the SIGNAL 2011 raising the bar

BIMONTHLY PUBLICATION OF THE SOCIETY OF BROADCAST ENGINEERS

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Have you visited us on the web yet?

www.sbe.org

Hogan new SBE president

Ralph Hogan, CPBE, DRB, CBNT is the newly elected president of the Society of Broadcast Engineers. Hogan is the associate general manager of Engineering and Technology for MCTV/ KJZZ-FM/KBAQ-FM Sun Sounds of Arizona in Tempe, Ariz. His one-year term, along with the terms of other members elected to the board, begins Sept. 28 at the SBE Membership Meeting.

See **ELECTION** *on page* **9**

New SBE University courses available

The SBE Education Committee is pleased to announce two new courses on SBE University. The first new course is Television Video and Audio - a Ready Reference for Engineers. This course, written by Randy Hoffner, is an introduction to video and audio for television, from the dawn of analog television broadcasting to today's digital television transmission. It is meant to give the television engineer a solid grounding in the various aspects of video and audio for television, and to serve as a ready reference to the pertinent standards.

The course begins with NTSC, which is the basis for all of television as we know it in the United States. Next, component analog video is covered, along with a tutorial on resolution and a discussion of aspect ratios. A chapter follows on digital video and one on digital scanning formats. Other topics covered include characteristics of the video signal, baseband video interfaces and plant infrastructures - video compression and video storage from kinescope to server.

A discussion of analog audio, in addition to providing some historical perspective, introduces basic

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SBE, NAB co-producers of 2012 Broadcast Engineering Conference

The Society of Broadcast Engineers will serve as co-producer with the National Association of Broadcasters for the NAB Broadcast Engineering Conference (BEC), held at the 2012 NAB Show in Las Vegas. The annual NAB Show is the largest media show in the world, with an attendance of more than 90,000 participants during last year's event.

The BEC is April 14-19, 2012, at the Las Vegas Convention Center and is the oldest conference held as a part of the NAB Show, now in its 66th year. The upcoming show will mark the 18th consecutive year for the SBE as co-producer.

The NAB has announced the members of the BEC Advisory Committee. This group meets to help determine the session topics and select the technical papers that will be presented during the BEC. Chairing the committee this year will be SBE member, Steve Fluker, director of engineering for Cox Media Group Orlando, in Orlando, Fla. Joining Fluker on the committee are Jeff Andrew of WTTG-TV, Washington, D.C.; Brett Jenkins, ION Media Networks, New York, N.Y.; Gary Nadler, ABC TV Network, New York, N.Y.; Thomas Ray, III, CPBE, AMD, DRB, Buckley Radio, New York, N.Y.; Robert Seidel, CBS Television, New York, N.Y.; Martin Stabbert, CPBE Citadel Communications, Las Vegas, Nev.; Jim Stagnitto, WNYC/WQXR Radio, New York, N.Y. and Glynn Walden, CBS Radio, Philadelphia, Pa. Also serving as representatives of the SBE and the Ennes Educational Foundation Trust are Fred Baumgartner, CPBE, CBNT, Harris Corp. – Broadcast Communications, Englewood, Colo. and John Poray, CAE, Society of Broadcast Engineers, Indianapolis, Ind.

The SBE and the Ennes Educational Foundation Trust will present a full-day Ennes Workshop to kick-off the BEC on Saturday, April 14. Ennes Trustee and long-time SBE member, Fred Baumgartner is organizing the workshop. A complete description of the topics and speakers for the Ennes Workshop will be announced in November.

The six-day BEC will continue through Thursday, April 19 with dozens of technical presentations, case studies and panels for television and radio engineers. The deadline for those interested in presenting a paper at the BEC is October 21. Visit the NAB website at www.nab.org for details.

Attendees of the technical conferences of the Public Broadcasting Service and the Public Radio Engineers Association, which precede the NAB Show in Las Vegas, have the opportunity to attend the Ennes Workshop as the final day of their respective conferences. Attendance at the Ennes Workshop during the BEC requires a full NAB conference registration. Hotel, show registration and fee information will be available at www.nab.org.

What's your Certification Quotient?
Answer on Page 11

Question: For the ATSC 8-VSB system, the symbol rate is:

A) 4.5 MHz B) 5.082138 Mbps
C) 10.76 Mbaud D) .01939 GHz

2011 SBE Certification Exam Schedule

Dates	Location	Application Deadline
Oct. 23	AES Convention	on-site & pre-registration
Nov. 4-14	Local Chapters	Sept. 16

Continuing forward with progress in motion

rhogan@kjzz.org

by **Ralph Hogan, CPBE®, DRB™, CBNT®**
SBE President

Greetings everyone! This is my first opportunity to communicate with many of you as the new president of the Society of Broadcast Engineers. The society has made a good deal of advancement over the past two years under the leadership of Vinny Lopez and I pledge to continue the work that is in progress. I also look forward to working with the most excellent SBE staff at the home office that complete the daily tasks, which make the society function smoothly.

I would like to welcome the other new SBE officers, Vice President Joe Snelson, CPBE, 8-VSB; Secretary James Leifer, CPBE; and Treasurer Jerry Massey, CPBE, 8-VSB, AMD, DRB, CBNT. I would also like to welcome the new board members serving two-year terms on the board of directors, Raymond Benedict, CPBE; Paul J. Burnham, CPBE; Mark Heller, CPBE; Charles "Ched" Keiler, CPBE, 8VSB, CBNT; David Priester, CPBE; and Gary Stigall, CPBE.

As a society the SBE provides a forum for the exchange of ideas and the sharing of information to help you keep pace with our rapidly changing industry. The SBE amplifies the voices of broadcast engineers by validating your skills with professional certification, by offering educational opportunities to maintain and expand those skills and by speaking out on technical regulatory issues that affect how you work. We will continue to work in support of member benefits by holding a strategic planning session in the summer of 2012. We will also make it easier for members to vote for their representatives by having electronic voting available in 2012.

The strategic planning session will have a facilitator to direct the discussion of this one-day meeting. This is an opportunity for the membership to provide tactical direction for the upcoming years of the society. The planning session is still in the development stage but I hope society chapter chairs and representatives attend this important happening. It will be held on a weekend to allow as many members to attend as possible. This event will give you an opportunity to have a voice in the direction of the society.

A resource that was updated while Vinny was in office was the new SBE website. Did you know there is a portion of the SBE website (http://www.sbe.org/sections/chapter_admin.php) devoted to chapter administration? Visit to obtain helpful information.

– The Program Ideas for SBE Chapters section gives program chairmen ideas for chapter meetings. A list provides 71 ideas for chapter programs.

– The Chapter Administration Forms section provides various forms available in MS Word and/or PDFs for chapter use. Some of the available forms are the Chapter Operations Manual, Chapter Attendance form, Chapter Meeting Report form, Chapter Election Summary form and the all important SBE Membership Application.

– The Board/Chapter Liaisons section lists the name and contact information for your coard/chapter liaison when you have questions or need help with your chapter.

– The Chapter Finances section includes helpful information on chapter rebates and how to setup a chapter bank account including, how to obtain an Employer Identification Number (EIN).

– The Chapter Calendar section provides each chapter with a calendar on the SBE national website. The calendar is intended to help prospective

See **PRESIDENT** *on page* **13**

Band Threats: It's not paranoia if they really are after you

cimlay@sbe.org

by **Chris Imlay, CBT**
SBE General Counsel

A couple of things have happened lately that make me wonder when the pain is going to stop. These pertain to the 2, 7, and 13 GHz BAS bands. It seems that all of our bands are on the chopping block at the same time.

Regular readers of this column have heard about SBE's work with the Department of Defense to coordinate the operation of twelve DoD satellite uplink facilities in the 2025-2110 MHz band. We have met with DoD many times in many places to do this, and we carefully planned and coordinated the necessary spectrum sharing in the markets where these facilities are going to go in the future. Each side respected the other. It is a model for the right way to share spectrum. We had to do this because the FCC, under very limited circumstances, allowed DoD satellite uplinks to be placed in the 2 GHz band. But it worked well.

