

**CHAPTER 24  
MADISON, WISCONSIN**

*Society of Broadcast Engineers*

*October 1992*

## **SBE BOOTH AT BROADCASTERS CLINIC 1992**

Chapter 24 has made arrangements for a booth in the exhibit area at the 1992 Broadcasters Clinic. Attendees can visit the booth to learn more about the SBE. Membership forms and certification information will be made available. Certification study guides on floppy disks will be demonstrated. Other SBE Chapters are encouraged to display their chapter newsletters.

Chapter 24 is looking for people to help staff the SBE booth during the times that the exhibits are open. The exhibits open at 4:00 PM on November 10 after which time there will be a meeting of all the SBE chapters at 7:00 PM. On Wednesday, November 11, the exhibits open at 10:30 am and will close around 5:00 PM. Once again, if anyone can help at the booth, call Kevin Ruppert at 271-4321 (work).

## **REMINDERS**

● Sign-on Breakfast, Wednesday, October 14, 6:30 AM at Lums in Market Square, sponsored by Michael Kerry of Swiderski Electronics

● The 1992 SBE National Convention, October 14-17, in San Jose

● SBE Chapters' Meeting, November 10, 7:00 PM, Broadcasters Clinic, Madison, Wisconsin, all chapters welcome!

## **OCTOBER MEETING**

**DATE:** Tuesday October 20, 1992

**AT:** Brat und Brau

6654 Mineral Point Road

(Corner of Grand Canyon Drive)

**DINNER:** 5:30 p.m.

**MEETING & PROGRAM:** 7:00 p.m.

**SEE INSERT FOR DETAILS OF THE  
MEETING AND PROGRAM**

## **September Minutes**

Chapter 24 of the Society of Broadcast Engineers met on Thursday September 17, 1992 for its regular monthly meeting at the Brat und Brau restaurant on Mineral Point Road in Madison.

The attendance of the September meeting included 22 SBE members, 15 who were certified, and one guest for a total attendance of 23.

The meeting was called to order at 7:03 PM by Chairman Jim Hermanson. Secretary Fred Sperry read the minutes from the August meeting. The minutes were approved as read.

Treasurer and Newsletter Editor Paul Stoffel reported the Chapter's account balance as well as the deadline to submit items for the newsletter and the date of the newsletter folding session at WKOW.

Membership Chairman Leonard Charles mentioned that he had sent notices with the August newsletter to those who were receiving the newsletter in a grace period. Any questions or concerns should be directed to Leonard.

*(cont'd on page 3, MINUTES)*

## **UPCOMING MEETINGS**

Wednesday, November 18, 1992

Thursday, December 17, 1992

Tuesday, January 19, 1993

## **CONGRATULATIONS!**

*from Jim Hermanson, Chapter 24  
Chairman*

Congratulations to Past Chairman and current Program Chairman Steve Zimmerman, who was presented with a Chapter 24 Distinguished Service Award at the September 17 chapter meeting! Steve has been recognized by the officers of Chapter 24 for his active work toward chapter membership growth; his unselfish volunteer work for the chapter; and his genuine desire for the betterment of the industry, broadcast engineering, and the place of the broadcast engineer. From the officers of Chapter 24-Thanks Steve!

**AMATEUR RADIO NEWS...**

by Tom Weeden, WJ9H

● The FCC has cited an amateur for indecent speech on the 20-meter band. On September 23 the Commission announced a Notice of Apparent Liability (NAL) for 2,000 dollars had been sent to Allen Burton, KA4URC, of Hombeak, Tennessee, for the alleged transmission of indecent words and language. An FCC field office said the transmissions were indecent within the prevailing Supreme Court and Commission precedent, going "well beyond what an average adult person in any community would consider to be worthy of protection."

● The Commission is proposing to relax restrictions on what are known as "permissible communications." The thrust of the proposal is to give amateurs greater flexibility in providing noncommercial communications services while retaining the traditional character of amateur radio. Overly literal interpretations of the "permissible communications" rule have led to undesirable and what the American Radio Relay League calls "ludicrous" restrictions on communications. The proposed relaxation could possibly allow the often-quoted "ordering a pizza" via autopatch while continuing to prohibit business communications.

