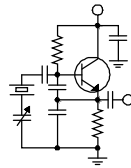


The Local Oscillator



The Newsletter of Crawford Broadcasting Company Corporate Engineering

JUNE 2011 • VOLUME 21 • ISSUE 6 • W.C. ALEXANDER, CPBE, AMD, DRB EDITOR

Rethinking our Plans

It is usually with some trepidation that I watch the calendar pages turn to the months of May and June. While late spring/early summer is one of my favorite times of the year, it also tends to be peak severe weather season in many parts of the country, and that so often spells trouble for our broadcast facilities.

Of course it was late April when the tornado outbreak in the south brought so much destruction to that part of the nation, but it's just that type of weather that is so prone to cause serious damage to our stations, interrupt power and keep out engineers hopping.

As I write this, several days after the deadly Joplin, Missouri tornado, the headline on my favorite news website reads, "Deadly Midwest Twisters Pummel 3 States - Are More on the Way?" That's certainly the question on a lot of people's minds, and that along with April's Birmingham tornados and two lightning strikes and some flooding at our Detroit facility last month has got me rethinking some of our contingency plans.

Until this year, my thinking had always been that any catastrophe would be localized - a lightning strike, a tornado, a fire or whatever, some event that would affect the studio or one of the transmitter sites in a cluster. The contingency plan for most markets has been to rely on other sites to provide backup. But

what happens when a mile-wide tornado wipes out several sites, or even if it only takes out power to a large geographical area encompassing more than one site?

To some degree, we are protected from at least the power outage aspect of that scenario in our larger markets because we have generators at the studio and transmitter sites. But one thing we learned during the Alabama crisis in late April was that the type of standby generators that we employ aren't intended to operate 24/7 for days or weeks on end. The oil and filter are going to have to be changed every few days, and a close eye needs to be kept on the coolant.

And in the days after a local disaster, you can forget about getting the regular service company out to perform these maintenance tasks on the generator - they will be too busy dealing with generators at the hospitals, police and fire stations, etc. We will have to deal with it ourselves, and that means keeping a supply of oil and filters on hand at the site along with the tools and containers necessary to perform the work. Obviously the time to figure out what's needed and stock the site accordingly is not the day after the disaster. That time is on a blue-sky day, a day when you wouldn't normally

be even thinking about such things.

Another thing we learned is the importance of keeping an adequate fuel supply on hand. In some



The red line indicates the NWS-plotted Birmingham tornado track. The brown area just south of the line is the WXJC(AM) tower site. The distance: less than 1,000 feet from the track to the nearest tower.

locations we are fortunate enough to have a natural gas feed to power the generator, essentially removing the whole issue of fuel supply from the equation, but that is the exception. In most locations we have to store a limited supply of either diesel or LP gas at the site. Normal weekly exercising of the generator plus occasional operation during short-term power outages will deplete this supply without the engineering staff really being aware of it. The lesson we learned is to be aware of the fuel level at all times and during critical times of the year ó storm season in the spring/summer and snow season in the winter, keep the tanks topped off.

And yet another lesson is to know the specific fuel consumption of each generator. That will provide a clear idea of the available run time for

the amount of fuel on hand, a piece of information that may be critical in the days following a disaster when it is necessary to prioritize the refueling of generators.

Stephen Poole will give you an excellent account of all his tornado adventures in his column herein, so I won't provide more details here. I will say, however, that we are thankful to God that our only real damage was the HV contactor in the WDJC-FM FM-30T main transmitter. It could have been much, much worse.

We will take away the lessons we learned and hopefully be better prepared for the time when it is.

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

Hello to all from Western New York! This spring has certainly brought its share of weather-related problems to many areas of our country. The devastation caused by the numerous tornados in the South and Midwest has risen into the hundreds of millions of dollars in damage and the loss of several hundred lives.

If you have never lived in a tornado-prone area, it's hard to comprehend just how much damage and devastation one of these weather systems can cause.

As a former resident of the mid-South (Western Kentucky), I can honestly say that I do not miss this time of year at all. Having experienced numerous tornados and witnessing their power firsthand while growing up, I learned quickly just how deadly these storms can become and how much destruction they can cause in just a matter of seconds.

My heart goes out to the residents of Joplin, Missouri where a recent tornado pretty much leveled the town, with damage to over 8,000 buildings and many homes and businesses leveled to the ground. As I write this, they are still looking for at least 10 missing or unaccounted for residents of the town, and the death toll has risen to over 100 persons.

There are 26 radio stations licensed to or within 15 miles of Joplin. I have not heard any

reports come out of the area as to the current condition of the broadcast facilities. I am sure that only those who had emergency preparations in place, such as power generators and alternate studios, were broadcasting immediately after the storm.

Broadcasters, as a source of news and information in events such as this, are vital to the communities that we serve. Being prepared for such

disasters and having backup plans in place could mean the difference between life and death in some circumstances. Does your station have a disaster recovery plan in place? How would you broadcast if you lost your main studio? There is no better time than now to address this issue. After an event such as this, it is too late. Meet with members of your local law enforcement agencies and find out how you could benefit each other after a disaster. A local National Guard or civil defense chapter could offer suggestions and ideas to help you come up with a workable plan. The Army Corp of Engineers is also a good place for obtaining help devising a disaster plan, and also may be able to offer equipment such as



generators in exchange for sharing a part of your facility for their use.

Part of our job as a broadcast facility is to serve the cities in which we are licensed. What better way to serve than to be able to broadcast important news and information after a disaster has occurred?

WDCX-FM – Buffalo

Our satellite woes continue here in Buffalo. At this point, we have come up empty handed as to a solution to the cause of our satellite reception problem. I have ordered a new LNB from Dawnco, which is advertised as the absolute best PLL-LNB available. The specs on this 20-degree phase locked looped unit boast a stability rating within +/- 04 KHz and 1dB gain compression point with a minimum spec of +10dBm. I highly suspect that we are experiencing some sort of terrestrial interference in this area, as recently we have had to revert to our analog STL as the digital signal has started breaking up also. As of this writing, I have not been able to troubleshoot the STL interference, as it has just started within the past several days. It possibly could disappear as quick as it appeared, attributed to atmospheric conditions.

