



Society of Broadcast Engineers

August 2005

History, Standards and Education

**By Matt Kinnan, CEV CBNT
SBE Chapter 59**

The other day I was discussing some wiring plans with a colleague. He is young and is always full of questions. He asked a really simple question, "What does XLR stand for?" Scratching my head I thought to myself, "that's a good question." I knew Cannon invented it, but I wasn't exactly sure how it got its name or what it stood for. I dashed off to my computer and in a few moments my Google search found the answer.

"The origin of the XLR connector was the Cannon X Series connector. It was fitting the demands of the audio community except the missing latch. Cannon rearranged the pins and added a latch. The new connector was called Cannon XL Series (X Series with Latch). Later the female version was changed to put the contacts in a resilient rubber compound. The connector was then called Cannon XLR Series.

"This connector soon became the industry's standard, and nearly every connector manufacturer copied the Cannon connector. It became an AES standard in 1982 with the pin assignment: 1: shield/ground, 2: hot pin, 3: cold pin." *

Just as I finished reading the answer to this simple question, I realized that no matter how much you think you know about your business, there is always room for learning and advancing you career. The SBE is a great way to keep up with our ever-changing profession. Join the SBE, get certified, and make sure others know you care.

* www.proav.de/history/XLR_history.html

(Matt Kinnan is the chairman of SBE Chapter 59, Kansas City, KS)

Next Meeting:

**Thursday,
August 18, 2005**

**Overture Center
Technical Tour**

**Meeting and Program
at 7:00 PM**

**Meet in the Rotunda
of the
Overture Center for
the Arts**

**Corner of State Street
and Fairchild Street
Madison, WI**

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Going to School on Tower Training

By Vicki W. Kipp

Tower company services managers and site maintenance vendors require unique competencies from their installation and maintenance technicians. They need skilled workers who know RF equipment and components but who also have savvy about rigging, climbing, emissions exposure, and safety issues particular to an aerial environment.

Unfortunately, you can't pursue a "tower technician techniques" degree at a technical college or university; nor is there a "tower apprenticeship."

It takes as long – if not longer – to become a well-trained tower technician as it takes to graduate from a college or to become a journeyman. Much of the expertise must be gained through on-the-job experience. However, there are courses that can help a technician become a stronger asset.

Some companies discount formal training as being too theoretical and expensive, and consider it a second-class alternative to on-the-job learning. Other tower companies find that improved worker efficiency offsets the training expense. The cost of the classes, plus travel and lodging, is a

consideration. The employer also loses labor while the tower technician is away from the job, although most courses compress instruction time to maximize the benefits per hour invested. Companies that use more than one training provider need to avoid subject duplication among courses offered by competing schools.

Although every tower technician cannot complete every available course, it helps to know what subjects are offered. The next time you review a tower technician's resume or compare credentials, you can have a better idea

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July Business Meeting Minutes

Chapter 24 of the Society of Broadcast Engineers met on Wednesday, July 20, 2005 at the Educational Communications Board conference room for the chapters monthly meeting. There were 19 members present, 13 of who were certified. There were also 3 guests present.

Chair Jim Magee called the meeting to order at 7:00 PM. Minutes for the June meeting as published in the July newsletter were approved.

Treasurer Leslie Franzen reported that the Chapter had a current balance in the black.

Newsletter editor Mike Norton reported the deadline for the August Newsletter as August 5th with the folding Party on Wednesday, August 10th at 5:30 PM at WKOW.

Sustaining membership Chair Fred Sperry reported there are now 25 sustaining members. There are 3 new sustaining members, Belden/CDT-Electronics Division, Midwest Media Group, and Madison Video Repair, and 4 renewal members – Alpha Video, Full Compass, Roscor, and Token Creek Productions.

Program committee Chair Steve Paugh announced that there would be a sign up page on the Chapter Website for the August 18th meeting at the Overture Center. The September meeting will be on Fiber Connect between cameras and truck, with the location to be determined. The October meeting will be from American Transmission Company as the Wednesday night program at Broadcasters Clinic.

