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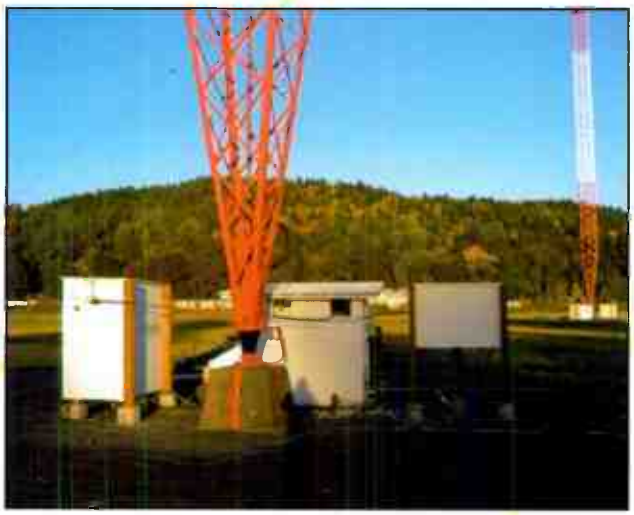
# Broadcasters look at reviving AM rules project

BY **Benjamin F. Dawson III**
*President/Managing Partner,*
*Hatfield & Dawson Consulting Engineers*

In March 2001, the FCC issued a long awaited Report and Order (R&O) in MM Docket 93-177, the AM antenna performance verification rulemaking. This rulemaking Order was the outgrowth of a Petition for Inquiry that had been filed 12 years previously by five consulting engineering firms. The R&O made significant changes in the details of directional antenna proof of performance procedures, significantly reducing the level of effort and volume of paperwork required, but did not alter the basic methodology or analysis

*See* **AM RULES** *on page* **18**



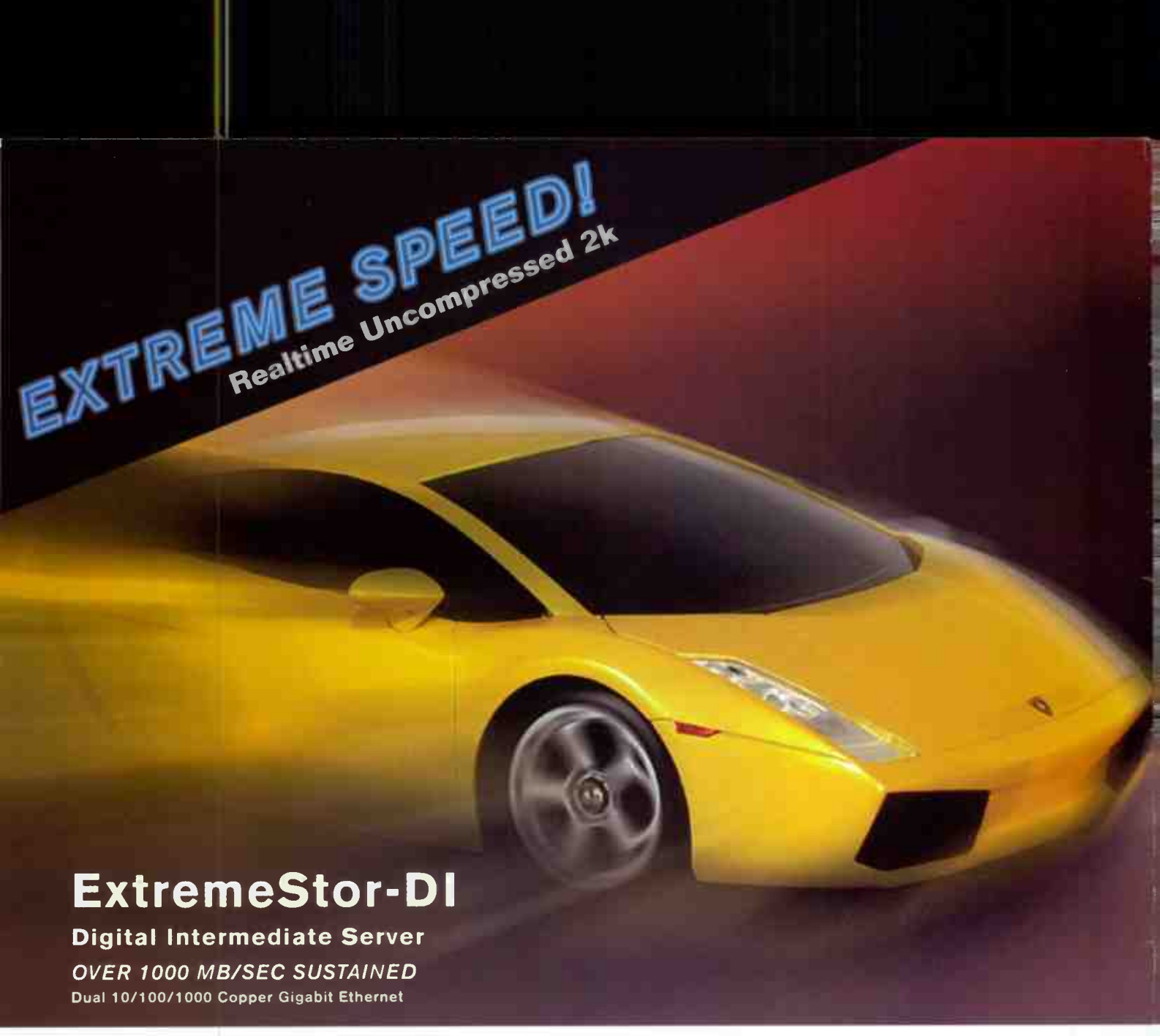
Broadcasters seek rules changes that would affect AM antenna arrays like the one shown here.

## Awards Dinner highlights National Meeting

PHOTO BY: ANGEL D. FISCHER

SBE members and guests attend the 2006 SBE National Awards Dinner, the highlight event of the SBE National Meeting. This annual event was held at Turning Stone Resort Casino in Verona, N.Y., in conjunction with the 34th Annual SBE22 Broadcast & Technology Expo, September 26-27.

**NATIONAL MEETING PHOTO SPREAD** *on pages* **12-13**

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# SBE names Focal Press official publisher

The Society of Broadcast Engineers has tapped Focal Press, a division of Elsevier, to be the official publisher of the Society. Focal Press specializes in technical and scientific publications directed to many fields including broadcasting and media.

The agreement means that SBE and Focal Press will co-brand as many as three books each year. SBE will bring relevant topics and arrange many of the authors. Focal Press will contribute its substantial editorial, marketing and production services.

Regarding the new agreement, SBE President Chriss Scherer, CPBE, CBNT, said, "One of the foundations of the SBE is member services, which includes education. Our members have expressed an ongoing interest in in-depth sources of technology, information, such as books and reference materials. This partnership with Focal Press combines the strengths of both groups to achieve this goal."

The first SBE/Focal Press publication is expected by late 2007 or early 2008. ●

## Chapter by-laws acceptance process streamlined

The SBE Board of Directors, at their meeting on Sept. 26, 2006, in Verona, N.Y., approved a change to the SBE By-Laws that will allow for quicker review and approval of chapter by-laws.

The current Society By-Laws require three different approval steps for a new chapter's by-laws. The Executive Committee, full Board of Directors and the Society's General Counsel all must review and approve the chapter by-laws under the current rules.

To expedite the approval of a chapter's by-laws, or changes to those by-laws, while still accomplishing a comprehensive content and legal review, the Board approved a change to Article X, Section 2, of the Society's By-Laws, providing that the Executive Director and General Counsel of the Society will review and approve chapter by-laws before a new chapter is authorized to operate by the Board of Directors.

The change also makes it clearer that chapters are required to have their own by-laws.

The old by-law read as follows:

> Article X. Section 2. The By-Laws of such subsections of the Society shall be approved by counsel, the Executive Committee of the Society, or such sub-committee as they shall designate, and the Board of Directors, before authorization is granted.

The newly amended by-law reads as follows:

> Article X. Section 2. By-Laws of such subsections of the Society are required and shall be approved by the Executive Director and General Counsel of the Society before authorization to establish the chapter is granted by the Board of Directors.

The amended by-law went into affect immediately upon approval by the Board. ●

## Chapter reports due for rebates

Chapters should note that Jan. 15, 2007, is the deadline to get 2006 chapter meeting reports and attendance records to the SBE National Office in order to qualify for the annual Chapter Rebate.

A minimum of five meeting reports, with attendance figures for each, is required to be eligible to receive the rebate, which will be mailed to chapter chairs June 1, 2007.

Rebates are figured by totaling two categories: 15 percent of the SBE dues paid by regular members of the local chapter and $5 for each new regular member who joined the chapter during the year. Chapters that reported at least five regular meetings in 2005 received a combined total of $36,716 for participating in this program.

Documentation can be mailed to SBE, 9102 N. Meridian Street, Suite 150, Indianapolis, IN 46260; faxed to (317) 846-9120 or e-mailed to Scott Jones at kjones@sbe.org. If you are not sure of how many reports have already been submitted, please call Jones at (317) 846-9000. ●

# Don't say no

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

cscherer@sbe.org

Broadcasting is a technology-driven industry. As our jobs continue to evolve from broadcast engineering to media engineering, the technology becomes even more important. As our skills as media engineers evolve to stay current with technology, our skills to explain this technology to the other people we work with must also evolve.

As engineers, we are comfortable with technology. Our co-workers depend on us to help them interface with the technology to accomplish the daily operational functions. Unfortunately, there are times when the human interface aspect of our jobs doesn't work as well as the equipment aspect. I was reminded of this recently when a fellow SBE member described a frustrating encounter he had with his general manager.