By stark contrast to this, Comsearch in August sent prior coordination notices (PCNs) to BAS licensees in Las Vegas and in Florida, and then to nationwide LTTS licensees on behalf of a company called Universal Space Network, Inc. The PCNs are for the purpose of coordinating private sector satellite uplink facilities in the 2 GHz band. SBE notified Comsearch - as have certain licensees receiving these notices - that Universal Space Network, Inc.is not eligible for regular licensing in the 2 GHz band. How, if DoD had to get a very specific order from the FCC for their satellite uplinks, could some private sector company plop down in the middle of the 2 GHz band without any coordination effort whatsoever?

The FCC Table of Frequency Allocations, Section 2.106 of the FCC's Rules, shows that there is no non-government allocation that would entitle a non-government entity to obtain an FCC license for satellite uplinks in the 2025-2110 MHz band. This is true whether or not the applicant is a government contractor. Only government entities, broadcasters, cablecasters and video producers are entitled to operate in the 2 GHz BAS band, and the government agencies cannot constrain BAS uses. There are international and U.S. Footnotes to this portion of the table of allocations, but the FCC Rule parts listed for the band (i.e. the services administered in the band by FCC) are Part 74F, Part 78 and Part 101. There is no non-government allocation for satellite uplinks.

U.S. Footnote 346 notes that Federal use of the band shall not constrain the Broadcast Auxiliary Service at 2025-2110 MHz, except that the 12 DoD satellite uplink facilities at 12 specific locations are co-equal, on a primary basis with non-Federal operations. U.S. Footnote 347 states that at 2025-2110 MHz, non-Federal, Earth-to-space and space-to-space transmissions may be authorized in the space research and Earth Exploration Satellite Service "subject to such conditions as may be applied on a case-by-case basis." Such transmissions "shall not cause harmful interference to Federal and non-Federal stations operating in accordance with the Table of Frequency Allocations." So, Footnote 347 is supposed to be the loophole that allows non-government earth stations to operate in the 2 GHz band.

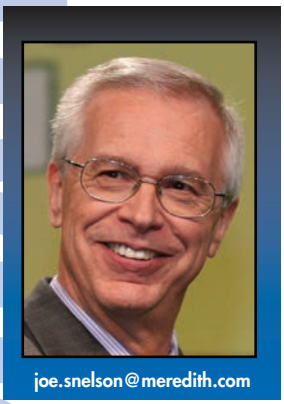
While a non-Federal satellite uplink could be authorized "on a case-by-case basis," in the 2 GHz band, and in a very few cases, some have been authorized, these facilities have no priority relative to, and would have to protect, all BAS operations, including all mobile facilities, at all times, no matter where located. The "case by case basis" would obviously be akin to a waiver process because these facilities are not authorized by the Table of Allocations at all. It is not possible to protect itinerant mobile or temporary fixed BAS 2 GHz facilities, including nationwide BAS and LTTS licensees, at any location controlled by the FCC, and certainly not in or anywhere near any television market where news breaks anytime and anywhere. Thus, it is not good enough for Comsearch or any commercial coordinator on behalf of a non-government entity proposing a satellite uplink anywhere in the 2 GHz band, to just send out a PCN without any engineering demonstrating protection of mobile, temporary fixed or itinerant facilities. These private sector entities need to take a lesson from DoD. Beware, 2 GHz licensees: if you receive a PCN notice proposing a satellite uplink anywhere near your market in the 2 GHz band, please let SBE know pronto. You would be well-advised also to contact your station's communications counsel and inform him or her about the issue and the notification in order to protect your ENG operations.

As to the 7 and 13 GHz allocations, the FCC finally resolved Docket 10-153 early in August by permitting fixed service (FS) operators to occupy the 6875-7125 MHz and 12700-13100 MHz BAS and CARS bands in rural areas where those bands are not currently licensed to TV mobile pickup stations. This was no surprise to SBE, because in effect, FCC had decided to do it more than a year ago in the National Broadband Plan. SBE filed three written submissions and held an extensive in-person meeting with numerous FCC technical staff members last fall, explaining why the FCC's effort was unworkable for broadcasters.

FCC claims that it has protected incumbent BAS users in the process. It has not done that. Yet, the SBE advocacy effort did have some positive effect on the outcome. In the report released August 9 FCC concluded, "The record indicates that it is not feasible to allow FS to share spectrum with mobile and temporary fixed TV pickup operations in areas where mobile and temporary fixed TV pickup operations are licensed." It held that, while BAS fixed and mobile operations share spectrum in the same geographic areas, the sharing that exists today would not be possible if it were not guided by informal agreements among local market participants. SBE's frequency coordination program thus was acknowledged to be critical to sharing in the BAS allocations at 7 and 13 GHz. Still, however, these fixed links will undoubtedly preclude any new licensing of TV Pickups outside the currently licensed areas, and there remains a potential for interference to broadcasters' receive sites. Any Section 74.24 itinerant operation will be subject to interference to and from wireless backhaul operations. And it is rather plain that in such cases there is unlikely to be found any regulatory help from the FCC.

There is more to do in this docket, and much for broadcasters to do to prepare for what could be an onslaught of FS applications in areas outside the service areas of broadcasters in the 7 and 13 GHz range. The very first thing that TV broadcast engineers must do is to check and make sure that your TV pickup receive sites are shown on each of your licenses in the FCC's ULS database. Do it today. Those with nationwide licenses should keep an eye on the FCC's ULS database for new applications and licensed FS facilities in your area.

It's not paranoia. They really are coming after us.


joe.snelson@meredith.com

The (not-so-) daunting essay question

by Joe Snelson, CPBE®, 8-VSB
SBE Vice President/National Certification Committee Member

Some time back I wrote an article about certification essay questions. Several years of essay grading later I would again like to talk about the essay question, which is an important part of obtaining a senior level or specialist certification.

The SBE Program of Certification has several different levels that are tailored to varying degrees of experience. In most cases, to obtain SBE certification an individual must pass an examination to demonstrate his or her knowledge of broadcast engineering. These exams all use a multiple-choice question format.

In addition to the multiple-choice test, the exam for Certified Senior Radio or Television Engineer or a Specialist certification (e.g. AMD, DRB, 8-VSB) also includes essay questions. What follows is why the essay question is important in the senior-level and specialist certification examination process.

First, let us review the requirements for senior level certification. An applicant must first have 10 years or more of responsible broadcast engineering or related experience. Then the individual must achieve a passing grade on an examination comprised of multiple-choice questions and one essay question. For a specialist the examinee must hold a Broadcast Engineer or higher level of certification, take an exam comprised of multiple choice questions and then provide a written response to one essay question.

You may wonder why these exams include the essay question. The answer is actually rather simple.

When the Senior Broadcast Engineer certification was created, it was felt that an additional element should be added in the exam process to demonstrate the applicant's proficiency in the field of broadcast engineering. An applicant with 10 years or more of experience should be very capable of answering an essay-type question related to a job responsibility that he or she has held. This type of question affords the examinee an opportunity to demonstrate from practical experience his or her knowledge of a subject. The same principle holds true of an individual seeking to obtain a specialist certification.

Similar to other SBE certification exams, 50 multiple choice questions are randomly selected from a pool of questions by computer. Each question is worth two points. During this portion of the exam, standard reference texts can be used. While it is important for an individual to know the material by heart, it is just as important to demonstrate that he or she is able to find the correct answer when needed. We often use reference materials in our jobs and, therefore, the same opportunity is given in answering the multiple choice questions. After completing the multiple choice questions, the examinee then provides a written response to an essay question.

You may be asking how the essay question is selected, administered during the exam and graded. When an applicant completes the application to take an examination for a senior level they will be asked to provide a record of experience of their last 10 years. Many applicants also attach a biography or resume that provides further experience details. The certification director at the SBE National Office will assign a member of the SBE National Certification Committee the task of reviewing the application. Upon approving the application, the committee member selects three essay questions from a question pool. The question pool covers various topics related to radio and television. The committee member selects three questions based on the experience information submitted by the applicant. This is why it is important for applicants to provide detail on their experience.

For the specialist examination, however, a single essay question will be selected by the national office that is targeted specifically for the specialist certification being sought.

