



**FREQUENCY COORDINATION NEEDS YOUR INPUT**

*By Tom Smith  
Chapter 24 Frequency Coordinator*

At the last meeting, there was some discussion of various issues in frequency coordination. This was brought up due to some interference in the 950 MHz Aural STL Band, as one of the Madison group of stations relocated their studios and created new studio to transmitter link paths. After talking to and e-mailing the parties concerned, it is apparent that the existing methods of coordination need some updating. Part of this is due to the FCC requirement for Prior Coordination Notification and part of this is because of the congestion of the 950 MHz band and the possible congestion of the TV microwave bands in the future.

When I came to Madison 29 years ago, there were four TV Stations and eleven radio stations. There was one TV STL and one or two radio STLs along with remote-pick-ups for the radio stations. ENG for TV was just starting. When I took over as Frequency Coordinator in July of 1992, there were five TV Stations with some ENG gear and two stations with microwave STLs. By that time, there were seventeen radio stations with eleven 950 MHz STLs and a two hop relay for the State network station in Highland. There are now 23 radio stations with twenty STLs and the two-hop relay for the Highland station. There are also two stations in the nearby Columbus area, both with STLs. We have six TV stations now with five stations having STLs and a large number of remote pick-up ENG units among them.

Besides congestion, there may be problems with the new digital systems. Because digital systems consist of multiple carriers and an amplitude component, we cannot rely on the FM capture effect to aid in eliminating interference. This may require the use different antennas to provide tighter transmit and receive beam width patterns.

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**Next Meeting:**

**Tuesday,  
April 12, 2005**

**Tower Inspections  
and Elections**

**Dutch Treat Dinner  
at 5:30 PM**

**Babe's Bar and Grill  
5614 Schroeder Road**

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

**at WMTV-TV Studio/  
WBUW-TV Transmitter**

**615 Forward Drive**

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**Diamond in the Sky**

**By Vicki W. Kipp**

Have you ever seen a tower that is wider in the middle than it is at the top and bottom? If you have, consider yourself fortunate. Only a few of these diamond-shaped towers exist. This is the story of a diamond-shaped tower near Nashville, Tennessee.

**Small Beginnings**

This story began on October 5, 1925 when WSM-AM signed on the air with a thousand watts of power at 1060 kilohertz. The transmitter and antenna were installed in downtown Nashville.

WSM broadcast from a horizontal long wire antenna stretched between two self-supporting towers, in a setup known as a "cage" or "flat top" antenna. A tuning house centered between the two towers fed a vertical source wire to the center of the horizontal long wires.

Edwin W. Craig, an insurance executive for the National Life and Accident Insurance Company, created WSM to promote the company while providing a public service. Craig drew the station's call letters from the National Life slogan: *We shield millions*. WSM-AM was given a dreamy nickname: *Air Castle of the South*. An informal live-

performance country music show called *WSM Barn Dance* premiered on November 28, 1925. The live show attracted so many guests to the WSM Studio, that people soon joked that WSM stood for *We seat many*. Two years later, the immensely popular show was renamed "The Grand Ole Opry." Almost eighty years later, "The Grand Ole Opry" still attracts giant studio crowds and many radio listeners on Friday and Saturday nights. On December 6, 1982, WSM-AM became Nashville's first stereo AM station.

The present day studio for WSM-AM  
(continued on page 6)

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## March Business Meeting Minutes

Chapter 24 of the Society of Broadcast Engineers met on Wednesday, March 16, 2005 at Full Compass Systems in Middleton, Wisconsin for the chapter's monthly meeting. There were 14 members in attendance, 11 of whom were certified and 4 guests.

The meeting was called to order at 7:06 PM by Chapter Chair Vicki Kipp. The minutes of the February meeting as published in the March newsletter were approved.

Newsletter Editor Mike Norton reported the deadline for the April newsletter is Friday, April 1<sup>st</sup> at midnight. The folding party is Wednesday, April 6<sup>th</sup> at 5:30 PM at WKOW-TV.

Treasurer Leslie Franzen reported that the chapter has a balance in the black. Sustaining Membership Chair Fred Sperry submitted his report on the recent renewal of Clark Wire and Cable, WMTV, and maney-logic. The chapter has 23 total sustaining members.

Program Chair Steve Paugh reported the next meeting will be Tuesday, April 12<sup>th</sup> and will be a presentation on tower inspections by CPH Engineering. The May meeting will be held Thursday, May 19<sup>th</sup> and will be a tour of Token Creek's new digital production unit. The Chapter's summer picnic will be Tuesday, June 21<sup>st</sup>.