Consider this scenario: A live shot is considered for a location that is clearly beyond the range of the station's equipment and not serviced by the usual means of telephone or IP connectivity. The event is several weeks away. The general manager asks the engineer if the shot is possible. How does the engineer reply?

In the case of my acquaintance, his response after researching the situation was, "It can't be done."

This is a direct "no" answer. While the answer is truthful, it does nothing to explain the problem given the available tools. While all the details of the technical limitations may be beyond the technical understanding of the manager, the engineering/management relationship can be strengthened by the effort to better explain the situation.

The engineer's research proved that the conventional methods that the station had access to would not work to make the shot. He did not investigate some unconventional ideas because he deemed them unreliable, but he investigated some alternative solutions, such as a satellite uplink. Unfortunately, he deemed this option too expensive and not worth mentioning.

While the engineer made an effort to find a solution, he only provided one solution, which was no solution at all.

The engineer then told me that his general manager does not consider him to be a team player, despite the engineer's feelings that he had tried to find a solution but came up empty. The engineer felt that he performed his duty, but the GM felt that he had not been given any options.

A better response to the GM would have been to provide information on the situation with an explanation as to why the existing or commonly used tools were not practical. The engineer could then have followed this with some of the unconventional or more costly ideas that were found.

By providing all the information, the GM could have made the decision to further investigate the other options or decide that the shot was not feasible. The advantage to the engineer in this scenario is that the decision came from the GM, who based his decision on the available information. If the engineer simply says that it can't be done, the engineer may unfortunately be seen as an obstacle to the station's success.

This all ties into the problem that many SBE members lament: a low professional perception of the engineer by other station staff members or management. Many engineers feel that there is an us/them wall between engineering and management. The positive side is that a wall can be torn down from either side.

There's an addendum to the situation I mentioned: The GM asked another engineer in a different market and was given an explanation of the situation and some possible ideas, all of which had significant costs involved. This further troubled the station engineer because now his solution was second-guessed. The end result for the live shot was the same because of the costs, but the GM was able to make the decision himself based on the complete information.

The perception of engineers to management was one issue that was raised at the SBE strategic planning meeting held this summer. While the Society is trying to help bridge the engineering/manager gap, for example, by reaching out to state broadcast associations, it's ultimately up to the individual to span that chasm and offer solutions.

What's your relationship with your manager? If it's not what you would like it to be, make an effort to change it. Communicate with him or her in a positive, professional manner that shows that you're part of the team, and that you're both working to achieve the same goals. ●

# 2006-07 SBE Committee Chairs

SBE President Christopher H. Scherer, CPBE, CBNT, has named his committee chairs for the 2006-07 term as listed below. The committees are responsible for developing SBE policies and programs at the national level. All committees report to the Board of Directors.

**Awards**.....Larry Wilkins, CPBE, CBNT
(334) 240-9274 • larry.wilkins@cumulus.com

**By-Laws**.....Hal Hostetler, CPBE
(520) 792-2270 • hhh@kvoa.com

**Certification**.....Jim Bernier, CPBE, CBNT
(404) 885-2009 • jim.bernier@sbe.org

**Chapter Liaison**.....Keith Kintner, CPBE, CBNT
(920) 424-7357 • kintner@uwosh.edu

**EAS**.....Clay Freinwald, CPBE
(206) 726-7071 • k7cr@blarg.net

**Education**.....Ted Hand, CPBE, 8-VSB
(704) 335-4732 • ted.hand@wsoc-tv.com

**FCC Liaison**.....Dane Ericksen, P.E., CSRTE, 8-VSB, CBNT
(707) 996-5200 • dericksen@h-e.com

**Fellowship**.....Sandy Sandberg, CPBE
(214) 343-5786 • sandytex@swbell.net

**Finance**.....Conrad Trautmann, CPBE
(212) 641-2014 • ctrautmann@westwoodone.com

**Frequency Coordination**.....Ralph Beaver, CBT
(813) 282-8612 • bevo@media-alert.com

**Industry Relations**.....Jeff R. Smith, CEA, CBT, CBNT
(609) 452-9696 • jsmith@nassaubroadcasting.com

**International**.....Jon Bennett, CPBE, CBNT
(804) 330-5700 • jon.bennett@mindspring.com

**IT Strategy**.....Chris Tarr, CBRE, CBT, CBNT
(414) 448-2118 • chris@broadcastdoc.net

**Membership**.....Tom Ray, CPBE
(212) 642-4462 • tomray@wor710.com

**Nominations**.....Jim Bernier, CPBE, CBNT
(404) 885-2009 • jim.bernier@sbe.org

**Publications**.....Andy Cummis, CBT, CTO
(201) 303-1303 • acvideo2@comcast.net

**Regional Convention Strategies**.....Vinny Lopez, CEV, CBNT
(315) 472-6800 • vlopez@wsyt.sbgnet.com

**Strategic Planning**.....Barry Thomas, CPBE, CBNT
(323) 841-0682 • barryt@broadcast.net

**Sustaining Membership**.....Tom Ray, CPBE
(212) 642-4462 • tomray@wor710.com

# 'Everything Audio' theme for Ennes Workshop at NAB2007

The Society of Broadcast Engineers will again be the organizing partner with NAB for the upcoming Broadcast Engineering Conference (BEC) at NAB2007, to be held April 14-19 in Las Vegas. The traditional Ennes Workshop will kick off the BEC with a special all-day program titled "Everything Audio."

Fred Baumgartner, CPBE, CBNT, is organizing the workshop with assistance from Lew Zager of PBS. Many of the attendees of the PBS Engineering Conference will be joining the Ennes Workshop again this year. Also joining for the first time will be participants in the annual NPR Engineering Conference.

The Ennes Workshop will be held Saturday, April 14, at the Las Vegas Convention Center. It will begin at 8 a.m. with a special one-hour "Back to the Basics" refresher tutorial, followed by audio technology presentations that will be of interest to those in both radio and television. Presenters will include experts in the field with practical, real-world engineering backgrounds and experience.

For more than a decade, the Ennes Educational Foundation Trust has sponsored a series of educational events and projects. The annual Ennes Workshop is the centerpiece event and draws the largest audience. The Ennes Trust is supported by donations from the industry, individuals, local chapters, volunteers and SBE. To attend the Ennes Workshop during the BEC, you must be registered through NAB for the full Broadcast Engineering Conference.

Watch for a complete program description in January on the SBE website, www.sbe.org, and in the February issue of *The Signal*.

A 10-member committee is working to plan the six-day Broadcast Engineering Conference. Papers for the conference were recently selected by the committee, and the complete program will be available on the NAB website, www.nab.org, in January. SBE member Lew Zager chairs the committee this year.

Registration and hotel information can also be found at the NAB website. ●

PHOTO BY: ANGEL D. FISCHER

**Attendees of the Ennes Workshop at NAB2006 listen to a presentation on making DTV measurements.**

## HAMnet
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***who?*** SBE Hams
***what?*** Meeting of Chapter 73
***when?*** Second Sunday of every month at 7 p.m. EST
***where?*** 14.205 MHz
**Join host Hal Hostetler, WA7BGX**

## 2007 Exam Dates

| DATES | LOCATION | APPLICATION DEADLINE |
|---|---|---|
| February 9-19, 2007 | Local Chapters | December 29, 2006 |
| April 17, 2007 | NAB, Las Vegas | March 2, 2007 |
| 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 |

# Encouraging first SBE-DoD meeting

dericksen@sbe.org

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

On Nov. 8, 2006, SBE and Department of Defense (DoD) representatives held a first meeting regarding moving up to 11 DoD uplinks into the re-farmed 2,025-2,110 MHz TV Broadcast Auxiliary Services (BAS) band. The daylong meeting was held in El Segundo, Calif., at the headquarters of The Aerospace Corporation, a major contractor for DoD space communications.

Present for SBE were President Chriss Scherer, CPBE, CBNT; Immediate Past President Ray Benedict, CPBE; Director and SBE Frequency Coordination Committee Chair Ralph Beaver, CBT; Director and SBE FCC Liaison Committee Chair Dane Ericksen, CSRTE, CBNT, 8-VSB; SBE General Counsel Chris Imlay, CBT, and SBE Executive Director John Poray. There were nine DoD representatives, three of which were active-duty U.S. Air Force officers, plus six civilian DoD persons.

## DoD Uplinks and FCC ET Docket 00-258

By way of review, in the July 2003 ET Docket 00-258 Fourth Notice of Proposed Rulemaking (NPRM) the FCC proposed moving up to 11 DoD Telemetry, Tracking and Control (TT&C) uplinks from the 1,755-1,850 MHz federal government Space Ground Link System (SGLS) band to the 2 GHz TV BAS band. According to Paragraph 1 of the NPRM, this move was required because the 1,710-1,755 MHz federal government band was being re-allocated to civilian use for still more Third-Generation (3G) wireless services.

Of course, this re-allocated spectrum would be awarded by auction, likely bringing billions of dollars into the federal government and keeping the FCC in Congress' good graces. However, before 3G could use 1.7 GHz, the existing hundred or so fixed-link government microwave stations in that band had to be relocated to the 1.8 GHz SGLS band. That relocation, in turn, supposedly meant that new spectrum had to be found for up to 11 DoD uplinks. The National Telecommunications and Information Administration (NTIA) thought that the 2 GHz TV BAS band would be a suitable location, the FCC did not disagree, and so the Fourth NPRM was born.

