



Smoke Signals

Newsletter of Fullerton Radio Club

October 2021

President's Column - October 2021

This coming Wednesday's (10/20) Zoom meeting will be a little bit more formal than our usual chat sessions. We have several important items of club business to discuss, so I hope you will be able to attend.

Secretary position: After serving the club faithfully for ten years, Linda Endsley has asked to step down as FRC Secretary due to some health issues. We need someone willing to run for this position. The responsibilities involve taking notes at our monthly Board meetings and submitting them to Paul for publication in Smoke Signals. The Board meets at 5:30 pm on the first Wednesday of each month, usually at the Sizzler in Fullerton. This would be a nice opportunity for one of our newer members to join the Board of Directors. There is no additional time commitment other than what I have just described.

Board election coming up: Your club officers serve at your discretion, and are elected for one-year terms each November. If you are interested in running for a position or nominating a (willing) club member, you may do so between now and mid-November. We will hold an election during the week of November 17.

The future of club meetings: As it looks like in-person activities are becoming more practical, I'd like you to start thinking about what you would like club activities and meetings to look like going forward. Do we return to a monthly evening meeting at Chapman Park Activity Center? Do we keep a presence on Zoom? Would it be better to have our monthly meetings on Saturday mornings, perhaps at a park? I think a Saturday morning meeting would allow a wider range of activities. If there is a Saturday morning where the Chapman Park Activity Center is

available (unknown), would we prefer that to meeting at night, as we have in the past? I'm thinking that meeting at a park one Saturday morning each month might be worth trying. I need to hear your opinion about how best to proceed. Please join us on Zoom on Wednesday to give your input.

The future of Smoke Signals: For the past 18 years, Paul Broden has donated his time as editor of Smoke Signals. In addition to the hours Paul spends editing and formatting articles, he also has the challenging (frustrating?) job of "encouraging" members to write and submit articles. It has always been difficult to gather enough content to fill the newsletter, but during the last several years it seems the number of articles submitted has continued to decline. We currently do not have enough material to fill 12 issues per year. Let's have a discussion about how best to get timely club news and other ham radio content to the members. Make Smoke Signals quarterly? Use some other medium? Your ideas and suggestions are welcome. [Ed: See article on page 3 entitled "Smoke Signals Future"]

October Club Meeting date:
Wednesday, October 20,
2021;
On ZOOM! - 8:00 PM

We'll be accepting nominations for Club officers at the October meeting. Are YOU ready to serve? We'll also be discussing the future of our newsletter Smoke Signals. We need your input!

Fullerton Radio Club
P.O. Box 545, Fullerton, CA 92836-0545

Board of Directors

President

Bob Houghton AD6QF
Email: bobhoughton@mac.com

Vice President

Paul Broden, K6MHD
E-mail: Pbroden53@gmail.com

Secretary

Linda Endsley, KJ6IHB

Treasurer, Public Service, Membership

Gene Thorpe, KB6CMO
E-mail: gtkb6cmo@juno.com

Members At Large

Richard Belansky, KG6UDD

Walter Clark

Tom Gaccione, WB2LRH

Robert Gimbel, KG6WTQ

Larry McDavid W6FUB

Volunteers

T-Hunt

Joe Moell, K0OV
http://www.homingin.com
E-mail: homingin@aol.com

W6ULI License Trustee

Albert Solomon, AG6OF
E-mail: albertsolomon18@gmail.com

Newsletter Editor

Paul Broden, K6MHD
E-mail: Pbroden53@gmail.com

November FRC BOARD MEETING

The next Club Board meeting will be on November 2, 2021, at Sizzler restaurant located on Harbor Boulevard just north of Brea Boulevard.

5:30 PM

All Members are welcome.

Show –and–Tell

Bring something of interest to the meeting to show and share your story. Something old, new, or just of interest to hams.