Certification and Education Chair Jim Hermanson reported the next window for local certifications is June 3-13 with an application deadline of April 22<sup>nd</sup>.

Frequency Coordinator Tom Smith reported on the appointment of FCC Commissioner Kevin Martin as the new FCC Chairman. The Entercom group is looking for some remote pickup frequencies. The big issue is Midwest Family's move and lighting up stations; a number of other stations are experiencing interference problems. There appears to be issues with Prior Coordination Notice and Comsearch. Flagged frequencies were sent out, but those frequencies were used. All parties are working through this to sort it all out. Coordinator Smith is interested if stations had been contacted by Comsearch—if so, please let him know one way or the other. This will continue to be a problem as stations are becoming more clustered near the towers and paths are becoming more overlapped. If anyone is planning a new path or relocating, please contact Tom for the most recent database. Paths should also be checked against a map to check for locations beyond either end of the planned path as well as 15 to 20 degrees on either side. Another possible reference is [www.fccinfo.com](http://www.fccinfo.com). The site updates their database weekly from the FCC's database, but is easier to use than the FCC's.

It was suggested about posting the database on the Chapter's website. There are concerns about security, but the site could be protected by password. Itinerate users can request coordination via the National SBE website which will then notify the local coordinator about the request via email.

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## AMATEUR RADIO NEWS

*By Tom Weeden, WJ9H*

- The FCC has released a Report and Order (R&O) on cognitive or "smart radio" systems. In its 42-page R&O, the Commission declined to adopt any new regulations for amateur radio transceivers or for digital-to-analog (D/A) converters "at this time." In its December 2003 Notice of Proposed Rule Making (NPRM), the FCC had proposed exempting manufactured software defined radios (SDRs) designed to operate solely in amateur bands from any mandatory declaration and certification requirements, provided the equipment incorporated hardware features to prevent operation outside of amateur bands. The Commission also had sought comment on the need to restrict the mass marketing of D/A converters "that could be diverted for use as radio transmitters."

But, in its R&O, the FCC concluded, "No parties have provided any information that shows that software programmable amateur transceivers or high-speed D/A converters present any significantly greater risk of interference to authorized radio services than hardware radios." The Commission went on to note that "certain unauthorized modifications of amateur transmitters are unlawful" and that it may revisit the issues "if misuse of such devices results in significant interference to authorized spectrum users."

The Commission said its R&O, released March 11, is intended to "facilitate continued growth in the deployment of radio equipment employing cognitive radio technologies and make possible a full realization of their potential benefits." The hope is that cognitive radios will allow more efficient use of the radio spectrum. The American Radio Relay League and the National Public Safety Telecommunications Council had commented earlier on the impracticality of incorporating hardware features to prevent out-of-band transmissions. The League also opposed regulating the marketing of high-speed D/A converters as burdensome, more costly to consumers and unnecessary because the devices don't pose a risk of interference.

- An Irving, Texas, Broadband over Power Line (BPL) pilot project has shut down and removed its equipment. In mid-March, the ARRL called on the FCC to shut down the system and issue fines for causing harmful interference to amateur radio communications. The ARRL's March 15 filing to the FCC's Enforcement Bureau, its Office of Engineering and Technology, system operator TXU and equipment manufacturer Amperion supported a complaint from ARRL member and North Texas Section BPL Task Force Chair Jory McIntosh, KJ5RM, who regularly commutes through the BPL test zone in the Dallas-Fort Worth area. McIntosh said when the system was running, interference in its vicinity was 20 dB over S9 or stronger on all amateur bands from 40 through 6 meters.

The ARRL became involved after FCC failed to respond to a formal complaint McIntosh filed last fall. ARRL Laboratory Manager Ed Hare, W1RFI, also took measurements at the Texas site that verified McIntosh's observations.

There's been no word from TXU as to its reasons for shutting down the system and removing the equipment. The test report the League included with its complaint pointed out that the interference was not confined to amateur radio spectrum but included additional HF spectrum. The ARRL said the system even failed to protect many of the bands that the FCC's new BPL rules require to be notched.

The Irving BPL test site is the third using Amperion BPL equipment to shut down following complaints from amateur radio operators. In Cedar Rapids, Iowa, last June, Alliant Energy cut short its BPL "evaluation system" after the utility and Amperion were unable to resolve ongoing HF interference to amateurs. In the Raleigh, North Carolina, area last October, Progress Energy Corporation shut down Phase II of its BPL field trial after pronouncing the test a success.

