

Edited by: Leonard Charles

Articles Welcome!! Send them to:  
Chapter 24 Newsletter  
5714 Modenaire St.  
Madison, WI 53711  
(hard copy or text files on 360K disk)

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MEETING ANNOUNCEMENT

DATE: Wed - Mar 8, 1989

ALEXANDERS of Madison  
5614 Schroeder Road  
Across from Vitense mini golf

Dinner: 5:45pm  
Meeting: 7:00pm  
Program: 7:30pm (at WISC TV 3)

The Program will be in the Conference Room of WISC Channel 3 Television at 7025 Raymond Road after completion of the business meeting at Alexanders. For those of you not attending the dinner, plan on arriving at Channel 3 at 7:30pm. This month Mert Knold of Microwave Radio Associates will demonstrate various microwave ENG style transmitters and receivers.

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UPCOMING MEETING DATES

Tuesday April 11  
Wednesday May 3

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Our Broadcast & Amateur Radio community lost an old friend last week. Clyde (Coffee) Downing died last week at the age of 66. Clyde had served many

years as President of the Madison Area Repeater Association and worked during the heart of the "golden years" at WISM- AM. Many of us grew up listening to the "coffee sippin', donut dunkin'" morning buddy. In all those years I can remember only one morning when the snow was so high that Clyde could not make it into the station. We could always count on that mello voice to be there to urge "our sleepy heads" out of bed with a bucket of cold water & on to work. Few personalities truly become regarded as legends, especially in Radio. Clyde did it & we are better for knowing and working with him!

Chris Cain CE/ WISM (1969- 1985)

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THE LEGALS....info by Doug McDonell

Weather Center International, Inc. of Madison, WI: Application granted to change site to 125 Larkin Street; .0011 KW; 389 meters AMSL. Action 1-31-89 (The station has quit operation on Channel 5 from that site)

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FCC NEWS....

SATELLITE JANNERS BEWARE: The Federal Communications Commission has received information indicating that deliberate harmful interference to satellite uplink operations is being encouraged. These incidents are found to occur through use of backyard satellite receive terminals modified as "satellite jammers" or deliberate misuse of a satellite operating company's uplink system. At the request of satellite users and because of its statutory responsibility, the Fed Communications

Commission is taking an active interest in this problem. Anyone contemplating causing malicious interference should be aware of the penalties involved... A fine of not more than \$10,000 or imprisonment for a term not exceeding one year, or both.

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LOUD COMMERCIALS: The FCC has concluded there is no clear way to impose new regulations that would be effective in controlling apparent loudness of commercial announcements over AM, FM and TV broadcast stations, and therefore, has terminated its inquiry into the matter. The FCC said its experience has led to the conclusion that loudness is very subjective and varies from listener to listener. Listeners weigh the content, subject matter, style, format presentation, video information and perhaps some less well-defined stimuli when deciding whether a commercial is loud.

The FCC concluded that technology has advanced to help both the listeners and broadcasters to control the apparent loudness of commercials, independent of regulation. Furthermore, due to the subjective nature of many of the factors that contribute to loudness, it would be virtually impossible to draft new regulations that would be effective.

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PROPOSED LOTTERIES: The FCC has proposed implementing a random lottery procedure (random selection) for new AM, FM, and TV stations in lieu of the present comparative hearing process. The FCC tentatively concluded that the complexity, length and expense of the comparative process has become unduly burdensome to applicants and the FCC, without providing commensurate, meaningful assurance that it produces or is more likely to produce the best

qualified licensees. The existing process not only drains the FCC's limited administrative resources but also the resources of potential licensees. The FCC pointed out that a lottery process would be less costly to applicants and, therefore, would lower entry barriers and encourage newcomers to enter the broadcast industry. Lotteries may also prove less costly for the FCC to administer as well.

COORDINATES CHANGE: Latitude and longitude coordinates are being changed slightly for all points in the United States. This is a result of the 1927 North American Datum (NAD27), on which North American coordinates are based, being replaced with the more accurate 1983 North American Datum (NAD83). This activity is authorized by the Office of Management and Budget and is being overseen by the Federal Geodetic Control Committee. Actual calculations are being performed by the National Geodetic Survey (NGS). In order to prevent intermixing of data using two different datums, the following procedures will be in effect until further notice: Applicants are instructed to furnish coordinates based on NAD27 datum on all submissions. Failure to do so could delay processing of applications. Applicants who have filed applications with coordinates based on NAD83 datum must provide NAD27 coordinates to the appropriate FCC licensing bureau. For further information contact Don R. Precure at (202) 653-8152.

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CHAPTER 24 STATS....

