SBE

the SIGNAL

BIMONTHLY PUBLICATION OF THE SOCIETY OF BROADCAST ENGINEERS

APRIL 2007

Volume 20, Number 2

Have you visited us on the web yet?
www.sbe.org

SBE events, meetings held at NAB2007

The Society of Broadcast Engineers is once again participating as a partnering organization with NAB to present NAB2007. SBE and NAB will present the special in-depth Ennes Workshops on Saturday plus informative sessions covering the latest in broadcast technology from Sunday through Thursday. SBE also has a full slate of meetings and will exhibit during the trade show from the same location as last year.

SBE Exhibit Booth

We will be on the second floor of the South Hall, Lobby Booth 28, which is just up the escalator from the South Hall main entrance and just outside the entry to the exhibits on the second floor. The BEC is also located on the second floor of the South Hall.

Be sure to plan to visit the SBE booth while at the convention. We'll have the popular "CertPreview" exam preparation software programs available along with all of our SBE published books including the SBE Television Operators Handbook, SBE Chief Operators Handbook and SBE Handbook for Radio Operators. The booth will also have a nice selection of broadcast engi-

The SBE Booth will again be in the upper level of the LVCC South Hall for NAB2007.

See **NAB2007** *on page* **19**

SBE introduces IRLP HAMnet

SBE is pleased to announce a new opportunity for Amateur Radio Operator members and others to communicate utilizing the Internet Repeater Linking Project or "IRLP."

This new Amateur Radio net, called, "IRLP HAMnet," will be a great way for broadcast engineers and other amateurs (any and all are welcome) to contact one another, share technical information, discuss broadcasting techniques and get the latest information on SBE programs and activities. IRLP HAMnet joins the long-running "HF" SBE HAMnet, as official functions of the Society of Broadcast Engineers.

The IRLP is a method of connecting different repeaters across the country and the world via the Internet. A "ham" in Denver, using the WA2YZT, "repeater" (often referred to as, "machine"), for example, enters a 4-digit node number to connect to, say. #7520, the W4YI repeater in Chattanooga Tennessee for a chat with a another ham there. For the SBE IRLP HAMnet, the control station (either KE0VH or WA2YZT operated by Jack Roland) connects to the Denver IRLP reflector, which allows other repeaters from all over the world to connect to it, creating a net

See **IRLP** *on page* **15**

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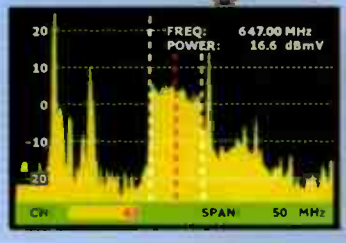

Spectrum analyzer

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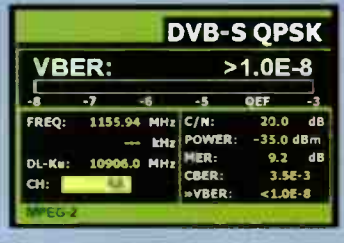
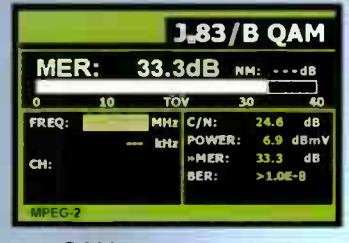
Analog measurements

8-VSB measurements



DVB-S and DSS measurements



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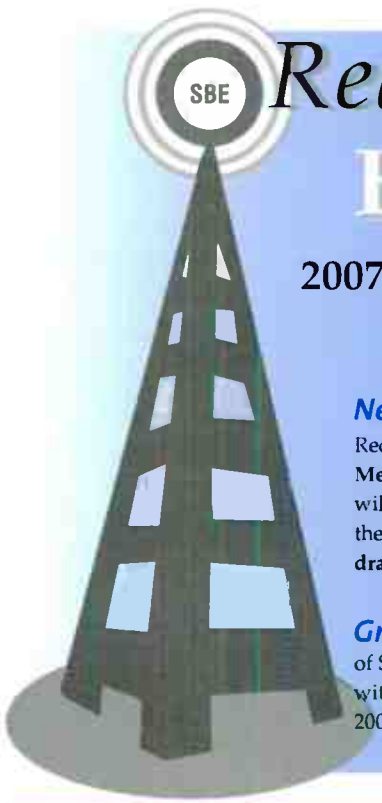
Recruit new members and win

There's still time to "**Reach New Heights**" during the 2007 SBE Membership Drive. The annual drive started March 1 and continues through May 31, 2007.

All current SBE Members who sponsor a new member during this year's drive will receive $5 off your 2008 dues for each new Regular, Associate or Sustaining member that you sponsor (up to $25). In addition, sponsors will have their names entered into the Membership Drive Prize Drawing where you could win one of many great prizes donated by SBE Sustaining Members and SBE Bookstore publishers.

If you plan to attend NAB2007, this is a great time to introduce your friends and colleagues to SBE. Bring them to the SBE Booth in the upper level of the South Hall of the Las Vegas Convention Center (conveniently located near the Broadcast Engineering Conference) with their applications where you can both pick up an SBE membership ribbon. Then invite them to the SBE Membership Meeting on Tuesday, April 17, at 5 p.m.



Reaching new
HEIGHTS

2007 SBE Membership Drive
March 1 — May 31

Need a little inspiration?

Recruit a new member during the **2007 SBE Membership Drive, March 1 – May 31,** and not only will you strengthen the voice of broadcast engineers in the industry, but **your name will be entered into a prize drawing with more than 50 prizes, including:**

Grand Prize: A trip for the winner, compliments of SBE, to the SBE National Meeting, held in conjunction with the Pittsburgh Regional Convention, October 10-11, 2007.

Time to renew your membership

It's that time of year again — time for Regular, Senior, Associate and Student Members to start thinking about renewing their SBE memberships.

SBE membership dues for Regular, Senior and Associate Members are $63. Dues for Students Members are $20.

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

Membership Renewal for Youth and Sustaining Members is due on the anniversary month of joining the Society.

Why don't you go to the convention?

BY **Chriss Scherer, CPBE, CBNT**
SBE President

It's hard to avoid all the news about the NAB Convention. It's in all the trade publications, this newsletter, your e-mail inbox and on most equipment manufacturers' websites. You know that it's a big convention, and it continues to grow. Depending on the portions that you could attend, an NAB visit can be as short as a day or as long as nearly two weeks. The experience offers lots to see, lots to do, and lots to learn.

While convention attendance continues to rise, it seems that there are many people who do not attend the annual gathering. For those who do not attend I ask, "Why not?"

This is the largest broadcast convention in North America in one of the most accessible cities. If the reason for not attending is purely financial, I can appreciate that. Las Vegas isn't the cheap spot that it once was. (Even so, there are ways around the cost, but that's another topic on its own.)

If you can't attend the NAB Convention, I hope that you at least attend a regional convention or expo. Many offer just as good an experience as the major event in Las Vegas. If you don't attend any events, why not?

I have asked people why they don't attend any conventions. There are a handful of common answers. I understand that sometimes there are legitimate reasons, but too often I hear excuses. What's your reason?

The most frequent responses I hear include some variation of my boss won't let me go, take the time off or pay for me to go. If in fact the boss was asked and this is a real answer, it's an answer that can be challenged.

Attending an expo or convention is an ideal way to network with others in our industry, to exchange ideas and experiences, and learn about the technology of our trade. Attending an SBE meeting offers these same opportunities, but a larger event provides a greater depth of opportunities.

If other coworkers are allowed to attend expos or seminars, so should you. You're a valuable part of the station team, and your advancement will help you help the team.

If an expo can be attended with one day out of the office, the financial burden is minimal. If attendance requires some travel funds that aren't available this year, be sure to include the expenses in next year's budget.

Not being allowed to take the time off is also ridiculous. You're allowed to go home at night and on the weekends, so the extra day or two out of the office should not be a problem. If you're a staff of one, find someone to cover for you for emergencies until you return.

One of the worst reasons I hear for someone not attending a convention is, "My boss thinks I'm going only so that I can look for another job." If this is the truth, then take it upon yourself to go and find that other job. If it's false, convince him to take the chance and let you go one time. Just be ready to report on the new information you obtained, and then apply it to your job.

The reality is that if you're good enough to get another job, the boss' attempt to thwart your career won't work anyway.

If media engineering is just a job, I guess I can understand not attending a convention. You're reading this because you're a member of the SBE, and therefore I assume that your work in media engineering is a career choice and not simply a job. Your career is your profession, and advancement in your profession is the natural course. Attending a career event is one way to advance your career.

If I don't see you in Las Vegas this year, I hope that I'll see you there next year, or at one of the regional events.

Member reception added to SBE's events at NAB2007

BY **John L. Poray, CAE**
SBE Executive Director

There'll be something new during the NAB convention this year. For those of you who will be attending NAB2007 in Las Vegas, you'll want to attend SBE's first-ever member reception. This will be a great opportunity to relax, meet up with friends and enjoy a cold beverage and hors d'oeuvres.

The event will be held from 6:30 to 8:30 p.m. in Ballroom D of the Las Vegas Hilton Hotel on Tuesday, April 17. The reception is being made possible through the generous sponsorship of Turner Broadcasting System/CNN. Besides the good food and drink, there will be a very nice door prize awarded to a lucky winner.

