

Edited by: Leonard Charles

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

MEETING ANNOUNCEMENT

DATE: Wed - May 3, 1989

ALEXANDERS of Madison
5614 Schroeder Road
Across from Vitense mini golf

Dinner: 5:45pm
Meeting: 7:00pm

The program this month will consist of Chapter 24 elections followed by the NAB review. Ballots will be passed out with the names of candidates for each office selected by the nominating committee. Floor nominations will be accepted prior to the elections. After the ballots are collected, the NAB review will begin. Various Chapter 24 members attending this years Las Vegas Convention will give reports on what's new and happening in the world of Broadcast Engineering.

CHAPTER 24 AUDIO CLINIC....

The next in a series of broadcast clinics for Chapter 24 is about to take place. The audio clinic is scheduled soon (see flyer attached to this newsletter). You must RSVP so that the organizers can get an accurate food and seating count. Simply use the registration blank provided as part of the flyer or call Andy Murphy at 833-0047 or Kevin Ruppert at 271-4321.

THE LEGALS....by Doug McDonell

Skywave Communications Corporation of Madison has tendered for filing an application to modify their CP of Low Power Channel 54 transmitting at 86 Meters on a city owned tower at 125 Larkin Street, Madison. The modification requested is to change their ERP from 1.68KW to 6.72KW.

Sauk Broadcasting Corp., Reedsburg, WI has applied for a CP to make changes on WMFM 104.9 MHZ licensed to Reedsburg, WI. To be changed is the ERP to 1.6KW H&V, HAAT to 137 Meters, and the Transmitter location to Cty Hwy F, .1KM South of old Town Hall Road, Town of Winfield, County of Sauk.

A Petition of Reconsideration of Mass Media Docket 87-121 (FM short spacing antennae) has been submitted to the FCC by the firm of duTreil, Lundin, and Rackley. The firm feels the Commission didn't go far enough in limiting to five miles the short space move with a directional antenna. The NAB has also filed a petition to reconsider contending that the move will lead to AM-ization of the FM band.

FCC NEWS....

The FCC has authorized a new class of FM station, C3. The power level is 25KW Maximum, with an antenna height of up to 100 Meters AAT. The new class is restricted to zone II which excludes the Northeast, portions of the Midwest, and Southern California. The Commission also deferred action on a proposal to double Class A power from 3 to 6KW.

The FCC will require AM stations to adhere to the NRSC-2 standard beginning in June of 1990. NRSC-2 is the limited bandwidth emission standard but in the interim, it will be presumed that stations having adopted the NRSC-1 audio processing standard are in compliance of NRSC-2 until June of

1994. After that, stations must meet the NRSC-2 standard.

FCC TO GET A NEW CHAIR....

Dennis Patrick, first named to the FCC by then President Reagan in 1983 and later in 1987 promoted to chairman, has submitted his resignation effective on appointment of a replacement. It was under Patrick's leadership that the Commission took on a "marketplace decision" method of administration. That method has not been to the total liking of many broadcasters and Congressmen however Patrick denied any pressure from the Bush administration causing his decision to resign. Massive deregulation of the industry also took place during Patrick's reign. The way the FCC regulates in the future is a question on many broadcaster's minds as speculation mounts on the next Chairman.

MUST CARRY....

The NAB and the NCTA (National Cable Television Association) is tied up in a battle over some kind of reinstated "must carry" rules. Broadcasters are insisting that any type of must-carry bill contain language protecting them from having their signals shifted from one location to another. There is currently offered, a Senate bill that would give broadcasters the final say concerning the placement of their channel on the cable lineup. NCTA President opposes saying "if they will stop insisting that ch 33 has a god given right to on ch 5 they can have their must-carry deal tomorrow morning".

HDTV TESTS....

History was made on two fronts in April, one on Satellite, the other on cable. On the west coast, Intelsat, Comsat, AT&T, and a Japanese Common Carrier (KDD) teamed up to create what is billed as the first international digital HDTV transmission. The signal originated in Malibu, where AT&T converted the fiber optic signals to Microwave signals in the regular international telephone service. The signal was then sent over a 72 MHz transponder on the Intelsat V Satellite to KDD's earth station in Tokyo. The format was 1125/60 origination and compressed from 600 megabits to 140 to fit on standard transponder bandwidth.

On the other coast, HBO, the National Cable Television Association, and the Japan Broadcasting Corporation (NHK) sent HDTV pictures by Satellite using Japans MUSE-E system to two cable headends in the Washington DC area. One system was a 120 channel FM system owned by Media General Cable and the other was a 41 channel Jones Intercable system. Viewing of the delivered product took place at a site 28 miles away from the head end after passing through 28 amplifiers. The result was "a very acceptable, very high quality high definition television signal". In a similar demonstration a year ago in Los Angeles, ghosting was visible, but in this demonstration ghosting was eliminated through refinement of the MUSE-E system modulation component since then.

