

Ohio Chapters, OAB Shine Hosting SBE National Meeting

Each year the SBE co-locates its SBE National Meeting with a regional or local broadcast-related event. This year, the national meeting was held in conjunction with the Ohio Broadcast Engineering Conference, conducted by the Ohio Association of Broadcasters in cooperation with the SBE chapters of Ohio. The Ohio SMPTE section is also a co-sponsor of the event.

Held Oct. 26-27 in Columbus, the conference proved to be an excellent event to partner with. There was strong attendance from Ohio broadcast engineers, excellent technical sessions and a trade show that featured more than 50 companies exhibiting their products and services. Our thanks to the OAB staff, led by President Christine Merritt, which presented a very organized educational

see [NATIONAL MEETING](#), p. 8



Actions of the SBE Board of Directors October Meeting

The SBE Board of Directors met for its scheduled fall meeting during the SBE National Meeting in Columbus, OH, on Oct. 26. A number of actions were taken and updates provided on society initiatives. Here are the highlights.

The society is creating a small EAS Advisory Group consisting of SBE members knowledgeable in EAS matters. The group will keep watch on EAS developments nationally and provide guidance and suggestions to the Board, Education and Government Relations committees as needed. At the time of the Board meeting all but one of the five seats on the advisory group had been filled. Shortly after, the final seat was filled as well. Engineers serving on the SBE EAS Advisory Group are Jim Hoge of Orlando, FL; George Molnar of Las Vegas, NV; and Larry Wilkins

of Montgomery, AL. Representing EAS equipment manufacturers are Ed Czarnecki of Digital Alert Systems and Harold Price of Sage Alerting Systems. Both companies are SBE Sustaining Members.

The Board approved its ninth affiliation with an SBE-like organization outside the United States. The Southern African Communications Industries Association (SACIA) covers several countries in Southern Africa, including South Africa, with a primary mission of education and certification for its members. The agreement provides the opportunity for sharing information, materials and knowledge between the two organizations. At the time of this writing, the agreement was pending approval by the SACIA board.

Education Committee Chair Wayne Pecena provided an update on the SBE Ed-

ucation Summit held on Sept. 28 in New York City. The information gleaned from the summit will be used by the Education

see [BOARD](#), p. 4

IN THIS ISSUE

- 4 Letter from the President
- 5 Broadcast Engineers in 2017
- 6 Are You CPBE Ready?
- 8 National Meeting Photos
- 10 Regulatory Updates
- 12 National EAS Test
- 16 Members On The Move

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

Nominations Open For SBE Fellow

As a broadcast professional, I'm sure you know an SBE member who has contributed to the success of an SBE chapter or the broadcast industry over the years. This person has exhibited a dedication to the advancement of the broadcast engineer, the field of broadcast engineering and the Society of Broadcast Engineers itself. Someone like this deserves to be recognized for his or her efforts. Consider nominating him or her for the SBE Fellow rank of membership. The SBE is now accepting nominations for 2017.

Fellow membership is the highest level of SBE membership. It's a form of recognition for someone who has contributed significantly to the society, the field of broadcast engineering or its allied professions, or by disseminating his or her broadcast knowledge and promoting its application in practice. Seventy-six members have been recognized with the honor in the society's more than 50 years of existence.

To nominate a member, candidates must be proposed in writing by a voting member to the Fellowship Committee. The nomination must include a comprehensive professional history of the nominee and an explanation of why the candidate is deserving of this honor. The nomination must also include the written endorsements of at least five other voting SBE members. All nominations are to be kept confidential. No others besides the nominators and the members of the Fellowship Committee should be aware of

the nomination. Moreover, the nominee should not be made aware that he or she has been nominated.

Nominations for 2017 must be received no later than March 17, 2017, for consideration. The Fellowship Committee will bring the names of nominees to the Board of Directors for consideration and election at the April 2017 meeting. The SBE secretary will notify those elected. Awards will be presented at the SBE National Awards Dinner during the 2017 SBE National Meeting to be held in Denver.

Submit your nominations to: Fellowship Committee Chair Troy Pennington, CSRE, CBNT; 6156 Hampton Hall Way; Hermitage, TN 37076 or to tpennington@sbe.org.



Certification Question

Answer on page 6

With 1kW into the AM antenna system, we measure a field strength of 200mV at 1 mile. The power is increased to 3kW. The new field strength will be:

- A. 346.4mV/m
- B. 632mV/m
- C. 30mV/m
- D. 2000mV/m



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LETTER FROM THE PRESIDENT

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

Enlighten, Educate and Challenge

The year of 2016 is quickly coming to an end. This is the time of year when we reflect back on this year and start making plans for the next, 2017. The reflection part is fairly easy as we can judge our accomplishments and failures accurately, but planning for the future is always a challenge. You may even be someone who makes New Year's resolutions. If you are, let me make some SBE suggestions for the New Year that will enlighten, educate and challenge you.

For starters, make this a year to become SBE certified or to expand your SBE certifications. This is a commitment that will personally benefit you. I have said this in a couple of addresses in SBE meetings that certification should be a personal goal to prove to yourself and to show others that you know your specialty. I especially challenge those of you who have never considered certification. The big excuse I hear is that you don't need to be certified because you know what you're doing and your employer doesn't require one. I understand that, but with SBE certification, you

allow other associates to see that you truly know what you're doing. Certification also instills a sense of pride in yourself so for your first New Year's resolutions, take an SBE certification test!

Another resolution to consider is more education. With the pace that our industry is changing, education is a continuing requirement. The SBE offers many educational opportunities through webinars and the SBE University. Make a goal for 2017 to pick up a couple of webinars in the coming year. We have live webinars throughout the year, and also archived webinars that will certainly be worth your time to explore



and enroll in. These webinars cover many areas of technology from IT, safety, RF, FCC rules and self-inspections, AM directional systems, just to name a few. At the SBE University there are courses in television video and audio, broadcast engineer management, AM antenna systems, FM transmission systems, and ENG. These are just a few of the many courses available. The best part is, you take these on your own schedule and time.

