



Edited by: Leonard Charles
 Articles Welcome! Send them to:
 Chapter 24 Newsletter
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 Madison, WI 53711
 (608)-274-0041
 (608)-271-4321
 (hard copy or ASCII text message
 on BBS at 608-274-7776)

Contributors this month:
 Doug McDonell
 Doug Smith
 Tom Weeden
 Stan Sarch
 Kevin Ruppert

MEETING ANNOUNCEMENT

DATE: Oct 16, 1990

ALEXANDERS

SCHROEDER ROAD
 (WHITNEY WAY at the Beltline)
 Dinner: 5:30pm
 Business Meeting: 7:00pm

Program: SBE Convention Reports and then a tour of Weather Central in the WKOW Television Studio Building. We'll meet at Alexanders for Dinner and a business meeting with a short discussion of the National Convention and then re-assemble at Weather Central on Tokay Blvd at 8PM for a tour of the facility.

UPCOMING MEETING DATES

- November 14, 1990
- (Revised) December 12, 1990
- January 15, 1991
- February 13, 1991
- March 21, 1991
- April 23, 1991
- May 22, 1991

AT&T - PANASONIC - S.W. BELL
 TELEPHONE SYSTEMS

Scharch Electronics Company
 2321 Whitlock Road
 Madison, WI 53719
 (608) 271-1800

YOUR OFFICERS....

- CHAIRMAN:**
 Steve Zimmerman (WKOW TV) W - 274-1234
 H - 845-8738
- VICE CHAIRMAN:**
 Jim Hermanson (WTSO/WZEE) W - 275-7130
 H - 231-2005
- SECRETARY:**
 Tom Weeden (UMTV TV) W - 274-1515
 H - 276-7915
- TREASURER:**
 Fred Sperry (WI Public TV/ W - 273-5500
 TOC) H - 833-6074

following:

- Best Local Chapter Newsletter
- Best Local Chapter Newsletter Editor
- Best Local Chapter Frequency Coordination Effort
- Best Technical Paper or Article
- Best Regional Conference

The two other Awards went to:
 Local Chapter with Greatest Growth of New Members - Chicago, IL
 Best Regional Convention - Syracuse, NY

LAST MONTH'S MEETING....

SEPTEMBER 1990 MEETING MINUTES

Madison, Wisconsin Chapter 24 of the Society of Broadcast Engineers met on Thursday, September 13, 1990 at Corby's Restaurant in Madison for the regular monthly meeting. The attendance at the September meeting was 15. All 15 were Chapter 24 members, and of these, 12 were SBE certified.

Chairman Steve Zimmerman called the meeting to order at 7:00 PM.

Treasurer Fred Sperry read the minutes of the August meeting in Secretary Tom Weeden's absence. Program Chairman Kevin Ruppert reported that there was still no program scheduled for the October meeting. He is open to suggestions, especially in the area of radio, which the chapter would like to focus on a little more. Kevin also mentioned that this evening's program would be by Chris Cain on WISC-TV's use of local area networks. Sustaining Membership Chairman and Newsletter Editor Leonard Charles reported that one sustaining member had not renewed, leaving the chapter a total of 15 sustaining members. Frequency coordinator Chris Cain reported nothing new in the area of frequency

COMMITTEE APPOINTEES

- Past President - Denny Behr
- Membership - Dave Gerisch
- Sustaining Membership - Leonard Charles
- Strategic Plan Comm - Denny Behr (Chair)
- Newsletter - Leonard Charles
- Program Chairman - Kevin Ruppert
- Cert/Ed - Doug McDonell/Tim Trendt
- Frequency Coor - Chris Cain
- Chapter Liason - Doug Smith

CERTIFICATION....

Future Exam Dates: November 9-19
 Contact Doug McDonell for info.

1121 RIVERWOOD DRIVE
 BURNVILLE, WI 53537
 (612) 990-8920

EMMONS ASSOCIATES, INC.

KEITH EMMONS

MADISON SWEEPS....

