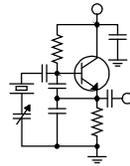


The Local Oscillator



The Newsletter of Crawford Broadcasting Company Corporate Engineering

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Translators!

The big news on the translator front this month is that the FCC has granted the WRDT(AM) 107.1 MHz translator application in Detroit (W296DY). This application had been held up at the Media Bureau awaiting Canadian coordination. Evidently, the Canadians responded with no objection, because in late February we got a grant.

This translator will operate with 60 watts ERP with a dual lobe pattern NNW and SSE, with broad nulls to the WSW to protect an Ann Arbor station and ENE to protect a K-Love translator. Hopefully we will not cause any interference issues to our neighbors. We will certainly be responsive if issues are reported.

The equipment is on order and I hope to have the station on the air in April sometime. This will be a great addition for WRDT.

Over on the other side of Lake Erie, it appears at this point that we are in the clear with the WDCZ - Buffalo translator application; no mutually exclusive applications have shown up in the FCC's database. The FCC has not yet released the list of MX groups and singletons, so we can't be 100% certain until then, but I'm fairly confident that we're good in Buffalo.

It's a different story in Rochester, where the WDCX(AM) translator application is MX with a translator application in Brockport, NY. The Brockport applicant is a good friend, and I'm certain we will be able to work out an arrangement that will resolve the MX status of both applications and make them grantable. It's really too bad that the FCC prohibits "collusion" in two-application MX groups, because if they did not, we would already have this

situation worked out and done with. If there were going to be more translator windows coming, I might suggest to the FCC that they change this policy – with just two applicants in an MX group, who would they collude against?

As I noted last month, in this AM translator window it will take quite a while to sort everything out. Based on our experience with the last window (Auction 99), it could well go on six months or more from application to grant of a CP. Assuming we do get grants, this will mean that every AM station in the company has a companion FM signal. I find that pretty amazing!

In Chicago, we're on the other side of a translator battle. Moody has filed for a translator in the Addison area on our 106.1 frequency right in our coverage area! I really can't believe they did that, knowing that we serve that area which is outside our protected contour but well within the listenable area. Chicago is Moody's hometown. They must have known that there is a local signal on that frequency.

We have alerted Moody's counsel as well as the organization itself of this conflict and advised them that we will take whatever steps are available to us under law to protect our signal. We've fought and won one translator battle on this frequency in Chicago, and we'll fight and win another one if we must.

My hope is that Moody will recognize that not only will they both cause and receive a tremendous amount of interference, making their translator worth very little in terms of service/coverage, but it will also be very costly to keep it on the air.

The New York Minutes

By

**Brian Cunningham, CBRE
Chief Engineer, CBC – Western New York**

Hello to all from Western New York!

We have all used outside contractors from time to time, such as tower climbers, HVAC repairmen, generator service techs, electricians, etc. In most cases, in all probability, you have used the same people for years, and know what level of service they provide and are comfortable with the work they do. But what about those you hire to do a job, and you know little to nothing about them?

From time to time, we are required to get several bids on goods/services from outside vendors, and many times, quotes are received from companies you know nothing about. How do you go about checking the integrity and reliability of the vendor?

The first thing I check is the Better Business Bureau to see if there are any complaints reported against the vendor, and then I search out any past customers I can find to see what type of service they received and if they were satisfied with the work performed. Secondly, I look at the amount of time the vendor has been in business and check to insure that they are a legitimate, licensed business with ample insurance to cover property damage/loss and coverage for employees performing the work. Once these requirements have been met, the vendor's bid is accepted for consideration.

Late last fall, we began experiencing some issues with our electrical service at the WDCX-FM transmitter site. The main disconnect was heating up due to excessive current draw, especially while the A/C units were running full bore. Each time the A/C kicked on, the in-rush current would for a short time far exceed the current capabilities of the cartridge fuses, and eventually the fuses would be fatigued to the point of failure. The heat measured with an infrared digital thermometer at the disconnect and meter socket would exceed 200 degrees at times, and as the fuse clips got hotter, they would expand and

cause arcing between the fuse blades and the mounting clips, therefore increasing the heat even further.



