The Parasitic Emission

Volume 37—Number 2
February 2011

Supporting Amateur Radio Club Activities

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Listen up!
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On The Air

by Joe Shupienis, W3BC

ALDOUS HUXLEY was only 38 years old when he wrote his *magnum opus,* his dystopian novel, *Brave New World.* Writing in the depths of the worldwide Great Depression, he imagined a future of apparent happiness and prosperity—a future in which poverty was eliminated, and the world was dominated by a prosperous, global economy of extreme consumerism, fueled by government-sponsored brain-washing. For this Society's *Alphas* and *Betas*—the upper and middle classes—things couldn't be better. For the *Gammas, Deltas* and *Epsilons*, life was not so good, but they were genetically engineered to be happy doing the jobs no one else wanted to.

In Huxley's brave, new world, greed and selfishness become virtues, and conspicuous consumption is government-mandated. The State's *Command Economy* is based on massive production of shoddy merchandise which has to be replaced frequently. Supplying this constant demand leads to full employment and a stable society. The workers' free time is spent in *soma*-induced, hallucinatory "holidays." Since solitary activities are considered subversive and anti-social, everyone is encouraged (through their nightly brainwashing) to engage in sports such as *Recreational Sex* or *Obstacle Golf.*

By now, you may be thinking, "Thanks for the book report, Joe, but what does this have to do with Amateur Radio?"

Huxley was not a ham as far as I know. However, many parts of his vision of the future are with us today. There really is a drug called Soma, and drug abusers seek it for its euphoric effects. You can visit your local super-store to buy a vast array of shoddy merchandise. Society is full of self-absorbed people, texting away on their cell-phones while "driving." And the main focus of those under the age of Medicare is... recreation. In all its forms!

In today's brave, new world, what does a mostly solitary, cerebral activity like ham radio have to offer the typical working man or woman? How can Amateur Radio clubs attract more members under the age of 50? Take a look at your next club meeting and calculate the average age. If it's anywhere near the national average, it will be well over sixty. How many hams under 40 do you see? How many are under 30?

We are not alone in our dwindling numbers of youthful members—this problem is shared by every lodge, service club and fraternal organization. These Grand Brotherhoods which were once the pillars of our culture now find themselves wanting for new members—the number of burial rites for departed members far exceeds the welcoming rites for new initiates. It seems that these "old-school" activities, long considered the very soul of Western civilization, are now dismissed by the thirty-somethings as "not cool." Today's young men and women have a multitude of other demands for their free time and money.

Parents of school-age children these days are all but forced to participate in their kids' athletic and other activities. Social pressure to "fit in" dictates priorities when it comes time to decide what to do and where to spend the paycheck. Much time is consumed shopping for additional shoddy merchandise to replace last year's worn-out, shoddy merchandise. The little time left at home is spent watching 1,000 channels of HDTV, playing video games and surfing the Internet.

So in our brave, new world, how do we attract younger hams? There's no easy answer. We can't just keep doing what worked in the past and hope for the best. When we talk about *EmComm* this and *Digital* that, and go on and on about contests and nets, we're actually missing the point. We need to acknowledge that those things that brought us into the hobby in the "good old days" are no longer relevant to young men and women under the age of 45. That's the truth of our current status, and it's literally a matter of life-and-death for Amateur Radio.

We need to become actively involved in addressing this situation. We need to make Amateur Radio attractive to people in their 30s and 40s. We need to seek out and encourage those persons we believe would make good hams to join our ranks.

We need to clean up our act and be careful not to do those things which alienate outsiders. Appearance counts. When we present Amateur Radio to the public, it's important for us to *be presentable!* We don't have to wear "monkey suits," but greasy tee shirts with beer advertising and obscene slogans are best left for other activities.

And never forget—every word we say on the air can be heard by everyone with a radio or scanner. If Mom and Dad hear us being ignorant jerks on the air, they're not very likely to encourage Junior to follow in our footsteps! To people with scanners, there's no such thing as a "secret frequency."

A word of caution is in order: In our brave, new world, it's good policy only to conduct mentoring of minors with no fewer than two or three adults present at all times. With all the lurid stories in today's news, strange, old men inviting children to come play with radios could be viewed with alarm and suspicion!

I'll see you... O*n the Air!*

We can't just keep doing what worked in the past and hope for the best.

The Quad-County Amateur Radio Club

Cameron, Clearfield, Elk and Jefferson Counties

Meeting Notices

February 18, 2011

February Meeting: The February Meeting will be held on Friday, February 18 at 7:30 pm in the meeting room of the Clearfield County 911 Center, Leonard Street in Clearfield. After the meeting, **Herb Murray, W3TM** will present a program on **how to obtain a vanity call**. Also, coffee and donuts will be served.

February Breakfast: 9:30 am, Saturday, February 12, Sid's Sub Shop, Old Town Road

Minutes

by Jeff Rowles, KA3FHV

Due to inclement weather, the regular meeting scheduled for Friday, January 21 was canceled.

