The Local Oscillator

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Transistor Radio

Those of you who grew up as I did in the 1960s and 1970s are no doubt familiar with the "transistor radio." What a revolution it was when that device came out. It allowed folks to listen to radio anywhere there was a signal.

Prior to that time, the tabletop radio was about as good as it got, but that required AC power, limiting listening locations. Of course we could listen in the car, but not at the park, at the ballgame, while walking or engaging in other non-automotive mobile activities.

The transistor radio and its power source, the now ubiquitous 9V battery, changed all that. With it we were granted a whole new freedom. I remember as a pre-teen carrying a transistor radio with me as I rode my bicycle, tuned in to the local Top 40 station. How cool was that! Even my parents and grandmother were big fans of the transistor radio. We had several around the house, and they could listen to their favorite station or program wherever they went.

Of course that technology is ho-hum today. Who would settle today for analog tuning and the tinny sound that such devices featured? Even the tiny little "cheapie" AM/FM radio that Amanda carries with her to ballgames features digital tuning and an LCD display, and the sound quality is more than acceptable using the ear buds that came with it.

Ultra-portability is something that consumers won't live without today when it comes to their personal aural entertainment. The transistor radio ushered in that ultra-portability in the late 1960s, and we haven't looked back since. Go to any gym and you'll find the treadmills and elliptical trainers manned by people with MP3 players, iPods and portable radios strapped to their arms. Look around just about anywhere and you'll see the telltale ear buds that indicate presence of some sort of personal entertainment device.

I think that it is in the area of ultra-portability where HD Radio has come up short. The focus to date has been on auto radios and tabletops, with a few component receivers thrown in the mix. But you could not, until lately, purchase a truly ultra-portable HD Radio capable receiver. That has recently changed with the introduction of the Insignia HD Radio Portable, now available in Best Buy stores for $49. I haven't tried one of these units, but I did look at a prototype at the NAB show back in April and was impressed with the look and feel of the thing. I plan to buy one soon and give it a try, and when I do, I'll bring you a full report in these pages.

As exciting as an HD Radio portable is, that's not what has my attention this month. Instead, it's my wireless phone. That's right, it's my Blackberry Curve. A lot of you probably have some sort of "smartphone" like this, and you've come to rely on it as not only a phone but as a PDA, Internet platform and much more. And now, we can add one more function to the resume of our smartphones: "transistor radio."

For the past several months, CBC has been

experimenting in two markets with a new platform from FlyCast. This platform streams station audio directly to most smart phones like the iPhone, iPod Touch; Blackberry Curve, Storm or Bold; and the T-Mobile G1.

Because it (necessarily) relies on heavy buffering to deal with signal deficiencies and drop-outs, it does not quite operate in real time, but the user has a lot of control over that. In fact, you can listen to the current cut (which is likely actually one or two songs behind what's on the air right now), or you can go back to previous songs or even prior hours.

The FlyCast smart phone platform evidently has a lot of value for some of our listeners. We have been amazed at the listenership. It outstrips our Internet streaming in some cases, even after just a couple of months "on the air"! For me, the FlyCast platform has turned my Blackberry into my "transistor radio," giving me the ability to listen to CBC stations and others anywhere, any time.

Unlike the transistor radio of old, however, the sound quality of the FlyCast platform is excellent. You can plug in a set of headphones or ear buds and get the full effect, or you can listen on the phone's built-in speaker for a truly nostalgic "transistor radio" experience. Those who have external inputs on their in-car entertainment systems can plug their smartphone in just as they do their MP3 player or iPod and listen in the car. When they get where they're going, they can unplug and keep on listening.

Another cool feature is that in addition to the scrolling song title/artist information, in many cases FlyCast will display the album cover art for the song being played. You can then click the "Buy This" button and it will take you right to Amazon.com where you can complete the transaction. For you Twitter users, you can click the "Tweet This" button and "tweet" the song to your friends. You can also rate the song with a thumbs-up "love it" or thumbs-down "hate it." No doubt there will be many more tie-ins with online social networking sites in the future.

FlyCast is not the only game in town. There are a number of other such providers out there, and some companies are doing their own thing. In his column in this month's issue, Larry Foltran gives a brief review of FlyCast and several other mobile radio applications.

For us, FlyCast presented the best, lowest cost opportunity to enter the mobile streaming arena. So far, I am impressed.

In coming months, we will continue to experiment, perhaps adding additional markets or stations or increasing the bandwidth of some of our existing streams. As we do so, I can't help but think that we are getting a glimpse of the future of radio – and perhaps its past as well – with this modern-day "transistor radio."

KCBC Night Upgrade

Over the last few months, we have been working with our friends at Clear Channel on a mutually-beneficial arrangement that involves one of their FM stations and our own KCBC. Part of this arrangement involves a nighttime power increase for KCBC, taking it from the present 1 kW to 4.1 kW with a new pattern using the existing towers.

The challenge for this upgrade is protecting Alaskan class A AM station KCHU in Valdez. Alaskan class A's are protected to their 100 uV 50% skywave contour and their 100 uV groundwave as well. Contrast this with class A's in the lower 48, which are protected to the 500 uV 50% skywave and 500 uV groundwave contours. Even though KCHU only operates with 10 kW, that 100 uV skywave contour is huge, encompassing a lot of ocean.

To get the power we want with a workable pattern, we retained Hatfield & Dawson to do the nighttime allocation study. They determined where the coastline and border points were around that contour and the protection level at each (a 1:20 ratio to the skywave field strength), then worked up a pattern design. We expect to file the application shortly, likely in early August, and we hope for a grant early next year.

The actual upgrade work will be done by KCBC contract engineer Steve Minshall. The existing daytime phasing and coupling system will be modified with RF contactors and nighttime networks. A Tunwall controller will be used to switch modes.

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

Hello to all from Western New York!

There has been much talk in the past few years about "global warming" and how our vehicle emissions and other sources are depleting the ozone layer that shields our planet from the rays from the sun. Back in the mid 1980s, it was discovered that the ozone layer over the Antarctic had been damaged, causing a large hole in the earth's upper atmosphere (some 30 miles above the Earth in the stratosphere). This "hole" was largely blamed on the use of chlorofluorocarbons (CFCs), which are highly stable compounds that are used as propellants in spray cans and in refrigeration units. CFCs are organic compounds composed of carbon, fluorine, chlorine, and hydrogen. The supposed cause of the ozone depletion is the accumulation of chlorine in the stratosphere, which breaks down the composition of the ozone atoms, which are made up of two oxygen atoms ($O_{2)}$ that combines with another oxygen molecule to form ozone (O_3). What scientists have determined is happening is that when CFC's are released into the air, the carbon, fluorine and hydrogen molecules are destroyed by the ultraviolet rays given off by the sun, the remaining compound, chlorine, then attaches to the $O_{3,}$ changing the composition of the molecules. This change in the ozone (O_3) allows more of the suns ultraviolet light to reach the earth, which causes, among other things, increased air temperature of the earth's surface, along with the destruction of microorganisms in the soil and water that are essential to sustain life in plants and animals.

