Northern Colorado Amateur Radio Club
P.O. Box 272956
Fort Collins, CO 80527-2956

The Tribander

The monthly Newsletter of the Northern Colorado Amateur Radio Club

Club Meetings are held on the 3rd Saturday of each month.

Firehouse Restaurant
1163 Main Street
Windsor, CO 80550

All are welcome and encouraged to attend.

NCARC Club Information

Club Officers

President	**Dan Magro**	**W7RF**	**(970)295-4200**	w7rf@radiodan.com
Vice President	**Tom Jungmeyer**	**K1TJ**	**(970)484-8329**	tom@completetowing.com
Secretary	**Dave Langenberg**	**KC9FOO**	**(773)612-8435**	dave@thelangenbergs.com
Treasurer Membership Chair	**Willis Whatley**	**WA5VRL**	**(970)407-6599**	whatley@frii.com
Interference Coordinator	**Larry Arave**	**W7LRY**	**(970)206-1281**	larv@outdrs.net
Newsletter	**Chris Howard**	**W0EP**	**(970)493-2309**	chris@yipyap.com
Technical Chair	**Eric Slutz**	**N0EAS**	**(970)282-3752**	eric@redginger.com
Hamfest Chair	**Matt Kassawara**	**KG0W**	**(970)433-2123**	battery@writeme.com

NCARC Repeaters

W0UPS: 145.115 MHz – (144.515 MHz Input) 100 Hz CTCSS Subtone (1* on, 0* off) Autopatch **Echolink Node 4236** (40-32.926N, 105-11.898W, 7229 ft) Horsetooth Mountain, west of Fort Collins, CO
W0UPS: 447.275 MHz – (442.275 MHz input) 100 Hz CTCSS Subtone Autopatch (40-32.926N, 105-11.898W, 7229 ft) Horsetooth Mountain, west of Fort Collins, CO
W0UPS: 224.520 MHz – (222.920 MHz input) 100 Hz CTCSS Subtone (40-32.926N, 105-11.898W, 7229 ft) Horsetooth Mountain, west of Fort Collins, CO
W0UPS: 146.625 MHz – (146.025 MHz Input) 100 Hz CTCSS Subtone (40-50.266N, 105-3.017W, 5600 ft) SW of the Rawhide Power Plant, 17.5 miles north of Fort Collins, CO
W0UPS: 146.850 MHz – (146.250 MHz Input) 100 Hz CTCSS Subtone (1* on, 0* off) (40-18.310N, 104-35.884 W, about 4985 ft) SE of Greeley, CO **New location**
W0UPS-5: 144.390 MHz – APRS Digital Repeater (40-32.926N, 105-11.898W, about 7229 ft) Horsetooth Mountain, west of Fort Collins, CO
W0UPS: 448.025 MHz – (443.025 MHz Input) 100 Hz CTCSS Subtone **ARES Rptr** (40-26.650N, 104-59.370W, about 5192 ft) Budweiser Event Center on I-25 at MM259

Nets

ARES District 10 Information Net	**Thursday**	**7:00 pm**	**145.115 MHz**
ARES Statewide Net	**Sunday**	**8:30 pm**	**145.310 MHz**
Central Colorado Traffic Net	**Daily**	**7:30 pm**	**145.310 MHz**
220 MHz Informal Net	**Monday**	**7:00 pm**	**224.520 MHz**
Tech Net	**Wednesday**	**7:00 pm**	**145.115 MHz**

Web Page

http://www.ncarc.net

Notice: NCARC Name Badges are available for only $10 each.

Just send your name; as you want it on your badge to **W5WIW** Willie Williams, 434 Magnolia Ct, Eaton, CO 80615, W.I.Williams@msn.com. It can be your full name, your first name, or your nickname and your call sign. Mail your payment for the Name Badge(s) to the NCARC P.O. Box (or bring it to the club meeting) and allow 3 to 4 weeks for processing. To view a sample of the name badges, just come to the club meeting. Willie also has shirts, patches, mugs, caps, jackets and other NCARC goodies available.

