



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

*Society of Broadcast Engineers*

*March 2006*

## **DTV DEADLINE IS LAW**

*By Tom Smith*

On February 8<sup>th</sup>, President Bush signed the "Deficit Reduction Act of 2005." In this 181-page budget bill (S-1932) was a seven page section that ordered all analog full-power television broadcasting to end by February 18, 2009. The last day for full power analog stations to operate will be February 17, 2009. All Class A LPTV stations will have to cease operation on channels 52 through 69 on the same dates and will only be able to operate on channels 2 through 51. The FCC will have to hold an auction of the recovered spectrum (channels 52-69) no later than January 28, 2008. On September 30, 2008, \$7,363 million in auction proceeds will have to be transferred to the General U.S. Treasury.

In the bill, the Congress did setup a program to provide for set-top boxes to convert the DTV signal for existing analog TV's. Between January 1, 2008 and March 31, 2009, a household can receive up to two coupons for DTV set-top boxes with each coupon worth \$40. Only one coupon can be used per set-top box. \$1.5 billion has been allotted for set-top box coupons with an additional \$160 million for administration. \$5 billion has been set allotted for consumer education.

The definition of a set-top box that is covered under the program is "digital to analog converter box that does not contain features or functions except those that are needed to convert any channel broadcast in digital to be received on an analog TV".

One billion dollars is allotted for the transition of public safety users to the new spectrum in the former TV band. \$30 million is allotted for the Metropolitan Television Alliance to make sure that New York City stations can provide adequate service until the Freedom Tower is built. Low-power and translator stations may receive a \$10,000 grant to convert from analog to digital

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## **Next Meeting:**

**Thursday,  
March 16, 2006**

**Mid-West Family  
Broadcasting Tour  
and Nominations**

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

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

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

**Mid-West Family  
Broadcasting**

**730 Rayovac Drive**

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## **Notice Of Elections**

**By Steve Paugh,  
Nominations Chair**

**Treasurer – Leslie Franzen  
Secretary – Tom Smith**

### **Call For Nominations**

In April we will hold elections for Chapter 24 offices of Chair, Vice-Chair, Secretary and Treasurer for the 2006-2007 term. All interested members of Chapter 24 who are current in their dues are eligible to run for elected office. The nominations committee is now accepting nominations for all four offices. As of this date, the following members have been nominated for the following offices:

**Chair – Cliff Groth  
Vice Chair – Dennis Baldrige**

During the March 16th meeting, the nominations committee will solicit the members present for additional nominations. If you would like to run for an office, or know someone who wishes to run, please bring it to the attention of the nominations committee. All nominees are requested to submit a short biography for publishing with the ballot. The nominations committee consists of Steve Paugh (Chair), Jim Hermanson and Leonard Charles.

### **Newsletter Editor Vacancy**

Mike Norton has announced that he will be stepping down Newsletter Editor. Please contact Chapter Chair Jim Magee or Mike Norton if you are interested in, or know of someone who would like to assume the duties of newsletter editor.

### **Special Events Chair Vacancy**

Lonnie Cooks has voluntarily stepped down as our Special Events Chair due to personal reasons. We thank him for his fine work over the

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## CHAPTER 24 OFFICERS

### CHAIR:

Jim Magee (Avid Technology Inc.)  
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### VICE CHAIR:

Dennis Baldrige  
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### SECRETARY:

Tom Smith (WHA-TV)  
W - 263-2174  
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### TREASURER:

Leslie Franzen (WMTV-TV)  
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### Past-Chair

Vicki Kipp (ECB-TOC)  
vkipp@ecb.org

## COMMITTEE APPOINTEES

### Program Committee:

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Fred Sperry	264-9806
Steve Zimmerman	274-1234

### Membership:

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### Sustaining Membership:

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fsperry@ecb.state.wi.us

### Certification and Education:

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### Frequency Coordination:

Tom Smith W - 263-2174  
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### National SBE Chapter Liaison:

Leonard Charles  
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lcharles@wisctv.com

## February Business Meeting Minutes

SBE Chapter 24 held a monthly meeting on February 15, 2006 at the studios of WISC-TV. There were 20 members present of whom 15 were certified. Also present were 5 guests.

