County Hunter News

May 1, 2009
Volume 5, Issue 5

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 attempt to 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.

We hope you will enjoy the County Hunter News. Feel free to forward, or provide links. Permission is given for copying or quoting in part or all provided credit is given to the CHNews and to the author of article.

County Hunter Nets run on 14.0565, 10.122.5, and **7056.5**, with activity nights on 3556.5 on Tuesday evenings around 8-9pm Eastern Time. 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, 24.915.5, 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

N4CD - Editor

Propagation conditions were not great in April. It seems not only are we at the bottom of the sunspot cycle, but that we are at 100 year lows in sunspot activity, solar radiation, and lack of sunspots. Not good for the higher bands which are struggling to even get and stay open some days, as we day after day after day of sunspot count zero. 40M continues to be the best band for county hunting, with occasional bursts of activity on 20M.

When a mobile shows up and gets spotted on 30M, they have good runs there. It depends where you are and where the mobile is. If the mobile is 1000+ miles away, 20M works when the band is open for the 6-8 hours a day for much of the country.

The SFI – 10.7cm solar flux - has stayed below or near 70 – bouncing around from 68 to 69 for weeks. That isn't good for 20M and above propagation. We could sure use some sunspots! We actually had one very short lived sunspot…the sunspot count got up to 11! (that means one 'group' of sunspots for 10 points, and one sunspot in the group – for a total off 11).

Even 40M has not always been great with 'long skip' some days, or not much in the way of skip on other days to places you need. When folks show up on 30M, some days it is fairly decent with propagation around the country – usually at least 500-600 mile skip. Most days, folks only show up on 30M when there is a spot, and that happens when folks go there in rotation from 40 to 30 to 20m or vice versa. Few seem to be listening on 30M these days.

The good news is most of the broadcasters have moved out of the 7100 to 7200 range, and quite a few from 7200-7300. They have moved up several hundred KHz to new allocations. Hopefully, the remaining stations in China will shortly get the message and vamoose from the hambands, too!

The weather is typical spring weather – late snowstorms up north – lots of rain along the gulf, and severe weather fronts moving through. Lots of QRN on the radio – with 80M often difficult. One has to watch the weather carefully since it can change incredibly fast this time of year. It's played havoc with a few of the state QSO parties – with rain/snow, or lots of rain and flood warnings or actual floods.

Some days you tune across 20M, and there are barely six signals on the whole band. Same for 40M some days. We could sure use a batch of sunspots. Mobiles are still out on trips, so between the county hunter mobiles and the state QSO parties, there are lots of opportunities to snag counties for the various awards.

1) **Mobile Activity in April**

March ended with some interesting weather in the Midwest. In the panhandle of TX/OK, they had 18 inches of snow, whipped by 60 mile an hour winds into 12-15 foot snow drifts the weekend after the OK QSO Party. The west half of OKLA got six plus inches of snow. Not much moved out that way. We lucked out on the timing of the OKLA QSO Party! The NC

QSO Party just before OKLA had mobile activity wiped out by snow and rain storms. During the GA QSO party, there were lots of rain storms and flood warnings/watches over much of the lower half of GA. Tornadoes ripped through Murphreesboro, TN and elsewhere across the south and Midwest. Snow continued to fall in northern MI and across the northern parts of the west.

Kent, **KL1V**, made a trip to FL, GA, SC, and NC – half the time he had rain which caused him some antenna problems and gave lots of static on 40M.

Jim, **K0ARS**, was off to the east coast running counties in OH, NY, SC and NC. You never know where he'll be headed.

Van, **WC5D**, ran a few counties in TX. Ron, **N5MLP**, put out counties in southeast TX on SSB.

Jim, **N9JF**, ran counties as he headed to various states on business trips.

Bill, **KM1C**, took a trip down to FL and back. Had some problems with the screwdriver antenna and couldn't get it to work on 20M, so it was 30 and 40M CW and SSB. One station out west got frustrated by no 20M operation, but that's the way things go some days.

Don, **AE3Z**, reports on his trip: "The trip started out great and went down-hill almost immediately.. Tried to run our first county (Bradford, Pa.) on 20 meters and couldn't get the screwdriver to move... It was on 40 meters... Wouldn't go "up".. I turned it down a couple turns and stopped (luckily..!!) and it wouldn't go back up.. I'm out of business..!! We stopped for breakfast and I took out a longer stinger and put that in and low and behold, the SWR on 40 was reasonable enough to be able to operate at least on 40 SSB and CW by just switching modes on the same frequency... I have no idea what the problem was.. After we got down into Virginia where we were going to spend a week, I started playing with it again and it finally decided to screw back up.. I took it all apart and cleaned it up (from our New York nasty winter weather..) and it "appeared" to work ok. That was Monday.. On Tuesday, it started raining and rained every day until we left on Sunday... When we started back yesterday, I went up to 20 meters and called, and I called and I CALLED... but, no one was there... Ran one county on 40 meters competing with the contesters and then, the rain started...AGAIN...!!

And, IT RAINED, AND RAINED AND then up in PA. it started to POUR...!! And, that's what we did the rest of the way home.. I guarantee, we do not need anymore rain for awhile.. At least we had a great time, some great "mountain" music, met some great people and got home safe... Maybe things will work better next time...!!! We had a nice visit with Ray AB4YZ, Jerry K1SO and Jim W1VA and his XYL near Roanoke on the way south

Bob, **N4CD**, headed on down to Brewster and Presidio on a special trip running counties to and from that area.

Jim, **W4HSA**, took a trip along the NC coast putting out counties.

Rick, **KG4NNK**, and Sheila, **KI4GKA**, ran another dozen KY counties for the folks. They have now put out over 50 KY counties this year.

VA3XOV took a trip down to VA running the counties on SSB and cw.

Alex, **K5XY**, ran some of the NM counties.

Greg, **NM2L**, Ed, **KN4Y**, and Norm, **W3DYA**, were busy putting out counties in the GA QSO Party. There were several other active mobiles including W4AN, NE4S, and W4NZ.

Kent, **KL1V**, managed to escape from Alaska despite the erupting volcano, and ran counties in FL, GA, SC, VA, and NC on a two week trip.

Paul, **WD9EJK**, ran in WI, IA, and IL on SSB.

Ed, **N8OYY**, put out counties in WV and OH on SSB.

Jeff, **W9MSE**, put out counties on a one day trip in WI.

Kyle, **WA4PGM**, was out in UT and AZ area on on 20cw.

Don, **K7DM**, ran down from WA to CA and back.

Jim, **KG7E**, ran a few counties out in ID with his new setup.

Toward the end of the month, people headed to the mini up in Michigan. Silver, **N9QS**, Frosty, **W0FP**, Dan, **KM9X** and Judy, **KB9MGI**, Bill,

WG9A, Jeffrey, Ron, **KB6UF**, **AF3X**, Bob, **KA9JAC**, and Ann, **KB9YVT**, Lowell, **KB0BA**, and Sandra, **N0XYL**, Don, **AE3Z**, Duane, **K8AO**, Bob, **N8KIE**, , Steve **AA8R**, and more headed north. Most of the mobiles ran on SSB. N9QS ran quite a few on cw, along with Ron, KB6UF, and Steve, AA8R. 30M actually had some activity!

Larry, **NA7W** was spotted on cw out in Washington State. Chuck, **W3CR**, ran a few in IL. Every now and then, Pete, **N6HH** appears for a few counties.

Ron, **KB6UF**, headed up through WI to MI then over to OH and then to Maine. He got all the MP counties for Darrel, W6TMD, who is now finished up for that award!

There were various QSO Parties going on during the month. We'll report separately on those.

2) 1x1 Calls

Have you worked a 1x1 call in a state QSO party and don't know how to QSL?

See http://www.ncvec.org/search.php for a listing of which organization had which call sign at which time. Often the same call sign is used multiple times a year. (from WA4PGM post on the K3IMC forum).

3) State QSO Party exchange deciphering

Each month, the CHNews, the ARRL Contest Corral, and the WA7BNM site list the upcoming QSO Parties. For those new to chasing counties there, or having fun working the mobiles/fixed stations, here's a quick deciphering of the listings.

If you see:

'North Carolina QSO Party RS(T) and NC county or S/P/C
www.w4nc.com
Mar 1 1700Z - Mar 2 0300Z

CW 3.54,3.74,7.04,7.14,14.04,21.04,21.14,28.04,28.14,
Phone 3.86,7.26,14.26,21.36,28.36"

What you see is that the exchange for NC QSO Party is RS or RST and the State/Province or Country for stations outside NC. (signal report and state/prov/country). For stations inside NC, they will give you signal report (RS or RST – usually 59 or 599) and their county. On CW, it will likely be an abbreviation, which you can find at the web site listed.

The contest period is given, and the suggested operating frequency areas – such as 7.047 on cw – but depending on activity, you might find stations from 7030 up to 7060, with most of them clustered in the 7040-7052 area.

IF you see:

Virginia QSO Party Serial and VA county/city or S/P/C
http://www.qsl.net/sterling/uf1.htm
Mar 21 1800Z - Mar 23 0100Z CW 1.805, 50 kHz+ band edge; Phone 1.845,3.86,7.26,14.27,21.37,28.37; 50.130,"

Then you give a serial number and your state/province, or country if you are outside VA, or if you are in VA, you give serial number and the county or independent city. Some folks will still send a signal report. On cw, often you will have folks send "NR 005 BEX" or similar. Frequently folks send 3 digit numbers, with the first digits being 00 at the start. That might throw off some newcomers.

So the exchange might go:

W4W: "VAQP VAQP de W4W/BEX"

Whole pile call him, including you

W4W: N4CD NR 016 BEX

N4CD: R NR 007 TX or NR 7 TX

W4W: R VAQP VAQP de W4W/BEX

In addition, if you only copy 'half calls', maybe you are hearing a mobile that typically will sign with a '/' and the abbreviation for the county. You might hear:

OKQP OKQP de N4CD/coa which means N4CD is calling CQ the OKLA QSO Party mobile in Coal County, OKLA. So if you are new to QSO Parties, don't be thrown off by the suffixes. US hams can add any suffix as long as it is not a country designation, such as "DL3". You might also hear calls like '/p' for stations out portable in a contest, and of course, '/m' which just means mobile. In VHF contests, you might hear a "/r" for rover category. By sending the county regularly, the mobile can then indicate when it has moved into a new county, so you can work it again!

Some stations will send three digit sequence numbers - - again, the computer starts at 001 and works its way up. So don't freak out if you hear " NR 002 BEX' or similar with the two leading zeroes. And of course, 599 is sent '5NN". Leading zeroes in serial numbers are sometimes sent as a 't'…as in TT3. That's a left over from the American Morse zero – which is a long dash. If you send by hand key – send a long dash for a leading zero.

Here, in the above listed contest, the cw activity is centered 50 KHz above the band edge – 7050, 14.050 – but depending upon activity, again look 7040-7055. Many mobiles will return to the same frequency or close by for each new run, so N4CD might run on 7048.5 most of the day, and 14.0485 during a contest, plus or minus QRM.

If you are a bit shaky on the copy, listen to the station giving reports. You'll hear what they send others. If they are sending serial numbers, they'll be going up one by one. So even if you don't know what you got, it's one more than the last guy got!

4) California Loonies at work – No black car for you!

"In a move that will likely get California's consumers in a huff, impending legislation may soon restrict the paint color options for Golden State residents looking for their next new vehicle. The specific colors that are currently on the chopping block are all dark hues, with the worst offender seemingly the most innocuous color you could think of: Black. What could California possibly have against these colors, you ask? Apparently, the

California Air Resources Board figures that the climate control systems of dark colored cars need to work harder than their lighter siblings – especially after sitting in the sun for a few hours. Anyone living in a hot, sunny climate will tell you that this assumption is accurate, of course.

So, what's the crux of the problem... can't paint suppliers just come up with new, less heat-absorbent dark paints? According to *Ward's*, suppliers have reportedly been testing their pigments and processes to see if it's possible to meet CARB's proposed mandate of 20% solar reflectivity by 2016 with a phase-in period starting in 2012, and things aren't looking good. Apparently, when the proper pigments and chemicals are added to black paint, the resulting color is currently being referred to as "mud-puddle brown." That doesn't sound very attractive, now does it? Windshields, backlights and sunroofs are also slated to get reflective coatings starting in 2012."

http://www.autoblog.com/2009/03/25/california-to-reduce-carbon-emissions-by-banning-black-cars/

Pretty soon, you'll have light white, silver, and medium white cars only in CA! Oh, and ones that magically get 35 mpg or better – everything else won't be sold in CA. Get ready for the Pelosi 2012!

5) K5END does OKLA QSO Party

Nice article and lots of pics on how he put antenna on the back of his pickup truck at:

http://www.eham.net/articles/21325

He was up in OKLA for the QSO party, but I did not see any spots for him on the W6RK site. You might get some ideas from his installation procedure. From his statement he worked 'Staten Island', I'd venture NT2A worked him!

6) KA5TQF – Dave –USCA #1123 - now SK.

An obituary in the El Paso News reported that Dave Zulawski, KA5TQF, passed away in April 2009 at age 49. He was born May 11, 1959. Dave

'assisted' for many years on the 20M SSB net, and became very active on the cw frequencies as well. He was very active activating and chasing IOTAs (Islands on the Air).

His picture appeared in the October 2008 issue of the County Hunter News.

7) County Line Signs and Problems

Risto, pointed out on the K3IMC forum:

"SALT LAKE CITY (AP) Tourists who think they're putting a hand or foot in each of four states at the Four Corners area are apparently missing the mark by about 2.5 miles. National Geodetic Survey officials say the Four Corners marker showing the intersection of Arizona, Colorado, New Mexico and Utah is about 2.5 miles west of where it should be.

The only place in the United States where four state boundaries come together was first surveyed by the government in 1868 during the initial survey of Colorado's southern boundary. The survey was inaccurate.

Officials said Monday the accurate location lies to the east of U.S. 160 in Colorado and northeast of the San Juan River as it flows into New Mexico. "

Information from: Deseret News, http://www.deseretnews.com

Lots of county hunters have visited the privately owned Four Corners Monument, and indeed, run two of the counties at a time per the MARAC guidelines(Awards Page) , which read:

"A **County Line** is the legally defined boundary between two **USA Counties**. A marker or sign usually identifies this boundary; however, some **County Line** markers are located close to, but not on, the actual surveyed boundary. For purposes of contacts for MARAC Awards, the official government **County Line** marker or sign is deemed to be on the **County Line** boundary except where there is a **Wet County Line**."

If you have a better means of determining the county line, then the rules state:

"A mobile may (but is not required to) use a more accurate method of determining the location of a **County Line** boundary, such as a survey map or global positioning system (GPS)."

Most of the Nav systems show state lines on them, such as the Garvin Nuvi 200 and similar (but not county lines). I haven't checked mine to see what it says at this location. Maybe others will provide feedback for the county hunters. Meanwhile, it looks like it is your choice to follow the markers or follow your GPS, if you can even get to the actual four corners location, or run the counties separately.

More From the Mini

Rich, W9JR

May Picture Gallery

KG5J, AL, in the hamshack
(Pic courtesy of AI5P, Rick)

KG7E – Entering Lemhi ID – LC WBOW N4RS CW III – 4/20/2009

Jim, KG7E, lives in Custer ID and has been putting out some of the nearby counties in his new JeepRunner mobile.

KL1V and W4YDY in Pitt, NC

The KL1V rental mobile is in the background.

KL1V/m temporary setup in rental car

Dave, W4YDY described it as:

"Kent is using the IC7000. It is a short antenna. He has what looks like a fishing line to the center front of the car for a guy and to save it if it were it to blow off the roof, but the magnets looked like they would do a good job. It's always better to be sure. He has an extra rig with him in case the IC7000 blows. He said he learned from his TX trip a few years ago.