We are beginning to make some headway in

our server replacement here in Buffalo. I have made three attempts to get the new server up and running, with problems developing at each attempt. The issue we are having is not the performance of the server itself; it's with NexGen loading the information from the server to the local database. Todd Dixon has been working diligently with me to try and determine what is causing the snafu.

After a recent VNC visit into our entire network, including both old and new servers, we think a solution is at hand. Before the weekend comes, I will install the changes in the NexGen startup script, which should load the data into the local machines after initial boot up and drive mapping.

This definitely has been a learning experience, and I have learned a lot about file server structure and how networks operate. The Rochester installation should go much smoother, I hope! 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!

The Motown Update

By

Joseph M. Huk, Jr.,

P.E., CPBE, CBNT

Chief Engineer, CBC–Detroit

Last month, I traveled to Dayton, Ohio for the annual Dayton Hamvention (hamfest). At the show I visited with many of the equipment vendors and walked the flea market looking for those precious electronic trinkets.

Besides that bit of fun, June was a very challenging month, mostly due to weather. The WMUZ facility was plagued with flooding and damage to equipment due to lightning.

Dayton

I was really looking forward to attending the Dayton Hamvention, since I could not attend last May. Last year, my dad passed away just before the event and my friend from England, Roy Barling

(G4TGP) who flies in for the event, had to be hospitalized due to an infection. This year,

everything finally worked out well for the trip.

The Amateur Radio event is a lot of fun. The flea market is a combination of private and commercial vendors. If you enjoy electronics as a hobby or as a profession, you can find test equipment and parts at a low price.

While rummaging through the 20 acres of surplus electronics, you just never know what you will find or see. Since the electronics and

communications industry is small, you will see old



friends or colleagues and have time to get reacquainted. We hams are also a little crazy (smile). You can see in the photos that hams like to dress up



as astronauts or have antennas pop out of our bodies. The passion of radio really shines though at this international hamfest.



At this year's hamfest, I was looking for a portable antenna structure to host an inverted Vee and perhaps a Yagi antenna. One vendor was selling portable military surplus towers. I was able to pick up the kit for \$150.00. It has all the pieces to erect a 30 foot structure. When it is stored, it fits in a bag that is a foot print of a camping tent. My son and I should have fun putting it together in our back yard. In addition, I found a lot of suppression parts for the station. Parts like MOVs (Metal Oxide Varistors) and fast switching diodes were easy to find.

The three-day hamfest was still hosted at the Hara Area venue in Dayton. Inside Hara Area is where most of the commercial vendors were located. The building is really old and will hopefully get a facelift soon. The septic system failed during the event and attendees had to use portable toilets exclusively. The officials didn't take this issue lightly. Roto-Rooter was called in to find the

obstruction in the pipes. They have a lot of fancy equipment to find the obstructions under the ground. The next day of the hamfest, the plumbing was working again with no issue.

When roaming around inside the area, I found all kinds of antenna towers and structures. In addition, you always find products that are not necessarily electronic but could be quite nice when operating your station. One such product was this suspended lounge chair. I could picture myself with a cold drink in one hand and a microphone in the other.

Studio Problems

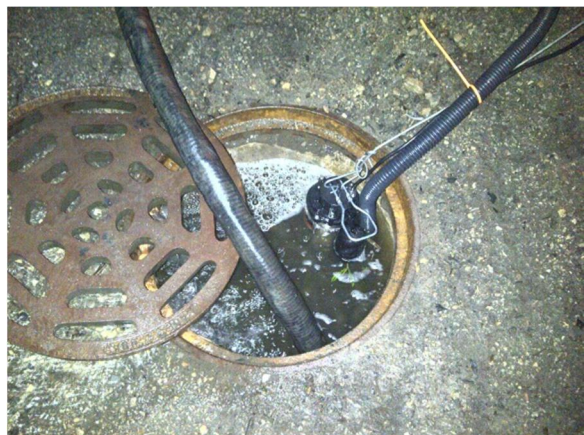
When I got back from Dayton, reality settled in quickly. We had experienced two lightning storms



Flooding in the studio parking lot.

two weeks apart, and then a week where we had rain continuously for days, which led to flooding.

Prior to the flooding, we were experiencing a parking lot storm drain that was very sluggish.



A clogged parking lot drain was the culprit.

When the rain became intense, we needed to contain the issue using sump pumps around the building.

Roto-Rooter was called out to clean the drain. They found over a foot of sediment and broken concrete in the drain that was preventing it passing the water. Since being cleared, the drain is working as intended.

The electrical damage from the storms to the plant involved burned up ICs in our Wheatstone bridge router and various other failures including our KVM (Keyboard Video Mouse) extenders. What I

did learn was that you need to add suppression to every entry port in these devices. Our Moseley LANLink 900 transceivers had no issue with storms. They contained suppression on the power line, Ethernet, and antenna ports. I am providing the same level of protection to the rest of these poorly immune devices.

Until next time, be safe, and if all goes well, we will be reporting to you from the pages of *The Local Oscillator* next month. Best regards.

News From The South

By
Stephen Poole, CBRE, CBNT, AMD
Chief Engineer, CBC–Alabama

On Tuesday, April 26th, Lee Davis, our afternoon host on 101.1 FM, interviewed Jim Stefkovich, head of the National Weather Service office in Birmingham. He said that the ingredients were there for a major severe weather event: it was warm and wet in the South, and a blast of arctic Canadian air was headed down to meet it. "Tomorrow (Wednesday, April 27th)," he said, was going to be ugly.

I certainly didn't discount the warnings, but I had no idea how bad it was really going to be. To play it safe, I told my two excellent assistants, Todd Dixon and Jimmy Parker, to be prepared. All leaves were canceled and all hands were to be on deck.