● September "QST" magazine reports on a problem that plagued a Virginia 2-meter repeater and often can affect broadcast TV reception in fringe areas. A stray signal, wandering 100 kHz across the 2-meter band with no apparent pattern, would bring up the WA4TFZ repeater. Hams triangulating on the interfering signal traced it to a home whose owner reported having TV reception trouble following a recent storm. A TV booster preamp of popular manufacture had begun to oscillate around 146 MHz and caused the repeater to key up when the booster

**Help Wanted**

● Opening for Chief Engineer at WORT - FM. This is a regular part time job that pays in the \$10.00 to \$12.00 per hour range. Hours are flexible. FCC operator's permit and at least two years experience needed. SBE certification preferred. Reports to the WORT management team. This is a good opportunity to have a degree of freedom in engineering that most commercial stations cannot offer. Should be able to work well with people. Call 256-2695 and ask for an application, or write to WORT-FM, 118 South Bedford Street, Madison, WI 53703

● Need extra \$\$\$ for the Holidays? If you have a knack for repairing broadcast equipment and can spare five to ten hours a month, then give me a call. No need to worry about retainers or phone calls in the middle of the night from part-time announcers; ...you set the hours! Call 798-1464.



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**WISC 3 TV**

drifted on to the 146.16 input frequency.

(From September 1992 "QST" magazine and W1AW radioteletype bulletins)

**CHAPTER 24 OFFICERS****CHAIRMAN:**

Jim Hermanson (WKOW TV)  
W - 274-1234  
H - 231-2005

**VICE CHAIRMAN:**

Leonard Charles (WISC TV)  
W - 271-4321  
H - 274-0041

**SECRETARY:**

Fred Sperry (WI PublicTV/TOC)  
W - 273-5500  
H - 833-6074

**TREASURER:**

Paul Stoffel (WI Public TV)  
W - 263-2175  
H - 241-4621

**COMMITTEE APPOINTEES**

Program Chairman and  
Past Chairman: Steve  
Zimmerman

Membership: Leonard Charles

Sustaining Membership: Stan  
Scharch

Strategic Plan: Dennis Behr (Chair)

Program Chairman: Steve  
Zimmerman

Special Events: Kevin Ruppert

Cert/Ed: Doug McDonell  
Tim Trendt, Platteville

Freq Coordinator: Tom Smith  
work 608-263-2174  
home 608-837-2729

Chapter Liaison: Steve Peck  
608-246-9797

National SBE Liaison:  
Terry Baun  
5300 W Garfield Avenue  
Milwaukee, WI 53208  
414-449-5300 (voice)  
414-449-5380 (fax)

## MINUTES

(con't from page 1)

Sustaining Membership Chairman Stan Sarch announced that the Chapter currently has 23 sustaining members.

Program Chairman Steve Zimmerman had no new program activity to report.

Special Events Chairman Kevin Ruppert announced that the Chapter will once again have a booth at this year's Broadcast Clinic. Anyone interested in volunteering to staff the booth should contact Kevin. Chairman Jim Hermanson then mentioned that the evening of November 10th has been made available to the SBE during the Broadcast Clinic.

Certification and Education Chairman Doug McDonell then announced that the deadline to register for this fall's certification exam had passed and that the next exam period would be in Spring.

Frequency Coordinator Tom Smith had no new business to report, but he indicated that he plans to get in touch with stations prior to election time to do any necessary frequency coordination.

Chapter Liaison Steve Peck had no new information to report.

Chairman Jim Hermanson then presented Terry Baun from the Milwaukee chapter who also serves on the National Board of Directors. Terry mentioned that the board had recently met in Indianapolis. Items on the agenda of this meeting included discussing the concerns expressed by many chapters regarding the SBE National Convention. Terry also mentioned that he expected a new National Executive Director to be named in the near future. Terry then reminded everyone that any comments regarding the SBE at a national level can be directed to him.