Interestingly, electronic news gathering (ENG) has successfully shared the 2 GHz TV BAS band (which DoD calls the Unified S Band, or USB) for years with the National Aeronautics and Space Administration (NASA), which uses that band for earth-to-space and space-to-space communications. However, the NASA shared use of 2 GHz works because the number of NASA uplinks are few and in remote locations. By contrast the candidate DoD uplinks are located in such major ENG markets as Los Angeles, San Francisco, Denver and Boston. Other DoD uplinks are located in heavy-use ENG markets such as Albuquerque, N.M., Orlando, Fla., and Colorado Springs, Colo. Only the DoD uplink in Guam is not likely to have any conflict with 2 GHz TV BAS operations (actually, it turns out that there two such uplinks in Guam, one operated by the Air Force and the other by the Navy).

One very interesting piece of information from this initial meeting was that the DoD uplinks will continue to operate in the 1.8 GHz SGLS band; that is, the operation in the 2 GHz TV BAS band will be in addition to, and not in lieu of, the existing 1.8 GHz operation. Had this fact been known, perhaps the FCC would have taken a different tack when it was approached by NTIA, and certainly the SBE comments to the proposal would have questioned the need for more, as opposed to replacement, DoD uplink spectrum. But, that's all water over the dam, now: the October 2004 ET Docket 00-258 Seventh R&O decided that DoD uplinks could share spectrum in major ENG markets, and SBE's Petition for Reconsideration of that decision was unsuccessful (as was the MSTV/NAB Petition for Reconsideration). So, the task is to now make that sharing work.

## Meeting Issues

SBE and DoD cooperated in drafting the meeting agenda. Issues SBE wanted addressed were use of a noise-threshold degradation interference criteria, whether ENG receive-only (ENG-RO) receiving antenna directivity should be factored in, the uplink relocation schedule, what receiver sensitivity DoD should assume when making its interference calculations, making sure that DoD understood the new TV BAS channel plan and, especially, the importance of the new Data Return Link (DRL) channels (i.e., these channels could end up being used for ENG control purposes, and so the upper and lower 0.5 MHz wide DRL bands should be considered "off limits"), and finally that DoD have a good understanding of how broadcasters so intensively use their 2 GHz BAS spectrum. To that end, the SBE team prepared a 22-slide PowerPoint presentation, which is now posted on the SBE website at www.sbe.org/documents/DoDSBEV6.ppt.

Issues that DoD placed on the agenda included typical vs. maximum uplink powers, the uplink channel plan, uplink channel loading, uplink side lobe suppression, and "hot line" numbers to be called for frequency coordination or in the event of actual interference.

## Encouraging Results

This writer was relieved to find a good attitude, and a spirit of cooperation, on the part of the DoD representatives. They appeared to appreciate the PowerPoint tutorial and were willing to admit that they had not fully under-

# SBE to host Leader-Skills seminars in summer 2007

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. Both courses are being offered in Indianapolis in 2007

Students listen to course instructor Richard Cupka at one of the SBE Leader Skills Seminars held in Indianapolis in 2006.

Course I, "Leadership – The Framework of People Skills" will be held June 5-7, 2007. 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.

Course II, "Leadership – Expanding Your People Skills" will be held Aug. 7-9, 2007, and picks up where Course I leaves off. In fact, those interested in Course II must either sign up for Course I as well or have attended one of the previous Leader-Skills programs sponsored by SBE or NAB (dating back to 1965). Course II explores individual behavior in groups and dynamics of interaction between groups; the complex motivations of different people and how to deal with them; how best to handle disciplinary processes; and where emphasis should be in a leader's ultimate responsibility over people and activities.

Cupka, who has more than 40 years 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.

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. Deadlines to register are May 2 for Course I and July 5 for Course II. The cost of registrations is $545 for each course, 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. The location of the courses in Indianapolis will be announced in January.

For more information on the SBE Leader-Skills Series, please contact John Poray at (317) 846-9000 or jporay@sbe.org. ●

stood how intensively, effectively and creatively broadcasters use the seven 2 GHz BAS channels, especially in Category I and Category II ENG markets. It was also learned that the 10 kW transmitter powers cited in the Fourth NPRM only applied to the 1.7 GHz SGLS band uplinks and that the maximum EIRP for an S-band uplink would be 104 dBm (11 dB less power than estimated by SBE in its comments). Also, the S-band channel bandwidth would be 2 MHz and not the 10 MHz bandwidth of an SGLS uplink signal, so this is a 7 dB reduction in the interference threat.

The issue of improved side-lobe suppression for the typically used 13-meter uplink dishes was more problematic in that the addition of a cake-tin shroud around the edge of the uplink dish, lined with microwave-absorbing material to further suppress the side lobes by 30 to 40 dB, would apparently cause radome clearance problems at lower elevation angles. But, because it is the side lobe leakage that is the interference threat to ENG-RO sites, this possible mitigation measure was scheduled for further discussion. The DoD representatives did note, however, that the side lobe suppression of their uplink dishes complied with NTIA standards. In response, this writer noted that those side lobe suppression requirements were undoubtedly not written with the need to protect co-channel, high-sensitivity ENG-RO sites in mind.

## SUMMARY

A good start has been made to the difficult task of making shared use of the 2 GHz TV BAS band work. DoD will be submitting a template to SBE for broadcasters to use when reporting technical data for their ENG-RO sites; SBE will be submitting a similar template to DoD, listing the technical parameters broadcasters will need to know in order to be able to confirm DoD interference calculations. With regard to itinerant ENG receive sites, the DoD representatives acknowledged their willingness, and obligation, to engage in real-time frequency coordination with local broadcasters to minimize the likelihood of interference.

There will be one more preparatory meeting between SBE and DoD, most likely in mid-January 2007, to review interference calculation methodologies. Meetings after that will be held in the vicinity of the to-be-converted uplink, and all local 2 GHz TV BAS licensees (and 2 GHz CARS licensees, if any) and the local BAS frequency coordinator will be invited to attend. ●

# SBE certified schools

BY **Ralph Hogan, CPBE, CBNT**
*Member, SBE Certification Committee; Chairman, Education Evaluation Subcommittee*

"The Certification Program is a service of SBE contributing to the advancement of broadcast engineering for the general benefit of the entire broadcast industry."

This statement describes what SBE does to recognize and raise the professional status of broadcast engineers by providing standards of professional competence. The program objectives of certification are to raise the status of broadcast engineers by providing standards of professional competence in the practice of broadcast engineering and related technologies; to recognize those individuals who, by fulfilling the requirements of knowledge, experience, responsibility and conduct, meet those standards of professional competence; and to encourage broadcast engineers to continue their professional development. This is all well and good for those who have been in the industry for a while but for those wanting to get into broadcast engineering, where should you start?

To help foster entry-level certification into broadcast engineering, the Society of Broadcast Engineers has established a Certified School program. This program allows students, while still in school, to meet some of the criteria that will be required in a broadcasting field by either sitting for an exam or completing an entry-level certified program.

Because of requests from the industry and technical schools, the Society has assembled a sample curriculum for broadcast technology programs that can be used as a guide by any institution for establishing a program, or updating their program, to meet the minimum requirements for establishing an SBE Certified School program. This sample curriculum includes examples of representative courses necessary to prepare students to work in broadcast and related digital audio and video studio industries as a technician designing digital studio installations, servicing broadcast transmitters, satellite receivers, remote pickup equipment, studio-transmitter links and studio computer systems. Preparation includes a foundation in Federal Communications Commission technical rules and regulations pertaining to the broadcast services, workmanship, system documentation and knowledge of current digital formats and modulation systems.

Upon course completion, these broadcast technologists will have received training and be qualified to work at entry-level positions in several fields. These might include broadcast operational engineering, broadcast network systems engineering and broadcast equipment maintenance. Some programs prepare technicians to operate and maintain broadcast audio, video and associated digital network systems in the context of broadcast station operations. Additionally, these technicians may also develop competencies in multi-track recording technology, satellite uplink technology, studio facilities design and construction, electronic field production, digital recording technology, automated broadcast operations, broadcast technology management and broadcast equipment maintenance, including RF devices and digital broadcast systems. Finally, through opportunities offered by internship programs, these technicians can develop a realistic understanding of professional work ethics under actual operational conditions.

The National Certification Committee reviews each institution that wants to participate in the Certified School program prior to its becoming recognized by SBE. The review begins with one of the members of the National Certification Committee contacting the school or program and gathering information from a representative of the school. The committee looks for a strong technical program that has several areas of technical expertise, such as broadcast operations, RF courses, basic AC/DC electronics, FCC rules, computer automation, digital systems and other broadcast-related disciplines.

Once the information is collected and school contact information established, the entire Certification Committee reviews the materials. If an area of knowledge is found lacking, the school is asked to modify its program to meet the criteria. In most cases, the schools can make minor changes to accommodate the request. The Certification Committee votes, and the school's participating status is then ratified by the Committee.

Once certified, each school undergoes a periodic review every two years. At this time the contact information is verified and a current copy of the curriculum is reviewed by the National Certification Committee to ensure the program is keeping current with technology advances that affect our industry. Once the review is completed, the school is then recertified for another two years. This periodic review is conducted so that SBE can ensure that the program is still meeting the goals of the Program of Certification.

SBE certified technical training schools can be found throughout the United States, as well as through the world via the United States military. There are currently 13 schools that have been identified by the SBE National Certification Committee as meeting the requirements for preparing students either to sit for SBE certification exams or, upon completion of the program with a grade of B or better, apply for certification as an SBE Certified Broadcast Technologist (CBT). In addition, there are two SBE certified training testing facilities in the military. These are the AFRTS Technical Training Program and Dantes Military Training.

There are a number of ways that students may gain certification from the SBE Certified School program depending on the school or program. The procedures vary from some requiring the student to take the SBE Certified Broadcast Technologist exam or just preparing for the exam.