I had my electrician look at the 200-amp load service to see what could be done to prevent this problem in the future. He recommended increasing the load disconnect to one rated for 300 amps and replacing the meter socket, which had been in place for over 30 years. At that time, I collected five bids from local contractors to get the best possible price for the service replacement. After

reviewing all the bids, I picked the one I thought was the best deal for us, signed and accepted the bid.

After sending the required down-payment, we waited for the work to be scheduled. And wait we did, days turned into weeks, and weeks into months, with many scheduled work dates canceled for one reason or another. Eventually, the vendor would not return our e-mails or answer phone calls inquiring as to when we would get this work done. I was finally able to reach the business owner, and he gave me every excuse imaginable as to why this had dragged out for months. He apologized profusely and set a date of February 23 to begin installation. Well, you guessed it, two cancellations later, they finally showed up to do the work on February 27.

The electricians that came were temporary employees, laid off from other electrical contractors due to little work over the winter months. I came to find out that the company we hired evidently is having financial problems and in all probability did not have the money to purchase the materials to do the job. The workmen spoke of bounced paychecks and suppliers suspending credit to the business owner for non-payment for supplies. Had we known all this, his company would not have been considered for hire. This was definitely a learning experience, and one I personally hope never happens again!



The new 300-amp service and meter base at WDCX-FM

In other news, we recently installed our new Omnia.9 audio processor at the WDCZ(AM) transmitter site. The unit was originally shipped to Brian Kerkan in Detroit for him to pre-setup this complicated processor, and once he generically set it up, shipped it on to us for installation. Once I received it, I set it up to where Brian could remote

into the interface via Team Viewer to make final adjustments.

I cannot begin to say how pleased I am with this processor! It literally blows the Orban Optimod out of the water! Due to bandwidth restrictions, the best we could do with the Optimod was 4 kHz bandwidth, anything higher would exceed what the antenna system could handle and cause the transmitter to fold back with VSWR faults. The Omnia.9 is set up for 5 kHz bandwidth, with no VSWR faults on the transmitter at all! Modulation levels are very good, and we are able to make 125% positive peaks and 98% negative, levels that we could not make with the Orban.

The overall audio quality is excellent, and we definitely have level dominance over all the other AMs on the dial. Brian Kerkan again did a stellar job on setting up this processor! His knowledge of the Omnia processors is an asset to CBC, and I would highly recommend that if you have any issues with your Omnia, give Brian a call!

The Motown Update by Brian Kerkan, CBTE, CBNT Chief Engineer, CBC – Detroit

The thaw has begun here in the Motor City. The past month has been full of projects, and a trip to Orlando for Hamcation. It was a nice break from the cold weather, and my assistant, Steve, passed his Technician Amateur Radio test.

We had an issue with a Nautel HD Exporter Plus. The exporter LCD screen displayed "Config Init" and would not boot. I took it out of service and brought it back to the station to do some bench testing.

I tried to restart it, and still came up with the same error. I called Nautel, and they said that it would probably need to be sent in for service. I figured I would open it up and take a look inside, so I removed all of the screws from the top cover and gained access to the chassis.

Essentially, the Exporter Plus is a Linux computer that boots off an Intel Z-U130 1GB SSD drive. There is a single board computer that is connected to the other cards through an edge extender. The computer has a standard 15-pin

monitor connector inside, and several USB ports, so I hooked up a monitor and powered up the exporter.

While watching the boot process, I noticed

that it hung and seemed to have a corrupted config. Looking closely, I was able to see that several capacitors were swollen and needed replacement, so I replaced all of the electrolytic caps on the computer board.