HDTV STANDARD, A STEP BACK..

The ATSC (Advanced Television Systems Committee), which had approved a HDTV standard of 1125/60 and supported its acceptance as a world wide production standard by the CCIR has changed its mind. They are now calling for delay in the world wide standard selection until the end of the next CCIR study period in 1994. This position change is supported by all three commercial TV networks, PBS and consumer and broadcast equipment manufacturers including Japanese-owned Sony Corp and European owned Philips. The ATSC endorsement of the 1125/60 standard had been opposed from the start by the CBS TV network.

DEALING WITH INSECTS....

in high power broadcast transmitters
by Kevin "Kevin" Ruppert

Insects can present pesty problems for broadcasters whose livelihood depends on staying on the air all the time, twenty four hours a day, three hundred and sixty five and one quarter days per year, and the station manager asks you to air an announcement if you are off for any reason!! Even the tiniest insect can cause an overload in transmitters and bug maintenance people trying to track down the causes of the failure.

At WISC, box elder bugs (bebs) have taken over the transmitter building in the fall and spring. The Harris BT-18L2 is supposedly "vermin proof," but these little guys have no trouble getting through the vent screens or between the doors and cabinet openings.

Visual inspection of the transmitter after a failure showed an open plate supply breaker and bebs around the high voltage shorting switch. As you might guess, the bebs were deceased. In the Harris, there are three separate plate supplies in the driver cabinet. (This "box" is old enough to have parts inside that say "Gates.") All three are shorted through bleeder resistors when one of the access doors is open. The problem is with the poor fitting of the doors on the transmitter. Careful inspection of this switch showed that there was very little space between the high voltage contacts and the shorting contact. I'm really surprised that I have never heard it arc over on humid days.

The bebs were crawling across the switch and shorting the high voltage. We have several bebs which have been toasted by the voltage. Normally, bebs have a crimson color on their underside. After toasting, they take on a much browner color. Arc marks have been observed on some undersides.

Accurate measurement of the distance between the shorting switch contacts was difficult to obtain. We had tried looking through the top of the cabinet at the switch. Subassemblies inside of the cabinet made this impossible. Leonard "Chuck" Charles finally came up with a test which produced helpful information. A small cardboard disk with a hole punched in the middle was placed on the stick which moves the

shorting switch. It was pushed onto the stick as far as it would go. The door was then closed, and opened again. (With plates off!) The cardboard disk had been pushed forward along the stick about a quarter of an inch. Thus, we could tell that the stick, and the switch contacts, were also moving a mere quarter inch. This problem was an easy one to correct. A small block of wood was glued to the inside of the door where the door pushes the stick. The block was about an inch thick. A hot glue gun was used to glue the block to the door. (If you don't have one of these hot glue guns in your shop, you should get one. This is truly a "high tech" way of sticking things down. They also are excellent for building railroad models.) So now we had over an inch of throw on the switch.

Although we had found a high tech way of increasing the gap on the shorting switch, we were still worried that bebs might get bold and walk across it. (The insects had not been told about the mod.) We felt that any type of conductive material placed across the gap would certainly cause a problem.

Attempts were made to find the resistance of the average beb. Several specimens were gathered from the transmitter building floor. The difficulty came in finding bugs that were still alive. A healthy dose of Malathion had greatly decreased their numbers. Pinning a live one down while applying the meter probes proved impossible. I finally managed to find a beb which had recently been alive. It had found its way into the CE's office by catching a ride in my hair. I took it to the engineering shop after swatting it with our copy of the RCA/GE service support catalog. (This was the first time I found a useful application for this catalog.)

A Fluke 8050A multimeter was used for the measurements. While holding the beb in a spray can lid, I applied the probes to its underside. Infinite resistance was noted. Even after punching up the highest resistance scale, (20M Ohm) infinity was the only reading which could be obtained from the crunchy underside of these pests. By this time, all I had left was a spray can lid full of crunchy insect parts.

The only conclusion that we were able to come up with is the following. It

seems obvious that the bodies of the pests were conducting the high voltage across the shorting switch and causing an overload. Using conventional resistance measuring instruments could not produce an accurate reading of an insect.

Perhaps consultation with an entomologist or Orkin representative could produce some useful data. Being a local TV station, we were not able to carry on the study any further, due to a lack of time and equipment. Personally, I would like a large equipment manufacturer to carry on with this study. Perhaps Harris or another transmitter company could take it from here. Or possibly a large research university such as the UW would be interested in getting a grant for this study now that Bill Proxmire is retired.

CLASSIFIED....

Arnold E. Armes is seeking technical employment in Broadcast Engineering. Arnold boasts of an impressive background mainly in Microwave and Satellite systems since 1965. His employment background ranges from KHBV Television in Henderson, Nevada to COMSAT in California to government contract work. Contact him at 608-255-5994.