Upcoming Events

November 7: TechConnect Radio Club **2009 Fall TechFest** Morrison, CO see flyer at www.na0tc.org
January 16 Northern Colorado ARC Winter Hamfest (Fort Collins, CO)
February 7 Aurora Repeater Association Swapfest (Brighton, CO)
May 28-30 2010 Rocky Mountain Division Convention (Casper, WY)

NCARC Meeting Minutes

October 17, 2009
Location: FireSide Restaurant, Windsor

There were 25 members present.

Called to order by Dan Magro at 9:03 AM

Nominations For Officers -- Election will be at November Meeting:
President: Matt Kassawara
Vice President: Willis Whatley
Secretary: Jerry Williams
Treasurer: Paul Rulon KD0BER
Tech Committee CHair: Eric Slutz
Newsletter Officer:
Control Operator: Tom Jungmeyer
Interferrence Officer: Chris KD0EGE
Ham Fest Officer: Mike Bates

REPORTS:

Treasurer: Checking account balance is $5564.76 Savings balance as of 9/24/09 $2158.91. We have 110 members on roster with a few overdue.

Tech Committee: Not a whole lot of news. Repeaters are up, we're now working on programming 7330. Steve Henry has the second 7330 in his posession. Matt recently worked on the 220 repeater. THere are a couple of problems up on the hill with the 220. First is desense from the "oodles of RF up there". Noise floor is also high up on the hill. There's also a "hum" sound which is in the receiver. Receiver VCO is not likely the problem, but rather a nearby fan could be riding the electric line and getting into the receiver.

Ham Fest: not a whole lot of updates. The location is back at the Lincoln Center. VE Testing is across the street at The Group realty center.

CHRISTMAS PARTY:

Dan floated the idea of having an "up scale" Christmas Party/Dinner. An informal poll was taken at a price of $60/couple. At the 30-50/couple limits there was some interest. The board will talk about it further.

Meeting Adjourned at 10:12 AM

Editor's Notes

As many of you know, this editor has changed QTH. After 13 years in Colorado, encompassing a resurgent interest in ham radio starting in 1999, the Howard household has relocated to Columbus, MS. Just last weekend I was able to erect a G5RV antenna and have made a few CW contacts. I am hoping to be on the air for the ARRL November Sweepstakes (CW) this coming weekend, Nov 7,8. Maybe I'll catch you on the air.

The "moving experience" is not all it is cracked up to be, let me assure you. The biggest problem is finding the right box with the right tool or piece of equipment that I need at the moment. I think I could have done things smarter by putting all of one QRP station into a single box. But the piles of stuff got translated into boxes of stuff, and to find the right thing is no longer a matter of searching pile A, but finding a box in a big bunch of boxes that contains the remains of pile A. Not that I'm complaining! At least it appears that everything is here safely… somewhere.

Club exhortations: I see we have a good list of nominated officers for 2010. Let me promote that one missing slot, Newsletter Editor. It is not a difficult job. Believe me, I can do it from 1300 miles away, so you can do it from on the scene like falling off a log. My advice to a new editor would be to subscribe to the ARRL email newsletters and keep an eye on qrz.com where you'll find Amateur Radio Newsline, Amsat News and other online resources. Trolling through that stuff yields lots of interesting material. Add in a few pictures from our club events and you are in business.

One regret from my newsletter work has been my inability to keep up with the interview segment. I enjoyed doing that. But it takes planning and forethought to schedule a few minutes with someone to get their picture and responses to a handful of questions. I enjoyed the few that I did, but wish I had done more. Hams generally are interested in what other Hams are doing.

Speaking of trolling through newsletters and such… here's a selection of amateur radio news from the past few weeks:

Amateur Radio Newsline™ Report 1680 - October 23 2009 -- In its October 20th public notice, the FCC begins by reiterating that transmissions by amateur stations participating in government disaster drills must comply with all applicable Amateur Service rules. It agrees that the value of the amateur service to the public is that of a voluntary noncommercial communications service, particularly with respect to providing emergency communications is one of the underlying principles of the amateur service. At the same time the agency is adamant that the Amateur Service is not an emergency radio service unto itself.

