



**Chapter 24, Inc.  
Madison, Wisconsin**

**Society of Broadcast Engineers**

**November 2006**

## Next Meeting:

**Wednesday,  
November 15, 2006**

**T. C. Electronics  
Audio Up-Conversion**

**Dutch Treat Dinner  
at 5:30 PM  
Quaker Steak & Lube  
2259 Deming Way**

**Meeting and Program  
at 7:00 PM  
Full Compass Systems  
8001 Terrace Ave  
Middleton, WI  
(use front entrance)**

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## Daylight Savings Time-007

**By Stan Sarch**

In 2005, Congress passed an energy bill which included extending Daylight Saving Time by 4 weeks. It became law on August 8, 2005. Beginning in 2007, DST will start on the second Sunday of March and end on the first Sunday of November. In 1998 and 1999 we were patching computer systems for the 'y2k bug.' That was made necessary because many computer operating systems were not ready to recognize a 4-digit year in the code. They had been using 2-digits to represent the year and did not fully anticipate the potential y2k problem. To further complicate matters it was not immediately clear to users which systems were compliant and which were not.

Now it's 2006 and we have a problem I'll refer to as 'DST-007' which begins on March 11, 2007. Like y2k, this problem looms because of an unforeseen change that is needed in computer operating systems. Unlike y2k, this change is made necessary by the U.S. Federal Government. Unlike y2k, it is more easily understood which systems are DST-007 compliant and which are not. Most systems require a corrective measure to become compliant. The measure ranges from changing existing time zone definitions that already exist on some systems to installing patches on other systems where mechanisms to redefine it do not already exist. Some systems may require that the user revert to manually making the semi-annual DST changes. Lastly some systems don't care about DST (wish I could say the same!). Users are already accustomed to changing such systems manually. They must begin doing this on a new schedule in 2007.

Here is a basic explanation of how time works on most computer systems. The computer clock keeps track of time in UTC (Universal Coordinated Time, aka: Zulu, Greenwich, etc...) which is the same everywhere in the world. No time zones, no DST. The local OS (Operating System) then calculates and

(continued on page 7)

## FCC GETS COMMENTS ON INDECENCY COMPLAINTS

**By Tom Smith**

On March 15, 2006, the U.S. Court of Appeals for the Second Circuit remanded back to the FCC for review an order in *Complaints Regarding Various Television Broadcasts Between February 2, 2002 and March 8, 2005*.

The Court ordered review of the part of the order that the FCC found in violation of the rules. The shows were NYPD Blue, The Early Show, and the 2002 and 2003 Billboard Music Awards. FOX and CBS filed a joint petition to the Court asking for Review.

On September 7, 2006, the FCC opened a two-week comment period on the issue. On September 21<sup>st</sup>, the FCC did something they normally don't do: they placed a link on the home page of the FCC website with links to the 16 comments they received. There were joint comments from FOX and CBS as well as comments from Minnesota Public Broadcasting. There were 13 comments from public interest groups and a group link to e-mail comments from the public.

From the openness of the comment process, the FCC considers this issue as very important on its agenda.

During 2004, the FCC imposed monetary sanctions for indecency violations up to \$1,183,000, for an aggregate annual total of \$3,658,000. In addition, some entities chose to settle claims against them and made voluntary payments to the U.S. Treasury, totaling \$7,928,080 in 2004.

The FCC has information regarding the regulation of obscenity, indecency, and profanity at <http://www.fcc.gov/eb/oip/Welcome.html>, as part of the scope of the FCC Enforcement Bureau.

*From FCC Releases (www.fcc.gov)*

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## October Business Meeting Minutes

On October 25, 2006 Chapter 24 of the Society of Broadcast Engineers conducted their monthly meeting at the Marriott West Hotel in Middleton, WI. This meeting included members of the other three Wisconsin SBE Chapters as well as members of other Midwest Chapters, and was held in conjunction with the Broadcasters Clinic sponsored by the Wisconsin Broadcasters Association and the Wisconsin SBE Chapters.

