio and Television Service) Technical Training Program, Defense Information School, Ft. Meade, MD 20755

<http://www.dinfos.dma.mil/Training/Training-Departments/Broadcast-Operations-Maintenance/>

*Certified Broadcast Technologist (CBT) certification is granted upon satisfactory completion of the military training program and a review by the National Certification Committee. This includes completion of the Basic Television Equipment Maintenance Course and the Broadcast Radio and Television Maintenance Course. Applications must be completed within one year of completing the course.

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<http://www.tvtechnology.com/content/jobs/18>

\$50 minimum (\$2/word) to post a job online and in print magazine.

Access to website job listings is open to the Internet.

Wisconsin Broadcasters Association Job Bank

<https://www.wi-broadcasters.org/broadcasting-careers/job-bank/>

\$(WBA annual dues based on station's gross revenue class) to post a position online for 4 weeks and in the next WBA print newsletter.

Only WBA Members can post jobs.

Access to website job listings is open to the Internet.

Do you have additional suggestions for industry-specific resources for broadcast engineering jobs? Please share your suggestions with your SBE Chapter.

FCC To Save Stations' Postage Costs

>>> by Tom Smith

At the January meeting of the Commission, they issued a Notice of Proposed Rulemaking (https://transition.fcc.gov/Daily_Releases/Daily_Business/2018/db0130/FCC-18-8A1.pdf) that would repeal the requirement for stations to file certain paper copies of contracts. These contracts include certain ownership contracts, and joint sales and operation contracts. Since stations now are required to place many of these contracts in their online public file, there is no reason to file a paper copy. Stations will have to produce a paper copy to the FCC, if requested. Stations are required to send copies of contracts within 30 days and the FCC would like comments if stations should be required to place these contracts in their public file within 30 days. There is currently no time requirement for these files to be placed in the public file.

This is another step for the FCC in their quest to eliminate paper filings, as most applications and other filings are now only accepted electronically.

Next Gen DTV Is Coming

>>> by Tom Smith

The FCC announced (https://transition.fcc.gov/Daily_Releases/Daily_Business/2018/db0202/DA-18-103A1.pdf) on February 2 that the new rules allowing DTV stations to start ATSC 3.0 operation will take effect on March 5. The rules were published in the Federal Register on February 2, which was why the FCC issued the announcement. The rules were scheduled to take effect 30 days after publication in the Federal Register. Because the rules are now in effect, TV stations can make plans to make considerations in their repack planning for the eventual transition to ATSC 3.0 operation.

This action signals the start of the next generation of over-the-air TV broadcasting.

>>> **Weeden** continued from page 3

performance specifications into US spectrum policy on a broader basis. "ARRL accepts...that increased spectrum user density is the inevitable result of new wireless services," the League said. "Given that this intensification of the use of the radio spectrum will necessitate new overlays of dissimilar radio services... in increasingly shared spectrum, it is necessary to depart from the traditional regulatory model that the Commission has utilized for spectrum allocations."

That model, ARRL said, has, almost without exception, placed limits only on transmitters, while the inability of some receivers to reject out-of-band signals "constrains new allocations in adjacent bands." This calls for what ARRL called "a 'holistic' approach to transmitter and receiver performance."

"Requiring better performance from receivers or RF-susceptible devices is a valid, reasonable, and long overdue requirement," ARRL said, "but the major goal of doing so should be to prevent instances of interference, not solely to allow the overlay of otherwise incompatible sharing partners in deployed spectrum to the detriment of incumbents."

ARRL argued, however, that the Amateur Service should not be subject to receiver immunity standards, because licensees employ a wide range of propagation, emissions, bandwidths, power levels, receivers, and antennas, making any receiver performance standards arbitrary, and compromising the Service's experimental nature. They are also able to differentiate between interference from nearby spurious or out-of-band signals and that caused by receiver deficiencies.

"Receiver immunity is not an intra-service issue in the Amateur Service," ARRL said. "The issue...is, rather, protection from spurious and out-of-band emissions from other services."

