



the SIGNAL

BIMONTHLY PUBLICATION OF THE SOCIETY OF BROADCAST ENGINEERS

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2009**

Volume 22, Number 1

3

**Ennes Workshop at NAB
in Las Vegas: Continuing
the Digital Transition**

5

**SBE releases the new
7th Edition
Television Operator's
Certification Handbook**

13

**Take your career to the
next level by
attending the new
SBE 2009 Leadership
Development Course**

16

**Busting the myths about
AM Modeling**

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on the web yet?*

www.sbe.org

SBE chapters volunteer in DTV transition preparations

As February 17th fast approaches, many SBE Chapters are working to ease the transition from analog to digital television for the public. Volunteers from a number of chapters have been staffing phone banks as various TV markets run DTV/analog tests for their local viewers, while other chapters have organized meetings and demonstrations in their communities.

Chapter 39 in Tampa has been involved in several activities relating to the digital transition. The chapter organized a Public Awareness Seminar on November 12 at the Hillsborough County Offices building in downtown Tampa. The



Members of Chapter 39 Tampa participated in a live call show on December 10 by radio station WMNF-FM. L-R: Michael Galik, Bob Hardie and Rob Lorei, WMNF Radio Host.

program consisted of a panel of industry representatives who provided a presentation of the DTV transition from their perspective. It was followed

See DTV on page 12

SBE Introduces the *SBE University*

The Society of Broadcast Engineers has announced the opening of the SBE University, a series of on-line, on-demand courses designed to bring expert instruction on a variety of technical radio and television topics to broadcast engineers at an affordable price.

Beat the recession with these all-new, affordable "nuts and bolts" courses available to take anytime at your convenience. No travel, hotel or other costs to eat up your limited training budget, these courses are developed

by experts for the SBE. Courses are reviewed before publication by the SBE Education Committee. Certificates of completion from the SBE will be sent to those who complete a course.

The first three courses are on topics of interest generally to radio engineers and are authored by Cris Alexander, CPBE, AMD, DRB, Director of Engineering at Crawford Broadcasting Company. They are now available for enrollment. Courses in television technology and

See UNIVERSITY on page 10

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Ennes Workshop at NAB in Las Vegas: Continuing the Digital Transition

The 2009 NAB Broadcast Engineering Conference (BEC) will open on Saturday, April 18 with the Ennes Workshop, presented by the Society of Broadcast Engineers and in cooperation with the Public Broadcasting Service. The topic will be "Continuing the Digital Transition."

Those attending the PBS Engineering and NPR technical conferences prior to the NAB BEC will have the opportunity to attend the Ennes Workshop. The Workshop will be held at the Las Vegas Convention Center.

To attend the Ennes Workshop, you must have full NAB convention credentials. See the NAB website, www.nab.org, to register. SBE members receive \$100 off the non-NAB member conference registration rate.

ENNES WORKSHOP SCHEDULE:

8:00 – 9:00 Digital Transmission 101 Part 1



Donald Vanderweit

Presented by Donald Vanderweit, Application Engineer with Agilent Technologies, Inc. of Manhattan Beach, Calif.

From Morse code to 8-VSB, QAM, and IBOC, digital radio has progressed within a generation from low-speed specialized applications to become the dominant means of transmitting information via radio communications. Each year, the Ennes sessions begin with an early-bird tutorial, and this year we are grateful to present Donald Vanderweit of Agilent as our guest educator. The tutorial will cover methods of digital modulation, measurements and impairments, and reinforces and expands what you already might know of this now essential part of broadcast engineering.

9:10 – 9:55 Digital Transmission 101 Part 2

9:55 – 10:30 IBOC Performance: The 1% or 10% Solution

Presented by Mike Starling, Vice President & Chief Technology Officer, National Public Radio of Washington, DC.

Improved HD Radio coverage and new features in the HD Radio system are hot topics in today's terrestrial radio industry. Both iBiquity Digital and NPR Labs have conducted additional technical analysis which will be discussed. This presentation will provide essential information and perspective on the industry's work towards a consensus recommendation for FCC action on a managed HD Radio power increase authorization. Mike Starling of NPR Labs and Steve Densmore of iBiquity Digital discuss latest developments and highlight important new features of the HD Radio system.

10:30 – 11:00 IBOC's Opportunities

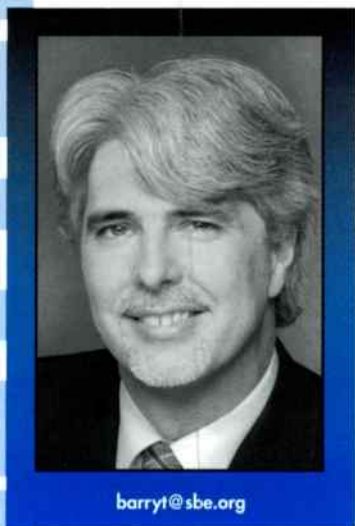
Presented by Steve Densmore, Broadcast Technology Manager at iBiquity Digital Corporation in Columbia, Md.

Steve Densmore of iBiquity Digital provides more perspective on IBOC and the current topic regarding IBOC power increases.

11:00 – 11:35 Five Good Reasons to use a Tube for High Power FM+HD Radio

Presented by Geoff Mendenhall, VP Research & Development, Harris Communications Division, Mason, Ohio.

Happy New Year!



BY **Barry Thomas, CPBE, CBNT**
SBE President

Happy New Year! Many of us are probably glad to see 2008 end but we are facing incredible challenges in 2009. The numbers and predictions have been dire but I also see signs of great hope as we progress into the new year.

The Importance of Fellowship

I have mentioned many times the advantages of SBE participation during difficult career times. We've seen increased activity in our Career Resources web site sections serving as yet another indication that we're in difficult times. These resources are excellent but they are no substitute for personal interaction and the networking opportunities afforded by your local chapter. If you have not participated in your chapter meetings, I strongly encourage you to do so and support your chapter's work as much as possible.

If you are like many members and are not near a regular chapter meeting, we have some alternate options. Ham operators can participate in the monthly meetings on the HF Hamnet and the IRLP Hamnet... Details are at sbe.org. We also have what I like to refer to as our "ongoing chapter meeting"; the SBE Roundtable. This is an excellent way to stay connected to SBE Members world-

wide. For those of you who participate in the Facebook and LinkedIn online social networks, SBE groups have been formed that include those interested in broadcast engineering.

I specifically want to encourage you to connect with your colleagues and to let the Society help. Difficult times can be much easier with the support of those who understand the challenges we all face.

A Foundation in Education

We have recently launched The SBE University and give you some details on page 1 in *The Signal* and online. This program is composed of on-demand courses available at an extremely reasonable cost on our web site.

This new educational program is being inaugurated by an excellent nuts-and-bolts course on AM antenna computer modeling. I'm looking forward to signing up for this first course and the many that will follow. All of these programs are being produced because of the long-suffering efforts of Education Committee Chairman, Cris Alexander and our Executive Director, John Poray. I hope you'll take advantage of them and, when you get the opportunity, thank John and Cris for their efforts in making them happen.

I also want to encourage you to help us to develop more of these programs. The extensive knowledge you have should be shared. Our new SBE University could be a great way for you to do that.

Resource Efficiency

In the last issue of *The Signal*, I mentioned the changes we recently implemented on the SBE advocacy program, specifically our Government Relations Committee. Some of the purposes of the changes were to more closely reflect the

work the committee was actually doing and to better align the SBE National efforts with benefits to our members. To that end, SBE Vice President and Strategic Planning Committee Chairman Vinny Lopez recently sent an email survey to all members who have supplied us their e-mail addresses. The Society has done some truly amazing things over the years through its legal advocacy efforts: Being a voice of reason to the FCC, sometimes being the lone voice in defense of Broadcast Auxiliary frequencies (including STL, RPU, wireless mics, 2GHz links, etc.) and effectively managing the use of scarce BAS frequencies through SBE frequency coordinators. The landscape has significantly changed with US Government entities such that sound logic, good engineering, and a reasoned argument is no longer the sole formula for success... even with a technical bureau like the FCC. Often, significant lobbying efforts have been expended to trump the laws of physics in the minds of FCC Commissioners. Lobbying efforts we try to combat with the modest financial resources of the Society of Broadcast Engineers. In an effort to keep your membership dues reasonable, we have not invested the significant dollars to dispatch political action committees (PACs), professional lobbyists, a big presence on Capitol Hill, or large and powerful firms. Unfortunately this sometimes means we have lost the fight or that our battle seems to never end.

For the Society's FCC legal efforts, we depend on the incredible and effective service of Chris Imlay, Esq. of Booth Freret Imlay and Tepper, combined with volunteer efforts of our committee chairs like past president and Government Relations Committee chairman Richard Rudman; past FCC Liaison Committee

chairman Dane Ericksen, EAS Committee chairman Clay Freinwald, Frequency Coordination Committee chairman Ralph Beaver and others. Because these people are volunteers with careers to support; you can imagine the time available for advocacy work may be limited when compared with the full-time lobbying efforts funded by the companies behind the technically-challenged "Trucker TV" project. This is not to diminish the enormous commitment all of these men have made to our efforts. In fact, they consistently go far above and beyond

the call of duty for the Society and have done great things. We all appreciate their work. It's just that the resources of, for example, many of the industry competitors who are mining broadcast BAS for new businesses are greater than ours by orders of magnitude: Microsoft, T-Mobile, Google, Flying J Truck Stops, Shure, Sennheiser, . . . the list goes on.

So here's the question that was the basis of the survey: How do we best allocate the Society's limited, mostly volunteer resources across these efforts – FCC Advocacy, education, certification, BAS

frequency coordination, EAS, chapter support, regional and national conventions – while working to assure the tangible benefits of your membership?

Our survey, which we will start interpreting this month, may help us get a better idea of your opinions but I'd like to hear more. I want to encourage you to discuss this on the SBE Roundtable. I am very interested in discussing this or any SBE issue with all of you using this great online forum.

YOU ASKED FOR IT AND NOW IT IS HERE!

The 7th edition of the SBE Television Operator's Certification Handbook is now available to purchase. The 7th edition has been rewritten and updated to include the latest developments in digital television. It is designed for the entry level, non-technical pool of applicants that fill master control positions in today's television marketplace.

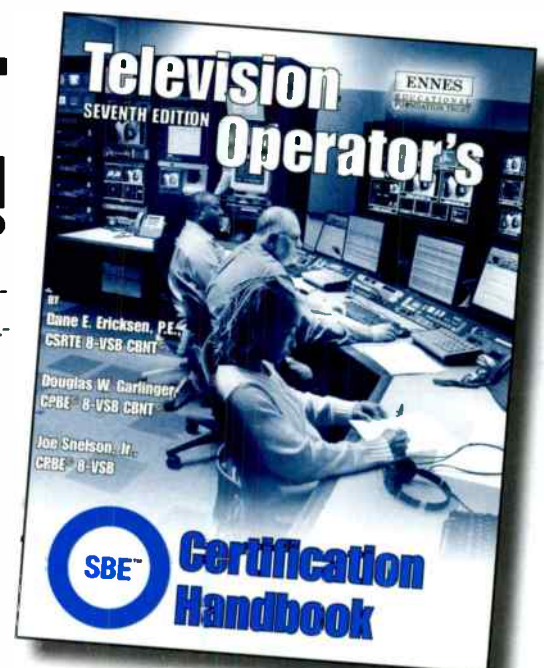
The SBE Television Operator's Certification Handbook is written by three experts in television broadcast engineering including, Dane E. Ericksen, P.E., CSRTE, 8-VSB, CBNT, senior engineer with Hammett & Edison, Inc., Consulting Engineers and a member of the SBE national board of directors; Douglas W. Garlinger, CPBE, 8-VSB, CBNT, of MediaFlo-USA, whose career in television engineering management spans more than 35 years. Garlinger earlier served as director of engineering for LeSea Broadcasting for 23 years; Joe Snelson, Jr., CPBE, 8-VSB, is vice president and director of engineering for the Meredith Broadcasting Group, a position he has held since 1998. All three men are members of the national SBE Certification Committee.

The 7th edition includes practical information on the Emergency Alert System, FAA tower lighting, remote control operation, FCC power levels, program sources, ingesting, Children's Television time restrictions and more. It contains new and updated information on how TV facilities work, operating the station, the duties of master control operators and maintaining the station logs. It explains the digital signal path as programming passes through typical equipment found in a modern digital master control.

The last chapter provides a basic introduction to the principles of 8-VSB transmission, video compression, PSIP and the DTV formats used to display the video picture on the home receiver.

The SBE Television Operator's Certification Handbook is used by many employers as a gage of the Master Control Operators knowledge. The book is also purchased for high school and college classes. Purchase of the handbook includes an optional exam that leads to certification by the SBE as a Certified Television Operator (CTO).

