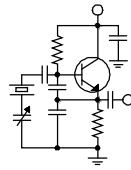


The Local Oscillator



The Newsletter of Crawford Broadcasting Company Corporate Engineering

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Changes

Spring is a time of change and transformation. Here in the Rocky Mountain Region we observe this as perhaps nowhere else. Winter wants to hang on and often brings some of the year's biggest winter storms during this transition, and a day or two before and after we have clear skies and temperatures in the upper 70s. Sooner or later, however, summer wins out by mere virtue of the number of hours of daylight. It is inevitable, a necessary change for the dormancy of winter to yield to the green of summer, a time of growth and renewal.

Within our own company, this spring has likewise been a season of change and transformation.

Readers may recall that Aaron McEachern left his Chief Engineer's position in our Detroit operation us back in March. Since then our good friend Joe Huk has been looking after the technical needs of the operation on a contract basis while we searched for a new Chief Engineer. I am pleased to report that we have found and hired that person. Brian Kerkan will join CBC-Detroit as Chief Engineer of that market on May 12.

Brian comes to us most recently from Saga Communications, where he has been Corporate Director of Engineering for several years. He is well known within our industry and has great experience with many of the same systems and components that we have long used. Having a good working knowledge of Wheatstone equipment, Nautel transmitters and the like will give him a leg up as he settles into his new position.

The engineering department of our Chicago cluster is in the process of undergoing a significant transformation this month. First, Rick Sewell has joined CBC-Chicago as Engineering Manager. Many readers will remember Rick well. He worked in our St. Louis cluster for many years, starting in production and operations, then moving up to be

station manager of KJSL before making the move into his first vocational love, engineering. Rick was Chief Engineer of our St. Louis market for many years before leaving four years ago to take a job as Chief Engineer in Clear Channel's St. Louis cluster. With his broad experience base on both sides of the microphone, in management and engineering and in both Christian and secular stations, he is ideally suited for the top slot in our Chicago-Rockford market, which includes three secular and one Christian station in a highly competitive PPM market situation.

The role of long-time Chief Engineer Art Reis is changing to contract status where he will help bridge the gap between the old structure and the new. We're not sure what Art's long-term plans are but we have benefited greatly over the years from his extensive technical knowledge and experience. Wherever he eventually lands on a full-time basis, Art will undoubtedly do well and his new employer will benefit as we did from his expertise.

In September of 2012, Senior Engineer Mack Friday announced his intention to retire at the end of August 2014, and with that date fast approaching we have had to make some additional changes in anticipation. Brian Bonds will at that time move into the Chief Engineer's slot in the market, essentially taking Mack's slot as supervisor but with a more technical role. James Kelly will continue in his present role and we will undoubtedly stretch him into new areas of responsibility as well. Indeed, at the top of Mr. Sewell's list is to find the highest, best use of every person on the CBC-Chicago engineering staff, from his own position all the way through to part-time remote technicians.

At some point, we will likely also hire an IT technician to take over Brian's and James's routine IT duties, freeing them to deal with the higher-level technical demands of the operation.

With all of the above in place, we can enter

the busy summer months with two of our biggest, busiest operations in excellent hands, well-staffed with capable, experienced and knowledgeable engineers of the highest caliber. In making these changes we have inarguably raised the bar not only within our own company but within the industry as well.

NAB Reflections

Like countless years before, this year's NAB Convention and Broadcast Engineering Conference was a busy time of meetings; tired, sore feet; long cab queues and endless bus rides; but it was also a great time of fellowship, sharing of ideas, renewing of old acquaintances and learning about new products and technologies.



Nautel again commanded prime real estate in the central "Radio Hall"

One complaint that I and many others had about this year's conference was that many of the meatier technical sessions were scheduled on the weekend – Saturday and Sunday. The rationale, or so I heard, was to keep the technical sessions from competing with the exhibits, which don't open until Monday. The problem with this is that a lot of folks, including me, do not arrive until Sunday afternoon and as such, cannot attend these technical sessions. And if the rationale for the change really is what I heard, I would heartily disagree. Very few if any attendees sit through every technical session. Instead attendees pick and choose, heading over to the exhibits while waiting on the next session of interest. I hope this schedule issue is rectified for next year and thereafter.

