

**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 3<sup>rd</sup> Saturday of each month  
At the Golden Corral, 901 E. Harmony Rd, Fort Collins, CO.**

**All are welcome and encouraged to attend.**

**Bring yourself and your appetite at 8:00 am.  
The Meeting begins at 9:00 am.**

# NCARC Club Information

## Club Officers

President	Steve Henry	N7GN	(970)226-2817	<a href="mailto:n7gn@arrl.net">n7gn@arrl.net</a>
Vice President	Bill Beach	K0UT	(970)224-1958	<a href="mailto:k0ut@earthlink.net">k0ut@earthlink.net</a>
Secretary	Dave Langenberg	KC9FOO	(773)612-8435	<a href="mailto:dave@thelangenbergs.com">dave@thelangenbergs.com</a>
Treasurer Membership Chair	Willis Whatley	WA5VRL	(970)407-6599	<a href="mailto:whatley@frii.com">whatley@frii.com</a>
Interference Coordinator	Mike Bates	N7DQ	(970)219-3225	<a href="mailto:n7dq@comcast.net">n7dq@comcast.net</a>
Newsletter	Willis Whatley	WA5VRL	(970)407-6599	<a href="mailto:whatley@frii.com">whatley@frii.com</a>
Technical Chair	Eric Slutz	N0EAS	(970)282-3752	<a href="mailto:eric@redginger.com">eric@redginger.com</a>
Hamfest Chair	Matt Kassawara	KG0W	(970)232-5215	<a href="mailto:battery@writeme.com">battery@writeme.com</a>

## NCARC Repeaters

<b>W0UPS: 145.115 MHz</b> – (144.515 MHz Input) 100 Hz CTCSS Subtone (1* on, 0* off) Autopatch (40-32.926N, 105-11.898W, 7229 ft) Horsetooth Mountain, west of Fort Collins, CO
<b>W0UPS: 447.275 MHz</b> – (442.275 MHz input) 100 Hz CTCSS Subtone Autopatch (40-32.926N, 105-11.898W, 7229 ft) Horsetooth Mountain, west of Fort Collins, CO
<b>W0UPS: 146.625 MHz</b> – (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
<b>W0UPS: 146.850 MHz</b> – (146.250 MHz Input) 100 Hz CTCSS Subtone (1* on, 0* off) (40-25.341N, 104-44.182 W) Greeley, CO
<b>W0UPS-5: 144.390 MHz</b> – APRS Digital Repeater (40-32.926N, 105-11.898W, about 7229 ft) Horsetooth Mountain, west of Fort Collins, CO

## Nets

ARES District 10 Information Net	Wednesday	9:00 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
Tech Net	Tuesday	7:00 pm	145.115 MHz

## Web Page

<http://www.ncarc.net>

**TECH NET Announcement!**

This is a reminder that the 145.115 TECH NET is held Tuesday evening 07:00 PM.  
It is hosted by N0WIQ, Kerry. All amateur radio operators (with 2M privileges) are welcome to check in.  
It is an open forum net with Questions, Answers and Topics of interest.

If the 145.115 repeater is not available, the net will be held on the 447.275 repeater

**Local Area Swaplists:**

For those who can not wait or can not attend the area swapmeets, below are the websites for some of the regional swaplists found on the internet. These are updated weekly.

Aurora Repeater Assn. Swaplist: <http://www.qsl.net/n0ara/swaplist.html>

Colorado Repeater Assn. Swaplist: <http://www.w0cra.org/swap/craswaplist.htm>

Wyoming Swap Shop: <http://www.qsl.net/n0ara/wss.htm>

New Mexico Swaplist: <http://bc-ares.org/swapnet/listings.html>

**New and renewing members for the current month:**

N0HHM – John WB4ZDL – Gerald N0LZR – Richard WA9FBO – Bob WD9IND – Mark W0FT – Rob N7GN – Steve  
KB0GAE - Tom

**The NCARC thanks you for your support.**

**New 220 MHz Net**

There is a new informal net that is being held every Thursday evening at 7:00 pm on the 224.520 Repeater.  
This is the **AB0SF** machine located at the Horsetooth Mountain site along with the 145.115 and 447.275 NCARC Repeaters.  
This repeater uses the standard offset for the 220 MHz band (input on 222.920) and a 100 Hz CTCSS.  
Hosted by KG6TDB, the topics will change each week and all licensed operators are invited to check in.  
For those who are interested, it also features IRLP capability (it is node 3902).