In old business, Vice Chairman Leonard Charles mentioned that he had not yet received any applications for the Scholarship the Chap-

ter is presenting to this year's Broadcast Clinic. He reminded everyone of the upcoming deadline to submit these applications. He then mentioned the deadline to submit annual dues to the National office. Leonard then mentioned that he is working with the Dane County Emergency Government Commission to develop another tier of notification for the Dane County EBS Receivers. This additional tier would be for emergencies only and would better facilitate area broadcasters.

In new business, Chairman Jim Hermanson announced that a Chapter Bylaws Committee has been formed. The committee will be chaired by Fred Sperry and will include Leonard Charles, Neal McLain, Tom Smith, Steve Zimmerman, and Jim Hermanson.

In professional announcements, Fred Sperry announced the addition of Jim Blaubach to the TOC engineering staff. Jim comes to the TOC from WQAD-TV in Moline, Illinois. Also in professional announcements, Bill Schoof announced that he is now the official Roscor representative for the Madison and Fox Valley area.

In general announcements, Chairman Jim Hermanson reminded anyone who hasn't done so to sign-on to the new Chapter 24 BBS.

Jim then presented awards to Chapter members who have been nominated for National Awards. These included Deanna Morris for Best Chapter Newsletter Editor, Chris Cain for Best Chapter Frequency Coordination Effort, Paul Stoffel for Best Technical Article/Paper by a SBE member, Paul Stoffel for Best Non-Technical Article/Paper by a SBE Member and Rob Hagen for Best Article, Paper, or Program by a Student Member.

Jim then mentioned that the Chapter by-laws currently being drafted will determine the criteria for future Chapter awards such as the distinguished service award. Jim reviewed some of the criteria for this

award and then presented Steve Zimmerman with a distinguished service award for his efforts in fulfilling this criteria.

Jim then adjourned the meeting and reminded everyone about the upcoming sign-on breakfast on October 14th.

Program Chairman Steve Zimmerman presented Kevin Peckham of Sony who introduced Joe Guerrero of Sony who did a presentation on the Portable Video Transceiver.

*Fred Sperry, Secretary*

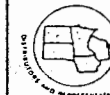
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*Created by Phil Mikalofsky  
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C-band	Ku-band	L-band
3700	11700	950 (units in MHz)
3710	11710	960
3720	11720	970
3730	11730	980
3740	11740	990
3750	11750	1000
3760	11760	1010
3770	11770	1020
3780	11780	1030
3790	11790	1040
3800	11800	1050
3810	11810	1060
3820	11820	1070
3830	11830	1080
3840	11840	1090
3850	11850	1100
3860	11860	1110
3870	11870	1120
3880	11880	1130
3890	11890	1140
3900	11900	1150
3910	11910	1160
3920	11920	1170
3930	11930	1180
3940	11940	1190
3950	11950	1200
3960	11960	1210
3970	11970	1220
3980	11980	1230
3990	11990	1240
4000	12000	1250
4010	12010	1260
4020	12020	1270
4030	12030	1280
4040	12040	1290
4050	12050	1300
4060	12060	1310
4070	12070	1320
4080	12080	1330
4090	12090	1340
4100	12100	1350
4110	12110	1360
4120	12120	1370
4130	12130	1380
4140	12140	1390
4150	12150	1400
4160	12160	1410
4170	12170	1420
4180	12180	1430
4190	12190	1440
4200	12200	1450

*(Editor's note: C-band and Ku-band use a LNB at the antenna that amplifies and down-converts satellite transmissions to L-band, 950 Mhz to 1450 Mhz, required by a receiver.)*

**NEW BUSINESS**

Our newly appointed Chapter Bylaws Committee (Bylawyers?) consists of:

- Chairman-Fred Sperry
- Leonard Charles
- Neal McLain
- Tom Smith
- Steve Zimmerman
- Jim Hermanson