*[Excerpts from the American Radio Relay League web site, [www.arrl.org](http://www.arrl.org)]*



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## FREQUENCY COORDINATION (continued from page 1)

What can be done to improve the coordination system? First, just because stations must now use Prior Coordination Notification with a consultant, it does not mean the SBE or Chapter 24 is stopping 950 MHz or TV fixed microwave coordination. The SBE coordinator also gets PCN notices to reply to. The local database can be a good planning tool for stations before they have a PCN notice generated. A local database can provide someone planning a new STL or other link with information that could indicate a potential conflict before filing a PCN and possibly being surprised by the results. The most important part of coordination is communication between stations and the coordinator. By talking to the local coordinator early in the planning process, he may be able to alert you of other station's plans and possible conflicts. Finally, the PCN system is not perfect either. It relies on the FCC databases, which are still not entirely accurate, even after the FCC asked stations to verify their information and send in corrections. Also, if the license has another address such as a corporate headquarters, the local station may not even receive or be aware of the PCN and unable to send reply concerning a possible conflict that may be unknown to the corporate engineers whom may deal with the PCN notice.

What has Chapter 24 been doing for coordination of fixed links? After receiving a call or e-mail, I normally check a map to locate receive sites in the proposed path or near the proposed transmitter. I then check if the proposed receive site is in another station's path or near another transmitter. I then send the local database and a letter listing any conflicts, listing both the station and the frequency. As the local coordinator does not assign frequencies, it is now up to the person

to select their frequency. After that, I wait for the person to get back with the frequency Selection and watch for an application to be filed with the FCC. The Los Angeles Coordinator posts a list of applications and grants weekly. When I get a frequency, I will add it to the database even before the PCN or application is filed, so anyone else seeking database information is aware of your plans. At this point is when communication starts to break down. Either the person planning the new broadcast auxiliary stations does not get always back to me or sometimes I miss the application because the station's legal business name is different then what I am familiar or because it is under a subsidiary. Locations are not noted in all notices, which makes it difficult to spot local applicants. Thus the new system does not get added to the database until I find the information by other methods. The Chapter 24 databases are checked against the FCC Universal License System database from time to time, but because of unreported changes, FCC database errors, or a transcription error, there have been times when errors have gotten in the database.

At the last SBE meeting some suggestions were brought up. The main one was the posting of the databases on the Chapter 24 web site. Stations could then verify their information and have errors corrected and download the databases when planning for a new system. Posting on the web was not done that in the past to avoid someone getting STL or remote frequencies easily and hacking into a stations STL. With the FCC database on the web, someone smart enough to hack an STL can also find the frequency information. Because this information is grouped together and made easier for some unwanted user to see, I would still like some kind of security, if possible.

This could be by issuing passwords or by a filling out a form for access. I would like any sign-on have a method of alerting the coordinator that a station is seeking coordination information for a new STL, so updates can be added in a timely matter.

The SBE is issuing new database software at NAB. If it works for our needs, I will do an update of the database from FCC information. There will be a request for verifications of the database from the stations in our area. One of the things I would like to know is what information should I add to the database. I now list a station's broadcast call letters, city of license and studio location (if it is located in a distant location), frequency, use (STL or relay), transmit and receive coordinates, and azimuth. I could add polarization, auxiliary's call letters, antenna heights, and if the system is digital or analog. The biggest limitation has been when I have tried to get the information on an 8 1/2 by 11 sheet of paper in landscape mode. As Excel will support 8 1/2 by 14 printouts and most printers will handle that, I should be able to add a few more columns of information. I will continue to e-mail databases in Excel or text if needed if the new SBE database does not support them.

The last issue I have is a communication issue that deals mainly with the radio people. I see the TV people at SBE meetings and conferences on a regular basis, but because I know that the radio engineers are busy, they get to meetings and conferences less often. Because I see them less, it is difficult to keep up on what is happening among your stations. A conversation before or after a SBE meeting or at a conference can alert me of what's going on and make me

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## Cast Your Ballot!

**By Steve Paugh,  
Nominations Chair**

Enclosed with this newsletter is the official ballot for the SBE Chapter 24, 2005 election of officers. The deadline for returning your ballot to the nomination chair is Monday, April 25th, 2005. The nominations committee will count the ballots on the evening of Wednesday, April 27th, 2005 at WISC-TV.

You may turn in your ballot in person during the April 12th, 2005 chapter meeting. If you are unable to attend the April meeting, you may mail your ballot directly to me at:

Steve Paugh- c/o WISC-TV  
Ballot  
7025 Raymond Road  
Madison, WI 53719

Please indicate "Ballot" on the envelope and we will hold your ballot unopened until the official counting process. Your ballot must be in our possession before we begin the counting on April 27th. Remember that your membership must be current to be eligible to vote. Your membership number must be entered on the ballot for it to be valid. Thanks to the nomination committee members Jim Hermanson and Leonard Charles.