The Headline in the Friday edition of the SBE Convention Daily News read "Madison Chapter Sweeps SBE Annual Chapter Awards with Five". If you are a member of Chapter 24, you can be proud. There were a total of seven National Awards given. Madison won the

Your Complete Tower,
 Antenna & Strobe Engineers

Broadcast Communications

P.O. Box 131
 Verona, WI 53593
 608-845-8755

JOHN CROOKS
 Vice President

coordination. Program Chairman Kevin Ruppert passed along a note that he and Chapter Liaison Chairman Doug Smith were looking into the possibility of having a member of the Milwaukee SBE chapter speak to our chapter on their experience in erecting a candelabra tower in Milwaukee. Chairman Steve Zimmerman mentioned an upcoming SBE meeting in Chicago that may be of interest to some of this chapter's members. The subject of the meeting will be on fuses and fusing. He then passed around the Chicago chapter's newsletter with this meeting information. Treasurer Fred Sperry reported this month's balance. Chairman Steve Zimmerman reported that Dennis Behr was in the process of putting together a committee on Strategic Planning. There was no old business.

Patrick Allinson
Service Manager



Roscor Wisconsin
11350 W. Theodore Trecher Way
West Allis, Wisconsin 53214
Phone: 414-476-2600
FAX: 414-476-4949

Education and Certification Chairman Doug McDonnell then announced the next certification test in Madison would take place between November 9th and 19th. He already anticipated 5 to 6 students from the UW-Platteville to be taking the test. Doug then presented a Broadcast Technologist certificate to Deanna Morris. Doug also mentioned that there was another certificate to be presented, however the recipient was unable to attend tonight's meeting and would receive their certificate at the next meeting.

The business meeting then adjourned. Program Chairman Kevin Ruppert then introduced Chris Cain who presented a program on local area networks.


(Thanks to Fred Sperry who took September's minutes.)

BRAD DICK RE-ELECTED....

The membership at large has re-elected Brad Dick as the President of the Society of Broadcast Engineers for a Second term. Dick was challenged by Andy Butler of Baltimore on the mail in ballot. All other National officers were unopposed and re-elected.

THE CLINIC....

The dates for this years "Broadcasters Clinic" are November 13-14-15. Fees are \$100 for two days and \$135 for all three. You should have received a brochure outlining the programs at this years clinic. If not, call 262-7942.



RICHARD WOOD
PRESIDENT

BROADCAST
MICROWAVE
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COTTAGE GROVE, WI 53527 (608) 839-4075

THE LEGALS....

info by Doug McDonnell

An application has been granted for a VHF LPTV on Channel 5 in Madison, WI to Warren L. Cave.(K05JJ) TP .01KW, ERP .034KW, TL 4610 University Avenue, RCANSL 339 Meters, Omni.

Application granted for voluntary assignment of license from D&P Markley Broadcasting Inc. to Beaver Dam Broadcasting Co. Inc. for WYKY 100.5MHZ FM in Columbus.

VERONA WI: Designated for hearing seven mutually exclusive applications for a new FM station on Channel 288A in Verona.

An application has been accepted for a Voluntary Transfer of Control from Robert A. Jones & Patricia A. Jones to Jeffery A. Smith the license of WRPQ AM 740KHZ in Baraboo, WI.

An application has been granted to extend the completion date on the CP for a VHF TV Translator Low Power channel 8 (W08CK) in Madison, WI. The license is held by the Identity Institute.

An application has been accepted for filing for a license to cover a CP which authorized a new aural ICR used with WYKY in Columbus, WI. The frequency is 94.5MHZ.

An application has been granted to Beaver Dam Broadcasting licensee of WKRO in Beaver Dam, WI (95.3MHZ) to change ERP to 6KW at 100 Meters.

An application has been tendered for filing from Radio Lake Geneva Corp of Lake Geneva WI for a CP for a new FM on 96.1MHZ, ERP of 6KW, HAAT 100 Meters.

42 36 58 88 29 20
A Petition to Deny was filed on 7/30/90.

An application has been tendered for filing from State Long Distance Telephone Co. of Lake Geneva WI for a CP for a new FM on 96.1MHZ, ERP of 3KW, HAAT 100 Meters.
42 36 55 88 32 01
A Petition to Deny was filed on 7/30/90.

