County Hunter News

April 1, 2011
Volume 7, Issue 4

Welcome to the On-Line County Hunter News, a monthly publication for those interested in county hunting, with an orientation toward CW operation**.**

Contributions of articles, stories, letters, and pictures to the editor are welcomed, and may be included in future issues at the editor's discretion.

The County Hunter News will provide you with interesting, thought provoking articles, articles of county hunting history, or about county hunters or events, ham radio or electronics history, general ham radio interest, and provide news of upcoming operating events.

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CW County Hunter Nets run on 14.0565, 10.122.5, and 7056.5, with activity occasionally on 3556.5 KHz. Also, with low sunspot activity, most of the SSB activity now is on 'friendly net' 7188/7185 KHz. The cw folks are now pioneering 17M operation on 18.0915. (21.0565, 24.9155, and 28.0565 when sunspots better). Look around 18135 or 18.132.5 for occasional 17M SSB runs.

You can see live spots of county hunter activity at ch.W6RK.com

For information on county hunting, check out the following resources:

The USACA award is sponsored by CQ Magazine. Rules and information are here:
http://countyhunter.com/cq.htm

For general information FAQ on County Hunting, check out:
http://countyhunter.com/whatis.htm

MARAC sponsors an award program for many other county hunting awards. You can find information on these awards and the rules at:
http://countyhunter.com/marac_information_package.htm

The CW net procedure is written up at:

http://www.wd3p.net/ch/netproc/netproc.htm

There is a lot more information at www.countyhunter.com . Back issues of the County Hunter News are available at www.CHNewsonline.com

De N4CD (email: telegraphy@verizon.net)

Notes from the Editor

1) Spring arrives

Spring has arrived in Texas although with my radio fairly quiet, you'd think all the mobiles are still stuck in snow and ice. We had a few good QSO parties this month along with a couple loud international contests. For those willing to join in the contests, there are opportunities for new band counties in the WPX type events, and HI and AK counties in the DX contests. Here in TX, the windows are wide open with 70 and 80 degree temps and good weather for mobiling.

Your author was busy with several other conventions so there wasn't any mobile activity this month to write about after the long FL trip a the end of last month. The bills are just coming in for that adventure – hi hi. The car didn't go too far this month, but hamfest season is upon us.

The sunspots tend to tempt us then retreat. At one point the flux was up over 130 with the Sunspot number way over 80. Now, the flux is down to under 100 and the SSN is down in the 40s and 50s. It jumps up a bit, then drops back. We have a good 'rising trend' which his encouraging. At times 15M worked well, but 10 has been dead most of the month.

The price of gas is up over $3.40 in most places in the country with $4/gal costs out on the east//west coasts and in many rural areas. This might put a damper on some of the longer trips, but likely mobiles will be out and about going places, to Dayton Hamvention and the National and min Conventions, and on normal vacations. There are some planned trips to HI and AK for those hunting for those from county hunter mobiles for the various awards. If you need 2nd AK, or Kalawao HI, check the K3IMC planned trips. (Gas in HI and AK likely to be $5/gal).

2) Paul N7JFP writes in:

“I ran several counties this weekend in NorthEast Washington State,

several of them were new ones for me, including Stevens, Pend Oreille, Douglas, Okanagon, and Ferry, along with Lincoln, Grant, Kittitas, Adams and Spokane. The thing I think some of the readers might find interesting is that if they ever visit the Grand Coulee Dam in Washington, there are 5 counties within about 20 miles of that river intersection, and all are easy to get to. The only difficulty is climbing back out of the dam canyon, up to the flatland to get good signal. I was able to put out all 5 counties in about an hour. It was really fun, and the conditions weren't all that bad. Hopefully the next time I do it, I will have be more proficient on my new paddle to give those out CW as well. Also, you owe it your self to visit the great visitor's center at the dam!

Thanks,
Paul, N7JPF

3) OHIO QSO Party YL Winner KJ8F

Sharon, KJ8F, was announced as the winner in the last Ohio QSO Party – YL Category for the third year in a row now. Congrats!

4) Mobile Activity in March

The band conditions improved a bit and the weather was better over much of the country, so mobiles were out once again. Gas prices were up to over $3/gal which may have limited some operation

AA0TT, W7IN, KC7YE, and K0MAF were running counties on 20M SSB

N0KV Barry and Pat, N0DXE were out on a trip in KS

Larry, W7FEN, was out and about in WA several times during the month

Jimmy, K4YFH, was all over FL, then headed north through GA and into SC.

Jack, WD4OIN, was spotted giving out counties in NC.

Scottie, N4AAT, was out running counties in SC with a trip to NC.

Jim, N9JF, was off on several business trips – down to the southeast on a long one, too.

Ed, KN4Y, was spotted in GA several times.

Paul, N7JPF was out in WA putting them out.

Steve, AK8A, was in south TX and seen running them on CW. Then he headed north to home.

WA2DWP left NY and headed on down into VA,

NA8W was running counties in OH

Ed, K8ZZ, took a nice trip over to WI.

Ed, K8YJ, was out many days in WV, and took a trip over to KY.

VE2MAM took a trip to a few counties in NY state

Paul, WD9EJK, was out and about in IL.

Dave, KE3VV, ran a few in MD>

Greg, NM2L, ran a few in GA

Bob, K7TM made several trips in ID.

Ron, KB6UF, was over in MS a few times and then ran quite a bit of LA.

Ralph, WA4HXG, was about in TN.

Gene, K5GE, made a nice trip to west TX cleaning up a lot of needs. Then he headed to LA to run some there.

Bob, N2OO, ran a few in NJ on cw.

Jack, N7ID ran some in ID and UT.

Ron, WB2SHU ran some UT counties on the 20M SSB net.

Joe, N5UZW, made a nice trip in AR.

The team of San, N7PIB/Alan, K6KLL ran several counties in CA.

Mike, KA4RRU ran counties in VA.

Jim, N4JT, ran a few in NC and VA.

Les, K0LG headed on down to FL on a nice trip

Dick, NG9L, headed from WI down to AL, then over to FL.

Kerry, W4SIG, was giving out counties in TN

Ray, WG6X, headed up to AL for some needed counties.

Bill, KM1C, was out in GA putting out a few.

During the month, about a dozen county hunter mobiles were out in the various QSO parties giving out the contacts.

WARC News

Courtesy of ARRL Letter 2/24/2011

Amateur Radio has moved a step closer to a medium frequency (MF) allocation below the AM broadcast band. During the first week of the Conference Preparatory Meeting (CPM) for the 2012 World Radiocommunication Conference (WRC-12) of the International Telecommunication Union (ITU), held in Geneva February 14-25, delegates completed the drafting of nine pages of analysis of the technical and regulatory issues related to WRC-12 Agenda Item 1.23: consideration of a possible secondary allocation to the Amateur Service of about 15 kHz somewhere between 415 and 526.5 kHz. Two possible methods of satisfying the agenda item, along with the possibility of there being no change (and therefore no allocation), are set out in the CPM Report, along with the advantages and disadvantages of each.

What is now called Method A envisions an allocation of up to 15 kHz between 472 and 487 kHz. Method B calls for allocations of 461-469 kHz and 471-478 kHz. Another Method that had been developed at earlier meetings of Working Party 5A of the ITU Radiocommunication Sector, for an allocation of about 15 kHz between 493 and 510 kHz, was dropped from the draft CPM Report because no support for this approach had developed among the

administrations participating in the preparatory process. A new digital system centered on 500 kHz is being developed by the maritime radio community, and an amateur allocation, even on a secondary, not-to-interfere basis, was found to be incompatible with the planned system.

“The hard work of a team of radio amateurs led by the International Amateur Radio Union (IARU) -- and with considerable help from friendly administrations -- has gotten us to this point,” said ARRL Chief Executive Officer David Sumner, K1ZZ, who attended the first half of the CPM on behalf of the IARU. “While more support will need to be developed among other administrations if we are to achieve an allocation at WRC-12, our prospects are better now than they were a week ago.” He gave particular credit to Ken Pulfer, VE3PU, who has coordinated the IARU effort and gained valuable support from the Canadian administration. “Ken and the IARU team have been working on this issue for three years,” Sumner said.

ARRL Chief Technology Officer Brennan Price, N4QX attended the CPM as a member of the United States delegation. The US supports what is now called Method B, which also has sufficient support among other administrations in the Americas to have become an Inter-American Proposal of the Inter-American Telecommunication Commission (CITEL) [see this article for more information]. At this stage, what is now called Method A has support from several administrations in Europe, Africa, Asia and Oceania.

WRC-12 will be held in Geneva next year from January 23 to February 17.

Somali Pirates Kill US Hams

Four Americans -- including three Amateur Radio operators -- who were being held hostage on their yacht by pirates off the coast of Oman have been killed. Scott Adam, K9ESO, and his wife Jean, KF6RVB, along with Bob Riggle, KE7IIV, and Phylis Macay were on board the S/V Quest when pirates boarded their vessel on Friday, February 18. The Adams were based in the Los Angeles area; Riggle and Macay were from Seattle.

According to the US Central Command, the boat was in the Indian Ocean, headed toward the Somali coast when on Friday, the 58 foot yacht sent a distress signal. The boat was being trailed by US Navy forces; it was about a two day sail from the Somali coast. They had begun tracking the yacht after being alerted that a Danish naval helicopter had seen the Quest off Oman under the pirates’ control. The Central Command oversees US anti-piracy operations in the Indian Ocean.

Officials were in the process of negotiating for the Americans’ release when gunfire was heard

around 1 AM (EST) on Tuesday, February 22. “As (US forces) responded to the gunfire, reaching and boarding the Quest, the forces discovered all four hostages had been shot by their captors,” a statement from US Central Command said. “Despite immediate steps to provide life-saving care, all four hostages ultimately died of their wounds.”

Mississippi QSO Party

The mobiles were out running – W3DYA, W4SIG, and K4ZGB mainly on cw. In addition, at least half a dozen fixed stations were on, making this a good one. From TX, there was good conditions on 40M to most of MS. The regular QSO Party folks, plus a good number of county hunters turned out for this year's event. Ron, KB6UF was in MS putting them out as well on SSB and on cw although not 'contesting'.

From the 3830 contest reflector:

W3DYA/m - 724 CW contacts

MS counties activated: 19

As a mobile, this was a very good contest. Thanks to the gang who hung around waiting for the next county.

Here are some statistics that seem to have become popular:

2011 MS QP TOP CALL COUNT (NON-MS)
N6MU 31
AB7RW 25
K4YT 24
N5NA 20
W0GXQ 19
W5ESE 18
KN4Y 18
K0DEQ 18
WA7JHQ 17
WA4UNS 16
NW6S 16
W4UCZ 15
K9EN 15
WB8WKQ 14

DL3DXX 14

HIGH CONTACTS (MULT, STATE/DX)
TX - 76
NC - 55
WA - 47
FL - 45
CA - 40
MS - 34
MI - 33
VA - 33
MO - 32
DL - 30 (Germany)
AZ - 28
MN - 25
GA - 20
NM - 20

Sunny, dry weather served up by the MS host was really appreciated. Guess they were trying to make up for last year?

WQ5L (MS) - 155 cw 240 SSB QSOs

Only part time, but still my second best MSQP score. Propagation is definitely on the way up. Had a nice long run on 20 meter phone around midday. Plenty of CW ops too, as always. Thanks to all who participated! 73,

K4ZGB mobile - 388 QSOs

"Thanks to all that followed me through 11 counties. I had a little difficulty with software and a new laptop through the first three counties, thanks for your patience during that time."

KN4Y – FL

"Operated CW and fixed stations were few, the few mobile stations drove fast and made it interesting. Need more fixed CW stations. It was 2 band contest for me.

