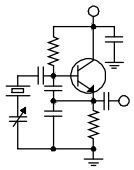
The Local Oscillator



The Newsletter of Crawford Broadcasting Company Corporate Engineering

JANUARY 2016 • VOLUME 26 • ISSUE 1 • W.C. ALEXANDER, CPBE, AMD, DRB EDITOR

The start of a new year can be an exciting time. In a sense, we get a ñrebootò at the beginning of each year. Hopefully all the prior yearôs projects are over and done with and we start with a clean slate, looking forward to new projects.

Last year we had a big list of projects in this company, one that took until the very end of the year to get through. It was really taxing on our resources, and we have deliberately planned for a much less aggressive year in 2016 in terms of projects and capital improvements. At the very least we will not have major projects going on simultaneously in several markets at once like we did in 2015!

This should give us all a chance to catch our breath and get caught up on repair and maintenance items that were perhaps deferred while we were dealing with capital projects. I really want to end this year with everything in excellent shape, ready for whatever the future holds.

Flexibility

Much of our efforts in recent years has gone to achieving flexibility in our facilities, particularly at the studios. We all know that the radio landscape is changing, and we need to be ready to change with it ï in a hurry if necessary. Should the situation dictate, we should be able to change formats, studios and configurations very quickly.

The WheatNet-IP and Wheatstone TDM systems we have in place in our major markets provide this flexibility, and we have already employed it in at least one situation. On the west coast, the decision was made to break out of the KBRT-KNSN simulcast during certain dayparts. The WNIP system allowed us to do that with a few mouse clicks ï no rewiring required! We have since set up the infrastructure for separate Internet streams for the two stations during the non-simulcast dayparts. Again, a few mouse clicks and we were good to go.

While transmitter facilities are seldom affected by changes to format, time-slotting and studio configurations, we still want to have the flexibility to make changes without spending a lot of time rewiring remote control systems and audio processors. We will be working on that in key markets in the coming year.

At this point I know of no big changes in any of our markets, so donôt read anything into the above in that regard. The point is that our technical operations and infrastructure have got to be ready for anything. Again, itôs all about flexibility.

Be Careful What You Ask For

Youôve probably heard it said to be careful what you ask for because you just might get it. Thatôs exactly what happened with the FCCôs AM Revitalization Order and the AM-only translator window. A window opens the 29th of this month for class C and D AM stations to apply to move FM translators (one per station) from as far as 250 miles away and to any available frequency.

The way I understand it, this is a first-come-first-served process, so while it is a ñwindowò process, it really isnôt. Applications must protect prior-filed applications. So we can expect a huge inrush of filings on January 29 and immediately thereafter and a mere trickle after that.

The problem is, that isnôt really enough time to identify an available translator, make a deal to purchase or lease it, find an available frequency within the AM stationôs 2 mV/m contour (or 25-mile radius) and prepare the application. Many translator applications will require contour protection engineering, including directional antenna and ERP restrictions, so a translator application may be quite complex.

Weôre looking hard at our options for all our class C and D stations. The pickings are slim, but this

is a one-time opportunity that we don't want to miss.

Solutions

As broadcast engineers, we're often called upon to come up with innovative solutions to problems. I've been doing that on a regular basis (or trying to) for the past 40 years. It can be a challenge and a real mental exercise, and I always enjoy that kind of thing.

I was recently faced with a problem that has nothing to do with broadcast engineering, but the principle and process were the same, so I share it herein. The solution may well have application in broadcast situations as well.

Early last month, my wife Phyllis and I went up to our mountain cabin on a Friday evening to enjoy a weekend up there away from the city. The cabin is at 8,500 feet AMSL and there are about four feet of snow on the ground up there. It's a nice place to sit around, relax and feed the fireplace.

When I walked in the door, I immediately knew there was a problem. It was *cold* in there. We set the thermostat on the furnace to 50 degrees when we leave each time, which is enough heat to keep the pipes from freezing.