## FREQUENCY COORDINATION (conclusion)

more aware of changes at your stations. If anybody in radio has any ideas about possibly getting together either for some SBE program or a lunch get together once in awhile, I am open to attending. The TV Chiefs meet on a regular basis and I have attended, when there was a coordination issue.

The Chapter 24 coordination program has been of an informal nature, as most SBE programs have. With only a handful of requests each year, there has been little pressure to make many changes. With all that

has happened to the industry in the last 10 years, it looks a few minor changes are needed. Any ideas on making it easier for you to receive or submit information would be appreciated. My e-mail address is smithtc@wpt.org.

Any finally, with the spectrum getting more crowded, there will be cases of interference with the best planned and coordinated systems. We will just have to be ready to deal with those instances of interference in cooperative matter as we have done in the past.

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 important and experience with PageMaker for Windows a plus. Please contact Chapter Chair Vicki Kipp for more information.

## FCC ISSUES REPORT ON OVER-THE-AIR TV

**By Tom Smith**

On February 28th, the Media Bureau issued a report on over-the-air TV usage. This report was the result of an inquiry that the Media Bureau issued last year. The inquiry was to determine the impact of the shut off of analog TV transmission on the public. For those who have followed the debate over setting an end date for analog transmissions, the results are not unexpected and most of the information has been mentioned in other reports and hearings by the FCC and Congress on the DTV transition.

The FCC found that 15% of the homes in the U. S. rely on over-the-air signals for all of their viewing and that 5% of the homes in the U.S. use over-the air because they cannot afford cable or DBS. The rest of the homes using over-the-air TV, use it because TV is not that important to them, with a small share having other reasons not listed. With DBS homes that use over-the-air for local stations (about half), and sets in cable and satellite homes not connect to the service, about 30% of the sets in the U.S. view over-the-air signals.

Considerable space was spent on the use of converters to receive DTV by current over-the-air users and how to get them into homes. The question of the government aiding in the cost of purchasing converters for those unable to afford them was discussed, as was consumer education on the DTV transition. The report finished with an analysis and list of options on methods for making the DTV transition including the timing of the transition.

*From FCC Media Bureau Report  
(www.fcc.gov)*

*Disclosure: Author filed comments for this inquiry and was quoted in the report.*



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## Diamond in the Sky (continued from page 1)

is in the Gaylord Opryland Resort in Nashville. WSM-AM broadcasts a combination of country music and talk radio.

### Growing Audience

By 1926, WSM-AM had increased its power to 5,000 Watts, formed an affiliation with the NBC Network, and expanded its broadcast day to eight hours. WSM received Class 1-A clear-channel status in 1932. The clear-channel classification enabled WSM to increase power to 50,000 Watts. WSM-AM became the only station in the United States allowed to broadcast at 650 kilohertz. After the 1981 Rio Agreement changed the original clear channel classifications, WSM-AM retained the protection that no other station within a 750-mile radius can broadcast at 650 kilohertz at night. WSM is one of America's twenty-five clear channel stations. The low frequency channel assignment and channel protection gave WSM an enviable nationwide coverage pattern. WSM-AM can be received in much of the US and Canada at night. The change in designation to a high-power clear channel status was the impetus for WSM to build a new broadcast tower.

### Enter Blaw-Knox

The Blaw-Knox Company of Pittsburg, Pennsylvania was formed on July 6, 1917 by a merger of the Blaw Collapsible Steel Centering Company and the Knox Pressed and Welded Steel Company. The city of Hoboken, Pennsylvania, which was home to an early Blaw-Knox factory, changed its name to Blawnox, Pennsylvania. Beginning in 1927, the Blaw-Knox company began building radio towers. Diamond shaped antennas – also called dual cantilever center-guyed antennas – are usually referred to by their trade

name, Blaw-Knox towers. The vertical diamond shaped WSM antenna tower (Figure 1) made by the Blaw-Knox Company was cutting-edge antenna technology in 1932.

WSM's Blaw-Knox tower was built by a tower crew from Columbia, South Carolina. Upon finishing construction of WSM, the crew ventured on to build the WLW Blaw-Knox tower near Mason, Ohio.

### Steel Landmark

Located about eight miles south of Nashville at the intersection of I-65 and Concord Road in Brentwood, Tennessee, WSM-AM is a middle Tennessee landmark. The WSM Blaw-Knox tower transmitted its first broadcast on October 5, 1932.



**Figure 1.** The pole at the top of the WSM-AM antenna tower holds a turnstile FM antenna for the now defunct WSM-FM 100.1 MHz station. The functionality of the open air transmission lines (lower left) have been replaced by underground transmission lines.