Sunspot News from NASA

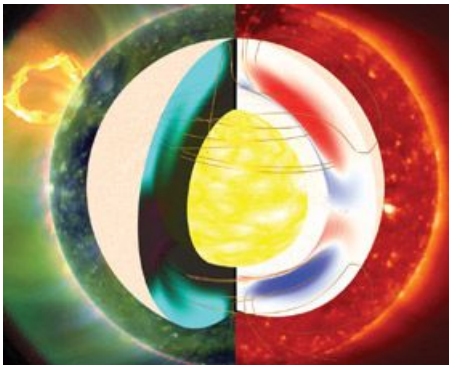
A powerful explosion that erupted on the solar surface on February 14 was the most powerful flare in more than four years, and heralds an approaching peak in the sun's 11-year activity cycle. But as the sun pulls out of an exceptionally quiet period of low activity, researchers predict the coming solar maximum won't be very exciting either.

"This cycle continues to fall below expectations. And those expectations were pretty low two years ago," says David Hathaway of NASA's Marshall Space Flight Center in Huntsville, Ala. The number of sunspots -- dark, highly magnetized regions on the solar surface -- is one indicator of solar activity, and scientists now predict this will be the weakest sunspot cycle in 200 years. "We are off to a good start for a below-average cycle peaking in late 2013 or early 2014," says Dean Pesnell of NASA's Goddard Space Flight Center in Greenbelt, Md. Understanding how present activity affects future cycles is important to gauging both the sun's influence on climate and its likelihood of producing powerful and destructive solar storms.

Solar physicists say they are homing in on the complex internal interactions that could explain why the sun has been hibernating for more than four years now and may not fully awaken for another decade. Hathaway and other researchers say they're now convinced that a flow of ionized gas, or plasma, known as the meridional flow controls the strength of the solar cycle (SN: 4/10/11, p. 8).On either side of the equator, the flow moves like a conveyor belt that stretches just beneath the solar surface from the equator to the two poles and then dives into the sun's interior, flowing from the poles back to the equator to complete the loop.

The speed of the flow appears to be a critical parameter. But Hathaway and other researchers disagree on exactly how the meridional flow affects solar activity.

In the March 3 *Nature*, Dibyendu Nandy of the Indian Institute of Science Education and Research in Kolkata and his colleagues report new computer simulations suggesting one way that the flow determines future solar activity. Their simulations show that a fast flow during the first half of a solar cycle, followed by a slower flow during the second half, creates a weak polar magnetic field. This generates an unusually weak and prolonged solar minimum, Nandy says, like the most recent one. For a 780-day period ending in March 2010, not a single sunspot was observed. During a more typical solar minimum, the sun is spot-free for about 300 days. "The Nandy article is an excellent study of the effect of the meridional flow on what we see at the surface over a solar cycle," says Pesnell.



This computer modeling shows that a deep minimum in solar activity occurs when the magnetic field belts of two successive cycles (blue and red colored regions in the right) become separated in space and time due to changes in solar internal meridional plasma flow.

But the problem, says Hathaway, is that his observations indicate that the speed of the meridional flow was exactly opposite to that required by Nandy and his colleagues. Another solar physicist, Yi-Ming Wang of the Naval Research Laboratory in Washington, D.C., says he is baffled by the apparent contradiction between the model and Hathaway's observations. Nandy notes that measurements made by Hathaway and his colleagues are limited to the surface, so they may not reflect the true speed of the flow deep in the sun's interior. Hathaway says that a fast meridional flow is indeed required to explain both the sun's long hibernation and the weakness of the current solar cycle, which began in late 2008. But his observations show that the fast flow occurred during the last half of the last solar cycle, not the first. The flow drags the magnetic field along with it, and a fast flow leads to a weaker field at the poles than a slow flow would. Because the polar fields are thought to be the seeds for the next solar cycle, a weak polar field will cause the next cycle to be weak also.

"It is possible that the current sunspot cycle, cycle 24, was seeded with magnetic fields from cycle 23, or even an earlier cycle, cycle 22," says Matt Penn of the National Solar Observatory in Tucson. "This seed field may have been weaker than normal, somehow, and it may be producing a weaker solar activity cycle now."

For now, the exact role that the meridional flow plays in the solar cycle remains a matter of debate. But the new research "demonstrates how the inner working of the sun, and variations in the plasma flow deep within our parent star can control its magnetic and energetic output, which in turn, determines the environment in space and affects climate on Earth," says Nandy. A weaker solar cycle is accompanied by a slightly dimmer sun, which changes the average temperature on Earth, says Judith Lean of the Naval Research Laboratory. She notes, however, that the sun's brightness did not hit an all-time low during the past solar minimum, even though the sun was unusually quiet.

Nonetheless, the decline in solar brightness from 2002 to 2008 as solar activity dwindled probably countered the warming on Earth that would otherwise have occurred due to greenhouse gases over that period. “As solar activity now increases,” she says, “we can expect this mitigating effect to stop.”

Source: http://news.discovery.com/space/zooms/sunspots-mystery-solar-maximum-110302.html

North Carolina QSO Party

There were very few mobiles to chase in this QSO Party – W4MY and KM1C and one or two others. There were quite a few fixed stations that got on and gave out their counties on multiple bands so you had lots to chase if you had propagation.

N8II – WV - 87 cw 110 ssb QSOs

Score includes 50 bonus points with Dare Co. (2 mobiles) and 150 bonus points for NI4BK + W4NC. I only heard W4NC twice, both time on 80M. NI4BK was on 40 phone and 80 CW, but didn't hear them that often. It seems like activity/mobiles participation is going the wrong direction in both the NCQP and MSQP. The condx on 40 couldn't have been better; everybody was pretty loud. Condx on 80 were fine, but the QRN was 20 db over 9 but about 8 PM. Everybody seemed to migrate to 80 pretty early, sigs were already strong from NC an hour before my sunset. There wasn't much mobile activity except for the mountains to sea effort of Marty W4MY and AA4XX?; quite a long trip to make in 10 hours and they made it to Dare Co in just over 9 hours! The distance is over 500 miles.

Activity on 40 phone was good as the total suggests, only about 6-7 mobile Q's there. After 8PM, activity really took a nose dive, so I was off and on after that. All in all it was a pleasant contest experience, so low key it was pretty relaxing. Around 4PM, I lost track of W4MY on 40 for a while. I don't think they were skipping over me, but the skip zone did extend over most of NC by shortly after 23Z.

AA8IA

“I was glad to have some of Sunday free to do this QSO Party. Worked W4MY seven times and AD8J once. Don't know if AD8J WAS mobile or not. Also got one of

the bonus stations for 50 points. Heard no other mobiles. I only spent two minutes checking bands other an 40/80 since I figured it was unlikely to have propagation to NC on any other.

Much more active contest than I had anticipated. Extremely high SWR on 75m limited my ability to make contacts there. I worked what I heard when I could. By the time I got around to 40m, it only a short amount of time before the suggested phone freqs were overrun with broadcast stations. All of that and the fact that I prefer CW resulted in more CW contacts than phone.

On 80m I did hear a lot of the NC stations running around working each other, which unfortunately meant that many weren't available to be worked by me. And in almost every case the NC station who didn't have the frequency was the one I needed for a new mult.

26 out of 100 counties? Pretty bleak, but I guess alright for three hours of time."

AA4FU – Wake

"Too bad this contest doesn't have a CW only category. I had problems with N1MM crashing at the beginning of the contest. I made three QSOs and then it crashed. I had to make the next 15 Q's the old fashioned way with paddle and pen. After that I spent an hour trying to figure out what was wrong. I never did figure it out, so I installed a new copy and went to the level I had used last and that worked.

W4UCZ (GA)

"Mobile participation seemed markedly reduced this year. Marty and Paul (AA4XX) operating mobile as W4MY accounted for 19 QSO's and mults and AD8J kicked in three more.

With fewer mobiles, my county mult count was down just a wee bit to 34 this year from 83 last year.

Very good participation from the fixed ops with 33 unique stations logged. So, on balance, there was a whole lot of fixed station "steak" but very little mobile station "sizzle".

Still one of my favorite parties and my thanks to the organizers and all the Tarheel ops for a fun Sunday.

W0BH (KS)

"A thunderstorm forecast meant really noisy conditions and the forecast was right. My antennas were disconnected a good share of the time, and when I did get on, it was a real challenge for me to hear.

NC4KW (Orange NC fixed)

"Once again this year my wife, Laurie N1YXU, and I decided to enter in the Club classification. We had a fun time the first 3 years and this year was no exception. When the starting gun went off, I started calling CQ on 20 SSB, but as the rate was slow quickly moved to cw. Soon it was Lauries turn in the chair and the rate went right up. You know, it is true that the female voice is worth at least 5db of signal strength. We each would operate for about 1 hour and then switch. After the first 4 hours our Q count was in the mid 300s. However the rate started to slow down and the QRN started to come up. That storm coming across the country was really causing some issues, but on we went for the full 10 hours. Laurie made most of the SSB Qs and I made the CW Qs and a few on SSB.

When it was over the stats indicated we worked 44 countries, 51 states and provinces and many DX countries, but only 1 counts for a mult. We never heard or worked NI4BK and did not work any stations in Cherokee County, so missed out on some of the bonus points. Also, last year we had 23 Qs with mobiles. This year we had only 2. Maybe we did not search and pounce enough or perhaps there we fewer out there due to the high gas prices.

Stuff from Ebay

Eddystone was a big manufacturer of communications equipment in England (and shipped throughout the United Kingdom countries). You can find them on Ebay, but the shipping from

Europe to here is typically over $100, so they are interesting to look at but very expensive to buy. I'm sure it works the other way, too! Those folks probably drool over our gear but can't afford to ship it overseas. Not much seen after 1980 or so. Occasionally someone in the US will own one of the Eddystone receivers and put it up for sale on Ebay.

Eddystone Receiver EB-35 Solid State
Circa 1965-1970

Here's a great museum page for Eddystone Equipment

http://www.qsl.net/g4bxd/eddystone.htm

Hallicrafters made only one 'kit' radio – the S-119 Sky Buddy II. You could also buy it factory wired. It had all of three tubes in it – a 6BE6 converter, a 6BA6 IF, and a two section 6CM8 audio pre-amp, and amp. The BFO function was done by a regenerative IF. It had a power transformer and selenium rectifier, and built in AM loopstick. It was offered 1961-1964. It covered AM, 2-5.5 MHz, and 5.7 to 16.4 MHz. The IF was 455 KHz.

Hallicrafters Sky Buddy II

Olson made a similar RA-48 (Frequency coverage for it was 550KHz to 30 MHz in four bands. It is transformer operated and single conversion with an IF of 455 KHz. The set has 4 tubes including a 6BE6 oscillator, a 6BA6 IF amplifier, 6AV6 for detector/ first audio, 6AR5 for audio output.)

Knight had a similar size unit - the Span Master II - but it had the 'All American Five' line up. It was offered in the 1970 Allied Catalog but is rather scarce as is the Olson unit. A British equivalent to the Olson was sold via their magazine Practical Wireless, the Unica UNR-30.

Thordarson Universal Transmitter

A pre-war Thordarson Universal Transmitter introduced in 1939 and was offered as a kit for a couple of years before World War Two. Such pre-war transmitters are rather uncommon. This transmitter is in working order. The original circuit called for a 6V6 crystal oscillator driving a 807 final. It takes “XT” cut crystals for the socket (or use an adapter for FT-243 crystals). It puts out 15-20 watts.

Here's another rare item from Ebay – an Atlas Model 206 Digital Synthesizer! Never seen one in person.

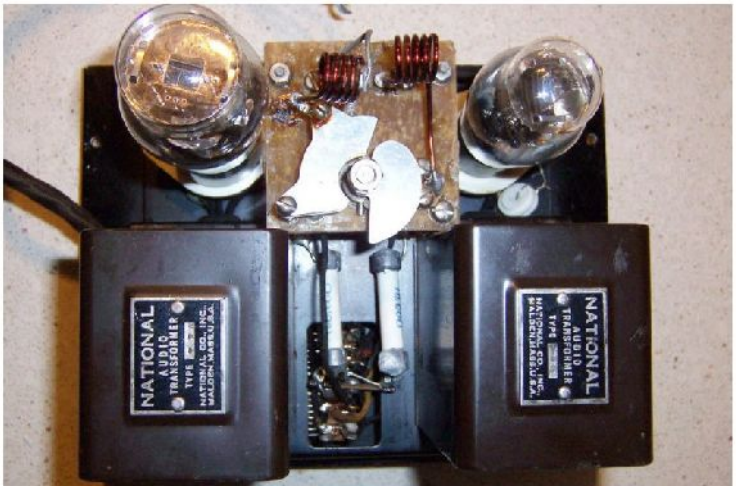
Atlas 206 Digital Synthesizer

For use with 210/215 transceivers

Equally rare – the Atlas 10X Crystal Adapter for use with same radios!