With Christmas just around the corner, consider treating yourself to a great gift! This has been a great year for the SBE and its membership as we introduced this year the new book, the SBE Broadcast Engineering Handbook. If you are looking for a great reference book to use for your daily work, certification and education, this is the book for you! There is also an advantage for you as an SBE member: a big discount when you purchase the book from the SBE Store on the SBE website. You will save \$40 from the non-member rate! Consider this the special gift for yourself this Christmas.

I trust you all have had a great year and be assured that the SBE will be working even harder for you in 2017. Happy Holidays to you!

BOARD from p. 1

Committee to plan future education programs that will cover technology projected to be common-place in the industry in three to ten years. Pecena also reported that another take-away from the meeting was insight on the background and knowledge that will be needed of station technical employees. The SBE Board will use that information as it looks to the future regarding membership and how the society will respond to the anticipated changes. More about this is covered in this issue of The Signal in the Education Update column.

The Board adopted the 2017 SBE budget, which takes effect on Jan. 1, 2017. The budget keeps SBE dues for all membership grades at current levels.

The Board approved national committee chair appointments for the coming year as submitted by President Massey. The list of committee chairs is found on page 15 of this issue.

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EDUCATION UPDATE

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

The Broadcast Engineer in 2017

The new year of 2017 is nearly upon us and will likely bring plenty of change to the broadcast industry. The spectrum auction and repack are likely on the minds of all TV broadcast engineers, as well as ATSC 3.0. 2017 will be a busy year and one filled with change. It is clear that a migration to an IP-based broadcast technical facility will continue as the use of common-of-the-shelf (COTS) IT hardware dominates in usage.

For many years, the broadcast engineer had a traditional trademark of identification: the Xcellite greenie and a favorite trim-pot tweaker in his or her front pocket. These tools of the past saw frequent daily use,



The one-time most common tools of the trade.

but I venture to say see very little use today. As the analog facility faded away so did the myriad of constant level or timing adjustments. In the digital environment, what adjustments remain became a graphical user interface (GUI), often from a laptop or tablet screen. Along with a change in the pocket tools often carried by the broadcast engineer comes a change in the knowledge and skills required. The broadcast engineer today is kin to an information technology professional with specialized skills in audio, video, and RF technologies.

The growth of IT infrastructure in the broadcast technical facility often brings a vast number of advantages ranging from system flexibility, to wiring simplification, to the cost. Virtualization and cloud-based services bring another level of service offering possibilities even to the smaller broadcaster. The reliance upon these services also means an increased reliance upon the underlying IP network, whether within the broadcast facility or external, to the facility.

The Security of New Tech

Network security is more important than ever as the broadcast technical facility relies on IP as a transport platform. The recent October DYN.com distributed-denial-of-service (DDoS) attacks clearly point out how fragile the public internet infrastructure can be. Overall, the single-day event that disrupted numerous major public websites will likely keep academic cybersecurity researchers occupied for man-years to fully digest how this attack occurred, and keep cyber-law enforcement engaged in the identification of who brought this attack about. Information to date suggests that the platform utilized was based on the exploitation of weak security capabilities in consumer internet-of-things (IoT) devices. These IoT devices are often characterized as low-cost consumer IP cameras and DVRs. As reported by the network security experts at KrebsOnSecurity.com, the Mirai malware botnet was found to be the basis of the attack, executed from likely hundreds of thousands of consumer IoT devices. Internet service provider Level 3 Communications placed the number of infected hosts participating in the DDoS attack at more than 500,000. DYN.com, where the attack was directed,

observed that more than 10 million individual IP addresses were involved.

It is believed that these devices were infected by locating devices on the public internet that had default manufacturer logins. In other words, the end-user had not changed the default logins to these devices upon installing on their networks. The Mirai source-code contains multiple device default login information.

In the case of one popular Chinese manufacturer, the default login information was hard-coded into the device, and even if the end-user had changed the login information, the device would be reset to the default in the event of a power outage. The low-cost design of the device did not permit a permanent change to the default login credentials.

This is just one of many events that emphasize the importance of IP network security. Best practices include knowing what is connected to your network, knowing the security capability or lack thereof of the host device, disabling host services not needed, but often enabled by default, and taking proactive steps to insure host devices are not vulnerable.

Network security tools such as nmap should find common use by the broadcast engineer to verify network security configurations much as the greenie found common use in the past. Network scanning to locate open and vulnerable access to a network host must become a common practice as host devices are added to a network. And repeated verification should not be over looked as software updates may change configurations that were in place.

Learning is a continuous process for the broadcast engineer.



It's possible an IP camera was the gateway for the DDoS attack in October.

Take advantage of SBE professional development events to learn a new technology, enhance your current skills, or adding an SBE Certification to your personal professional portfolio. 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. Your comments, suggestions, ideas for future programs, and feedback are always welcome!

For more information on any SBE education program, contact the SBE National Office at 317-846-9000.

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- ATSC 3.0
- Streaming Radio
- FCC Self-inspection
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- Grounding
- HD Radio
- Antennas
- RF Safety
- ...and more!

sbe.org/webinars



CERTIFICATION UPDATE

By Hal Kneller, CPBE, & David Priestler, CPBE
Members, SBE Certification Committee
hkneller@sbe.org, dpriester@sbe.org

Are You Qualified for CPBE and Don't Know It?

While there are many SBE members certified to the highest and most prestigious level within the organization – Certified Professional Broadcast Engineer (CPBE) – we find many SBE members qualify to obtain this level but fail to realize it. For many, it may surprise you to find that you are eligible to apply.

An important aspect of the CPBE qualification process is that there isn't an additional examination. The CPBE certification is based upon your many years of experience and references from your peers.