An application has been tendered for filing from Tom Kwiatkowski of Lake Geneva WI for a CP for a new FM on 96.1MHZ, ERP of 3KW, HAAT 100 Meters.
42 36 34 88 26 25

An application has been tendered for filing from David A. Nelson of Lake Geneva WI for a CP for a new FM on 96.1MHZ, ERP of 3KW, HAAT 100 Meters.
42 37 03 88 27 12
Petition to Deny was filed on 7/27/90.

An application has been tendered for filing from Lake Geneva Broadcasting Corp of Lake Geneva WI for a CP for a new FM on 96.1MHZ, ERP of 3KW, HAAT 100 Meters.
42 36 32 88 26 20

An application has been tendered for filing from Northwest Broadcasting Co. of Lake Geneva WI for a CP for a new FM on 96.1MHZ, ERP of 1.492KW, HAAT 140 Meters.
42 37 23 88 26 31

SONY

Kevin Peckham
Account Manager
Broadcast Products Division

Sony Communications Products Company
1200 North Arlington Heights Road
Itasca, Illinois 60143
Telephone (608) 271-3778
(708) 773-6046
Service Center (708) 773-6037
Emer. Tech. Assist. (201) 833-9533
National Parts Center (800) 538-7550

An application has been tendered for filing from Scott Trentadue of Whitewater WI for a CP for a new FM on 106.5MHZ, ERP of 3KW, HAAT 100 Meters.
42 55 03 88 42 52

An application has been tendered for filing from Mianne Nelson of Whitewater WI for a CP for a new FM on 106.5MHZ, ERP of 3KW, HAAT 100 Meters.
42 54 24 88 44 54

An application has been tendered for filing from F.W.K. Broadcasting Company of Whitewater WI for a CP for a new FM on 106.5MHZ, ERP of 3KW, HAAT 100 Meters.
42 55 21 88 43 04

An application has been accepted from Baraboo Broadcasting Corp to change the frequency of a Remote Pickup license to 153.23MHZ used in conjunction with WRPQ AM.

An application has been accepted from K to Z LTD of Lancaster, WI for a new RP mobile system with 1-5 units on 161.70MHZ to be used in conjunction with WGLR AM and WAXI FM.

FCC NEWS.....

Info by Doug Smith

It looks like cable TV reregulation is dead, at least for this year. Apparently the Bush administration intended to fight the proposed bill in the Senate, and veto it if it passed. Amendments tacked on by several senators didn't help.

The proposed "spectrum fee" for broadcasters is still very much alive, however. It is not known if this fee was in the compromise spending bill worked out, and then voted down, last week.

sexually-explicit movies aired on the pay-TV outlet) were not ruled on. WSNS does have several opportunities to appeal.

A law limiting the amount of advertising allowed in children's TV programming has passed both houses of Congress. While final details of the new law are not yet available, it's believed this law will limit advertising to 10.5 minutes per hour on weekends and 12 minutes per hour on weekdays, both on broadcast and cable TV channels. The bill would also establish an endowment for the funding of children's educational TV programming. The administration is opposed to this law but is not expected to veto it.

Storer Cable has taken the city of Montgomery, Ala. to federal court, challenging two ordinances. One requires uniform cable pricing throughout a franchise, while the other prohibits exclusive agreements between cable programmers and cable systems. Montgomery has issued two franchises, one to Storer, the other to a new company, Montgomery Cablevision.

Multivision Cable TV of Hermosa Beach, Calif. has been shut down by the FCC. An inspection by FCC engineers found excessive leakage in the 108-136MHz aircraft band.

The Commission and the Informal Working Group 2 (IWG-2, established to advise the FCC on the upcoming World Administrative Radio Conference) have proposed several different possible frequencies for digital radio. The proposed bands:

- 728-788MHz (TV channels 57-66)
- 1493-1525MHz (aeronautical telemetry)
- 2390-2450MHz (microwave ovens)
- 500-608MHz (TV channels 19-36)
- 614-806MHz (TV channels 38-69)
- 1460-1530MHz (aeronautical telemetry)
- 1710-1850MHz (government)
- 1850-1990MHz (fixed microwave)
- 2200-2290MHz (government)
- 2500-2655MHz (instructional TV and wireless cable)

The Judicial Conference of the U.S. has agreed to allow TV cameras in the federal courts, in civil cases only. Six district courts and two courts of appeal will be allowed to volunteer for the project. It appears likely that the first federal court to experimentally permit cameras during proceedings will be right here in Madison. Rep. Kastenmeier is in charge of the subcommittee on federal courts, and

chief judge Barbara Crabb is in favor of cameras in the courtroom. Further, our other main judge, John Shabaz, is opposed to cameras in his court, but is "willing to go along" with a test.

