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 Hamfests

August 14-15 Duke City Hamfest (Albuquerque, NM)
August 16 Denver Radio Club Hamfest (Golden, CO)
August 28-30 Mountain ARC CampFest 2009 (Lake George, CO)
September 5 Alamogordo Hamfest (Alamogordo, NM)
September 27 Boulder ARC BARCFest (Longmont, CO)
October 3 Pecos Valley ARC Swapfest (Roswell, NM)

Ham Radio for Travelers

With August being the prime vacation month I thought it would be appropriate to review some of the ways of taking Amateur Radio on the road. (I will tackle the question of **why** you would want to take ham radio on your vacation another time. For now let us consider it a moot point!)

FM -VHF/UHF

Probably the easiest way to engage in radio activities on a trip is to take along an FM mobile or handheld radio. You will also want to either take along a list of potential repeaters or have that information already programmed into the memories of your radio. One popular repeater list is the ARRL Repeater Directory. Similar information is available on the internet. Here in Colorado you can get a very nice heavy-paper map of the state and list of current repeater assignments at the Denver HRO or from the Colorado Council of Amateur Radio Clubs website at http://www.ccarc.net. Don't forget to take along your battery charger!

I frequently have trouble trying to get someone to talk to me on "foreign" repeaters while traveling. I guess people just like to talk to their friends or something. I would think that if they went to the trouble to build a repeater and list it in the directory they would be open to the idea that maybe someone will eventually appear on the thing. But who knows. Short of calling "mayday!", which I don't recommend or even suggest, you might listen for when the repeater is active, or put out your call with a bit of explanation "w0ep from Colorado on vacation, monitoring, looking for conversation". Maybe you'll be able to roust out one of the locals to tell you where the best pizza can be had. (Incidentally, ready conversation is one of the **very best** features of the NCARC repeaters. I commend you guys for getting on and meeting new people as they pass through the area. Keep up the good work!)

AM/SSB/digital/CW – VHF/UHF

I have a nice, 4 element wideband 2 meter beam from Arrow Antenna in Cheyenne, WY (http://www.arrowantennas.com) which breaks down to a very small package. It would be useful for any mode on the 2 meter band. They have similar antennas for other bands also. With an antenna like that and a radio capable of all-mode operation, a person could easily do VHF/UHF sideband or digital work while on a trip. It would be handy to have an extendable paintpole or other lightweight mast to get the antenna up as high as possible. But if you were working from a hotel balcony you wouldn't even need that.

Check the schedule in advance for VHF/UHF nets, contests or other operating events. You just might stumble on a band opening. But for me I want more certainty, particularly if I haul the equipment some distance in my luggage. Also, be ready with the necessary information. Do you know your grid square?

I don't know of any handheld all-mode radios so sideband/digital will probably put you into the realm of a mobile-sized rig. You'll need more space in the luggage and probably a larger battery or a way to tap into house power. But with a break-down antenna I think you still are in the neighborhood of a briefcase or small duffle to make this happen.

And here is where I stumble on the distinction between a radio-active traveler and a mobile radio. Operation from a moving vehicle imposes a different set of criteria than working from a park bench or hotel room. Mobile radios usually operate from a vehicle's DC power system. You will want to investigate whether your vehicle has space within reaching distance for a radio installation, or whether you need to employ a rig with a detachable faceplate. Mobile antennas require a stouter construction seeing as how you will be afflicting them with 75 or 80 mph winds while you cruise the highway. There are also height limitations to easily drive down the road and/or get through the fast-food drive-through lane. For FM there are many kinds of vertical whips available. For SSB it would be better to have something with horizontal polarization like a halo or a diamond.