Bates Technical College, in Tacoma, Wash., requires for course completion that the student must apply for and take the SBE Certified Broadcast Technologist exam.

Cayuga Community College, in Auburn, N.Y., has the local chapter certification chairman meet with the appropriate faculty at Cayuga and evaluates the applicant's status. Upon verifica-


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

**In a typical receive-only Earth station, the signal-to-noise ratio may be improved by the following:**

A) Increasing the size of the antenna

B) Reducing the LNA (low-noise amplifier) noise temperature

C) Reducing the length of the coaxial cable length

D) All of the above

Question taken from SBE CertPreview. Turn to page 18 for the answer.

tion, applicants who apply for certification are then awarded the classification SBE Certified Broadcast Technologist.

The Boise State University courses, in Boise, Idaho, prepare students to sit for the Certified Television Operator (CTO) and the SBE Certified Broadcast Technologist (CBT) exams.

Most of the other school programs allow students who complete the program with a grade of B or better, who apply for certification, are awarded the classification of SBE Certified Broadcast Technologist upon the receipt of verification from the school's faculty.

The Program of Certification is always on the lookout for good technical training programs, and many of the current schools have been brought to the National Certification Committee's attention by local SBE Chapters. If you know of any programs that may be of interest to the Society, please contact the SBE National Office. Copies of the Sample Curricula for Broadcast Technology Programs may be obtained upon request from SBE Certification Director Megan Clappe at mclappe@sbe.org or (317) 846-9000. ●

# Earn college credit for SBE certification

The Society of Broadcast Engineers and Excelsior College have teamed up! Your current SBE certification may qualify for credit towards a degree from Excelsior College, or it could help you finish that degree you've been working on at another institution. If you're interested, contact Excelsior College by calling toll-free (888) 647-2388 to learn about the details.

EXCELSIOR COLLEGE. *Finish Ahead*

When you are ready to submit your SBE certification for credit to Excelsior College, download the SBE transcript request form at www.sbe.org or www.excelsior.edu, or contact the SBE National Office for a copy. When you've completed the form, send it to Megan Clappe, Certification Director at the SBE National Office via e-mail at mclappe@sbe.org, fax at (317) 846-9120 or mail to the Society of Broadcast Engineers, 9102 N. Meridian Street, Suite 150, Indianapolis, IN 46260. Clappe will prepare your transcript and send it to Excelsior College. ●

# 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®)**
Harry Gordon, Tehachapi, CA - Chapter 47
Robert Griffiths, Poinciana, FL - Chapter 42
Richard Rudman, Studio City, CA - Chapter 47
Ronald Schacht, Kensett, IA - Chapter 2

**CERTIFIED SENIOR BROADCAST ENGINEER® (CSBE)**
Neil Smith, Woodbridge, VA - Chapter 37

**CERTIFIED BROADCAST NETWORKING TECHNOLOGIST® (CBNT®)**
Raymond Klotz, Tulsa, OK - Chapter 56

## 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®)**
William Burckhard, Billings, MT - Chapter 137
Richard Vaughan, Corpus Christi, TX - Chapter 29

## AUGUST EXAMS

*"Thank You" CHAPTER CERTIFICATION CHAIRS FOR YOUR ASSISTANCE*

**CERTIFIED SENIOR RADIO ENGINEER (CSRE®)**
Edward Hollis, Pasadena, CA - Chapter 47

**CERTIFIED 8-VSB SPECIALIST (8-VSB)**
Scott Chestnut, Los Angeles, CA - Chapter 47
William Magliocco, Atlanta, GA - Chapter 5

**CERTIFIED BROADCAST NETWORKING TECHNOLOGIST® (CBNT®)**
Robert Hedges, Westerville, OH - Chapter 52

## CERTIFIED BY LICENSE

**CERTIFIED BROADCAST TECHNOLOGIST® (CBT)**
Lee Howder, Morrow, GA - Chapter 5
William Perry, Cowarts, AL - Chapter 118

## CERTIFIED RADIO OPERATOR® (CRO)

**CERTIFIED RADIO OPERATOR® (CRO)**
Michael Cornell, Suring, WI

***Pasadena City College***
Peter Elsesser, Sierra Madre, CA
Branden Frankel, Glendale, CA
Nicole Garcia, Arcadia, CA
Meguru Hirose, Pasadena, CA
Ju Young Kim, Pasadena, CA
Richard Mahoney, Pasadena, CA
Luis Meza, Los Angeles, CA
Marlon Morales, Los Angeles, CA
Agustin Navarro, El Monte, CA
LaShonda Riddle, Altadona, CA

***CBS Radio - Los Angeles***
Steve Binder - KLSX
Cedric Buard
Brian Burton
Juan Calvillo - KLSX
Dot Cannon - KNX
Mike Catherwood - KROQ
Adam Delgado - KRTH
Chris Fay - KCBS
Marcus Fernandez - KCBS
Crysta Garner - KLSX
Domagoj Gotovac - KLSX
Jeremy Gray - KLSX
Bruce Greene - KROQ
Jonathan Guggenheim - KCBS
Tim Halm - KRTH
Galaviz Horacio - KLSX
Corey Irwin - KROQ
Omar Khan - KROQ
Matt Laubacher - KLSX
Ricardo Mojica - KCBS
Jennifer Morales - KCBS
Forrest Nelson - KLSX
Casey Oliver - KROQ
Steve Pailet - KLSX
John Ramey - KNX
Gil Ramirez - KROQ
John Salwin - KLSX
Vinny Stone - KLSX
Chris Taliaferro - KLSX
Ricardo Vazquez - KNX
Gerry Wachovsky - KLSX
Art Webb
Keith Williams - KLSX
Mick Wingert - KCBS
Shanna Woolsey - KLSX

## CERTIFIED TELEVISION OPERATOR® (CTO®)

**CERTIFIED TELEVISION OPERATOR® (CTO®)**
Raquel Allison, North Richland Hills, TX
Ronnie Barnes
James Nasi, Arvada, CO
Charles Pullen, Dyer, IN
Yolanda Toles, Moreno Valley, CA

## 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 BROADCAST TECHNOLOGIST® (CBT)**
Clarence Bullock, Rochester, NY - Chapter 22

**CERTIFIED TELEVISION OPERATOR® (CTO®)**
Ted Brown, Kannapolis, NC
Joseph Johnson, San Ramon, CA
Don Thompson, Oakland, CA

The Society of Broadcast Engineers' Program of Certification is recognized by the National Skill Standards Board. NSSB Certification Recognition promotes quality assurance in the certification marketplace and provides national recognition for certifications that meet the quality benchmarks.

# Chapter by-laws guide chapter operation

jporoy@sbe.org

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

In this space previously, I've discussed the three key elements of successful chapters. They are: good programming, social opportunities and recognition. If each of your chapter meetings has a good dose of quality programming, an opportunity for members to informally socialize and a sprinkling of member recognition for their contributions or achievements, chances are you are part of a reasonably healthy chapter.

However, it's also important to have a good framework of operating guidelines to keep your local chapter focused on its mission (essentially the same mission as that of the national organization) and operating efficiently. These guidelines are best developed through the use of chapter by-laws. By-laws help maintain continuity by providing a guide for each succession of chapter leadership.

The very notion of having to draft by-laws can be intimidating to some. We've made it relatively easy for SBE chapters to develop their own by-laws by providing a sample set that serves as a template. They can be used essentially "as is" or can be modified to fit the needs of each local chapter. As long as the mission of the national organization stays intact, and no by-laws are written that would violate any state or federal laws, a chapter can develop its own by-laws that meet its own needs.

"Why do we need chapter by-laws? Aren't we a part of National and under its by-laws?" some have asked in the past. Each SBE chapter is an independent organization that determines its own meeting schedule, elects its own officers and adopts its operating rules as it sees fit. Again, as long as the chapter's mission stays the same as the national organization's, retains the minimum required officers and membership level that National requires and meets minimum meeting requirements, it is meeting the requirements to be a chapter of SBE.

Chapter by-laws should cover essential items, including its mission, election of officers and the appointment of others to leadership positions, and an outline of when and how meetings are held of both the chapter and the chapter's governing board. It's not a good idea to put detailed operating procedures in by-laws documents as they can become too restrictive down the road. By-laws should be able to stand the test of time, needing only to be visited occasionally to make changes when circumstances such as developments in technology or operating conditions make them necessary.

All SBE chapters are to have their own by-laws and many of them do. Due to lapses in activity, some chapters have lost track of any local copy and some older chapters may have never had any by-laws. I encourage all chapters who don't have their own by-laws to work to put a set together during 2007. With the sample set available, you don't have to start from scratch, and there is help available. You are welcome to contact me at the National Office, and our General Counsel, Chris Imlay, is also available (at no charge) to answer any basic questions you may have. There is also a section in the SBE Chapter Operations Manual that will be helpful, which is available as a PDF on the SBE website at www.sbe.org/chapter_admin.php.

Once you have your by-laws drafted, have your members adopt them and send a copy to me at the National Office. They will be reviewed by Chris Imlay and me to be sure they meet the required criteria, and also to be sure you haven't drafted any language that could cause problems for you later on. Once approved, a copy will be maintained at the National Office in your chapter's file. You'll also want to be sure your chapter officers have a copy (at least) and share them with new officers as they come on board.

If your chapter is being formed now, the approval of your by-laws is a prerequisite before the national board of directors can approve your charter application.