The tower was originally built with 758 feet of square structural lattice and then 120 feet of tapered mast to measure 878 feet tall. At the time of construction, WSM was the tallest tower in the US. The steel members on the bottom part of the WSM tower are larger than the steel members on the top of the tower. There is a transition between the bottom linear taper and the top non-linear taper at 680 feet. Where the top and bottom tapers meet, there are eight insulated steel guy cables attached. At the point of maximum force at the tower base, the tower rests on two porcelain insulators (Figure 2). Contemplating the physics at play with the WSM-AM tower is overwhelming.

It is not unusual for passersby to call the station to report that the tower is tipping over. Watt Hairston, the Chief Engineer of WSM-AM, often gets calls of this nature. Watt concedes that "The tapered nature of the tower can create

(continued on next page)



**Figure 2.** The porcelain insulators at the base, which support the entire weight of the structure, are predicted by one expert to support in excess of 300 tons. A very large spark gap (not shown) is behind the insulators.

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## Diamond in the Sky (continued)

the illusion that the tower is falling, although it's been standing straight for more than 70 years now."

Upon use, it was discovered that the tower was too long electrically. The daytime signal is carried by ground waves while the night time transmission is carried by sky waves. An interference zone with cancelled or distorted reception occurs when the ground waves and sky waves become equal. At a height of 878 feet, WSM's very high angle of radiation caused cancellation between ground waves and sky waves 120 miles away in Chatanooga and Knoxville. This was a problem. The tower would have to be shortened in order to shift the signal cancellation zone to less populated areas.

A portion of the tower's tapered top was removed in 1939 so that the tower now stood at 808 feet. The removed portion of the tower was then put in to service as a flagpole at the nearby Lipscomb School. The tower section flag pole was used until the school was rebuilt in 1996. WSM's sister tower, WLW-AM in Ohio, also had to be lowered in order to avoid having its interference zone fall over Indianapolis, Indiana.

### FM Not Financially Feasible

A new mast pole was installed at the top of the modified WSM-AM tower in 1939 for an FM sister station in the 45 MHz band, W47NV-FM. WSM-FM's allocation moved up to 100.1 MHz after WWII ended. The 45 MHz FM antenna was replaced with another turnstile antenna. WSM relinquished their FM license and ceased operation in 1952 because FM transmission had not caught on at that time and WSM wanted to start a television station instead. The 100.1 MHz FM antenna remains installed on the WSM-AM tower. Another later attempt at an FM sister station for WSM-AM succeeded. The WSM-FM station 95.5 MHz antenna is located on a guyed tower a few miles away.

### Limited Production

Despite being effective radiators and impressive works of architecture, there were very few Blaw-Knox towers ever built. Shortly after WSM and WLW

were constructed, builders determined that a uniform cross-section tower could be built for about half the cost of a dual cantilever center-guyed antenna. By one count, there are five diamond-shaped towers remaining in the U.S..

The Blaw-Knox company exited the tower business in 1958. In addition to building towers, the Blaw-Knox company also built tools for the public works and highway construction industries. The Ingersoll-Rand company has a line of paving and road-surfacing equipment called Blaw-Knox.

### In the Doghouse

The WSM doghouse is an aged brick building with charming white double doors with windowpanes. The doghouse contains equipment used to tune the characteristic output impedance of the transmitter and transmission line to the input impedance of the WSM-AM tower. An inventory of the WSM Antenna Tuning Unit (ATU) includes extremely large metal capacitors, inductive coils, a dummy load, and grounding straps. The coils and capacitors form a coupling network (Figure 3). A Caterpillar generator and a backup antenna at the site help ensure reliability.

### Transmitter Building/Museum

While the WSM tower was awe-inspiring, the WSM-AM transmitter building is just as much of a treat. Besides the obvious contents of transmitters, the building contained old-fashioned treasures.



**Figure 3.** Inside the doghouse, a person can hear an emulated version of the transmitted audio in the vibrations of the tuning coils.

Two Harris transmitters, a DX 50 and a 3DX50 Destiny, occupy the main room. WSM alternates weekly between the two transmitters. The transmitters were among the newer items in the transmitter building.

The transmitter building is large by today's standards, but it needed to be built big to house the first 50 kilowatt transmitter. Storage drawers containing all of the original blue prints the Blaw-Knox Company prepared for the tower. In Watt Hairston's office, a blackboard is entirely covered by schematics, formulas, and computations intended to determine the impedance of WSM.