**CHAPTER 24  
SUSTAINING  
MEMBERS**

Our newest sustaining member:  
**Jim Rogers**  
Comark Communications

Latest renewal:  
**Panasonic Broadcast**

- WMSN 47**
- Broadcast Communications**
- BTS**
- Skyline Communications**
- Harris Allied Broadcast**
- Todd Communications**
- Video Images**
- Fuji Film I&I**
- Swiderski Electronics**
- Roscor Wisconsin**
- Electronic Industries**
- Maney Logic**
- WMTV 15**
- WKOW-TV 27**
- Anixter**
- The Tape Company**
- Emmons Associates**
- Scharch Electronics**
- WISC-TV 3**
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# FCC NEWS...

by Leonard Charles

## Excerpts from FCC public notices:

- The FCC has modified its rules to allow independently owned and operated noncommercial educational FM translators assigned to reserved frequencies and providing service in the fill-in areas of their primary stations to receive signals by any terrestrial transmission facilities.

- The FCC has proposed amending the Commercial Radio Operator Rules to privatize the examination of applicants for commercial radio licenses. It has also proposed clarifying Part 13 rules regarding who may sign certifying statements.

- The FCC and the Department of Justice initiated civil enforcement proceedings against WLUP(AM), Chicago, IL. The FCC imposed a monetary forfeiture in the amount of \$6,000 on WLUP for violating Section 1464 of the Communications Act which prohibits utterances of, "any obscene, indecent or profane language by means of radio communication." Since it has twice requested payment and the station has stated that it will not pay, the FCC said it is clear that the licensee wishes to contest the matter in court.

- *From Satellite Communications Magazine:* The FCC has proposed a draft Table of Allotments for High Definition Television (HDTV). It includes four broad HDTV allotment objectives: 1) a second channel for HDTV service would be provided for existing broadcasters; 2) a minimum service area of 85-90 km (55 miles) from the station's transmitter would be ensured; 3) HDTV channels would be allotted to the UHF spectrum; 4) preference would be given to HDTV where a choice must be made between providing a

greater service area for a new HDTV allotment or additional protection for an existing station. The agency previously determined that the allotments must be in place before the HDTV standard is adopted.

- The FCC has amended its Amateur Radio Service rules to permit any amateur operator to be the licensee of a space station. These stations, located at least 50 kilometers above the Earth, transmit to the amateur-satellite service. Previously, only operators with the Amateur Extra Class could be a space station licensee.

## RADIO...

By Stan Sarch


- USA Digital Radio is on-air testing it's "Project Acom" in-band on-channel DAB system. The FCC has authorized operation on WILL-FM, Urbana, IL. The digital signal is at 30db below the analog signal. Additional details of the testing are not yet available.

- Eleven New York FM stations are installing a new FM combiner/antenna system atop the Empire State Building. The new antenna will be 120 feet farther up the tower than the 30 year old system.

- The FCC expects to accept applications soon for the new 1605-1705 Khz AM band. After initial approval last year, the docket has been held up by petitions for reconsideration.

- The U.S. Advisory Commission on Public Diplomacy, a bipartisan group, is advising the U.S. government to scale back it's current foreign broadcasts. Among some of the recommendations: shutdown the TV Marti Broadcasts to Cuba, and reduce shortwave operations in regions where local AM and FM service is now the most used.

(Excerpts from Radio World)



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M A D I S O N

## LOCAL LEGALS

submitted by Doug McDonell

- Application granted to translator low power broadcast, W38BO, Channel 38, Select Business Resources, Inc., Madison Wisconsin. Modification of construction permit to change from Channel 5, 76 Mhz - 82 Mhz, to Channel 38, 614 Mhz - 620 Mhz, plus offset, ERP: 24.2 Kw, TPO: 1.4 Kw, TL: 1975 County Trunk MM, Oregon, Wisconsin.

- Application granted to commercial TV broadcast station, WWRS-TV, Channel 52, estate of Wayne R. Stenz, et al., Mayville, Wisconsin. Construction permit (CP) to replace expired CP. Original CP granted on 12-5-88; CP expired on 4-4-92.