There are many people who believe that global warming is only a theory, and even more who believe that it is a hoax. Whichever way you lean, one thing is for sure, our world's climate is changing. Here in Buffalo, last month we recorded the coldest July on record, which goes back some 68 years. Rainfall has well exceeded the normal expectancy for our region, and sunny, warm days seem to be few and far between. Weather patterns are drastically changing, and whether these changes are directly associated with global warming are yet to be determined. I do not put a lot of faith into the global warming theory, as changes in our earth's weather have been noted for centuries. Just two summers ago, the Northeast was experiencing near-drought conditions, with temperatures well into the 90 degree range. If global warming were a fact, I believe we would see more stable weather patterns, with slight changes from year to year, instead of significant swings of conditions from one year to the next.

WDCX-FM, Buffalo & WDCX(AM)/WLGZ-FM, Rochester

I had hoped that by the start of August we would be nearly through with painting the six-tower array at the WDCX(AM) transmitter site in Rochester. The weather simply has not cooperated with us again this year to get this painting done. The towers were scheduled to be painted last year, but an extremely wet spring and early summer kept our tower crew on standby until the weather conditions improved. Once the weather conditions were adequate for painting, the crew was so far behind in other scheduled work that they could not get to us before the early winter.

Recently we have received numerous complaints from our Internet listeners that our stream was dropping out regularly, and other strange things were going on within the streams' audio, such as segments repeating themselves several times and long blackout periods when there should be audio playing. I contacted streaming service provider Liquid Compass to check out their end of things, which they

did and found their end to be working fine. They did note that there were numerous data packets missing, either directly from our encoder or as a result of some problems that our ISP was having. I contacted Verizon, our Internet service provider, and they were no help at all. All they would do is to test the physical line from the switch to our building; the data test I requested was out of the question. As I am still learning about Internet protocol, I enlisted the help of Todd Dixon in our Birmingham cluster to assist me in determining the cause of our problem. Todd was able to teach this old dog a few new things, and as a result of his assistance, I found the problem to be in our in-house Linksys router/firewall. Once I programmed and installed the new router, everything has been working as expected. Thanks, Todd for all your help, it is greatly appreciated!

Last month I installed a new tube in the WDCX-FM transmitter, one that I had purchased from Freeland Products. Not long after the installation I experienced a plate overload on the Continental transmitter. I reset the overload indicator, and turned the plate back on, and the transmitter ran fine for the next couple of days until it happened again. Hmmm, time to check this thing out. I checked all around the cavity for arcs, including the plate blocker, but found none, and no apparent reason for the overloads. The tube I ordered was supposed to be a 4CX15,000 EEV, but further investigation revealed that the tube I received was a standard 4CX15,000A rebuild, of which I have had so many problems with in the past. I phoned Freeland, and Randy agreed to send me the EEV tube and swap out the A-series tube. Although the A-series tube tuned up well, I noticed that it required a lot more screen voltage and drive to make licensed power. The EEV that I installed in the WLGZ transmitter has been working well, with no problems at all.

Speaking of WLGZ, my late-July maintenance visit turned from being a routine visit to a nightmare in short order. After I had completed all I set out to do during the visit, I was on the way back to Buffalo when I received a call that the station had gone off the air. I tried unsuccessfully to turn the transmitter back on via remote control, so I turned around and headed back to the transmitter site. I found that the main plate breaker had tripped on the transmitter along with the 100-amp breaker in the service cabinet. I reset both breakers and turned the transmitter back on, and sat and waited. After about an hour and a half, the transmitter kicked off again with the same symptoms but one variable – the 100-amp breaker was hot! I found that the lugs were loose on the back of the breaker causing the breaker to eventually trip due to a thermal overload. I removed the breaker, tightened the lugs as tight as I could get them, and re-installed the breaker. So far, neither the transmitter nor the breaker has tripped off, but there definitely was damage to the breaker as noticed by the discoloration of the breaker body, especially around the area of the wire lugs and the blades that attach to the three phases. A replacement breaker has been ordered, and I will replace it on next month's visit.

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

The Motown Update

By
Joseph M. Huk, Jr.,
P.E., CPBE, CBNT
Chief Engineer, CBC–Detroit

Hello everyone! It is a pleasure to be here at CBC-Detroit.

As Cris mentioned so kindly in last month's *Local Oscillator*, I do have a lot of alphabet soup at the end of my name. I would like to say that I believe the degree of alphabet soup after someone's name measures how many kind people have been benevolent to mentor that person. In this poor economy, I am fortunate to have worked with and be mentored by some wonderful folks.

First I would like to thank Tam Nordstrom and Andy Adrian. I worked with Tam and Andy at Visteon Corporation. At Visteon, I performed antenna design and reception calibration on many vehicles and radios we designed and manufactured for BMW, Ford and other original vehicle equipment manufactures. Tam taught me about management style and getting along with other co-workers. Andy taught me about antenna design and measurement techniques.

Within the broadcast industry, I would not be here writing to you if it were not for Russ Harbaugh, Jr. Russ was chief engineer for KQV in Pittsburgh and WXYZ and WRIF for over 20 years (ABC). Throughout high school and college, he has been the most positive influence on my life. He has taught me to have patience and be positive no matter how difficult the task. He had installed in me the determination to never give up as well as a very strong foundation in broadcast engineering. For that I am very grateful.

At Crawford Broadcasting Company, my new home, I would like to thank Cris Alexander and Frank Franciosi for recognizing my positive attributes and giving me such a great opportunity. Larry Foltran, Art Reis and Stephen Poole have already shared their wisdom and have given me immense support and mentoring during my first month on the job.

So in conclusion, I would like to leave you with a thought. For every fortunate person with letters after there name, there are great people who have been very supportive and generous and deserve a great deal of the credit.

I hope to be bring you some of my thoughts in upcoming issues of *The Local Oscillator*, so stay tuned!

News From The South

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

Endless Rain

You know, I could save a lot of time each month if I'd just prepare a standard intro about the weather. Better yet, I should write a program that would insert "rain" or "ice" or whatever is appropriate for the time of year, and I'd have my first few paragraphs. Maybe I ought to look into that.

As I write this, severe storms are passing just to the south of Birmingham. We'll have our own run-in with bad weather later today and tonight (and the rest of the week, har, har).