Past Certification Chair Jim Hermanson announced that there will be a Certification test at the NAB Radio Show on September 22nd with the application deadline being August 18th. The next local tests will be from November 11th to 21st with the application deadline being September 23rd.

Frequency Coordination Chair Tom Smith reported a Prior Coordination Notice was issued for a new 950 MHz STL for WHA-AM. He also reported that on July 14th, Nextel held a 2 GHz Relocation market kick-off meeting for the Madison and Rockford TV stations. The relocation transition should to be completed by next spring with the planned switchover date being March 11, 2006.

National Liaison Leonard Charles reported that nominations for the SBE National Board of Directors are being taken.

In new business, Chapter 24 and Newsletter Editor Mike Norton has been award Best Chapter Newsletter (Class B) by the National SBE. The Chapter has a certificate for an RSI RF Safety Course which Leslie Franzen won at the June picnic that he was unable to use. Contact Jim Magee if interested.

In other new business, Vicki Kipp announced that Tom Ray of

(continued on next page)

July Business Meeting Minutes (continued from page 2)

WOR Radio in New York was looking for feedback until Labor Day concerning a national strategic planning committee. Chair Jim Magee volunteered to serve as Chapter 24 liaison.

In Old business, the by-law change to allow want ads for used equipment in the chapter newsletter was submitted. The by-law change was published in the July newsletter and will be voted on at the August meeting. A two-third vote of those present is needed for passage.

Chairman Jim Magee also noted that committee positions for Newsletter Editor, Certification/Education, and Special Events Coordinator were still open.

The program was a presentation on the current state of Land Mobile Radio by Steve Miller of General Communications, Inc.

Respectfully Submitted by Tom Smith, Secretary

Thank you to Steve Miller of General Communications for presenting at the July meeting.

The *Chapter 24 Newsletter* is published monthly by SBE Chapter 24 Inc., Madison, WI.

Could you be the next newsletter editor? Chapter 24 is seeking a volunteer to become the next editor of the award winning Chapter 24 newsletter. Good PC skills are helpful and experience with PageMaker for Windows a plus. Please contact the Chapter Chair for more information.



AMATEUR RADIO NEWS

By Tom Weeden, WJ9H

• “Mayday, Mayday, Mayday! This is the sailboat Enamorado. Mayday, Mayday!” That’s what Madison radio amateurs Ed Toal, N9MW, and Ralph Henes, W9CAR, heard during a casual Sunday morning net July 24 on 14.238 MHz that also involved Dick Mannheimer, K6LAE, in Los Angeles. Toal and Henes were able to contact the operator, Ken Saijo, KC6ORF—a California retiree—who confirmed the 35-foot sailing vessel was in trouble and needed help.

“All social chatter immediately stopped, and we declared an emergency in progress on frequency,” Henes said. Then, while Toal gathered information from the operator aboard the Enamorado, Mannheimer and Henes both called the US Coast Guard to relay the boat’s situation and position, which turned out to be in Mexican waters.

“The US Coast Guard relayed our information to the Mexican Navy, and then it seemed like a long time passed and nothing seemed to be happening,” Henes recounted. Henes and Toal were able to copy KC6ORF well, although Mannheimer could not, and they maintained contact with the disabled boat.

The Wisconsin hams learned that Saijo was accompanying the boat’s skipper, Ken Scheibe, on a trip from California to Costa Rica when they ran into a storm. As a result, the vessel lost its engine and steering, both men had suffered injuries and Scheibe was reported in severe pain. Before putting out distress calls on 20 meters, Saijo had tried without success to raise help via the vessel’s VHF marine radio.

Toal had to leave after a couple of hours, but Henes and Mannheimer remained on frequency, and Henes said he kept the two sailors talking and updating their position. About three hours into the incident, Henes again called the US Coast Guard to see if it had heard back from the Mexican Navy. “The answer was no,” he said. So he called the Mexican Navy himself and, after what he described as “a few tense language-barrier moments,” he was connected with someone who spoke English and Spanish and told that a rescue boat and helicopter were on the way.

