

Microvolt

July 2024



Let's Go Portable

Going *portable* means taking your radio gear out of town, out of your home, or just out of your comfort zone, then setting up and operating from your new location. It's yet another way to have fun with ham radio. But, are there other reasons to go portable? What kind of equipment does that require? And will that be expensive? Let's explore what it's going to take, to get you and your radio out of the house and on the road!



Cover story	2
Editorial	3
Letters to the editor	4
Club announcement	5
For your information	6
Spotlight on KK7LAT	7
Tech corner	9*
Strays	13*

**Online version only*

Cover – Going portable



Being portable might mean that you can quickly join an outdoor activity already in progress. Or it can mean that you're prepared to set up an emergency station away from your usual operating location.

Before you venture out on your portable journey, here are a few decisions you might need to make:

- Your band(s) of choice: HF or VHF/UHF or both?
- Operating location?
- Solar, generator or vehicle power?
- How long do you plan to be there?

- Toiletries, medications, hand sanitizer
- Sunscreen, hat
- Garbage bags
- Shelter (tent / RV / vehicle / canopy), table, chairs
- Phone, laptop, charger



As you can see, going portable requires some prior **planning** on your part. But you'll also need to consider the following equipment:

- Transceiver, microphone, tuner, key, headset
- Antennas, masts, guy wires, stakes
- Coax, barrel connector
- **Batteries, generator, power supply**, fuel, cabling
- **Solar panel, charge controller**, inverter, cabling
- Tool kit
- **Headlamp**, desk lamp, **flashlight**
- Food, water
- Pen, paper
- Coat, gloves, hoodie, sweat shirt, sunglasses

When you work portable away from your city for the first time, you might be surprised at the low noise floor on your S-meter and how little noise is in the audio you're hearing. The high level of noise generated by laptop power supplies, wall warts, inverters, and small appliances, from your neighbors **and from your own home** will be in your rear-view mirror.

Keep in mind the three rules to amateur radio success: **test, test, test**. Some of this testing might include these:

- Test your transceiver and microphone
- Check your batteries
- Check your fuel
- Check the location availability (gates, restrooms)
- Check the weather
- Check everything for safety

Finally, don't forget to let somebody know where you're going and when you plan to return, especially if you intend to operate alone.

Microvolt editorial staff

Editorial – X on the Air

During **Field Day** (and any day, for that matter), a ham radio club can set up a special station known as **GOTA**, which stands for *Get On The Air*. It's special because it's meant for unlicensed or under-licensed folks to operate on amateur radio bands by virtue of **an elmer** who accompanies and mentors them. And if set up during Field Day, can bring the sponsoring club a ton of extra points.

This GOTA idea has prompted a number of amateurs to creatively devise ways to help people quickly and easily get on the air, the operative “quickly” leading to the necessity of portability. One of the first of these portable offshoots is **SOTA** (Summits on the Air), in which a participant climbs a pre-designated mountain peak or other high elevation, sets up a station, and collects contacts for the event.



Those who participate in a SOTA event will first **register for the summit** they intend to operate, announce (on social media, etc.) their intentions to operate this way (to attract contact attention), and state on which bands (no repeaters permitted) they plan to operate. They then drive to the nearest trailhead, hike their gear to the top, set up, and start calling CQ on their bands.

Other popular on-the-air (“radiosport”) events have recently emerged and helped numerous people get involved with amateur radio in a portable way, especially **POTA** (Parks on the Air), which has gained explosive popularity in recent years because it's quick (not nearly as formal as SOTA), it's easy (no hiking necessary), and it's fun (almost any park qualifies).

JOTA (Jamboree on the Air) is an event that helps Boy Scouts operate annually in October.

YOTA (Youth on the Air) is a year-round activity that



specifically helps young folks become interested in amateur radio. Another **YOTA** (Youngsters on the Air) is intended to do the same, but is based in Europe and Africa.