Members of SBE are welcome to bring a guest and we encourage prospective members of SBE to attend as well. We hope all members will plan to attend the spring SBE Membership Meeting on Tuesday from 5 to 6 p.m. in S228 of the Las Vegas Convention Center and then head for the Hilton and the reception that follows at 6:30 p.m. It should be a fun time!

Speaking of the spring SBE Membership Meeting, part of the meeting will be devoted to recognizing a number of our chapter certification chairmen for their service. Those with one, five, 10, 15 and 20 years of service will be recognized. These folks and many others like them work hard to encourage SBE members and others in their areas to become certified. Most of them proctor certification exams multiple times each year as well as take the time to review certification and recertification applications. We also will be recognizing all of the SBE Accredited Frequency Coordinators in attendance. SBE began accrediting frequency coordinators in one and a half years ago and 102 have since applied and received this distinction. We hope you will attend and thank them for their service. Among the highlights of the meeting will be SBE president, Chriss Scherer, CPBE CBNT providing an update about Society programs and initiatives.

The first 125 members in attendance at the SBE Membership Meeting will receive a special SBE "door prize" and one lucky winner will win a digital camera! The spring SBE Membership Meeting is being sponsored once again this year by Microwave Radio Communication (MRC). Our thanks to MRC for their continued support of SBE!

Another national event will take place across the country from Las Vegas later in the year. The annual SBE National Meeting is in Pittsburgh this year on October 10-11 and will be conducted in conjunction with the Pittsburgh - Chapter 20 SBE Regional Convention. The National Meeting will include the fall meeting of the SBE Board of Directors, the annual Fellows Lunch, Annual Membership Meeting, and National Awards Reception and Dinner.

The Chapter 20 Regional Convention will include an exhibit floor and reception on the evening of the 10th. On the 11th, the show floor will be open all day and technical paper presentations will also be featured. The National Meeting/Regional Convention will be held at the ExpoMart and Radisson Hotel in Monroeville, PA on Pittsburgh's east side.

For more information about the SBE National Meeting and Chapter 20 Regional Convention, visit www.sbe.org or www.sbe20.org and watch future issues of *The Signal*.

Finally, I encourage any of you who haven't renewed their SBE membership to do so today. Every member is important to the continued vitality of this organization and there is always something for you to benefit from by being a member. SBE has bucked the trend of declining membership that many membership organizations have suffered in recent years. To get the most out of your membership, be active and engaged in what your Society is doing and in your local chapter.

SBE Member Reception

- Sponsored by Turner Broadcasting System/CNN
- Held from 6:30 to 8:30 p.m. April 17 in Ballroom D of the Las Vegas Hilton Hotel during NAB2007
- SBE Members, their spouses, and interested engineers and technitions are invited to attend
- Hors d'oeuvres and beverages provided
- Special prize give-away

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FCC values engineers and lawyers ... differently; and more about bad RF

cimlay@sbe.org

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

Every time I go to the FCC for a meeting (which isn't by any means as often as it used to be, because the current Chairman has recently adopted a policy which restricts staff below the Bureau chief level from meeting with the private sector, so most contact is by phone or e-mail these days) I look at the job postings. I don't do that in order to find a better job for me, because the one I have suits me just fine. Instead, I like to compare the salaries that are offered in the postings down in the lobby. FCC is very detailed in their job postings, and they have paper copies of the descriptions of jobs that are available at any given time. On several occasions, I have found engineer jobs and lawyer jobs posted at the same time. Sure, any comparisons that I would make are going to be purely anecdotal, because the jobs are dissimilar and therefore a bit hard to compare, but I am looking for some long-term patterns here. Let's see what the job postings look like from time to time, and see if we can find a pattern.

Last summer, FCC posted two jobs at once. The first was for an Attorney Advisor in the Wireless Bureau, who would be a GS 12, 13 or 14, depending on qualifications and experience. The job would be in the mobility division, which deals with policy for Amateur, Citizens, Private land mobile, aviation and marine radio. The starting salary was, for a GS-12, between $65,000 and $84,559 per year. For GS-13, $77,300 to $100,554 per year. For GS-14, $91,407 to $118,828 per year. There was a single opening for that job. The second job was for Electronics Engineers, to work as Engineers-In-Training (EIT) program. There were many job openings in this category, not just one. There were several in each of the District Offices and at Gettysburg. The job rated a GS 5, 7 or 9, with upgrade potential to a GS-13. The salary range was between $32,755 and $61,089 depending on education and experience. The GS-9 range requires graduate education and substantial experience. Quite a difference between the engineer jobs, of which they had plenty, and the lawyer job, of which they had one.

More recently, there were three jobs posted at once. The first was an Attorney Advisor in the Media Bureau. There was one vacancy in Washington. The job was for a GS-14 or 15 classification, and the salary range was $93,822 to $143,471. The job was a senior advisor dealing with cable, broadcast television and radio, and satellite television issues. Promotion potential was GS-15. The second job was also in the Media Bureau for an Attorney Advisor, a GS-11, 12 or 13. The salary range was $55,706 to $103,220. There was one vacancy in Washington. This was more of a legal researcher job, to conduct special studies in the Media Bureau and preparation of documents in various proceedings, including rulemaking. Promotion potential was GS-14. The third job was for an Electronics Engineer, to work in the Office of Engineering and Technology. There was one opening in Washington, with a GS-7, 9 or 11 classification, depending on experience and education. The salary range for this job was $41,262 to $68,898. This job would involve working in the Electromagnetic Compatibility Division, evaluating engineering studies, and telecommunications system proposals, in order to authorize new services. It involved advising senior staff on the technical merits of proposals and rulemaking petitions, and research into telecommunications technologies. It also involves correspondence with international organizations. It sounds to me like a really interesting job. The promotion potential is up to a GS-13.

So, the statistical validity of the above is just about nil, but isn't there at least the hint of a pattern here? The low end of the three law job salary ranges are higher than the engineer jobs; the upside salary ranges are a good deal higher than the engineer jobs; and the promotion potential is higher in each case for the law jobs. Is this because of the graduate level degrees that the lawyers have? No, because the salary ranges are significantly different, and the engineer jobs on the high side do not approach those of the law jobs, regardless of graduate degree of the engineer. The most notable of these postings was that for the EIT positions, of which there were many as of last summer. It would be interesting to determine the number of vacancies that were filled since then. But the starting salaries for those positions were below those of most administrative assistant positions in Washington, so those that were available in Washington may still be available. The lawyer positions were probably filled.

On another subject, my last *Signal* article about Bad RF triggered quite a few interesting and very thoughtful responses. Virtually all of them agreed with Howard Fine and not with me. Here are two excerpts, with company names and sources omitted:

Chris, the Commission's historic tack of holding the end user primarily and, often, solely responsible for unlicensed operation is archaic. To me, it stems from the days when RF technology was not nearly as ubiquitous or had nearly the potential for harmful interference as it does today. Used to be that unlicensed operation meant someone with a technical background and the means and acumen to build or otherwise acquire the equipment, deliberately put his transmitter into operation as a ham, HF or broadcast band 'pirate'. Nowadays RF devices are offered for sale in every Wal-Mart, Target and Home Depot... It is no wonder that the public and business sectors have no idea that anything offered for sale for their business or home use would require a license.

I personally have been involved with Part 74 interference cases, one where a ... manufacturer's rep sold ... equipment to two unsuspecting professional sports franchises saying "these are fine for you to use — as long as you keep them on low power they will stay under the TV station's radar." These team's

venues were less than a half mile from the local stations main consolidated ENG receive site. The manufacturer and their local rep both said to me that they did not think they had done anything wrong. I also am aware of ... systems being sold to [organizations] which have no idea that any license is required. IMHO, in today's RF device saturated environment the parties with the knowledge and, therefore, significant responsibility, are the manufacturers and resellers.

So count me as a vote with Howard. [Some] equipment manufacturers have taken the lack of FCC requirements and scrutiny as a green light to market and sell their equipment in a most unethical manner. This makes the lives of frequency coordinators inordinately more difficult, to the detriment of spectrum utility.

I am usually pretty conservative about government intrusion, but I strongly believe that the FCC should require all manufacturers to include a highly visible warning (such as a fluorescent sticker) both in the manual and on the packaging warning customers that use of the equipment requires a Federally issued license. And all sales personnel should be held responsible by FCC rule to directly advise the customer of any licensing requirement. Since the user has thus been educated, one can then fairly hold the user liable for improper or illegal operation.

Another comment blamed the marketing techniques of certain manufacturers for the problem:

As a life long conservative Republican, thoughts of additional regulations for business isn't the first thought that comes to my mind when I get up in the morning. But I also believe some manufacturers have little regard for ethics and put their customers in the position of unknowingly violating the law. Let me mention what I consider an extreme example... In the not too distant past, [one company] had a "Worship" catalog, targeted of course at churches, promoting the sale of wireless mics on UHF TV channels. Not a hint of mention that it would be illegal for the typical church to use. Perhaps it would be OK if the church broadcast their services, but that wouldn't be the typical case. Even if they DID broadcast a service... it is unlikely that the wireless mic would be used exclusively for that purpose.

In my experience, churches are usually law abiding institutions. But they are also principally run by volunteers and usually have no reason to be aware of FCC rules. In the case of my church, the worship leader happens to be a broadcast professional... but his paid job is in producing ads for the local TV station... so even in his case he has no reason to be familiar with the FCC rules. As far as I know, I am the only person in the church familiar with the FCC rules, and I don't happen to be involved with the worship team or purchase of mics. So... a "reputable" manufacturer (not a dealer) is specifically promoting a wireless mic as suitable for church use. No caveats. Just send money. Are we REALLY supposed to say that the manufacturer shouldn't be held accountable for such actions?