In attendance were 43 members of the SBE of which 32 were certified. There were two guests.

Chapter 24 Chair Cliff Groth called the meeting to order at 7:05 PM. Cliff ask for members of the various Chapters to be recognized, of which members of Chapters 26, 28 17, and 80 noted their presence. Stan Starch motioned that the minutes from the September meeting be accepted as published in the October Newsletter. Steve Paugh seconded the motion.

Frequency Coordinator Tom Smith reported that there were two Milwaukee TV stations seeking coordination for election night, and that the FCC had released the Report and Order on unlicensed use of the TV bands.

Chair Cliff Groth relayed the Treasurers Report, as Treasurer Leslie Franzen was not present.

SBE National Board Member Keith Kintner presented Chapter 24 Newsletter editor Mike Norton the National Award for Best Newsletter for 2005, and Tom Smith the National Award for Best Frequency Coordination Effort for 2005.

The motion to adjourn the meeting was made by Stan Starch and seconded by Steve Paugh.

The evening's program was a presentation by Dr. Barry Ortan of the University of Wisconsin Communication Department on the future of Broadband and Broadcasting.

*Submitted by Tom Smith, Secretary*

## Chapter 24 Listserver Available

Chapter 24 members are invited to join the chapter listserver. To subscribe, send an email message to the following address: [msnsbe-request@broadcast.net](mailto:msnsbe-request@broadcast.net). In the body of email message type: *subscribe*. (The subject line can be left blank.)

The Mailman package the listserver is running on also has a web interface for subscribing to the list. Point your browser to [www.broadcast.net/mailman/listinfo/msnsbe](http://www.broadcast.net/mailman/listinfo/msnsbe) to subscribe. Instructions and a confirmation message will be emailed to you.

## OVER 1000 HD RADIO STATIONS NOW BROADCASTING

According to the iBiquity Digital, there are 1046 HD radio stations that are on the air in the US. According to the iBiquity web site, approximately one new HD Radio broadcaster goes on the air each day, reaching every major U.S. city and 60% of all listeners.

They report that 26 AM and FM stations in Wisconsin are operating with the HD digital carriers.

## NEARLY 1600 DTV STATIONS ARE ON THE AIR

As of November 8th, there are 1584 DTV stations in 211 markets providing programming. Over 99.98% of all US homes are in markets with at least one DTV signal on the air.

In Wisconsin there are 44 DTV stations currently on air. The National Association of Broadcasters maintains a list of DTV stations that are in operation. This can be found at the NAB web site ([www.nab.org](http://www.nab.org)).

## SBE CHAPTER OF THE AIR:

HamNet meets the second Sunday of each month at 0000 GMT on 14.205 MHz. Hal Hostetler WA7BGX is the Control Station. Any amateur operator is welcome and encouraged to participate.



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## AMATEUR RADIO NEWS

By Tom Weeden, WJ9H

Ending a protracted waiting period, the FCC's Report and Order (R&O) in the so-called "omnibus" Amateur Radio proceeding, WT Docket 04-140, was adopted October 4 and released October 10. In it, the FCC adopted nearly all of the changes it had put forth in its 2004 Notice of Proposed Rulemaking (NPRM) in the proceeding. The R&O the FCC released does not include action on the Commission's proposal to eliminate the Morse code requirement for all license classes.