A seminar has been held in Washington in an attempt to clarify the Commission's political advertising regulations. Recent audits of political advertising at several stations show considerable confusion over what the regulations really mean. (check your copy of the rules & see if you can figure them out. I sure can't!)

Yves Faroudja has pulled his SuperNTSC system out of the official advanced television testing program. He intends to continue with development, however.

President Bush has asked Congress for \$14.2 million to allow the Voice of America to expand its programming to the Middle East. Currently, VOA broadcasts 7.5 hours daily to this region; Bush wants to air 13 hours of Arabic and 11 of English programming. The money would come out of the budgets of Radio Free Europe (which broadcasts to Eastern Europe) and Radio Liberty. (which broadcasts to the U.S.S.R.)

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Chairman Al Sikes has announced that the FCC will be completely reviewing all broadcast regulations in early 1991. From Sikes' comments, it appears that he's concerned with the ability of conventional broadcasters to successfully compete with new technologies such as cable, DBS, and digital radio.

The U.S. Court of Appeals has ruled that the FCC did not have the authority to waive Congress' ban on ownership of cable TV systems by telephone companies. The waiver was issued to GTE to allow it to build an experimental coaxial/fiber optic CATV system in California.

The license renewal of WSNS-TV Chicago has been denied. WSNS, currently a Spanish-language station, had been operated as a pay-TV outlet for a period, during which no news or local programming whatsoever was aired. Obscenity charges (based on scrambled

JEFFREY N. CLARINE
CENTRAL REGION SALES MANAGER



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FAX # (507) 332-6705

The Commission has permitted one company to purchase the two Fox affiliates in the Lynchburg/Roanoke, Va., market, and operate them as satellites of each other. The two stations, WJPR-TV and WVFT, were separately owned, and both were in Chapter 11 bankruptcy. Unlike the recent case where a South Carolina station was not permitted satellite operation, a mountain range between WJPR-TV and WVFT's transmitter locations makes signal overlap minimal.

The one-to-a-market rules have been waived yet again, to permit the head of WHBQ-AM Memphis to purchase the construction permit for channel 50 in that city.

A vote is expected at the October 11 meeting of the FCC on a rulemaking for wireless cable. Changes proposed include banning regular cable systems from owning wireless cable in the same

Apparently one of the victims of the first round of random drug testing in the FCC has been 76-year-old Commissioner James Quello. Quello said "It's kind of wasted on me - I think."

Pan American Satellite has asked for a waiver of rules prohibiting competition with Intelsat; Pan American would like to provide telephone service to Eastern Europe.

RADIO....

by Stan Scharch, N9HMA

The FAA has proposed new regulations which would expand its review process of FM and VHF-TV applicants. Current regulations limit the FAA's EMI review process to new tower construction that already requires FAA notification. The proposed rulemaking expands FAA notification to include those seeking a modification or move to an existing transmitting tower.

Several engineering firms and the NAB

VIDEO

Milwaukee
Madison
Chicago

IMAGES

Jim Braun
District Sales Manager
Video Images, Inc.
2137 S. Stoughton Road • Madison, WI 53716-2851
(608) 221-8888

have petitioned the FCC for reconsideration of FM directional antenna proceedings. Many broadcasters that have filed comments on the subject are asking for a DA freeze until more data is in.

The Senate Committee on Commerce, Science and Transportation has passed legislation requiring the federal government to review its own RF spectrum usage and turn over as much as 200MHz to the FCC for use by the private sector. DAB, HDTV and portable digital telephones head the list of possible recipients. Much of the debate centers on whether the federal government and the taxpayers should foot the bill for equipment replacement that would then allow the private sector use of a particular band. Nevertheless, the NTIA and FCC agreed that 200 MHz is an acceptable target to shoot for.