For the senior level, after the examinee answers the 50 multiple-choice questions, the he/she then chooses one of the three essay questions selected by the certification committee member. The three essay questions are provided to the examinee in a sealed envelope. The examinee will choose one essay and write a response. Unlike the multiple choice question portion of the exam, reference texts are not allowed to be used while answering the essay. For the specialist exam only one question will be provided as mentioned earlier.

A minimum passing score of 84 is required for an examinee to obtain certification for senior or specialist certification. The essay question may contribute up to 20 points towards this 84-point total. This means a person must score a minimum of 64 points on the multiple-choice questions to pass the exam assuming they achieved a perfect score of 20 points on the essay question. As you can see, there is considerable worth placed on the essay question.

Here is how the grading of the essay question works. Once the multiple-choice questions have been graded and it has been determined that an individual has scored at least 64 points, the essay question response is then sent to three members of the National Certification Committee to be graded. The three members independently grade the essay and return their scores to the SBE National Office. The national office averages the three scores to obtain a single score for the essay response. The single score for the essay must be at least a 10 for the individual to pass. If the averaged essay score is a 10 or greater, the essay score is added to what was achieved on the multiple choice questions. This becomes the total score of the examination.

So how does someone prepare for the essay question? Because I have graded several essay responses, I will offer my own thoughts and observations that I feel could help you to prepare to take the essay portion of the senior or specialist examination.

1. Submit an accurate application. Be specific on your application and other documents you attach as to your work experience and responsibilities. This greatly assists the committee member assigning your essay questions to assign those questions that are in line with your experience.

2. Neatness counts. On the essay response, be neat in any drawings you provide and ensure your writing is legible. The committee person assigned to grade your question is a grader and not a mind reader. Messy drawings and handwriting may work against you if the grader cannot follow or understand what you have written. Hint: A small straightedge ruler with no formulas or notes on it may be useful for any supporting drawings you may need to provide.

3. Be detailed. Provide appropriate supporting detail on any drawings or explanations. Think of this in terms of

See **ESSAY** *on page* **8**

CONGRATULATIONS
New SBE Certification Achievements

LIFE CERTIFICATION

Certified Professional Broadcast Engineers® and Certified Senior Broadcast Engineers® who have maintained SBE certification continuously for 20 years and are current members of SBE may be granted Life Certification if so requested. All certified who have retired from regular full-time employment 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®)
Henry Ruhwiedel, Crown Point, Ind. – Chapter 26

CERTIFIED BROADCAST RADIO ENGINEER™ (CBRE®)
Gerald Dalton, Arlington, Texas – Chapter 67
Robert Griffin, San Luis Obispo, Calif. – Chapter 40

CERTIFIED BROADCAST NETWORKING TECHNOLOGIST® (CBNT®)
Gerald Dalton, Arlington, Texas – Chapter 67

NEWLY CERTIFIED CPBE®

Applicant must have had 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.

CERTIFIED PROFESSIONAL BROADCAST ENGINEER® (CPBE®)
Kevin Fournier, Monument, Colo. – Chapter 48
Harry Hardisty, Tyler, Texas – Chapter 67
Mark Heller, Two Rivers, Wis. – Chapter 80
John Pfisterer, Oakdale, N.Y. – Chapter 15

JUNE EXAMS

"Thank you" Chapter Certification Chairpeople for your assistance

CERTIFIED SENIOR RADIO ENGINEER™ (CSRE®)
John Mackey, Beaverton, Ore. – Chapter 124

CERTIFIED BROADCAST RADIO ENGINEER™ (CBRE®)
David Ford, Penticton, B.C., Canada

CERTIFIED BROADCAST NETWORKING TECHNOLOGIST® (CBNT®)
John Mackey, Beaverton, Ore. – Chapter 124

AUGUST EXAMS

"Thank you" Chapter Certification Chairpeople for your assistance

CERTIFIED BROADCAST RADIO ENGINEER™ (CBRE®)
Thomas Karvelis, Oakdale, Pa. – Chapter 20

CERTIFIED BROADCAST TELEVISION ENGINEER™ (CBTE®)
Dean Maluski, New Britain, Conn. – Chapter 14
Martin Shostrom, Redwood City, Calif. – Chapter 47
Michael Streby, Temecula, Calif. – Chapter 36

CERTIFIED VIDEO ENGINEER® (CEV®)
Jonathan Abrams, Jersey City, N.J. – Chapter 15
Seth Morth, Marietta, Pa. – Chapter 41

CERTIFIED BROADCAST NETWORKING TECHNOLOGIST® (CBNT®)
Peter Bankwitz, Detroit, Mich. – Chapter 82
Sean McGuire, Worcestor, Mass. – Chapter 11

CERTIFIED BROADCAST TECHNOLOGIST® (CBT™)
Sean Mahoney, Graham, Wash. – Chapter 16

CERTIFIED RADIO OPERATOR® (CRO®)
Jason Ornellas, South San Francisco, Calif. – Chapter 40

CERTIFIED TELEVISION OPERATOR® (CTO®)
Gary Avila, Watsonville, Calif. – Chapter 40

SPECIAL PROCTORED EXAMS

CERTIFIED BROADCAST TELEVISION ENGINEER™ (CBTE®)
James Blackford, Evansville, Ind.

CERTIFIED BY LICENSE

CERTIFIED BROADCAST TECHNOLOGIST® (CBT®)
Paul Hunter, Candia, N.H. – Chapter 110
Glen Johnsen, Moreno Valley, Calif. – Chapter 131
Joseph Royall, Mount Olive, N.C. – Chapter 93
Evelyn Walton, Indianapolis, Ind. – Chapter 25

CERTIFIED RADIO OPERATOR® (CRO®)

Christopher Cross, Centennial, Colo.
Matthew Schmidt, Monroe, Mich.

CERTIFIED TELEVISION OPERATOR® (CTO®)

Travis Arrington, Chancellor, Ala.
Aaron Fisher, Marietta, Ga.
Paul Frisbee, Mt. Juliet, Tenn.
Randal Lance, Mt. Juliet, Tenn.
Jeanette McNair, Marietta, Ga.
Auner Moncada, Marietta, Ga.
Jeremy Ott, Denver, Iowa
Heidi Thomas, Marietta, Ga.
Daniel Thompson, San Antonio, Texas

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, Calif. – Chapter 131
Sam Killen, Richmond, Va.. – Chapter 60
Frederick Krampits, Chicopee, Mass. – Chapter 14

CERTIFIED PROFESSIONAL BROADCAST ENGINEER® (CPBE®) AM DIRECTIONAL SPECIALIST™ (AMD™)
Stephen Lockwood, Seattle, Wash. – Chapter 16

CERTIFIED SENIOR RADIO ENGINEER™ (CSRE®)
Brian Heise, Bells, Texas – Chapter 67

CERTIFIED BROADCAST RADIO ENGINEER™ (CBRE®) AM DIRECTIONAL SPECIALIST™ (AMD™) DIGITAL RADIO BROADCAST SPECIALIST™ (DRB™)
John Mulhern, Liberal, Kan.