Some time ago I spent a considerable amount of time exploring the web sites of prominent wireless mic vendors and it was hard to find ANY mention by ANY of them of the legal issues. When I [contacted one company, I] downloaded several manuals and associated advertising brochures, and found NO mention of legal restrictions. The [company] expressed surprise. [They] agreed that only broadcasters, etc could legally use their mics and said they would look into the matter. But a year later, they still are promoting wireless mics on UHF channels to churches.

In summary, I think SOMETHING has got to change. My suggestion is simple: a law that requires ALL sales literature, ads, and manuals from manufacturers to have a brief mention of the legal restrictions. It might be no more than "Use is restricted to licensed users qualified under Part 74 of FCC rules, typically broadcasters". The box it is sold in should have a similar statement, as should manufacturer literature about the product targeted to dealers. As they say, the devil is in the details, but it would appear to me that this wouldn't be a very onerous requirement, and should be fairly easy to enforce.

Not bad ideas. What do you think?

Another headache for 2 GHz ENG

BY **Dane E. Ericksen, P.E., CSRTE, 8-VSB, CBNT**
Chairman, SBE FCC Liaison Committee

In yet another headache for 2 GHz TV Broadcast Auxiliary Service (BAS) Electronic News Gathering (ENG) operations, the deployment of Advanced Wireless Services (AWS) systems at 2,110–2,120 MHz in New York City, Chicago, and undoubtedly other large metro areas is starting to cause interference to 2,025–2,110 MHz ENG operations, especially to band-edge licensees operating on either old TV BAS Channel A7 (2,093-2,110 MHz) or new TV BAS Channel A7d (2,097.5–2,109.5 MHz). AWS operations are also a potential threat to the twenty 25-kHz wide upper Data Return Link (DRL) channels at 2,109.5–2,110 MHz.

T-Mobile Notifications Sent To NYC and Chicago Area Broadcasters

2 GHz TV BAS licensees in New York City and Chicago have received notification letters from commercial mobile wireless services (CMRS) operator T-Mobile USA, Inc., advising of its intention to deploy A-block AWS (also known as Third-Generation wireless services, or "3G") stations in those areas. Hand-held mobiles would transmit at 1,710-1,720 MHz, which isn't a problem, but A-block AWS base stations would transmit at 2,110–2,120 MHz, with equivalent isotropic radiated powers (EIRPs) of up to 62.1 dBm (1,640 watts). B-block AWS stations, at 1,720-1,730 MHz for mobiles and 2,120–2,130 MHz, are less of an interference threat with regard to out-of-band emissions (OOBE), but still represent a brute force overload (BFO) interference threat to the sensitive receivers used at ENG receive-only (ENG-RO) sites, especially those using low noise amplifiers (LNAs).

Notifications Required by FCC Rules

These notifications are required by Subpart L of Part 27 of the FCC (Part 27 = the Miscellaneous Wireless Communications Services, Subpart L = 1710-1755 and 2110-2155 MHz Bands). Specifically, Section 27.1133, "Protection of Part 74 and Part 78 Operations," states that:

"AWS operator must protect previously licensed Broadcast Auxiliary Service (BAS) or Cable Television Radio Service (CARS) operations in the 2025-2110 MHz band. In satisfying this requirement AWS licensees must, before constructing and operating any base or fixed station, determine the location and licensee of all BAS or CARS stations authorized in their area of operation, and coordinate their planned stations with those licensees. In the event that mutually satisfactory coordination agreements cannot be reached, licensees may seek the assistance of the Commission, and the Commission may, at its discretion, impose requirements on one or both parties."

Thus, a newcomer AWS operator is required to coordinate with adjacent-band BAS/CARS licensees.

The notices sent to the NYC and Chicago area 2 GHz BAS licensees do not meet the requirements of Section 27.1133 in this writer's opinion. Those notices only attached a large scale map with scores of circles, with each circle representing a new A-block AWS base station. But, without any supporting data, such as geographic coordinates, the map is useless for determining whether a proposed new AWS base station is close to an existing ENG-RO site. Further, Section 27.1133 requires the AWS licensee to determine the locations of BAS and CARS stations (which includes ENG-RO sites), and not vice versa.

In response to these T-Mobile notices (done through commercial microwave frequency coordinator (CMFC) Comsearch), the Chicago-area broadcasters have scheduled a meeting with the T-Mobile folks for March 2, and at the time of this writing the NYC-area broadcasters are in the process of scheduling have scheduled a similar meeting for March 8. On behalf of SBE, this writer will participate in the Chicago meeting by teleconference, and hopefully also in the NYC meeting, again by teleconference. So, by the time you read this article, broadcasters should have a good idea of how cooperative T-Mobile will be in ensuring that harmful interference to existing TV ENG operations in the Chicago and NYC areas is not caused.

Still Waiting for a WT Docket 04-356 R&O

It is curious that T-Mobile is planning to deploy before a Report and Order (R&O) to the still pending WT Docket 04-356 rulemaking (Service Rules for 2 GHz AWS stations) has been issued. The reply comments to that rulemaking closed on February 8, 2005, so a R&O is certainly due (indeed, past due in this writer's opinion). In its December 8, 2004, initial comments to that rulemaking, SBE proposed that AWS base stations normally not be located any closer than 0.5 km to an ENG-RO site, but only if the OOBE suppression requirement for 2 GHz AWS base stations was tightened from 43 + 10log(TPO in watts) to 67 + 10log(TPO in watts). Under the SBE proposal, if an AWS licensee nevertheless elected to build an AWS base station within 0.5 km of an ENG-RO site, then the AWS licensee would be required to submit a site-specific application for that base station, and have an equipment test condition placed on the authorization, requiring interference tests to be conducted prior to placing the

new base station into regular service. (Like cellular and PCS, AWS is an area-licensed service, where the party winning the spectrum auction is entitled to construct base stations anywhere in the auction area, which may be a Basic Trading Area (BTA), a Major Economic Area (MEA), a Cellular Marketing Area (CMA), a Major Trading Area (MTA), a Regional PCS Area (RPC), or some other geographically defined area; see http://www.fcc.gov/oet/info/maps/areas/. Area-licensed services typically have a signal strength or power flux density (PFD) limit that must be met at their service area boundary, but, other than that, are generally free to build new cell sites wherever the auction winner sees fit within its operational area. Some exceptions include a cell site near a radio quite zone, near an FCC Monitoring Station, or with sufficient antenna height to require FAA approval; in those cases, a site-specific application must first be filed and approved. The SBE proposal was to add ENG-RO sites to the list of triggers that could require a site-specific AWS application.

If an equipment test condition is placed on a site-specific AWS license, and if those tests demonstrate no interference to the nearby ENG-RO site, then the AWS licensee could bring the cell on line and start serving customers. But if the equipment tests showed interference, then the tests would have to be suspended and not re-commenced until the appropriate additional filters could be installed. The appropriate additional filters might include sharper band pass filters for the AWS transmitters, further reducing the OOBE, or might include filters added in front of the ENG-RO LNAs. In severe cases, both mitigation methods might be necessary.

So, stay tuned. Between the 2 GHz transition from the old 1,990-2,110 MHz TV BAS band plan using 17- and 18-MHz wide analog channels to the new 2,025–2,110 MHz TV BAS band plan using 12-MHz wide digital channels, the deployment of high-power Department of Defense (DoD) satellite uplinks that include transmissions at 2,025–2,110 MHz, and objections from Industry Canada when an existing TV Pickup station with an operational area within 35 miles of the Canadian border tries to modify its license from the old to the new band plan, the complications of BFO and OOBE interference from 2,110–2,120 MHz A-block AWS stations may seem like the straw that will break the camel's back. SBE will be doing its best to ensure that doesn't happen.

Georgia to Host Ennes Workshop

SBE Chapter 5 in Atlanta and the Georgia Association of Broadcasters (GAB) are sponsors of an Ennes Workshop planned for Callaway Gardens Conference Center in Pine Mountain, GA on Friday, June 8. The Workshop, presented in cooperation with the National Office of the Society of Broadcast Engineers, will feature a full day of presentation topics of interest to broadcast engineers and technicians. both television and radio, and those working in related fields. Attendance at Ennes Workshops typically qualifies for SBE recertification credit.

The program for the Workshop is being finalized as of this writing. Typical presentations at recent workshops have included presentations on proper wiring techniques, engineering considerations for digital microwave STL, TSL and ICR, improvements to FM and HD signal quality, digital video transport basics, audio over IP, monitoring and analysis of MPEG video systems and networking and data transmission for HD radio.

Ennes Trustee, Fred Baumgartner, CPBE, of MediaFlo USA, is organizing the program and will serve as moderator. Local organizational support is being provided by SBE Chapter 5 chairman, Bill Magliocco, CPBE, CBNT, 8-VSB and member, Mark Fehlig, P.E., CPBE, CBNT and Jere Pigue, President of the GAB.

Callaway Gardens is located 70 miles southwest of Atlanta and 30 miles north of Columbus, GA on U.S. 27. The Ennes Workshop is being held as a part of the 2007 GAB Convention.

The complete program and information on how to register are posted on the SBE website, www.sbe.org in the calendar and education sections.