National SW-5 Five Meter Portable Transceiver – first offered in 1934 for the Five Meter band that hams had before WW2.

"TR56 TRANSCEIVER. THE NATIONAL TRANSCEIVER , AS THE NAME IMPLIES, IS A COMBINATION RECEIVER AND TRANSMITTER DESIGNED PRIMARILY FOR PORTABLE USE ON THE 56 MC BAND. TWO TUBES ARE EMPLOYED, A TYPE 30 AND A TYPE 33. WHEN USED AS A RECEIVER, THE TYPE 30 FUNCTIONS AS A SELF BLOCKING SUPER REGENERATIVE DETECTOR, TRANSFORMER COUPLED TO THE 33 USED AS AN AUDIO AMPLIFIER. WHEN USED AS A TRANSMITTER, THE TYPE 30 TUBE FUNCTIONS AS AN OSCILLATOR AND THE TYPE 33 AS A MODULATOR.'



IN SEPTEMBER 1934 QST THE RECEIVER/TRANSMITTER IS ADVERTISED BY NATIONAL FOR A PRICE OF $67.50 LESS TUBES, BATTERIES AND HANDSET. THEY USED A STANDARD WESTERN ELECTRIC HAND SET WITH THE UNIT (NOT INCLUDED IN THIS AUCTION) BUT THE 33 AND 30 ARE IN THE SET. THIS TRANSCEIVER IS IN EXCELLENT CONDITION, ALL ORIGINAL. THERE ARE NO CHIPS, DENTS OR MODS ON THE SET. THERE ARE TWO SMALL SPARE INSULATORS INCLUDED INSIDE FOR THE ANTENNA TERMINALS. THIS SET IS CONNECTED FOR A SINGLE WIRE ANTENNA, FEED THROUGH ON FAR LEFT. A COUPLING COIL CAN BE CONNECTED TO THE TWO MIDDLE TERMINALS FOR A PARALLEL FEED LINE ANTENNA.

THE WOODEN CABINET IS COMPLETE, EVEN TO THE BATTERY HOLD DOWN BRACKETS, HOWEVER THE CABINET GLUE HAS DRIED OUT OVER THE YEARS AND IT NEED TO BE RE-GLUED. THE CABINET ALSO HAS SCRATCHES, BUT NO GOUGES. THE LEATHER CARRYING STRAP IS BROKEN AT ONE END. ALL HARDWARE IS EXCELLENT. THE UNIT WEIGHS ABOUT 20 POUNDS AND MEASURES 7-1/2 BY 15 BY 10 INCHES HIGH. IT WILL BE PARTIALLY

DISASSEMBLED FOR SHIPPING AND PACKED FOR ROUGH HANDLING BY CARRIER. THE TOTAL WEIGHT WILL BE ABOUT 25 POUNDS.

Sold for $374 for the National Collectors!

Here's something I had not seen before. It looks like a simple superhet with plug in coils from the late 60s or early 70s made by Unelco. From what I could find, Unelco was located in the Philadelphia area

It came with five sets of coils – an 'antenna' coil and and oscillator coil, and ran off 4.5v DC.

Synchronous AM Detection

This month we go off on a tangent and investigate Synchronous AM detection/reception. N4CD was surfing Ebay and ran across an item for sale – Add on Synchronous Detector for short wave receivers. While most hams now are on Single Sideband, where every good receiver uses a Product Detector circuit, or the digital equivalent, for short wave listening and for AM diehards, synchronous detection is something that is definitely on the 'wanted' list starting the 1960s. Affording one was something else as they were more complex and with

tubes – well, that was a lot of extra tubes (maybe a dozen!). Solid state made it a lot easier, and ICs make it very easy.

Many modern radio receivers incorporate memories, phase locked loops, direct digital synthesis, digital signal processing and more. One option that can be very useful on the short wave bands is synchronous detection or synchronous demodulation as this can give improved performance for receiving amplitude modulation (AM) transmissions under fading situations.

Back in the 1960-s 90s, this was a topic of hot discussion in technical magazines. The AM die hards were looking for an edge to try to justify the 'ancient modulation'.

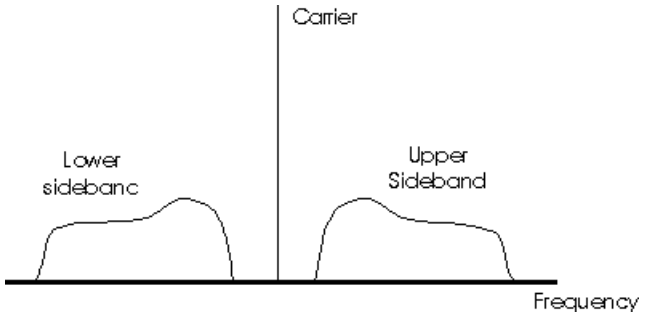
Amplitude modulation (AM) is still widely used for broadcasting on the long, medium and short wave bands despite the fact that there are more efficient forms of modulation that can be used today. The main reason for its use is that it is very well established, and there are many millions of AM receivers around the world today. Inertia – Momentum – Etc.

In any receiver a key element is the demodulator whose purpose is to remove the modulation from the carrier to give the audio frequency representation of the original signal. This can then be amplified by the audio amplifier to drive headphones or a loudspeaker. Many receivers still use what is termed an envelope detector using a semiconductor diode for demodulating AM. These detectors have a number of disadvantages. The main one is that they are not particularly linear and distortion levels may be high. Additionally their noise performance is not particularly good at low signal levels.

Envelope detectors also do not perform very well when the signal undergoes selective fading as often occurs on the short wave bands. Selective fading can be thought of as radio waves arriving via different paths and combining destructively. The result is like moving a deep notch across the band through your sidebands and carrier frequency.

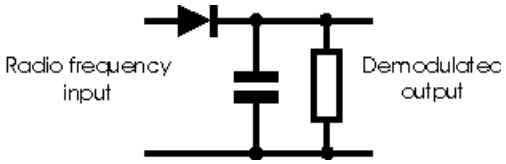
It takes more than 6dB of carrier above the sideband levels for proper demod with an envelope detector. (with an SD, you only need enough carrier or sideband energy to establish phase lock). With a diode detector, severe distortion occurs every time the carrier drops out in a selective fade. Carrier nulls (fades) of 20 to 30 dB or more are common, which result in total loss of intelligibility. Under these conditions, the desired signal has become a double-sideband reduced-carrier transmission which cannot be detected in the normal manner.

An AM signal contains two sidebands and the carrier. For the signal to be demodulated correctly the carrier should be present at the required level. If fading of the carrier results, it makes the received signal appears to be over-modulated with the result that distortion occurs in the demodulation process.



In most simple receivers a simple diode envelope detector is used. In the old days, it was simply a tube diode section. These circuits give adequate performance in many applications.

Here the diode first rectifies the signal to leave only the positive or negative going side of the signal, and then a capacitor removes any of the remaining radio frequency components to leave the demodulated audio signal. Diodes are not totally linear, unfortunately, and this is the cause of some of the distortion.



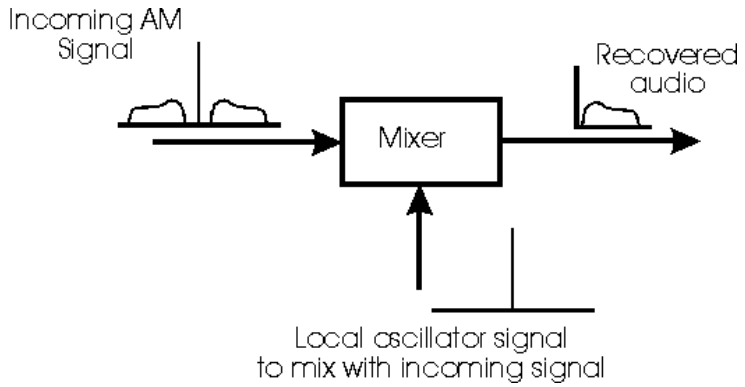
An envelope detector for AM signals

Synchronous detection is a more precise, high-technology, substitute for the envelope detection. Although envelope detection was used in the old crystal sets and still is used today in most digitally-tuned superhets, synchronous detection is not merely a high-tech frill to add to an already high-tech digitally-tuned receiver today.

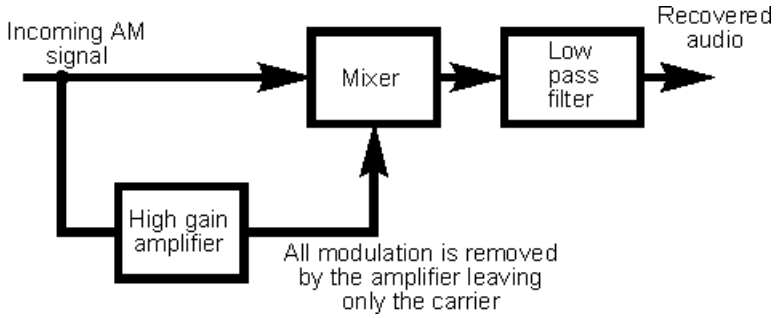
This is often superior to diode or envelope detection, but naturally requires more circuitry. In SD, a signal on exactly the same frequency as the carrier is mixed with the incoming signal as shown below. The signal is either generated by phase locking to the incoming carrier, or generating it in other ways. (the existing carrier is either used to generate the sideband, or filtered out).

This has the effect of converting the frequency of the signal directly down to audio frequencies where the sidebands appear as the required audio signals in the audio frequency band.

The crucial part of the synchronous detector is in the production a local oscillator signal on exactly the same frequency as the carrier. Although it is possible to receive an AM signal without the local oscillator frequency on exactly the same frequency as the carrier this is the same as using the BFO in a receiver to resolve the signal. If the BFO is not exactly on the same frequency as the carrier then the resultant audio is not very good. (try listening to a DSB suppressed carrier signal! If you get close, you'll still get beat notes – you gotta be EXACT!)



Fortunately this is not too difficult to achieve and although there are a number of ways of achieving this. The most commonly used method is to pass some of the signal into a high gain limiting amplifier. The gain of the amplifier is such that it limits, and thereby removing all the modulation. This leaves a signal consisting only of the carrier and this can be used as the local oscillator signal in the mixer as shown below. This is most convenient, cheapest and certainly the most elegant method of producing synchronous demodulation. This is known as "Exalted Carrier" SD.



A synchronous detector using a high gain-limiting amplifier to extract the carrier

A synchronous detector is more expensive to make than an ordinary diode detector when discrete components are used, although with integrated circuits being found in many receivers today there is little or no noticeable cost associated with its use as the circuitry is often included

as part of an overall receiver IC.

Synchronous detectors are used because they have several advantages over ordinary diode detectors. Firstly the level of distortion is less. This can be an advantage if a better level of quality is required but for many communications receivers this might not be a problem. Instead the main advantages lie in their ability to improve reception under adverse conditions, especially when selective fading occurs or when signal levels are low.

Under conditions when the carrier level is reduced by selective fading, the receiver is able to re-insert its own signal on the carrier frequency ensuring that the effects of selective fading are removed. As a result the effects of selective fading can be removed to greatly enhance reception.

