The annual Society of Broadcast Engineers membership drive is underway. The drive is an effort to recruit new members to the society, and you can benefit from your recruiting efforts as you help the Society grow.

When you recruit a new member during the Member Drive, you will be entered into the drawing for prizes donated from our Sustaining Members and the SBE. If you recruit a new Sustaining Member, you'll earn five entries into the prize drawing. And if you recruit three or more Regular or Associate Members or one Sustaining Member, you will also receive an upgrade to SBE MemberPlus.

You already know the benefits of being part of the Society, so share it with your colleagues. Need a list? Go to sbe.org/SBEreasons.

The annual SBE Membership Drive began March 1, so recruit someone now through May 31 to be eligible to win a prize. The grand prize is airfare and hotel to attend the SBE National Meeting, planned to be held during the 2023 Midwest Broadcast & Multimedia Technology Conference in Columbus, OH, in September.

As a further bonus, for every new member you sponsor, you will receive $5 off your 2024 dues (up to $25). Take membership forms to your next chapter meeting and encourage your guests to join the SBE.

SBE Sustaining Members who have contributed prizes are noted on page 14. It's quite a list of items, ranging from logoed apparel to gift cards to broadcast equipment. We thank these SBE Sustaining Members for their support.

Start recruiting now, and make sure your recruits list your name on their SBE membership applications so you get the credit. There's a space on the online form and the fillable PDF. Full details about the Membership Drive are at sbe.org/drive.
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1 = Coming Soon | 2 = Requires an additional internal card
Who will be the next Robert W. Flanders SBE Engineer of the Year award recipient? Perhaps you know someone worthy of the honor. Nominate that person today. Individuals can also be nominated directly for the national award. National award nominations need to be submitted to the National Office by June 15.

Also, Chapter Engineer of the Year award recipients, nominated by SBE Chapters, are automatically entered into consideration for the Robert W. Flanders SBE Engineer of the Year award. Each chapter can establish its own criteria for the chapter award.

There are also honors as well. The James C. Wulliman SBE Educator of the Year; the SBE Technology Award; Facility Innovation of the Year; Best Technical Article, Book or Program by an SBE Member; Best Article, Paper or Program by a Student Member; and the Freedom Award are among the accolades. There are also a series of statistical awards.

Of the 13 awards recognizing chapters that are presented each year, a local chapter or SBE member submits nominations for 10 of them. Many SBE members are highly qualified and deserving of recognition. Likewise, many chapters do an excellent job promoting the ideals and goals of the SBE. Please nominate these members and chapters so they can receive the recognition they deserve.

For more information about all the SBE National Awards, visit sbe.org/awards or contact Megan Clappe at the national office or by email at mclappe@sbe.org. Recognition by your peers is the highest honor. Honor your colleagues today.

2022 Finances in Review

The Society of Broadcast Engineers, Inc. completed 2022 with net revenue from all operations of -$260,475. Gross income from all sources was $1,064,662. The value of SBE savings and investments as of Dec. 31, 2022, were $1,359,767. Total SBE assets as of Dec. 31, 2022 were $1,770,007. Long-term investment loss totaled -$204,116.

A percentage breakdown of SBE income from program operations and expenses is depicted in the accompanying charts. A financial statement will be published in the June issue of The Signal, following the completion of the Society’s annual financial audit.

### Income

- Frequency Coordination: 5.5%
- Publications/Advertising (non-Cert): 6.7%
- Membership Dues: 12.9%
- Sustaining Member Dues: 17.96%
- National Meeting: 21.28%
- Certification: 38.75%
- Education: 38.8%
- Other Income: 1.0%

### Expenses

- Frequency Coordination: 1.21%
- Communications w/ Members: 6.49%
- Chapter Rebates: 2.21%
- Member Services: 3.34%
- National Meeting: 6.34%
- Certification: 4.9%
- Education: 5.5%
- Depreciation: 2.6%
- Administration: 17.96%

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**SBE Awards: Nominate Today!**

The Signal is published bi-monthly by the Society of Broadcast Engineers, Inc., 3102 North Meridian Street, Suite 150, Indianapolis, IN 46208. ©2021 Society of Broadcast Engineers, Inc. Editorial content and design: Chris Scherer, 317-762-9723, csscherer@sbe.org.

Advertising: Debbie Hennessey, dhennessey@sbe.org, 317-846-9000. SBE is a registered trademark of the Society of Broadcast Engineers.
A Student’s Introduction to Broadcasting

It’s hard to believe another NAB Show is almost here. I hope to see many of you at the Membership Meeting and the annual Member Reception on April 17 in Las Vegas. This issue of The Signal is loaded with all the details about everything the SBE is doing at the convention. Take a few minutes and add all the SBE events to your calendar. Also, stop by the SBE booth and say hello. You’ll be able to meet your elected SBE leaders and the SBE staff.

A while back I wrote an article about Andy Gladding and the broadcast engineering program at Hofstra University. This month I turn my column over to one of the students there, Karoline Otavalo, so she can tell you more about the program.

Karoline is a sophomore at Hofstra University where she is majoring in audio/radio productions, with a minor in mass media. Karoline grew up in Queens, NY, and her hobbies include painting and reading comedy books.

WRHU at Hofstra University, is an all-student-run, four-time Marconi award-winning radio station. WRHU is known for its affiliations with many local New York sports teams including the Ducks, Nets, Islanders, and Riptide. These unique affiliations allow students to train as sports broadcasters in addition to all the behind the scenes positions. WRHU has many different productions that allow students to find their passion and get involved as soon as they pass the training class’s final exam. Students are taught to engineer, create packages, and produce shows. WRHU produces its morning show (Morning Wake Up Call, which airs from 7 to 9 a.m.), News Show (that airs from 5 to 5:30 p.m.), music slots (from various genres like alternative, pop, and many more) and covers various sports shows like the Islanders and many more. Students are responsible for writing and creating the material to be aired during these shows.