New position brings many firsts

BY **Megan E. Clappe**
SBE Certification Director

Some of you may know my name but for those of you who don't, I'm Megan Clappe. I succeeded Linda Baun as Certification Director in July. Although I have been with SBE since 2003 as the Certification Assistant, this new position has provided me a lot of firsts.

One of those "firsts" is the opportunity to attend NAB this year. I hope to meet many of you throughout the upcoming years and the perfect opportunity will be at the booth in Las Vegas. We will also have a chance to interact at the annual membership meeting.

This year at NAB we will continue the tradition of recognizing the service anniversaries of our local Certification Chairmen. This tradition began in 2003 and honors our volunteers on a recurring five-year cycle. The SBE Membership Meeting will be held at NAB2007 on Tuesday, April 17, from 5 to 6 p.m., in Room S228 of the Las Vegas Convention Center. At that time, we will present plaques to the following:

20 Years

- Richard Burden, CPBE – Chapter 47, Los Angeles, CA
- Eddy Arnold, CSTE – Chapter 61, Memphis, TN

15 Years

- Mark Quella, CPBE – Chapter 11, Boston, MA

10 Years

- Gordon Carter, CPBE – Chapter 26, Chicago, IL
- Charles Grider, CBRE, CBNT – Chapter 118, Montgomery, AL
- Ernest Hartt, CPBE – Chapter 38, El Paso, TX
- James Leedham, CPBE, CBNT – Chapter 74, Midland, NE
- John Reno, CSBE – Chapter 14, Connecticut Valley
- Terry Reynolds, CPBE – Chapter 89, Alaska
- Noel Richardson, CSRE – Chapter 116, Mountain State, WV

5 Years

- Paul Claxton, CPBE, CBNT – Chapter 131, Inland Empire, CA
- Terry Horbatiuk – Canada
- Gary Keener, CBTE – Chapter 69, South Texas
- Raymond Klotz, CPBE, CBNT – Chapter 56, Tulsa, OK
- Brian Ryel, CBTE – Chapter 135, Middle Tennessee
- James Sams, CSTE, CBNT – Chapter 80, Fox Valley, WI

First Year of Service

- Don Hackler, CSRE, CBTE, CBNT – Chapter 40, San Francisco, CA
- Emir Hadziahmetovic, CSTE – Chapter 101 Columbia, SC
- Elvir Hadziselmiovic, CSRE, CSTE – Chapter 62, Utah
- Tony Mancari, CBT – Chapter 78, Blue Ridge, VA
- Peter Thibault, CBT – Chapter 132, Fort Meade, MD
- Philip Schmitt, CBRE, CBT – Chapter 102, Grand Rapids, MI

I want to take this time to thank all of the other local Chapter Certification Chairmen for the time they take to help make the Program of Certification grow and run smoothly.

I would also like to thank the members of the National Certification Committee for their time, effort and patience.

Please feel free to contact me at any time at mclappe@sbe.org or 317-846-9000.

New SBE Certification Achievements

LIFE CERTIFICATION

Certified Professional Broadcast Engineers® and Certified Senior Broadcast Engineers® who have maintained SBE certification continuously for 20 years and are current members of SBE may be granted Life Certification if so requested. All certified who have retired from regular full-time employment may be granted Life Certification if they so request. If the request is approved, the person will continue in his/her current level of certification for life.

CERTIFIED PROFESSIONAL BROADCAST ENGINEER® (CPBE®)
Brian Morgan, Springfield, IL - Chapter 49

CERTIFIED BROADCAST TECHNOLOGIST® (CBT)
Annette Wegesend, Sacramento, CA - Chapter 43

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®)
Barry Erick, Dallas, PA - Chapter 2

NOVEMBER EXAMS

"Thank You" CHAPTER CERTIFICATION CHAIRS FOR YOUR ASSISTANCE

CERTIFIED AM DIRECTIONAL SPECIALIST (AMD)
Harry Hardisty, Tyler, TX - Chapter 67
Mike Raide, Shortsville, NY - Chapter 57
Certified 8-VSB specialist (8-VSB)
Larry Price, Los Angeles, CA - Chapter 47

FEBRUARY EXAMS

"Thank You" CHAPTER CERTIFICATION CHAIRS FOR YOUR ASSISTANCE

CERTIFIED BROADCAST RADIO ENGINEER (CBRE®)
Anthony Guerra, Toronto, Ontario Canada

CERTIFIED BROADCAST TELEVISION ENGINEER (CBTE®)
David Barker, Carol Stream, IL - Chapter 26
Tony Christensen, Sandy, UT - Chapter 62

CERTIFIED AUDIO ENGINEER® (CEA®)
Raymond Barley Jr., Pittsburgh, PA - Chapter 20
Warren McFerren, Evergreen park, IL - Chapter 26

CERTIFIED VIDEO ENGINEER® (CEV®)
Joseph Mahedy, Mount Kisco, NY - Chapter 15

CERTIFIED BROADCAST NETWORKING TECHNOLOGIST® (CBNT®)
Lawrence Bornacelli, Orlando, FL - Chapter 42
Wayne Cook, Bedford, TX - Chapter 67
Eric Dye, Eugene, OR - Chapter 76
Michael Hansen, Farmington, UT – Chapter 62
Paul Jonak, Riverside, CA - Chapter 131
Richard Kidder, Hanford, CA - Chapter 66
Neal Kiely, Beaverton, OR - Chapter 124

CERTIFIED BROADCAST TECHNOLOGIST® (CBT)
Rubin Garcia, Aventura, FL - Chapter 53
Warren McFerren, Evergreen park, IL - Chapter 26
Bryan Shaw, Easton, MD - Chapter 46

CERTIFIED TELEVISION OPERATOR® (CTO®)
Andrew Bloustein, Chicago, IL - Chapter 26
Garrett Bohannon, Ellicott City, MD - Chapter 132

CERTIFIED RADIO OPERATOR® (CRO)
Dennis Perry, Squim, WA
Bryan Shaw, Easton, MD - Chapter 46
Joshua Werner, Oshkosh, WI
CBS Radio-Los Angeles
Meg Daily, KCBS
Michelle Gonzalez, KLSX
Louie Holguin, KTWV
Brenda McIntyre, KNX
Gilbert Mares, KNX
Eddie Rodriguez, KTWV

CERTIFIED TELEVISION OPERATOR® (CTO®)
Jeffrey Barefoot, Woodbridge, VA
Rose Hernandez, Sacramento, CA
Matthew Horstman, LaCrosse, WI
Jennifer Whitaker, Salt Lake City, UT
UNIVERSITY OF NORTH CAROLINA
Jorg Eichfuss, Durham, NC
Thomas Goodwin, Durham, NC

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®)
Leonard Charles, Madison, WI - Chapter 24
Mark Fehlig, P.E., Snellville, GA - Chapter 5
James Griffin - Chapter 131
Mario Hieb, Salt Lake City, UT - Chapter 62
Thomas Skubel, Pittsburgh, PA - Chapter 20
Keith Stuhlmann, Fort Myers, FL - Chapter 127

CERTIFIED SENIOR BROADCAST ENGINEER® (CSBE®)
Warren Shulz, Griffin, IN - Chapter 26

CERTIFIED SENIOR RADIO ENGINEER (CSRE®)
John Landry, Hastings on Hudson, NY - Chapter 15

CERTIFIED SENIOR TELEVISION ENGINEER (CSTE®)
Paul Cohen, La Crescenta, CA - Chapter 47
Carl Dole, Williamburg, IN - Chapter 25
Michael Hoffman, Hermosa Beach, CA - Chapter 47
W. Keith Martin, Fairbanks, AK - Chapter 89
Fernando Portela, Miami, FL - Chapter 53
James Wilson, Sellersburg, IN - Chapter 35

CERTIFIED SENIOR RADIO ENGINEER (CSRE®) AM DIRECTIONAL SPECIALIST
Phil Alexander, Indianapolis, IN - Chapter 25

CERTIFIED SENIOR TELEVISION ENGINEER (CSTE®) 8-VSB SPECIALIST
Dennis Vigil, Albuquerque, NM - Chapter 34

CERTIFIED SENIOR RADIO/TELEVISION ENGINEER (CSRTE)
Elliott Eckert, Jr., Norwalk, CT - Chapter 15

CERTIFIED BROADCAST RADIO ENGINEER (CBRE®)
Richard Archut, Monroeville, NJ - Chapter 18
Gerald Dalton, Arlington, TX - Chapter 67
Richard Horner, Koror, Palau, PW

CERTIFIED BROADCAST TELEVISION ENGINEER (CBTE®)
Joseph Addalia, Jr., Winter Springs, FL - Chapter 42
Robert Lewis, Park City, UT - Chapter 62
Thomas McNicholl, Whitesboro, NY - Chapter 22
George Melton, Riverdale, GA - Chapter 5
Rick Morris, Evanston, IL - Chapter 26
Michael Nipps, Green Bay, WI - Chapter 80
Daniel Rapak, Randolph, NJ - Chapter 41
Larry Rixman, Louisville, KY - Chapter 35
Robert Russo, Guilford, CT - Chapter 14
Willie Smith, St. Joseph, MO - Chapter 59
Ricardo Vilardell, El Paso, TX - Chapter 38

CERTIFIED VIDEO ENGINEER® (CEV®)
Johnnie Freyermuth, Jr, Fairmount, GA - Chapter 5