The price for one copy is just \$49.00, plus \$3 for shipping and handling, and includes the cost of the certification exam. Educational institutions will receive a 10% discount on the purchase price when ordering five or more copies. All others will receive a 5% discount on orders of five to nine copies and 10% on orders of ten or more copies. For more information or to order, please contact the SBE National Office at (317) 846-9000 or cwaite@sbe.org. Orders may also be made on-line at the SBE website at the SBE Bookstore, http://sbe.org/edu_books.php.



FCC: Deception, distrust and change coming

BY **Chris Imlay, CBT**

SBE General Counsel

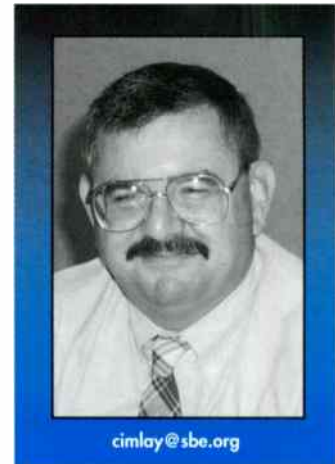
I am very happy to be working closely once again with former SBE President Richard Rudman, a good, long-time friend and to a large extent a mentor for me on broadcast engineering topics. Richard has accepted the invitation of SBE President Barry Thomas to head the SBE's Government Relations Committee in its new configuration. No one is better than Richard at FCC advocacy. He has been advocating in Washington on SBE's behalf at least as long as I have, which now has been almost 30 years.

Richard was at KFVB in Los Angeles in 1979, and was pretty much the expert at broadcast auxiliary issues in Los Angeles, the ultimate trial by fire. Although he was not much older than me, he taught me volumes about broadcast operations and how auxiliary facilities are configured and how they are used. I recall many times when Richard would come to Washington on Group W business. He always carved out a day or two to come to my office, sit down with me, drink my bad office coffee (or, during the darkest times, "new Coke"), and we would pound out pleadings to file with the FCC about BAS topics on SBE's behalf.

This was at a time when the SBE Board of Directors was not at all sure that SBE ought to be active in FCC proceedings at all. But Richard persuaded the Board that SBE should be viewed by the FCC as a resource, and in order to do that, SBE would have to file comments that were constructive and helpful, and represented the "can-do" attitude of broadcast engineers. Richard looked for win-win solutions to regulatory problems, and told the FCC not what it was doing wrong, but how to do it right.

This column is not about Richard, but about his philosophy. When Richard became President of SBE, he firmed up as SOP that SBE should be perceived as a "resource" in broadcast technical regulatory matters. It is a good role for your Society, I think, but the environment in Washington is such that it is a role that is increasingly difficult to effectuate. This is because the Congress and the FCC are decreasingly interested in technical accuracy, and in the actual effects of their actions. Instead, policy decisions are made on the basis of political dogma. I thought about SBE's "resource" role recently, when I read the House Energy and Commerce Committee's majority staff report released December 4, 2008. It was a stinging indictment of the FCC's management under soon-to-depart FCC Chairman Kevin Martin. It is really something. If you haven't read it yet, take some time and read it. It is called *Deception and Distrust: the Federal Communications Commission Under Chairman Kevin J. Martin*.

The report is the result of an investigation that began in the Spring of 2008 by the House Energy and Commerce Committee, which until recently was headed by Congressman Dingell of Michigan. We met with the investigative counsel for the Committee last July. In a two-hour meeting with the investigative counsel and his team, we talked about the FCC's disinterest in technical accuracy in decisionmaking, and the FCC's willingness to sweep technical evidence that disagrees with its preconceived policy position under the rug, in order to clear the way. That is what happened in the Broadband Over Power Line proceeding and it is what has just happened in the TV White Spaces proceeding.



We asked the House Energy and Commerce Committee investigators last Summer why they were taking on the FCC mismanagement issue so late in the term of FCC Chairman Martin. After all, Martin would likely be replaced no matter who won the election last Fall. They said that they wanted to have a Committee report that would serve as a roadmap for Martin's successor so that the problems that arose in the Martin FCC would not be repeated by his successors. Well, whatever.

In any case, they said that there would likely be hearings on this. We thought we would have a chance to submit some testimony when the hearing occurred. After our meeting, though, for the rest of the summer and into the fall, we weren't told much about the status of the investigation, or when any hearings might be held. I thought the matter was pretty much dead when, in early December, the report issued. But it wasn't what we expected. Instead, it was a majority staff report. There is a big difference between a full Committee Report of the House Energy and Commerce Committee (one of the most powerful committees of the House of Representatives) and a majority staff report. The Democratic majority staff might understandably be critical of the Republican FCC Chairman toward the end of his tenure at the agency. But it is one thing to have the majority staff issue a report like that. It is something else entirely to have an entire Committee con-

demn your tenure at the helm of the FCC. It is kind of like the difference between being stung by a hornet and being bitten by a barracuda. Neither is any fun, but one is much worse than the other.

Still, this report is pretty harsh. It found specifically that the Chairman manipulated, withheld or suppressed data, reports, and information. And this withholding of information was not just from the public. It was withheld by the Chairman's office from other Commissioners' offices as well. It found that important Commission matters have not been handled in an open and transparent manner, thus raising suspicions both inside and outside the Commission that some parties and issues are not being treated fairly. This is the part that concerns SBE the most. The FCC simply can't be trusted at the moment to be in possession of engineering or technical data, and to configure its regulatory decisionmaking in light of that data. It doesn't seem to matter whether the information is provided by a reputable, trusted source or even the FCC's own engineers. It won't use that information if the information is contrary to the way the FCC wants to go. This is very serious. The agency has to be managed in a way that technical data is fairly and openly evaluated. Too often, recently, the FCC can't be trusted to do that at all.

The Report found that the Commission has failed to carry out some important responsibilities. That, I can attest to myself, and so can anyone else that serves on the SBE's Government Relations Committee. FCC technical regulatory items have languished for years at a time at FCC, and that situation has been far, far worse under Kevin Martin than any other prior time I can recall. Very few items have moved under Martin (other than DTV issues) for a long time now. The list of items on circulation at FCC (I have the dubious honor of representing one party in the oldest item on that list -- now about five years old), which is controlled

by the Chairman's office, is longer now than at any prior time in the FCC's history.

Perhaps the worst indictments in the report pertain to Martin's relations with other Commissioners and his handling of his own staff. It found that the Chairman's "heavy-handed, opaque and non-collegial management style has created distrust, suspicion, and turmoil among the five current Commissioners." A review of separate statements of Commissioners in recent months has borne this out. It does appear that other Commissioners have sharply criticized certain actions of the Chairman more publicly than ever before. Finally, the Report found that Commission staff have not been efficiently managed. No surprise there. Staff I have spoken with have been rather candidly critical of the Chairman's insistence on making all decisions, reviewing all staff output, no matter how low down the chain, and in general, failing to empower virtually any member of the staff. Instead, the staff feels intimidated. Indeed, the Report said that generally, when an investigation reveals matters this serious, there would be a hearing. But there was sufficient intimidation of the staff, and such fear of reprisal by the staff, that the Committee discovered that key witnesses would not be willing to testify or even be identified as a witness for fear of retaliation. There is most assuredly a heavy-handedness about the Chairman's office that we keep hearing about from friends on the FCC's staff. In fact, there have been a lot of people who have left the

agency since Martin came aboard, some of whom are going to be hard to replace. Especially the engineers.

How can an association like SBE contribute constructively to FCC processes, or act as a technical information resource, in an environment like this? Quite simply, we can't. But change is in the wind. The new administration will nominate a new Chairman soon. As of this writing, Commissioner Tate has just left the FCC, and the rumor mill has Kevin Martin leaving the FCC soon. Of course, it may be awhile before a new Chairman comes aboard. Perhaps the administration will appoint one of the current Democratic Commissioners as an acting Chairman. Perhaps there will be a vacancy for awhile. Even if a new Chairman is confirmed quickly though, there are issues that have to be prioritized at the agency. Technical regulatory matters are likely to lag behind. DTV Conversion has to shake out before much else is done. So it will take some patience on our part. We can hope, however, that the next Chairman will do a better job of listening than the last one did.

Renew your membership

It's that time of year again, time for Regular, Senior, Associate and Student Members to renew their SBE memberships.

SBE Membership dues for Regular, Senior and Associate Members are \$63. Dues for Student Members are \$20.

Membership renewal notices were mailed out to all Regular, Senior, Associate and Student members in early February. If you do not receive your renewal notice, contact the SBE National Office at (317) 846-9000.

Membership Renewals for Youth and Sustaining Members are due on the anniversary month of joining the Society.

One viewpoint on the road to DIGITAL TV

BY **Ralph Hogan, CPBE, CBNT, DRB**

Member national Certification Committee and SBE Treasurer

The television digital transition or as some call it “analog shut off” for me involved several steps starting in 1998. Washington State University had two stations and a TV translator to convert to digital. One station, KTNW, is located in Kennewick, WA, the other KWSU in Pullman, WA, with a TV translator in Lewiston, ID. The FCC Table of Allotments indicated the digital channel for Kennewick would be 38 and the digital channel for Pullman would be 17.

After several iterations and various scenarios, it was decided that WSU would build out KTNW to full power and put in a low-power transmitter for KWSU, which would allow reversion of KWSU to channel 10 at a later date and flash cut the existing channel 15 TV translator. Initial estimates for just the transmitter build out were in excess of \$8 million, which was going to be impossible for WSU to obtain. The station had to find a way to conserve money wherever possible.

To maximize the return on investment in master control equipment, WSU collaborated with KSPS in Spokane, WA, to construct a shared facility. Initially, it would operate three analog signals, six digital streams and feed a school district cable system. To capitalize on an existing 6 GHz digital STL, radios were upgraded and bandwidth was converted from channelized TI to a 45Mb/s single pipe for digital transport of programming to the transmitters. To further save funds, WSU partnered with Harris to beta test the new NetVx digital transport STL. At first, the system was not stable because of clocking and buffer overflow problems. When the vendor resolved these problems, the system became rock solid.

The full-power construction of KTNW was completed without much problem. A new tower was constructed to replace the existing tower and a new digital transmitter and antenna were installed, which allowed KTNW channel 38 digital to begin operating in April 2003. Shortly after completion, the existing analog transmitter completely failed and had to be replaced with emergency unbudgeted funding. Fortunately, the new transmitter on analog channel 31 can be easily modified to provide backup for the digital 38 transmitter when it is no longer needed for analog use.

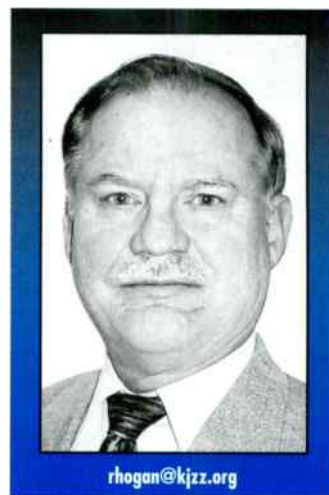
The KWSU station in Pullman is in a small college town in eastern Washington. Not having many financial resources to work with, WSU attempted to hold conversion costs to a minimum. KWSU applied for a low-power digital construction permit that would allow a digital signal to be on the air to fulfill FCC requirements of having a digital signal on the allocated digital channel 17. This consisted of a 1kW Thales digital transmitter and a low-power antenna mounted on an existing microwave tower next to the main TV tower. When a tower analysis was prepared on the existing TV tower, it was found that the top 100’ of the tower would need to be replaced if any work was done on the tower. With no funds to replace the tower an antenna sweep was completed on the existing analog channel 10 antenna to see if it would be capable of digital operation. The first study was inconclusive so a second test was run using a digital exciter on channel 10 to energize the antenna. Measurements were made proving that the existing antenna would indeed pass digital without any problems. To further

conserve funding; Larcan, the manufacturer of the

analog transmitter, was contacted to see if the existing analog transmitter could be converted to digital instead of replacing it. Larcan confirmed that modifications were possible. The conversion would entail replacing everything except the power supply and cabinet. The upgrade took place during the first week of December, and I am happy to say that KWSU channel 10 digital started operating on Dec. 8, 2008. All that is left to do now is to repurpose the 1kW Thales transmitter to operate as a translator in Lewiston.

There were many twists and turns along the way, but the transition at WSU was accomplished with a dedicated staff of planners and technicians to maximize service to the viewers and minimize the cost of conversion without sacrificing a quality installation.

With the sunset of analog and the digital conversion of full power TV stations across the country finally being completed, the SBE certification exams will be reflecting the same with an increased emphasis on digital and a reduction of analog television questions. The certification committee has reviewed the database, removed most of the analog technology questions, and has replaced them with current digital technology. The updated database will be ready for the April exam period. Keep in mind that not all analog TV is going away since Class A and translator stations do not have a sunset date so some analog questions will remain in the question pool.