With that done, I called Nautel. I figured it was worth checking into the possibility of getting the image disk and trying to restore the SSD. The computer inside the Exporter Plus has SATA ports, so it was a simple

thing to hook up a SATA DVD drive and make a Linux boot disk.

I booted the Exporter off of the DVD and could see the SSD drive as available. Nelson at Nautel Support was very helpful, and the engineering department provided the RAW disk image. I restored the image to the drive successfully and proceeded to disconnect the monitor, DVD drive, keyboard and





Bulging caps on the computer board

mouse.

I powered it up, and sure enough, it booted normally. The steps I took prevented me from having it out of service and shipping it back to Nautel.

The Exporter Plus was then returned to service and it is now working great. If you have an older Exporter Plus, it might be worth inspecting it to find out if the capacitors are okay. I ended up buying a spare SSD drive on eBay and loaded it with the disk image in case I need it in the future.

We also decided to repair some of the Electrovoice RE-20 microphones that rattled or had foam inside that had badly disintegrated. Parts are available for rebuilding and were ordered from Bosch through Lee Edwards at Proaudio.com.

There is a very tiny Allen screw that needs

loosened to allow the top of the microphone to unscrew. The foam that surrounds the RE-20 motor becomes mush. We dismantled the entire microphone and gave it a good much needed bath.



Fully restored RE-20 -- like new!

Once cleaned, we reassembled it and it was like a brand-new microphone and sounds great.

The parts are under \$15 dollars per microphone. It was definitely a worthwhile project.

We are looking forward to our new fiber connection at the studio being active in mid-March. What a relief to be off of copper and cable.

I have been studying for the FAA Part 107 sUAS FAA test, and I took the test at the end of last month and passed! I am now a certified drone pilot!

I look forward to spring. '73 from Brian, W8FP.

News from the South by Stephen Poole, CBRE, AMD Chief Engineer, CBC-Alabama

Ah, Alabama ... where just a couple of weeks ago, we were well below freezing. Now we're in the 70s, nearing the 80s, and our AC units are beginning to go back to not-work. As I write this, we've had trouble (again) with the big 35-ton unit on the roof of our studios at 120 Summit Parkway. It's working now, after several trips from various technicians, but we're praying. (With fingers crossed.) You don't want to be without AC once it becomes truly Bama Hot – upper 90s with a relative humidity over 80%.

But life is good and we're blessed here.



We've got quite a few little projects that we're working on. The sample loop on tower #5 at WXJC in Tarrant has become shorted, and we've got to get a tower crew to look at that. We're building some headphone stations for the studios to replace the old Broadcast Tools units that we installed in 2006. And now, Bob Newberry with iHeart Media, who maintains a site right next to WDJC-FM's on Red Mountain, notified me just a few minutes ago that he thinks he can see a CAT5 line on that tower blowing in the breeze. We'd

better take a look at that.

The Bad Sample Loop

We tried to get the TDR function to work on our little Array Solutions analyzer (we have the 4170), but thus far, can't get it to do anything. Cris sent the company's reliable old Tek unit, but when I plugged it in, I got nothing. I let it charge overnight; still nothing. I pulled the battery pack, measured no voltage on it, and wondered if it was bad. Finally, I disassembled the pack and found a broken wire (Figure 1). Soldering that back in place, then charging for a couple of hours, let us finally get a look at the sample line.



Figure 1 - Ah. THAT'S why we had no battery.

The result is shown in Figure 2. The loop for tower #5 is on the left. It looks like a dead short at the end of the transmission line – nice and flat, then a sudden drop. To the right is one of the known-good loops. This is what you expect to see: a little “blip” right at the loop, given that the loop has some reactance, and will reflect a bit of the pulse back to the TDR.

We've ordered the parts, the parts are here, and we're going to install them as soon as the weather permits. Plus have the tower crew look at that flapping CAT5 line at Red Mountain. It's always something ...