Following these, a number of other “XOTA” ideas have appeared, such as **IOTA** (Islands on the Air), **LOTA** (Lighthouses on the Air), and **COTA** (Castles on the Air). Hams being who they are, a few have set up some fun (actual and tongue-in-cheek) events, such as **MOTA** (Museums on the Air), **PPOTA** (Porta Potties on the Air), and **WMPLOTA** (Walmart Parking Lots on the Air). What creative ones can you come up with?

Anything to add? Email editor@utaharc.org



Letters to the editor

Dear Editor:

I have a slight speech problem because of some past mouth surgeries, and people have told me a few times that I mumble when I'm talking on the repeater. Do you have any suggestions that I could use to improve my speech?

Stephan in Draper

Dear Stephan:

Not knowing exactly how you sound, and not being a doctor, it might be difficult for me to give you a precise prescription on how to remedy your speech issue. But if you don't mind my generalizing, I can suggest two things I've seen help a few: 1) speak slowly and 2) keep your syllabic volume (loudness) consistent. For example, to say the word individual, I might practice saying all five syllables with the same loudness, instead of allowing the last couple of syllables to soften or drop off, as is typical for American pronunciation.

Dear Editor:

Do ham radio operators have a special day they celebrate?

Blaine in Cottonwood Heights

Dear Blaine:

On one hand, you could be referring to *WARD*, or *World Amateur Radio Day*, which falls on April 18. On the other hand, you might mean the day the 10-meter band reopens, and when it does, please be sure to let the rest of us know!

Dear Editor:

I've been listening to people talking on local repeaters and on simplex nets, and so forth, for about seven or eight months since I earned my license. Is it just me, or does it seem like 2 meters works differently between day and night? I realize that HF is affected differently between day and night, but from what I remember, 2 meter signals are not affected as much by the ionosphere, especially if they're line-of-sight. Anyway, it just seems to me that time-of-day makes a difference. What are your thoughts?

Perry in North Ogden



Dear Perry:

Turns out your observations are correct. While HF (at least over long distances) behaves according to ionospheric conditions, as you pointed out, VHF communication is affected by a different set of conditions. The common medium between these VHF points is the atmosphere, primarily the *troposphere*, where we live. Between daytime and nighttime, the differences in the troposphere that seem to affect VHF most are temperature, moisture content, and air density. And depending on these conditions, your distance from the other station, and the height difference between you two, going from day to night your signal can become better *or* worse. Also, a phenomenon called tropospheric ducting can occur when the temperature of the troposphere drops, like when it becomes nightfall, while the tropopause (the layer that holds the troposphere down) remains relatively warm.

Dear Editor:

How should I respond, if at all, when somebody on the radio says, "Stand by"?

Joseph in Taylorsville

Dear Joseph:

Great question, because the directive *Stand by* has been met by some confusion among hams, new and experienced. An operator that says, *Stand by* typically means *Please wait* or similar. When you hear that, it's often best to say your call sign, then *Standing by* or nothing at all. During a net or an emergency, however, *be sure to use wisdom and good judgment*, to prevent causing harmful interference.

Send your thoughts to editor@utaharc.org

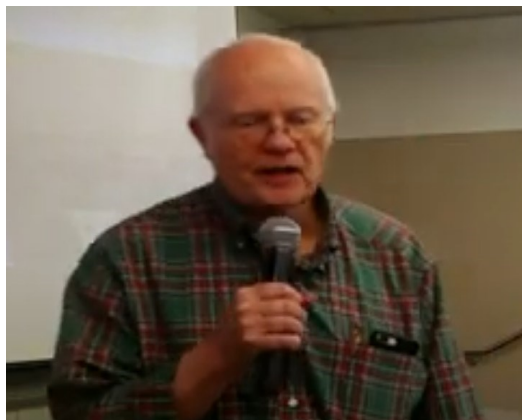
Club news

Adam Stribling KK7NJJ, our recently-appointed club Field Day Chair, explained in our June 2024 meeting the details of our plans for Field Day 2024. He went over the number of stations, the potluck dinner, the directions to the site, and what it takes to set up an event like this.