HF – Receiving

For traveling HF operation the first option we should mention is shortwave listening. Portable shortwave is a longstanding hobby and there are many appropriate radios to consider. For a long time Sony made a receiver that was targeted toward business travelers and it came with an active antenna system and other accessories. But a lot of shortwave equipment, particularly the smaller stuff, is not very good. Many don't have a BFO so they won't receive CW or SSB at all. And the analog dials have to cover so much frequency range that you would have to have a steady hand to find the morning AM group on 3875 kHz. Having said that, there are some acceptable shortwave radios that could do the job. A modern computer-controlled receiver like the Ten-Tec RX-320 might be a good thing to check out.

Options include an active antenna, possibly an antenna tuner or counterpoise to improve reception.

There is quite a bit of information on the internet for SWLs: radio reviews at www.eham.net and www.dxing.com are useful; station schedules at www.earthsignals.com or www.primetime**shortwave**.com come in handy if you want to take a break from copying 40 meter CW. The book Passport to Worldband Radio is a good printed reference and is available at www.passband.com or maybe at your local bookstore. I have some older copies of PWB here if someone wants to check one out.

HF – QRP

QRP is a whole thing unto itself in the ham world. For the lightest, simplest HF station you can't beat a CW-only QRP radio. Backpacking rigs like the Elecraft KX-1 (www.elecraft.com) or the Hendricks PFR-3 (www.qrpkits.com/pfr3.html) are built specifically for backpacking and hiking where you want the most bang per ounce. They even have integrated CW paddles. You can lie in your sleeping bag and work the world on HF-CW. It's not easy doing that with a couple of watts and a low antenna but it can be done.

There are a lot of other radios that are a step up in size from the backpacking rigs, for example the Elecraft K1. Many kits are available to fill this bill also. Small one or two band CW radios are usually the place where radio-builders and radio-designers get started. So if you are thinking about setting up a soldering station and building your own equipment you will be killing two birds with one stone: homebrew and transportability. If you want a list of kit-builder websites let me know. There are too many to list here. One good resource I will mention is the qrp-l.com mailing list.

If you are not a CW fan, then things get a little bit more complicated. For homebrew, a small double sideband radio isn't that much more complicated than a CW rig. For kit-built there are a few options (see the Elecraft K2 for one). Many folks in this situation go with the Yaesu FT-817 or the Icom IC-703. I think of the two the 817 is probably the more popular. Either one will give you a whole lot of radio in a very small package. I haven't used either one, so I have no opinion on either. I believe the 817 has internal batteries but the 703 has a built in antenna tuner. If you buy either one and hate it you can give it to me. My birthday is coming up anyway.

Probably the bigger issue with man-transportable HF is the antenna. For a single band situation you can cut a dipole from some lampcord. With some twine or string you tie both ends to handy trees, get the center up as high as you can, and you are in business. For a multiband operation you will need more than that. The PFR-3 backpacking radio has a built in antenna tuner. You run your zipcord right into the back of the radio. The part of the dual-wire from the dipole (really a “doublet”) center feedpoint down to your radio acts like a twinlead feedline. The tuner will tune that up for whatever band you are operating on. I believe there are some commercial antenna tuners for the FT-817 that work similarly. For situations where a dipole won't do the job there are various transportable antennas that can be used. Some I've heard of are the Buddipole (http://www.buddipole.com/) and variations on coil-loaded verticals, both commercial and homebrew.

HF – Person Portable

That leads us to the next subject. There are some hams who are interested in manpackable HF radio. But instead of setting up the dipole and operating from the picnic table these guys want to have the radio on their back and the microphone in their hand and walk around as if they were using a VHF/UHF handheld on the local repeater. Check out the website hfpack.com/ for examples.

As you might suspect, the antenna and the power source can be interesting issues when doing portable HF like this. I think they usually end up with some kind of coil-loaded whip sticking out of their backpack. But, frankly this particular variant of HF operation

has never appealed to me much so I will let someone else step up and explain it if they like (newsletter articles always welcome!). OJ sent me a link to a YouTube video online wherein a ham at the 2009 Dayton Hamvention last spring was toting around a kilowatt HF station on a backpack frame. So friends, it can be done. Be wary of the RF exposure if the loading coil is right behind your head. Otherwise, go for it. The video is at http://www.youtube.com/watch?v=Nxp_Nsa54_Q&feature=channel_page .