Tuesday was the calm before the storm. We weren't very busy, so I finished my May *Local Oscillator* article a bit early. I didn't even mention the weather. Poor Cris has had to wait more than once for my article in the past, and even at the best of times, I'd normally send it to him right at the deadline. But hey, this time, I was early! Patting myself on the back, I turned out the lights at the end of the day and headed to dinner and to check on my wife Sandy, who was at home recovering from surgery.

The Rude Awakening

Wednesday morning around 5:45 AM, the

sound of heavy rain and a strong wind woke me up. Hail began pounding the windows. That was nothing I hadn't heard before, so I just lay there, waiting for it to subside... but unlike in the past, it became stronger and stronger.

The whole house started shaking. I rolled over and touched Sandy's arm. "Honey, that's a tornado."

She answered, "I know. I'm praying."

Given her recent surgery, I knew there was no way we'd get to a closet in time. I just grabbed her hand and we prayed together. The wind roared, the house

continued to shake for about a minute and I heard a loud "bang" out front. But through it all, I felt a sense of peace; I knew that God would protect us. We learned later that it was an EF2 tornado, one that dissipated just before reaching our neighborhood.

When the wind died down, there were trees down and debris was scattered everywhere. The "bang" that I'd heard earlier was an old console stereo that had been sitting on our front porch, headed for the trash. The wind had blown that heavy thing into our front door. Our mailbox had been ripped out of the ground and thrown down the driveway. Our neighbor two doors to the north had lost his entire home; it had been blown off its foundation and had split. Fortunately, he and his family were on vacation at the time, so they weren't at home.



But our house appeared okay. We'd lost some shingles and there were a few little holes in the siding, but aside from that, it was sound and dry. Sandy and I paused to thank God for looking after us. I then turned to her and said one of the *stupidest* things I've ever uttered: "Well, we've had our tornado."

On the way to work, listening to our stations, I began to realize that April 27, 2011 was going to be different. There were the usual reports of power outages and damage in some areas of central Alabama, but the NWS was reporting that "the worst was yet to come." New and even stronger supercells were building all over Mississippi, headed our way.

That turned out to be exactly the case. Alabama was hit by *dozens* of EF3, EF4 and EF5 tornadoes, one after another, all day long and into the evening. It was totally unprecedented: at one point, we had several strong tornadoes on the ground *at the same time*. It would later be declared the worst tornadic event since the Great Depression, with hundreds of fatalities.

Cordova and Cullman

I worked at the studios, waiting for a break in the weather until about 3 PM, but if anything, the rain had steadily become worse. The WXJC-FM (92.5) site in Pumpkin Center had lost power that morning and had since come back on air, but I wanted to ensure that the roof was okay. WXJC (850 AM) in Tarrant had also lost power and I knew that WYDE-FM (101.1) in Cullman was already on generator. I told Todd and Jimmy where I would be going and asked them to keep an eye on the weather for me. My first destination was the 92.5 site.

As soon as I turned onto US 78, Sandy called me. She was at home watching the live coverage and told me that a warning had been issued for Walker County. A large tornado was hitting the Parrish area at that moment. "Turn around," she said in her best She Who Must Be Obeyed voice. As soon as I finished talking to my sweetie, Todd called with the same warning: "Don't go to Pumpkin Center." Since WXJC-FM was on the air, I told Todd that I would head to the 101.1 site in Cullman instead.

Here's a strong piece of advice: when traveling in bad weather, *always* let someone know where you're going and when you plan to arrive. I'm not being melodramatic when I say that Sandy and Todd quite possibly saved me from severe injury or even death. I probably would have missed the EF4 that went through that area, but there were so many trees down that I could either have wrecked my car or have been trapped in the middle of nowhere. This

particular twister missed Pumpkin Center, but it was one of two that totally destroyed Cordova, the city of license for WXJC-FM.

I then headed for 101.1. I had just turned onto I-65 and headed north when Sandy called again: "Don't go there, either. There's a huge tornado headed that way, too." Todd followed up with a call a few minutes later with the same warning. This was another EF4 that passed right through downtown Cullman (though, thank the Lord, it just missed the 101 transmitter site three miles south in Good Hope).

By this time, I realized that it was foolish to be on the roads. The weather was really getting ugly all over the area and to be honest, I was tired of dodging twisters. I carefully and slowly headed home. It was too late to head back to the studios.

Tuscaloosa/Birmingham

By this time, the national media were doing live coverage; many of you watched that high-end EF4 tornado chew its way through downtown Tuscaloosa. It moved on to destroy the small communities of Pleasant Grove and Pratt City, and then crossed I-65 just north of Birmingham — right from where I had talked to Sandy just an hour or so before. While that storm was passing through, to be safe, our staff at the stations put everything in auto and rode it out in an interior stairwell, but thankfully, it didn't come near our studios. Aside from some debris in the parking lot, 120 Summit was fine.

This tornado did, however, go through Fultondale, completely destroying over 50 homes and businesses, then headed almost directly over the 850 AM site in Tarrant. In Tuscaloosa, WTXT had lost their transmission tower; in the Birmingham area, WATV and WAGG each lost a tower. The only thing that saved WXJC was the fact that by the time it passed within a few *hundred* feet of the site, the tornado was dissipating. But that same storm soon spawned another EF4 monster that continued that same general track, chewing things up all the way into Georgia. It's amazing that our 5-tower array wasn't even damaged.

Can You Hear Me Now? NO!

So many lines and wireless sites had been knocked out, communications were our next problem. Cris and Laura Scotti had both been watching the coverage, and both were obviously worried. Wednesday evening (while keeping a close eye on yet *another* killer tornado that passed a few miles north of our house, by the way), I tried several times to call or send a text. It took hours for me to finally force through a couple of quick "we're OK"

messages.

The storms ended and we started surveying the damage, but communications would continue to be a problem. Land lines would remain out over a wide area. WXJC-FM, WYDE-FM and WDJC-FM (93.7) had no phone service for days. Wireless sometimes worked, but it was extremely intermittent, making coordination difficult. I kept getting öcall failedö or öunable to sendö errors on my mobile. You don't realize how much you use that Blackberry, iPhone or Android until it stops working!