QCARC Information	
President	Doug Rowles, W3DWR w3dwr@hotmail.com
Vice President	H. Deforest Murray, III, W3TM kb3tap@hotmail.com
Secretary	Jeff Rowles, KA3FHV jrowles@earthlink.net
Treasurer	Dorothy Morrison, N3PUQ edmo1@atlanticbb.net
Executive Board	Don Jewell, KB3LES Lars Kvant, SM7FYW Ed Morrison, K3JE Joe Shupienis, W3BC Bryan Simanic, WA3UFN
Repeaters	N3QC 147.315+ [173.8] K3EDD 444.625+ [173.8] N3IZE 444.900+ [173.8]Clfd local
Nets	Sunday @ 1900 147.315 (Club)
Web	www.qcarc.com

Behind the Gavel

by Doug Rowles, W3DWR

AS OF FRIDAY, January 21st our 147.315, N3QC repeater had been on the air for 986 days. She hasn't missed a beat. What she has missed is the opportunity to link together area amateurs on a regular basis other than the weekly net.

Used to be on the old 146.73 machine at the Clear Run site and later on 147.39 on Rockton Mountain, a wide-ranging group of hams got on the air every evening. I had those early frequencies in the scanner before I was licensed back on July 17, 1979. The whole family listened to the Sunday night net.

What did they talk about? Just about everything - new rig, hard to get DX station, band conditions, what they had for dinner. Once in a while there would even be a "mental inversion." If you remember that term, you are dating yourself.

Sunday mornings were reserved for LMB - DDA story time. There were times when we couldn't eat our breakfast for laughing. Some of the best stories were the DDA coon hunting remembrances. Right near the top is the afternoon LMB first used the wife's microwave on a beef roast. The longer he cooked it the harder it got, till he finally tossed it in the trash.

Another occasion is working the repeater while on the road. Some folks get on the air mobile, but not nearly as many as in years gone by.

The point I am trying to make is we have a great repeater so let's use it! After dinner take that cup of coffee to the radio room, grab the mic and let the coverage area know that you are monitoring the frequency. It doesn't have to be a two hour discussion. We just need to return to the good old days once in a while. Think about it.

[Ed. Note: Day 1,000 will be February 4. Let's all make at least one contact that day.]

Punxsutawney Area Amateur Radio Club

Punxsutawney and Jefferson County

Meeting Notice

February 8, 2011

February Meeting: 7 pm, Tuesday, February 8, Presbyterian Church, Findley Street, Punxsutawney. After the meeting, President John Buttner, KB3OUG will present a program on using the new club website.

PAARC Information	
President	John Buttner, KB3OUG kb3oug@gmail.com
Vice President	Jim Byrne, KA3WSX jimwsx@windstream.net
Secretary	Steve Waltman, KB3FPN kb3fpn@windstream.net
Treasurer	Sham Hollopeter, W3QOS
Repeaters	N5NWC 146.715- [173.8] Punxs'y N5NWC 443.475+ Punxs'y KE3DR 147.390+ [173.8] Rockton N3HAO 53.07- (-1MHz) Rockton N3JGT 147.105+ [173.8] Sigel N3GPM 444.275+ Brookvl
Nets	Monday @ 1930 147.390 (Club) Monday @ 2000 147.105 (ARES)
Web	www.qsl.net/k3hwj/

3 Club Connections

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Groundhog Day Special Event

THIS YEAR, the Punxsutawney Area ARC is putting the K3HWJ special event station on the air to celebrate the annual Groundhog Day festivities. The station will be active on Saturday, February 5th beginning at 9:00 am. Look for K3HWJ on 14.240, 7.245, 147.390 and 146.715 MHz.

PARA An Amateur Radio Organization Serving Clearfield and Centre Counties ... ORGANIZED NOVEMBER 1992 ... W3PHB

Philipsburg Amateur Radio Association

Philipsburg and Clearfield County

Meeting Notice

February 12, 2011

The **February meeting** of the Philipsburg Amateur Radio Association will be held on Saturday, February 12 at 3:00 pm at Bock's Dining & Tea Room, 429 North Centre Street.

PARA Information	
President	John Szwarc, N3SPW *jsszwarc@yahoo.com*
Vice President	Dave Runk, AA3EJ *aa3ej@yahoo.com*
Secretary	Dave Runk, AA3EJ *aa3ej@yahoo.com*
Treasurer	Jim Warg, N3ONE
Liaison	Filip Cerny AB3HK, ARRL Liaison Dick Thompson, K3BIE Interclub Liaison
Repeaters	W3PHB 146.430+ [173.8] Rtlsnk Mt W3PHB 146.640- [173.8] Philipsbg W3PHB C 147.255+ [DSTAR] Kylertown W3PHB 444.750+ [173.8] Philipsbg
Nets	Saturday @ 2100 147.430+ [173.8]
Web	www.philipsburg-ara.org

Headwaters Amateur Radio Club

Coudersport and Potter County

Meeting Notice

February 3, 2011

January Meeting: 7 pm, Thursday, February 3 at the Charles Cole Memorial Hospital, Coudersport. Park in Section A and enter Door A, then the first room on the right.