HF – Mobile

Back in about 1975 my father (wb0eqt) had a regular Heathkit HF transmitter (tubes of course) mounted on the floor in his 1969 Ford Mustang. He used a Hamstick (www.hamstick.com/) type antenna mounted on the rear deck and spoke to many people on 20 meters while commuting to his job.

A similar setup is even easier today. There are many, many mobile-sized HF radios on the market. A popular one that comes right to mind is the Icom IC-706. I think the most popular antenna you see in such installations is the "screwdriver": a long vertical coil with a whip extending from the top. A control can be used to electrically lengthen or shorten the coil to reach a resonant condition. The coil itself doesn't change shape, a contact of some sort goes up and down the coil to change it's electrical length. The first antennas of this type used the motor from an electric screwdriver to move the contact (sometimes by rotating the whole coil). So that is why they are called "screwdriver" antennas. Some of the sophisticated installations will use compatible radios and antennas so that the antenna tuner button of the radio will activate the tunable antenna and get things all set up for you to transmit... just like being at the home shack.

Don't neglect the power requirements. Some folks run an auxiliary battery setup to avoid talking down their vehicle's battery when they are operating from a parking lot. You might find help in this department from the local store that installs big, loud, boomer stereos for the crowd who like to shake their windows at each stoplight.

HF – Stationary

And for the stationary HF station we are nearly back to a home shack. Our club's recent Field Day setup was a good example. We had an RV as our basecamp with temporary supports holding up dipoles. We also had a lightweight yagi on a mast complete with rotator. A crank-up tower on a trailer is not out of the question for this type of situation, or a loop of copper piping around the roof of the RV. Dipoles do require a support of some sort on the far ends. They may take up too much space for your neighbors at the KOA campground. Maybe it would be good to have some kind of compact antenna for those situations where a full stretch dipole or 40ft crank-up won't fit into the neighborhood and a more expansive setup for when the elbow room is available.

Somewhere along in here I should also mention HF and VHF/UHF digital modes. The classic VHF/UHF digital application is APRS. Your radio, in concert with a GPS, can send out position reports to inform the world of where you are. Directed text messages and other types of information can also be sent over this type of system. As for HF, many traveler's use Winlink, an HF message forwarding system that interfaces into internet email. It is a popular tool for people that live in a boat or recreational vehicle. See the website www.winlink.org/.

HF – DXpedition

One thing I've never had the opportunity to try is a DX expedition. Some people take a boat-load (literally!) of equipment and people to some far off island and operate. But there are also places where you can rent a fixed radio station just like renting a hotel room or condo. The website www.dxholiday.com is one place to find information about this kind of Amateur Radio Vacation. I expect for the right price you could do this just about anywhere. You'll have to work out the licensing issues and get yourself a passport and a plane ticket.

Check out this guy who has a rentable ham shack in Buena Vista, Colorado: www.lostcreekcabin.com/.

I leave it as an exercise for the reader to convince any spouse or family members that flying to an exotic location to spend a week on the radio is a good thing. It sounds like fun to me. Maybe the kiddies and Mom can take in the local outlet malls while I pull in some DX contacts.

VHF/UHF/HF – No Radio

Finally, I'd like to cover the case where you don't have a radio at all. Almost any reputable hotel these days has internet access and with internet access you have the potential for voice-over-IP communications. You can make contacts with other hams using the internet only (echolink, skype), or by employing a radio link at one end or the other of the connection (echolink, irlp). Our own Matt Sybrant, kb0jwr, has built a portable echolink station. He travels a lot for his employer. While working at a remote site he can set up the echolink station at his hotel or some other place. He then can take his handheld VHF/UHF radio and walk around the premises and speak to other echolink users.