Finally, Adam extended an invitation for all to come out and help set up if possible, and at least attend and join the excitement of Field Day, whether or not one can help. This year it's held from noon Saturday June 22 through noon Sunday June 23.

In addition, UARC President Marv Match KA7TPH mentioned that Field Day is a unique opportunity for amateurs to get a taste of HF in an once-a-year environment set up for that purpose.



You can see the video presentation here: https://www.youtube.com/live/seAzSsX_aRY?si=8KYxhDcDg2KWiyUV You can also view past club meeting presentations on our YouTube channel: <https://www.youtube.com/c/UtahAmateurRadioClub>

(Photos courtesy James Bennett KK7AVS)

Notice to all UARC members in good standing

The Utah Amateur Radio Club is governed by its bylaws, last amended in October of 2002, and a lot has taken place in 22 years. As a result, our bylaws have fallen out-of-date, requiring us to update them, but the proposed changes must be approved by a vote of the membership. We are required to notify the voting club members in good standing at least 48 hours prior to taking such a vote, **so this serves as your notification.**

We're also required to hold the bylaws modification vote at an in-person meeting with a quorum of 10% of the voting membership in attendance, and because we have members scattered across the country, this will not be a trivial task. We plan to vote on proposed bylaws changes at the start of our 12 September 2024 in-person meeting if we can attract enough members to constitute a quorum.

So, if you're able, please, PLEASE attend at least the first part of the September meeting, and invite any fellow club members you know. The location of the September club meeting is room 2230 of the Warnock Engineering Building on the University of Utah campus. This only serves as a meeting notice; we'll post the details of the actual proposed amendments at a later date.

Thank you,

UARC Board

For your information

Microvolt has expanded!

Your club newsletter *Microvolt* is now longer than the 8 pages you might be used to. See the rest of the story in the online version, located at

<https://user.xmission.com/~uarc/Microvolt/2024/July2024.pdf>

Annual UARC Steak Fry

Our annual fun get-together is coming up on Saturday 20 July 2024 at the [Spruces Campground, site GRP7](#) starting around 3:00 pm. (Spruces is approximately ten miles up Big Cottonwood Canyon.) Cost is \$15 per person. Details are posted on our website, <https://user.xmission.com/~uarc/steakfry2024/>

License classes

Salt Lake:

General : Tuesdays 7:00 pm to 9:00 pm
147.160+ MHz (127.3 Hz tone)

Orem:

Extra : 5 Tuesdays, 6:30 to 9:30 pm
Jul 16, Jul 23, Jul 30, Aug 6, Aug 13
Technician : 4 Tuesdays, 6:30 to 8:30 pm
Sep 17, Sep 24, Oct 1, Oct 8
Visit psclass.orem.org to register (\$10)
Orem Traffic Training Room, 95 E Center St
HamStudy.org account required
Email nojiratz@hotmail.com for info

Exam sessions

Salt Lake County:

- Email Garth Wiscombe W7PS w7ps@arrl.net
Aug 25, Sep 30, Oct 28, Nov 25
- Email Rick Morrison W7RIK w7rik@arrl.net

Utah County:

- Wed 17 Jul 7:00 pm : **Provo** : [signup](#)
- Wed 21 Aug 7:00 pm : **Provo** : [signup](#)
- Sat 21 Sep 10:00 am : **Eagle Mtn** : [signup](#)

Club repeaters

Farnsworth Peak : 146.620– MHz (no tone)

Scott Hill : 146.620– MHz (no tone)

Lake Mountain : 146.760– MHz (no tone)



SDRs and beacons

Northern Utah WebSDR : [sdrutah.org](https://sdr.utah.org)

KK7AVS SDR : k7xrd.club

N7RIX SDR : <https://sdr.n7rix.com>

K7JL beacon 28.2493 MHz

HF remote transceiver club stations

If you'd like to know how to get started using the remote stations, visit the [HF remotes link](#) on the [club website](#) :

<https://user.xmission.com/~uarc/HFRemote.html>

How can I help?