“I managed to persuade the office person to contact the naval vessel and please ask them to come up on our ham radio frequency,” Henes said. “It worked! Within minutes, they were on the frequency calling the stranded boat.” Enter Jorge Lira, XE1JP, who volunteered to serve as translator. He was able to relay the foundering sailboat’s coordinates to Mexican authorities. “He saved the day,” said Henes, who reports he was able to hear the rescue helicopter in the background on Saijo’s transmission. Saijo and Scheibe were plucked to safety from the distressed vessel, which the Mexican Navy towed to safety.

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Going to School on Tower Training (continued from page 1)

what to expect from those who have completed various courses. Although by no means comprehensive, here are a few courses complementary to the career of a tower technician:

Andrew Corporation

Several courses for tower technicians are offered at the Andrew Institute in Orland Park, IL, or on location. Andrew's Base Station Antenna Fundamentals course gives participants hands-on practice with antenna mount assembly and installation. The VSWR Fundamentals course is taken in conjunction with this course. Other courses include Connector Attachment Training, Terrestrial Microwave Systems Installation, and Pressurization instruction. www.andrew.com/institute

Anritsu

Certified cable and antenna analyzer training is provided by Anritsu factory-certified instructors through vendors such as Amtronix, Hutton, Primus Electronics, Talley, and Tescoco.

This two-day course teaches RF line-sweep theory-and-practice including insertion loss, return loss and frequency domain reflectometer (FDR) testing, installing, testing, and maintaining feed lines and antenna systems. www.us.anritsu.com/training

CommScope

Tower technicians who attend CommScope Wireless's course on how to properly install connectors on cables can qualify for CommScope Wireless's Gold Contractor certification for the trained installer. The certification is valid for two years; the class must be repeated for re-certification. www.commscope.com

ComTrain

Known for its climbing and safety training, ComTrain offers three courses – Certified Tower Climbing Safety and Rescue, Tower Climbing Safety and Rescue-Train the Trainer, and Basic Tower Technology – and sells several reference books that they developed. ComTrain courses are offered in Monroe, WI, or on location. www.comtrainusa.com

DBI/SALA & Protecta

Tower technicians can receive safety equipment training at DBI/SALA & Protecta training centers in Red Wing, MN; Houston, TX; or on location.

Courses include Fall Protection Site Survey, Fall Protection Program Development, Equipment Inspection, On-site System Specific, On-site Fundamentals, Detailed Skills, Equipment Inspection, Train the Trainer, Tower Climbing & Rescue and Industrial Rescue. www.dbisala.com

Dielectric/Flash Technology

Flash University is held in Franklin, TN, or on location. Flash University gives an overview of Flash Technology products, explains the basic engineering and physics involved in tower lighting, and covers FAA guidelines, troubleshooting/repair methods and monitoring. www.flashtechology.com/training.html

Eupen

Cable and connector manufacturer Eupen offers training on how to properly install connectors on its cable, with an emphasis on the importance of proper contact to prevent water ingress. Eupen offers instruction to their customers and their customers' contractors for free.

www.eupen.us/training.htm

Gravitec

Gravitec offers training at their facility in Bainbridge Island, WA, or on location. Gravitec has several classes including Tower Climber/Rescuer, Tower Rescuer, Competent Tower Rescuer, Competent Tower Climber, Tower Supervisor, Qualified Fall Protection Person, Fall Protection Equipment Inspector, Fall protection Trainer, FAA Qualified Tower Climber Program and National Weather Service Qualified Tower Climber. www.gravitec.com

RSI

Radiofrequency Safety International has several courses for the technician, such as RF Site Safety Awareness, Telecomm Construction Safety, RF Train the Trainer, Advanced RF Train the Trainer and Superior Survey Techniques. www.rsicorp.com

Sitesafe

Sitesafe offers RF health and safety awareness training in Web-based and classroom venues. Their web-based training program is for companies that have employees and contractors working in an RF environment and covers all aspects of RF safety and certifies that students have obtained a clear understanding of proper practices. www.sitesafe.com/se_rfhealth.asp

Experience may be the best teacher, but it can seldom be documented. Tower companies with a credentialed workforce reduce their exposure and enhance their productivity.

