

EXPERIMENTAL BROADCASTER'S NEWSLETTER

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Hot News

HOT CARRIER ANTENNA SYSTEMS FOR AM AND FM ?

A recent issue of the "DOWN-THE-TUBES" (referring to "Waveguide"), a trade publication devoted to microwave communications, had a very interesting article. It had to do with a new antenna design using super heated Mu metal. Mu metal is an alloy most often used in shielding of magnetic devices such as transformers. It is highly efficient in keeping magnetic fields contained. Mu metal has been used for years for this purpose.

Recent discoveries however have shown that when the Mu metal is heated past the Curie temperature it develops a new characteristic. The Curie temperature was named after Madam Curie (yes the one associated with Radium, etc.), who also experimented with magnetism. It seems that when a current is passed through the MU metal it develops a magnetic field up to 10 times greater than any other material. You see, current flowing through a conductor creates a magnetic field around that conductor. This is why antennas work - Radio frequency currents flowing in the antenna creates waves of magnetic fields which radiate outward from that antenna. This new discovery could lead to antennas which would have an effective power gain of 10 - FOR A SINGLE ELEMENT ANTENNA!

Radio wave radiation from such an antenna would be by "Hot Carrier Electrical Charge Transmission" (HCETC). This is because the current flow through the material is greatly enhanced by heating of the material.

This can be taken a step further. Two such antennas can be placed side-by-side. The first antenna would induce a current in the second. This would be at 10 times the input power. The second antenna would increase this by 10 times and feed it back to the first antenna ($10 \times 10 = 100$ times power). If the antennas are heated past the Curie temperature and then power is applied, the system can be made self-heating. The current flowing in each antenna would heat the Mu metal increasing its radiated output. More output, more heating. Power would increase $10 \times 10 \times 10 \times 10$ etc. The antennas therefore would have to be spaced some critical distance apart to avoid melt-down.

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So far the experiments have only been partially successful - they keep burning up the test apparatus. Someday, perhaps very soon, we'll be hearing more about this remarkable discovery. What a difference this will make to the standard (AM) broadcast and FM bands. In fact you may wish to experiment along these lines and be the first to develop an AM or FM HCETC antenna! You must begin by making each of the antennas $1/4$ wavelength long for the desired frequency. They must be made from the finest grade of Mu metal. Place them some distance apart (this may have to be by trial and error). Next heat one of them to 10,000 degrees Fahrenheit and feed it some RF power. Let us know the results - next April!

Dear EBN,

It seems it never rains but it pours as far as the "pirate" scene around here is concerned. The one at 90.3 in Arabic is a regular fixture every Sunday from about noon until 11 at night. The guys I told you about in my last letter continue to be active, but have cooled their activities somewhat, and are now only on weekends. But last night really was something. I thought I was hearing the same guys playing their tapes and stuff at odd speeds. But I noticed that after every selection the carrier would go off, and come on again after a few seconds, and another selection would play. Then the signal would disappear again, and come up again with another song etc.

After about an hour of this, I started hearing talking, and heard the familiar voices of the original station, which now calls itself KPSC (was KMES). But then I heard another voice with some very creative and funny fake commercials. After listening awhile it became obvious that I was hearing TWO separate stations taking turns on the same frequency!! The two had so nearly identical signal strengths here that it was difficult to tell until I heard some chatter. The new station (at least this is the first time I heard it so it was new to me) called itself HCHZ, and the operator identified himself as Jack Cheese! He seemed to be much more professional than the other station, and played many funny commercials, and ended with a professional sounding sign-off.

The two were chatting about visiting each other, and antenna problems and program sources. The KCHZ operator mentioned that he was going to Texas to attend an up-coming convention of the NAB (perhaps National Association of Broadcasters?).

This is the first time I've heard the commercial FM band being used like a CB or Ham band! This channel (104.7) bears close watching for anyone interested in hearing some real unusual stuff from "pirate" broadcasters.

