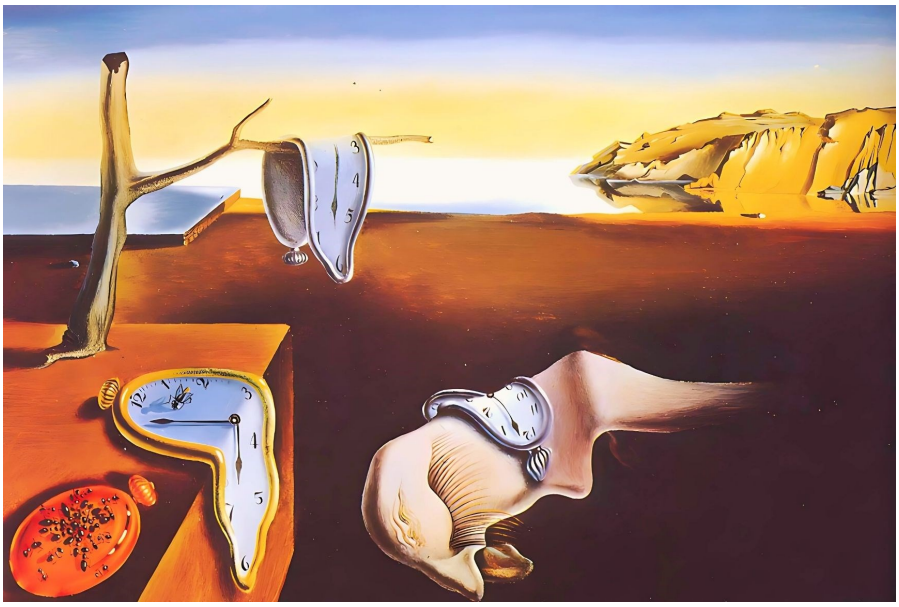
# Microvolt

***Monthly newsletter of the Utah Amateur Radio Club***

**June 2025**



# It's About Time



*Does anybody really know what time it is?*
*Does anybody really care?*

**— Chicago**

**Time allows us to mark the occurrence of a particular event. We can also measure the *passage of time* between events. But what does time have to do with amateur radio? From the changing magnetic field to the UTC moment at the start of a net, it turns out that time is a quantity that permeates just about everything in ham radio, albeit often invisibly. In this issue, we take a look at time, what it means, how it affects us amateurs, and why we really care.**

# Cover – About time

If you're a farmer, it might be important for you to know when to plant or harvest your crops. If you're a business leader, it might be important to know when your appointments take place. If you're a person with a full-time job, it might be important to know when you should awaken to get ready for the day. But as an amateur, how is keeping track of time important to you?

In fact, you might be one or all of the above, and yet the question regarding the relevance of keeping time to you as an amateur remains. Besides knowing when the next net should start or how many minutes it's been since you had last announced your call sign, there might be important time-keeping details that are working for you, possibly some without your knowledge.

So, why is time so important that we've spent enormous amounts of resources on tracking it, from sundials to atomic clocks? Time is a fact of our existence, regardless how we might feel about it. What's important is its management: in most cases we're free to waste it or use it to our advantage. We mortals have little control over the passage of time, so our only option is to figure out what to do with the time that's granted us.

In a cold and lonely bedroom, a person is curled up, having just heard the news that he or she has a few months remaining on this planet. That person will likely look upon life a little differently than the rest of us. After emerging from a bath of myriad emotions, time now becomes precious, and its waste is the new enemy. It's suddenly easier to overlook petty remarks and to start saying loving words to friends and family. This person is completely stripped of pride and realizes a new sense of kindness, thoughtfulness, and love for all others that has never previously entered the heart. Is time truly that precious? Is this what it takes to make us appreciate the gift we're given?