The IC7000 head is attached with double sided tape so it can be easily removed when he turns the car back in. The key has a very heavy base so it stays still when he is on CW. A laptop with the Delorme map is plugged into the cig lighter. "

Kent, KL1V on the forum: "Thanks to all it was a fun trip, 6640 miles on the rental car, 5,370 contacts and 269 new transmitted counties."

OKLAHOMA QSO PARTY – de W0BH/M

After missing our Spring Break this year, Lorna once again volunteered for a scenic driving tour of Oklahoma, but she had a request .. go to lots of "new" counties. Music to my ears, and a 33 county plan quickly appeared on my computer, starting from my dad's home in Grant County in north central Oklahoma, the route meandered southeast, then south past Oklahoma City before heading southwest to pick up all the southwestern counties. Overnight was scheduled for Elk City in Beckham County, then a final run north and west out the panhandle.

The only major equipment change from previous trips was an Icom 7000 which replaced the Icom 706MkIIG (still along as a spare). The Astro van (with 257,000 miles) was set up with three Hustler vertical sets on triple mag-mounts: 20SSB/40SSB/10, 20CW/40CW/15 and 80CW. Two Dell laptops ran NA with keying, rig control and DeLorme GPS and Street Atlas software. Both computers are powered by Lind DC/DC converters which eliminated an inverter and lots of noise. As we drove along, Lorna listened to my receive audio through the FM audio and soon made some contacts of her own as a number of you remembered her from last year!

Saturday

With cloudy, mild weather, we headed out for our first three-county line about 20 miles away. A few minutes from the line, 1300UTC arrived and my first CQ hit the airwaves on 80CW. Nothing. Second CQ, N9NE appeared, and we were off. Third CQ and the radio went dark. During testing, I'd seen this happen but assumed my battery voltage was low enough to shut down the 7000, because it came back up again when I started the van. This time the engine was running and it shouldn't have happened. After I tried the power switch a few times, the radio lit up and worked for a few practice CQs on CW, but went right back off when I tried SSB. As I was puzzling over this depressing state of affairs, Lorna commented that the radio seemed to quit just as we went over bumps in the road.

We stopped the van, plugged the radio into a different power connector, and all was well. My next contact in the log was at 1305UTC, but the down time

seemed like (and could easily have been) much longer. Lorna just gave the assisted category a whole new meaning for me!

My favorite operating is always at county lines. As we arrived at the GNT/KAY/GAR line, the action really picked up. It takes me a few contacts to get in the groove and relearn the most efficient way to send and log multiple contacts.

Although my favorite mode is CW, I really enjoy the quick SSB chats with the "regulars" which gives Lorna a chance to get in on the action. She really started learning calls this time and would reach for the mike before a contact request came in. As more ops heard her call, she got even more requests and I got even busier coding her contacts in the log so I could separate them out later.

The low bands were in pretty good shape right from the start, but 20m was late opening. I had several unsuccessful CQ attempts on 20m before my first contact at 1449UTC. The bands were crowded with a number of contests and QSO parties, but the 7000 handled it well. Signals weren't always strong but they were clear. Using the 706, I often heard signals I just couldn't quite pull out. I didn't have that feeling as often with the 7000.

The Heil noise-canceling headset really helped as well. I'm sure I missed some contacts, but if so, I didn't hear them even faintly in the background. The Heil headset does amplify the 706 and 7000 background hiss, but a pilot trick of wearing foam E.A.R. plugs inside the headset takes that and other noise down considerably and really saves the eardrums. The overall results definitely earn Icom some credit. My goal was to average 100 Qs an hour, and I kept that up over both days with peaks going much higher.

Lorna is an avid birder, so the van would occasionally stop unexpectedly and the binoculars would appear, particularly when going by potholes, ponds and lakes. She also birds at county line stops and sometimes hears a horn beep to remind her that we need to get moving. When I get a really good run going at a line, I tend to stay longer than I should. We got a bit behind schedule as the day went along, so Lorna picked up the pace on the four lane roads. Going fast over a long bridge into a pretty good headwind, we heard a bang on the roof.

My first thought was that a mag-mount let go, but the masts were guyed so that didn't seem likely. I was on SSB at the time and saw nothing unusual on the SWR or power meters. When we stopped to check at the end of the bridge, I found (let me put this politely) catastrophic 20m (CW) resonator damage. I had a pre-tuned spare along, but still lost minutes swapping things out and rechecking the tuning.

We ended Saturday with 1,230 combined Qs in the log for 12 hours work and headed to Elk City for the night. The Standifer House Bed and Breakfast is actually an old hospital which has been completely refurbished with very unique rooms. Each room has a different theme, and a number of rooms include a jacuzzi.

While Lorna enjoyed the accommodations, I was watching weather and replanning Sunday. Since the panhandle had already been well-covered and high winds and storms were forecast in that direction for Sunday, it made sense to turn east and save three hours of drive time home after the party.

Sunday

We almost got off late because of the terrific breakfast, but Sunday morning found us rested and ready to go. Other than some major power line blanketing at the first stop, band conditions were really good and 20m opened almost immediately. The wind did pick up as forecast, so although I looked longingly in the direction of the panhandle, the decision to go east was a good one for us. Had I known that WB8JUI still needed Texas and Cimarron counties for the Sweep, we would have been happy to accommodate. Keep us posted when you talk to us!

For me, the most memorable non-ham moment on Sunday occurred when we stopped on the Woodward/Major county line. We pulled off on a sandy road and parked facing an ocean of last year's switchgrass blowing in the wind. The wind kept low clouds of sand scudding along the "beach" road to complete the scene and there we were ...

Stats

We operated 17.5 hours, 1949 combined Qs, 415 unique calls.

Lorna and I drove a total of 939 miles from Kansas round trip and will

definitely do it again. Thanks to Jerry (K5YAA) for coordinating the event, Gene (W5LE) for the web site, the OKDXA for sponsoring the OQP, and the mobiles and Oklahoma base stations for putting all 77 counties on the air. Congrats again to John, N6MU, for taking advantage of that fact an amazing two years in a row!

As a final footnote, we're working hard on the Kansas QSO Party scheduled for the last weekend in August. Join us!

73, Bob/w0bh and Lorna/k0why"

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Note de N4CD: Were you curious about why their van didn't start after the TX QSO Party? Where they managed to get it started one more time and head home without shutting it off, and then have it dead again in the driveway the next morning? The repair place diagnosed it as a bad fuel pump, so the tank was removed and a new fuel pump installed. That wasn't the problem. It turned out to be the electronic module that controlled the fuel pump. As you can tell from the OKQP story above, the van is still running fine with the new module!

Sunspot Update

The news is not getting better on sunspots. Per NASA (Author: Dr. Tony Phillips):

April 1, 2009: The sunspot cycle is behaving a little like the stock market. Just when you think it has hit bottom, it goes even lower.

2008 was a bear. There were no sunspots observed on 266 of the year's 366 days (73%). To find a year with more blank suns, you have to go all the way back to 1913, which had 311 spotless days. Prompted by these numbers, some observers suggested that the solar cycle had hit bottom in 2008.

Maybe not. Sunspot counts for 2009 have dropped even lower. As of March 31st, there were no sunspots on 78 of the year's 90 days (87%).

It adds up to one inescapable conclusion: "We're experiencing a very deep solar minimum," says solar physicist Dean Pesnell of the Goddard Space Flight Center.

"This is the quietest sun we've seen in almost a century," agrees sunspot expert David Hathaway of the Marshall Space Flight Center.

In 2008, the sun set the following records:

A 50-year low in solar wind pressure: Measurements by the Ulysses spacecraft reveal a 20% drop in solar wind pressure since the mid-1990s—the lowest point since such measurements began in the 1960s. The solar wind helps keep galactic cosmic rays out of the inner solar system. With the solar wind flagging, more cosmic rays are permitted to enter, resulting in increased health hazards for astronauts. Weaker solar wind also means fewer geomagnetic storms and auroras on Earth.

A 12-year low in solar "irradiance": Careful measurements by several NASA spacecraft show that the sun's brightness has dropped by 0.02% at visible wavelengths and a whopping 6% at extreme UV wavelengths since the solar minimum of 1996. These changes are not enough to reverse the course of global warming, but there are some other, noticeable side-effects: Earth's upper atmosphere is heated less by the sun and it is therefore less "puffed up." Satellites in low Earth orbit experience less atmospheric drag, extending their operational lifetimes. That's the good news. Unfortunately, space junk also remains longer in Earth orbit, increasing hazards to spacecraft and satellites.

A 55-year low in solar radio emissions: After World War II, astronomers began keeping records of the sun's brightness at radio wavelengths. Records of 10.7 cm flux extend back all the way to the early 1950s. Radio telescopes are now recording the dimmest "radio sun" since 1955. Some researchers believe that the lessening of radio emissions is an indication of weakness in the sun's global magnetic field. No one is certain, however, because the source of these long-monitored radio emissions is not fully understood.

All these lows have sparked a debate about whether the ongoing minimum is "weird", "extreme" or just an overdue "market correction" following a string of unusually intense solar maxima.

"Since the Space Age began in the 1950s, solar activity has been generally high," notes Hathaway. "Five of the ten most intense solar cycles on record have occurred in the last 50 years. We're just not used to this kind of deep calm."

Deep calm was fairly common a hundred years ago. The solar minima of 1901 and 1913, for instance, were even longer than the one we're experiencing now. To match those minima in terms of depth and longevity, the current minimum will have to last at least another year.

http://science.nasa.gov/headlines/y2009/01apr_deepsolarminimum.htm

Is Wind Power The Answer?

The 'greenies' will tell you that wind power is the answer to reducing the carbon footprint. Let's examine some actual data to determine how many fossil fuel plants we will be able to shut down when we build more and more windmills. It may be that wind power, with its intermittency – varying with the winds and storms, may have some serious problems to overcome.

if the grid is to reliably supply sufficient power to meet demand, wind must have a backup. And there is the rub. Because just about every technology that might currently be used as a backup takes a really, really long time to start up. Small gas turbines can be producing electricity from a cold stop pretty quickly, but a large coal-fired power plant can take days to go from a cold stop to producing electricity. This is in part because there are a series of steps where A has to precede B which must come before C to start plants up, and partially just because immediately heating the whole system up would cause the plant to blow up just from the thermal stresses.

In addition, most wind power plants produce only about 20% of their rated capacity – so if 5000 MW of wind is added, it typically will produce 1000 MW during a year. In Germany, the estimate that adding 48,000 MW of new wind power will allow them to only shut down 4,000 MW of coal

plants, since they will have to be kept available (and at idle) 100% of the time to provide reliability.

There is no evidence that industrial wind power is likely to have a significant impact on carbon emissions. The European experience is instructive. Denmark, the world's most wind-intensive nation, with more than 6,000 turbines generating 19% of its electricity, has yet to close a single fossil-fuel plant. It requires 50% more coal-generated electricity to cover wind power's unpredictability, and pollution and carbon dioxide emissions have risen (by 36% in 2006 alone).

Flemming Nissen, the head of development at West Danish generating company ELSAM (one of Denmark's largest energy utilities) has stated that "wind turbines do not reduce carbon dioxide emissions." The German experience is no different. Der Spiegel reports that "Germany's CO2 emissions haven't been reduced by even a single gram," and additional coal- and gas-fired plants have been constructed to ensure reliable delivery. Indeed, recent academic research shows that wind power may actually increase greenhouse gas emissions in some cases, depending on the carbon-intensity of back-up generation required because of its intermittent character.

Some have proposed using windmills to compress air to store in underground caverns. Then, that compressed air could be used to provide power when wind turbines stop due to low wind speeds.

However, don't get set to turn off too many of your natural gas and coal power plants any time soon. As the European experience shows, they have actually been adding more coal plants to provide backup to the wind power turbines.

Naturally, solar only is available during the day, so 'something' has to provide the power at night. Typically, the wind is strongest during the day, due to solar heating. What does that leave? Hydro, Nukes and fossil fuel plants!

Yes, wind and solar will reduce the carbon burned during the day, but don't plan on any power plants being shut down any time soon. They'll be needed at night.

Natural Bingo Award

At the March 17th meeting of the MARAC Board, the board accepted the Awards Committee proposal for Natural Bingo.

"Dave (KE3VV) made a motion that the Board approve the Awards Committee's recommendation for the Natural Bingo Award. Roll call indicated 6 in favor and none opposed. Janet (KC5QCB) and Dave (KE3VV) will update the MARAC Award's web site"

Logger seems to track it, but the MARAC Awards page is still silent on the Natural Bingo Award. It hasn't been updated since last June.

State QSO Parties

We continue our detailed coverage of state QSO Parties for the Year of the State QSO Party Award. It's also a time of increased mobile activity and a chance to get counties on multiple bands. You have the opportunity to work fixed stations in the various counties, some of them good for the Natural Bingo award.

MISSOURI QSO Party (4/4 – 4/5 2009)

There appeared to be one mobile out putting out counties – KC0M/m, plus about 20 fixed stations that got on for the QSO Party. A bit disappointing, but still an opportunity to add some band counties, prefixes or new counties.

KN4Y: Did get 17 contacts in the Missouri party. Got 4 new MO counties on 80-meters so not a total wipe out.

WA4UNS: I heard 3 MO stations..and luckily, one of the MO stations was in a county I needed.

AD1C: I worked 7 fixed stations in MO, mostly on 40 SSB. W0JPL was the only QSO on CW, K2VV/0 was the only QSO on 20. I think most of the ones I worked were new band counties on 40.

N5KGY: Made 10 contacts with MO

Comments from the 3830 contest reflector

KP4Y/W0: 'I only had a mobile antenna out the balcony of the Apartment. I just got back to ham radio and contesting after 8+ years of retirement. However I really like the "show me state" MO and operating from here really test your skills.

I knew that my participation in the contest was going to be limited due to commitments made for Saturday night and early in the afternoon of Sunday so my strategy was to focus on CW to benefit from the 2-pts per qso deal. This strategy really proved to be wrong as activity on CW was even lower than on phone. Almost at the end of the contest I decided to do phone and had a decent run but using the hand microphone with one hand while keying contacts into the computer with the other hand wore me out very fast (definitely need headset for the next one).

W0BH: "I intended to go mobile in the MOQP this weekend, but no driver and 40-45mph sustained winds from the south with higher gusts and forecast storms kept me home on Saturday. No driver, morning snow and 40-45mph

sustained winds from the northwest with higher gusts kept me home on Sunday! I'm still picking up tin from the barn roof. I did find a few MO stations on 40m to work when conditions were right from Kansas. Thanks for being there. We'll try again next year!

I did find a driver for the NEQP the last weekend in April, so look for me there from a number of rare western and southwestern counties."

N4CD: Made 14 contacts between SSB and CW. Send in logs. Added the MO sticker to my YSQSO Party award certificate.

* * * * * * * * *

Montana QSO Party (4/4/-4/5/09)

Most of the Montana stations wait for the 7-land QSO Party coming up. A few fixed stations got on to make this QSO Party happen, but it was slim pickings. Expect better for the 7-land QSO party with maybe 30 counties in MT on the air. The weather wasn't too great either.

NB7V made over 1200 contacts from MT, and K7BG made over 250 contacts. (per the 3830 contest reflector claimed scores)

KN4Y: Did not hear one Montana station on CW

WA4UNS: I heard 2 MT on SSB

N5KGY: Made 7 contacts with 5 different stations in MT on SSB

W0BH: "The three stations I worked were loud, and two were across town from each other in the same county with quite a competition going!"

N4CD: Worked 2 MT stations – sent in log for YSQSO Party. 2 QSO and 1 county. Score =2. Put the MT sticker on the certificate.

