



Giardina, Hand and Hoffman Named SBE Fellows

Three SBE members have been elevated to the membership rank of Fellow. The SBE Board of Directors elected Frank Giardina, CPBE; Ted Hand, CPBE, 8-VSB, AMD, DRB; and Robert Hoffman, CPBE; at its meeting held during the 2017 NAB Show.

Frank Giardina is the director of engineering/IT for Cumulus Media Birmingham, AL. His career includes working at Rockwell-Collins and working at Birmingham stations including WAQY, WBRC-AM/FM, WSGN, WAPI-AM/FM, WZRR and WJOX. He is a past chair of SBE Chapter 68 Birmingham, and is currently frequency coordinator. He is an instructor in the Alabama Broadcasters Association's Engineering Academy.

Ted Hand is director of engineering/operations at WSOC-TV, Charlotte, NC, Cox Media Group. His TV career also includes working for stations in Norfolk and Hampton Roads, VA. He has served SBE Chapter 54 Hampton Roads, VA, as webmaster, and is active in SBE Chapter 45 Charlotte, NC. Ted served 11 years on the SBE Board of Directors, five of those as secretary. He has served on the SBE's Executive Committee, and he has chaired the SBE Frequency Coordination Committee.

Robert Hoffman is the chief engineer of Hubbard Radio St. Louis and stations WIL-FM, WARH-FM and WXOS-FM. His radio career has taken him to stations in Murphysboro, IL; Mt Vernon, IL; and Cape Girardeau, MO; before he moved to St. Louis.



Giardina



Hand



Hoffman

He is active in Chapter 55 St. Louis as the meeting coordination and program chair, a role he has filled since 1995.

The Fellow honor is the highest membership level in the SBE. Members must have made significant contributions to the broadcast engineering field or the SBE. Candidates are nominated by their peers. The three will be recognized during the SBE National Awards Dinner on Oct. 26, 2017, in Denver, during the annual SBE National Meeting, which will be held in conjunction with the Rocky Mountain AV Expo.

Read more about the new SBE Fellows in SBE News and Headlines at sbe.org.

Denver is Site of 2017 SBE National Meeting

The Society of Broadcast Engineers will bring its 53rd annual national meeting to Denver, CO Oct. 25-26, 2017. The event will be held in conjunction with the Rocky Mountain Audio/Video Expo (AVX), an annual regional exposition and educational event. The conference includes a media

equipment and services tradeshow and multiple technical sessions of interest to all media engineers, technicians, post-production and media IT personnel.

Serving as event host is SBE Chapter 48 of Denver and the Colorado Front Range. The SBE National Meeting begins on Wednesday afternoon, October 25, with the fall meeting of the national SBE Certification Committee from 2 to 4 p.m. The fall meeting of the SBE Board of Directors will take place from 6 to 10 p.m., and attendance is open to any SBE member. On Thursday, activities begin with the annual SBE Fellows Breakfast, a reunion of SBE Fellow members including this year's inductees, Robert Hoffman, CPBE; Ted Hand, CPBE, 8-VSB, AMD, DRB; and Frank Giardina, CPBE. In the afternoon,

the SBE Annual Membership Meeting will be held from 2 to 3 p.m., with a live webcast available to members around the world.

see [MEETING](#), p. 3

What is RICE-NESHAP?

Have you heard of RICE-NESHAP? It's not a new Asian fusion dish. If you have a stationary internal combustion engine at your facility, you need to know how RICE-NESHAP affects you.

SBE Director Mike Hendrickson has prepared a report that you can read at the SBE website:

<http://bit.ly/rice-neshap>

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SBE National Office
317-846-9000 www.sbe.org

MEETING from p. 1

The SBE Annual Awards Reception and Dinner will take place on Thursday, beginning with the reception at 4 p.m. and dinner at 5 p.m. The dinner will feature a guest speaker and the presentation of the society's major awards, including the Robert L. Flanders SBE Engineer of the Year and James C. Wulliman SBE Educator of the Year awards. The dinner program will conclude with the presentation of the Fellow honor to Hoffman, Hand and Giardina.

In addition, to be presented are awards recognizing individual member and chapter achievement. For chapters, they include the Best Chapter or Regional Educational Event, Best Chapter Communications, Most Certified Chapter, Highest Member Attendance and Greatest Growth in New Members.

Individual awards include: Technology Award, Facility Innovation of the Year, Best Technical Paper, Article, Book or Program by an SBE Member; Best Article, Paper or Program by a Student Member and the new Freedom Award.

The AVX begins on Wednesday with the trade show and educational sessions. AVX session topics and speakers will be announced in the coming weeks.

The SBE National Meeting and the AVX will be held at the Crowne Plaza Denver International Airport Hotel. The hotel has complimentary shuttle service to and from the Denver International Airport. The hotel is about 20 miles from downtown Denver and can be reached by Denver's new light-rail system. A station is near the hotel.

AVX registration can be made through the AVX show website. The expo and



The Crowne Plaza DIA

most educational sessions are free to those who pre-register. The expo includes more than 100 exhibiting companies and annually hosts more than 1,400 visitors.

Registration for the SBE National Awards Reception and Dinner will be through the SBE website. Reservations are required (\$16) and made online at the SBE website, sbe.org, or by calling the SBE National Office at 317-846-9000. There is no cost to attend the SBE Annual Membership Meeting.

Make reservations at the Crowne Plaza DIA by calling 866-378-1583, and use the booking code XVA. A limited number of guestrooms with a special rate of \$122 per night plus tax has been reserved for the event.

More details will be released beginning in July. Save the dates and plan to make your way to Denver for this year's SBE National Meeting and the Rocky Mountain Audio/Video Expo.



Certification Question

Answer on page 6

Failure of any flashing tower light must be reported to the FAA if not corrected within:

- A. ¼ hour
- B. ½ hour
- C. 1 hour
- D. 2 hour

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LETTER FROM THE PRESIDENT

By Jerry Massey, CPBE, 8-VSB, AMD, DRB, CBNT
SBE President
jmassey@sbe.org

The SBE: Meeting With and Working For You

Since our last *Signal* a lot has taken place. Of course, the most noted is the 2017 NAB Show, which included the Ennes Workshop and the national SBE Membership Meeting and reception. It was my honor to meet many of you at these events and to discuss your thoughts on the SBE and the industry. Your comments are important to the continued strengthening of the SBE and the broadcast industry in particular. Thank you all for taking your valuable time to visit the SBE booth and attend the sessions and the national meeting and reception!

The SBE Board of Directors met on Sunday preceding the NAB Show and voted on your recommendations for our new Fellow members. Being elevated to the membership rank of Fellow this year are Frank Giardina, CPBE; Ted Hand, CPBE, 8-VSB, AMD, DRB; and Robert Hoffman, CPBE. These SBE members are highly regarded by you and I offer my congratulations to each on this well-deserved recognition.

The second SBE Compensation Survey was conducted from April 1 to May 13 to determine salary levels and benefits among broadcast and media technology engineers. The SBE conducted its first

survey last year. With this second survey, it will establish a baseline for subsequent surveys to establish compensation trends. Thanks to each of you who participated in this survey.

During the NAB Show, it was my honor to speak to the NAB Technical Apprentice Program candidates on the values of the SBE and how we can assist them in their future in broadcasting. Later in May, I also spoke to the Georgia Association of Broadcasters Radio Talent Institute students on broadcast engineering and the SBE. It is always great to see such eager students that want to join our industry and become the leaders of the future. I wish them well as they set out on their broadcast future and they now know that the SBE will be there to assist them.

Also during the NAB Show, your SBE was providing information about new EPA regulations that apply to stationary internal-combustion engine emissions. The RICE-NESHAP regulations cover emergency generators, pump engines or other devices powered by an internal combustion engine. SBE Director Mike Hendrickson has prepared a report on the regulations, which is posted at the SBE website. We will also publish that report in the next issue of *The Signal*.

Renew Your Membership

While I am on the subject of membership, I encourage each of you to encourage your technology professional associates who are not SBE members to become members. The SBE can strengthen them in their broadcast careers through certification and education. No other organization has the capability to do what the SBE can do for its members. Your Board of Directors and officers are always spreading the word about the SBE but we need you to do the same as members.

Elections for your national officers and Board of Directors is coming up soon. As I am on my last year as your president, let me encourage you to participate in this year's election. The SBE Nominations Committee has come up with a slate of very qualified SBE members who are willing to dedicate their time and energy to represent you in the coming SBE year. When you receive the notice that elections are open, please take the few minutes necessary to vote for your future representatives.

Looks like this is going to be a hot summer, so I trust you will keep cool and keep safe. As always, we are open to your thoughts and comments so be sure to communicate with me or any other officer or board member.