In its October 10 Report and Order, the FCC:

- Expanded the phone subbands in the 75 and 40 meter bands;
- Agreed to allow Novice and Tech Plus (Technician with Element 1 credit) licensees to operate in the General class CW subbands on 80, 40, 15 and 10 meters;
- Implemented rules to discourage multiple vanity call sign filings on the same day from the same applicant;
- Permitted auxiliary stations to transmit on portions of the 2 meter band;
- Permitted the use of spread spectrum on 222-225 MHz;
- Permitted amateurs to retransmit communications from the International Space Station;
- Permitted amateur licensees to designate a specific Amateur Radio club to receive their call sign in memoriam;
- Eliminated certain restrictions governing the manufacture, marketing and sale of external RF power amplifiers intended for Amateur Radio use;
- Clarified that "amateur stations may, at all times and on all frequencies authorized to the control operator, make transmissions necessary to meet essential communication needs and to facilitate relief actions;"
- Deleted the frequency bands and segments specified for Radio Amateur Civil Emergency Service (RACES) stations;
- Deleted the requirement to publicly announce Amateur Radio examination locations and times;
- Permitted Amateur Radio stations in Alaska and surrounding waters more flexibility in providing emergency communications;

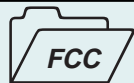
The FCC also took several other miscellaneous actions. The changes spelled out in the R&O go into effect 30 days after their publication in the Federal Register.

*(Excerpts from the American Radio Relay League's <[arrl.org](http://arrl.org)> web site)*

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# FCC Rulemakings

Compiled by Tom Smith

## PROPOSED RULEMAKINGS

**ET Docket No. 04-186  
Unlicensed Operation in the TV  
broadcast Bands  
ET Docket No. 02-380  
Additional Spectrum for  
Unlicensed Devices Below 900  
MHz and in the 3 GHz Band**

On October 12, 2006, the FCC adopted a First Report and Order and Further Notice of Proposed Rulemaking that started the process to allow the operation of unlicensed devices on the TV bands. They released the full Report and Order on October 18<sup>th</sup>. The Report and Order will allow unlicensed devices on the TV bands, with the sale of such devices starting on February 18, 2009. These devices will operate on TV channels 2 through 51 with no operation allowed on TV channels 52 through 69 as these channels are being reallocated for public safety and new services through auction of the spectrum.

Operation is also prohibited on channel 37, which is reserved for radio astronomy and wireless medical telemetry services, and prohibited on channels 14 through 20 in the 13 markets where land mobile operation is authorized to share the TV band.

In the notice of further rulemaking, the Commission asks for input on the rules they have proposed so far, which are rather vague, and on a number of schemes for the unlicensed devices to detect the operation of a TV transmitter and to either select an unused channel or turn itself off. They are considering the operation of two types of devices. One type would be low-power devices, such as the current devices to transmit

data from your DSL or cable modem to your laptop, the other would allow for the transmission of data over a large area for mainly commercial subscription proposes. These transmitters would operate with an output of one watt and an antenna gain of 6 dbi or an ERP of 2.5 watts.

The first issue that was discussed in the Further Notice of Rulemaking was if the proposed low-power devices should be licensed or unlicensed. This issue was raised in comments during the first notices and inquiries. They want to know on how the licenses should be granted such as auction, if they are secondary to other users, and how large an area the license should cover.

The bulk of the discussion in the further notice of rulemaking concerned methods of interference protection to television broadcasts. The Commission proposed a number of methods of interference protection, but stated that there was insufficient information to adopt rules. They are basing the use of systems for the unlicensed devices to detect nearby TV transmitter on technology used in the unlicensed 5 GHz band to detect radar stations.

They first discussed the threshold level of the TV signal to be detected when looking for occupied channels to avoid using. In this section, the issues of how often the device must check if the channel is occupied, how long it takes to shut down when finding a TV transmitter and how long it would remain off after detecting that a TV transmitter has shut off.

The Commission is proposing that a high power device would have to check for co-channel and adjacent channel operation and a low power

device for co-channel operation only. Other issues concerned the bandwidth of the detection system, antenna considerations, transmit power control to limit power to what is required for operation, spectrum sharing between unlicensed devices, and measurement methods determining the sensitivity of the interference detection system.