Many retirees have been heard to say that they have so little time now, that they have no idea how they ever had time to work. Why is it that we seem to be so much busier than we have been? Some researchers and other folks who study this kind of thing point at that little device you're holding in your hand, your smartphone. There was a time when you can disconnect and turn off the world, but that day has long since been in the rear view mirror. Many possess the unrealistic fear that they'll miss something important if they turn off their computers.

Those of us who have yet to experience the blessing of retirement trade our time for money, as we work and slave our lives away for our families, putting bread on the table and a roof over our heads. It's good when we can save up enough time and money to vacate work and enjoy leisure time away from regular society.

Maybe today is the time to start looking at time a little differently, no matter what the doctor might have said. Surprise the socks off a loved one by calling him out of the blue and telling him that you love him. Take one or two new hams under your proverbial wing and share with them your knowledge, but more importantly, your time.

Finally, if you have a few minutes for a little "timely" entertainment, here's a video called ***Time Lapse of the Future: Journey to the End of Time***. We believe it's about time you enjoy it.

*Microvolt editorial staff*

# *Editorial – Keeping time*

Earth rotates in relation to the Sun once every twenty-four hours, no more, no less. In this century prior to 2020, the Earth's rotation had been slowing down, and then in 2020 started spinning up again, due to a variety of minor terrestrial and celestial factors. Overall, the rotation of our planet slows down at approximately 2.3 milliseconds per century.

Due to movement in Earth's magma, the ice caps melting slightly (because liquid water is more dense than ice), and normal oceanic displacements, our moment of inertia is modified ever so slightly, accounting for some of the change. When enough milliseconds accumulate over time, scientists are considering altering our current time by adding or subtracting a leap second. Meanwhile, each day is precisely 24 hours long, not one day being longer or shorter than any other.

Because of the Earth's tilt on its axis, we experience seasons, which changes the amount of sunlight over a given spot during any day of the year. As a result, people are often heard to say that the days are getting longer or shorter, or that a particular day is the longest day of the year. Again, every day has precisely the same length of time, 24 hours. What people mean, however, is that the *daytimes* are getting longer or shorter, or that *daytime* on a particular day is the longest of the year.

From the Mayan calendar to atomic clocks we terrestrials have been interested in keeping time for one reason or another. Many devices have been invented to better help us keep track of time or even provide for us the time of day. One problem we've encountered is the time difference between locations on the globe. To solve that, we've roughly divided the planet into 24 time zones, each 360 ÷ 24 = 15 degrees wide, give or take.

Due to geographic, political, and convenience reasons, however, the time zones aren't as uniform as longitudinal lines would otherwise suggest. China and Greenland, for example, both span five time zones, yet only recognize a single official time zone for most of the country. On some continents such as South America, parts of one time zone that should normally be east of its adjacent zone is found on its west instead. Adding to the challenge, countries such as India and Venezuela are on a 30-minute boundary, and Nepal is on a 45-minute boundary.

To get us on the same page, we've developed a time system called GMT, or Greenwich Mean Time, which was based on a particular location in Greenwich, England. Today, our earthly time reference is its successor, called Coordinated Universal Time, abbreviated ***UTC*** by agreement. Using UTC, you and a DX contact can agree on the time and date of the exchange by referring to the same time, removing all ambiguity.

There are moments when it's convenient to refer to local time within our time zones, so the following chart summarizes the conversion between UTC time and most American locations:

| To get | Do | | To get | Do | Time Name |
|---|---|---|---|---|---|
| EST | UTC - 5 | or | UTC | EST + 5 | Eastern Standard |
| EDT | UTC - 4 | or | UTC | EDT + 4 | Eastern Daylight |
| CST | UTC - 6 | or | UTC | CST + 6 | Central Standard |
| CDT | UTC - 5 | or | UTC | CDT + 5 | Central Daylight |
| MST | UTC - 7 | or | UTC | MST + 7 | Mountain Standard |
| MDT | UTC - 6 | or | UTC | MDT + 6 | Mountain Daylight |
| PST | UTC - 8 | or | UTC | PST + 8 | Pacific Standard |
| PDT | UTC - 7 | or | UTC | PDT + 7 | Pacific Daylight |
| AST | UTC - 9 | or | UTC | AST + 9 | Alaska Standard |
| ADT | UTC - 8 | or | UTC | ADT + 8 | Alaska Daylight |
| HAT | UTC - 10 | or | UTC | HAT + 10 | Hawaii-Aleutian |