Ornellas Appointed to Fill SBE Board Vacancy

SBE President Jerry Massey has appointed Jason Ornellas, CBRE, CRO, to fill an open position on the SBE Board of Directors. The SBE Executive Committee ratified the appointment during a conference call meeting on March 21. The Board seat opened when Mark Simpson, CPBE, AMD, DRB, CBNE, resigned from the Board. Ornellas fills Simpson's unexpired term that will end in the fall 2018.

Ornellas is director of engineering at CBS Radio, Sacramento, CA. He has been an SBE member since 2008, first as a Student Member. He was involved with SBE chapters in Indianapolis, San Francisco and New York City before moving to Sacramento. He is a member of Chapter 43 Sacramento.

On the appointment, Massey said, "Ja-

son expressed interest in serving on the Board in previous SBE elections, so it was a natural choice to ask him to join the Board now. I'm glad to have him with us. At the same time, I'm sorry that Mark Simpson has decided to step down, but I understand his reasons."

Mark Simpson was recently promoted to VP of engineering of Townsquare Media. He was elected to the Board in 2016. He has stepped down from the Board to focus his energy on his new position.



Ornellas

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EDUCATION UPDATE

By Wayne M. Pecena, CPBE, 8-VSB, AMD, DRB, CBNE
Chairman, SBE Education Committee
wpecena@sbe.org

The Cybersecurity Conundrum

The dictionary defines conundrum as “a confusing and difficult problem or question.” I can’t think of a better noun to describe Cybersecurity in general and especially in the broadcast environment. Accounts of data breaches, ransomware, and service disruption through various network hacking exploits focused on the broadcast and media provider have surfaced since 2015. Once in the past, often relying on obscurity, the broadcast technical plant is simply no longer immune from Cybersecurity as an option. Cybersecurity is a must! Incidents involving the broadcast station network exploits can lead to revenue loss, media protection liability, service disruption, license regulatory violation, and public embarrassment. Cybersecurity begins with the proper design of the broadcast network that employs techniques such as internal network segmentation, firewall protection, encryption, and believe it or not, often some common sense.

Tools in Your Cybersecurity Toolbox

The firewall and the VPN are two essential tools that become the foundation of a secure technical facility. The firewall should be the starting point for implementing network security policy.

5 Best-Practice Steps to Network Cybersecurity

- Change Host Device Default Login Information, and Use Strong Passwords
- Segment Internal Networks via VLANs
- Use Firewall Techniques to Protect Internal Network(s)
- Utilize VPN Technology for Remote Access
- Have a Recovery Plan

Firewalls are available in many forms from open-source software packages to self-contained security appliances. Each has its own advantages and disadvantages ranging from expertise required to setup and maintain to features offered. All share a common trait of packet filtering. As an OSI Layer 3 device, firewalls work by

inspection of the IP packet header information. Based on the source and/or destination addresses, the protocol utilized, and/or the TCP or UDP port information within the header, the firewall performs a decision to pass or deny the packet based on an established rule set. In some cases, the rule set is static such as filtering Internet Control Message Protocol (ICMP) from entering your internal broadcast network from the Internet at large. This easily implemented stateless tactic prevents someone from outside your network from exploring your internal network by utilizing the Ping command, which is based on ICMP. Other rule sets are dynamically based, where an internal host governs the IP address and port is opened by the stateful firewall for the duration of a TCP/IP conversation between the internal and external hosts.

Virtual Private Network (VPN) technology should be utilized anytime remote access from a public network is required to an internal network whether the remote location is the transmitter

site or chief engineer's home PC. The VPN provides the three essential characteristics defined by the CIA Triad to insure network security: Confidentiality, Authentication, and Integrity. The VPN creates a secure tunnel between the remote host and the internal network by use of secure protocols such as Internet Protocol Security (IPsec) or Transport Layer Security (SSL/TLS) to encapsulate an encrypted or secure IP packet within an IP packet. The SSL based VPN is often utilized in situations where Network address Translation (NAT) is involved. Even when deep packet inspection sniffing techniques might be utilized by a hacker, the resultant information obtained is simply an encrypted packet thus providing the confidentiality.

Tools can only go so far, and a human social aspect comes into play. Users must be aware of network phishing attempts and employ some common sense by changing default login information for your network's host devices. And always use strong passwords. Tips and resources to create strong passwords are abundant. One such reference from the SANS Institute is included in references section of this article.

RF101 Webinars

The SBE RF101 webinar series continues and is likely to be the most attended webinar of all SBE offerings. If you missed any of the previous webinars, remember that all SBE webinars are available on-demand so that you can take part on your own schedule. The multi-part RF101 Webinar Series was developed and conducted by industry consultant, Dennis Baldrige. Dennis' focus is on those with minimal RF experience, but feedback to date has shown that there is something for the experienced broadcast engineer to learn.

Your SBE Education Committee wants know your career professional development needs. Consider providing your expertise and knowledge to your SBE peers through one of many program delivery platforms. Lend your advice and guidance to the SBE Education Committee. Continuous learning is a key trait of the successful technology professional and the SBE Education team is dedicated to bringing you quality professional development programs covering relevant broadcast industry topics delivered in different mediums to meet your needs.

RESOURCES

Cybersecurity can be a complex process and getting started is often daunting. Several resources that are tailored to the broadcast technical plant can help ease the process. A few notable references include:

- *SBE EAS Advisory Group “EAS Security Notes”*
sbe.org/sections/news/EASsecurity.php
- *FCC CSRIC Working Group 4 Report*
bit.ly/CSRIC4report
- *NAB “Essential Guide to Broadcasting Cybersecurity”*
bit.ly/NABcyber
- *SANS Password Creation Guidelines*
bit.ly/SANSpassword

For more information on any SBE education program, contact Education Director Cathy Orosz at the SBE National Office at 317-846-9000 or corosz@sbe.org.



CERTIFICATION UPDATE

By Ralph Hogan, CPBE, DRB, CBNE
Chair, SBE Certification Committee
rhogan@sbe.org

Change Is A Good Thing

As was reported in the April issue of The Signal, the National Certification Committee has been asked on various occasions over the years to allow electronic devices to be used when taking certification exams. For some time, the committee has allowed on a limited basis the use of e-book readers, tablets, calculators and smart phones with calculator function as long as they were put into airplane mode and not connected to the internet for the multiple choice portion of the exam. Exams with essay questions are closed book, and do not allow the use of peripheral resources.

In reality, everyone uses internet resources in daily work. Most manuals are not printed, but are supplied as PDF or DOC files. A great wealth of information is posted on manufacture websites. The Certification Committee has been asked to consider this in relation to the existing certification exam procedures.

During the National Certification Committee meeting on April 22, the results of the yearlong beta testing program were discussed. In short, the data revealed that allowing the use of the internet during testing did not have an appreciable effect on the pass/fail rate for the exams. All levels of certification exams were sampled during the yearlong study. Because of this find-

ing, the committee voted to allow the use of internet-connected devices, PDF books and notes along with the existing open-book policy starting with the June exam period and going forward.

At the SBE board meeting on April 23, the national board was notified of the change in test procedure. The national committee will monitor the results of exams and reserves the right to change or modify this procedure as necessary. Even though individuals may use the internet while taking exams, neither the SBE nor its proctors can guarantee that connectivity will be available at testing sites, and the examinee should be prepared to complete the exam by other means if connectivity is unavailable.

Maintaining the integrity of the question database is critical to the success of the certification program. We want to be certain that the questions are not removed from the examination room. During the exam, any handwritten notes created during the exam must be turned in with the exam package. Electronic note taking during the exam is prohibited.

Just as the Certification Committee has an ongoing review of exam questions to be sure what is being tested is relevant and timely, this procedural change also ensures that the exam process itself remains timely.



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Answer from page 3

The answer is B.

Part 17.48(a) of the FCC Rules states that the owner of any antenna structure, "Shall report immediately to the FAA, by means acceptable to the FAA, any observed or otherwise known extinguishment or improper functioning of any top steady burning light or any flashing obstruction light, regardless of its position on the antenna structure, not corrected within 30 minutes."

Society of Broadcast Engineers, Inc. 2016 Audited Financial Statements

Combined Statement of Assets, Liabilities* & Net Assets Dec. 31, 2016

| ASSETS | |
|----------------------------------|--------------------|
| Cash & cash equivalents | \$9,813 |
| Investments | 1,061,751 |
| Office Equipment | 13,989 |
| Intangible Assets | 5,073 |
| Total Assets: | \$1,090,626 |
| LIABILITIES and NET ASSETS | |
| Liabilities | \$0 |
| Net Assets: | \$1,090,626 |
| TOTAL LIABILITIES and NET ASSETS | |
| | \$1,090,626 |

* CPA-conducted financial audit reflects modified cash accounting method. Investments are listed at market value.