Web site: www.FullertonRadioClub.org

October Board Meeting Minutes

The October FRC Board meeting was called to order on October 6 at 5:40 PM at Sizzler Restaurant. Those in attendance were: President Bob Houghton AD6QF, Vice President Paul Broden K6MHD, Treasurer Gene Thorpe KB6CMO, Board Members Larry McDavid W6FUB, Robert Gimbel KG6WTQ, Walter Clark, and guest Irene Broden. The meeting began while we ate. It was noted that Secretary Linda Endsley KJ6IHB has notified the Board that she will be unable to continue as Secretary for the foreseeable future.

Minutes of the August Board Meeting were reviewed and accepted. [There was no Board Meeting in September.]

Treasurers report:

Savings account; \$2,608.82. Checking account; \$4155.72 as of 9/10/21. There were no new deposits or expenses reported. A \$96 fee for renewal of the website is due this month. Bob will take care of it.

Membership:

No new members or current member renewals were identified. The overall club membership shows 45 paid members, plus 2 life members as of 8/6/21.

Upcoming club programs: No pending presentations were noted. Club meeting will continue on Zoom until further notice and until a satisfactory meeting place is identified.

Special Events:

The TAG meeting this month (October 13) will be held on-site at Walter Clark's home.

Old Business:

As announced in last month's Smoke Signals the club board meeting has been changed to the first Wednesday of each month. Meeting location will be announced prior to the event.

New Business:

During the October club meeting we will solicit candidates for the upcoming club officers election. A discussion during the October meeting will also determine the best method for voting.

The future of our newsletter, Smoke Signals, was discussed. Solicitation of input is, and has been, difficult to resolve. [See separate article on page 3 of the newsletter].

Meeting attendance, even on Zoom, has been somewhat limited, and there was a discussion as to why the low attendance. The board discussed the potential of a change in the meeting night as Wednesday seems to be a busy night for many members. No decision was made.

The meeting ended at 6:40 PM. Informal discussions continued.

Submitted by Paul Broden K6MHD, acting secretary

Solar Electricity Update

I got my 2-month Anaheim utility bill today; my solar system over-produced slightly for the period, despite the clouds recently. But, peak output is decreasing rapidly as the season changes; solar output will be lower until spring. The rate of change of daylight and sun moving south is highest at the autumnal equinox.

The shape of the solar output curve approximates a sine wave to the first order, but deviates most at the early morning and late afternoon, when output is lower than a true sine wave would provide.

I did some simple calculus math and calculate that the area under a normalized half-cycle sine wave (the total daily energy produced) is 2X square units. So, if it were a sine wave and the peak output at meridian were 1 kW, the total output for the day would be 2 kWh. That day total calculated output is never reached; the actual daily total with full sun is 1.8 to 1.9 the peak output. I think this due to low-angle atmospheric solar energy absorption and some minor tree-shading in late afternoon. This assumes all solar panels face due south, as mine do.

Physics rules...

Larry

Smoke Signals Future?

Our Club newsletter, Smoke Signals, has been our key means of communication with members and friends since the club's origination in 1950. I recall writing the newsletter in the 1960's as a part of my duties as club secretary. Production of the newsletter was much more difficult in those days as it all had to be done with a typewriter and mimeograph machine, and all copies went out by what is now referred to as "snail mail." Vince and Betsy Vigus took over the newsletter production somewhere in the 1980s, I think, and did an amazing job of it's editing and production until Vince's death in late 2003.

So what's my issue now with the ease of word processing and email? The issue continues to be availability of content and sources of input. Walter Clark does a wonderful job of providing photos and dialog obtained from the TAG meetings. In recent months, maybe even a few years, we wouldn't have more than a page or two without Walt's TAG reports. So, what am I looking for? There is no change in our request for articles about what's going on in your HAM life. You can tell us what you've been doing in your HAM adventures, anything about new equipment, what you've built, or just a subject that will be of interest to club members. Something with photos will be ideal. If you're concerned about writing kills, do be. If needed, I'll do a little "wordsmithing."