Minutes

January 2011

HARC Meeting January 6 2011: Jason called the meeting to order at 7:21 PM. Meeting minutes from December were read. Wayne motioned to accept Jim C 2nd

Treasure report: Tom motioned to accept Jim C 2nd.

Old Business

Jim C asked club members to volunteer when classes are being held. Club officers will remain the same for 2011. We still need a secretary; Tom WA3HLC will still try and help out.

A discussion was held about making a data base with club member's info. I.E phone numbers, cell numbers etc. As Jason was strained in the flood and could have used the info to get help.

A discussion was held about RACES and ACS and our relation with the County. We seem to be in a holding pattern.

A talk was held about the recent flood and being prepared for emergencies.

New Business

A discussion was held about having a message handling training session. Possibly after the Monday evening nets or once a month and possibly using 146.685 for RACES and using 146.88 for ACS.

A further discussion was held about Ham Classes. Jim C will order training material. Jim C asked for input from members who wish to help with a specific subject matter. Club has to advertise soon if classes are to start in February.

Tentative date to start February 9 and continue for 12 weeks. Anyone wishing to take the classes for Technician or General or know of anyone interested please contact Jim C at 814-274-9508 or email at Jimcent@verizon.net Subject Ham Classes.

Motion to Adjourned at 8:20 PM by Wayne, Diana 2nd

Attending Meeting

Jason, Jim C, Wayne, Tom, Diana.

Headwaters ARC Information	
President	*Jason Layton, K2BYL*
Vice President	*James Centanni, W2IMK*
Secretary	*Charles Scott Sharpe, KB3JVD*
Treasurer	*Wayne Stahler, II, WS3PC*
Repeaters	N3PC 146.685- [173.8] Coudersport K3CC 146.880- [173.8] Coudersport KB3EAR 444.300+ Coudersport
Nets	Monday @ 1900 146.685- [173.8] Monday @ 1930 28.360 [USB] Monday @ 1945 1.980 [USB]
Web	www.n3pc.com

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Elk County Amateur Radio Association

Elk and Cameron Counties

Meeting Notice

February 16, 2011

February Meeting: 1:30 pm, Sunday, February 20 at the Elk County EOC, US 219 South of Ridgway.

Elk County ARA Information	
President	*Scott Logue, N3LVG*
Vice President	*Rick Wehler, N3RJH*
Secretary	*Jerry Robinson, N3RYG*
Treasurer	*Mary Lewis, N3UDN*
ARES EC	*Bob Devilling, N3SGY*
Repeaters	N3NIA 147.000+ [173.8] Bootjack N3NWL 147.285+ Ridgway N3RZL 442.200+ Ridgway N3RZL 442.350+ Boone Mtn WA8RZR 443.675+ St Marys N3FYD 146.805- Emporium WA3WPS 147.180+ Emporium
Nets	Sunday @ 2000 147.000+ [173.8]
Web	www.n3nia.com

Local Net Schedules

by Joe Shupienis, W3BC

QCARC	1900	Sunday	**147.315**	*T 173.8*
ECARA	2000	Sunday	**147.000**	*T 173.8*
PAARC	1930	Monday	**147.390**	*T 173.8*
Jeff Co ARES	2000	Monday	**147.105**	*T 173.8*
Clfd Co ARES	2100	Wednesday	**147.315**	*T 173.8*
PARA	2100	Saturday	**146.430**	*T 173.8*
Headwaters ARC	1900	Monday	**146.685**	*T 173.8*

VE Test Sessions

Test dates for **Coudersport** will be 3/12, 5/14, 7/16, 9/10, and 11/12/11. The test site is the Charles Cole Memorial Hospital Conference Room at the side entrance on the helicopter landing parking level. Testing starts at 10:00AM. All license classes are given and there is no charge.

Test dates for **Ridgway** Area are 3/19, 6/18, and 9/17/11. Until further notice, these tests will be held at the 911 Center and will begin at 9:30AM. There will be no charge and all license classes will be given.

VE Exams are given in **Philipsburg** after each PARA meeting, 2nd Saturday every month except July and January.

VE Exams are planned for **DuBois** in April, July and October. Contact Bryan, WA3UFN for more information.

Shorts

Best wishes go out to **Don Jewell, KB3LES** who recently had a fire in his home. Fortunately, everyone is safe.

– . . . –

Don't forget to make a contact on the 147.315 repeater on **Friday, February 4th**. That will be day 1,000 of continuous operation.

– . . . –

Plan on contacting K3HWJ on **Saturday, February 5th** during the **Groundhog Day Special Event**. If you want to operate, you are welcome to stop by the Punxsutawney Airport where the station will be set up.