We drain the water out of the pipes in the crawl space – the plumbing system is designed with a gravity feed to a pair of spigots in the crawl space in the back, just inside an access door, so after we shut the well pump down all we have to do is open all the faucets in the house and then open the two hot and cold water drains and let the water drain out. But that leaves the water heater tank full and water in the indoor pipes around the pressure tank and water filters.

As I said, it was cold in there, so I immediately raised the lid on the toilet and found a block of ice in the bowl. The tank was also frozen solid. Then I found the water filter housings both shattered. I checked the furnace and found the pilot light out. A neighbor told me that early that morning a big wind had come through, creating a ground blizzard. Evidently that created enough of a downdraft to blow out the pilot flame, leaving the place with no heat for several hours.

I re-lit the pilot and got the place warmed up in short order, and several hundred dollars later I had plumbed in a new water filter housing. Thank God there was no other damage! Phyllis used a hair dryer to thaw out the toilet. I fired up the well pump and everything was back to normal.

That little episode defined the problem for me. If it happened once it could happen again, and if it happened long enough before we caught it, we could have a ruined water heater, split copper pipes inside and all kinds of other damage. I had to find a way to prevent that.

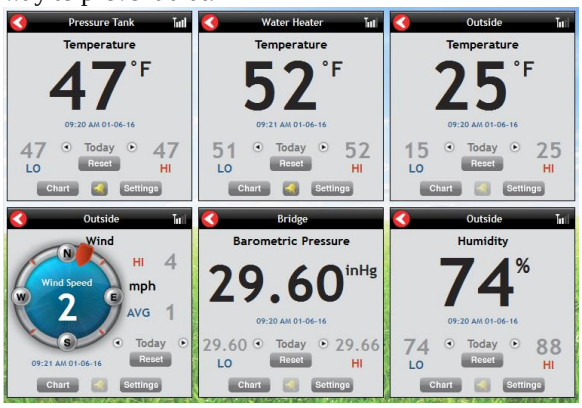


Figure 1 - The Acu-Rite internet bridge shows me conditions at the cabin in real time.

I spent the next week searching out my options with HVAC contractors, plumbers and supply houses. There were solutions, but all were expensive and none were very attractive. Then I started thinking about a way to remotely monitor the temperature inside the cabin.

An internet search took me to the Acu-Rite website. I already have an Acu-Rite weather station outside both our home and the cabin, so I was familiar with the brand and product line. What I

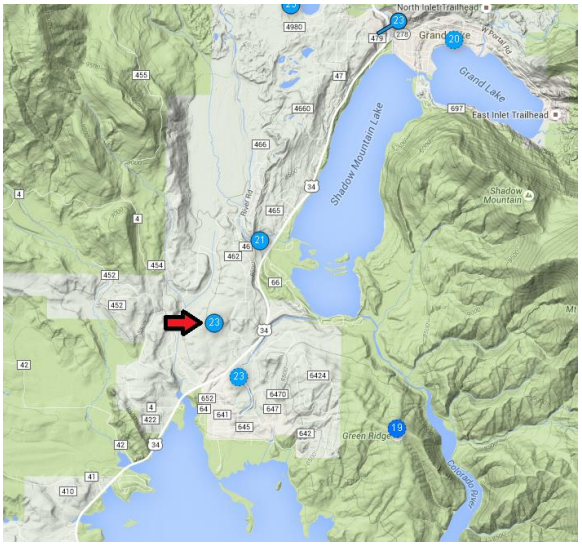


Figure 2 - My weather station reports to Weather Underground, where site visitors can see temperature, wind, etc.

didn't know was that they also offer an "internet bridge" device that will couple the weather station and two other sensors to the internet. It comes with a

smartphone app that lets you see all your temperatures in real time and set alarms that will alert you by both text message and email.

That sounded perfect for the application, so I immediately ordered basic internet service at the cabin and I ordered a product bundle including the Acu-Rite internet bridge and three temperature sensors. A week later all were installed and we were up and monitoring.

