The Local Oscillator

The Newsletter of Crawford Broadcasting Company Corporate Engineering

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New FM Class Proposal

Many of you may have read in the trade press that the FCC is considering a new class of FM station that is between class A and C3/B1 with maximum facilities of 10 kW ERP at 100 meters AAT. An outfit called Commander Communications filed the proposal, and surprisingly, it's getting some traction at the FCC in MB Docket No. 24-183. I say surprisingly because a proposal for a new class C4 category that would have permitted 12 kW/100m operation by many stations got nowhere after ten years of sitting in someone's in box. As far as I know, that proposal never made it to a docket.

So what's our take on this proposed new class? It could have some benefit for our company.

For example, under the new proposal, our class A WYDE-FM in the Birmingham market, which currently operates at 2.2 kW/167m, could upgrade to 10 kW/100m equivalent while contour protecting a co-channel class A station to the north. That would have an immediate result of a much stronger signal into the Birmingham market from the site, which is some distance outside of town.

Another win would be WYRB in Rockford, Illinois. Under this proposal we could upgrade our existing 3.8 kW/126m facility to 10 kW/100m equivalent with just a little contour protection of a co-channel station across the border in Wisconsin. There would be no such benefit for WSRB in suburban Chicago because of a grandfathered short-spacing to a second-adjacent channel station at a downtown site.

But no interference analysis has been offered with the proposal. The NAB has offered some soft opposition, citing the lack of technical analysis and a count of how many stations would be upgradable. Our friends at Cumulus are taking a harder stand, citing an increase in the noise floor of the FM band and an unacceptable risk of increased interference, particularly to translators. I can see that as being an issue, and one that would creep up on us as stations upgrade over a long period of time. They suggest the proposal may result in "islands of service in the midst of seas of interference" and the "AM-ization" of the FM band, a valid concern in my view.

We may file reply comments on this proposal, but at this point, I don't know what we would say other than to agree with the NAB that additional technical analysis is needed. We will certainly be watching as things develop.

Pre-Sunrise/Post-Sunset

Another surprise out of the FCC last month was the public notice that recalculated pre-sunrise (PSRA) and post-sunset (PSSA) authorizations are available for class D AM stations and class B stations operating on regional channels. If I recall correctly, it was some 17 years ago that the FCC made a similar announcement that included an online calculator for PSRA/PSSA but withdrew the announcement a short time later when a defect was found in the algorithm. This time around, the FCC is doing things a little differently, inviting licensees to request PSRA/PSSA authorizations by written request.

I filed such requests for all of our class D AM stations, including KBRT, KLDC, WRDT and WYDE. We already got grants on all those.

§73.99 of the FCC rules contain the provisions for PSRA/PSSA, and they specifically address protection of domestic and foreign class A stations for class D stations operating on clear channels. KBRT and KLDC both fall into that category. KBRT operates on a Canadian clear channel, and KLDC on a Mexican clear. There are domestic stations entitled to night protection by these stations, but it appears that the PSRA/PSSA calculations ignore those for the transition hours.

For KBRT, we got 500 watts PSRA starting at 6 AM in the months that sunrise occurs after 6, and

500 watts PSSA until sunset plus one hour year round with some lower powers in 15-minute blocks thereafter. I already set all that up in the scheduler in the NX50 transmitter, using the Burk ARC Plus remote control to take care of final switching to day power in the morning and night power in the evening. It will be interesting to see what kind of coverage that nets us in Orange County. KBRT has a 50% night limit of a whopping 89 mV/m from KCBS in San Francisco, so that's a lot of interference to overcome. Still, the skywave from KCBS, which is significantly west of KBRT, takes a couple of hours to come all the way up, so there will be some time when there is limited interference and KBRT can produce meaningful coverage even at 500 watts.

We got a similar authorization for KLDC in Denver, which is co-channel with XEB1 and CJOC. The PSRA provides for 500 watts or thereabouts from either 6:00 or 6:15 AM in January, February, March, November and December, which are the late power-up months. PSSA provides for 500 watts in the 15 minutes after sunset in January, November and December with 168 watts for 15 minutes in February, March and October. That station does pretty well even with its 12-watt night power, so I think we'll find the PSRA/PSSA operation worthwhile.

WRDT in Detroit got PSRA authority for 207 or 500 watts from 6:15 AM in March, April and August, and at 6:30 AM in September. We got similar relief in January and December starting at 7:30 AM (sunrise is at 8:00 AM). Post sunset we got a ramp down from either 239 or 500 watts starting at sunset and continuing for 30 minutes. We'll have to experiment to see if 207, 239 or 500 watts from the Monroe, Michigan transmitter south of Detroit is better in the city than 14 watts on the night antenna which is off Eight Mile in Detroit.

Finally, for WYDE in Birmingham, our all-digital station, we got 500 watts pre-sunrise starting at 6:00 AM year-round, and a ramp down from 268 or 154 watts from sunset to 30 minutes after sunset year round. WYDE has a 50% night limit of 27 mV/m from WNDE in Indianapolis, but the all-digital operation should overcome a lot of that interference. With its transmitter site located on the east edge of downtown Birmingham, I expect that WYDE will do well in the city with its PSRA/PSSA operation.

As for how to implement all this… it's fairly easy with the NX transmitters. Not so much with the J1000 transmitters. Those have built-in schedulers, but there are two issues.