Once we established a time standard and a time division agreement, we also had to agree on a written format. Not to be confused with *military time*, today's amateur radio standard has generally adopted the ISO 8601 recommendation of the HH:MM format,

# *Editorial – Keeping time, cont'd*

using the UTC 24-hour clock and without the "T" prefix. Here are some examples of the time 7:23 pm in different 24-hour clock formats:

- 1923 (military)
- 19:23 (amateur and other non-military)
- 1923R (military, with the time zone suffix)

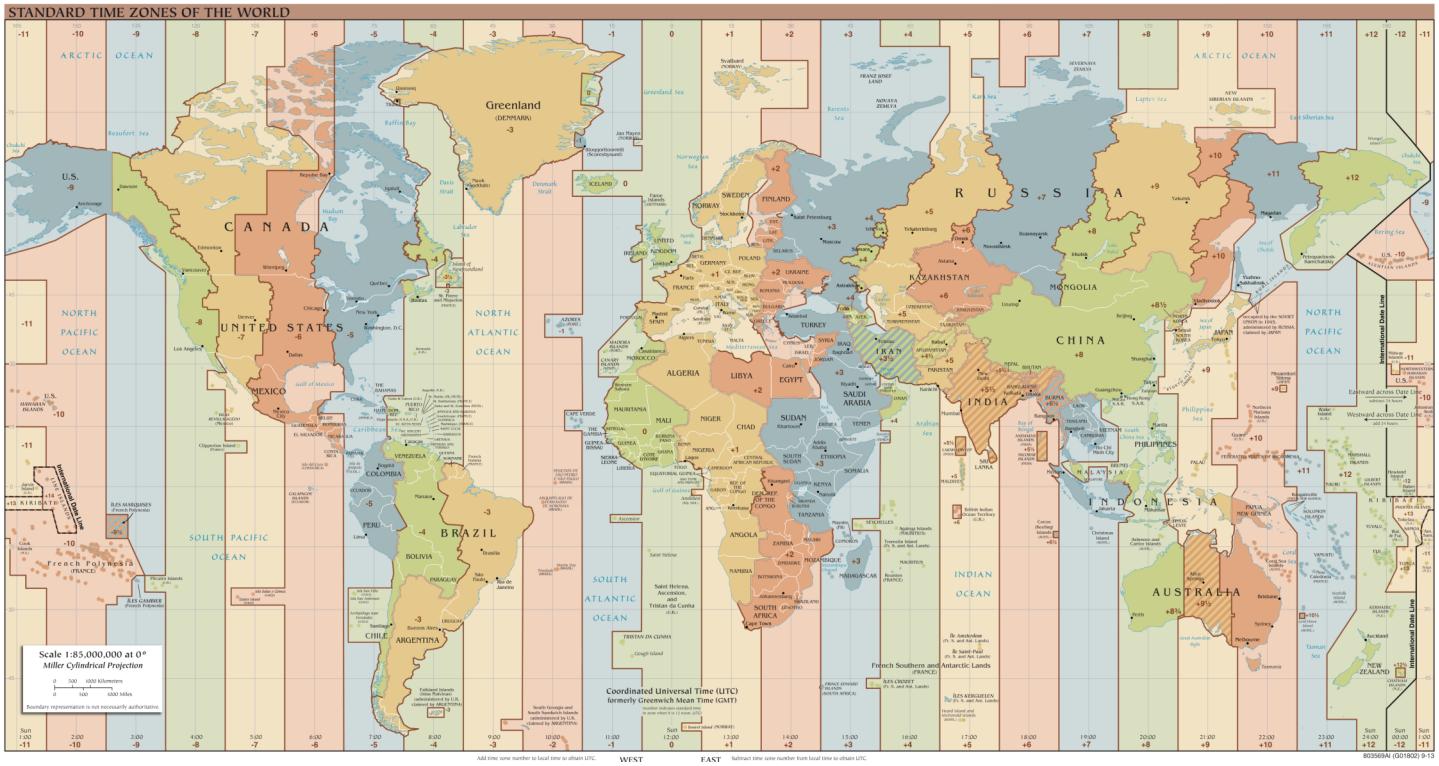
BTW, the current UTC time is continually broadcast on shortwave frequencies from government-run radio stations WWV and WWVH 24/7/365. They're fed and controlled by NIST (National Institute of Standards and Technology), and broadcast a digital time code in a specific format each minute, including a digitally encoded BCD signal that announces the current time and date, interpretable by radio-controlled "atomic" clocks that can be purchased at most retail stores. You can listen to the broadcasts on 2.50, 5.00, 10.00, 15.00, and 20.00 MHz AM.