Amateur Radio GPS Mystery Tour

EVERY MONTH, we present a set of GPS coordinates that are somehow related to amateur radio.

Last month's coordinates were 23°06' 59" N, 82°23' 47" W. This is QTH of Arnie Coro, CO2KK in Havana, Cuba. He hosts an amateur radio and shortwave listening program each week on Radio Havana, of which he is one of the founders. He's a very active ham, and you can usually find him on 40 and 20 meters.

This month's location was the subject of a Hollywood movie, and is still popular today. There is no ham here (but a "hog" is involved.) There is definitely a ham radio connection, however! See if you can guess what it is!

February ARGMT Coordinates:

40° 55' 48.5" N, 78° 57' 28.0" W

Hint: If you plan on going there, you better be prepared for any kind of weather!

– . . . –

A request from the Editor

To all Club Officers:

Please send us information about your club. It is your chance to put your club's activities in the spotlight for over 300 readers in this part of the state. This publication is far more worthwhile when we can print your activities. It becomes less valuable when you don't share your news.

If your club does something, please, for the good of all our readers, take a moment to send a short note about it. It doesn't have to be fancy—it just needs to be submitted. Here is the email address to submit material:

submit@parasiticemission.com

5 Club Connections

Turn On, Tune In, Listen Up!

by Joe Shupienis, W3BC

FORTY METERS had a Novice band back in the Dark Ages (1966) when I first got on the air. One day, I brought home a new crystal for 7120 kc, plugged it into the transmitter, and tuned up. “CQ CQ CQ,” I sent, “DE WN3FOZ WN3FOZ K.”

Switching to receive, I was filled with joy as a weak signal called me back—on my very first 40 meter CQ! I was as excited as a 13 year old kid could be—the other station was in a new state, all the way over in Illinois! What a great after-school activity on that cold winter afternoon, as the sun slowly descended toward the horizon.

Just when I finished another transmission, I noted that his signal was getting stronger, most likely due to improving propagation when suddenly—”De-de- DUM! De-de-de-de-de dum... dum...” chimed out of my speaker!

Not exactly the Voice of Doom, it was merely the *interval signal,* warning that Radio Moscow's mighty megawatts were getting ready to spew hours of Communist propaganda. And it ruined my QSO! My disappointment didn't last long, though. I turned off the BFO, and tuned around the band, listening to the shortwave broadcasts from all over Europe, Africa and South America.

It was no problem for me to go to listen-only mode when the Bolshevik Broadcasting Communists took over my one and only frequency on 40 meters. It was easy, because for the previous several years, I had listened to a lot of radio.

Back in the days when I couldn't find anybody to teach me the Morse code, I became a broadcast band DXer. My first QSL card was from WCCO in Minneapolis/St Paul, Minnesota. It was the first of many, and was soon joined by such big guns as WCBS, WNBC, WABC, WLS, WCFL, WQXR, WWL, WSB, WSM, WHO, CKLW, CBM, WOWO, WRVA, WWVA, WBZ, KYW, KMOX, KDKA, and WHAM!

In my years of listening to AM broadcasts from all over the country, I learned a lot about geography—and a lot about the world I lived in. For example, I discovered that the news from New Orleans had much in common with the news from Philadelphia. Both cities had transit problems, and highway construction was a growing concern for the motoring public.

I learned about weather, too. If a blizzard hit Chicago, we were in for it a day or two later! To this day, fond memories of Motown music and frigid February nights listening to far-away basketball and hockey games echo in the recesses of my mind. Those happy days of youth are still alive.

My musical education was not neglected, either. New York's Classical station, WQXR was the home of Symphony Hall every evening at 8:00. At the other end of the dial was live country music from the *Grand Ole Opry* on WSM, in Nashville. Dixieland jazz wafted through the gumbo-scented airwaves from WWL on 880 kc in New Orleans every night. Right next door on 880 kc was the clipped delivery of news from the Big Apple's WCBS. One notch away on 890 kc, you could hear the British Invasion on WLS in Chicago, owned by the World's Largest Store (Sears, Roebuck & Co.) Crosstown rival WCFL on 1000 kc had the loudest signal on the band in our area most winter evenings. Must have been the result of Union Labor!

Teachers lamented the shallowness of most of the small-town kids who attended school with me, and some even asked me where I picked up my surprisingly well-rounded knowledge of the world that existed outside the DuBois city limits. Most of them scoffed at my honest answer, but my 8th grade Art teacher K3TFL, instead, nodded knowingly and became my Elmer.

And that brings us full-circle to the winter of 1966-67, and my 40 meter listening adventures. In March, my Novice license would expire, and it wouldn't be until May that the FCC would come to Pittsburgh to administer Amateur Radio exams.

During those months I couldn't transmit, I listened a lot. I learned a lot. I took advantage of the daily Morse Code practice transmitted by W1AW. I wanted to make sure I would pass the 13 wpm test for the General class license. Just to be on the safe side, I tuned to military stations like NSS and NAA and copied all the five-letter groups I could at 18 wpm until my pencil wore out.