Roger.

"Press Release" style copy submitted to the LPBN

Watch Out Dr. Ruth - Here Comes Dr. Eric Jason!

WROK in Oil City, PA now known only as Rock Radio 15 to its listeners on their new frequency of 1570 Khz and heavy A.O.R format, has come up with their own answer to Dr. Ruth. One of the station's air personalities doubles as the station's sex therapist! "It turned out to be a great idea," says Mike "G", chief operator and founder of the station. "He makes numerous appearances on the air throughout the course of the day commenting on anything from song titles, news, sports, and weather, to aids, saving the gerbils, and Liberace!" says "G". He adds that the staff doctor chooses to use slang words rather than medical terms when referring to the human body which quickly turns every conversation into a hilariously heated live comedy sketch. "It's like having George Carlin or Richard Pryor right in our studio!" Mike commented. Doctor Eric Jason, as he's known to everyone, is also the top guest of infrequent call-in advice programs in which the station's on-air staff serves as the callers needing help. Sometimes volunteers and other friends, all having no problem coming up with funny questions, weird names for things, and strange voices. help out. "I think anyone listening knows its a hoax but will probably keep listening because its so funny" Mike said. The doctor soon sat in and helped Mike interview a local rock band and had no problems fitting in because Dr. Jason has long hair, an earring, a foul mouth, likes heavy-metal, drinks, and smokes! Mike said cassette airchecks of the shows are available on request by contacting him at (814) 676-3077.

"Press Release" copy submitted to EBN

KROX ... Rox West Texas. That's what can be heard if you live in Odessa, KROX is an "experimental" radio station on 106.7 MHz. The station is a weekend broadcaster who's format consists of AOR. Our technical status is as follows:

Transmitter is a homebrew job with an ERP of 22 watts into an omnidirectional quarter wave vertical and a 10 element directional, and we broadcast in stereo.

We kicked off the grand sign-on the weekend of March 7, however the station has been on the air for about a month. KROX had recently received some TV publicity when channel 7 lead off their weekend newscast with the report of an "illegal broadcaster" in the area. We've got a 5 man staff with one female. We will soon be playing top run movies in their entirely on TV channel 4 so stay tuned!

Ted S.

Editorial Comment:

This may not make your EBN Editor too popular with some readers, but here goes anyway - it has to be said!

We try to be fair and present letters and comments as they are submitted - usually without negative comment. After all this newsletter is supposed to be a vehicle for communications and suggestions between experimental broadcasters. We should point out that "experimental broadcasters" includes cable FM stations, carrier-current stations, 100 mW AM "home stations", and even "wired" public-address type stations. We also receive input from licensed station engineers and announcers and from "pirate", "free radio", and "alternative radio" operators.

Letters which are of constructive interest to all are, of course, encouraged. Some of the letters we've published in the last few issues have offered viewpoints, practices, and behavior which probably will lead to the downfall of the stations mentioned in those letters.

"PRESS RELEASES" on the other hand generally only serve those that write them - we don't feel we have room for them in the EBN and can't accept future submissions for publication.

Many of the letters we've received are interesting, informative, and tend to regard radio as a responsible medium. The "...." stations tend to justify their unlicensed (and often illegal) operation as being necessary. The reasons range from "the air waves belong to everyone" to "the stations around here don't play what the people want to hear".

We don't offer any judgement on whether these "...." stations are right or wrong in their thinking. Some may reason that this country was founded on dissent and revolution - on the other hand laws and regulations are necessary to protect the majority. The bending or breaking of laws or regulations is a matter for governmental agencies to handle - either in changing the laws or regulations, or in enforcement of them, or both. We WOULD like however to offer comment on the "behavior" of some of the "...." stations.

Radio SHOULD BE a RESPONSIBLE medium. True, give the people what they want to hear...but, is what some "..." stations offer REALLY what the "people" want to hear, or something the "...." station operator THINKS they want to hear? What may be "funny" to the operator may "tune-out" listeners. The operators may very well wind up doing their "thing" just for themselves.