HACKER GETS WHACKED....
(from Chapter 56)

The naughty newsman who was caught hacking his way in to a competitor's computer was given his walking papers. Michael Shapiro, the assistant News Director for WTSP in Tampa-St. Petersburg, was arrested in February for breaking in to rival WTVT's computer system via modem. WTSP fired not only Shapiro, but also the station's news director, Terry Cole. Shapiro still faces 14 felony counts for computer break in. Cole was not charged with any crime, but lost his job since the scandal occurred in his department.

Editor's note: Each month I enjoy reading the humorous section of the Chapter 56 newsletter. The following is a reprint of some of those articles from the Chapter 56 April newsletter.

WORST TECHNICAL TIP: It is possible to tell if a 9 volt battery is charged by sticking your tongue across the terminals. The same technique should not be used to test a 12 volt car battery.

HELICOPTER LESSONS (Author unknown)

My original suspicion, that helicopters just beat the air into submission was, as I've since determined, completely erroneous. In layman's terms, what a helicopter does is generate a negative gravitational field through a carefully balanced coupling of multiple bipolar, gyroscopic forces, creating a unit of energy termed "Anti-Gravities," which are capable of pushing the earth away from the machine.

It's extremely delicate, though. The slightest malfunction of any of the parts quickly disturbs the anti-gravitational field and results in the two bodies colliding with synergistic effects.

To confirm this yourself, try dropping a model helicopter (or full scale one, for that matter) from a height of about six feet. A bent skid or two is the likely result. Now, try hovering a model at that altitude while abruptly stopping the engine. The model plummets with parts flying everywhere! I know! I've done it myself!

Those folks flying with so-called "autorotation" are really just collecting extra "Anti Gravities" (hence the term, "Negative Collective") to be used in such emergencies. Through careful regulation, these people are capable of releasing the stored Anti Gravities in such a manner as to allow a gradual reduction in the anti-gravitational field, resulting in a somewhat controlled touchdown.

If they are not careful, though, these folks may run out of Anti-Gravities too early, eliminating the Anti-Gravitational field, thus resulting in a landing with catastrophic results.

PARANOID SCHIZOPHRENICS OUTNUMBER THEIR ENEMIES AT LEAST TWO TO ONE.

"MY KIND OF ENGINEER"
From Dallas Chap #67

This ad appeared some years ago in Broadcasting Magazine. Evidently it was placed by someone with an outlook on life.

OLD MAN. Supurb Engineer looking for small station Maintenance. Used to having his own way. Not interested in working very hard. Now into computers. Loves music and automation. Hates Disc Jockeys. Box XXXX.

CHAPTER 24 SUSTAINING MEMBERS

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SBE CHAPTER 24, MADISON WISCONSIN

AUDIO CLINIC

Saturday May 20, 1989
WISC Studio
7025 Raymond Road
Madison, Wisconsin
10:30am - 2:00pm

SESSION I: CART MACHINES... EVERYTHING YOU WANTED TO KNOW

Mark Hill, technical manager for 3M - ITC will discuss the care and feeding of audio cart decks. Routine maintenance as well as the design criteria for these machines will be discussed. Questions will also be taken about this medium which most of us have had to deal with.

SESSION II: ROOM ACOUSTICS FOR BROADCAST

Chapter 24 member Erv Vanags will start out with basic acoustic theory that will serve as a basis to build a system to evaluate and design acoustic treatments for broadcast applications. He will investigate room acoustic theory and how it applies to evaluation of present room acoustics. Then he will apply these theories and perform a rigorous evaluation on a sample problem. Some specific terms that will be discussed will be room modes, T60, the Sabin and sound absorption, Sound Transmission Loss, and sound diffusion.

SESSION III: STEREO MIKE TECHNIQUES

Chapter 24 member Tom Weeden will give a brief overview and then demonstrations on various stereo microphone systems with emphasis on the mono-compatible "M-S" Technique.

SESSION IV: AUDIO PROOF ROUND TABLE

Chapter 24 members Doug McDonnell, Herb Jordan, and Jim Hermanson will lead a round table discussion on the dos and don'ts of an audio proof. Demonstrations of the various types of gear used for proofs will be done. Questions and comments from the audience will also be taken.

- The order of the sessions may vary
- Lunch will be catered and paid for by Chapter 24.
- Pre-registration is asked by using the registration blank below or by calling Andy Murphy at 833-0047 or Kevin Ruppert at 271-4321. There is no fee involved.

Clip and send to: Kevin Ruppert
WISC TV - 3
7025 Raymond Road
Madison, WI 53719

SBE CHAPTER 24 AUDIO CLINIC
Saturday May 20, 1989
Registration Blank

I plan on attending the Audio Clinic:

NAME: _____

COMPANY: _____

SBE MEMBER: Yes _____ No _____ Chapter # _____

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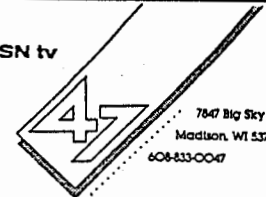
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