**Longmont Amateur Radio Club Swapmeet**

**04/07/2007**

Boulder County Fairgrounds in Longmont 8AM - 1PM

Admission: \$5.00

Contact: Longmont Amateur Radio Club, P.O. Box 86, Longmont, CO 80502-0086 for information only, email [mail@larclub.org](mailto:mail@larclub.org)

VE Testing at 10 AM. For more information go to <http://www.larclub.org>

**Top ten reasons for attending Field Day**

**(Amateur Radio's annual support of the brewing, processed meat and insect repellent industries):**

- The smell of sweat and sun block in the Saturday morning air.
- Getting in your annual mine field training while erecting antennas in the local cow pasture.
- Watching your buddies trying to shoot an arrow with an 80-meter dipole tied to it through the top of a nearby tree.
- Seeing one your buds' tent fly through the air and wishing you had not tied the other end of the dipole to it.
- Learning from your buddies the correct procedure for using a Transmatch to tune a shunt fed tree.
- Discussing with your buddies the best way to cook the birds that they hit with the arrows while trying to raise the dipole.
- Consuming all the food-like substances from the barbecue and winning the belching contest.
- The smell of insect repellent as the evening and mosquito feeding time approaches.
- The all night aerobics of CW station operations, contact logging and mosquito avoidance maneuvers.
- The smell of fried equipment in the Sunday morning air.



## **Spring has Sprung (It's Lightning Season again)**

The Front Range and Eastern Colorado are second only to central Florida when it comes to lightning activity. Those of us who chase severe WX each season are at risk more often than your average Amateur mobile operator. But all Amateurs who operate mobile in this area will probably find themselves in WX that creates a lightning strike risk one or more times per season.

When operating mobile, a direct or even a nearby lightning strike can damage or destroy your radios. It can also damage you even while you are inside your vehicle. In addition to the electrical risk, if you take a direct or nearby hit while mobile, there is a good chance that your hearing and vision will be temporarily impaired by the strike. An image can be burned into your retinas by the bright lightning flash. The image will usually fade over a period of several minutes as your vision slowly returns to normal, but this creates a dangerous situation if you are in motion at the time that it occurs. Consider stopping in a safe location until the lightning activity diminishes.

If you handle an "ungrounded" radio or the antenna feedline while lightning is striking close-by or even when underneath the highly charged anvil of a convective thunderstorm, you can receive a strong shock. If lightning directly strikes your vehicle under these circumstances, the results could be serious for you.

There are several guidelines for mobile installations that can help reduce your risks. Always use a D.C. grounded antenna for your mobile operations. Many 5/8<sup>th</sup>-wave two-meter antennas use a tapped loading coil with one side of the coil connected to the shield and the other side connected to the antenna. The center conductor is connected to the coil somewhere in between, at the 50-ohm impedance point. Antennas constructed in this way usually say so on the packaging. Many of the Amateur mobile antennas are constructed in this way but some only use a series impedance matching inductor to make the antenna look like an electrical 3/4 wave, instead of the tapped coil that would provide a D.C. ground and a better 50-ohm impedance match. The advantage with a grounded antenna is that if the antenna and the car chassis are electrically connected, they will share the same static charge, preventing (or at least reducing) electrostatic discharge through and damage to your radios, under some circumstances. A grounded antenna can also prevent electrical shocks to you via the coaxial feedline, since the car chassis and the antenna are already at the same voltage potential.

Don't get too relaxed with this approach. A direct strike to your D.C. grounded antenna would still likely destroy your radio and present a significant shock hazard to you. The extremely rapid increase in electrical charge from a lightning strike can flow from the "strike point" through ALL available conductors during its journey along parallel paths to ground. Even though a direct connection to the vehicle chassis ground at your antenna might have a very low impedance compared to the path through your radio, a small portion of the charge will flow through your radio. However, it will probably be less than it would be if you were using an ungrounded antenna. Your radio will provide only one of many paths to the real ground (the Earth's surface underneath your vehicle). The majority of the charge will probably flow through your vehicle's sheet metal body to the frame underneath and then arc to ground either through or across the surface of your tires. It may also arc from a piece of metal under the vehicle that is close to the ground.

To effectively "drain" static electricity from your antenna to your vehicle chassis, your antenna must have a direct connection between the braid (shield) of your coax at the antenna mount and the metal body or chassis of your vehicle (as well as the D.C. connection to the antenna radiator). Be aware that most Magnetic Mount antennas do not meet this requirement. As an added precaution, you should also ground the metal chassis of your radio directly to the vehicle frame or body through a short heavy braid such as the shield from a piece of coax.

For additional protection, insert a gas gap type lightning discharge device in series with your antenna feedline and ground it to your car chassis through a short piece of braid as well. Most operators do not think of doing this on mobile radio installations. The gas gap type protectors can handle much more current than the solid state type, but they generally require a higher voltage threshold and more time before they break down. These devices discharge across an enclosed "gap" between two conductors and use a type of gas to reduce the voltage required to initiate ionization.