Chairman Jim Magee called the meeting to order shortly after 7p.m. The minutes for the January meeting were approved as published in the February newsletter on a motion by Leonard Charles and seconded by Pete Deets.

Treasurer Leslie Franzen reported on the Chapter's current bank balance. Sustaining Membership Chair Fred Sperry reported that there was one new sustaining member, Entercom Communications, and two renewing sustaining members, Richardson Electronics and Wisconsin Public Television.

Program Chair Steve Paugh reported that the March meeting would be a tour of the new Midwest Family Broadcast facility as well as nominations for the April election of officers. The April meeting would be the election and a presentation by Statmon Technologies on System Controls. Steve in his other role as Nominations Committee Chair stated that there was still an open nomination for Chapter Chair for this years election.

Certification Chair Jim Hermanson noted that the address for the nation SBE was changing as they were moving to new offices. Jim announced that the deadline for applying to take a certification test at NAB was March 3<sup>rd</sup>. The deadline for the next local test, which will be given between the dates of June 3-12, is April 21<sup>st</sup>. The SBE is starting to give the AM Directional and 8VSB exams and will recognize the 30<sup>th</sup> Anniversary of the Certification program at NAB.

Frequency Coordinator Tom Smith had no new activity to report, but did mention an article on the status of the 2 GHz transition on the Broadcasting and Cable website, and noted that it covered some issues that were discussed at the January meeting.

National Liaison Leonard Charles mentioned that the SBE NAB events were on the SBE website, that SBE members are able to get a \$200 discount on a NAB registration and that the NAB Ennis workshop would be on Saturday of NAB and cover everything RF. In other SBE news, Chuck mentioned that the SBE Fellowship nominations were open, that the new SBE logo was available for use by the local Chapters, membership dues were to be in by April 1<sup>st</sup> and Keith Kinter was to be our national liaison for this coming year once again. The SBE has agreed to a group auto and home insurance plan for members with Liberty Mutual Insurance through their agents.

Finally, Chuck mentioned that for members with two separate certifications, they are now able to synchronize their renewal dates, so they can be renewed together. In figuring renewal points, points are needed for the certification for the highest points total only. Those points will count for both certifications.

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## February Business Meeting Minutes (continued)

Chairman Jim Magee once again asked for volunteers to serve on the various committees, noting that many committee members have been doing these tasks for a number of years. He noted the need for a newsletter editor and a special events Chair.

The meeting was adjourned and Leonard Charles gave a demonstration on video and audio podcasting for delivery of program content to the web and cell phones and other mobile devices.

*Submitted by Tom Smith, Secretary*

## Notice Of Elections (continued from page 1)

years. Please contact Chapter Chair Jim Magee if you are interested in, or know of someone who would like to assume the duties of Special Events Chair.

The remaining appointed officers have agreed to continue their current position; they are Program Committee Chair- Steve Paugh, Program Committee Members- Fred Sperry and Steve Zimmerman, Membership- Paul Stoffel, Sustaining Membership- Fred Sperry, Frequency Coordination- Tom Smith, and National Liaison- Leonard Charles.

### Ballots

The election ballot will be included in the April newsletter. The deadline for nominations and the submission of biographies will be 48 hours prior to the deadline for submissions to the April newsletter, as announced by Mike Norton during the March 16th meeting.



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# AMATEUR RADIO NEWS

*By Tom Weeden, WJ9H*

- Ham radio received positive mentions in post-Katrina reports from the US House of Representatives and the White House. References to the Amateur Radio Emergency Service (ARES), the Military Affiliate Radio System (MARS) and the HF digital e-mail system Winlink 2000 appear in "A Failure of Initiative"—the final report of the Select Bipartisan Committee to investigate the preparation for and response to Hurricane Katrina.

