

TCARES - Tuolumne County

Amateur Radio & Electronics Society

Amateur Radio Club Winter 2023 Newsletter



December 21, 2023



The Pinecrest repeater site on top of the Dodge Ridge ski area (radio shack & tower visible @ bottom center).

Merry Christmas and Happy New Year!

Greetings TCARES members and Happy Holidays! This quarter's newsletter has some wonderful articles - things that teach, things that inform, and things that inspire! We're hoping to keep the TCARES club aware of the news of interest to members, along with helping everyone to connect with one another in different ways. Our article authors have put effort into their pieces and we hope you enjoy their contributions. One difference between this Winter 2023 newsletter and the Fall 2023 newsletter is this:

Please *answer the following question* and email your response to jewato@gmail.com:

“What are you still curious about after reading this newsletter?”

We continue to have F2F breakfast meetings at [My Garden Cafe](#), in east Sonora - come join us and connect with other hams! We hope to see you all at the next **TCARES Club Breakfast** meeting on **January 20th** and/or at our **Winter Field Day** event on **January 27th**. Additionally, the **Quartzfest Ham Radio Convention** on **January 21st** (near Quartzsite, Arizona) is also on the docket (see ***“Dates to Remember”***, for these events, and more, below).

So, please, come join in on the fun and get connected with other hams!

Coming Up:

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Dates to Remember:

January 20	TCARES Club Breakfast Meeting
January 21	Quartzfest Ham Radio Convention
January 27	Winter Field Day
February 17	TCARES Club Breakfast Meeting
February 24	TCARES Club Board Meeting
March 16	TCARES Club Breakfast Meeting
March 19	Vernal Equinox
March 30	TCARES Club Board Meeting
April 12	DX Convention
June 21	Field Day



Editor's Note

By [Jeff Tolhurst](#)
N6JWT/WRDP326

2023 TCARES Retrospective



Reflecting on the past year, the TCARES Club can be proud of the different achievements and milestones that have marked our progress. We've gotten a lot done! We have also had some challenges and opportunities for growth and development. Many of us have gained new knowledge and skills while enjoying our hobby. And we can now take the time to look ahead and plan for the future of our club – where should we be headed? What should we be doing with our time, and resources?

Let's take a look at many of the things we've accomplished this year (take a deep breath!): **1) Field Days** (Winter (@ Columbia State Park) and Summer (@

Phoenix Lake)); **2) Support for Community Events** (Jamestown Run, Old Mill Run, Groveland Grind mtn. bike race, Tuolumne County Airport Day); **3) Weekly Nets** (>450 Nets TOTAL, including all the regular TCARES Nets, plus 2 weekly GMRS Nets on the Columbia repeater and another Sunday night Net on the Moccasin repeater); **4) Emergency Communications events** (Great ShakeOut + the March 11th "tornado" incident – 1st tornado ever recorded in Tuolumne County); **5) TCARES Club Breakfasts** (12 of them @ My Garden Café); **6) 3rd Tuesday Tech Nets** (HF, Winlink, APRS, Radio Go Kit, CAT (Computer Aided Transceiver), and more); **7) Return of the quarterly TCARES Newsletter** (2 issues this year); **8) TCARES Education Committee formation** (in late October); **9) Support for GMRS NRW** (Neighborhood Radio Watch) **programs** (3 GMRS repeaters currently functioning in Tuolumne County; 5 weekly NRW Nets currently (Twain Harte, Groveland, Strawberry, and 2 in Columbia); **10) Repeater maintenance and upgrades** (2 new batteries at Pinecrest/Dodge Ridge & 2 new ones in Columbia); **11) Fall Tri-County HAM Club Picnic** (Angels Camp); **12) TCARES Christmas Party** (Tuolumne City); **13) \$5,000 donation** to the club (anonymous donor); **14) New Members** (there are currently ~125 members, according to Mike, W6MVM); **15) we've elected a new President** (Mike, W6MVM) and a **new Secretary** (Ginger, KM6RFT); **16) new Vision and Mission statements** were clarified and developed by the club's Board of Directors; **17) ~4 or 5 VE sessions**; and **18) more** (I'm sure I've left some things off that I'm not remembering...). Whew – that seems like a LOT of activity for our club!

We've also gained some new hams over the past year. Grayson, KE6KYI, and his VE crew, have all volunteered their time to test new hams, at the Sonora Public Library, and we've likely added a dozen, or more, to the FCC ranks. Additionally, we've lost one of our members, recently, Bob, KK6TE, who is now a Silent Key (SK). He will be greatly missed by many. It's been a memorable year.

No year is without its challenges, and it is essential to recognize our opportunities for growth. The weather this past winter threw us some curveballs, and we were able to function well, overall, despite some challenges along the way. The TCARES repeater system held up very well during the many Atmospheric Rivers (AR) that came our way. The Columbia repeater had some challenges and Greg, WA6HNA, was able to diagnose the issue (a feedline was shorting out, we think) and we haven't had the problem since (thanks Greg!!). Additionally, there were a couple of other minor issues that Greg coped with, and, with the help of a donor's generosity, we've hardened the system even more (i.e. new batteries + a new antenna going in on one site this spring). Other challenges include educating and training new HAMS (and GMRS users) and the club's Board of Directors is actively working on that by forming a new Education Committee – so stay tuned! Finally, the rapid growth and interest in the

GMRS radio service has presented the club with some challenges, as well. The Board discussed how GMRS fits into Amateur Radio. We wondered: Is it a completely separate radio service? Is there some overlap? Can we recruit GMRS radio operators into the Amateur Service? Do we try to integrate GMRS NRW activities into our club activities? Or not? Clarifying our Vision and Mission statements will help us to be able to make the best decisions for the club and figure out who we are, and how GMRS fits in with our mission. This challenge with GMRS has likely been good for the club, since the discussions have helped us to clarify why our club exists and what our purpose is. We currently believe that we exist, in part, to connect people together, socially, with one another. We have some common interests and desires. There are also differences within our club, some diversity. Some of us like to test our abilities to compete and gain as many contacts abroad as we can, in all the different modes possible. Others are interested in having a means to communicate during emergencies, to gain intel on escape routes during wildfires, or other, incidents. And still others want to connect to one another via radio, to communicate our wants, needs, desires, actions, and practice the art of small talk. Amateur radio is such a wonderful thing – it's a hobby, it's a sport, it's an avocation, it's a lifeline connection, it's intel on the action, it's community service, it's helping contribute to the "common good", and it's more. We continue to pursue our love of radio as well as how it connects us to one another. While doing that, we're able to celebrate our successes, while rising to the challenges we also face. To me, it's a wonderful human experience, and I love it! Ginger and I get to practice resilience, problem-solving, adaptability, leadership skills, and more, as do you, our members. We're a wonderful group, in my opinion.

We have more to do. One of our major goals, as our new president has suggested, will be to focus on starting "some additional training and/or mentoring". There are already plans to teach "Intro to Radio" classes in Sonora this new year. We have an instructor lined up, and we're working on the curriculum for both HAM and GMRS radio operators. Additionally, there is also discussion about intermediate, and advanced, training and classes. So keep your antenna tuned into what the club is working on. This newsletter's purpose, in part, is to keep club members (and others) apprised of our aspirations and goals. We're hoping that radio can connect us together during calm times, as well as times of distress. Training, and education, will play a critical role in the future, as we continue to keep our community vibrant, healthy, connected, and inspired. We've done some great things this year, and this next year we will continue to grow and progress toward a more successful and fulfilling future.

Merry Christmas and Happy New Year, everyone!

73, jeff, [n6jw7](#)



President's Messages

by [George Overturf](#) and [Mike McGinty](#)
N6GEO **W6MVM**



Outgoing President's Message (George, N6GEO)

It has been an honor to serve as your club President. Over the past two years, we as a club have recovered from COVID and now have a strong treasury, a large roster of members, and a calendar full of activities. And I want to thank you, and my board, because together we made this happen. I am confident that the club is in a good place to move forward under new leadership and they can count on my continued support.

73, George, [N6GEO](#), n6geo@arrl.net



Incoming President's Message (Mike, W6MVM)

Hello, thanks for electing me as President of TCARES for the next two years. I would like to thank George, N6GEO, for the great job he did as president and for encouraging me to run so he could go trailering in his new (to him) Airstream trailer. Have fun in Quartzite, and say hello to Gordo.

It's too bad the Yuma HamFest, which followed Quartzite, is gone forever. It was my favorite hamfest. No volunteers to do it anymore. Too bad. I would like to

help TCARES to be the club its members want it to be. It's been a great club over the years, a social club, centered around amateur radio, which is what, I think, the members want it to be. I've certainly enjoyed it. We've had fun at the runs, Field Day, Father's Day at the airport, many good breakfast meetings, and other events. We need to keep these events up and improve them where we can.

It's been a long time since TCARES had any active training or mentoring programs. A lot has changed in ham radio in the last 10 years. New and interesting technology has come into the hobby. Digital on both the UHF and HF radio has changed things drastically. Many of our members are already participating in these new modes and having great fun. George's 3rd Tuesday night Tech Net on the repeaters has started spreading the knowledge on how to hook your computer to your rig so that you can use these modes. It would be great to have some of our experienced members start some additional training and/or mentoring on these new technologies for those that are interested in them.