CERTIFIED BROADCAST RADIO ENGINEER™ (CBRE®)
Lawrence Bornacelli, Apopka, Fla.. – Chapter 42
Andrew Disterhaft, Oshkosh, Wis. – Chapter 80
Daniel Ferreira, Jr., Easthampton, Mass. – Chapter 14
Stephen Lampen, San Francisco, Calif. – Chapter 40
Bill Marriott, Indialantic, Fla.. – Chapter 7
Kent Randles, Portland, Ore. – Chapter 124

CERTIFIED BROADCAST TELEVISION ENGINEER™ (CBTE®)
Darrell Cottrill, Magnolia, Texas – Chapter 105
Richard Klein, Waterford, N.Y. – Chapter 58
William Mutter, Clarksburg, Md. – Chapter 132
Clark Rhoads, Canyon Lake, Calif. – Chapter 131
Joseph Sipos, Fairfax, Va.. – Chapter 37
Glen Wright, Knoxville, Tenn. – Chapter 113

CERTIFIED BROADCAST NETWORKING TECHNOLOGIST® (CBNT®)
Christopher Bailey, Moscow, Idaho – Chapter 117
Lawrence Bornacelli, Apopka, Fla. – Chapter 42
David Costanza, Harrisburg, Pa. – Chapter 41
Tracy Gibson, Manhattan, Kan. – Chapter 3
Brian Heise, Bells, Texas – Chapter 67
David Johnson, Dallas, Texas – Chapter 67
Keith Kintner, Winneconne, Wis. – Chapter 80
Frederick Krampits, Chicopee, Mass. – Chapter 14
Allen LeMelle, Clovis, Calif. – Chapter 66
Kevin LeRoy, Hanover, Md. – Chapter 46
Kevin Olden, Adrian, Mich. – Chapter 104
Norman Philips, Arlington, Texas – Chapter 67

CERTIFIED BROADCAST TECHNOLOGIST® (CBT®)
Jan Bathurst, Quentin, Pa. – Chapter 22
Daniel Carcopo, Garner, N.C. – Chapter 93
Darrell Gaucier, Edmonton, Alberta Canada
Craig Gill, Indianapolis, Ind. – Chapter 25
William Hamilton, New Glarus, Wis. – Chapter 24
Wayne Hart, Silver Spring, Md. – Chapter 37
Eric Hartzell, Columbus, Ohio – Chapter 52
Thomas Haynie, Virginia Beach, Va. – Chapter 54
Charles Karbginsky, Lake Orion, Mich. – Chapter 82
Tom Kettwig, Boise, Idaho – Chapter 115
Daniel Maney, Madison, Wis. – Chapter 24
John Monroe, Tacoma, Wash. – Chapter 16
Steven Peterson, Federal Way, Wash. – Chapter 16
Philip Schmitt, Kalamazoo, Mich. – Chapter 102
Jeremy Scott, Beckley, W. Va. – Chapter 116

CERTIFIED TELEVISION OPERATOR® (CTO®)
Doug Michelsen, Foster City, Calif.
Donald Thompson, Oakland, Calif.

ESSAY *from page* **6**

preparing something that would be reviewed by your peers, boss or other industry professionals.

4. Be thorough. Ensure that all the items mentioned in the essay question are answered fully. Read the question carefully. It may be worth making a checklist to ensure you address all the areas required. Once your essay answer is complete, reread the question to verify that all the elements are included.

5. For block diagrams, unless explicitly stated otherwise, an "electrical one-line" flow drawing is being requested and not a free hand artist rendering of what equipment visually looks like.

I hope this helps you understand the importance of the essay question and the process used to assign and grade it. Do not let the essay question intimidate you from obtaining the senior or specialist level of certification that you deserve. As you answer the essay question, let your experience "do the talking" and let those creative juices flow. I state this from experience as I took the senior level exam and passed.

Ennes Trust awards three scholarships

The Ennes Educational Foundation Trust has awarded three scholarships to broadcast engineering and technology students. Members of the SBE, Michael West, Jason Davis and Clint Mason have been selected by the Scholarship Committee to receive funding to further their education.

The Harold E. Ennes and Robert D. Greenberg scholarships are awarded to individuals interested in continuing or beginning their education in broadcast engineering and technology. The Youth Scholarship is an award for a graduating high school senior interested in broadcast engineering as a career. Each scholarship awarded this year is for $1,500.

SBE Immediate Past President Vinny Lopez, CEV, CBNT said, "Much time and consideration was put into the selection of these three deserving candidates by the Scholarship Committee. I wish them the best of luck as they continue their education in broadcast engineering."

Harold E. Ennes Scholarship Recipient Mike West

Youth Scholarship Recipient Clint Mason

Greenberg Scholarship Recipient Jason Davis

West, of Napa, Calif., is the recipient of the Harold E. Ennes Scholarship. West is a sophomore at Napa Valley College in the Broadcast Television Engineering Technology Program and is expected to graduate in May 2012. West is currently learning from maintenance engineers at KTVY Channel 2 in Oakland, Calif. as he participates in an internship. As a volunteer for the Napa High School Marching Band, West works at football games to help raise money for scholarships for graduating seniors. West plans to purchase textbooks and supplies with the funds.

Davis, of Spokane, Wash., is the Robert

See **SCHOLARSHIP** *on page* **12**

ELECTION *from page* 1

Ballots were tabulated on August 25 by the official board of tellers, consisting of nine members of Chapter 25 of Indianapolis, Ind. Upon hearing the election results, President-elect Hogan said, "I look forward to serving the society and continue the excellent efforts the SBE has made in certifying, educating and networking broadcast engineers."

Hogan began with Sun Sounds in 2008. Previous to Sun Sounds Hogan held the position of assistant general manager of engineering services for Northwest Public Radio and Television and Academic Media Services at Washington State University in Pullman, Wash. from 1998 to 2008. Prior to his time in Washington, Hogan served as director of engineering and operations for the Boise State Radio Network in Boise, Idaho from 1990-1998. Other career positions have included chief engineer at KSLU in Hammond, La. and vice president of engineering for Pan American Films and Video in New Orleans.

Elected to serve as vice president of the society was Joseph Snelson, CPBE, 8-VSB of Henderson, Nev. Snelson is vice president of engineering at Meredith Corporation. Elected to a first term as secretary was James E. Leifer, CPBE of Boynton Beach, Fla. Leifer is director of engineering and IT for Clear Channel Communications South Florida. Elected as treasurer was Jerry Massey, CPBE, 8-VSB, AMD, DRB, CBNT of Greenville, S.C. Massey is southeast corporate regional engineer for Entercom Communications and director of engineering/MIS for Entercom Greenville.

Members of Chapter 25, Indianapolis, Dale Smiley, Tom Weber, Doug Garlinger, Darrell Nickolaus, Don Hemenover, Michael Goode, and David Forte, Phil Alexander and Charlie Sears act as the official Board of Tellers for the 2011 SBE Board of Directors election, August 25, 2011, in Indianapolis, Ind. Members counted votes at the national headquarters to determine the 2011-12 officers and directors.

Seven candidates vied for six positions on the SBE Board of Directors. Those elected include: Raymond Benedict, CPBE, of CBS in Washington, D.C.; Paul Burnham, CPBE of e2v Inc. in Poughkeepsie, N.Y.; Mark Heller, CPBE, CTO of WTRW Inc./WGBW Radio in Two Rivers, Wis.; Charles "Ched" Keiler, CPBE, 8-VSB, CBNT of Reach Communications in Fort Lauderdale, Fla.; David Priester, CPBE of Ithaca College in Ithaca, N.Y.; and Gary Stigall, CPBE of TV Magic in San Diego, Calif.

The national board of directors is responsible for the development of society policy and determinates the programs and services the organization provides to its more than 5,200 members. The newly elected directors will join six remaining directors who have one year left in their term, as well as Immediate Past President Vinny Lopez, CEV, CBNT.

An induction ceremony will take place at the SBE Annual Membership Meeting. The meeting is part of the SBE National Meeting, September 27-28 in Columbus, Ohio and is being held in conjunction with the Ohio Association of Broadcasters' (OAB) Ohio Broadcast Engineering Conference. Supporting the OAB are the five SBE chapters located in Ohio, which include Chapter 33, Southwest Ohio; Chapter 52, Columbus; Chapter 70, Northeast Ohio; Chapter 104, Toledo; and Chapter 122, Youngstown.

The SBE will conduct the board of directors election online in 2012. The objectives of the electronic voting system are to make it more convenient for members, increase the participation and conduct the vote in a more financially efficient manner. Members will have the choice to opt out of the electronic ballot to receive their ballot and vote by mail.

SBE Leadership Development Course gets successful reviews

by **David Priester, CPBE®**
SBE Education Committee Chair

Rodney Vandeveer, Purdue University Professor of Organizational Leadership and Supervision, led the 42nd SBE Leadership Development Course in Atlanta, Georgia August 2-4. Twenty-five students from six companies were in attendance. Subjects in the three-day intensive and interactive course included a self-assessment, understanding generational differences, motivation, how leadership is an attitude, building winning teams and the function and nature of leadership. Student reviews conclude that for a second year in a row, the self-assessment study section of the course is the most popular. This section teaches engineers to understand their own leadership style and how to respond to various personalities.