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.

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Fred Willard, Arnold, MD – Chapter 37

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William Kozel, H, North Olmsted, OH – Chapter 70
Alexander Schneider, Kingwood, TX – Chapter 105
Brian Wheatley, Toronto, Ontario Canada
Fred Willard, Arnold, MD – Chapter 37

CERTIFIED BROADCAST TECHNOLOGIST® (CBT)

Brian Wheatley, Toronto, Ontario Canada

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®)

James White, Palm Springs, CA – Chapter 131

NOVEMBER EXAMS

"Thank You" CHAPTER CERTIFICATION CHAIRS FOR YOUR ASSISTANCE

CERTIFIED SENIOR TELEVISION ENGINEER (CSTE®)

Robert Blauvelt, Royal Palm Beach, FL – Chapter 88
Wayne Murphy, Wildomar, CA – Chapter 131
Steve Paugh, Madison, WI – Chapter 24

Daniel Rapak, Randolph, NJ – Chapter 15
Kenneth Romans, Seapooose, OR – Chapter 124

CERTIFIED SENIOR RADIO ENGINEER (CSRE®)

George Corso, Pembroke Pines, FL – Chapter 53

CERTIFIED BROADCAST RADIO ENGINEER (CBRE®)

John Beck, Raymore, MO – Chapter 59
Donald Bohrer, El Paso, TX – Chapter 38
David Hodges, Blacksburg, VA – Chapter 78
Matthew stadmueller, Salt Lake City, UT – Chapter 62
John Tyler, Pawcatuck, CT – Chapter 14
Sam Virgillo, Yardley, PA – Chapter 18

CERTIFIED BROADCAST TELEVISION ENGINEER (CBTE®)

Daniel Smith, Perris, CA – Chapter 131

CERTIFIED AUDIO ENGINEER® (CEA®)

John Robert Ross, Brownsville, TX
Zsolt Vicsacsan, Phoenix, AZ – Chapter 9
Sam Virgillo, Yardley, PA – Chapter 18

CERTIFIED VIDEO ENGINEER® (CEV®)

Dana Cole, Stillwater, OK – Chapter 85
John Robert Ross, Brownsville, TX

CERTIFIED AM DIRECTIONAL SPECIALIST (AMD)

Thomas Ringer, Herridon, VA – Chapter 37

CERTIFIED 8-VSB SPECIALIST (8-VSB)

Dennis Baldrige, Hillsboro, WI – Chapter 24
John Collinson, New Port Richey, FL – Chapter 39
Louis Johnson, IV, Clinton Township, MI – Chapter 82
John Robert Ross, Brownsville, TX
Danile Zillich, Albuquerque, NM – Chapter 34

CERTIFIED BROADCAST NETWORKING TECHNOLOGIST® (CBNT®)

Steven Cordova, San Francisco, CA – Chapter 40
William Epperson, Wellington, FL – Chapter 88
Sean Fahey, West Valley, UT – Chapter 62
William Ford, III, Lynchburg, VA – Chapter 78
Mack Friday, Merrillville, IN – Chapter 26
David Gooding, Elkhart, IN – Chapter 30
Glenn Gunnufsen, Hardy, VA – Chapter 78
Wilson Helmericks, Denver, CO – Chapter 48
David Hodges, Blacksburg, VA – Chapter 78
Richard Hood, Jr., DeBary, FL – Chapter 42
Lee Howder, Fontana, CA – Chapter 131
Kathryn Neal, Bloomington, IN – Chapter 25
Jon Olesnevich, Allison Park, PA – Chapter 20
Michael Olson, Centerville, UT – Chapter 62
Brian Ouellette, Chester, CT – Chapter 14
Daniel Rapak, Randolph, NJ – Chapter 15
Anthony Singleton, Victorville, CA – Chapter 131
Andrew Stern, San Francisco, CA – Chapter 40
Dana Swann, Ellicott City, MD – Chapter 37
Zsolt Vicsacsan, Phoenix, AZ – Chapter 9
Lory Watkins, Burien, WA – Chapter 16

CERTIFIED BROADCAST TECHNOLOGIST® (CBT)

Chris Connely, Clovis, CA – Chapter 66
Gregory Laughrin, Albuquerque, NM – Chapter 34
Michael Olson, Centerville, UT – Chapter 62

CERTIFIED RADIO OPERATOR® (CRO)

Victor Cenusa, Westfield, NJ – Chapter 15
Tiffany Credle, New York, NY – Chapter 15
Valerie Rostkowski, Brooklyn, NY – Chapter 15

CERTIFIED TELEVISION OPERATOR® (CTO®)

Evan Pavlica, Reseda, CA – Chapter 47

SPECIAL PROCTORED EXAMS

CERTIFIED BROADCAST NETWORKING TECHNOLOGIST® (CBNT®)

Mark Steers, Raymore, MO – Chapter 59

Stephen Brown, Brooklyn Park, MN
Joseph Brunke, Plover, WI
Nathan Chervek, Saint Paul, MN
Joseph Conlon, Inner Grove Heights, MN
Eamon Coyne, Saint Paul, MN
William Dahlstrom, Rochester, MN
Michael Davison, Northfield, MN
Randall Greenly, Saint Paul, MN
Glenn Griffin, Saint Paul, MN
Frank Grundstein, Wynnwood, PA
Michael Halleck, Saint Paul, MN
Robert Hayles, Plymouth, MN
Michael Hendrickson, Lakeville, MN
Donald Heppelmann, Saint Paul, MN
Thomas Nelson, Saint Paul, MN
Joseph Niffen, Bloomington, MN
Larry Oberg, Minneapolis, MN
Michael Ostlund, Bloomington, MN
Douglas Rowe, Saint Paul, MN
Harold Schardin, Forest Lake, MN
Wayne Selly, West Saint Paul, MN
Douglas Thompson, Osceola, WI
Michael Weber, Woodbury, MN

Doug Zastoupil, Bismarck, ND

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CERTIFIED BROADCAST TECHNOLOGIST® (CBT)

Mariann Belger, San Diego, CA – Chapter 36
Randall Miller, Jr., Harrisburg, PA – Chapter 41
Dale Podracky, Blacksburg, VA – Chapter 33

CERTIFIED RADIO OPERATOR® (CRO®)

CERTIFIED RADIO OPERATOR® (CRO)
Michael Stark, Santa Monica, CA
Kristie Williams, Boise, ID

PASADENA CITY COLLEGE

Alejandro Cano
Steve Conde
Thuy Mao
Jacob Murray
Johnathan Navarro
Kevin Sevillano
Josh Zielinski

CERTIFIED TELEVISION OPERATOR® (CTO®)

CERTIFIED TELEVISION OPERATOR® (CTO®)

Randi Hyden, The Woodlands, TX
Keith Jacoby, Bozeman, MT
Russell Jones, Cullowhee, NC
Jessica Perdomo, Cullowhee, NC

SKY ANGEL

William Brooks
William Davis
Chris Dennison
Donald Jordan
Dustin Miller
Joseph Miller
Sean Mills
G. E. Rodrick

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®)

Thomas Beck, Southaven, MS – Chapter 125
Charles Mikowski, Grand Rapids, MI – Chapter 102
Gary Stigall, San Diego, CA – Chapter 36

CERTIFIED BROADCAST RADIO ENGINEER (CBRE®)

Raymond Bagby, Weatherford, OK – Chapter 85
Charles Dube, East Longmeadow, MA – Chapter 14
Mack Friday, Merrillville, IN – Chapter 26

CERTIFIED BROADCAST TELEVISION ENGINEER (CBTE®)

Robert Dickinson, Wasilla, AK – Chapter 89
John Eppler, Westerfield, CT – Chapter 14
Kenneth Fuller, Calabasas, CA – Chapter 15
David Haralambou, Marlborough, MA – Chapter 11
David Kuether, Brea, CA – Chapter 47
Joe Wargo, Lyndhurst, OH – Chapter 70

CERTIFIED AUDIO ENGINEER® (CEA®)

James Bigwood, Owings Mills, MD – Chapter 46
Jay Champagne, Delray Beach, FL – Chapter 110

CERTIFIED VIDEO ENGINEER® (CEV®)

David Buell, Oak Grove, MO – Chapter 59

CERTIFIED BROADCAST NETWORKING TECHNOLOGIST® (CBNT®)

Raymond Bagby, Weatherford, OK – Chapter 85
Michael Maville, Boca Raton, FL – Chapter 88

CERTIFIED BROADCAST TECHNOLOGIST® (CBT)

Jason Beard, Douglasville, GA – Chapter 5
Yezmin Blue, Seattle, WA – Chapter 16
Adam Daniel, Tacoma, WA – Chapter 16
James Grace, Mount Vernon, SD
Paul Herndon, Aurora, CO – Chapter 48
Robert Spain, Thermopolis, WY – Chapter 129
Norman Stein, Laurel, MD – Chapter 37
Deno Thomatos, Denver, CO – Chapter 48
Robert Weiss, Philadelphia, PA – Chapter 18

CERTIFIED TELEVISION OPERATOR® (CTO®)

Jennifer Etrog, Brooklyn, NY
Tony Flores, San Antonio, TX
Robert Glover, Randolph, MA
Steve Hurley, Chicago, IL
Michael Langlois, Worcester, MA
Richard Martinez, San Antonio, TX
Kurt Race, Grand Rapids, MI
Richard Sharp, Jr., Greenville, MI
Eric Smith, Arvada, CO – Chapter 48
Michael Tonges, Canton, OH – Chapter 70
Lisa Varboncoeur, Bryon, IL

CERTIFIED RADIO OPERATOR® (CRO)

Kyle Smith, Los Angeles, CA

additional radio courses will be added soon. Descriptions of the courses now available follow.

AM Antenna Computer Modeling Course

The FCC now permits moment method computer modeling of many AM directional arrays as an alternative to traditional cut-and-try adjustments and field strength measurements as a means of performance verification (“proof”). (See the related article on page 16 of this issue of the Signal. ed.) This alternative has the potential in many cases of saving a tremendous amount of time and expense, allowing the licensee of an AM station using a directional antenna to tune up and proof the antenna system for a fixed and greatly reduced cost.

Modeling of AM antenna systems, while not particularly difficult, does require some specific steps and proper model calibration in order to be valid and acceptable to the FCC. This course will take the student through the modeling and measurement process specifically for AM broadcast antennas, providing a general understanding of the process and procedures as well as operation of the recommended software.

Course Syllabus

Broadcast Moment Method Modeling

- Overview
- Limitations of Traditional Field Strength Measurements
- Method of Moments Basics
- FCC Modeling Rules
- Using Moment Method Modeling for Directional Antenna Proofs
- A Step-by-Step Modeling Example
- A Loop Sampling Example
- Analyzing Potential Reradiators

Measurements for AM Antenna Computer Modeling

- Field Measurement Overview
- Impedance Matrix Measurements
- Antenna Monitor Sampling Systems for Moment Method Proofs

It should be noted that this is not an omnibus method moment modeling training course. It does assume a basic understanding of modeling techniques and procedures. It is recommended that students who do not already have this basic understanding enroll in and complete a suitable training course. We recommend the ARRL's, Antenna Modeling Course. While this course focuses on amateur radio antennas, it provides an excellent understanding of the modeling process, good modeling procedure and the advantages, disadvantages and limitations of the NEC and MININEC moment method cores.

FM Transmission Systems Course

An FM transmission system, at its most basic level, consists of the transmitter, the transmission line and antenna. There are many variables within these basic building blocks, including types and sizes of antennas, size and type of transmission line, and transmitter power output. Situation-specific variables such as the allocation and class of station, permissible area to locate, permissible tower height, location of the tower site with respect to the target coverage area, and the local terrain all come into play in the proper selection of the correct tower, antenna, line and transmitter.

This course will provide the student with knowledge of all of the above-mentioned items and variables and how they impact the performance of an FM station. Upon completion, the student should have a clear understanding of the proper design, installation and maintenance of an FM transmission system.

Course Syllabus

- Antenna Site Considerations
- Antenna Gain vs. TPO
- Vertical Plane Characteristics
- VSWR Bandwidth
- Antenna Designs
- Transmission Line Types
- Transmission Line Selection
- Transmission Line Installation
- Maintenance

Matching Networks and Phasing Course

At the heart of any AM transmission system is any number of matching networks that are used to impedance match the antenna to the transmission line and transmitter and provide proper inter-element current phasing. These networks, composed of mica and vacuum capacitors and plated coils that often “sing” with modulation, are the stuff of mystery. Many capable broadcast engineers who have not previously dealt with these components and networks approach them with some trepidation, as they have for decades been the realm of the consulting engineer, things not to be touched if at all possible. While there is wisdom in leaving a working system alone, any engineer responsible for the care and feeding of an AM transmission facility should understand the networks therein.