REDUCTION OF MULTIPATH DISTORTION

Sometimes, the signal broadcast by a distant shortwave transmitter arrives at a receiver's antenna via several different paths of unequal lengths. When that happens, the receiver "hears" a separate signal arriving over each path, and each separate signal is "heard" at a slightly different time. The multiplicity of arrival times of similar signals can be thought of as the radio-frequency equivalent of the audio-frequency Doppler effect (the apparent change in a car horn's frequency, as the car horn approaches, arrives, and then leaves a listener, at high automotive speed). When a receiver uses an envelope detector, and several of the differently timed signals are among the stronger signals that the receiver "hears", multipath distortion (sometimes called selective fading or QSB) can cause an "in-and-out" effect on the receiver's audio. The "in-and-out" effect makes listening to the signal unpleasant and even can make understanding the signal difficult or impossible. Synchronous detection helps to reduce or eliminate the "in-and-out" effect. Since part of its process is instant-by-instant calculation of the desired signal's carrier frequency and continuously re-tuning the receiver to track the carrier, the synchronous detector compensates, instant-by-instant, for the multipath distortion, and thereby reduces or eliminates the "in-and-out" effect at the receiver's audio output.

In addition, one can use phasing techniques for signal rejection. Should a carrier (or equivalent) or similar interfere with either sideband, you can use SD to selectively pick either sideband, or use both to remove/reduce the interfering signal.

Another advantage is an improved signal to noise ratio at low signal levels. The demodulator sees the components of noise that are in phase with the local oscillator. Consequently the noise level is reduced and the signal to noise ratio is improved.

Unfortunately synchronous detectors are only used in a limited number of receivers because of their increased complexity. Where they are used a noticeable improvement in receiver performance may be seen and when choosing a receiver that will be used for short wave broadcast reception it is worth considering whether a synchronous detector is one of the

facilities that is required.

Note – all good SSB receivers use a product detector, which eliminates the problems with the envelope detector non-linearity and need for 6dB more carrier to demodulate correctly. In SSB, you don't have a carrier to start with!

You might classify SD into two categories

Synchrodyne – where you generate a local carrier from the existing carrier via phase lock or other digital generation methods.

Homodyne – where you use 'exalted' (amplied) carrier for the detection system.

Going back in history, we see several developments. One was the “Costas Loop” described in 1956 by John Costas in QST. . This circuit used the information in the sidebands to create a phased locked carrier, and it would work well with full, reduced or suppressed carrier double sideband signals. It added quite a bit of complexity, and in most cases, there is enough carrier to provide a phase lock signal for detection.

A Costas loop is a phase-locked loop used for carrier phase recovery from suppressed-carrier modulation signals, such as from double-sideband suppressed carrier signals. It was invented by John P. Costas at General Electric in the 1950s. Its invention was described as having had "a profound effect on modern digital communications". The primary application of Costas loops is in wireless receivers. Its advantage over the PLL-based detectors is that at small deviations the Costas loop error voltage is $\sin(2(\theta i - \theta f))$ vs $\sin(\theta i - \theta f)$. This translates to double the sensitivity and also makes the Costas loop uniquely suited for tracking doppler-shifted carriers especially in OFDM(data/cellular) and GPS receivers.

In the usual implementation of a Costas loop, a local voltage-controlled oscillator provides quadrature outputs, one to each of two phase detectors, e.g., product detectors. The same phase of the input signal is also applied to both phase detectors and the output of each phase detector is passed through a low-pass filter. The outputs of these low-pass filters are inputs to another phase detector, the output of which passes through noise-reduction filter before being used to control the voltage-controlled oscillator. The overall loop response is controlled by the two individual low-pass filters that precede the third phase detector while the third low-pass filter serves a trivial role in terms of gain and phase margin.

For the really tech minded math geeks, here's a comprehensive article on the Costas loop – lots of math and equations

http://rfdesign.com/images/archive/0102Feigin20.pdf

The Costas loop is very much used today – it's main advantage is it works well in drifting or doppler shifted carrier situations – such as digital systems with poor frequency stability or wi-fi or microwave systems. (those GPS satellites are moving at 20,000 mph! Think of the Doppler shift). There is lots of reading on Costas loop circuits – Google it. You can recover the carrier and demodulate the signals in a fading poor quality signal situation. (you do have tremendous fading/multipath at microwave in just about any situation).

Another method is called the 'exalted carrier'. One takes the existing carrier and amplifies it, thus insuring adequate carrier under fading conditions to properly demodulate the AM signal. You can then use an envelope detector or SD system. Modern chips that allow true SD have made this method obsolete.

Interesting article with spectrum graphs of using Synchronous Detection

http://www.kongsfjord.no/dl/Audio/AM%20Synchronous%20Detector%20Experiences.pdf

More reading for those interested in pursing it more.

QEX Sept 1992 (not available on line)

A synchronous detector for AM: (QST July 1993 – ARRL members only)

http://www.arrl.org/files/file/Technology/tis/info/pdf/9307028.pdf

Serious (and high end) receivers like the Drake SW-8 and other top line receivers for shortwave listening often come with Synchronous Detectors.

Drake SW-8 with Synchronous Detection

You can also buy an outboard SD unit like the one below:

Sherwood Engineering Synchronous Detector – Outboard

You hook a unit like this into your receiver “IF Output”, and if you don't have that, to a capacitive or inductive pickup loop around your last IF tube.

For most ham SSB applications, there is no significant improvement by trying to use an SD. The human ear is very good at filling in for multipath fading, and of course, there is no 'other sideband' to use to reconstruct damaged information in one sideband. New digital filtering provides additional ways to combat interference. However, if you are a die hard AM type or a dedicated shortwave listener, buying a top end unit, or an outboard SD might be just your cup of tea.

Idaho QSO Party

There were a few stations on for the ID QSO Party, with a mobile or two and a portable station to chase. Several large fixed stations were on, providing about 10 multipliers on cw and 12 on SSB.

From 3830 reflector:

K0TO (Bonneville) made 90cw and 162 SSB contacts

N6MU (CA) - 19 cw and 19 SSB contacts

KS4X had 5 cw contacts and 18 on SSB

N4VA - 14 cw and 22 ssb contacts

New Threats to Ham Radio Spectrum

On February 10, Representative Peter King (R-NY-3), Chairman of the House Homeland Security Committee, introduced HR 607, the B roadband for First Responders Act of 2011 . The bill has been referred to the House Energy and Commerce Committee, which handles telecommunications legislation. HR 607 addresses certain spectrum management issues, including the creation and maintenance of a nationwide Public Safety broadband network. As part of that network, the bill provides for the allocation of the so-called "D-Block" of spectrum in the 700 MHz range for Public Safety use.

The D-Block consists of two, 5-megahertz-wide segments of spectrum (758-763 and 788-793 MHz) that became available when the FCC ended analog television broadcasts in June 2009 and reallocated the 698-806 MHz band for Public Safety and commercial broadband. It was anticipated that the D-Block would be auctioned for commercial use. There are several bills in Congress providing for the allocation of the D-Block for Public Safety use, and HR 607 is one of those. But HR 607 uniquely provides for the reallocation of other spectrum for auction to commercial users, in order to offset the loss of revenue that would occur as the result of the allocation of the D-Block to Public Safety instead of commercial auction. HR 607 lists the paired bands of 420-440 MHz and 450-470 MHz among the bands to be reallocated for commercial auction within 10 years of its passage.

"Of serious concern to the ARRL is the inclusion of the 420-440 MHz amateur allocation in the list of frequencies to be cleared for auction," said ARRL Regulatory Information Manager Dan Henderson, N1ND. "The ARRL and the Amateur Radio community certainly support the work of public safety agencies and understand their desire for an interoperable network; however, the inclusion of most of the amateur 70 cm spectrum as one of the replacement bands is illogical and unacceptable. The 420-440 MHz band is not Public Safety spectrum and should never have been included in any spectrum swap of Public Safety allocations."

Saying that the ARRL Washington team has already begun meeting with key Congressional staff on Capitol Hill, Henderson noted that Amateur Radio already shares the 70 cm band on a secondary basis with the governmental radiolocation services, such as the PAVE PAWS radar systems: “The 70 cm band is a critical and irreplaceable resource for Amateur Radio public service and emergency communications. The specification of the 420-440 MHz band in this legislation is ill-conceived. To be sure, the ARRL will vigorously oppose this legislation in its present form. It is, as evidenced by other legislation, completely unnecessary to the creation of a nationwide Public Safety broadband network or the use by Public Safety of the D-Block for that purpose. The role of the Amateur Service as a partner to Public Safety in the provision of Newsletter March 2011 public service and emergency communications necessitates the retention of full access to the entire 420-440 MHz band.”

HR 607 is presently cosponsored by the Homeland Security Committee’s Ranking Member, Representative Bennie Thompson (D-MS-2) as well as Representatives Shelley Berkley (D-NV- 1), Yvette Clarke (D-NY-11), Billy Long (R-MO-7), Candice S. Miller (R-MI-10), Laura Richardson (D-CA-37), Mike Rogers (R-AL-3), and Michael Grimm (R-NY-13).

“As we continue to track the progress of HR 607, I urge ARRL members to watch for further information about the bill on the ARRL website,” Henderson said. “When that additional information is released, it will include a request to contact your representative and express opposition to HR 607, as long as it includes a provision to auction off any Amateur Radio spectrum for commercial use. ARRL members may also sign up for the ARRL Legislative Update Newsletter and automatically receive information as it becomes available. Sign up by logging onto the ARRL website and select the ‘Edit Your Profile’ link located at the top of each page. Once on that page, select the ‘Edit Email Subscriptions” tab and click on the box for ARRL Legislative Update.” The ARRL Legislative Update is prepared on an “as needed” basis to those who have opted-in to receive it. A new edition addressing HR 607 will be forthcoming soon.

South Dakota QSO Party

This is not noted elsewhere so we are including the rules here – from Jim, KD0S

2011 SOUTH DAKOTA QSO PARTY (SDQP)
OFFICIAL RULES

1700 UTC APRIL 23- 1700 UTC APRIL 24

OBJECT: Stations outside South Dakota work as many South Dakota stations and counties as possible. Stations inside South Dakota work everyone.

EXCHANGE: Stations outside South Dakota send signal report and state, province, or DXCC country. South Dakota stations send signal report and county.

MODE: Modes are phone, cw, and digital. (Any digital mode qualifies, ie: RTTY, PSK31, etc.) Stations may be worked only once per mode per band.

QSO POINTS: Phone contacts are worth 2 point, CW and digital contacts are worth 4 points.

MULTIPLIERS: Stations outside South Dakota multiply QSO points by total SD counties worked. Stations inside South Dakota multiply QSO points by SD counties+US States+ Provinces+DXCC entities.

CLASSES: Fixed station, and Rover.

MAXIMUM POWER: High Power [greater than 150 watts], Low Power [150 watts or less] and QRP [5 watts maximum].

WORK STATIONS: Regardless of mode, work station only once per band per mode per county.

SCORE CALCULATION: Score= total QSO points X Multipliers.

FREQUENCIES: 160,80,40,20,15,10,6 and 2 meters. No repeater contacts can be included in score. Suggested operating frequencies: 1815 and 40 kHz up on CW; 1845, 3855, 7180, 14255, 21355 and 28455 on SSB; 3580+, 7035+, 14070+, 21070+ on PSK; 3585+, 7038+, 14075+, 21075+ on RTTY.

MOBILES: South Dakota Mobile (Rover) stations are considered a new contact each time they change counties. County line contacts count as multiple contacts for both stations.

LOGS: All logs must be received by June 1, 2011. Submit cabrillo files via email to SDQP@kd0s.com. Include station callsign in the subject line.

Suggested logging programs: GenLog http://mysite.verizon.net/dmascaro1/
N1MM logger: http://n1mm.hamdocs.com/

WI QSO PARTY

Wow- another good one. These folks get out the mobiles and the fixed station activity was great. There were hundreds of spots for WI counties on the spotting sites.

from the 3830 reflector:

AA8IA 96cw 41 ssb 46 Mults

What a great QSO Party. I had more fun on the radio than I have had since the OhQP last year. Lots of mobile activity and some amazing mobile CW ops -- which made me think that K8MR and W1NN must have moved to WI and changed calls. Really, superb mobile ops. Also nice to work K9TY/M on 40 SSB a few times. A strange but welcomed thing occurred when I answered a CQ on 40m, worked a WI station, and then he passed it off to another WI station in another new county that I worked, who passed it off once again to a third county. So I got three for the price of one. Lots of CW activity. I actually worked some SSB and was pleasantly surprised to find out that I had a normal SWR on 40 SSB for the first time. On 80 SSB I was unlucky as usual, and I'm guessing all of about 1 watt was making it out the antenna. I did manage to work a couple SSB stations on 80m though.