Power Outages

The two knockout punches were (1), there had been so blamed *many* tornadoes that the destruction was unbelievably widespread, and (2), many of the big inter-city electrical lines (the öfeedersö) had been destroyed. The Brown's Ferry nuclear plant in North Alabama hadn't been damaged, but virtually all of its transmission lines were either on the ground or in the Tennessee River. Cullman EMC, which supplies power to 101.1 FM, had lost their feed from TVA. Even once they repaired their own damaged lines (and there were plenty), they were still literally in the dark until the Tennessee Valley Authority could feed *them*.

850, 1260 and 92.5 had lost power, but miraculously, in all cases it had been restored by the next day (Thursday). Not so at WDJC-FM and WYDE-FM, though. Both were on generator and would be for days to come. We started scrambling for a way to refuel them, but no one was available to go to the sites. We'd have to figure out a way to do it ourselves.

The solution for WYDE-FM turned out to be a local oil company that would sell us 55 gallon drums pre-loaded with diesel. They also sold us a hand-cranked pump to get the fuel into the generator. A local building contractor, Chris Boshell, loaned us his F350 truck to get them up to Cullman. Once that generator was topped off, we used one of the drums and my own pickup to keep it fueled.

WDJC-FM was a different story. A tree had fallen across the road to the transmitter site. In the process, it had then become tangled in the power lines. Alabama Power told us it would take several days before they could even get to us. With the road blocked, the best we could do was to use small, hand-carried cans. It was a race that we were slowly losing: we added as much fuel as we could, but the tank level continued to drop. We lowered the transmitter power and switched off the air conditioning to extend the run time. When Alabama Power finally restored service on Sunday (May 1st), the fuel gauge was



Refueling the WYDE-FM gen from a 55-gallon drum

sitting one notch above empty. Whew!

Many people don't realize that these generators aren't actually intended for continuous operation. They're designed for a maximum of 100 hours (roughly four days) of run time before service ö and that's best case. Cummins and Caterpillar actually want you service them every 24 to 48 hours of run time. Facilities that absolutely, positively cannot lose power typically have two gensets: one is used while the other is on standby or being serviced. Both of ours were running continuously for days when the power went out. I knew they badly needed an oil change, if nothing else. My old buddy Art Reis come through on that one: he gave me the number of a guy up in Illinois who walked us through servicing the first generator. After that, the second one was a breeze.



A tree across the road and tangled in power lines blocked access to the WDJC-FM site

At length, the power returned at WYDE-FM in Cullman on Wednesday, May 4th ö one week to the day after the storms.

The Final Word

I imagine that you've seen plenty of images from this area; YouTube alone has dozens of videos, both amateur and professional, of the twisters and the aftermath. There's no need for me to post pictures of the devastation. But you know, tornadoes are weird: you can drive into Warrior (near where I live) and see downed trees and destroyed homes, but just a few miles away, you'd never know we'd had a storm.

Likewise, Sandy and I drove back into Alabama from Nashville the other day. There was no sign of damage until we almost reached the Tennessee River near Huntsville. The storm that had hit Brown's Ferry had crossed over I-65 at that spot, and it looked like a giant had mowed a 1/2 mile swath of trees to either side of the Interstate. A few miles down the road, there was no sign of damage again.

As I write this, the death toll is well over 200 just for Alabama; the search for missing people continues. Entire cities, such as Hackleburg, Cordova and Phil Campbell, have literally been wiped off the map. Todd, Jimmy and I handled the stress by cracking jokes; I couldn't have made it without them. We just kept going and stayed busy so that we wouldn't have to ponder the fact that, not that many miles away, there were literally body bags lying on the ground, waiting for trucks to come and collect them.



Debris from damaged homes and businesses landed in the WXJC(AM) antenna field

The most heartbreaking stories were of victims who'd done everything right, but who'd been

killed nonetheless. One family in the path of that killer EF5 in north Alabama were in a deep basement; a car was thrown on top of them. They were crushed, even though they were in a safe place.

The bottom line is that the only safe place to be when a strong tornado hits is somewhere else. (I'm not being facetious.) A reinforced underground shelter is second best. I thank God again for protecting us and our facilities. The only real damage that we sustained was the loss of the plate contactor



A damaged contactor was the only real damage

in WDJC-FM's main transmitter. It had started chattering and had then cracked and arced. About 60' of 3/0 cable was burned up in the process, and that was *fun* to replace. But considering the alternative, I'd take it!

And I am extremely proud of our staff. Not only did Todd and Jimmy shine, our stations provided around-the-clock coverage. Listeners called in with needs, which could be anything from ice to chill insulin to an oxygen refill. Other listeners called in and met those needs. Some of our show hosts worked so many hours, they were literally hoarse by the time they left the air. Everyone stepped up and made me as proud as I've ever been. Our story was soon knocked off the national news by the royal wedding and Bin Laden's death, but that's fine. We live in a story of the weak society, after all. But please, give to the Red Cross or some other good charity, if you would, because a lot of people here are still in need. Keep us in your prayers, too. God kept our facilities and all of our loved ones safe, and I thank Him for that.

Catalina Tales

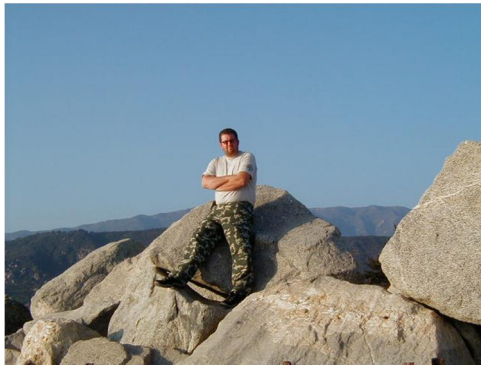
By
Bill Agresta
Chief Engineer, KBRT

Greetings from Santa Catalina Island! My life is all about brush clearance, clean-up and repairs these days as I prepare our Catalina Island transmitter facility for summer. We continue to experience some fairly severe windstorms here considering what we are used to, so I am not quite to the point where I can set up our front patio for summer with the barbecue and all, but I am hoping that comes soon. Besides my work here on the island, I have also been spending more and more time at our new property on the mainland up at Oak Flat. Some weeding and posting a few more signs all seems to have been worthwhile as our vandals have apparently moved elsewhere. I am hoping this trend continues through the summer.