So far, we've been blessed. Aside from a few notable examples (such as an Omnia that got toasted by lightning, requiring another trip to the factory), we haven't had a lot of damage – certainly nothing like last year, when we had to rebuild the entire main antenna at WYDE-FM in Cullman. But it adds up, and the odds are catching up with us. The most recent examples are a burned/arced fuse holder in the XL60 at WXJC (which I replaced), the death of WXJC's NE-IBOC HD generator (which is now headed to Nautel) and the loss of a PA module in WYDE's ND-5 transmitter (which I just finished repairing; cross your fingers as Todd takes it back to the transmitter site for Ye Olde Smoke Test).

Replacing the fuse holder (on the lower left of the detached panel)

While replacing the PA transistors in the Nautel ND5 isn't a lot of fun (I've complained about that here before), I have to give those guys credit: they fully document their transmitters, their support is top-notch and you can actually get inside their equipment when it's time to work on it. Those of you who have the old ND-series know what I'm talking about: you simply pull the "cube" that has blinky lights, then remove the defective module by loosening some screws. That part's easy.

And I have to give them even more credit for the XL60. The problem was one of the +48V supply fuses inside the transmitter, in the back. When I pulled the cap off and saw the soot and crud from arcing, I sighed. Replacing that thing would surely be a half-day job, I thought. But in fact, Nautel designed it and ran the wiring so that the entire panel dropped down for easy access! With Jimmy's assistance, it only took about 30-45 minutes, total, from start to finish.

The only thing I have to whine about (and that's just me) is the way that so many transmitter manufacturers assign the designations for the different components and assemblies. I realize why they do it that way: referring to the mod driver as "Assembly A1A2" instead of an "ABC123 board" means that they can upgrade to a different PC board in the future. But it does make it a little difficult on us poor working stiffs in the field. We'll look up an assembly, see "A2A1B" and then try to figure out what that board or module is actually called in the transmitter (NAP44A? LBD66D?).

But yeah, I'm truly whining now, so let's move on.

The CBC Engineering Forum... Lives?

Actually, yes it does, even though there has been almost no activity in there for months now. I guess in an age of Twitter and Facebook, that poor forum feels and looks like 1999. But it's still a valuable resource for sharing tips and tricks, and just for chatting with one another. It's an area set aside just for us.

Point your Web browser to http://forums.crawfordbroadcasting.com/ and share your latest thoughts with the rest of us. Note, though, that we've had to disable new user signup in the forums, because we were getting spammed. ("Contact me in South Africa for cheap V_*grA!") This was happening in spite of our "captcha" – the little picture filled with numbers and letters that you have to type in when you join a forum. Unfortunately, the spam morons have written bots that can even read most captchas – which amazes me a bit, really, seeing as how I have trouble reading them sometimes!

If you're not a member of the forums and would like to join up, please send me (spoole), Todd (tdixon), or Amanda (amandaa) an email at crawfordbroadcasting.com. We still host engineering papers, too – if you have a schematic or detailed "how-to" for a particular problem, please send it in. Browse to: http://www.crawfordbroadcasting.com/~cbc/Eng_Files to see this library of useful info.

A New Mail Server?

We're currently evaluating a new mail server for a possible conversion later this year. The Scalix system that we're using right now is doing the job, but it's about 10-year-old technology and lacks several of the features that are taken for granted nowadays.

For one, it's surprisingly difficult to set up Scalix for secure, encrypted Webmail (i.e., https instead of plain-jane http). We've gotten it working in the past, but as soon as you upgrade the Scalix installation, all of your changes are lost and must be redone from scratch. Plus, Scalix needs a LOT of attention. Our complaints about email issues have dropped significantly in the past few months, but that's because Todd and I have been spending so much time on the thing. On a typical weekend, I spend several hours doing maintenance, cleanup and backup.

We're evaluating the Zimbra mail server, which is a much newer system. The company that created it was purchased by Yahoo a few years ago, so it's backed by a major player. Best of all, the aforementioned encryption and security features are enabled right out of the box. It also has several Exchange-like features, including shared contacts, calendars and "to-do" lists: for example, each department in each of our markets could create a "to do" list and share contact info. You control who sees what on your account.

Of course, there's no such thing as a perfect system; they'll all got their irritations. Zimbra uses Java and Javascript to create the Webmail environment, and it can be slow at times. (Yes, unfortunately, even slower than Scalix!) But Zimbra also offers a free desktop program, similar in concept to a full-blown Outlook setup, that's much, much faster and that supports all of Zimbra's key features. Better yet, it's available for all key operating systems: Windows, Mac and Linux.

Those of you who are interested in evaluating Zimbra can contact me. We can't take too many test users at present because the server is living in a relatively-slow backup DSL connection. But I would like to have a few people running it through its paces.

And Finally: A Look at CentOS

We moved our Scalix installation over to CentOS Linux a few months ago. We have also moved our backup server to that operating system, and thus far, we're very pleased with it. For those of you who aren't familiar with "Cent," it's a community build of the Red Hat Enterprise series. For example, CentOS 5 is basically equivalent to RHEL 5. In any case where a vendor requires RHEL Linux, CentOS will probably work just fine.

Cent isn't as easy to configure as OpenSUSE, which still remains my favorite desktop system. But with the addition of Webmin, a software package that allows you to configure via a Web browser, it's easy enough that I can do what we need. The best thing is that it's based on true Enterprise-class server code and remains stable for several years. With a non-enterprise distribution like OpenSUSE or Fedora, you only get updates for about 2 years after a given version is released (with Cent, it's 5). Even worse, the updates will, as often as not, break something else, requiring that you reinstall or reconfigure and go looking for problems. Since CentOS is based on Red Hat Enterprise, all updates have been thoroughly vetted and tested before release and normally won't "break" your installation.

As with most Open Source software, you can download CentOS for free and try it for yourself.

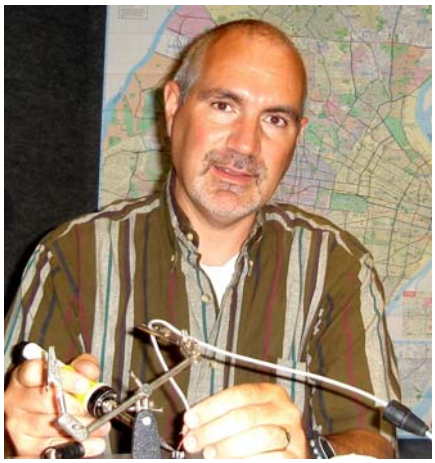
Check it out at http://www.centos.org. It's not for casual "try Linux" usage; it's a serious, enterprise-class system that will take some work. But if you need a rugged, reliable and extremely secure server, it's definitely worth a look.

Until next time!

Gateway Adventures
By
Rick Sewell, CBRE
Chief Engineer, CBC–St. Louis

FM HD Power Increase

The news that a potential power increase for FM HD signal is on the table right now is most welcome. It was good to read that NPR labs have come out in favor of an interim case-by-case increase in the power levels of the HD signal.