* * * * * * * * *

GA QSO Party (4-11 and 4-12)

These folks know how to throw a party, too! Mobiles included KN4Y, W3DYA, KC4HW, NE4S, W4AN, W4NZ, NM2L, plus other county hunters at fixed stations – K4SSU, N4NX,

John, **K4BAI**, the contest log coordinator, reported over 1000 logs were submitted for this one! He'll be busy!

N9JF: "Thanks for the spots! I could have stayed busy working the ones you spotted...except I couldn't hear most of them! Some days it's like that. Wish I could have worked NM2L at least once. I heard him once in a pileup and that was it. Signals were as good on 80 as on 40, but the QRN was nasty.

K4XI: "Nothing south of Atlanta on 40 - no 20 and 80 bad QRN. Next year I think I will go to the Florida Keys (Monroe) to work the GAQP. 80 was good early on but not many stations running. 20 seemed to have the most activity but from the middle of Florida at this point in the cycle - nothing heard. The conflict with Easter probably didn't help either.

N4AAT: "Nothing at all on 20 & 40 SSB and nothing on 20& 40 & 80 CW, zilch"

KC3X: "GAQP No Prop on 20 and lost Prop on 40 at 2100z, fun while it lasted"

W0GXQ: "Very selective propagation into Georgia from MN forty meters was slow but twenty was hopping (72% of my contacts). My goal was to S & P for new counties and I managed to find 35 of them."

K7REL: "Not Much Propagation Here Either to Georgia.....only worked two in Georgia today; only one contact with KL1V. But the JA's are booming in here now with their contest."

N4AAT: "Not a single contact on 20 or 40 SSB and CW. Couldn't hear anyone."

KO1U: "416 Q's" "OMG Norm was smokin...What an OP!!! My hero..."

N9QS: “I worked 105 contacts and had 67 multipliers but missed almost all day Sunday. Just CW and Just 40/80. I couldn't hear anyone on 20, so I stuck mainly to 40. Had a great time. I had a big tear in my eye when I saw that Norm W3DYA was going to be in Evans GA. It was one of my last 5 for all "W" prefixes, but alas family must come first.. Great going Norm and all the other mobiles. I had a hard time hearing Greg NM2L but managed to work him a few times. “

W4GNS: “tough from SW VA was hard to hear the mobiles, W3DYA was about the only mobile I could hear, the rest were fixed stations, Nuttin' at all heard on 20 meters , And my efforts on 80 were futile, Need 1500 plus watts and a very big antenna to compete on 80. Contact Points: CW(41 * 2) + PH(0 * 1) = 82 Multipliers = 28 GA Counties (28 cw + 0 ph)”

K7REL: “Saturday night after 2400z was great here on 40m! And Sunday was also great on both 20m and 40m. Between Kent, KL1V, and the Georgia QSO Party, I managed to get 35 new counties on CW and 22 new counties on SSB so far.”

NT2A: “Nice QSO Party. Thank you to everybody’s mobiles, fixed stations, and also spotters IBOT and N4CD. I got 275 Q’s and 145 Mult. The condition for my location in NY was not so good. Most reports for mobiles are around S3 and some QSOs were like miracles. The loudest mobile on 20m - KN4Y, on 40m – W3DYA/m.

QSO breakout for mobiles: W3DYA/M – 51, KN4Y – 23, NE4S – 21, W4NZ/M – 18, W4AN – 13, NM2L – 11, N4FD – 3, KC4HW/M – 2.

Comments from the 3830 Contest reflector

KC4HW: (GA mobile) – “Well quite an interesting day. We (my YL and I) were pretty much on schedule arriving in Early county around 10:15AM. Got everything working and made a few contact and the screen went very dim!!! Tried everything rebooted several times, but nothing would make it right. Finally made the decision to make the trip back home to get another laptop. After it was off for a half hour, I tried it again and it came back up just fine. But after a few minutes it went dim again. Thought that it might be a fan issue, so put the car's AC on and directed it to the area on the laptop where the fan is located. From then on, there was no problem with the dim screen.

Unfortunately this computer's battery is dead also, so had to keep it plugged into the 12 volts all the time, some times it would pull out and cause the computer to power down. Real pain. So if you noticed that I disappeared abruptly, then this was the reason.

Nevertheless, managed to make it to Early, Seminole, Miller, Baker, Mitchell, Decatur, Seminole and finished in Early again.

Conditions were not to good. Lots of noise in SW Georgia. Did manage to work several DX station.

Thanks to everyone for the Qs. Hope to see everyone in a couple of weeks in the FQP and then the first weekend in June for the Alabama QSO Party. "

The DX was in, with DL3DXX, OK1APV, OK1KT, an SM, LY2ZZ, DL5AWI and many others in the GA logs.

NM2L: "It was a pretty uneventful trip except that I got lost in my own back yard! I missed a turn and ended up in my home county by mistake so it took me a while to get back on track. Anything above 20 meters was a wash and there was no activity on 6 meters at all from the local folks. I did try every band in every county just because I said I would, but it was a real waste of time. I wasn't really in the contest for the score so in the long run it didn't really matter. All in all, it was a good time. Total QSOs was 468 in about 9 hours. I did have some trouble on 20 meters with the antenna change I made so now I have something to work on as soon as I can get some time. Total counties run was 16. There is always next year! "

From the 3830 Contest Reflector

W4NZ: "This was Team-NZ's fourth go at mobile contesting, the second in the GQP. With the holiday weekend, we could only mount a one-day effort. I convinced N4ZZ to drive from Nashville to Chattanooga and join N4DRV and me. Our primary driver/navigator, Sam N4DRV, piloted us through 20 counties covering a route of 380 miles. We had planned for 21 counties but Pickens became a casualty of a time crunch near the end.

Murphy found us again this year in the form of an intermittent problem in the 20m antenna. That's why no QSO's there and I'm sure it cost us some multipliers.

Conditions seemed very good, at least we didn't experience the heavy QRN of the few days prior to the GQP. There were two especially noteworthy signals, DL3DXX (6 Q's) and DL5AWI (5 Q's). Both were as strong as stateside stations on 40m well before our sunset. In addition, we had 5 QSO's with DL5AWI on 80m. Outstanding!"

K4BAI/W4AN: "KU8E and I were out as W4AN/M in 21 GA counties on Saturday. We had RF and computer problems and it may take several days to sort out the logs on two computers and on paper. Thanks for all the support for GA QSO Party and the QSOs. 73, John.

N4PN: "First time in a long time to operate from home .. condx were either real good or real bad...20m was no good at the start but was ok later. Made a few contacts on 160 and 6 meters since this was the first year to make contacts on those bands... Only one goal - to average 100 per hour for contest...made it by 35Q's

Thanks to all who gladly worked me on both cw and phone....
This was just a lot fun, especially with the great opening to Europe late Sunday on SSB - lots of one pointers....
Not a single signal on 15m...."

W0BH: mobiles: "35 W3DYA Great job, Norm!, 11 KN4Y, 9 W4AN, 8 W4NZ, 7 NE4S, 5 NM2L, 3 KC4HW , 2 N4XGI. Overall, I worked 87 counties and 68 unique call signs. "

W4AN (ops K4BAI, KU8E): 823Qs "100W, mobile whips. 21 GA counties. We had some computer and RFI problems. Lost about an hour of operating time to dinner, gas stop, and computer problems. Thanks for all the QSOs. QSLs via K4BAI. Next year, we hope for both days and many more counties and contacts. "

K4HYB: Over 1800Q "Saturday only...6 op's and lots of fun"

K4OD (mobile on Sat with **NE4S**) "I had more fun than a human being ought to be allowed on my first ever rover run. Mike is an entertaining host and he has a great setup in his truck.

First ever rover run with NE4S - mostly driving but made a few contacts also. We were, initially, not going to stop in Wilcox county because it simply was not on our list. We re-evaluated and decided to stop just before the county line and had an extremely good run before crossing into the next county. We stopped at points but, mostly, Mike ran counties on the fly while I drove. I like the "rover" concept but think that stopping is much more to my liking than running on the fly.

N4CD: 120Qs, mostly CW. Sent in logs and put the GA sticker on my YSQSO Party Certificate.

Michigan QSO Party (4/18/09)

The Michigan QSO Party had several active mobiles. Propagation was not great for many with the flux below 70 over the weekend and a slightly elevated A index. However, hundreds of spots were made from 80 through 20M. No activity seen on 15M or 10M.

AD1C: 47 QSOs in 31 counties here, mostly on 20/40 CW, a handful on 20 SSB. Worked a few new band/mode counties. Signals were generally down except for a few loud fixed stations. Worked mobiles K8MR, W8CAR, K9TM, K8IR and W8RU.

N9QS: "I worked 51 stations in 41 counties. Only heard one Mobile Station K8IR and worked him a few times.

W0GXQ: A few more mobiles would have helped . . . because of my location, I worked 40 and 80 only, and all CW. Total Q's 117 with 56 counties. Lot's of new ones for 4th time and about a dozen new ones on 80m. I never did hear N8KR aero mobile - must have operated SSB only."

NN8L: "I ran Mason on 20 and 40 SSB until I wasn't getting any more responses then switched to 80 and ran that until pretty much the end of the contest."

From the 3830 reflector

K8UMR: (N8MR, K8AZT, K8HW, WX8YZ, K6VEM) "This was the first time the Livonia Amateur Radio Club had been involved with the Michigan QSO party to anyone's knowledge. We operated from the Livonia EOC, using two stations - one CW and one Phone. The CW station consisted of a Electraft K3 to an 80 Meter dipole fed with 400-ohm open line on the roof (approx. 40 feet high). The Phone station consisted of a Yaesu FT-450 to a ground mounted Hygain vertical with six radials.

NO5W: "Hopes of making a serious effort in the MiQP were dashed by the torrential rains in the Houston area most of Saturday. I was not able to get on the air until around 0000Z. At that point 20 was gone and, due to the thunderstorms that had moved off to the east, 40 and 80 were very noisy."

W8PIF:(KC9FKE,K8MBI,KC9MLD,KS8O,KG8CX,W9JTL,KD8FUE,W8SCO,AND K9KI) – "We had a great time and thanks for the Q's. Most of the operation was run by W9JTL and 4 youths ages 11 to 14 who did a great job and I am sure became hooked on contesting. Thanks for all the patients during some of the contacts.

Great fun was had by all who participated, 15 in all. Brats and Burgers were done on the grill by an 11 year old, Hunter (KC9MBI) who will become our official chef for contests, he is also a great contester, (watch out all). Thanks to all the mobiles for their work and skill. We also had a VE session where we had a successful candidate for upgrade to general and a new tech. The three rigs worked flawlessly and the three logging computer with N1MM kept up to pace. We spent much to much time on phone keeping the score down, but by next year, a couple of the kids will be ready to work the cw side. (Menominee County – 244Qs)

K8EPV Operator(s): AC8W K8DD K8WMW KA8IEO KD8HBX
Station: K8DD – 855Q – multi –op effort

W8CAR/m "10 counties after a problem ridden start. The inverter I got to charge the laptop would kick off so wasnt charging the battery. Once moved

to a front accessory socket all was well. I keep forgetting how much fun mobiling is and boy am I tired. …beautiful wx, decent condx and no car trouble made this a fun one! “

K8MAD: (N8XX opr @ N8XX stn) : “Fun contest, even though Murphy struck. For the Ohio QSO Party I had loaned my Computer to rig interface to a friend but, alas!, didn't get it back. So, I cobbled another together with parts on hand. Unfortunately, I didn't check it out prior to the event. It was DOA. I looked it over, but didn't see anything wrong. So, I hooked up my ancient bug (circa 1955, hadn’t been used since the 80s). It had corroded contacts, and simple burnishing didn't do much.

Brought out the trusty J-38, and did the pump handle thing. It’s amazing that 1800s technology still works in the 21st Century! Even at 1 p.m. 20 meters was all but dead, so quick move to 40. . The trusty J-38 worked great!

Thanks to all who slowed down to my hand sent hand keyed speed, even though I could copy faster. It’s nice to see that a rookie would have been treated well.”

K8IR/m (650Qs) :” On the way home last night, I didn't think it was that good an outing. But after running the numbers, it looks like our second best effort in the 8 years I've been mobile (last year was the best). I felt the first few hours were pretty good, but when the QRN came up on 40 and 80, it became quite a struggle. Despite that, the 0200 hour was our best with 71 contacts.

Weatherwise, it was a day of sharp contrasts. It was in the 70's and sunny when we started in the southern U-P, but by the time we got to the Lake Superior shore, it was 35 and foggy. We drove through some showers after dark. There still was snow in the woods in many areas, and plenty of ice on the lakes. No unusual wildlife sightings this year, they all must have been trying to stay warm.

Thanks to all who called in and especially to those who followed us around. Several stations had 10 or more contacts. K8MFO was the clear leader finding us 17 times, all on CW.

I have to thank Eric, KG9GH, my driver for the third year. We used his vehicle this time, and he spent much time and effort building a ground plane over his pickup bed for the 80 meter antenna. We used most of the legal height above the vehicle, and just managed to drive through the lift bridge at Houghton which has a clearance of 14 feet. (vehicle picture on k8ir.com) Eric also put the GPS to good use, and got us into the last county at a comfortable 35 minutes before the end.

K8MM – QRP 5W – Genesee MI – 425Q : "Lot's of fun again this year, and it seemed like there was a lot more activity. I decided that I was going to glue my butt to the chair and not miss any operating time like I have the last couple years. This is the first time I've actually had all the antennas repaired after the harsh winter winds, and the shack was ready to go. Thanks to AC8W and K8DD for helping me take down a broken tri-bander and put up a good one a couple days before the contest.

I did have to fight line noise for a lot of the time, so sorry to those that called but kept getting covered up by the QRN from Detroit Edison.

W8RU/P (W8RU,AB8OJ,KC8VGG) – "We'd stop, set up dipoles, operate on battery power for about 2hrs, then pack everything up and move on." – [They ran 3 counties SSB/CW.]

K8MR: "This year I teamed up with driver AC8E to cover 25 counties in the northeast lower peninsula of Michigan. It was a beautiful day to be driving, but perhaps too nice as a lot of people were taking advantage of the nicest day of the year to date to do things other than work us crazy mobile contesters. As is often the case, we did see snow on the ground in shaded areas in the top two tiers of counties. I always hope this is the last snow I'll see for six or seven months.

This was the maiden contest voyage of my new (2001) Honda Odyssey minivan. No problems, it does have some ignition noise that the blanker handled, but little other noise from fuel pumps, computers, etc. Fortunately gas prices were about half of what they were last year.

Conditions were decent for having no sunspots. 80 meters worked well, and we had more qsos on 75 SSB than on 40 and 20 SSB combined. A lot of those 80/75 qsos were well before dark.

There were relatively few European QSOs this year. I had two qsos with stations in the same county as me, a fairly rare happening. Worked WD8S on 40 CW in Ogemaw, and KX8P on 20 SSB in Presque Isle.

See you all in the Ohio QSO Party on Saturday, August 22,
as well as in Dayton in a few weeks."

Results NEQP 2008

A very interesting analysis of the 2007 vs the 2008 New England QSO Party can be found at:

http://www.neqp.org/2008/2008-results.html

I enjoyed the band by band breakdown of contacts, the mobile analysis (average 20 contacts per county – high number in the 70s for a few counties). All but 4 counties were run mobile, and two of them were Dukes and Nantucket. Get set for NEQP the first weekend in May!

Florida QSO Party (4/25 and 4/26)

These folks know how to hold a party. Likely every county was on the air, with a half dozen mobiles or more going everywhere to give out the contacts. 20M cooperated from TX to FL, and hundreds were in there calling the mobiles and fixed stations.

Complete coverage next month due to need to get CHNews out now.

Nebraska QSO Party (4/25 and 4/26)

There was one spotted mobile, W0BH. Bob had some rig problems on Saturday, but ran through about 16 counties putting them out on 20 and 40M SSB. That was it.

Complete coverage on this next month.