W9DND/K0PC/M

The only thing disappointing about the 2011 WiQP was the temperature, it was about 30 degrees less than the 60s we had last year. The weather was just fine with seasonal temps and the roads were clear.

John W9DND has been my QSO Party driver for the last eight years. John's call was originally held by his uncle Archie Smith (SK in 1995). Archie was an outstanding CW operator who had a 60wpm Code Proficiency Certificate from the ARRL. Archie lived in Wisconsin his whole life and was very active on traffic nets.

A few weeks ago Archie's daughter found an old trophy in a box. It was from the 1964 Wisconsin QSO Party, Archie had won 2nd Place in the CW category. That trophy inspired us to use W9DND as our call this year. We thought it was fitting that Archie's call would ring out in CW throughout Wisconsin again.

40M was the real money band this year. It was short and it was long at the same time. We had QSOs throughout Wisconsin and through most of the country one after the other. 20M was also in good shape but it was hard to tear away from the rate on 40M. 80M seemed to have a lot of noise this year. Our QSO count on 80 was half what it was last year.

The turnout was great. When 0100z rolled around the QSO counter hit 899! With dupes the actual number dropped to 894 but that's not as dramatic. Our mults were down this year but the total score was up about 4%. We had 213 unique calls in the log. Rates were high all day with an average rate of almost 130 for the whole contest. The highest hour was 158 during hour 5.

Heavy hitters included:
18 - K8ES
17 - NA0N
16 - N4VV, W0GXQ, W8TM
15 - W0PI
14 - N0UR, W1END
13 - K0TI, K2KW, N4TZ, WA3HAE
12 - K0TK, K8MR, NS9I, NT2A, NU0Q
11 - K3TW/4, K9EN
10 - AF9T, N8II, W4NZ, W6GMT, W9EAU

It was also great that Mike KP2/K9NW took some time away from the sun and sand in the Virgin Islands to work us a couple of times.

Thanks to everyone who participated and to the West Allis RAC for another great event.

73,
Pat K0PC & John W9DND

KE0G/P QRP

4.9 watts, QRP, using a 34' pole and 2 to 4 radials. Sat in the back of our

SUV, and was too hot during the afternoon, until the sun went down. Good activity on 40 M and 20 M, so-so on 80 M, and nobody home on 15 M. Thanks for all the QSO's.

72, Dan ke0g

NE9U/N9CBA mobile

For various reasons, we started the contest from home and ended up at the up-north cabin on Sunday night. We also planned an entirely new route that, unfortunately, didn't have very many good roads (I am not good with motion sickness and I think I came VERY close to messing up Arts radio on our leg from Shawano to Lily (Shawano, Menomonee, and Langlade Counties) I'm guessing that trip would be very pretty in early October for the fall colors though! Nice hilly, windy road along the Wolf River. We missed a couple turns earlier in the contest that also slowed us down. Our total trip was a bit over 300 miles, down from our usual 350 miles...but we still managed to hit 17 counties and amazingly, we were only 2 miles from my cabin in Florence County when the contest ended. (we really hadn't planned things out that thoroughly!)

For the most part, everything went smoothly. Art (N9BCA) had sold our long-time radio (TS-850), so we ended up using his Icom 756 pro III. I may not have had it entirely figured out, but it didn't seem to blank our ignition noise quite as effectively (well when noise blanker was on it distorted signals, so I left it off. Plus it didn't seem as selective in distinguishing the pile-ups as the old 850 (Or maybe I'm not!) But all in all, no real problems.

We tried to continue our tradition of an after-contest Steak dinner, but there aren't a lot of eating establishments to choose from in Florence County, let alone finding one open at 9:00 on a Sunday night. Luckily we called a place 15 miles up the road and he was just closing but agreed to stay open and fry us up some burgers. Thank You!

Thanks to everyone for calling in. Great time as usual."

NG9T Mobile (K8IR operator)

A bit colder than the last two years, but plenty of sunshine and the trip was uneventful, although some of the roads seemed bumpier this year. Congratulations and thanks to my driver, Eric, KG9GH for flawless navigating

and making it to all 19 counties we planned this year. The QSO count is down, but we gained a mult. Plenty of short skip on 40 to work the counties. Looking at some of the other scores, I probably should have spent a little more time on 80. 20 seemed rather noisy, but was productive. I checked 15 a couple of times, but no activity.

Thanks to all who called in and especially those who followed us through the day.

WI9WI/mobile

This was my eighteenth consecutive year of operating mobile in the WIQP. After spending many years operating in the northern tier of counties near our cabin in Sawyer County I was bored with doing the same route over and over with minor variations. I decided a few years ago to try to work the WIQP from every county in WI as a solo mobile op. The only assistance I've had has been from my dogs. After this year I am up to 37 with 35 to go.

I started near the tri-county intersection of WSR, GRL and MRQ. I got out of Madison a bit late since I usually play hockey on Sunday morning and didn't want to skip it. I had checked out all the gear and antennas on Friday. I got to my first site in MRQ about 15 minutes before the opening bell. I was all set up about 2 minutes after the gong went off. My first CQ showed a high SWR on the BugCatcher on 40. It was perfect on Friday, 1.1:1 at7070.

I got back out of the car and started troubleshooting. It seemed I had a bad coax connector. I changed the coax, and tightened a couple of bolts that grounded the antenna mount to the car fame. Voila, back in business. But it cost me about 20 minutes. Forty was great. I made 51 QSOs in 34 minutes. Just before moving to WSR county my K3 started showing "LOW BATTERY" How can this be ? I run the rig, keyer and computer through a RigRunner from a deep cycle RV battery located in the rear of the car and I had charged it and put it on trickle charge the previous day. It had checked out fine. But the V was going down to 10 V on keying.

I cut back the power to 50 watts and that helped for a bit. By the time I moved to the GRL county it was showing low again so I cut back to 25 watts. This is the third time I have had major battery issues in the WIQP. One year it cost me all but a couple of hours of the contest. Next step is a glassmat battery. After finishing in GRL, I connected the power cable directly to the

car battery and started on my way to the 4 corner intersection of SHA/WAP/MAR/POR.

The car is a Suburu Outback which is very quiet on the ignition noise front with the engine running. I fortunately had a wrench which fit the bolts on the car battery, otherwise I would have had to stop at Lowes at Stevens Point to get one. This however cost me at least 15 more minutes, as well as another 10 or so minutes when I couldn't get the car hood to latch properly. I was considering going back to Madison by this time. My next QSO in SHA was 2 hrs and 9 minutes after stopping operating in GRL. I don't operate while moving. This is totally lost time. I need to rig something up so I can operate phone and record my QSOs like W0ZQ does. Fortunately my next 4 counties were uneventful with quick moves between SHA, WAP, MAR and POR. After 2 or 3 minutes of unproductive CQing just at the end I quit a couple of minutes early, packed up and arrived home in Madison about 2230 local.

Some stats

County	Time	QSOs
MRQ	34 m	51
WSR	21	27
GRL	32	65
SHA	48	81
WAP	25	58
MAR	37	73
PORT	38	72

Forty was obviously the money band. All QSOs were CQing CW. I didn't operate on 80 much because in spite of checking out well on Friday the antenna refused to load properly on Sunday and I didn't want to waste time figuring out why with 40 so good. I did no S&P.

Gear: K-3, BugCatcher on 80/40, Hustler on 20, Netbook computer with WriteLog, Microham keyer/interface.

I spent 2 hrs and 9 minutes moving between the two main operating areas. I spent 12 minutes moving between the counties in the first area, and 20 minutes in the second area.

Thanks to everyone for the QSOs, especially to all the Minnesota stations.

See you next year from a few new counties.

73

Jim
WI9WI

W0ZQ/mobile

Good weather, good time, more fun than one should have from the front seat of a Subaru. Many thanks to the sponsors and those who stopped by for a Q. 73,
Jon.

VA3KGO had 122 SSB contacts with 50 multipliers

K2KW (OH) - 164 on cw, 146 on SSB, 65 multipliers

"Thanks to all the mobiles. The most QSOs were with:
W9HB 6
NG9T 10
W0ZQ 10
W9MSE 11
NE9U 12
W9DND 13

K4BAI (GA) 111 on cw, 222 on SSB, 54 multipliers

WE9V (Kenosha) fixed 288 cw 322 SSB

"I really didn't want to do this contest, but somehow couldn't keep away. I started two hours late and went to the end, so operated only 5 of the 7 hours.

Part of me wishes I didn't even do the contest, part of me wishes I did the entire 7 hours.

Thanks for all who called in.”

N9NE (Portage) fixed

“Greetings,

This is the first time in several years that I have not gone mobile for the WIQP. I was just too fatigued from my having to put up with the high 70s and 80s in south TX the last few weeks to put the gear in the van, tweak the antennas, and guy them down. Poor me! And my usual drivers were unavailable. So, I sat home and handed out POR.

I thought 15 and 10 might be open, but it was
a waste of time going up there. Even 20M was not all that good IMHO.

I have never seen 40M so good as today. I worked mobiles near (10 miles) and far (NW WI). It was all open. I was 'forced' to run SSB to the point that I couldn't take the 3 to 4 Q's a minute at times. Voices bounce off the empty spaces in my cranium. I worked all the counties around me, including at least 3 stations in the Menominee Nation (County) and a contact in Marathon County for the first time in years (SSB).

My last two contacts were new multipliers: Walworth and Florence (thanks, Scott!). What a nice way to finish the contest.

I had a good time, but my point total won't win anything. In the end, what does it matter anyway? I had a load of fun, and I can run mobile next year when the price of gas is $8/gallon....

Never did get ID, and this after working a slug of them in THEIR contest yesterday. Guess they were pooped out.

I heard Scott, NE9U/M say at the end of the contest that he had made 808 contacts. He might have a new record!

Here's my summary:

Band	Mode	QSOs
3.5	CW	93
3.5	LSB	64
7	CW	178

7	LSB	142
14	CW	62
14	USB	25
21	CW	1
Total	Both	565

Daylight Savings Time

Over the weekend (3/12), the American populace engaged in its annual spring ritual of changing all their clocks and watches to reflect the forward jump in time. Characterized by the cute phrase, “Spring forward; Fall back,” daylight savings time becomes the governing factor in our daily lives. But does this annual ritual, designed to generate energy savings from reduced incandescent lighting, actually save us energy today? The latest research suggests it doesn’t.

Until 1883, all time in the United States and its territories was determined locally. That year the railroad industry established official times zones across the country with a set standard time within each zone. This was designed to facilitate greater efficiency in operating the national rail system. Congress followed the railroad industry and adopted its uniform time system in 1918. Because the Interstate Commerce Commission (ICC) was the only federal regulatory agency at the time, Congress granted it the authority to regulate the standard time system. Included in the law was a requirement for the country to observe daylight savings time, but it was repealed a year later. Observing daylight savings time was left as a local option.

Daylight savings time was observed nationally during World War II as part of a movement to conserve energy. It was not uniformly practiced after war’s end. It wasn’t until 1966 that the Uniform Time Act was passed that standardized the starting and stopping dates for daylight savings time, although it allowed individual states to stay on standard time if their legislatures approved it. In this law, the responsibility for administering daylight savings time was shifted from the ICC to the Department of Transportation.

A 1972 amendment extended the option not to observe daylight savings time to areas on the borders of two time zones that are within the same state. This enabled neighboring communities in states to stay on the same time zone even though they were on either side of a time zone line. The length of daylight savings time was extended in 1986 from the last Sunday in April to the first Sunday in April. And in 2009, the most recent adjustment was legislated with daylight savings time now extending from the second Sunday in March to the first Sunday in November.

Originally it was assumed that by extending the length of the day, more sunlight in the evening would reduce incandescent lighting needs. Evenings would have more people active than during the early morning hours so the amount of lighting saved would more than offset additional lighting needed during the early morning dark hours. Another benefit of daylight savings time is that the number of traffic accidents and the number of fatalities from traffic accidents would be reduced as well as the incidence of crime. Collectively, it was believed daylight savings time would save energy and reduce social costs.