According to the latest membership listing from the National office of the SBE, as of December 1988, here is our statistics:

Regular Members ... 47  
Senior Members ... 10

Associate Members ... 1  
Student Members ... 8  
  
Total Members ... 58  
Certified Members ... 25 or 43.1%  
  
(I know these numbers don't add up, but that's what the print out said. Must be some new National math)

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A JOB WELL DONE....

Congratulations to Denny Behr and crew at the Wisconsin Public Television Technical Operations Center (TOC), one of eight facilities nationwide bestowed with BME's Excellence in Engineering Award in the January 1989 Issue. At-a-boy guys. For anyone who has yet to see the finished product, stop by, I'm sure Denny would love to show you around.

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CPR CLASSES....

The joint Red Cross/Chapter 24 CPR & Emergency First Aid course has been completed. A total of 9 Chapter 24 members attended the certification program... far short of the number of members originally signed up. It was an excellent learning experience and is unfortunate that more people did not take advantage of it.

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ANDREW'S BUS TRIP....

The end-of-January bus trip to the Chicago area to tour the Andrew Plant was a success with 24 members taking advantage of the afternoon. So that's how they make that stuff.

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SOLVING RECEPTION PROBLEMS...  
(by Chris Cain)

The following is a summary of a project/field trip wherein the Engineering staff of WISC-TV resolved a long time interference problem of a rural Wisconsin town. My thanks to Kevin Ruppert, Doug Smith and Stan Scharch of our Engineering staff for their invaluable help.

For several months we have received several reception complaints of our station in a rural/ small community 50 miles SW of Madison. The reports stressed that "weeks at a time" would pass wherein reception of our channel 3 signal was impossible. Other VHF & UHF stations could be easily received, but not us!

We decided to plan a visit to this town, upon completion of our new ENG truck. The truck would allow use of the Mast for observation & measurements of our signal. It was decided to obtain a Potomac Instruments/ FIM 71 portable field strength meter. A Tek 7L13 spectrum analyzer was also taken along & was used to monitor Visual & Aural carriers.

We outfitted the truck with a Consumer type high gain "deep fringe" type antenna. We also fitted the calibrated dipole that came with the FIM 71 for MAST mounting. This allowed us the ability to observe and measure the signal at specific distances from the station.

The Field Trip:

On January 26th we left for Rewey around 8:45AM. Along the way we stopped at 10 mile intervals, extended the mast. (Allowing us to observe the OFF AIR signal & measure the field strength.)

All measurements and observations

seemed normal as we entered our Grade B service contour and continued South West.

As we ascended several hills; getting closer to the 1150' ASL town boundaries, the signal was quite good.

Crossing the town limits our visual signal was suddenly "muddy". A non-synchronous "bar" rolled thru the picture. Upon arriving at our "contact" home, the signal on 3 was quite poor. The FIM 71 indicated an "acceptable" level for grade B, but the picture was very evidently being interfered with. By rotating the truck mast around with the deep fringe antenna, we could clearly receive Iowa & Wisconsin stations. Only Channel 3 looked horrible!

It was time to "look" at the signal with the 7L13. Much to our surprise an un-modulated carrier about 50KHZ below our visual was observed! It was drifting about 5KHZ in frequency. The amplitude at that location was about 1/3 of our transmitted visual carrier. Since the deep fringe antenna was in place, it was decided to drive thru town to attempt to "triangulate" the source of the mystery carrier.

Let's break here a second for a quick fix on our location. Our transmitter site was North East of the town. We started our "sniffing" at the South West corner of the town. Most of the town lay in front of us, between our transmitter and the truck.

As we headed East thru town, the signal measured greatest almost due North until we apparently went by it! At the city boundary the interference almost disappeared. As we turned back the amplitude of that phantom carrier increased. Our triangulation indicated we should head due North into the town.

On the first N-S street the signal

kept increasing until it towered over our visual carrier by 3 db! There it was, on the 7L13, this monster unmodulated carrier, quivering around right there on the CRT! Time to hop out and utilize the portable FIM-71.

Within minutes we had nulled out the FIM-71 dipole at 4 points around a house located in the NE most part of the town. The signal was definitely coming from a roof mounted antenna that was pointing right at our transmitter. The FIM-71 indicated a whopping signal of 4mv/m (that's a lot when your Visual carrier right next to it is only 1.5 mv/m)!

Murphy was certainly with us.. You guessed it, the people were not home! We were able to determine the name of the resident before we left town.

We returned to Rewey two days later. Once we got in, we found a "FINCO" (Model 6-923) 82 Channel Distribution Amp. We replaced it with a four way (passive) splitter. The home owners let us keep the amp. Since we removed the RF Amp the interference problems have ceased in Rewey. As a matter of fact the signal levels that I have measured coming out of the input of this amp approach a +20dbm on various channels. It is no wonder that the home owners at "ground zero" report that they could not receive any channels at all!