And in that category, Cris (and our company in general) is pretty aggressive about staying on top of the latest rules and permitted actions. There are a number of different ways in which you can turn off some tower lights now, for example. You can also make it so that the sides and top beacon(s) flash together. We did that to all of our towers except for one at the 850 site. That last one had our Dragonwave studio to transmitter link on it, so we didn't want to disturb things until we had a tower crew on site to physically alter the wiring to the side lights.

This seems simple enough, doesn't it? You just move the hot wire on the side lights to the hot line for the top beacon. Right? Well, it took three trips (to the tower crew's credit, they didn't charge for the rework) to get it right. The first time, they made the sides flash and made the top beacon steady. The second time, they worked for a few hours, declared the top beacon good ... but it was still steady. The third time was the charm: we now have blinky-flashies all over the place, which is what we wanted.



Figure 2 - A sample loop on a TDR.

Tower Man Say, Don't Throw Me No Curves

However, two thoughts come to mind. First of all, the average quality of tower crews continues to decline. Sure, there are some good ones – Microwave Specialists, which we've used here and in California comes to mind – but most of them are questionable now. If you throw anything at them that they're not familiar with, it's going to be a pain in the butt. Why having the sides flash with the beacon should astonish them is a mystery, but it did.

The second thought is that my fellow engineers here obviously aren't as aggressive about taking advantage of the new rules. From time to time, one of them will email or text: “Hey, your side lights are out at Red Mountain!” (Yes, we have a waiver. That's intentional.) Or: “All your lights at Tarrant are flashing!” (Yes. They are. They're supposed to.) But hey; I just thank God that we look after each other here.

Headphone Stations

If I wanted to, I could bore you with a full-on rant about this one. Most available headphone units for studios fall into two categories: (1), they're designed for multiple headphone sets in one box, or (2), if they're single per-talent stations, they're hilariously expensive. I can see why this is so: if

you're a manufacturer, you have a fairly fixed cost for the box, so why not put 4 or 6 headphone amps in it? They're little surface-mounted microchips now, anyway.

The good news is, along with our new Blade M4 mic units, Jay Tyler at Wheatstone gave us a great deal on a bunch of their GP-3 headphone stations. These have a knob and a cough button, and can easily be interfaced to either our older Bridge TDM system or the new Blades. But I didn't want to pay their price for individual mounting boxes ("turrets") for these. Call me stingy.

At any rate: Todd, Jack and I are all handy with shop work, so we're banging together some nice-looking boxes, using smooth poplar wood from Lowe's. Figure 3 shows one of the works in progress. Lord willing, I'll have more pictures next time. We're also scheduled to install a new transmitter at 92.5 (WXJC-FM) next month!

Until next time, keep praying for my wife Sandy, and keep praying for this nation as well. We are blessed!