I was one of those "electronic geeks" who bought my HD radio early on just after they went on sale over five years ago. When I made the purchase there was only one AM station on HD in the market and no FM stations broadcasting in HD. I was generally pleased by the coverage of the AM station, finding that the HD signal came close to matching the range of the "useful" analog coverage. But I didn't get a chance to check out an FM HD signal until a month or so later when I needed to take my daughter to a youth conference in Indianapolis.

I knew there were several FM stations already in HD at that time. Driving into Indianapolis on the station's analog signal, I realized even without a scientific study that the HD signal coverage was about 60-percent of the "useful" analog signal.

A few months later, several FM stations in the St. Louis Market began putting out an HD signal and I found that this was fairly typical of an HD signal's coverage. This was tolerable if the diversity delay of the station was set right and the analog and digital audio matched in level and processing. However, once the multicast channels became part of the digital radio landscape, it quickly became evident that something had to be done.

There's nothing like hearing one of your favorite songs drop out all of a sudden or hearing a talk program interrupted by a digital dropout with no analog signal to back it up. I remember as much as five years ago writing in this publication that the power level increase of the HD signal needed to be explored.

It was obvious that the additional channels were the chief selling point of HD Radio to the general public. There are many of us who have concerns that unless the coverage issues are addressed, it is going to be very difficult to get the new channels to be successful.

The first buyers of almost any new electronic device will be the "gadget geeks." If their experience is not a good one, you are not going to get the word-of-mouth recommendation that is necessary to propel the sales and use of the new technology. Let's face it, and I know this because I am one; every "gadget geek" lives to show off their latest gadget. But that's not going to happen if they become frustrated with the new gadget. In fact, the opposite will be true.

This is why I believe HD Radio has not penetrated the market as much as we had hoped. We have been selling the "new stations" that someone will hear when they fork out a couple of hundred dollars for an HD Radio receiver. Then when they listen, they often hear stuff like simulcast stations, and the signal drops outs while they drive around town.

Increasing the power would definitely be part of the solution. The other would be to continue to develop program content that is unique and fresh. Of course in the current economic climate, that is definitely easier said than done.

I am encouraged that the much-needed power increase for the HD signals appears to be on the horizon, and I hope the FCC acts soon. Maybe with the power increase in hand, broadcasters will be more inclined to invest in programming the multicast channels to an even greater level.

Catalina Tales

By
Bill Agresta
Chief Engineer, KBRT

Greetings from Santa Catalina Island!

It's been another week to remember, that's for sure. I am currently in pretty bad pain, not quite as bad as after the fire, when I was trying to keep KBRT on the air with three broken ribs and head to toe poison oak, but this is still no fun. I had gone to look at a transmitter site and was about to take some pictures to document some graffiti and vandalism. Someone had stacked up some junk beside an old building and had reportedly been partying on the roof.

I climbed up to take a picture, but as soon as I got to the top, I heard gunfire and a bullet whizzing over my head. I quickly ducked down, but that caused the stuff I was standing on to fall, and me with it. I ended up landing flat on my back, just like the old Wild West shows, but someone forgot to place a mattress under me so I hit pretty hard. By the time I caught my breath and dragged myself back to my truck, I decided to quickly get out of there.

I never saw who was doing the shooting, and I figure they never saw me either. Unfortunately, this is one of the issues that broadcasters using sites in the National Forest have to deal with because in most cases, it is legal to shoot on such public lands. I am all for the right to bear arms, and in fact, I think it's great to have a place where these people can shoot, but come on! Let's be a little more responsible here. It's not a good thing to shoot up some hill when you cannot see what's at the top!

Anyway, I am actually okay, no broken ribs (and that is a miracle considering how far I fell), just some pain.

In other news, I know I already wrote about some of this, but the KBRT transmitter plant on Catalina Island is looking really nice. It's no thanks to all the dust caused by the Airport Road that the Conservancy stripped of pavement and has still not replaced, but the newly painted tower fences and ATU houses look great. They are finally all one color, dirt-tan, the same color as our three 280-foot towers. We also repainted the trim around the building and replaced some of the wood, mowed the entire property including the tower field, and reorganized the outdoor shop area so it looks nicer from the road. I hope you find the opportunity to visit Catalina Island some day soon and take the Inland Motor Tour. Ask for my brother when you do. He drives one of the tour buses.

Besides all the outdoor maintenance work I did last month, I have been digging into our computer/Internet situation at the plant. I put together a few more machines and installed a switch that after, playing with it for a couple of hours and getting it to work with HughesNet, not an easy thing to do. Their system does not seem to like anything but a direct connection to a computer with their compression software installed. I refuse to use the software as it causes lots of issues on its own. Besides, unless you visit the same site over and over, all it does is eat memory and slow you down. Unfortunately, I have still not gotten the Verizon Wireless modem to connect from down here at the building, at least not solidly. I am going to try one more thing with another Yagi antenna I found that is a lot more directional and null at the rear, hoping this will stop some of the reflections that are phasing my signal in and out. If any of you has any ideas, I always love to hear from you.

So, I don't have a whole bunch more to tell you all about this month and right now, I need to get some rest. I need to get this back of mine happy again. 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

Leftovers from Last Month

Last month, I asked the question: Why is it advisable to raise the filament voltage on a new high-power beam tetrode utilizing a thoriated tungsten filament, to its full rated voltage, for the first 100-200 hours of its operation?

Here's the answer: A thoriated tungsten filament operates with a considerably higher electrical resistance when it's new than when it's been in operation for awhile, thus (Ohm's Law rules here) its current draw from the filament transformer is considerably less at the outset of its life. In order for the other tube elements to be able to draw their rated currents from the cathode emissions, it is important that the filament voltage be raised to the point where the filament is operating with the proper *wattage* to maintain proper emission. That's the key. Once the tube filament has gotten past its 'break-in' period, then of course the filament resistance has decreased to the point where the filament current draw starts to become dangerous to the tube at the rated filament voltage. It's then highly desirable to lower the filament voltage to a point just a couple of tenths above the point where the plate current starts to drop off. Across the life of the tube, periodically raising the filament voltage just enough for proper tube emission is proper engineering practice. It's time to send the tube back for a rebuild when the filament voltage has to be raised past its maximum rated voltage in order to maintain proper plate current. Thanks to Freeland, Inc. for that one.

Now, seeing that I may have something interesting going on here, I'm going to try to keep this series of questions and answers going for as long as I can. I'll call it, "Project Sheherazade", where I ask the silly question one month, and give the honest answer the next month. Some will be easy, some will be hard. This one is probably easy. Here goes:

Most of us have worked with that stuff they call "Great Stuff." It's just wonderful for sealing up a transmitter building against bugs and rodents. It has a lot of other uses as well. As useful as Great Stuff is, it is also pretty nasty to work with. The instructions say you have to wear gloves when using it, but have you found out what it's like to remove said gloves when they're all covered in that goo? Removing the first one is easy, but when removing the second glove with the now-bare other hand, well, you get the picture. Now, here's the question: What is the *solvent* for Great Stuff? No fair looking on the can. I'll tell you next month.