Good by-laws in themselves won't guaranty a good chapter, but they will help ensure a framework to operate that each succession of leadership will find helpful. ●

**What's on your mind?**

***SBE Roundtable*** – SBE's member e-mail discussion group created to facilitate discussions about the Society.

***EAS Exchange*** – An SBE-sponsored e-mail discussion group about the Emergency Alert System

***Sign up for both on the SBE website at www.sbe.org***

## NATIONAL MEETING *from page* 1

Representatives proudly display the 2005 SBE awards presented to their chapters. From left are Tom McNicholl, CBTE, conference chair of the SBE22 Broadcast & Technology Expo, accepting Best Regional Convention or Conference; National Awards Committee Chair Larry Wilkins, CPBE, CBNT, AMD; SBE President Chriss Scherer, CPBE, CBNT; Ted Hand, CPBE, 8-VSB, Hampton Roads, Va., Chapter 54 webmaster, accepting Best Chapter Website; Troy Pennington, CSRE, CBNT, Nashville Chapter 103 member, accepting Highest Member Attendance at Chapter Meetings (Class B); Ralph Hogan, CPBE, CBNT, Palouse-Clearwater, Idaho, Chapter 117 member, accepting Most Certified Chapter (Class A); Keith Kintner, CPBE, CBNT, Madison, Wis., Chapter 24 member, accepting Best Chapter Newsletter and Best Frequency Coordination Effort (Class B); and William Magliocco, CPBE, CBNT, 8-VSB, Atlanta Chapter 5 chair, accepting Greatest Percentage Growth in New Members (Class B).

Special guest speaker David Sumner, CEO of ARRL, receives thanks from SBE President Scherer.

PHOTOS BY: ANGEL D. FISCHER





LEFT: Raymond C. Benedict, CPBE; Gary S. Hartman, CPBE, and Troy D. Pennington, CSRE, CBNT, display their Fellow awards.

Central New York Chapter 22 Chair Francis Fasuyi, CSTE, and SBE22 Expo Convention Chair Tom McNicholl, CBTE, receive recognition for their chapter's hosting of the SBE National Meeting.


Larry Wilkins, CPBE, CBNT, AMD, accepts the 2005 Broadcast Engineer of the Year Award from SBE President Scherer.


CLOCKWISE FROM ABOVE:: Gary Sgrignoli expresses his gratitude for being named the 2005 Educator of the Year.

President Scherer shows his musical talents singing a tune with the band during the reception prior to the National Awards Dinner.

Jon Bennett, CPBE, CBNT, accepts the Awards Dinner door prize from Bob Morrissette of MRC.

President Scherer takes the oath of office for his second term from SBE General Counsel Chris Imlay, CBT, while newly inducted officers and directors look on.

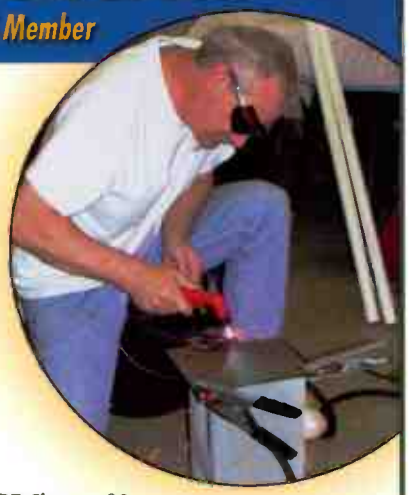
# Lyons receives award

John Lyons, CPBE, of The Durst Organization, is presented with the 2006 Radio World Excellence in Engineering Award during a rooftop ceremony in New York City. Standing with Lyons is his wife Natasha; Paul McLane, Radio World U.S. Editor in Chief; and Jody Durst, Co-President of The Durst Organization. Several dozen New York broadcast engineers, including many SBE members, attended the event, held October 19.

PHOTO BY STEVE FRIEDMAN

# In the Circle...

*a snapshot of an SBE Member*



**Sim Kolliner, CSBE**

Director, Harris Technical Solutions

Harris Broadcast Communications Division

Holly Springs, N.C.

SBE Chapter 93, Raleigh-Durham

Joined SBE in 1975

**Best known for:** Chapter Chairman of Jacksonville in the late '70s; presentation: "Projecting a Professional Image;" various Harris product programs at SBE meetings around the country; SBE Taste of NAB road show presentations in Raleigh in 2005 and 2006.

**Focal Point:** Sharing our experience, innovation and insight with the best and the brightest in broadcasting.

**Getting Started:** I was in the audience, at age 5, at KROD in El Paso, Texas, for a cartoon show when a TK-11 "smoked." I was hooked! I wanted to know more about TV.

**Sphere of Influence:** Mike Wenglar, from KVUE in Austin, Texas, taught me what I needed to get started in the industry – everything from proper soldering techniques to how to cut straight with a hack saw.

**Job satisfaction:** Managing the team that works with system integrators and their customers to apply Harris products to solve their problems and design innovative solutions.

**When I'm not working...** I build street rods.

**You may not know...** Growing up in El Paso, we used to climb the mountain that splits the city and ask for tours of the transmitter sites located there (before remote control).

**Favorite Gadget:** Plasma Torch. Pictured above, I'm cutting steel to fabricate a bracket for a demo kit repair.

# Ennes Trust scholarships awarded for 2006

The Ennes Educational Foundation Trust has awarded three educational scholarships for 2006. Winners are chosen from applications received by the July 1st deadline.

The Harold E. Ennes and Robert D. Greenberg scholarships are awarded to individuals interested in continuing or beginning their education in broadcast engineering and technology. The Youth Scholarship is specifically for a graduating high school senior interested in broadcast engineering as a career. Each scholarship award this year is for $1,000. This year's recipients are:

Kate Carney Landow, CBT, CBNT

## Harold E. Ennes Scholarship

**Kate Carney Landow, CBT, CBNT,** is the recipient of the Harold E. Ennes Scholarship. Landow's career in broadcasting started in high school with video and film production classes at the Fred N. Thomas Career Education Center (CEC) in Denver. After learning to edit on ¾-inch tape and splice film, she continued on to the University of Colorado at Boulder and earned a B.F.A. in film.

After graduating, she began her career in telecommunications. A position at the National Digital Television Center (now operated by Comcast) introduced her to a team of engineers that encouraged her to pursue engineering as a formal career path. Many of the engineers mentoring Landow carried SBE certifications, and they encouraged her to look into SBE as a way to help her achieve her career goals.

Since passing her CBT and earning the CBNT certification, Landow has also continued with higher education. The Ennes scholarship will help her complete her final semester of graduate school. In December, Landow will earn her Masters in interdisciplinary telecommunications from the University of Colorado at Boulder. The scholarship is helping her with an independent study course for which her objective is to build the foundation for a video lab that will ultimately serve future students interested in testing IPTV signals and video compression. The lab will build on Landow's Capstone team project that focused on IPTV business model analysis. Her team's work has been published in *The TICSP Workshop on Ambient Multimedia and Home Entertainment at the EuroITV 2006*: "Proceedings of the TICSP Workshop on Ambient Multimedia and Home Entertainment at the EuroITV 2006," part of the TICSP Series #33.

Landow is very grateful for the opportunity offered by the scholarship. The scholarship has allowed her to take a challenging last class before graduation, the result of which will enable future students interested in the video and compression engineering to pursue those studies.

Daniel Nevels, CEA

## Robert D. Greenberg Scholarship

**Daniel Nevels, CEA,** is the recipient of the Robert D. Greenberg Scholarship. He is a member of SBE Chapter 39 in Tampa, Fla., and has been appointed the chapter's webmaster. He is a Certified Audio Engineer (CEA), holds an Amateur Radio Operator Extra Class (WD5ETR) and also holds an FCC commercial radio license with ship radar endorsement.

Nevels works part time and attends the University of Tampa full time. He is majoring in music with a minor in electronic music and recording. He has been accepted in the Honors Society at UT and made the National Deans List in 2004-05 and in 2005-06.

Nevels has been nominated to the International Scholar Laureate Program, Delegation on Music. At the 33rd Honors Convocation in April 2006, he was awarded the Certificate of Achievement for Exemplary Academic Performance in Music.

Nevels' goal is to pursue a career in broadcasting, writing soundtrack and music for commercial radio, TV and motion picture.

Noah Van Zandt

## Youth Scholarship

**Noah Van Zandt** is the recipient of the Ennes Youth Scholarship. Van Zandt currently is a freshman at Cedarville University in Ohio where he is majoring in electrical engineering. He previously attended Temple Christian School and was valedictorian of his class.

Van Zandt hopes to pursue a career in broadcast engineering for FM radio, either as a station engineer or as a consulting engineer.

The Ennes Educational Foundation Trust is a non-profit, charitable organization dedicated to the education of current and future broadcast engineers. It provides scholarships, offers workshops and supports other projects that meet the Trust objectives of training broadcast engineers, as well as preparing a new generation for the field. The Ennes Scholarship Committee congratulates the above recipients and wishes them well in future endeavors. ●

## Broadcast towers and local control:

# Time for a change

cimlay@sbe.org

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

Bob Vinikoor had it right, actually, four years ago, but the FCC still hasn't figured it out. Bob, you will recall, was faced with a zoning ordinance in the town of Lebanon, N.H., that did not permit antennas above a nominal height. The height limit was an absolute one that would not allow construction of any AM broadcast towers at all, anywhere in the town. Bob successfully challenged that ordinance, using a really creative argument that had not been tried before. And he did it with no help at all from the FCC. Bob, a radio amateur as well as a broadcaster, retained Amateur tower law specialist Fred Hopengarten, K1VR, to help him in the case. SBE filed a friend-of-the court brief in the case, which went to the Supreme Court of New Hampshire.