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FCC Rulemakings

Compiled by Tom Smith

PROPOSED RULEMAKINGS

MM Docket No. 99-25 Creation of Low Power Radio Service

As Reported in the April newsletter, the FCC issued its Second Order on Reconsideration and Further Notice of Proposed Rulemaking on proposed changes to the rules concerning low-power FM stations. On July 7th, the FCC published the Second Order on Reconsideration and Further Notice of Proposed Rulemaking in the FEDERAL REGISTER, which started a 30-day comment period, which was to end on August 8th. On July 29th, Station Resource Group filed a motion seeking 30 additional days for the comment period. They sought the added time, so they could compile ideas and research at an annual retreat for the group that was to be held on August 3-5, 2005. The FCC found good cause for the petition and extended the comment period by two weeks with comments due on August 22nd and reply comments due on September 5, 2005. The Notice was adopted and released by the FCC on August 3rd.

MB Docket No. 05-210; FCC 05-120 Revision of Procedures Governing Amendments of Allotments to FM Table of Allotments and Changes of Community of License in the Radio Broadcast Services

On June 9th, the FCC adopted a Notice of Proposed Rulemaking proposing that the rules concerning the filing of petitions to amend frequency allotments and applications for new stations in the FM band be changed from the present two step process where one petitions for a new allocation and then is able to apply for a new station after the FCC amends

the table of allotments, to a new system where the frequency request is made with the application to build a new station. The FCC also proposed new rules concerning applications for changing the city of license for existing AM and FM Stations. For more information, see the July Newsletter.

The FCC released the notice on June 14th noting that the comment period would start when published in the FEDERAL REGISTER. On August 3rd, the FCC published the notice in the FEDERAL REGISTER. Comments for this rulemaking are now due on October 3rd giving a 60-day comment period with reply comments due on November 1st.

MB 03-15; DA 05-2233 Second Periodic Review of the Commission's Rules and Policies Affecting the Conversion to Digital Television

On August 2nd, the FCC extended the filing deadline for the First Round Conflict Decision Form 383 for DTV Final Channel Elections. The deadline was extended seven days from August 8th to August 15th. The Association of Federal Communication Consulting Engineers sought a thirty-day extension in a filing on July 28, 2005. The original filing period was for sixty days, starting June 7th.

The FCC also issued guidelines that tell stations which sections of Form 383 to fill out if they change their first round channel election and participate in the second round of channel elections. Stations needing to file the form are those keeping their NTSC channel and accepting interference, have only one in-core channel, or wish to modify their facilities to eliminate interference. Those who do not file and have a conflict will be expected to participate in the second round of elections.

The FCC also reissued the guidelines for the amount of interference allowed in resolving channel elections of stations with one in-core channel, entering interference agreements, and the notification of the FCC of a conflict between two stations channel elections. This situation could occur when a station wishes to return to its NTSC channel contingent on another station returning to their NTSC channel. This situation can occur when there is interference from the first stations NTSC channel to the second stations DTV channel and the second station elected to remain on its DTV channel and not consent to additional interference. The FCC wants information from the first station in its Form 383 on how it wishes to proceed because of the second stations conflicting election of its DTV Channel in the first round.

CG Docket No. 05-231; FCC 05-142 Closed Captioning of Video Programming; Telecommunication for the Deaf, Inc. Petition for Rulemaking.

On July 14, 2005, the FCC adopted a Notice of Proposed Rulemaking in response to a petition from the following organizations: they include the Telecommunication for the Deaf, Inc. (TDI), the National Association of the Deaf, Self Help for the Hard of Hearing People, Inc., the Association for Late deafened Adults and the Deaf and Hard of Hearing Advocacy Network.