Rather, says the regulatory agency, ham radio is a voluntary, non-commercial communication service. It is authorized for the purpose of self-training, intercommunication and technical investigations. This, as carried out by licensed persons interested in radio technique solely with a personal aim and without pecuniary interest. In other words, nobody involved in the use of ham radio on the air can directly or indirectly profit from it.

The FCC then goes on to say that state and local government public safety agencies occasionally conduct emergency preparedness or disaster drills that include amateur operations. Some entities, such as hospitals, emergency operations centers, and police, fire, and emergency medical service stations, have expressed interest in having their employees who are amateur station operators participate in these drills by transmitting messages on the entity's behalf. The Commission's Rules, however, specifically prohibit amateur stations from transmitting communications in which the station licensee or control operator has a pecuniary interest, including communications on behalf of an employer.

But here is where that olive branch of sorts comes in. The FCC release goes on to say that given the public interest in facilitating government-sponsored emergency preparedness and disaster drills, that the FCC will take this opportunity to provide a clear process for requesting a waiver, and provide the information that it required in order for it to consider granting such a request. And this is what the FCC says has to be done.

First, you the ham radio operator cannot request the waiver. Only the government agency or entity that you work for can do that. In other words, waiver requests should be submitted to the Wireless Telecommunications Bureau by the government entity conducting the drill, and must provide the following information:

First, when and where the drill will take place. Second, the identification of the amateur licensees expected to transmit amateur communications on behalf of their employers. Third is the identification of the employers on whose behalf the hams will be transmitting and lastly, a brief description of the drill.

The FCC emphasizes that the filing of a waiver request does not excuse compliance with the rules while that request is pending. Rather that the waiver must be requested prior to the drill, and employees may not transmit amateur communications on their employer's behalf unless the waiver request has been granted.

AMSAT News Service Bulletin 294.01 -- October 21, 2009 -- AMSAT's OSCAR Number Coordinator Bill Tynan, W3XO announced he has received an e-mail sent to the AMSAT-NA Board of Directors by Hans van de Groenendaal, ZS6AKV, Secretary SA AMSAT requesting that an OSCAR number be allocated to umbandilaSat.

In the e-mail Hans states that the amateur radio transponder on SumbandilaSat was successfully switched on from the ground by ZS6BPZ during the test phase on Sunday 18 October 2009 and that several QSOs were made through the transponder.

The amateur radio payload on SumbandilaSat was developed by SA AMSAT and incorporated by the University of Stellenbosch into the main payload. The SA AMSAT payload was officially coordinated through the IARU Satellite Frequency Coordination Panel with an uplink of 145.880 and downlink of 435.350 MHz

ARRL Letter -- October 29 --

The Doctor Is IN: Antennas for Domestic Contests

By ARRL News Editor S. Khrystyne Keane, K1SFA

Just the other day, the Doctor and I got to talking about ARRL Sweepstakes. I showed him my crystal mug and whisk broom from last year's Sweepstakes running (the W1AW team did quite well), and he showed me what kind of antennas I should look into for domestic contests. Being more of a DX RTTY contester, I really don't know much about the domestic side of things. I dabbled in the February NAQP RTTY Contest last year from K1TTT -- and will do so again in 2010 -- so I made sure to listen attentively. Here is what the good Doctor had to say:

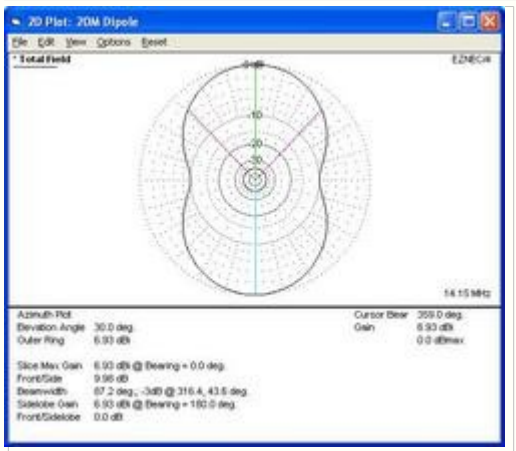

Figure 1: Azimuth pattern of a half-wave dipole at a height of half a wavelength has a -3 dB beamwidth of of 87 degrees on each side -- a close match to the coverage needed by W1ZR to reach US and Canadian stations.