Mounting "Spline Balls" on your vehicle may also reduce your chances of taking a direct lightning hit. These devices work by dissipating "static charge buildup" through coronal discharge. The two-way radio and microwave industries have used this technique for years and they swear that the spline balls reduce or eliminate lightning strikes to their towers.

A metal chimney brush with stainless steel "bristles" mounted on a metallic handle can often be found at the local hardware or home improvement store. They are usually about six or eight inches in diameter. You can fabricate a spline ball from these by trimming and bending the bristles. A spherical surface is the preferred shape that should be defined by the ends of the wires. You can certainly expect strange looks from other motorists if you mount one of these on your vehicle. The coronal discharge is very interesting to watch if you are operating mobile after dark.

Another aid that can be beneficial is a ground strap, similar to those used to discharge aircraft, connected to the frame underneath your vehicle. A strap of oil soaked leather is usually sufficient. This type of ground strap can also reduce or eliminate the shocks that you sometimes get on dry days when exiting your vehicle.

If you are into storm chasing, don't forget the Faraday Cage effect. The metal body of your vehicle is a form of Faraday Cage but you can also select parking locations that may create an even larger cage around you and your vehicle. Parking under very high power lines (Godzilla lines) about midway between the nearest support towers or under other large metal structures can offer additional protection from lightning when you are stuck in your vehicle.

Finally, always carry your HT with extra batteries when you are mobile. If you get caught in close proximity to lightning activity, turn off the mobile rig and hang up the mobile mike. Use the HT for communications (if possible) until you get to a safer location or the storm passes. The HT can also be used as a backup rig if your mobile fails. A spare magnetic mount antenna stored in the vehicle can be deployed to increase the range of the HT when it is safe to do so.

Have fun this summer but stay safe...

## Colorado QSO Party 2007

1200 UTC 15 July, 2007 until 0400 UTC 16 July 2007 (6AM to 10PM MDT)

After some years of absence the Colorado QSO Party (COQP) is happening again. Mark your calendar and get ready for a fun time.

The County Hunters are joining in this event to cover counties and grids for the party. They are having their national banquet in Denver that weekend and will lend their expertise to the contest. Colorado has 64 counties and they are planning to cover some of the more rare counties and grids in the state. There is little other contest activity scheduled for that weekend so you should be able to devote considerable time to this event.

This event uses different power levels and four mode categories this year. The modes are Digital (RTTY, PSK, etc.), CW, SSB and Mixed (any combination of the other three). Frequency coverage includes all HF, VHF and UHF bands except 60 meters and WARC bands. Sorry, no repeater or satellite QSO's this year. The full 16 hours may be operated. Colorado stations operating from their QTH will also be valuable to the contest as well as the mobile stations. That provides more opportunity for more stations to operate both in-state and out-of-state.

Regardless whether you are a serious contesteer or just a casual operator, participation will be fun and will improve your amateur radio skills.

NCARC Meeting Minutes - March 17, 2007 - Location: Golden Corral

Meeting called to order by Steve Henry N7GN at 9:00

There were 21 members and 4 guests present.

## REPORTS

Secretary: minutes approved as read

Treasurer -- Update on savings will be available at the next meeting. Checking \$11429.87.  
We had 6 membership renewals.

Tech Committee -- Eric was absent. Steve mentioned the 145.115 problem with de-sense. The tech committee did a study during the Wednesday night ARES net and found no correlation between the 115 de-sense and the APRS digi station transmissions.

Control Op -- Nothing new  
Interference -- Nothing new

Pizza Party -- 10 folks showed up for the Pizza Party  
--suggestion made to put Pizza Party announcements on the repeater  
--next Party early June

## OLD BUSINESS

Event Center Repeater  
-- repeater is now in Chet's hands. Working on arranging site visit to Event Center to get it installed.

Field Day  
-- It's in June (4th full weekend), discussions continuing on locations, etc.

Colorado Marathon  
-- Sunday May 6th  
-- Requires 16-20 Hams  
-- If interested get in touch with K0JEF (Jeff Ford)

## NEW BUSINESS

May 6 -- Weather Spotter Training in Weld County bldg at Del Camino. RSVP to Randy W0AVV

Colorado QSO Party  
--Will be held sometime in July  
--looking for clubs to sponsor plaques (\$30 each)  
--The idea is to make as many contacts as you can in CO (10M - 80M CW & SSB)

MOTION: NCARC will spend 30 dollars for a plaque. Made by Clark K0FCM. Seconded by Rick WA7BNG Approved by show of hands.

Longmont Swap Fest Apr 7 coming up

New 220 Net Thursdays at 7 PM on 224.520 MHz - 100Hz PL.

Presentations: We need folks to volunteer to give presentations  
--Mike N7DQ will be doing April Presentation