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a THOMSON - CSF Company

Newsletter edited by: Paul Stoffel  
Contributors this month: Leonard Charles, Jim Hermanson, Doug McDonell, Phil Mikalofsky, Kevin Ruppert, Stan Scharch, Fred Sperry, Tom Weeden

# **OCTOBER MEETING**

## **SBE CHAPTER 24 MADISON, WISCONSIN**

### **TUESDAY, OCTOBER 20, 1992**

**Our October meeting and program will be held at Brat und Brau, 6654 Mineral Point Road, Madison, WI.**

**Visitors and guests are welcome at all our SBE meetings!**  
**Dutch Treat Dinner at 5:30 p.m.**  
**Business Meeting at 7:00 p.m.**  
**The Program will start at 7:30 p.m.**

**David Felland, Director of Engineering of WMVS-TV/WMVT-TV, Milwaukee, will discuss High Definition Television (HDTV). David has first hand experience with HDTV broadcast. Following the presentation, there will be a round table discussion on HDTV and how it might effect Madison. Bring your questions and comments.**

**Upcoming SBE Programs and Events:**

- **Sign-On Breakfast October 14, 1992, Wednesday: Sign-On Breakfast sponsored by Swiderski Electronics. 6:30 a.m. at Lums in Market Square. Michael Kerry from Swiderski will pick up the tab for your breakfast. Start your day with this Sign-On breakfast!**
- **November 18, 1992, Wednesday: Digital audio workstation demonstration and discussion by Dave Habiger from Roscor.**
- **December 17, 1992, Thursday: Video Disk recording technology. Lou Skriba from Sony will discuss the approach that Sony is taking in video disk recording.**
- **January 19, 1993, Tuesday: MANEY LOGIC will show their Timer Plus and other Many Logic products. Presentation will be at the WKOW-TV studio. Following the presentation there will be an opportunity to tour WKOW.**
- **February 17, 1993, Wednesday: Video Toaster demonstration at the studios of RCC Systems, Inc., on Regent Street in Madison.**
- **March 18, 1993, Thursday: Grassland Media Inc. We will visit the facility of Grassland Media Inc., and look at their two edit suits, ADO, Chyron and PC-based Computer Graphics.**
- **April 27, 1993, Tuesday: NAB REVIEW. Attendees will talk about what they found interesting at the 1993 NAB.**
- **May 19, 1993, Wednesday: Nuclear Accelerator in Oregon, WI. Ed Rowe will show our members some of the electronics behind the nuclear accelerator.**

**Program Chairman Steve Zimmerman**

## Sun Outages *submitted by Tom Weeden, WMTV (608) 274-1515.*

The following are the autumn 1992 satellite solar outages calculated by SUNOUT.EXE for Madison, WI. These outages occur twice a year when the sun passes directly behind geostationary satellites. Times should be accurate to within a minute or two anywhere in southern Wisconsin.

Outages will begin around October 4 and continue until about October 15. The sun will be closest to the satellites' positions on October 9. Duration of the outages can be up to 15 minutes, depending on the size of the receive dish, noise temperature of the LNB, and how close it is to the October 9 peak.

Calculations do not hold for inclined-orbit satellites such as SBS 2, which are only in their "correct" position twice a day.

