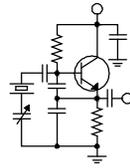


The Local Oscillator



The Newsletter of Crawford Broadcasting Company Corporate Engineering

FEBRUARY 2017 • VOLUME 27 • ISSUE 2 • W.C. ALEXANDER, CPBE, AMD, DRB EDITOR

A Bolt from the Blue

Back in December, I began feeling some discomfort, really a bone-deep ache, in my lower left leg. I lived with it for a few days before I went to the doctor. He couldn't see anything externally wrong and said to give it a week to see if it cleared up.

Well, it didn't, and a week later I was at the ER where I was told I had probably ruptured the plantaris muscle in my calf. They put me in a boot and said it would clear up in a couple of weeks. A week later, I couldn't walk, so I went back to the ER where they ran an ultrasound to be sure I didn't have a blood clot. I didn't, so they sent me home.

A couple of days later I went back to my primary physician and he referred me to an orthopedic surgeon and scheduled an MRI. The next morning I was wondering if I would be alive when I finally got in to see the surgeon or have the MRI, so I called my doc back. He got me right in for an MRI, and that's when they found the problem ó a serious infection in my leg. He sent me right across the street to the hospital where I was immediately admitted.

The following day I had surgery on the leg to clean out the pockets of infection. The lab was able to identify the bacteria and they started me on a powerful IV antibiotic. I spent a week in the hospital and finally went home on the 16th of last month. My wife, Phyllis, administered daily doses of IV antibiotics, and I had to see various doctors over the next two weeks.

On the 27th I had another MRI that identified additional pockets of infection, and I had another surgery on the 28th.

At this point, I'm still slowly recovering with my leg all bandaged up and daily infusions of IV antibiotics. It is my hope and prayer that I'm fully on the mend now with no more surprises waiting. Those of you who know me personally might not recognize me ó I'm down well over 30 pounds from where I started January.

So, what's behind all of this? As far as we can tell, it all goes back to a spider bite that I got while helping Amanda with a difficult project at the KLTT transmitter site, replacing the rack controller circuit board in the NX50 transmitter there. It's impossible to know whether I got the infection directly from the spider, if I had it on my skin and the spider bite provided a means of ingress, or if it came from somewhere else entirely. All we know is that spider bite scar was the only visible skin penetration in infected area.

As I'm recovering, I am working full-time, which is a blessing. I can't stand to be idle for long, especially mentally.

Thanks to all of you for your prayers as I have gone through this ordeal. I have no doubt that the Lord has brought me through it as a direct result of the prayers of friends and family all over. Don't let up! I still need your prayers to get completely well.

The New York Minutes

By

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

Hello to all from Western New York! The month of January has been a busy one for our stations in the Western New York markets.

Around 2:00 on the morning of the 11th, I received a phone call from the Burk remote control that we had lost commercial power at the WDCX-FM transmitter site, and the generator was on. Normally, this would not be a problem, as we frequently lose power at this remote site, but this time, the generator would run for a few minutes, the commercial power would come back on momentarily,

then go off again, resulting in the generator kicking back on. After three cycles of this, I determined that I should go out and investigate what was going on. At the time, we were experiencing high winds, bursts with sustaining wind speeds in excess of 50 mph.

When I arrived at the transmitter site, we were running on generator power, but it was not long until the cycle began again. I measured the incoming commercial power and found that it would exceed 300 volts phase to phase, then dip down to less than 160 volts. Knowing that the in-rush current from the generator can cause major damage to our equipment, I shut off the commercial power and ran exclusively from the standby generator.

A call into our commercial power provider revealed that several power lines had been blown down due to the high winds, and regulator damage had been done to the feeder sub-station that fed electricity to the area of the transmitter site. New York State Gas and Electric (NYSEG) estimated that the outage would be restored by 4:00 AM, so I decided to stay until commercial power was restored and I was sure that it would stay on.

The hours began to roll by, and the estimated time of restoration was extended several times. We had plenty of diesel fuel in the generator, so I was not worried that we would have to scramble to get additional fuel to stay on. We finally returned to commercial power around 4:00 PM on Friday

afternoon, and once again, our generator saved us from losing precious revenue from lost air time.

We were down to about 75 gallons of fuel left in the tank, so I arranged for our fuel provider to deliver enough diesel fuel to fill the tank in case of another outage. In the meantime, the high winds had subsided, and NYSEG was able to replace the two poles that were blown down during the storm.