To unwind after that, I started to listen to the foreign broadcasts from friend and foe alike. Radio Moscow had a huge signal, and their “news” was technically the truth, but far from the “whole truth.” Our side was no better—we whitewashed everything as well by putting a pro-American spin on our news! My education continued and I learned that the *Cold War* was a war of words, backed up by bombs.

Today, there's not much of interest on AM broadcast. The music died a long time ago, and regional identities are gone. Tuning around, about all you'll hear is dozens of stations all shouting the same, syndicated, political clap-trap, and a few preachers going

I was as excited as a 13 year old could be—the other station was in a new state!

forth to proclaim the Good News.

Neither are the Short Wave bands what they used to be. The megawatt powerhouses of the Cold War have mostly fallen silent. In their wake, the International Broadcasting bands are mostly populated by American preachers preaching to Americans, repetitive programming from a handful of large stations, and third-world broadcasters boldly trying to venture forth into the 20th century. Yes, I know this is the 21st century!

But if you tune carefully, you'll still discover many gems. There are stations which maintain their national identities, and their English language broadcasts are delightfully informative. Granted, the once mighty BBC no longer broadcasts the news every hour as they once did, and I believe the world is the worse for the loss of their accurate, impartial reporting.

Once in a while, you'll hear the music of a faraway land, and through the magic of radio, find yourself transported to the most exotic of places, if only for a few brief moments.

Shortwave Radio is still there—I don't know for how much longer—but for now, I encourage you to fire up your receiver and tune around. You don't even need a license, since you're not transmitting, but you still will find you have the entire world at your fingertips.

If you don't have an HF license, you can still experience the joy of DX. Most shortwave broadcasters will be delighted to receive your reception reports and will be happy to send you QSL cards. Many of them value honest reports, especially those that document interference from the American commercial "religious" broadcasters.

Even in the Internet age, broadcast listening has a charm of it's own, and its magic can be the key to becoming an active ham. Give it a try!

Grid Dip Meters & Tank Circuits

By Pete Carr WW30

A LONG TIME friend, Jim Burgoon, N3DKA, had offered me a free linear amplifier if I would come and get it. He mentioned that it was a tube unit. I went over to his house and was introduced to a 4 by 4 by 5 foot cabinet that weighed several hundred pounds. I looked inside and found a top RF shelf and a loose assembly of parts filling the bottom. We struggled to load the amplifier into my truck and it came home with me.

The amplifier had been built in the 1960s by an engineer at the old Sylvania plant in Emporium, Pennsylvania. He had built several and, after he passed away, his widow had offered them to Jim. The unit I picked up had been used to swap parts to the other amplifiers so was in great need of attention. It also did not come with any sort of schematic or paperwork.

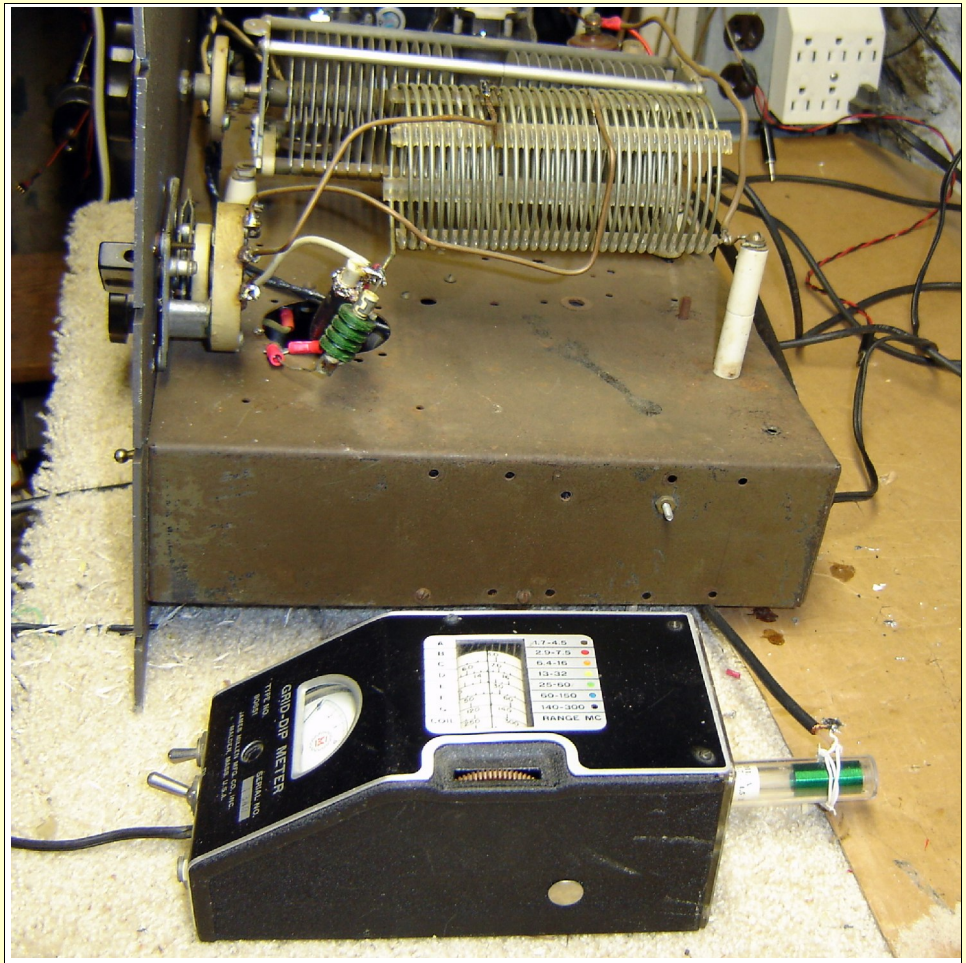
The sockets and tank circuit parts were for a pair of 813 tubes which came along in a separate paper bag. The 10 volt supply was built into the RF shelf along with the output tank circuit while the cabinet bottom would hold the high voltage supply. It took only about a day to replace some wiring that had cloth insulation which was falling off. I also used a 250 watt electric soldering gun to resolder some connections that looked