The electricity savings from daylight savings time have been eliminated by increased use of compact fluorescent light bulbs (CFLs), which use significantly less energy than their incandescent bulb counterparts. Moreover, the additional daylight in the evening results in greater use of air conditioning that consumes more power than any savings from less incandescent lighting. As a result, the latest research shows that energy usage during daylight savings time in most years increases by 0.5% to 1.0%, or not at all.

Source: http://www.firstenercastfinancial.com/pdfs/100349.pdf

OKLAHOMA QSO PARTY

Wow – another good one. Jerry, K5YAA who is the 'spark plug' behind this, was unable to get out for health reasons and was missed. There were great mobiles with W3DYA, N5UM, K5CM, W0BH, AF5Q and others on SSB too. I missed the first part on Saturday, but caught quite a few counties on late Saturday afternoon and on Sunday. Skip was 'short' but it worked to all over OK for nearly all the contest period. Mobiles were doing well on 20M too with long runs on that band. There was some 15m activity, but 10m fans didn't have fun.

More than half a dozen loud fixed stations gave out the counties too

from the 3830 contest reflector:

AF5Q mobile

Well, another Oklahoma QSO Party is closed and done. Thanks for the contacts and the hams who followed me. I'm sorry I could get the sweep for anyone, but wasn't Sunday a run and a half. I woke up late, and had to think of something fast.

I started out Saturday getting a free truck was in Ellis county. That continued south through Dewey and Ellis and finally stopped when I got to Roger Mills. I had a lightning strike in Dewey county that set a field on fire. One should have seen the Fire trucks go by while I was on the Dewey /Custer Line,

Contest was good and thorough, and well run.

73 to all and Good DX...

De AF5Q/M

N5UM mobile

A most excellent time indeed. My youngest son is 15 and driving on a learner's permit -- so I got to operate while in motion. Got to cover a lot more counties than in previous years. I operated fixed station at home last year, so it was good to get out again.

Setup: 2008 Pontiac G6 with 2 hamsticks on trunk lid. IC756 (old blue screen) at 100W on 20M, 50W on 40M (higher power on 40 caused some RF trouble with the car's on-board computer). Made a couple of Qs on 15, but it was too much of a hassle to change out one of the hamsticks to change bands. Thought about taking the N5UM official ham van/camping vehicle as I have on prior roves, but it's just too old and tired to be reliable anymore.

Top 5 contacted stations:

CALL	40M	20M	15M	Total
N6MU	6	23	1	30
N4PN	11	18		29
K4YA	12	15		27
W5ESE	22			22
W0GXQ	15	6		21
WA6KHK	2	18		20
K0DEQ	11	7		18
NT2A	3	14		17
N5AQ	13			13
NJ4X	13			13

County and QSO breakdown:

COUNTY	40M CW	40M PH	20M CW	20M PH	15M CW	Total
Atoka	9		11			20
Canadian	15		4	15		34
Cherokee	6		9			15
Coal	6		27	3		36
Creek	9	4	9	6	1	29
Garfield	21	1	3	10		35
Garvin	11		39			50
Haskell	21		21		1	43
Kingfish	15					15
Latimer	16		12			28
Logan	8		18	11		37
Mayes	17	1	3			21
McClain	15		10			25
Mcintosh	10		6			16
Muskogee	7		2			9
Noble	24	1	5	11		41
Oklahoma	18	1	1	8		28
Osage	13		12	9		34
Pawnee	13	3	14	13		43
Payne	17	3	16	13		49
Pittsbur	23		15	16		54
Pontotoc	14		28			42
Rogers	5		6			11
Sequoyah	11		3			14
Tulsa	9	1	7	7		24
Wagoner	8		8			16
Grand Total	341	15	289	122	2	769

Worked 18 Oklahoma counties and 8 DX countries.

See you all next year, if not sooner. Watch for me in some of the other domestic contests.

73,
Al N5UM

W3DYA mobile - 813 CW QSOs

Great event with sunny and warm weather on my route.

Here's a list of calls with 10 or more QSOs; not to minimize the value of even one QSO:

W0GXQ 34
N6MU 34
NT2A 28
W5ESE 25
K0DEQ 23
N4PN 22
WB2ABD 19
K0FG 18
W9MSE 15
K0HNC 15
N4AAT 14
N1BY 13
NJ4X 13
AA5JG 13
KN4Y 13
N4CD 12
K1TKL 12
SP5SA 12
LY5A 12
K9EN 11
K2HVN 11
K7INA 11
KB8OMG 10
K7ESN 10

Thanks to those who were spotting me. It made a big difference and is appreciated.

73, Norm, W3DYA

K5CM mobile

"Lots of noise Saturday morning from a storm that was right on top of Pam and I. We go caught in a hail storm near Nowata. About quarter size, but no major damage to the mobile.

Thanks to the many stations that followed Pam and I around the state."

W0BH mobile

After spending Spring Break at home cleaning house this year, Lorna and I were extra ready to head south and run Oklahoma. With the high gas prices, I had a short but county-rich route planned. That all changed after a flurry of emails with Connie and some of the other mobiles. In order to try to cover all 77 counties (with fewer mobiles this year), we swapped around counties and came up with a plan. The W0BH/m route included the Oklahoma panhandle counties except Cimarron which was being covered by a fixed station.

My equipment didn't change from last year with the exception of a wire tie. I put one around my MFJ travel paddle in order to decrease the contact spacing and it really helped my keying. I also accidentally put one of my Hustler triples on "backwards" and couldn't figure out at first why 40m was suddenly showing a high SWR. When you have seven resonators that close together on top of a van, it takes a long time to tune everything because they all interact with each other. I found only one combination that worked for all. Turning the antenna back around made it work once again.

Rather than a narrative this time, I'll just make some general comments.

1. 15m was wide open both days, but I got only a few answers to many CQs.

2. The Russian DX contest generated lots of activity but only a few Qs for me. At times, Virginia stations were also really loud in the VAQP.

3. There was some fierce cloud to ground lightning while we were running the Canadian / Kingfisher county line. QRN wasn't too bad and I kept working stations, but I probably shouldn't have been on the air. The weather stopped as fast as it started and we moved out of the storms as we headed west.

4. Activity generally seemed down from previous years, but I did have a great run at the Woods / Alfalfa county line. The abbreviation for Woods is WOO and Woodward is WDW. The counties are also close to each other, so it's easy to get them confused. A number of stations asked to work Lorna while we were parked at the line, but she was sound asleep and I didn't want to interrupt her well-deserved nap. The SSB didn't wake her, but the sound of sandhill cranes flying overhead did, so the stations eventually were able to log her.

5. I don't pretend to understand all the awards the county hunters are after, but apparently some of the awards involve working Lorna (and thankfully me as well!). QSO Party trips are one of the few times I can get an HF mike in Lorna's hand, so it's really fun for me to hear her making those contacts and I'm glad we can both help everyone out.

6. I wanted to put out calls on 80m throughout the day, but my 80m mag mount base developed a problem. I had spares of almost everything along except another triple mag mount. The spare is now ordered. I was able to work some 80CW at the end by moving the 80m antenna to another base.

7. This year, an extra hour was added to Saturday but everyone was required to take an hour off in 30 minute time blocks sometime during the day. We used the break to avoid two long stretches in counties we'd already worked out, and even stopped for a quick lunch. One disadvantage was finishing up an hour later. The last hour on Saturday turned out to be really slow. I also hope no fixed stations missed us in a county because they were taking a break.

8. Lorna and I finished Saturday with 902 combined Qs in the log.

9. We found ourselves on a new stretch of highway which ran parallel to the old (closed) road and county line but in a different county than planned. And no, we weren't lost!

10. Western Oklahoma counties are big. We ran Ellis county the long way south to north and I figured rates would really be slow at the end. They weren't, and the country was also really beautiful. A rather stiff tailwind helped us, except when Lorna narrowly missed a coyote which ran flat out across the road right in front of us.

11. It was fun to say "59, Texas" while in Oklahoma!

12. We decided to continue on out to Cimarron because a) I'd never ran CIM in the OQP, and b) I wanted to make sure the CW-only gang also had a shot at the sweep. We finished on the Texas / Cimarron line in a dry dusty field. Sounds bad, but at least we were away from all power lines and noise.

Stats

We operated 16.8 hours, 1391 combined Qs, 305 unique calls, 3 dupes. Lorna ended up with 50 contacts in her log.

States not worked : AK CT HI LA MT ND SD VT
Canadian mults not worked : NL NT SK
OK worked : 20 counties
DX worked : DL EI HK LY OK PA SP TI XE

County breakdown (in visited order)

Saturday (420 miles)

01 GNT : 60 Grant
02 KAY : 50 Kay
03 GAR : 50 Garfield
04 NOB : 31 Noble
05 PAY : 29 Payne
06 LOG : 52 Logan
07 OKL : 37 Oklahoma
08 CAN : 44 Canadian
09 KIN : 46 Kingfisher
10 BLA : 37 Blaine
11 MAJ : 90 Major
12 WOO : 57 Woods
13 ALF : 58 Alfalfa
14 WDW : 20 Woodward
15 DEW : 33 Dewey
16 CUS : 29 Custer
17 WAT : 37 Washita
18 KIO : 40 Kiowa
19 GRE : 32 Greer
20 BEC : 49 Beckham

Sunday (244 miles)

21 RGM : 52 Roger Mills
22 ELL : 99 Ellis
23 HRP : 61 Harper
24 BEA : 73 Beaver
25 TEX : 117 Texas
26 CIM : 54 Cimarron

Special thanks to the following ops for 10 or (way) more contacts!

57 N4PN N6MU
51 K4YA
43 W4YWX
42 WA6KHK
36 K0HNC NT2A
32 W5ESE
27 K0DEQ
23 W0GXQ W4NT W5FIT
18 N5MLP
17 LY5A
16 N3RJ
14 K0FG K2HVN
12 KE7HTL N4CD VA3GKO
11 AA5JG KG8N NJ4X W0ZQ WB2ABD
10 W0PAN W9MSE

OK Mobiles worked: K5CM/m (6), N5UM/m (5), W3DYA/m (3)

Consistently loudest signal: N4PN

W0BH Award Winners

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----------------- First Place -------- Very Honorable Mention--
Most overall Qs - N4PN/57 N6MU/57 -- K4YA/51 --------- W4YWX/43
Most CW Qs ------ N4PN/38 ---------- N6MU/35 --------- K4YA/33
Most PH Qs ------ N6MU/22 ---------- WA6KHK/20 ------- N4PN/19
Most counties --- N6MU/26 (all) ---- K4YA/25 --------- N4PN/24
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Lorna and I drove a total of 1091 miles from Kansas round trip and the 80+ degree temps on the Sunday ride home were much better than the snowstorm that kept us home last year. Thanks to Connie (K5CM) and Pam (N5KW) for coordinating the event, Gene (W5LE) for the web site, the OKDXA for sponsoring the OQP, and of course the mobiles and Oklahoma base stations that made it all happen.

The Kansas QSO Party is once again scheduled for the last weekend in August. It's our sesquicentennial (150th) anniversary of statehood, so join us for something special!

73, Bob/w0bh and Lorna/k0why

N4PN – GA

Nice going with all of the mobiles.....accounted for 173 of my 227 Q's....led by Bob, W0BH with 56 Q's...wow! Thanks also to Lorna - his XYL/driver, K0WHY, for 18 Q's....Other great mobiles: K5CM - 31, N5UM - 28, W3DYA - 22 and AF5Q - 18.. Many others with several Q's....

Missed 7 of the 77 counties.....got too scattered early and knew then it would probably be impossible for the sweep... Maybe one day...

73, Paul, N4PN

W5ESE QRP TX fixed 114 cw, 28 SSB, 65 mults

“Missed hearing some of the "regulars" this year. Hope they will be able to rejoin the fun next year. Many thanks to all the rover and fixed stations that made it fun. I enjoy looking at a map showing all the counties while I

operate.

I apologize for a few dupes; I still log to a clipboard. My totals above are the results after typing in my log and dupe checking.