One is that the internal clock in the J1000 is notoriously inaccurate and must be reset every few days if you want to stay somewhere close to reality. It cannot be done remotely, and there is no provision for NPT synching.

The other issue is that the scheduler gives you one shot at a power preset per day. If you need to hit, say, preset three for both PSRA and PSSA, too bad. You would have to create an identical preset in a different position and select one for PSRA and the other for PSSA. But there are only six presets, not enough for most multi-level PSRA/PSSA authorizations plus day and night. It's going to take some creativity in the Burk remote control systems, using calendars and macros to get it all to work.

SNMP

One of the best things that has come into some semblance of proliferation in recent years is SNMP. It's a wonderful thing, giving us the ability to read from and write to devices, including transmitters, monitors, codecs, microwave links, UPSes and more, using simple commands in a common language over IP.

It can be frustrating at times hunting through MIBs for the correct OIDs (gotta love the acronyms!), but once you figure that out, it's usually easy to find your way around to the parameters you want to monitor and the things you want to control.

SNMP has made remote control wiring a thing of the past with modern transmitter equipment. Sure, some folks will insist on having hard-wired RF On/RF Off controls, but that's not really necessary.

As I was contemplating how to go about setting up all the PSRA/PSSA switching at the various sites, one thing I didn't worry about was the actual remote control functions. All I had to do in the Nautel transmitters was program the presets. The Burk ARC Plus Touch remote control systems were able to select the proper presets using SNMP, no additional wiring needed.

When we installed the new Nautel VX transmitters, connecting them up to the remote control system was a non-event – just plug in the network cable. Everything else was done in the remote control by selecting the desired OID.

Maybe our industry was a bit late to the game with SNMP, but better late than never. It's sort of like AoIP… how did we ever live without it?

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

Hello to all from Western New York! The unusual heat wave continues here in the Northeast, and along with the heat comes A/C issues.

Last month, we had the air conditioning units serviced at both Rochester transmitter sites during the first extended heat wave.

The WLGZ-FM Bard 5-ton unit had a buildup of cottonwood fibers in the condensing coils, drastically reducing the amount of airflow through the coils, causing extremely high head pressure on the compressor. Solly Industries was called in to clean the condensing coils and give the entire unit a check-up to ensure proper cooling for the remainder of the summer.

At the WDCX(AM) site, the Bard unit would not even come on, and the repairman found that the fan had failed, so replacement was warranted.

On Wednesday the 3rd, I received an alarm from the Burk remote control that there was a high temperature alarm at the WDCX-FM transmitter building. When I arrived at the site and opened the door to investigate the cause of the alarm, I was blasted with 104 degrees of heat! Both A/C units were inoperable. The "A" unit would come on but only blow out warm air. The "B" unit would not come on at all. So once again, a call was made to get the crew from Solly Industries out to see what was keeping the air conditioning units from working.

They found an extremely dirty filter and a clogged-up condensing coil on the "A" unit. The date on the filter they removed showed that it was installed June 17th, so I have no clue as to why the unit clogged up so quickly. I try to replace the A/C filters every six weeks if there are lengthy dry spells to keep the units operating as efficiently as possible.

After cleaning the "A" unit, they moved on to troubleshoot the cause of the failure in the "B" air conditioner. There they found a bad contactor, which was easy to replace. The condensing coils were checked also and found to be not as dirty as the lead unit, but were cleaned anyway, to prevent any failure down the road.

We had several instances of power failures due to the heat, one at the WDCX-FM transmitter site. The other two occurred at the WDCX(AM) transmitter site outside Rochester. Fortunately, we did not lose any programming as the generator came right up and ran without incident until the commercial power was restored.

On Tuesday the 9th, the crew from Northeast Tower made the trip from Syracuse to relamp tower #5 at the WDCZ transmitter site in Hamburg. The outage was first discovered at the end of May, and I immediately reported it to the FAA Flight Services Center. I asked that the NOTAM be extended to the middle of July, as Northeast was going to combine several jobs in the area to save on our travel costs. In the event that it was going to take longer for Mike and his crew to arrive, we would have notified the FAA and extended the NOTAM for an additional week or two.

Back in the early part of April, Don Crawford, Jr. made an agreement to lease out his HD-3 channel to a local broadcaster. The Broadcast Electronics importer, an IDi-20, was installed in 2006 and was incapable of providing multi-cast channels, so a new importer was purchased from BE. We were told at the onset that it would take about 6-7 weeks for the new IDi-50 importer would arrive, so we set our plans for early June installation. What would follow, we had no idea how much our plans would be thrown off the tracks!

After the new importer arrived, I attempted to install it, but it would not communicate with the FSi-60 exporter. After spending several hours trying to figure out why, I gave up and phoned BE technical support for assistance. After waiting several hours for a return call, the tech support agent informed us that

the new importer would not work with the current operating system running on our exporter. We were using version 2.2.2 and were told that version 4.3.2p1 would have to be installed to get it to work. A few days later, I tried downloading the version 4.3.2p1 software from the BE website, but it would not download. Another call to BE tech support was made, and the return call was received two days later. After checking a few things, it was found that Google Chrome, my browser, didn't like this software version. I tried Microsoft Edge, and was able to download the software and burned it to a CD-ROM.

Heading back to Rochester (again) with the bootable disk in hand, I attempted numerous times to load the software with no luck. I placed another call to tech support, this time to the RF department (as the issue was with the Fsi-60 exporter). I was told that the exporter should boot right up from the CD-ROM I downloaded and burned, but it was not happening.