During the training class, which takes place in the summer, spring, and fall, students are taught the different aspects of radio production, and shadow different shows; therefore, if you come in undecided, trainees can try different aspects of radio. Trainees are also assigned a mentor who guides them and helps them with any radio-related questions throughout the training class. At the end of the training class, students are given a written and practical exam that allows them to be fluent in all aspects, from theory to hands-on practice.

For example, consider a trainee who loves radio but wants to be behind the scenes rather than on air. There are many opportunities to understand behind-the-scenes radio work, like Tech Thursday, which meets every week from 7 to 9 p.m. Students are taught how to work with different programs such as ProTools, and they build and understand from scratch how each piece of equipment works.

My Own Story

As a sophomore audio/radio production engineer who joined the WRHU station in the fall of 2022, I have worked with many mentors and learned so much from the other students. The station provides hands-on experience and opportunities for all the students in the program. The great thing about WRHU is that it is inclusive. All majors are welcome to join the station, whether they have experience or not because the station is all about hands-on learning.

I have always been a fan of understanding how audio works and the details of how audio impacts emotion and the overall ambiance of a room. With an audio/radio productions major, I can better understand how to use sound to provoke different emotions and settings. I also look forward to learning more about how broadcasters shape a radio station’s image in the marketplace. Everyone in the world of communication/broadcasting plays a significant role in how the final product turns out, and everyone plays a crucial role in producing a show. Within the major, I have been learning about ProTools software and how tone is so crucial to evoke emotion depending on the goal of your radio station/podcast. I have also been learning how to operate analog and digital audio boards.

As someone who just started this major with minimal experience, I can attest that the WRHU training class prepares students for the real world of radio, broadcasting, and even engineering. I have gained many skills, like board operating, proper ways to use a microphone, and setting up before a community volunteer comes in on weekends. I have brought my skills to my major and feel comfortable when working with different materials.

The WRHU experience has taught me so much. The best part for me has been working with all the mentors and the other students who are part of the program.

Register Now to Attend the Leadership Development Course in August

Register today for the SBE Leadership Development Course, Aug. 2-4, 2023 in Atlanta. Don’t miss this team-building course that explores the nature of leadership, the difference between being a manager and being a leader, how to build a winning team, the importance of attitude in the leadership position, communication insights and much more.

The SBE Leadership Development Course will take place Aug. 2 through 4 at the Courtyard by Marriott Atlanta Airport West; 3400 Creek Pointe Drive; East Point, GA. A special room rate of $129 is available for Leadership Course attendees. The cost of the three-day course is $720 for SBE members and $775 for non-members.

Register at sbe.org/ldc. Questions? Contact Education Director Cathy Orosz at 317-846-9000 or corosz@sbe.org.
The Ultimate Network Security

The broadcast station today relies on an information technology (IT) infrastructure based on the Internet Protocol (IP), whether it’s a small radio station or a major market, state-of-the-art ATSC 3.0 TV facility. Protecting the infrastructure against cyber threats grows more challenging each year for the broadcast IT engineer, and it’s a constant cat-and-mouse game with threat actors. Threats are constantly evolving, and the cybersecurity precautions implemented must evolve as well. New Federal Communications Commission (FCC) regulations will likely add Emergency Alert System-focused cybersecurity compliance requirements later this year. With or without FCC intervention, the broadcast station must address cybersecurity upfront rather than as an afterthought.

The recent Skyview Network cyber event that disrupted content distribution to affiliate stations highlighted the potential vulnerability of the broadcast IT system. While the Skyview incident was isolated to the network’s core IT infrastructure, the impact could have been more severe if the reach had included the more than 10,000 Skyview affiliate stations connected via satellite. The typical broadcast station affiliate likely has connected the Skyview XDS satellite receiver-decoder to its local network to allow file download of content. Current EAS system operation requires that a station’s encoder-decoder be connected to the public internet to allow polling and receipt of IP-based alert messages from authorities.

The “air gap” is an effective approach to network security and provides the ultimate isolation from any foreign intervention. While extremely effective, it is not practical in the modern broadcast facility. Reality requires that we interconnect our IT infrastructure to other external IT environments, whether required by regulations or required to achieve our business goals. Remote access to our broadcast network infrastructure is the norm rather than the exception.

Achieving the Goal

The CIA Triad defines cybersecurity goals as confidentiality, integrity and availability. To achieve these goals, principals such as Defense-in-Depth (DiD), network segmentation and the Principal of Least Privilege (PLP) are often applied to create effective cyber protections. DiD states that multiple structured cybersecurity measures must be implemented rather than reliance on a single protection, such as a lone firewall. The structured approach follows the data-flow layers of the Open Standards Interconnection (OSI) model, commonly including physical infrastructure security, Ethernet port security, packet filtering, encryption and authentication employing multifactor authentication (MFA). PLP states that the minimum access rights are granted to users, devices and applications to achieve their business function. Often referred to as “deny by default” practices separate administrative and user account rights on Microsoft-based systems.

Network architecture is critical to implementation of cybersecurity precautions and should be considered the starting point. The network should be segmented in lieu of the traditional flat design. The segmented or layered network breaks down a larger flat network into smaller individual networks, or independent segments. Each of these segments is an independent subnet or broadcast domain. Perimeter security was once the norm for network resource protection, however in today’s threat landscape, internal network protection techniques are required. The segmentation reduces the attack surface by limiting the reach that an infected host has to reach other host devices often referred to as “east-west” movement throughout the network.

Build that network

The popular approach to building a segmented network utilizes the virtual local area network (VLAN) capabilities of a managed Ethernet switch. Host devices are assigned to a designated VLAN through the switch configuration. VLAN implementation allows one physical network infrastructure to transport multiple networks over a common shared medium. Logical segmentation is commonly utilized although physical segmentation can be deployed although creating a more complex infrastructure in equipment and network cabling with far less flexibility.

When intra-VLAN communications is required between hosts, Layer 3 routing and packet filtering is utilized to limit what hosts can communicate with each other. Packet filtering is the most basic firewall technique providing stateful filtering with permit or deny decisions made based upon individual IP addresses, ports, protocols or logical combinations of these parameters. A stateful firewall (capable of monitoring all aspects of network traffic) can also be implemented between VLANs where more complex packet filtering is required.