Fred, Bob and SBE collaborated on the argument, of which we were rather proud. We admitted, as we had to do, that the FCC had not, despite being asked repeatedly by broadcasters, exercised its authority (which, under the Communications Act, it clearly has) to preempt certain overly restrictive land use ordinances that preclude or inhibit the ability of broadcasters to serve their audiences or construct the facilities that the FCC authorizes in a construction permit. Past efforts on the part of NAB and others to achieve a modest, reasonable national policy that would at least require local zoning officials, and city or county councils, to work with broadcasters to "come to the table" had failed.

But the failure of those good efforts isn't the end of the issue. Just because FCC has not declared a national preemption policy with respect to broadcast towers and antennas does *not* mean that there is no federal preemption. Not by a long shot. There are two other circumstances in constitutional law in which the federal law trumps the state or local law. The first is where an entire field of regulation is reserved to federal government regulation. The other is where a state or local regulation actively conflicts with the federal law, or the objectives sought to be achieved by the federal law.

It is this last circumstance that Bob, Fred and SBE applied to zoning regulations that preclude broadcast tower installation. We argued that, pursuant to its authority under Section 307(b) of the Communications Act of 1934, (which requires that the FCC allocate frequencies, powers and times of operation of radio stations among the several states and communities so as to achieve a fair, efficient and equitable allocation), the FCC had granted Bob's construction permit for a new AM station at Lebanon. This represented a specific decision by FCC that Lebanon, in particular, needed radio service on the specific frequency and operating parameters that were specified in the permit. Having done so, we argued, the city of Lebanon could not preclude the installation of an antenna everywhere in the community without irreconcilably conflicting with the implementation of federal law.

Lebanon fought valiantly for the proposition that Bob could install the antenna in some other community, or that he could use a shortened antenna. The problem with the first argument was that, if Lebanon could prohibit broadcast antennas by means of an antenna height limit throughout its own community, so could any other surrounding municipality. And the problem with the second argument is that the construction permit specified an antenna of a particular height, and any antennas that would meet the Lebanon zoning ordinance height limit would be well below the minimum efficiency limit specified in the FCC rules. So Lebanon had saddled Bob with a complete prohibition.

The Supreme Court of New Hampshire agreed with us. It held that, while some limits could be placed on antenna siting in Lebanon, the city could not prohibit antennas outright in all zones in the city. *This is the only citable precedent that deals directly with the subject of federal preemption of state or local land use regulation of broadcast antennas.* It is a good, well-reasoned precedent, though, and it has been used in several other situations where the local land use regulations act as a complete bar to antenna installations.

A recent case, also in New Hampshire, citing the Koor v. Lebanon decision, resulted in a remand to municipal land use authorities. The zoning ordinance would otherwise have precluded an antenna entirely in a municipality which represented the only site that would meet FCC spacing requirements. Recently in Florida, a county ordinance would have precluded the installation of two additional towers to permit a daytime-only AM station to add nighttime service pursuant to a granted FCC construction permit. The municipality, after being presented with the Koor decision, was forced to back down and to permit the two additional towers. So far, so good.

Where has the FCC been in these cases? Nowhere in sight. FCC hasn't said much about broadcast antenna preemption ever since broadcasters told the FCC that if the digital television transition was to proceed on schedule, the FCC would have to preempt local land use restrictions on building new towers or modifying existing towers. FCC refused to do that and instead infamously urged broadcasters to "reach out" to land use officials, who they said would surely accommodate them. How incredibly naive!

On Sept. 26, 2006, the chief of the Media Bureau responded to a request for the issuance of a declaratory ruling filed one year earlier to the day. It was filed by a communications attorney representing a non-profit citizen's group. The group was participating in the preparation of a revised zoning ordinance in some unspecified community. The declaratory ruling requested by this group would apply to preemption of local zoning regulations applicable to broadcast towers. The group was urging that local government officials in their municipality adopt an ordinance that would restrict construction of broadcast towers in rural areas and impose height restrictions in new areas where new towers would be permitted. The proposed new ordinance would, they said, be premised on land preservation goals, including preservation of agriculturally zoned land and "scenic vistas." This is the usual aesthetic justification for restriction of antennas. Apparently, this non-profit group wanted to fire a preemptive strike against the application of the Koor case in their backyard.

It was an interesting pitch, since growth and urban sprawl in most metropolitan areas makes new AM broadcast station construction (if not FM and television) a virtual impossibility. Now, the group was urging that "agricultural land"

and rural areas need protection against antenna construction as well. What these folks asked FCC to do was to state that, "under the current policy of the FCC, local zoning rules which are predicated on land use preservation, including preservation of agriculturally zoned land and scenic vistas, would not be preempted by the Commission" with respect to the construction of "new broadcast towers in certain rural areas and... height restrictions in other" areas. Pretty broad relief, if they could get it.

FCC did nothing for a year, and then issued the letter decision. The essence of the decision on this was exactly one sentence. It read as follows: "It is true that, to date, the Commission has not adopted any rules or regulations that preempt local zoning rules affecting construction of broadcast towers." After making that one pronunciation, the Media Bureau chief said that therefore, the declaratory ruling request was "granted, to the extent described (in the letter)."

Well, where's the beef? The Media Bureau made a true statement of fact, but it provides no guidance whatsoever, either for land use officials or for broadcasters. I suppose we should be happy for small favors, since nothing that the Commission has said undoes any of the Koor case rationale, but where do we go from here?

Suppose I am an FM broadcaster wanting to bid in for one of the expensive construction permits available at the recently announced FM auction. What am I paying for there if there is no guarantee of my ability to construct a new station due to local land use regulations? Where is the FCC's concern about competition that led to the preemption policy with respect to preemption of local regulation of personal wireless service antennas and of over-the-air video (and now broadband data) reception services? Does it really take an act of Congress to get the FCC off the dime here?

In an Amateur Radio antenna case I worked on in California not too long ago, a municipality wrote to a United States senator there, complaining that the FCC policy on Amateur Radio antennas was too vague. They complained very legitimately that the FCC has to be clear in its antenna policies, because otherwise, municipalities have to do their best and hope they get it right, because all of their antenna ordinances have to be tested in court. Not an efficient method at all. Broadcasters and municipalities alike need some articulation of policy, and some guidance. Kudos to Bob Vinikoor, Fred Hopengarten, SBE members and to the Supreme Court of New Hampshire for obtaining some. No kudos to the FCC, which can and should do better than this. ●

# Make nominations now for 2006 SBE Awards

Some SBE Members go above and beyond the call of duty to do their jobs *and* serve SBE and the broadcast industry, and some 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 21 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 in the fall. Winners will be presented with either a certificate or a plaque at the SBE National Awards Dinner.

Nominations are due to the SBE National Office no later than May 31, 2007. For additional information, please contact John Poray at jporay@sbe.org or (317) 846-9000 or Larry Wilkins, Awards Committee Chair, at larry.wilkins@cumulus.com or (334) 240-9274.

### Lifetime Achievement Award

If you know someone who deserves extra recognition, you can use the 2006 Awards form to make a Lifetime Achievement Award nomination. Nominations for this award can be made any time in accordance with the rules listed on the form on page 21, but no more than one award will be presented in a given year. ●

**NOMINATION FORM** *on page* **21**

# New SBE chapter forms in Oregon

SBE sends a warm welcome to its newest local chapter – Medford, Ore., #141. Special thanks to Chapter Chairman Michael Gary for his role in organizing the chapter and to SBE Member Larry Bloomfield for his role in encouraging area members to start a chapter in the southwest corner of Oregon. ●



# MARK YOUR CALENDAR

**February 24**

**Sacramento Ennes Workshop**

**Hosted by:** Sacramento Chapter 43
**Information:** SBE National Office at (317) 846-9000 or visit www.sbe.org

**March 13-14, 2007**

**Great Lakes Broadcasting Conference & EXPO**

**The Lansing Center, Lansing, Mich.**
**Hosted by:** Michigan Association of Broadcasters, in cooperation with SBE Chapter 91 and the Michigan Association of Public Broadcasters **Contact for conference:** Call (800) 968-7622, e-mail mab@michmab.com or visit www.michmab.com/conferences/glbc_main.html **Contact for trade show:** Call Robin Smith at (800) 878-5131 or e-mail mab@michmab.com

## AM RULES *from page 1*

process to use modern antenna analysis techniques as the original petitioners had proposed. The petitioners had pointed out that use of these techniques would not only simplify antenna performance verification, but in many cases actually reduce interference levels.

The original Petition for Inquiry had been prompted by the significant changes in the power of computerized antenna system analysis that had come about because of the use of moment method computation techniques and because of the explosion in available computer power on desktop and even portable personal computers. Structural engineers and engineers developing antennas at HF and beyond had begun to perform their work almost exclusively with the advanced computational techniques that modern computer methods allowed. Medium wave antennas were well suited to this type of analysis as well, but the FCC's methods, dating from the 1939 Standards of Good Engineering Practice (and even before), were based on measurement of magnetic fields at pertinent azimuths over the area extending to 30 km from the antenna.

Although the original proponents of the Commission's inquiry and rulemaking, and many others as well, felt that use of carefully documented measurements of antenna operating parameters, derived from rigorous sampling conditions, are a far better indicator of array performance than relying on troublesome magnetic field measurements, the Commission declined to adopt methods which would replace field measurements. But the Report and Order also included a Further Notice of Proposed Rulemaking to "seek comments... to define arrays for which computer modeling could be used in the proof process."