After several more attempts to load it, I sent an image from the disk to tech support to verify that I had all the files to upload to the exporter. Rick Voepel from BE verified that all of the files were correct and could not offer an explanation as to why the files wouldn't load. I tried the version 2.2.2 boot disk I had on hand to see if it would load, and it would not work either! Looks like I had a defective CD drive.

I removed the exporter and checked to see if there were any loose cables, etc., but found everything to be connected properly. I called several computer supply businesses in the area to try and locate a replacement IDE CD drive, but no one had one. My only other choice was to abandon this project until I could get a replacement IDE CD drive.

Once I returned to Buffalo, I went out to the WDCX-FM transmitter site and removed our unused exporter and took the IDE CD drive out of that one to temporally install it in WLGZ's exporter the next trip over. After a couple of days, I returned to Rochester, installed the drive scavenged from the Buffalo exporter and attempted the software installation again. Still wouldn't load!

At this point I am ready to eat nails! I have spent days on this installation with little to no results. I thought perhaps I have a bad disk or a corrupted ISO file, so I tried re-burning the software using Ever burn, a free software download for Windows 10. This one worked, and the software installation was finally completed.

Once everything loaded onto the exporter, I double checked the IP addresses, crossed my fingers, and rebooted both the importer and exporter. The two units synchronized, but there was only HD-2 playing, no HD-3. Not being familiar with this new software, I phoned Charlie Nobel at BE tech support for assistance, and waited… and waited. Five hours later, still no call, so I started checking out the configuration myself. I was able to get the HD-3 channel to work, and finally put this project to rest!

I will say this: BE technical support leaves a LOT to be desired. There were many areas of this project where BE dropped the ball, but the most frustrating portion of it all was wasted time, waiting for a return phone call, for hours and hours!

The Sangean HDR-14.

I did have to make a final trip back over to set the HD-2 and HD-3 modulation levels along with the diversity delay on the HD-1. I attempted to set it by ear but knew that it wasn't going to be accurate. I returned with the new Buffalo Inovonics 551 modulation monitor and got everything set. I was surprised to see that the diversity delay (the analog-digital time alignment) was only off by 27 samples, not bad for these old tinny ears!

One thing I would like to pass along to those of you with HD and multiple HD channels. I recently purchased a portable HD receiver that will play multiple HD channels, has AM and FM reception and also provides PSD data. The unit is a Sangean HDR-14 and is available through Amazon for about $70 dollars. I am thoroughly impressed with the quality and sensitivity of this receiver, and if you're looking for a good, inexpensive confidence monitor for your HD-R channels, I think you would be pleased with this receiver. It operates off of three AA batteries and even comes with a 5 volt power supply, and has an earphone jack, internal clock, and can be programmed for multiple presets. Quite impressive for the price!

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
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Chief Engineer, CBC–Detroit

WRDT Twilight Authorization

Regular *Local Oscillator* readers are used to me writing about SNMP. I find myself on this topic often because I'm continually finding more uses for it.

Prior to SNMP, metering status and commands had to be connected to a user's monitoring system by way of wire to a host's General Purpose Inputs and Outputs or GPIO. Not only was this time-consuming, but it has many practical limitations.

First and foremost, the host and monitoring equipment must be co-located, and one is limited to whatever GPIO the host equipment manufacturer chooses to implement. Usually, this is nothing more than basic statuses, a few commands, and a couple of meters.

I love having as much situational awareness as possible, and while at my former employer, had connected easily hundreds of data points to the remote controls.

As I pointed out last month, a huge frustration of mine had always been an inability to calibrate and linearize a devices meter on the remote equipment. In fact, I've only ever found one piece of gear that did this correctly and that's Potomac Instruments antenna monitors – they've nailed it – but SNMP takes the exact numbers from the host and eliminates calibration and nonlinear voltage samples.

This month's SNMP adventure is just at its beginning. I've just been given information that our WRDT 560AM site in Monroe, Michigan has received pre-sunrise and post-sunset authority from the FCC. PSRA/PSSA gives this station operational authority for its daytime site at differing power levels that change every 15 minutes. The station may operate up to two hours prior to sunrise at reduced power levels then is again allowed to reduce power in fifteen-minute increments for up to two hours past sunset. Power levels are defined in a grid provided with the authorization.

In order to effectively keep 560 at the correct power levels, I plan to use our Burk ARC Plus Touch remote control system. It not only has a built-in calendar with the ability for me to define our pre-sunrise and post-sunset times, but it also has SNMP which I can leverage to call the appropriate power level presets that I will program into our Nautel J1000 transmitter.

This should be fun, and SNMP will really make the J1000 dance during these twilight hours. I'll write about it next month and let you know how it works.

Austin Powers (Yeah baby, yeah!)

In last June's *Local Oscillator*, I talked about troubleshooting a tower lighting issue we had at WRDT 560AM in Monroe, Michigan. For several months I had been getting alarms from our tower light monitor on tower 2 complaining about the flash rate of the beacons. I'd show up, clear the alarms, and test the lights with my sophisticated glove over the photocell trick and find they worked as they should.

After a few rounds of this, I decided to completely rewire the box containing the flasher, replacing the flasher, and the photocell. Of course, this worked perfectly for several weeks until the alarms reoccurred. More troubleshooting didn't reveal anything out of the ordinary, so I condemned the tower light monitor itself and replaced it with a new one. Again, time passed without any problem, so I considered this problem licked. But, of course, like any intermittent problem, she's a cruel mistress.