There are two ways to initially qualify. If you already hold Certified Senior Radio Engineer (CSRE) or Certified Senior Television Engineer (CSTE), then you simply need some paperwork to show that you meet the eligibility criteria. If you are not currently certified as a CSRE or CSTE, you need to first sit for either senior exam. Once you hold a senior certification, and have the requisite qualifications as outlined below, you may then apply to be a CPBE.

The second way you may qualify to apply for the CPBE is if you hold a state Professional Engineer's license in electrical engineering. Note at the CPBE level, there is no distinction between radio and television.

Once you have qualified by holding a senior certification or a state PE, you will need to also qualify by having the required experience as follows:

- Twenty years of professional work *employment* experience within the broadcast technical industry. Education time does not count unless you hold a state issued registered Professional Engineer license (electrical engineering only). This counts towards four years of experience. If you hold a PE and do not want to take the CSRE or CSTE exam, you may be eligible as long as you can verify the 20 years of experience in broadcast engineering or related field.
- Evidence of sufficient knowledge in:
 - Maintenance
 - System design
 - Management/supervision of employees
 - Continuing education

All candidates must submit the following along with their application and payment:

1. Two letters of reference from an SBE CPBE, CSRE or CSTE holder or a PE per above
2. One letter of reference from a person who has supervised your work

Note that if the person who has supervised your work also meets the first refer-

ence letter requirement (SBE certification or a PE), that letter can be used to meet half the requirement for 1 and all the requirement of 2. One letter can be used to meet both requirements.

While not required, the SBE strongly recommends an applicant submit a resume to more easily verify his or her qualifications and years of employment experience. As members of the committee charged with evaluating applications, we can attest to the value of as much relevant information, particularly a resume provided by the applicant.

Finally, the applicant should supply a brief written statement that explains why he or she believes his or her professional experience, educational background and training qualifies for certification based on the published criteria.

Currently the SBE has 966 individuals who have applied and qualified for certification at this level. Undoubtedly there are many other people among our membership and those in the industry who would qualify for CPBE certification. We urge you to apply if you meet the criteria mentioned above.

Our wonderful certification staff is always happy to answer questions and can always refer you to the Certification Committee for answers and further information.

Want to be a mentor or a mentee?

SBE Mentor Program

The SBE Mentor Program pairs an experienced broadcast engineer with someone who is a newer broadcast or multimedia technology professional. The SBE Mentor Program provides a means for SBE members to share knowledge and experience.

Want to know more or participate?
sbe.org/mentor

Answer from page 3

The answer is A.

A field strength reading in millivolts per meter changes in proportion to the power ratio.

First, determine the power ratio (in decibels) with this formula:
 $dB = \sqrt{P2/P1}$

In this case:
 $dB = \sqrt{(3000/1000)}$

Which gives the result:
 $dB = 1.732$

Determine the new field strength at 3kW by multiplying 200mV/m by the power ratio of 1.732. The new reading will be 346.4mV/m

SBE Certification Achievements

CONGRATULATIONS

LIFE CERTIFICATION

Certified Professional Broadcast Engineer (CPBE)
William Burckhard, Billings, MT - Chapter 6

Certified Senior Television Engineer (CSTE)
James Kuhns, Clinton Township, MI - Chapter 82

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 the 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.

CERTIFIED PROFESSIONAL BROADCAST ENGINEER (CPBE)

James Kauffman, Ocoee, FL - Chapter 42

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.

AUGUST EXAMS

Certified Senior Television Engineer (CSTE)
James Kauffman, Ocoee, FL - Chapter 42

AM Directional Specialist (AMD)
Lee Clardy, III, Lafayette, LA - Chapter 72
AM Directional Specialist (AMD)
A. Lee Clardy, Lafayette, LA - Chapter 72

8-VSB Specialist (8-VSB)
William Traue, Idaho Falls, ID - Chapter 145

SPECIAL PROCTORED EXAMS

Certified Broadcast Radio Engineer (CBRE)
Timothy Kyobe, Kampala Uganda

CERTIFIED BY LICENSE

Certified Broadcast Technologist (CBT)
Brant Herrett, Santa Cruz, CA - Chapter 40
John Knoblock, Akron, OH - Chapter 70

CERTIFIED TELEVISION OPERATOR (CTO)

George Davis, Longmont, CO
Brad Harris, Lakewood, CO
Gerald Miranda, Arvada, CO
Thad Utech, Vermillion, SD
Benjamin Waddell, Knoxville, TN

Life Outreach International
Carol Armentrout, Euless, TX
David Butler, Euless, TX
Mario Crow, Euless, TX
Martin Ferguson, Euless, TX
Eric Jacobsen, Euless, TX

Life Outreach International (cont.)
Scott McDuffie, Euless, TX
Johnny Medlock, Euless, TX
Andy Stackable, Euless, TX
Joshua Todd, Euless, TX
Daniel Yost, Euless, TX

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.

Certified Professional Broadcast Engineer (CPBE)
Robert Army, Jr., Moreno Valley, CA - Chapter 131
Kevin Fournier, Stephens City, VA - Chapter 37
Frederick Krampits, Chicopee, MA - Chapter 14
George MacKnight, Germantown, OH - Chapter 33
John Pfisterer, Oakdale, NY - Chapter

Certified Professional Broadcast Engineer (CPBE)
8-VSB Specialist (8-VSB) AM Directional Specialist (AMD)

John Collinson, New Port Richey, FL - Chapter 39

Certified Senior Radio Engineer (CSRE)
John Landry, Hastings on Hudson, NY - Chapter 15

Certified Senior Television Engineer (CSTE)
Russell Taylor, Arlington, VA - Chapter 37

Certified Broadcast Networking Engineer (CBNE)
John Collinson, New Port Richey, FL - Chapter 39