<u>SATELLITE NAME</u>	<u>LONGITUDE Deg. West</u>	<u>WORST TIME (CDT)</u>
Spacenet 2	69	11:14 AM
Satcom F2R	72	11:27 AM
Galaxy 2	74	11:36 AM
Satcom K2	81	12:07 PM
Satcom F4	82	12:12 PM
Satcom K1	85	12:25 PM
Telstar 302	85	12:25 PM
Spacenet 3	87	12:34 PM
SBS 4	91	12:52 PM
G-Star 3	93	1:01 PM
Galaxy 3	93.5	1:03 PM
SBS 3	95	1:10 PM
Telstar 301	96	1:14 PM
SBS 2	97	1:19 PM
Galaxy 6	99	1:28 PM
SBS 6	99	1:28 PM
Spacenet 4	101	1:37 PM
G-Star 1	103	1:46 PM
G-Star 2	105	1:55 PM
Anik E2	107.3	2:04 PM
Anik C1	110	2:17 PM
Anik E1	111.1	2:21 PM
Morelos 1	113.5	2:32 PM
Anik C3	114.9	2:39 PM
Morelos 2	116.8	2:48 PM
Spacenet 1	120	3:01 PM
Telstar 303	123	3:14 PM
SBS 5	123	3:14 PM
G-Star 4	125	3:23 PM
Galaxy 5	125	3:23 PM
ASC 1	128	3:36 PM
Satcom F1R	131	3:49 PM
Galaxy 1	133	3:58 PM
Satcom C1	137	4:16 PM
Aurora 2/ Satcom C5	139	4:24 PM

(Editor's note: The SUNOUT.ZIP program is available from Chapter 24's BBS and can be found in the BROADCASTING FILES section. The program needs to be unzipped.)



## BROADCASTERS CLINIC 1992

As technology continues to move forward, the program committee and I continue to search for significant presentations in current and new technology. I hope you will be with us at BROADCASTERS CLINIC 1992. ...PROTECT YOUR FUTURE! *Don Borchert*

### GENERAL INFORMATION

#### DATES

Tuesday through Thursday, November 10-12, 1992

#### LOCATION

All sessions of the Broadcasters Clinic 1992 are held at the Holiday Inn Southeast, Highway 12 and 18 at I-90, Madison, Wisconsin 53704. Phone 608/222-9121.

#### FEE

\$115 - Any two days

\$150 - All three days

Fee covers program materials, continental breakfasts and luncheons as indicated, refreshment breaks, the Pizza-Engineering forum, and two evening receptions with hot hors d'oeuvres (cash bar).

You are entitled to an 80% refund if cancellations are received prior to November 2, 1992. Enrollees who do not cancel are obligated for the full fee. Substitutions may be made at any time.

#### ACCOMMODATIONS

Please make your own room reservations with the Holiday Inn Southeast, Highway 12 and 18 at I-90, Madison, Wisconsin 53704. Phone 608/222-9121. We suggest that you make your reservations before October 23, 1992, while discounted rooms are being held for the seminar. Please specify that you are attending the Broadcasters Clinic 1992.

#### CREDIT

Conference enrollees can earn up to 2.1 Continuing Education Units (CEUs) from the University of Wisconsin.

#### INFORMATION

For further conference or exhibitor information, contact Don Borchert, WHA Radio and Television, 821 University Avenue, Madison, Wisconsin 53706. Phone 608/263-2157.

This program is offered through a partnership between UW-Madison and UW-Extension.

### REGISTRATION FORM

## BROADCASTERS CLINIC 1992

(0276) W

November 10-12, 1992

I will attend: (Please check)

Tuesday  Wednesday  Thursday

Fees: \$115 (Any two days) \$150 (All three days)

Amount enclosed: \$ \_\_\_\_\_

Soc. Sec. No.: \_\_\_\_\_

Not mandatory—used to ensure accessibility and accuracy of your educational record.

Name: \_\_\_\_\_

Title: \_\_\_\_\_

Organization/station: \_\_\_\_\_

Business address: \_\_\_\_\_

street

\_\_\_\_\_  
city/state/zip

Phone: (      ) \_\_\_\_\_

area code

daytime number/evening number

Mail this form and your check made payable to UW-Madison, to:

Registrations, Wisconsin Center  
702 Langdon Street  
Madison, WI 53706

To register by phone, please call 608/262-2451 or FAX to 608/262-8516.

Voluntary information collected to enhance the programming efforts of University of Wisconsin-Madison.

SEX:  female  male

BIRTHDATE:      Month      Day      Year

HERITAGE:  American Indian  Asian  Black

Hispanic  White or Other

#### OCCUPATIONAL AREA

100 Professional, technical and managerial occupations

700 Other occupations

Please advise us at time of registration if you are handicapped and desire special accommodations. Requests are kept confidential.