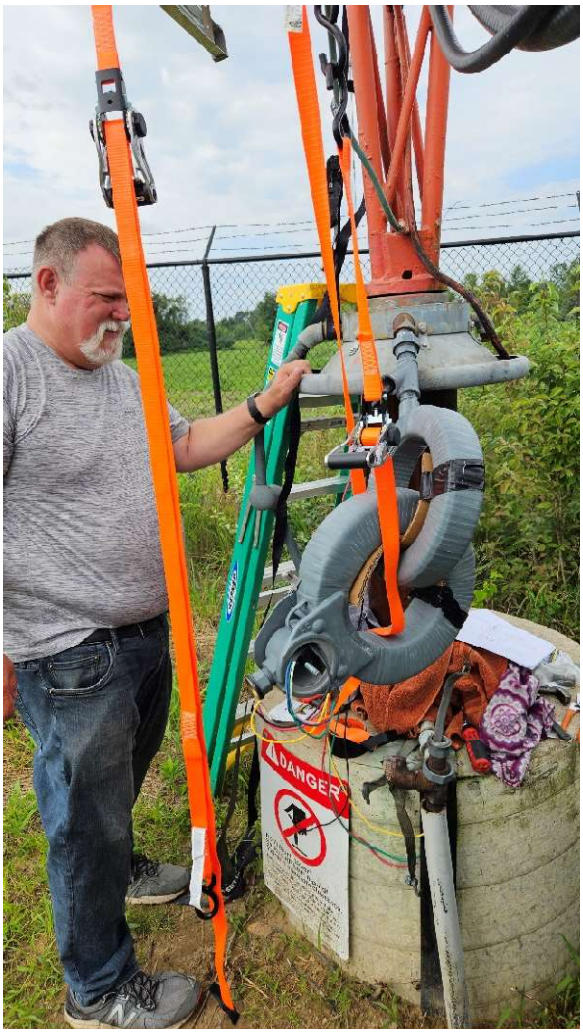
Finally, she decided to show herself this spring when the lights refused to work and stayed broken long enough for a diagnosis to be made.

Lighting an AM tower requires a bit of parlor magic. This is because the structure on which the lights are mounted is itself the active antenna. In most AM transmission systems, the tower combines with its own ground system (and often other like antennae) to be the radiating element.

If one were to carelessly string lights together on one of these towers, then connect it to the electrical mains to energize the lights, that very connection would act as a pathway for the RF energy coming from the transmitter to either find its way to ground or enter the electrical system. Both scenarios are undesirable and would cause massive detuning of

the tower and ruin its efficiency if not nullify its ability to work completely.

So, what to do? How can we energize lighting or other powered appurtenances on an AM tower and not interfere with the tower's fundamental job being that of an efficient and effective AM radiator?



Ratchet straps were used to support the rings while securing them in place.

Turns out this can be done using inductors. Some towers use simple wire-wound coils (an inductor) to act as a filter called an isolation choke, which blocks the transmitter's RF energy from entering the electrical system. Others (like ours) use air core transformers which are hugely ineffective at radio frequencies but the utility's low frequency 60 Hz power jumps the coils' airgap quite effectively. Voilà, the lighting's connection is now **poof** invisible.

The finished product.

Our air-core transformer is simply two interlocked wire wound inductive rings that act one as a sender (primary winding) and the other as a receiver (secondary winding). Austin Insulators, Inc. of Toronto, Ontario, Canada made the ring transformer that failed. It had endured easily forty years of harsh Michigan weather out at the base of tower two, so I ordered an identical transformer from Austin, which came by truck on a pallet weighing about 110 lbs.

Day one of the rings' replacement found us dodging raindrops and trying not to fall into gopher holes. The rings use simple 1-inch rigid black pipe for mounting, the same stuff you'd use to connect your furnace or water heater. While this is convenient, forty years outside had caused ample rust, locking all the threads together. Fortunately, I'm outrageously skilled with MAP//Pro gas and a hideous amount of heat and two big pipe wrenches combined with my Schwarzenegger-like biceps to crack them loose.

Rather than try to muscle this whole beast to the ground, I used the reciprocating saw to cut a notch out of the top ring so the bottom ring could be removed independently.

Day two we returned with the plumbing pieces I determined were needing replacement. Fortunately, Austin's tech support confirmed that the new unit was dimensionally similar to the original. This meant that hoisting the new rings into position and connecting them to the existing pipe unions would position them properly. This didn't make the job of hoisting them any easier, and the rings' instructions made it clear that you should NOT hang the top ring with the bottom ring dangling below it. I took caution a step further and decided to make sure they never even touched one another.

To achieve the careful lift I wanted, we taped cardboard to the inside of the rings, then stuffed a blanket between them. I used my Little Giant articulating ladder, forming it into an L shape,

then I lashed the bottom rung of one side to the tower, letting the other side stand on the ground. This gave me a gantry from which to drop ratchet straps I used as slings for each of the transformer's rings. This let Steve and me lift the transformer rings into place, adjusting their height as we lifted so the two rings never contacted one another.

After the rings were at the appropriate height, I connected the pipe unions and adjusted the rings' position so that they were centered.

The electrical connections were reasonably straightforward, though the manufacturer provided plenty of options for both the line and the load side of the transformer.

A quick test and a calibration of the tower light monitor and this problem is now firmly in the rearview mirror.