We have been informed that the Finney Company has been out of business for about 5 years. We wanted to send this wideband transmitter to them for inspection. We are also told that a bunch of these units were sold to the public! Be looking for this one, fellow broadcasters!

Chris Cain  
Chief Engineer  
WISC-TV Madison, WI

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HDTV STANDARD....

The American National Standards Institute Approved an HDTV standard, the one as recommended by SMPTE. It is 1125 lines with 60 frames per second. It differs from the Japanese standard in that their standard is 1125 lines & 59.94 Frames/second. Cap-Cities/ABC, NBC, Fox, North American Phillips, Zenith, MIT, David Barnoff research Center and Faroudja were not in favor of approval of this standard. CBS, HBO, Motion Picture Association of America, Matsushita, Panasonic and some broadcast related unions supported the SMPTE Standard. This standard will affect what equipment is used in production for HDTV.

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LASER TURNTABLE D.O.A....

Finial Technology has been working on a laser optical turntable which would play standard analog vinyl records. The original price tag on the consumer model was rumored to be \$3786.00 with the professional version being developed with more bells, whistles and price tag. The consumer model, the LT1 was shown at a Los Angeles Electronics show in November 1988 although still not available for sale. The obvious market for the product would be stations with huge vinyl libraries wishing to transfer them to another medium or to be able to play direct from the library with no additional wear on it. In a nut shell, the systems works by bouncing a laser beam off the groove of the record and transforming the embedded signals to sound without actually ever touching the surface. In early January, just as the market was expecting to be able to buy the machines, Finial called a press conference to announce they had scratched plans to produce it. A company spokesman

said the price would have had to be in the \$10,000.00 range. While its true that the professional market would probably have paid that, it would have taken a huge consumer market to make production feasible and it was felt the price tag would be too high for consumer consumption. The hope is now to license the technology to a company that could make a go at production.

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DAT's NOT MOVING....

At a November 1988 meeting of Japanese and European hardware manufacturers and international record producers, no progress was apparent in the battle to agree on a copy protection scheme for the machines. The latest effort came in the form of the Philips' Solo Copy proposal which would allow only one copy of a compact disk onto DAT.

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HIGH RESOLUTION CD....

How about eight times oversampling at a rate of 352.8 KHZ in a CD player. That coupled with four Digital to Analog Converters (2 per channel-that's one for each half of the analog waveform) is why the new Technics SL-P1300 CD player is dubbed 'high resolution'. The machine uses 18 bit technology. Suggested list is \$1800.00.

\*\*\*\*\*

KLYSTRODE vs KLYSTRON....

The world's second Klystrode transmitter is up an running at WABW-TV, a Georgia PBS affiliate in the Albany-Tallahassee-Pelham Market. The Comark Transmitter went on line four months after the first ever Klystrode was fired up also at a Georgia PBS station.

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NEXT GENERATION DISPLAYS....

Japanese and American manufacturers have been researching the feasibility of a full color liquid crystal and gas plasma flat display but have made little progress. Now, however, with research monies being made available by the Pentagon for development of a next generation display for HDTV and Computer uses, the research may get the impetuous to leapfrog the CRT in becoming the new state of the art in video displays. One of the main advantages of such a display is its immunity to vibrations and shock making the displays of value in Military field equipment.

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(from Chp 28, Milwaukee)

MORSE OVERBOARD....

Sixty-six countries in the International Maritime Agency decided to implement a new Global Maritime Distress and Safety System, which will ultimately replace the use of Morse code for shipboard distress signalling. The new system will become a mandatory requirement for all ships beginning in 1999. It is already in service on British ships and will begin replacing shipboard (and coastal) telegraphers in 1993. The new signal technique can be operated by non-technical crew, and includes a floating beacon to allow the site of a sunken ship to be located using satellite technology. For a number of years, shipboard radio-telegraph operators have conducted most communications using methods other than CW. The new system will bring an end to the need for a radio-telegraph operator for even emergency communications.

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The FCC and FBI want to know how and

why the Super Bowl XXIII audio was interrupted on a Los Angeles cable system by music from "The Jetsons" and some anti-Semitic remarks. The piracy began about eleven minutes into the game, cablecast over the Century Southwest Cable Television System, serving some 76,000 subscribers.

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TCI'S Madison cable system dropped the WMVS signal on December 31. WMVS-WMVT General Manager Thomas Axtell has started a campaign, asking viewers to write TCI to get the station back on the system.

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(from SBE Short Circuits/Ch 56)

LONG DISTANCE BROADCASTING....