I think the club should continue to do what the members enjoy and also try to provide a way for interested members to explore more of what modern ham radio has to offer.

73, Mike, [W6MVM](#), w6mvm@arrl.net

Letters to the Editor

There were no Letters to the Editor this quarter, though there were a few letters to the TCARES Board of Directors. An opportunity to send your thoughts, feelings, and desires, to the editor exists in this space. For example, Tim, KN6MKS, sent the Board an email, last May, asking that we link ALL the repeaters in the county, permanently. The Board listened, discussed the pros and cons of Tim's idea, asked for member input and feedback, then tested it during the fall. We are now trying to solve some technical issues with the linking. Your ideas are being listened to, and valued, as members of our club, and Letters to the Editor can be a useful tool for this process.



2023 TCARES Christmas Party

Chasing DX

By [David McNeil](#)
W6PHO



CHASING DX (AND DREAMING OF EXOTIC TRAVEL)

DXpeditions in our winter months might be a fine way to soak up some rays on a beach, maybe surf or eat grilled seafood, or just relax. Actually, there's a huge amount of preparation and work involved, and precious little recreation in most cases. The simplest (but expensive) way to go is to rent a fully equipped station set up in, say, the Caribbean, and have the best of both worlds. Dream on!

There have been lots of DXpeditions lately. Yours truly worked only a handful of them, so for the fuller list I turn to Pat, WA6SCW, who generously shared information from his log. I did, however, contact most of the DXpeditions listed in the last Newsletter. Some of these were on multiple bands, for there were some extremely hot times, especially on 15, 12, and 10 meters.

Hint: listen from sunrise to mid-morning, then mid-afternoon to the evening. But check the spotting services for some exceptional opportunities.

Our county contest team, which had worked the ARRL Sweepstakes and the California QSO Party, worked only a few hours of the CQ WW CW Contest, with some 560 contacts. (Yours truly couldn't participate because of family obligations). The contest sessions have been held at the home of Mike, W6MVM, and Marie Ann, K6IOY, but the star was Bob, K6XV, a very experienced contester, and DXer, with a whopping 329 DX entities to his credit.

George N6GEO, made even more contacts in this contest, as did Pat, WA6SCW, who at the same time achieved the significant goal of 300 entities. Way to go, Pat! (I am still trying for 200.)

In September and October, Pat worked sixteen DXpeditions, mostly in the Pacific region, but also Senegal, Uganda, Botswana, and Mayotte. He worked many other exotic countries, too many to list here.

Looking forward: between December 15 and January 15, we may be able to hear and work more rare DX. Look for:

V6EU	Micronesia,
VI7A	Lakshadweep,
T32TT	East Kiribati,
XT2AW	Burkina Faso,
V47JA	St. Kitts & Nevis,
D44MCS	Cape Verde Is,
VU4N	Andaman & Nicobar,
3B9AT	Rodrigues I,
T02FY	French Guiana

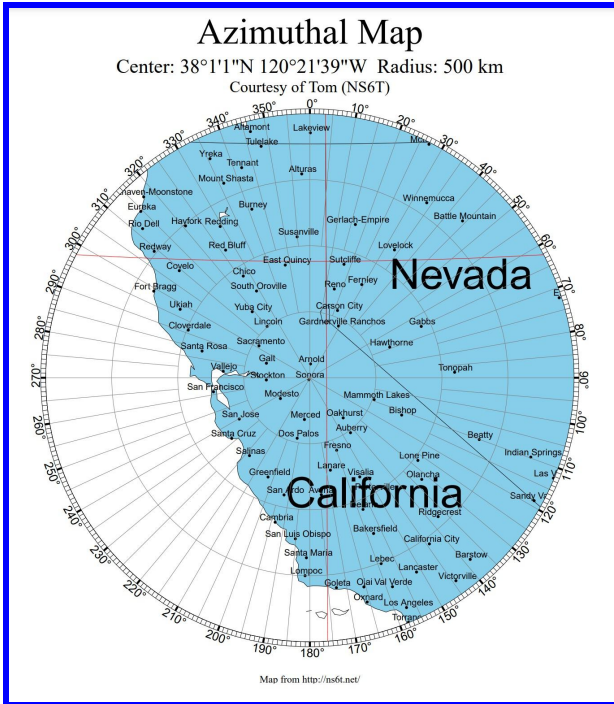
(At right are Bob, K6XV, Mike, W6MVM, and George, N6GEO, "TUO".)



Travel plans, health, and weather may cause changes, so it is wise to check a station's QRZ page if you are looking for it.

Contests coming up include:

CQ WW WPX RTTY Feb. 9-11,
ARRL Inter DX CW Feb. 16-18,
CQ WW WPX SSB March 29-31.



Mike McGinty suggests that the "First Commandment of Amateur Radio" is "Family First." Gee, I had thought that it should be "When calling a rare DX station that is listening 'up,' do not send your call sign over and over again on his frequency, especially when he is transmitting." But seriously, folks, and I'm sure my fellow writers and editor agree, let's cherish and enjoy our families in the holiday season.

By the way, the radio amateur's code found in the ARRL Handbook of the 1950's called for us to be "gentlemanly". This wording changed to "considerate" in the 60's, perhaps under the influence of the women's lib [equal rights movement]. (The earlier code also calls for "unswerving loyalty to the ARRL." That's something worth discussing in the light of the new membership fee structure.)

But I digress. And close for another column.

73 and Feliz Navidad everyone!

David, [W6PHO](http://www.w6pho.com)

Get out those world maps and start marking places you've contacted! Please write to dmcneil36@gmail.com with your comments, questions, and reports of your DX successes for inclusion in a future column.

David began his love affair with ham radio at age 13, keeping out of trouble by hanging around a University radio club station. He built and operated Heathkits, making his first DX contacts in mid-1957, shortly after upgrading to General from Novice. This was (during the "19th Solar Cycle," which peaked in 1958). He renewed his K5GRT General class license but after moving to California got his present W6PHO call. After 45 years of studying European history, he has returned to the radio hobby he fell in love with as a teenager. He upgraded to Extra in 2015 and got his DXCC certificate in 2017.



Meet Our Members

By [Ginger Rohlen](#)
KM6RFT



Grayson Rehn, [KE6KYI](#), is a California native who was born in San Francisco as the second oldest of six children. Growing up, Grayson and his family lived in San Francisco, Daly City, and East Palo Alto. When Grayson was a Junior in high school, his family moved into the Santa Cruz mountains where all eight of them lived together in a 2 room cabin his Dad originally built for summer vacations. "In the mornings", Grayson recalls, "I had to be the first one up to build the fire in the stove. No one would get up until I built the fire for us." After high school, Grayson met his wife, Melinda, on a blind date and they were married in 1974. They lived together in Scotts Valley where Grayson worked for WJ, an electronics firm. After their son finished high school, they moved up to Groveland and bought a home in Pine Mountain Lake. Grayson and his wife will celebrate 50 years of marriage next year.

Throughout his life, Grayson has been interested in electronics and experimenting with things. Growing up, both his Mom and Dad were into ham radio, and at one time, his dad owned a radio repair shop. In high school Grayson took electronics and radio shop classes. He and his best friend, who lived next door, "rigged up the ole string and can" to communicate with each other. Later he built his own 3-tube radio transmitter and receiver to communicate with his friend.

He remembers always experimenting with electronics at home. If someone tried to enter his room he had everything rigged so they couldn't open the door. "Nobody dared come in my room for fear of being shocked or surprised in some electronic way." After high school, Grayson was a member of the Neighborhood Youth Corps and worked closely with a local electrician. All of these experiences helped build a foundation for a career in the field of electronics.



For as long as he can remember Grayson has always tinkered with things, taking them apart and putting them back together. As he says, "I was always proud of myself when I put it back together and there were no left-over parts." One night Grayson was working on a radio and he couldn't get it to work. He went out to his dad and asked him for help. His dad just looked at him and said, "You will never learn how to do it if you don't learn it yourself." Grayson recalls stomping off and pouting for a bit. "And then," he says, "I went back and worked with the radio for a couple more hours and finally found the problem. I don't know if I would have found the problem if Dad wouldn't have said that to me." This experience made a lasting impression on Grayson and has given him the confidence to take on any job, and persevere, despite the obstacles.

As he says, "Everything I've tried I've been able to do. I like the challenge - a laptop computer - a cell phone. I can take them apart and put them back together again. I can make things, build things, fix things - I'll give it a try. If I get stuck, I can look it up in a book, on Youtube, or even observe, to learn

and then ask questions.” When Bob Airhart, [WA6RTS](#), a lifetime member, approached him one day and said, “Hey we’re having Ham radio classes, why don’t you see if you can join us.” Grayson agreed to take Bob’s class and he then went on to pass the Novice and Tech-Plus exam very easily. However, learning Morse code to pass the General exam was a challenge. Grayson set a personal goal for himself to learn the code within the year. He was successful and earned his General license.