We were indeed lucky in the fact that we did not experience and damage from the power cycling between the generator and

commercial power. Time Warner, our Internet provider at the site, was not as lucky. The powered amplifier on the pole that feeds Internet service to us was blown due to the excessive power surges, but it was replaced and internet service restored by 6:00 PM that same day.

On Wednesday the 18th, we finally finished up the new Nexgen file server installation in Rochester. Right before the new year, I had installed the new server and loaded the current backup, but we were unable to complete the installation at that time, as I was called back to Buffalo to take care of an issue that came up. I returned to Rochester early on the 18th, and performed an incremental backup on the old server so we would have current, up-to-date files on the new server.

After installing the additional files onto the new server, RCS and I completed the configuration of the new server and put it on line about 10:00 PM that day. I decided to stay overnight in Rochester, just in case we experienced any problems with the new server. After spending several hours with the board operators the next day, we found that there were a few minor items we omitted, but those issues were quickly taken care of with a call into RCS support. In all, it was a successful installation, and the best part was that we had no down time at all.

It has been said many times, when it rains, it pours! The week after replacing the Nexgen file



server, we lost one of the Nexgen workstations in the WLZG production room. This machine had been experiencing problems for some time, but we had been working around the many issues it was having, trying to prolong the purchase of a new computer. When it finally expired, Cris ordered a new Dell T-3620 to replace it. All was good with the new computer except that the old Audio Science sound card would not fit into the computer!

After looking at the way the internal case was designed, I determined that I could modify the case to accommodate the large PCI sound card. Near the back of the motherboard, directly behind the PCI slot, was a cage that mounted the hard drive, with additional bays for more drives. If this were removed, and the drive re-located, I would be able to install the sound card, barely!

I drilled out all of the rivets securing the card cage onto the computer's frame, removed the cage, and mounted the hard drive on the outside of the optic drives mounting cage. Luckily, the power and optic cables that attached to the hard drive were just long enough for this to work. If the sound card had been just one inch longer, we would not have been able to use this model computer.

We had just completed the above computer installation when a few days later, the ASERVE3 computer in Buffalo died! Cris ordered an identical computer that we had just installed in Rochester, but we did not have to modify the computer's case, as this one had a smaller sound card. The only issue we had with this installation was that Nexgen kept telling us that the license had expired. The Nexgen license key for this computer was a parallel dongle, not a USB license dongle that is used in most of the newer machines. A reload of the Sentinel licensing software took care of the expired license issue. Other than that, this machine was up and running with no problems to note.

Another issue I would like to mention is the failure of several of our Symetrix 528e processors in Rochester, in all, four failures within a week or so! These were all purchased and installed at the same time, and it surely is ironic that they all failed within days of each other. I checked into the flat rate repair of these processors, and found that we could replace

them with new ones cheaper than the repair cost. I have purchased four of the DBx 286S processors, and will be installing them shortly.

Along with all of the above occurrences, we started the WDCX renovations on January 30th. We are having the entire station's interior painted and new carpet throughout the entire facility. The painters were on site Monday, tearing out old doorways in the halls that were not used, and installing new sheet-rock where the door frames were.

Also, there were several walls that were covered with carpet (can you say 70s?) so they were removing all of the carpet from the walls and having to sand off the adhesive that secured the carpet to the walls, to make a smooth, even surface for painting. We anticipate about two weeks of work for the painting and new carpeting, and beginning February 1st, I will be beginning the studio renovations in the main control room and talk studio!

Tom Dozier of Hollywood Exteriors will be doing the renovation work in the studios, mainly removing the carpet from all of the studio walls and sanding them to accept paint, installing a new drop ceiling in the new talk studio, along with a divider wall that will house the new Middle Atlantic equipment racks. By mid-February, we should be ready for Hi-Tech Laminates to deliver and install the custom-made broadcast furniture for the two studios, and hopefully, by the end of the 3rd week of February, the new Wheatstone control surfaces and Blades will begin to trickle in. I will include pictures of the new studios in next month's New York Minutes.

One other project I have currently going on is the installation of a new VoIP phone system. Convergence Solutions, a vendor we have used in several other markets, is working with me to get the system up and running. As of this writing, I have installed all the necessary equipment, and plans are to cut over to the new system on Friday February 3rd. We still have some wiring issues to figure out and additional programming to be done, but do expect to hit our target date on Friday for completion.