I installed a remote temperature monitor right next to the pressure tank and another in the water heater closet, the two most critical locations in the cabin for temperature. I set alarms to alert me if the temperature in either location gets below 40 degrees F, which should provide me with adequate time to call a neighbor or the local HVAC service tech to deal with the underlying heat issue.

With the bridge in place, our outside weather station also reports to Weather Underground (wunderground.com), a really excellent weather website.

You just might keep Acu-Riteôs internet bridge in mind for real-time temperature monitoring applications. For $99 on Amazon, itôs a steal!

The New York Minutes
by
Brian Cunningham, CBRE
Chief Engineer, CBC – Western New York

Hello to all from Western New York! By the time this reaches press, we will have yet again issued in another new year! My wish for all of you is that you enjoy health and happiness, and may 2016 be the year that you accomplish everything in your engineering ćto-doô list!

I am amazed at how fast last year flew by. I guess it seemed to go so rapidly due to the excessively long winter we had last year. It was well into May before the winter finally let go, which gave us only about five months of relatively decent weather. This year is starting out far from the ćnormalô weather we usually experience; itôs been dry with relatively pleasant temperatures. I guess we have El Niño to thank for the mild winter thus far, the warm Pacific waters have raised atmospheric temperatures over western and central Canada, where our weather streams most often originate. The warm air flow down from the Canadian jet stream has kept Lake Erie well above freezing, but this could backlash at some point, with lake effect snow burying us like last winterôs November storm that dumped eight feet of snow south of the city. As of January 1, metro Buffalo has only received about 2 inches of snow, far behind totals we would expect this time of year. We are praying that this trend continuesé

The month of December was relatively quiet in Buffalo and Rochester. Aside from the normal maintenance items there is not much to report on. We did have some issues arise when a couple of our C-Band satellite receivers failed, one in Buffalo and the other in Rochester. Thankfully, we have adequate back-up on both, so there were not any lost programs resulting from the failures. The failed units have been shipped back to Wegener for evaluation and repair, as I do not have the necessary documentation nor equipment to repair in the field. Hopefully, they will repair and return the units soon, as we are quite nervous operating both markets without backup.

In the past several monthsô reports I have discussed the problems we have been experiencing with our Internet services, both Time Warner and Verizon. After lengthy discussions with the technical support departments of both companies, we are no closer to having our issues resolved as we were when this all began. Our service tends to be satisfactory one hour, and the next hour, total trash.

Time Warner has been monitoring our service for several weeks now, trying to determine where the bottleneck is occurring. First inclination was that the node servicing us was being overloaded, but after weeks of observation, they have ruled that out, so itôs back to square one.

As we are relying more and more on IP for delivery of audio, it is imperative that our issues be

identified and resolved. The main problem I have is keeping the ISP technical support staff focused on the problems at hand. They tend to wander off, looking for things totally irrelevant to the main issues.

That about wraps up another month here in the great Northeast, and until we meet again here in the pages of *The Local Oscillator*, be well, stay warm and happy engineering!

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

Happy New Year!

The Christmas season brought many talented musicians to the WMUZ studios to perform live during Robin Sullivanôs afternoon drive show. They brought their keyboards and guitars, and performed some of the Christmas classics live.

Itôs fun to be involved with live and local radio that connects with the community.

Last year was filled with many exciting projects and a good opportunity to improve the facilities here in Detroit. We made many improvements including new production rooms utilizing Wheatstone surfaces, mic processing, IP distribution of the Bob Dutko show, new tower lights at WMUZ and the addition of the WheatNet-IP system for NexGen playout and audio routing.

There have also been projects at each transmitter site. The WRDT night transmitter was relocated to another area of the building at our leased site. We were able to finish replacing all of the tower fences at the WRDT daytime transmitter site in Monroe before the real cold snap hit us at the end of 2015, and the WRDT Monroe building has at long last been cleaned out.

WMUZ host Robin Sullivan and several musicians with Brianne Danter, one of the artists that came through our studios over Christmas.