To conserve available energy during World War I by making better use of daylight hours, the US adopted Daylight Saving Time temporarily, and then permanently starting in World War II. Contrary to popular myth, Benjamin Franklin did not invent DST. Contrary to popular myth, farming was not the reasoning behind adopting DST. Regardless of its original intent, many are in favor of abolishing this practice of "springing forward" an hour in March and "falling backward" an hour in November to accommodate the time adjustment in an effort to save daylight.

## A leap of faith

Speaking of time, our calendars have also undergone changes in world history. Following the use of the lunisolar calendar by Romans, Julius Caesar enacted a new calendar in 45 BC based on twelve months and added leap days every fourth year. Recognizing the increasing inaccuracies introduced by the Julian calendar, however, Pope Gregory VIII introduced the Gregorian calendar, in 1582, which we use today. The Gregorian calendar differs from the former in that leap days are excluded on century years except those evenly divisible by 400. This made 1800 and 1900 non-leap years, but made 2000 a leap year.

*Anything to add? Email* ***editor@utaharc.org***



# *Letters to the editor*

Dear Editor:

I have been asked by my son's third-grade teacher to do a presentation about ham radio to the second-through-fourth graders at the school where he attends. My current plan is to give a basic "introduction" to radio, age appropriate, a small intro as to how propagation works, and what bands/frequencies are used for what. I want to use an HT to show what local repeater traffic might sound like, then maybe use an HF radio with either my vertical or EFHW antenna to make some longer-range contacts. If you have ever done a presentation like this before, would you be willing to share your experience?

Austin in Layton

Dear Austin:

Congrats on the opportunity! Here are a few tips from my own experience:

1. Their attention span is less than 6.7 seconds, many much less. You exceed that between topics, and you've lost them.
2. Catch them off-guard, but don't shock them. Tell them you can talk to people in China without a phone. Tell them you can bounce your signal off the Moon. Tell them you can talk to people in China without knowing Chinese.
3. Don't attempt to educate them, entertain them. They're probably smarter than you'll ever be, so your purpose is to interest them, not teach them.
4. Play games with radios, like tell each other Dad jokes on them, play hide-and-seek with them, solve a puzzle in two different rooms, etc.
5. Let them handle the HTs, make fools of themselves on the air, and damage your HTs beyond repair (the very reason they make Baofengs). After they or you say your call sign, of course.
6. Arrange with a friend to come on the repeater during presentation time, and have your friend ask questions to the kids. No, not your average ham friend, but somebody who's just a Happy Meal smarter than the kids, and can out-think them a little (might be a little difficult to find). He should ask a kid his favorite food, then prove the kid wrong by telling them he used to work on a pastrami farm. Have him ask the kid to loan him some money to make bail that night. He should ask the kid what it wants to be when it grows up, then tell them how much money he'll make per hour. Have him explain the purpose of the slowly pulsating red light on a tall tower out in the field near a highway, which is to prevent planes from crashing into the tower, then explain the purpose of the tower, which is to hold up the light.