Grayson has a long history of service with TCARES. He has served as President and Vice President and is currently a trusted VE (Volunteer Examiner - a U.S. licensed Radio Amateur holding a General Class license or higher, who offers their time to administer the FCC licensing exams) for our club. Grayson is also a familiar voice on several of our nets. He began serving as a Net Control by volunteering to help Carl, [NI6Z](#), (SK = silent key), run the net when Carl wasn’t feeling well. Grayson refers to Carl as one of his Elmers and shared that he learned a lot by helping him. When Carl became a silent key, Grayson took over as Net Control of the Wednesday night TCARES net.

Grayson also stepped in as Net Control for the 10-meter Net, and the Simplex Net. Personable, and kind, Grayson is a welcome presence on our nets. “It gets to be fun when you do all the nets,” he says. He appreciates the help of Paul, [KN6CWT](#), and Mike, [KI6WJT](#), who are willing to step in and help on the evenings when he is unable to be Net Control. It was a pleasure speaking with Grayson and delightful to hear all of his stories. I enjoyed interviewing him.



73, Ginger, [KM6RFT](#)

Ginger is a mom, a teacher, a student, a devoted partner, and a life-long learner. Her interests are many and center around service, communication, leadership, and integrity. She recently completed a Masters of Science in Counseling. She is open to challenging herself to learn and grow and in facilitating that in others. Ginger shares a love of Geology and the natural world around her with her partner, Jeff, and enjoys hiking and exploring the outdoors. Her interest in Ham radio stems from a desire to join others in learning, to be of service, and to continue to improve her communication skills on the air.



Community Corner

By [Paul Bailey](#)

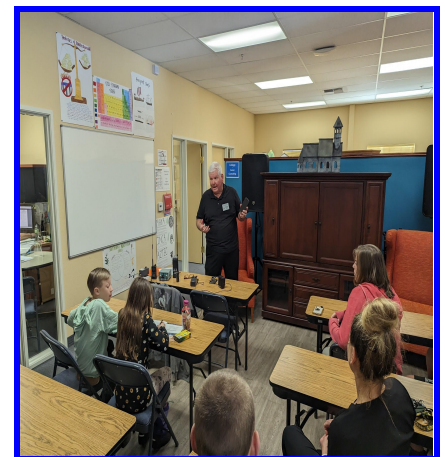
KN6CWT/WRWS835



Hello again from the Community Corner. This article is going to tell you all about a high altitude balloon launch that club members did with a group of students from Mountain Oaks Elementary School. What is a high altitude balloon? They are uncrewed balloons typically filled with helium or hydrogen and released into the stratosphere. High altitude balloons are used for a vast array of authorized purposes in the public and private sectors, such as monitoring the weather, capturing clear images of the cosmos, and carrying out science experiments.

In February of this year, Michael Grcevich, David Volt, George Chraft, Micheal Pierce, and Paul Bailey, started a “Radio Knowledge and High Altitude Balloon Launch” class. Working with Mountain Oaks Elementary

School, David and George provided the balloon, and the hydrogen to launch the balloon, along with the hardware device, and launch site, which was in Lodi, CA. Micheal G. provided the example equipment of radios, keyers, tesla coil, and APRS transmitter, along with a functioning website for the balloon launch. Michael P. provided information on radio history and also work packets to test the kids' knowledge. Paul provided radios, keyers, and Youtube videos, demonstrating what ham radio is and its use in our county and further out into the world. These folks went above and beyond with teaching the group of kids. The group showed the kids that radio has so many different functions and avenues to learn from.



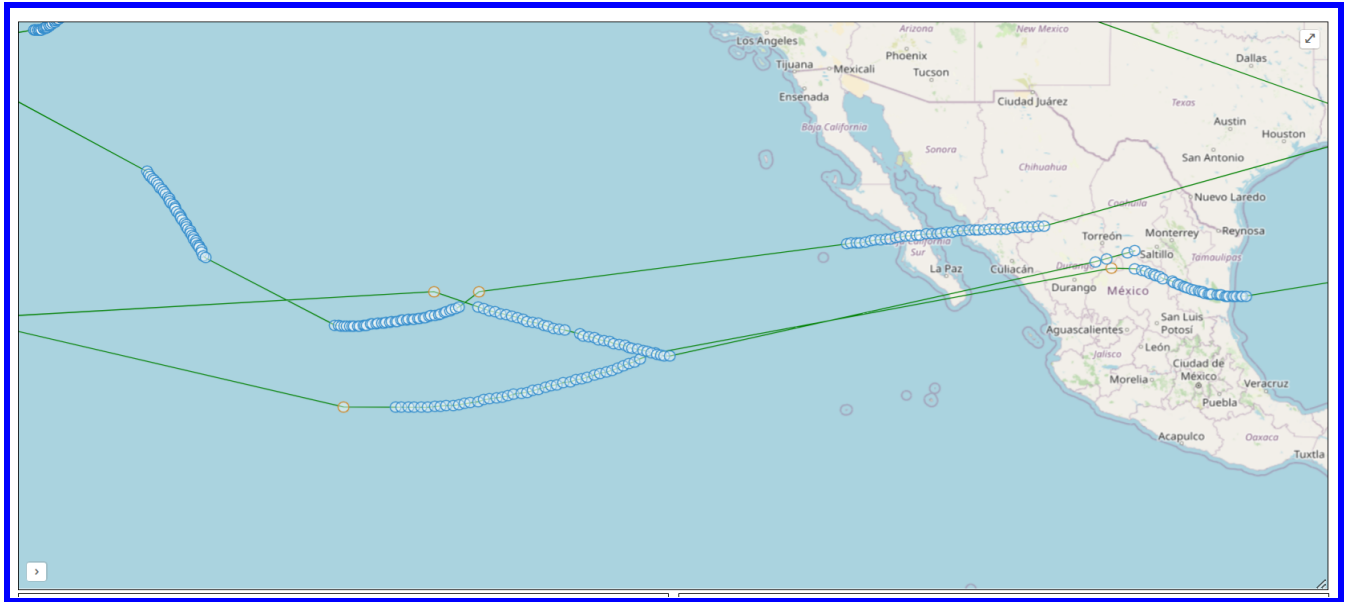
This is an update on how the balloon is doing so far for **198 days**, and counting. **KB6USJ-11** is still outperforming our original expectations.

Valuable information is constantly being collected. If you recall, since the original launch back in May 20, 2023, the Pico headed north and traveled up near the Arctic Circle and one orbit actually crossed over the North Pole. That event caused some concerns since the angle of the solar panels were not set for that high of a latitude, and the results would not be generating

enough solar power to keep the beacon transmitter in operation. The good news is that, for the most part, daily GPS and telemetry data has been received, and the balloon is continuing to send daily beacons. The electronics have held up through solar radiation storms, and harsh atmospheric conditions (including freezing temperatures). I did not mention, another concern was that KB6USJ-11 would eventually run out of sunlight in its Northern orbit, as the seasons changed, and sunlight would focus on the Southern Hemisphere. Luckily the upper atmospheric winds pushed the balloon to a more southerly orbit. How far south will it go? Its latitude has been in the Tropic Of Cancer - will it get down to the Equator, or beyond?



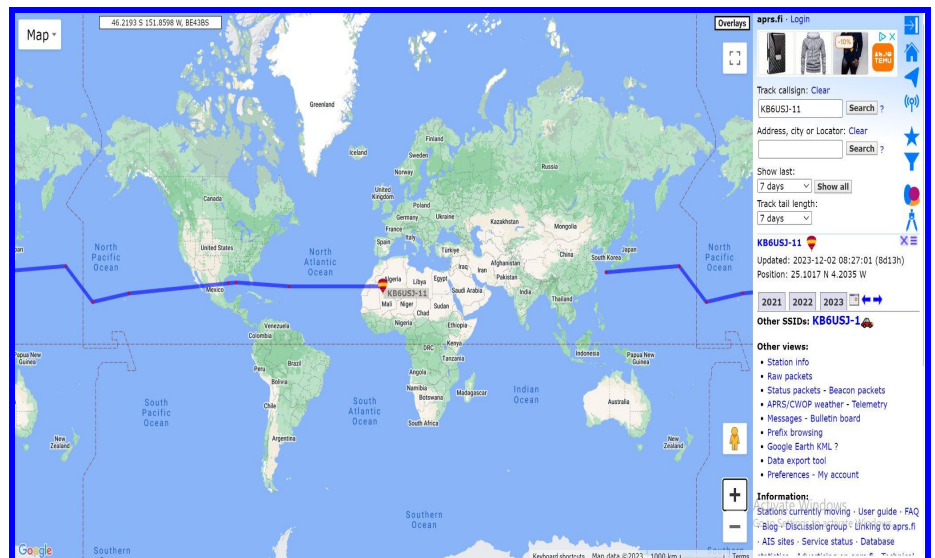
Map of Balloon Track.



Since the time it launched, other balloon launches have taken place, and also some failures have occurred. The group considers these attempts as R&D, some things are learned with failures. Just like SpaceX, it is a step by step process of trying, failing, learning from the failure, correcting, and trying again! Please go to www.aprs.fi and track the balloon's progress as well as to learn more about the www.aprs.fi website. Stay tuned - the group has also launched a small ocean buoy that has a beacon and solar panels and is capable of 24 hour transmission, since it does carry a battery pack that charges during the day. The program is going to continue and we are in need of a school or students that would like to participate in our experiments, like studying the Earth's magnetic field and Earth's weather sciences.