A Hard Lesson in Communication

This isn't exactly engineering stuff, but since so many of us in engineering are now managers, I find that this is a valuable lesson in communication for managers.

Now I can't take credit for this saying. I got it from the CE at WPRO in Providence, Rhode Island some years back: "Communications is our business; it's not our policy." No kidding, I've lived and lived with this for years, and I now find that the problem of lack of communication is not just here in broadcasting – it's all over. I think that it's a part of the national psyche that thinks it knows everything, but doesn't. Details missed. Business lost. Sales lost. Etc.

Here's a supreme example: Back when we put the new WYRB Rockford facility on line, we took the recommendation of a neighboring business in our building and hooked up with a very nice sales rep at the local ISP, signed up, and went on-line.

Eight months later, we lost our service. We called for repair. After a runaround lasting several days, we were told that our service had been cut off for non-payment. What??? How did that happen? I called corporate. The ISP wasn't even in their payee database. They'd never seen a bill! I called the Rockford office. They hadn't seen a bill. They'd assumed that it had gone straight to corporate. I touched base with our business manager here at Hammond. She didn't know anything about it.

What had happened?

I called the account rep. Thank goodness I'd

had the presence of mind to stick her direct line into my cell phone's speed dial. She was just as mystified as I was... until she told us where the bills had been sent. Oh, they went to the address of our building, all right, but *without a suite number*. Apparently, without that suite number, the invoices went into the Post Office's black memory mail hole, lost forever to the world.

The next thing I knew, our Hammond business manager was getting calls from a collection agency about an overdue bill from our ISP. Well, they sure didn't waste any time turning us over, did they? I called them back, and after four messages into their voice mail, they finally called back and I explained the situation to them. They couldn't have cared less, what a surprise! I told them that we *weren't* going to pay until we got a written invoice with an amount on it. Understand that, to that point, we had nothing in writing. Everything was verbal. Well, with that, the collection agency finally got to the point, and sent us the invoice – about $403.00. Fair. I quick dashed off the Purchase Order Request and sent the whole mess overnight to corporate. The bill was paid post haste, and the story should have ended there.

Wrong! I waited about four business days and called the ISP back, asking them to re-connect us, now that the bill was paid. The answer came back, "No! You must start the sign-up process all over again in order to be returned to service." What??? This whole thing had started because the ISP had failed to put a complete address on our bill. Well, how long is that going to take? Three weeks, they said. By this time, our Internet had been down several weeks in Rockford and we were having to use the wireless router of our neighboring business across the hall, the one who'd recommended and still was using this same ISP. Have you tried lately to run any kind of business without on-line capability? We were that desperate. But now this ISP was going to delay our return to our own Internet connection by three more weeks?

Our business manager blew up at this point (she beat me to that by only a moment), and asked me to get a new ISP. We had two vendors in mind, but one didn't even have infrastructure into the building, and installing it would also take weeks, so we went to the other, because they could set up service immediately. Well, almost. They had us set up in a couple of days. And that should have ended there.

Two weeks later I get a call from the collection agency for the original ISP, again, this time demanding around $250. What for? And why wasn't this put into the first dunning invoice? I couldn't get a straight answer for a couple of weeks until, finally, the agency came up with the paperwork. The collection this time was for an "early disconnection fee." Talk about adding insult to injury! The thing is, *we never disconnected the service. They did!* So now, because the ISP screwed up billing and took us off line, then wouldn't reconnect us in a timely manner after we paid the bill, they charged us a disconnection fee.

Let's cut to the chase. Here's the way this should have been handled: At the first sign of trouble, the vendor should have gotten word to the sales person on our account (who is, by the way, a very good lady) that there was a problem here. Certainly she would have called us, I would have initiated some sleuthing, and the problem would have been solved well before the point at which our service would have been cut off. That would have ended the issue right there. But instead, the company didn't even bother to find out why this sort of thing happened. They cut us off and immediately turned us over to collections. Bad policy!! Collections, of course, is a separate company with the people skills of a squid. Second, once the bill was paid, whether it be to collections or to the vendor itself, there is no point in making the customer start the process all over again in order to be reinstated, unless it's revenge. The last time I checked, revenge was not on the list of acceptable business practices – unless your corporation is a major bank, but that's beyond the scope of this discussion.

Third, it should be axiomatic that if it isn't the customer who terminates the service, then there should be no fee for early disconnection. Period. I don't want that to be a law, just company policy. Any company who cuts off a customer over a misunderstanding, after the customer pays the bill, can just kiss their early termination fee good-bye or be touted to the skies for their bad manners. Which is what I'm doing right now. Too bad I can't give their name, but it is available upon request.

I've said this before in these pages: In one day, three thousand years ago, Samson killed 20,000 Philistines with the jawbone of an ass. Today, the same number of sales are killed each day by the same method. And now I can attest to all of you, that it isn't just the sales people who do it.

SBE Online University

As many of you know, the Education Committee of the Society of Broadcast Engineers is chaired by Cris Alexander. Just short of a year ago, Cris tapped both Stephen Poole and me to assist him on the committee. As part of our job, we were to help

develop courses of study for skill necessary for doing the job of engineering a broadcast station. That didn't mean we had to write the courses. There are others far better than we who can do that. But, I have edited one course and proofread another, and it's things that I've gleaned from those experiences on which I'd like to comment here.

To put it succinctly, the SBE Online University courses with which I'm familiar have been incredible. The course on Telco systems standards and practices was written by no less than Steve Church, who founded Telos and is the "go-to" brain on all aspects of connecting a radio station (or TV audio) to the world. The course is laid out clearly, and my job of delineating the course into chapters and creating test questions was made a lot easier by Steve's clear communication of his subject.

No less can be said of the AM Antenna system course, written by Cris Alexander, which could cover a lot more ground than it did, but didn't, and for a very good reason. The course is designed for the engineer who has to maintain an AM antenna system, not for the guy who gets to design and install it. That's important, because at first thought, AM antennas can be intimidating to learn and to generally deal with. By not playing up the aspects of the AM antenna system that an on-site or contract engineer doesn't need to know to do the job right makes the course much more approachable and less intimidating. I will say that some of the equations which are involved in the design of the array are shown within the course, but they don't appear in those questions which I've seen. They're there mainly for illustration of some of the principles of directional arrays, with which an Engineer should be at least passingly familiar.