This little activity alone will go a long way. I mean, the teacher will likely hate you, but the kids will adore you, and that's the point.

Dear Editor:

Should I place my SWR meter between my radio and my tuner, or between my tuner and my antenna, and why?

George in Tooele

Dear George:

Inserting an SWR meter between your tuner and your antenna will measure the reflection from your antenna, which can deceive you into believing your tuner is defective or ineffective. Inserting it between your transceiver and your tuner will measure the reflection from your tuner, and will show you when the tuner is adjusted properly.

Dear Editorial Staff:

I'm on hospice and have some ham radio gear that I'd like to donate to the club. Who can I contact?

Sal in South Jordan

Dear Sal:

So sorry to hear about you going on hospice! Please contact James Bennett at kk7avs@gmail.com

*Send your questions to* ***editor@utaharc.org***

# Club news

There has been a huge surge of interest recently in ***Fox Hunting***, or hidden transmitter locating, and our resident expert Larry Jacobs WA7ZBO was gracious enough to come and give us a presentation on its fundamentals. He showed us a little history, some important equipment used for locating a hidden transmitter, and how to use them effectively to get the job done. Larry even provided us with a few good tips, plus some funny hidden transmitters from past hunts.


Larry has been a local active ham for the last 55 years and has occupied most positions in UARC, including past president back in the 70s, when UARC held meetings at Murray High School. His interest in amateur radio direction finding (ARDF) began at ten years old while accompanying his father Jake W7DBO, on six meter fox hunts in Olympia, Washington. Today much of his time is spent building equipment, hiding Fox Boxes or giving ARDF presentations at club meetings and amateur radio conferences.

*You can see the video presentation here. You can also view past club meeting presentations on our YouTube channel.*

(Photos courtesy Shawn Evans K9SLE, et al)

# UARC 2025 Fall Potluck

Our 2025 Spring Potluck was so successful that, by overwhelming demand, we plan to hold a Fall 2025 Potluck dinner on Thursday 11 September at the same location, the Salt Lake County Facilities Management Cafeteria, 2001 S State St, room S1-100. We're announcing this now, because some club members said that two months wasn't enough notice for the Spring Potluck. But wait, there's more. Yes, we've discovered that our members enjoy eating and socializing so much that we've decided to plan a third potluck dinner for this year, this one in time for the Holidays. This UARC Christmas Potluck will replace the December club meeting on Thursday 11 December 2025, to be held at a very secret location that will be revealed later.

# *For your information*

## Field Day 2025

Saturday noon 28 June through Sunday noon 29 June **near Payson Lakes**. We plan to start setting up Thursday night about 6:00 pm.

## Steak Fry 2025

Our annual fun get-together is planned for Saturday 19 July 2025 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.

## Fall 2025 Potluck Dinner

The next club potluck dinner is 6:30 pm Thursday 11 September 2025 at the Salt Lake County Facilities Management Cafeteria, 2001 S Sate St.

## License classes

*Salt Lake:*

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

*Provo:*

**Technician** : Saturday, 8:00 am to 1:00 pm
20 Sep
Visit **HamStudy.org/sessions** to register (free)
**Provo Fire Station #2**, 2737 N Canyon Rd
Email **nv7vham@gmail.com** for info

*Orem:*

**Extra** : 5 Tuesdays, 6:30 pm to 9:30 pm
15 Jul, 22 Jul, 29 Jul, 05 Aug, 12 Aug
**Technician** : 4 Tuesdays, 6:30 to 8:30 pm
Sep 16, Sep 23, Sep 30, Oct 07
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