The report noted, "In Mississippi, FEMA dispatched Amateur Radio operators to hospitals, evacuation centers, and county EOCs to send emergency messaging 24 hours per day." Radio amateurs at airports in Texas and Louisiana "tracked evacuees and notified families of their whereabouts," while the Red Cross "deployed Amateur Radio volunteers at its 250 shelters and feeding stations, principally in Mississippi, Alabama and Florida."

The White House report, "The Federal Response to Hurricane Katrina: Lessons Learned" released February 22 also cast Amateur Radio in a favorable light—in its Appendix B, "What Went Right," which cites specific reports in the general news media about Amateur Radio activities following Hurricane Katrina.

- A new American Radio Relay League public relations campaign set to launch this April will cast Amateur Radio in the light of the 21st century and focus on its universal appeal, even in today's already technology-rich society. At the same time, the "Hello" campaign will note the 100th anniversary of what many historians consider the first voice radio broadcast in 1906 by Reginald Fessenden.

"It is quite simply the largest PR campaign that ham radio has ever attempted," says ARRL Media and Public Relations Manager Allen Pitts, W1AGP. Built around the word "Hello," the coordinated campaign will set "a positive, upbeat tone that highlights the international capabilities of Amateur Radio," he explained.

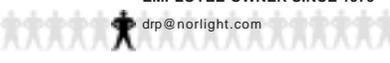
The "Hello" campaign is designed to gain momentum as the year progresses. Components will include the release of public service announcements for use by radio and TV broadcasters and a video for meetings, presentations and even broadcast. Other highlights will include a "Hello" campaign Web site and special operating events. The high point of the "Hello" campaign will come in December on the centennial of Fessenden's first radio broadcast.

History recalls that the Canadian-born and educated Fessenden, using an early alternator, transmitted the first audio radio broadcast from his laboratory in Brant Rock, Massachusetts. Radio operators aboard

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## SENATE BILLS THREATEN TV RECEPTION

By Tom Smith

Two bills have been introduced in the U.S. Senate that could cause interference to off-the-air TV reception. Both these bills would require the FCC to allow unlicensed RF devices on open TV channels. Sen. George Allen (R-VA.) and Sen. John Kerry (D-Mass.) have introduced bill S-2327 with co-sponsors Sen. John Sununu (R-N.H.) and Sen. Barbara Boxer (D-Calif.). Their bill would require that the FCC complete its rulemaking proceeding of ET Docket No. 04-186 and issue a final order regarding white space in the matter of Unlicensed Operation in the TV broadcast Band within 180 days of the passage of the bill.

The bill would require the FCC to adopt the following conditions in the final order.

- (1) Permit unlicensed, non-exclusive use of unassigned, non-licensed television broadcast channels between 54 MHz and 698 MHz.
- (2) Establish technical guidelines and requirements for the offering of unlicensed service in such a band to protect incumbent licensed services and licensed services and licensees from harmful interference.
- (3) Require unlicensed devices operating in such band to comply with existing certification processes.

The second bill was introduced by Sen. Ted Stevens (R-Alaska) and is bill S-2332. This bill is an amendment to the Communications Act of 1934 and is somewhat more detailed. The bill would make TV spectrum between 72 and 698 MHz except channel 37 (608-614 MHz) available for use by unlicensed devices including wireless broadband devices.

The bill would require the FCC within 180 days after the bill's passage to

“adopt minimal technical and device rules in ET Docket Nos. 02-380 and 04-186 to facilitate the robust and efficient use of the spectrum made available under section 342 of the Communications Act of 1934 (47 U.S.C. 342) by unlicensed devices, including wireless broadband devices.”

The devices the FCC has proposed would allow fixed stations to operate with a transmitter power of one watt and a radiated power of four watts. Mobile units would operate with a power of 100 milliwatts.

The bill would require the FCC to establish rules and procedures to protect incumbent licensed services from interference from unlicensed devices, address complaints from licensed broadcast stations including verification in the field of actual harmful interference, and require manufacturers of unlicensed devices that operate in the TV band to submit a plan to correct harmful interference “to the extent that harmful interference is found by the Commission which may include disabling or modifying the unlicensed devices remotely.”