On July 23, 2004, Telecommunication for the Deaf, Inc filed a petition for the FCC to start a rulemaking to "establish additional enforcement mechanisms to better implement the captioning rules, and to establish caption quality standards to ensure high quality and reliable closed captioning". The petition requests the FCC to create rules that would: 1) Create an FCC database with updated information for video program distributors and providers and a captioning complaint

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FCC Rulemakings (continued from page 5)

form, 2) establish compliance reporting requirements and audits, 3) require responses to consumer complaints about quality issues within 30 days, 4) establish fines or penalties for captioning rules violations, 5) require continuous monitoring by the video programming provider so technical problems can be corrected quickly, 6) require video program distributors to reformat programs with edited or compressed captioning, 7) require that for a program to be considered captioned under the existing rule, it must be minimum FCC standards for completeness, accuracy, readability and synchronicity with the program audio, and 8) adopt non-technical standards to ensure video programming is "fully accessible" to the deaf and hard of hearing. There were 90 comments in support of the petition. The National Cable and Telecommunication Association filed opposing comments.

The notice discussed the issues raised in the petition. The first issue discussed was Non-technical Quality Standards for closed captioning, which includes the accuracy of the text, placement, identification of other sounds and use of pop-up or roll styles. The FCC has not regulated non-technical standards believing that program providers and producers would put requirements for non-technical standards in the captioning contracts. TDI claims that the market place does not address the non-technical issues and there has been very little improvement in quality in the past 5 years.

The FCC is asking if there should be non-technical standards, cost of maintaining non-technical standards, differences in standards between pre-produced and live programs and responsibility for non-technical standards.

The next issue was technical standards. Current rules require a program distributor such as a TV station

or cable provider to pass through all captions unless the program is reformatted. TDI claims there are many failures that cause the loss of captions and asks the FCC to add additional procedures to prevent and correct the loss of captions.

The third issue discussed is the monitoring of captions. The FCC rules now state that the program distributors are responsible for monitoring and correcting captioning problems, but has no specific rules on monitoring. The Commission asks if specific rules for monitoring should be created.

Issue number four that was discussed was time limits for acting on complaints about captioning. Currently, the timetable for processing complaints could last over for months before the complaint is answered and the complaint must go to the provider first and be forwarded to the FCC. The FCC would like comments on shortening the period of time for processing complaints and if complaints should be filed with the FCC directly. TDI asked for a standardized form for complaints and included a sample complaint form, which is with the full Report and Order.

Next, should the FCC have specific levels of fines for failing to caption? TDI suggest an \$8000 fine for every hour of programming without captions. The FCC seeks comment on establishing specific fine levels and what those levels should be. TDI also requests that all TV stations and cable and other multi-program suppliers file a quarterly report on their compliance with the captioning rules within 30 days of the end of the quarter. The FCC seeks comment on the filing of such reports and what they should contain.

Another captioning issue is the use of Electronic Newsroom Techniques. Now, in markets below the top 25 in the nation, stations can use captions generated by

their news scripts. This means ad-libs and breaking news is not captioned. Stations in the top 25 markets must use some method of real time captioning. TDI wishes that real-time captions be extended to markets under the top 25. The FCC would like to know if captioning costs have decreased enough to require live captioning in smaller markets.

The Commission would also like to know the availability of captioners and captioning services, and what impact imposing a quality standard would have on those numbers. They also would like comments on the use of electronic filing for waivers to the closed caption rules and if it should be mandatory or optional.

Three other issues raised by TDI's petition include the pass through of captions, which TDI claims many program distributors fail to do, and garbled captions. They also addressed the reformatting of closed captions. TDI would like anyone editing captioned program for time or content to be required to re-caption the program to avoid dropped or extra captions from deleted parts of the program. This would require stations to re-caption programs that they are repackaging. Finally TDI requests that the FCC do Benchmark Compliance Audits of the closed captioning rules.