So what was new at the show this year? Nautel surprised me a little bit with its new GV-series of FM transmitters. I was reminded that we took delivery of our first NV-series transmitter in 2008.

That can't be true, can it? I guess it is, and that makes it time for a new generation of high-power FM from the leading manufacturer of AM and FM transmitters. The GV series takes the NV to whole new levels of efficiency. Many of the issues that the NV transmitters had, such as cooling in the front end, have been dealt with as well as the addition of some convenience features. I look forward to using GV-series FM transmitters at WDJC-FM, WYDE-FM and elsewhere.



Codecs were of particular interest this year. Here, WorldCast displays its line of Horizon codecs.

One thing that jumped out at me was that there was Wheatstone equipment in booths all over the exhibit floor. I figured out in short order that this was a way of demonstrating that various other manufacturers' equipment (such as TieLine) has WheatNet capability, which is great! Not only was there Wheatstone equipment in those other booths but it was talking to the network in the Wheatstone booth. That, I thought, was a pretty cool demonstration.

IP codecs are nothing new – they have been out there for a few years now and several have implemented multi-path connectivity to make them more robust for STL or network applications. I took more notice of those items this year because we are contemplating where we will go in a couple of years when our space segment contract expires. The Comstream/Radyne equipment we now use for CBCSAT uplink/downlink is obsolete and unsupported. We will have to either replace this equipment wholesale company wide or move to a different distribution platform, and I'm thinking the latter may be the way to go, using IP codecs, the Internet and multiple paths. With that in mind, I paid a lot of attention to WorldCast, TieLine, Telos and other manufacturers that offer such equipment. In

fact, as I write this we are testing a TieLine unit in Denver for this very purpose.

I spent a good amount of time visiting with David Day of Day-Sequera, who had several new products that you may have already seen in trade publication ads and elsewhere. Of particular interest were some devices that monitor the time-alignment of HD/analog signals. One device simply reports the offset so that the user can adjust the analog diversity delay in the exporter or audio processor, but another actually makes the process automatic, replacing the delay in other devices. Judging by what I hear around the Denver market, stations often don't pay all that close of attention to time alignment, which is critical in fringe areas. Such an automated device/process would take care of that.

Moseley caught my eye with some Part 101 microwave link equipment. This presents an additional option for the licensed 11 and 18 GHz links that we are moving into throughout the company.

I got the full demo of RCS's new digital media/automation system, Zetta. This is not the next evolution of Nexgen it is a whole new product, complete with a really outstanding GUI interface, new database structure (that we can back up!) and tons of features. For one thing, Zetta will eliminate the need for VOXPro in our studios for recording/editing of phone calls. That will make things a lot cleaner, eliminate a whole computer, monitor and desktop controller. We will likely start making the move to Zetta company-wide in the next year, so you might want to visit the RCS website and see what it's all about.



The RCS team demonstrates Zetta at the NAB convention.

One highlight of the NAB convention is walking the exhibit floor with Mr. Crawford and Don

Crawford, Jr. This is the one chance that I have to show the boss new equipment, emerging technologies, and introduce him and Don to the people who make it all possible.

And of course I very much enjoyed seeing and visiting with all the folks that I talk to or correspond with often but see only at the spring convention or fall radio show. That alone makes it worth the trip.

AOIP

In her column this month, Amanda Hopp will talk about a big production room project she just wrapped up. I was privileged to be able to participate in that project so that I could learn the equipment and technology, and now I feel that I have a handle on it.

Before this project, I viewed the whole concept of audio over IP (AOIP) with a degree of fear and trepidation. It involved some things I had no clear grasp of, such as VLANs and VLAN multicasting, IGMP querying and other mysterious acronymic concepts.