Your editor has been around radio for a long time. Experiences include commercial stations, high school and college stations, and listening to several "...." stations over the years. Many DJ's tend to be on "ego trips", and that's fine as long as it's kept under control - it's part of what makes-up their personality. The audience accepts them, may even love them, so long as the music is to their liking. Too much goofing around, idle chatter, inside jokes, horse play, "profanity" (what may not be profanity for one may be for someone else) etc., invariably is the downfall of any station, "...." type or not. Working within a RESPONSIBLE MEDIUM leaves no room for childish games, shocking Grandma out of her shoes with choice words, channel "wars", and the like. The AUDIENCE is the thing, not the individual DJ or operator.

The downfall of a "...." station may not only take the form of lost listeners, but also in greater visibility to enforcement agencies. A "professional" sounding "...." station tends to blend with the other stations on the air. Weird, foul language, and way-off-beat programming will most certainly attract the attention of the enforcement branch of the FCC. Not because the operator's "free speech or expression" is being denied, but because someone became offended and reported the UNLICENSED "...." station to the FCC.

By the way, we invite "letters to the editor". If you agree, or disagree with the above let us know. We reserve the right to edit but will attempt NOT to change the theme of such letters. O.K., enough with the lecturing. How about some informative and constructive letters like the following:

Dear EBN,

Here are the addresses of a couple of very good program sources. The first offers "Healthtime News", a 2 minute program about health related subjects. They send a cassette or reel tape free every 2 weeks and include a schedule of up-coming topics.

Scientific Medical Programs, Inc.

The Citadel LLB
450 Seventh St
Hoboken, NJ 07030

The second has "Trivia Quiz", a 60 second on trivia topics plus 60 seconds of commercials. Its hosted by Z-100 WZGO DJ and is on record. You must agree to play 10 or more out of the 14 quizzes each week. They send you 14 free prizes each week to give to the winners. These include albums and some top-selling books. To participate you have to sign a contract for a 13 week period. This is HEAVY DUTY STUFF ! They will send demo tape info.

MJI Broadcasting
666 fifth ave - 34th floor
New York, NY 10103

Mike P.

Dear EBN,

AFRTS stands for the Armed Forces Radio & Television Service. It's the U.S. owned and operated radio & TV facilities in 44 countries around the world. For the most part, military members actually run the stations at military bases where English programming isn't in plentiful supply.

This is more of an opinionated operational look at what happens after programming leaves the States. A recent article in Broadcast Electronics (Dec '86) paints a little different picture of the system. This point of view is from a former commercial broadcaster (Cleveland/Akron) and low person in the military broadcasting system.

I work for the AFRTS at Torrejon Air Base in Spain. It's considered the network for military radio in this country. The station operates out of a portion of a military temporary housing facility, something like a hotel. I host a midnight two hour nationwide classic rock show.

The television side of the house is cable. This is pretty typical throughout the military, even though host country citizens really couldn't watch out programming since we'd be transmitting with our own NTSC system.

TV equipment for the most part is fairly broadcast quality. Video tapes are edited through Sony BVU 800's. Programs are played back on the Sony VU series, but scheduled to switched to 800's. Switching is done thru a Grass Valley 1600. Sony and Videotech equipment bank the racks, with Jerrold and Catel modulating.

TV programming comes out of BC (Broadcast Center) outside of Los Angeles. Timely events like news, American Top 10 and Entertainment This Week come off the Satellite. BC sends programs down from all the major commercial networks including PBS. The less timely entertainment and series are sent in weekly shipments of 3/4" U-matic from BC.

The radio side of the house is actually comprised of two stations. A new BE automated cable FM station, and an over-the-air FM (100.2) which also serves as the network for the other stations in Spain from 6pm through 6am. Unfortunately the equipment on the radio side is short changed. Equipment tends to be given a life expectancy beyond a reasonable time. Equipment with less of a "brand name" outbid more reputable companies, so the equipment is less dependable.