While security protection is the goal of segmentation, network performance is often realized by the smaller broadcast domains and elimination of unnecessary network traffic. Network traffic is isolated to an individual VLAN rather than being distributed across all segments.

It is yet to be seen what the adopted FCC EAS cybersecurity regulations will require. If the Payment Card Industry (PCI) Data Security Standard (DSS) should be referenced as a guide in the regulations, network segmentation will be a requirement for broadcast stations. An EAS VLAN in the broadcast station network architecture could likely be the norm in compliance.

Cybersecurity precaution implementation can be complex. Effective cybersecurity protection can be achieved with a focus on the fundamentals which begins with network segmentation. Further DiD techniques add further protection through physical security precautions, Ethernet switch port security, packet filtering, encryption and authentication for remote access. The air-gap may not be a practical approach, but always question if a critical broadcast system host device needs network access. Keep in mind that public Internet access and remote access are not always the same. If network access is required, implement the IP connectivity in a secure manner with cyber protections addressed up front on day one rather than after a cyber-attack.
After 22 years as the Certification Chair for Chapter 15 New York, I finally managed to convince the members of SBE 15 that it’s time for someone else to step up and take a turn at getting members certified. It’s been fun sometimes, seeing people you’ve known for years pick up their certifications. It’s been hard other times, like Covid (need I say more?). But it’s always been satisfying seeing those for whom you arranged and proctored tests have their names appear in The Signal with their brand-new certification. Knowing that you played a large part in making that happen. And, as it happened, my last proctored exam session was probably one of my most interesting, and annoying, sessions. So let me tell you a story.

A young woman reached out to me to express her desire to become SBE certified. Nothing unusual there except that she could only take the exam on a Saturday. You see, she is employed in the broadcast department of a cruise ship and can only take the exam on a Saturday. You see, nothing unusual there except that she could only take the exam on a Saturday. She wanted to knock out two of them: the CTO and CBT.

We picked two dates, and we were all set. Or so we thought. After we made our plans, two non-US crew members jumped ship in New York and all employees without a US visa or passport were now restricted to the ship in New York until further notice. Now what? With the support of her managers on the ship, they petitioned the corporate HR department to allow me to board the ship and administer the tests. This process took almost two months (and a lot of submitted documentation) before permission was granted for me to come aboard. And now we’re down to crunch time because the ship is moving from New York City to Los Angeles. We pick the next-to-last Saturday, figuring if there’s an issue we can meet the next Saturday if needed. She also made the decision to take both tests on one day. It’s not something we encourage, but it was her decision.

Exam Day Arrives

The big day comes, and I head into the city. Of course, it would have to be the first really cold day of November (it snowed overnight) and the wind is blowing as it usually does in the city as I’m walking to the ship. I get to the pier at 8 a.m. like I was told, but can’t get on. The “early boarding” list hasn’t made it to security yet. I wait in a tiny lobby with about 80 transitional crew members for 45 minutes until pier security comes and gets me. I trade my driver’s license for a pier visitor badge and I’m escorted to the crew gangway where I am stopped again. This time by ship security who says I am not on their list. Seems the ship security didn’t have the updated list and I had to wait again, until the new list was supplied, and I could board – after trading my passport for a ship visitor badge. So now I’m ready go, except I must wait for the ship’s doctor to arrive and give me medical clearance to board. Cleared by the doc, I make it through the scanner, get the wand (hip replacement), join my examinee, who has been waiting outside security the whole time, and we head up to a conference room. It’s been two and a half hours since I arrived on the pier, but we have finally made it to test time and I begin proctoring my last exams as the Certification Chair for SBE Chapter 15.

And, as I write this, taking pride in all the exams I have arranged and proctored over the last 22 years, I received word that Carmen has passed both her tests, and can now sign her correspondence Aishwarya Carmen Godbole, CBT, CTO.

CERTIFICATION UPDATE
By George Marshall, CPBE, Chapter 15 New York Former Certification Chair georgemarshall@iheartmedia.com

One Final Exam

Volunteer Recognition

The SBE is made up of a multitude of volunteers. There are six employees who work at the National Office, but the real momentum of the SBE is because of those who dedicate their personal time to further the goals and objectives of broadcast engineering through the SBE. This includes, but is not limited to the Board of Directors, all the various SBE committees in addition to the Certification Committee and the local chapters including the chapter certification chairs.

Every year at the annual membership meeting during the NAB Show, the SBE recognizes the local certification chairs who devote volunteer time to the Program of Certification. These local certification chairs receive a plaque on the recurring five-year anniversaries and a pin on their first year. What follows is a list of those who will be recognized in April.

Thank you very much to all the volunteers who devote so many hours to the SBE and the certification program!

Chapter Certification Chairs
Stephen Lockwood, CPBE, AMD; Chapter 16
Bob Lawrence, CBRTAVE; Chapter 72
Charles Mikowski, CPBE, 8-VSB, CBNT; Chapter 102
Matthew Saplin, CBTE; Chapter 58
Vincent Atwood, CBTE, CBNE; Chapter 132
James Cole, CPBE; Chapter 9
Steve Epstein, CPBE; Chapter 143
Ed Roos, CPBE; Chapter 88
Samuel Straus, CPBE; Chapter 60
Donald Strauss, CPBE; Chapter 55

National Certification Committee
Troy Pennington, CSRE, CBNT; 30 Years

The presentation layer receives the data from the application layer and translates it into a format and syntax that’s readable by other computers. This layer is also able to provide encryption and compression if the application layer asks it to do so.

CQ Answer from page 3
The answer is D
SBE Certification Achievements

April 2023

LIFE CERTIFICATION

Certified Professional Broadcast Engineer (CPBE)
R. Brett Gilbert, Jenks, OK - Chapter 56

Certified Broadcast Radio Engineer (CRO)
John Frercks, Princeton, NJ

Certified Broadcast Networking Technologist (CBNT)
Michael Scott, Las Vegas, NV - Chapter 128

Certified Broadcast Radio Engineer (CBRE)
Jeffrey Crutchfield, New Johnsonville, TN

Certified Broadcast Networking Technologist (CBNT)
Daniel Zillich, Albuquerque, NM - Chapter 34

Certified Video Engineer (CVE)
Michael Belanger, Morrow, OH - Chapter 33

SBE Certified and oh her current level of certification for life.