Each contest brings its own special requirements to the antenna designer. While many popular contests focus on communications outside North America and require the ability to send signals to all points of the compass, Sweepstakes is different, with a need to cover just the US and Canada. That means generally shorter range contacts and contacts in a limited range of directions, depending on station location.

In addition, points are gathered based on individual contacts multiplied by ARRL Sections. Thus, it is desirable to have the capability to reach all 80 sections on at least one band that will have propagation available. ARRL Contest Manager Sean Kutzko, KX9X, notes that many a contest superstation's secret weapon for Sweepstakes is a 40 meter dipole up between 25-30 feet. He says 40 meters is the Sweepstakes "money band" -- you can get close-in contacts during daylight and rake in the distant Sections when the band goes long in the evening hours. He said he had never put in a serious effort at Sweepstakes without a low dipole for 40, no matter how much aluminum he had up in the air.

Figure 2: By adding a 5 percent longer than the dipole and 6 feet behind it, I reduce -- but don't eliminate -- rearward radiation and provide some gain to the front where distances are longer. (for bigger picture see ARRL website

Another great solution is a multiband Yagi that can be pointed towards the areas with the best propagation. If possible, have it relatively low -- perhaps at a half-wave length above ground -- to be able to cover the close-in stations, as well as those at the continent's far edge. Obviously, from the Central US or Canada, distances tend to be shorter than they are from the coasts with stations near the edges better able to make use of higher antennas. If you have the ability to try different heights, by all means try lowering your antenna from the optimum height for transcontinental contacts and see what works best for you.

If you're like me and don't have rotatable HF arrays available, all is not lost. First you need to figure out what azimuths you need to cover and then try to match those to fit your location. From my Connecticut location, I would want to cover from the direction toward old friend Don, WT1I, in Ocala, Florida (bearing 214°) up to Mark, KL7TQ, my old Army buddy in Eagle River, Alaska (322°).

There are many ways to compute the bearing to a station. The easy way

out is to just use **www.qrz.com**. If your listing includes your latitude and longitude, bringing up another station and "looking at the details" will provide you with the bearing to their station. If you don't know anyone at the edges of the desired coverage area, just put a city name in the "Name Search" function and pick one that comes up. It doesn't get much easier -- or, if you must, you can use spherical trigonometry.

Using my station as an example, the range of bearings I want to cover requires a beamwidth of 322° minus 214°, or 108°. A half-wave dipole at a height of half a wave length has a -3 dB beamwidth of 87° (see Figure 1). At a width of 108° it's only down to -4.6 dB from the peak. That's pretty close, and might be good if I had a lot of distant stations behind me, as in Central US or Canada, but I don't.

If I were to put a wire reflector, 5 percent longer than the original dipole, 6 feet behind it (for 20 meters), I would have an easy to deploy 2-element Yagi with the pattern shown in Figure 2. To make it resonate in mid band, I need to trim about 4 inches from each end of the now driven element and I'm good to go. Note what I have -- a bit more gain in front, a lot less in the back, but still plenty of signal toward northern New England. My signal at the edges of my coverage area is now stronger than the dipole's -3 dB points.