I was able to resurrect ñthe beast,ò our MW-1 backup transmitter at the WRDT day site. While supervising the fence installation crew, I decided to take some time to dig a little deeper into why this transmitter was acting erratically. After checking voltages and modules, I discovered an intermittent connection on the audio driver board. By tapping around on one of the Molex connectors, I found a cold solder joint on the back side of the circuit board. After the repair was complete, I was able to put the MW-1 on the air to do some maintenance to our main WRDT Nautel ND-1 transmitter.

I also had an opportunity to do some repairs on our other ND-1 transmitter at the WEXL site that was damaged due to overvoltage last month. The utility incoming line voltage was 256, and the transformer was tapped at 240. In the end, the transmitter ended up a little crispy. This gave me an opportunity to give the transmitter an overall checkup, including changing out the older electrolytic caps in the power supply.

With the cold weather upon us, I frequently check the line pressure on our main and aux transmission lines. O-rings often leak, and the consequences can be very costly if the line flashes over due to condensation in the line. Itôs worth keeping an eye on. I have seen the destruction after the fact, and itôs not pretty.

There are several new projects I will be working on in 2016. The first one will be a

An ND-1 PA module from WEXL that was damaged by high line voltage. Note the blasted modulators and heat damage to R7.

replacement of our main NexGen file server. I look forward to setting it up with a new NAS backup setup. Having the additional storage and faster drives should improve the system performance.

We will also be updating our remote control systems. I have been able to setup IP connectivity to each of my transmitter sites over the last year. It will be nice to have the alerting and the convenience of improved access. The Burk ARCPlus Touch system has worked great for us at WEXL. I look forward to installing the Burk systems at WMUZ and WRDT.

In watching the trades, I wonder what the upcoming filing window for the 250-mile translator moves for AM broadcasters will bring in terms of increased interference and band congestion. I am sure there are a lot of deals happening in advance of the applications being considered and approved. It is a shame that it has taken so long to address the issue. It would have been a better choice to have given AM broadcasters consideration before all of these LPFM applications were approved, in my opinion.

Having the FM bands cluttered up and short spaced with close adjacent channels is not going to improve the listener experience.

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

Happy New Year! Godôs best blessings to you and yours for 2016!

We had a bit of bad weather in December, lots of rain and high winds. Thank the Lord, our transmitter sites werenôt damaged, though we were on generator a good bit. I also had some fun getting to the sites, what with flooded roads being closed. Itôs always something, innit?

WDJC Audio Server Hangs

Iôve related this in previous issues, but I thought Iôd give you an update: WDJCôs audio server would hang, seemingly at random, at intervals between one and five days. Closing NexGen and restarting it, without rebooting the machine, would take care of the problem.

RCS Support was convinced that it was a hardware issue. We brought in an RCS tech and he recommended One Big Network Switch; having separate switches, he said, could cause problems. So, we ordered a nice Cisco 48-port and installed it.

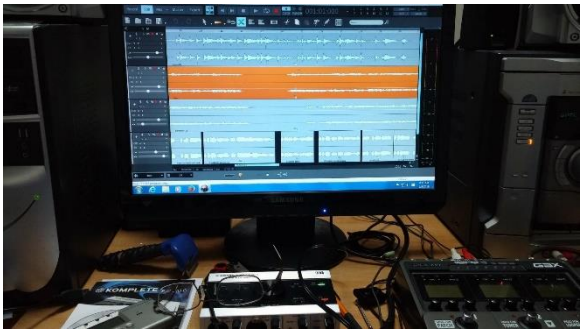
The hangs continued, no rhyme, no reason. Weôd go for days, then get a panicked call from the WDJC control room. Weôd restart the audio server and it would work fine for a few more days.

I now believe that itôs a software issue ï some sort of very subtle bug that may have been introduced in an update or upgrade. Let me explain. This might be somewhat roundabout, but hang with me here.