2016 SBE Revenue & Expense Statement

| INCOME: | |
|--|--------------------|
| Membership Fees & Support | \$397,385 |
| National Meeting | 44,330 |
| Certification | 71,610 |
| Publications/Promotion | 83,360 |
| Education Services | 71,770 |
| Interest & Dividend Income | 28,547 |
| Net Realized/Unrealized Gain (Loss) from Investments | 31,123 |
| Miscellaneous Income | 12,350 |
| Total Income: | \$753,657 |
| EXPENSES: | |
| Member Services | \$364,527 |
| Chapter Rebates | 33,133 |
| National Meeting | 27,887 |
| Publications/Communications | 74,221 |
| Certification | 83,178 |
| Education | 70,738 |
| Administration | 73,435 |
| Depreciation/Amortization | 5,073 |
| Total Expenses: | \$732,192 |
| CHANGE IN NET ASSETS: | \$32,483 |
| NET ASSETS 12/31/2015 | \$1,069,142 |
| NET ASSETS 12/31/2016 | \$1,090,626 |

SBE Certification Achievements

CONGRATULATIONS

| | | | |
|--|--|---|---|
| LIFE CERTIFICATION | <p>Certified Professional Broadcast Engineer (CPBE) 8-VSB Specialist (8-VSB) Allen LeMelle, Clovis, CA - Chapter 66</p> <p>Certified Broadcast Television Engineer (CBTE) Alan Weissman, Williamsville, NY - Chapter 133</p> | <p>Certified Broadcast Networking Technologist (CBNT) Allen LeMelle, Clovis, CA - Chapter 66 Gene Parker, Hermitage, TN - Chapter 103</p> <p>Certified Broadcast Technologist (CBT) Gene Parker, Hermitage, TN - Chapter 103</p> <p>Certified Television Operator (CTO) William Sherwood, Jr., Langley, OK - Chapter 56</p> | <p>Certified Professional Broadcast Engineers and certified senior broadcast engineers who have maintained SBE certification continuously for 20 years, are at least 59½ years old and are current members of SBE may be granted Life Certification if so requested. All certified who have retired from regular full-time employment and are at least 59½ years old may be granted Life Certification if they so request. If the request is approved, the person will continue in his/her current level of certification for life.</p> |
| CERTIFIED PROFESSIONAL BROADCAST ENGINEER | <p>Certified Professional Broadcast Engineer (CPBE) Robert Daly, Eagan, MN - Chapter 17</p> | <p>Applicant must have 20 years of professional broadcast engineering or related technologies experience in radio and/or television. The candidate must be currently certified on the Certified Senior Broadcast Engineer level.</p> | |
| FEBRUARY EXAMS | <p>Certified Senior Radio Engineer (CSRE) Sam Wallington, Auburn, CA - Chapter 43</p> <p>AM Directional Specialist (AMD) Dennis Graiani, New City, NY - Chapter 15</p> <p>Certified Audio Engineer (CEA) James Lidberg, Mesa, AZ - Chapter 9</p> | <p>Certified Broadcast Networking Engineer (CBNE) Vincent Atwood, Fort Meade, MD - Chapter 37 Jeremy Baker, Carlisle, PA - Chapter 41 Michael Holcepl, Glenn Dale, MD - Chapter 37 James Lidberg, Mesa, AZ - Chapter 9</p> | <p>– <i>CBNE cont.</i> Richard Lozano, San Antonio, TX - Chapter 69 Lawrence Paulausky, Havertown, PA - Chapter 18 John Saunders, Boonsboro, MD - Chapter 46 Digital Radio Broadcast Specialist (DRB) Lawrence Paulausky, Havertown, PA - Chapter 18</p> |
| NAB SHOW EXAMS | <p>Certified Broadcast Radio Engineer (CBRE) Steven Balzer, Tanjung Bungah, Penang, Malaysia Jacob Bechtold, Fargo, ND Joel Belk, Manitou Springs, CO Cristan Caughill, Honolulu, HI Christopher King, Knoxville, TN</p> | <p>Certified Broadcast Television Engineer (CBTE) Thomas Carlisle, Mesa, AZ Michael Gibson, Rosamond, CA</p> | <p>Certified Broadcast Networking Technologist (CBNT) Rick Copeland, Sacramento, CA David Ratener, Kent, WA Ryan Phillips, Seattle, WA</p> |
| SPECIAL PROCTORED EXAMS | <p>Certified Broadcast Networking Technologist (CBNT) Junta Tokunaga, Waipahu, HI - Chapter 63</p> <p>Certified Broadcast Technologist (CBT) Brian Allred, Nampa, ID - Chapter 115</p> | <p>Alabama Broadcasters Association Certified Senior Radio Engineer (CSRE) Alex McKenzie, Hays, KS - Chapter 3</p> <p>Certified Broadcast Radio Engineer (CBRE) James Heim, Vass, NC - Chapter 147</p> | <p>Certified Broadcast Technologist (CBT) Tyler Angle, Meade, KS - Chapter 3 Ian Cushman, Brentwood, TN Joshua Hatton, Leighton, AL Lee Mosley, Guntersville, AL - Chapter 111 Coleman Vice, LaGrange, GA</p> |
| CERTIFIED BY LICENSE | <p>Certified Broadcast Technologist (CBT) Daniel Gonzales, Simi Valley, CA - Chapter 47 Navapadol Tabkum, Escondido, CA - Chapter 36</p> | | |
| SBE CERTIFIED SCHOOL COURSE COMPLETION | <p>DINFOS Ashley Batts, Long Beach, CA - Chapter 47</p> | <p>James Jones, Fort Meade, MD - Chapter 132</p> | <p>Kimberly Robinette, Westminster, MD - Chapter 46</p> |
| CERTIFIED RADIO OPERATOR (CRO) | <p>Justin Bandy, Pasadena, CA Oquindle Bennett, Fayetteville, NC Ben Johnson, Cave City, AR</p> <p>Mesquite ISD Cole Shafer, Mesquite, TX Johnny Angel Vasallo, Mesquite, TX Rachel Williams, Mesquite, TX</p> | <p>St. Petersburg College Latasha White, New Port Richey, FL</p> <p>Knightsdown High School Rylee Baker, Knightsdown, IN Sophia Baker, Knightsdown, IN Gabriel Blake, Knightsdown, IN Josh Fish, Knightsdown, IN Jarett Lewis, Knightsdown, IN</p> | <p>Knightsdown High School – cont. Dakota Locker, Knightsdown, IN Dustin Marsee, Knightsdown, IN Jonathan Peoples, Knightsdown, IN Eli Pierson, Knightsdown, IN Tucker Personett, Knightsdown, IN Karter Petry, Knightsdown, IN Seth Roberts, Knightsdown, IN</p> |
| CERTIFIED TELEVISION OPERATOR (CTO) | <p>Oquindle Bennett, Fayetteville, NC Michelle Davies, Sweet Valley, PA David Holmes, FPO, AP Mary Pierce, Portland, OR</p> | <p>North Shore Senior High School Aaron Aldape, Houston, TX Kennedi Bourda, Houston, TX Michelle Chenevert, Houston, TX Pablo Coloma, Houston, TX Chelsea Guerra, Houston, TX</p> | <p>North Shore Senior High School – cont. Aron Morris, Houston, TX Benjamin Rangel, Houston, TX Vernesha Simmons, Houston, TX Shelby Terry, Houston, TX Samantha Ubernosky, Houston, TX</p> |
| RECERTIFICATION The following applicants completed the recertification process either by re-examination, point verification through the local chapters and national Certification Committee approval and/or met the service requirement. | <p>Certified Professional Broadcast Engineer (CPBE) Mario Hieb, Salt Lake City, UT - Chapter 62</p> <p>Certified Professional Broadcast Engineer® (CPBE) AM Directional Specialist (AMD) Digital Radio Broadcast Specialist (DRB) Arthur Reis, New Lenox, IL - Chapter 26</p> <p>Certified Broadcast Networking Engineer (CBNE) Paul Claxton, Moreno Valley, CA - Chapter 131</p> <p>Certified Broadcast Networking Technologist (CBNT) Mario Hieb, Salt Lake City, UT - Chapter 62</p> | <p>Certified Broadcast Technologist (CBT) Mark Allen, Peoria, IL - Chapter 49 Matthew Antalek, Lancaster, MA - Chapter 140 Steven Beitzel, Trenton, OH - Chapter 33 Gregory Beveridge, Thornton, CO - Chapter 48 William Elliott, Jr., Ft. Pierce, FL - Chapter 39 Marc Fenton, Moreno Valley, CA - Chapter 131 Scott Heitman, Napa, CA - Chapter 40 Arthur Mistretta, Murrieta, CA - Chapter 131 Michele Muller, San Mateo, CA - Chapter 40 John O'Brien, La Canada, CA - Chapter 47 Thomas Pearson, Cottage Grove, OR - Chapter 76 James Pronath, Washington, DC - Chapter 37 Lewis Soli, II, Hayden, AL - Chapter 68 Stephen Tuzeneu, Charlotte, NC - Chapter 45 Billy Volek, Sioux Falls, SD</p> | <p>Certified Television Operator (CTO) James Long, Potomac, MD - Chapter 37 Arthur Mistretta, Murrieta, CA - Chapter 131 David Winfield, Parma, OH</p> <p>Certified Radio Operator (CRO) Raul Camarillo, Jr., Pasadena, TX Randy Ray, Canyon, TX Ronald Teufel, Charleston, WV David Winfield, Parma, OH</p> |



A



B



C



D

A: The SBE, in its new location in the North Hall lobby, still attracted quite a crowd. **B:** A daily booth drawing was held Monday through Wednesday. Ben Nemser of NEMAL (Monday's sponsor) drew the day's winner. **C:** Raoul DeSota (r) with reception Gold Sponsor EMP Solutions holds the company's lightning suppressor. **D:** The SBE Member Reception on Tuesday was the place to meet and socialize. **E:** The annual SBE Membership Meeting on Tuesday provided an update on all the SBE's activities. **F:** The SBE Board of Directors met Sunday morning. **G:** The Ennes Workshop, held on Saturday was a deep-tech kickoff for the convention.