On a course evaluation form, Robbie Winter, CTO said, "I learned more about myself in three days than I have in the last 30 years!"

The course is designed to benefit both individuals, as well as their employers. Participants were asked how their companies could expect to benefit from the SBE Leadership Development Course. One student said, "They can expect a more rounded leader who is an agent of change that will effectively communicate to our staff's desire."

Participants in the SBE Leadership Development Course pose for a group photograph, August 4, 2011, in Atlanta, Ga. Preparations for the annual course are underway for 2012.

Initial plans for the 2012 SBE Leadership Development Course entail that the course will be held again in early August, however the specific date and location have not been determined. Additional details will appear on the SBE website and in SBE publications as they are confirmed.

COURSE *from page* **1**

audio concepts such as levels, mono and stereo, and multichannel audio. This is followed with a discussion of digital audio, including sampling and quantization, interfaces, and digital audio metering. Audio compression for television discusses the AC-3 audio compression system used in ATSC digital broadcasting. Finally, there is a chapter that looks at audio storage and recording.

This course is for anyone who needs a good grounding in television video and audio, from the relative newcomer who needs to learn all about how television video and audio work, to the experienced engineer that needs to know something about digital. The cost for the course is $99 for SBE Members and $139 for non-members.

The other course newly released in SBE University is The New Lifecycle of Media - IP and File Based Architecture and Workflows. Gary Olson, who is a media technology and business advisor specializing in the transition of traditional media workflows and business processes, wrote this course. He is a recognized industry leader with practical experience in the analysis, selection and uses of technology and is an innovator in media technologies and broadcast design.

The intent of this course is to review the entire IP and file based architecture, the changes in workflows and the broad spectrum of technologies that make up the environment. The way content is produced, handled, managed and monetized has changed. All aspects of broadcast and production have changed. The transition to an IP infrastructure-supporting file based broadcast and production came about more quickly and completely than any of the other recent changes in the broadcast and production industry. It is a transition that is dependent on people, process and technology.

The course provides an understanding of:

– All the technical considerations that need to be considered in a file based architecture

– The changing roles and responsibilities engineers will have in designing and maintaining these new systems

– The new jobs and/or roles that are necessary in handling media in this architecture

– The changes in workflow and business processes.

Chief engineers, station managers, broadcast and production engineers, media IT engineers, IT technicians and managers will benefit from this course, as well as anyone working or looking to work in media production & distribution and content creation. The cost for the course is $99 for SBE Members and $139 for non-members.

MARK YOUR CALENDAR

Oct. 18 · SBE RF Safety Course
Instructor: Richard Strickland of RF Safety Solutions
Cost: SBE members - $85; non-members - $125

Nov. 5 · NYC Ennes Workshop
Visit the Ennes Workshops page in the Education section on www.sbe.org for a complete list of instructors. **Cost:** SBE members - $60; non-members - $75; students $50

Jan. 12 at 2 p.m. - Webinar by SBE: Chief Operator Responsibilities - What Should I be Doing?
Instructor: Dennis Baldridge, CPBE, 8-VSB, AMD, DRB, CBNT
Cost: SBE members $49; non-members $69

For more information or to register for programs brought to you by the SBE, visit the Education page on the SBE website at www.sbe.org.

We are excited to welcome a new national president, Ralph Hogan, who has been extremely active and involved in the SBE, as well as other broadcast technical societies for many years. Hogan's knowledge of the industry and dedication to the mission of the SBE will serve the society well.

Although Immediate Past President Vinny Lopez will continue to serve on the national board, we will miss the leadership and humor he brought to the president's chair the past two years. Being the chief elected officer of a national organization is never easy, but Vinny handled the role well, with a determination and enthusiasm to overcome all obstacles. His presence will be an asset to Ralph, as other past presidents have been to their successors.

We are saying goodbye to four other members who are ending their service, at least for now, on the national board. Ted Hand concludes his four consecutive year stretch as national secretary. Andrea Cummis ends her tenure after eight consecutive years on the board, the last two as treasurer.

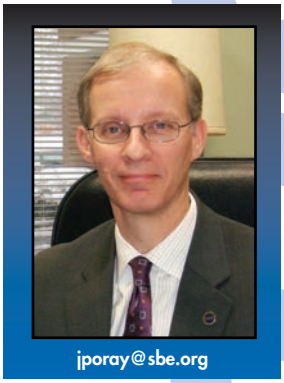
Barry Thomas ends his board service after serving three years as a director, two years as treasurer, two years as president and two years as immediate past president. Chriss Scherer leaves the board after having served as president for two years from 2005 to 2007, immediate past president and then another two-year director's term.

Our thanks to these five members, and all of the members of the 2010-2011 SBE Board of Directors for their dedication, leadership and hard work this past year.

- John Poray, CAE

Volunteers, lifeblood of the society

by John L. Poray, CAE
SBE Executive Director



jporay@sbe.org

During this time of year we see a number of great volunteers who have served on the national board conclude their service. Some have served the maximum amount of time set by the limitations outlined in the SBE By-laws, while others move on to devote more time to family, careers or other volunteer interests.

It's during this time, perhaps more than any other time of the year that I find myself reflecting about those who have served the SBE in a volunteer capacity and the contributions they have made that have helped mold, shape and drive the organization at every level. So many members have contributed their time, energy and expertise to lead a chapter, compile a newsletter, organize chapter monthly programs, maintain a website, proctor certification exams, serve as a local frequency coordinator, keep track of a chapter's finances and records, or any number of other volunteer roles. Each volunteer effort has contributed towards the objective of providing a program that is an educational benefit to local members, as well as a source for professional interaction and an opportunity to recognize experience and expertise.

Many national board members have, almost without exception, served first at the local level and have made the commitment over the years to help lead the society by serving on the national board or on one of our committees, as an author, course instructor or program organizer.

With these contributions in mind, it's imperative to remember that to keep the SBE, at every level, moving forward and a relevant, valued asset to each member, we must continue to develop volunteers who will lead each chapter and serve on the national board and do so with a commitment to enhancing the career development of our members and the advancement of the field of broadcast engineering.

> **"If your chapter is in need of someone to lead a task, chair a committee or maybe chair the chapter, consider volunteering"**

Broadcasting faces challenges today that are among the most difficult the industry has ever seen. Technology and the economic model in which broadcast stations operate are in constant change. As the professional organization for broadcast engineers, and that term includes an array of titles and responsibilities, we are dependent on members who are willing to lead and serve if we are going to meet those challenges. If your chapter is in need of someone to lead a task, chair a committee or maybe chair the chapter, consider volunteering. Your contribution will make a difference and, as many times is the case when you volunteer, you will benefit from your own involvement in ways that you did not anticipate.

ENNES EDUCATIONAL FOUNDATION TRUST

Thank you to the following supporters for their scholarship funds contributions:

Harold Ennes Scholarship
Chapter 24, Madison, WI
Geoffrey Wheeler, Yorktown, NY

Robert Greenberg Scholarship
Chapter 24, Madison, WI

Youth Scholarship
Chapter 24, Madison, WI

The Ennes Educational Foundation Trust offers scholarship, presents educational programming and provides grants for educational projects that benefits broadcast engineering and the broadcast engineer. To make a tax-deductible donation, make your check payable to the Ennes Educational Foundation Trust and mail it in care of the Society of Broadcast Engineers, 9102 North Meridian Street, Suite 150, Indianapolis, IN 46260.

Answer: C - Broadcast ATSC 8VSB carries a symbol rate of 10.76 Mbaud, a gross bit rate of 32 Mbit/s, and a net bit rate of 19.39 Mbit/s of usable data. The net bit rate is lower due to the addition of forward error correction codes.

Question on page 3

In the Circle ... *a snapshot of an SBE Member*

David L. Erickson, CEAV, CBT, CBNT, flight simulation technician lead for L-3 Communications, Link Simulation and Training/Textron- A.A.I. on the Elmendorf A.F.B. Member of Chapter 89, Anchorage, Ala.

Focal Point: I am proud to be a member of SBE since 1996 and amongst such distinguished fellow technicians and engineers. I have been involved with SBE since start of working life in the mid to late seventies.