Certified Broadcast Television Engineer (CBTE)
James Cox, Charlestown, IN - Chapter 35
Thomas McNicholl, Whitesboro, NY - Chapter 22
Charles Zariello, Voorheesville, NY - Chapter 58

Certified Broadcast Radio Engineer (CBRE)
Stephen Lampen, San Francisco, CA - Chapter 40
Robert Fields, San Antonio, TX - Chapter 69
David Ford, Penticton, BC
Vincent Fuhs, Sioux Falls, SD
Amanda Hopp, Aurora, CO - Chapter 48
H. Kent Randles, Portland, OR - Chapter 124

Certified Broadcast Television Engineer (CBTE) 8-VSB Specialist (8-VSB)

James Blackford, Evansville, IN - Chapter 121

Certified Broadcast Networking Technologist (CBNT)

James Blackford, Evansville, IN - Chapter 121
David Costanza, Harrisburg, PA - Chapter 41
James Dalke, Bellevue, WA - Chapter 16
Marc Fenton, Moreno Valley, CA - Chapter 131
Vincent Fuhs, Sioux Falls, SD

Robert Hawthorne, APO, AE - Chapter 69
Brian Heise, Bells, TX - Chapter 67

Margo Kelly, Washington, DC - Chapter 37
Michael Lemmond, Henrico, VA

Ascencion Rick Marquez, Bethesda, MD - Chapter 37

Kevin Olden, Adrian, MI - Chapter 104
Brian Truong, Perry Hall, MD - Chapter 132

Certified Audio Engineer (CEA)
Mark Dubosky, Sarasota, FL - Chapter 90

Certified Video Engineer (CEV)
Jonathan Abrams, Jersey City, NJ - Chapter 15

Certified Broadcast Technologist (CBT)

David Ford, Penticton, BC
Vincent Fuhs, Sioux Falls, SD
Robert Hawthorne, APO, AE - Chapter 69
Kevin Lapham, North Port, FL - Chapter 90

Certified Television Operator (CTO)

Roy Amick, Irmo, SC
Ronnie Barnes, Menifee, CA - Chapter 131
David Corpuz, Aurora, CO
Doug Michelsen, Foster City, CA
Seth Morth, Marietta, PA - Chapter 41
Donald Thompson, Martinez, CA

Certified Radio Operator (CRO)
Ronnie Barnes, Menifee, CA - Chapter 131
Michael Cornell, Suring, WI

New Facebook Group: SBE Chapters

The Society of Broadcast Engineers has been active on Facebook, Twitter and Youtube for some time. In November, a new Facebook group was launched to highlight the activities of SBE chapters. Group subscribers can post photos of SBE chapter meetings, conferences and events for all SBE members to see.

In addition to sharing photos, chapters can access the group as a resource

for potential meeting presenters. The group is gaining members quickly as photos are posted and shared.

The initial photos posted are from chapters 47 Los Angeles; 55 St. Louis; 103 Nashville; 118 Montgomery, AL; and 147 Ft. Bragg. More photos are being added as more chapters join.

Access the Facebook page now at bit.ly/FB_SBE.



Sights from the 2016 SBE

NATIONAL MEETING from p. 1

event for engineers. Our thanks also to SBE Chapter 70 Chairman John Hovanec, CSRE, AMD, DRB, CBNT, who chaired the OAB's program committee for the conference.

The SBE Annual Membership Meeting is an important part of the SBE National Meeting, and as the SBE has done for the past ten years, was webcast live so members not attending in Ohio could take part. SBE President Jerry Massey, CPBE, 8-VSB, AMD, DRB, CBNT led the meeting, which included reports from SBE officers and several committee chairs, presentation of membership recruiting awards and the induction of the 2016-17 officers and six board directors.

President Massey was sworn in for a second, one-year term as was Vice President Jim Leifer, CPBE. Andrea Cummis, CBT, CTO was sworn in for a fourth term as treasurer and Tim Anderson, CPBE, DRB, CBNE was inducted to serve his first term as secretary. Directors beginning their two-year terms included Jim Bernier, CPBE, CBNE; Kirk Harnack, CBRE, CBNE; Wayne Pecena, CPBE, 8-VSB, AMD, DRB, CBNE; Marcelo Sanchez, CPBE; Mark Simpson, CPBE, AMD, DRB, CBNE; and JT Tucker, CSRE, AMD, CBNE. They join six other directors on the Board who are in the middle of their two-year terms and Immediate Past President Joe Snelson, CPBE, 8-VSB.

Two chapters were recognized during the membership meeting with the annual SBE Golden Recruiter Awards. This award recognizes the chapters that recruited the most members during the annual SBE Membership Drive, held March 1 through May 31 this year. Chapter 33 of Southwestern Ohio, chaired by James Stitt, CPBE, won in the larger chapter category and Chapter 32, Tucson, AZ, chaired by Robert Nemitz, CBNE, won in the smaller chapter category.

More than 300 members have viewed the webcast of the meeting. The webcast was made possible through the financial support of five SBE Sustaining Member sponsors: AC Video Solutions, Blackmagic Design, DTS/HD Radio, DVEO and Micronet. Our thanks to them, and also to our volunteer technical crew, led by Vinny Lopez, CEV, CBNT, of Syracuse, NY, and Ron Taylor, John Cash and John McKinley, CPBE, of Columbus, with help from SBE Communications Director Chriss Scherer, CPBE, CBNT.

A highlight of the National Meeting was the 2016 SBE Annual Awards Dinner. Among the members recognized for achievement were Michael Hendrickson, CPBE, CBNT, with the Robert W. Flanders SBE Engineer of the Year Award, Cheryl Lustenberger, CTO, CBNT, with the James C. Wulliman SBE Educator of the Year Award.

Staff Sgt. Norman Portillo, CBT, CTO, of Ft. Bragg, NC, received the first SBE Freedom Award, and SBE Sustaining Member Blackmagic Design received this year's SBE Technology Award.