Amanda will tell you about configuring several Cisco smart switches, something that involved all of the above acronyms and more. I learned that configuring switches of this caliber involves more than the point-and-click we are accustomed to with Netgear and Linksys (and even lower-level Cisco) switches. I had to make a special cable with an RJ45 on one end and a DB9 on the other so that we could Telnet into the switches. I was initially irritated but upon further reflection, that makes a lot of sense. You could easily lock yourself out of the switch if programming it through a web GUI using one of the ports.

I'm proud of Amanda's work in the production rooms. These are now very clean, simple installations and other than mic and speaker cables there are no audio wires at all outside the rack pods. Most of the connections are made via CAT6 cable. Audio connections from external sources are made using StudioHub cables and short CAT5 jumpers. Most everything else including and especially Nexgen and Adobe Audition is done via WheatNet IP. You can, quite literally, go from bare cabinets to a fully-functional studio in a couple of hours. Amazing!

Next on our list is to network all the production rooms together, and that will require new home runs of CAT6 from each room. After that we plan to bring the Nexgen audio servers into the system with Wheatstone IP Blades. Stay tuned!

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

Hello to all from Western New York! This winter will go down as the winter that would not go away. As of Tuesday, April 23rd, we were still experiencing snow activity in Western New York. We have numerous outside projects for this spring, but most cannot begin until warmer, drier weather arrives.

We had to postpone our tower painting last fall at the WDCZ transmitter site when the weather turned too cool to paint the remaining 2½ towers. A late start due to spring rains coupled with an early fall created a much smaller window of opportunity to get the towers done. Also at this site, we were scheduled to have the tower foundations repaired, as chunks of the concrete have been coming off the base piers for some time now. The contractor we hired to do this work kept putting us off until the weather got too bad to make the repairs. Only then did we learn that he had been in financial trouble and was closing his business. But out of this bad situation came some good. The contractor that I found to replace the original was able to do this work for a substantially better price. As soon as the weather breaks he will begin the repairs on the tower foundations.

At the WDCX-FM tower site we will have to make some repairs to the fencing that encloses the tower anchor points. Excessive frost heave has pushed some of the chain link fence posts as much as 18 inches out of the ground, and that has severely distorted the chain link. The easiest solution would be to simply remove the chain link fabric and move it down and re-secure it. Our other alternative is to replace the posts that have heaved, which comes at a much higher price. We'll get some estimates of repairs both ways and determine the best way to make the anchor points secure again.

Aside from the frost heave, another anchor point received some damage from a fallen tree early in the winter. The debris was cleaned up and the damage was assessed. It looks like we will only have to replace two short horizontal runs at one corner of

the fence. No other damage was noted. All three tower anchor points will have to be sprayed with cold galvanizing spray due to rust on the turnbuckles, and all grounding wires will be checked for tightness. We had a very windy winter and the guy wires flexing with the wind tend to break off the grounding connections between guy runs. I had replaced many of the grounds several years ago, so we are due for some maintenance in this area.

In Rochester, the WDCX (AM) site held up great this winter! Aside from a couple of tripped breakers

due to brown outs, we made it through the winter unscathed. There are no major projects planned for this site this year other than some minor repairs on the wooden fencing around several of the towers. Last summer, with the assistance of our production manager Brandon Grinder, we replaced one whole side of fencing that had been broken by heavy winds. This summer, with Brandon's help again, we will have to replace several broken 4x4 posts and some fence panels that have cracked/broken from the winter winds. These repairs will help keep our towers secure from any outside intruders.

I had mentioned in last month's edition of *The Local Oscillator* that work was to finally begin on the WLGZ-FM transmitter building in Rochester. Pink Rose Contractors installed the drywall ceiling and insulation above the roof joists to help insulate the attic space from the cooled portion of the building. Somehow, from the beginning stages of this project, a roof-mounted ventilation fan was left out of the final quote, which meant that with the addition of the ceiling and insulation, the building was getting hotter than ever before, no big surprise with the volume of the space being reduced quite a bit! We still have repairs to be made to the aging A/C unit, which works only when it wants to, so heat build-up in the building, even during the cooler temperatures, was too much for the equipment.