CERTIFIED BROADCAST NETWORKING TECHNOLOGIST® (CBNT®)
Mansur Abdulhussain, Houston, TX - Chapter 105
Douglas Barkley, Fort Lauderdale, FL - Chapter 53
Patrick Berger, North Aurora, IL - Chapter 26
Sanford Boyd, Andalusia, AL - Chapter 118
Richard Danysh, Jr., Falls City, TX - Chapter 69
Donald Dobbs, Keller, TX - Chapter 67
Mark Fehlig, P.E., Snellville, GA - Chapter 5
Richard Graham, Glenwood, IA - Chapter 74
Charles Grantham, Andalusia, AL - Chapter 118
Brian James, Birmingham, AL - Chapter 68
Thomas Jones, Montgomery, AL - Chapter 118
William Kozel II, North Olmsted, OH - Chapter 70
Rick Mann, Florence, AL - Chapter 68
George Melton, Riverdale, GA - Chapter 5
Michael Nipps, Green Bay, WI - Chapter 80
Gerard Paonessa, San Antonio, TX - Chapter 69
Willie Smith, St. Joseph, MO - Chapter 59
Dennis Vigil, Albuquerque, NM - Chapter 34
Charles Youngs, Atlanta, GA - Chapter 5

CERTIFIED BROADCAST TECHNOLOGIST® (CBT)
Gina Dierks, Omaha, NE - Chapter 74
Peter Fountain, Clermont, FL - Chapter 42
R. Allen Fowler, Murray, KY - Chapter 103
Kevin Fowley, Kingston, TN - Chapter 113
Don Hemenover, Indianapolis, IN - Chapter 25
Tom Kettwig, Boise, ID - Chapter 16
Ronald Lindquist, Thomasville, GA
Richard Malinowski, Mt. Prospect, IL - Chapter 26
Michael Miller, Moscow, ID - Chapter 117
Michele Muller, San Mateo, CA - Chapter 40
Scott Rivers, Coon Rapids, MN - Chapter 17
Michael Schweizer, San Francisco, CA - Chapter 40

CERTIFIED TELEVISION OPERATOR® (CTO®)
Abel Abeyta, Houston, TX
Luis Balderas, Brownsville, TX
Jimmy Boone, Columbia, SC
Zandra Clarke, Forest Park, GA - Chapter 5
William Kauffman, Lancaster, PA
James McLaughlin, Denver, CO
Mark Metzler, San Mateo, CA

Lucinda Hutter Cavell named Outstanding Female Broadcast Engineer of the Year

The American Women in Radio and Television (AWRT) and the Society of Broadcast Engineers (SBE) have named Lucinda Hutter Cavell as the recipient of the annual, "Outstanding Female Engineer of the Year" award. The award was presented during the 2007 AWRT Annual Leadership Summit & Business Conference, on Saturday, March 10, 2007, at the Renaissance M Street Hotel during the AWRT Power Breakfast. Broadcasting & Cable magazine sponsored the award this year.

AWRT has long recognized women making inroads in all areas of electronic media; this includes the growing field of broadcast engineering. Through this innovative partnership, AWRT and SBE (the only organization devoted to the advancement of all levels and types of broadcast engineering) selected a woman who has made significant contributions to the broadcast industry, whose professional track has been technical in nature, and who has advanced the goals and objectives of the SBE and AWRT, while simultaneously promoting the field as a career path for women in the electronic media.

With the announcement, SBE president, Chriss Scherer, CPBE CBNT said, "Broadcast engineering talent today spans a range of interests and personalities, and the AWRT/SBE award recognizes one part of this diverse pool. The SBE has recognized its own members through its annual award program for many years, and we are pleased to further our efforts and recognize others for their contributions."

Hutter Cavell's impressive 28-year career as a broadcast engineer has taken her from a near plane crash in Brazil to braving missile fire at Desert Storm. Hutter Cavell has worked at three separate Olympic Games as well as Presidential travels. In addition to being highly accomplished, she is adamant about mutual support for women in the broadcasting technical field. It is her fervent belief that there is a lack of effective mentoring in the industry and that the biggest challenges are people – not technology issues.

SBE President Chriss Scherer, AWRT/SBE Female Engineer of the Year recipient Lucinda Hutter Cavell, and AWRT Vice President Mary Bennett stand together after the award ceremony.

In the Circle...

a snapshot of an SBE Member

David Priester, CPBE
Director of Technical Operations for the Roy H. Park School of Communications at Ithaca College
SBE Chapter 140, Ithaca, New York

Best known for: Good question, but-probably for the number of years I served as certification chair in Atlanta. I wasn't always a regular at meetings but I held local office several times. The longest term though was as certification chair. That's something I really liked doing, and I could always fit that into my work schedule. I always believed in the program, went through three levels myself, and urged my associates to participate.

Picture here: One of the aspects under my overall management is the technical plant of Ithaca College's two radio station operations. The picture was taken in the VIC control room with the young woman who was the on-air talent at the moment. I'm not sure of the topic of conversation (was when I was teaching in the photo) but the console is brand new and somewhat more complicated than the old one and it probably had something to do with that.

Focal Point: There are two particular things among the myriad of aspects of the SBE that I think are of particular value to our profession and business. One is the representation and voice the Society provides in front of government agencies, particularly the FCC. That's difficult for an individual to do and be taken seriously in these times it seems. The other is the education, training and mentoring of those who will be taking our places. One sees different viewpoints regarding the available talent pool for the media engineering field these days, but if our business follows the anticipated trends predicted for other technical fields we will have to work hard to attract and prepare the future technicians and engineers.

Getting Started: Looking back, I think my interest began when I was around 5. I was drafted to participate in a kids TV show on the Chicago NBC affiliate (I remember the peacock on the gigantic cameras). My memory is a little dim on this but I'm told that it was all my mom could do to get me out of the control room. I wasn't really much interested in my roll in the show but the control room fascinated me.

IRLP from page 1

that all can hear from their local repeater.

Jack Roland, CBRE. who developed the idea of using the IRLP as a way to get SBE members together, said, "We came up with the idea for this net because the SBE HF "Chapter of the Air" is not always accessible by "hams" who cannot erect HF antennas and because of the HF band's susceptibility to HF radio propagation characteristics." Jack is Chief Engineer at Entercom Radio in Denver.

The SBE IRLP HAMnet will be based in Denver using the WA2YZT UHF/VHF repeater system, IRLP node #3286, on the first and third Saturdays of each month at 11:00 am, U.S. Mountain Time.

Here's how you can participate. The SBE IRLP HAMnet control station, either KE0VH, Jack Roland, or WA2YZT, Paul Deeths (net controls), connects to the local Denver Reflector IRLP Link on the local Denver WA2YZT repeater, (for local Denver hams, the repeater is on 146.805 or 447.175, usual split, 186.2pl). Then, you identify the local IRLP repeater in your area and, unless it is a closed club repeater, simply tone in, #9874. This will connect you to the Denver Reflector and the SBE IRLP HAMnet. For more information about the net and how to participate, go to www.qsl.net/ke0vh/SBEhamnet.html or, youcan contact Jack Roland, KE0VH, net control, at ke0vh@qsl.net, or jroland@entercom.com.

Jack Roland at his station in Denver.

For more information on the IRLP, go to www.irlp.net. If you would like to subscribe to Jack Roland's email list for all interested SBE IRLP HAMnet participants, just let him know via email and he will add you to the list for announcements and information. Jack will also be glad to help you find your local IRLP node repeater and get you on the air with the SBE IRLP HAMnet. He reminds everyone that all amateurs are welcome to participate.

The "HF" SBE HAMnet has been in operation for more than 20 years and is handled by Control Station WA7BGX, Hal Hostetler, CPBE. It meets the second Sunday of each month at 2400 UTC/0000 Monday on the 20 meter HF radio band.

Recognize best of 2006

Some SBE Members go above and beyond the call of duty to do their jobs *and* serve SBE and the broadcast industry, and many local SBE chapters do an absolutely excellent job of serving their members. But often these efforts can go unrecognized. Don't let that happen this year. Pull out a pen or pencil, turn to page 17 of this issue and make your nominations now for the 2006 SBE Chapter and Individual Awards.

There are five chapter and five individual award categories from which to choose when making a nomination. Three chapter awards are determined by using statistical information on record at the SBE National Office. In addition, five of the chapter awards are divided into two classes so that chapters with vastly different membership sizes are not competing with each other. This means that up to 18 awards could be presented.

Award winners will be notified in July and invited to attend the 2007 SBE National Meeting, which will be held October 10-11 in conjunction with the Pittsburgh SBE Regional Convention, sponsored by Chapter 20 in Pittsburgh, Pa. Winners will be presented with either a certificate or a plaque at the SBE National Awards Dinner held during the National Meeting.

Nominations are due to the SBE National Office no later than May 31, 2007. For additional information, please contact Larry Wilkins, Awards Committee Chair, at larry.wilkins@cumulus.com or (334) 303-2525 or Whitney Allen at wallen@sbe.org or (317) 846-9000.

NOMINATION FORM on page 17

Question taken from SBE CertPreview. Turn to page 21 for the answer.

To help you prepare for your certification exam we provide question examples from the practice tests. How do you score?