The proponents of the original Petition for Inquiry were convinced in 1989, based on their own experience, that the science of antenna analysis had progressed to the point where computer modeling and internal array parameter monitoring could be relied upon for performance verification for most, if not all, medium wave antenna systems. The experience of the past 17 years has only reinforced that judgment. In the large majority of cases, experienced engineers now simply set antenna systems to the antenna monitor parameters predicted by a careful computer modeling process and perform the absolute minimum of field measurements required by the rules. In cases where the FCC is not the regulator, even fewer and sometimes no field measurements are made with complete confidence (and regulatory approval). Only the United States FCC and Industry Canada require elaborate magnetic field measurements for medium wave (AM) antenna performance verification. Now, a growing group of broadcast licensees have realized that use of modern analytical techniques and elimination of field measurements is desirable because it would allow much greater confidence in the time and therefore the cost of antenna performance verification. The problems of accurate and meaningful magnetic field measurements in complex environments are well known and far to numerous to discuss at length in this short article, but the operating principle of most knowledgeable engineers for at least the past two decades is, when in doubt, ignore the corrupted and compromised field strength data and believe the internal array monitoring information.

In early October, during the IEEE Fall Broadcast Technology Symposium, at the request of a group of licensee engineers, the group met, along with two of the original petitioners, and discussed re-convening the industry meetings that had originally reviewed this subject and decided to request Commission action on the Further Notice of Proposed Rulemaking. By the time this article is published, the initial meeting, like the original meetings hosted but not sponsored by NAB, will have taken place on November 15. At this meeting, the consensus comments that were initially filed by NAB, equipment manufacturers, consultants and licensees will be discussed. It's very likely that the experience of the last five years will bring some changes in those recommendations, probably supporting even more strongly the idea of use of moment method analysis and internal array monitoring to replace magnetic field strength measurements. To many of us who have long used these methods, this will be a welcome development. ●

**Ben Dawson** is the president/managing partner of Hatfield & Dawson Consulting Engineers, in Seattle, and has practiced as a consulting electrical engineer specializing in radio frequency telecommunications for over 35 years. He is a Registered Professional Electrical Engineer in Washington state and California.

**ANSWER** from page 8:

**D.** All of the above. Each one of the first three options will provide on increase in the signal level over the noise level. Depending upon the unique circumstances, one or two of the above may be more desirable or more practical to change and each will provide a different level of improvement depending upon the amount of change you are able to implement.

# SBE Fellow nominations now open

BY **Martin "Sandy" Sandberg, CPBE**
*Chair, SBE Fellowship Committee*

The Fellow designation is the most distinguished 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 election to 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 written endorsement of at least five other voting members. Nominations are confidential; candidates should not be aware that they have been nominated. Nominations for the year 2007 must be received no later than April 1 for consideration.

The Fellowship Committee will bring the names of nominees to the SBE Board of Directors for consideration and election. The SBE secretary will notify those elected. They will receive their award at the SBE National Awards Dinner next fall during the 2007 SBE National Meeting.

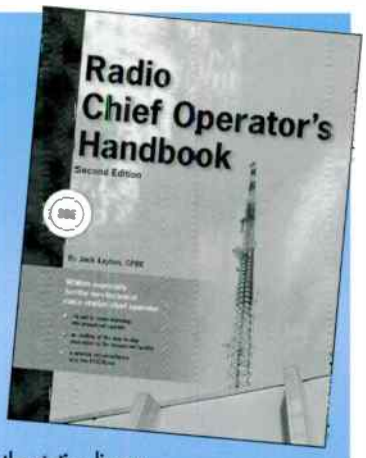
Sixty-nine members have been recognized with the Fellow honor in SBE's 42-year history. If there is a member in your chapter who has distinguished him or herself in the field of broadcast engineering, this is an opportunity for members of your chapter to prepare a nomination for that person.

Nominations for Fellow are to be submitted to Martin Sandberg, CPBE, Chairman, SBE Fellowship Committee, 9807 Edgecove Drive, Dallas, TX, 75238-1535, or to sandytex@swbell.net. ●

# SPOTLIGHT:

## Radio Chief Operator's Handbook, 2nd Ed.

**JACK LAYTON, CPBE**




This handbook is written specifically for the non-technical radio chief operator. Its purpose is to enable one with some exposure to the equipment in a broadcast radio facility to be able to carry out the duties of a chief operator. It provides information a chief operator needs to be ale to recognize problems that cause the operation of the radio station to be beyond the limits of the station license and/or the FCC Rules. It also includes excerpts from the FCC Rules relevant to the chief operator. This updated edition has a new section explaining digital audio broadcasting. **S-08 • Pub. 2005 • 71pp**

**Member Price: $39** • Non-Member Price: $49
***Shipping/Handling: $3***

## Television Operator's Certification Handbook, 6th Ed.

**FRED BAUMGARTNER, CPBE, CBNT, AND DOUG GARLINGER, CPBE, CBNT**

This handbook is designed for the entry-level, non-technical pool of applicants that fill master control positions in today's television marketplace. This edition reflects the latest technology and broadcast practices, including video file servers, automation and centralized or "Hub" broadcasting. There is updated information on the Emergency Alert System (EAS). Other topics include: operating the station, keeping the log, tower lights, staying on the air, legal requirements, television signal fundamentals, closed captioning, FCC issues and more. In addition, after completing the handbook, you can schedule to take the SBE Certified Television Operator Exam. **S-06 • Pub. 2005 • 68pp**

**Member & Non-Member Price: $42**
***Shipping/Handling: $3***

## Certification Handbook for Radio Operators

**RON BARTLEBAUGH, CBNT**

This handbook helps radio board operators learn more about the broadcasting business from the technical and business side. It covers topics such as FCC rules, technical layout of a typical station and the general responsibilities of a radio operator. An overview of station management structure and professional etiquette is presented. Other chapters cover station logs, the Emergency Alert System (EAS), safety requirements and operational procedures for trouble situations. In addition, after completing the handbook, you can schedule to take the SBE Radio Operator's Certification Exam. **S-09 • Pub. 2003 • 72pp**

**Member & Non-Member Price: $42**
***Shipping/Handling: $3***

## Books You Can Use!

A complete list of available titles can be found and ordered online at:
**www.sbe.org/store_books.php**

## LAN Technologies Explained

**PHILIP MILLER AND MICHAEL CUMMINS**

This comprehensive and easy-to-read tutorial describes the protocols, techniques, products and concepts that enable an organization's computer and data networks to carry more volumes of data at greater speeds. It guides you from traditional access methods, such as Ethernet, through the latest high-bandwidth technologies, including Gigabit Ethernet. **F-42 • Pub. 2000 • 776pp**

**Member Price: $62.96** • Non-Member Price: $69.95
***Shipping/Handling: $4***

## Television Receivers

**JERRY WHITAKER, CPBE**

This guide offers the latest on digital video for DTV, cable and satellite. It tackles what's new in receivers and is packed with examples, diagrams, schematics and data to help you handle every aspect of the newest systems and devices. **M-62 • Pub. 2001 • 586pp**

**Member Price: $71.96** • Non-Member Price: $89.95
***Shipping/Handling: $5***

## Directional Antennas Made Simple

**JACK LAYTON, CPBE**

This "how-to" book includes topics such as how and why vertical and directional antennas work, the importance of ground systems, radiation patterns at angles above the ground, planning and building of a directional antenna system, phase sampling systems, production of the directional pattern and how to troubleshoot antenna sampling systems. **J-01 • Pub. 1996 • 177pp**

**Member Price: $39.96** • Non-Member Price: $49.95
***Shipping/Handling: $4***

# Order Now!

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Prepayment is required on all orders. Shipping is calculated per item. Allow 2-4 weeks for processing and shipping within the continental U.S. Please provide a street address as all orders are shipped via ground delivery service. For express shipping or shipping outside the U.S., please contact SBE at sbestore@sbe.org or call (317) 846-9000. Credit card orders may also be called in or made online at the SBE website. Checks should be made payable to "SBE" and mailed to: SBE Bookstore, 9102 N. Meridian St., Ste. 150, Indianapolis, IN 46260.

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

## New Members

Amado M. Abenojar – Mesquite, TX
Ronald R. Anderson – Knightdale, NC
Scott Anderson – Eden Prairie, MN
Keith L. Andoos – Oceanside, NY
Jody Black – Charlotte, NC
Tommy G. Brown – Phoenix, AZ
William A. Bushner – Allentown, PA
Sean S. Carpenter – Clearwater, FL
Dave T. Casey – Shoreline, WA
Timothy D. Cason – Gaithersburg, MD
Alejandro J. Cruces – Frederick, MD
Stephen H. Cullipher – Farmville, NC
Ronald E. Davis – Rayville, LA
Gregory M. DiFiore – Cranberry Township, PA
Michael Drainer – St. Louis, MO
Eric JM Dye – Eugene, OR
Edwin P. Elias – Canovanas, PR
Arturo Fernandez – North Augusta, SC
Gerry Field – Watertown, MA
Kerry W. Garnett – San Diego, CA
Timothy L. Guentz – South Sioux City, NE
Clifford E. Haglund – North Augusta, SC
Joe T. Hale – Moon Township, PA
Keith F. Hamilton – Cary, NC
John W. Harrington – Modesto, CA
Scott C. Helmkamp – Toledo, OH
Lee Howder – Morrow, GA
Steven P. Hunter – Mount Vernon, WA
Luke D. Hysell – Sparks, NV
Nikki J. Jauron – Portland, OR
Gerard Kane – Atlanta, GA
Richard L. Kidder – Hanford, CA
Randy Lee – Waco, TX
John H. Lloyd, Jr. – Sandy, UT
Ian D. MacSpadden – Alexandria, VA
Joseph D. Mahedy – Mount Kisco, NY
David J. Matterazzo – Greenwich, CT
Michael R. McNamara – Beaverton, OR
Scott R. Michaels – Sheboygan, WI
Clay Middlebrook – Bentonville, AR
Laura B. Mir – Washington, DC
Philip A. Muller – Reno, NV
Victor J Munoz – El Paso, TX
Jon D. Naugle – Escondido, CA
Brandon Penn – Aliso Viejo, CA
Sharlet A. Pethel – Fresno, CA
Dean R. Rogers – Princeville, HI
Carl Schafner – Salt Lake City, UT
Michael T. Simonds – Eagan, MN
Charles W. Singleton – Amarillo, TX
Christopher A. Spacone – Torrance, CA
Stephen A. Tuzeneu – Dudley, MA
Kenneth Vedder – Oakdale, PA
Dan A. Watson – Terre Haute, IN
Tom K. Werner – Kacksonville, OR
Gary Westbrook – Peoria, AZ
Nathaniel R. Yonts – Powell, TN