The unlicensed devices would have to be certified that they meet minimum technical criteria and that they can perform the requirements for remedying the interference, including remote disabling or modification.

Bill S-2327 is named the “Wireless Innovation Act of 2006” and bill S-2332 is called the “American Broadband Act For Communities”.

These bills were endorsed in letters to Senators Allen and Steven by the Consumers Union. Also endorsing the FCC’s rulemaking is the Technology CEO Council.

The Senators Allen, Kerry and Stevens stated in their press releases that these bills would expand the reach of broadband to areas where it is not presently available, such as rural areas. Senator Stevens quoted studies stating that there could be 150MHz of spectrum available in Anchorage and Honolulu and up to 50 MHz available in Chicago and Boston. Senator Sununu, who holds a mechanical engineering degree, stated “Thankfully, advances in technology have eliminated any real claims of harmful interference by existing licenses in this spectrum band.”

The FCC adopted ET Docket No. 04-189 on May 13, 2004 and released it on May 25, 2005. Nearly 400 comments were filed with the commentators falling in two camps, broadcasters stating potential interference problems and members of the computer industry and community which were looking for new spectrum for their latest wireless systems. There were mixed reactions by manufacturers that the use of unlicensed devices would work on the TV band. Manufacturers of RF equipment and their trade groups had mixed thoughts about unlicensed equipment in the TV broadcast band. They were for the approval of the use of unlicensed equipment, but had concerns about interference to TV reception and asked that the final rules provide for sufficient protection to broadcast reception.

Two FCC Commissioners also express concerns about TV reception interference. Commissioner and now FCC Chairman Kevin Martin express concern in both this docket and the earlier Docket No.02-380, which was an earlier inquiry in this matter. Commissioner Jonathan Adelstein also expressed concerns in his statement on Docket No. 04-186. Both

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## SENATE BILLS THREATEN TV RECEPTION (continued)

Commissioners voted for the action to continue through the rulemaking process.

The Notice of Proposed Rulemaking can be found on the FCC's Office of Engineering and Technologies 2004 news archive on May 25, 2004. Information on this docket was also written up in the June 2004 SBE Chapter 24 Newsletter in the FCC Rulemaking column. Comments are available on the FCC Comments site. To find comments, just type in 04-186 in the upper left box of the comment search form and hit the search button. Charles Rhodes also covered the subject of unlicensed devices in the TV band in this column in the February 22<sup>nd</sup> issue of TV Technology.

*From thomas.loc.gov (U.S Congress Website) with additional information from Doug Lung's RF Report.*

[Disclosure: The author filed comments in Docket 02-380 expressing concerns against this proposal.]

## DTV DEADLINE IS LAW (continued from page 1)

operation, and LPTV and translators in areas covered under the Rural Electrification Act can receive up to \$65,000. Non-profit and stations serving areas with less than 10,000 people will have priority.

Also from the auction proceeds, \$156 million will go to the National Alert and Tsunami Warning Program, \$43.5 million for Enhanced 911 services, and \$15 million for essential air services.

*Broadcast Engineering* has reported one problem with the budget bill. There is a typo in the bill that changes one amount allotted by \$2 billion. The bill may have to pass both houses again in order to be legal and take effect. The bill passed in the House by a margin of two votes, so according to *Broadcast Engineering* the deadline could change yet.

*From thomas.loc.gov with additional information from Broadcast Engineering (www.broadcastengineering.com)*

## Amateur Radio News (continued from page 3)

ships at sea—tipped off in advance to be listening for something special—were astounded to hear Fessenden's broadcast that included the scientist and inventor playing "O Holy Night" on the violin and reading a Bible passage.

The campaign will show that despite the Internet and other technologies, the possibility of being able to talk with everyday people around the world and sometimes in exotic locales—coupled with the surprise, art and uncertainty of DXing—remains a major attraction for Amateur Radio. The "Hello" campaign also will take advantage of likely FCC action this year to drop the Morse code requirement at least for General class applicants.