73, Paul, [KN6CWT](http://www.aprs.fi)

Hello, my name is Paul Bailey and I have been in love with radios for as long as I can remember. I have been a Ham since 2019. My callsign is KN6CWT. During that time I have gotten involved with TCARES quite a bit. I have been lucky to have been elected to the board of the club as a director and now the Treasurer. I have helped with programing and operating radios for both fun and in emergencies, I've also been fortunate enough to help put in a new repeater. I have also learned so much from APRS to WIN System. I have had the opportunity to participate in club events like field day, races, National Night Out and Fly-in's.



Mike's CW Column

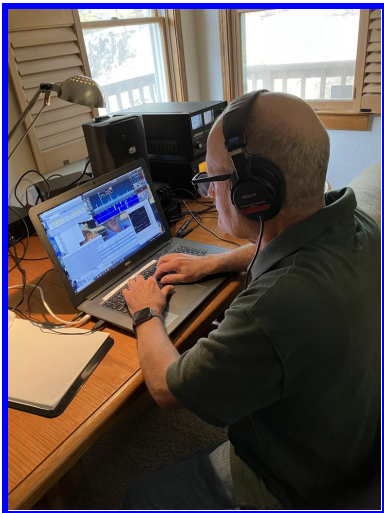
By [Michael McGinty](#)
W6MVM



In September's CW Column I reviewed the status of CW in modern Ham Radio and discussed the three most common CW activities. These were "Rag Chewing", contesting, and DX hunting.

October and November are the big contesting months and it's what I concentrated on since the last column. In this column I'll cover what we did to build a good contesting station at Marie Ann's ranch and the contests we entered. I'll also review some interesting 'conversational CW' activities we've encountered.

Before I start, I would like to point out that 10 Meters has been as good as I've seen it since 1960. I'm looking at it now at 2PM, November 30, 2023, at 28.450 MHz SSB. Multiple DX stations, strong signals, the best I've seen in a long time. 10 meters is back!! And it worked great for our contesting all month. 10 meters is open to every class of license for CW and SSB, including Technician. A 10 meter dipole is easy to build and doesn't need to be high off the ground to be effective. You can use cheap 75 Ohm cable TV coax, available at any hardware store, to feed it. Get on and join the fun. You won't regret it. (If you need help building a 10 meter antenna, let me know. We'll get it done).



CONTESTING, CONTESTING, CONTESTING

The station at Marie Ann's was anything but a contesting station. It consisted of an AM station using a Johnson Ranger (1954) and 75A-4 (1956), an SSB station, consisting of a Collins S-Line (1959) with a 30L-1 amplifier from the VietNam War, and a good CW station consisting of a Flex 6300 barefoot, using old software. There is a great tower that hasn't been used since 2016. The StepIR beam was sitting on the ground. All the cables were wound up in the outdoor shed. This is what we started with.

George, N6GEO, thought we should build a contesting team to use the great facilities at Marie Ann's ranch, basically unlimited space for antennas, a great 70 ft. tower and a big room for equipment. He suggested that we enter the California QSO Party in the new class of multi-operator, multi-transmitter, low power. He thought we could take the record for Tuolumne County back for the previous outside group that came here just to use our county several years ago.

The team consisted of George, N6GEO, Bob, K6XV, David, W6PHO, and me, W6MVM. George and David, you know. Bob has been a contester for 58 years. He got into Ham Radio by, and for, contesting. He moved from the Bay Area to Copperopolis recently, and loves to join in contesting groups. He was also a great help on the antenna projects at the ranch.

California QSO Party

We decided to enter the California QSO Party as K6TUO, using the new multi-multi class. We decided to put up George's TA-33 trap triband beam rather than the single frequency StepIR beam. We had a 205 foot G5RV for the low bands, and the beam for the high bands. Let me point out that contesting is only run on the classic bands 160, 80, 40, 20, 15, 10 and, sometimes, 6 meters. The newer bands, 60, 30, 17, and 12 meters, are spared the intrusion of contesting. We used two sets of Field Day filters, one for the G5RV that split out 80, 40, and 20 meters, and a second, connected to the beam that split out 20, 15, and 10 meters. This allowed us to use two transmitters on either antenna on separate bands.



The rig we used was George's new Yaesu FT-710 with a Russian SDR receiver for spectrum scope. It

also had a Winkey CW keyer. This worked great for CW.

We used the Flex 6300 for SSB. We used the [N1MM+](#)

[Logging Program](#) for

logging. The logging

programs were easily

linked and the info

shared. This is probably

the best logging

software that I have used and it's free. Only HRDelux

comes close (and costs money). Just search N1MM for

info and downloading. More on this software later.



We did great in this contest and had great fun. We came in **third (3rd)** in the M2/LP class. I mainly operated SSB. I

was still learning modern CW contesting. David also got his introduction to modern CW contesting. He picked it up faster than I did.

ARRL CW Sweepstakes

We decided to do the ARRL CW Sweepstakes. This is another big contest but no multi-multi class. We needed to redesign the station to a single-transmitter, multi-operator, high power station. This allows us to try to dominate a frequency and call CQ until the spotters put us on the net. Then we get mobbed by others calling us. This is a great, high scoring, strategy, if you have a great signal. A good beam and a good amplifier would provide this. I upgraded the software in the Flex 6300 to the latest version. This was painful, since my main Flex wouldn't upgrade. The Soulsbyville Flex would. This took several days. This allowed us to use the latest CW Skimmer software from Software Defined Connections (<https://www.lw-sdc.com/>) and connect properly with N1MM+ to configure a proper contest station. I moved the ALS-1300 amplifier and the AT-AUTO tuner, along with the Heil audio system from Soulsbyville to the ranch. This gave us a first-class station.

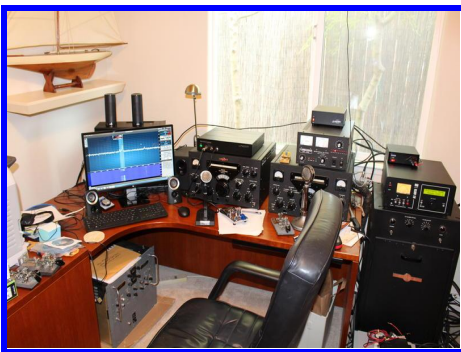


We did well nationally in this contest. I mainly kept the equipment running. We burned the balun out on the beam on Sunday, but fortunately the upper bands (15 and 10) went dead and we finished the contest on the 20 meter dipole that we designed for Field Day. The balun was designed for 1K input power in the 1950's. We were using 1.2K output from a modern amplifier. We changed the balun for the next contest.

CQ World Wide DX Contest

After the Thanksgiving holiday, Bob and I worked the CQ WW DX contest. We only worked about 5 hours of the 48 hour contest but we worked 56 countries and 40 zones. George worked much more from his home station. I finally got up to speed on CW contesting and was able to work 34 of the 80 contacts in this contest. Great fun. I hope to do more.

Contest Summary



In summary, the California QSO Party is probably the most fun. It's the only contest where California stations are sought out, especially Tuolumne County stations. This is an SSB and CW contest run on the same weekend. (CQP.org) This is on the first full weekend in October. The CQ WW DX Contest is probably the biggest contest ever and great fun. I've never worked so many countries as I have in this contest. It is run on two separate weekends, the SSB in late October and the CW in late November. I worked both and had great fun. I'll concentrate my contesting efforts on these contests more next year. I hope you'll join me. You will love it. The ARRL Sweepstakes is grueling. The exchange is

long and hard. Just like a messaging net. I think it is the contester's contest. If you do well in it, you're a real contester.

Conversational CW

I didn't want to leave this subject out. I found a delightful conversational CW net on Tuesday nights at 8PM on 3.545 MHz. It's run by a Sacramento based club. The Samuel F. Morse Radio Club (www.W6SFM.org). It is well run at about 15 wpm by a good CW operator. After a short preamble, the net operator, W6SFM (Chris), asks for check-ins. Just send your call and you will be called in order. Everyone just says what's going on in plain CW and net control passes it on to the next station. The net takes about an hour. I've enjoyed this net.

May 2024 W6SFM Bug Roundup

HOME ARRL STRAIGHT KEY NIGHT MEMBERS CLUB MEETINGS WEEKLY NET MORE

W6SFM
Samuel F. Morse Amateur Radio Club
(SFMARC) Sacramento, CA

AMATEUR RADIO CLUB CALL W6SFM
2024 Club Memberships Now Open!

Next Columns

In this column I've just talked about what's going on with some of the club operators. I introduced several software products, especially loggers. I hope to go into depth on loggers and net logging such as www.QRZ.com and [ARRL Logbook of The World \(LoTW\)](http://ARRL Logbook of The World (LoTW)). I hope you enjoyed this column. It was a bit intense on contesting. I hope the description of the station helped you understand a good

contesting station whether you ever build one yourself. You're always welcome to operate this one in any contest we're in.

We also want to take up CW decoding software soon. It really helps you to enjoy CW, by not having to write everything down. The ones I've used are far from perfect, but they do help you to enjoy conversational CW. I've already tried some of the software. I'll try as much as I can and will report in the next column.