(Excerpts from Radio World)

AMATEUR RADIO NEWS....

by Tom Weeden, WJ9H

In the wake of success of the World Radiosport Team Championships at this summer's Goodwill Games in Seattle, a draft proposal has begun circulating in the US and other countries for the creation of a World Rediosporting Federation. The formation of a federation is a requirement of the International Olympic Committee to consider making Amateur Radio a "demonstration sport" at the 1996 Olympic Games.

Walter Cronkite has become a ham! The former CBS News anchor recently passed the Novice Class exam and has received a KB2 callsign.

STS-35's launch has been delayed again due to ongoing fuel leak problems. The tentative launch date for the shuttle which will carry the Shuttle Amateur Radio Experiment is now December 1, 1990.

The FCC has granted several nets operating on the 20-meter phone band more time to resolve ongoing on-air disputes. Chief of the Commission's Special Service Branch, Robert McNamara, wrote that FCC has received five plans addressing the underlying causes of unproductive on-the-air disputes. The plans recommend that the amateur community be allowed to continue addressing this problem internally. McNamara has extended the deadline for amateurs to develop the joint plan until February 1, 1991. Despite the extension, several individual amateurs have been cited for causing deliberate interference on 20 meters and could face monetary fines.

Elsewhere in the enforcement department, FBI agents aided by FCC investigators arrested Anthony Marcantonio, KA2ZGE, on August 2 and seized 20 pieces of transmitting equipment. The FCC had previously responded to interference complaints followed by death threats to the investigators over the radio. Marcantonio was charged with making threats by radio, a felony carrying a penalty of up to five years in prison, a \$250,000 fine, or both.


(From October 1990 QST and August 1990 Badger State Smoke Signals magazines.)

CONVENTION 1990....

by Leonard Charles

From the pre-convention Ennes workshops to the Sunday morning disaster seminars

dealing with recent Hurricanes and Earth Quakes, the 1990 SBE National Convention in St. Louis proved to be enlightening on the most crucial concerns of the Broadcast Engineering profession as we enter the 90s. There were the standard subjects covered like saving AM through NRSC and just how much FM processing is enough. But it seems the most up to the minute and thought provoking lectures dealt with the consumption of the industries energies on Digital Audio and HDTV. Try some of these ideas on for size. You may soon be able to call up a Columbia Records computer in California and download into your computer an entire 'latest release' album which would then be transferred to your audio system to be played back in full studio dynamics. Or using your local cable/fiber/phone system, you could download that album direct to DAT. Of course first you would have to pass along your credit card number for billing purposes. Many DAB scenarios were discussed with the prevailing distribution being Satellite, including mobile reception, with reinforcement by many low power/short tower land based


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repeaters. The supposed "multipath" created by simultaneous reception of a satellite transmission and land based signal will actually be regenerative and necessary for reliable coverage. Many different channel allocation schemes and spectrum requirements for DAB are long from being resolved. In this way, DAB is in the same spectrum boat as HDTV. How to do it is not nearly as big a question as where to do it. Spectrum fears however, get less and less as new digital compression ratios get larger and larger.

Among the more impressive legal forums, the FCC, the FAA, a CE and a Lawyer got into an interesting verbal boxing match over the fate of FM license applications due to the new FAA computer program for aviation communications interference. After the dust settled, all agreed that the safety of air travel was of the utmost concern and that in the end, that safety would be satisfied. The lingering question is who will pay for the safety? Will it be the aviation industry through newer and better

broadcasters through loss of viable FM transmitter sites.

Have you ever seen Steroscopic TV. It's a video system with a higher scan rate and special LCD glasses. Two completely different images of the same shot taken with mechanically strapped cameras are alternated on the display while the glasses alternately block the view from the right or left eye using received synchronized infrared signals from the display. To the naked eye, the picture looks a blurry double of something, but with the glasses, it has the dimension of depth not found in normal NTSC video displays. All shots were computer generated in this demo so the effect of real time action video could not be experienced. The computer images looked great.

The Klystrode vs MSDC-Klystron world of UHF television was discussed again and it appears that the Klystron may be winning this battle with a lot of units on the air and some pretty impressive air-cooled power levels just around the corner. Comark lectured on the Klystrode and Harris on the MSDC.