We obtained a quote for the roof-mounted exhaust fan that was left out of the original quote, but



it was way too high for the scope of work involved. After thinking about it, I decided I could do this installation myself and save several thousand dollars in the process. I have ordered all the equipment and parts to do the job and am waiting for the weather to break to get this work done. Hopefully some pictures

of the project in next month's report.

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, and happy engineering!

News From The South

By

Stephen Poole, CBRE, CBNT, AMD
Chief Engineer, CBC-Alabama

Well, this is a blessing. We had severe, tornadic storms roll through on Monday, April 28. But I'm *not* going to post the usual pictures of transmitter sites buried under fallen trees, because all of our sites came through relatively unscathed this time, thank the Lord!

I don't want to make light of this.

Unfortunately, we had some fatalities in the state when the tornadoes rolled through, and I hope everyone remembers their families in prayer. Some folks lost homes and other possessions.

But I can and will thank God. Staying on the air is my job, and I consider it my ministry. We had the usual glitches with WYDE-FM's T1 line, and a few power outages, but for the most part, we stayed on the air and kept our listeners company-while the strong winds blew. That's how it's supposed to work.

Everyone has a weakness. Mine is a kind of reverse psychology. Part of me figured that if we worked overtime to ensure that we were ready for the storms, they wouldn't hit us too hard. With Cris's assistance, we even bought a new chainsaw and then didn't have to use it.

We have an electric chainsaw that we use for tower site maintenance, but in a burst of something resembling logic, I dimly realized that it probably wouldn't be much use if the power was out. Cris agreed to let us purchase a good Stihl unit, which now sits safely in our shop at the studios.

But I hope you'll understand if I say that I hope we don't really need it. I'll pull it out now and then and crank it just to make some blue smoke and annoy the Global Warming folks, but frankly, I'm thanking God for how well we weathered this event

especially given how badly the entire state was hammered almost exactly three years ago, on April 27, 2011.

Microwave Data Links

The weather has had another effect: the tower crews are running, repairing damage. Everyone is running behind, even the guy who normally mows the grass at our transmitter sites. But hopefully, we're going to get the mess at WXJC in Tarrant straightened out early next week. We will then move to (pounce on) finishing up that double-hope for WYDE-FM in Cullman.

Todd, who is now becoming a certified propeller-headed Geek, won a Raspberry Pi and some other goodies from MCM. He has been babbling happily about using it to make a mini-PBX that will allow us to connect our transmitter sites over these Dragonwave and Trango links.

Whether his brainstorm works, we have been eagerly awaiting the day that we can get all of our remote locations off of ATT land lines, simply because they're unreliable. As I write this, in fact, we're waiting for ATT to restore phone service to poor little WXJC-FM in Pumpkin Center. That was one of the few minor casualties from Monday's storms.

We haven't been idle. We've been testing the equipment, getting it ready to go. We've decided to redo the power supplies on our Dragonwaves, putting them in a NEMA box up on the towers at the dishes. I wasn't happy with the dinky ground screws in those Transectors and power inject boxes, though, so I modified them a bit (see Figure 1).

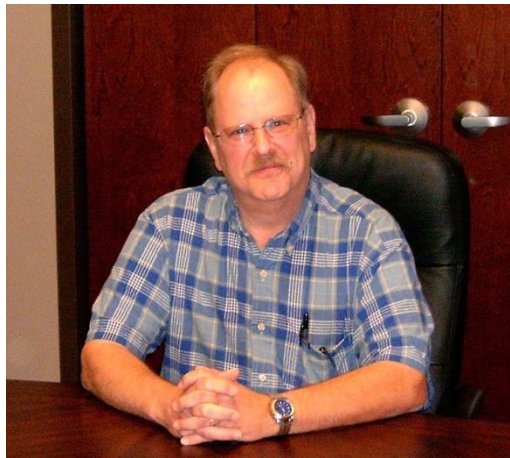




Figure 1 - Now this is how you ground a NEMA box.