Three members were elevated to the highest SBE membership level. Jay Adrick, Wayne Pecena and Joe Snelson were named SBE Fellows.

Adrick also provided the keynote presentation for the evening, telling the interesting and inspiring story of the radio engineers who built and opened the historic Voice of America 200kW station in Bethany, OH, beginning in 1944 and operating it until the facility's closing in 1994. The station building and grounds are now preserved as a museum and park.

At the close of the dinner, President Massey invited everyone to attend the 2017 SBE National Meeting in Denver, CO, held in conjunction with the Audio Video Expo (AVX) at the Crowne Plaza Denver International Airport Hotel on Oct. 25-26.



National Meeting



B



C



F



G



I

A. Chris Imlay swears in Jerry Massey as president. **B.** Jerry Massey stands with the 2016-2017 SBE Board of Directors. **C.** Norman Portillo (right) receives the first SBE Freedom Award. **D.** Mike Hendrickson accepts the Robert W. Flanders SBE Engineer of the Year Award. **E.** The SBE Board of Directors met on Wednesday evening at the National Meeting. **F.** Cheryl Lustenberger accepts the James C. Wulliman SBE Educator of the Year Award. **G.** Ron Taylor (l) and Vinny Lopez at the master control desk for the Membership Meeting netcast. **H.** SBE Secretary Ted Hand delivers the Secretary's Report at the Membership Meeting. **I.** New SBE Fellows Wayne Pecena, Joe Snelson and Jay Adrick are joined by other SBE Fellows at the Awards Dinner. **J.** Jay Adrick delivers the keynote speech at the Awards Dinner. **K.** President Jerry Massey speaks during the Awards Dinner.

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LEGAL PERSPECTIVE

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

A Couple of Updates...

Here is a short update on a few things that I have covered this year in this column. First, the Spectrum and Receiver Performance Working Group of the FCC's Technological Advisory Committee is hard at work analyzing RF noise floor trends and a next generation system architecture for radio spectrum interference resolution. The comment date has now passed for submissions on the TAC Noise Floor Technical Inquiry, ET Docket 16-191. The TAC Working Group has summarized the responses and is preparing a report to be presented to the TAC in December. There were responses from 73 individuals and organizations filed. The responders included 23 companies or industry organizations, 39 RF professionals, 31 licensed radio amateurs, and nine miscellaneous responders. Responders comprised the following groups: amateur radio, noise hunters, broadcasters, cellular providers, public safety, GPS providers, power companies, and lighting producers. Of the responses, 26 provided quantitative or semi-quantitative data and eight suggested ways in which the subject could be further studied. All responders agreed that a comprehensive noise study is needed.

The most commonly cited noise sources were incidental and unintentional radiators, including RF lighting, power lines and switching power supplies. The comments seemed to indicate that there is an inverse relationship between noise floor and frequency. There were many complaints about noise in the AM broadcast, MF, and HF bands. However, there were also comments about issues with noise and FM broadcast, VHF and UHF public safety communications, and even cellular networks. There were mixed responses about the noise potential of some newer technologies such as RF lighting and switching power supplies. These devices can be designed and built to radiate very little RF noise, which implies that existing regulations are not being followed and better enforcement of existing Part 15 and Part 18 rules, especially at the point of importation, is needed. There was also concern expressed about aggregate RF noise, so even where individual devices may meet regulatory noise limits, the aggregate sum of the noise exceeds those levels. This would suggest that different regulations are required.

The TAC working group has also met with the chief of the FCC Enforcement Bureau on this subject. Topics included creating

a comprehensive database of past enforcement activities that would be available to researchers; the potential for intentional RF interference that disables or spoofs GPS signals; the importation of devices that don't conform with incidental and unintentional radiation limits and the use of counterfeit FCC labels; and elimination of filtering components after equipment authorization, leading to excessive noise in production models of devices. The Enforcement Bureau is unable to help much due to resource limitations, and if any progress on these issues is to be made, there will have to be FCC and industry collaborations developed.

And About Enforcement

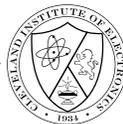
Speaking of enforcement, there isn't much good news. A very negative effect resulted from the closing of the field offices and the termination of experienced FCC field staff so far and it is getting worse. During the first six months of 2016, 13 senior staff in the field offices retired from FCC. All were senior engineers. By January 2017, we are told that there will be an additional 11 Field Offices closing. There will by that time be 33 *current* field staff lost, 14 of whom are in the northeastern part of the United States. It is unclear how many additional staff will retire of their own volition. There used to be three regional counsels doing the enforcement work and building cases based on field staff investigations. Now there are no regional counsels, but there are three "field counsels," all located in Washington. The field offices are typically staffed by one or two persons, and the two tiger teams promised to be deployed to fly to the site of interference problems have not been created yet, because the FCC can't staff them. Reportedly, the FCC posted the jobs but got no takers because the job requires 100 percent travel time. In response to a question asked by Congress' Subcommittee on Communications and Technology, FCC Chairman Wheeler recently responded that the tiger teams "should be" operational by early 2017. We will see if that happens.

H.R. 636, the FAA Reauthorization Act, which passed in July, instructs the FAA to enact rules attempting to protect meteorological evaluation towers. These are between 50 and 200 feet. They are typically located in rural agricultural areas and they tend to be very low-profile towers, hard for crop dusting aircraft to see in certain circumstances.

The FAA is obligated, by July 2017, to issue regulations to require the marking of the towers covered by the legislation: those that are "self-standing or supported by guy wires and ground anchors;" that are 10 feet or less in diameter at the above-ground base, excluding concrete footings; are between 50 feet above ground level at the highest point and not more than 200 feet above ground level; on which an antenna, sensor, camera, meteorological instrument, or other equipment is mounted; and are located outside the boundaries of an incorporated city or town; or on land that is undeveloped; or used for agricultural purposes. The term "undeveloped" land means a defined geographic area where the FAA determines low-flying aircraft are operated on a routine basis, such as low-lying forested areas with predominant tree cover under 200 feet and pasture and range land. As far as we can tell now, the FAA has not yet issued a proposed rulemaking.