*Eagle Mountain:*

**Technician** : 5 Thursdays, 7 to 9 pm
Aug 14, Aug 21, Aug 28, Sep 11, Sep 18
Email **ki6oss6365@gmail.com** to register (free)
**Eagle Mountain City Hall**, 1650 Stagecoach Run

## Exam sessions

*Salt Lake County:*

- Email Garth Wiscombe W7PS **w7ps@arrl.net**
  Jun 30, Jul 28, Aug 25, Sep 29, Oct 27, Nov 24
- Email Rick Morrison W7RIK **w7rik@arrl.net**

*Utah County:*

- Wed 18 Jun 7:00 pm : **Provo** : **signup**
- Sat 14 Jun 10:00 am : **Eagle Mtn** : **signup**
- Wed 16 Jul 7:00 pm : **Provo** : **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**
KK7AVS SDR : **k7xrd.club**
N7RIX SDR : **https://sdr.n7rix.com**
K7JL beacon 28.2493 MHz

## HF remote and club transceiver stations

If you'd like to learn 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?

Reach out to the club leadership by sending an email to **uarc@xmission.com**. Also, add to this page by emailing **editor@utaharc.org**

# *Spotlight – Wade Shearer KK7RRW*

*At the age of twelve, I was first exposed to ham radio on Mount Timpanogos when I was part of an active scout troop that summited the mountain multiple times per year. I immediately fell in love with the mountain and volunteers that spent their weekends as guides and first responders along the trail. My neighbor and leader, Ben Christensen, was a member of the Timpanogos Emergency Response Team, so I got an up-close view into how the organization operated. He was a hero to me. I dreamed that I could have my own radio and help people on the mountain.*

*Having hiked Timpanogos many times, it just so happens that I had proposed to my wife in the upper meadow of that very mountain. The frequency of my ascents up the mountain slowed after we got married and started having kids, however. As my family grew, I also developed an interest in self reliance and emergency preparedness. In February 2024, after being called to serve as the self-reliance specialist at my church again, I was thinking about gaps in our preparedness plan and decided it was finally time to get some radios. I ordered a pair of Baofeng handheld radios, but having them just in case of an emergency didn't last long, and I started studying for the Technician license exam.*

*My dad Hal KK7RRU, who had started studying to get his license when I was a teenager, but struggled mastering Morse code, was excited to join me now that it's no longer a requirement. Once my son Max and daughter Lila studied, we took the exam together in March 2024 and we all passed. Lila and I went on to get our General, and Hal, his Extra. A month ago, my third daughter Afton joined us with her Technician license.*

*I started having QSOs, participating in nets, and attending club meetings, and found a wonderful community of some of the friendliest and most kind people, willing to teach and help you out with anything you need. I really appreciate how the FCC rules help create a place where I'm comfortable for myself and my children.*

*One day, Noji KNØJI invited me to run the Family Net on Sundays, and I began doing this from my handheld outside, but it got cold and it was hard to take check-ins. After I upgraded to a TYT TH-7800 mobile radio and a Pockrus J-pole, and set up a shack on a card table in my garage, I spent the Winter there, working next to a propane heater. I'm really proud of my daughter Afton who has now taken over as net control of that net.*

*As I'm mostly interested in portable operations, especially in the back country, I didn't think I would be interested in HF. I caught the bug at Field Day, however, and started saving for a base station. I also saved up for some bigger antennas and to move my shack into the house. I now have two vertical antennas on the roof and an off-center-fed dipole that hangs from a tree. I was able to run coax into an unfinished utility room in my basement; it can still be cold in there, but its a much nicer shack than the garage was.*


*I've enjoyed DX-ing and hunting POTA. I now have confirmed contacts in all 7 continents, all 50 states, 139 counties, 19 countries, and 139 grid squares. I think I'd enjoy activating some day. I'm saving for a battery and portable antenna that I can use for that and camping.*

*I've dreamed of the day that my children would be big enough to start hiking and I could take them up the mountain. That happened in August, when I summited Mount Timpanogos for my seventeenth time, this time with my daughter Lila. We took our radios and listened in on the TERT team talking. It was an awesome day.*

*— 73, Wade KK7RRW*

# *Tech corner – Field Day 2024 highlights*

Hi, my name is Sylvia, and I had a very unique experience at Field Day this last year, part technical and part operational, but all of it fun. It was my first year attending. Despite having to overcome some unique challenges, I found ways to enjoy and make it the best experience ever!