By the way I find it interesting that Lowes sells the big crimp lugs for 4 and 6 gauge wire, but they don't sell the crimp *tools*. I guess they expect you to bite them or use a hammer. But then again, once I priced these things online (and picked myself back up off the floor after I *saw* said prices), I guess they figure they won't be selling enough of them to make a difference.

So, this is a glass-half-empty/full thing. I'd just be grateful that they carry the lugs.

A Sad Farewell

Jimmy Parker came to us just prior to us building our new studios at 120 Summit Parkway in 2006. He first worked for us as a board operator, but as I got to know him, I wanted to 'steal' him into Engineering. Jimmy had been to school for studio engineering, and besides, he could crack jokes with the best of us.

Over the past several years, we've watched him grow to the point that he has been doing most of our routine transmitter site maintenance. I can't tell you the number of times that he has pitched right in during emergencies, cheerfully helping late into the night or in pouring rain. He shared our key ethic: we stay on the air, period. Make it happen!

But time moves on. Jimmy married a beautiful girl named Stephanie several years ago. She lived in Huntsville, so Jimmy (being intelligent) moved up there with her. That was an awfully long way to drive, but he did it, because he loved working with us. Every day, he drove from Huntsville to Birmingham, about two to two-and-a-half hours round trip.

Now, there's both good and sad news: The good is that Stephanie is expecting. We pray that the baby will be healthy and happy (and look *nothing* like her father). The sad news is that after a lot of prayer, Jimmy has realized that he needs to be near his wife and new baby, so he's leaving us. He'll be taking a job much closer to home in Huntsville.

We wish Jimmy, Stephanie, and New Parker Kid nothing but the absolute best. Jimmy won't be that far away and we'll stay in touch. We've told him not to be a stranger. He has even offered to pitch in for special projects and emergencies, as he has the time. We wish him the best and pray God's best blessings on him for the future.

Sandy's Surgery

My wife Sandy is currently recuperating from hip replacement surgery. I'm pleased to report that she's doing quite well. Thanks to those of you who prayed for her rapid recovery. But this image comes from the place where she has physical therapy.

They're great at the therapy stuff ... but the company that owns the site might need to rethink their approach to security a bit (see Figure 2). I'm just saying. The green gate on the left is locked at night to keep people out of the parking lot. Theoretically.



Figure 2 - A stranglehold on that 'security' thingie.

That's it for this time: short and sweet. Next month, I hope to compensate with lots of both prose and pictures of *completed* Dragonwave work. Until next time, keep praying for this nation!

Mainland Memoirs
By
Bill Agresta
Chief Engineer, KBRT

Greetings from sunny Southern California! Usually about this time, a day or so before my *Local Oscillator* submission is due, I look back at my month but have a tough time remembering much detail because I'm so caught up in the projects of present. This month I made notes, and wouldn't ya know, I'm still more excited about future projects so, let's start there.

As I write this, Todd Stickler and I have begun to put our heads together over a fairly large project at our Costa Mesa studios. It seems that some work has been back-burnered with regards to completing our digital audio chain, and today, as we began to explore and make drawings, we figured out why.

We have been trying to basically copy our old analog setup, except do it using AES/EBU. I have been waiting on corporate, and I guess they did not realize that, so here we are, time to put the pedal to the metal and get this train a-rolling!

We thus far have worked out a way to seriously simplify our chain while at the same time, making it more effective and efficient for use. It will be nice to remove the old stack of analog distribution amplifiers, eight in all, and end up with only one left in the rack, and it will be great to be done with the analog multi-pair cables coming from everywhere. The new set up should leave us with only a few digital audio lines all neatly labeled and tied.