The purpose of this course is to give the student a good overall understanding of the various types of networks used in an AM transmission system, the situations in which each might be used and calculating the leg values thereof. It also discusses the phase budget for a phasing and coupling system and the use of power divider and phasing networks therein.

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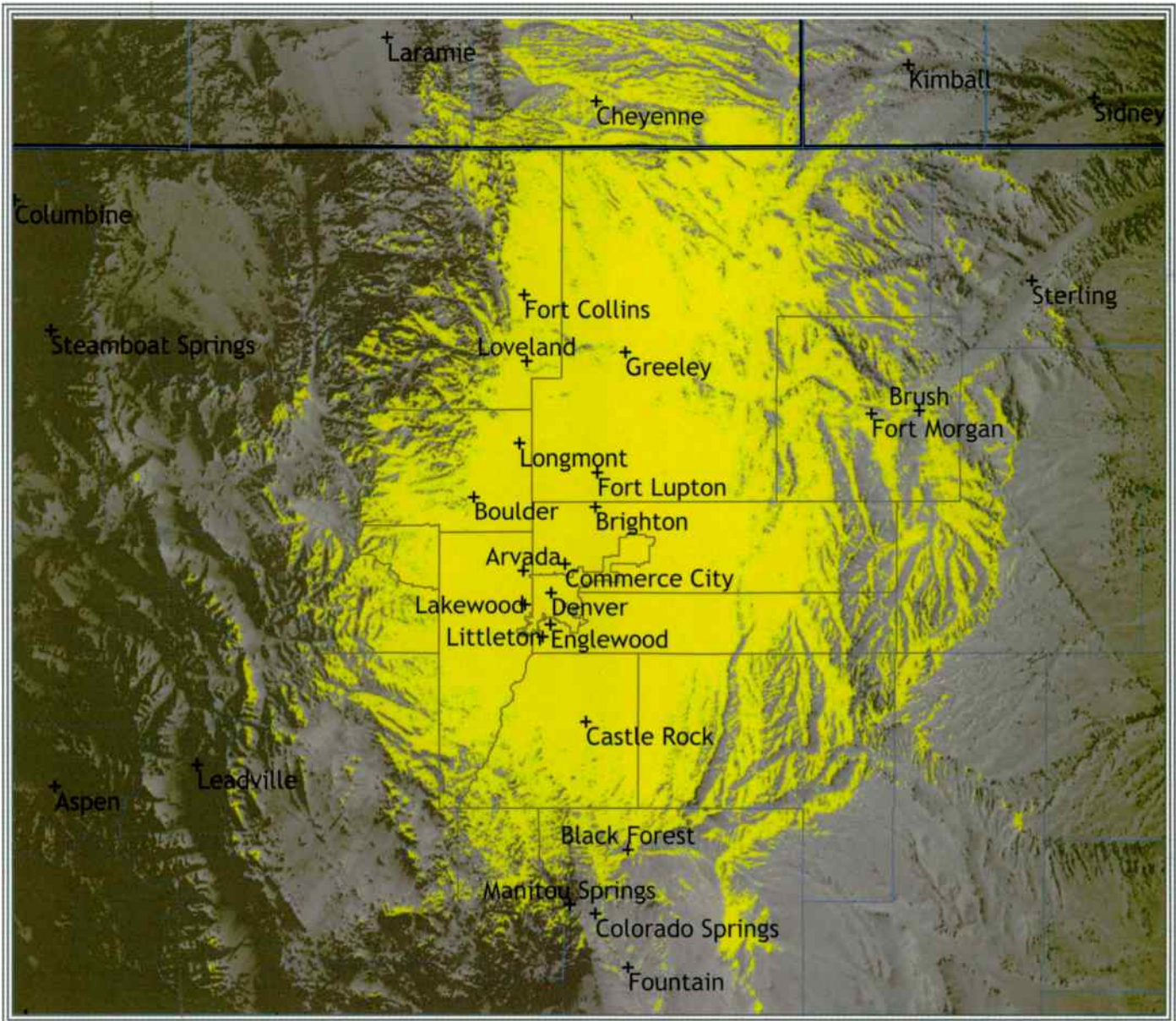
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Course Syllabus

- Matching, L and Tee Networks
- Practical Considerations for Matching Networks
- Phase Shifting Networks and Power Dividers
- Phase Budget
- Network, Divider and Shifter Designs
- Multi-Mode Systems

Enrolling in the SBE University Courses

You can register and take the SBE University courses at any time, day or night, 365 days a year. To register for any of the SBE University on-line courses, go to the SBE website, www.sbe.org, and click on the "Education" tab on the blue horizontal tool bar located near the top of the page. Then click on the "Seminars" tab located on the red drop-down box. The "SBE University" will appear at the top of the "Seminars" page. Click

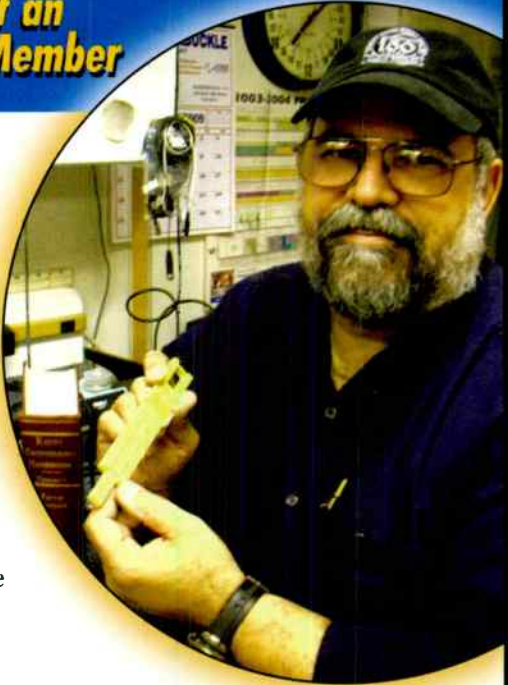
on the course of your choice to begin enrollment. You may register using VISA, MasterCard or American Express. You'll receive a unique log-in and password to access the course(s) you purchase. Once in the course, you can leave and come back at any time. You will automatically pick up where you left off.

SBE members receive a discount off the enrollment fees.

Course	SBE Member Fee	Non-member Fee
AM Antenna Computer Modeling	\$125	\$150
FM Transmission Systems	\$ 75	\$ 90
Matching Networks and Phasing	\$ 75	\$ 90

In the Circle ...

a snapshot of an SBE Member



Allen LeMelle, CPBE, 8-VSB, CBNT
 Transmitter Supervisor
 KFSN-TV 30 ABC
 Fresno, CA
 SBE Chapter 66, Joined SBE in 1988

Getting Started: My instructor, Mr. Bob Thompson, challenged everyone in the electronics class to obtain an FCC License. I accepted the challenge, got the license and a pretty good job in AM Radio in 1969. Spent six years in the Navy as a Firecontrol Technician during the Vietnam Era and returned to broadcasting at the end of the war.

Focal Point: I enjoy the local Chapter 66 membership support along with the monthly meetings and presentations.

When I'm Not Working: I can be found on the campus of the local city college. Look in the computer lab, the welding shop or the drafting lab.

A.K.A. Affectionately known as "Grumpy"! So say my wife and daughter.



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 Contact: Jassen Hahn
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by questions from the audience and included questions that had been e-mailed to the SBE Chapter 39 Website. The successful program was aired live on Bright House Cable's local access channel.

The chapter also organized a meeting on December 4, which brought the broadcasting community together to promote communications between all the stations and the cable and satellite distribution systems. Station and cable operators were able to ask specific questions of each other regarding problems they had with the transition and to work out solutions on the spot. As a result of this meeting, the local TV stations decided on seven dates and times for analog shut off soft tests.

Tampa Chapter 39 was also invited to participate in a live call-in show on December 10 by WMNF-FM. The program had so many callers regarding the transition that WMNF-FM reported receiving calls the rest of the day and into the next day.

Members of South Texas SBE Chapter 69 made a difference in their area on November 22 by hosting a digital converter box demonstration at Crossroads Mall in San Antonio. Two hundred-fifty guests visited the SBE display, where chapter members demonstrated several brands and models of digital converter boxes set up and operating into analog TV sets.

A big benefit to attendees was the chance to see functioning converter

boxes in action. Everyone had the opportunity to have one-on-one discussions with SBE member engineers prepared to discuss the digital transition in general and converter boxes in particular. Chapter members showed visitors how to set up the boxes, do automatic channel scans and adjust antennas using the tools built into the boxes.

"This has been more worthwhile than some of the speaking engagements I have done," said KVDA chief engineer Roger Topping, one of the chapter's participating members. Everyone involved had a really good time and was looking forward to doing another DTV converter box demonstration.

Central/Western Oklahoma SBE Chapter 85 joined members of SBE Chapter 56 in Tulsa at the OETA studios in Oklahoma City for a series of four DTV Transition phone bank events. With a strong turnout of SBE volunteers, the event was a success.

On Wednesday, January 14 Chapter 56 had another soft shut down of the analog transmitters in the Tulsa market. Each of the three shut downs lasted two minutes.

SBE Chapter 48 in Denver has participated in three DTV soft tests by providing volunteers for phone banks at the local PBS station. These tests have been covering all of Colorado. SBE volunteers and local station personnel handled nearly 2,800 calls from viewers who needed information about the shutdown. The tests took place on November 17, December 17, and January 14.

Chapter 88 West Palm Beach and Chapter 53 South Florida coordinated a group effort to sync the test messages to the public on December 22. The members who worked the call center received 1,449 total calls with questions about the transition.

Chapter 118 in Montgomery, Ala. manned the phone bank during a live DTV program on the Alabama Public Television Network on Sunday, January 4.

Across the nation SBE Chapters have made an impact guiding and educating the public by preparing them for the analog shut off. These SBE chapters are great examples of Society members' involvement, knowledge and commitment to assist the public through the transition.

Below three:
SBE Chapters 85 and 56 volunteered at the OETA studios in Oklahoma City working the phone bank on December 17, 2008.



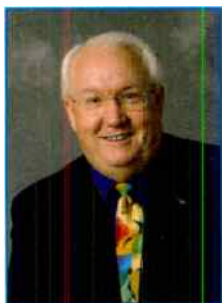
KVDA Engineer Chris Anderson explains converter box setup to a viewer. Photo by Roger Topping.



KENS Assistant Director of Technology Jerry Foonessa, CBNT and KVDA Engineer Chris Anderson show off digital converter box technology. Photo by Roger Topping.

Maximize your leadership potential

Attend the new SBE Leadership Development Course



Leadership Development Course Instructor
Rodney Vandever.

Leadership! We hear and read a great deal about leadership. All individuals are given a unique set of talents when we are born and it is our job to tap into our personal skills and abilities to maximize our potential throughout our lives. Some of the talents – natural and learned – help us on our journey to becoming a leader. All of us talk about leadership or, more likely, the lack of leadership. Whether it is our government, our business or organization, or even our own family we want and need leadership – good leadership. We think we know good leadership when we see or experience it. But what is it really? But more on that later. . .

Your professional society, the SBE, provides you with the opportunity to maximize your leadership potential by conducting leadership and interpersonal skills development in its

Leadership Development Course. This course is taught by Purdue University Professor Rodney Vandever, professor in the Organizational Leadership Department, who has vast leadership experience and has conducted leadership development for companies such as a Medtronic, Allen Bradley, and many more. In today's market place, the company and even the individual with the leadership and management skills has the competitive advantage. Enormous changes, challenges brought about by vast technical innovation, economic, political, and social changes await all of us in our work and at home. And we as individuals have the need to keep ourselves ready for change.

But, again, what is leadership? Leadership is about people and to be good, really good, it requires an understanding of a lot of people skills – skills such as communication, motivation, change, teamwork, managing conflict, problem solving, and the list could go on and on. How important is leadership? An interesting fact is the number one reason for failure among the Fortune 500 companies is poor interpersonal skills; or said another way, poor people skills or poor leadership. Interestingly enough, the number one interpersonal skill that is lacking is communication.

Leadership has two different meanings that will be explored in the SBE training. First, leadership is the catalyst that transforms potential into a new reality yielding a positive result. As a leader, you can be the catalyst to help bring about needed

change. Secondly, leadership is the art and science of getting the job done through the willing efforts of others. Key point, leadership is an art and a science. We will explore both. To learn more about leadership and the necessary people skills for success, we challenge you to stretch your leadership knowledge by attending the dynamic workshop on leadership coming to you on August 4-6, 2009 in Indianapolis. It will be fun and insightful; yet challenging and a rewarding experience. Put it on your calendar.