*(Excerpts from the American Radio Relay League's <www.arrl.org> web site)*

## OVER 1500 DTV STATIONS ARE ON THE AIR

As of March 4th, there are 1550 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)).

## EAS TEST SCHEDULE AVAILABLE

The schedule of Required Weekly Test (RWT) and Required Monthly Test (RMT) times to be sent on Wisconsin Public Radio is listed on the web. It can be found at [www.wpr.org/eas](http://www.wpr.org/eas).

All of the designated State Relay stations in Wisconsin are members of Wisconsin Public Radio.

Also listed on the web page are scheduled time for RMTs from NOAA Weather Radio stations.

## Chapter 24 Seeking Newsletter Editor

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.



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## The Closed Captioning Handbook is All-Inclusive

By Vicki Kipp

If you want to know just about anything and everything about closed captioning for broadcast, then the *The Closed Captioning Handbook* is the book for you. Author Gary D. Robson has compiled details on all areas of closed captioning in this 352-page paperback published in 2004.

### Why Closed Captioning?

Robson begins by making the case for why content should be closed captioned. The first reason that comes to mind for most of us is that closed captioning makes content accessible to hearing impaired. Also, captions are a helpful tool in teaching literacy. Video can be captioned in multiple languages to broaden its reach. In addition to all of these accessibility reasons for captioning, then there is the legal requirement for broadcast television captions.

### Timeline

As the self-appointed captioning industry “chronicler,” Gary Robson prepared a historic timeline of closed captioning development.

The Telecomm Act of 1996 called upon the FCC to mandate captions for broadcast television.

Present Telecomm Act of 1996  
Caption Phase-In Deadlines:

- 2006 virtually 100% of all “new” English language programs must be captioned.
- 2007 1,350 hours per quarter (roughly 15 hours per day) of “new” Spanish language programs.
- 2008 At least 75% of all “old” (first aired 1997 or earlier) English language programs.

- 2010 100% of all “new” Spanish language programs.
- 2012 75% of all “old” Spanish language programs.

Although the FCC mandates broadcast captions and has a random audit policy, they rely mainly on consumer complaints for tracking broadcaster compliance.

### Critiquing Closed Captioning: Translation and Transmission Rates

When a captioner covers an event, the incoming caption strokes are constantly tracked in a translation dictionary. A percentage is assigned to the captioning based on the number of entries that match dictionary words. Captioners with a 99% translation rate, or one translation error every 20 lines of captioning with five words to a row, are considered ready to caption on the air. Similar to a video game, the real time captioning software displays the translation rate on the screen so captioners can gage their performance. Captioners hit a milestone when they accomplish their first “hundred percent” translation.

As useful as translation rate is a metric, it does not address mistranslates or misfingerings. The Total Error Rate (TER) is determined when captions are reviewed after a broadcast for correct meaning and grammatical errors. The TER score is usually a little lower than the translation rate. A respectable TER of 98% equals one error per ten caption lines.

Both the translation rate and the TER are somewhat subjective. It is difficult to consistently determine caption quality.

Another factor in caption readability

is the transmission rate at which captions are displayed for the viewer. According to a study by Carl Jensema called “Viewer Reaction to different Captioned Television Speeds,” 145 words per minute (WMP) is a common preference for caption transmission rate.

### Caption Conventions

While there is not a FCC standard for caption quality or an industry standard for caption presentation, there is a de facto reference for caption presentation. The federally-funded Caption Media Program (CMP) has reference for captioning of their own videos. CMP’s “Caption Key: Guidelines and Preferred Techniques” details caption conventions. The guide is downloadable from [www.cfv.org](http://www.cfv.org).

Both *The Closed Captioning Handbook* and the *CMP Caption Key* cover captioning nuances such as all uppercase versus mixed case captioning, verbatim versus edited captions, speaker identification for roll-up and pop-on captions, acronyms and abbreviations, sound effects and onomatopoeias, and other caption conventions. Roll-up captions are visible as they are entered, while pop-on captions appear all at once to the viewer.