The Commission proposed a number of methods of interference avoidance. One method was the use of a GPS receiver in the unlicensed device and the use of a database of TV transmitters. The device would use GPS to determine the location and then compare the coordinates of its location with the database to determine if it was far enough away from the TV transmitter to avoid interference to viewers. Comments were made expressing concern for the reliability of the GPS and methods for determining sufficient distance from the TV transmitter. Another database method was that the installer would be responsible for checking the coordinates and the database and select operating channels.

The second method proposed was that the unlicensed device would receive a control signal from a TV station that would give it a list of prohibited channels. The problem that was noted in earlier comments was, what if the device was unable to receive the signal with the control signal? It still could cause interference to TV sets in the area that could still receive signals from stations on the occupied channels.

Proposed technical requirements were discussed, including types and applications of devices, out-of-band emissions, direct pickup and receiver

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AUDIO VIDEO A/V LIGHTING

## FCC Rulemakings (continued)

desensitization, certification of transmitters, and use on the Mexican and Canadian borders. One issue that was raised was that there is no clear direction in protecting wireless mics.

There are a lot of ideas in this proposal by the Commission, which may or may not be feasible. But in the end, by the list of comments in the previous notices, this is basically a battle between broadcasters and the computer and consumer electronics industries. The outcome of this proposal by the Commission will surely affect broadcasters and viewers if what has happened on the 2.4 GHz band is any example. This is just at a time when broadcasters, Congress, and the FCC are expecting viewers to convert to expensive HDTV sets.

Comments are due 75 days after the notice is published in the Federal Register with replies due 30 days later.

**MB Docket No. 87-268  
Advanced Television Systems and  
Their Impact upon the Existing  
Television Broadcast  
Service**

On October 10, 2006, the FCC adopted the Seventh Notice of Further Rulemaking for the transition to Digital TV. This rulemaking asks for comment on the final version of the table of allotments for digital TV stations. This table lists what channels all stations will operate on after the February 17, 2009 shut-off date for analog TV services. The proposed table is the result of three rounds of channel selections being made by the existing TV broadcasters. Round one was when stations with both analog and DTV channels in the core channels of 2-51 made their selections of either of their two channels. The second round was for stations with both an analog or DTV

channel and either one or both were out of the core. The third round was for those stations that had only an analog channel, mostly stations that applied for or were granted construction permits or licenses after the DTV table was made for the transition period. These were 50 NTSC station and the applications or grants were made after 1997. These stations were given a DTV channel that they could now use, or move to at the end of the transition. A few stations in the last group may have to change operation on their existing analog channel.

The Commission will only accept requests for changes by stations where the coverage of the DTV transmitter does not replicate their analog coverage or there are severe interference issues. Any other channel change requests will have to be made by the normal allotment procedures after the table is finalized. There is a second action by the FCC for processing channel changes and second channels for translators and LPTV stations for their conversion to DTV. This process has been going on during the election process for full power stations.

This Order has a long discussion on the process for selecting the final channels and, also has a section on resolving interference issues pertaining to channels selection for a number of specific stations.

As part of this rulemaking the FCC has issued two allocation tables. The first is the traditional allotment table listing cities and their allotted TV channels, while the second table is an Excel spreadsheet with all the information for each station including analog channel, power and antenna height for the DTV transmitter, as well as coordinates.

Here are the allotments for Wisconsin and the cities just outside its borders.

Antigo .....	46
Appleton .....	27
Chippewa Falls ...	49
Crandon .....	12
Eagle River .....	28
Eau Claire .....	13, 15
Fond Du Lac .....	44
Green Bay .....	11, 23, 39, 41, 42
Janesville .....	32
Kenosha .....	40
La Crosse .....	8, 14, 17, 30
Madison .....	11, 19, 20, 26, 50
Mayville .....	43
Menomonie .....	27
Milwaukee .....	8, 18, 22, 25, 28, 33, 34, 35, 46
Park Falls .....	36
Racine .....	48
Rhineland .....	16
Superior .....	19
Suring .....	21
Wausau .....	7, 9, 24
Wittenberg .....	50
<i>Minnesota</i>	
Duluth .....	8, 10, 17, 33
Minneapolis .....	9, 11, 22, 29, 32, 45
St. Cloud .....	40
St. Paul .....	26, 34, 35
Rochester .....	10, 46
<i>Illinois</i>	
Aurora .....	50
Chicago .....	7, 11, 19, 21, 27, 29, 31, 43, 45, 47
Freeport .....	23
Joliet .....	38
Rockford .....	13, 16, 42
<i>Iowa</i>	
Dubuque .....	43