73, Mike [W6MVM, w6mvm@arrl.net](mailto:w6mvm@arrl.net)

I started in Ham Radio in 1957 as KN5UHU and K5UHU in Kingsville, TX. I was very active in the early 60's as KH6DOX in Honolulu. Then I received my EE degree from San Jose State in 1969 and focused on working as a consulting engineer. Ham radio took a back seat to what were very exciting times in electronics and software. After retirement in about 2010, I went back to enjoying ham radio and have been active with TCARES in Sonora. I've collected a lot (too much) of Collins equipment and used them on the air exclusively until recently. I purchased several modern rigs including my favorite Flex 6300. I use the Flex in two locations, at home in Soulsbyville, and on my sailing yacht, Integrity. My main station is in Soulsbyville, CA.



Reaching Out

By [Tim Kreger](#)
KN6MKS



I was recently chatting with Jeff on the new GMRS repeater on Duckwall Mtn. and mentioned how many different opportunities we have up here to the availability of other repeaters and nets. Jeff suggested that I send him a copy of the list of repeaters and nets that I can access from this location as an example (see [Table 1](#) and [Table 2](#) below; click on each link to download each table). I explained to him that I keep a simple text file that I leave open on the PC that has a list of the nets I try to check in on if I am available. I also cleaned up the list I saved from my 2 meter radio and added a couple 70 cm repeaters at the end. I have made a contact on most of the repeaters on this list and

check in on most of the nets on the list if they are open to guests.

I strongly feel it is important to discover the limits of the equipment *before* it is necessary during an emergency situation. I actually placed a 911 call for a Ham in Monterey County that observed a mail theft occurring and did not have a cell phone to report herself. This was somewhat of a gratifying experience and kind of “made it all worthwhile” spending all this time and effort getting the station working well enough to have solid comms over 100 miles!

The other benefits that can be gained from talking on other systems is getting ideas for the efficient operation of our own system. One major difference I have observed is the use of callsigns. Several of the systems I talk on are very relaxed and have focused on the spirit of the law in regard to callsigns. Once a party has made the initial ID you just don't hear the calls being used for at least 10 minutes or so but if everybody out there knows he has a license it really does not matter if you know his exact call, that's just Bob!! I feel this is way more friendly to new operators and encourages them to want to talk to Joe and Fred and not worry about having to memorize numbers and letters because it is **so** much easier to remember Tim or John.

73, Tim, [KN6MKS](#)

*Tim has been playing with radios since he can remember - pretty much before he was 10 years old. He was playing with broadcast AM tube radios just trying to get them to receive something. He was then given a scanner when he was around 12 or 14 years old. It was a 4 channel analog scanner with 4 rotary knobs for each channel and you would just rotate the knob back and forth for hours listening to whatever you could, and then go to the next channel and rinse and repeat. Then he found a JC Penney CB radio in a thrift store for 10-15 bucks with a mag mount attached so he bought that and walked out to his van and stuck the mag mount on the roof and plugged the radio into the cigarette lighter and he was hooked! Tim said it took him around 2 or 3 days to finally talk to somebody (maybe sooner but sure seemed like that long lol). Then he bought a Radios Shack SWR meter and found out all about the strange matching thingy and met a Tech over in Alameda that was just plumb full of info and told Tim that the 2 most important things in a radio system are the **microphone** and the **antenna**. Tim said he would add **GROUNDING** is the third thing on the list!*

Repeater List			
Name	Frequency	Offset	PL Tone
MOCASSIN LOCAL	145.29	-	100.0
MOCASSIN LINK	145.29	-	146.2
DUCKWALL LOCAL	147.945	-	100.0
DUCKWALL LINK	147.945	-	146.2
CALAVERAS	145.17	-	100.0
MODESTO	145.39	-	136.5
2M CAL	146.52	-	88.5
33	145.33	-	100.0
WA6HAM MT DIABLO	145.41	-	107.2
W6SRR	147.045	+	94.8
MT DIABLO	147.06	+	100.0
MT VACA	147.195	+	123.0
TOUL CO SIMPLEX	145.51		
W6YDD	146.625	-	100.0
VACAVILLE, MT VACA	145.47	-	127.3
VACAVILLE, MT VACA	147.27	+	77.0
TOUL CO FIRE DEPT	151.13		88.5
SONORA PD	153.8		88.5
TUOL CO SO	152.72		88.5
FREMONT PK	441.9	+	110.9
CARLA 17 MT ELIZ LINK	443.475	+	103.5
CARLA 17 MT ELIZ LINK	443.475	+	151.4

Table 1: Tim's Repeater List he uses.

Day	Time	Frequency	Description
M-F	5:42 AM	147.0600	Mt. Diablo Net
M-F	6:10 AM	147.0600	6:10 Net K6HS-Harry
M-F	7:00 AM	145.3900	Modesto area Traffic and Weather
SAT	8:00 AM	462.6000	FRS/GMRS Net
Sunday	6:00 PM	28.4600	10-10 Net Oklahoma
Sunday	6:30 PM	146.0600	Dublin Emergency Net, Mt. Diablo Repeater
Sunday	8:30 PM	145.2900	Moccasin - North State Emergency Net
Monday	5:00 PM	28.4820	10-10 Net Central U.S. (CST)
Monday	7:00 PM	147.1950	Mt. Vaca/Sacramento County ARES
Monday	7:00 PM	28.3080	SCCARC 10M Net
Monday	7:30 PM	145.4100	ccra.us Contra Costa County Net
Monday	7:30 PM	145.1700	Fowler Peak CARS Net
Monday	8:00 PM	145.2900	TCARES All Linked Repeaters
Monday	8:30 PM	28.4500	High Frequency Net on 10 Meters (28.450)
Monday	8:45 PM	50.1400	6 Meter Monday Night Net
Tuesday	8:00 PM	145.4700	Vaca Valley Radio Club Local Net
Wednesday	12:00 PM	147.0600	Bay Area Hospital Net
Wednesday	6:45 PM	145.4100	Red Cross Net
Wednesday	7:00 PM	147.0900	N6SJV Net Lodi
Wednesday	8:00 PM	147.0600	Sky Net Weather Net
Wednesday	8:00 PM	145.2900	TCARES All Linked Repeaters
Wednesday	8:00 PM	28.4000	Calaveras HF Net
Thursday	7:00 PM	145.2900	Friendship Net Round Table, All Linked Repeaters
Thursday	7:30 PM	145.1950	Mt. Vaca Swap Meet
Thursday	8:00 PM	147.5100	Simplex Net 147.510 MHz
Thursday	8:30 PM	7.0530	Slow CW Frequency: 7.097 (all license classes)

Table 2: Tim's list of frequently used frequencies.

Editor's Note: TCARES member, Ken Sanders, [AE6LA](#), also just sent me a list of frequencies he uses for the Calaveras County region - he lives in Arnold. Ken also had suggestions for using his list:



General Information and Suggestions:

1. Do not transmit on any frequency on which you do not have authorization.
2. PS (Public Safety) listening is OK, but passing on information heard can be a problem.
3. Many scanners have a "Close Call" search that can help find nearby signals.
4. In a major event, monitor PS *and* HAM frequencies to have situational awareness.
5. In a major event, use FRS/GMRS Channel 20, Tone 22 to communicate with non-HAMs.
6. During an incident, there is likely to be an emergency net in progress on 145.170 MHz. Please join us.
7. Learn Radio Direction Finding (RDF) or Fox Hunting. RDF is a useful skill to find accidental, or purposefully, keyed down transmitters that are causing interference.

Frequency List for Calaveras County Area						
	Freq-MHz	Offset-MHz	Tone-Hz	Location	Sponsor	Comments
Amateur Radio - HAM						
	145.1700	-0.600	100.0	Fowler Pk.	CARS-N6FR	Primary Club Repeater
	145.1700	0.000	100.0	TalkAround		Simplex on Repeater Out
	441.8750	5.000	100.0	Arnold	CARS-N6FR	Linked to 145.170
	441.8750	0.000	100.0	TalkAround		Simplex on Repeater Out
	440.1000	5.000	100.0	WestPoint	WS6P-W6WPT	
	146.8350	-0.600	100.0	Amador	ACARC	
	147.0900	0.600	114.8	Bear Mtn.	WB6ASU	Lodi ARC
	147.9450	-0.600	100.0	Duckwall Mtn.	TCARES	Primary Club Repeater
	146.1150	0.600	100.0	Columbia	TCARES	
	147.9750	-0.600	100.0	Dodge Ridge	TCARES	Back Country Coverage
Public Service - PS						
	151.1750	ListenOnly	136.5	Multiple	CalFire	TuolCalv Dispatch "San Andreas"
	151.3550	ListenOnly	103.5	Multiple	CalFire	"Command 1"
	151.2650	ListenOnly	103.5	Multiple	CalFire	"Command 2"
	151.2425	ListenOnly	103.5	Multiple	CalFire	"Command 12"
	151.6625	ListenOnly	136.5	Multiple	CalFire	"Calaveras Command"
	151.0400	ListenOnly	192.8	FowlerPk	Cal-SO	1 of 4 Dispatch Repeaters
	151.0100	ListenOnly	192.8	BlueMtn	Cal-SO	1 of 4 Dispatch Repeaters
	151.0550	ListenOnly	192.8	SanAndreas	Cal-SO	1 of 4 Dispatch Repeaters
	151.0700	ListenOnly	192.8	ValleySprings	Cal-SO	1 of 4 Dispatch Repeaters
	151.0250	ListenOnly	136.5	Multiple	CC Roads	"Control"
FRS/GMRS Suggested Emergency Channel						
	462.6750	0.000	141.3	Simplex	Individuals	FRS/GMRS Channel 20, Tone 22
				OFF on Rx, On Tx if possible		REPTR6 - PL_141.3

Table 3: Ken's frequencies (to download click [here](#)).