News from the South
by
Todd Dixon, CBRE
Chief Engineer, CBC–Alabama

PfSense-the Next Chapter

At the close of last month, we were installing the final updates on the company's ClearOS firewall solution that we could get since the underlying software (CentOS 7) was at its end-of-life as far as any updates or support was concerned. I mentioned that we were switching to a new firewall solution, PfSense, that is based on BSD (open source UNIX) and is what many consider to be a "hardened" firewall.

One of the real challenges that we face in changing something like a firewall is that our network systems have been built on them. The firewall is, in many ways, the foundational piece of the network. All of our internet service providers come into them, and packets are routed around our networks by them. They also provide a level of threat protection to our networks by blocking bad traffic and keeping our networks safe.

So with all of that in mind, the obvious next question was, how in the world are we going to implement this new firewall in each market with as little down time as possible?

The company has some real expense tied up in these firewalls. Every one of them are Dell PowerEdge servers of one generation or another, so the answer certainly wasn't simply to trash can all of them and start new. Another solution might have been to send a single backup PowerEdge from Birmingham with PfSense already installed on it to each market individually as a replacement and then for that market to send the server being replaced back to Birmingham so it could be done again in another market. Technically, this would have worked okay, but the solution seemed like so much extra work on each end for everyone involved. We have multiple firewalls in each market and then there would have been the considerable shipping expense back and forth each time that the operation was done. Again, it was workable, but in the end, we found, what I believe to be a much better solution to the problem.

You can call it a hobby if you want to call doing work things at home a hobby, but I try to keep up with the latest trends in CPUs as well as computer stuff in general. The fact is, you never know when it will come in handy at work to help achieve a task you might not have been able to do even two years ago.

One of the trends I watch is the Intel NUC (next unit of computing) products. The form factor for these computers are four inch by four inch cases, but they really pack a punch. Of course, several other companies have their knockoffs that are not Intel's brand but are still fairly feature rich. When the chip fabrication factories are putting transistors three nanometers apart from each other, everything else follows suit.

I've been seeing these small form factor boxes for some time, but in the last year or so they have been also coming out with multiple NICs. It was at that moment that I thought, "Why couldn't I install PfSense on a multiple NIC box and simply do an inline replacement of our Poweredge firewalls?" This would allow us to put the smaller form factor box in place while we got PFSense installed on the bigger server type box and then with some PfSense magic©, back up the small form factor unit's firewall

This Moginsock mini PC has 4 2.5 Gbps NICs and happily ran PfSense on our network in Birmingham for over a week.

settings and restore them onto the PowerEdge systems.

The small form factor Moginsok unit we got has a 4-core Intel Celeron N5105 processor with 8 GB of DDR4 Ram and a 128 GB M.2 SSD hard drive. It easily ran on our network in Birmingham for a week with no real issues.

The plan moving forward is to ship it out to each market. As we finish one market, we'll ship it to the next. I've prepared some rudimentary instructions regarding how the install will proceed, but I should be able to log into each of our markets and get the necessary network parameters from each ClearOS install and simply plug them in for the next market (or second or third firewall in the market).

Birmingham is done and the currently running on PfSense and Denver is next. They'll be able to go through my install document and make sure it is true to form. I knocked out most of the gotchas in our install here and it shouldn't take a long time to move through the company and in no time at all we'll all be using PfSense on our current hardware.

Until then, we'll either visit on these pages or with a one-on-one visit because of PfSense, but I pray God blesses you and the work of your hands.

Tales From Cousin IT
by
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CBC Corporate IT Specialist

Unless you've been asleep in a cave, you've probably heard about CrowdStrike, a security company that monitors your systems for intrusion and malware. They originally made their name by boasting that they could automatically update their threat detection several times a day if needed.

On Friday July 19th, they sent out a buggy update for their Falcon Intrusion Sensor ... and hilarity ensued. Ars Technica, one of the best geek/techno sites on the Web, says that the problem was caused by a memory violation. Simply put, Falcon tried to access non-existent memory, which will indeed cause a BSOD (Blue Screen of Death). Here, I speak from experience as a programmer.

The bottom line is that The Mighty Falcon killed 8.5 million Windows computers world-wide. Air travel screeched to a halt (see Figure 1), businesses couldn't run their point-of-sale systems ("checkout registers," or if you're a Brit, "tills;" see Figure 2), emergency services were offline, you name it.

This killer fault in the operating system kernel put Windows into an endless reboot loop. It would try to boot, crash, display the dreaded BSOD and then do it again on the next boot attempt. Rinse, repeat, wipe hands on socks. There have been reports that some systems would come back after 15-20 reboots, but given the nature of the problem, I have my doubts about that.

Best of all, if your systems were hosed, you had to manually kill the offending file on each individual computer that was affected. It took several days in some cases to get systems back online. Delta, my airline of choice, was in meltdown over that entire weekend. Good thing I wasn't flying, and I hope none of you were!

I've said before that I'm not a huge fan of Microsoft or Windows. But fair is fair; the problem was not caused by them. I've seen some misleading headlines (not to mention the vendor's note in Figure 2) that imply that Redmond had something to do with the meltdown and that's just not true. They've worked

Figure 1 - Small airport (Boise, left) or large (LaGuardia, right), all down.

overtime helping Windows users fix their issues, even releasing a bootable tool to delete the bad patch.

This raging dumpster fire belongs to CrowdStrike from front bumper to tailpipe. End of story.