FEBRUARY EXAMS

Certified Senior Radio Engineer (CSRE)
Stephen Palau, Riverside, CA - Chapter 131

Certified Broadcast Radio Engineer (CRO)
David Leishman, Antelope, CA - Chapter 43

Certified Broadcast Television Engineer (CBTE)
Patrick Reilly, Menards, NY - Chapter 58

Certified Audio Engineer (CEA)
Craig Fincher, Fort Worth, TX - Chapter 67

Certified Broadcaster Technologist (CBT)
Joseph Davenport, Burbank, CA - Chapter 47

Certified Broadcast Technologist (CBT)
Tyler Woodward, La Crosse, WI - Chapter 112

Certified Broadcast Technologist (CBT)
Joseph LeFlore, Colby, KS - Chapter 3

SPECIAL PROCTORED EXAMS

Certified Broadcast Networking Technologist (CBNT)
Tyler Woodward, La Crosse, WI - Chapter 112

Certified Broadcast Operator (CTO)
Philip Torti, Rochester, NY - Chapter 57

Certified Broadcast Operator (CTO)
Philip Torti, Rochester, NY - Chapter 57

CERTIFIED BY LICENSE

Christopher Leake, Austin, TX
William Winger, Twin Falls, ID

CERTIFIED TELEVISION OPERATOR (CTO)
Sarah Louis, Bedford, TX

RECERTIFICATION

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.

SBE CERTIFIED SCHOOL COURSE COMPLETION

THANKS TO THE FOLLOWING SUPPORTERS FOR THEIR CONTRIBUTIONS

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.

Ennes Educational Foundation Trust

John H. Battison Founder's Scholarship
Edmund Berkey, Alexandria, VA
John Frercks, Princeton, NJ
William Harris, Albuquerque, NM
Kishore Persaud, Catonsville, MD
Thomas Weber, Greenwood, IN

Robert D. Greenberg Memorial Scholarship
Edmund Berkey, Alexandria, VA
John Frercks, Princeton, NJ
Kishore Persaud, Catonsville, MD
John Turner, Mountain Lakes, NJ
Thomas Weber, Greenwood, IN

Harold E. Ennes Scholarship
Ronald Bartlebaugh, North Canton, OH
James Baum, San Antonio, TX
Edmund Berkey, Alexandria, VA
John Frercks, Princeton, NJ
Stephen Hawes, Berkeley, CA
Kevin Hornberger, Plainfield, IL
Kishore Persaud, Catonsville, MD
Mark Phillips, Beacon, NY
Jan Pritzl, Milwaukee, WI
Thomas Weber, Greenwood, IN

Youth Scholarship
Michael Baker, Glen Burnie, MD
Edmund Berkey, Alexandria, VA
Marc Fenton, Moreno Valley, CA
John Frercks, Princeton, NJ
Stephen Hawes, Berkeley, CA
Robert Lesko, Binghamton, NY

Gino Ricciardelli Scholarship
Edmund Berkey, Alexandria, VA
John Frercks, Princeton, NJ
Kishore Persaud, Catonsville, MD
Gary Talkiewicz, Binghamton, NY

General Fund
Gary Blais, Brandon, FL
Louis Caesar, Jr., New York, NY
Cristian Caughill, Honolulu, HI
Alexander Goehe, Stow, OH
Stephen Hawes, Berkeley, CA
Britt Lockhart, Yukon, OK
Alexander Marbella, Rowland Heights, CA
Peter Tann, Green Bay, WI

sbe.org/ennes
Nominations Committee Seeks Board Candidates

By Wayne M. Pecena, CPBE, 8-VSB, AMD, ATSC3, DRB, CBNE

The SBE Nominations Committee is beginning its work to assemble a slate of candidates for the upcoming SBE election. I have again been appointed to chair the Nominations Committee.

The SBE Nominations Committee seeks qualified candidates who are voting members (Member, Senior, Fellow or the designated representative of a SBE Sustaining Member) in good standing (dues paid). Candidates must hold an engineering level of SBE certification (CBT or higher, or CBNE) and maintain it the entire duration of service on the Board, if elected. Candidates should have a desire to serve and lead, not only as a member of the board, but through service as a national committee chair or member. Members of the Board are “at large,” meaning they represent all members, not any one specific region, state, city or chapter.

Members of the Board are expected to attend two meetings each year; in the spring, held during the annual NAB Show, and in the fall, at the annual SBE National Meeting. Other meetings may be called via conference call during the year.

The national SBE board includes 12 directors, four officers and the immediate past president. Directors serve two-year terms, and officers serve one-year terms. Six director seats will be contested in 2023 as will all four officer positions. The SBE By-laws limit the number of terms of elected members of the Board. Directors may serve three consecutive terms, the secretary and treasurer may serve up to four consecutive terms, and the president and vice president may serve up to two consecutive terms. The maximum time anyone may serve on the board is ten consecutive years.

Members interested in offering their candidacy and serving on the national Board if elected are encouraged to contact the SBE Nominations Committee Chair Wayne Pecena, at wpecena@sbe.org or via the SBE National Office at 317-846-9000. A slate of nominees will be assembled by the committee by April 14. Other qualified members may be nominated by members in good standing no later than June 30.

The election takes place from July 14 through Aug. 15. Those elected will be installed into office during the SBE National Meeting, planned to be held in Columbus in September.