F



G

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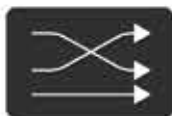
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LEGAL PERSPECTIVE

By Chris Imlay, CBT
SBE General Counsel
cimlay@sbe.org

Wireless Mics in the UHF-TV Band, Post-Auction

Users of wireless microphones and UHF Low Power Auxiliary devices at the close of FCC Auctions 1001/1002 have significant options for continued access to the UHF television band. The auction closed formally at the end of March of this year. On April 13, 2017, the FCC released a Closing and Channel Reassignment Public Notice (DA 17-314), which determines the order in which television stations that participated in the auction should move to the spectrum below TV Channel 37 (i.e. below 608 MHz). The issuance of that public notice started a 39-month transition period, which is scheduled to end on July 13, 2020. At the end of this transition period, all television stations that participated in the auction will have cleared the spectrum between 614 MHz and 698 MHz. The good news for wireless mic and intercom users, however, is that even after the 39-month transition period, there will still be significant spectrum at UHF available; well more than was originally expected.

During the 39-month transition period, wireless microphones, intercoms and other low-power broadcast auxiliary devices can continue to operate normally in the entire 614-698 MHz band. However, it will be necessary *during this entire period* to protect any broadband systems that begin operations during the transition time. And there will be many of those, because the TV station relocation during this 39-month period, vacating the band 614-698 MHz for broadband use, will occur in stages. The early stages of TV station repacking will occur in TV markets that are isolated from other markets, such as Salt Lake City, UT. Adjacent markets, such as Washington, DC, and Baltimore, MD, will be later in the process. The largest auction winner in the process, T-Mobile, promises that it has “a track record of purchasing new spectrum and deploying it at break-neck speed,” which it has every right to do, and broadcasters and wireless mic users have to accommodate it. In fact, T-Mobile has been a good communicator with the SBE about this process, and we expect that to continue.

And that is a really good thing, because the difficulty for broadcasters in the use of wireless microphones and low-power auxiliary devices in the 614-698 MHz band during the transition is that we have no way of knowing when a particular auction

winner plans to light up in a given area. There are parts of states such as Arizona, for example, in which there are no TV stations to move and T-Mobile or other auction winners could simply light up tomorrow. The only way to coordinate that is by communication with the broadband provider auction winners. The SBE will do as much of that as we can with the auction winners.

Almost Business as Usual

Though the 614-698 MHz band will be unavailable anywhere for wireless microphones after the 39-month transition, the band 470-608 MHz (TV Channels 14-36) will continue to be available without interruption, though TV stations that migrate from above Channel 37 to below channel 37 will gradually make some of that spectrum unusable. Wireless microphones, however, can operate as close as 4 km outside the actual service contour of a TV station, regardless of the location of the TV antenna. Licensed wireless microphone users are permitted to operate closer to, or even within the service contour, if they are indoors and the TV signal strength is less than -84 dBm. TV Channel 37 (608-614 MHz) is not and never has been available for wireless mic and intercom use; that channel is used for radio astronomy and medical telemetry devices and it will stay that way. However, wireless microphones will after the transition period operate in the duplex gap between the broadband uplink and downlink bands. This is a 10 MHz segment at 653-663 MHz. This 10 MHz will be divided between *licensed* wireless microphones and intercoms (4 MHz at 653-657 MHz) and *unlicensed* wireless microphones and intercoms and TV white spaces devices (6 MHz at 657-663 MHz).

Finally, wireless microphones and intercoms can operate in the guard band just above TV Channel 37 on an unlicensed basis (2 MHz between 614 and 616 MHz). The power limit for wireless microphones operating in the duplex gap and in the guard band *after the transition period* is 20 milliwatts effective isotropic radiated power (EIRP). There will be no operation permitted in the 1 MHz segments just below and above the broadband downlink segment (616-617 MHz and 652-653 MHz) after the transition period. The table summarizes the UHF bands still available for wireless microphones and intercoms.

UHF Bands for Wireless Mics and Intercoms

- 470-608 MHz
With flexible restrictions to protect television broadcast reception
- 614-616 MHz
20 mW EIRP limit, unlicensed only
- 653-663 MHz
20 mW EIRP limit, licensed at 653-657 MHz, unlicensed at 657-663 MHz
- 614-698 MHz
From now to approximately July 13, 2020, or before when broadband auction winners begin operations in given areas

Keep in mind also that the 900 MHz and 1.4 GHz replacement bands available for wireless microphones have attracted the attention of manufacturers. So far, so good.

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FOCUS ON SBE

By John L. Poray, CAE
SBE Executive Director
jporay@sbe.org

Strategic Planning, By-law Changes, Highlight April Board of Directors Meeting

More than 103,000 people attended the recent annual NAB Show in Las Vegas. A good number of SBE members were among them and found their way to our new booth location in the upper level lobby of the Las Vegas Convention Center North Hall. We were pleased to welcome six new members to the SBE who signed up during the show and another 28 current members who renewed their memberships.

The national SBE Board of Directors met on Sunday during the event, led by SBE President Jerry Massey, and I'd like to share with you a few items the Board discussed.

The first item was a decision to hold a one-day strategic planning conference in 2018. Details, including the date and location, will be determined in the coming months, but the primary focus is likely to be on the society's membership. With the technical skillsets and knowledge needed in the media field changing at a rapid pace, the Board will discuss what the Society must do to keep pace and provide for the changing needs of both current and future members.

SBE Certification Committee Chair Ralph Hogan reported to the Board a decision made by his committee at its meeting the previous evening to allow internet access to resources during SBE certification exam sessions. This comes after more than a year of beta testing, research and discussion. Read more about this in Ralph's Certification Update column in this issue of *The Signal*.

The Board approved two changes to the Society's By-laws. The first change expands the scope of an existing by-law providing the Board with authority to institute travel cost reimbursement for members of the board to attend Board meetings. The change expands the authority to meetings of the Executive Committee. The intent is to ease the financial burden for those who serve on the Board and Executive Committee, and not make the financial commitment to attend meetings a deterrent to running for the Board. Because of budget constraints, this is starting with a maximum of just \$100 per year allotted to each director and officer to offset a small por-



Jerry Massey (l) and John Lyons just before the NAB Technology Luncheon.

tion of their travel expenses.

The second change adds an indemnification clause to the SBE Bylaws. Indemnifying officers, directors and staff minimizes their exposure and personal liability when working in good faith on behalf of the society. It is very common in non-profit associations. The new text of the By-laws may be found on page 15 of this issue of *The Signal*.

The Board also discussed the RICE-

NESHAP rules, which regulate operations of reciprocating internal combustion engines. An article about RICE-NESHAP by board member Mike Hendrickson is posted on the SBE website, and I encourage everyone to read it to see if these regulations effect your facilities.

The Board voted to elevate three members to the SBE membership rank of Fellow. They were nominated by members and reviewed by the national SBE Fellows Committee, chaired by Troy Pennington, and then the Board. They too, are in this issue of *The Signal*. Our congratulations to members Robert Hoffman, Ted Hand and Frank Giardina!

Lastly, I would like to recognize SBE Fellow member, John Lyons of The Durst Organization in New York City. John was recognized by the NAB with its Television Engineering Achievement Award during the NAB Technology Luncheon held during the convention. John has made tremendous contributions to television broadcasting in his career and has been an outstanding supporter of the SBE. We were pleased to see him recognized for his work.