RAM Professional Audio Products	
RON A. MITCHELL PRESIDENT	RAM BROADCAST SYSTEMS INC. 348 West Colfax St. Palatine, Illinois 60067 Telephone 708-358-3330 Telefax 708-358-3577

As the Television and Radio technical seminars happened simultaneously, I was unable to attend any on the Radio side although there were many on the Radio agenda I would have liked to see.

On the floor, VHF Solid State TV transmitters were popular with Harris showing their Platinum series. Larkan and Townsend (Toshiba) units were on display although Larkan had only one PA module on display with a life size picture of their transmitter. Midwest Communications had the Townsend installed in a Semi Trailer and ready to roll into your station's parking lot for a demonstration. Acrodyne was showing a complete 1KW Solid State UHF transmitter.

Qdetics had a couple of Video cart machines on display, one equipped with Sony DII. Ampex was showing their ACR 225 spot player using DII.

There were the normal plethora of CCD cameras, all formats of Video decks,

Video monitors, switchers and editors that one would expect at such a show. Chyron was showing an up and running Infnit character generator. And of course the latest in ENG vehicles was on display by TE (Television Engineering) complete with a fully extended 58 foot pneumatic mast (almost touched the ceiling of the convention center). A nifty little stereo audio monitor system in a single rack panel size was displayed by Wohler Technologies, Inc of San Francisco. With 3 speakers and specially arranged colored leds its easy to tell instantly if your stereo audio is true in phase and fidelity.



In Radio, processing audio completely in the digital domain was the hot item with Gentner and Paragon showing units. They were quick to point out that peak clipping in the digital domain is accomplished perfectly and cleanly with no fear of the artifacts caused by conventional diode clipping. And of course, several prepared setups can be stored and recalled for instantaneous A-B comparisons. In fact, with a modem and home computer, one could be sitting at home in the living room, dial in the processor and adjust its setups from the comfort of your easy chair being able to hear the affects of your "tweaks" immediately in your controlled environment. There is even a provision for the engineer to password limit the depth of access by the PD.

Kintronics was showing a complete AM phasor, something I thought I'd never see again. The new Gates AM 5KW Solid State transmitter was on display. From the inside, it looked a lot like the Harris SX series. The Nautel Solid State AM transmitter was also on display. FM transmitters were shown by Continental, CCA, BE, and QEI. The QEI rig was a 10KW transmitter the size of a single equipment rack. Harris, Continental, and QEI also had a 500 Watt FM transmitter with it's most likely use that of back up to a full power rig. The usual ensemble of antennas, remote equipment, audio cart/tape machines, transmission lines, towers and accessories, and studio consoles were shown. Something I had read a lot about but had never seen was being demoed in

the Harris/Allied booth, the AKG Digital Sound Editor. It is quite a versatile and impressive unit doing remarkable cut and pasting of one or all of eight channels of audio. However at \$37,500 for the base unit, with only 4.4 minutes of stereo storage time, it seems a little out of reach for most radio stations.

Two new receivers with the AM NRSC de-emphasis filter were displayed in a booth manned by SBE Chapter 47 (Los Angeles). A Denon model TU 660 with a 10KC notch filter and a Philips model FR70 without. The configuration had a CD player into a LPB low power AM transmitter into a Dummy Load. A loop antenna was used to pick up the signal into the receivers and headphones for the monitors. There was no processing being employed nor any chance for any interference in this bench test setup but it did sound good.

Next year its off to Houston for SBE 1991. The Houston Convention and Visitors Bureau even had a booth at the St. Louis show to help attendees start planning their trip. And yes I did manage to make it to the top of the Arch before the lack of a Federal Budget compromise closed it for the weekend. St. Louis was indeed a great place for this convention.

	WISC-TV
	7025 RAYMOND ROAD MADISON, WI 53711 608-271-4321

DIFFERENT CHANNEL....

NBC's TV station in Denver, KCNC, has found a way to avoid alienating the part of their audience that doesn't care for election coverage. On Election Night, Nov. 6, KCNC has purchased the entire time period from 7 to 10PM on Denver independent station KTVD. KCNC's election coverage, including KCNC's own anchors, will air on KTVD, while regularly scheduled NBC programming will air on KCNC.