My Home Studio

Cris and Amanda often chide and scold me because Iôm not a ham. (Well, I am, but theyôre referring to Amateur Radio.) The truth is, Iôve just

never had time for it. When Iôm not conquering the world of electronics or software at work, I do music. My spare money and time goes into things like monitor speakers, Ernie Ball Cobalt Slinky StringsÊ, new software and stuff like that.



The audio workstation at my house.

At the beginning of December, I decided that I wanted to do some Christmas music. A late start, I know, but I figured I could get at least a couple of songs done. Hah! So much for that. I had upgraded my old Athlon system to an AMD FX6100; the old Windows XP didnôt want to work, so I purchased a used Windows 7 system just for music. I have several audio interfaces, including an Alesis mixer that communicates via USB. For keyboard stuff, I use what are called ñsoft synthsò ð the synthesizer is entirely in software.

To reduce support calls, most of the defaults in any Windows system are to just make things work and be done with it. Further, if you havenôt declared or defined a default, Windows will choose one for you. This is perfect for Joe Average, who just wants to watch videos or listen to music. For those of us who are constantly moving interfaces around, it can be a real pain.

One minute Iôll use the Alesis interface, the next, Iôll want my Zoom G3X guitar processor (also USB). Each time I do this, though, Windows moves the defaults and my music software wants me to confirm the gazintas and gazoutas. I also have a devil of a time making two programs work at the same time, too ð say, I want to play a file from the sequencer, through a soft synth, while I record some guitar.

Another joy is that, as Microsoft has (finally) added real security to Windows, it sets defaults for older software that are very restrictive. My audio software couldnôt write to most of the folders, even though I was logged as an administrator. I couldnôt create new folders, either ð that option wasnôt even available when I right-clicked. Huh? Several hours of Google searching later, I had found some workarounds and was back in business.

I told you all of that for two reasons. First, it gives me an excuse to post a picture of my home studio rig. Second, though, my experience convinced me that at least some of the time, when weôre having issues with the PCs here at work, it could very well be *Windows* and not the third-party software, be it NexGen or something else.

NexGen: Software?

Back to the NexGen hangs. WDJC is our all-music station, constantly working and stroking the system, around the clock. WXJC AM and FM run a lot of 30- and 60- minute programs; WYDE AM and FM are all talk. But hereôs what convinced me that itôs something in the software ð either NexGen, or Windows 7 Pro, or the Wheatstone drivers. Starting the week before Christmas, I begin using VNC to restart WDJCôs audio server every evening. We havenôt had a single hang since. Not one. Weôre going on three weeks now, glitch-free.

The problem isnôt necessarily in NexGen; for all I know, it could be one of the resource managers in Windows 7 Pro. But I think that this is what we programmers call a ñresource leak.ò The classic example is a program that grabs a chunk of memory, uses it for a while, and then forgets to cleanly release it back to the operating system. This is cumulative, too. It takes time to show up and itôs related to usage. Heavy use means that youôre allocating, grabbing and then freeing resources all the time, so the problem is more likely to pop up.

I think weôre on to something here, but weôre still keeping an eye on it. I pass it on for your edification.

Watch Those Opened Boxes!

My latest addition to the home studio is the Native Instruments Audio 6 interface (in the lower middle of the photo above). It cost about $200, and itôs nice: 2 stereo inputs, 2 outputs, 24-bit resolution and up to a 96 kHz sample rate. It also has a MIDI in and out, and SP/DIF ins and outs. With the provided drivers, it does everything I need.

But hereôs where I share my second tip of this article: the box had been opened when I bought it. Remember, nowadays, youôre not just buying a gadget, youôre buying that gadget *and software*. The drivers for the USB interface donôt require any special licensing, but the add-ons in the box do. As part of the deal, Native Instruments threw in their ñTraktorò package with 3 GB of sound files. That would have made a nice addition to my soft synth

collection, but Iôm unable to use it. Someone else had already registered the software under a different email address!