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

The Motown Update

by

Brian Kerkan, CBTE, CBNT
Chief Engineer, CBC–Detroit

Greetings from the Motor City! I hope everyone had a great holiday season, and that 2017 is going well so far.

In January, I focused on network improvements. We ordered a few Cisco SG300 switches from a retailer for a great price. When they arrived, we configured them and put them into production.

We ended up having a random port drop issue. After some additional investigation, I found that the firmware was several revisions back from current. You would think that the upgrade would be fairly easy. We found that you cannot directly upgrade to the new firmware version without first going to an intermediate version, requiring the boot code being flashed using a TFTP server.

It is amazing what you can find by searching on the Internet. Several people had the same issue. Once we upgraded the boot code, the newest firmware installed without a hitch. The upgrade was applied to our backup switches, and then it was introduced into production. The upgrade solved the issue. You never know what issues you may be dealing with that are due to bugs in an earlier version of firmware. We have upgraded all of our switches in the facility.

I also worked on new version of master screens for our Burk ARCPlus Touch systems. Once I had all of our sites networked and available, it was time to put it all together.

From one screen, we have all of the transmitter sites and their parameters. I like the flexibility that Burk Autopilot provides to enable us to design our own screens using the custom view editor.

The editor provides an object-oriented interface to lay out your screen. Each meter, status, or command can be placed on the screen where you choose. The style of each object can be defined. The

meters can be analog style, or digital. You can also select font size and type.

The beauty of this is that you can combine sites. One screen can provide the most essential information that your operators need to see. If you have ever used Visual Basic, it is a lot like that. Graphics can be added including station logos. You can also add other objects like weather maps, times, or third party programs such as security cameras.

I have been optimizing our use of the Wheatstone M-1 microphone processors throughout our studios. Each production console has processing built in, so I was able to distribute the other processors where they were most needed. Using the expanders in acoustically challenged rooms takes away from the hollow sound that you hear when

multiple microphones are live at the same time.

Social media has become a focus in sales and programming. We have been testing Facebook live in our studios and planning for developing video production capability. Pete Presnel, one of our writer producers, has been recording video in HD on his cellphone. He has been editing it using a low-cost video editing software suite. The results of his work are available for viewing the WMUZ website at www.wmuz.com/Goodwin or https://youtu.be/KqEhV2S_ma4. This video was shot entirely on a Samsung Galaxy 7. It is amazing how far we have come in quality of these smartphones.

We were able to find a pair of microphones that was designed for use with phones or tablets using the TRRS jack, the iRig Mic Lav. For a low-cost microphone, it works great if the AGC that some phones have that can be disabled. There are a lot of decisions that need to be made in choosing computers, and designing the studio to accommodate





Custom Burk Remote Control Screen

video. Computers need to have a fast enough CPU, a good video card and enough RAM to edit and

produce video. Storage of the video must be considered, as well.

The Facebook Live video feed that I setup for testing uses a mix minus bus that contains only the studio mics and the telephone hybrid. The automation is not assigned to this bus due to the potential of broadcasting performance-copyrighted music. There is more than meets the eye when it comes to planning these kinds of projects.

For mic suspension, I decided to try the Better Bands solution for the thin EV suspension bands that always seem to break. I have found that they hold up well to even our toughest talent. The Better Bands are much thicker, and have a more substantial attachment point. After trying these, I think I will eventually change all of mine out as they wear. The bands are available at better-bands.com.

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

Windy!

Seems like I always start by talking about the weather, but hey, that's what causes most of our excitement. (That and computers, anyway a lot more on that in a moment.)

Over the weekend of January 21st-22nd, we had some severe storms roll through. That's nothing unusual. Alabama is generally humid to start with, so if you have a warm day followed by a cold front moving in, we usually get thunder bumpers. This happens year-round and we're used to it. Except for a surprisingly gusty wind, these storms didn't seem to be that bad.

Everything was on the air, so I figured we'd dodged a bullet. Monday, though, it became clear that we had problems; we were on the air, but mostly via our backup links, which had automatically switched in.

First, the Dragonwave link between our studios and the WDJC site on Red Mountain had been knocked slightly out of alignment. That's only a 5-mile hop, so we still had signal, but it was breaking up at times. This link is the main data path for *all* of our STL signals, so we had to look at that first thing.



Todd clambered onto the roof and successfully realigned that 2-foot 18 GHz dish. The dropouts went away.