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ENGINEERING PERSPECTIVE

By The SBE EAS Advisory Group
Larry Wilkins, CPBE, AMD, CBNT; Group Chair
lwilkins@sbe.org

EAS Security Notes

Intrusions into computerized equipment have been around since the internet began. It is no surprise that these invasions have made their way into radio and television stations. Most recently, EAS devices have been a major target. To comply with FCC rules, these devices must have internet access to receive information from FEMA via IPAWS. Security for EAS and other station devices should be a high priority for station engineers. As a result, the SBE EAS Advisory group has put together basic security guidelines to aid stations in assuring that all equipment is protected from these outside intrusions.

Broadcast station equipment intrusions are more than an inconvenience. They can cost you to repair the systems that were compromised. They can cost you revenue for lost airtime. They can cost you credibility in your audience and community. Moreover, it eventually will cost all of us if the government feels it necessary to step in with additional regulations and requirements on broadcasters.

At the same time, it's challenging for many broadcasters to keep up with the wide range of potential cyberattacks. Many broadcasters don't know they have become vulnerable to attackers until it's too late.

The Problem

Recent events had plainly shown that broadcasters are a low-hanging fruit for internet mischief-makers and cybercriminals. All too frequently, this involves key station equipment and computers left vulnerable to the internet, not changing default passwords, or even not having passwords at all.

The results have included the entire programming stream disrupted by IP streamers redirected to offensive, political and/or obscene content, the issuance of false or simulated EAS messages, the creation of fake messages and alerts via RDS encoders, the wholesale disruption of station operations when computers are locked via malware and viruses, and more. These are issues that have already happened, repeatedly.

In many cases, the threats boil down to simple vulnerabilities that could have been easily addressed beforehand.

- Stations with unconfigured firewalls - or even no firewalls.

- Station equipment left exposed and unprotected to the open internet.

- Station equipment left with default or easily guessable passwords – or even no passwords.

- Email attachments open, which introduced malware across the station network.

Presenting the potential for reaching a wide audience with inappropriate or political content, broadcasters present an irresistible opportunity for internet bad guys. Some broadcasters have opined that cybersecurity is too expensive or difficult. However, as we outline below, broadcasters can take preventative steps that are often a minimal expense, or no expense at all.

Technical Solutions

Know Your Systems. Know what systems are connected to your network and to the internet, and know which systems should not be. If it is connected to the network, it needs to be protected. This includes equipment at the business office, studios, transmitter sites, remote control points, and other remote sites.

Firewalls to Defend Your Network. The one security item every company needs is a firewall, a security appliance that attaches to your network and acts as the protective shield from the outside world. A firewall continuously inspects traffic and matches it against a set of pre-designed rules. Just about everything in a broadcast facility should be behind a firewall if it is connected to the internet. Make sure any software or firmware is up to date, and don't leave ports open.

Equipment Passwords and Account Management. Broadcast equipment may come with a default password. Change default passwords on any equipment in your operation and delete unused accounts. A password alone does not fully protect equipment access by other means. Equipment needs to be behind a firewall.

Updates and Patches. Equipment manufacturers may contact you periodically regarding software patches and updates. Apply these updates in a timely manner. Make it a practice to check with manufacturers to see if software updates have been released. These updates and patches may include not only feature im-

provements and bug fixes; they may also contain critical security patches.

Secure Networks. A virtual private network (VPN) securely and inexpensively uses the public internet instead of privately owned or leased lines to provide secure access to a network. Consider, for example, a VPN link as part of the STL, if that link relies on an IP stream from the studio to transmitter.

Safe Web Browsing and E-Mail Habits. Email and suspect websites are an easy entry point. Consider a software security solution that includes e-mail security, Web gateway security, and URL filtering.

Social Solutions

Security fundamentally involves a social aspect. Internally, you may need to reorient your employees and colleagues around safe email and web browsing habits. Teach them to be wary of scam and phishing emails, and to beware of potentially dangerous attachments to emails from unknown or suspicious senders. Reinforce safe web browsing habits, such as not downloading content from unknown or suspect websites.

Broadcasters are a community. Externally, you may find opportunities to share information about what you are doing to improve security, what threats you see, and how you are addressing them.

Some tasks may be beyond your own ability or resources. When you need to conduct a risk assessment, or get assistance in setting up network and IT security solutions, it may be money well spent if you don't have the expertise to do it yourself.

The Bottom Line

- **Know your Systems.** If it's connected, it's at risk.

- **Defend your Network.** Everything connected to the network or the internet must be behind a firewall.

- **Protect your Equipment.** Change default passwords and usernames. Install software upgrades or patches.

- **Use Common Sense with Email and the Internet.** Use caution when opening email attachments or downloading from websites.