At a tape speed of 16 i.p.s., one cycle of a 15kHz signal occupies:

A) 3 mils of tape
B) 1 mil of tape
C) .05 mil of tape
D) 10 mils of tape

2007 Exam Dates

DATES	LOCATION	APPLICATION DEADLINE
April 17, 2007	NAB, Las Vegas	CLOSED
June 1-11, 2007	Local Chapters	April 20, 2007
August 10-20, 2007	Local Chapters	June 8, 2007
November 9-19, 2007	Local Chapters	September 21, 2007

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

New Members

Justin S. Arnett - Indianapolis, IN
Clinton S. Ash - Wichita, KS
Anthony Bartolomeo - Tinley Park, IL
Benjamin Bentley - Statesboro, GA
Danny Biando - Carmichael, CA
Harvier L. Black - Milwaukee, WI
Michael S. Brown - Little Rock, AR
Dewey P. Cash - APO, AE
Juan Chavez - Sylmar, CA
Derrik K. Cullison - Santee, CA
Michael S. D'Amico - Atlanta, GA
Vanny Dith - Moreno Valley, CA
Francine M. Du Verger - New Haven, CT
Lynn A. Durham - Pickerington, OH
Paul B. Ford - Phoeniz, AZ
Robert Garfinkel - Loveland, OH
Richardo A. Garza - Richardson, TX
Gregory Gialloreto - Birdsboro, PA
Steven Hasskamp - Royse City, TX
Albert Kacerguis - New Haven, CT
Neal W. Kiely - Beaverton, OR
Nathan A. Kohler - Dallas, TX
Tom Larrison - Buford, GA
Joshua A. Lighty - Dover, PA
Michael T. McCabe - Kitchener, Ontario, Canada
Christopher B. McDonald - Hampton, VA
Terry L. McFadden - Paris, TX
Daniel J. Mettler - Fishers, IN
Stephen W. Morris - Kitchener, Ontario, Canada
Todd Pekala - Los Angeles, CA
Jaime Piedra - San Antonio, TX
Oscar C. Quintanilla - El Cajon, CA
Wes Renier - Richmond Hill, GA
Kevin Rider - New York, NY
Donald R. Russell Jr. - Rockford, IL
Karl D. Sargent - Medford, OR
Bill Schully - Fort Worth, TX
Ron Schultz - Liberty Hill, TX
Andy H. Soule - Kenduskeag, ME
Garrick D. Stapleton - Knoxville, TN
Joel A. Stein - Irvine, CA
Anthony Stokes - FPOAE, NY
David Stuart - St. Louis, MO
David Tallacksen - Jersey City, NJ
Christopher L. Taylor - Kansas City, MO
Gerald Thaxton - Burley, ID
Cynthia E. Thornton - Gambrills, MD
Andrew Tyler - Englewood, CO
Richard W. Westcott - Burbank, CA
Ronald B. Yoslov - Charlotte, NC

New Student Members

Frank D. Beals - Carlton, OR
Mike J. Bergman - Ruston, WA
Matthew A. Gassman - University Place, WA
Chad R. Giles - Covington, WA
Jeremy N. Hall - Marcellus, MI
Rosemary Haskins - Nashville, TN
Krister J. Hatch - Chicago, IL
Aaron D. Hillman - Spokane, WA
Derrick J. Kessler - Tulsa, OK
Bryan M. Meek - Roy, WA
Robert S. Mills - Spokane, WA
Edarius D. Parker - Federal Way, WA
Richard L. Ramos - Lake Mary, FL
Steve A. Rosario - Tacom, WA
Matthew C. Stadtmueller - Ogden, UT
Alex D. Swenson - Tacoma, WA
Todd R. Sykes - Graham, WA
Teresa A. Tapp - Vallejo, CA
Austin F. Taylor - Fircrest, WA
Brandon A. Tofanelli - Napa, CA
John T. Trousdale - Cromwell, CT

New Associate Members

Krish Biliyar - San Diego, CA
Jon E. Easter - Indianapolis, IN

New Youth Members

Christina N. Leprine - Jericho, NY
Gregory E. Modelski - Warren, MI
Al J. Pitman - Chalfont, PA

Reinstated Members

Wilmer Arellano - Weston, FL
Duncan R. Brode - Los Angeles, CA
Robin A. Copley - Durham, NC
Brian D. Cunningham - Buffalo, NY
Derrick D. Davis - Farmington Hills, MI
John Demshock - Altamonte Springs, FL
Charles A. Forey - Cathedral City, CA
Christopher A. Fraley - Piscataway, NJ
Billy Harrison - Chesapeake, VA
Gary F. Herlache - Green Bay, WI
Timothy J. Hershiser - Eugene, OR
Mike W. Hoffman - Lawton, OK
Scott M. Hower - London, United Kingdom
Joseph A. Kees - Cary, NC
Nick S. Kiraly - Edgewater, MD
Dennis R. Krumblis - Tyler, TX
Veronica A. Mazuca - San Marcos, TX
Michele I. Muller - San Mateo, CA
Joel C. Nelson - Sheboygan, WI
Stephen M. Poole - Warrior, AL
Charles E. Riales - Southaven, MS
James A. Richardson - Milner, GA
Harry L. Scott - Woodbridge, VA
Michael R. Weber - Woodbury, MN
Wendell R. Wyborny - Cypress, TX
Stephen M. Zelenko - Pittsburgh, PA

Reinstated Student Members

Stephen Lloyd - Fort Meade, MD
Dennis A. Rund - Jenera, OH
Eric M. Tervol - Elkhart, IN

SBE Members on the Move

John Collinson, CPBE, AMD, CBNT, has been named Chief Engineer of WWSB-TV in Sarasota, Fl. Collinson is also the certification chair for Chapter 39, Tampa Bay.

Fred Engel, CPBE, has taken the position of Vice President of Broadcast Business Unit at Roscor Corporation in Mt. Prospect, Ill. after 28+ years as Vice President of Technology at WTTW11/Chicago.

Jeff Smith, CBT, has accepted the position of Manager of Broadcast Maintenance Engineering for Sirius Radio in New York City.

If you or someone you know has moved, changed positions or been honored in some way by the broadcast engineering industry, submit details to Members on the Move at wallen@sbe.org or to Attn: Whitney Allen, 9102 N. Meridian St., Suite 150, Indianapolis, IN 46260.

Annual Awards Nomination Form for 2006

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:** Whitney Allen, Communications Manager, at wallen@sbe.org or (317) 846-9000 **or** Larry Wilkins, Awards Committee Chair, at larry.wilkins@cumulus.com or (334) 303-2525.

DEADLINE: Materials must be received by the National SBE Office by May 31, 2007. Winners will be announced in July and awards presented at the 2007 Awards Dinner during the SBE National Meeting in Pittsburgh.

OFFICIAL RULES: Nominations valid only for achievements/data occurring from Jan. 1, 2006 through Dec. 31, 2006. Only active SBE Members and Chapters in good standing (having reported at least five [5] chapter meetings for 2006) are eligible for awards. Class awards are determined using the median chapter size as of Dec. 31, 2006, 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.

CHAPTER AWARDS

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 2005-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.

INDIVIDUAL AWARDS

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 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 SBE 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.

MOST CERTIFIED CHAPTER*, HIGHEST MEMBER ATTENDANCE*, AND GREATEST GROWTH IN NEW MEMBERS*: These three awards are determined with statistical information based on Dec. 31, 2006, figures on file at the SBE National Office. Chapters established in 2006 are not eligible for the Greatest Growth in New Members award.

***DENOTES CATEGORIES WITH TWO CLASS AWARDS**

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 3/4 majority vote of the SBE Board of Directors, based upon recommendations made by the SBE Awards Committee.

COMPLETE THE FOLLOWING INFORMATION

AWARD: _____

NOMINATION (CHAPTER OR INDIVIDUAL NAME): _____

SUPPORT ITEM A: _____

ITEM B: _____

ITEMS 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: _____

Want to **learn how to lead** or **expand** your **leadership skills?**

Then the **Leader-Skills Seminars**, sponsored by SBE, **are for you.**

If you relate most seminars with having a hard time keeping your eyes open and staying awake — attending the Leader-Skills Seminar will change your mind.

"(It was) an eye-opening experience," said Brian Gallagher, who attended the 2006 Leader-Skills Seminar in Indianapolis. **"Cupka is obviously one of the best at what he does."**

Gallagher was one of 14 who attended Course I of the seminar that was held last June. Course I graduates continued their leadership training with a second course offered in Indianapolis in August.

> **"If I had eight hours to cut down a tree. I would spend six sharpening my axe."**
>
> *~ Abraham Lincoln*

The Leader-Skills Series, in its 11th consecutive year with the Society, is specifically designed for broadcast engineers who have or aspire to have management responsibilities. SBE offers the two-part series in cooperation with instructor Richard D. Cupka, Sr., West Lafayette, Ind.

Cupka, who has over 40 years of experience in adult training, has directed and taught the Leader-Skills seminars to broadcast engineering managers, supervisors and technicians for 40 years. Many of the most respected broadcast engineering managers in the country today are graduates of the program and continue to send members of their staffs so that they, too, can learn from Cupka.

Cupka is known for his unique style of teaching. "I was told before about his style," said Tommy Baugh, who also attended Course I of the seminar. **"It was the best teaching style I have ever encountered. It was the best three days of learning ever spent. It opened my eyes to look at myself."**

This year, Course I, "Leadership – The Framework of People Skills" will be held June 5-7, 2007, at the Holiday Inn Select in Indianapolis. It covers the function and nature of your leadership role; how to build stronger teams and effective internal cooperativeness; the complex differences of people; and discovery of your "natural" style of leading and how to nurture a "developed" style to help you adjust to different people in differing situations.