The wind we continue to experience on the island has made some of our roads hard to navigate from time to time. Sometimes there are so many sharp rocks falling from the hillsides that if you can pass by without getting hit, you will most likely get a flat tire at the very least. That was my situation last week as I went into town to catch a boat to the mainland only to have my sidewall slashed open with a golf ball sized hole.

Given all the obstacles I face here day to day on our ever changing roads, I have been very impressed with our 2001 Toyota Tacoma 4x4. This old buddy has been through a lot, many times filling in on tractor duty, and it just keeps asking for more. I

drove a Land Rover Defender here on the island before I came to work for Crawford Broadcasting, so I have some serious 4x4 experience to compare to, and I believe the Tacoma is a much better handling off-road vehicle than the Defender, and at half the price. Okay, before I go off into an auto-review here, I better get back to transmitter plant.



The thing is, however, this place has run so well the past few months that I don't have a whole lot of technical stuff to write about. I made a minor adjustment to our satellite dish, repaired a UPS and did some work in our little studio, and that was about it for the tech stuff. The rest of my life here is "farmers work," out on the tractor fixing the roads, pulling weeds and of course, the never ending paperwork that I only wish would blow away in one of these storms.

In "island factor" news, the Coast Guard has erected a new antenna tower on Mount Orizaba, and it has become the most visible tower on Catalina Island. It sits on Catalina Conservancy property, and given all the past discussions about how they do not want any more towers on Catalina Island, I had to shake my head at this one.

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 Chicago Chronicles

By
Art Reis, CPBE, CBNT, AMD
Chief Engineer, CBC–Chicago

Heroes

I had already put my May missive for *The Local Oscillator* to bed when those vicious storms just murdered the Deep South at the end of April. Just like Cris, as he wrote of it in the May issue of the *LO*, I couldn't help but be concerned for what might be happening with our stations there, and with our engineers, Stephen, Jimmy and Todd. Were they alright? I became especially concerned when I heard that Cullman, Alabama was hit by an EF-5 monster tornado and virtually destroyed. We have a transmitter site there with a 1400-foot tower. While the site survived, the local power plant and infrastructure were damaged along with the rest of Cullman, so while our own WYDE-FM was still up, it was only there because of site's faithful diesel generator. However, the fuel tank was definitely NOT designed to supply all the fuel for a week or more of continuous operation.

As for Birmingham itself, our big station there, WDJC-FM on Red Mountain, was also on emergency power with a diesel rig, though for a much shorter period of time. That meant that Stephen, Todd and Jimmy had to deal with keeping those gens on line in order to keep the two big FMs on the air, if for only 16 hours a day. What they did to keep those gens in enough fuel and oil changes to keep on keeping on was beyond the call of sanity.

Cris, in an email to the other CEs at the height of the crisis, called all three of them his heroes (emphasis his). I agree. I can only hope that if and when such a crisis comes upon us here at our Chicago operation (God forbid), we can respond just as well as Stephen, Todd and Jimmy did. Gentlemen, lead on!

Attitude Adjustment, HD Radio Division

I have a bone to pick and a rant to give against the folks at *Inside Radio*. Apparently, they prefer to give a positive spin to the satellite radio boys, while pooh-poohing the fact that HD-FM multicasting is out there, available, free, and just like satellite, all you have to do is to buy the radios and

go.

I'm referring specifically to two blurbs which ran on April 18 and 20 in the online short form version of *IR*, in which a San Francisco FM station, which heretofore had broadcast a country music format on its main FM/HD-1 channel, had switched to another format, and moved the country format over to HD-2 multicasting. *Inside Radio*, in reporting the change, haughtily stated (and I say that advisedly) that the move had left no country format in two of the nation's top four markets.

Excuse me, but that's a lie, and it's designed to denigrate HD radio, and, in my view, in favor of satellite. I've been over this before: satellite, to the best of our knowledge, has yet to make a profit. Any profit. And its debt load is enough to ensure that that might never happen. Terrestrial radio stations broadcasting in HD are, for the most part, making money. The only thing lacking is a strong (and I mean, *really strong*) marketing push to get people truly interested in buying radios. We've been there before.

For my part, I recently made the decision to put my money where my mouth is. I've owned several HD radios over the years, as my last month's article reviewing the JVC HDR-40 will attest. Now, I don't necessarily recommend this idea to others, but if you can do it, and you have the financial resources for it, try this: One of the PD's here just got married. Debra is the director at WYCA, our religious -little station here in Chicago. Though I wasn't even invited to the wedding, which bothered me not a whit, I decided to get her a wedding present: an HDR-40 car radio just like mine, complete with a custom installation kit for her Honda Accord.

Understand something here: Before all the other Class B FM stations in the market (most of which transmit from downtown) went to HD radio, WYCA had a listenable signal from its Beecher transmitter site to about 47th St. at the Ryan Freeway in Chicago. These days, thanks to the inability of most analog radios (and some of the digital ones) to filter out the digital signals from second adjacent



stations, the practical coverage of the station ends at about 87th St. That was one of the factors considered when the move was made to put WYCA's audio stream onto WPWX-HD-2 during the summer of last year, and it has remained there, almost uninterrupted, since. The installation of our new Nautel NV-40 in March resulted in an instant, automatic increase of our HD power output by a factor of four.

Listening to the WYCA format on WPWX-HD-2 is now a pleasure almost all over Chicagoland. There are very few dead spots in the city now, and none on the south and west sides, which is where the bulk of WYCA's listeners are. Add to that the prospect of a new antenna coming this fall, which will up our coverage to the northwest and southwest, and HD coverage on 92.3 should be very enviable. The only way in which our PD Debra is going to understand this is by listening, but getting an aftermarket radio is not something one would expect for her to get on her own. Which is why I got one for her. Her marriage just made the gift a lot more convenient.