A spiral staircase connects the main floor to the basement and the present to the past. The machine shop in the basement contains a DoALL Countour Machine Job Selector with War Finish made after WWII. WSM engineers preferred to craft solutions on site (Figure 4). A group of filing cabinets hold records from the 1960's and 1970's of a fight to keep the assigned clear channels clear. An electrical box holds a maze of fabric-wound wires attached to pegs. On the shelves are old radios and antiquated electronic measurement tools.

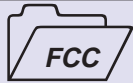
If you find yourself near Nashville one day, keep your eyes open for a diamond-shaped tower on the horizon.

*Acknowledgements: Watt Hairston, Chief Engineer of WSM-AM; John Hettish, moderator of Tower-Pro forum; Fybush.com; www.j-hawkins.com; and WSMonline.com.*



**Figure 4.** WSM-AM Chief Engineer Watt Hairston shows off the site's machine shop. In the past, WSM engineers would build any tower or transmitter parts that they needed.





## FCC Rulemakings

Compiled by Tom Smith

### PROPOSED RULEMAKINGS

#### MM-Docket 99-25 Creation Of a Low Power Radio Service

The FCC has issued a Notice of Further Rulemaking concerning low-power FM. The notice covers a number of issues including ownership and technical issues. In this notice, the FCC gave immediate relief to stations that need to relocate their transmitter sites by increasing the distance of such a move to 5.6 km for a 100 watt LPFM and 3.2 km for a 10 watt LPFM. The previous limit was 2 km for a 100-watt station and 1 km for a 10-watt station.

The FCC has asked for information on allowing LPFM stations to be transferred to different ownership, which is now not allowed. Currently, only changes of the board of directors are allowed. A station must cease operating if the current license wishes to withdraw from the operation. The FCC also asks if ownership should be limited to local entities and limited to one station. The rules now allow for ownership of up to 10 LPFM stations nationally after 3 years, but the FCC has frozen the limit to one station at the present time.

Another ownership question concerns licenses that timeshare a frequency. The Commission asks if the time for an agreement to be negotiated should be extended from 30 to 90 days, if they can relocate their transmitters to a central location beyond the distance allowed for minor changes and if time shared stations should be renewed. Now a timeshared station must cease operation after the 10-year license expires.

The FCC asks if the construction period should be increased from 18 months to 36 months to match the construction period of full power stations. Another issue raised concerns the relationship between LPFM stations, translators and full power stations. The Commission has been asked to make LPFM stations primary stations in

relations to FM translators. The reason is because a LPFM station is meant to serve a local area and many of the translators filed for recently have been for national networks of satellite feed transmitters. It was also proposed to allow a LPFM to remain on the air if it caused interference to a new full power station within its 70 dbu contour on the second and third adjacent channel.

The FCC rejected the use of contour protection instead of mileage separation for LPFM stations and clarified the definition of local origination. Translator application grants were frozen for six months.

The notice was adopted on March 16th and released on March 17th. Comments are due 30 days after publication in the FEDERAL REGISTER with replies due 15 days later.

### FINAL RULEMAKING

#### ET Docket No. 03-108 Facilitating Opportunities for Flexible, Efficient, and Reliable Spectrum Use Employing Cognitive Radio Technologies

The FCC has issued the final rules on the manufacture and use of software radios. These are radios that use software and digital to analog converters to create RF signals. The technology is also used in receivers. This technology is to be used to allow frequency, modulation, bandwidth, and power to be changed depending on use and interference conditions. Software controlled radios may have the ability to adapt their operation by listening for other transmissions, finding its location in relation to other transmitters and looking for beacons for primary transmitter.

These radios can be used in a number of ways, such as allowing multiple units in a service to share the same frequencies and to allow unlicensed units to share spectrum with licensed stations. In this case, the units would select an open frequency or shut down such as proposed for Wi-Fi on the TV broadcast band.

What is allowed and not allowed is extensive and anyone interested should read the order. The way the Commission describes this technology, it has unlimited possibilities and the potential to give nearly unlimited spectrum use.

This order was adopted on March 10th and released on March 11th.

#### ET Docket No. 04-151, WT Docket No. 05-96, ET Docket No. 02-380, ET Docket No. 98-237 Wireless Operations in the 3650- 3700 MHz Band; Rules for Wireless Broadband Services in the 3650- 3700 MHz Band; Additional Spectrum for Unlicensed Devices; Below 900 MHz and in the 3 GHz Band, Amendment of the Commission's Rules With Regard to the 3650-3700 MHz Government Transfer Band

The FCC has allocated the band of spectrum from 3650-3700 MHz to wireless broadband use. The stations will be licensed on a nationwide non-exclusive basis.