Getting Started: I started out my working life in FM radio, working for Augie Hiebert's FM station KNIK in about 1977. He also owned an AM station, KBYR, and the local CBS affiliate KTVA. So, desiring further challenges technically and also being interested in photography/videography/visual imagery, I soon went to work for KTVA as a production assistant/cameraman/tape operator. Being a small station, and with Augie's philosophy of giving young-uns a chance, I was able to partake in pretty much every function involved with broadcasting on the production side, which was a lot of fun and definitely a learning experience.

Sphere of Influence: I met and worked with a broadcast engineer at the University of Alaska who since has become a lifelong friend and mentor. A mentor then, and a mentor now! I can't speak enough of how important I feel mentorship is; one learns from several sources and multiple ways, i.e. from going to school and reading books and on-the-job training, but having a good mentor is perhaps a better way to learn and just as important if not more so than the other paths to enlightenment. My mentor and friend is SBE Life Member Truman Walrod III. I have worked with many fine technicians and engineers, but Truman stands out. He and the other SBE engineers I have worked with have made me realize that the SBE is a fine organization, to include individuals such as these.

When I'm not working I ... am a proud member of the U.S. Coast guard Auxiliary. Lately I also partake in the rewarding hobby of High–Power Rocketry. Designing and constructing rockets is very interesting, and there's nothing like pushing that launch button, and turning money into smoke in the blink of an eye! I also enjoy playing guitar and tinkering with my 1969 Olds Toronado.

Job Satisfaction: My career took a skew, in the mid-nineties to accommodate my interests and qualifications in the field of aviation. I got involved with Flight Simulation. Flight sims are complex beasts, and include sophisticated video and audio systems amongst the rest of their technology. Possessing A & P and Pilot and Ground Instructor licenses allowed me to increase and build on the previous experience and qualifications and expand my world. Flight Simulation is an environment that would make any techie a happy camper and keep a video and audio technician or engineer quite interested, and busy.

You may not know ... that in the eighties I went to work for the University of Alaska, as the first operating engineer of the fledgling and pioneering Learn Alaska Network, which was one of the earliest satellite-based educational television networks. We were all quite proud of this accomplishment, it was rare for Alaska to do any pioneering work in any technical field, but we sure did with this! Other nations such as Indonesia came to see how we did things, and then went home and instituted similar networks of their own. At one point, counting affiliated network stations, which were actually TVRO's coupled to LPTV transmitters, the Learn Alaska Network was, I believe, the fifth largest network in the U.S., with approximately 252 affiliated stations. Every city, town, and village with more than 25 people had this educational network available to them.

Favorite Gadget: My favorite gadget is my rocket launch tower and launch controller I designed and constructed. Works like a champ!

SCHOLARSHIP *from page* 9

Greenberg Scholarship winner. Davis is enrolled in Spokane Community College in the Biomedical Equipment Program. Davis realized his interest in the broadcast engineering field after studying RF and fiber optics in a college course. Davis plans to use the scholarship for tuition for a networking certificate or degree.

Mason, of Napa, Calif., is the recipient of the Youth Scholarship. Mason is a 2011 graduate of Napa High School and is the sound technician for an area church. Mason is a recent participant in a TV Television Production Workshop and is a freelance video editor. Mason will be using this scholarship for his tuition at Gonzaga University where he will major in broadcast production and hopes to acquire an internship at ESPN while there and work for the company once he graduates.

The Harold Ennes Scholarship Fund Trust was initiated by Chapter 25, Indianapolis of the SBE in 1980 in memory of Harold E. Ennes, author of many textbooks for broadcast and broadcast-related communications training and a member of the Indianapolis chapter. Ennes was a member of the SBE National Certification Committee and made many contributions to the early development of the Certification Program. To encourage greater growth, Chapter 25 transferred the trust to the SBE national organization to administer in 1981. Scholarships presented by the Ennes Trust are made possible by donations from the SBE members and chapters and companies that do business with the broadcast industry. More information on the Ennes Trust can be found on the SBE website.

SBE Members on the Move

LeRoy Wolniakowski, CPBE is the newest inductee to the Wisconsin Broadcasters Hall of Fame.

Marty Hadfield, CPBE joins Clear Channel Radio Seattle as director of engineering.

Chapter Spotlight

Chapter 59 talks EAS and CAP

by **Chriss Scherer, CPBE, CBNT**
cscherer@sbe.org

SBE Chapter 59 Kansas City was formed in 1978 by a group of mostly TV engineers, which included past SBE President Jack McKain and SBE Vice President-elect Joe Snelson. Emerson Ray, then the RCA rep for the area was also instrumental in starting the chapter.

In addition to McKain, two other SBE past presidents reside within the area: Brad Dick, who lives in the Kansas City metro but is a member of Chapter 3, and myself.

The chapter holds occasional joint meetings with SBE Chapter 3 and the Kansas City section of the Audio Engineering Society. Some of the more unique meetings the chapter held were a tour of the FAA Flight Center where members were able to sit with air traffic controllers (this was pre-9/11) a tour of the Kansas City Crime Lab and several tours of the National Weather Service facility in Pleasant Hill, MO. Having an FCC Field Office in Kansas City also allows chapter members to hear from FCC field agents on FCC matters. On the eve of the analog TV shutdown, the chapter held a wake for analog TV complete with a coffin for some aging analog TV equipment, and on another occasion the chapter also held its own broadcast antiques roadshow, which included a visit from a vintage broadcast equipment appraiser. The chapter also holds an annual picnic as a purely social event.

The chapter has been recognized in the SBE Awards Program for best chapter website in 2008-2009 and most interactive chapter in 2001.

While the chapter's roots had a TV interest, the core group today leans to radio, but chapter leaders seek a balance of TV/video and radio/audio presentations with a touch of general maintenance, IT, security and occasional non-broadcast topics.

With the pending national EAS test in November and the CAP compliance deadline at the end of September, Chapter 59's September meeting was a roundtable discussion of EAS. Kirk Chestnut, CPBE, Kansas City EAS chairman, led the discussion, which covered the Kansas and Missouri efforts on adding CAP to the state systems, an overview of the various monitoring assignments and methods, and an update on the implementation of CAP into the local area plans.

Members of Chapter 59 discuss the Emergency Alert System on Wednesday, September 7. Kansas City EAS Chairman Kirk Chestnut, CPBE lead the discussion.

PRESIDENT *from page* **4**

members, vendors, the media and others learn the details of your chapter's upcoming meetings.

– The Web Toolkit, Web Hosting and Member e-mail list sections contain helpful information about chapter websites and email addresses. Chapters in need of a host for their website or who wish to establish email lists for their members to communicate among themselves may find the Electronic Communications resource article helpful.

– The SBE Logos section provides instructions on correct usage of the official logo. SBE chapters and members may use the official SBE logo on chapter newsletters, websites, meeting report forms, etc. Members may use the official logo to indicate their status as an active member on business cards, personal websites, letterhead, etc.

Another area where the SBE has made significant progress, is legislative issues. Each year the SBE Board of Directors adopts legislative goals based on recommendations from the government relations committee, general counsel and interested members. The plan serves as a guideline for the society on how it is to focus its resources in the areas of legislation and media regulation that affect membership. Having completed most of the 2011 Legislative Goals the new government relations committee chair has been charged with developing goals for 2012.

Our education and certification programs have been growing stronger every year. The education program provides affordable education to our members using various instructional methods. These SBE University and online programs are designed to help broadcast engineers keep up with the ever-changing demands of the job and the industry, help prepare for SBE Certification and qualify for SBE Recertification. If you feel there is a course that is not available but should be, please contact Kimberly Kissel by email at kkissel@sbe.org. SBE Certification is recognized nationally and internationally. The SBE has been contacted on various occasions to help develop other certification programs in allied fields outside of the United States. We offer certifications from the operator to the Certified Professional Broadcast Engineer. There is a certification level for every broadcast engineer and technician. Our Certified Broadcast Network Engineer certification will be the latest offering from the certification program. If you have been putting off getting certified, speak with your local chapter certification chair to see what level would be appropriate for your training and experience. Members can also contact Megan Clappe, mclappe@sbe.org at the national office for help or advice.