ARES/RACES Emergency Communications Report

By [Ned Sudduth](#)

K6NED/WRPM781



Great California ShakeOut Drill Reported a Success

Editor's Note:

TCARES members Rich Combs, KN6HSR; Ned Sudduth, K6NED, and Toni Sudduth, K6TNI, reported that the October 2023 Great California ShakeOut exercise was an "outstanding" success. Here is their story as reported to the [ARRL News](#) (11/03/2023):

"This is a drill. Drop! Cover! Hold on!" was the mantra for the Great ShakeOut exercise on October 19, 2023, at 10:19 AM in Tuolumne County, California.

The Great ShakeOut is an annual international event that promotes awareness of how to prepare for and react to an earthquake. For the past 2 years, TCARES has used this event as an opportunity to test our ability to provide backup communication for the county public safety agencies. Considering that over the past year there have been two instances where primary communication systems went down -- one due to a fire, and the other due to a damaged T1 fiber optic cable -- this was a timely opportunity. It is a great chance to partner with first responder agencies, build trust, and develop awareness of mutual capabilities and needs.

There was an amateur radio operator stationed at the Tuolumne County Emergency Operations Center, which was operated by the Office of Emergency Services. After a preparatory simulated 5.0-magnitude San Francisco earthquake preamble at 10:19 AM, Ned Sudduth, K6NED, began taking check-ins from amateurs throughout the county with his wife Toni, K6TNI, who logged the reports. County Geographic Information System (GIS) staff loaded the real time of those hams on a map that was displayed on a TV. Tuolumne County is fortunate to have a backbone of four linked, 2-meter repeaters that cover almost the entire county.

There were 38 amateur radio operators providing reports on conditions throughout the county. In addition, we had four Neighborhood Radio Watch (NRW) communities using Family Radio Service radios, General Mobile Radio Service (GMRS) radios, and a few GMRS repeaters to add an additional 28 reports. Each NRW community has an embedded ham who monitors the NRW traffic, and then provides a summary to the Incident Commander during their check-in.

Considering it was a Thursday morning, we felt this was a great response. Participation increased from last year's check-ins. Although Tuolumne is a large county by area, it has a population of just more than 55,000, and it is primarily rural and mountainous in character. Nonetheless, the combination of NRW communities with embedded ham radio operators and a robust repeater system has shown that even when the power and internet are down, first responder operations can continue to operate, and communities can immediately communicate and mobilize to help themselves.

During the net, net control began by asking for regional check-ins based on repeater location, starting

with the most remote corners of the county. Roll call was not conducted, but check-ins in small batches of three or four allowed for concise reporting with "yes" or "no" comments on the availability of grid power and telephone services. Most stations checking in had clear audio and delivered their local status professionally. Some stations learned they needed to make improvements. Stations at sites of interest, like schools or government buildings, were asked to state their affiliation with organizations like the Community Emergency Response Team, Search and Rescue, Crime Scene Unit, etc. Mobile units also checked in and made reports. Those in nearby counties checked in, too, and they reported their local situation reports.

Ideas for next year are already underway with plans to assign operators to specific locations like the local fairgrounds, hospital, Red Cross, fire stations, etc. The Automatic Packet Reporting System can also provide value next year with real-time location and status updates from mobile operators. Thanks to TCARES, the Tuolumne County Sheriff, the Office of Emergency Services, and GIS staff, and the radio operators who have made this an outstanding exercise for the last 2 years.

Thanks to TCARES for the information contained in this report.

73, Ned, [K6NED](#)



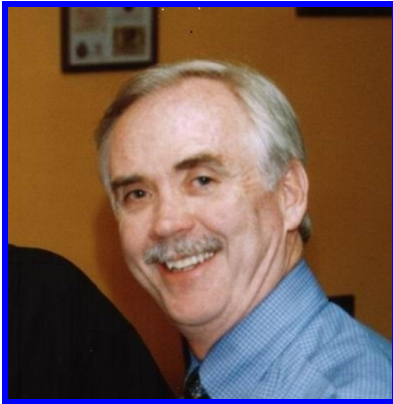
The screenshot shows the ARRL website's news section. At the top is the ARRL logo with the text "The National Association for Amateur Radio". Below the logo is a navigation menu with items: Home, On The Air, Licensing, Education & Training, Membership, Regulatory & Advocacy, Public Service, Technology, Get Involved, ARRL Store, About ARRL, and News & Features. The main content area is titled "News" and features a sidebar on the left with links to "ARRL Audio News", "ARRL Periodicals Archive Search", "QST", "On the Air Magazine", "QEX", "NCJ", "ARRL Letter", "News Tips", "Doctor", "So Now What?", and "ARRL Magazines". The main article is titled "Great California ShakeOut Drill Reported a Success" and is dated "11/03/2023". It includes an "Editor's Note" and a paragraph stating: "Tuolumne County Amateur Radio and Electronics Society (TCARES) members Rich Combs, KN6HSR; Ned Sudduth, K6NED, and Toni Sudduth, K6TNI reported that the October 2023 Great California ShakeOut exercise was an "outstanding" success. Here is their story as reported to ARRL News: "This is a drill. Drop! Cover! Hold on!" was the mantra for the Great ShakeOut exercise on October 19, 2023, at 10:19 AM in Tuolumne County, California. The Great ShakeOut is an annual international event that promotes awareness of how to prepare for and react to an earthquake. For the past 2 years, TCARES has used this event as an opportunity to test our ability to provide backup communication for the county public safety agencies. Considering that over the past



Sparky's Corner

By [Rich Combs](#)

KN6HSR/WRMM317



FRS and Tones

The last article was a general introduction to **FRS**, Family Radio Service. Now we'll cover a few more details. First up is TONES!

PL, Private Line, Channel Guard, CTCSS, Tones, call them what you will, they are just different names for the same thing. It is not a form of encryption, your transmission is still able to be heard by anyone. It is a way to reduce hearing unwanted transmissions on the same channel you wish to operate on. Maybe your group wants to stay in touch while out for a hike, but doesn't want to hear some fishermen chatting on the same channel. You could switch to another channel, where you might

unfortunately have a similar problem. Instead use tones.

I think CTCSS is the best term to use as it describes what is happening. CTCSS stands for Continuous Tone Coded Squelch System. Let's start from the end.

A Squelch System is a way to disable the audio on a receiver. Many radios have a squelch knob. As the squelch knob is turned clockwise, a stronger signal will be required to turn on or "open" the audio on the radio. It is normally adjusted so that the audio will turn on slightly above the ever present level of background noise. Sweet, no noise to bother your partner, assuring domestic tranquility.

Tone coded. Instead of a knob that sets the squelch level, a tone is used. If the tone is not present, it is like having the squelch knob turned all the way up, blocking all audio. If the tone is present, the audio is "opened", or turned on. A tone is just that, a sound, in the low end of the hearing range, between 67 Hz and 254.1 Hz. This is Hz, not KHz or Mhz. 67 Hz is just above the annoying 60 cycle hum we sometimes hear, while 254.1 is a C₄ for those musically inclined. But we don't hear them on our HT!

What! Is my hearing aid malfunctioning? No. The radios are designed with an audio filter that blocks any sound below about 300 Hz. The tone is there, we just don't know it.

Enter Continuous. The tone is there during the entire transmission, we just don't hear it because all audio below 300 Hz is blocked. Hopefully the Continuous Tone Coded Squelch System makes some sense now.

You can use CTCSS on Transmit and/or Receive, sometimes called Encode and Decode. If you transmit on a different tone than the receiver is set for, the receiver won't hear you. If you have your receiver tone set differently from the transmitter, you won't hear the transmission. Simple as that. Your group operates on one tone, and the fishermen on another tone. You hope.

What can go wrong? There are 50 standard CTCSS tones, although a subset of 38 is sometimes used. This can lead to a problem. "I'm on tone 2, set your radio to tone 2." If one radio has 50 tones, and the other has 38, the tone numbers may not match up. What you must do is specify the tone frequency,

and you must know the correspondence between your tone # and the tone frequency. "I'm on tone 2, which is 71.9 Hz for me. Let's use that tone." is much better than just "use tone 2". An example is in Table 1.

One final gotcha, or tip, is that if your tones are turned off, or tone 0, you will hear all transmissions on a given channel. This might be helpful to monitor for traffic, but you won't know what tone is being used, if any, so your response might not be heard. And it won't block any unwanted traffic.

This is written for novice FRS users, but everything here applies to GMRS and HAM radios.