SBE Schedule of Events

Friday, April 14
SBE Ennes Workshop @ the NAB Show
Advance registration required
9:00 a.m. - 4:30 p.m.
Westgate Conf. Rooms 7, 8, 9, 10

Saturday, April 15
SBE Ennes Workshop @ the NAB Show
9:00 a.m. - 4:30 p.m.
Westgate Conf. Rooms 7, 8, 9, 10
Certification Committee Meeting
6:30 - 10 p.m. • LVCC W230

Sunday, April 16
SBE Board of Directors Meeting
8:30 a.m. - 12 p.m. • LVCC W230
SBE Education Committee Meeting
2 - 3 p.m. • LVCC W230
SBE Booth Drawing
5 p.m. • SBE Booth LN4, sponsored by Nemal Electronics

Monday, April 17
SBE Frequency Coordinators’ Meeting
9 - 11 a.m. • LVCC N263
SBE Membership Meeting
5 - 6 p.m. • LVCC W216-W218
SBE Booth Drawing, sponsored by Linkup Communications
5 p.m. • LVCC W226

Tuesday, April 18
SBE Certification Exam Session
9 a.m. - noon • LVCC W201
Advance registration required
SBE Booth Drawing
5 p.m. • SBE Booth LN4, sponsored by Blackmagic Design

NAB SHOW, from p. 1
cause the first 125 people in attendance will receive a pair of SBE-logoed luggage tags. The Membership Reception starts after the Membership Meeting at 6:15 p.m. in W226. Light snacks and drinks are made possible from the generous support of several SBE Sustaining Member sponsors. Lots of prizes will also be awarded, including gift cards, broadcast equipment and more. Check the list of event sponsors on page 9 of this issue.

The SBE booth is LN4, which will be located in the North Lobby of the LVCC. This is the same location as in 2022, which is in view of Starbucks. Be sure to check the complete event schedule on the SBE NAB Show events page on our website (sbe.org/nab), which is also linked from the home page.

Another helpful resource to plan your convention time is our SBE Sustaining Member Online Resource Guide (sbe.org/guide). All these sources provide details for SBE committee meetings, the board of directors meeting, SBE certification exams, and the daily booth prize drawing.

SBE Sustaining Members Providing Prizes

Sunday
SBE Booth Drawing $200 Amazon Gift Card Giveaway, sponsored by Nemal Electronics

Monday
SBE Membership Meeting
The first 125 people in attendance receive a pair of SBE-logoed luggage tags courtesy of Blackmagic Design
SBE Booth Drawing $200 Amazon Gift Card Giveaway, sponsored by Linkup Communications
Blackmagic Design Studio Camera 6K Pro

SBE Member Reception
AC Video: $100 Amazon gift card
Burk Technology: PRF-1 RF sensor
Drake Lighting: $100 Amazon gift card
Kathrein: SBE Broadcast Engineering Handbook
Markertek: Sescom SES-CT1 cable tester
Tieline: Four $25 Amazon gift cards
Orban: PCn100 processing software license

Tuesday
SBE Booth Drawing $200 Amazon Gift Card Giveaway, sponsored by Blackmagic Design

Participate in the 2023 SBE Compensation Survey

The SBE is conducting its eighth (and ongoing) compensation survey. Launched to provide practical information to SBE members about individual compensation (salary and benefits) based on facilities, market size and years of experience, SBE members will have access to the full report.

While each annual survey has seen a successful response rate, your participation is important to provide the large sample pool for the most reliable results. All survey responses are anonymous. Find the survey link in email communications and on the SBE website. With your help we can provide a useful and practical resource to SBE members.

Highlights of the survey will be reported in The Signal. The full report will be available for download to members from the SBE website. Take the survey today.

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The SBE Thanks These Sustaining Members for Sponsoring Events at the NAB Show

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**OBSTRUCTION LIGHTING ELEVATED V2 HIGH INTENSITY SYSTEM**

- GROUND-BASED POWER AND CONTROL COMPONENTS
- LIGHTWEIGHT FLASH HEADS
- REDUCED TOWER LOADING
- TOUCH SCREEN INTERFACE
- OPTIONAL PULL-OUT SCREEN
- IR COMPLIANT
- SBE PRESENTATIONS ZOOM OR LIVE
Two Notable Waivers of FCC Rules

As engineers, broadcasters, and communications attorneys we often live and die by the myriad and far-reaching rules of the Federal Communications Commission, diligently (dare we say lovingly) set down in Title 47 of the Code of Federal Regulations. The FCC’s Rules (with a capital R) guide nearly every decision facing a broadcast station. However, at times it may behoove us to remember that the Commission reserves the right to waive its Rules, and in certain circumstances the FCC has explicitly laid out situations when a waiver is appropriate. This article will discuss two such notable cases: the Raleigh waiver, and the Mattoon waiver.

Waiver of FCC Rules

FCC Rules may be waived by the Commission “for good cause shown,” but the Commission has made it clear that waivers are rare, and parties seeking such an exception generally face an uphill battle. An applicant must lay out with particularity the reasons why a waiver is warranted, and one will only be granted if (1) special circumstances exist that warrant deviation from the usual rule, and (2) allowing a deviation better serves the public interest. While these baseline requirements remain applicable to all waiver requests, in certain circumstances the Commission has identified common scenarios when a waiver of FCC Rules may be appropriate, and will generally be considered favorably if an adequate showing is made.

Raleigh Waiver. A Raleigh waiver may be applicable to noncommercial educational (NCE) stations seeking to expand their coverage area, but unable to do so without receiving contour overlap with adjacent stations. Under FCC Rules prohibited overlap occurs when one station’s interference contour overlaps another station’s service contour. In these cases, the station seeking to expand its service contour such that it will be overlapped by a second station’s interference contour is said to “receive” overlap, while the station whose interference contour is overlapping is said to “cause” the overlap.

While such overlap is generally prohibited, an NCE station may request a Raleigh waiver if the proposed expansion would: (1) receive – not cause – overlap from (2) second- or third-adjacent channel stations, and (3) the benefit to the public of increased NCE service “heavily outweighs” potential interference in a small area. When these elements are present, the Commission has delegated authority to the Media Bureau to waive the applicable rules if the overlap received is 10 percent or less of the NCE station’s proposed expanded service area.

In one important caveat to a Raleigh waiver, the station requesting the waiver will generally be required to accept a condition on its license that future modifications of the station causing the overlap will not constitute a per se modification of the receiving station’s license. In this way, the station causing the overlap will not be completely restricted from requesting revisions to its service contour in the future due to the overlap granted by waiver. As such, stations requesting a Raleigh waiver should note that the Commission may look favorably on subsequent requests to move or even marginally expand the caused overlap.