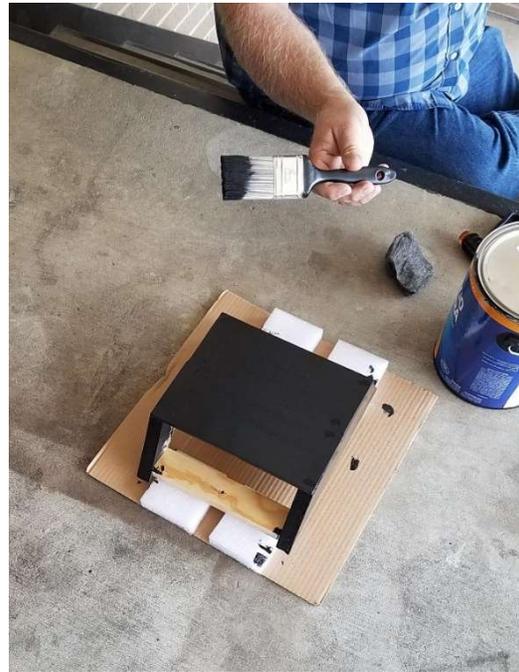


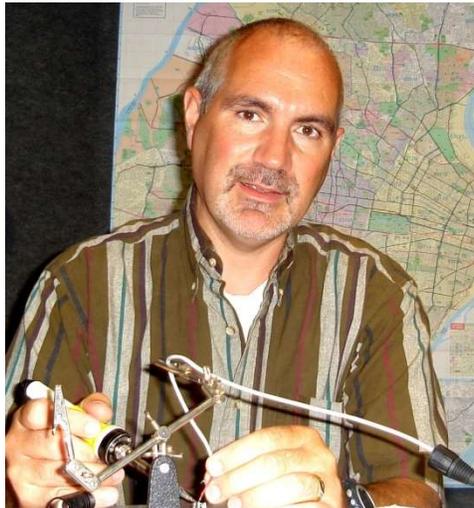
Figure 3 - Work in progress on new headphone stations.

The Chicago Chronicles
by
Rick Sewell, CSRE, CBNT, AMD
Engineering Manager, CBC-Chicago

Sounds great... just a little touchy

It's not every year we get to install a new transmitter. In fact, in a short while I will be entering my fifth year here at the Crawford Broadcasting Chicago cluster, and this will be my first transmitter installation here. So, I was quite excited to get the chance to install the new transmitter for WSRB scheduled for this year.

This past month, we installed a Nautel GV5 transmitter. Every installation is just a little different, and I always figure that if everything goes perfectly smoothly, you probably pay for it later. In this case, it didn't go as smoothly as we would like. But for the



most part, everything fell in line as it should.

Since we were replacing the older backup transmitter that was on the backup antenna with what was the main being on the main antenna, we had to take the station off the air to re-plumb the RF hardline. This meant a midnight trip to the site and, of course, it was scheduled for the weekend we received 15 inches of snow. I ended up following the snow plows, and I had to go through snow up to my waist to get to door of the site.

Once we had the transmitters plumbed into their proper antennas, we tested the new GV5 first into the dummy load. We then eventually put it on the air for a ten-

minute test, but we were waiting to officially put it on the air until the next day.

That night, however, I received a text from the program director that the station sounded bad. I immediately thought the new transmitter must have come on at the same time as the other transmitter was on the air. I checked the remote, and sure enough, this was the case.

I turned it off from the remote. Just few minutes later, it was back on again. I turned it off again and checked the events page of the remote control and it showed the “on” command was not generated from the remote control, so it wasn’t an operator doing something they shouldn’t.

I logged into the web page of the transmitter, and it showed that the “turn on” command was given to the transmitter, but it didn’t differentiate where it was coming from. It could have been from the remote, the buttons on the interface board inside the transmitter, the touchscreen on the front of the transmitter, or from someone logged into the web server. I entertained the idea that we had a hacker, but I thought it unlikely.

My guess was the touchscreen. I remembered that when I came into the site at midnight after the snowstorm, I saw the various menus open by themselves on the touchscreen. At the time, I thought one of my engineers had maybe left the menu open. Now it made sense. I looked at the log of the transmitter, and I could see that we had “turn on” and “turn off” events before that night, but the transmitter couldn’t make RF since we didn’t have the interlock cable connected yet.

I postponed the official commissioning of the transmitter, because if it could turn itself on, it could also turn itself off. Not something we wanted to happen once on air. I got Nautel support involved, and they said they have never seen a touchscreen turn a transmitter on or off like this before. During that day, I had seen the “log off” prompt show up several times, and I also had to recalibrate the screen several times.

Our Director of Engineering, Cris Alexander, suggested we turn on the screen saver. That made sense. Additionally, part of the issue was that we had a mini-split air conditioner on the wall opposite of the front of the transmitter. This was likely a contributing factor. I turned the fans down on this unit and did my best to re-direct the air flow away from a transmitter. Usually, you’re trying to do the opposite.

I had hoped these two steps would help solve the problem. We left the cursor in the middle of the screen, saw the screen saver come on and then

left it for 24 hours like this. If the transmitter didn’t come on, problem managed.