This Millen dip meter, also known as a "dipper", has the plastic plug-in coil for 80/75 meters installed at the rear. The tuning thumb wheel is on top of the housing next to the analog frequency readout display. There are two toggle switches on the front face which turn on the 110 volt power and the filament voltage to the unit.

Through the magic of radio, you'll be transported to the most exotic places

questionable. Finally I installed the two tubes and plugged the RF shelf into 110 volts. The tubes lit up quite nicely and tests showed that all was well with the input circuit.

The amplifier output tank circuit consists of a 3 inch diameter inductor with two taps for 40 and 80/75 meters, and two variable capacitors. I found a schematic on the Web that used two 813s and used that circuit as the main reference diagram for the project. It showed that the *door-knob* capacitor at the junction of the plate inductor and the 'load' capacitor would block high voltage B+ DC from entering the tank circuit. RF, would travel from the plates of the 813s through the door-knob capacitor into the tank circuit where the impedance of the tube circuit would be matched to the output and the antenna. Inside the bottom of the RF shelf was a small green choke that was not connected to the tank but hug by a wire from the output SO-239 connector.



The dipper is coupled to the coax that is plugged into the RF output of the RF shelf tank circuit. The small, three-turn loop of white hookup wire is slipped over the dipper inductor. Position of the loop on the inductor is not critical. The green RF choke is visible at the left end of the 3 inch diameter tank coil on the shelf.

There was a brief explanation with the schematic that said that this choke would short high voltage B+ to ground if the door knob capacitor shorted. This was a safety measure intended to keep the high voltage B+ from being fed to the antenna.

For a circuit to be resonant the values inductive reactance (X_L) and capacitive reactance (X_C) need to be equal. The formulas for these are:

$$X_L = 2\pi FL \quad \text{and} \quad X_C = \frac{1}{2\pi FC} \quad .$$

In practice the goal is maximum transfer of energy of a specific frequency signal from one part of a circuit to another. Antennas, receiver intermediate amplifiers and, of course, transmitter tank circuits are good examples of these formulas at work.

John Frantz, K3TMD had previously loaned me a James Millen Grid Dip meter, also known as a 'dipper' for another project. The combination of the tank inductor tap and the position of the two variable capacitor shafts would produce resonance. I wanted to test these parts and also make a tuning mark for each band on the front panel for reference. I hooked up the dip meter to the output SO-239 connector of the RF shelf. There seemed to be no dip anywhere in the 80/75 meter band. This test was done without the tubes powered up since I was only evaluating the output tank circuit. I did find some serious corrosion on the brass fingers that connect the rotor shaft of the loading capacitor to its output terminal and thought that it might be the trouble. No help. Then I disconnected the loading capacitor, leaving only the inductor and tuning capacitor, and checked the dipper again. It now dipped in the upper end of 75 meters!

I reconnected the loading capacitor to the circuit and reread the schematic. There was that choke at the output of the tank in parallel with the loading capacitor. I soldered the little green choke into the circuit in parallel with the loading capacitor and the whole tank circuit dipped perfectly. It was evident that the little green choke was a part of the resonant circuit as well as a safety item.

The grid dip meter is the forerunner of the MFJ 259B antenna analyzer. It uses a tube as the main component although later versions used field effect transistors. These solid state dippers could be battery powered for portable use up the tower and at the antenna. Because the early tube dippers

The goal is maximum transfer of energy from one part of a circuit to another

needed 110 volts for power they were mainly used in the shack for such work as testing this amplifier project. They could check antennas for resonance at the radio as well and give some interesting readings compared to SWR meters. The 110 volt power cable also meant that you were less likely to drop the meter off the tower!