We set up and camped out at beautiful Payson Lakes, Utah. Once we got set up, a fellow ham friend offered to take me for a walk around to familiarize me to where things were, such as the restrooms and the various operating stations. It was a nice campsite; however, navigating my way around as a blind person made for some challenges. The grounds were very rocky and uneven; lots of tall grass, gullies, steep hills, and shrubs. Using my white cane to detect the edge of the road, and follow the grass to locate the restrooms from my tent, I did manage to find my way around. I also used the caution tape and certain cords and cables as landmarks that were sticking out of the ground to locate the different tents where the stations were set up.

We also enjoyed good food, which was delicious! One of our favorites was the Jell-o salad with cottage cheese and whipped cream. A few of us had several helpings of that. We were also served burgers and hot dogs, along with various side dishes. There was something for everyone to enjoy at the dinner for sure!

*Sylvia Bernert K7KQY*

Because it was my very first time attending Field Day, I wanted to observe and hear all the tips and tricks from more experienced operators, so that's just what I did. For the first couple of hours I sat and listened to each operator making the initial contacts with another operator logging in those contacts into the computer. I had heard prior to coming that the computer software was not accessible to the blind and therefore, I would not be able to help with the logging.

Knowing this, I still took on the challenge of logging anyway. In fact I paired up with another long-time fellow ham operator Linda Reeder N7HVF who had attended Field Day for many years. Linda started out by making the initial contact using voice, then repeat the call sign to me as I logged it into the computer. Even though the computer did not vocalize what I was typing, I knew the layout of the keyboard enough that it was just a matter of memorizing the method of how to log the contact. First type in the call sign, press Enter, then type in the designator, press Enter, and done! Onto the next contact!


*Linda Reeder N7HVF*

Where it got challenging is when a contact had been previously worked on another band, the computer would make an audible noise (ding), which indicated it was a duplicate to which it would then autofill on the screen. If you could not see the screen, you would not know that popup message was displaying on the screen and you would go on assuming you were just entering more contacts. All it took was an occasional sighted individual to poke their head in to inform me of the message, to help me know to press Escape and continue to enter in the next contact.

# *Tech corner – Field Day 2024, cont'd*

I spent eighteen to twenty hours observing, making initial contacts, and/or logging contacts. I spent several hours teamed up with a fellow ham working in the 20-meter band tent logging contacts. My final hours at Field Day were spent making initial contacts and logging in those contacts into the computer simultaneously as there was no one else available to assist me at the time.

I enjoyed the camaraderie between all the other ham operators at Field Day. I made new friends, I learned a lot, and most of all, made it a worthwhile experience despite the challenges. I also think that having our Field Day coordinator along with some of our club board members seeing the blind in action, experiencing the accessibility challenges we were facing firsthand were educational to them. Seeing the desire we have of conquering these challenges, it's my understanding that there have since been some discussion about resolving those issues going forward.

I've been a ham operator since 1995, but only obtained my General Class license in May of 2023 and looking forward to many more years of Field Day fun. This is Sylvia, K7KQY saying 73, and encouraging everyone to stay radioactive!!