Winston Churchill said,

"To every man(person) there comes in his lifetime that special moment when he is figuratively tapped on the shoulder and offered the chance to do a very special thing, unique to him and fitted to his talent; what a tragedy if that moment finds him unprepared or unqualified for the work which would be his finest hour."

This leadership development course, is designed to help you be prepared for what may be your finest hour.

We look forward to seeing you there.

FOR MORE INFORMATION OR TO REGISTER FOR THE SBE LEADERSHIP DEVELOPMENT COURSE, VISIT THE SBE WEBSITE AND CLICK ON EDUCATION/SEMINARS.



A DA station is operating with antenna monitor parameters at variance but with monitor points within limits. How long may it so operate according to FCC rules?

- A. No more than 30 days without filing for an STA
- B. Indefinitely, so long as monitor points are within limits
- C. 10 days, if the FCC is promptly notified
- D. 45 days, maximum

Adding HD to FM transmission presents many challenges to the transmission system, and there are rarely perfect solutions. It would seem that the role of tubes in new transmitter designs would continue to diminish; but in the case of FM+HD, efficiency and cost of operation might best be met with a novel use of power tubes.

11:35 – 12:15

DTV Transition Status

Presented by Bill Meintel, Partner, Meintel, Sgrignoli & Wallace of Warrenton, Va.

Only six months ago, Bill Meintel discussed a number of issues that could have come together to create the “perfect storm” leading to a transition catastrophe. Two months past the well publicized February 17, 2009 cessation of full power analog broadcasts, Bill will look back and see how each of these issues played out on “transition day” and what has transpired since. Bill will offer his perspective on the current state of the transition. Has the transition come to a successful conclusion or is there still more work to be done? Finally, what comes next? For example, despite the recent fanfare over the end of full power analog television transmission, many low power television stations and translators will continue to transmit analog signals for the foreseeable future.

LUNCH BREAK 12:15 - 1:15

1:15 – 2:45

Implementing Mobile/ Handheld

Presented by



Jay Adrick, Vice President – Broadcast Technology for Harris Communications Division, Mason, Ohio



and Wayne Bretl, Principal Engineer, Research & Development Department at Zenith Electronics LLC, Lincolnshire, Ill.

This presentation will provide an overview of the ATSC M/H system and describe what it will mean for those stations that choose to broadcast the service. It will cover a description of the service, the types of consumer devices that the service will reach, the business models that broadcasters might develop and the technical considerations for deployment of the service. An in-depth look will be made at the M/H Physical Layer, the equipment necessary to broadcast ATSC M/H and the possible changes that the system will require for the transmission plant in order to optimize mobile service.

The current status of the ATSC Candidate Standard will be reviewed along with a view of what lies ahead as the technology rolls towards a commercial launch.

1:15 - 1:25 Overview of ATSC M/ H as a system and a business

Presented by Jay Adrick

1:25 - 1:50 Primer on ATSC M/ H Physical Layer

Presented by Wayne Bretl

1:50 - 2:30 Integrating ATSC M/ H into the digital television station

Presented by Jay Adrick

2:45 – 3:30

Improving DTV and Mobile TV Coverage Through On-Channel and Translator Technologies



Presented by Rich Schwartz, Vice President of Product Management at Axcera, Lawrence, Pa.

Current DTV coverage areas were allocated based on a single-transmitter architecture, which is predicted to provide minimum specified field strength to 50% of the locations within each coverage area, 90% of the time. Terrain features can produce shadowed areas, or cover-

age gaps, where signal strength is lower than required for reliable reception. Both the analog sunset and the desire to employ ATSC M/H mobile services have highlighted the extent of coverage gaps for many broadcasters.

Networks of additional DTV emitters can be deployed to mitigate these gaps in coverage. These networks can range from groups of simple on-channel boosters and DTV translators that relay the primary transmitter signal, to complex networks of synchronized DTV transmitters deployed in a “cellular” arrangement that fundamentally replaces the single-transmitter architecture. The optimum choice of DTV coverage network technology is driven by the locations of terrain features and population distribution. Multi-emitter on-channel networks must be carefully designed to avoid significant harmful interference in overlapping coverage areas.

This paper will describe how an on-channel DTV network functions, define the associated terminology, provide guidance in determining when this type of deployment is applicable and give an overview of the systems engineering necessary to design such networks.

3:30 – 4:15

DTV Maximization: The Value of Power



Presented by Dennis Wallace, Partner with Meintel, Sgrignoli, & Wallace in Waldorf, Md.

With the end of analog television transmission, television broadcasters are much more reliant upon their digital transmission systems to reach the viewer. In this presentation Dennis Wallace will discuss the findings of field and laboratory tests regarding DTV reception and in particular planning factors for indoor DTV reception. The “Value of Power” for DTV broadcasters will be discussed as well as important considerations for the

post-transition DTV transmission facility.

Dennis will provide an in-depth discussion of indoor planning factors for DTV reception as well as how those factors might be applied to the new M/H (mobile/handheld) DTV transmission system. This discussion will include presentation of data regarding the measured performance of indoor antennas and pre-amplifiers as well as building penetration losses and other factors, such as taboo interference, needed to create an indoor DTV reception model.

Mr. Wallace will also provide an overview of the various ways for broadcasters to maximize their coverage and service areas for DTV and will conclude with some suggestions for improving the coverage of DTV stations.

4:15 – 5:00 Antenna Choices for Digital Systems



Presented by Kerry Cozad, Senior Vice President, Broadcast Engineering, Dielectric in Raymond, Maine.

The importance of reliable wireless transmission/reception of data for video reception has been growing for the past few years. What choices do the data provider (broadcaster) and the data user (viewer) have when it comes to optimizing the performance of the antenna systems? Kerry Cozad will offer a discussion of what is available now and trends for the near future in antenna designs. He

will review antennas for full power DTV transmitter installations and antenna considerations for mobile/handheld, single frequency networks and translators.

Ennes Workshop Organizers



Lewis Zager, Television Broadcast Technology Consultant, Falls Church, Va.



Frederick M. Baumgartner CPBE, SBE Education Committee, Ennes Educational Foundation Trust, San Diego, Calif.

Nominate a deserving member for SBE Fellow

BY **Troy Pennington, CSRE, CBNT**
Chairman, SBE Fellowship Committee

The March 31 deadline for nominations for the membership rank of SBE Fellow will soon be upon us. That's still plenty of time to nominate a deserving member who has made a real difference in your chapter over a long period of time; someone who has exhibited a dedication to the advancement of the broadcast engineer, the field of broadcast engineering and the SBE itself.

If you have such a person in your chapter, consider nominating him or her for the SBE Fellow rank of membership. The Fellow designation is the highest level of membership and recognition presented to members by the Society of Broadcast Engineers. Members of SBE may earn the Fellow rank through several paths of achievement including conspicuous service, valuable contributions to the advancement of broadcast engineering or its allied professions, or by disseminating their broadcasting knowledge and promoting its application in practice.

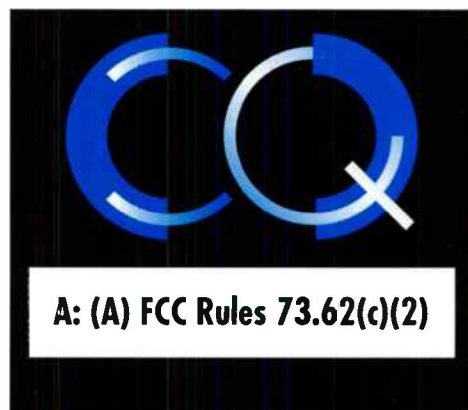
Candidates for Fellow must be proposed in writing by a voting member to the Fellowship Committee. The nomination must include a comprehensive professional history of the nominee and the reasons you feel the candidate is deserving of this honor. The nomination must also include the written endorsements of at least five other voting SBE members. All nominations are to be kept confidential. No others besides the nominators and the SBE Fellowship Committee members should be aware of the nomination. Moreover, the nominee should not be made aware that he or she has been nominated.

Nominations for 2009 must be received no later than March 31, 2009 for consideration. The Fellowship Committee will bring the names of nominees to the SBE Board of Directors for consideration and election at their April 19, 2009 meeting. The SBE secretary will notify those elected. They will receive their award at the SBE National Awards Dinner on October 7, held during the 2009 SBE National Meeting in Verona, New York, in conjunction with the annual Broadcast & Technology Expo, sponsored

by Chapter 22, Central New York.

Seventy members have been recognized with the Fellow honor in SBE's 45 years of existence. If there is a member in your chapter who has provided distinguished service in the field of broadcast engineering or to the chapter or at the national level, this is an opportunity for your chapter members to prepare a nomination for that person.

Nominations for Fellow are to be submitted to Fellowship Committee Chairman: Troy Pennington, CSRE CBNT, 6156 Hampton Hall Way, Hermitage, TN 37076 or to troy.pennington@cumulus.com.



Busting the myths about AM Modeling

BY The AM Directional Antenna Performance Verification Coalition

In a long-awaited and much publicized action, the FCC recently enacted new rules that will allow AM broadcasters to use computer modeling for performance verification of many directional antenna systems. The new rules give broadcasters some new options and provide for a much lower cost means of tuning and proofing an AM antenna. This represents a new paradigm in AM antenna work. To borrow a popular advertising phrase, “This is going to change everything.”

However, since the proposed rules first hit the radar screen of the trade press and message boards, there has been a good bit of misinformation floating around. Even the release of the 2nd Report & Order back in September did not clear most of this up. As a result, there is much confusion and unnecessary worry throughout the AM broadcast community. The AM Directional Antenna Verification Coalition, which proposed the new rule, wishes to put these worries to rest by clarifying what the new rules and procedures mean for broadcast station owners, operators and engineers.

First off, antenna modeling represents an option for broadcasters. It is not mandatory for station owners to have their arrays modeled. Stations can continue operating under the terms of their existing licenses as before. But if there exists a condition, such as an out-of-tolerance monitor point or tower work above the base insulator that would otherwise require adjustment and either a full or partial proof of the array, the option now exists to instead construct a model of the array, calibrate the sample system and adjust the array to the model-indicated parameters. In these days of

high gas prices, that sure beats driving a bunch of radials! But if a traditional proof is a more comfortable route, that remains an option as well.

Only series-fed (i.e. insulated-base) towers are eligible for the modeling option. This rules out skirt-fed (“folded unipole”) elements and shunt-fed towers using a slant wire. Arrays using other than insulated base series-fed towers will have to stick with the old proof method.

Unequal height towers are eligible for the modeling option, provided that they are series fed.

Top-loaded towers are also eligible for the modeling option, again provided that they are series fed.

Monitor points will be a thing of the past for stations licensed pursuant to the modeling option. Instead, some reference field strength measurements are made with the modeling option. These measurements are filed along with the model, but they do not have licensed maximum values as monitor points do.

Recertification of the sample system is required every 24 months for stations employing the modeling option. This consists of the same measurements and tests made initially during the array tune-up, namely checking the current/voltage/phase linearity of the base sample devices (TCTs) or checking of the consistency of the impedance of the sample loops, and checking the sample lines for electrical length and loss. Also once every 24 months, the reference field strength measurements must be repeated. Again, these aren't monitor points, so a higher field strength at a point than one filed with the license application does not constitute a “violation.”

Finally, it is not necessary to file an

FCC Form 301 to employ the modeling option in most cases. The station license can be modified for eligible stations with a Form 302-AM.

AM station owners and engineers should recognize the cost savings that the modeling option represents. Most if not all the variables associated with the old way of doing things can be eliminated, leaving a fast, fixed-cost means of tuning up and “proofing” a directional array. Rather than days, weeks or even months of trial and error adjustments and measurements, the modeling and adjustment process can be completed in a couple of days. Instead of days or weeks of walking and driving radials and making field measurements, and instead of countless hours documenting the measurements, with the modeling option as soon as the array is adjusted to the model parameters and three field measurements are made on each pattern minima and maxima radial, you're done. You can file the 302-AM and go home.

With this new option, gone are most of the excuses for having an out-of-adjustment array. For a fixed sum, most arrays can be retuned using a model, eliminating the likelihood of a big fine and clearing up interference caused by the out-of-adjustment directional pattern. That, we believe, will make the AM band a decidedly friendlier place.

The AM Directional Antenna Performance Verification Coalition consists of representatives from broadcast stations, groups, networks and consultants. Ray Benedict, CPBE of CBS and a past SBE national president, chairs the group.

Board approves changes to By-laws

The Board of Directors of the Society of Broadcast Engineers approved two changes to the SBE By-laws during their meeting held via conference call on November 25, 2008. The changes took affect immediately following the vote.