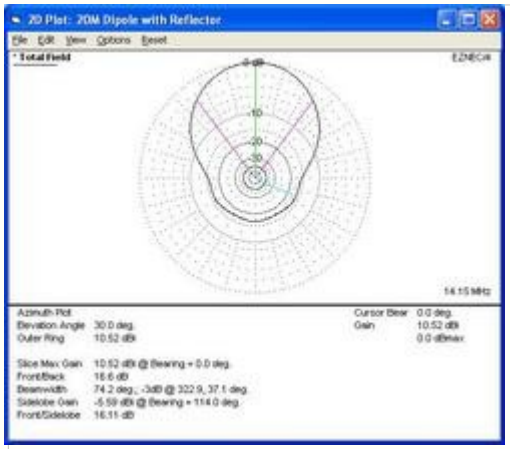

Figure 3: If I have no need for coverage to the rear, I can optimize the reflector length to achieve more gain by focusing almost all of my signal to the front. (for bigger picture see ARRL website.)

If I don't have many stations to my rear, an additional 1 dB of forward gain can be achieved at the expense of rearward signals (see Figure 3) and a higher SWR by shortening the reflector a few inches -- about 2.5 percent over the driven element should do the trick. This may be worthwhile if you are right at a corner of the country. For more bands, just use parallel elements and multiple reflectors. See the article by Marcus Hansen, VE7CA, to get the idea. Azimuth plots represented in Figures 1, 2 and 3 represent the output from the EZNEC antenna modeling software by Roy Lewallen, W7EL.

Thanks Doctor! Do you have a question or a problem? Send your questions via e-mail or to "The Doctor," ARRL, 225 Main St, Newington, CT 06111 (no phone calls, please). Look for "The Doctor Is IN" every month in QST, the official journal of the ARRL.

ARRL Propagation Forecast Bulletin 44 ARLP044 – October 30, 2009 --
From Steve Nichols, G0KYA
Wymondham, England October 30, 2009

The propagation bulletin this week is written by Steve Nichols, G0KYA, of the RSGB's Propagation Studies Committee in the English county of Norfolk. K7RA is out of town and will return next week for the November 6 Propagation Forecast Bulletin ARLP045.

Well, what a week it has been. The solar flux hit 82.3 on Tuesday, the highest recording yet since the first observed "new cycle sunspot" in January 2008, which was the "official" visual start of Sunspot Cycle 24.

Even as I write this, the flux is still at 80, thanks to sunspot region 1029, so let's hope that it is a sign of better things to come.

The region (1029) produced several B-class solar flare events and a single C2.2 class flare on the 28th, but luckily CQ World Wide SSB was unaffected for the most part.

NASA's STEREO "behind" spacecraft is not showing any new spots coming around the solar rim, but we live in hope. I was lucky enough to record a Podcast with Carl Luetzelschwab, K9LA at the RSGB's Convention in the UK where he talked about Solar Cycle 24 and the possible effect of galactic cosmic rays on Top Band propagation. You can hear the Podcast at, http://www.gokya.blogspot.com/ .

In the UK a combination of sporadic-E and F2 layer propagation made10 meters a "must have" band for contesters last week-end. The 28 MHz band was full of European stations and I personally worked more than 25 countries in two hours of casual operation. Longer DX included 4X (Israel) and ZS9 (South Africa) with signal strengths peaking at 59 with very simple antennas. I can't remember the last time 10 meters was so active, although it was interesting to note that on Monday the band was completely clear. It just shows that you should call CQ once in a while.

Northern Colorado

Amateur Radio Club
Information/Application Form

____ I would like more information on Amateur Radio.

____ I want to join the NCARC. My payment is enclosed.

____ I want to renew my membership. My payment is enclosed.

Annual Dues:
Family Membership: $25.00
Full Time Students: $5.00

BEFORE FILLING THIS OUT, READ THIS MESSAGE ----------
↓

Name: _____

Callsign: _____

Street: _____

City: _____

State: _____

Zip: _____

Telephone: _____

License Class: _____

E-mail Address: _____

You only need to fill in your name or callsign and anything that has changed. Any items left blank will be assumed to be correct in the NCARC database.

If you would like to receive the newsletter by E-mail, please indicate so here. ←

Receive Newsletter by E-mail? YES NO

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