Meanwhile, 101.1 in Cullman was on its backup link, which is WDJC's HD2 signal. We have a Yagi antenna and an HD receiver to feed the Omnia at the transmitter site. This was dropping in and out, too. I drove to Cullman and noted that the Yagi had moved a bit to the right a not enough to kill the signal, but just enough, given the high humidity that morning, to cause occasional dropouts.

As for the primary data link, we determined that the problem was at the relay point near Warrior, AL, on Mount High. Both radios were up and we were able to get into them with a laptop, so we wondered if the dishes were out of alignment.

These are big honkin' 8-foot 6 GHz dishes, but there are stiff arms on them to prevent them from turning, so I wondered about that. We had a tower crew come in to double-check the radios; everything seemed fine. They then tried to tweak the path, but it became obvious that both ends were out of alignment. A single crew probably wasn't going to



Figure 1 - I marked the location of WDJC's tower. Aligning this one is easy because you can see the target.

get that lined up, not in anything like a reasonable time.

The good news is that we've found another tower crew here in Alabama, the owner of which used to work for Southern Broadcast Services when they were in business. SBS used to be our go-to guys for tower work, and I was delighted to hear about this new crew. As I write this, they'll be here in the next few days and will be on both ends of the link to get it back into alignment. I'm also going to have them tighten the bolts on those stiff arms until they squeak!

Why did the wind knock things out of alignment this time, when we've made it through so many severe storms in the past? I can't say for sure, but this particular storm was a bit unusual. The wind had a high sustained speed of 25-35 miles per hour, with gusts of hurricane force. Of course, the wind at high elevations (read: on a tower) will be higher than that, so I guess this time, our number came up.

I hope to report on success with that link in the next issue.

Computer Upgrades

As I get older and as my curmudgeonity becomes more and more pronounced, I purely hate upgrading the OS on one of my computers. The good news with Linux is that it's free, very, very secure and reliable. The bad news is, the free offerings reach end of life within a few years at most. When EOL happens, there are no more updates, and if you keep running that older system, it becomes more and more vulnerable to bugs and to attacks. Thus, you have to upgrade.

I'd still take installing Linux over Windows

any day. A typical Linux distribution comes with all drivers and most of the software that you'll need or want. You stick in the DVD or the thumb drive, tell it to install and let it rip. There's no hunting for drivers and add-ons all over the Internet; most of it comes self-contained, ready to go, with the base distribution.

But that doesn't mean that there aren't problems. We sometimes forget that the 'free' distributions of Linux basically exist as beta tests for the paid 'enterprise' products. Fedora, for example, is the not-ready-for-prime-time version of Red Hat Linux, and OpenSuse is the test bed for the enterprise Suse Linux product. Given that, I really shouldn't complain, I guess.

There will still be problems, though, and as the number of different types of computers has grown exponentially over the years, each is going to have its own quirks. (This is true with Windows as well; I want to be clear about that.) In my case, I've been struggling with my printers. OpenSuse unfortunately has a buggy version of the HPLip package for HP printers in its most recent distributions. It works with most HP products, so I guess it's not a big priority for a fix, but my LaserJet is one of the exceptions.

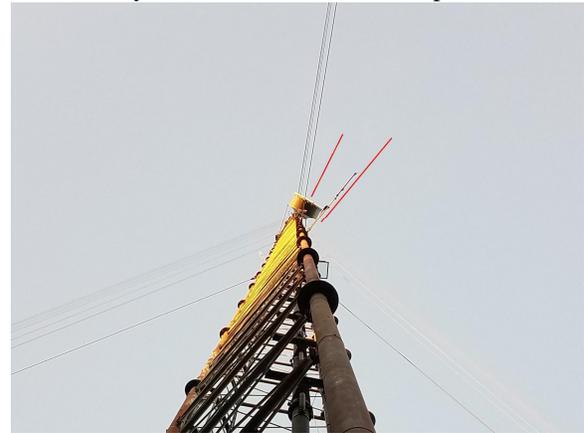


Figure 2 - Not the clearest picture, but the Yagi for WYDE FM's backup STL should point within a few degrees of the big 8' dish above.

To work around that, I manually install an older version of the HPLip stuff. Everything's fine, my printer works, the scanner works, I'm happy. But if I'm not careful, OpenSuse will pop up a little window that says, 'we have updates for your computer' and if I hit 'update' without thinking, the updater will see that older version of HPLip and overwrite it. Back to square one.