Here's an example of what I mean: Negative towers are a fact of life in a lot of AM directional antenna systems. For those of us who don't know what I'm talking about, a negative tower is a tower in an AM antenna array which, rather than taking power from the phasing and coupling system with the rest of the array, actually gets its power from the other array elements. Why does such a tower do that? Well, the course doesn't go into that and neither will I, other than to say that the power that the tower absorbs has to go somewhere, and in the past, the practice has been to fold back that power into the antenna phasor, headed for the transmitter. But, there's a problem with that practice. Folding a negative tower's power back into an antenna system often lowers the VSWR bandwidth of the entire antenna system. In the past, the only problem with that may have been the lowering of a station's audio frequency response, and in some cases limiting the station's ability to modulate a full 100%. However, in this day and age of IBOC transmission, the result of RF foldback from a negative power can limit the bandwidth of an antenna system enough to destroy the IBOC signal – and usually does.

Well, what can be done about that? About the only thing that *can* be done is to take the power returned by the negative tower and put it into a dummy load! "Really?? You're kidding," I hear you say. No, I'm not, and here's the kicker. That negative tower *has* to be there or there would be no acceptable pattern. And if there is more than one negative tower in an array, which is well possible if there are more than, say, four towers in the array, that is a definite possibility. But, if the power is being absorbed into the dummy load, doesn't that reduce the power going to the listeners? Yup. And what can you do about that? Increase the output power of the transmitter to compensate. And yes, the Commission is now allowing that in some cases.

But – and here's the point, the only things that the local engineer needs to know about any of this – if that the station is licensed for, say, 5 kW, and that the transmitter is instead putting out a good deal more power than that to compensate for the negative tower, and that the amount of power being dissipated into the dummy load from that negative tower or towers needs to be measured as well.

By the way, if an antenna array has indeed more than one negative tower in it, and the station is contemplating IBOC operation, it may well be worth a trip to the consulting engineer to request a study of the array, with the goal of reducing the number of negative towers in that array. I've seen this done on a station located, actually, about five miles from my office. The station in that case has a very hot six tower in-line array wherein the towers at each end were both negative in the original design. A redesign of the array made only the back tower on the array (tower 1) negative. While not contributing much power to the radiated signal, tower 6 is now a positive tower, and for the first time in its history, the array is really stable.

Fascinating? Well, to me it is. And, by the way, thanks much to Cris Alexander for telling me a

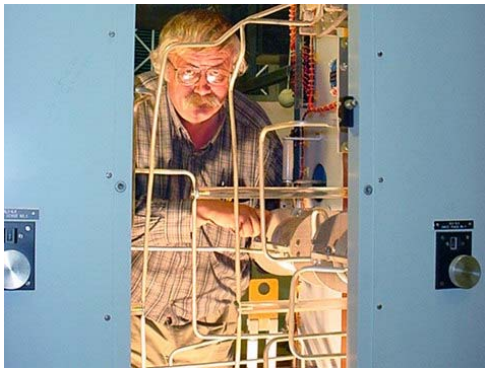
lot of this. But for the contract engineering person trying to keep an array legal, stable, and sounding good, not so much. He or she has other things to worry about with an AM antenna system, and that's exactly what this AM antenna course is about, and nothing more. So, if you're interested in showing yourself to be more valuable to your station or stations, it might pay you to take this and other courses from SBE Online University, and then, with that in hand, get certified. Remember, an SBE-certified engineer is a more valuable engineer, and SBE Online University is the best way to help get you there... without intimidating you.

Until next month, blessings!

The Portland Report

By
John White, CBRE
Chief Engineer, CBC–Portland

I'm sleepy. Why is that of interest to anyone? I was up all night last night and probably will be again tonight. The event? The annual warm weather T1 failure.



Unusual this year was the delay of warm weather as the world is experiencing an unusually cool period. As I write this at the end of July, we have several days of temps above 90. Warm summer weather isn't unusual. Apparently neither are warm weather T1 failures.

The pattern has been consistent. The temp goes above 90+ in the late afternoon. Then between 6 and 7 PM, the line begins to throw errors. All of which triggers a mad house of activity.

- A quick trip to the transmitter site to confirm the T1 problem.
- A call to telco to report the problem (circuit number in the Rolodex next to the trouble number).
- Telco confirms and calls out the on-call circuit tech.
- A mad dash to get the remote Hotline to the transmitter for emergency backup.
- About 8:00 PM, the T1 goes down hard.
- The Hotline has problems connecting, but is finally on line providing station audio.
- About 9:30, the T1 comes back up.
- At 10:00 PM, the tech arrives to troubleshoot the now nonexistent problem.
- The telco tech maliciously checks all parts of the end span looking for "possible" problems.
- We all retire for what's left of the night at 04:00 AM.

Sometimes old odd facts pop up years later as useful information. When I was 19, I happened to meet a retired Ford automotive engineer. For a radio nerd in that era of the Corvettes, T-Birds and the Dodge Hemi, I am sure I talked his ear off.

One thing he talked about was the proper way to break in a new engine. What he said was not at all the dealer recommendation. The dealer recommendation was 35 max the first 100 miles, then 45 and finally 60. The engineer's recommendation was radical. He said drive for 25 miles or so at 25. Make sure the temp and oil pressure is good. Now he said take it to the highway on a quiet day. Starting from a stop, go full acceleration through the gears to 60. Once at 60, back off and let the engine relax, then repeat the process.

The reason for his wisdom is as follows. When an engine is under heavy load, the high cylinder pressures force the rings to seat tight. The result is a tight, strong engine. He held that how you handle a new engine teaches it to be either tight or sloppy.

Fast forward to generator maintenance. I had noticed earlier the generator was producing a fair bit of blue smoke. The service tech noticed that as well, and I was thinking, "Uh oh, now what?" The generator is 25 years old but can't have more than several hundred hours on it.

Enter stage left, Yogi Berra: "It's déjà vu all over again." The tech said he sees this a lot with

generators that are under-loaded. The engine doesn't work hard and the engine learns to be sloppy. The solution is to do a run with a load bank and make the engine work hard for an hour or so. Seems like I heard that from the Ford engineer.

Last month, I mentioned that KKPZ is looking to move its studios to the transmitter building. We have had quite a few hoops (like zoning) to jump through, and that has been going well. The latest has been "System Development Charges" from the city. These charges were advanced as a way to compensate for the impact of new housing construction – the new schools, sewer plants, and water plants that needed to be built to accommodate them.

In the past, the new homes added to the tax base were used to issue construction revenue bonds to be paid off over 30 years. With new development, local governments started looking for more revenue. The solution became charges against construction or remodeling projects, as much as 10 to 30 percent of the project and in some cases more. The proceeds, in theory, were used to mediate the impact of the project.

A somewhat famous case happened here in Portland. A pizza restaurant was loosing its lease after some 30 years. Bad luck was offset by good luck. A space was available in the same block on the other side of the street. The owner prepared for the move until he got a bill for $40,000 in System Development Charges.

I am beginning to think an engineers job has changed to about half and half technical and PR.

Last month I talked about the tower repair project. That project is done, and this month I have included a couple of pictures of the final result.