73, SPARKY, [KN6HSR](#)



Tone Name	RETEVIS RT49P FRS	RETEVIS RT76P GMRS	Radioddity DB25G GMRS Base Station
	Frequency	Frequency	Frequency
1	67.0	67.0	67.0
2	71.9	71.9	69.3
3	74.4	74.4	71.9
4	77.0	77.0	74.4
5	79.7	79.7	77.0
6	82.5	82.5	79.7
7	85.4	85.4	82.5
8	88.5	88.5	85.4
9	91.5	91.5	88.5
38	250.3	250.3	192.8
39			196.6
40			199.5
41			203.5
42			206.5
43			210.7
44			218.1
45			225.7
46			229.1
47			233.6
48			241.8
49			250.3
50			254.1

Table 1 showing how the Tone Name vs. Frequency can be different for the RETEVIS FRS & GMRS radios compared with a Radioddity GMRS radio.

I passed my Technician and General licenses in February, 2020 and Extra in September 2021. (I'm good at taking tests; I need to work on working a radio!) Main QTH = Livermore, CA, USA, (CM97). I'm relatively new to the radio world! Member of LARK, Livermore Amateur Radio Klub, and TCARES Tuolumne County Amateur Radio Electronics Society. My alternate QTH = Strawberry, CA (CM98). As of 10/2021, I'm now working on CW via CW Academy. I passed the Beginner level in October, 2020, and I passed the Basic level in March 2022. I got interested in HAM radio to improve emergency communications for the Strawberry Volunteer Fire Department in 2019. I have gotten in way over my head since then! I have enjoyed building a few kits from QRPme and QRPguys. I have been developing a Neighborhood Radio Watch (NRW) program in Tuolumne County, modeled on one in El Dorado County, CA, USA.

From Hobby Hill: GMRS MATTERS

By [John Buster](#)
KN6RLM/WROX508



Hi folks! KN6RLM/WROX508, John, here to review a radio I *really* like! Choosing a GMRS radio can be a head-scratcher. With so many brands and so many different features, which one works for your particular needs? The mobile radios can offer up to 50 watts of power for long range communication, while hand-held radios for GMRS are restricted to a maximum of 5 watts on certain channels. I do have a Radioddity DB25-g 25 watt mobile radio, and it's great in the car, but most of the time I'm not in my car, so the hand-held is my most used radio. I am prone to dropping my electronics - phones, radios, cameras, etc. I would love to have one of the expensive hand-held radios, with built in GPS and an LCD screen, and I would probably still drop it and cringe at the replacement cost. So, I have gone the cheaper route.

Affordability is my main concern, but functionality is only slightly less important. I wanted a radio that was full power, repeater capable, and also could be used to scan other frequencies. Lots of hand-held GMRS radios can also function as a scanner. With these criteria in mind, I settled on the **Baofeng UV-9G**.

Things I like about the Baofeng UV-9G:

1. This radio uses **CHIRP** (a free, open-source tool for programming your radio), which is a lot easier to use than the factory **code plug** (a file that contains all of the programming information for a radio).

2. This radio is **waterproof** to a few feet deep.

My friend, Tony, WRUL492, tested the radio at Pinecrest Lake recently. He said it works as advertised. So, if you like boating, kayaking, fishing or any other near water activity, this is really great, although we decided that we should have a long tether for the radio, in case we dropped it, as it seems to want to sink!

3. This radio seems to be fairly **rugged**. It has taken a few spills (even down a concrete staircase!) and seems to work just fine!

4. This radio can be programmed with VHF/UHF **scanner channels** (receive only).

5. If you already know how to use a Baofeng UV-5R, this radio is almost identical in features.

6. Mine came with an **extended range antenna**.

7. The radio comes with a **data cable** (proprietary) and a **charger stand**.

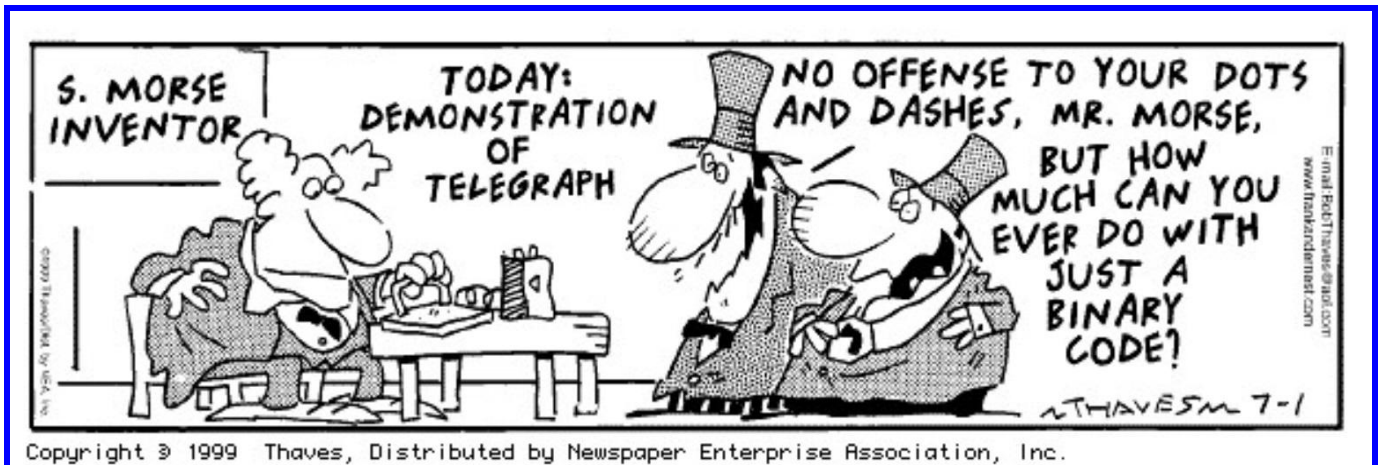
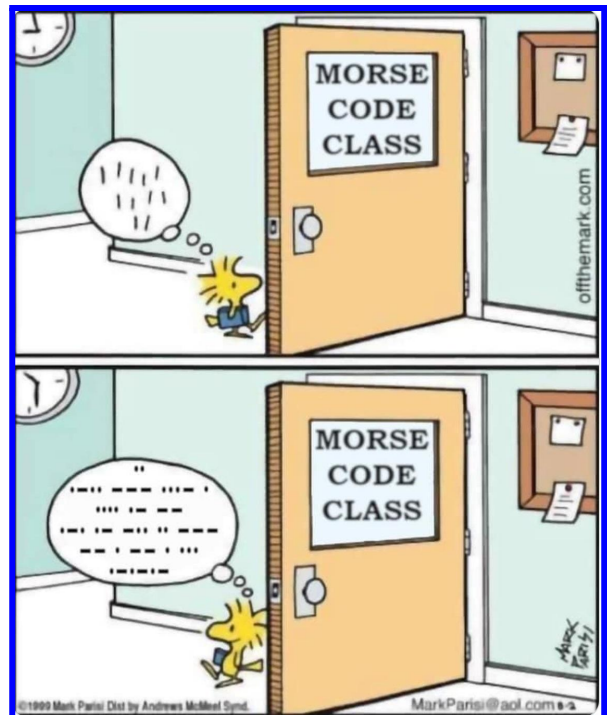


Things I'm not so keen on include:

1. The **belt clip** is not permanently affixed to the radio. It is a quick release design that ends up being extremely **easy to lose**.
2. The waterproof design means a proprietary port for data cable - **no K-style plug**. There is an adapter available, but it does not come with the radio.

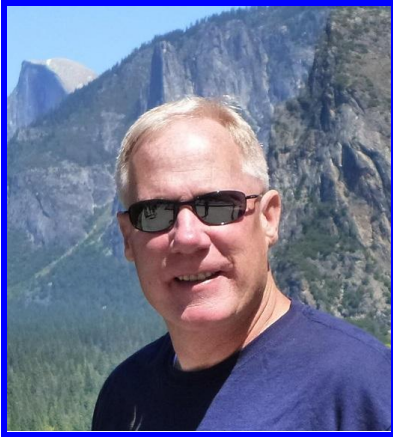
Overall this radio is **versatile** and **affordable**. Learning to use CHIRP is easier than manually programming any radio, so that's a plus. This radio would be good for a beginner, and if GMRS becomes a long term pursuit, there are other great radios out there to try!
 Thanks for letting me review this radio and I wish all TCARES a Happy Holiday!

73, John, [KN6RLM](#)/WROX508



Groveland GMRS

By [Chris Passeau](#)
K6CDP/WRPX768



Hello to everyone.

This is an update on what the Groveland GMRS group is doing.

[Richard Combs](#), KN6HSR/WRMM317, brought the neighborhood radio watch idea to Tuolumne County. The idea was to provide a radio service that the non-ham radio community would be able to use during emergencies. Thanks to Richard, the idea has taken off for the non-ham radio community, who do not want to obtain an Amateur Radio License. We now have **four** areas in the County that are using GMRS radios: 1) Strawberry, ; 2) Twain Harte; 3) Columbia; and 4) the Groveland neighborhoods. Columbia and Groveland are lucky enough to each have repeaters which provides greater coverage for their areas. Each

neighborhood is conducting a weekly NET.