We ended up with no false “turn on” events, so we officially commissioned the new transmitter that next day. I was extremely pleased with what we heard on the air. It was very noticeable.



WSRB PD Jay Alan turning the new transmitter on.

Fast forward to about 3:45 AM the next day and I got a call with the transmitter off the air. I turned it back on, and a minute later, it was back off again. I switched to the backup transmitter and then went to the site a bit later. I found the cursor right on the “Off” button of the touch screen. The air conditioning in combination with this “touchy” touchscreen took it off screen saver, moved the cursor down the screen to the “Off” position, and turned the transmitter off.

I pulled the serial control cable off the touchscreen so it could no longer control the transmitter. I then put it back on air. We went without incident for four days, so we could safely say that it was the touchscreen. Nautel sent us a new touchscreen, which we installed four days prior to the time of this writing. So, it appears, knock on wood, that the new screen is not as “touchy” since we haven’t had an incident yet.

As I stated earlier, we are definitely sounding better on the air. We’re louder, yet still with a very open sound. I was often asked by the staff when we were installing the transmitter if the signal would improve. I had to answer with, “I don’t anticipate it doing that, since we aren’t increasing the power.”

However, the good news is that we have noticed that we are filling in some weak areas. I have received reports from the staff that the signal is better

in a lot of areas. I noticed it myself on one of my drives north of the area, and I saw a solid signal much past where I would hear the station fighting static previously. I am not sure what is making the

difference, but my best guess is that the new transmitter is much better dealing with multipath in those areas.

Valley News
By
Steve Minshall
Chief Engineer, KCBC -- Modesto

The New Year has brought us some new problems at KCBC. One of our NexGen machines in the main studio started to give us grief. Occasionally the computer would lose connection with the Wheatnet system, which required a reboot to re-establish communication. The rate at which it lost connection began to increase. It was obvious that this condition was deteriorating and was soon going to be a real headache if we did not solve the problem.

We came to the realization that the computer was the oldest one in our system and was still running XP. Cris ordered us a new workstation and we began to make the switch. It should have been a fairly simple change to make, but Murphy's Law did prevail!

We pulled the USB dongle from the computer that we were replacing and put it in the new computer. The new computer refused to recognize the dongle and this threw us for a loop for quite a while. Finally, we realized that the dongle was not a NexGen dongle at all but rather a dongle for the Wheatnet driver. I forgot that the Wheatnet system needed a USB dongle to license an XP machine. Opening up the old machine, we found the NexGen dongle neatly installed inside. Once we were done wasting time with that ordeal, we were up and running with our new machine.

Another problem cropped up in the studio. We had a power outage one day, the UPS took over as usual, and the generator started up just fine. The problem was that the UPS did not take over fast enough. These computer power supplies seem to have a fairly small capacitor, and even in the very short time of the UPS changeover, they can glitch.

This doesn't happen very often, but once is enough and it can certainly ruin your day or night when it happens.



The solution was to purchase a full-time UPS, one that is always providing power from the inverter, whether the inverter is running for the battery or from the mains.

That was a great plan until we fired up the new UPS. Since it's a full-time UPS, it needs full-time cooling, and cooling means fans, and fans mean noise.

Studios are supposed to be quiet, but with the UPS fans running, it was going to be far from quiet. The solution was fairly simple – we installed the new UPS in the office outside the studio and ran the power into the studio with a nice heavy cord. We are fortunate that over the years the power requirements of the studio have decreased dramatically, and the new UPS handles the whole studio with ease.

But nothing can be completely simple. We installed the UPS during the evening so that we could interrupt all the essential equipment with little impact our listening audience. The following day, we noticed that we had a hum in the speakers. The hum was not on the air, fortunately. It turned out to be a ground loop issue, and unplugging the unused UPS from the wall sockets killed the hum.