The Nitrogen Cycle

Many people consider the wider use of biofuels a promising way of reducing the amount of surplus carbon dioxide (CO2) being pumped into the air by the world's mechanized transport. The theory is that plants such as sugar cane, corn, oilseed rape and wheat take up CO2 during their growth, so burning fuels made from them should have no net effect on the amount of that gas in the atmosphere. Biofuels, therefore, should not contribute to global warming.

Theory, though, does not always translate into practice, and just as governments have committed themselves to the greater use of biofuels, questions are being raised about how green this form of energy really is. The latest come from a report produced by a team of scientists working on behalf of the International Council for Science (ICSU), a Paris-based federation of scientific associations from around the world.

The ICSU report concludes that, so far, the production of biofuels has aggravated rather than ameliorated global warming. In particular, it supports some controversial findings published in 2007 by Paul Crutzen of the Max Planck Institute for Chemistry in Mainz, Germany. Dr Crutzen concluded that most analyses had underestimated the importance to global warming of a gas called nitrous oxide (N2O) by a factor of between three and five. The amount of this gas released by farming biofuel crops such as corn and rape probably negates by itself any advantage offered by reduced emissions of CO2.

Although N2O is not common in the Earth's atmosphere, it is a more potent greenhouse gas than CO2 and it hangs around longer. The upshot is that, over the course of a century, its ability to warm the planet is almost 300 times that of an equivalent mass of CO2. Robert Howarth, a professor of ecology at Cornell University who was involved in writing the ICSU report, said that although the methods used by Dr Crutzen could be criticized, his fundamental conclusions were correct.

N2O is made by bacteria that live in soil and water and, these days, their raw material is often the nitrogen-rich fertilizer that modern farming requires. Since the 1960s the amount of fertilizer used by farmers has increased sixfold, and not all of that extra nitrogen ends up in their crops. Corn, in particular, is described by experts in the field as a "nitrogen-leaky" plant because it has shallow roots and takes up nitrogen for only a few months of the year. This would make corn (which is one of the main sources of biofuel) a particularly bad contributor to global N2O emissions.

But it is not just biofuels that are to blame. The ICSU report suggests N2O emissions in general are probably more important than had been realized. Previous studies, including those by the International Panel on Climate Change (IPCC), a United Nations-appointed body of experts, may have miscalculated their significance—and according to Adrian Williams of Cranfield University, in Britain, even the IPCC's approach suggests that the global-warming potential of most annual crops is dominated by N2O emissions.

The broader issue, therefore, is the extent to which humanity has hijacked the "nitrogen cycle", as the passage of that gas into and out of the atmosphere is known, for its own use. Alan Townsend, of the University of Colorado, Boulder, is one of those trying to calculate the extent of this change. What seems certain is that the nitrogen cycle is changing faster and more profoundly than the carbon cycle, which has attracted much more attention.

This week Dr Townsend, and others involved in something called the International Nitrogen Initiative, are meeting in Paris to try to organize an international assessment of what is going on. This would do for nitrogen what the IPCC has done for carbon. To some, worries about nitrogen will doubtless seem to be no more than the latest environmental bandwagon. But the case of biofuels shows that without proper consideration of all greenhouse gases, not just CO2, it is too easy to rush headlong into expensive methods of mitigation that actually make things worse.

Source: The Economist

Static Drain on Antennas

Fitting an Static Drain Resistor

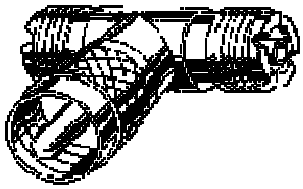
Should there not be a resistor one can be put in circuit using a T-piece with an appropriate resistor mounted in a plug which is then fitted to the T section. This arrangement is placed on the antenna side of any lightning protection.

A ½-watt carbon film resistor is used. A value of 1kΩ for up to 5 watts transmit power, rising to 10kΩ for 10 to 100 watts.

Please note no wire wounds for reasons of inductance mixed with self capacitance - they resonate at the weirdest of frequencies and have a nasty habit of disturbing the SWR at points along the band. I have done plenty of experiments in the hope to prove this wrong, and have never succeeded. As soon as the wire-wound is replaced with carbon/metal film, the problems disappear.

For bigger transmitters, limit the resistance to 10k-ohms but increase the power rating of the resistor to about 1% of the total transmitter power (assuming the feed is 50Ω). Do not place it after the tuner if there is one - impedances found here would blow the resistor.

Some in the RF industry would have seen coils used as static drains. The theory is the coil is high impedance at RF and so looks open circuit, whilst still presenting a short to the DC and draining it to deck. The problem with them is they too can start reacting ('scuse the pun!) with the capacitance present on the system, especially at the lower ends of the band. Also, getting hold of the material to create the coils is such a pain. Having used resistors for most of my life with an extremely high level of success has made them my 'de facto' standard when fitting static suppression to antennas that need it.



http://marcspages.co.uk/tech/2100.htm

Peak Oil News

a) End of Corn Ethanol?

Over the past few years, the legislature of the State of California has passed into law a series of Acts to combat Global Warming—one aspect of which is to reduce the State's own Greenhouse Gas (GHG) emissions by 10 percent by the year 2020.

Within the state, the California Air Resources Board (CARB) is responsible for developing regulations to implement these enacted legislative goals. A new "Low Carbon Fuel Standard" (LCFS) is part of the planned regulatory

structure, and on March 5, 2009, the staff of CARB released a set of documents and spreadsheets describing the proposed new regulations for the LCFS in detail.

The effect of the proposed CARB rules is this: **If adopted in late April and fully promulgated by the Board, Midwestern corn ethanol will not be an attractive or suitable fuel for use in California, beginning as soon as the year 2011. The proposed new rules embody a method of calculating the GHG emissions released by corn ethanol (during its entire "life cycle," from crop production to milling to use) which determines that a gallon of corn ethanol emits MORE GHGs than a gallon of gasoline derived from petroleum, such as the product known as CA-RBOB, used as the baseline motor fuel in the regulations.**

The problem is not just the potential loss of corn ethanol demand from California, which is in excess of 800 million gallons per year. According to the CARB staff report, a consortium of 13 other states is preparing to follow the same procedures as California. These states include the populous states of the northeastern US, and perhaps Minnesota. It is possible that the CARB approach could be adopted nationally—approved by the President, his EPA, and Congress."

"The key focus here is that we need to pay attention to the carbon emissions and air-quality emissions of the entire cycle. We cant just say biofuels are good, we have to say what kind of biofuels are good. The data show that if we want to achieve real greenhouse gas emissions, we should be looking at cellulosic grass, rice straw, not crop-based fuels, said Bonnie Holmes-Gen of the American Lung Association. We have to look at the pathway of the fuel is it from a waste crop or is it from corn?

For environmentalists and state regulators, that difference is crucial: If a fuel, such as ethanol, springs from corn, the carbon emissions associated with producing that corn the fuel for the harvesting equipment, the fertilizer, the fuel used to generate the power for a farm, for example must be included."

How about them apples? Corn ethanol emits more carbon than gasoline. Might be 'outlawed'? Dang…..100 billion in federal bucks thrown down the ethanol rat hole. The government can't do anything right when it tries to 'engineer' society.

Of course, what they didn't tell you as well is that your fuel mileage goes down when they mix in corn ethanol into your gas. It's a pollutant.

b) **Russia**

Last week, the Russian government predicted 2009 oil output of 9.68 million barrels a day, a 1.1% annual drop. But a survey of 12 industry analysts puts the decline at more than twice that rate, with the most pessimistic predicting a slump of 7%.

Having plunged to a third of last summer's peak, oil prices have stabilized lately. They remained strong in the past week despite a March 15 decision by the Organization of Petroleum Exporting Countries to leave production quotas unchanged until at least May.

Little attention is being given to Russia, where crude-oil output fell last year after a decade of increases. Russian producers pay high taxes, which leave them with limited cash to spend on maintaining fields and bringing new production online. Meanwhile, tight credit markets are slowing the flow of loans to the sector..

This month, the brokerage Sanford C. Bernstein in London cut its forecast for Russia's crude production this year to 9.1 million barrels a day, a 7% drop from last year.

In early January, Russia's five biggest producers -- OAO Rosneft, OAO Lukoil Holdings, TNK-BP Ltd., OAO Surgutneftegas and OAO Gazprom Neft -- announced an average annual reduction in capital spending of 15% for 2009. Officials agree that the situation is bleak.

Producers may lack funds to support production levels at mature oil fields in West Siberia or to open up new fields in East Siberia and Timan Pechora in Northern Russia while also having to deal with the current tax burden.

Since 2000, oil companies ramped up production at fields in West Siberia -- the source of most of Russia's oil -- by bringing in new technology. As output from those fields declines, big investments are required to tap new deposits in more difficult-to-access areas.

Moscow-based Alfa Bank thinks the annual rate of decline in production at Russian oil fields already in operation totals 15% to 17% per year, compared

with a rate of 7% in 1998. The higher rate implies producers would need to bring 1.5 million barrels a day in new output on stream just for production to stay flat. That is very unlikely in the current situation.

Source: Wall Street Journal

c) Ethanol Potential Problems Ahead

The ethanol industry must be wondering where the bottom is. Profits are slim or non-existent and about 20 percent of all U.S. plants are shut down. In addition, ethanol's main by-product, which is sold as livestock feed, has raised potential food safety concerns. Several studies have linked the by-product known as distillers grain to elevated rates of E. coli in cattle. And now, distillers grain is facing further scrutiny because the Food and Drug Administration has found that it often contains antibiotics leftover from making ethanol.

Ethanol production relies on enzymes, yeast and sugar to convert corn into fuel. And just as the wrong bacteria in the body can sicken people, it can also cause a variety of ailments in a batch of ethanol.

In ethanol production, the main enemy is a bacterial bug that makes lactic acid. These organisms compete with the yeast for the sugar, but instead of making alcohol they make primarily lactic acid.

If enough of the bacteria are present, fermentation can be ruined. If that happens, there's no ethanol and no profit. To prevent the problem producers rely on antibiotics.

Among others, ethanol producers use penicillin and a popular antibiotic called virginiamycin to kill bacteria. That raises two potential concerns. One is that these treatments might promote the growth of bacteria that are resistant to antibiotics. The development of these 'super-bugs' is a major concern in health care because they reduce the effectiveness of medicines. Bacteria have been found in batches of ethanol that were in fact resistant.

The second concern is that the antibiotics could find their way to humans through the food chain. The U.S. Food and Drug Administration has taken a mostly a hands-off approach to the use of antibiotics in the ethanol industry. With increasing concerns over food safety in recent years the agency is taking a closer look.

Testing of the byproducts recently at 60 plants showed that many contained antibiotics, mainly four types. - Penicillin, virginiamycin, erythromycin and tylosin.

At this point the story gets murky. Those FDA guidelines are part of the problem - they're a patchwork and far from definitive on what levels of antibiotics in distillers grain are safe.

If the FDA decides to restrict antibiotics in the ethanol industry it could have far-reaching consequences. Distillers grain is a major source of low-cost livestock feed. Any restrictions on its sale and use as feed will hurt the profit-scarce ethanol industry and the livestock farmers who rely on it. Distillers grain is one of the few dependable money makers left for the ethanol industry.

Meanwhile the regulatory process continues to play out. The FDA will test more distillers grain samples, and expects to issue a final report this summer.

Depending on how this regulatory battle winds up, it could change the way ethanol plants distill their product and their profits (or lack of them).

d) Green Energy Follies

Thanks to an obscure tax provision, the United States government stands to pay out as much as $8 billion this year to the ten largest paper companies. Why? Even though the money comes from a transportation bill whose manifest intent was to reduce dependence on fossil fuel, paper mills are adding diesel fuel to a process that requires none in order to qualify for the tax credit. In other words, we are paying the industry to use more fossil fuel.

In 2005 Congress passed the $244 billion transportation bill. It included a variety of tax credits for alternative fuels such as ethanol and biomass. But it also included a fifty-cent-a-gallon credit for the use of fuel mixtures that combined "alternative fuel" with a "taxable fuel" such as diesel or gasoline. Since the 1930s the overwhelming majority of paper mills have employed what's called the kraft process to produce paper.

Wood chips are cooked in a chemical solution to separate the cellulose fibers, which are used to make paper, from the other organic material in wood. The remaining liquid, a sludge containing lignin (the structural glue that binds plant cells together), is called black liquor. Because it's so rich in

carbon, black liquor is a good fuel. The kraft process uses the black liquor to produce the heat and energy necessary to transform pulp into paper. It's a neat, efficient process that's cost-effective without any government subsidy. They get about 75% of the energy they need from using it. So what could be better?

By adding diesel fuel to the black liquor, paper companies produce a mixture that qualifies for the mixed-fuel tax credit, allowing them to burn the bio-fuel and apply for the alternative tax credit.

No one in Congress seems to have anticipated this creative maneuver. This past fall the Joint Committee on Taxation computed the cost of extending the tax credit for three months and projected it would cost a manageable $61 million. It now appears that the extension (which was passed as part of the TARP) could cost as much as $2 billion before the credits expire at the end of this calendar year.

In fact, the money to be gained from exploiting the tax credit so dwarfs the money to be made in making paper--IP lost $452 million in the fourth quarter of 2008 alone--that the ultimate result of the credit will likely be to push paper prices down as mills churn at full capacity in order to grab as much money from the IRS as it can.

On March 24 International Paper (IP) announced it had received its first check from the IRS for a one-month period this past fall. The total? A whopping $71.6 million check! If you look at the economics of this business, to make that kind of money today you'd have to be on another planet."

Isn't Congress great at wasting your tax dollars?

e) Oil the trigger for downturn?

"Reeling from the housing bust and the banking crisis, it's hard to think that the energy shock — the one that carried the average price of gasoline to a peak of $4.11 a gallon last July — was much more than a minor player in the economic downturn. But there's the uncomfortable fact previous oil shocks, like the ones that came with the 1973 oil embargo, the 1979 Iranian revolution and the 1990 invasion of Kuwait, were also associated with recessions. And the 2001 recession, too, came on the heels of a run-up in oil prices."

”I n a paper presented at the Brookings Panel on Economic Activity Thursday, University of Calif.-San Diego economist James Hamilton crunched some numbers on how consumer spending responds to rising energy prices and came to a surprising result: Nearly all of last year’s economic downturn could be attributed to the oil price shock.”

A more controversial argument on energy’s role in the credit crunch could go like this. Housing prices kept on climbing, but the **Federal Reserve** – laboring on the idea that it couldn’t identify bubbles and that even if it could, it shouldn’t pop them — didn’t do anything about them. But then rising oil prices started adding to inflationary pressures, so the Fed kept pushing rates higher, left them high even as housing prices collapsed, and was to slow to lower them when the credit crisis got rolling.

My paper uses a number of different models that had been fit to earlier historical episodes to see what they imply about the contribution that the oil shock of 2007-08 might have made to real GDP growth over the last year.

The implication that almost all of the downturn of 2008 could be attributed to the oil shock is a stronger conclusion than emerged from any of the other models surveyed in my Brookings paper, and is a conclusion that I don't fully believe myself. Unquestionably there were other very important shocks hitting the economy in 2007-08, first among which would be the problems in the housing sector. But housing had already been subtracting 0.94% from the average annual GDP growth rate over 2006:Q4-2007:Q3, when the economy did not appear to be in a recession. And housing subtracted only 0.89% over 2007:Q4-2008:Q3, when we now say that the economy was in recession. Something in addition to housing began to drag the economy down over the later period, and all the calculations in the paper support the conclusion that oil prices were an important factor in turning that slowdown into a recession.

It is interesting also that the observed dynamics over 2007:Q4-2008:Q4 are similar to those associated with earlier oil shocks and recessions. The biggest drops in GDP come significantly *after* the oil price shock itself. What we saw in earlier episodes was that the drops in spending caused by the oil price increases resulted in lost incomes and jobs in affected sectors, with those losses then magnifying other stresses on the economy and producing a multiplier dynamic that gathered force over subsequent quarters.”