This means the band will be shared by users in much the same way the broadcast auxiliary band is. All fixed base stations will have to be registered with the FCC instead of being individually licensed. Power will be limited to 25 watts ERP and the transmitter systems must be able to detect if a particular band of spectrum is in use before proceeding. There is protection for current users of the band, which are some satellite uplinks and other government users. There is also interference protections for the C-band satellite service just above the new service.

This action was taken on March 10 and released on March 11th.

(From FCC [www.fcc.gov](http://www.fcc.gov))

5727 Tokay Boulevard  
Madison, Wisconsin 53719  
(608) 274-1234  
Fax: (608) 274-9514



**March Business Meeting Minutes (continued from page 2)**

National Liaison Leonard Charles reported that the Nextel plan for 2GHZ relocation is expected to be delivered to the SBE on April 2<sup>nd</sup>. Shortly after that, stations should start receiving information about when the move will actually be starting.

The second round of nominations for Chapter officers was held. There is a full ballot with the following candidates:

- Chair ..... Jim Magee
- Vice Chair ..... Dennis Baldrige
- Treasurer ..... Leslie Franzen
- Secretary ..... Tom Smith

Elections will be held at the April meeting. There are a number of appointed offices that will be opening. The Chapter is looking for someone to server on the Nominations Committee, Certification/Education Chair, and Newsletter Editor. If anyone is interested in serving, please contact either the current office holder or Chapter Chair Kipp.

Under new business, Chapter Chair Kipp announced that the National office is looking to form a committee to assist chapters with their regional conferences and to share ideas. They are looking for a representative from Chapter 24 to serve on the committee and Vicki has passed the request on to Don Borchert, as he is chair of the Broadcaster's Clinic and a chapter member, to see if he would like to represent us or appoint someone.

Leonard Charles announced that the Programming Committee of the WBA Summer and Fall Clinics is meeting March 17<sup>th</sup>.

For professional announcements,

Sound Devices will be at NAB for their 7<sup>th</sup> year and anyone attending is invited to stop by their booth.

The meeting adjourned at 7:23 PM

The evening's program was a presentation of Sony's HVR-Z1U HDV camcorder by Joe Guerrero of Sony.

*Submitted by Jim Magee, Secretary*

**HAVE AN IDEA FOR A SBE PROGRAM?**

Is there a topic you would like to see covered at one of our local Chapter 24 meetings? Is there a technology that you would like to learn more about? Or, better yet, is there a topic that you are qualified to speak on at an upcoming meeting? Please let us know!

Please forward your ideas to one of the Program committee members.

**Chapter 24 Web Site Features**

Visit SBE Chapter 24's home on the web at [www.sbe24.org](http://www.sbe24.org). There you will find a wealth of information—from Chapter meeting information, sustaining members listings, the Wisconsin State EAS Plan, to a list of past and current officers. You can also check your meeting attendance, which can be useful in completing recertification forms. Check it out!

Thanks to WISC-TV for maintaining the web server for the Chapter 24 Web page!

Thanks to WKOW-TV for providing copying and folding facilities for the Chapter 24 newsletter!

**CHAPTER 24 SUSTAINING MEMBERS**

**RECENT RENEWALS:**

**Clark Wire and Cable  
maney-logic  
WMTV-TV 15  
Wisconsin Public TV**

**THANKS TO ALL OUR SUSTAINING MEMBERS:**

**Alpha Video  
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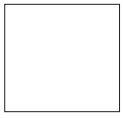
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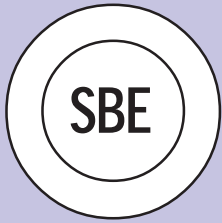


**FIRST CLASS MAIL**

Newsletter edited on Pagemaker 7.0 by: Mike Norton  
Contributors this month: Vicki W. Kipp, Jim Magee, Steve Paugh, Tom Smith, and Tom Weeden.  
Thanks to Leonard Charles for his work on the Chapter 24 WWW page.

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# APRIL MEETING and PROGRAM



## Society of Broadcast Engineers CHAPTER 24 MADISON, WISCONSIN Tuesday, April 12, 2005

### Tower Inspections and Elections

Chris Mallon of CPH Engineering will give us a demonstration of a new, non-destructive technique for determining the amount of corrosion occurring on guy anchor rods for guyed communication towers. As a practical field demonstration we will use the newly erected WMTV/WBUW tower as our test subject.

Chris will also discuss the general concepts of tower maintenance, things to be aware of and the services offered by CPH Engineering that will ensure a long and useful life of one of the more expensive and often taken for granted items of broadcast hardware.

We will also be collecting the ballots for the election of officers – we will have extra ballots in case you forget to bring yours.