Whether you're an experienced professional or a raw beginner, the club can always use your help. Reach out to the club leadership by sending an email to uarc@xmission.com

Also, if you'd like to see something added to this page, please email editor@utaharc.org

Spotlight – Ray Smith KK7LAT

Ray became interested in radio when he was 13 years old, after purchasing a Hallicrafters shortwave at an army surplus store. Upon arriving home, he located a piece of wire to use for an antenna, and excitedly listened to stations from all over the world. While friends were attending football games, Ray was home listening to shortwave radio. He listened to stations transmitting voice, but he also heard CW transmissions and became fascinated with it. After some patient study and a lot of listening, Ray was finally able to decode the messages that the CW stations were sending.



Later, Ray got involved with CB radio, and after serving a two-year mission for the Church of Jesus Christ of Latter-day Saints, started a family while installing and repairing equipment for a restaurant supply company.

In 2022, Ray's cousin Ben Booth K7RXL got Ray interested in getting his amateur radio license. After studying hard, Ray passed the Technician Class exam in March 2023, then got his General Class ticket the following

September. After purchasing a Baofeng UV-5R, Ray met other hams in UARC on the radio. He contacted Carl Pockrus in American Fork, and purchased a J-pole from him. Later, James Bennett KK7AVS came to Ray's home and installed a flag pole antenna, which Ray uses for VHF and UHF. James also obtained a CB antenna modified for 10 meters and installed it in Ray's office. With that antenna, Ray has made over a hundred contacts around the world, including stations in Argentina, Mexico, Hawaii, Japan, Alaska, and several provinces of Canada.

One day, Ray was talking to Craig Bledsoe KL7H of Las Vegas over the Intermountain Intertie. Craig ended up giving Ray a Yaesu FT-757GX HF rig and accompanying power supply that were badly in need of repair. Michael Chambers KN6KRB came over to Ray's house and helped him disassemble the radio. They found that some of the parts had burned out. Fortunately, Standard Supply Electronics had all the parts they needed. They put the radio back together, turned it on, and it worked like a charm.

Ray loves to hunt, fish, and play sports, and was once a competitive swimmer, until 2019, when a leg amputation due to a blood clot brought those activities to a halt. Ray is a member of UARC, and plans to become a member of [Handiham](#) because of his disability.

Ray, thank you for allowing me the privilege of interviewing you. We wish you the best in all your ham radio adventures.

73, Linda Reeder N7HVF



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We encourage you to submit original pictures (highest resolution), articles, software and hardware descriptions, nuggets of humor, and responses to editorials. Email your content, pictures attached, to the editor at editor@utaharc.org by the 20th just prior to the target month.

The **Utah Amateur Radio Club** was organized under its present name in 1927, although its beginnings may date back as early as 1909. In 1928, it became affiliated with the **American Radio Relay League** (club #1602) and is **NOT** a 501(c)(3) non-profit organization. It holds a club station license with the call sign W7SP, a memorial to Leonard "Zim" Zimmerman, amateur radio pioneer in the Salt Lake City area.

The club meets each month except July and August, and meetings are usually held on the second Thursday of the month at 7:30 PM in the University of Utah's **Warnock Engineering Building**, room 2230.

Club membership is open to anybody interested in amateur radio; a current license is not required. Dues are \$20 per year, including a *Microvolt* subscription, which cannot be separated from membership. Those at the same address as a member who has paid the \$20 can obtain a membership without a *Microvolt* subscription for \$12. Send dues to club secretary James Bennett, 4960 W 5400 S, Kearns, Utah 84118. Send address changes to kk7avs@gmail.com

Tax-deductible monetary contributions are gladly accepted. Send directly to club treasurer Shawn Evans, 1338 S Foothill Dr, #265, Salt Lake City, Utah 84108-2321. For in-kind contributions, please contact uarc@xmission.com to make arrangements.