ARRL said that while the TAC's allocation principles include over-generalizations, the Council is "very much on the right track" with such concepts as receiver immunity standards for certain radio services and, especially, for consumer electronics "and the initiation of necessary and urgent programs, such as interference-hunting teams, to supplement

the Commission's meager enforcement resources." ARRL said it looks forward to working with the FCC in developing an interference-tracking corps. ARRL also supported the creation of a public database of past radio-related enforcement activities. What little FCC enforcement is necessary in the Amateur Service must be timely and visible, ARRL said.

ARRL's assertion was that a knowledge database regarding ambient noise levels in certain environments must be in place before adopting any next-generation spectrum management techniques: "No system of spectrum management incorporating [harm claim thresholds] and receiver immunity levels can be accurately implemented" without the noise study data.

(Excerpts from the American Radio Relay League's <arrl.org> web site)



Puerto Rico Stations Still Suffering

>>> by Tom Smith

TV and radio stations in Puerto Rico and the U.S. Virgin Islands are still suffering from Hurricane Maria. Four months after the Hurricane Maria, the FCC is still issuing their daily report on the number of stations that are off the air. Whenever there is a major disaster, the FCC requires TV and radio stations along with cell phone and landline phone companies and cable systems to report outages. Normally, these reports are issued for one to two weeks.

As part of the recovery of the TV stations in both Puerto Rico and the Virgin Islands, the FCC (https://transition.fcc.gov/Daily_Releases/Daily_Business/2018/db0111/DA-18-35A1.pdf) will allow TV stations that need to rebuild their transmitter facilities to rebuild on their new repack channel. Because of the isolation of the islands from the rest of the nation, the FCC is letting them go forward as the early movement to the new channels will not cause interference to the rest of the TV stations in the U.S. from the domino effect of changing the channel for one station affecting other stations on the same or adjacent channel.

Radio Shack

>>> continued from page 1

improvement store.

The worst part of the closing of Radio Shack is that many of us in broadcast engineering got interested in electronics with our visits to the Shack. With the changes in electronic gear and technology in the last decade or two, it has become harder to provide exposure to young people to electronics, mechanics, and other basic technologies. Technological knowledge is more than being able to code.



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SBE Chapter 24 Certification and Education News

Well Done

Congratulations to Michael Murray of WIFS Channel 57, on being certified as a Certified Television Operator (CTO), and Clark Jillson of CESA 3 TV on recertification as a Certified Broadcast Technologist (CBT)!

The Open 2018 Exam Schedule

Exam Dates	Location	Application Deadline (to SBE National Office)
April 10, 2018	Exams during the NAB show	March 2, 2018
June 1-11, 2018	Local Chapters (Madison Area)	April 20, 2018
August 3-13, 2018	Local Chapters (Madison Area)	June 5, 2018
November 2-12, 2018	Local Chapters (Madison Area)	September 24, 2018

Certifications are granted for five years. See the Maintenance of Certification Program page at http://www.sbe.org/sections/Cert_Maint.php for guidance with recertification. There you will also find a downloadable Excel spreadsheet to help track your activities for credits in the recertification categories over five years.

See <http://www.sbe.org/sections/documents/LifeCertificationapplication2017.pdf> for information on applying for Life Certification.

When you are ready to take an SBE exam, please fill out the appropriate application and send it into the SBE National office (see address below). You will be notified once your application has been approved. Approximately 3 weeks before the exam time, your local certification chairman will receive a list of applicants in his/her area. He/she will then contact those applicants to schedule a date, time and place for the exams. The exams will be mailed back to the National office for grading. The pass/fail grades will then be mailed directly to the applicants.

You may mail, email or fax your applications to:

Megan E. Clappe
Certification Director
9102 N. Meridian St. Suite 150
Indianapolis, IN 46260

317-846-9120 Fax
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Thanks to Leonard Charles
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The Association for Broadcast and
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