The new tower diagonals are clearly visible next to the old.

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

Uninvited Guests

The month of July started off to be rather exciting. After the project in May out at the KLVZ daytime site north of Brighton, we knew we'd have to get some more asphalt work done. During the transmitter move project, we had to have part of the asphalt at tower two cut to accommodate the underground run of PVC conduit. We had our contractor, Mike Kilgore, deal with this. He wanted to get us a good deal, and found a company that would do the work for much less than the other companies around.

The folks from the asphalt company knew they needed to have Mike out at the site during the work to monitor things and show them exactly what to do. Well, on Monday June 29th, I was at a Bible study when I got a call from my dad, who was out of town. He normally does not call me when he is out of town unless it's important, so I took the call. He had received a call from Mike in which he learned that the asphalt contractor showed up, took our gate down and did the work without anyone from CBC or Kilgore Construction there. He noticed that they snagged one of the copper straps around the area and tore it.

The next day, I headed out there first thing. Keith Peterson met me there to assess the damage. The company had completely ripped out a section of copper strap (onto which the radials for that tower terminated) and had cut the connecting copper strap at the edge of the older part of the asphalt. Keith fixed the strap outside the asphalt area. We had to find all the broken radials and solder them back on and also solder the strap back onto itself.

Later that afternoon, I went back out to try to find the other end of the copper strap under the asphalt. This was a lot of hard work as I had to dig through the new asphalt. Mike knew I was out there and since he could not make it out to help, he sent out one of his workers to help me. We never did find the copper strap after digging a good three feet into the asphalt. Later that evening, Mike went out to also assess the damage and to fix our gate which was not put back on right by the asphalt company. Mike did some more digging around and actually found the other end of the copper strap. It looked as if the company cut it and then folded it so it'd stay under the asphalt.

Mike had to get the asphalt company back out to fix the place where we had to tear up the asphalt looking for the strap. They came back out on the 13th without calling first and yet again, they took down the gate and did the work without anyone being there. I received a call from Mike saying the guys were on there way out and he'd be out there shortly. I decided to call the police this time because these guys were trespassing. They did not have permission to take down our gate, go on our property and do the work without Mike or myself out there. A lot of good that did. Apparently, since they were hired to do the work, they were allowed on the property regardless. I'm glad their machines did not snag a guy wire or something and causing more damage. They were able to finish up their work and we won't be seeing them again for a long while, if ever.

Power Failure

I spent a couple hours on the Fourth of July working at the studio while my dad fixed the mower at KLZ. On Friday, the 3rd, we had a power failure/surge that took all four stations off the air. The surge that happened killed the power supply to KLTT's Telos unit as well as the Comrex Hotline. The Hotline was an easy fix; I just used the power supply from another unit until I could get a new one ordered.

The Telos unit was a different issue. It would take time to fix that I didn't have on the 4th. We do not have any spare for the 2X12, so I knew I'd have to take our spare 1X6 and set it up. I did this

the 6th when I got into the office. This took much longer than I expected because our spare had a note on it that said "Dead Again." This is yet another item left over from my predecessor that was never fixed like it should've been. I decided to try it, and it worked fine for five minutes. It powered on and I even called my cell with it. Then it just quit working. The unit showed to be on, but the switch console did not work at all. We tried different switch consoles and different cables. We finally grabbed the 1X6 unit from KLZ and put it in for the week since KLTT has live shows that use the phone system.

I have since sent the 1X6 unit that did now work properly to Telos, and as of the 29th, they have been testing it and it works. They called me and want to send it back. I talked them in to keeping it a few more days just in case. Maybe the unit just didn't like me, or maybe there is really something wrong with it. Either way, I want to make sure when I get it back that it works. It's our only spare for four stations.

The Mowing Continues…

On the 15th, we finally got more mowing done at KLZ. I was able to get inside all the tower bases with the sickle bar mower and my dad was on the tractor getting the back portion of the 50-acre property mowed. This ended up being a full day of work as we had several issues with the equipment. At the end of the day, we ended up taking our Troy-Bilt string trimmer back to the shop because it acted

Our Massey-Ferguson tractor got a workout mowing the 50 acres at the KLZ site.

like it had no power once I started using it on weeds. According to the shop, it's working great. I've decided to give Keith the task of using it, thinking maybe it just doesn't like me anymore.

The 29th was a day spent at KLTT. The week of the 27th has been one of great temperatures (low 70s for the highs) and semi-good weather. I had planned on going out on the 28th to mow but the weather forecast predicted rain after the noon hour. So on Wednesday, my dad went out with me so we could get it done faster.

All the grass in the foreground was as tall as the growth in the background when we started.

It had rained the night before and everything was still wet. The grass/weeds were well over a foot tall, in some places three feet tall. We have a John Deer riding mower that we use at KLTT. I started with the blade as high up as it would go, and the mowing still proved to be difficult. With the grass so wet, it just didn't cut well. We ended up going over the property in front of the building several times before it started looking good. We then moved on to the towers.

I had noticed the transmitter going to "lightning mode," which is 10,000 watts triggered by the first VSWR trip, often. Usually when there is static in the air it will switch itself over, but it has never done it this much, especially in clear weather. I noticed the weeds were touching the ball gap at one tower, causing the VSWR trips. We were able to get the sickle bar into one of the tower bases to cut that down. At tower 4, we had to get on our hands and knees and pull all the grass and weeds by hand. Tower one is in a swampy area and was still full of water, so we went to tower two and were able to mow it with the push mower. It began raining while mowing tower two. It started lightning as well. We quickly finished up the tower and called it a day.

Remote Closet

On July 21, I decided to clean up the remote closet here at the office. It had all sorts of CDs, cassettes, papers and other miscellaneous "stuff" dating back several years. I had noticed that we needed a place for promotional stuff because the

offices of the managers were getting full, so I decided to clean out the remote closet to make some room. I put everything in boxes in a neat way so that the person who would be going through it could do so easily. This took an entire morning. The closet now looks good. It now is the home of all the remote equipment and promotions materials.