As I mentioned, the power requirements in the studio are considerably less than they used to be, and another thing that's happened over time is of the amount of equipment that we have in the studio has decreased substantially. The next step in our studio maintenance will be to rearrange some of the equipment and remove a tall rack that is no longer needed. This will free up the space and make it look nice.

The Portland Report
by
John White, CBRE
Chief Engineer, CBC–Portland

Well, talk about irony! And a bit of egg on the face as two weeks prior to this writing, the local weather guessers assured us that “winter is over.” Oh, really? Just one week later a Winter Storm Warning was issued with a forecast of 4 to 8 inches of snow. Ongoing throughout the week, Mt. Scott piled up nearly *two feet* of drifted snow.

I believe the old saying that it’s not over ‘til it’s over, does apply here. The latest weather guess is projecting snow for the first weekend in March! Oh, well. Did I say it’s not over ‘til it’s over?

Local area broadcasters have been planning for large-scale emergencies and identifying methods we can use to get public safety information to stations for transmission to the public. In the Portland area, EAS is well equipped with encoders and connections to the Local Relay Network and IP distribution via IPAWS. With several municipalities, the local EAS system is working fairly well.

In other parts of the state, however, not so much. A few counties have the old analog encoders while many counties have no EAS capability at all. Equipping warning points throughout the state is a priority, with planning for funding high on the list of tasks.

In addition to the initial EAS warnings, local area broadcasters are addressing mechanisms which enable dissemination of public safety information after the warning. In a small event, the normal broadcast news internet and wireless tools will likely be available. In that case, no special communication tools will be needed.

With large events, wireless, internet, and landlines are unlikely to be operational or reliable. Portland area broadcasters are addressing the need for communications with emergency managers following

a large-scale event. Several factors come into play.

In most locations, warning points will be staffed by 911 operators and police, fire and medical dispatchers for obvious reasons. EAS installations are operated by police, fire and medical dispatch, which function 24 hours a day. The EAS encoder and any VHF/UHF links to broadcasters will be located convenient to the 911 and dispatch facility.

After the initial warning, emergency managers will begin to assemble the team necessary continue responding to the disaster. In a large scale event one of the first actions will be to establish an Emergency Coordination Center (ECC) or Emergency Operations Center (EOC). The EOC/ECC facility is likely to be established at a different physical location, potentially in a different building.

As a broadcaster, the goal is that each EOC/ECC be equipped with VHF/UHF RPU equipment to provide voice communication link to broadcasters from emergency managers. Obtaining the funding for this step will be the next undertaking.



The Mt. Scott site covered in snow.

Rocky Mountain Ramblings
The Denver Report
by
Amanda Hopp, CBRE
Chief Engineer, CBC - Denver

Tower Inspections

With the new drone, we are able to inspect our towers more closely. On a couple of these inspections, we found the lightning rod on two towers at KLTT were loose, and the same at KLVZ night. We were able to easily get one lightning rod tightened up at KLTT, but the other one was seized so it had to be removed. We purchased a new one. These are a one-size-fits-all thing. Apparently in 1994/1995, when the KLTT towers were put up, they had a different size. This will require our tower climber to haul not only the lightning rod with the hardware, but a drill with some batteries and bits so he can drill out the hole to make the new rod fit. If the weather ever cooperates with us, we might finally get it done. I am not sure what to expect from the KLVZ night towers, but hope it is just simple hardware tightening.



Shifting Parameters

The KLVZ day and KLTT night patterns have been out of whack lately. These are normally very stable, and I cannot seem to find a reason why they are shifting. I was thinking weather, but the issue came back when it was a warm sunny day.

I am going to give it one more try, adjusting them back to where they should be and watch closely. I'll go ahead and make a trip to the towers with the issue and make sure there is nothing obvious. Whenever things like this happen, it always bothers me not being able to find the cause. Hopefully this one will prove to me something simple.