Gubmint To The Rescue!

You have to love governments: they'll tell you to leave your windows open, then gasp in horrified amazement when hornets build a nest in your bedroom. The next step, of course, is to find someone else to blame it on. It couldn't be their enlightened policies, perish the thought!

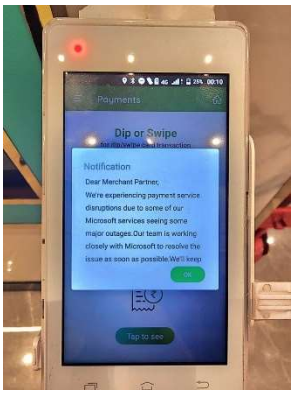

Figure 2 - Point of sale systems were killed -- along with a lot of other things.

In this specific case, Microsoft wants to keep unvetted 3rd-party software out of the operating system kernel, but the EU has prevented them from doing that. (Apple has already deprecated and limited access to the kernel; Microsoft wants to do this as well.)

Politicians hold televised hearings so that they can "harrumph" and shake their fingers for the cameras. Their knowledge of IT could be carved into a pebble with a shotgun, but they want the face time. The same circus repeats itself over and over: embarrassed CEOs and CIOs and other-Os will mumble and deflect when questioned; finally, after a week of hearings with horrible TV ratings, the politi-critters will give up and blame it on Global Warming. Repeat, rinse, wipe hands on a CEO's shirt.

CrowdStrike's own CEO (the other -Os are hiding under their desks) is scheduled to testify on Monday July 29th. The company is already looking at mega liability here and their stock has cratered. For the guy to also be forced to listen to hours of yarping from politicians should be considered cruel and unusual punishment. Of course, CrowdStrike's first offer hasn't helped their position: a $10 coupon for some free eats. Seriously. I'm not making that up.

Lessons

Lawyers are parachuting into affected businesses around the globe, anxious to grab their slice of any settlement. Some legal analysts say that this won't be easy, depending on CrowdStrike's licensing terms and disclaimers of liability. We'll see. In the meantime, there are some takeaways for all of us.

First, stuff like this isn't 100% preventable, but there are things that could be done by the OS vendors. Like most modern operating systems, Windows logs everything during the boot process. It shouldn't be that hard to note which driver or kernel module is preventing the boot, then skipping it for another try into Safe Mode. But that's just me.

Another thing that has become obvious is that this World-Wide Cloud thingie comes with grave risks. It shows the need for isolated, off-site backups. Maybe we should even have backup systems – complete mini-networks that could be switched on to at least keep core operations in business. That wouldn't be cheap and a decision like that is above my pay grade, but maybe we should consider it.

One joke that made the rounds was, "Southwest's Commodore 64s kept chugging while Delta, United and American were crushed!" (Heh.) Well, our traffic, billing, production and on-air systems all use Windows. We're stuck with it.

It's hard to imagine anything worse than 8.5 million systems running and screaming into the shrubbery, but never underestimate the ability of lazy, stingy humans to foul things up. I'm running across this with the Google Play Store ...

Google Play: Kill Gnats with A Flamethrower

Granted, Google had work to do after they were caught distributing malware from their Play Store. But in typical uber-geek fashion, they've come up with draconian rules that make it very difficult for individual programmers to get their apps into the Store. I guess I can see their logic: Joe Badguy won't find this easy to do, but it has put roadblocks in the way of installing a new My Hope Now app.

Google now requires that any app must have a published data retention policy. They have pages filled with check boxes that describe the app; most have absolutely no relevance to what our app does. There's no "Other" option with a fill-in box, either.

They now want the app to go "live" in stages: it must be thoroughly vetted by at least 20 beta testers for at least two continuous weeks (in other words, a tester can't pop in, check the app, pop out, then pop back in; only the active "pop" time counts). Google reserves the right to reject any app that doesn't provide "minimal functionality." One of the examples they've given is that of a dictionary app that doesn't include "common vocabulary;" they could kill it. In other words, they're looking at app content now as well.

The problem is that tech companies – Google is by no means the only offender (PayPal, I'm looking at you) – that wants to completely automate things like this. Instead of having an oxygen-breather examine each issue, they want to use AI to parse inflexible, one-size-fits-all rules that (to quote developer comments from one of their online videos) are "killing small developers." Multiple-choice checkboxes and simple fill-in answers are easy to parse: No data policy posted? Kill it! Targeting an older version of Android? Bang, you're dead!

But enough Debbie Downer stuff; let's do a good old fashioned rant. I know that this is an election year, and this is one of the biggest concerns facing all voters, regardless of party:

Inflation And the Economy

You know what else I love? Government boffins, under pressure from anxious politi-critters, will cook statistics to make a trash fire look like a scented candle. Case in point: lately, I've seen headlines crowing that prices that have only risen 1-2% in the previous month. But the cumulative effect remains. The bottom line is that prices are much higher than they were just a couple of years ago.

My key indicator is the Little Debbie Oatmeal Cream Pie, the one built with oats, sugar and grease, and filled with that tasty white cream made from industrial chemicals, sugar and more grease. Two years ago, they were two for a dollar at my local convenience store. Now they're a buck each. That's a 100% price rise and I have no hope that said price will decline in the near future.

Example number 2: because I'm single again, having lost my wife, I eat out frequently. A meal at Chik-Fil-A used to cost $6-7; now it can easily hit $15. Anyone who says that the economy has "recovered" should be quietly led away to a padded room.