But the club board has two new suggestions. First, take a photo of what's actually going on in your HAM life. Should be easy with a cellphone. Email it to me and I'll take it from there. Vacation with radio activity; new equipment; new antenna or putting it up; something repaired in your gear; or

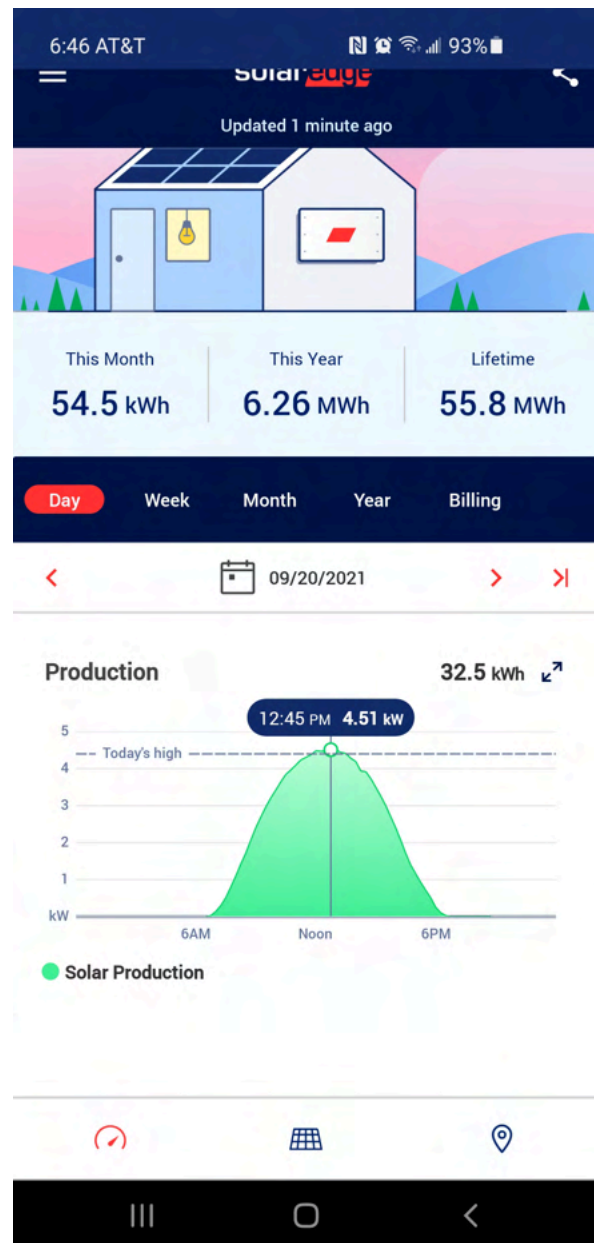
just use your imagination. I'll edit as needed. No need for long dialogue about the event. Just a brief comment about the photo.

Our second idea is that we're going to identify someone(s) from the membership roster, then make contact with you and, as we identify your HAM interests, ask YOU SPECIFICALLY to provide something for Smoke Signals. Nothing overwhelming!

Please remember that it's YOUR club. We need YOUR participation! And please attend the monthly Zoom meeting. There are lots of you that we haven't seen in a long time.

Thanks: Paul Broden K6MHD, Smoke Signals editor/publisher.

Larry's Solar Power Graphics



Transmitter Hunting Session October 30

Fullerton Club members and their families are invited to the next southern California on-foot radio direction finding session, which will take place Saturday, October 30, 2021 at Bonelli Regional Park. It is intended for both beginner and intermediate level transmitter hunters. A ham radio license and/or knowledge of radio equipment are not requirements. Try your hand at some easy two-meter transmitters that I will set. There will also be a 5-fox two-meter international-rules course of moderate difficulty set by Scott Moore KF6IKO. A transmitter on the 80-meter band may also be set up to try.

Included in this session will be a barbecue lunch, prepared by the GOTAhams and the Tri-County Amateur Radio Association.