Radio programming, as far as entertainment, all from disc. News is sent over phone lines and satellite to phone lines. Sporting events are also live over the voice lines.

All sorts of entertainment radio programs are supplied on a must carry basis (TV is the same). Must-carry radio programming takes up about 14 hours a day. Programs include Rick Dees, Charles Tuna, Radio Theater, Gene Price, All That Jazz and a host of others.

BC sends approved music for local programming. All music is on the AFRTS label, with some albums containing about seven cuts of two separate albums per disc. No idea who picks the cuts (rumors have it that three old retired widows say "Oh, that's a pretty one; and that's what makes it). All formats of music are sent, with the current emphasis on Pop, Rock, Black and Jazz, with a separate disc system for country music. The stations music library pretty much covers the pop songs and albums that were top 100 picks from 1960. Country artists start at 65'.

What you've just read are observations from the viewpoint of a person who's been in the system for just over a year. The following lean more towards opinions. If you're looking for training and experience in radio and television, then the AFRTS is one good way to go about getting it. If your experience is limited to say high school broadcasting, the AFRTS can be of benefit.

If you have commercial experience in the commercial world, then getting use to the military broadcasting ways can be a little difficult. Often people that have cross trained from (eg) being a cook into broadcasting are put in charge. Your rank follows you from one job to another, but of course experience can't be taught in a school. This is a major disadvantage to military broadcasting. If you have had past experience it doesn't count if you don't wear the stripes.

As stated earlier, equipment tends to be given a paper life beyond mortality, while engineers are trained in the field. Great experience for the engineer, but for the operator sometimes bad news.

Sometimes programming decisions would baffle the insane. Someone had the notion that if you play black, rock, rap, country, metal and adult contemporary all back to back, then everyone will listen because there's something for everyone. This is how our radio side is losing listeners to the Spanish stations playing just one format. And, oh yes, Spanish station play 75% English language cuts.

Then there was the time the TV side scheduled the premier of "Moonlighting" Sunday afternoon at 3, and "The Hank Williams Story" at 10pm.

Now not all the system is fouled up. We've got a couple of people in charge that are really talented and know the business.

Our satellite technology is on the upswing. TV will be scrambled with audio being digitized with six channels for alternate radio programming for cable, and possible TV stereo audio.

BC has moved into Sun Valley outside of LA, and is upgrading for a better product. Unfortunately the pride and equipment put into the building of the new BC ends at ocean shore. But finally a strong headend, and "things" do tend to flow downstream.

To summarize the situation; AFRTS is another government subsidized service which tends to feel crunch of governmental cuts. The men and women who work for the service range from pros in the field, to pencil pushers that know that you listen to the radio and watch the TV. AFRTS can probably best be compared to a small town radio and TV combo run by a family.

When I write this I don't speak for the government, and my sources are limited to my experience after a year on the job. Of course AFRTS provides a "touch of home" to its audience which in itself is a valuable service for morale.

Dan.

WANTED, FOR SALE, BARTER, BULLETIN BOARD

WANTED: AM antenna & G-C coupler, cart R/P unit, 4-ch mixer with cue, FM mono transmitter. Have 5 watt AM G-C transmitter for sale or trade. (904) 623-2911 (no collect calls please) Mike

4 SALE: FMS Stereo transmitter, good condition \$80.00 will bargain. Call "Jeff" (201) 933-2661

4 SALE: Tapecaster RP6000, 5 W AM, make offer. Paul (402) 551-2124

4 SALE: 1936 Henway, best offer, inquire to Ernie (916) 534-0417

We had a "Sound Advice" column from the LPBN, several letters and pictures, and a request for an antenna "mini-lesson" this month. Sorry, just plain ran out of room, but we'll try to get them in next issue.