The tuning range is determined by a plug-in inductor housed in a plastic tube with two pins. The pickup coil would be just big enough to slip over the inductor tube where energy from the test circuit is coupled to the meter. A thumb wheel on top of the housing tunes it over the range selected by the inductor and the meter needle dips to the left if resonance is found. The frequency of resonance is found by reading the dial next to the thumb wheel. Accurate frequency readings can be obtained by placing a frequency counter close to the dipper to read the output of the dipper oscillator.

As with most test equipment you need to be smarter than the gear to use it effectively. The References section at the and of this article lists several items from QST magazine that fully explain the Dip meter history and functions. ARRL members can log onto the web site and download these articles which are excellent reading. If you download the manual for the MFJ 259B meter and compare the materials you will better understand how this modern meter has built on the gear that came before it.

Lee Lewis, N3NWL has an MFJ analyzer and has commented several times that he has to remove the batteries from it to prevent them from discharging while stored. Several listers to the Yahoo Groups, Ham Antenna group have also commented about high battery drain. Certainly, the old Millen Dip meter has no such problem as long as you pay the electric bill and the extension cord is long enough!

This is the front panel of the Millen Dip Meter with the unit powered up. There is an earphone jack on the right front of the panel where you could listen to "beat" frequencies of signals from the circuit under test. Before the advent of high accuracy frequency counters this was another way for determining the frequency of the signal.

Resources:

http://www.isquare.com/millen/millen-page.htm: The James Millen web site

QST Nov. 1993 **Accurate Dip Meter Using the MFK249 SWR Analyzer.**, by David Barton AF6S.

QST Oct. 1986 **Beware the One-Turn Loop**, by Charles Michaels W7XC.

QST Jan. 1974 **Art of Dipping**, by Benjamin Clark WB4OBZ.

QST Jun. 1972 **High-Accuracy FET Dipper**, by Peter Lumb G3IRM

Yahoo Groups: Ham Antenna group.

About the Author...

Pete Carr, WW3O resides in Ridgway with his wife, Dolly. He is a frequent contributor to the *Parasitic Emission* and has written articles published in *QST*.

He formerly held the callsign WB3BQO. He constructed, installed and maintained the original 147.000 repeater in Ridgway, and is active in the Elk County Amateur Radio Club.

He is a member of AMSAT, and has been an active supporter of Amateur Satelite communications. He is an avid R/C pilot and has built and flown many powered and unpowered R/C aircraft.

Pete serves as a VE, and is always willing to help local amateurs with technical issues. He is Elmer to a number of hams, and enjoys helping others as much as he can.

As with most test equipment you need to be smarter than the gear to use it effectively

Announcements

Hi Everybody!

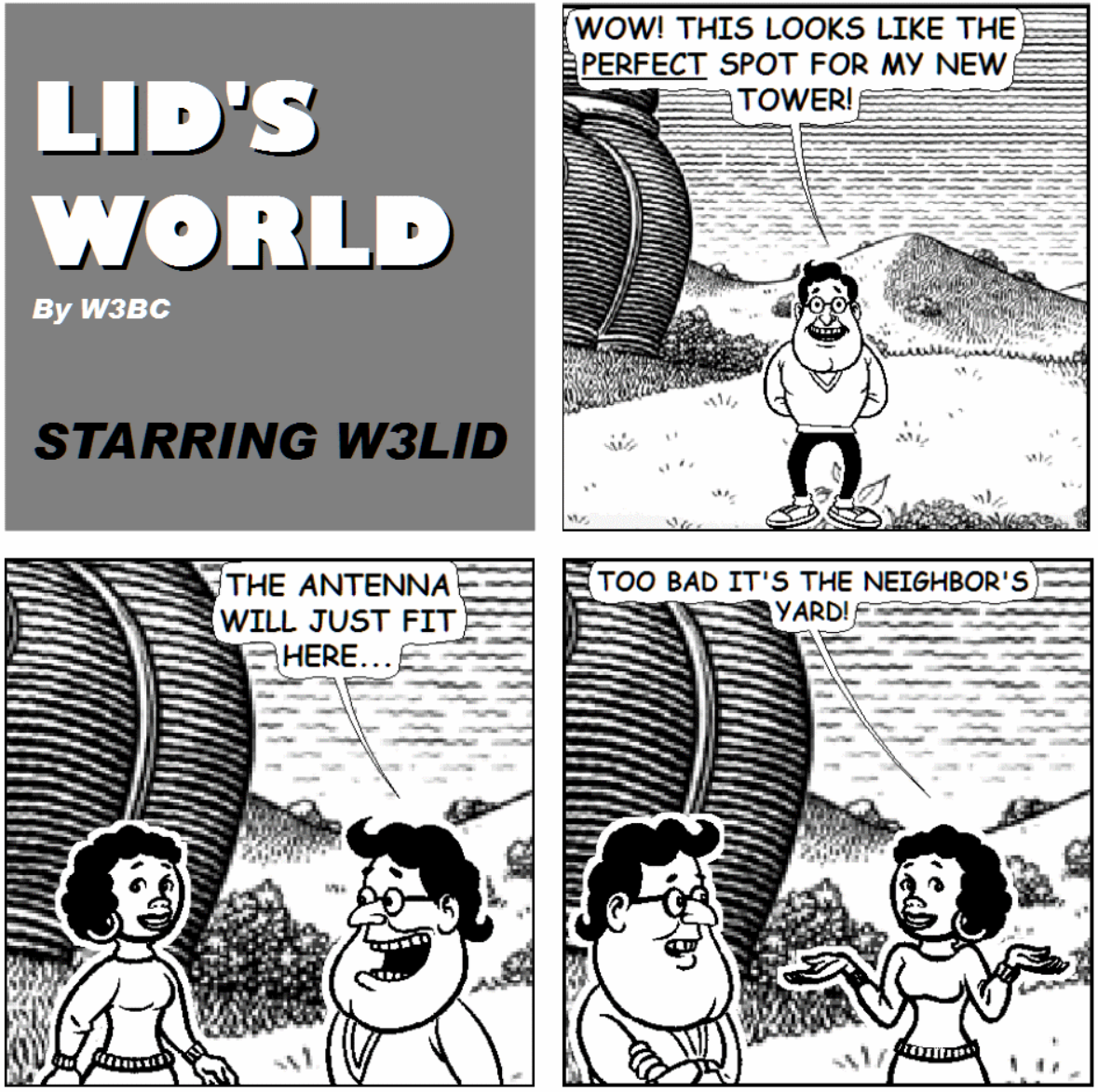
The Punsxutawney Area Amateur Radio Club – K3HWJ, has a new multi-media web site built. I am the new President and web master.