### ALL CAPS versus Mixed Case

Captions have historically been entered in all uppercase. While capital letters may have been necessary with early character generators and caption decoders, this technology limitation disappeared long ago. People expect mixed case captioning for multimedia content. Some broadcast caption providers have recently switched to mixed case captions.

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3

## The Closed Captioning Handbook is All-Inclusive (continued)

### Verbatim versus Edited Captions

Is it okay to edit the dialogue when captioning in order to increase the reading speed and comprehension of the spoken word? It depends on who you ask.

The verbatim captioning crowd feels that there is no good reason to present less information to the deaf and hard of hearing viewers than hearing viewers receive. Verbatim supporters feel that captioning should provide equal access to communications, not partial access based on someone else's interpretation of what they need.

Those who support editing captions feel that paraphrasing increases accessibility without decreasing the amount of information portrayed, as long as the meaning of the captioning is preserved. On occasion, caption editing may be required for high burst speed dialogue (ex: talk shows) to accommodate the bandwidth limitations of line 21.

### Consumer Caption Decoders

*The Closed Captioning Handbook* touches on consumer caption decoders. Legacy external caption decoders include the National Captioning Institute's TeleCaption series, Teknova, ViewCom, MYCAP USA, and SoftTouch. The SoftTouch MagHubcap product performs standard decoder duties and can remove the black background behind captions, send caption text to a computer, and act as a broadcast-quality character generator. The TV Guardian Caption Decoder and Obscenity Filter and ProtecTV decoder can sensor captions.

The Television Decoder Circuitry Act (TDCA) of 1990 ended development for consumer television external caption decoders. TDCA was legislation that mandated that every television set 13" or larger manufactured in 1991 or later for sale in the United States must have an internal caption decoder.

Some external caption decoders send captions to computers using a serial or USB connection. Internal

computer video cards with TV tuners, such as the ATI All-in-Wonder video capture card, allow users to view television programs and captions on a computer. Some cards display the captions in a separate caption window, instead of placing text over the video.

Some capture cards allow viewers to store captions on their computers for review later. Viewers could even make their own transcripts. Viewers may use caption cards to monitor stations for caption compliance. Some cards come with a keyword search that triggers an audible or visible alert, begins saving captions, starts recording video, or begins other pre-programmed tasks when the software detects a keyword.

Newer televisions may include an automatic caption on during mute feature. Most televisions can't display captions and the On Screen Display (OSD) menu simultaneously. Many televisions with Picture in Picture (PIP) can't display captions for the program displayed within the PIP window.

Based on the premise that most live shows use roll-up captions and commercials use pop-on captions, some hobbyists have built a "Mute on Commercial" decoder for their television sets. By modifying your television set or sacrificing a remote control, you can make your television mute audio when it senses a pop-up caption and resume audio when a roll-up caption appears. This logical approach doesn't work so well when there are uncaptioned commercials or during the few second delay after a commercial break and before a show's roll-up captions begin.

### Broadcast Data Recovery Decoders

Broadcasters and multimedia developers who need to decode closed captions often use external decoders manufactured by EEG, Link Electronics, or Norpak. *The Closed Captioning Handbook* contains a list of decoder command codes that can be helpful for troubleshooting. Computer caption decoder cards include the ATI All-in-Wonder, the Adrienne PCI-21/RDR, and the Viewcast Osprey. The Osprey

card has a cross-platform programming interface for custom development. For serious caption monitoring, the Norpak decoder and WHAZ-it software and line of data recovery cards can monitor dozens of channels at a time, logging the streams to an SQL database for analysis and for loss of captions, V-Chip data, XDS, station identification, and time of day packets.

### Movie Theater Captions

*The Closed Captioning Handbook* has photos of various movie theater captioning systems. Special open caption showings of new releases are occasionally available. Scrolling text LED signs with captions have been poorly received in theaters. The National Center for Accessible Media's (NCAM) Rear Window Captioning, in which captions are reversed and displayed in bright LEDs from the theater back wall sign and patrons use a transparent reflector panel to view captions, could catch on.