"I learned more about myself in three days than I have in the last 50 years," said Baugh. **"The program was about people. That's what I needed."**

Designed to take technically-adept people and instill in them sound supervisory and management skills, the Leader-Skills Series can also be viewed as a tool for personal growth and development, even for those without prior management or supervisory responsibilities.

Registering early is a good idea – each course is limited to a minimum of 10 and a maximum of 18 participants. Deadline to register for Course I is May 2. The cost of registration is $545, which includes three days of instruction, all course materials, a certificate of completion and classroom refreshments. All transportation, housing and meals are the responsibility of the participant. However, a single or double room can be reserved through SBE at the Holiday Inn Select (Airport) – where the course will be held – at a rate of $105 per night, plus tax.

Course II, "Leadership – Expanding Your People Skills" picks up where Course I leaves off and will be offered from August 7-9, 2007.

If you would like more information on the SBE Leader-Skills Series, please contact Whitney Allen at (317) 846-9000 or wallen@sbe.org.

> **"The 'secret' to success is... getting ready!"**
>
> *~ Henry Ford*

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neering-related technical books available to members at SBE member-discount prices and an assortment of SBE logo items. Membership renewals and new memberships may also be transacted at the booth.

Booth Hours

Sunday — 2 p.m. to 4 p.m.
Monday to Wednesday — 9 a.m. to 6 p.m.
Thursday — 9 a.m. to 4 p.m.

Booth Location

LVCC South Hall Lobby Booth 28 at the entrance to the second floor exhibit hall.

SBE Spring Membership Meeting

You won't want to miss the annual spring SBE Membership Meeting, held on Tuesday, April 17 from 5 p.m. to 6 p.m. in S228 of the Las Vegas Convention Center. We are pleased to announce that this year's Membership Meeting is being sponsored once again by SBE Sustaining Member, Microwave Radio Communications (MRC).

SBE will hold several other meetings during NAB2007 that may be of interest to you. (Located at the Las Vegas Hilton Hotel unless otherwise indicated)

- Board of Directors Meeting, Sunday, 8:30 a.m. to 12 p.m.; Conference Rooms 1-2
- SBE/NFL Game Day Coordinators Meeting, Monday, 8:30 a.m. to 12 noon, Conference Room 1-3
- SBE Frequency Coordinators Meeting, Tuesday, 10 a.m. to 12 p.m., Conference Room 11-12
- * EAS Meeting, Monday, 2 p.m. to 4 p.m., Ballroom G
- SBE Certification Exams will be conducted on Tuesday from 9 a.m. to noon for those who have pre-registered.
- Membership Meeting, Tuesday, 5 p.m. to 6 p.m., Room S228, Las Vegas Convention Center
- SBE Member Reception on Tuesday from 6:30 p.m. to 8:30 p.m., Ballroom D

NAB2007 opens with Ennes Workshop

The center piece Ennes program is the Saturday before the NAB2007 floor opens. It's unlike anything else that happens at NAB. There is no call for papers, but rather the Ennes team and the PBS team get together and ask themselves what is it that Broadcast Engineers can most benefit from. The topic is picked, and speakers are specifically recruited and invited. This year we go after audio. Interestingly, this will be the first year that National Public Radio will join the SBE/Ennes and PBS assemblage. No other gathering, anywhere, finds so many Broadcast Engineers in one place.

Attending the program requires a full NAB conference registration; however, as an SBE member or with a PBS, or NPR affiliation, there is a substantial discount for pre-registration. Look at http://www.sbe.org/ennes_workshops.php for NAB2007 registration and information on other Ennes programs.

Bright and early at 8 a.m. (Las Vegas Convention Center Time) April 14, 2007 the pre-program begins with a beginner's tutorial – Audio 101 as it were. The tutorial has become a tradition in years where this is applicable, as well as a number of short presentations on the state of the art, its history, or whatever the programmers think is interesting.

At 9 a.m., the program begins with Steve Lampen from Belden who covers the 100 things you should know about audio wiring. He is constantly asked to speak at the Ennes road shows. This is a new presentation, focusing on audio, both digital and analog, and microphone to speaker. Of all broadcast engineering skill sets, the ability to design, construct and maintain the audio infrastructure is critical to the success of any radio, TV or newer media engineer.

It's difficult to have any program on audio without recognizing the role Dolby and compression in general plays. Rocky Graham, the director of broadcast products, and Mike Babbitt, director of customer support, each provide a tutorial on digital technologies for audio and using metadata respectfully.

Steve Church is well known in the industry for his interest and innovations in audio over his career. We asked Steve to provide a tutorial on the recent trend to build audio facilities not on shielded pairs, but on Internet Protocol connections, switches and commonly available IP infrastructure.

Tim Carroll, the founder of Linear Acoustic is equally well known in the industry for his work on multichannel sound for high definition systems, telephone interfaces and processing. Making the transition from stereo or mono to surround sound can be more complicated than making the digital transition. His session deals with our struggles to deal with the level and image shifts.

It's hard to get Birney Dayton, who founded nVision to talk, unless he has something important to say. Along with Jay Kuca (their director of product management) the pair will take on the trials and tribulations of bringing multichannel sound to your DTV facility.

Radio folks, do pay attention. While TV is arguably "nothing more than radio with a light," there are any number of movements afoot to bring multichannel sound to radio. Frank Foti has presented on this topic at any number of Ennes road show sessions. Others have their opinions. The Ennes NAB2007 program is designed for broadcast engineers who may be working in radio or TV today, and streaming mobile or other new media tomorrow.

The program finishes the day with Roger Charlesworth who has worked with Conan and Letterman, and brings a futuristic view of what audio for broadcast will be.

We hope you'll join many of your fellow SBE members April 14-19, in Las Vegas for NAB2007!

ENNES
EDUCATIONAL
FOUNDATION TRUST

thanks the following supporters for their contributions:

Harold Ennes Scholarship Fund

- Michael Waldman, Chesterfield, MO
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The Ennes Educational Foundation Trust offers scholarship, presents educational programming and provides grants for educational projects that benefits broadcast engineering and the broadcast engineer. To make a tax-deductible donation, make your check payable to the Ennes Educational Foundation Trust.

Mail donations in care of the Society of Broadcast Engineers, 9102 North Meridian Street, Suite 150, Indianapolis, IN 46260. The Ennes Trust is a 501(c)3 non-profit, charitable organization, EIN# 35-1506445.

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

New Members are listed in blue

ACTIVE POWER • 2003
Sriram Sivaram
(512) 744-9472
Battery-Free Backup Power Systems

ADC TELECOMMUNICATIONS INC. • 1998
Anne-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

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

AMERICAN TOWER CORPORATION • 2000
Peter A. Starke
(781) 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
(209) 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

AVOCENT • 2005
Matt Nelson
(256) 430-4000
KVM Switching for Broadcast

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 Miklius - Studio Products or Tim Bealor - RF
(217) 224-9600
Radio Equipment Manufacturer

BROADCAST ENGINEERING MAGAZINE • 1984
Bradley L. Dick
(913) 341-1300
Journal of the Broadcast Industry

BROADCAST MICROWAVE SERVICES, INC. • 1997
Russell Murphy - East or Jim Kubit - West
(540) 932-3660 or (805) 581-4566 or (800) 669-9667
Manufacturer, Transmitters, Receivers, Antenna Systems

BROADCAST SUPPLY WORLDWIDE • 1986
Shannon Nichols
(800) 426-8434
Audio Broadcast Equipment Supplier

BROADCASTERS GENERAL STORE • 2004
Buck Waters
(352) 622-7700
One Stop Broadcast Store

CANARE • 1991
Cheryl Moritz
(818) 365-2446
Audio/Video Interconnect Products

CANON USA, INC. • 1985
Gordon Tubbs
(201) 807-3300 or (800) 321-4388
Broadcast Lenses & Transmission Equipment

CHYRON CORP. • 1992
Carol Keane
(631) 845-2031
HD/SD Character Generators and MOS

CLARK WIRE & CABLE • 1991
Shane Collins
(800) 222-5348
Audio, Video and Remote Camera Cables

CMBE, INC. • 1999
Chip Morgan
(802) 758-5000
High Performance Broadcast Engineering

COAST TO COAST TOWER SERVICE, INC. • 2001
Mike Jackson
(972) 923-9504
Broadcast Tower & Antenna Specialist

COMET NORTH AMERICA • 2005
Steve Clatterbaugh
(214) 235-6596
Capacitors, Variable & Fixed

COMREX CORPORATION • 1997
Chris Crump
(978) 784-1776
Remote Audio Broadcast Equipment

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

CONTINENTAL ELECTRONICS CORPORATION • 1976
Michael Troje
(214) 381-7161 or (800) 733-5011
AM & FM IBOC Transmitters

CRISPIN CORPORATION • 2006
Brian Gleason
(919) 845-7744
Broadcast Automation Solutions

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

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

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
Direct - (800) 433-8269 or Main - (800) 342-5338
Klystrons, MSDC IOTs, IOTs, Satcom Amps, TWTs

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

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

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) or Chris Pannell (Radio) or Bob Duncan (Software)
(513) 459-3406 or (406) 556-0280 or (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
Heywood 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
Manager, NFL Frequency Organization Group

JOSEPH ELECTRONICS INC. • 2003
Yohay Haharny
(847) 501-1584
Broadcasters One-Stop Supplier