Yes, I will install this new HD radio in her car, and once she gets the add-on to allow her to control the radio from the remote on her steering wheel (which is coming) she should be very happy with it, to the point, I trust, where she will want to tell others about it. Including, particularly, our client churches. My next move? To see what it would take to trade out for a bunch of little HD "walkman-style" radios for many of the pastors of those churches. Those pastors are, obviously, opinion leaders in their communities. Make believers out of them, and you will have many more people believing in our HD multicasting services themselves. Give the folks what they want, including and especially on HD radio, and they will come. And, oh yes, the *audio*!

Now, why hasn't the gang at Ibiquity thought about promoting like that?

Installation Blues

Now, having said all that, I must say that my recent experience with installing the new 4.3 series of HD software could have gone a lot better than it did. As many of you who are operating HD know, there are two advantages to the new version: 1) the ability to operate with greater channel bandwidth, for use in running HD-2, HD-3, and even HD-4, and all in stereo (rather than the HD-3 being in mono, and no HD-4); and 2), the lowering of the HD carriers' peak-to-average ratio, which allows the HD transmitters to be operated at higher power without violating the HD radio mask. More on that in a moment.

The downside is the software installation

itself. It's enough to make an old-timer really want to retire. Now understand that I'm not placing blame on anyone here, I'm just relating the situation. Let someone else sling the guilt. I'm not needed for that.

Here's some of the litany:

First, the earliest versions of the HD radio generators were built on motherboards which don't allow for replacing their internal hard drives with anything approaching today's state-of-the-art. I think I've discussed this before in these pages. Let's just say that the modifications are expensive and time-consuming, and not doable in the field.

Second, having said that, only two of our five FSi-10s needed that much treatment. For the rest, the 4.3.2 software install went apparently just fine. All are now upgraded.

Third, the installation of the Importer software version 4.3.1 is nowhere near as straightforward. Days on the phone with BE will surely be a testament to that. Here's how:

When installing version 4.3.1, the process must start with the formatting of the hard drive, erasing forever anything on it, and the re-installation of Windows, from scratch, and only Windows XP-Service Pack 3. Without that step, we are told, the system won't operate. That's when we learned that, no matter whether you have the license or not, without an original Windows XP disk, whether you have a license or not, you cannot format the hard drive from CD. In other words, a copy won't do. Formatting the hard drive will only happen with a Microsoft-issued disk. Try getting one of those from Microsoft in this day and age, even with a license.

The one thing the installation manual stresses above all is that the instructions must be followed in order. They mean it. The problem is, not all of the instructions are in there. I don't know who wrote the installation manual, be it BE or Ibiquity, but the truth of my claim is seen, at least in my case, by the plethora of marginal notes that are in my book, printed on both sides of each leaf. A lot of things are left out. For instance, our Windows XP disk contained Service Pack 2, but not SP-3. That meant a two-part install *and*, afterward, a call to Microsoft for their registration key. The call is automated, which, on its face, is not bad. However, it is difficult to get the automated system at wherever their call center is to understand the DTMF tones coming from a noisy transmitter room. I ended up having to do it from outside, where a windy day doesn't help either. If push comes to shove, do it from your parked car. And Lord help you if you get shunted off to a live operator from who knows where. They simply do not understand your English. Enough said.

More? Sure. There is no instruction in there as to when the drivers for the sound cards or the Ethernet connections are to be installed. In the case of the latter, you have to go on-line to get them. The many different types of motherboards used in the manufacturing of the various Importers are such that keeping drivers for all different types is precluded. The wise engineer will simply make note of the type of Ethernet port is in your Importer, then go online and download the latest version. No such problem with the audio card. The Importers only use two, ASI and Orban, and those drivers are on the version 4.3.1 installation disk. Be sure to have both sets of drivers installed after loading the operating system but before loading the actual importer software. Then, and this is entirely neglected in the book, you must install your preferred remote PC remote control software, such as UltraVNC, PC Anywhere, Go to Meeting, or whatever. If you need to get Customer Service into your computer to deal with installation foibles, you'll be glad you saved the time by doing that.

After that, installation should be fairly straightforward, but don't necessarily count on it. We (both the CSR and I) ran into a buzz saw when, with installation complete, the Importer wouldn't connect with the Exporter. Sure, the two boxes could ping each other over the network, no sweat. They just wouldn't carry on *the* meaningful conversation. So, for now, no multicasting. It's almost enough to drive a saint mad.

But not quite. As I write this paragraph, it is a couple of weeks after the rest of the article, and in the interim we've learned a few things. The first lesson is that those who are installing the importer 4.3.2 software in systems which have Exgines in them are experiencing almost no problems with their installs. Installation problems are only occurring in those stations where the Importer and the Exporter

are co-located at the transmitter site. That is the case in our Chicago stations, and I've now learned that the Importer-Exporter-no-Exgine configuration is now in a vast, tiny minority of stations. That's why Ibiqity has been slow to recognize the issue. They do now, however. The engineers at BE replicated our experience in their lab and found exactly the same issue we did. Both the BE CSD and I have related the situation to Ibiqity, and they're on it. By the time you read this, hopefully, the situation will be resolved and our multicasting will be back on the air in our Kirkland transmitter site (where multicasting has been off the air for some time. My suspicions are, given what I've observed: something in the software is pointing the Importer to the wrong port in the Exporter. What'll you bet?

Note that this has not affected our multicasting operation at WPWX, which is on our new Nautel system. That one is still on the air.

Only one change would I make to the Importer 4.3.2 software. Unlike its earlier versions, you cannot get it to start, and go on the air automatically. If the system goes down, someone has to go to the site and restart the Importer manually. That is a huge step back, since it doesn't allow the system the ability to refresh itself by shutting down and re-starting (as we used to do every morning at 3 AM on all of our active Importers. That must change, and I for one will be on Ibiqity to do it, until they do.

Next month

Have I got a dilly of an article for you next month. I don't have any AM stations in my stable these days, but I have a tale about two AM's and 12 towers which will leave you shaking your head. Until then, blessings to you all!