Source: WSJ and links.

f) Ethanol Companies Flounder

Aventine Renewable Energy Holdings Inc, a maker of corn ethanol, has filed for Chapter 11 bankruptcy protection, after suffering from declining liquidity and margins. The Pekin, Illinois-based company and six affiliates filed for protection from creditors on Tuesday with the U.S. bankruptcy court in Wilmington, Delaware. It said it had $799.5 million of assets and $490.7 million of debts at year-end.

In late October, Aventine's larger rival VeraSun Energy Corp also filed for bankruptcy protection.

The ranks of biofuel producers facing bankruptcy continues to climb, with Pacific Ethanol the latest to add its name to the list.

The Sacramento-based maker of ethanol from corn reported last week that its creditors had given it until the end of April to pay them back or renegotiate terms. The company is in default on $250 million in loans and could face bankruptcy if it can't find more cash or renegotiate.

The past two months have seen Pacific Ethanol shutter three of its five plants in the face of mounting losses. The company last week reported a 2008 loss of $151 million, a decline from 2007 losses of $18.6 million. While the company's sales grew to $704 million in 2008, up from $461.5 million in 2007, the company's 2008 cost of goods eclipsed sales for the year, rising to $737.3 million, up from $428.6 million in 2007.

Those figures lay out the challenge facing ethanol companies, with high prices for corn and energy eking away at margins and falling gasoline prices dragging down prices for the fuel they make.

g) Oil Use in Shipping

"One giant container ship can emit almost the same amount of cancer and asthma-causing chemicals as 50m cars, study finds"

"Confidential data from maritime industry insiders based on engine size and the quality of fuel typically used by ships and cars shows that just 15 of the world's biggest ships may now emit as much pollution as all the world's

760m cars. Low-grade ship bunker fuel (or fuel oil) has up to 2,000 times the sulfur content of diesel fuel used in US and European automobiles.

Pressure is mounting on the UN's International Maritime Organization and the EU to tighten laws governing ship emissions following the decision by the US government last week to impose a strict 230-mile buffer zone along the entire US coast, a move that is expected to be followed by Canada.

The setting up of a low emission shipping zone follows US academic research which showed that pollution from the world's 90,000 cargo ships leads to 60,000 deaths a year in the US alone and costs up to $330bn per year in health costs from lung and heart diseases. The US Environmental Protection Agency estimates the buffer zone, which could be in place by next year, will save more than 8,000 lives a year with new air quality standards cutting sulfur in fuel by 98%, particulate matter by 85% and nitrogen oxide emissions by 80%."

http://www.guardian.co.uk/environment/2009/apr/09/shipping-pollution

Wonder what that is going to do to the price of everything as shipping charges go up and up – killing the economy even further. Stay tuned.

h) Ethanol Follies Continue

An anticipated federal rule could brand a popular fuel regarded as "clean" as a dirty emitter of greenhouse gases. Production of corn-based ethanol took off in 2005, prompting an outcry over rising food prices and conversion of virgin lands for corn planting.

Now, the U.S. Environmental Protection Agency plans to quantify greenhouse-gas emissions associated with renewable fuels. Ethanol producers have already been hit hard by high corn prices and weak demand for gasoline, into which ethanol is blended. New accounting by the EPA could add to the struggling industry's woes and discourage new producers from entering the market.

A stringent standard for calculating emissions from the fuel could include the impact from clearing land to make room for corn production, which

absorbs less greenhouse gases than forests or grasslands. Such a regulation could force some ethanol producers to report large emissions, which would disqualify their fuel from federal biofuel targets.

The measure intends to ensure that renewable fuels have a quantifiable environmental benefit, but may undermine efforts to make biofuels more affordable. The popularity of biofuels grew in the middle of the decade, as fossil fuel prices skyrocketed and the government placed new emphasis upon securing U.S. independence from foreign oil.

To compare emissions from ethanol and fossil fuels, the EPA must decide when in the production process does the "life" of a biofuel begin: in the cornfield, at the ethanol plant or in the engine of a car?

Because ethanol and gasoline have relatively similar emissions when burned in a car engine, Greene said, a calculation looking at the whole lifecycle of the fuel is important. Ethanol produced in coal-fired plants may be less environmentally friendly than gasoline, he said, while ethanol from other plants would comply, depending upon the exact calculation method used.

The EPA sent a draft of the rule for calculating emissions to the federal Office of Management and Budget for an interagency review in February. The EPA hasn't yet said when the regulation will be made public.

A stringent ruling could prevent the U.S. from using new ethanol production to meet the target. With few other viable alternative fuels currently available, such a ruling could take the country off of its course for increasing biofuel consumption."

On the Road with N4CD

Joyce, N9STL was closing in on the Master Platinum award – the highest one MARAC has to offer at this time. She had all but six worked, and had completed her 500 transmitted counties. Those NY counties she needed weren't run much in the winter. Or summer for that matter. She had potential 'snowbird' mobile to get them but that wouldn't be for another few months until the folks moved back to the summer home.

Scottie, N4AAT volunteered to get the ones she needed in NY. Before you know it, he was already mobile in New York state headed to the 4 she needed there, including one over in snow territory. On Saturday afternoon, April 4th, Scottie and Joyce hooked up to get the last ones in NY – Columbia and Dutchess.

N4AAT/m Columbia NY

N4AAT/m Dutchess NY

That left two reserved counties to go for everything and they were in south TX.

Over the past year or two, I had given both Scottie, N4AAT, and Joyce, N9STL, a bunch of needed counties out in OR, MT and UT. After Scottie went to the ones I needed in NC and VA, for me, my needs were down to just Clermont, OH, and N9STL made a special trip to get my last WBOW for MP. So she had held the last two for me for her MP. Mobiles helping other mobiles out!

Texas is a big place. It's 521 miles, more or less, from Collin County down to the Brewster/Presidio line. [Next time, if there is one, I think I'll arrange to have the last saved one a bit closer to home! – Brewster County is bigger than the entire State of Connecticut!] Only a half dozen counties in TX are further away than Presidio! Hmmm….I could have used some better planning!

However, I had some fun and put out some needed counties for the folks on this trip. The weather was good. On Saturday, the temp was up to 90 degrees and sunny – but with high winds hitting 50+ mph.

I was still using the temporary set up in the 2009 new Malibu, just about a month old. Not to worry – other than the spur on 7058, it ran well on the other bands, and I usually QSY'ed down to around 7051 on 40cw. I left the house Saturday before 6am and headed over to a small hamfest in Parker County. It was supposed to start at 8, but at 7:30 when I arrived, it was going full blast. In 45 minutes I had seen everything, said hello to several friends there, bought 20 feet of Nr #8 red/black auto type zip cord wire to put in permanent install in the Malibu, was given a tray with maybe 2000 resistors sorted in little boxes, 'free' from an estate sale, and then left. There were a good number of boatanchors for sale, but none tugged hard enough at me to consider buying one and taking it home.

So it was off on the interstate out past Odessa – where the speed limit is 80 mph. You can make good time if you want to drive that fast. Not much of anything out this way but flat, boring Texas highway.

The wind was coming out of the southwest/west at 40-50 mph, so the car had to work if you really wanted to do 80mph – the wind resistance was like going 120 mph! The antennas sure blew around with the gusty wind. I stayed around 65-70. About half way down to Alpine, Joyce let me know she was now finished in NY, so it was top priority to get down there and get her finished up without too many detours. Well, I still got off the interstate and ran Crane, and then Glasscock. The counties off the interstate are rarer, for sure

The route was down on some smaller roads and even smaller roads to Alpine, TX, elevation of about 4500 feet. That's a nice place to be in the summer time – temps hit 90-100 degrees in the day and drop to 50-60 degrees at night. There is not a lot of rain there, so humidity is very low most of the time. When the sun goes down, it cools off quickly. If you've been in Colorado up in the mountains, you'll know the sensation. In places like Silverton in San Juan County (9000 feet) or Telluride, it can be 30 F in the morning, and be 95 in the afternoon, and when the sun goes down, the temp quickly plummets once again.

I ran Brewster TX on the various bands. N9STL was in there – getting her next to last WBOW – leaving only one to go.

Alpine is a great place for a passive solar house. Make it of adobe – with large thermal mass. No need for a/c then. I zipped through Alpine to the

county line on Highway 90. Dang – no sign to take a picture of – you need to do that for last WBOW. Well, this road made an S at the county line, so a few miles later, you hit the county line again, and then once again, and there was a sign for Presidio. A picture was snapped quickly.

Presidio/Brewster County Line – Last WBOW for N9STL M.P.

In the picture, you see the new N4CD mobile – with mag mount (grounded) on the trunk deck for 20/30/40cw, and separate 40M SSB hamstick on mag mount.

There was some noise there from the power line you can see, so I moved down the road a bit to get to a nice quiet spot. I waited for a moment to see if a mobile was running, then on 7188 gave Joyce, N9STL a call, and she got

the last WBOW with a 5x5 SSB contact on 'the friendly net' . Joyce had been working diligently on it for years. Finally! Success! Jubilation!

Then we did the QSO again later on cw. She is also down to about 10 to have 'all CW' as well.

Of course, I ran the counties along the way on 20/30/40cw and 40M SSB, so the log is full of contacts. Joe, N5UZW, was running things most of the day on 40M SSB. Others pitched in, as N4AAT/m back east was weak for those further west, and Hollis, KC3X ran him much of the time. Naturally, on 40M, lots of stations volunteered to look in other directions no matter who was running. On 40M CW, Jim, KB6TAL, was helping me with relays and spots Saturday. Greg, NM2L assisted on Sundays.

Occasionally I would scan the bands for contacts for the MO and MT QSO Parties. There was not a whole lot to choose from, but enough to have a log to send in for the Year of the State QSO Party award. Two heard and worked in MT(score = 2 pt) , and 13 in the MO QSO Party.

Now just a note about modern cars - Mine had the optional 6 speed automatic transmission. OK….with a 3 or 4 speed, you can have a 'P-R-N-D-L' type arrangement on the steering column, or console mounted lever. What happens when you have six forward speeds, neutral, park and reverse? You'd need a whole lot of detents with a whole lot of probability of having a hard time selecting the right gear. So, in the six speeds, they put in what they call 'tap shifters' on the steering wheel. Normally, just like a 3 or 4 speed, you leave it in automatic and it merrily shifts up and down. The six speed is rated 10% better gas mileage over the 4 speed.

If you go to the mountains of Colorado and need to downshift so as not to burn out your brakes, in the Malibu, you put the shift level in 'Manual' and then use the tap shifter buttons on the steering wheel to up shift or downshift into a lower gear! It took a few seconds to figure out, but better to figure it out before you need it as you start careening down a mountainside wondering how to do it! It shows you on the digital display which gear you have selected. (M1 through M6). With all the gadgets in this car, you need a 30 minute orientation course to figure the stuff out, and then a refresher course every now and then.

A few other county hunters needed Presidio, but after the Feb mini and some earlier N4CD trips around TX, most of the TX listed needs have been

satisfied. (Scottie informed me he still needs 90 in TX on cw – so there is reason to go mobile still!). Folks had run all over the state before and after the Weslaco convention. I ran everything down and back on this trip, other than the ones close to home in lots of traffic in the Dallas Metroplex.

After the special run to Presidio, it was then back to the Antelope Motel. [$55, including tax] From their website:

"The Antelope Lodge is not one of those franchise motels which all look alike. The Lodge was built in 1949 as one of the first "motor courts" in West Texas. We have tried to restore the Lodge and keep its postwar charm without overly modernizing it. We call this style "rustic casual", and we hope that you'll relax while you're here and enjoy sitting on your porch or picnicking in the courtyard.

The Antelope Lodge has charming cottages with kitchenettes. Most cottages contain two guest rooms, each with private bath. You can park right next to your room, which makes unloading and loading easy. Each cottage has a stone porch with chairs so you can easily enjoy the great weather."

Older unit construction – tile roof, individual type units, redone a few years back. It consisted of about 15 buildings, each with two units. I went to bed early

Sun went down about 8:30 pm this far west in TX.

The alarm went off at 5:30 am. It was very dark outside. Stars were shining brightly in the Texas sky. The sun would not come up for another 2 hours, but I headed back home for the first 75 miles on the same road as yesterday. As I drove along, it was a very lonely road to be on – passing only one convoy of 6 RVs and one other vehicle in 75 miles. No buildings, no lights, no houses. Nothing but desert scrub. No wildlife seen either.

The plan was to go was home via a different route – Highway 67 most of the way after I traveled north of I-10. It took over 100 miles to get to a new county I hadn't run on Saturday, so that is why I got an early start. The GPS said I could be home by a little after 2pm if I kept moving. Gas was just around $2/gal.

Sunday morning it was in the mid 40s. And windy. Then the temps made it up to 60 for the trip back home.

The trip was uneventful going down. Murphy was about to strike on Sunday on the way back. I was running counties, stopping to run 40M SSB most of the time as sigs were not great. I pulled over to work the weak ones, or just to make it easier to log so I didn't have to use the recorder all the time.

The car made it to just over the Tom Green, TX line about 150-200 miles out from Alpine. I had pulled over in parking area to run on SSB, then got back on the road and made it about 2 miles down the road before car started squawking 'low tire pressure'. Yes, it was low. This car has tire pressure sensors for each wheel (more government mandates and you pay an extra $100 a car for them in each wheel – inside the tire). So I pull over. Tire pressure now down to zero for that tire. Visual inspection shows very flat left front tire. Hmmm….oh well. I didn't see anything to run over, otherwise I would have avoided it. Dang.

Hmmmm..... call for help. That ON-Star unit is nice – it comes standard in very new GM product – and it is 'free' for the first year. GM sends out local tow truck to change tire. 45 minute wait. No charge to put on the spare. That's nice too. It has GPS so it know where you are – you don't even have to be aware of exactly where you are or what road or how far along it you are - they will find you. It goofed a bit – it thought I was on the southbound side of the road – I was on the northbound side – 40 foot error or so. Not

bad! The teeny ‘compact spare’ was installed and the flat tire stuck in the trunk.

I went into San Angelo to service station that is actually open on Sunday, spending 40 minutes actually finding it. They looked at the flat tire. After they put some pressure in it, it leaked in two places and one was a cut around edge of tire. Then they shook their heads. Said 'sorry - no go – we cannot fix it'. Totaled - 1640 miles on it. Kaput. There was no Bridgestone/Firestone tire dealer open in town on Sunday according to them. I wanted to buy same brand tire to have 4 alike. I’m not a Firestone tire fan, but that’s what all of them seem to have as standard equipment.

So I ran 250+ miles home on teeny spare tire an 'under 55' the rest of the way home. Now I was the slowpoke, that everyone wanted to pass on roads where the speed limit was 70 mph most of the way, and folks use that as a minimum speed typically, with the average over 75.

The car needed gas, so I stopped. Wow…the car computer said I got 38 mph on that tank of gas, and by my calculations, I got about 37. Hmmm. Could this be that running at 50-55 mph got you great mileage? Well, something in my engineering background said that this needed further investigation. I checked the speedometer against the Garmin Nuvi GPS unit speed indication. Dang. 50mph on the car speedometer was 45 mph in reality. With the small tire, it was logging about 10-12% too many miles. So the gas mileage was good but not quite that good! Over 32 mpg, and the wind was still blowing 30-40 mph off the side of the car. I just poked along home, being the slowest car on the road.

Finally, I arrived home about 5 hours behind planned time, but I stopped a few times to stretch and grab a snack. Still home before the sun set.

Monday it is off the replace essentially brand new tire on the 3 week old car. 1930 miles on the car in 3 weeks. I haven't really gone anywhere either. Up to OKLA once, and otherwise, haven’t left the state of TX on the 1000 mile trip.