Then there's my Microline printer, which most operating systems (including Windows) want to

set up in graphics mode. All I need is plain-jane text printing for PORs. Getting that set up each time I upgrade is fun as well.

But, given that I get a free enterprise-class operating system, I'm willing to accept it. I'd just have to invite my curmudgeoninity to hush.

SSL / TSL For Wordpress

As I've mention here before, we also pitch in to help Cris, Amanda and Keith Peterson with our Corporate servers out in Denver. We have another major change coming for our Web server: in the very near future, Google is going to start downgrading sites that don't use Secure Socket Layer / Transport Layer Security or, in layman's terms, sites that don't support HTTPS (note the 's' at the end) instead of plain, unencrypted HTTP.

Keith tells me that sometime this year, Wordpress is going to require HTTPS as well, so this has moved from the 'maybe someday' category up to one of the front burners.

Making a site use SSL/TLS isn't terribly mysterious; millions of hosts use it and it's well-

documented and well-understood. But it's not a trivial matter. First, we have to generate a 'fingerprint' of the server in question, then send it to someone who issues SSL/TLS certificates (we use GoDaddy). Once we receive the issued certificate, we have to modify our server to use it and to start enforcing SSL. I did this several years ago with our mail server, so it's nothing new - but we have over a dozen Websites. That means that *each* will need a unique certificate, and *each* will need to be configured.

Oh, and yes, we have to pay for each of those certificates. There are ways to get 'wildcard' certificates that will cover many different domains, but first, they're considerably more expensive, and second, they work best with sites like, 'host1.somesite.com,' 'host2.somesite.com,' 'support.somesite.com,' and so on - in other words, obvious subdomains of the main one, 'somesite.com.'

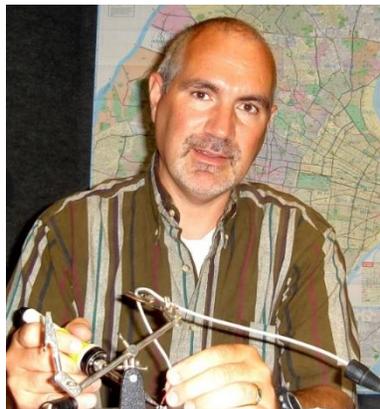
But we'll get it figured out. My hair may turn a bit grayer, but that's nothing new.

Until next time, keep praying for this nation!

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

As engineers, we don't always get the clues to what makes something stop working. We can't dust for fingerprints or bring out the cotton swabs to collect DNA samples like they do in crime shows. This can sometimes be frustrating. Sure, there are times you see the burnt parts and make a fairly educated guess that there was likely a lightning strike in play recently; but that's not always the case.

For me, knowing the cause can help me analyze if there are things I can do to prevent it happening again in the future. If you know your weak spots, you might be able to make appropriate preventative change. All of us have probably had those events that occur in blue-sky conditions. There doesn't seem to be any logical reason for a system that just starts acting up.



I had that occur recently. I woke up in the middle of the night to numerous alarms of disconnections that were happening due to an issue with the Trango 18 GHz Ethernet radio that connects between our studios and the WSRB transmitter site. We use the link to send audio, RDS, PAD, remote control and other data services. I noticed that we had received a good amount of rain, but I couldn't remember hearing any thunder associated with the rain. I found that a bit curious, but chalked it up to coincidence that the problem just happened to occur about the same time the rains came through. I actually was more worried about icing antennas with this rain system than lightning, since it was January and the temps were right at freezing.

Fortunately, it was just rain and no ice. The other good thing was that we were only off air for a few seconds while the Omnia 11 processor at the site automatically switched to its secondary input, which comes from the 950 MHz STL radio we use as a backup for audio to the site.

Later that morning, we performed a power reboot on the Trango Ethernet radio at the WSRB transmitter site. That got it back up and running again. However, I still had to wonder what started it flaking out in the first place.

I remembered the lightning map website I have visited numerous times. The site is www.lightningmaps.org. The site will show lightning strikes as they occur in real time. The quotation marks are there because there is about a one-second latency. The site is nice because you can watch a thunderstorm approach and see where the lightning is striking and have a good idea where it's heading.

I usually have the setting on all strikes within the last 15 minutes. I remembered that there were settings that allow you to view strikes over a longer time period, but I wasn't sure if it would go back far enough to view what happened overnight.