Dutch Treat Dinner at 5:30 PM  
Babe's Bar & Grill  
5614 Schroeder Road, Madison, WI  
(no reservation- just gather together)

Meeting and Program at 7:00PM  
WMTV-TV CH15 Studio/WBUW-TV CH57 Transmitter  
615 Forward Drive, Madison, WI

(Please do not park in the news car slots along the front of the WMTV Studios!)

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>
Thursday	May 19, 2005	Token Creek Truck Tour
Tuesday	June 21, 2005	Summer Picnic
Wednesday	July 20, 2005	Commercial and Public Radio Overview

Program Committee:

Steve Paugh  
277-5139

Fred Sperry  
264-9806

Steve Zimmerman  
274-1234

# **CANDIDATE BIOGRAPHIES**

## **Jim Magee - Candidate for Chairperson**

I have 24 years experience in media or media related industries. I am currently the Madison Program Manager for Avid Broadcast where I coordinate development, customer support, marketing, sales, and documentation. I have served as Chief Engineer at WRNN-TV (Kingston, NY), CLTV (Tribune's regional cable news channel in Chicago), Empire Studios (Burbank, CA)/Shop Television Network as well as Asst. Chief Engineer for KMIR-TV (NBC/Palm Springs, CA). On the production side, I have worked in a wide variety of positions, including directing for KMIR-TV and KSCI-TV (Los Angeles, CA). I have also worked for a systems integrator serving as Site & Project Engineer. I have been member of Chapter 24 since 2001 and have served as Chapter Secretary for the past 3 years.

## **Dennis Baldrige - Candidate for Vice Chair**

Dennis has been working in the field of broadcasting for over 28 years. He started as a service technician for broadcast and two-way communications equipment and now is self-employed as contract engineer for several AM & FM stations in Southwest Wisconsin. He presently is certified as CPBE and CBNT with the SBE.

Dennis also has both a Bachelor of Science degree in music and Master of Arts degree in science. He continues to teach college courses related to the broadcasting field. These include college electronics, algebra, advanced mathematics and physics.

Dennis's hobbies include amateur radio, radio astronomy and music. He is former member of both the Madison Symphony and LaCrosse Orchestra and teaches music courses several times a year at the International Academy of Music in Indianapolis, IN.

## **Tom Smith - Candidate for Secretary**

I am running for Secretary of Chapter 24. I have been a member of SBE since 1971 and have been a member of Chapter 24 since 1976. I have served as Frequency Coordinator for Chapter 24 since July of 1992 and have held a number of offices for Chapter 24 for a number of years. I held the office of Secretary for one term in the mid 1980's. In the last six years, I served two years as vice-chair, two years as Chairman and another two years as vice-chair.

I have worked in broadcasting since 1969 and have worked at WHA-TV for the last 29 years. Before that, I worked at stations in Fond Du Lac and Wausau. I have worked part-time providing maintenance support for both radio stations and video production facilities.

I am running because in this era of dramatic changes in broadcasting, I would like to do what I can to support the future viability of broadcasting in the multimedia world. I feel that SBE has the best interest of both the broadcast technicians and the broadcast industry as it's prime objective and it is the best avenue that I can belong too to support future growth in broadcasting.

## **Leslie Franzen - Candidate for Treasurer**

My name is Leslie Franzen and am currently treasurer of SBE Chapter 24. I would like to continue on in this position for another year. Presently I am employed at WMTV as an Operations Technician. In my free time, I like to cook, read, and write. Thanks for your support.



## 2005 SBE Chapter 24 Election Ballot

You must be a current member of SBE Chapter 24 to be eligible to vote.

Please include your SBE member number: \_\_\_\_\_

Voter names will not be identified.

VOTE FOR ONE FOR EACH OFFICE. MARK AN "X" NEXT TO YOUR SELECTION.

### CHAIRPERSON

\_\_\_\_\_ Jim Magee

\_\_\_\_\_ \_\_\_\_\_  
(write-in candidate)

### VICE CHAIR

\_\_\_\_\_ Dennis Baldrige

\_\_\_\_\_ \_\_\_\_\_  
(write-in candidate)

### SECRETARY

\_\_\_\_\_ Tom Smith

\_\_\_\_\_ \_\_\_\_\_  
(write-in candidate)

### TREASURER

\_\_\_\_\_ Leslie Franzen

\_\_\_\_\_ \_\_\_\_\_  
(write-in candidate)

Elections will take place during the April chapter meeting. If you cannot attend that meeting, you may send your completed ballot to the address below. Please vote only once.

Steve Paugh - c/o WISC-TV

#### **Ballot**

7025 Raymond Rd.

Madison, WI 53719

All ballots must be received by 5:00 p.m. Monday, April 25, 2005.