Support these companies who support the industry and the Society of Broadcast Engineers

ADC Telecommunications Inc. • 1998
Anne-Marie Gunderson (952) 917-3072
Fiber and Copper Interconnect

Advanced Broadcast Solutions • 2008
Mark Siegel (206) 870-0244
Systems Integrator

American Tower Corporation • 2000
Peter A. Starke (781) 461-6780
Broadcast Tower Development/ Construction/Management

Anton/Bauer Inc. • 2004
Kyle Dann (203) 929-1100
Manufacturer Portable Power Systems

Audemat-Worldcast Systems Inc. • 2000
Christophe Poulain (305) 249-3110
Control Manufacturer

AVCOM of Virginia, Inc. • 2010
Warren "Buck" McElfresh
(804) 794-2500 ext. 312
Spectrum Analyzers

AXCERA • 1983
Mike Rosso (724) 873-8100
Broadcast Television Transmitter Manufacturer

Belden Electronic Division • 1991
Steve Lampen (800) 235-3361
Cable and Connectivity

Bexel • 2009
Garrick Lewis (818) 565-4314; Calrec
Broadcast and Audio Consoles

Broadcast Electronics, Inc. • 1978
Ray Miklius - Studio Products
Tim Bealor - RF (217) 224-9600
Radio Equipment Manufacturer

Broadcast Engineering Magazine • 1984
Bradley L. Dick (913) 341-1300
Journal of the Broadcast Industry

Broadcast Microwave Services, Inc. • 1997
Jim Kubit (805) 581-4566
Manufacturer, Transmitters, Receivers, Antenna Systems

Broadcast Supply Worldwide • 1986
Shannon Nichols (800) 426-8434
Audio Broadcast Equipment Supplier

Broadcasters General Store • 2004
Buck Waters (352) 622-7700
Broadcast Audio Video Distributor

Canon USA, Inc. • 1985
Larry Thorpe (201) 807-3300,
(800) 321-4388
Broadcast Lenses & Transmission Equipment

Communications Laboratories • 2008
Jared Maynard (321) 409-9898
Emergency Management Network

Comrex Corporation • 1997
Chris Crump (978) 784-1776
Audio codecs & Telephone Interface Products

Comsearch • 2004
Tim Hardy (703) 726-5651
Frequency Coordination Services

Content & Communications World (CCW) • 2006
Michael Driscoll (203) 371-6322
HD World, 3D World and SATCON

Continental Electronics Corporation • 1976
Michael Troje (800) 733-5011
AM & FM IBOC Transmitters

Dejero Labs • 2009
Bogdan Frusina, CTO (519) 886-8070
Complete Cellular ENG Platform

Dialight Corporation • 2006
US Headquarters (732) 919-3119
FAA Obstruction Lighting, L.E.D. Based

Dielectric Communications • 1995
Joe Zuba (609) 256-8190
or Matt Leland (207) 655-8139
TV & FM Broadcast Products

Digital Alert Systems, LLC • 2005
Bill Robertson (585) 765-1155
Emergency Alert Systems

DSI RF Systems, Inc. • 2010
Judy Mueller (732) 563-1144
RF Service/Installation/Products

du Treil, Lundin & Rackley, Inc. • 1985
Jeff Reynolds (941) 329-6000
Consulting Engineers

DVEO - Division of Computer Modules, Inc. • 2011
Laszlo Zoltan (858) 613-1818
Everything About Transport Streams

e2v • 1997
Mark Strohecker (914) 593-6831
Electronic Components, SATCom Amplifiers

Econco • 1980
Debbie Storz (800) 532-6626 or
(530) 662-7553
New & Rebuilt Transmitting Tubes

Elettronika America Inc. • 2010
Maria Quintero (305) 592-4506
Television Transmitter & Exciters

ENCO Systems Inc. • 2003
Don Backus (800) 362-6797
Digital Audio Automation & Delivery

ERI - Electronics Research • 1990
David White (812) 925-6000
Broadcast Antennas, Transmission Line, Filters/ Combiners,Towers and Services

Florical Systems • 2008
Jim Berry(352) 372-8326
Television Broadcast Automation

Frontline Communications Corp. • 2000
Stephen Williamson (727) 573-0400, ext. 160
Manufacturer Broadcast Vehicles

Fujinon, Inc. • 1986
Thom Calabro (973) 633-5600
Broadcast & Communications Products

Gepco International • 1995
Dave Chapa (847) 795-9555
Audio, Video Cable Products

Grass Valley • 2000
Andy Jackson (404) 929-5000
TV/Film Production & Broadcast Professionals

Harris Corporation, Broadcast Communications Division • 1977
Dave Hopson (TV) (513) 445-5243
Mark Goins (Radio) (513) 899-9124
Broadcast Equipment Manufacturer

Heartland Video Systems, Inc. • 2011
Dennis Klas (920) 893-4204
Systems Integrator

Image Video • 1997
Zach Wilkie (416) 750-8872 ext. 228
Under Monitor Tally Display Systems, Monitor Design and Manufacture Broadcast Equipment

Jay S. Gerber, CBT • 1999
(205) 491-6904

Kathrein Inc., Scala Division • 1985
Michael W. Bach (541) 779-6500
Antennas for Broadcasting & Communications

Ka You Systems • 2011
George Gimourginas (301) 585-4302
Audio, Video, IP - Satellite

Kintronic Labs, Inc. • 2010
Eric Miramontes (423) 878-3141
AM HD Antenna Systems

KPFF Consulting Engineers • 2004
Madison Batt (206) 926-0508
Tower Engineering, Inspections Design

L-3 Communications Electron Devices • 2003
Steve Bliek (570) 326-3561, ext. 229
Tubes, Power

Latakoo, Inc. • 2011
Rod Taylor (512) 825-8709
Internet Video Distribution

LBA Technology, Inc. • 2002
Jerry Brown (252) 757-0279
AM/MW Antenna Equipment & Systems

Lincoln Financial Media • 2007
Barry Thomas (404) 261-2970
Media Group Owner

LYNX Technik • 2007
Steve Russel (661) 251-8600
Broadcast Terminal Equipment Manufacturer

Markertek Video Supply • 2002
Andrew Barth (845) 246-3036
Audio, Video, A/V Broadcast Supply

Maxell Corporation of America • 1991
Patricia Byrne (201) 794-5900
Data/Broadcast Video Media

MAYAH Communications • 2010
Daniel Loeffler (360) 618-1474
Audio CODECS: Mobile/ 1/21 RUrack

Micronet Communications, Inc. • 2005
Jeremy Lewis (972) 422-7200
Coordination Services / Frequency Planning

Microwave Video Systems • 2011
Warren J. Parece (781) 665-6600
Microwave Equipment Rental, Sales & Service

Middle Atlantic Products • 2005
David Amoscato (973) 839-1011
Equipment, Mounting, Solutions

MoreCom, Inc. • 2009
Kyle Moorehead (763) 533-5535
Networking & AV Construction

Moseley Associates, Inc. • 1977
Dave Chancey (805) 968-9621
Digital STLs AM/FM/TV

National Association of Broadcasters • 1981
(202) 429-5340
Industry Trade Association

National Football League • 1999
Ralph Beaver
Game Day Coordination Operations

Nautel, Inc. • 2002
Jeff Welton (877) 662-8835
Radio Broadcast Transmitter Manufacturer

Nemal Electronics Int'l, Inc. • 2011
Benjamin L. Nemser (305) 899-0900
Cabels, Connectors, Assemblies and Fiber Optic

NSOEM • 2010
Robert Sorbet (281) 500-8940
Electrical Equipment Sales

NuComm/RF Central • 2009
Don Hoeler (908) 852-3700 ext. 3110
Digital and Analog Video Microwave Systems

Orban • 2011
David Rusch (480) 403-8300
Audio Processing AMFMTV

OTL • 2010
Sylvain Theriault (450) 444-7009
Tower Lights (Lighting)

Panasonic Solutions Company • 1985
Joe Facchini (201) 392-6183
Professional Broadcast Equipment

Pasternack Enterprises • 2001
Christine Hammond (949) 261-1920
Coax & Fiber Products