The first amended By-law is found in Article III., Section 6 and shortens the minimum notice required to call a meeting of the full Board from 21 working days to 10 calendar days.

The former language of Article III, Section 6 (with affected text in italics):

Section 6. The Board of Directors shall have the power to hold meetings at such times and places as it deems necessary; to appoint committees; to employ staff and consultants; to authorize expenditures, establish policies and procedures, and to take such actions as may be necessary or desirable to carry out the purposes of the Society. Meetings of the Board of Directors may be called by the President whenever he deems necessary. Other meetings shall be called by the President upon written request of any four Directors or officers. Notification of all meetings of the Board of Directors shall be served personally, by regular United States Mail or receipted electronic mail, or by telephone conference call. Such notices shall not be made less than *21 normal working calendar days*.

The new language of Article III., Section 6, effective November 25, 2008 (with affected text in italics):

Section 6. The Board of Directors shall have the power to hold meetings at such times and places as it deems necessary; to appoint committees; to employ staff and consultants; to authorize expenditures, establish policies and procedures, and to take such actions as may be necessary or desirable to carry out the purposes of the Society. Meetings of the Board of Directors may be called by the President whenever he deems necessary. Other meetings shall be called by the President upon written request of any four Directors or officers. Notification of all meetings of the Board of Directors shall be served personally, by regular United States Mail or receipted electronic mail, or by telephone conference call. Such notices shall not be made less than *10 calendar days prior to the day of the meeting*.

The second amended By-law is found in Article IV., Section 2. This added language provides a candidate for national president or vice

president the opportunity to serve two consecutive one-year terms, if elected, even if normal term limits would otherwise have restricted him or her to only one term.

The former language of Article IV, Section 2:

Section 2. The President may serve up to two consecutive terms in that office. The Vice President may serve up to two consecutive terms in that office. The Secretary may serve up to four consecutive terms in that office. The Treasurer may serve up to four consecutive terms in that office. No elected person may serve more than ten (10) consecutive years as a director and/or an officer without a break in tenure of at least two years.

The new language of Article IV., Section 2, effective November 25, 2008 (with affected text in italics):

Section 2. The President may serve up to two consecutive terms in that office. The Vice President may serve up to two consecutive terms in that office. The Secretary may serve up to four consecutive terms in that office. The Treasurer may serve up to four consecutive terms in that office. No elected person may serve more than ten (10) consecutive years as a director and/or an officer without a break in tenure of at least two years; *however, should a candidate for President or Vice President be eligible for at least one year of service under this provision, that candidate would be eligible for election to two consecutive terms.*



Tiffany E. Shaw has joined Media Technology Ventures, a portfolio company of Boston based Alta Communications as their Vice President of Technology.

If you or someone you know moved, changed positions, or been honored in some way in the broadcast engineering industry, submit details to Member on the Move at bessex@sbe.org or to Attn Holly Essex, 9102 North Meridian St., Suite 150, Indianapolis, IN 46260

SBE Certification 2009 Exam Schedule

Dates	Location	Application Deadline
February 6-16, 2009	Local Chapters	CLOSED
April 21, 2009	NAB	April 1, 2009
June 5-15, 2009	Local Chapters	April 17, 2009
August 7-17, 2009	Local Chapters	June 5, 2009
November 6-16, 2009	Local Chapters	September 18, 2009

SBE University has arrived

BY John L. Poray, CAE

SBE Executive Director

SBE has been all about education since its inception in 1964 (yes, now 45 years ago!). The bulk of the educational opportunities happen monthly at local chapter meetings. With more than 100 chapters, most of which meet ten or more times each year, that's more than 1,000 educational opportunities annually! That number doesn't include the many regional conventions and special seminars conducted by chapters each year. The value of live, in-person learning opportunities at the local level that are affordable and readily accessible has never diminished and remains a key benefit of SBE membership.

For many years, SBE at the national level had devoted a portion of its resources towards education. Working with SBE's charitable arm, the Ennes Educational Foundation Trust, SBE has presented dozens of Ennes Workshops since 1989. It resurrected the "Leader Skills" management training seminars in 1997 after the NAB dropped the program in 1994. From 1986 through 1996, SBE presented its own national convention with education as its focus.

In 2003, the SBE Board, under the leadership of then-president, Ray Benedict, CPBE, began an effort to increase the emphasis on education at the national level. The goal was to provide SBE members with a major source of fundamental and advanced courses on technical topics that members needed to keep up with the demands of their broadcast facilities.

A new education committee was formed, chaired by Fred Baumgartner, CPBE, with the task of developing educational offerings for members. The objective was to make education programs affordable and accessible by offering them to members using multiple delivery methods. SBE would continue to

use traditional in-person programs but would also take advantage of available technology to deliver courses via the web, both live and on-demand.

Members had asked for it, and it was one of the key services requested by members that came out of a strategic planning conference in 2006, called by then national president, Chriss Scherer, CPBE, CBNT. The work towards an expanded educational program continued and in 2007, SBE's first live, web-based program, the SBE RF Safety Course, was presented four times to a combined crowd of more than 280 participants.

The goal set by the Board in 2003 of a greatly expanded educational program was picked up by a third national president, Barry Thomas, CPBE, CBNT. In October of 2007, Barry tapped Crawford Broadcasting director of engineering, Cris Alexander, CPBE, AMD, DRB to lead the Education Committee. In the ensuing months, Cris and his committee worked to build the foundation for what will eventually be dozens of courses offered by the SBE. The SBE University was created to offer quality on-line, on-demand courses covering important technology topics to members.

The first three courses offered by the SBE University are now available. These include the AM Antenna Computer Modeling, FM Transmission Systems and Matching Networks and Phasing. Additional courses will be added soon, including a course on 8-VSB and lightning protection.

The on-line courses offer the opportunity for members

to access courses at their convenience and at a very reasonable price,

without the cost of travel and lodging. Something that is especially beneficial in this time of very tight budgets. The courses are available to anyone to take but are at a discount to members of SBE.

The SBE University compliments the existing educational programs that SBE provides – Ennes Workshops (so far in 2009 planned for Sacramento, Las Vegas, Alabama and Eugene, Ore.), the SBE RF Safety Course (May 21 with another later in the year) and the SBE Leader Skills Program (Course I on August 4-6 in Indianapolis).

These programs, coupled with all of the excellent programs offered by SBE chapters on a monthly basis, make SBE truly THE source for continuing education for broadcast engineers. We hope you will plan to make the most of your membership and take advantage of them.



jpokay@sbe.org



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New PLC Course

The Society of Broadcast Engineers would like to welcome its newest members to the organization:

New Members

Ray Allen - Butler, GA
Philip Barreca - New York, NY
Michael A. Davison - Northfield, MN
Michael D. Lipford - Crossroads, TX
Wayne A. Selly - West St. Paul, MN
Alex Zucker - Glenwood, MD
Eric N. Jones - Columbia, MO
Camile B. Howerton - Aurora, CO
Kevin Lessard - Wrentham, MA
Paul Hunter - Candia, NH
Keith J Altavilla - Riverside, IL
Mariann Belger - San Diego, CA
Thomas J. Bunk - Hagerstown, MD
Jeff Craigmile - Spokane, WA
William C. Garwood - Hertford, NC
Joseph D. Niffen - Bloomington, MN
Richard J. O'Neill - Stoughton, MA
Peter Williams - Dallas, TX
Franklin C. Brannock - Mt. Zion, IL
William Casto - Lincolnton, NC
John J. Davis - Missouri City, TX
Daniel J. Halgash - Warrington, PA
Robert E. Kafarski - Walton, NY
Dorsey C. Kelly - Birdsboro, PA
David S. Lodge - Mount Laurel, NJ
Dale S. Podracky - Blacksburg, VA
Jerry L. Shields - Idaho Falls, ID
Dana W. Tyler - Webster, NY
Cory L. Bray - Edgewater, MD
David E. Dunning - Seattle, WA
Larry Hamlin - Oklahoma City, OK
James G. Hardy - Belmont, NC
Robert L. Hayles - Plymouth, MN
Naveen Khan - Dubai, UAE
Jonathan L. Kramer - Los Angeles, CA
Chan Kwok Ming - Tseung Kwan
ONT, Hong Kong
Thomas J. Lykins - Bridgeview, IL
Tsz Ming Chui - Shatin, Hong Kong
Li Pak Chuen - Yuen Long NT,
Hong Kong

Steven Rosenblatt - Silver Spring,
MD
Christopher D. Scherer - Gahanna,
OH
Steven C. Schmitt - Quincy, IL
Kim L. Seelye - Valrico, FL
Frank J. Trybuchowski - Blaine, MN
Kwok Wing Yeung - Tuen Mun NT,
Hong Kong
Yu Yuk Yin - Tseung Kwan ONT,
Hong Kong
Alex Cordero - New York, NY
Kyle D. Hammer - Minneapolis, MN
Edmund G. O'Leary - Cranford, NJ
Gary A. Pearcey - Stone Mountain,
GA
William R. Shearn - Cheney, WA
Billy Stratton - Southport, NC
John N. Andrews, III - Vienna, VA
Greg Folk - South Lake Tahoe, CA
James M. Glanz - Brooklyn, NY
Enrique Gonzalez - Ponte Vedra
Beach, FL
Suzie Hollander - New York, NY
Michael V. Huntington - Kerman, CA
Kenneth Sands - Plymouth, MI

New Student Members

Nick Pegg - Rolla, MO
Chris Erickson - Sacramento, CA
Todd Walley - Windham, NH
John B. Narus - Union City, NJ
Benjamin C. Rodriquez - Puyallup,
WA

New Youth Members

Scott M. Mamrosh - Terryville, CT
Ryan J. Tobin - Wexford, PA
Chad R. Laurie - Glenview, IL
Nathan W. Bradley - Sandyville, WV

Reinstated Members

Steven C. Garnett - Streamwood, IL
Richard Medrano - Salinas, CA
Jeremy D. Preece - Sacramento, CA
Lou Schneider - Nordland, WA
Charlie F. Farr, Jr. - Virginia Beach,
VA
David J. Dobes - Waterloo, IA
John R. Hovanec - North Royalton,
OH
John D. Mathews - Holts Summit,
MO
Michael Patton - Baton Rouge, LA
Donald L. Perkins - Johnson City,
NY
David L. Gregory - Cutler, CA
Mark L. Fate - Pomona, CA
Roy I. Luke - Martinez, GA
Scott Hempstead - Springfield, VA
John G. Leveck - Gardnerville, NV
Paul Wesley Roten - Dothan, AL
Alejandro Solis, Sr. - Waldorf, MD
Michael J. Steiner - Portland, OR
Brian J. Olinger - Dulles, VA
John A. Pethel - Fresno, CA
Sharlet A. Pethel - Fresno, CA
Lee A. Williams - Jean, NV
Hans P. Juergens - Chicago, IL
Terry A. Priesont - Altadena, CA
Peter B. Sakowski - Mountaintop,
PA
Christopher M. King -
Murfreesboro, TN

Reinstated Senior Member

Dana J. Puopolo - Los Angeles, CA

Reinstated Student Members

Samuel R. Williams - Dublin, VA
Wayne A. Nestor - Stromsburg, NE

SBE

CHAPTER AWARDS

2008-2009

INSTRUCTIONS: Use one form per nomination. Photocopy this form for additional nominations. Please include all pertinent information about your nomination, as well as yourself. Supply as much information as possible, as this will assist the Awards Committee in its selection process. Nomination materials will be photocopied for each judge, if you wish each judge to have an original of any of your support materials (such as newsletters, CDs or anything printed in full-color), please send five sets. Nominations may be disqualified if requested support material is not provided.

SUBMISSIONS: Mail completed entries to: The Society of Broadcast Engineers, Inc., Attn: Awards Committee, 9102 North Meridian St., Suite 150, Indianapolis, IN 46260. For questions concerning nominations, contact: Megan E. Clappe, Certification Director, at mclappe@sbe.org or (317) 846-9000 or Mark Simpson, Awards Committee Chair, at mark.simpson@citcomm.com or (334) 240-9274. **DEADLINE:** The National SBE Office must receive Materials by May 31, 2009.

Winners will be announced in July and awards presented October 15, 2008, at the 2008 Awards Dinner during the SBE National Meeting. **OFFICIAL RULES:** Nominations valid only for achievements/data occurring from January 1, 2008 through December 31, 2008. Only active SBE Members and Chapters in good standing (having reported at least five [5] chapter meetings for 2008) are eligible for awards. Class awards are determined using the median chapter size as of December 31, 2008, as the dividing line between Class A (less than the median) and Class B (greater than the median). The decision of the judges is final.