It’s a pain in the neck, but in the big scheme of things, not much to complain about. I saw 5 dead deer in the road Sunday. Someone ran into them. These are the small TX deer- 80-90 lbs – but they can still total your car. One deer decided to bound across the road about 50 feet in front of me. For some

reason, I had slowed down a bit – to doing 60 instead of 70-75. Maybe ESP? He or she made it across the road safely. I made it up the road safely.

The trip was a big success radio wise. Joyce got her last WBOW for Platinum. That was the main reason for the trip. It's hard to get excited about going out on long trips other than QSO Parties or LC for the folks with current propagation conditions where sometimes you work 10 or 15 people from a county – or less - hardly worth burning the gas. This was a bit better getting 20-30 contacts per county, but not like the heydays of 50-90 contacts per county! In the OK QSO Party, I did have lots of counties with 50-60+ contacts – that was further 'north' where 40M worked better, plus naturally a lot of interest in the state QSO Parties. Some counties on this only had 15 contacts or so, too.

As far as tires, that was the fourth flat tire on the road in 400,000 miles of driving. Two could not be fixed. One had a bolt in the sidewall, the other a belt that shifted eventually letting a bubble form that went thump, thump, thump. Two got fixed with a plug. That's not a bad average. Does that mean no tire trouble now for 100,000 miles? Hope so.

Since it was Sunday night, when I got home, I went out to pizza place for pizza to celebrate successful trip. I love pizza, but due to health and waist line considerations, I limit myself to once a week - and that is often on Sundays.

Now for logs. I used the recorder a lot on this trip, so I'll be busy listening to it all again. I can just see the mailbox being full of MRCs to check and sign now. Fan mail! Hi Hi. A also need to extract and send in the MT and MO QSO Party Logs for the Year of the State QSO Party Award. Then I can put the MO and MT flag stickers on my certificate.

From the K3IMC web needs page, I see Darrel, W6TMD only needs a handful to finish his MP. Scottie needs only the four in AK (plus one), and Bob, N8KIE is headed there in late May/early June. Bob also will finish his MP when he gets to Alaska and puts them out. If all goes according to plan, at least five will have the Master Platinum award by June.

When I got home, I checked the car manual. It should be in the car, but I was reading it at home, learning how to program all the gizmos on the car and left it there. Dang – it said if you have 60 psi in the compact spare, you can drive at up to 65mph for up to 3000 miles. Good to know next time.

The ON-Star agent had said keep it no more than 55. Well, I made it home safe, and that is what counts.

On Monday, I called the Bridgestone/Firestone dealer to get another similar tire for the car. Hmmmm..not cheap. The Malibu takes a 'performance tire'. Wow – 4 cylinder engine but the base model tire is 'performance rated'? Sounds like a rip off, but if you want to have 4 of the same tires, you pay the price. I was out of there for $130 for one new tire, installed, with a road hazard warranty. No mileage warranty either on 'performance tires'. I sense a conspiracy here! Cheap way of getting out of warranties to classify them as 'performance'.

If you buy a Cadillac Escalade, you can be in for $400 or more for one new tire. If you get the 'run flat' tires, you are looking at 600 bucks a tire, and most of them cannot be fixed either if you get a flat. Ouch! The good news is the tires seem to last well. The bad news is when Murphy strikes, it can add up quickly. Apparently I wasn't alone there getting a flat. When I pulled over, I found 3 lug nuts sitting right by my right tire. Someone drove off with only half the bolts installed after they changed a spare. Wonder if they stopped in the same rest area? Next time I'll avoid the large rock gravel parking lots where the TX yahoos probably unloaded their beer bottles after stopping.

So now I am ready for more trips. Dayton coming up in May. Then off to the National in July, and I'm sure there will be other trips in there. I've got about 300 counties to run to finish off second time – from all of WA state to just about all of ME, half of ND and SD yet, most of ID, half of OR, most of MN, half of CA. San Juan, WA and Dukes and Nantucket MA. So many counties, so little time.

With no new challenges for mobiles to work on, many of the mobiles are just kicking back, waiting for new awards to be created. To get Master Gold, you need to accumulate 1500 points, and most do that by running 1500 counties. For Master Platinum, you need to run 500 different counties, so that keeps the mobiles out there with MG running counties to get their totals up. Of course, folks looking for counties for the various awards can work any of the mobiles, from 'no star' mobiles, which might be good for Natural Bingo, or prefixes, or teams/YLs, or other awards where other mobiles may not be good. What will keep the mobiles out running?

On this trip, I ran some TX counties where I am good for "new" Natural Bingo, with the "C" and "D" in my suffix. Crane, Comanche, Callahan, Coleman. Of course, if you need Collin, work me at home, or Dallas or Denton are just down the road. Likely, though, all past contacts will count, so who knows how many people have nearly all the counties for Natural Bingo or are closing in? Time will tell.

Green Light Bulbs

There's a "socket-share conundrum" as the lighting community tries to put new energy-efficient bulbs into traditional light sockets. One of the problems of changing recessed lighting to 'energy efficient' type bulbs is heat. The mantra thus far has been: "just switch your incandescent to a C.F.L." That's going to be replaced by just "switch your incandescent to an LED bulb."

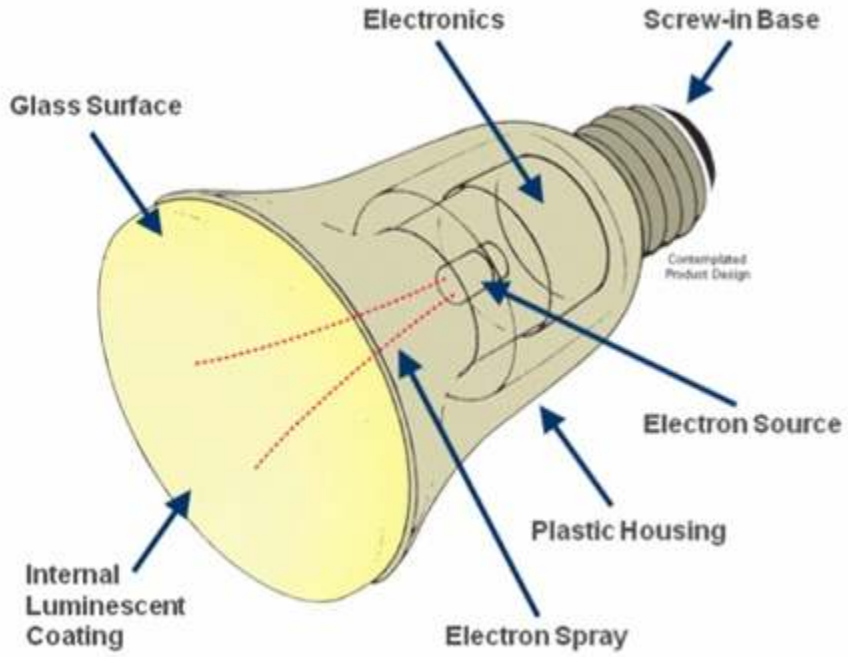
The problem is the fixtures that replacement lamps are designed to go into. They're heat traps. Incandescents are not adversely effected by heat, but LEDs and C.F.L.'s are. Trying to fit the CFL or LED incandescent replacement lamp into an incandescent fixture is going to lead to all manner of problems. Now, a new type of light bulb is potentially coming to market.

Vu1 said it plans to introduce a fully dimmable, mercury-free, instant-on bulb for recessed ceiling fixtures by the end of this year. It will, the company says, last about 6,000 hours – or six times the lifespan of an incandescent – and have a price tag similar to high-end C.F.L. reflector bulbs: about $18 to $22.

Vu1's technology – which it has dubbed "electron stimulated luminescence" – shares some of the same basic science on which cathode ray tubes in older televisions are based. According to the company, E.S.L. creates light without requiring a filament, plasma, coils or mercury vapor. Electrons are sprayed uniformly over a broad area inside the bulb, which is coated with a phosphor mixture. This causes the entire surface of the bulb to glow and create light.

In 2007, Vu1 formed a manufacturing subsidiary in the Czech Republic where 50 technicians are currently refining the technology and its production processes. The company says it plans to have a demo that will operate in household sockets ready by June, and to begin high-volume mass production by the end of the year.

The company chose to produce bulbs for recessed fixtures first because Vu1's technology is dimmable and does not have the heat-sensitivity problems experienced by LEDs and C.F.L.s when placed in enclosed fixtures. The market for this type of bulb, too, is ample. The United States Department of Energy estimates there are more than 500 million recessed down lights in residential buildings alone, and more than 20 million are sold each year.



Molokai – A problem Island

If you are a county hunter trying to get to all 3077 US Counties, you've got to make the trek to Molokai, the island that contains the County of Kalawao. Molokai is a 'laid back' island, to put it mildly. It has a population of about 7000, and one traffic light. For decades, there has been a lack of opportunity on the island for new high school and college grads for any work.

Recently, a crystal meth addition has spread all over the islands as well. Unfortunately, that's also true for many rural areas in the USA.

From the Molokai Dispatch (3-26-2009):

"Molokai suffers a disproportionate amount of social and economic problems. December 2008 statistics from the State of Hawaii Department of Human Services show that there are 2088 people on Molokai receiving Financial and Supplemental Nutrition Assistance. With an approximate population of 7,000, this means that roughly 30 percent of the people living on Molokai are receiving public assistance. The many other problems the people of Molokai face are due in large part to a lack of economic opportunity.

Unfortunately, I continue to believe that a handful of rebels and malcontents are holding the people of Molokai hostage, resulting in these economic and social hardships. "

Have you ever heard of the Molokai Ranch? From
http://visitmolokai.com/rnch.html

"In 1897, a group of prominent businessmen formed what is now Molokai Ranch, Ltd. They purchased 70,000 acres of land, mostly on the western half of Molokai, leased another 30,000 acres of government land and began raising cattle and other livestock. Today Molokai Ranch encompasses about 53,000 acres which is roughly one third of the island.

From the beginning, the rich paniolo (Hawaiian cowboy) heritage has been an integral part of the ranch. This is a working cattle ranch with real life cowboys doing real life cowboy chores on a daily basis.

For the past 100 years, the ranch has played a major role in the evolution of the island's agriculture-based economy and in the development of the necessary water resources."

"The Ranch's parent company, Molokai Properties Limited, wanted to develop a section of the Ranch's land at La'au Point on the southwest corner of Molokai. Their stated plan would have created a small sub-division of about 200 multimillion dollar homes.

Opposition from the community arose to the plan. After many heated and sometimes bitter public planning and environmental impact meetings, Molokai Properties decided to abandon the plan. Within a few days, they announced that the Ranch would be ceasing all its operations on Molokai including the Lodge, Movie Theater, and Kaluakoi Golf Course. They then laid off almost their entire Molokai work force of about 120 employees."

Recently, Molokai activists had opposed expansion of the Molokai Ranch, which would have allowed it to operate at a profit, something that it had not done in years, so it shut down giving 120 more people pink slips. Young folks may know the Molokai Ranch that had a popular series on one of the TV channels (MTV?). The Sheraton Golf Resort shut down. Businesses associated with the Molokai Ranch (Cinema/Restaurants) also shut down. The ranch shutdown means the closure of the island's only movie theater, the only gasoline station in west Molokai, and the island's only 18-hole golf course.

The island is not a good place to do business. Things continue to slide downhill. Too many people on the island feel they are 'entitled', but to what folks don't know what. There is a Native Hawaiian movement to 'reclaim' the Native Lands, but of course, before Hawaii became a state, the monarchy owned 99% of the islands and the 'people' if they were lucky got to live on the land and pay an annual rental fee for it.

Now, rather than have some multi-million dollar homes on the island, the lib left wing socialist activists would rather have everything 'natural'. That usually means no jobs and no industry, no commercial farming, no tourism,

or anything else. Subsistence living in the 21st century. Oh, and everyone living off state assistance as well.

Gas costs a buck more a gallon there as it all is barged in – Molokai has no deep water port – thus no cruise ships ever land there, and it is off the beaten path with a small airport that handles only smaller airplanes. The ocean channel is one of the worst wave/current situations in the world to get across from Oahu.

So now the state has to take over the water system that supplies 1200 residents, the Ranch owners chopped down every tree on the ranch they planted, destroyed the ranch buildings, sold the cattle, and simply walked away in disgust with being unable to do business there. Unemployment, already high, doubled with the closing of the Ranch, which by the way, was as 'green' and ecological as you could get.

Moloka'i has Hawai'i's highest rate of residents — estimated at 30 percent — who rely at least in part on subsistence practices to feed themselves through farming, fishing and hunting. With 1/3rd of the islanders getting assistance, likely 80-90% of the families there are on public welfare!

Drug addiction is a problem everywhere – especially where few opportunities exist for good employment and advancement – but the family structure and the business environment of Molokai is being torn apart by drugs and the welfare state. With fewer tourists heading there, many of the remaining jobs are also in jeopardy. No need for as many rental cars when folks don't have anywhere to go or anyplace to visit or any place to stay. Tourists head to the other Hawaiian Islands and enjoy. Maybe soon only county hunters will be among the few visitors heading there?

* * * * * * *

from http://visitmolokai.com/kala.html

Some interesting stuff on Kalawao. Remember the small blurb last month about the planned expedition to the lower part of Kalawao being cancelled due to lack of fuel?

"Once a year in the summer, when the seas are calm, a barge from Honolulu anchors at Kalaupapa, delivering thousands of pounds of rice, cases of beer, drums of gasoline and supplies to stock the grocery store and hospital." So when they run out, they wait until the next supply ship arrives and do without.

"Kalawao" is only part of the lower area of the island, but hams refer to the entire peninsula as Kalawao County.

According to John, K1ER, the channel between Molokai and Oahu is one of the roughest crossings in the world. It's 32 miles across. Even for very large ships and barges it is a rough trip. Remember the surfing competitions off the north end of Oahu with the 40-50 foot waves?

http://www.youtube.com/watch?v=fcPsXrzwS3A

Collin Campbell/ASPO on Peak Oil

In short, the current assessment concludes that the production of *Regular Conventional Oil* passed its peak in 2005 at 67.8 Mb/d and that all categories did so in 2008 at 81 Mb/d. Note that *Refinery Gains* mean that supply to the market was 2-3% higher.

The above assessment may help explain the current financial and economic collapse, which is increasingly being seen as the worst ever experienced. Oil production, which commenced on a commercial scale in the mid-19th Century, delivered an increasing supply of cheap and easy energy that stimulated the growth of industry, transport, trade and agriculture, allowing the world population to expand six-fold in parallel. Economic growth was facilitated by the creation of financial capital, with banks lending more than they had on deposit, confident that *Tomorrow's Economic Expansion* was collateral for *To-day's Debt*.

This chapter of history also saw the adoption of classical *Flat-Earth Economics*, perceiving a Planet of infinite resources to be captured by human ingenuity and market forces, with its choir chanting that *The Stone*

Age did not End for want of Stones. Prices over most of the period were relatively stable, being partly controlled by the international oil companies or government agencies, such as the Texas Railroad Commission or OPEC which curtailed production to support price. Even so, there were periodic surges, especially in the early 1980s, reflecting political events.

It is evident that prices have been firming since the turn of the Century, as the indicated peaks of production were approached. The main surge however followed the peak of *Regular Conventional* in 2005, being partly driven by speculation on a rising market. The higher prices gave rise to a massive transfer of petrodollars to the governments and royal families of the Middle East, where production costs for much of their oil probably lie in the range of no more than $10-$15 a barrel. The resulting surplus may have been recycled to overseas banks with the effect of devaluing currency and destabilizing the global financial structure.