The Portland Report

By
John White, CBRE
Chief Engineer, CBC–Portland

This month, I had intended to write about emergency preparedness. The quakes near Japan have raised visibility of the 9 + subduction zone earthquake potential for the Pacific Northwest. Then on a weekend check of the station, I took the short route where the main road passes through the Willamette National Cemetery. It was then I knew I needed to tell a different story. The story of the American people in hard times.

Jimmy was a simple seaman. A hard times flatland farmer's son. His father was not allowed to grow crops for the family, and with few other prospects, Jimmy had joined the Navy. It wasn't a bad life for a flatland farmer.

One particular day after a long voyage and fighting bad weather, Jimmy's ship, the *Blue*, was late to port. The old man got on the horn. It's been a hard voyage and we have an inspection, but I am going to grant overnight shore leave. Everyone report at 09:00 tomorrow morning. You will have 24 hours to make this ship ready for inspection when you return.

And so Jimmy, the son of a flatland farmer, was part of the skeleton crew for the night and morning. One more routine night of a ship ready for action. Jimmy woke to explosions and the general quarters klaxon. *ALL HANDS ON DECK!* The gunner's mate pressed the cook into service. The pointy thing goes into that round hole, close this door and push down that lever. Up the ladder was the next problem. The gun tarps were in place for inspection. No problem. The gunner's mate elevated the gun and fired a round. Tarp gone.

The gunner's mate found himself tracking attackers so low that the wing markings were clearly visible. Track and fire, track and fire, repeatedly the

gunner's mate fired round after round. One hit and a smoke trail, tracking the next, click. Down below, the gunner's mate found a man with a pinched finger injury. Big guy, you handle the pointy thing, little guy you close the door. The gun was back in action.

Up topside, with the boilers still alight, the ensign ordered full power. A few berths down, the California took a hit. Boiling black smoke gave cover as the *Blue* was in action returning fire. Then the ensign ordered turns. *We need room to fight!*

Flank speed, damn the harbor limits, the destroyer *Blue* put to sea, ensign in command, guns in action. Pulling attackers from the main fleet as the *Blue* returned fire.

At the end of the war, my father moved the family back to our farm. We lost track of Uncle Jimmy, but I kept the sailor's cap he gave me. I don't remember much of Uncle Jimmy, but I remember that day.

I remember that day, Sunday, December 7, 1941. The day my Uncle Jimmy and the destroyer *Blue* went to war. The day my father and Douglas Aircraft began building aircraft for America. The day my grandfather began to repair the tack so he and the team, Babe and *Blue*, could plant in the spring for our boys.

I remember those that came before Jimmy. Those that fought with Jimmy and those that came after him. From Tripoli to Normandy, from Guadalcanal to Inchon, the only amount of land we have ever asked for in return is enough to bury those that did not return.

Thank you Sons and Daughters of America.
Thank you Uncle Jimmy.



Rocky Mountain Ramblings
The Denver Report
by
Amanda Alexander, CBT
Chief Engineer, CBC - Denver

Wow, what a month! We continue to have problems with the new Sage ENDECs not receiving various tests from KYGO, the LP-2 station in the Denver operational area. On the instruction of the folks at Sage, we have adjusted the levels several times with no effect. We purchased and installed a new FM receiver, and that didn't help. We did realize with the new receiver the levels were quite high. We changed the pad around and got the levels down where they should be (1 volt P-P) and so far so good test-wise it seems. At this writing, I haven't done my weekly check yet but I did get several emails over the Memorial Day weekend notifying me that we had received tests on every station for KYGO, as well as auto forwarding tornado warnings for some storms on the eastern plains. I hope that when I finally do get to the logs, I will find everything as it should be (at long last).

It seems the air conditioning system at the KLTT site has a mind of its own. Last month, I received an alarm that the building temperature was above 85 degrees. I checked on it and it was indeed above 85, ten degrees above to be exact. I quickly went to the site. Keith was there when I arrived per my request and he had doors open. It was in the 60s outside. He checked the unit and all looked fine. I decided to check the thermostat and found the air was turned *off*. Now, the only way to do this is to either go to the unit itself and turn it off or to go to the web interface and turn it off. Keith hadn't messed with it and I know I hadn't either. I turned it on at the unit itself and found it cooled back to 73 within 45 minutes. I checked the scheduler inside the unit and found all okay with that. I have now remembered to save the web access to the unit to my master sheet so if I get another alarm, I can easily check the on/off status before driving out there.

On a personal note, I did get moved in to my new place. The painting is done minus the minor touch-ups, and the furniture is in. It looks like I live

there now. Getting used to the random noises of the neighbors is taking some getting used to at times,

my neighbors make a lot of noise. I feel very blessed as a handful of people have given me gift cards which have and still are a tremendous help in getting the items I have needed. There is still work that I need to do and items I need to buy before the move is 100% complete, but for the most part life has continued on. I have my routine mostly down and am enjoying the place.

I also went to Texas for the long weekend this Memorial Day. I spent the weekend with longtime family friend, Robert "Bubba" Payne known to a lot of folks around the company. I had a great time. I was able to see my Texas Rangers play a 14-inning game. It was too bad they lost it in the 14th. I also got to see an amazing IMAX film called *Tornado Alley*, filmed by Sean Casey from Discovery Channel's "Storm Chasers." I got to tour the Dublin Dr. Pepper plant in Dublin, Texas. No, this is *not* the regular Dr. Pepper you buy at your local grocery store. This is the *original* Dr. Pepper. They began making it with real sugar. When other companies went to corn syrup, they tried it, didn't like it and changed back to real sugar. The taste is much better than the Dr. Pepper we drink from restaurants and stores. The tour was great and I even came home with some souvenirs and a couple of house warming presents: a Dublin Dr. Pepper clock and a sugar canister, something I didn't have before. I also had the opportunity to attend church with Robert. The Sunday School lesson and sermon were both great and the people very friendly. I even had the opportunity to eat lunch with a family from the church. The weekend went by way too fast, but it was a much needed vacation. Always a plus when going on vacation, nothing major happened at the stations while I was away. I just have to play catch up for a day before everything gets back to normal.