Here's something that is rarely mentioned: the quality has suffered as well. I'm speaking of well-known name brands, too. The bread that I buy often has a thick, chewy center; it was rushed and wasn't allowed to rise properly. Cans of peas and beans have grit and sticks in them. I like Brussel sprouts, but lately, the frozen ones have come with excess woody stems. And on it goes. I guess businesses are trying so hard to stay afloat in this horrible economy that I should thank God that we can get things at all. I do; I think back to all the shortages during the Great COVID Fiasco. But ... you know.

The lawyers want me to point out that (a) all trademarks used in this article are the property of their respective owners and (b) all of the above is just my opinion and worth exactly what you paid for it.

Until next time, keep praying for this nation!

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

There certainly have been some challenges with summer storms this year. It seems like we have a year or two of little damage due to lightning and static issues and then one of those summers comes along where we just get several instances of damage or consequences.

Earlier this year we had an incident that caused damage to our auxiliary transmitter at the WPWX site in Burnham Illinois. We can't pick out an exact date, most likely in early June, but a storm caused damage that didn't show up until we went to run the backup transmitter.

The transmitter, a Nautel NV40 transmitter about 14 years old, is set to run in the auxiliary antenna with a TPO of 8.8 kW. When it came on it hit the TPO but then started dropping power until it was barely over 2 kW.

We found multiple problems across almost half of the 20 power amplifier modules. There were a few power amplifier alarms, but most of the issues were related to fans. The modules were showing multiple fans not running.

As suspected, most of the fans are probably not bad. Which would be better if that was the problem. It appears the lightning probably came down through the aux line and then fed through the 48-volt distribution to the fans. What is most likely wrong is that the distribution supply in each of the faulty modules is bad. They will most likely need to be replaced in each module. Currently, we are still awaiting the parts to do so.

Another intense storm, with 19 associated tornadoes, came through on July 15th. Of course there were multiple power outages in the area. Four of our five sites lost power at some point.

One of the bigger issues occurred at our Lansing site where the generator came on but shortly after alarmed and shutdown. The engineering crew cleared the alarms, and again it shut down with over-temp alarms.

They called for an emergency visit from the generator tech, and he found an issue with the radiator being partially clogged. They took the doors off the generator and were able to get the generator running again. We also eventually reduced power on the transmitter to get some load off as well. Those steps got us through the next four days until power was restored.

The other big issue was at our Burnham site. The generator there was less than a year old, so that was not the problem. The generator at this site runs off propane. With this site having a 20 kW TPO on the main transmitter, it can really cut through propane quickly. We normally have the remote control drop it to half of that when it gets an indication of transfer from utility to generator.

That certainly helps, but even at that level we still can use the fuel fairly quickly. With this outage, we had started with the 1,000-gallon propane tank gauge indicating about 60% full. Once it appeared that power wouldn't be restored for five days, we started calling the propane supplier to get fuel delivered.

Unfortunately, we were into their automatic system and standing in line with everyone else needing delivery. This got a little bit dicey as to when we were getting the delivery, and it was starting to look like we might go off the air with this important site.

Without really knowing when the propane truck would show up and the tank under 30%, we took the transmitter down to 4 kW. That certainly wasn't optimal, but it was better in my mind to run at the lower level longer than go off the air altogether.

That decision probably turned out to be the correct one as we still were more than 24 hours out from delivery. It turned out that we were down to 5% on the propane tank gauge and most likely hours, perhaps minutes, from going off the air when the truck showed up and filled the tank.

Glad they got there then and within another 24 hours utility power was restored.

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

Vacation is So Close

July always seems to be the hottest month of the year. We only had a couple of days of 100-degree weather with the rest being in the 90's. That being said, it means I like to try to not go to the transmitter sites, at least for outdoor work, during July.

The month was mainly spent at the office, which was good. It allowed me to catch up on some busy work. I still have plenty of work to do such as getting the FTP stuff automated, so our people have a little less work to do. Every time I try to work on it something else comes up and since it is not a high priority it gets pushed.

The beginning of August typically marks vacation. My parents, husband and I travel to the San Juan mountains in southwest Colorado. It is a great time away from Denver, from all the distractions, noise and heat of the city.

This year will be a bit different for us as we got booted from the place we normally stay. That is a small place with twelve small cabins. My husband and I usually stay in the cabin next to my parents. There is a small creek that runs next to it, and it is peaceful, except for all the OHV's going down the main road.

When we got word that our dates were not available, I got to work looking into our options. I am so grateful for AirBNB. I wanted to do something different and found a house at the edge of town near the river. It was built last year, and it is very modern. It has central AC, a fully functional kitchen, washer/dryer and so much more. It won't be located right next to the woods, but it will offer us a place to stay, all in one place with plenty of room for all the stuff we bring. It has Starlink for internet, which will be good, smart TVs for those rainy days or evenings.

Vacation this year will be different but at the same time it's an exciting different. I am very much looking forward to a week off work to relax a bit.

Selling KLZ

Okay, not really, but the thought of burning the transmitter building down came to mind last week. I had been at the site Thursday night with my husband, who was kind enough to help me knock the growth down inside the tower bases. The plan was to do that, take what I needed the next day home and go straight to the other two sites Friday morning. I did just that, knocked down as much growth as I could, enough so that I was comfortable with leaving town and not having to worry about a weed getting into something it should not be in.