Ran QRP from the home shack near Austin, TX.

Transceiver is a Ten-Tec Omni VI, with a 300' Horizontal Loop fed with open wire line.

N6MU fixed CA

“One of my favorite Parties. Top mobile for me was K5CM with 36 Qs followed closely by W0BH (35), W3DYA (33), N5UM (30) and AF5Q (17)

VA QSO Party

K4UK and maybe 3 other mobiles were out

from the 3830 reflector

W4VA multi op fixed in Faquier, VA (at KA4RRU)

“Call: W4VA
Operator(s): K3KQ, K4RG, KA4RRU, KD6AKC, N4YXW, KX3A, KJ4EOO
Station: KA4RRU

Over 1500 contacts made – over 1100 on SSB, over 400 on CW. Just one contact on 10M

KN4Y (FL) fixed

"Did a little CW operating Saturday late and most of the day Sunday. Most of the activity was working the four mobiles, not many fixed stations on CW. The pace allowed me to enjoy a banana split.

Minimally Coupled Tilted Antennas

During the past winter months, I did a little research on 1920s radios and the technology they use. One of the more interesting things I found were the various ways that manufacturers used to build the 'Tuned Radio Frequency' (TRF) sets of the day. It was either that type of radio, or a regenerative detector. The superhet had a 'yet to be produced' status. Previous articles about regenerative detectors, regen kits, etc, got me to thinking.

A TRF set consists of multiple RF amplifier stages on the same frequency. Way back when, they didn't use shielding (that too was 'yet to be invented) and everything was built on a wood chassis. With triode tubes, there was high tendency to oscillate with the grid to plate capacitance of the large tubes of the day (O1As), and of course, no shielding.

Professor Hazeltine came up with the 'Neutrodyne' set. He wanted to charge high royalties if you used his design for neutralizing an RF amplifier. Hams today with a tube in their linear or output stage of a boatanchor such as a DX-100, DX-40, Kenwood TS-520 or 820, know that they have to adjust the neutralizing capacitor when they change tubes or align the transmitter.

Some of the other manufacturers looked for 'work arounds' to be able to build and sell sets without paying big royalties to Hazeltine. One of the more interesting ways I found was to optimize the physical positioning of the coils.

If you had three tuned circuits, you could place them in the three different axis – one located horizontal flat from left to right, one located vertically, and one located on the third axis.

Here's a typical set and arrangements of the coils of a 1920 set. It's a Atwater Kent 'Breadboard Radio. Notice the 3 coils at the back of the radio.

On the left side, you will see the first coil behind the first variable capacitor. It is vertical, with a switch on top to select coil taps. Then a tube amplifier, followed by the second coil which is laying flat pointing to the rear. Then another RF amplifier, followed by a third tuned circuit with the coil lying along the axis of the long board. Three tuned circuits on 3 different axes so they didn't couple into each other (or had the minimum amount of coupling). That allowed you to have enough gain to take the picowatt RF signals and amplify them enough. In the radio above, you had a grid leak 'detector' tube followed by two audio amplifier stages and this radio would drive a 'horn speaker' with all of a few milliwatts of audio power.

This was before Hazeltine invented the 'neutralized circuit'. You could get a bit more gain then.

Some other smart engineers did a lot of experimenting and calculating. Was there another way to build radios and not have them oscillate all over the place as you used higher and higher gain tubes? The tube engineers were coming up with better tubes with higher gain. So what did they come up with?

Here's the picture

This is the 'optimized' angle for arranging coils to have the minimum coupling between stages. It turns out that the magic number is 55 degrees. If you tilt the axis to that angle, you have the absolute minimum coupling between the coils. You put all the coils in tilted to 55 degrees.

Now, you'll recall that coils set up a field around them, just like a magnetic field around a magnet which you've probably seen illustrated many times. When the fields intersect, you transfer power from one to the other. In this case, you don't want good coupling because that gives you rf feedback, as that creates a gigantic oscillator, not a receiver!

When homes back in the 1920s started to become 'electrified', there was also lots of QRN from wiring. They didn't have good insulators, didn't understand RFI, grounding, etc. One big topic of the day in the magazines was taking steps to reduce QRN pickup.

A receiving antenna is just the capacitive equivalent of a coil. You can use a 'loop' antenna as well – horizontal, vertical. Just a one turn 'coil'. If you put two antennas in close proximity, you couple power from one into another. Just wait until a ham fires up 100 feet from your location at a mini- you'll nearly jump through the roof! If you put an antenna close to a noise source, you pick up the noise. Sometimes there's a lot more noise than signal, so you just have to wait to get out of the noisy area.

Over the past year, I've picked up a few issues of QST, Radio, and Short Wave Craft from the 1920s and 1930s. Right in there was a significant find that took a while to sink in.

Hams started out with gigantic top loaded verticals – the 4 wire Tee antenna strung between giant towers that looked like a gigantic old fashion clothes dryer on steroids. Then they went to horizontal wires. Then they tried verticals with less success. Often, one hears the

common term that a vertical receives equally poorly in all directions but picks up noise well.

Nowadays, many hams are limited to verticals by subdivision restrictions, and of course, mobile antennas are vertical. So anything that reduces noise pickup is definitely on the 'want list'.

QRN comes from all directions. You get radiation off the power line. You get radiation off insulators that is likely vertically polarized. Now, you get it off plasma TVs and computer modems and desktop units, from home routers and all the electronic gadgets people have. There is radiation off the 'ground wire' on power poles that is vertically polarized. It's all very 'local'. Now ham signals from 'skip' stations, nearly everything you work on the country hunter net, comes in with random polarization. It matters not if the originating station uses a beam or dipole or vertical transmit antenna. By the time it gets to you, it is 'random'. You can receive it on a horizontal antenna, or a vertical antenna, or any combination.

What we need is an antenna designed to pick up the 'skip' signals but not the local signals. That's impossible to do, but we can orient the antenna to get the best compromise.

So was there something those folks knew back then, tried back then, and we can use today? I dug through the magazines. Sure enough, a German professor, Dr Heisselluft, had provided the answer in one of his technical papers.

Here's some tidbits I've found on the web

“There will always be a optimum vertical angle for the antenna in which the signal is strongest. This angle may vary from one station to another. A remotely adjustable tilt angle will allow you to find the sweet spot when trying to tune in those difficult stations. “ “A fixed tilt angle can be used in good signal conditions. In this case, you want to optimize the angle for your weakest stations.. “[1]

“The Tilt Base may be bolted to a secure flat mounting surface, or to the recommended galvanized steel mounting pipe described (not supplied) in the installation “

The way to minimize coupling from local noise sources into your vertical antenna was to tilt it at 65 degrees. Not 73 or 53, but 54.7 degrees on the money. (35 deg from true vertical) That gave you the minimum interaction to other 'local signals' like QRN, while still giving you excellent pickup of random polarized signals. The signal to noise ratio would be improved by many, many dBs. We could go through the math, but let's just simplify it to basic sine and cosine numbers and the optimization of the tangential radiation angle.

“its better to DX with tilted antennas than just a vertical antenna “ [2]

“I got a better swr reading when i tilted my antenna foward. i didn't want to cut the whip so i tilted it and the swr went down. I just kept tilting it till the swr was just right. “ [3]

Since I live in a subdivision with lots of noise sources around, I couldn't wait to try it out. The articles went on to examine the effect of antenna size versus noise – there isn't much difference between small diameter verticals and fat thick ones. That was good to know.

One other factor in the tilted vertical was the orientation. Naturally, for mobile use while you are moving, you can't optimize it. However for fixed use, it turns out that skip propagation can be optimized by coupling the antenna at the best geomagnetic angle, with it oriented 180 degrees from magnetic north. If you are going to tilt your antenna, the best direction is to 'due magnetic south'. You'll have to check your local charts for 'magnetic declination' as its different for every part of the country. Otherwise, just try the 'average' which is about 15 degrees east of north – so point your antenna 15 degrees west of 'due south' on your GPS handheld unit.

I took an old Hustler type 40-10M vertical and put it on top of an old mobile mount where I could change the angle at the bottom. I had to kluge the mount with a few adapters to get the threads to match. I hooked 4 radials to the base, and hooked up a spare piece of coax and ran it to the shack. Three pieces of nylon string kept it vertical. It was 30 feet away from the normal R-5 vertical I use on 20m and up.

When both were vertical, the noise was a bit higher on the R-5, but signals were a bit higher too. About the same signal to noise ratio. They correlated well. I listened on the county hunter net, and to some random QSOs. My noise is about S2 on CW and about S4 or S5 many days on SSB on 20M. Some days is much better.

Then I took out a protractor and carefully adjusted the mount to have the Hustler leaning 35 degrees to the south. (65 deg with respect to the ground) . I had to use some more string to make 2 guy wires to keep it from falling over as this was a temporary test set up. After rushing back inside to see if there was anything to his theory, I checked the noise again. Wow. The noise on the leaning vertical was down 10 dB. Signals were the same strength. I had a much better signal to noise ratio. Compared to the R5 vertical, it was tremendously quietier. This was progress. Now I'll have to install it permanently at that angle. The mobile and fixed stations on the county hunter net were easier to copy.

I checked on 40M before and after tilting as well. The noise dropped nicely. I listened to a few random QSOs, but there wasn't much activity that day on CW on the net to see how well I could copy the county hunter mobiles.

Then the OK QSO Party came along. Wow. Those signals on the tilted vertical were great. I could copy the weak mobiles 100 miles away, and the stations working them were loud. I'd even hear the thunderstorm QRN much louder over my normal significant background QRN. I'm going to have to make that new antenna a permanent installation.

I just made these fixed station checks and haven't tried it on the mobile yet. I use a mag mount that doesn't allow for easy adjustment of the angle. In my car, the antenna probably leans only 5 degrees back, so I am nowhere near the optimum angle to reduce picked up noise. Now just think, if you let your antenna lean back to that magic 55 degree number, you'll be 'coupling less noise' into your radio, making it easier to copy those 'two two' reports. Some of the folks with motorhomes have been doing this with antennas leaning off the back. Maybe they'll need to check their angle to be sure it is near 65 degrees now. Just imagine reducing the coupling to the local power lines as you zip along giving out the contacts. Wouldn't that be great?

Who is going to be the first to report back on the mobile install and the results they get with 'tilted antennas'? One test with vertical and one at the magic angle of 55 degrees? Maybe someone with two mounts on the car can give us a report of their success?

References

[1] We really don't need no danged silly stinkin' references. This is the April issue of the County Hunter News

If you want to read up on other nifty antennas, check out

Appropriate References:

A Hidden Mobile Antenna, Wayne Waller, W4TZB, QST April 1969

More Socks-for-the-Cents Antenna, QST April 19621, James F. Van Detta, WA2FQZ

Power-A-Plenty-for-Pennies, James F. Van Detta, WA2FQZ, April QST 1964

ARRL members can access previous issues of QST and articles on line in the QST Archives.

http://www.arrl.org/arrl-periodicals-archive-search

Michigan Mini

The MI mini will be held April 28-30 at the Holiday Inn in Traverse City, MI. You can get the group rate until April 13.

More info at:

http://michiganmini.superhosts.net/

So far the following have signed up

AA8R & W8TAX
AB8JF & N8WTQ
AC0B & Kathy
K8ZZ
K8AO & Judy
K8OOK & N8IPG
KD9ZP & K9FDL
KM9X
KB0BA & N0XYL
N8HAM & Peggy
N8KIE & N8RLI
N8OR
N9QEI & Janice
NN9K & N9DQS
W7FEN
W8JJ
W8TVT & N8RRR
WB8JZN & KA8ZPN
W8TZA & W8WKD
WG9A & Sandra
WA9DLB & Helen
W9OP & W9PIP
W9GBH & Joan
WB9ZNA

North Dakota QSO Party

There were several fixed stations spotted: KE0A, K9DIG, ND0B, and one mobile, N0UD who ran a few counties.