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FOCUS ON SBE

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

The Hidden Benefit of Membership

The annual SBE National Meeting held in October always includes a time of welcoming members new to volunteer service at the national level. This includes those coming on the Board of Directors and as chairs of national committees. These members have made a commitment to serve the society, representing all members during their term on the board. That commitment is not only of their valuable time, but also of some financial resources to attend two meetings of the Board in the spring and fall.

As new volunteers were coming on board at our most recent national meeting in Columbus, they were taking Board positions previously held by members who were ending their terms of service. These outgoing members of the board had also made the same commitment to voluntarily serve to govern the society. This is a pattern that happens every year, but it is always bittersweet as we've come to know these members well during their service and now we won't be interacting with most of them, at least not as much. I'd like to publicly thank those who are in the latter category and on Oct. 27, ended their service on the national SBE board.

Ben Brinitzer is the regional vice president of engineering at iHeartMedia in Charlotte, NC. He completed one two-year term on the Board and chaired the SBE EAS Education Committee. Eric Schecter, who recently became chief engineer of NPR member stations KJZZ/KBAQ of Rio Salado College in Tempe, AZ, also served one term on the Board and was co-chair of the SBE Mentor Committee. That committee oversaw the establishment of the society's new mentoring program earlier this year.

Gary Kline, who operates Kline Consulting and previously was the long-time vice president of engineering at Cumulus Media, finished his third consecutive two-year term on the Board, most of that time chairing the SBE's finance committee. And lastly, Ted Hand, director of engineering and operations at Cox Media Group in Charlotte, NC, who served as national

secretary this past year. Ted served a total of 11 years out of the past 14 on the Board; as secretary for five years, which includes two additional meetings to attend each year as a member of the executive committee, and the others as a director. Our sincere thanks to these members who volunteered their time and resources to serve on the national Board.



To recognize his many years of service to the SBE Board of Directors, Ted Hand (right) receives a plaque from SBE President Jerry Massey.

broadcasting, feel a sense of accomplishment and the satisfaction that they have contributed to make their chapter, and the society as a whole, better than it was before they got involved. They are recognized for their participation, sometimes formally but many times informally, as those around them in the industry know them for their contributions, leadership and dedication to the betterment of broadcast engineering.

For the SBE to continue to be an organization that provides its members with career development opportunities, opportunities for leadership and recognition of skills and knowledge, the cycle of member engagement through volunteering for leadership roles must continue. New leaders will always be needed as others end their good service. Have you thought about stepping forward to serve your chapter, or possibly at the national level in a leadership role? Consider it, and the next time the opportunity presents itself to volunteer as a chapter officer, line up the chapter's monthly program, or in one of the many other ways the SBE has available to serve, take advantage of the opportunity and give yourself a membership benefit that you may not have expected.

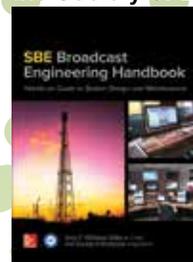
Chapter Leadership

Of course, those who volunteer and are elected for leadership roles at the national level represent only a small percentage of the total number of volunteers within the SBE. There are hundreds of members who lead their chapters, provide programs at chapter meetings, teach courses or serve in other ways. The society would not function without them. Yet, they are also taking advantage of one of the benefits of membership; to get involved in a leadership capacity in their professional membership organization. Yes, it takes some time that would be otherwise spent working, with family or on favorite past times, but there is a return to the member that is often unanticipated. They expand their network of friends and colleagues within

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ENGINEERING PERSPECTIVE

By Larry Wilkins, CPBE
Chair, Alabama SECC
wilkins@sbe.org

National EAS Test: A Report Card

FEMA conducted the first nationwide test of the Emergency Alert System (EAS) Nov. 9, 2011. Although stations receive and transmit local/state tests regularly, that test was intended to assess the ability of sending a national alert simultaneously to the entire United States.

Lessons learned from that test were addressed in the latest national test on Sept. 28, 2016, at 2:20 p.m. EDT. A major difference in the two tests was the distribution method. In 2011 the test was sent via the Primary Entry Point (PEP) network, while the latest test was distributed through FEMA's Integrated Public Warning System (IPAWS).

Months before the test date, those involved in the state emergency communication committees (SECCs) were busy working with broadcasters and cable systems to assure that their EAS equipment was programmed and operating properly.

To create a test that would closely simulate an actual National Alert, FEMA incorporated a new National Periodic Test (NPT) code and a new location code of six zeros (000000). This location code included every county in the United States. As a result, some EAS decoders required their incoming filters to be reprogrammed, while other units required firmware updates.

In correspondence with Al Kenyon, FEMA national test technical lead, reports from SECCs around the country, along with feedback from the Amazon Web Services, which handled the audio file retrieval during the test, indicated excellent results. The isolated reports of reception and/or retransmission problems appeared to be improper configuration of EAS decoder issues. When asked about future national tests, Kenyon said none are planned for the remainder of 2016. He added, "At the moment we are discussing annual testing, and debating the benefit/risk of conducting the next test again in September, National Preparedness Month, and worrying about a hurricane making landfall on the scheduled test date."

Harold Price with Sage Alerting Systems indicated that for the most part the test was a success. "There were a few problems that were localized, like a university user that was able to fetch the CAP message but not the CAP audio due to firewall issues, and it therefore played the text-to-speech voiced audio," Price said. He added, "The biggest source of confusion was that some users did not anticipate that their CAP/CAP device would pick up an over-the-air relay first, and therefore air that version instead of the CAP version. Sage, as have other manufacturers, has petitioned the FCC to allow a short delay while the CAP/

EAS device checks for a CAP version before airing an OTA version. Relaying the OTA version at a station was not a failure of the test by that station."