UARC maintains the 146.620– and 146.760– repeaters, which are administered by the **UARC Repeater Committee**. Direct comments and questions to any committee member. The 146.760– repeater is on IRLP node 3352.

The **UARC Ham Hotline** at 801-583-3002 is for information regarding amateur radio, including club, testing, meeting, and membership information. Leave your name, number, and a short message, and we'll make a good-faith effort to return your call.

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UARC 2024 Board

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For late breaking news listen to the UARC Information Net Sundays at 9:00 pm on 146.620– or visit the [announcement page](#).

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Tech corner – Cookie sheet antenna

Some hams who really want to get their VHF / UHF signals out of their homes better than what their stock antennas can, find that they can't (or won't) install an outdoor antenna on their roofs, for whatever reason. Still others look for a temporary or portable, but effective solution to their dual-band needs. As a result, they turn to an old-but-good remedy: the cookie sheet antenna.

The typical cookie sheet antenna is made of nothing more than a magnetic-mount antenna stuck to a steel cookie sheet, often the same cookie sheet on which your mother used to make cookies. Well, that's pretty simple, but not really worthy of a Tech article, in my opinion. So, I thought I'd take the project up a notch, and make one using a through-hole mount instead. This design has two added benefits: it performs a little better, and it allows for the use of non-magnetic sheets, such as those made out of aluminum.

For the cookie sheet in this project, I used a pizza pie tin, because it cost a dollar at the nearest dollar store, and I didn't need to ruin one of my wife's good cookie sheets. So, technically, I suppose what we're building here is actually a pizza pie-tin antenna. If you think about it, you can actually make the sheet out of cardboard covered in aluminum foil.

Parts list

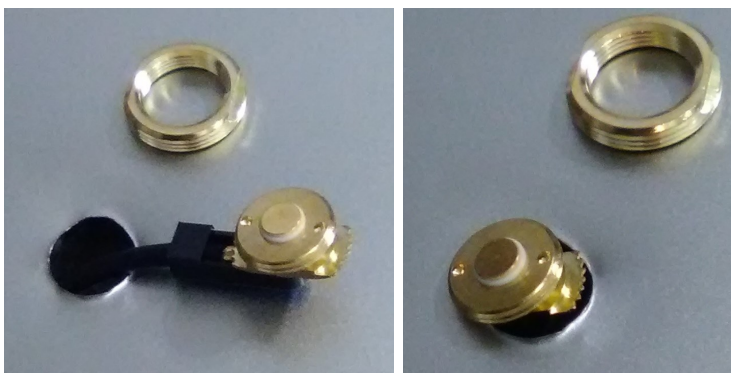
One [Tram 1180 dual-band NMO mount antenna](#)

One [Tram 1250 MNO mount](#)

One [metal cookie sheet](#) or [pizza tin](#)

Construction

Locate the center of the metal sheet (center is best, but near one of the edges is very acceptable), and **drill** or **punch** a 13/16" hole. In this case, I used a [13/16" Greenlee punch](#) to do the job, because a punch tends to make a cleaner hole.



Remove the outer brass ring from the NMO mount, slip (you might have to force) the threaded mount body up through the underside of the hole. Place the outer brass ring back onto the NMO mount body, tightly onto the sheet.



Tech corner – Your own PCBs, cont'd



Screw the NMO connector of the antenna onto the NMO mount of your sheet, and you're done!