In this table you notice that no one has gone back to a low-band VHF  
(continued on page 6)



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**FCC Rulemakings (continued from page 5)**

channel, and WISN (12) in Milwaukee and WGN (9) in Chicago are not going back to their high-band VHF channels. Channel 11 in Chicago will go to WBBM with WTTW staying on its UHF Channel.

This Order was released on October 29<sup>th</sup> with comments due January 11, 2007 and replies due on February 12, 2007.

**WT Docket No. 03-187  
Effects of Communications Towers on Migratory Birds**

The FCC has issued a Notice of Rulemaking on November 3, 2006 concerning the effects of towers on migratory birds. The FCC is seeking comment on scientific data about collisions of migratory birds and towers, factors such as the location, height, guy wires and the collocation of antennas on a towers including their effect on historic properties, wetlands, and endangered species. One issue that the FCC mentioned in the press release was requiring the use of medium intensity strobe lights as a method to preclude other measures.

**FINAL RULEMAKINGS**

**MM Docket No. 05-210  
Revision of Procedures Governing Amendments to FM Table of Allotments and Changes of Community of License in Radio Broadcast Services**

On November 3, 2006 the FCC adopted a Report and Order that made some major changes in the way FM stations are allotted, and in the rules for changing the community of license.

First, the FCC will now accept changes of community of license as a

minor change and allow stations to apply for a change of community on a first come/first served basis. It is currently a two-step process where a station must apply for the change of community and then file for a construction permit.

The second part of this rulemaking will now require an applicant to file a form 301, which is an application for a construction permit at the same time as they file to allot a new FM channel to a community. Currently when someone finds a new FM frequency for a community, they have to request the FCC to allot the frequency to the community and then the FCC will open the frequency for any one interested in applying.

This means that one's work in finding a frequency could be for naught, as it opens the channel for all that might be interested and some other person could win the frequency in auction. This method gives a little better chance that the first person to find a frequency will get it.

The final part of this order now requires that petitions to amend the table of allotments be filed electronically, with the electronic filing of a form 301. Previously, allotment petitions were filed by written letter.

FCC Commissioner Robert McDowell, in his comments, expressed disappointment that the final rules still required publishing in the *Federal Register* and 60 day delay in FCC action for objections. These requirements still retain some of the appearances of major application actions.

The Commission's hope is that it will aid in getting the new frequencies to those who value the allotments and will bid in the auctions.

**WC Docket No. 06-10  
United Power Line Council's Petition for a Declaratory Ruling Regarding the Classification of Broadband over Power Line Internet Access Service as an information Service**

On November 3, 2006, the FCC adopted a declaratory statement that made Broadband over Power Line (BLP) to be an information service. This allows BLP to be regulated the same as DSL service from the telephone companies and cable modems from the local cable company.

By regulating BLP as an information service, BLP would be on an equal footing with DSL and Cable Internet services. The FCC hopes this will encourage increased deployment of BLP services.

*From FCC Releases (www.fcc.gov)*


**SBE Certification Information Available**

Certification information brochures and applications are available from Jim Hermanson, the Chapter 24 Certification Chair.

If you are considering taking an SBE certification exam, would like more information, or have questions about the process, you are encouraged to contact Jim.

He can be reached by sending an email message to [jhermanson@wisctv.com](mailto:jhermanson@wisctv.com).

You can also find out more information about SBE Certification by visiting the National SBE website at: [www.sbe.org/cert\\_index.php](http://www.sbe.org/cert_index.php).