This project continues our focus on the Costa Mesa facility that we began last month as soon as I returned from vacation. It began with a redo of Studio D that got an entirely new look and feel. The nice thing is, this has all been done on a very low budget, and one a lot more down to earth considering the research I did before we began.

Our old interview table was not working for us anymore, so I got bids on new studio tables, most to the tune of \$4,000 and up. Being a person who has done his share of woodworking, I think those prices are insane considering the product you end up with. Most are made of cheap particle board and many are not

well put together.

We decided to make our studio an example of what can be done on a very small budget. We modified the existing table by adding a new wood top and then building what I call a "spaghetti trough," something I have used in many church audio/visual installations. Simply put, it is a trunk that sits in the middle of the table and contains wire (service loops), small electronics or interfaces and also allows for a nice place to mount connections and controls for things like headphones, microphones, etc.

The spaghetti trough also allowed us to mount the computer monitor up and out of the way, and it leaves room for books and such to be used on the table surface without interfering with any plugs or controls, something we used to have issues with.

The next upgrade for our studios is the replacement and relocation of our monitor speakers, much smaller speakers located at the mix position rather than overhead which in a few cases have led to some bumps and bruises in the past. I know that my Operation Manager, Todd Stickler, is very excited as this all comes together, and I am glad to create a more functional and organized workplace.

Todd and I spent a long and hard day doing brush clearance up at our transmitter site and got it nearly done. I have some repairs to make on our DR Power Mower and our string trimmer before I head back up to finish, but I am glad at how quickly we were able to tackle what we did.

After a day of brush clearance the Amateur Radio volunteers from the Corona Police Department came up for a tour. We had a great time with them. I always love to show off that awesome transmitter site. It seems they have also talked me into getting my Technician Class Amateur Radio License, so all you hams out there, we'll be talking soon.

Until next month, the Lord bless you and keep you; the Lord make his face shine upon you and be gracious to you; the Lord turn his face toward you and give you peace.



The Portland Report

By
John White, CBRE
Chief Engineer, CBC-Portland

As I write this, pellets of solid rain are tapping at my windows tapping like a growling wolf reluctant to release its prize. It's been like that this year, and although Portland is finally past the snow, we still have snowfall at coast range locations. It does look as though this will be a cool summer.

When we recently remodeled the KKPZ transmitter building to also serve as the studio/office location, we replaced light fixtures in the new areas. In other areas we retained many of the original 1980 fluorescent fixtures. These are four-tube T12 lamp fixtures. At 30+ years of age, the fluorescent ballasts are at or near end of life and dropping like flies, and with the building occupied for longer periods that failure rate is only likely to increase.

A year ago we replaced many lamps and several ballasts. I had intended but was unable to stock up on any spare ballasts. The simple fact is that the original T12 has become a dinosaur. Some electronic replacements are available (32 W), but it would be a nightmare to mix those with original four-tube 40-watt (160-watt total) fixtures. In any case, the ongoing failures and replacements threatened to be an increasing cost and maintenance issue.

Again this winter, three of the eight high-pressure sodium vapor security lights failed, most likely with bad lamps. With two of the three fixtures in the lunch room out, I decided it was time to look for a better solution. That search found retrofit kits for LED replacement of fluorescent and sodium

lighting fixtures.

Following that thread, I stopped by one of our local electrical suppliers to look at the stock of retrofit kits. In the face of the old fixtures failing at an increasing rate, what I learned is encouraging on several fronts.

I already knew the LED service life is expected to be on the order of 100,000 hours, much better than the 1,000 hour life cycle of older lamps. The energy consumption of LED fixtures is approximately 32 watts for the same light as the old 160-watt fixture. That's 5.2 kW with the current fixtures compared to 800 watts with the new retrofit, a savings of 4.4 kW whenever the lights are all on. A single one-time upgrade retrofit will be much more labor efficient than one-by-one repairs with scarce replacement parts.