UW-Madison provides equal opportunities in employment and programming including Title IX requirements.

## TUESDAY, NOVEMBER 10

- 7:45 Registration and Continental Breakfast
- 9:00 **Broadcast Engineering Sessions**
- Safety at the Transmitting Site  
*Donald L. Markley, DL Markely & Associates, Peoria, IL*
- Werl's World of Broadcast Engineering  
*George Werl, Jr., Commsulting, Inc. St. Paul, MN*
- Stereo Audio Magneto Optical Mini Disc with CD Quality  
*Sony Business & Professional Products Itasca, IL*
- Noon Luncheon
- 2:00 True Digital RF Transmission for Aural STL Applications  
*Tom Daily, Dolby Laboratories, San Francisco*
- Contract Engineering: Questions and Answers for the Contractor and Employer  
Panel: *Mark Persons (Chair)*  
*M. W. Persons & Associates Brainerd, MN*
- Jim Zastrow, Zastrow Technical Services, Schofield, WI*
- Steve Brown, Chief Engineer, WHBY/WAPL Radio, Appleton, WI*
- Electronic Industries Association's Testing of Digital Audio Radio (DAR)  
*Thomas Keller, Chairman EIA Testing Laboratories*
- 4:00 **Equipment Exhibits Open**
- Reception and Cash Bar
- 7:00 Society of Broadcast Engineers Meeting
- 8:00 **Engineering Forum**  
*Moderators: Gary Mach and Ken Dixon*

## WEDNESDAY, NOVEMBER 11

- 7:45 Registration and Continental Breakfast
- 8:30 **Broadcast Engineering Sessions**
- New Products to Solve Old Problems with Transmission Line Pressure  
*Scott Schuette, GSW Supply, Appleton, WI*  
*James Jouron, Fairchild Industrial Products*
- Audio Processing in the Analog and Digital Domain  
*Bill Ammons, CRL Systems, Tempe, AZ*
- 10:30 **Equipment Exhibits Open**
- Noon Luncheon (on your own)

- 2:30 Microphones: A Technical Review and Application Techniques  
*Todd Boettcher, WTMJ Inc., Milwaukee*
- Audio Processing-System Engineering  
*Greg Buchwald, Motorola, Schaumburg, IL*
- AM Class E Modulation in Solid-state Transmitters  
*Bill Harland, Broadcast Electronics Quincy, IL*
- In Band Digital Transmission Systems for AM and FM Broadcast  
*Jeff Andrew, WGCI Gannet Radio, Chicago*  
*ACORN, Los Angeles*
- Preventative Maintenance and the Repair of CD Players  
*Laura Tyson, Broadcast Supply West*
- 5:00 Reception and Cash Bar
- 7:30 **Pizza-Engineering Forum and "Ask the FCC"**  
*Moderators: Doug McDonell and Ken Dixon*

## THURSDAY, NOVEMBER 12

- 7:45 Coffee
- 8:30 **Broadcast Engineering Sessions**
- Analog Optical Recording Systems for Video Applications  
*Lou Skriba, Sony Corporation of America*
- History of Transmitter (UHF) Efficiencies  
*Martyn Horspool, Harris Corporation Quincy, IL*
- Evolving Digital Tape Recording Technology  
*Dennis Cogan, Sony Broadcast*
- Considerations for the High Power Amplification of the Digital HDTV Signal  
*Nat Ostroff, President Comark Communications, Colmar, PA*
- Noon Luncheon
- D5... The Logical Digital Component Extension of D3  
*Phil Livingston, Panasonic Broadcast Systems Secaucus, NJ*
- A Revolution in Television Camera Measurement Techniques  
*Mel Infanzon, Tektronix, Inc. Beaverton, OR*
- Advanced Television System Update... HDTV and Video Compression Discussion  
*Engineering Team, General Instruments and M Engineering*
- ???? Adjournment . . . see you next year!