The full Report and Order was released on July 21st with comments due 45 days after publication in the FEDERAL REGISTER and reply comments due 15 days later. Anyone involved in television should become familiar with the rulemaking; if a number of these rules are enacted, most stations would have to add personnel to do captions or contract with a service, which in any case would be an additional budget item. Master control personnel would also have added responsibilities for monitoring captions.

From FCC Releases (www.fcc.gov)



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AMATEUR RADIO NEWS (continued from page 3)

Toal said in an interview on WMTV that this is another example of why ham operators are licensed by the FCC for emergency communication. "The guy on the boat has got the problem. The guy in the Navy is the hero. He's the one who's rescuing him. We're providing communication. But it's a very critical link. It has to happen."

- The FCC has proposed dropping the 5 words-per-minute Morse code element as a requirement to obtain an Amateur Radio license of any class. The Commission recommended the change to the rules in a Notice of Proposed Rule Making (NPRM) in WT Docket 05-235. "Based upon the petitions and comments, we propose to amend our amateur service rules to eliminate the requirement that individuals pass a telegraphy examination in order to qualify for any amateur radio operator license," the FCC said in its NPRM, released July 19.

The Commission said it believes dropping Element 1—the 5 WPM Morse examination—would "encourage individuals who are interested in communications technology, or who are able to contribute to the advancement of the radio art, to become amateur radio operators." The FCC said it also would eliminate a requirement it believes "is now unnecessary and that may discourage" current licensees from advancing their skills, and that it would "promote more efficient use" of current amateur radio spectrum.

The International Radio Regulations recently deleted the Morse testing requirement for amateur applicants seeking HF privileges, leaving it up to individual countries to determine whether or not they want to mandate Morse testing. Several countries already have dropped their Morse requirements.

A 60-day period for members of the public to comment on the FCC's NPRM in WT 05-235 will begin once the NPRM appears in the Federal Register.

(Excerpts from the American Radio Relay League <arrl.org> and WMTV <nbc15.com> web sites)



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CHAPTER 24 SUSTAINING MEMBERS

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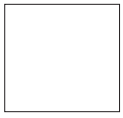
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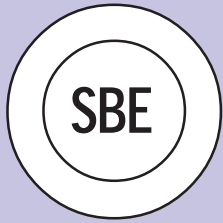


FIRST CLASS MAIL

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Contributors this month: **Matt Kinnan, Vicki W. Kipp, Tom Smith, and Tom Weeden.**
Thanks to **Leonard Charles** for his work on the Chapter 24 WWW page.

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AUGUST MEETING and PROGRAM



Society of Broadcast Engineers CHAPTER 24 MADISON, WISCONSIN Thursday, August 18, 2005

Overture Center Technical Tour

Designed by Cesar Pelli, the Madison Overture Center is a world class venue for the performing arts. We will be given a guided tour of this magnificent facility, seeing not only the public areas but also the inner workings of the technology behind the scenes. To ensure that we have the best possible tour, the Overture needs to know the size of the group that we will be bringing.

Please log on to the Chapter 24 web site and sign up for the tour. There is no charge for SBE members and guests. The Chapter will cover the cost of the tour, but we need to know if the group will be over 25 people.

Dutch Treat Dinner on Your Own.

There are several dining establishments in the general area of the Overture Center. Try to be in the Rotunda of the Overture Center by 7 PM.

**Meeting and Program at 7:00PM
Overture Center for the Arts
Corner of State Street and Fairchild Street
Meet in the Rotunda
Madison, WI**

Nearest Parking Ramp is the Civic Center Ramp, which is located behind the Overture Center.

Visitors and guests are welcome at all of our SBE meetings!

2005 UPCOMING MEETING/PROGRAM DATES:

<u>Day</u>	<u>Date</u>	<u>Program</u>
Tuesday	September 13, 2005	Fiber Optic Cable for ENG/SAT Remotes
Wednesday	October 12, 2005	T.B.D./Broadcast Clinic
Thursday	November 17, 2005	DTV Receiver Shoot-Out/Stream Sniffing

Program Committee:

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277-5139

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