MORE ONLINE

The SBE's online EAS information:
sbe.org/eas

- 101 Telco Solutions • 2017**
Erik Hoegh-Guldberg 469-732-3589
Dehydrator and Microwave Repair
- 305 Broadcast • 2015**
Anthony Gervasi 305-406-3560
Broadcast Equipment Supplier
- AC Video Solutions • 2014**
Andrea Cummis 201-303-1303
Consulting, Systems Design/Integration
- AEQ Broadcast International • 2015**
Peter Howarth 954-581-7999
Broadcast Audio, Video and Communications
- American Tower Corporation • 2000**
Peter A. Starke 781-926-4772
Development/Construction/Management
- ATV Broadcast, LLC • 2016**
Doug Smith 317-258-6280
Telecommunications Consulting Group
- Audemat-Worldcast Systems Inc. • 2000**
Christophe Poulain 305-249-3110
Control Manufacturer
- AVCOM of Virginia, Inc. • 2010**
Tom Pagonis 804-794-2500
Spectrum Analyzers
- AVDB Group • 2014**
Maria Cody 720-940-7131
Audio/Video/Lighting & Control
- A-Ware Software/MusicMaster • 2014**
Shane Finch 352-351-3625
Advanced Music Scheduling Solutions
- B&H Photo, Video & Pro Audio • 2016**
Israel Low 212-239-7500 x2962
Broadcast Equipment and Workflow Solutions
- Belden Electronic Division • 1991**
Sales 800-235-3361
Cable and Connectivity
- Black Box • 2014**
Brian Kutchna 724-873-6719
HD-KVM Switching & Extension
- Blackmagic Design • 2012**
Terry Frechette 408-954-0500
Production Switchers, Digital Cameras,
Routers, Video Editing and Monitoring, Color
Correction, Video Converters
- Bracke Manufacturing LLC • 2012**
Patra Largent 949-756-1600
RF & Microwave Components
- Broadcast Devices, Inc. • 2015**
Robert Tarsio 914-737-5032
Audio/RF Support Products
- Broadcast Electronics Inc. • 1978**
Tom Beck 217-224-9600
Radio Equipment Manufacturer
- Broadcast Microwave Services Inc. • 1997**
Jim Kubit 805-581-4566
Manufacturer, Transmitters, Receivers,
Antenna Systems
- Broadcast Software International • 2016**
Marie Summers 888-274-8721
Radio Automation, Audio Logging
- Broadcast Supply Worldwide • 1986**
Shannon Nichols 800-426-8434
Audio Broadcast Equipment Supplier
- Broadcasters General Store • 2004**
Buck Waters 352-622-7700
Broadcast Audio Video Distributor
- Calrec Audio • 2016**
Dave Lewty 805-305-5711
Audio Mixing Equipment
- Canon USA Inc. • 1985**
Larry Thorpe 201-807-3300,
800-321-4388
Broadcast Lenses & Transmission Equipment
- Cavell, Mertz & Associates Inc. • 2011**
Gary Cavell 703-392-9090
Consulting Services
- Comrex Corporation • 1997**
Chris Crump 978-784-1776
Audio & Video Codecs & Telephone Interfaces
- Comsearch • 2004**
Tim Hardy 703-726-5651
Frequency Coordination Services
- Continental Electronics Corporation • 1976**
Michael Troje 800-733-5011
AM & FM IBCB, TV Transmitters
- CueScript • 2014**
Michael Accardi 203-763-4030
Teleprompting Software & Hardware
- Dakota Lighting Supply • 2015**
Randy Doremus 303-748-6241
FAA/Obstruction Lighting Products
- Davicom, Division of Comlab, Inc. • 2014**
John Ahern 418-682-3380
Remote Site Monitoring and Control Systems
- DEVA Broadcast • 2015**
Toddr Ivanov 305-767-1207
Monitors, IP Audio Codecs, RDS/RBDS
Encoders, Audio Processors, Broadcast Tools
- Dialight Corporation • 2006**
US Headquarters 732-919-3119
FAA Obstruct. Lighting, LED Based
- Dielectric • 1995**
Cory Edwards 207-655-8131
TV & FM Transmission & Cellular Products
- Digital Alert Systems, LLC • 2005**
Bill Robertson 585-765-1155
Emergency Alert Systems
- DoubleRadius, Inc. • 2012**
Jeffrey Holdenrid 704-927-6085
IP Microwave STL
- Drake Lighting • 2015**
Dave Sheppard 270-804-7383
FAA Obstruction Lighting - Medium and High
Intensity
- DTS Inc./HD Radio Technology • 2014**
Rick Greenhut 443-539-4335
HD Radio Technology
- du Treil, Lundin & Rackley, Inc. • 1985**
Jeff Reynolds 941-329-6000
Consulting Engineers
- The Durst Org. - 4 Times Square • 2004**
John M. Lyons, CPBE 212-997-5508
TV/FM/Microwave Tower Site
- DVE0 - Division of Computer Modules Inc. • 2011**
Laszlo Zoltan 858-613-1818
Everything About Transport Streams
- e2v • 1997**
Dominic Piarulli 914-593-6828
Electronic Components
- Econco • 1980**
Debbie Storz 800-532-6626,
530-662-7553
New & Rebuilt Transmitting Tubes
- ENCO Systems Inc. • 2003**
Ken Frommert 800-362-6797
Playout and Automation Solutions
- ERI - Electronics Research • 1990**
David White 812-925-6000
Broadcast Antennas, Transmission Line,
Filters/Combiners, Towers and Services
- Fiber Group Inc. • 2016**
Dennis Ford 336-859-2031
Fiber, Video, Satellite and Drone Products
- Floral Systems • 2008**
Shawn Maynard 877-774-1058
Television Broadcast Automation
- Frontline Communications • 2015**
Tracy Brink 727-280-8843
Broadcast Vehicle Manufacturer
- Fujifilm/Fujinon • 1986**
Gordon Tubbs 973-686-2769
Broadcast & Cine Lens Products
- GatesAir • 1977**
Dave Hopson (TV) 513-445-5243
Mark Goins (Radio) 513-899-9124
Broadcast Equipment Manufacturer
- Gepco/General Cable • 1995**
Mike Vivian 859-572-8000
Innovative Cabling & Custom Solutions
- Graham Brock, Inc. • 2012**
R. Stuart Graham 912-638-8028
Technical Consultation - Radio/TV
- Harmonic Inc. • 2014**
Matt Tietze 301-537-6288
Video Compression and Processing
- Heartland Video Systems, Inc. • 2011**
Dennis Klas 920-893-4204
Systems Integrator
- Hilights, Inc. • 2016**
Richard Hickey 352-564-8830
Obstruction Lighting Maintenance
- Hitachi Kokusai Electric Comark • 2013**
Jack McAnulty 860-763-1100
Manufacturer Broadcasting Transmission
Equipment
- IEWC • 2014**
Matt Granard 425-286-1900
Global Connectivity Solution Provider
- Image Video • 1997**
Zach Wilkie 416-750-8872 x228
Under Monitor Tally Display Systems,
Monitor Design and Manufacture Broadcast
Equipment
- Inovonics Inc. • 2012**
Gary Luhman 831-458-0552
Radio Broadcast Equipment
- Integrated Microwave Technologies • 2009**
John Payne 908-852-3700
Wireless Video Systems
- JAMPRO Antennas Inc. • 2011**
Alex Perchevitch 916-383-1177
DTV, FM-HD Radio, DVB-T/T2, ISDB-T, DAB
- JVC Professional Video • 2014**
Lon Mass 973-317-5117
Professional Video Products, Camcorders,
Display Monitors, Recording Decks
- Ka You Systems • 2011**
George Gimourginas 301-585-4302
Audio, Video, IP - Satellite
- Kathrein USA Inc. • 1985**
Les Kutasi 214-238-8835
Antennas for Broadcasting & Communications
- Kintronc Labs, Inc. • 2015**
Joaquin Raventos 423-878-3141
Radio Broadcast Antenna Systems - ISO9001
Registered Company
- L3 Electron Devices • 2017**
Mark Strohecker 570-326-3561
CEAs, IOTs, Thyratrons
- LBA Technology Inc. • 2002**
Javier Castillo 252-757-0279
AM/MW Antenna Equipment & Systems
- Linkup Communications Corporation • 2017**
Mark Johnson 703-217-8290
Satellite Technology Solutions
- LYNX Technik • 2007**
Steve Russell 661-251-8600
Broadcast Terminal Equipment Manufacturer
- Markertek • 2002**
Wesley Brewer 800-522-2025
Specialized Broadcast & Pro-Audio Supplier
- Maxell Corporation of America • 1991**
Al Dripchak 973-653-2414
Data/Broadcast Video Media
- Micronet Communications Inc. • 2005**
Jeremy Lewis 972-422-7200
Coordination Services/Frequency Planning
- Microtech Gefell GmbH • 2016**
Michael Miltzer +49 36649-82245
Microphones
- Microwave Video Systems • 2011**
Warren J. Parece 781-665-6600
Microwave Equipment Rental, Sales & Service
- Middle Atlantic Products • 2005**
David Amoscato 973-839-1011
Equipment, Mounting, Solutions
- Midtown Video • 2016**
Jesse Miller 305-669-1117
Complete Studio Production Support
- MoreCom Inc. • 2009**
Kyle Moorehead 763-533-5535
Networking & AV Construction
- Moseley Associates Inc. • 1977**
Bill Gould 805-968-9621 x785
Digital STLs for Radio and Television
- Nascar Productions • 2014**
Abbey Kielcheski 704-348-7131
Live/Post Production Services
- National Association of Broadcasters • 1981**
Industry Trade Association 202-429-5340
- National Football League • 1999**
Ralph Beaver 813-282-8612
Game Day Coordination Operations
- Nautil Inc. • 2002**
Jeff Welton 877-662-8835
Radio Broadcast Transmitter Manufacturer
- Nemal Electronics Int'l Inc. • 2011**
Benjamin L. Nemser 305-899-0900
Cables, Connectors, Assemblies and Fiber
Optic
- Neutrik USA, Inc. • 2012**
Kathy Hall 704-972-3050
Ruggedized Optical Fiber Systems
- Orban Labs, Inc. • 2011**
David Rusch 480-403-8300
Audio Processing AMFMTV
- Pastermark Enterprises • 2001**
Christine Hammond 949-261-1920
Coax & Fiber Products
- Pebble Broadcast Systems • 2016**
Kurt Schini 612-345-0461
Television Broadcast Playout Automation
- PlayBox Technology • 2017**
Van Duke 561-229-0003
Automation Video Playout Server
- Potomac Instruments • 2012**
Guy Berry 301-696-5550
RF Measurement Equipment Manufacturer
- ProAudio.com - A Crouse-Kimzey Co. • 2008**
Mark Bradford 800-433-2105 x560
Proaudio Broadcast Equipment Distributor
- Propagation Systems Inc. - PSI • 2010**
Doug Ross 814-472-5540
Quality Broadcast Antenna Systems
- Quintech Electronics and Communications Inc. • 2002**
James Herbstritt 724-349-1412
State-of-the-art RF Hardware Solutions
- QVC • 2011**
Kevin Wainwright 484-701-3431
Multimedia Retailer
- Radio Frequency Systems • 2015**
Scott Martin 812-589-4755
Broadcast & Telecom Antennas & Systems
- RCS • 2003**
Diana Stokey 308-284-3007
Audio and Video Content Management
- RDL • 2004**
David Zovod 928-778-9678 x104
Audio, Video, Control & Test Equipment
Manufacturer
- RF Specialties Group • 2008**
www.rfspecialties.com
Everything from the Microphone to the
Antenna
- Rohde & Schwarz • 2003**
Walt Gumbert 724-693-8171
Transmitters, Test & Measurement, Video
Servers & Storage
- Ross Video Ltd. • 2000**
Richard Schatz 613-228-0688
Manufacturer, Television Broadcast Equipment
- Sage Alerting Systems Inc. • 2010**
Gerald LeBow 914-872-4069
Emergency Alert Systems Products
- SCMS Inc. • 2000**
Bob Cauthen 800-438-6040
Audio and RF Broadcast Equipment Supplier
- Seacom Erectors, Inc. • 1997**
John Breckenridge 360-793-6564
Tower/Antenna Erections
- SEG • 2014**
Chris Childs 913-324-6004
Supply Chain Products and Services
- Shively Labs • 1996**
Dale Ladner 888-SHIVELY
FM Antennas & Combiners
- Shure Incorporated • 2012**
Bill Ostry 847-600-6282
Microphones, Wireless Systems, Headsets
- Sierra Automated Systems and Eng. Inc. • 2011**
Al Salci 818-840-6749
Routers, Mixers, Consoles, Intercoms
- Signiant • 2012**
Danielle Rita 781-791-4611
Accelerated File Transfer Solution
- Silvus Technologies • 2015**
Mark Tommey 617-816-6588
Wireless Video Mesh Network
- Smarts Broadcast Systems • 2017**
Dave Potratz 800-213-3356
Radio Digital Audio Systems
- Snell Advanced Media • 1995**
John Shike 818-556-2616
Video Equipment Manufacturer
- Solid State Logic • 2014**
Steve Zaretsky 212-315-1111
Digital Audio Mixing Consoles, Networked
Audio Routing, Embedded Audio Solutions
- Staco Energy Products Co. • 2010**
Paul Heiligenberg 937-253-1191 x128
Manufacturer of Voltage Regulators, UPS
- Sutro Tower Inc. • 1989**
Eric Dausman 415-681-8850
Broadcast Tower Leasing
- The Switch • 2011**
Peter Hartz 323-645-8011
Fiber Transmission Provider
- Tektronix Inc. • 1977**
Jim Lang 503-627-2980
Video Test & Measurement, Equipment
Manufacturer
- Telemetrics Inc. • 2016**
Anthony Cuomo 201-848-9818
Camera Robotic Control Systems
- Telos Systems/Omnia/Axia • 2003**
Denny Sanders 216-241-7225
Telos Systems Talk-Show Systems
- Teradek • 2011**
Jon Landman 949-743-5783
Camera-top ENG Solutions
- Terrestrial Inc. • 2003**
Billie Layman 888-373-4832
FCC Broadcast Auxiliary Licensing Services
- Tielne The Codec Company • 2003**
Dawn Shewmaker or Jacob Daniluck 317-845-8000
Audio Codec Manufacturer
- Unimar Inc. • 2001**
Thad Fink 315-699-4400, 813-943-4322
Tower Obstruction Lighting Designer,
Manufacturer, Distributor
- Verizon Digital Media/Services • 2015**
Gary Learner 781-221-7400
Media Intelligence and Logging Solutions
- Vislink Inc. • 1991**
Mike Payne 978-671-5700
Video Microwave Systems and Services
- Wheatstone • 2010**
Jay Tyler 252-638-7000
IP Consoles, Routers & Processors
- WideOrbit • 2012**
Brad Young 214-923-6337
Broadcast Management Software, Automation
and Master Control
- Wireless Infrastructure Services • 2006**
Travis Donahue 951-371-4900
Repacking Services - West Coast Turnkey
Services
- WnewTech Corporation • 2014**
Luiz Santiago 310-220-5664
Systems Integration