[Editor's note: The parameter shift at KLTT

and KLVZ-N turned out to be issues with the remote controls, not the arrays. The antenna monitors were showing parameters dead-on, but the R/C indications were off and shifting, presumably due to oxidized connections. Stay tuned...]

Coming Up

This first quarter has been rather slow. While I enjoy things working for the most part, I do look forward to what March may bring. We are looking to replace our NexGen DRR machine and go with the blade system. This machine is the oldest we have. We have been trying to put off replacing it for years due to the difficulty it will bring. I think we are going a route that will allow us to get it into the blade world with a new computer, but put off changing a few things until we migrate our entire system to the AOIP world. That is still a couple years out, but, at this rate, it will be here before I know it.

I am also hoping to get the tower work done at the KLVZ night and KLTT sites and to start with the spring work at each site. I have small projects to do at each site. The biggest of them will be at KLTT. I am replacing all the locks on the ATUs with what Kintronics sells now, using the RH024 keys. This will put all of our sites with the same key, making it easier for us. Each ATU also needs to be thoroughly cleaned, and the rubber seal on each needs to be removed and completely cleaned off before I add a brand new rubber seal. I have yet to figure it out, but despite having them replaced not that long ago, they are already disintegrating.

I guess that about covers this edition, so until next time... that's all folks!!!

The Local Oscillator
March 2018

KBRT • Costa Mesa - Los Angeles, CA
740 kHz/100.7 MHz, 50 kW-D/0.2 kW-N, DA-1

KNSN • San Diego, CA
1240 kHz/103.3 MHz, 550W-U

KCBC • Manteca - San Francisco, CA
770 kHz/94.7 MHz, 50 kW-D/4.3 kW-N, DA-2

KKPZ • Portland, OR
1330 kHz/97.5 MHz, 5 kW-U, DA-1

KLZ • Denver, CO
560 kHz/100.3 MHz, 5 kW-U, DA-1

KLDC • Brighton - Denver, CO
1220 kHz/95.3 MHz, 660 W-D/11 W-N, ND

KLTT • Commerce City - Denver, CO
670 kHz/95.1 MHz, 50 kW-D/1.4 kW-N, DA-2

KLVZ • Denver, CO
810 kHz/94.3 MHz, 2.2 kW-D/430 W-N, DA-2

WDCX • Rochester, NY
990 kHz, 5 kW-D/2.5 kW-N, DA-2

WDCX-FM • Buffalo, NY
99.5 MHz, 110 kW/195m AAT

WDCZ • Buffalo, NY
950 kHz, 5 kW-U, DA-1

WDJC-FM • Birmingham, AL
93.7 MHz, 100 kW/307m AAT

WCHB • Royal Oak - Detroit, MI
1340 kHz/96.7 MHz, 1 kW-U, DA-D

WRDT • Monroe - Detroit, MI
560 kHz, 500 W-D/14 W-N, DA-D

WMUZ-FM • Detroit, MI
103.5 MHz, 50 kW/150m AAT

WMUZ • Taylor - Detroit, MI
1200 kHz, 50 kW-D/15 kW-N, DA-2

WPWX • Hammond - Chicago, IL
92.3 MHz, 50 kW/150m AAT

WSRB • Lansing - Chicago, IL
106.3 MHz, 4.1 kW/120m AAT

WYRB • Genoa - Rockford, IL
106.3 MHz, 3.8 kW/126m AAT

WYCA • Crete - Chicago, IL
102.3 MHz, 1.05 kW/150m AAT

WYDE • Birmingham, AL
1260 kHz/95.3 MHz, 5 kW-D/41W-N, ND

WYDE-FM • Cullman - Birmingham, AL
101.1 MHz, 100 kW/410m AAT

WXJC • Birmingham, AL
850 kHz/96.9 MHz, 50 kW-D/1 kW-N, DA-2

WXJC-FM • Cordova-Birmingham, AL
92.5 MHz, 2.2 kW/167m AAT



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