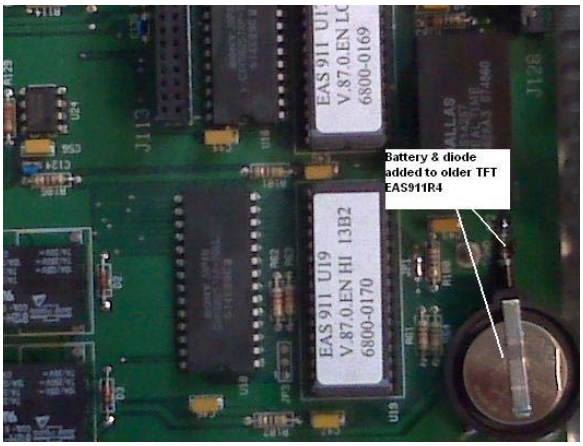
TFT EAS 911

Lately, it seems as if every EAS 911 unit falters in some way. Currently, we have two units not working properly. One I had to send in to the manufacturer. The other we are working on a fix ourselves. We have one unit that will not print for the test received. Instead, all the printout shows is EOM received. Ricky Tam at TFT told me to test the power supply and it tested just fine. He then had me send it in for repair. The other one's battery power, which comes internally from the clock module, no longer works. If it gets unplugged or the power goes out, it resets all the info. We decided instead of sending it in, we would install our own battery. I got the parts (button battery holder and 3.2V lithium battery) in on the 29th and put it all together on the 30th. There wasn't much to it. Just connect the positive side of the battery to JP2 through a diode and connect the other side to ground. We used silicon adhesive to secure the battery holder to the board.

A Look Ahead

The month of August will be a fun one for me. I have a friend's wedding to attend on the 2nd and then I go on vacation for a week to Lake City, Colorado. I hope to also get done with several small projects around the office. I would like to replace the black and white security cameras with the new color cameras we have had sitting in the engineering room for over six months. I also want to put the covers on the cabinets in the control rooms. Currently, the covers are not put on due to the clips that attaches them breaking as well as because they no longer fit. With the tubs of the Wheatstone control surfaces lying below the cabinet top, it means we need to cut off a couple inches on the covers and find a new way of attaching them. I was contemplating just screwing them in, but if I need in there to look at some wiring it may make it difficult. I may try some new clips instead. I would also like to label all the wiring in the production rooms. Currently, there are no labels and if something gets unplugged from the Mackie boards, it may be difficult to figure out where it goes. There are also several things not plugged in at all. I'd like to get all the wiring neatened up to make it easier to work in each room and also to make it easier to trace wires when things go wrong. I don't know if I'll get to all of this, but those are the things I would really like to get done around the studio the month of August.

Until next time, that's all folks!



Digital Diary
by
Larry Foltran
Corporate Website & Information Technology Coordinator

Mobile Radio

Just a few months ago, I joined the rest of the technologically inclined community and upgraded to a smartphone. I know I'm a bit behind on the trend and feel free to call me "old fashioned," but until recently I felt that a phone should be only that. I felt there was no reason to have a device, designed with the primary purpose of making phone calls, possess the ability of performing a myriad of tasks just short of making coffee in the morning. Boy was I wrong. But that's actually a topic for a different day.

Upgrading to a smartphone opened up the world of mobile radio for me. My radio listening would no longer be limited to the car or PC. Even the programming options are expanded beyond the local stations. As long as my phone is nearby, which is typically close to 24-hours a day, I can tune into a variety of radio stations. Although the options in terms of delivery software are few at this point, I can see the pool of service providers expand greatly in the near future.

Crawford Broadcasting Company recently made the jump into mobile radio by partnering with FlyCast. We are currently mobile streaming our three Detroit stations (WMUZ, WEXL, & WRDT) and our three Chicago stations (WPWX, WSRB, & WYCA). After downloading the FlyCast application to your smartphone, you can easily sort by city and select the desired station. How much easier can it get? By purchasing the upgraded FlyCast service, you get a few very useful tools including a record function and the ability to "rewind" up to 30 minutes of programming on the specific station.

There is also "I Heart Radio," which boasts the streaming of 350+ stations. Although I think FlyCast has them beat in terms of tools and ease of use, I Heart Radio's selection combines actual radio stations with groups of programming specific pseudo stations such as Smooth Jazz, Big Classic Hits, and others.

My wife introduced me to a mobile streaming application called Slacker Radio. Slacker provides a number of main categories of programming styles such as comedy, blues, and alternative as some examples. Each category is further divided into more specific sub-categories. Where Slacker differs from both FlyCast and I Heart Radio is that it has no actual streaming radio stations. It is essentially a massive jukebox, playing song after song. The basic service does provide the listener with the option of skipping to the next song, six times per station on a daily basis. Upgrading to the enhanced service opens it to unlimited skipping and a variety of other added tools. After a bit of use, this system appears to more closely resemble satellite radio than actual radio streaming. The most impressive thing about the Slacker system is the sound quality. Granted, playing music through a small smartphone speaker isn't the greatest. But plug in some quality headphones and it was nearly CD quality. What's missing from this service is the human touch that on-air hosts provide.

Finally, satellite radio has made the move to mobile delivery as well. XM Radio has unveiled its mobile subscription service limited to either Alltel or AT&T services, or Blackberry devices. For $7.99 per month, subscribers have access to 20 channels selected from XM's library. Whether folks are going to pay that kind of money for such limited access will be interesting to see.

Perhaps it's my biased opinion, but I feel it's tough to beat good local radio. I'll have to admit that, whether it is on mobile streaming or online, I do occasionally tune in to stations outside the Detroit area while not at work. But in all honesty, I find local programming with local hosts talking about local interests to be a much better fit for me.

A Bit of Poetic Justice

A couple of weeks ago, I received a frustrated call from a family friend who's computer wasn't doing much more than blowing hot air into their den. I offered to take a look at it, and she brought it over a day or two later. After booting up the machine, I quickly confirmed that it was moving slower than molasses in January. Upon further inspection, I saw that the dreaded WinPC fake antivirus had found its way onto this computer. Another victim of the "your computer is infected, download now" scare tactic.

As I continued to look through this computer, I began to find one file-sharing application after another. Quite honestly, I wasn't surprised. I can safely say that four out of five infected computers that I look at have at least one file sharing application loaded on the machine. Although it may be nearly impossible to truly track the path of infection, I'm fairly confident that one or more "shared" files were infected with a minor or gateway bug. Whether it was malware or spyware, it opened the door for something worse to come in. In this case it most likely provided the avenue for the fake virus warning, which leads to the user downloading and installing WinPC. At that point, it was game over.

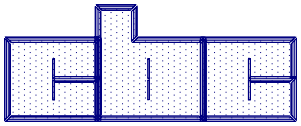
I spent the next several days working on that computer. Whatever was in there was preventing me from installing any new antivirus or anti-spyware software, or even running any software already on the machine. The only thing the computer did moderately well was to go on the Internet and display all kinds of pop-up ads and fake warnings. Online virus and spyware scans also did nothing. It was time to pull the life support and pass on the bad news.

I made the phone call and the owner was obviously disappointed. Surprisingly, she wasn't as disappointed with the potential loss of photos or other data as she was with losing the large number of downloaded songs she had accumulated. Numerous hours spent downloading "free" music and now she'll spend money to either replace the hard drive or the computer entirely. Hmmm…seems quite ironic I think.

…until next month!

KBRT • Avalon - Los Angeles, CA
740 kHz, 10 kW-D, DA
KCBC • Riverbank - 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, 6 kW/65m 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



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