BEST REGIONAL CONVENTION OR CONFERENCE:

Recognizes the effort of the local chapter that sponsored, organized and held a regional technical conference and/or convention that best furthered the goals and objectives of the Society. **INCLUDE:** A) Conference Location/Dates; B) Conference Coordinator(s); C) Conference brochure or brief written description.

BEST CHAPTER NEWSLETTER*: Recognizes two local chapters that produced the best locally published newsletter in its Class, providing up-to-date and relevant information about the chapter in a graphically pleasing and editorially sound manner. Chapters must exercise full control over its content, mailing and size. **INCLUDE:** A) Newsletter Name; B) Newsletter Editor; C) Description of how it is produced, including list of contributors; D) Three (3) samples of 2008-published issues.

MOST INTERACTIVE CHAPTER:

Recognizes the local chapter that most actively attempted inter-association with organizations in industries related to the Broadcast Engineering profession (example: SCTE, ITVA, SMPTE, et. Al.). **INCLUDE:** A) Interacting Organizations; B) Dates/descriptions of common events; C) Program announcements, attendance sheets or other evidence of common meetings/events between your chapter and associated groups.

BEST CHAPTER FREQUENCY COORDINATION EFFORT*:

Recognizes two local chapters that expended the greatest and most effective effort toward frequency coordination in its market, service area and Class. **INCLUDE:** A) Frequency Coordinator(s); B) Database URL link or printouts; C) Written description.

BEST CHAPTER WEBSITE: Recognizes the local chapter with a website providing up-to-date information about the chapter, including officers and meetings; making effective and creative use of graphics; providing links to the SBE National website; and effectively representing the chapter and SBE. **INCLUDE:** A) Website address; B) Webmaster.

MOST CERTIFIED CHAPTER*, HIGHEST MEMBER ATTENDANCE*, and GREATEST GROWTH IN NEW MEMBERS*: These three awards are determined with statistical information based on Dec. 31, 2008, figures on file at the SBE National Office. Chapters established in 2008 are not eligible for the Greatest Growth in New Members award.

**Denotes categories with two class awards.*

AWARD: _____

NOMINATION (CHAPTER OR INDIVIDUAL NAME): _____

SUPPORT ITEM A: _____

ITEM B: _____

ITEM C & D: Please submit descriptions on a separate sheet; other items requested may be originals or photocopies

I, _____, respectfully submit the above nomination for consideration by the National SBE Awards Committee.

Daytime Phone: _____ E-mail: _____ Chapter Name and No. _____

Address: _____ City/State/Zip: _____ Date Submitted: _____

INDIVIDUAL AWARDS

2008-2009

SBE

INSTRUCTIONS: Use one form per nomination. Photocopy this form for additional nominations. Please include all pertinent information about your nomination, as well as yourself. Supply as much information as possible, as this will assist the Awards Committee in its selection process. Nomination materials will be photocopied for each judge, if you wish each judge to have an original of any of your support materials (such as newsletters, CDs or anything printed in full-color), please send five sets. Nominations may be disqualified if requested support material is not provided.

SUBMISSIONS: Mail completed entries to: The Society of Broadcast Engineers, Inc., Attn: Awards Committee, 9102 North Meridian St., Suite 150, Indianapolis, IN 46260. For questions concerning nominations, contact: Megan E. Clappe, Certification Director, at mclappe@sbe.org or (317) 846-9000 or Mark Simpson, Awards Committee Chair, at mark.simpson@citcomm.com or (334) 240-9274. **DEADLINE:** The National SBE Office must receive Materials by May 31, 2009. Winners will be announced in July and awards presented October 15, 2008, at the 2008 Awards Dinner during the SBE National Meeting. **OFFICIAL RULES:** Nominations valid only for achievements/data occurring from January 1, 2008 through December 31, 2008. Only active SBE Members and Chapters in good standing (having reported at least five [5] chapter meetings for 2008) are eligible for awards. Class awards are determined using the median chapter size as of December 31, 2008, as the dividing line between Class A (less than the median) and Class B (greater than the median). The decision of the judges is final.

BROADCAST ENGINEER OF THE YEAR: Recognizes the SBE Member who has made the greatest contribution to the broadcasting industry and to furthering the goals and objectives of the Society. **INCLUDE:** A) City and state; B) Current employer; C) Detailed written description of contributions; D) His/her portfolio (if possible).

EDUCATOR OF THE YEAR: Recognizes the SBE Member who is dedicated to the education of the broadcast engineers through personal writings, teachings, programs and employment and who furthers the goals and objectives of the Society. **INCLUDE:** A) City and state; B) Current employer; C) Detailed written description of contributions; D) His/her portfolio (if possible).

TECHNOLOGY AWARD: Recognizes the SBE Individual or Sustaining Member who has provided the industry with the best new or innovative technical item or idea to further the science of broadcast engineering and to assist the broadcast engineer to be more productive in the craft. Only ideas that have been shared with others in the industry are eligible. **INCLUDE:** A) Technology Item/Idea; B) City and state; C) Written description.

BEST TECHNICAL ARTICLE, BOOK OR PROGRAM BY AN SBE MEMBER: Recognizes the author of the best technical article, book or paper in its contribution towards the increase of scientific, operational, artistic or technical knowledge in the broadcast engineering industry. **INCLUDE:** A) Title of book/article/program; B) City and state; C) Copy of article, book outline or program paper.

BEST ARTICLE, PAPER OR PROGRAM BY A STUDENT MEMBER: Recognizes the SBE Student Member who has shown excellence in the presentation of a technical, operational or scientific paper published in an SE local, national or industry-related publication; or program presented at a local chapter meeting, national/regional convention or broadcast engineering-related class. **INCLUDE:** A) Title of article/paper/program; B) School attending, city and state; C) Copy of article, book outline or program paper.

SBE LIFETIME ACHIEVEMENT AWARD: Recognizes and pays tribute to individuals for their dedication, lifelong achievement and outstanding contribution to the broadcast industry. Nominees must be SBE members in good standing and have been active for 40 years or more in the broadcast engineering industry or a closely allied field that benefits broadcast engineering. Nominations must come from SBE members in good standing, and will include the endorsement of three other SBE members in good standing. **INCLUDE:** A) City and state; B) Current employer (if applicable); C) Career biography; D) Detailed written description of contributions. **OFFICIAL RULES FOR LIFETIME ACHIEVEMENT AWARD:** Nominations for this award can be made at any time, but no more than one recipient will be named in a given year. Awards are determined by a $\frac{3}{4}$ majority vote of the SBE Board of Directors, based upon recommendations made by the SBE Awards Committee.

AWARD: _____

NOMINATION (CHAPTER OR INDIVIDUAL NAME): _____

SUPPORT ITEM A: _____

ITEM B: _____

ITEM C & D: Please submit descriptions on a separate sheet; other items requested may be originals or photocopies

I, _____, respectfully submit the above nomination for consideration by the National SBE Awards Committee.

Daytime Phone: _____ E-mail: _____ Chapter Name and No. _____

Address: _____ City/State/Zip: _____ Date Submitted: _____

FEBRUARY 2009

Silver Members, those with at least 25 years of membership, are highlighted with a silver box, New Members are listed in blue

ADC Telecommunications Inc. 1998
Aime-Marie Gunderson
(952) 917-3072
End to End Connectivity Solutions

Advanced Test Equipment Rentals 2006
Martin Jahn (800) 404-2832
Test and Measurement Equipment Rentals

Air 1995
Mark Polovick (607) 215-0653
UHF TV Broadcast Transmitters

American Tower Corporation 2000
Peter A. Starke (811) 461-6780
Broadcast Tower Development/Construction/Management

Anixter 2005
David Ste-Marie (800) 995-6158
Audio/Video Cable & Interconnect Products

Anton/Bauer Inc. 2004
Paul Dudeck (203) 929-1100
Battery Solutions for ENG

Audemat-Aztec Inc. 2000
Sophie Lion Poulain
(305) 249-3110
RDS Generator, Metering, Monitoring, Remote Control Manufacturer

Autodesk 1998
Christina Shackleton
(212) 338-3888
Digital Content Creation Software

AXCERA 1983
Mike Rosso
(800) 215-2614 ext. 101
Television Transmitters & Exciters

Belden Electronic Division 1991
George Stillabower
(765) 983-5200
Cable and Connectivity

Beveridge Consulting, Inc. 2006
Gregory J. Beveridge
(720) 810-3464
Broadcast Engineering Technical Consulting

Broadcast Electronics, Inc. 1978
Ray Mikkelsen - Studio Products
Jim 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
Russell Murphy - East
Jim Kubit - West
(540) 932-3660, (805) 581-4566, (800) 669-9067
Manufacturer, Transmitters, Receivers, Antenna Systems

Broadcast Supply Worldwide 1986
Shannon Nichols
(800) 426-8334
Audio Broadcast Equipment Supplier

Broadcasters General Store 2004
Buck Waters (352) 622-7700
One Stop Broadcast Store

CANARE 1991
Luis Sotomayor
(818) 365-2446
Audio/Video Interconnect Products

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

Charon Corp. 1992
Carol Keane (631) 845-2031
HD/SD Character Generators & MOS

Clark Wire & Cable 1991
Shane Collins (800) 222-5348
Audio, Video and Remote Camera Cables

COMET North America 2005
Steve Clatterbaugh
(214) 235-6596
Capacitors, Variable & Fixed

Communications Laboratories 2008
Jared Maynard
(312) 409-9898
Emergency Management Network

Comrex Corporation 1997
Chris Crump (978) 784-1776
Remote Audio Broadcast Equipment

Comsearch 2004
Tim Hardy (703) 726-5651
Frequency Coordination Services, Continental Electronics

Continental Electronics Corporation 1976
Michael Troje
(214) 381-7161, (800) 733-5011
AM & FM HBC Transmitters

Crispin Corporation 2006
Brian Gleason (919) 845-7744
Broadcast Automation Solutions

Crouse-Kimzey Co. 2008
Mark Bradford (972) 660-6100
Broadcast Equipment Sales

CUC Broadcast 2008
Michael Johnson
(951) 278-5626
Shared Storage System Integrator

Dataworld 1998
John T. Neff (800) 368-5754
Coverage Maps and Services

Dialight Corporation 2006
Doug Woehler (732) 991-2837
Obstruction Lighting, L.E.D. Based

Dielectric Communications 1995
Jay S. Martin (207) 655-4555
TV & FM Broadcast Products

Digital Alert Systems, LLC 2005
Bruce Robertson (520) 488-8667
IP Based EAS ENDEC

DiskStream Incorporated 2006
Rein Taul
(519) 579-8166, ext. 57
Capsa Video Archive

DMT USA, Inc. 2003
Tom Newman
(856) 423-0010
Television Transmitters, Translators and Antennas

DSC Laboratories 2002
Michael Kent (905) 673-3211
Test Charts & Illuminators

DTV Interactive 2007
Jennifer Jang
(482) (0) 2-344-62040
Test & Measurement Solution Provider

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

DYMO Corporation 2006
Robert Garvey (717) 342-8090
RHINO Professional Labeling Products

e2v technologies Inc. 1997
Rick Bossert
(800) 433-8269, (800) 342-5338
klystrons, MSDC IOTs, IOTs, Satcom Amps, TWTs

Econco 1980
(800) 532-6626 or (530) 662-553
New & Rebuilt Transmitting Tubes

Electrack Enclosure Products 2008
Todd Schneider (714) 776-5420
Racks, Enclosures, Power, Accessories

Empower RF Systems 2008
Jon Jacek (310) 412-8100
DTV Transmitter & Translator

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

Environmental Technology Inc. 1997
John Cahill
(800) 234-4239, ext. 229
Dehydrators, Deicing Sensor & Controls for Broadcast/FM and Satellite Antennas

ERI - Electronics Research 1990
David White (812) 925-6000
Antennas, Towers, Filters, Combiners

ETS-Lindgren/Holaday EMF Measurement 2003
Dave Seabury
(908) 876-5042
RF Safety Instrumentation

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

Freeland Products 1997
Joel Freeland (800) 624-7626
Rebuilt Power Tubes

Frontline Communications Corp. 2000
Doug McKay
(727) 573-0400, ext. 120
Broadcast/Command/HLS Vehicles

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

Gepco International, Inc. 1995
Ken Bernd
(847) 795-9555
Audio, Video Cable Products

Google Inc. 2005
Scott Bodgan
(949) 791-1200
SS32, Maestro, ASP Solutions

Harris Corporation, Broadcast Communications Division 1977
Joe Mack (TV), Chris Pannell (Radio), Bob Duncan (Software)
(513) 459-3406, (406) 556-0280, (719) 439-0130
Broadcast Equipment & Services

HD World 2006
Michael Driscoll
(203) 371-6322
HD World Conference & Exposition
(Oct. 10-11, 2007, New York)