Well, that about does it for this episode, so, until next time! that's all folks!!!



Digital Diary
by
Larry Foltran
Corporate Website & Information Technology Coordinator

Do We Have Too Much Personal Technology?

Just a few weeks ago, I had the opportunity to spend some time at the "Happiest Place On Earth" with my family, in-laws and my parents to celebrate their 50th wedding anniversary. What a truly enjoyable time it was. Well before being shocked by the price of food and souvenirs, my wife was shocked when I told her that I wouldn't be taking my laptop on this trip. Being a veteran of Mickeyville, I knew that I'd have very few opportunities to use my computer and I also wasn't going to pay through the nose for internet access while on vacation. So after some long goodbyes, I departed sans laptop.

Just because I didn't have it with me didn't mean that I had completely abandoned technology during our time away. I was still armed with my Smartphone and my techie senses were on high alert as always. Although they do a great job of hiding the inner workings of the rides, catching a glimpse of the operating panels and other equipment is always a treat for me especially there considering the technology the Imagineers typically utilize.

One thing I was very surprised to see was the number of iPads being used by visitors at the parks. I saw folks holding up their iPads to take photos and video just about everywhere we went. I recall turning around briefly during the fireworks presentation and seeing an array of iPads being held up to capture the moment. It reminded me of the limousine chueffers holding up their little signs at the airport.

Another thing that really surprised me was the number of iPad users pulling out their devices while waiting in line for the various rides and attractions. I can wholeheartedly understand if it were the peak of the travel season and the short waits were 70 minutes or yes I've been there during those times and hope to never do so again. But some of the longest lines we encountered were marked as 20 minutes, although according to my time-conscious son the wait time was much shorter than that. Regardless, I watched folks powering up their iPads

time and time again to check email, Facebook, or surf the web.

This may be more social commentary than a tech related statement, but have we reached the point that we are so deeply connected via technology that we can't stand in line for 15 to 20 minutes without checking on what our friends are doing back home via Facebook?

One specific gentleman really surprised me. For a brief time during the day, it seemed as if our family was shadowing his family as we ended up either immediately behind them or a short distance back in nearly every line. He caught my attention the first time around when he pulled out his iPad from a small backpack, apparently specifically designed for this device. With each and every line, I couldn't help but notice that he would fire up his iPad in every line we were in, even a very short five-minute line where he used it for what seemed like less than two minutes.

I can sympathize with someone who needs to stay connected via email because of the line of work they are in, but time and time again or yes I was peeking - I could see the distinctive Facebook logo. All while his two small children, completely enthralled by the magic of that place, were attempting to share their excitement with him. Every attempt brushed off as he scrolled through status updates. Although I wouldn't have brought my laptop to the park even if it had made the trip to Florida, seeing that made me glad that I had left it home to focus on the memories being created at every turn of those 20 minute lines.

Granted not all of the memories from that trip were of the warm and fuzzy variety, especially the one of me jumping off the bus bound for one of the parks and running the somewhat short distance back to the hotel to retrieve my daughter's camera that she had left at the bus stop. But one thing I've learned from Clark Wilhelm Griswold is that even when a family vacation strays from your plans or expectations, you press on. Put away the iPad and Smartphone, because the warm and fuzzy memories



will be right around the corner.

What To Do When It's All Gone

Late last week, I was notified by our receptionist that her computer and the general usage computer located at the front of the station were not working properly. It didn't take me long to discover that the all of the desktop icons were gone as well as the start menu program listing. I was told that the files within the My Documents folder on her computer were also suddenly gone. Something had obviously infected these computers.

As I continued to look around, I found that the installed software was still present in the Program Files directory on the storage drive, so apparently only the shortcuts had been deleted. I utilized the anti-malware software already installed on the computer to run a series of scans, each finding one or two infections but none resolving the issue of the missing desktop shortcuts.

I decided to pull out my bag of more aggressive antimalware/antivirus tools and scanned each computer's storage drive, registry, and a variety of other areas using different preferences and options during subsequent scans. The infection reports trickled in and I killed off each as they popped up. After nearly a day and a half of scanning, cleaning and inspecting, I reached the point of zero infections in consecutive scans. I felt as if I could safely consider the computers clean. Now it was time to find out what happened to all of the data.

I started by taking a close look at the My Documents folder where the majority of the user's critical data was stored. I discovered through the folder properties that there was 1.6 GB of data in the folder, which I considered a strong indicator that the infection hadn't actually deleted the data. I decided to change the folder's view settings to display hidden files. The shroud was lifted and the data was all there, albeit hidden.

My attempts at un hiding the folder's contents using the properties menu was unsuccessful. I could still see the hidden files, but they were shown as having the hidden attribute. I turned to the command prompt in hopes that doing so in DOS would prove successful. Thankfully, it was. This step also worked with the desktop shortcuts and start menu shortcuts. After a few final clean-up steps and registry checks, the machines appeared to be back to normal.

After some research, it appears that the virus in question could have been one of several different variants. Some indications point to autorun.inf, but I can't be absolutely sure. Regardless, this infection did cause a bit of a headache especially considering that the symptoms were different from anything I had ever encountered. I am also thankful that the overall infection was limited to only two computers. Hopefully this brief narrative will help save some effort if you ever encounter similar symptoms.

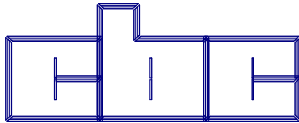
í until next month!

The Local Oscillator
June 2011

KBRT • Avalon - Los Angeles, CA
740 kHz, 10 kW-D, DA
KCBC • Manteca - San Francisco, CA
770 kHz, 50 kW-D/1 kW-N, DA-1
KJSL • St. Louis, MO
630 kHz, 5 kW-U, 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
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

CRAWFORD
BROADCASTING
COMPANY



Corporate Engineering
2150 W. 29th Ave., Suite 300
Denver, CO 80211

email address: crisa@crawfordbroadcasting.com