W1WBB (RI)

"Also, worked a lonely N0UD/m Sat. night on 20m CW while I was in the midst of the Russian DX 'test. Not much activity, but no surprise from one of the most consistently difficult states for me to work during contests... "

Why Your Oil Prices will Rise

Thursday, March 24th at 7:00AM EDT

In 2011, Gulf of Mexico oil production will under-perform the government's pre-Macondo forecasts by 355,000 barrels per day — almost 130 million barrels for the year. In 2012, the shortfall rises to 550,000 barrels per day — *200 million barrels*. That's fully one-third of the Gulf's oil producing capability, and **over 10% of total domestic oil production.**

These are staggering numbers.

Alaska, our #1 oil producing state, will supply roughly 200 million barrels in 2012.

Two hundred million barrels is about what the U.S. imports from Iraq every year. Or roughly half of our Saudi Arabian import volume. Two hundred million barrels would supply all of Ohio's yearly petroleum use, with quite a bit left over.

Replacing 200 million barrels of oil will require an additional supertanker full of oil *every two days*.

The Department of Energy's Energy Information Administration (EIA) provides a rather dry but telling explanation:

> Off shore oil production in [the 2011 forecast] is lower than in [the 2010 forecast] throughout most of the projection period [through 2035] because of expected delays

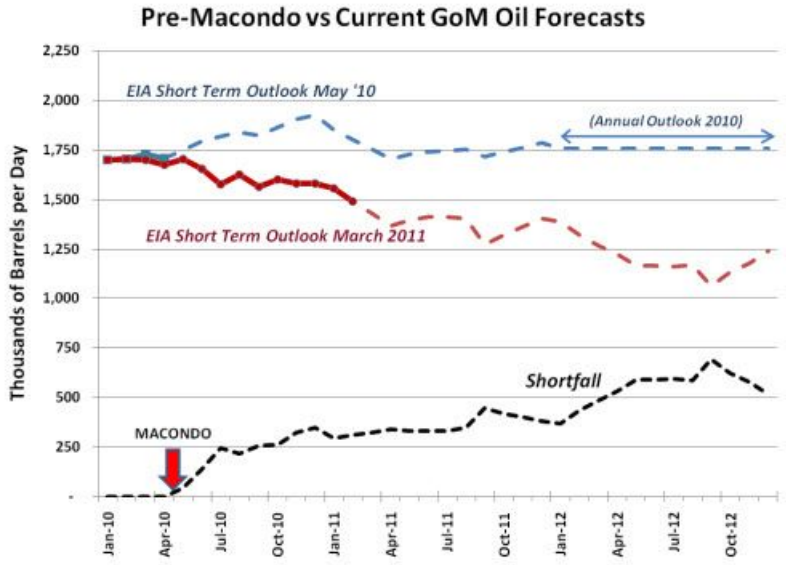
> in near-term projects, in part as a result of **drilling moratoria** and in part due to the **change in lease sales** expected in the Pacific and Atlantic outer continental shelf (OCS), as well as **increased uncertainty about future investment** in off shore production. [AEO2011 Preview, p. 8. Emphasis added.]

Moratoria, access and uncertainty: issues which fall squarely in the laps of Barack Obama and Ken Salazar. Their misguided policy decisions come in times of rising global demand and rising world tensions. By the fall of 2012, we might look back on the "good old days" of $105 per barrel oil and $3.75 per gallon gasoline.

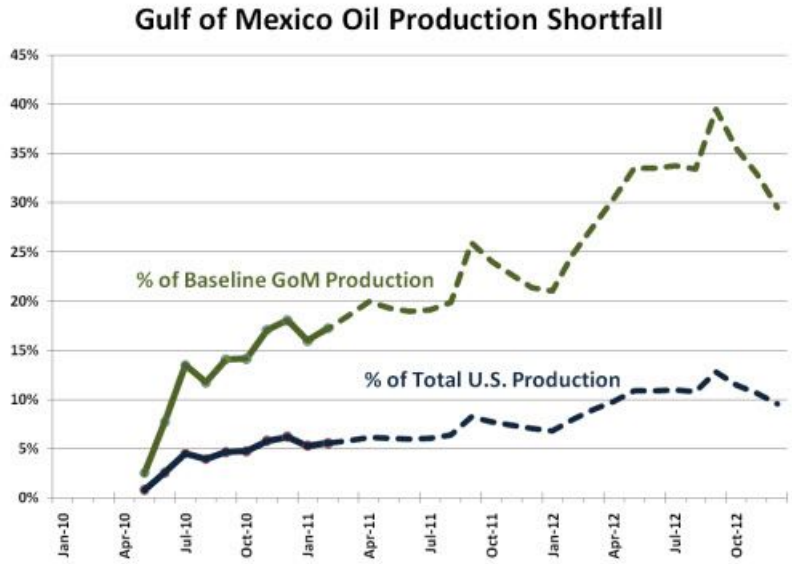
The projected shortfall comes from EIA forecasts. EIA's *Annual Energy Outlook*, with detailed production and consumption forecasts covering the next 25 years, is published each April; AEO2011 is due to be published April 26, but a Preview came out last December.

Short Term Outlooks are published monthly. The most recent STO was published March 8.

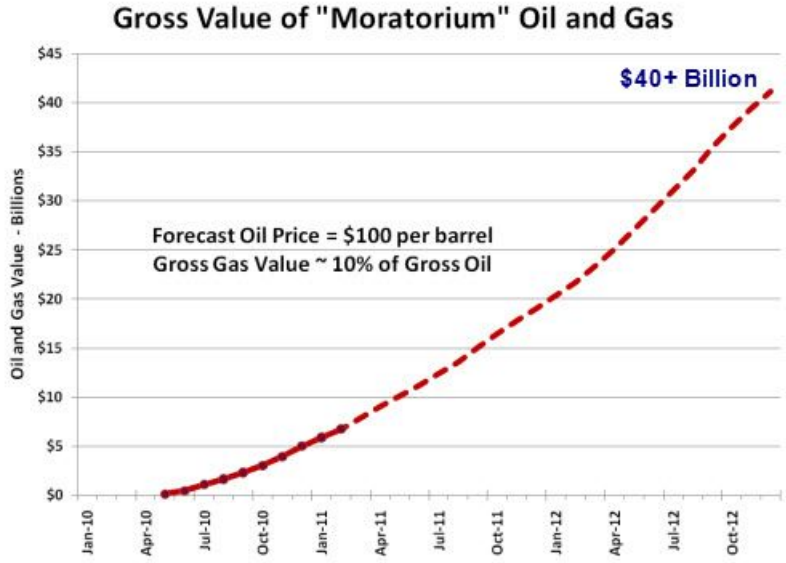
The shortfall is the difference between the March 2011 STO ("where we are") with the May 2010 STO ("where we might have been"). The May 2010 STO was the last monthly forecast which did not take post-Macondo regulatory actions into account. Since the STO only covers a 24-month time frame, supplemental values for 2012 came from last year's Annual Energy Outlook.



The cumulative shortfall, just through the end of 2012, will be 387 million barrels, plus 723 billion cubic feet of natural gas (which contains the equivalent energy value of about 120 million barrels of oil).



How much are we talking about in dollar terms? Just on the value of the oil and gas alone, over $40 billion dollars worth. Somewhere around $6 billion of that would have flowed straight to the U.S. Treasury as royalty. This analysis is too simplistic to address the real economic cost, in terms of lost jobs, capital investment, income and payroll taxes, etc. Notice in the graph below that the cumulative value really starts to take off in 2012 as the volume loss accelerates.



Consider, too, that this shortfall does nothing to curtail demand. Not a single consumer will alter their consumption habits (that is, until the price adjusts). This volume of oil will be made up from imports, adding to our national trade imbalance.

Ultimately, as I have argued before, a half million barrels a day can make a substantial difference in the market price of oil. As we have seen supply disruptions (Libya, Yemen and elsewhere) against growing demand, buyers will inevitably bid up the value of that last barrel to come on the market.

This shortfall could be erased by an administration that correctly viewed the oil and gas industry, not as a convenient whipping-boy, but as a potential growth engine for our tepid economy. Capitalist risk-takers have already proven the potential of oil from shale plays such as the Eagleford of South Texas and the Bakken of North Dakota. We find ourselves at a moment in time when a true visionary in the White House could realistically set a goal of 50% or more growth in domestic oil supply, and couple it with a commitment to develop our plentiful, clean *American* natural gas resources. Such a visionary leader could become the first president since the 1973 embargo to succeed in putting America on a course to true energy security –

Hey, a fellow can dream, can't he?"

Source: BRY board 3/25/2011

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In addition to our current administration policy of 'NO NO NO', the Saudis continue to use more of their own oil as their population expands. The same is true in Brazil and use in China is up over 10% in just the last year. Japan will need massive amounts of fuel for rebuilding. The only good news for the US is the increasing production of shale oil, but that too is very limited and won't do much to stem the ever decreasing flow from Alaska and the Gulf of Mexico.

17M Report

The following mobiles were spotted in the past month on 17M

K5GE, KA4RRU, W7FEN, N0KV/N0DXE, K8ZZ, KN4Y, N7PIB, K6KLL, KB6UF, N4JT, N5UZW, W0NAC/N0LXJ, W9MSE, KM1C, NM2L, W0GXQ, W3DYA, N5MLP, N4AAT

The band is good at times, so give it a try.

Awards

USACA 1215 Jerry, K1SO Feb 28, 2011

Second Time #306	Phil, AB7RW	Mar 6 2011
Second Time CW #25	Phil, AB7RW	Mar 6, 2011
Bingo #326	Barry, KB8OMG	Feb 9, 2011

Events for County Hunters

April 2

MO QSO Party RS(T), serial, MO county or S/P/C www.w0ma.org
Apr 2, 1800Z - See web site Multiple operating periods; CW 1.820 and 40 kHz from band edge; Phone--1.880,3.825,7.220,14.250,21.380,28.350.

April 9

Montana QSO Party RS(T), S/P/C or MT county www.fvarc.org
Apr 9, 0000Z - Apr 10, 0000Z CW-1.81, 3.54, 7.035, 14,04, 21.05, 28.05 SSB – 1.845, 3.810, 7.244, 14.262, 21.365, 28.325 .

New Mexico QSO Party Call sign, name, and NM county or S/P/C www.swcp.com/~n5zgt
Apr 9, 1400Z - Apr 10, 0200Z CW-1.85,3.55, CW-1.85,3.55,7.045,14.05,21.05,28.05,50.095; SSB-1.85,3.925,7.26,14.28,21.38,28.38,50.13.

Georgia QSO Party RS(T), S/P/C or GA county gqp.contesting.com

Apr 9, 1800Z - See web site Multiple operating periods; CW 1.815,3.545,7.045,14.045,21.045,28.045,50.095; Phone 1.865,3.810,7.225,14.250,21.300,28.450,50.135.

April 16

Michigan QSO Party Serial and MI county or S/P/C www.miqp.org
Apr 16, 1600Z - Apr 17, 0400Z CW 45 kHz from band edge,Phone 3.825,7.200,14.250,21.300,28.450.

April 23

South Dakota QSO Party
See Rules above
April 23 1700Z to 1700Z on April 24

April 30

Nebraska QSO Party RS(T), NE county or S/P/C www.hdxa.net
Apr 30, 1100Z - May 1, 1700Z CW: 1.805 and 35 kHz above band edge,Nov/Tech--10 kHz above band edge; Phone—1.915,3.865,7.265,14.265,21.365,28.465,146.460.

Florida QSO Party RS(T), FL county or S/P/C www.floridaqsoparty.org
Apr 30, 1600Z - See web site Multiple operating periods; CW 7.025-7.035,14.040-14.050,21.040-21.050,28.040-28.050; Phone 7.18-7.19,14.265-14.275,21.340-21.350,28.480-28.490.

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Other events coming up

MICHICAN MINI

April 28-30 - See above

Dayton Hamvention County Hunter Meeting – Friday 4pm

May 20-22
http://www.hamvention.org/

National Convention – July 2011

The 43RD MARAC National Convention
July 6th – July 9th, 2011 Duluth, MN

Holiday Inn & Suites, 200 West First St. Duluth, MN 55802
1-800-477-7089 / 1-218-722-1202
Check MARAC.org for latest info