KATHREIN INC., SCALA DIVISION • 1985
Michael Wm. Bach or Mike Johnson
(541) 779-6500
Antennas for Broadcasting & Communications

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

L-3 COMMUNICATIONS ELECTRON DEVICES • 2003
Steve Bliek
(570) 326-3561, ext. 229
Tubes, Power

LBA TECHNOLOGY, INC. • 2002
Jerry Brown
(252) 757-0279
AM/MW 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

LP TECHNOLOGIES, INC. • 2006
Samuel Lee
(316) 816-9696
Spectrum Analyzers

LP TECHNOLOGIES, INC. • 2006
Samuel Lee
(316) 816-9696
Spectrum Analyzers

MACKAY COMMUNICATION • 2002
Patrick Fisher,
Director of Satellite Services
(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 or (800) 545-0608
TV & FM Antennas & RF Components

MICRONET COMMUNICATIONS, INC. • 2005
Jerry Armes
(972) 422-7200
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 Amoscato
(973) 839-1011, ext. 1197
Enclosures, Power, Accessories, Furniture

MINKLIN DESIGN INC. • 2005
Jay Minkin
(206) 250-7481
System Integration/Design/ Documentation

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

MORROW TECHNOLOGIES, INC. • 2002
Tish Boyles
(727) 531-4000
Spectrum Analyzers

MOSELEY ASSOCIATES, INC. • 1977
Dave Chancey
(805) 968-9621
RF & T1 STLs

NATIONAL ASSOCIATION OF BROADCASTERS • 1981
(202) 429-5340
Industry Trade Association

NATIONAL FOOTBALL LEAGUE • 1999
Jay Gerber
Game Day Coordination Operations

NAUTEL, INC. • 2002
Wendell Lonergan
(207) 947-8200
Radio Broadcast Transmitter Manufacturer

NEURAL AUDIO • 2006
Mark Seigle
Surround Sound Technologies

NORTHWEST TOWER ENGINEERING, PLLC • 2003
Steven Diamond, P.E.
(425) 258-4248
Tower Engineering, Structural Analysis

NOTT LTD. • 2002
Ron Nott
(505) 327-5646
Folded Unipole Antennas; Detune Systems; Lightning Prevention

NUCOMM, INC. • 1996
John Dulany
(908) 852-3700
Digital Microwave Transmission Equipment

NVISION, INC. • 1997
Doug Buterbaugh
(530) 265-1000
Routers, Master Control & Terminal Equipment

OLDCASTLE 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 • 1996
Steve Gordoni
(805) 497-4685
Broadcast Audio Products

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

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

PROPHET SYSTEMS INNOVATIONS • 2003
John Gager
(308) 284-3007
Audio and Video Content Management

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

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

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) 713-5322
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 Cauthen
(800) 438-6040
Broadcast Equipment - New/Used

SEACOMM 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

SIGNASYS • 2005
Jeff Wolter
(408) 350-7210
Integration, Support, Training

SMELL & 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

STANTRON/APW • 2006
Jay McGrath
(518) 731-7447
Equipment Racks

STRATOS GLOBAL CORPORATION • 2006
Folef Hoofd Graafland (Eastern USA), Chris Mott (Western USA)
(888) 766-1313 (USA)
or (709) 748-4233 (Rest of World)
Streaming & Voice via Satellite

SUNDANCE DIGITAL, INC. • 2004
Steve Krant
(972) 444-8442
Broadcast Automation Solutions

SUPERIOR BROADCAST PRODUCTS • 1999
Benny Springer
(800) 695-7919
Vacuum Tube and Solid State Transmitters

SUPERIOR ELECTRIC • 1995
Michael J. Miga
(860) 585-4552 or (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

TEKTRONIX, INC. • 1977
Jon Hammarstrom
(503) 627-6936
TV Test, Measurement Equipment

TELEMETRICS INC. • 2006
Jim Wolfe
(201) 848-9818
Camera Remote Control Systems

TELEX COMMUNICATIONS, INC. • 1992
Murray Porteous
(818) 566-6700
Intercom Systems, Microphones, Headsets

TELOS SYSTEMS / OMNIA / AXIA • 2003
Denny Sanders
(216) 241-7225
Telos Systems - Talk-Show Systems / CODECS POTS & ISDN; Omnia, A Telos Company - Audio Processing; Axia, A Telos Company - Professional Networked Audio

TERRESTRIAL RF LICENSING COMPANY • 2003
Steven Slocum
(888) 373-4832
FCC Licensing Services

THE DURST ORGANIZATION – 4 TIMES SQUARE • 2004
John M. Lyons, CPBE
(212) 997-5508
TV/FM/Microwave Tower Site

THE WHITLOCK GROUP • 2000
Kévin Thompson
(800) 726-9843
Broadcast and Presentation Solutions

THOMSON BROADCAST & MEDIA SOLUTIONS • 2000
William Powers
(404) 929-5007
TV/Film Production & Broadcast Professionals

TIELINE TECHNOLOGY • 2003
Kevin Webb
(888) 211-6989
POTS, ISDN Codecs & Audio/Video Products

TOTAL RF MARKETING • 2001
Tom Sharkoski
(215) 633-1000
Wireless Broadcasting Equipment Rental

TRILITHIC, INC. • 2007
Art Leisey
(317) 8895-3600
EAS ENDEC Equiptment

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

TURNER BROADCASTING/CNN • 2007
Brad Ramer
(404) 827-5020
Television Engineering Services

UNIMAR, INC. • 2001
Michael A. Marley
(315) 699-4400 or (800) 739-9169
Tower Obstruction Lighting Designer, Manufacturer, Distributor

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

VENTURE TECHNOLOGIES GROUP, LLC • 2006
Larry Rogow
(323) 965-5400
Television Stations

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

WESTWOOD ONE • 2006
Dee Perkins
(315) 383-5499
Satellite Distribution for Radio

WIRELESS INFRASTRUCTURE SERVICES • 2006
Mr. Travis Donahue
(951) 371-4900
Broadcast System Integration Services

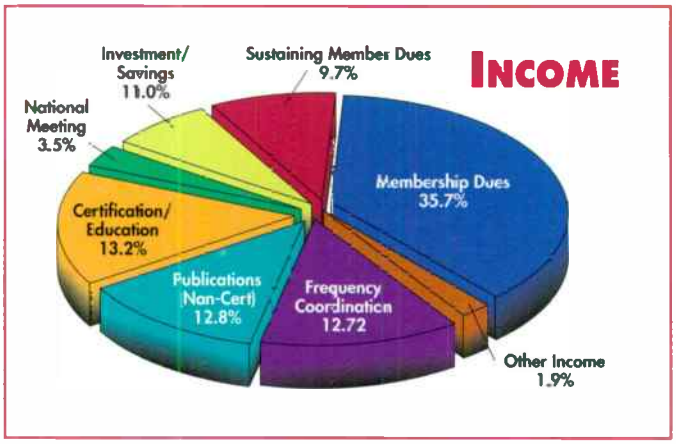
WOHLER TECHNOLOGIES INC. • 2004
Milton Garcia
(510) 870-0810
In-Rack Audio & Video Monitoring

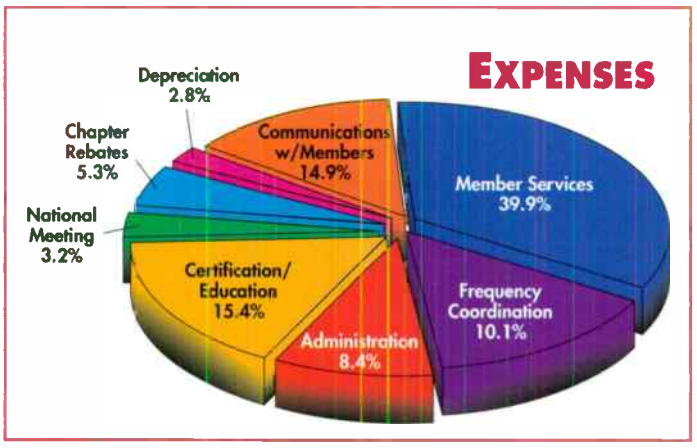
WYSONG ENTERPRISES INC. • 2005
Rodney Wysong
(423) 325-6900
Helicopter E.N.G. Solutions

2006 SBE Financial Review

The Society of Broadcast Engineers, Inc. completed 2006 with net revenue from all sources of $79,307. Gross revenue was $768,296 while expenses were $688,989. The value of SBE medium and long term investments increased in 2006 by $84,683 over 2005. Total assets as of December 31, 2006 were $1,196,432, an increase of $80,818 over 2005.

A percentage breakdown of SBE income and expenses are depicted in the accompanying charts. A financial statement will be published in the June issue of The SIGNAL, following release of the Society's annual audit.





ANSWER from page 15:

The correct answer is B — 1 mil of tape. If the tape is moving at a rate of 15 inches per second and this signal has 15,000 cycles per second, the on complete cycle will span .001 inches. 1 mil is equal to 1/1000th of an inch.

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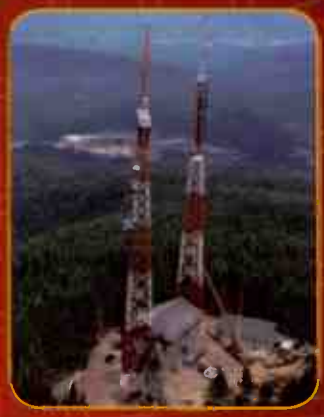

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