If you have receivers, scanners, directional antennas, attenuators, or other equipment suitable for on-foot RDF, be sure to bring it. Make sure all batteries are fresh. A limited amount of RDF gear will be available for loan.

For those who want to build RDF gear for use with their own two-meter hand-held radios or scanners, Marvin Johnston KE6HTS will bring kits for measuring-tape yagis and active attenuator circuit boards. He also has complete antenna/attenuator kit that includes the power switch, BNC connector, housing and battery, ready to install as the tape measure beam is built. There will be tools and soldering stations for building. If you're not an electronic technician, don't worry because there will be experts to help you. Send e-mail to Marvin (marvin@west.net) to pre-register and get more information about equipment. The building session will only take place if there are sufficient advance

registrations. If you already have equipment and just want to hunt transmitters, you don't need to pre-register.

If it takes place, the building session will start at 9:30 AM. Please be prompt. Beginner transmitters will be on the air at that time. The main 5-fox hunt will start about 10:30 AM. Hunters may start the advanced course at any time until 12 noon. Courses close at 3 PM.

For the advanced 2-meter course, electronic scoring will be used. If you have an "e-stick," be sure to bring it. A \$5 donation is requested for the advanced course to cover expenses related to e-punch equipment and maps. The beginner course and the 80-meter transmitter hunt are free of charge and e-punch is not required for them.

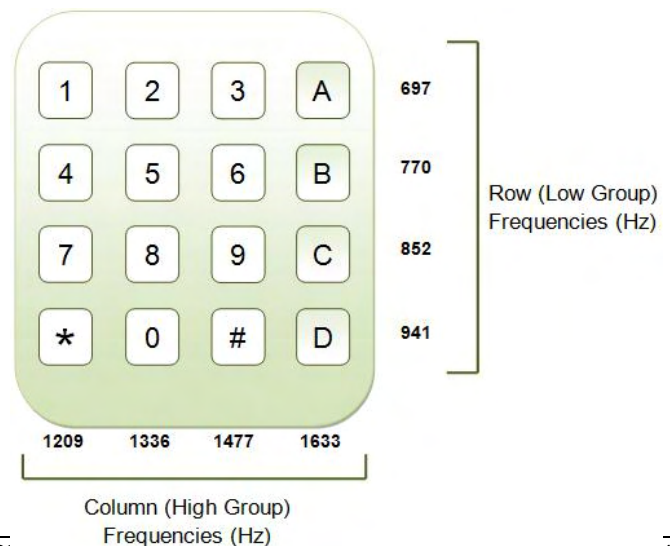
Trails are primitive in some areas of the park, so wear sturdy shoes. All ages are welcome, but young children must be accompanied by an adult at all times.

Bonelli Regional Park is near Raging Waters, Brackett Field, and Puddingstone Reservoir. From the 57 freeway north of I-10, take the Via Verde exit and go east through the entrance to the park. There is a per-vehicle entry fee. Go approximately 1/4 mile beyond the entrance and turn left into the parking lot for the former Snack Shoppe and bike rental stand. Look for the orange-and-white orienteering flag directing you to the starting area. Talk-in is on 146.97 MHz simplex. A map to get you to the park is at www.homingin.com.

73, Joe Moell K0OV

TAG Activity Report for October 2021

This was the first "indoor" in-person TAG meeting since COVID. That's at least a year and a half. There was just the right number to fill the living room, but there's always room for more. Walter (host and your reporter) started with a question about a digitizer of slides he has. The scanned results looked terrible. Noisy and blurry. There were no suggestions, but it started a long discussion about the quality and cost of digitizing 35 mm film. Conclusion as far as Walter is concerned, is that 35 mm as old as it is, is still a challenge for affordable digital conversion. And to get a decent digital copy made you must rely on the professionals and that's expensive. It's incredible that film is so good. It is still hard to get digital copies that leave nothing behind. Dang.