Cinematic Captioning Systems has developed a similar system that uses a sign at the back of the theater and a mirror that clips on to the back of theater seats. Personal Captioning Systems, Inc. (PCS) uses a transmitter and wireless PocketPC PDA receiver called the Palm Captioning Display. PCS also sells a Clip-On Captioning Display that uses the same concept, but it clips on to the patron's glasses to send text through a prism suspended in front of the wearer's eye.

### DTV Loophole

*The Closed Captioning Handbook* discusses DTV captions in depth. After implementation of the TDCA, it seemed safe to assume that all new televisions would be able to decode closed captions.

However, when television receivers began to split from the display device, as with computer receive cards or DTV set top boxes, the receivers were exempt from the TDCA because they did not have a display bigger than 13 inches—or any display at all. The FCC

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## The Closed Captioning Handbook is All-Inclusive (continued)

closed this loophole effective July 1, 2002 with Report and Order FCC-00-059 "Closed Captioning and Video Description of Video Programming, Implementation of Section 305 of the Telecommunications Act of 1996, Video Programming Accessibility." As a result, all DTV tuners in the US must meet minimum caption decoder requirements, regardless of whether they include a display device.

The same Report and Order mandated enhancements to EIA-708 caption format for DTV. Enhancements include:

- Decoders must support standard, large, and small caption sizes.
- Providers can choose a caption size and the viewer can choose an alternate caption size.
- Decoders must support eight fonts.
- Providers can choose a font and the viewer can choose an alternate font.
- Decoders must support eight character and character background colors (white, black, red, green, blue, yellow, magenta, and cyan)
- Providers can choose a caption foreground and background color and the viewer can choose alternate colors, including a translucent background.
- Decoders must allow viewers to alter the appearance of the caption character edge.
- Decoders must be able to decode and process data for six standard services, but only one caption service need be displayed at a time.
- Decoders must have a default

option that displays captions as intended by the captioner. Decoders must also include an option that allows the viewer's chosen setting to remain until the viewer alters these settings, including when the television is shut off.

- Cable providers and other multicasters must transmit captions in a digital cable television set compatible format when transmitting to digital television devices.
- Since DTV screen resolutions can vary from set to set, captions are displayed in a caption window, instead of in a fixed location. The position of a caption window is determined by the coordinates at which its anchor point locks to the screen. Each caption service may have up to eight active windows displayed at a time.

### Preserving Captions When Encoding

While there is no mandate that requires captioning of videos, DVDs, media player files, or streaming media on the Internet, unless the content is provided by the Federal Government, media accessibility should be a priority in the digital domain as well. The FCC caption mandate applies only to broadcast programs.

However, the Rehabilitation Act of 1998, Section 508 mandates that training and informational videos developed or used by a [federal] government agency are accessible, both with captions and with audio description. Distance learning programs used by or funded by the Federal Government are also subject to the Act. Section 508 could be

interpreted as a mandate for captioned multimedia presentations and fully accessible web sites.

There is software available to enable captioning of digital video files for DVDs and media players. Software is more likely to support broadcast-quality external hardware encoders than encoder cards because external hardware versions don't change as often as cards do.

### Captions for DVD

When Japanese anime DVDs were released in America, they often had Japanese subtitles, but not English subtitles. While creating the initial captions for a program is a labor-intensive task, modifying captions is not. Using a DVD ripper, fan subtitlers ("fansubs") ripped the DVD, translated the text track dialog, and then burned a new DVD. Web sites distributed the fansub translations in file formats compatible with various DVD burners. Subtitling capability in DVD rippers and burners for home users was improved by the fansub community. Some applications import captions as SAMI, XML-like, or HTML-like formats that spare the user the tasks of rendering and generating TIFF files for DVD captions. The fansub culture fizzled out when new Japanese anime releases began including English subtitles. However, the DVD caption modification software tools remain available.