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Member Spotlight: John A. Graham

Member Stats

SBE Member Since: 1982
Certifications: CSRE
Chapter: 33 Southwestern Ohio
Employer: Strong Tower Christian Media, WFCJ, WECC
Position: Engineering Director
Location: Dayton/Springfield, OH
I'm Best Known For: Dealing with RF issues at the transmitter sites and audio issues at the studios.

Q *What do you value most about your SBE involvement?*

A I have enjoyed the training that SBE has offered with the Ennes program.

Q *What got you started in broadcast engineering?*

A When I was young, my father gave me a little yellow crystal radio for Christmas. I tuned in WLW at night and our local station WCHO (Washington Court House) during the day. At 13, my father let me use an old tube radio, and I listened to all the AM stations at night. After that, I started to study his home course on electronics.



John in the pits at the racetrack.

Q *Who was your mentor?*

A Dave Johnson, with whom I worked at Mortensen Broadcasting Company as an announcer, helped me in my start into engineering. When Dave worked for Salem in Cleveland, he took the time to teach me about AM directional antennas.

Q *What do you like most about your job?*

A Each day is different with a new set of problems to solve. Also, I enjoy working with new equipment that is being developed for our industry.

Q *When I'm not working I...*

A ...love to watch and attend Nascar races. I love to photograph landscape scenes and sporting events.

Q *You may not know this, but...*

A ... I was the guy who stood on a Logitek console for an ad several years ago when the Mosaic consoles were introduced.

Q *Do you have a nickname?*

A Years ago, an announcer started to call me Johnny Be Good after the Chuck Berry song. Later it was shortened to Johnny BG and its hung around over the years.

Candidates Announced for Upcoming SBE Election

Each year the SBE membership elects members to serve on the national Board of Directors; the governing body of the society. This includes all four officers for one-year terms and half the 12 directors for two-year terms.

Additional candidates may be nominated by the membership. Any eligible member proposed by at least ten members to the national Secretary by July 10 will be added to the ballot. The election will take place June 24 through August 23. Balloting will be via the election website, except for those members who have

opted out of electronic voting this year or who have not provided the SBE national office with their email address. They will receive their ballots through the mail.

For more information about candidacy, contact Secretary Wayne Pecena at wpecena@sbe.org or Executive Director John Poray at jporay@sbe.org or 317-846-9000.



Leifer

Nominations Committee Candidate Slate

Officers:

President: James Leifer, CPBE; Chapter 11 Boston; Andover, MA

Vice President: RJ Russell, CPBE; Chapter 18 Philadelphia; Philadelphia

Secretary: Wayne Pecena, CPBE, 8-VSB, AMD, DRB, CBNE; Chapter 99 Bryan, TX, College Station, TX

Treasurer: Jim Bernier, CPBE, CBNE; Chapter 5 Atlanta; Alpharetta, GA

Treasurer: Ched Keiler, CPBE, CBNE; Chapter 53 South Florida; Ft. Lauderdale, FL

Directors: (top six vote getters will be elected):

David K. Bialik, CBT; Chapter 15 New York City; New City, NY

Andrea Cummis, CBT, CTO; Chapter 15 New York City; Roseland, NJ

Mark Fehlig, CPBE, 8-VSB, CBNT; Chapter 40 San Francisco, Walnut Creek, CA

Mike Hendrickson, CPBE, CBNT; Chapter 17 Minneapolis; Lakeville, MN

Stephen H. Lampen, CBRE; Chapter 40 San Francisco; San Francisco

Kim Sacks, CBT; Chapter 48 Denver; Loveland, CO

Dave Siegler, CPBE; Chapter 5 Atlanta; Atlanta

Barry Thomas, CPBE, DRB, CBNE; Chapter 48 Denver; Denver

Kevin Trueblood, CPBE, CBNT; Chapter 90 SW Florida; Estero, FL



Russell



Pecena



Bialik



Cummis



Fehlig



Bernier



Keiler



Hendrickson



Lampen



Sacks



Siegler



Thomas



Trueblood

WELCOME TO THE SBE

NEW MEMBERS

Ashley E. Batts - Long Beach, CA
Joel L. Belik - Manitou Springs, CO
Francisco J. Bernues - Torrance, CA
Joe S. Calkins - Pensacola, FL
Eric B. Carter - Tallahassee, FL
John A. Chesnutt - Inglewood, CA
Douglas B. Crall - Tallahassee, FL
Robert C. Cram - Spokane, WA
Joao Paulo Cruz Araujo - Uberlandia, Minas Gerais, Brazil
John Cruzat - Brooklyn, NY
Benjamin Datin - New Port Richey, FL
Jack B. Davidson - Greensboro, NC
Jonathan O. Ferraro - Plainville, CT
Mikie S. Fierro - San Jacinto, CA
Kristen Garand - Amherst, MA
Michael L. Gibson - Rosamond, CA
Shawn Gowen - Indianapolis, IN
Ian J. Greene - Kennewick, WA
Harold M. Hallikainen - Arvada, CO
Ryan G. Hensler - Kokomo, IN
Zhulietta Ibisheva - Honolulu, HI
Russell Laferty - Auxier, KY
Markell Lambright - Brooklyn, NY

James C. Marlow - Saint Louis, MO
Kevin M. McDaniel - Tallahassee, FL
Ronald V. Merrix - Tallahassee, FL
Arthur G. Patton - Tallahassee, FL
Ben T. Privot - Washington, DC
Andy Radig - Oshkosh, WI
Christopher Ray - Greensburg, PA
Donald Richardson - Marietta, GA
Daniel S. Riley - Aurora, CO
Kevin S. Robbins - Tupelo, MS
Kimberly Robinette - Westminster, MD
Joan Santos - Winnipeg, MB Canada
Gerald D. Schultz, II - Los Angeles, CA
Jacob D. Simms - Knoxville, TN
Michael E. Skehan - Washington, DC
Thomas Smigel - Cleveland, OH
Randy J. Smith - Spokane Valley, WA
Navapadol Tabkum - Escondido, CA
Justin L. Van Hout - Appleton, WI
Brandon M. Watkins - University Place, WA
James R. Wheeler - Franklin, CT
Jon Zucco - Denver, CO