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

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

## Daylight Savings Time-007 (continued from page 1)

displays the correct local time based on UTC. Example: Madison, WI in the summer(DST). UTC -6:00(CST) +1:00(DST). In other words, 18:00 UTC = 13:00 local. If Madison in winter (non-DST) then UTC -6:00. 18:00 UTC = 12:00 local.

An important thing to be aware of is the time zone calculations are made locally on each computer system. So if your computer receives the clock reference from a corporate server or from one of the many time servers on the internet, it's getting UTC – not the local time in most cases. The correct local time depends on the calculation described above which takes place in the background on your computer – even those on most corporate networks.

Microsoft says it will release free patches for Windows XP and Windows Server 2003. Windows Vista will be shipped with the patch already installed. Older Microsoft operating systems

(Windows 2000 and beyond) are no longer under full support so it is unclear what patches will be made available (Windows 2000 users that have an 'extended support contract' will qualify for a patch). Microsoft also has a tzedit.exe utility that can be used to manually fix the DST-007 problem on each computer – including the older ones.

After all the y2k hoopla, Jan. 1, 2000 itself ended up being pretty much a non event. Maybe it's because we spent a lot of time and money working on the problem in 1998 and 1999, or maybe it's because it just didn't matter all that much if January 2000 was represented as Jan 00 or Jan 100. As with many things the truth is somewhere in the middle. The best thing to do at this point is to determine the importance of DST on your systems and what action is required to adapt to the new DST-007 schedule. We will probably read more about this in the next few months.

### Free Radio Guide Subscriptions

Ray Topp, Publisher of Radio Guide, invites all SBE members to receive a free subscription.

Radio Guide carries much practical technical information, equipment reviews, and interesting stories of radio's history. Past Radio Guide issues for the last three years are available. Enter your free subscription at [www.radio-guide.com](http://www.radio-guide.com).

## CHAPTER 24 SUSTAINING MEMBERS

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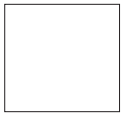
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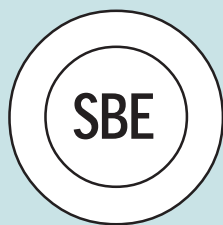


**FIRST CLASS MAIL**

Newsletter edited on Pagemaker 7.0 by: Mike Norton  
Contributors this month: Jim Hermanson, Stan Sarch, Tom Smith, and Tom Weeden.  
Thanks to Leonard Charles for his work on the Chapter 24 WWW page.

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# NOVEMBER MEETING and PROGRAM



## Society of Broadcast Engineers CHAPTER 24 MADISON, WISCONSIN Wednesday, November 15, 2006

### T. C. Electronics – Audio Up-Conversion

T.C. Electronic will demonstrate their latest product designed to convert Stereo audio to 5.1 audio. This software based product is called UNWRAP and was originally designed for film and music production. The process claims forward and backward compatibility and is sure to be of interest to anyone with legacy material they want to re-purpose in a 6 channel distribution environment. Bring your ears and an open mind to this remarkable demonstration.

**Dutch Treat Dinner at 5:30 PM**  
**Quaker Steak & Lube**  
**2259 Deming Way**  
**Middleton, WI**  
**(no reservation - just gather together)**

**Meeting and Program at 7:00PM**  
**(use the front door entrance)**  
**Full Compass Systems**  
**8001 Terrace Ave**  
**Middleton, WI**

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

2006/2007 UPCOMING MEETING/PROGRAM DATES:

<b><u>Day</u></b>	<b><u>Date</u></b>	<b><u>Program</u></b>
Thursday	December 14, 2006	Holiday Party at Fitzgerald's
Tuesday	January 16, 2007	T. B. D.
Thursday	February 15, 2007	SignaSys - Digital ENG Training

Program Committee:

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277-5139

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264-9806

Steve Zimmerman  
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