### Captioning Media Player Files

Since no industry organization came forward to set a standard for streaming synchronized captions, each media player company developed their own standard. Microsoft developed SAMI. SMIL and RealText were developed by RealNetworks. Apple's QuickText

(continued on next page)

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## The Closed Captioning Handbook is All-Inclusive (continued)

formats work with SMIL files. Adobe Flash uses XML files and often requires users to download the HiCaption Viewer plugin. The separate formats mean that separate caption files must be prepared in order to caption for each major media player. Also, variations in each player's caption handling mean that a different process must be followed to make captions accessible in the respective media players.

On the upside, captions are displayed in their own area on a media player, instead of covering the video. Also, the appearance of captions can be customized more easily in a media player. The caveat is that content providers must select a widely available font in order to ensure that the selected font should be installed on the playback computer.

### Recommendation

If you would like to learn more about any of the topics covered here, then *The Closed Captioning Handbook* is for you. Signed copies are available for purchase from [www.captioncentral.com/handbook](http://www.captioncentral.com/handbook).

Thank you to Leonard Charles from WISC-TV for presenting to us about POD-casting at the February meeting.

## Certification Information

By Jim Hermanson

- The SBE National Office is relocated, as of Feb. 3rd. The new location is just one-quarter mile from the old one. The new address is: Society of Broadcast Engineers, Inc., 9102 N. Meridian Street, Suite 150, Indianapolis, IN 46260. The telephone and fax numbers remain the same.

- The certification program will celebrate it's 30th birthday at the Membership Meeting at the NAB. There is a press release for this...[http://sbe.org/PR\\_Cert\\_Anniv.php](http://sbe.org/PR_Cert_Anniv.php)

- CERTpreview certification sample test software for the AM directional and the 8-VSB Specialist certification will be unveiled at the SBE booth at NAB.

- The Specialist certifications have done well since their inception. The AM directional specialist debuted at NAB 2005. We have 21 who have been granted that designation. The 8-VSB made its debut in October of 2005. We have 10 with the 8-VSB designation and another 11 took the exam in February.

- Jim Hermanson, SBE Chapter 24 Certification and Education Chair, has some certification recertification materials available. He can be reached at [jhermanson@wisctv.com](mailto:jhermanson@wisctv.com) or (608) 277-5150. Or the forms can be downloaded from the SBE National Web site at [www.sbe.org](http://www.sbe.org).

# CHAPTER 24 SUSTAINING MEMBERS

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Steve Paugh is the editor for the HTML Version of this Newsletter,  
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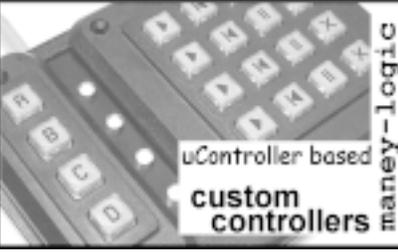
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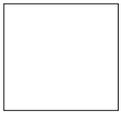
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**SBE Chapter 24 Newsletter**  
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**FIRST CLASS MAIL**

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

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# MARCH MEETING and PROGRAM



## Society of Broadcast Engineers CHAPTER 24 MADISON, WISCONSIN Thursday, March 16, 2006

### Mid-West Family Broadcasting Tour and Nominations

John Bauer, Chief Engineer for the Mid-West Family radio properties will give us an informative tour of his new facility. The Mid-West Family properties include WJJO, WLMV, WMGN, WTDY, WTUX, WWQM, WHLK and WSLK. The studios, offices, and engineering support are cleverly integrated on three levels, making this a very interesting design.

We will have a short business meeting in the spacious front lobby before beginning the tour.

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

**Babe's Bar & Grill  
5614 Schroeder Road  
(no reservation- just gather together)  
Madison, WI**

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

**Mid-West Family Broadcasting  
730 Rayovac Drive**

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

#### 2006 UPCOMING MEETING/PROGRAM DATES:

<u>Day</u>	<u>Date</u>	<u>Program</u>
Tuesday	April 18, 2006	Elections/Statmon Technologies
Wednesday	May 17, 2006	ECB Tech Core Tour
Thursday	June 22, 2006	SBE Summer Picnic

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