Prime Image, Inc. • 1997
Rodney Hampton (408) 867-6519
Digital Audio/Video Equipment

ProAudio.com - A Crouse-Kimzey Co. • 2008
Mark Bradford (800) 433-2105 ext. 560
Proaudio Broadcast Equipment Distributor

Propagation Systems Inc. - PSI • 2010
Doug Ross (814) 472-5540
Quality Broadcast Antenna Systems

Pulsecom • 2003
Winnie Evans (703) 471-2926
AM, FM and HD STLs, Copper & Optical

Quintech Electronics and Communications Inc. • 2002
Paul Campagna (724) 349-1412
State-of-the-art RF Hardware Solutions

QVC • 2011
Kevin Wainwright (484) 701-3431
Multimedia Retailer

Radian - A Division of Prestige Telecom Inc.• 1986
John McKay (866) 4-RADIAN
Towers, Antennas, TV Installation

RCS • 2003
Diana Stokey (308) 284-3007
Audio and Video Content Management

RDL • 2004
Chuck Smith (928) 778-9678, ext. 142
Audio, Video, Control & Test Equipment Manufacturer

RF Specialties Group • 2008
www.rfspecialties.com
Everything from the microphone to the antenna

Richland Towers • 2001
David Denton (813) 286-4140, ext. 4235
Tower Owner/Management

Rio Steel & Tower • 2010
Keith Cendrick (817) 225-0890
Turn-key Tower/Antenna Services

Rohde & Schwarz • 2003
Eddy Vanderkerken (469) 713-5322
Broadcast Transmitters, Test & Measurement

ROSCOR Corporation • 1998
Tom Voigts (847) 299-8080
DTV System Integrator

Ross Video Ltd. • 2000
Kyle Luther (613) 652-4886
Manufacturer, Television Broadcast Equipment

Sage Alerting Systems, Inc. • 2010
Gerald LeBow (914) 872-4069 ext. 210
Emergency Alert Systems Products

Salzbrenner Stagetec Media Group • 2009
(888) 782-4391
Professional Audio Solutions

SCMS, Inc. • 2000
Bob Cauthen (800) 438-6040
Broadcast Equipment- New/Used

Screen Service America • 2010
Graziano Casale (212) 695-8341
Broadcast Transmitter & ATSC Mobile

Seacomm Erectors, Inc. • 1997
John Breckenridge (360) 793-6564
Tower/Antenna Erections

Shively Labs • 1996
David Allen 888-SHIVELY
FM Antennas & Combiners

Sigmet • 2008
Ed Portko (610) 783-6666
Broadcast Equipment Support Sales

Snell Inc. • 1995
John Shike (818) 556-2616
Video Equipment Manufacturer

SpectraRep • 1998
Mark O'Brien (703) 802-2975
Coverage Maps and Services

Staco Energy Products Co. • 2010
Paul Heiligenberg (937) 253-1191 ext 128
Manufacturer Voltage Regulators, UPS

Stainless LLC/Doty-Moore • 2004
Ed Deetscreek (215) 631-1323
Towers - Engineering - Services - mods

Superior Electric • 1995
Michael J. Miga (860) 507-2025
Power Protection Equipment

Sutro Tower, Inc. • 1989
Eric Dausman (415) 681-8850
Broadcast Tower Leasing

TC Electronic • 2008
Ed Simeone (818) 665-4902
DTV Audio Level Processing

Technostrobe • 2009
Francis Lacombe (877) 578-7623
FAA lights - High Intensity

Tektronix, Inc. • 1977
James Lang (800) 833-9200
Video Test Equipment Manufacturer

Telos Systems/Omnia/Axia • 2003
Denny Sanders (216) 241-7225
Telos Systems - Talk-Show Systems

Terrestrial RF Licensing Company • 2003
Steven Slocum (888) 373-4832
FCC Broadcast Auxiliary Licensing Services

The Durst Organization – 4 Times Square • 2004
John M. Lyons, CPBE (212) 997-5508
TV/FM/Microwave Tower Site

The Switch Company • 2011
Peter Hanz (323) 645-8011
Fiber Transmission Provider

The Whitlock Group • 2000
Kevin Thompson (800) 726-9843
Broadcast and Presentation Solutions

Tieline Technology • 2003
Mary Ann Seidler (317) 845-8000
POTS, ISDN, Codecs & A/V Products

TV Magic • 2008
Bob Anderson (858) 650-3155
Broadcast Systems Integrator

Unimar, Inc. • 2001
Thad Fink (813) 643-6791 or (813) 943-4322
Tower Obstruction Lighting Designer, Manufacturer, Distributor

Vislink News and Entertainment • 1991
Nadine Frechette (978) 671-5700
Video Microwave Systems

Ward-Beck Systems Ltd. • 2004
Michael Jordan (416) 335-5999
Metering, Monitoring, Distribution, Conversion

Warning Systems, Inc. • 2008
Elysa Jones (256) 880-8702
CAP, Warning, Emergency Alert

Wheatstone • 2010
Jay Tyler (252) 638-7000
IP Consoles, Routers & Processors

Wireless Infrastructure Services • 2006
Travis Donahue (951) 371-4900
Broadcast Microwave, Tower and ENG Installation, Integration Maintenance Services

Welcome New SBE Members:

New Members

William J. MacDonald - Mesa, AZ
Jean H. Hantid - Seatac, WA
Hunter M. Gorman - Shreveport, LA
Kevin M. Watson - APO, AE
Peter P. Zackowski, IV - Orange, CT
Mohammad A. Haqqani - Houston, TX
Alexander C. Hubbard - West Greenwich, RI
Joseph J. Gerardi - New York, NY
Daniel L. Grover - Siler City, NC
Evelyn J. Walton - Indianapolis, IN
David E. Budwash - Winston, GA
William A. Steinhour - Herndon, VA
Charles E. Cooper - Midland, TX
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Dan Agostino - Austin, TX
Jan L. Myers - Rising Fawn, GA
Thomas Bohnet - Fairbanks, AK
Franklyn S. Ginsburg - Washington, DC
Grant McGilvray - Denver, CO
Scott Sarkisian - Gardendale, AL
Mark Turner - Chesterfield, VA
Richard White - Cave Creek, AZ
James Regis - Pine Forest, FL
Eric F. Tepe - Smyrna, GA
Morgan Grammer - Lexington, KY
Tony D. Knox - Santa Clarita, CA
Darrell P. McCalla - Mountain Brook, AL
John R. McLaughlin - Mount Joy, PA
John C. Nielsen - Gretna, NE
Christopher L. Phillips - Redwood City, CA Wayne Quan - Sacramento, CA
Thomas Romero - Truckee, CA
Jose Toscano - Doral, FL
Marcin Zawila - Brooklyn, NY
Bradley E. Giardiello - Owings Mills, MD
Curtis D. Gomez - Burbank, CA
Jason Jackson - Louisville, KY
James W. Stanley - New Albany, IN
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Paul Weaver - Temecula, CA
Robert E. Askew - Powder Springs, GA
Wilfred A. Meys - Superior, WI

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Steven R. Finton - Quincy, IL
Joshua K. Arensberg - Los Angeles, CA
Kris D. Anderson - Denison, TX
Michael S. McCune - Glenoaks, CA
Scott A. Clifton - Naperville, IL
William L. Sutton - Greenville, MS
William F. Garner - Germantown, TN
Thomas J. Alessi - Darien, CT
Stephen B. Pless - Auburn, GA
Geoffrey Wheeler - Yorktown, NY
John W. George - Alexandria, VA
Timothy J. White - Tallahassee, FL
William R. Hartman - Spring, TX
Jon C. Hartmeyer - Zanesville, OH
Russ A. Abernathy - Cordova, TN
Jessica A. Rye - Wichita, KS
Donald J. Trapp - Westminster, CO

New Student Members

Eric D. Hughey - Lee's Summit, MO
Clint T. Mason - Napa, CA
Ledion Isufaj - Columbus, OH
Michael J. DeLaRosa - Palmyra, MO
Adam R. Heege - New Milford, CT
Carl B. Polson - East Wenatchee, WA
Ricardo R. Velez - Concord, CA

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Alfonso O. Lopez - Miami, FL

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