Airing the OTA version instead of CAP would not allow television stations to display the extended text and defeat the ability to air second-language audio.



Digital Alert Systems' Bill Robertson reported, "We've done a post-NPT analysis based on the number of service tickets gathered from customers calling to request some level of support. Obviously we didn't receive calls or comments if everything worked well, and on whole those customers having properly configured their systems – and more importantly

– paid attention to the system leading up to the test had no problems. Nonetheless, the overall number of service tickets was actually rather small (< 1.8%) of our total user base, which is quite nice. Of these, the largest percentage didn't even relate to our equipment, but since we're on the front lines we get all the calls."

Robertson added, "The scarcity of a live-audio events to test these issues can be understood and speaks volumes on why the NPT should be done with more regularity."

One State's Preparation

In Alabama, we spent a lot time on the phone instructing stations on correct procedures and quite often actually programming their units remotely using internet connections. In addition, we issued written instructions regularly using the Alabama Broadcasters Association's (ABA) email list server. Information was also presented at SBE chapter meetings and other seminars.

To ascertain how successfully the test was received and relayed, an FTP server was set up with more than 100 key stations around the state reporting automatically to the site. This has proved very useful in keeping a check on the health of our distribution system. We knew within a few minutes after the test how successful it was propagated throughout the state.

Addressing the live-audio issue, Alabama has a satellite-delivered CAP system installed by Global Security Systems, which allows the insertion of real audio during test. We alternately issued the Required Monthly Test (RMT) with text-to-speech or real audio to enable stations to make sure their system will fetch and play the audio file. All LP-1 and LP-2 stations have GSSNet downlinks.

As you should be aware, the FCC set up an online reporting system, the EAS Test Alerting System (ETRS), which was designed to check the overall distribution of the test nationwide. Once these reports are fully analyzed it will give a good picture as to any bottlenecks in the system. Early comments from the Commission indicated distribution was very successful with most errors being isolated.

Stations that had an issue with the test are encouraged to contact the SECC in their states for assistance in isolating the problem. Contact information for your SECC can be obtained from your state broadcaster association.

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Radio Automation, Audio Logging
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Wireless Video Mesh Network
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Q What got you started in broadcast engineering?

A I went to the Helena vo-tech school and one of my classes was broadcast engineering, taught by Jess Waymire. I got my first job in engineering at KRTV in Great Falls, MT.

Q Who do you admire or consider a mentor?

A Jess Waymire was a big influence. Jess and his brother Dee built KHQ in Spokane, WA. In the very early days of TV, Jess was the broadcast electronics instructor at the Helena Vo-tech school. At the time the school was part of the state school system, but was not with the state college system. Everything Jess knew he learned from equipment manuals. I worked under Karl Black, the chief engineer of KRTV. He was very patient with me. I admired him and learned a great deal from him.



William with the car he races.

Q What do you like most about your job?

A I never wanted a job that was too routine. This job has never let me down. My work week could include a day working on a high-power UHF transmitter, another driving to a remote microwave or translator site, sometimes in mud snow or both. Our DMA is the size of the state of Mississippi so I often drive a four-wheel-drive

pickup, ATV or snowmobile. Another day might be studio work.

Q When I'm not working I...

A ...love to drag race. I run my car in Pro ET at the local drag strip (Yellowstone Drag Strip). I do most of the work on the car myself and drive alone. I get help from my granddaughter and my wife, Carol. My car has run the quarter mile in 10.16 sec at 133 MPH. I also like gardening and playing around in my garage.

Q You may not know this, but...

A ...I would rather listen than talk.

Q What is your favorite gadget?

A A Sawzall

Chapter Check

Chapter 147 Ft. Bragg, NC

The members of Chapter 147 met in January, which was one of the first meetings after the chapter was officially chartered by the SBE Board of Directors.



Chapter 47 Los Angeles

Chapter members manned the SBE booth at the 141st AES convention held there in October.



Chapter 47 Los Angeles

The Chapter 47 Los Angeles October meeting featured a presentation from Chris Crump of Comrex.



Memphis, TN

SBE members in Memphis, TN, have been gathering to form an SBE chapter. In June, the group met and toured the SSL Broadcast Demonstration Vehicle.



National Meeting Netcast

The SBE National Meeting, held in Columbus, OH, at the end of October in conjunction with the Ohio Broadcast Engineering Conference, presented by the SBE chapters of Ohio and the Ohio Association of Broadcasters, was streamed live. That stream is now available on demand at the SBE Youtube channel.



Watch it now:

sbe.org/youtube

Make Your Plans Now for 2017 Leadership Development Course

Since 1997, the SBE has presented the SBE Leadership Development Course, which was first taught in 1965. The National Association of Broadcasters sponsored the course from 1965 to 1995. This intense course is designed specifically for broadcast engineers who have or aspire to have management responsibilities. It's designed for technically adept people to acquire and develop the skills for sound leadership, supervisory and management skills. The SBE Leadership Development Course is equally beneficial for those who are already in management and for those without prior management or supervisory experience.

The SBE course is taught by Rodney Vandever, a professional leadership and management trainer and a professor of organizational leadership and supervision at Purdue University.

Leadership has two different meanings that will be explored. First, leadership is the catalyst that transforms potential into a new reality yielding positive results. As a leader you can be the catalyst to help bring about needed change in yourself, others and your organization. Secondly, leadership is the art and science of getting the job done through the willing efforts of others. The key point is that leadership is both an art and a science. This course explores both meanings.

The three-day event challenges attendees to refine leadership skills and better understand and improve interaction with others. Several broadcast organizations send a group of students to the course to share the experience of this highly interactive event. Registration includes all course materials, three days of instruction, the Leadership Development Webinar Series of three webinars, a certificate of completion, light breakfast items and classroom beverages. SBE Members receive a discount on registration.