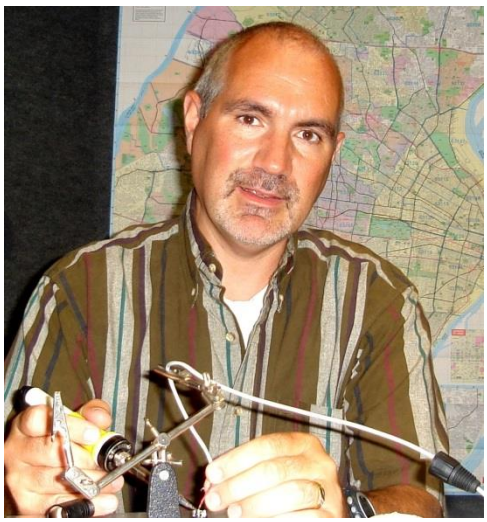
Most software nowadays is available both on disk or as a download; this is no different. The key is the license. Much as Microsoft does, Native Instruments uses a very long numeric code, several groups of 6 characters, to activate the software. It then pings their Website to register itself under your email address, enabling the extra features.

Iôm guessing that someone purchased it, took it home and installed the software, then returned it for a refund. Or, someone actually opened the box, copied down the license key, and then closed it back up. However it happened, Iôm still waiting on a reply from Native Instruments support. The moral of this story, though, is obvious: be very wary of an opened box! The truth is, itôs probably better to order something online and to download nowadays. That way, you know youôre getting a ñvirginò copy with a good license key. Whimper.

Until next time, keep praying for this nation!

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

We recently have been through and are still going through renovations in the four main control rooms in our Chicago studio complex. This has been a long process. Our control rooms are full-time, 24/7 operations, so there are no conveniently available times to do major remodeling. So, we had to take each control room, one at a time, into a production room to try to keep operations as normal as possible.



Our major goals were to change the carpeting on the floor and add carpeting on the walls. When I first got here, the studios were obviously in need of an upgrade. The carpeting on the floors was very worn and beginning to bubble as the glue on the slab was coming loose.

The walls were a different story, they were a mish-mash of paint and differing colored cloth-covered foam boards. These did a good job of cancelling sound reflections, but they were getting older looking and shabby. Along with the painted walls, the look was not very uniform. So we decided to put carpet on the wall that would cancel the sound reflection and at the same time bring a uniform look to the walls and from room to room. Doing this at the same time as we were doing the floor allowed us to make a very good match.

For the floors, we went with two-foot carpet squares glued to the concrete slabs. We of course have rules about having no food or drink in the studios, but as you no doubt know, this is not always followed and carpeting can seem obtain stains very quickly. With the carpet squares we can always remove a square or two and replace them with new ones to get rid of a stain that we might have to live with for the next ten years. We purposely ordered extra boxes of the squares out of the same run so that we had spares on hand for just such occasions that would match what was already on the floor. Hopefully we never have to use them, but I am pretty sure we will.

After getting the carpeting done in each room, the change in appearance was drastic. We really went from something that looked slapped together to something that looked like a professional studio. However, there was one problem. The carpeting on the wall didnôt do as good of a job cancelling the sound reflections as I thought it would.

Some of the rooms were not too bad, but some were sounding like we were broadcasting from a cave. It varied from room to room. In particular, the worst room was the WYCA talk studio, where we have as many as six mics turned on at a time. So any non-desirable sound in the room would easily be

picked up by that many mics, and this was especially true with the echo issue.

I didnôt want to go back to the shabby-looking foam boards because that would defeat the purpose of upgrading the appearance of the studios. I decided to go with the Auralex Foam Wedgies. I didnôt feel like we needed to cover the entire newly-carpeted wall after just spending a bunch of money on that. I figured if we strategically place the Wedgies, we could get rid of the most of the echo.

Instead of placing the Wedgies directly on the walls, we went with thin plywood first. We cut four-by-eight foot plywood sheets in half so that we ended up with two four-by-four sheets that could be screwed to the wall. The Wedgies were then glued to the plywood and strategically placed near commonly-used microphones to damp the reflection.