This lightning map showed where and when the strike occurred.

However, once I logged into the web page, I saw that it had a 24-hour setting and I could see that the path of lightning strikes of the storm went right

over the WSRB site. Even though I never heard any thunder at my house, which is miles away, there was a storm.

In fact, one of the strikes registered about a half mile away. The included photo shows the pink dot with the timestamp next to it. This strike was close to the site. It didn't show a strike hitting directly but there was probably enough static in the air that it affected the Trango adversely and got it started on the issues of connecting and reconnecting during the overnight hours.

The timestamp shows 7:24:31. Knowing we didn't have storms at that time locally, the timestamp was obviously in Greenwich Time. Subtracting the six hours to get the local time and the strike happened at 1:24 am. I rechecked the email timestamp of the disconnection alarm and sure enough it was 1:24 am. I'm no math genius but it was easy enough to put two and two together on this one. That strike, or the associated storm, had obviously affected the Trango Ethernet radio.

Right there on the map I had my "fingerprint." In reality, the information I gathered from the lightning map just confirmed what I had already thought, an electrical storm had played havoc with the Ethernet radio. It did get me to thinking again. Besides just being a cool site to watch lightning strikes as they happen, there could be some nice applications not just for safety purposes. This map could be used for insurance claims. If you could point out the actual lightning strike hitting at or near your tower, you've got proof of what caused the damage.

This could not only help with an insurance claim, but engineers may want to share this site with the rest of the staff that have trouble wrapping their minds around what happens when an electrical storm runs through your transmitter site. As Broadcast Engineers, we have seen the results of these storms during and after. For the rest of our staff they are sometimes insulated from these events and don't always understand the "why" something goes down.

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

It was the best of snow, it was the worst of snow. Last month, I complained of winter weather and Portland drivers who panic at the sighting of a single snow flake. Well I didn't know what was to come. Portland had a lot more coming just a week later.

Being optimistic, I had made a commitment to travel to provide an overview of Oregon's broadcast engineer travel credentials for the Seattle SBE chapter. That was not to be as just one day prior to the trip, local weather forecasts were deteriorating rapidly and taking on a tone of urgency.

One day later, I was on the road making a last minute check at the station prior to the arrival of more intense snow. On the way in to the station, I noticed station audio was not sounding normal. Once at the station, I found the Eventide delay was producing the distorted audio. An additional clue was the Eventide display was darker than usual and the digital input level indicator was going nuts.

With crossed fingers, I cycled the power. Nothing, no indication of power, no return to life, and one dead Eventide in hand. So with snow increasing, a quick, temporary stand-in was called on, and on to plan B we went. After placing the station on weather status, I began the trip home, watching fat snowflakes and continuing predictions of 3 to 6 inches. More on the findings with the Eventide later.

The next morning, we awoke to a foot or more of snow. Portland's snow plow leapt into action as Portland Department of Transportation panicked and ordered the roads closed. Later that day, we appeared to have lost audio on the AM. Our tenant's station at Mt. Scott was also off the air as well, implying the problem might be more complicated.

Several hours later, I called a neighbor near the station for an eyes-on road report. That report was 12 plus inches and drifting with no indication of any road clearing or sanding activity.

With that report, I decided to attempt the trip in to the station. First, of course, I needed to clear

my own vehicle. Not a small task. Doors frozen closed and 21 degrees does not make for a quick trip.

For the most part, traffic was light and roads in varying states of drivability. Fortunately, I have a properly equipped 4X4 vehicle with aggressive tires. Once at the station I was greeted by a parking lot drifted full with snow. That took some shoveling to create a path to the door.

Once inside, I found we had experienced several power outages and bumps. During the process, the main transmitter had switched from the main exciter to

the backup exciter. At the same time, the Omnia.3AM, which provides audio to the aux transmitter and main analog backup exciter had lost it mind. The Omnia 3 has its operating system on a PCMCIA card, which allows easy upgrade or change. That also leaves the Omnia operating system card vulnerable to power bump damage.

In this case, having redundant audio processing, backup exciter and aux transmitter proved that two wrongs can make a wrong. In this case, the two wrongs were bumping the Omnia card while also switching to the alternate exciter. Once the main exciter was cleared, getting back on the air



Erosion from runoff caused this AC unit to tip over.

was simple.