The high prices also began to adversely affect the economy, which in turn undermined the assumption of eternal growth reducing thereby the collateral for current debt. Prices reached a peak of almost $150 a barrel in mid-2008, but then fell back to 2005 levels as the market sold short on the futures market, the industry reduced its holdings in storage, and demand fell in a crumbling economy. As usual, different databases show widely different production numbers, but the EIA (an arm of the US Government) reports a peak of 86.8 Mb/d in July 2008 for all categories of oil liquids, including refinery gains, falling to 84.3 Mb/d by the end of the year.

It seems likely that this year will see a further marked decline in production. The flat-earth economists may cheer, being able to attribute it to falling demand from a collapsing world economy, as well as investment constraints. These factors, which are indeed contributory factors, will allow them to persist in denial of physical limits as imposed by Nature, which are anathema to their calling. They can cheer even louder in recognition that their principle of discounted cash flow, whereby the future is deemed in financial terms to be worth less the present, has been more than vindicated. But whatever other short term factors are involved, the peak ultimately reflects the underlying physical limits imposed by the immutable physics of the reservoirs and the falling discovery trend of the past forty years.

Accordingly, even if there are brief economic recoveries, raising production in the years ahead will be progressively more difficult.

It is well to remember that for every gallon used, one less remains, which is the underlying driver whatever the short term economic or political factors cause departures from the underlying trend. The implications are colossal posing the difficult question of how many people the Planet can support in the next Century without the help of cheap and easy oil-based energy, which to-day is equivalent in energy terms to some 22 billion slaves working around the clock. It looks indeed as if this is a *Turning Point for Mankind.*

Even so, there is much that could be done to ameliorate the consequences and lessen the tensions of the transition, and it is encouraging that the International Energy Agency, the OECD watchdog, is at last able to reveal what it has long known, and urge governments *to leave oil before it leaves us.* This can give national governments an umbrella for new, even draconian, policies, which might otherwise be difficult to adopt. Energy saving by improved efficiency should clearly have priority even if it runs counter to the past economy built on consumeristic waste. The least effective measure might be to fabricate yet more baseless currency as seems to be favoured by governments in their so-called bail-out programmes, which they hope will restore the outdated practices of the past."

"That the world's population has grown greatly over the past Century is a matter of historical fact. The explanation for the anomaly is open to debate: doctors might attribute it to advances in medicine; and economists might see it as a reflection of successful market forces. But the role of energy, especially that from oil and gas which simply flowed from the ground under their own pressure, must be significant. It has both fuelled the massive transport fleets that ply the world's roads, skies and oceans, and has had a critical impact on modern mechanised agriculture, providing food. While a debate rages as to the date of peak production as imposed by natural depletion, there can be little doubt that *Petroleum Man* will be virtually extinct by the end of this century. It is reasonable to expect that his departure will have an impact on the overall population.

According to the IEA, oil and gas accounts for more than half of the world's energy supply (see table). It is virtually inconceivable that the production of the alternatives can be increased to offset the depletion of oil and gas. Already much of the world lives a hand-to-mouth existence, so an overall

fall in population seems inevitable. The present financial crash probably marks the opening of the new order as the perception of the inevitable economic contraction which must characterise the Second Half of the Oil Age begins to permeate the system. The transition threatens to be a time of great tension as explained by William Stanton in his excellent book *The Rapid Growth of Human Populations 1750-2000* (ISBN 0-906522-21-8), but a new more benign and sustainable age may dawn for the survivors."

[From the ASPO Newsletter Feb and March 2009 (Permission to reproduce items from the Newsletter, subject to acknowledgement, is expressly granted)]

http://www.aspo-ireland.org/index.cfm/page/newsletter

Reducing the Carbon Footprint

Energy Myths and Realities **Keith O. Rattie Chairman, President and CEO Questar Corporation** ***Utah Valley University April 2, 2009***

I'm going to address my remarks today primarily to you students of this fine school. Thirty-three years ago I was sitting where you are today, trying to decide what to do with my career after graduating with my degree in Electrical Engineering. I made a decision to go to work for an oil company – Chevron - on what turns out to have been a false premise: I was convinced that by the time I reached the age I am today that America and the world would no longer be running on fossil fuels. Chevron was pouring lots of money into alternatives – and they had lots of money and the incentive to find alternatives - and I wanted to be part of the transition. Fast forward 33 years. Today, you students are being told that by the time you're *my age* the world will no longer be running on fossil fuels. I'm going to try to do something that seems impossible these days – and that's have an honest conversation about energy policy, global warming and what it means for America"s energy future – and for you, the generation that will have to live with the consequences of the policy choices we make. My goal is to inform

you with easily verifiable facts – not hyperbole and propaganda – and to appeal to your common sense.

There may be no greater challenge facing mankind today – and your generation in particular - than figuring out how we're going to meet the energy needs of a planet that may have 10 billion people living on it by the middle of this century. The magnitude of that challenge becomes even more daunting when you consider that of the 6.2 billion people on the planet today, nearly two billion people don't even have electricity -- never flipped a light switch. Now, when I started my career with Chevron in the mid-1970s the "consensus" at the time was that America and the world were running out of oil. Ironically, the media back then was also declaring a scientific consensus that the planet was cooling, fossil fuels were to blame, and we were all going to freeze to death unless we kicked our fossil fuel habit. We were told we needed to find alternatives to oil – fast. That task, we were told, was too important to leave to markets, so government needed to intervene with massive taxpayer subsidies for otherwise uneconomic forms of energy. That thinking led to the now infamous 1977 National Energy Plan, an experiment with central planning that failed miserably. Fast-forward to today, and: déjà vu. This time the fear is not so much that we"re running out of oil, but that we're running out of time – the earth is getting hotter, humans are to blame, and we're all doomed unless we find alternatives to oil, gas and coal -- fast. Once again we're being told that the job is too important to be left to markets.

Well, the doomsters of the 1970s turned out to be remarkably wrong. My bet is that today's doomsters will be proven wrong. Over the past 33 years mankind has consumed more than three times the world's known oil reserves in 1976 – and today proven oil reserves are nearly double what they were before we started. The story with natural gas is even better – here and around the world enormous amounts of natural gas have been found. More will be found. And of course, the 30-year cooling trend that prompted the *global cooling* scare in the mid-70s abruptly ended in the late 70s, replaced by with a 20-year warming trend that *peaked in 1998*. The lesson that we should've learned from the 1970s is that when it comes to deciding how much energy gets used, what types of energy get used, and where, how and

by whom energy gets used -- that job is too important *not* to be left to markets.

Now, I'd love to stand up here and debate the science of global warming. The mainstream media, of course long ago declared that debate over -- global warming is a planetary emergency, we've got to change the way we live *now*. I"ve followed this debate closely for over 15 years. I read everything I can get my hands on. I'm an engineer, so I try to bypass the media's penchant for alarmism – "World coming to an end – details at 11" - and go straight to the actual science. My research convinces me that claims of a scientific consensus mislead the public and policy makers - and often reflect another agenda. Yes, planet earth does appear to be warming – but by a not so unusual and not so alarming *one degree* over the past 100 years. Indeed, global average temperatures have increased by about one degree per century since the end of the so-called Little Ice Age 250 years ago. And, yes carbon dioxide concentration in the upper atmosphere has increased over the past 250 years from about 280 *parts per million* in 1750 to about 380 parts per million today – that's .00038. What that number tells you is that carbon dioxide – the gas that everyone in this room exhales every three seconds or so, the gas that plants need to grow - is a trace gas, comprising just four out of every 10,000 molecules in the atmosphere. But it's a very important trace gas – without CO2 in the atmosphere, the earth would be a lifeless ball covered with ice. And yes, most scientists believe that humans are responsible for much of that increase. But that's where the alleged consensus ends. Contrary to the righteous certitude we get from some, no one knows how much warming will occur in the future, nor how much of any warming that does occur will be due to man, and how much to nature. No one knows what the impact of warming will be, nor how easily people, plants and species will adapt to warming. When you hear someone claim they know, I suggest Mark Twain's advice: respect those who seek the truth, be wary of those who claim to have found it.

My views on this issue changed dramatically about a decade ago when I looked at the inputs to one of the global circulation models (GCM) that had been built to predict warming over the next century. If the only input were carbon dioxide, the output would be simple – doubling of the concentration of CO2 in the atmosphere would result in only about a 1 degree increase in

global average temperatures over the next 100 years. But the earth"s climate is what geek engineers refer to as a "non-linear, dynamic system". There are dozens of inputs, and as I studied the model further I concluded that many of the inputs into these models are little more than the opinion of the scientist – in some cases, just a guess. For example, water vapor is the most important greenhouse gas – far more potent than CO2. [As an aside, if CO2 is a "pollutant" as some assert, then water vapor is also a "pollutant" – an absurd conclusion. But I digress]. I discovered that scientists do not agree on how to model water vapor, clouds, precipitation and evaporation. Some argue that clouds amplify CO2 forcing, others believe precipitation acts as the earth's thermostat. The point is there's no consensus this fundamental issue. But the reality for American consumers is that whether you agree that the science is settled or not, the political science is settled. The new Congress has promised to "do something". Carbon dioxide regulation is coming. Indeed, President Obama's hope of shrinking the massive federal budget deficit depends on vast new carbon revenues from a tax on carbon energy – so called "cap and trade". Senate Majority Leader Harry Reid has promised a bill by May.

Under cap-and-trade, the government would try to create a market for carbon dioxide by selling credits to companies that emit carbon dioxide. They would set a cap for the maximum amount of CO2 emissions. Over time, the cap would be lowered. In theory, this will induce companies to invest in lower-carbon technologies, thus reducing emissions to avoid the cost of buying credits from other companies that have already met their emissions goals. The costs of the credits would be passed on to consumers. Because virtually everything we do and consume in modern life has a carbon footprint, the cost of just about everything will go up. This in theory will cause each of us to choose products that have a lower-carbon footprint. Any way you slice it, cap and trade a tax on the way we live our lives – one that by design will produce a windfall for government. Here's the crucial point. The long term goal is „80 by 50"– an 80% reduction in carbon dioxide emissions by 2050.

Please indulge me as we do the math on what „80 by 50" means, using Utah as an example. Utah's carbon footprint today is about 66 MM tons per year. Our population is 2.6 MM. You divide those two numbers, and the average

Utahan today has a carbon footprint of about 25 tons per year. An 80% reduction in Utah's carbon footprint by 2050 implies a reduction from 66 MM tons today to about 13 MM tons per year by 2050. If Utah's population continues to grow at 2% per year, by 2050 there will be about 6 MM people living in our state. So 13 MM tons divided by 6 MM people = 2.2 tons per person per year. Under 80 by 50 by the time you folks are about my age you will be required to have a carbon footprint of just 2.2 tons per year.

Q: when was the last time Utah's carbon footprint was as low as 2.2 tons per person?

A: not since Brigham Young and the Mormon pioneers first entered the Wasatch Valley and declared "this is the place". You reach a similar conclusion when you do the math on „80 by 50" for the entire country. „80 by 50" would require a reduction in America's carbon footprint from about 20 tons per person per year today, to less than 2 tons per person per year in 2050 – again, a 90% reduction in per capita carbon footprint.

Q: when was America's carbon footprint as low as 2 tons per person per year?

A: not since the Pilgrims arrived at Plymouth Rock in 1620.

In short, '80 by 50' means that by the time you folks are my age, you won't be allowed to use anything made with - or made possible by - fossil fuels.

So I want to focus you young people today on this critical question: "How on God's green earth – pun intended - are *you* going to do what my generation said we would do but didn't – and that's wean yourselves from fossil fuels in just four decades?" That's a conversation that each of you, and indeed, all Americans need to engage in now -- because when it comes to "how" there clearly is *no consensus*. Simply put, with today's energy technologies, we can't get there from here.

The hallmark of this dilemma is our inability to reconcile our prosperity and our way of life with our environmental ideals. We Americans love our cars. We like the freedom to "move about the country" – to drive to work, fly to

conferences, visit distant friends and family. We aspire to own the biggest house we can afford. We like to keep our homes and offices warm in the winter and cool in the summer. We like devices that use electricity – computers, flat screen TVs, cell phones, the Internet, and many other conveniences of modern life that come with a power cord. We want food that's low cost, high quality, and free of bugs – which means farmers must use fertilizers and pesticides made from fossil fuels. We like things made of plastic and clothes made with synthetic fibers – and all of these things depend on abundant, affordable, growing supplies of energy. And guess what? We share this planet with 5.9 billion other people *who all want the same damn things*.

America's energy use has been growing at about 1.5 % per year, driven by population growth and prosperity. But while our way of life depends on ever-increasing amounts of energy, we're downright schizophrenic when it comes to the things that energy companies must do to deliver the energy that makes modern life possible.

We want energy security – we don't like being dependent on foreign oil. But we also don't like drilling in the U.S. Millions of acres of prospective onshore public lands here in the Rockies plus the entire east and west coast of the U.S. are off-limits to drilling for a variety of reasons, some legitimate, some not. We hate paying $2 per gallon for gasoline -- but not as much as we hate the refineries that turn unusable crude oil into gasoline. We haven't allowed anyone to build a new refinery in the U.S. in over 30 years. We expect the lights to come on when we flip the switch, but we don't like coal, the source of 40% of our electricity – it's dirty and mining scars the earth. We also don't like nuclear power, the source of nearly 20% of our electricity -- it's clean, but we're afraid of it.

Hydropower, the source of about 6% of our electricity is clean and renewable. But it has also been blacklisted – dams hurt fish. We don't want pollution of any kind, in any amount, but we also don't want to be asked: "how much are we willing to pay for environmental perfection?" When it comes to global warming, *Time* magazine tells us to "be worried, be very worried" – and we say we are -- but we don't act that way. Let me suggest

that our conversation about how to reduce carbon dioxide emissions must begin with a few “inconvenient” realities.

Reality 1: America’s and the world’s demand for energy will grow by 30-50% over the next two decades – in fact it will more than double and could triple by the time you’re my age. Simply put, America and the rest of the world will need all the energy that markets can deliver. We’re going to need it all – oil, natural gas, coal, nuclear, wind, solar, geothermal, biofuels.

Reality 2: There are no near-term alternatives to oil, natural gas, and coal. Like it or not, the world runs on fossil fuels, and it will for decades to come. The U.S. government’s own forecast shows that fossil fuels will supply about 85% of total world energy demand in 2030 – roughly the same as today. Yes, someday we’ll find alternatives. But that day is still a long way off –

We don"t want pollution of any kind, in any amount, but we also don"t want to be asked: “how much are we willing to pay for environmental perfection?” When it comes to global warming, *Time* magazine tells us to “be worried, be very worried” – and we say we are -- but we don"t act that way. Let me suggest that our conversation about how to reduce carbon dioxide emissions must begin with a few “inconvenient” realities.

way off. It’s not about will. It’s not about who’s in the White House. It’s about thermodynamics and economics. Now, I was told back in the 1970s the same that you’re being told today: that wind and solar power are „alternatives" to fossil fuels. A more honest description would be „supplements". Taken together, wind and solar power today account for just one-sixth of 1% of America’s annual energy consumption today. Let me repeat that statistic – one-sixth of one percent -- .0016. I’m holding a pie chart showing total U.S. primary energy demand today. PowerPoint won"t even create a thin slice for wind and solar – it’s just a line. Back when I was starting my career Jimmy Carter declared that America would be out of oil

and gas by 1990, and declared alternative energy the "moral equivalent of war." Thirty years and $30 billion in government subsidies and all we get for all the wind farms and all the solar electricity plants in operation in this country today is a thin line on a pie chart. Undaunted by all of this, President Obama has proposed to *double* wind and solar power generation in this country by the end of his first term. I would first point out that the line on this pie chart will become a slightly thicker line by the end of his first term. I would also point out that wind and solar power doubled in just the last three years of the George W. Bush administration. I'll grant you that W. started from a smaller baseline, so doubling again over the next four years will be a taller order. But if President Obama's goal is achieved, wind and solar together will grow from one-sixth of one percent to a combined one-third of one percent of total primary energy use – and that assumes energy consumption remains stagnant, which of course it will not. The problems with wind and solar power become apparent when you look at their footprint. To generate electricity comparable to a 1,000 MW gas-fired power plant you'd have to build a wind farm with at least 500 very tall windmills occupying 40,000 acres of land. What about solar power?