The [Groveland NET](#) is on Saturday nights at 7 pm, PST. We welcome any GMRS licensed user to check into the NET. The Groveland NET channel (GMRS identifies it as channels not frequencies) is on repeater channel one. The repeater channel frequencies are: 1) Receive (Rx) = **462.550** MHz; and 2) Transmit (Tx) = **467.550** MHz with a CTCSS of **162.2** Hz. The repeater is located on Vernal Ridge Drive [above Groveland, just south of Pine Mtn. Lake (PML); see map below] and provides great coverage. I have been able to hit the repeater from Tuolumne City, Twain Harte, and Sonora. We now have approximately 60 users on the Groveland repeater. On August 31st there was a cell and telephone outage in many parts of the county, including Groveland. The Groveland repeater was utilized throughout the outage by many people to keep in touch with each other. With the frequent PG&E power outages, and cell phone outages, GMRS has proven to be a great resource for Groveland.



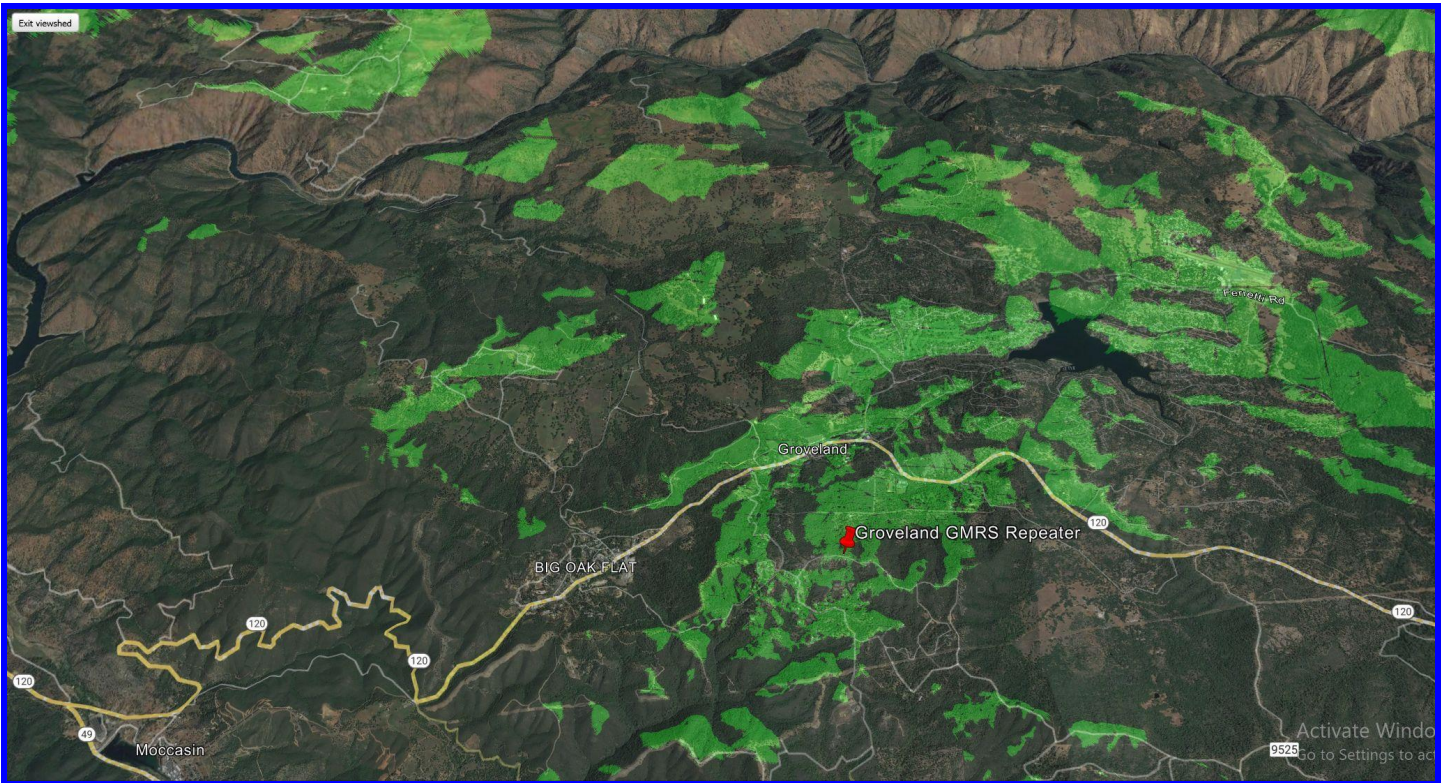
I would like to thank Richard Combs, KN6HSA/WRMM317, Jeff Tolhurst, N6JWT/WRDP326, and Marc Colton, N6NEZ/WRME405, for helping to keep their neighborhoods safe by bringing GMRS to the non-ham radio communities in Tuolumne County.

73, Chris, [K6CDP](#)

([Groveland GMRS Facebook Page Link](#))



This Google Earth map shows the Groveland GMRS repeater on Vernal Ridge, just south of town.



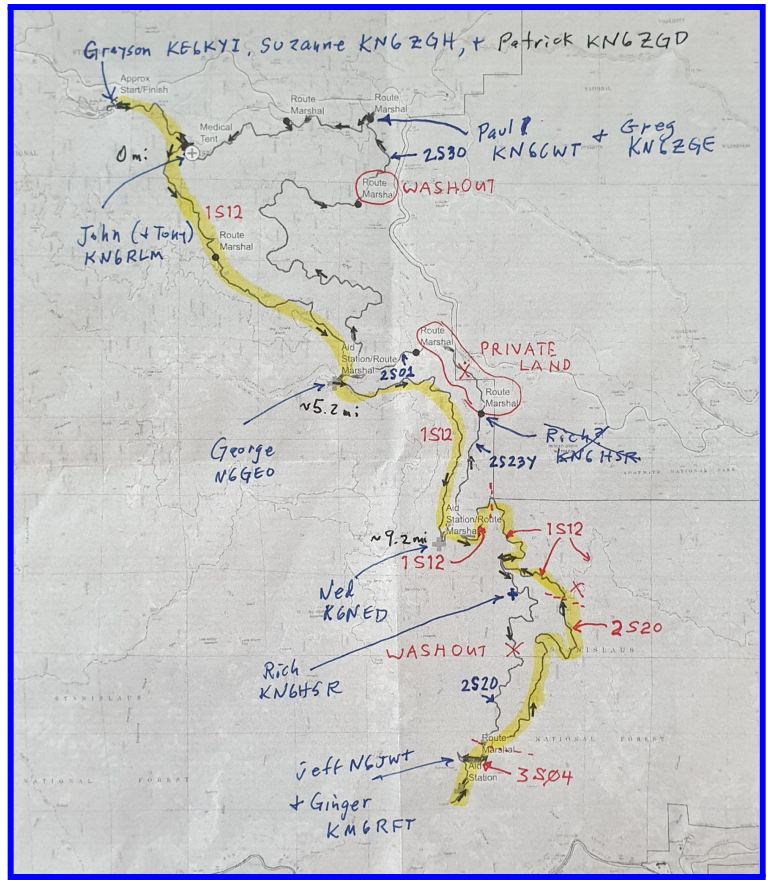
This Google Earth map shows a viewshed, in green, highlighting the land surface (within the map's view) in the line of sight from the Groveland repeater's antenna location.

[GG TRAILS] 20230624

- Arrived @ Station 6 @ ~9:45am
9:54am

1	501	26	520	51	520	76
2	570	27	513	52	523	77
3	556	28	510	53	520	78
4	577(2)	29	528	54		79
5	514	30	535	55		80
6	525	31	564	56		81
7	557	32	506	57		82
8	585	33	530	58		83
9	588	34	507	59		84
10	548	35	594	60		85
11	502	36	517	61		
12	599	37	529	62	1st rider arrived	
13	512	38	531	63	@ ~9:54am; last	
14	504	39	522	64	rider left @ ~12:00	
15	555	40	515	65	w/50 riders	
16	519	41	521	66	recorded total.	
17	547	42	505	67		
18	536	43	590	68	Weather: partly	
19	574	44	516	69	cloudy; high 60's;	
20	571	45	537	70	slight breeze @	
21	596	46	567	71	noon.	
22	585	47	552	72		
23	568	48	537	73	Occupied st. w/	
24	589	49	560	74	Ginger, KM6RFT,	
25	518	50	584	75	and Ryan route	
					marshall.	

Looking for rider 569 19.2 NBCK
Delivers Andrew's visket to Dwight.



Notes and a sketch map from the Groveland Grind (GG) mountain bike race, with radio support by TCARES in June, 2023. HAM radio operators worked with GG Route Marshalls to provide communications support for the race organizers. Grayson, KE6KYI, performed Net Control duties, while working with George, N6GEO, Rich, KN6HSR, Ned, K6NED, John, KN6RLM (and Tony, WRUL492), Paul, KN6CWT, Greg, KN6ZGE, Suzanne, KN6ZGH, Patrick, KN6ZGD, Ginger, KM6RFT, and Jeff, N6JWT. Below is a radio propagation map, from Google Earth, showing line of sight from the TCARES Duckwall Mtn. VHF repeater.