Recently I had the opportunity to construct a new FM facility in Houston, Texas. The plan was to move our existing FM, KHYS Port Arthur, to cover both Port Arthur and the Houston market....The major obstacle to covering the Houston market was the frequent temperature inversions. These can cause an FM signal to hit the inversion layer, and actually bounce upward into the ionosphere, rather than into the city. To combat this problem, we installed diversity microwave links, and diversity transmit antennas. I should add that our studios, located in Downtown Houston, are 58 miles from the transmitter site!

Two transmit antennas are located at 1000 feet and 2000 feet up the tower. Each transmit antenna has a receive Yagi nearby, with cavities to cancel our own frequency, aimed at a local Houston station. Each antenna is connected to a Johnson receiver. In the event that the signal received from the lower antenna is actually greater than that received by the higher antenna, a status alarm is triggered on our Gentner VRC-1000

remote control. We can then switch to the other antenna. (The Gentner can be programmed to make the switch automatically, but the system is still in the testing phase).

To accomplish the antenna switching with a minimum of downtime, a Continental air driven switch was chosen. This switch can make a transition in .2 seconds. I built a control box which would operate the switch, and interlock the transmitter plates in the event the switch faulted. The logic box also monitors Plate ON status. The situation was exacerbated by the fact that a combiner is employed, and we will actually be switching TWO stations SIMULTANEOUSLY. This whole process takes less than a second, and is barely noticeable over the air. We have a similar box in the transmitter room to facilitate switching between main and aux transmitters, although a slower, motorized switch was used for that.

STEVE DAVIS 918-664-281

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(from Chp 56, NE Oklahoma)

NAUGHTY NEWSMAN...

WTVT-TV in Tampa was having a problem with someone breaking into the newsroom computer. The hacker was tampering with files containing confidential news department information. The station alerted GTE and state law officials. A tap and trace telephone was placed on the computer's modem. The culprit turned out to be a former employee who was working as an asst. news-director at rival station WTSP. 14 felony counts of computer break-ins were filed against the hacker. By the way, how secure is your computer system?

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BEST ADVICE FOR THE MONTH: When in doubt, change the component with the most legs.

\*\*\*\*\*

ZERO OR OH....

(from a recent Ann Landers column)  
Dear Ann: The radio announcer says: "Tune to station 103 (one-oh-three) on the FM dial." The sports announcer says the basketball score is 101 (one-oh-one) ;the telephone operator says the number is 555-0011 (five-five-five oh-oh-one-one).  
It's common practice to use the 15th letter of the English alphabet for the number zero, but I wish people would stop mingling the alphabet and numbers together. It's ridiculous. Be our spokesperson, Ann. Tell English speaking people to stop using the 15th letter of the alphabet when they really should use the number zero.  
K.G.S., Port Richey, Fla

....In Madison, the sage from the hills might say:

My-oh-my...

Z-one-zero-four....

One-zero-one-point-five-FM....

"Maybe we should all just use call-sign...."

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SUSTAINING MEMBER NEWS....

Our newest Sustaining Member, Maney Logic, has uploaded onto the SBE Chapter 24 portion of Dave Willow's Computer Bulletin Board, a demonstration of his product. The file is entitled Newstimr.arc and is located in the SBE file area of the board. You will need to un-arc the file to run it. To get to the SBE file area, from the main menu prompt type c;B;f and you will see the file listings. Then just go through the download procedure for your particular version of telecommunication software.

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MORE SUSTAINING MEMBER NEWS....

Broadcast Communications (Jim/John Crooks) have expanded their service area to include beacon rebuilding. This new service comes about after years of having to rebuild them on the tower. Only tower climbers are aware of the difficulties doing that. For the sake of quality service, the rebuilding will now be done in the controlled environment of their shop and then exchanged in the field. The program proves so successful that it has been expanded to include other tower crews as well as station owners and engineers. The services include:  
1) Rebuilt beacons for sale  
2) Exchange of old beacons for rebuilt  
3) Purchase of old beacons from stations  
4) Installation of rebuilt on towers  
5) Sale of glass and parts to stations  
Contact Jim or John for more information.

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CHAPTER 24 SUSTAINING MEMBERS

- MTW TV 15
- LOGIC
- Broadcast Communications
- W100 AM / Z104 FM
- Broadcast Television Systems
- Pro Video
- Floor Systems Midwest, Inc.
- Emmons Associates, Inc.
- Allied Broadcast Equipment
- WMSN TV 47
- WISC TV 3
- RAM Broadcast Systems Inc.
- WKOW TV 27
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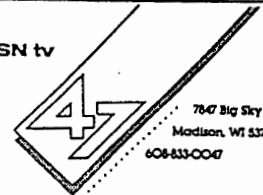
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