But the aspect I find intriguing is remote operation of a fixed radio station using the internet to transport both the signal information and the station control information. We had a very nice presentation at the 2009 HamCon convention in Estes Park about just this subject. Didn't I hear that the Boulder Amateur Radio Club has a station that their membership can use over the internet? I think it would be great to have that kind of capability for our club too.

Ok, that's about all that I know about Amateur Radio for Travelers. If you have a personal story about operating on the road, while backpacking, from a hotel room, or at a DX station, please put together either a presentation or a short newsletter article. I for one would love to hear about it.

Ham Shack For Sale

Ham shack for sale in Fort Collins, Colorado. It's in a nice neighborhood about 3 blocks from Colorado State University, just south of the trendy "Old Town" area. No covenants or restrictions. Electric, telephone and internet (via dsl) available. Includes a 40ft. guyed tower, rotator, rotator control box and 3 element tri-band yagi (Hy-Gain TR-3). Other equipment and radios negotiable.

Comes with a detached three bedroom, one bathroom house in good condition: 1707 Remington Street.

Inquire by email: chris@yipyap.com or telephone (970) 493-2309.

Loose Ends

News on the BPL front. According to this videoed presentation by ARRL CEO Dave Sumner (K1ZZ) at 2009 Dayton Hamvention, www.youtube.com/watch?v=mdoRW39smDc&feature=channel , the FCC ignored information from their own technical experts showing that BPL was a bad idea. ARRL is now calling on the FCC to rework the BPL rules but may have to go back to court to get that done. (ed: Maybe the wholesale change of FCC commissioners with the new federal administration will help.)

Local Hams Aid Rescue Squad To Solve Public Safety Interference Issue -- From ARRL Letter Vol 28 No 30 (email 7/31/2009)

When you live on a remote island with numerous mountains and valleys, communications can be tricky. Add interference that blocks the main communications frequency used by the local emergency rescue squad and you've got a disaster waiting to happen. That's what responders and residents on St John in the US Virgin Islands recently found themselves facing.

On June 12, the primary repeater output frequency for St John Rescue <http://www.stjohnrescue.org/> was completely blocked by a 2- tone AFSK signal that continued for more than a week. Because St John Rescue uses the frequency to dispatch, monitor and provide two-way communications during emergency calls, it was vital that the cause of the problem be detected and corrected.

According to Phyllis Benton, NP2MZ, a Public Information Officer in the ARRL US Virgin Islands Section, some members of St John Rescue are also members of ARES. With some additional help from the FCC, three hams – Paul Jordan, NP2JF, Mal Preston, NP2L, and George Cline, KP2G -- set out to find the source of the interference.

The interference was not directly affecting operation of a second rescue repeater, Benton told the ARRL. "St John Rescue Chief Gilly Grimes and Paul Jordan, NP2JF, used handheld Yagi antennas to 'fox hunt' for the source of interference," she said. "To their surprise, the signal was being received off the back of the antennas and coming in very strong."

The source of the interference turned out to be 32 miles away from a tower on Mount St Georges on the island of St Croix. "The carrier frequency was just 7.5 kHz above the rescue frequency of 158.7525 MHz," she explained. "Upon closer inspection, the problem was isolated to a repeater that is part of the new US Virgin Islands territory-wide MPT 1327 trunking system. This transmitter was licensed for and was putting out 120 W with a pass band of 50 kHz and was being tested as the control channel."

Benton said that the second, unaffected repeater operates at an output frequency of 159.660 MHz, far enough away from the trunking frequency being tested to avoid being affected: "This second repeater serves areas not covered by the primary repeater. So, until the problem was resolved, a large part of St John was left without reliable rescue emergency radio communications. Once the source of the problem was identified, the interference was turned off on June 19."

To head off any future interference problems, the trunking system promoters have asked St John Rescue to change its current repeater frequencies to frequencies that theoretically would not receive interference from the trunking system. Benton said that St John Rescue is considering this request. -- Information provided by PIO Phyllis Benton, NP2MZ

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: _____

Receive Newsletter by E-mail? YES NO

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.
←