Holbrook Enterprises, Inc. 2006
Jleywood Bagley
(208) 468-8797
WireCAD - Serious design tools

Image Video 1997
Dave Russell
(416) 750-8872 ext. 230
Under Monitor Tally Display Systems, Monitor Walls, Signal Alarm Systems

Jay S. Gerber, CBT 1999
(205) 491-6904
Manager, NFL Frequency Organization Group

JDSU 2007
Brigitte Robbins
(919) 338-5061

Joseph Electronics Inc. 2003
Yohay Halami
(847) 501-1584
Broadcasters One-Stop Supplier

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

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

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

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

LEA International 2004
Carol Rassier
(208) 762-6121
Power Quality Products & Services

Lincoln Financial Media 2007
Don Shaw
704-374-3639
Media, Communications

LYNX Technik 2007
Steve Russell
(661) 251-8600
Broadcast Terminal Equip

Mackay Communication 2002
Patrick Fisher (919) 850-3164
Satellite Communications Equipment & Airtime

Markertek Video Supply 2002
Tom Moretti
(845) 246-3036
Audio, Video, Audio Visual Broadcast Supply

Maxell Corporation of America 1991
Patricia Byrne
(201) 794-5900
Broadcast Video Products

Micro Communications, Inc. 1998
Frank Malanga
(603) 624-4351, (800) 545-0608
TV & FM Antennas & RF Components

Micronet Communications, Inc. 2005
Jerry Armes
(972) 422-2700
Coordination Services / Frequency Planning

Microwave Filter Company, Inc. 2003
Sherry Bell
(315) 438-4700
Passive Electronic Filters

Microwave Radio Communications 1991
Nadine Frechette
(978) 671-5700
Video Microwave Systems

Microwave Service Corporation 1997
Warren J. Parece
(978) 556-0970
Microwave Equipment Rentals/ Sales/Service

Middle Atlantic Products 2005
David Amosato
(973) 839-1011, ext. 1197
Enclosures, Power, Accessories, Furniture

Minkin Design Inc. 2005
Jay Minkin
(206) 250-7481
System Integration/Design/ Documentation

Mohawk 1995
Jamie Silva
(800) 422-9961
Wire and Cable

Moseley Associates, Inc. 1977
Dave Chaney
(805) 968-9621
RF & TV STLs

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

National Football League 1999
Jay Gerber
Game Day Coordination Operations

Naute, Inc. 2002
Wendell Lonergan
(207) 947-8200
Radio Broadcast Transmitter Manufacturer

Neural Audio 2006
Mark Seigle
Surround Sound Technologies

Nott Ltd. 2002
Ron Nott
(505) 327-5646
Fused Unipole Antennas; Detune Systems; Lightning Prevention

Nucomm, Inc. 1996
John Dulany
(252) 852-3700
Digital Microwave Transmission Equipment

NVISION, Inc. 1997
Doug Butterbaugh
(530) 265-1000
Routers, Master Control & Terminal Equipment

Oldcast Precast, Inc. 2006
Douglas Domas
(678) 371-8315
Precast Buildings/General Construction/Program Management

OMT Technologies Inc. 2001
Ron Paley
(888) 665-0501
Automation, Skimming/Logging Software

Orban/CRL 2008
David Rusch
(480) 403-8300
Audio Processing

Panasonic Broadcast & Digital Systems Company 1985
Tom Moore
(201) 392-6176
Professional Broadcast Equipment

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

PESA Switching Systems, Inc. 1997
Robert McAlpine
(800) 328-1008
Routing Switcher Manufacturer

Pike & Fischer 1991
Andy Myers
(800) 255-8131, ext. 234
FCC Rules & Regulation

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

Pro-Bel 2002
Terry Barnham
(631) 549-5159
Automation, Routing & Infrastructure

Propagation Systems, Inc. (PSI) 2005
Doug Ross
(814) 472-5540
Quality Broadcast Antenna Systems

ProVideo Systems, Inc. 2000
Dave Goldsmith
(419) 874-2850
Sales, Consulting, Design & Integration

Pulsecom 2003
Stan Bailey
(630) 961-3253
Telco Broadband Audio Transmission

Quintech Electronics and Communications Inc. 2002
Richard E. Bush
(724) 349-1412
RF Signal Management

Radian Communication Services Inc. 1986
John McKay
(866) 4-RADIAN
Towers, Antennas, TV Transmitter Installation

RCS 2003
Diana Stokely
(308) 284-50007
Audio and Video Content Management, Music Scheduling, Radio Automation

RDL 2004
John Gatts
(928) 778-9678, ext. 111
Audio, Video, Control & Test Equipment Manufacturer

RF Central, LLC 2005
Jeff Winemiller
(717) 249-4900, ext. 222
Digital Wireless Microwave Equipment

RF Specialties of Texas, Inc. 2008
Don S. Jones
(806) 372-4518
Transmitters, Antennas and More

RF Technologies a Ferrite Company 2008
Bill Ammons
(800) 634-4075
Television Broadcast Antenna Systems

Richardson Electronics 1987
Chris Chinchilla
(800) 348-5580
Power Grid Tubes

Richland Towers 2001
David Denton
(813) 286-4140, ext. 6872
Tower Owner/Management

Rohde & Schwarz 2003
Eddy Vanderkerken
(469) 713-2532
Broadcast Transmitters, Test & Measurement

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

Ross Video Ltd. 2000
Burt Young
(613) 652-4886
Manufacturer, Television Broadcast Equipment

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

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

Sencore, Inc. 2005
Jeff Murray
(800) 736-2673
Audio/Video Test Equipment

Shively Labs 1996
David Allen
(207) 647-3327 or 888-SHIVELY
FM Antennas & Combiners

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

Snell & Wilcox, Inc. 1995
John Shike
(818) 556-2616
Video Equipment Manufacturer

Stainless LLC/Doty-Moore 2004
Les Kutasi
(215) 631-1313
Tower Engineering/Tower Service

Stratos Global Corporation 2006
Folef Hooft Graafland (Eastern USA), Chris Mott (Western USA)
(888) 766-1313 (USA)
(709) 748-4233 (Rest of World)
Streaming & Voice via Satellite

Strobe Tech, LLC 2008
Wes Pimentel
(419) 868-8414
Tower Lighting Experts

Sundance Digital, Inc. 2004
Steve Krant
(972) 444-8442
Broadcast Automation Solutions

Superior Broadcast Products 1999
Benny Springer
(800) 695-7919
Vacuum Tube & Solid State Transmitters

Superior Electric 1995
Michael J. Miga
(860) 585-4552, (800) 787-3532
Power Protection Equipment

Sutro Tower, Inc. 1989
Gene Zastrow
(415) 681-8850
Broadcast Tower Leasing

Switchcraft, Inc. 1995
Jim Hoffman
(773) 792-2700
Electronic/Electromechanic Components

TC Electronic 2008
Stacey Moran
(818) 605-4906
DTV Audio Level Processing

Tektronix, Inc. 1977
Jon Hammarstrom
(503) 627-6936
TV Test, Measurement Equipment

Telemetrics Inc. 2008
Jim Wolfe
(201) 848-9818

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

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

TESSCO 2008
Scott Palermo
(410) 229-1562
STL, Cable Test Equipment

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

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

Thomson Broadcast & Media Solutions 2000
William Powers (404) 929-5007
TV/FM Production & Broadcast Professionals

Total RF Marketing 2001
Tom Sharkoski (215) 653-1000
Wireless Broadcasting Equipment Rental

Trilithic, Inc. 2007
Art Lelsey (317) 895-3600
EAS INDEC Equipment

Troll Systems, Inc. 2006
Brian Goldberg (661) 702-8900
Broadcast Control Systems

TRON-Tek, Inc. 1993
W.M. (Bill) Grass
(888) 819-4877
Part 74 Video Links

TV Magic 2008
Eva Langer
(858) 650-3155
Broadcast Systems Integrator

Unimar, Inc. 2001
Michael A. Marley
(315) 699-4400, (800) 739-9169
Tower Obstruction Lighting Designer, Manufacturer, Distributor

VALCOM 1996
Bill Burtenshaw
(519) 824-3220
AM/FM Broadcasting Antennas

VCI Solutions 2007
Kristin Garini
(413) 272-7200
Broadcast Traffic & Automation Solutions

V-Soft Communications 2002
Adam Puls
(319) 266-8402
Broadcast Engineering Software & Consulting

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

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

Westwood One 2006
Conrad Troutman
(212) 641-2014
Radio and TV Programming

Wire Wizards Integration 2007
Mr. Mark Guidire
(619) 992-0549
Reliable Specialized Installation Technicians

Wireless Infrastructure Services 2006
Mr. Travis Donahue
(951) 371-4900
Broadcast System Integration Services

Wolter Technologies Inc. 2004
Jon Harker
(510) 870-0810
In-Back Audio & Video Monitoring

WSI Lighting 2008
Kandy Paremus
(800) 783-1450
Lighting Distributor/Obstruction Lighting

Recruit a new member and win
in the 2009 Membership Drive

STRENGTH IN NUMBERS



With the rough winter weather it's easy to look forward to spring – a time of renewal. Again this year, SBE is giving its members another reason to anticipate spring: the SBE Membership Drive. Now is the time to start preparing for the drive, which runs from March 1st through May 31st. Take advantage of this perfect time to recruit new members for SBE. Members are what make our Society great, so help keep SBE strong by adding to its growing membership.

“Strength in Numbers” is this year’s membership drive theme. A new theme means a new chance to win. By being a part of SBE, you have a chance to help strengthen the Society and win in this year’s SBE Membership Drive. Help people you know by introducing them to SBE and help strengthen their careers with the benefits of being a part of the SBE team.

Maybe there is someone new to broadcast engineering on your staff. Perhaps you know a student who has an

interest in the profession.

Introduce these people to SBE. Utilize these new interests and new opportunities to strengthen our team of broadcast engineers.

Among the many good reasons to join SBE is the fellowship SBE provides. Through our fellow engineers at local chapter meetings, you interact with others in the industry. Local chapter meetings create opportunities for learning, forming friendships, and they create a support system if you ever need help.

SBE is the only organization devoted to the advancement of all levels and types of broadcast engineering. Through its members, SBE provides forums for the exchange of ideas, where sharing information helps you keep pace with the rapidly changing industry.

MEMBERSHIP DRIVE PRIZES

GRAND PRIZE

- Trip to the 2009 SBE National Meeting in Turning Stone Casino and Resort in Verona, NY from October 6 – 7

OTHER PRIZES

- (4) Eton E1XM AM/FM/Shortwave/XM ready Radio Courtesy of Westwood One
- Directional Antennas Made Simple by Jack Layton
- Logo Golf Shirt Courtesy of Continental Electronics
- (25) Adjustment Tweaking Tools Courtesy of Continental Electronics
- Pocket Size External Hard Drive Courtesy of Broadcast Microwave Services, Inc.

MORE TO COME

You have every reason to encourage someone to join SBE. You would be helping that person, contributing to SBE, and you will be eligible for Membership Drive prizes. In addition to being entered in the Membership Drive prize drawing, you will also receive a five-dollar discount on your 2010 membership renewal for each new member you recruit (up to five).

This year’s Grand Prize is a trip to the SBE National Meeting at Turning Stone Casino and Resort in Verona, N.Y. from October 6 – 7, which includes airfare for one to Verona (from within the continental US) and two nights hotel stay.

With so many great and rewarding reasons to reach out and recruit new members to join SBE’s strong team, everyone’s a winner.

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LBA is your trusted supplier of digital ready AM antenna systems. Our customized products include Directional Systems, Diplexers, Triplexers, ATU's, AM Isolators, Ground Systems and RF Components for all power levels. LBA offers you complete RF project design and installation services.

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AUDIO UNDER CONTROL



AERO.air (5.1)™ Transmission Loudness Manager
2008 TV Technology STAR Award Winner

The next-generation AERO.air 10-channel TV audio processor from Linear Acoustic (previously called the AEROMAX-5.1:XL) represents the world's first TV audio processor to feature built-in Dolby® Digital (AC-3) encoding. Engineered on the foundation of the company's supremely successful first-generation digital television processors, the AERO.air system enables broadcasters to deliver compelling 5.1-channel surround sound while saving them time, money, and space.

The comprehensive AERO.air solution is equipped with a loudness controller, upmixer, and metadata manager, as well as full-time, two-channel downmixing to support legacy analog paths. Built-in AutoMAX™ processing fixes two-channel audio that is broadcast wrongly signaled as 5.1 channels. Equipped with hard relay bypass and dual hot-swappable power supplies for mission-critical applications, the processor accepts 5.1 network audio, two-channel local audio and digital or analog auxiliary/EAS stereo audio for processing. HD-SDI audio and VANC metadata inputs and internal Dolby Digital (AC-3) encoding are available as options.