*Sylvia Bernert K7KQY*

# *Strays – Then and now*

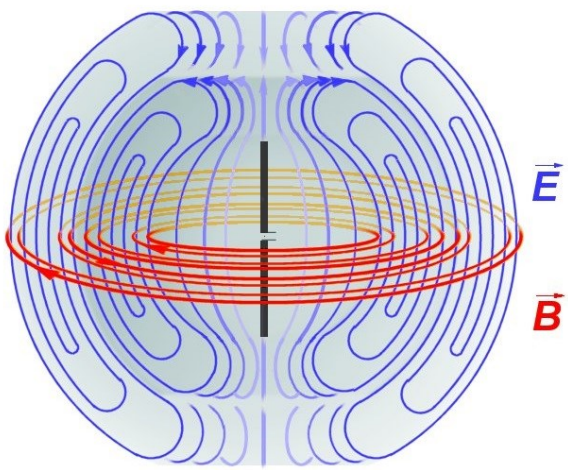
In case the above title leads you to believe we're discussing something reminiscent of the *good-ole days*, let me help you focus your nostalgia on something only remotely related, ***time differences***. And I'm not talking about the Daylight Saving kind either, because that topic alone would probably draw the torch-and-pitchfork mob at my doorstep the day following publication. From the early days of when mankind began to reckon the time of day, it soon became apparent that one time measurement of great interest was ***the passage of time***.

I love blueberry pie, and I even know how to make one. The only problem I typically ever encounter when I attempt the feat, however, is my interpretation of the amount of time that's required to perform the baking part of the task, versus the actual time that I allow the creation to remain in the oven at the requisite temperature, assuming the raw ingredients begin their heated journey at room temperature. Whether it's the amount of time something requires, or the amount of time that an event transpires, either is often measured by the difference between the ending time and the starting time, known as the time differential, ***Δt***.

## Relevance

The world of amateur radio is built on the very principles that depend heavily on things that change through time. While permanent magnets can be fun to play with, our radio sphere can only occur using magnetic fields that change with time. The following is one of Maxwell's equations, known technically as the *Maxwell-Faraday Equation*:

$$\nabla \times \mathbf{E} = -\frac{\partial \mathbf{B}}{\partial t}$$




In essence, *a time-varying magnetic field always accompanies a spatially-changing electric field that changes at the same time*. From this equation, it should be obvious to the casual observer (just kidding) a magnetic field (***B***) that changes with time (**t**) produces an electric field (***E***) that also changes with time and space, the very basis of radio waves in a single formula. The corollary to this is that if the magnetic field is constant, like with a permanent magnet, there will be no time-varying electric field, and therefore no radio waves. But you knew that.

And you likely also knew that electricity takes a certain amount of time to travel down a conductor. And since it's varying in intensity as it travels, it produces a time-varying magnetic field outside it. And if that varying time happens to match the speed of electrical current through the conductor (velocity factor), you have a recipe for a possibly effective antenna.

What might be surprising, however, is that two separate electromagnetic ("radio") signals can originate from a single source, yet arrive at different times at the same destination. This can occur when part of the signal is reflected off a hillside or the side of a large building, for example. The ensuing *multi-path* pair results in the signals being received at slightly different times out-of-phase (out-of-sync) with each other, potentially resulting in distortion and even cancellation of each other.

So, quite a lot of what we amateurs deal with involves the time differential. As for my blueberry pie, my family might disagree, but I believe I've only exceeded the required baking time once that I'm aware of. In any case, we seemed to have survived the ordeal sufficiently to allow me to continue my life's journey.

*Noji Ratzlaff KNØJI*

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**We encourage you to submit** original pictures (highest resolution), articles, software and hardware descriptions, appropriate humor, and responses to editorials. Email the 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 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. The 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. Send dues to club secretary James Bennett, 4960 W 5400 S, Kearns, Utah 84118. Email 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.

Call the **UARC Ham Hotline** at **801-583-3002** for amateur radio information, including club, testing, meeting, and membership information. Leave a message, and we'll make an effort to return your call.

## UARC 2025 Board

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**For-late breaking news** listen to the UARC Information Net, Sundays at 8:30 pm on 146.620– or visit the announcement page.

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