In keeping with the goal to upgrade the looks of the studios, I decided a ñlittle twistò on the installation would add a little flare to the appearance. Instead of just installing the four by four plywood sheets in square with the ceiling and floor, we rotated them 45 degrees so that they took on a diamond appearance rather than a square look. We have received a lot of positive comments on the way they look, and it served to break up the monotony of the almost monotone colored walls. Itôs almost like we planned it that way.

The WYCA talk studio with new wall carpet and Auralex "Wedgies."

We should have already had new doors installed on the studios, but when they got here we soon found that they must have been stored in a puddle of water at the warehouse because they all had varying degrees of water damage. So the installation was halted and we are awaiting new doors to be shipped.

Just like at your home, when you make one change, everything else looks bad, so you end up doing more than you bargained for. So now we need to paint the ceilings and we are planning on upgrading the looks of the old studio cabinets by repairing and re-staining surfaces. It never stops!

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

Crash, bang! Yet again, further still, even more, the fence is down, again.

At the northwest corner of the KKPZ property, Crest View Drive eastbound makes an abrupt right turn. A common problem is vehicles traveling east at high speed fail to make the turn, lose control, and take out our cable fence. Apparently, high-speed cars on narrow residential roads are common, as in the past we experienced as many as two or three incidents a year.

After several of these incidents, I soon grew tired of having the fence repaired and began looking for a solution. That solution turned out to be the application of reflective tape on every fence post and available surface. At night, the result is that the intersection lights up like a state fair carnival. For the most part that has been effective and reduced the number of crashes. Only a blind driver should miss that warning,

And yet some do, usually crashing into the fence, then slinking off into the dark, leaving us to repair the fence. None of this is new nor is it worth another comment in this New Year report. But just two days prior to Christmas this year another crash took out our fence. What was different in this crash is that it was reported and the repair covered by the driverôs

insurance. That is a step forward.

So far the New Year hasnôt been boring. We rang in 2016 with an outbreak of Mt. Scott ice. Early Monday (1/4), the roads at Mt. Scott were reported closed with no access. Later in the morning the roads were passable, although sanding had been limited or non-existent.

The post-and-cable fence at the KKPZ property boundary has been hit – again!

The worst part of the travel to the KKPZ studio/transmitter site was the last 100 feet. The approach at the gate was a skating rink. I worked my way down the unpaved area to open the gate. The parking lot ice had not changed when I left, and I did leave the gate open to allow easier access later. At the door, the ice-covered show made for poor walking traction. I was able to get to the door with some difficulty. I used the door mat to provide traction when I left.

And still the excitement wasnôt over. The best snow route access to Mt. Scott is Flavel Drive. On the way out, I was greeted by a blizzard of red and blue lights at 92nd, where the fire department was fighting a fire. Although Flavel was open, the going was slow. I counted 12 engines and other pieces of equipment. That was not a boring trip!!!

One quick note on 2015 in review. Happy New Year to Oregon broadcasters and engineers interested in the emergency response aspects of our industry. A bit more than a year ago, several engineers interested in keeping local broadcast stations on the air met to talk about planning for disaster. At about the same time, the first-informer promotion rolled out across the nation.

Long story short, local broadcasters all across Oregon, the SBE and the Oregon Association of Broadcasters began working on a program to allow engineers to have access to broadcast facilities in restricted access areas. This last year legislation was enacted that enabled our program, and we are now in the final phases of discussion with Oregon Emergency Management. In a conference call just prior to the holidays, we approached local emergency managers with an introduction to the program. Michael Everhart who participated in the conference call reported:

ñMy introductory call of Monday December 21 with Andrew [Phelps from Oregon Emergency Management] and the Local Emergency Managers went well. After Andrew introduced me, I gave a quick rundown of the history of the project ï where the idea started, SBEôs support for the group, OABôs sponsorship of the legislation, and passage of HB2210.