Locally, Oregon utilities have an energy savings cash rebate program to offset the capital costs for installation of retrofit kits. I am asking for bids now to check how the cost figures pencil out. As Paul Harvey said, stand by for news.

In a previous column I described a small fire we had experienced a couple of months ago. I would like to take a few moments here to expand on that experience.

Sometime in the past, we had a commercial communications tenant that added two clandestine antennas. Worse, he didn't feel bound by any rules of proper installation procedure. That was a major contributor to the problem and exposed an issue that should be considered by all broadcasters.





Figure 1 - Cable at building entry port. Note the fire damage.

At KKPZ we have a 170-foot communications tower on which we lease space to tenants. This tower is located to the south of the building with a 10-foot ice bridge to the building. The tower and the cable entrance are grounded with 3-inch copper strap. Sometime after the initial incident, I noticed another area of concern shown in Figure 1. Clearly the fire stop material has been activated and expanded to close off the entrance passageway. What happened?

The culprit is shoddy installation combined with bad weather and falling ice. Notice the drawing of the building entrance in Figure 2. As the coax cable passes through the entry port, the coax shield acts as one plate of a capacitor with the cable jacket acting as the dielectric when the cable becomes ungrounded in an RF environment. In this case, the voltage is nowhere near enough to punch through the

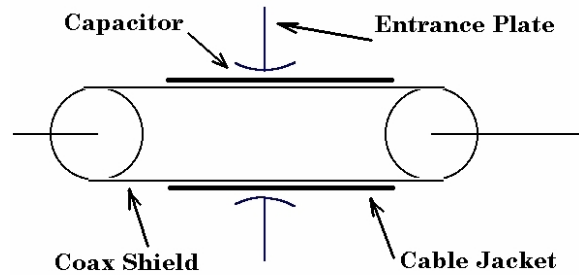


Figure 2 - Equivalent circuit of the cable building entry.

jacket.

What happened instead is that the jacket acted as a lossy dielectric capacitor between the shield and ground. The RF on the shield cooked the jacket over time. Figure 3 shows the cable after it was removed and clearly depicts what happened to the cable.

That RF should not have been there, which brings us to the actual cause. Notice the δ ground δ that was used. The industry stopped using this kind of braid for grounding years ago for the reason shown. Simply put, braid which is made of very small exposed conductors is NOT weather resistant.

The so-called ground was just a failure waiting to happen.



Figure 3 - Cable after removal from entry port.

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

Springtime

Spring has sprung, more so in some places than others. As I write this, many parts of the South are dealing with tornados while here along the Front Range of the Rockies the wind is blowing hard. With spring comes the growth. It is amazing how fast the grass and weeds grow in Colorado after a small rain. One day, brown grass and the next day it's two feet high and bright green. It's time to start mowing and attempting to stay ahead of the growth.

Tractor

We recently decided to purchase a canopy for our new Kubota tractor. Many people think that we have nothing to worry about in Colorado. If it doesn't get to 100 degrees, there is nothing to worry about right? Wrong. As some of you may know, Denver is known as the Mile-High City. While that may mean something different in 2014, for years it has been because Denver is a mile above sea level, with other areas being higher or a little lower. That puts us a mile closer to the sun with not a lot of atmosphere above to filter out the UV rays, and all that combines to make those sun rays that much more brutal. We decided we wanted to try and keep ourselves from being burned while mowing.



A new, smaller trailer will allow us to transport the Kubota tractor between sites.

Trailer

One thing with the new tractor was the fact that we can't just leave the tractor unattended



overnight at any of our sites. For one thing this is a brand new, very nice tractor and not the 40-year-old beast we used to have. It has "steal me" written all over it. To make matters worse, the newer tractors have a one key for all of the same series, so anyone could get their hands on a key to fit the tractor and drive off with it. That being said, we knew we'd have to get a trailer my

vehicle could pull. We sold our old car hauler trailer to Kilgore Construction and went and bought a new, smaller and lighter one that is still rated to haul the new Kubota. With that I had to also go get a brake controller installed in my car. I'm not a big fan of having to haul so much weight with my car, but I guess it won't be an everyday thing so it will survive.