## New Associate Members

Mary M. Palomino – Phoenix, AZ

## New Student Members

Joaquin Coronel – Nampa, ID
Mackenzie Duncan – Chagrin Falls, OH
Thomas Loehrer – Aurora, CO
Jeff W. Tuttle – Germantown, MD

## New Youth Members

Courtney R. Cronin – Glenview, IL
Kody C. Kirby – Liberty Township, OH

## Reinstated Members

Rafael A. Acosta – Ponce, PR
Thomas V. Ammons – Gibsonia, PA
William L. Amos – APO, AE
Matthew D. Boughton – White City, OR
William E. Cohn – Schaumburg, IL
Keith H. DeBelius – Burbank, CA
Peter A. Douglas – Greenwood Village, CO
John W. Elliott – Middletown, OH
Edward A. Elser – North Augusta, SC
Steve J. Epstein – Columbia, MO
Frank J. Felker – Glassboro, NJ
Douglas P. Irwin – Issaquah, WA
Christopher M. Kelley – Randolph, AL
Greg A. Martin – Burbank, CA
William G. Perry – Cowarts, AL
David C Politano – West Orange, NJ
Matthew S. Richardson – Tucson, AZ
Kenneth W. Richter – Bakersfield, CA
Harry Sanchez-Corraliza – Utuado, PR
Edward A. Sharpe – Glendale, AZ
Gregory A. Vlahos – Chicago, IL
David C. Worley – Tucson, AZ

## SBE Members on the Move

**Ted Hand, CPBE, 8-VSB,** assistant CE/RF engineer at CBS O&O WGNT-TV in Portsmouth/Norfolk, Va., and former CE at WTKR Norfolk and WAVY Portsmouth/Norfolk, moves to the 26th market as the new chief engineer of Cox Television's WSOC-TV and Independent "Action 64" WAXN in Charlotte, N.C.

**J. Gibson Prichard, CBNT,** has accepted the position of chief engineer & chief technology officer for WTVF/NewsChannel 5 in Nashville, Tenn. Prichard was previously assistant chief engineer for WZTV, also in Nashville.

*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 jporay@sbe.org or to Attn: John Poray, 9102 N. Meridian St., Suite 150. Indianapolis, IN 46260.*

## SBE Accredited Frequency Coordinators

The Society of Broadcast Engineers began the Accreditation Program to provide volunteer SBE coordinators the opportunity to be recognized as part of a standards-based, nationally recognized program of local voluntary broadcast-auxiliary frequency coordinators. The program also makes it possible for SBE to demonstrate to the broadcasting industry the widespread acceptance of a voluntary set of standards guiding local coordination.

*Accredited Sept. 15, 2006 through Nov. 6, 2006*

| Coordinator | Location | Affiliation |
|---|---|---|
| Hector Perez | El Paso, TX | Chapter 38 |
| Timothy Brusky, CBT, CTO | Green Bay, WI | |
| Jerry Scott, CBRE | Pekin, IL | Chapter 49 |
| John Christie | Mississauga, Ontario, Canada | |

Those interested in becoming an SBE Accredited Frequency Coordinator may go to www.sbe.org/accreditation.pdf for more information and an accreditation application.

# SBE 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: John Poray, Executive Director, at jporay@sbe.org or (317) 846-9000 or Larry Wilkins, Awards Committee Chair, at larry.wilkins@cumulus.com or (334) 240-9274.

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

**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 2006-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: _____

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

***New Members since last issue are in blue***

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

**ADC TELECOMMUNICATIONS INC. • 1998**
Anne-Marie Gundersen
(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

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

**ANTON/BAUER INC. • 2004**
Paul Dudack
(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

**AVOCENT • 2005**
Matt Sellers
(256) 430-4100
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 Mikhus - Studio Products
or Tim Bealer - 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

**COMSEARCH • 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

**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**
Peter Taul
(519) 579-8166, ext. 57
Carsa 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, Dicing 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

**GLOBALSTOR DATA CORPORATION • 2000**
Bob Jones
(818) 701-7771, ext. 31
Data Storage Solutions Providers

**GOOGLE INC. • 2005**
Scott Bodgan
(949) 791-1200
SS32, Maestro, ASP Solutions

**HARRIS CORPORATION, BROADCAST COMMUNICATIONS DIVISION • 1977**
Joe Mack (TV) or Chris Pimmell (Radio) or Bob Duncan (Software)
(513) 459-3406 or (306) 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 Hahamy
(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

**LEADER INSTRUMENTS CORP. • 2002**
George Gonos
813-600-1783
Electronic Test & Measuring Equipment

**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

**MINKIN 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 Vogts
(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

**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

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

**STRATOS GLOBAL CORPORATION • 2006**
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Chris Mott (Western USA)
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or (709) 748-4233 (Rest of World)
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**SUNDANCE DIGITAL, INC. • 2004**
Steve Krant
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**SUPERIOR BROADCAST PRODUCTS • 1999**
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Power Protection Equipment

**SUTRO TOWER, INC. • 1989**
Gene Zastrow
(415) 681-8850
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**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**
Kevin 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

**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

**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
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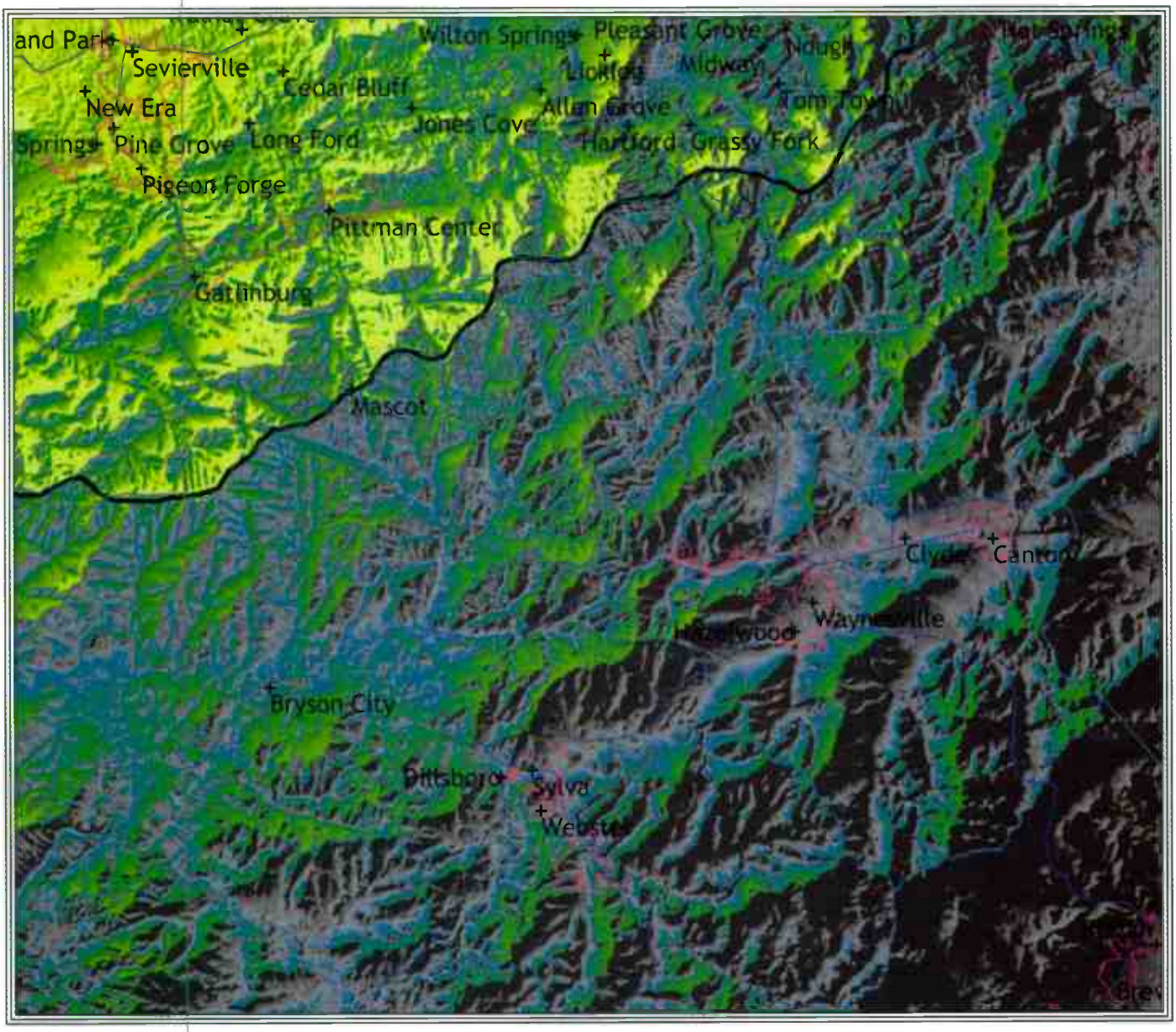


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