ñI emphasized that Andrew was inviting us into the LEM circle as a first step to developing relationships between local engineers and their county/city EMs, and that we would be sending out our draft credentialing procedure following the call. Andrew pointed out that the purpose of the training is not to enlist engineers as first-responders on an incident, but to enable them to work safely under Incident Command for the purpose of maintaining and restoring broadcast communications vital to public safety.

ñI asked if there were any questions or comments on the sample training list. There was only one. The Wheeler County EM asked what we meant by ómasteryô in reference to the items under Initial Qualification Requirements. I replied that that would be a passing grade on the course, and that ómasteryô was just a language choice, though one could certainly demonstrate mastery through participation in simulation exercises or actual incidents ï which we will certainly encourage. There were no further questions during the call, and to date I have not been contacted regarding any follow up questions.ò

It sounds as though local broadcast engineers will be well received during a disaster. Public safety information is vital for the public, and only local broadcasters can provide that link.

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

Nautel

Truth be told, not much happened last month. Thank goodness for that. I think the most exciting thing was getting an alarm from the KLTT NX50 that a power module went down.

Fixing those modules has become second nature. I am very grateful Nautel put in troubleshooting guidelines in their manual. Makes finding the issue simple.

In this particular failure, I found we actually had two power modules go down at the same time. One was just the modulators, which is what we normally see. These are somewhat of a pain to replace but nothing too serious. The other one had the three modulators and two power amps that failed.

We still arenôt sure what caused the issue. It was another clear sky night. No power events shown in the logs, nothing going on right before it happened. The transmitter was at low power, 1.5 kW.

We continue to monitor the issue and hope that by us reporting the issue each time that Nautel might be able to get a handle on it. Surely we arenôt the only NX50 out there with this issue. And if we are, what is it about the site that causes the issue?

Upcoming

January brings a new year. It is always nice to purge those old emails and documents that are no longer needed, clearing out the space to start the New Year.

2016 brings us a number of projects. Several of our servers will be replaced over the next year. While in some ways I look forward to learning, I also dread it as much of it is just plain confusing to me.

We still have the rest of winter to look forward to. I am hoping for a January thaw as we have an Austin ring transformer that needs to be repaired at KLTT. It is in very bad shape and I just wasnôt able to get to it before the cold hit.

Spring will bring the storms and rain that we somewhat enjoy and the growth we do not enjoy. I am hoping we are able to keep up with it better this year. It is always tough as there is so much land to cover (115 acres!!), and because we donôt have a place to securely store the tractor at two of the three sites, it means we have to always plan on taking it back to the barn at KLZ at the end of a day of work.

The cleaning and maintenance of the sites should be an easy task, though. I intend to put together a plan, a checklist of sorts, for each site for myself and Keith to use each week to be sure we stay on top of things.

That about covers it for this edition, so until next timeé thatôs all folks!!!

KBRT • Costa Mesa - Los Angeles, CA
740 kHz, 50 kW-D/0.2 kW-N, DA-1
KNSN • San Diego, CA
1240 kHz, 550W-U
KCBC • Manteca - San Francisco, CA
770 kHz, 50 kW-D/4.3 kW-N, DA-2
KKPZ • Portland, OR
1330 kHz, 5 kW-U, DA-1
KLZ • Denver, CO
560 kHz, 5 kW-U, DA-1
KLDC • Brighton - Denver, CO
1220 kHz, 660 W-D/11 W-N, ND
KLTT • Commerce City - Denver, CO
670 kHz, 50 kW-D/1.4 kW-N, DA-2
KLVZ • Denver, CO
810 kHz, 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
WEXL • Royal Oak - Detroit, MI
1340 kHz, 1 kW-U, DA-D
WRDT • Monroe - Detroit, MI
560 kHz, 500 W-D/14 W-N, DA-D
WMUZ • Detroit, MI
103.5 MHz, 50 kW/150m AAT
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, 5 kW-D/41W-N, ND
WYDE-FM • Cullman - Birmingham, AL
101.1 MHz, 100 kW/410m AAT
WXJC • Birmingham, AL
850 kHz, 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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