That wasn't the end of the weather problems. After a week of limited access, we had a day of full access and no parking. That was followed by warming and rain, 45 degrees at Mt. Scott. Much of the snow melted quickly, causing a large amount of runoff. Being on a mountain top, Scott doesn't have flooding potential. Instead we have the challenge of erosion. And yes, AC compressors can turn over.

On the plus side, I had been concerned with the potential of ice and snow causing high SWR problems with the new FM translator. The translator was working fine with a nice signal all during the storm.

Over the years, we have developed a procedure which allow us to dial in to the station and add, remove, and update Nexgen program content. The ability served us well as access was limited for more than a week. That's a positive step as I expect winters will be more severe for the next few years.

We have had problems with the building generator drooping out with false high temp alarms. After the last service, with replacement of sensors and disconnecting an aftermarket add-on, the

generator ran fine with no problems so far.

The problem with the Eventide delay is that the power supply is in a small space with ventilation at the top of the unit. When mounted in a rack, that ventilation may be blocked. When I opened the Eventide, I found the power supply was totally dead. The supply shows indications of temperature-related deterioration, so the failure may not be entirely due to power surges.

I called Eventide for a replacement power supply and was told they no longer support the product. Fortunately, the power supply is a standard off-the-shelf item that is listed at Mouser, Digikey, and other vendors. However, the supply is not in stock, with a special order restock of at least 13 weeks delay.

During the search, I found a listing on eBay for the supply as new in box. I have two on order. I suspect a manufacturer has discontinued the power supply and the remaining stock ended up on Ebay. This may be the last chance to obtain replacement power supplies and save the cost of a new delay.

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

January has been yet another fairly slow month. It has been very different for me. I am used to going to a site to do some work and having my dad tag along. He's a guy that likes to get his hands dirty. He helps me with various projects all the while teaching me. With him being unable to actually go to the sites with me, I've had to figure things out on my own, which is not altogether a bad thing, but it is a little nerve-wracking.

KLTT Night Switch

At sunset each day, KLTT switches pattern and reduces power. Several weeks ago, I got a call that the station was off the air right around sunset. I looked and it hadn't switched pattern - it was stuck

between patterns. I had to rock the antenna controller back and forth between day and night modes once and it went to the night pattern.



A couple weeks after that, it began happening more frequently. It even became more difficult to get the site to switch. At one point I had been trying for nearly a half hour before it finally switched.

I finally ended up setting up a DLink network camera so that I could watch the status indicators on the antenna controller and see where the issue was happening. I found the issue at towers 2 and 3 on the south side of the array.

The next day, I met Keith at the site. We turned the tower lights on at those two towers and switched patterns. Of course, the pattern switch worked perfectly. It's been working perfectly ever since. The voltage at the tower read fine, so we just left it.

The temperatures are warmer than they have been in a long while, so it's very probable the issue is also temperature related. All we can do now is wait. While I hope the issue is gone for good, I'm guessing when the next snow storm hits and it gets cold, it'll reappear.

KLVZ HD Exciter

Early in the month, while dealing with a minor issue at the KLTT transmitter site, I got a phone call that KLVZ was off the air. Always a call I hate early in the day. I immediately headed to the site, which isn't too far away from KLTT, and upon entering, I found the AM-IBOC exciter was dead. I could not get it to power up at all.

I remember vaguely when this happened a while back and we had to put the transmitter into

analog mode. We didn't leave the instructions at the site. I remembered there were several jumpers to move and that we had to wire up the mono audio feed, but wasn't sure exactly what to do.

Thankfully, my dad was available by phone and reminded me which jumpers. I had to call a friend at Nautel to confirm the rest. It was actually fairly simple, but without my dad there I was very unsure of myself. I thought we had left the analog wired up. Turns out we didn't. I'm just grateful the cable we used originally was in the cabinet so I just had to plug it in and we were off. I had to adjust power and modulation on the analog side to be within legal limits.

I found the power supply was most likely the culprit in the AM-IBOC exciter and sent it off for repair. We are waiting for it to be repaired and sent back. It'll be nice to get the station back to digital audio.

That about covers it for now, so until next time, that's all folks!!!

The Local Oscillator
February 2017

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, 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/91.1 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
970 kHz, 5 kW-U, DA-1
WDJC-FM • Birmingham, AL
93.7 MHz, 100 kW/307m AAT

WEXL • 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 • 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/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



Corporate Engineering
2821 S. Parker Road • Suite 1205
Aurora, CO 80014

email address: crisa@crawfordbroadcasting.com