NO MORE ZAP!!!

by Kevin Ruppert

Tired of that desk top computer of yours crashing after you pull your desk chair

your VCR that forgets what it has programmed into it when lightning strikes nearby? Well, by 1992 it could very well be that new electronic devices will no longer exhibit these types of behavior. The reason is a strict new standard for EMC, or Electromagnetic Compatibility.

Representatives from many Wisconsin manufacturing firms attended the 1990 First Madison Electronic Rep Expo on Sept. 24. Bob Johnson, from Loren Green Associates, presented a discussion on these new pulsed electromagnetic interference (EMI) standards. Mr. Johnson's firm represents a company which sells the equipment needed to perform the tests on electronic gear to make sure that they will comply with these new regulations.



The reason that companies are being forced to produce products that are virtually "zap proof" is due to the fact that our brothers (and sisters) of the European Community (EC) are planning to impose MANDATORY requirements for electromagnetic immunity testing for all consumer, commercial, and light industrial products sold over there. The requirements include tests for most forms of pulsed EMI including Electrical Over Stress (EOS) threats such as noise bursts and surges. Because companies now operate in a global market, the mandatory European standards will impact nearly everyone. There is a great deal of pressure to "harmonize" the non-European standards with these new requirements to prevent conflicting and additional tests. As a result, the EC 92 requirements are expected to have an impact equal to that of the FCC requirements of the 1980's which required producers to control electromagnetic emissions. No one wants to be left out in the cold, so it is expected that everyone will be required to follow these new standards.

Electrostatic Discharge (ESD) testing will be one of the tests performed. The testing is done in two different ways, direct and indirect. In direct ESD, the equipment under test is fed a discharge of 8 kV by contacting the device with a probe designed to provide the zap. In

some cases, an air discharge into the device is also done with up to 16 kV. In another test, called indirect ESD, the discharge takes place between two other objects, such as a table and chair, with the device under test nearby. If, during any of this zapping, there is any kind of a glitch resulting in incorrect operation or failure of the device under test, it has failed.



Also tested will be power and input/output lines. Each line in and out of a device will be pulsed with Electrical Fast Transient (EFT) bursts. Even the green ground line on the power cord will be tested with respect to the ground reference to see if the device fails. Surges, which are high-energy, short-duration pulses that are frequently caused by lightning or the switching of power loads, will be tested for. Power lines into the device will be surged with up to 6 kV. I/O lines will be tested with surges of 4 kV in various waveforms.

With these new EMC requirements on the near horizon, it looks as if the equipment designers and engineers of the 1990's will find that many, if not most, of their products will not meet these new requirements, and they will have to learn a great deal to cope with the new tests.

(Information taken from The Pulsed EMI Handbook by the technical staff of KeyTek Instrument Corp.)

WINTERIZE TOWERS....

With Winter almost here, Sustaining Member Broadcast Communications passes along these tips to get ready for the season:

GUY WIRES: Ice clips over preforms or ice breakers above the guy dampers.

ANTENNA/RADOME HEATERS: Inspect & test to minimize reflected power during icing conditions.

ICE SHIELDS: Install above antennas and glass beacons. Antenna jumpers should

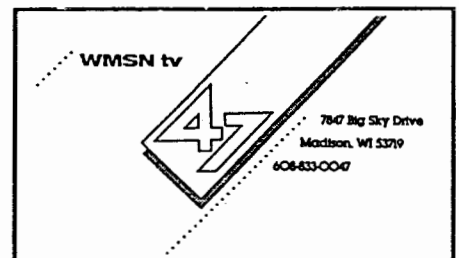
be routed under horizontal tower members to protect from falling ice.

TOWER LIGHTS: Relamp tower in fall.

TENSIONING: On guyed towers, over or under tensioned guy wires can fail during icing conditions.

CABLES AND LINES: All should be tightly secured throughout the length of the tower. Ice and wind load can snap hangers and hardware that are not tight.

Make sure that you're ready for winter as emergency tower service can double in costs due to severe weather conditions.



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SUSTAINING MEMBERS....

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Scharch Electronics Company
WKOW TV 27
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WMTV TV 15
Maney Logic
WMSN TV 47
WISC TV 3
RAM Broadcast Systems Inc.
WTSO/WZEE Radio