For anyone interested in seeing the application of a Raleigh waiver in action, a recent order to show cause issued by the Media Bureau (DA 23-82) addresses both the elements of an initial waiver of received overlap as well as the subsequent expansion of caused overlap.

Mattoon Waiver. A Mattoon waiver arises in the context of a proposed relocation of an FM translator. Normally, a translator relocation will only be considered a minor modification if the proposed 60dbu contour of the relocated translator overlaps at some point with the 60dbu contour as currently licensed. If the proposed move is far enough that there will be no contour overlap (referred to here-in as a long distance relocation), a major modification is required, and thus will only be permitted in certain filing windows. Because of this, some translator licensees attempt to achieve a long distance relocation through a series of “hops” – filing multiple minor modifications each moving the translator a short distance, but with the aggregate effect of a relocation that would have required a major modification if requested in a single, initial application. This practice is disfavored by the Commission and will generally be denied if discovered, or worse. In a recent similar and particularly egregious example, a licensee was accused of utilizing a hopping scheme to relocate several low-power television stations using a series of minor modifications, and in a Consent Decree (DA 22-232) agreed to pay a $250,000 fine and relinquish nearly 100 LPTV and translator licenses.

In spite of this, the Commission acknowledges that longer distance relocation of a translator may be in the public interest under certain circumstances, particularly when being used to rebroadcast an AM station. As such, the Media Bureau has previously exercised its authority to grant Mattoon waivers to treat a long distance translator relocation as a minor modification if: (1) the applicant does not have a history of requesting a series of “hops” or otherwise abusing minor modification rules; (2) the proposed relocation site is mutually exclusive with the translator’s current license facility; and (3) the translator will rebroadcast a proposed AM primary station. To further reinforce the last element, if a Mattoon waiver is granted, the applicant will be required to accept a condition that the translator will rebroadcast the proposed AM primary for four years of on-air operations (exclusive of silent periods). Original guidance on Mattoon waivers also included preservation of adequate spectrum for LFM stations in the analysis, but subsequent FCC decisions have not always analyzed that issue. Nonetheless, it is worthwhile to be aware of this earlier consideration, particularly given rumblings of a forthcoming LPFM filing window.

We all strive to comply with the FCC’s Rules in many different contexts, but every once in a while it is important to be reminded that they are not inviolate. So next time you need to make adjustments to your NCE or translator facilities, keep these waiver options in mind – they may be just the ticket!
FOCUS ON THE SBE
By James Ragsdale
SBE Executive Director
jrgsdale@sbe.org

Invest in Yourself and Others

Many of you have invested in yourself this year, learning new technologies for your jobs or for the broadcast engineering industry. You attended classes, webinars, or studied written materials. However, some of you have invested in growing the knowledge of your peers, by donating to the Eannes Educational Foundation Trust. And others who came before donated to the Trust, leaving a legacy of educational opportunity. Each year, the Eannes Trust names recipients of five scholarships:

- John H. Battison SBE Founder’s Scholarship (open to anyone)
- Harold E. Ennes Scholarship (open to anyone)
- Youth Scholarship (specifically for graduating high school seniors)
- Robert D. Greenberg Scholarship (open to anyone)
- Gino Ricciardielli Scholarship (open to anyone)

A minimum of five $2,500 scholarships will be awarded in 2023.

Each year, the Eannes Educational Foundation Trust offers these scholarships to deserving candidates who aspire to a career in the technical aspects of broadcasting. Scholarship awards are used for tuition, room and board, or textbook costs at post-secondary educational institutions, or for other technical training programs approved by the Scholarship Committee. Preference is given to applicants who are SBE members; however, any individuals otherwise eligible, including graduating high school seniors, are encouraged to apply. The application deadline is July 1 each year. Go to sbe.org/scholarship.

In addition to the SBE, there are other organizations supporting the broadcast engineering field. One of our peer organizations, the Association of Federal Communications Consulting Engineers (AFCCE), has a scholarship program. AFCCE awards cash scholarships each Spring and Fall to junior, senior, and graduate students who have an intention to pursue a career in telecommunications engineering.

Through its Scholarship Committee, AFCCE also administers the IEEE Broadcast Technology Society/AFCCE Jules Cohen Memorial Scholarship, the E. Noel Luddy Memorial Scholarship sponsored by Dielectric, Inc. as well as the Byron St. Clair Memorial Scholarship.

Scholarship applications are accepted from college students undertaking an undergraduate or graduate program at an accredited U.S. college, university or technical school studying engineering or science and related to the telecommunications field. AFCCE administers several scholarships described in greater detail below. A single application will automatically enter you into consideration for all scholarships for which you are eligible.

The AFCCE Scholarship
The goal of The AFCCE Scholarship is to provide financial assistance to students who are undertaking a full-time undergraduate or graduate program at an accredited college or university with a major in engineering or science and related to the telecommunications field. Only Junior/Senior students and graduate students are eligible.

The AFCCE Scholarship generally ranges from $500 to $2,500 per semester depending upon the qualifications of the candidate as well as the candidate’s demonstrated interest in pursuing a career in the telecommunications consulting engineering or related fields. Since 2006, AFCCE has awarded on average more than $15,000 annually for the AFCCE Scholarship.

The IEEE Broadcast Technology Society/AFCCE Jules Cohen Memorial Scholarship
The IEEE Broadcast Technology Society (BTS) is a scientific and educational organization whose purpose is to advance the theory and practice of electrical and electronic engineering as it relates to the technology of broadcasting. BTS funds a memorial scholarship award for undergraduate (Junior/Senior) or graduate engineering students interested in a career in broadcast engineering honoring the memory of a long-time member of both AFCCE and BTS, Jules Cohen. Scholarship amounts are either $5,000 or $10,000. Students receiving an award may re-apply and are eligible to receive additional awards, subject to a limit of $15,000. Unsuccessful applicants may re-apply.