Check out the site at www.qsl.net/k3hwj/

Thought that you all would like to visit us.

P.S. Be sure to sign our Guest Book!

John Buttner, KB3OUG



Legal Notices

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www.parasiticemission.com
which also makes available selected back issues, current issues and more.

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The current, online, interactive version of the calendar, which contains regional club activities and events in upcoming months may be accessed at calendar.parasiticemission.com.

You may use that calendar to enter amateur radio events of interest to local amateurs which are intended for publication, subject to review and approval.

Happy Groundhog Day!

February 2011 Amateur Radio Club Activities

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
30 7:00pm» QCARC 2-meter FM Net 8:00pm» Elk Co ARA Net	31 7:00pm» HARC Nets 7:30pm» Punxsutawney ARC 2 Meter Net 8:00pm» Jefferson County EMA Radio Service Net	01	02 9:00pm» Clearfield County A.R.E.S. Net	03 7:00pm» Headwaters ARC Meeting	04	05 9:00pm» Philipsburg ARA Net 9:00am= K3HWJ Groundhog Day Special Event
06 7:00pm» QCARC 2-meter FM Net 8:00pm» Elk Co ARA Net	07 7:00pm» HARC Nets 7:30pm» Punxsutawney ARC 2 Meter Net 8:00pm» Jefferson County EMA Radio Service Net	08 7:00pm» Punxsutawney Area ARC Meeting	09 9:00pm» Clearfield County A.R.E.S. Net	10	11	12 9:30am» QCARC Breakfast 3:00pm» PARA Meeting 9:00pm» Philipsburg ARA Net
13 7:00pm» QCARC 2-meter FM Net 8:00pm» Elk Co ARA Net	14 7:00pm» HARC Nets 7:30pm» Punxsutawney ARC 2 Meter Net 8:00pm» Jefferson County EMA Radio Service Net	15	16 9:00pm» Clearfield County A.R.E.S. Net	17	18 7:30pm» QCARC Meeting	19 9:00pm» Philipsburg ARA Net
20 1:30pm» Elk County ARA Meeting 7:00pm» QCARC 2-meter FM Net 8:00pm» Elk Co ARA Net	21 Presidents' Day Parasitic Emission Submission Deadline 7:00pm» HARC Nets 7:30pm» Punxsutawney ARC 2 Meter Net 8:00pm» Jefferson County EMA Radio Service Net	22	23 9:00pm» Clearfield County A.R.E.S. Net	24	25	26 6:00pm» NAQP - RTTY 9:00pm» Philipsburg ARA Net
27 12:00am» NAQP - RTTY (cont.) 7:00pm» QCARC 2-meter FM Net 8:00pm» Elk Co ARA Net	28 7:00pm» HARC Nets 7:30pm» Punxsutawney ARC 2 Meter Net 8:00pm» Jefferson County EMA Radio Service Net	01	02 9:00pm» Clearfield County A.R.E.S. Net	03 7:00pm» Headwaters ARC Meeting	04	05 9:00pm» Philipsburg ARA Net