Tower Lights

Early last month, I began receiving tower light alarms from both the lighted towers at KLZ. It was rather odd, both towers having a beacon go out at the same time. With the first alarm, I went out to get a visual and everything looked fine. I did not have binoculars but could tell both bulbs in the beacons were lit. The next morning I went out and manually turned the tower lights on. I had no clue what would be causing this issue but began to trace things out. I found the wires went to a punch block and repunched the wires. When I did that our alarm started showing things were okay. So I thought things were good.

That night, I got another alarm. Both KLZ beacons showed to be out. I verified they were working and the next day I again went out and began tracing the wiring. It took us a while to figure out how the tower lights status wires came in to the building, but we found it. It involved going into the crawl space and finding where the wires went in the rack before going to the block.

The problem was a common ground wire.

Whoever had installed the tower light monitor modules had used a single piece of audio cable for the status alarm, using the red wire for one tower, the black for the other and tying the grounds together with the shield. That shield was punched onto an insulation displacement block, and without any insulation to displace, the connection evidently wasn't all that great. We repunched it and it has been working fine ever since.

Wheatstone Upgrade Part 1

We did it. Our production rooms have been upgraded. In March, we upgraded Prod C. The initial setup of the Wheatstone equipment, which included an E6-8 control surface, a mix engine blade and a console blade, proved to be difficult, but we found it was only user related. The beginning of April, we received the equipment for upgrading the other two production rooms. We also purchased three new Cisco 2960 8-port managed gigabit switches. Wheatstone recommends these so we decided that for each room we needed to have one.



Wheatstone E6-8 control surface in Denver production room.

With the other switches we had been using (Linksys managed gigabit switches), we always had an issue with reboots. It would take a long while for the system to come back up and work. Setting up the

Cisco switches proved to be difficult as the manual I found online did not seem to have the right setup. We should have been able to log in to the unit, set the IP address and password and then log in to it to do the setup. It did not work. After calling Cisco, their support team helped us get it working using the console port. We were able to get the switches set up and installed in the production rooms. This included Prod C, replacing the Linksys switch we had in the room.

Setting up the other two rooms went very smoothly. In one instance, I was able to get a computer set up over the weekend and get the equipment working and installed the following Monday. This included cleaning out the old wiring from the Mackie board, installing the new equipment and running some new cables for microphones and speakers. In less than a couple days we were able to get two rooms set up and ready to go. I must say, the rooms look, work and sound amazing.

Nautel Exporter Plus

We are currently having issues with the KLZ Exporter Plus. We noticed a few times that the HD was off. Going out to the site we found the exporter was off, as if someone had powered it down. Powering it back up all seemed fine. But then it happened a couple more times and it finally dawned on us there was a problem.

I looked at the power supply and the readings seemed normal. The fan on the motherboard looked to be working. Since the exporter would work for days on end after being powered back up, it was hard to tell if there were any alarms before it died.

At this point, we are going to replace the fan just in case it keeps failing and we don't catch it. The only way to fix the issue is to start working on it one step at a time and ruling things out. Hopefully by next month, I will be able to tell you it is fixed working reliably.

That about does it for this edition. I pray you all stay safe this spring. So until next time that's all folks!!!

The Local Oscillator
May 2015

KBRT • Avalon - Los Angeles, CA
740 kHz, 50 kW-D/0.2 kW-N, DA-1

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

KSTL • St. Louis, MO
690 kHz, 1 kW-D/18 W-N, ND

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

WDCX • 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

WLGZ-FM • Webster - Rochester, NY
102.7 MHz, 6 kW/100m AAT

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

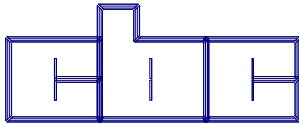
WYDE • Birmingham, AL
1260 kHz, 5 kW-D/41W-N, ND

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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