The E. Noel Luddy Scholarship
In 2010, broadcast antenna manufacturer Dielectric Communications established a scholarship honoring E. Noel Luddy (1917-2013). The E. Noel Luddy scholarship provides up to $2,500 per year to Junior, Senior and graduate students who are majoring in engineering or other fields associated with the broadcast and telecommunications industries.

Byron St. Clair Memorial Scholarship
In 2018, the National Translator Association (NTA) established a scholarship in Byron’s name, to be administered by AFCCE. The fund provides scholarships for promising undergraduate (including first & second year and community college students) and graduate students at accredited U.S. universities, colleges and technical schools interested in broadcast engineering or technology.

Application Deadlines
Applications deadlines are October 31 for the Spring semester and May 31 for the Fall semester. Applications received after the cut-off dates may be held for consideration for the next semester.

The SBE wants you to know that there are many opportunities to help pay for your education and training. Also, we want to thank you for your willingness to invest in yourselves and your peers. This passion for broadcast engineering shows the selfless desire of our members to improve the world around us. If you know someone who would be a good candidate for any of these scholarships, please let them know how to apply.

Chapter 53 South Florida
The chapter met at the Nemal Electronics cable and connector manufacturing facility in Miami on Jan. 21. There was a one hour tour demonstrating the entire manufacturing process of typical broadcast cables (fiber and copper) from raw materials to finished product. Live extrusion, twisting, planetary cabling, and braiding operations as well as CNC connector manufacturing were all demonstrated. Attendees asked questions of the machine operators and gained a new perspective on the manufacturing process. After the tour, the group had lunch in the facility and continued with additional questions and answers about broadcast cabling.
Builds Aren’t the Same Post-Pandemic

When it was decided to relocate Alpha Media’s Louisville cluster post-pandemic from their longtime downtown location, we knew it was going to be a big undertaking. But as is often the case, the journey from Point A to Point B was full of “interesting” twists and turns.

Louisville’s market manager had taken our initial location criteria, and identified three locations that would fit the bill (including line-of-sight to all five transmitter locations). After walk-throughs, we identified the 9300 Hurstbourne Building, a 13-story high-rise that is affectionately known by locals as “The Flashcube Building” East of downtown Louisville as our preference.

It started to become challenging when we were notified shortly after signing our lease that the building was being sold. In the process, new owners brought a new building engineer into the picture, and that meant he had to be brought up to speed on our project.

It’s fair to note that an undertaking of this magnitude exceeds the average building tenant’s requirements. Since this building is typically only occupied during “normal” business hours, the chillers in use are taken off line after hours and on weekends. This required the addition of mini-splits for the studios and TOC to support a 24/7 operation. Additionally, output from the emergency generator at ground level had to be routed to the 6th floor suite TOC where the transfer switch lives. Then there was the issue of locating our rooftop antennas.

Previous ownership had contracted with Phoenix Tower International for rooftop RF management, so we had to pause while the new ownership determined whether that relationship was going to continue. Already in existence on the roof was an AT&T cellular site, which we determined wasn’t going to interfere with us RF wise, but locating our antennas was another matter. Fortunately, a reinforced cinder-block elevator penthouse provided us a suitable mounting location that allowed us to “see” our receive sites through apertures in the RF permeable glass facade that surrounds the penthouse, effectively hiding the cellular installation.

In order to route the transmission line from the rooftop antennas to the TOC, it was necessary to bring them down thru the building return air plenum that runs the complete height of the structure into the basement where AT&T’s equipment is located. Fortunately, there is a hatch at the roof level and existing snap in attachment for cable clamping also utilized by our AT&T friends. Installation is quite the opposite of scaling a guyed tower. In this case rappelling down the return plenum was in order.

As the rooftop location wasn’t conducive to locating a C band Receive antenna there, we borrowed a trick utilized in a recent build in Gurnee, IL where we located the satellite antenna and receivers at a transmitter site, linked back to the studios over a hi-cap, bi-directional microwave link that delivers audio, metadata and contact closures over Axia AoIP, and also provides backup connectivity to the studio location using the fiber drop installed there.

The studios are built on Axia AoIP topography and utilize Wide Orbit Automation for Radio v 5.0 for playout.

Since the pandemic has taught us all the meaning of supply chain issues, we ordered all materials to complete this build well in advance. Still, we have materials that remain on back-order as the cutover was being made. Not the least of which is a pair of 6’ high performance 11G antennas for the high cap link to the WDJX transmitter site. Fortunately, the internet connectivity that was planned to back up the RF and 11G links are all in place and Comrex BRICLInks are doing yeoman duty in the interim. And the acoustical windows for the showcase studios are also casualties of supply chain delays, forcing their installation to be delayed.

Because the majority of studio gear was being replaced at the new site, very little downtime was experienced as each of the stations were cut over to their new “digs”. The existing streaming hardware was replaced with a Telos Z/IPStream X/2 appliance and telco converted to Telos VX utilizing the Vonage hosted service. Hardware for a couple 3rd party services (Futuri & Jelli) were easily migrated to the new facility.

I don’t believe it can be over-stressed to allow for the inevitable supply chain snafus. From the conversations I’ve had with suppliers, I fully expect this to be the case well into the foreseeable future.
Support the companies who support the SBE and the industry
Member Spotlight: Ben Endow

Member Stats
SBE Member Since: 2005
SBE Certifications: CPBE
Employer: KTVK/KPHO Gray Media
Position: RF Engineer
Location: Phoenix, AZ
Chapter: 9 Phoenix
I'm Best Known For: Being an RF broadcast engineer. There are fewer and fewer RF engineers in our industry.

Q: What do you enjoy or value most about your SBE involvement?
A: The camaraderie with the other engineers in the market.

Q: What got you started in broadcast engineering?
A: When I was in high school, one of my instructors started a radio club and taught us about how a radio station works. When I started college, I worked at the student-owned radio station and later became a master control operator at the local PBS station.

Q: Who was your mentor or who in the industry do you admire?
A: Mike Mundt and Ken Segota, whom I worked with at KUID while I attended the University of Idaho. I started as a master control operator and when I graduated I was working at a broadcast engineer. Perry Priestley, whom I worked with at Varian TVT and was later part of Harris Corporation.