Course plans are being finalized, but the event is expected to be held Aug. 8-10 in Atlanta. Registration will be available at sbe.org/ldc or by contacting the National Office.

National Committee Chairs Named

SBE President Jerry Massey has appointed chairs of the various national committees for the coming year to oversee the activities of society functions. Contact them via the SBE website or the National Office.

Awards	..... Mike Hendrickson, CPBE, CBNT
By-Laws	..... Ched Keiler, CPBE, 8-VSB, CBNE
Certification	..... Ralph Hogan, CPBE, DRB, CBNE
Chapter Liaison	..... Mark Fehlig, CPBE, 8-VSB, CBNT
Education	... Wayne Pecena, CPBE, 8-VSB, AMD, DRB, CBNE
Fellowship	..... Troy Pennington, CSRE, CBNT
Finance	..... Marcelo Sanchez, CPBE
Frequency Coordination	..... R.J. Russell, CPBE
Government Relations	..... Joe Snelson, CPBE, 8-VSB
International	..... Charles W. Kelly Jr.
Membership	..... Kevin Plumb, CPBE
Mentoring	..... Jeff Keith, CPBE
Nominations	..... Jim Bernier, CPBE, CBNE
Publications	..... Andrea Cummis, CBT, CTO
Social Networking	..... Kirk Harnack, CBRE, CBNE
Sustaining Membership	..... Mark Simpson, CPBE, AMD,
	..... DRB, CBNE (co-chair)
	..... J.T. Tucker, CSRE, AMD, CBNE (co-chair)

WELCOME TO THE SBE

NEW MEMBERS

Steven Allen - Vashon, WA	Amy B. Powelson - Ithaca, NY
Hassan Bokeem - Cutler Bay, FL	Scott T. Rohrer - Dayton, OH
Michael T. Bonds, Jr. - Centreville, AL	Joshua M. Rule - Roanoke, VA
Joseph Burke - Buffalo, NY	Matthew M. Simon - Dallas, GA
Jun Lin Chan - Bukit Mertajam, Penang, Malaysia	David B. Smith - Clarksville, IN
Tommy Collins - Dayton, OH	Peter Sockett - Raleigh, NC
Ricardo Esparza - South Gate, CA	Jon Strelecki - Milwaukee, WI
Damian M. Fry - Middleton, WI	Trevor Stuart - Edmonton, AB Canada
Sam Gibby - Fayetteville, AR	Swee Cherng Tan - Bukit Mertajam, Penang, Malaysia
Alex Hackney - Kenova, WV	Anthony C. Tyler - Odenton, MD
Gregory Huntsman - Sheffield Village, OH	Vic L. Watkins - Knoxville, TN
E.J. Inscho - Mechanicsburg, PA	John M. Willkie - San Diego, CA
Todd M. Jacobs - Kenner, LA	Richard J. Woelk - Saskatoon, SK
Rick Jesse - Springfield, MO	Jennifer L. Wolfe - Myrtle Beach, SC
Megan Kirst - Las Vegas, NV	
John C. Lathrop - Indianapolis, IN	
Charles Lin - New York, NY	
Larry Lindner - Meridian, ID	
James P. Mace - West Palm Beach, FL	
Daniel R. Messano - Augusta, GA	
Edward W. Noyes, III - Lexington, SC	
Kyle F. Parkin - Clifton, NJ	
Michael Pecoraro - Henderson, NV	
Ryan Phillips - Mercer Island, WA	

RETURNING MEMBERS

Jason E. Beard - The Woodlands, TX
Theodore J. Bordelon - Pearland, TX
Frank J. Felker - Glassboro, NJ
James R. Gadsby - Auburn, NY
Jon E. Hall - Normal, IL
Matt G. Laubach - Eugene, OR
Bryce A. LeGrand - Wichita, KS
Dennis J. Majewicz - Lancaster, NY
Steven R. Martin - Fayetteville, GA
Michael A. McGuire - Mason, NH
Ransom Y. Place III - Bismarck, ND
Michael A. Rabey - Indianapolis, IN
Troy T. Robinson - Naperville, IL
Nathan W. Russell - Indianapolis, IN
Anthony Singleton - Washington, DC
Terry M. York - Los Angeles, CA

NEW STUDENT MEMBERS

Noah Rubin - Boston, MA
Chung Hing Yip - Sha Tin, Hong Kong

NEW ASSOCIATE MEMBERS

Lynn Sloneker - Acra, NY

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MEMBERS ON THE MOVE



▶ **David Priester**, CPBE, has retired from 13 years as director, technical operations at the Park School of communications at Ithaca College.

▶ **Ron Viste**, CPBE, of Eau Claire, WI, received the Gold Circle Emmy Award from the Upper Midwest Chapter of the National Academy of Arts and Sciences. He is one of only eight people to receive the award in 16 years.



▶ **Stephen Lockwood**, CPBE, AMD, is now the president of Hatfield and Dawson Consulting Engineers in Seattle, WA.



▶ **Eric Schecter**, CBRE, is the chief engineer of KJZZ/KBAQ/Sun Sounds in Phoenix, AZ.

▶ **Scott Solko**, CBRE, DRB, CBNT, is now the chief engineer of the Entercom Sacramento stations.



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

MARK YOUR CALENDAR

SBE Webinar: RF 101 Part 1

Local Chapters
Jan. 26, 2017

sbe.org/webinars

SBE Certification Exams

Local Chapters
Feb. 3 - 13, 2017

sbe.org/certification

Application deadline is Dec. 31, 2016.

SBE Membership Drive

March 1, 2017

sbe.org

Drive runs until May 31, 2017.

NAB Show

Las Vegas, NV

April 22 - 27, 2017

nabshow.com



Live & Local

Skyllity covers the Presidential Election in New York City at Times Square with LiveShot.

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