After I was done, I went to KLZ to drop the stuff off, and in the process, I wanted to run in the building to do some logs. I walked up to the door and saw a big spider. I may have yelped, turned around, and made the decision that the site belongs to the spiders now. I really do not like spiders, of any size, especially big ones. And I am not exaggerating the size. I believe this to be a wolf spider. I know we have them at the site. I sometimes hear them howling. I spray, spray and spray some more, but they still come around. Usually though, we find them curled up, dead. Seeing this one right next to the door to go into the building was a first. I had no desire to try to walk past it. With my luck it would try to attack me, and it would win!

Mowing

I mentioned going to the sites to deal with growth. I have been seeing on camera for a while the growth at some of the tower bases. Nothing too big but some seemed to be getting taller. Thankfully, the fields are in pretty good shape so there is no need to use the tractor. I was able to use the Ryobi string trimmer to get the worst of it knocked down at KLZ, KLTT and KLVZ. I will have to go back out after my vacation, hopefully in the Fall, with the Stihl weed eater with the blade attachment to get the bigger stuff knocked down. But for now, the towers are safe.

CDs

Corporate sent us a bunch of CDs almost a year ago. These CDs are mostly various Tailored Plan training seminars Mr. Crawford has held over the years. There's also some other stuff: training on other things, celebrations, spot work, and more. The task was to rip the CDs to MP3 files and save them on a server for access by our managers and salespeople.

Selena had done the majority of the work, but due to some health issues, did not finish the project. She was having to rip the CD onto the computer, go in and change the metadata because most of the CDs had weird stuff showing. No clue where it found the info it got, but we wanted things to be right. Then once the CD was ripped and the metadata changed, the next step was to upload it to the CBC Program Bank server. With Selena not able to do it, I chose to take it on. I spent the better part of the week going through the remaining CDs.

Some of what was left after the Tailored Plan seminars were things I did not know how to categorize. So, for now, they sit in a miscellaneous folder in the Program Bank. I will go through and figure out what to do and get it organized. While I finished the work up from home one evening, my cat Scooby decided it would be his job to guard the pile of CDs I was working on. He may have knocked them down at one point trying to use them as a petting stand. After that wore him out, he laid down next to the pile and just waited.

Scooby guarding the stack of CDs.

Coming Up

July was a slower month, and August will be more of the same. I will work with Stephen on getting the FTP server updated to a new OS. So be prepared for the screams from clients and some employees. We will give notice about what to expect and when. I look forward to learning a new OS and getting various servers updated. And that gets me thinking, maybe I will wait to get the automation for the FTP site done until after this upgrade so I don't have to change everything when I'm done.

There is really not a lot on the list for August. For now, though, my mind is trying to stay focused on my last week of work before vacation. I do not want to be one of those people who goes on vacation before actually going on vacation. There is work to be done still! That about covers it for this edition. I pray you all stay safe and well!

KBRT • Costa Mesa - Los Angeles, CA
740 kHz/100.7 MHz, 50 kW-D/0.2 kW-N, DA-1
KNSN • San Diego, CA
1240 kHz/103.3 MHz, 550W-U
KCBC • Manteca - San Francisco, CA
770 kHz/94.7 MHz, 50 kW-D/4.3 kW-N, DA-2
KLZ • Denver, CO
560 kHz/100.7 MHz, 5 kW-U, DA-1
KLDC • Denver, CO
1220 kHz, 1 kW-D/11 W-N, ND
KLTT • Commerce City - Denver, CO
670 kHz/95.1 MHz, 50 kW-D/1.4 kW-N, DA-2
KLVZ • Brighton-Denver, CO
810 kHz/94.3 MHz/95.3 MHz, 2.2 kW-D/430 W-N, DA-2
WDCX • Rochester, NY
990 kHz/107.1 MHz, 5 kW-D/2.5 kW-N, DA-2
WDCX-FM • Buffalo, NY
99.5 MHz, 110 kW/195m AAT
WDCZ • Buffalo, NY
950 kHz/94.1 MHz, 5 kW-U, DA-1
WDJC-FM • Birmingham, AL
93.7 MHz, 100 kW/307m AAT
WCHB • Royal Oak - Detroit, MI
1340 kHz/96.7 MHz, 1 kW-U, DA-D
WRDT • Monroe - Detroit, MI
560 kHz/107.1 MHz, 500 W-D/14 W-N, DA-D
WMUZ-FM • Detroit, MI
103.5 MHz, 50 kW/150m AAT
WMUZ • Taylor - Detroit, MI
1200 kHz, 50 kW-D/15 kW-N, DA-2
WPWX • Hammond - Chicago, IL
92.3 MHz, 50 kW/150m AAT
WSRB • Lansing - Chicago, IL
106.3 MHz, 4.1 kW/120m AAT
WYRB • Genoa - Rockford, IL
106.3 MHz, 3.8 kW/126m AAT
WYCA • Crete - Chicago, IL
102.3 MHz, 1.05 kW/150m AAT
WYDE • Birmingham, AL
1260 kHz/95.3 MHz, 5 kW-D/41W-N, ND
WYDE-FM • Cordova-Birmingham, AL
92.5 MHz, 2.2 kW/167m AAT
WXJC • Birmingham, AL
850 kHz/96.9 MHz, 50 kW-D/1 kW-N, DA-2
WXJC-FM • Cullman - Birmingham, AL
101.1 MHz, 100 kW/410m AAT

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