Q: What do you like most about your job?
A: One day I might be working at my desk in the office, the next I might be working on transmitter or microwave equipment of some mountain top.

Q: When I’m not working I...
A: ...watch Nascar and play Sudoku.

Q: What’s your favorite gadget:
A: The Raspberry Pi

Still Time to Renew Your SBE Membership

It is still not too late to renew your membership in the Society of Broadcast Engineers and retain your membership benefits. If you are a Member, Senior, Student, Associate or Fellow member, you may renew online at sbe.org. Click on “Renew Membership” in the upper right-hand corner of the website home page (or the hamburger drop-down menu on a mobile device). The online system is available 24/7, is secure, and accepts Visa, MasterCard and American Express. The system automatically generates a receipt, sent to your email address. You will need your member number and website password to access the renewal system, but if you don’t have them handy, there is an automated retrieval system available to you on the renewal page.

When renewing, consider joining more than 1,000 fellow SBE members who have chosen the SBE MemberPlus option over the past year. For $175, the SBE MemberPlus option provides all of the benefits of traditional membership, plus access to all archived SBE webinars and all new SBE webinars produced through March 31, 2024. That’s more than 100 webinars covering a broad range of broadcast/media technology, regulatory and safety topics.

You may also renew your membership by mail, completing and returning the renewal form and your payment to the SBE national office: Society of Broadcast Engineers; 9102 N. Meridian Street, Suite 150; Indianapolis, IN 46260; or by fax at 317-846-9120.

Traditional and MemberPlus Members
Membership renewal was due April 1. SBE By-laws provides for a three-month grace period (extends through June 30). If you chose the SBE MemberPlus option in 2022 and you did not renew by April 1, be aware that your SBE MemberPlus option benefits ended on April 1, 2023, and your membership was automatically converted to traditional membership for the duration of the grace period. If you renew during the grace period (or after), you can restore your free access to all SBE webinars by taking the SBE MemberPlus option.

Grand Prize
A trip to the SBE National Meeting in Columbus this September.

Additional Prizes
Donated by Sustaining Members
• BSW: Shure SM7B microphone
• Davicom: $50 Amazon gift card
• Dielectric: Two Dielectric polo shirts
• Heartland Video Systems: $100 Amazon gift card, Rocketbook smart notebook, stadium throw, glass tumblers, and more
• Nemal Electronics: $100 Amazon gift card
• Orban: 1101e card and breakout cable
• Telos: iTunes gift card, Telos swag bag
• Tieline: Three Yeti insulated cups

From the SBE
• A copy of SBE CertPreview
• One free SBE Webinars by SBE registration
• One $25 gift certificate for the SBE Store/SBE Bookstore
• An SBE-logoed hat
• Two SBE coffee mugs and magnets

sbe.org/drive
**NEW STUDENT MEMBERS**
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- Brendan Loring - Charlotte, NC
- Sean P. Meade - Muskegon, MI
- Ashley Rolo - Freehold, NJ

**NEW ASSOCIATE MEMBERS**
- Diana Amaya - San Antonio, TX
- Max Herrle - Tallahassee, FL

**NEW MEMBERS**
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- Kevin Ebersohl - Bethesda, MD
- Eric F. Espeut, III - Washington, DC
- McKay J. Everhart - Molla, OR
- Simeon T. Fields - Mona, AR
- Allen Fream - Greensburg, PA
- Kyle J. Grandillo - Brooklyn, NY
- Phil T. Hannon - Monroe, LA
- Bryan Harley - Fresno, CA
- Christopher Harris - Norfolk, VA
- Matt Hock - University Center, MI
- Jessica A. Holderfield - Dothan, AL
- Stephen Hoover - Pittston, PA
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- Michael Hurtz - Philadelphia, PA
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- William King - Chandler, AZ
- David J. Knight - Meridian, ID
- Brenda G. Kraatz - Chicago, IL
- Dan Lamatsch - St. Paul, MN
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- Kenny R. McAllister - Jackson, MS
- Michael P. McCann - Alexandria, VA
- Connor R. McDonald - Wichita Falls, TX
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- David W. Woodard - Ada, OH

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- Alejandro M. Vazquez - Knoxville, TN

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- Chad F. Hagedorn - Tacoma, WA
- Dennis A. Giurintano - Metairie, LA

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831-458-0552
Members On The Move

Ben Brinitzer, CPBE, AMD, is senior Tiger team engineer at iHeartMedia, Marietta, GA. Rich Redmond is president and CEO of Ele- nes, Quincy, IL.

Chris Tarr, CPBE, AMD, CBNE, is the broadcast chair of the Wisconsin EAS Committee. He takes the position over from Gary Timm, who retired from the role on March 1.

John Mackey, CPBE, 8VSB, DRB, CBNE, is a senior broadcast engineer for Western Communications, Beaverton, OR.

Michael Saffell is regional director of engineering for Hearts Television, Milford, NH. Jacob Cummings is a staff engineer for Cumulus Media Kansas City and Topeka.

Michael Streby, CBTE, 8VSB, CBNE, is regional director of engineering/IT for Gray Television, Sioux Falls, SD.

Jo Addalia, CBTE, is vice president, broadcast technology, at Heart Television, Winter Park, FL.

Have a new job? Received a promotion? Send your news to Chriss Scherer at cscherer@sbe.org.

MARK YOUR CALENDAR

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SBE Compensation Survey Opens
April 1, 2023

SBE Dues Renewal Deadline
April 1, 2023 sbe.org/renew

SBE Ennes Workshop @ the 2023 NAB Show
Las Vegas April 14-15, 2023 sbe.org/ennes_workshop

2023 NAB Show Las Vegas April 15-19, 2023 nabshow.com

SBE Membership Meeting NAB Show April 17, 2023

SBE WEBxtra online April 17, 2023 sbe.org/webxtra

SBE WEBxtra online May 15, 2023 sbe.org/webxtra

SBE Membership Drive Ends May 31, 2023 sbe.org

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