RETURNING MEMBERS

Edward I. Amana - Abuja, Nigeria
David D. Beach - Houston, TX
Francisco Bedolla - Puebla, Mexico
George W. Blessing - Murray, NE
Michael J. Boucher - Las Vegas, NV
Troy G. Caldwell - Topeka, KS
Phillip J. Carter - Lake Park, GA
Robert F. deBettencourt - Gaithersburg, MD
Mike Felt - El Mirage, AZ
Karl M. Fontenot - Crowley, LA
Scott Fussell - Columbus, GA
Jason M. Gorodetzer - Aurora, CO
James K. Hobbs - Lincoln, NE
Mindy Hoffman - East Brunswick, NJ
Frederick K. Humphreys - Antioch, TN
Gerry D. Inks - Fishers, IN
Michael Jamnick - Minneapolis, MN
Robert F. Kelley, Jr. - Tamuning, GU
Eric D. Kuglin - New Bern, NC
Keith J. Leitch - Santa Rosa, CA
Julio C. Lopez Garcia - Mexico City, Mexico

Paul Lyons - Dayton, OH
John E. Mackey - Beaverton, OR
John D. Mathews - Holts Summit, MO
Ted A. McCall - Easley, SC
Aaron T. McEachern - Grand Blanc, MI
James R. Mertins - Tulsa, OK
Robert A. Meuser - New York, NY
Drew D. Pinkney - Lemoyn, PA
Stephen C. Portier - Hammond, LA
Marcus Q. Potier - Katy, TX
James R. Pronath - Washington, DC
Oscar C. Quintanilla - El Cajon, CA
Michael H. Randolph - Abilene, TX
Glen Rewal - Castaic, CA
Kimberly K. Sacks - Loveland, CO
Garth J. Sims - Clio, MI
Montre D. Staton - College Park, MD
Barry A. Walters - Irving, TX
Jaclyn Wilson - Ocala, FL
Junwel A. Yanez - Quezon City, Philippines

NEW STUDENT MEMBERS

Douglas P. Berry - Auburn, WA
Rachael Boruta - Wilmington, DE
Tyler L. Cox - Gig Harbor, WA
Logan C. Elmore - Port Orchard, WA
Pedro L. Franqui - Tacoma, WA
Caleb L. Gordon - Saginaw, MI
Henry M. Holtgeerts - Tacoma, WA
James E. Jones - Fort Meade, MD

Calon D. King - Tacoma, WA
Darian T. Nieves - Puyallup, WA
Talat Oyefeso - Compton, CA
Christopher F. Rees - Tacoma, WA
Steven R. Surerus - Puyallup, WA
Trenton R. Tomaras - Gig Harbor, WA
Aidan C. Torp - Tacoma, WA

NEW YOUTH MEMBERS

Liam M. Salvage - Streetsboro, OH

NEW ASSOCIATE MEMBERS

Paul A. Fitts - Hagerstown, MD

Greenberg Scholarship

John Demshock, Altamonte Springs, FL
Craig Fox, Syracuse, NY
Andrew Funk, Atlanta, GA
Carl Kissner, Royal Oak, MI
Rick Levy, Cambridge, MA
James Linn, Atlantic Beach, FL
John Lyons, New York, NY
Kevin Plumb, Trumbull, CT
Eric Wright, Marietta, GA

Battison Scholarship

Lawrence Behr, Greenville, NC
Ralph Chambers, Ft. Lauderdale, FL
Carl Cutforth, Mountain Lakes, NJ
John Demshock, Altamonte Springs, FL
Andrew Funk, Atlanta, GA
Ronald Huceby, Butte, MT
Carl Kissner, Royal Oak, MI
James Linn, Atlantic Beach, FL
John Lyons, New York, NY
Kevin Plumb, Trumbull, CT
John Turner, Mountain Lakes, NJ
Eric Wright, Marietta, GA

SBE Board Adopts By-laws Changes

The SBE Board of Directors approved two changes to the Society By-laws at its meeting on April 23, 2017. The changes took effect upon passage. The first expands the scope of an existing by-law that provides the Board with authority to institute travel cost reimbursement for members of the board to attend Board meetings. The change expands the authority to meetings of the Executive Committee. The new by-law reads as follows:

Article 3, Section 10

"In the discretion of the Board of Directors, the Board may permit reimbursement of Board members for some or all travel and lodging expenses reasonably incurred in their attendance at meetings of the Board or the Executive Committee. At the discretion of any Chapter of the Society, that Chapter may reimburse individual members of the Board of Directors for their otherwise unreimbursed out-of-pocket expenses necessarily incurred in pursuing Society business."

The second change adds an indemnification clause to the bylaws. The intent is to indemnify national officers, directors and staff to minimize their ex-

posure and personal liability when working in good faith on behalf of the society. The new by-law reads as follows:

Section 14

"The Society shall, to the extent legally permissible, indemnify each person who may serve or who has served at any time as an officer, director, or employee of the corporation against all expenses and liabilities, including, without limitation, counsel fees, judgments, fines, penalties and settlement payments, reasonably incurred by or imposed upon such person in connection with any threatened, pending or completed action, suit or proceeding in which he or she may become involved by reason of his or her service in such capacity; provided that no indemnification shall be provided for any such person with respect to any matter as to which he or she shall have been finally adjudicated in any proceeding not to have acted in good faith in the reasonable belief that such action was in the best interests of the corporation; and further provided that any compromise or settlement payment shall be approved by a majority vote of a quorum of directors who are not at that time parties to the proceeding. The Society may maintain insurance, at its expense, to protect itself and any such person against any such liability, cost or expense."

ENNES EDUCATIONAL FOUNDATION TRUST

The trust offers scholarship and educational programming and grants that benefit broadcast engineering and the broadcast engineer. Submit tax-deductible donations, payable to the Ennes Educational Foundation Trust, to the Society of Broadcast Engineers; 9102 N. Meridian St., Suite 150; Indianapolis, IN 46260.

THANKS TO THE FOLLOWING SUPPORTERS FOR THEIR CONTRIBUTIONS

Ennes Scholarship

Jason Brown, Seminole, FL
John Byrne, Jr., Lyndell, PA
Ronald Capan, Pittsburgh, PA
Timothy Carroll, Lancaster, PA
Cristan Caughill, Honolulu, HI
John Demshock, Altamonte Springs, FL
Maria Dudzak, Ketchikan, AK
Andrew Funk, Atlanta, GA
Philip Hartman, San Francisco, CA
Kent Hatfield, Rochester, NY
Michael Johnson, Oklahoma City, OK
Martin Jury, Little Chute, WI
Carl Kissner, Royal Oak, MI
Carl Lahm, Lake Villa, IL
Kate Landow, Englewood, CO

James Linn, Atlantic Beach, FL
John Lyons, New York, NY
William McCombs, Wichita, KS
John Peterson, Fargo, ND
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Barry Thomas, Denver, CO
Conrad Trautmann, South Setauket, NY
John Turner, Mountain Lakes, NJ
David Turmire, Pocatello, ID
Thomas Weber, Indianapolis, IN
Eric Wright, Marietta, GA

Youth Scholarship

John Demshock, Altamonte Springs, FL
Andrew Funk, Atlanta, GA
Martin Jury, Little Chute, WI
Carl Kissner, Royal Oak, MI
Kate Landow, Englewood, CO
James Linn, Atlantic Beach, FL

John Lyons, New York, NY
Scott Pendergraft, Wrightsville, PA
Kevin Plumb, Trumbull, CT
Jason Quintana, Hudson, CO
Matthew Saplin, Altamont, NY
Larry Will, Glen Mills, PA
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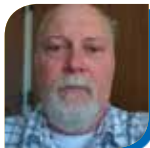
MEMBERS ON THE MOVE



◀ SBE Vice President **James Leifer**, CPBE, is the senior manager broadcast operations at American Tower, Woburn, MA.

Steve Sauer is the assistant engineer at Beasley Media Group in Estero, FL.

▶ **Steve Hendrix**, CBT, has left Oregon Public Broadcasting and is now the chief engineer of KPXE, Kansas City.



◀ **Jon Hardee**, CPBE, is a broadcast maintenance engineer with North Carolina Public Radio-WUNC.

Kim Sacks, CBT, is director of engineering at iHeartMedia, Loveland, CO.



▶ **Kim Sacks**,



◀ **Leonard Charles**, CPBE, has been inducted into the Wisconsin Broadcasters Association Hall of Fame.

Have a new job? Received a promotion? Let your fellow SBE members know. Send your news to [Chriss Scherer at cscherer@sbe.org](mailto:Chriss.Scherer@sbe.org).

MARK YOUR CALENDAR

SBE Certification Exams

Local Chapters
June 2 - 12, 2017 sbe.org/certification

Webinar: RF101 Module 5

Online
June 15, 2017 sbe.org/webinars

Webinar: IP Networking Part 3

Online
June 20, 2017 sbe.org/webinars

SBE Certification Exams

Local Chapters
Aug. 4 - 14, 2017 sbe.org/certification
Application deadline is June 5, 2017.

SBE National Meeting

Denver, CO
Oct. 26 - 27, 2017 sbe.org

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