Well, here's a photo of "America's most productive utility-scale solar electricity plant". It has a *capacity* 8.2 MW, and it's located on 82 acres of land in southwest Colorado. When you take into account the fact that the sun doesn't always shine, you would need roughly 250 of these plants, occupying roughly 20,000 acres to replace a single 1,000 MW gas-fired power plant. By comparison, a 1,000 MW gas-fired power plant can be built on about 10 -15 acres. [Another example, you'll find a photo of Sempra energy's El Dorado Solar near Las Vegas on their website. 10 MW – largest of its kind in North America – built next to a 500 MW gas-fired power plant. They plan to run the gas plant and "supplement" gas-power with solar when its available. This is the current state of the art].

The *Salt Lake Tribune* recently celebrated the planned startup of a 14 MW geothermal plant near Beaver, Utah. That's wonderful! But the Tribune failed to put 14 MW into perspective. Utah has over 7,000 MW of installed generating capacity, primarily coal. America has one million MW of installed capacity. Because U.S. demand for electricity has been growing at

about 2% per year – we need to build 10-20,000 MW of new capacity every year to keep

Because U.S. demand for electricity has been growing at about 2% per year – we need to build 10-20,000 MW of new capacity every year to keep pace with growth. There's a worldwide building boom in new coal-fired power plants – over 200,000 MW under construction, over 30,000 MW in China. In fact, there are 30 coal plants under construction in the U.S. today that when complete will burn about 70 million tons of coal per year. Why did my generation fail to develop wind and solar? Because our energy choices are ruthlessly ruled, not by political judgments, but by the immutable laws of thermodynamics. In engineer-speak, turning diffused sources of energy such as photons in sunlight or the kinetic energy in wind requires *massive* investment to concentrate that energy into a form that's usable on any meaningful scale. What's more, the wind doesn't always blow and the sun doesn"t always shine. Unless or until there's significant breakthrough in high-density electricity storage – a problem that has confounded scientists for more than a century – wind and solar can never be relied upon to provide base load power. But it"s not just thermodynamics. It's economics. Over the past 150 years America has invested trillions of dollars in our existing energy systems – offshore platforms, power plants, the grid, steam and gas turbines, railroads, pipelines, distribution infrastructure, refineries, service stations, boilers, airplanes, cars, trucks, appliances, etc. Changing that infrastructure to a system based on renewable energy will take decades and massive new investment. To be clear, we need all the wind and solar power *the markets can deliver at prices we can afford*. But please, let"s get real -- wind and solar are not "alternatives" to fossil fuels. [If time, explain why Bush"s hydrogen vision has gone nowhere].

Reality 3: Carbon cap and trade regulation will drive the cost of energy painfully higher. Obama's budget puts the cost at $650 MM over the next decade. Some believe that this estimate could be off by a factor of three – suggesting the true cost will approach $2 trillion over the next decade. As I mentioned, the businesses that are forced to buy credits will pass this cost on in the price of their goods – we'll all pay for it. Aside from the enormous cost, I hope you would ask: will cap and trade work? In my opinion the answer is no. It won't work until we have viable alternatives to fossil fuels

that can be delivered to markets at scale and at a cost that is politically and economically acceptable. The European Union implemented a cap and trade scheme in an effort to meet their Kyoto commitments to reduce carbon emissions to below 1990 levels by 2012. [Explain Kyoto if time]. There's a reason why they're failing: no country is willing to sacrifice their economy and their standard of living to do so. Europe's cap and trade scheme was designed to fail – and it's working as designed. Let me do the math to explain why Kyoto would have failed in the U.S. and why I think Obama's cap and trade scheme will also fail.

Americans were responsible for about 5 billion metric tons of CO2 emissions in 1990. By 2005 that amount had risen to about 5.8 billion tons. Let's suppose that the U.S. had signed the Kyoto treaty back in 1997 – incidentally, Bill Clinton was President and Al Gore was Vice President when the Senate voted 95-0 to reject Kyoto - the U.S. would've committed to cut manmade CO2 emissions to 7% below that 1990 level – to about 4.6 billion tons, a 1.2 billion ton per year cut.

Q: what would it take to cut CO2 emissions by 1.2 billion tons per year by 2012?

A: a lot more sacrifice than just riding your Schwinn to work or school, and changing light bulbs. We could've outlawed gasoline. In 2005 gasoline use in America generated about 1.1 B tons of CO2. That would almost get us there. Or, we could shut down over half of the coal-fired power plants in this country – coal plants generated about 2 B tons of CO2 in 2005. Of course, before we did that we'd have to get about 60 MM Americans and a significant number of American businesses to volunteer to go without electricity. This simple math is not friendly to those who demand that government to mandate sharp cuts in manmade carbon dioxide emissions -- now.

Reality 4: Even if America does cut CO2 emissions, the same computer models that predict manmade warming over the next century also predict that Kyoto-type CO2 cuts will have *no discernible effect* on global average temperatures for decades, if at all. The models show that Kyoto reductions

would prevent only a small fraction of one degree of warming over the next 50 years. When was the last time you read that in the paper? We've been told that Kyoto was "just a first step." Your generation may want to ask: "what's the second step?" That begs another question: "how much are Americans willing to pay for „a first step" that has no discernible effect on global climate?" The answer here in Utah is: not much, according to a public opinion poll conducted by Dan Jones and Associates published in the *Deseret News*. 63% of those surveyed said they're worried about global warming. But when asked how much they'd be willing to see their electricity bills go up to help cut carbon dioxide emissions, only half were willing to pay more for electricity. Only 18% were willing to see their power bill go up by 10% or more. Only three percent were willing to see their power bill go up by 20%. Here's the rub: many Europeans today pay at least 20% more for electricity as a consequence of their (failed) efforts to severe the link between modern life and CO2 emissions. If Americans aren"t willing to pay a lot more for their energy, how do we reduce CO2 emissions? Well, here are four things we can all agree on. First, we need to improve energy efficiency.

Second, we need to stop wasting energy.

Third, we need to conserve energy. Fourth, we need to rethink our irrational fear of nuclear power. Fifth, we need to embrace one of the key recommendations of the Intergovernmental Panel on Climate Change - substitute low-carbon natural gas for higher-carbon coal and oil. The good news: we can now do so without driving the price of natural gas to unacceptable high levels. Indeed, 2008 will be remembered in the energy industry as the year U.S. natural gas producers changed the game for U.S. energy policy. Smart people in my industry have „cracked the code" – we've figured out how to produce stunning amounts of natural gas from shale formations right here in the U.S. [Explain difference between shale gas and shale oil]. As a result, we can now say with confidence that America and the world are "swimming" in natural gas. U.S. onshore natural gas production has grown more than 20% over the past three years, a feat that most energy experts thought impossible a few years ago. America's known natural gas resource base now exceeds 100 years of supply at current U.S. consumption – and that number is sure to get bigger. Abundant supplies mean that natural

gas prices over the next decade and beyond will likely be much lower than over the past five years. While prices may spike from time to time in response to sudden, unexpected changes in supply or demand – for example, hurricanes in the Gulf of Mexico or extreme cold or hot weather – these spikes will be temporary. Greater use of natural gas produced in America - by American companies who pay American taxes - will help reduce oil imports. Unlike oil, 98% of America's natural gas supply comes from North America. What's more, we don't need massive new investment in gas-fired power plants to substitute gas for coal. I mentioned earlier that America has about one million MW of installed electric generation capacity. Forty percent of that capacity is built to run on natural gas – about 400,000 MW. That compares to just 312,000 MW of coal capacity. But unlike those coal plants, which run at an average load factor of about 75%, America's existing, installed natural gas-fired power plants operate with an average load factor of less than 25%. Turns out that we"ve got a quick and easy way to cut carbon emissions without driving the price of electricity through the roof – use clean burning, low-carbon, American-made natural gas in our existing, underutilized gas-fired power plants. Sixth, your generation needs to focus on new technology and not just assume it as many in my generation did back in the 70s – and as many in Congress continue to do today. Just one example: there's no such thing as "clean" coal. But given America and the world's dependence on coal for electric generation, we need to fund R&D aimed at capturing and storing carbon dioxide from fossil fuel plants. [Mention USTAR funding].

To be sure, carbon capture and sequestration will be hugely expensive and it'll take decades to implement *on any meaningful scale*. The high costs will be passed through in electricity rates to consumers. It's not just the capture part - we'll have to construct a massive pipeline grid comparable to our existing natural gas pipeline grid, and drill thousands of wells to transport and pump massive amounts of CO2 into the ground. The facilities required to do this will use huge amounts of energy – which most likely will come from fossil fuels, negating some of the carbon reduction benefits. We're not sure where we're going to put all this CO2. Questar is one of the largest owner-operators of underground natural gas storage. Gas storage is in high demand - we're always looking for places to build cost-effective storage.

But I can tell you that there aren't many places left that are economic to develop. That will be the case with CO2 sequestration as well. But the point is, R&D aimed at allowing us to continue to use fossil fuels while waiting for breakthroughs in other technologies seems a rational thing to do.

Seventh, it"s time to have an honest discussion about alternative responses to global warming than what will likely be a futile attempt to eliminate CO2 emissions related to fossil fuel use. In truth, while many scientists believe man"s use of fossil fuels is at least partly responsible for global warming, many also believe the amount of warming will be modest and the planet will easily adapt. Just about everyone agrees that a modest amount of warming won"t harm the planet. In fact, highly-respected scientists such as Harvard astrophysicist Willie Soon believe that added CO2 in the atmosphere may actually benefit mankind because more CO2 helps plants grow and increases biodiversity. When was the last time you read that in the paper?

You've no doubt heard the argument that even if global warming turns out not to be as bad as some are saying, we should still cut carbon emissions – as an insurance policy – the so-called precautionary principle. While appealing in its simplicity, there are three major problems with the precautionary principle. First, none of us live our lives according to the precautionary principle. Let me give you just one example. Around the world about 1.2 million people die each year in car accidents – about 3,200 deaths a day. At that pace, 120 million people will die this century in a car wreck somewhere in the world. We could save the lives of 120 million people by banning cars and trucks, or by imposing a 5 mile per hour speed limit worldwide. How many of you can live with a 5 MPH speed limit to save 120 million lives? Of course we don't – we accept trade-offs. We implicitly do a cost-benefit analysis and conclude that we're not going to do without our cars, even if doing so would save 120 million lives. Don't you think we should insist on an honest cost-benefit analysis for cap and trade regulation? Second, the media dwells on the potential harm from global warming, but ignores the fact that the costs borne to address it will also harm us. We have a finite amount of wealth in the world. We have a long list of problems – hunger, poverty, malaria, nuclear proliferation just to name a few. Your generation should ask: how can we do the most good with our limited resources? The opportunity cost of diverting a large part of current wealth to solve a

potential problem 50-100 years from now means we do "less good" dealing with these other problems.

Third, economists will tell you that the consequence of what is in effect a huge tax on the way we live our lives will be slower economic growth. Slower economic growth, compounded over several decades, means that we leave future generations with less wealth to deal with the consequences of global warming, whatever they may be. [Compare U.S. wealth in 1900 vs. today]. In truth, mankind has proven to be remarkably adaptive. Humans live north of the Arctic Circle where temperatures are below zero most of the year. Roughly one-third of mankind today lives in tropical climates where temperatures often exceed 100 degrees. In fact, you can take every one of the potential problems caused by global warming and identify lower-cost ways to deal with that problem than rationing energy use. For example, if in fact melting arctic ice causes the sea level to rise, a wealthier world will adapt over time by moving away from the beach or building retaining walls to protect beachfront property. What about the polar bear? Polar bears have survived sometimes dramatic climate changes over thousands of years, most recently the so called "medieval warm period" of 1000-1300 A.D. in which large parts of the arctic glaciers disappeared and Greenland was truly "green". It's an established fact that more polar bears die each year from gunshot wounds than from drowning. The first thing we need to do to protect polar bears is to stop shooting them.

Let me close by returning to the lessons my generation learned from the 1970s energy crisis. We learned that energy choices favored by politicians but not confirmed by markets are destined to fail. If history has taught us anything it's that we should let markets determine how much energy gets used, what types of energy get used, and where, how and by whom energy gets used. What's more, no form of energy is perfect, thus only markets can weigh the advantages and disadvantages of different energy forms. Instead, government's role is to set reasonable standards for environmental performance, and make sure markets work. I've tried to cover a lot of ground this afternoon. I hope my comments provoke at least some of you to become engaged in the discussion about America's energy future. Most of all I wish you freedom, prosperity – and abundant supplies of energy at prices you can afford. Thank you for your attention and now I'll be glad to take rebuttal!

Awards

Not much in the way of awards in April. MARAC is looking for a new Awards Chairperson. Janet, KC5QCB has resigned due to heavy work load. The new Awards Chairperson should be announced in the next Road Runner. No MARAC awards were issued in April 2009.

Second Time #387, Bob, N5KUC, March 27, 2009

USACA #1183, Fred, K0FG, April 6, 2009

Events for County Hunters

May 2-3

MARAC CW and SSB Contests

May 2, 0000Z - May 3, 2400Z - Details last month, or go to http://aa8r.net/ for the full details. Two separate contests running at the same time. You need to download the abbreviations page. Signal report followed by two letter state followed by 4 letter county abbreviation.

Indiana QSO Party

1600 UTC Saturday May 2, 2009 to 0400 UTC Sunday May 3, 2009
(Saturday noon to midnight EDT or 11 AM to 11 PM CDT)

Send RS(T) and your state/province/DX. IN stations send RS9T) and 3 letter county abbreviation.

http://www.hdxcc.org/inqp/

New England QSO Party

2000Z Saturday until 0500Z Sunday (4pm EDT Saturday until 1am EDT Sunday)
1300Z Sunday until 2400Z Sunday (9am EDT Sunday until 8pm EDT Sunday)

Send signal report and state/province (DX stations send signal report and "DX"). New England stations send signal report, county and state.

http://www.neqp.org/

7th Call Area QSO Party

1300 UTC Saturday to 0700 UTC Sunday (6 AM to midnight PDT the first Saturday in May).

7th area stations send signal report plus 5-letter state/county code (e.g. ORDES; see list). County-line stations send multiple codes (state code needed only once, e.g. ORDES/JEF). Non-7th-area stations send

signal report plus state/province/"DX" two-letter codes. Stations in other QSO parties send their appropriate exchange. "Provinces" are VE1-9, VO and VY0-2. County-line contacts may be logged with one entry showing all counties or with one QSO entry for each county.

http://www.codxc.com/new/Page.asp?Content=DRYLAND7S&Page=1

10-10 CW & Digital Test (Wishful thinking? Or E—Skip season?)

May 2, 0001Z - May 3, 2359Z Send RS(T), 10-10 number if you have one, and state/province/country

May 9- 10

Nevada QSO Party

May 9th 1700Z – to May 10 1700Z

RS(T) and S/P/C or NV county nv.arrl.org/NQP

CW--15 9, 1700Z 9, 1700Z kHz and SSB 25 kHz above General band edge.

May 15-17 Dayton Hamvention

County Hunter Forum – Friday 4pm – W8JJ Coordinator

County Hunter Dinner - Golden Corral – 5:30-7pm

May 30-31

CQ CW WPX Contest – good chance to work counties/prefixes

RST and serial www.cqwpx.com
May 30, 0000Z - May 31, 2400Z

That's it for this months County Hunter News. Keep the pictures, articles, links and other good stuff headed this way. 73 de N4CD