Have fun

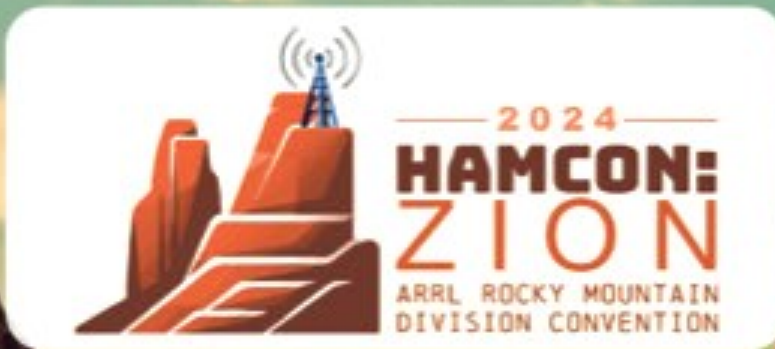
The Tram 1250 mount has a length of coax attached from the factory, and it terminates with a PL-259 connector, suitable for most mobile radios. You'll need to purchase an appropriate adapter or [pigtail](#), if you plan to use the antenna with a handheld radio. *Also, making this antenna will provide you with a little experience toward a) installing a hole-mounted antenna on your vehicle and b) installing NMO mounts, side benefits.*

You'll find the best results when you place the cookie sheet antenna near a window or sliding glass door, but experiment to be sure. You (and your contacts) might be amazed just how much better you sound, even though you're still indoors.

Noji Ratzlaff KNØJJ



the premier amateur radio
convention experience...
made specially for the West



July 12-13, 2024
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Visit us online at:

<https://HamConZion.com>



Silent key– John Hays K7VE

On 20 April 2024, friend, mentor, and club member John D. Hays K7VE passed away in his Kingston, Washington, home, surrounded by family.



John was best known for his leadership in helping to transform the [ARDC](#) (Amateur Radio Digital Communications) team into a renowned organization that helps ham radio clubs obtain grants toward helping the youth get involved in amateur radio.

Among John's impressive credentials, John helped found the New England Packet Radio Association, Northwest Amateur Packet Radio Association, and the Utah Packet Radio Association. He's served as an officer of our own Utah Amateur Radio Club, as well as the Sky Valley Amateur Radio Club, and the Kootenai Amateur Radio Society. Prior to his passing, John loved operating D-STAR and FT8.

You can read more about John on [the ARDC page](#) and on [his QRZ page](#).



73 and rest in peace, John.

Strays – Readily available spare fuses



Blown fuses happen. Decades ago, when your house lights went out, one had to take a flashlight down into the dungeon, open the fuse box, and locate the little guy that so valiantly gave its life to save an appliance from an untimely demise. Thankfully, today's circuit breaker has been developed and manufactured inexpensively enough to have found its way into nearly every home, relieving us of the need to stockpile spare fuses. Still, we find that a few things still do use them, such as our vehicles, small appliances, and yes, our amateur radio equipment.

BULB BLOW? SPOILED SHOW?



BUY A PAIR! HAVE A SPARE!



G-E PROJECTION LAMPS
FOR ALL SLIDE AND MOVIE PROJECTORS
GENERAL ELECTRIC

A **fuse** is a device that's designed to freely conduct electrical current until the flow rate exceeds a particular threshold or "rating", after which the device will self-destructively interrupt the circuit. They're often inexpensive and convenient, compared with the cost of the circuit or appliance it's intended to protect from an over-current or other condition.

Sometimes due to a short circuit or reversed battery connection, fuses do happen to open, or "blow", as we like to say. Using your radio on someone else's power system could bring unwanted surprises. Afterwards, you might find yourself digging around in your kit, only to find fuses of the wrong value.

As the late 1950s General Electric projection lamp advertisement said "Buy a pair! Have a spare!". A cheap and easy solution is to attach spare fuses to the sides of the fuse holder with an adhesive. Rubber cement or a common adhesive makes a good bond, and the fuse can easily be pried off with a knife blade when the spare is needed; a two-part epoxy would be too strong. A small piece of duct tape can also be used for those, as well as the glass tubular kind.

Finally, before attempting to replace the fuse right away, you might want to find out why the fuse blew in the first place, or you could end up with a second blown fuse or worse. If the problem (short circuit, incorrect voltage, etc.) is still present, a new fuse won't fix the problem, and can result in a burned out radio or even a fire that can take your home with it.



Allen Wolff KC7O