Our intrepid leader is back from exploring the north Midwest of the country. He shared with us his interest in DTMF decoder boards. Dual tone multi-frequency (DTMF) is the sounds or tones generated by a telephone when the numbers are pressed. The three horizontal rows of numbers on a telephone keypad generate three different frequencies and the three columns producing yet a different three. Each number has a unique pair of frequencies. You can see how old this technology is. These tones are transmitted over the voice channel of any radio, or even telephone lines of course. DTMF can also be used to control automated equipment and of course functions for equipment to be controlled by hams remotely.

Bob is interested in the receiving of these code and thought he'd solder something up. He was amazed at how low in cost evaluation boards are for the chip that does this magic. He bought five for six dollars !

Dick Bremer couldn't think of anything to talk about so the others prompted him about his interest in CERT and RACES. "Oh yea" he said. It turns out that a surprise party was organized to honor him for his contribution to both CERT and RACES. (As if he forgot to tell us. Yea sure.) This was in the club house of the home-owners-association where he lives. One of the three CERT repeaters are in that club house, or above it. Even the mayor of Brea was there.

Let me review a bit about CERT and RACES. During World War Two, all ham radio activity was shut down. It was something of a young man's sport so most were drafted to the signal corp anyway. But the ARRL wasn't too happy about hams being shut out during

this time of emergency so after the war the ARRL, the army and FCC set about to create some rules about ham use during a war where frequency control (revealing presence) would limit the fun use of radio. The resulting RACES service --**R**adio **A**mateur **C**ivil **E**mergency **S**ervice was designed to provide a quicker and smoother transition in the event the President ever needed to silence the regular Amateur Radio.

The Community Emergency Response Team (CERT) is a local group of people keen on being ready in emergencies. There are CERT teams all over the country. This index of California CERT groups has 17 cities that start with the letter B as in Brea. It educates volunteers about disaster preparedness for the hazards that may impact their area and trains them in basic disaster response skills, such as fire safety, light search and rescue, team organization, and disaster medical operations. CERT expertise allows them to interface with professional responders (police and fire). Your reporter signed up for a one time only training where I learned how to interface (and take direction from CERT trained individuals). The more thorough training for CERT regulars is on-going. Then there's guys like Dick who not only train but are essential operators and maintainers of the radio equipment used by CERT. This is where RACES and CERT work together. Alas, Dick reports that the city of Brea has made it more difficult for him to maintain the equipment. They think that because they paid for it, they control its use. Dick is in the process of explaining to them that it is RACES and himself that own the operation of the radios

Larry McDavid showed the finished handle for his RDF rig. We only learned this evening that he has never used this or any other in a T-hunt. In fact he was very anxious that Dick Palmer who has experience with this hobby, evaluate its feel. Larry's goal is to make the STL files available for free. He thinks the actual hardware would sell well, but wants nothing to do with that. He's retired after all. Bill Webb made all the boxes on the RDF antenna as well as the handle. Perhaps the most important feature is the attenuator. That's needed because

most radios don't have the dynamic range in their AGC to handle being within 20-30 feet of the transmitter. I learned from Larry that it's tricky because you can't just increase the loss with a resistor from the antenna. That's



because the radio itself (a handy talky) is in a plastic box and will allow a signal in anyway. The trick is to attenuate the signal from the antenna and then shift it 4 Mhz away from the overwhelming frequency. The radio of course must be moved to this new frequency too.

Dick Palmer in the photograph on the right is pointing to the matching transformer Larry built into the antenna. Dick normally has a new QRP radio he made to show us. But for the last few weeks he's been in Idaho to visit his daughter. (Nampa, Twin Falls, Snake River)



Larry McDavid has several technical hobbies. He is active in the Home Shop Machinist Club (they meet at El Camino College near Torrance.) At their annual picnic there was a table full of old stuff. Something that is always fun to dive into. He picked out a selenium rectifier to share with us. Sadly, all of us are all old enough to recognize it instantly. There was much discussion on forward and back voltage drop. How they smelled when driven hard. Why the fins and so on. Larry said that when silicon diodes were introduced to replace these smelly and unreliable devices, they often were sold as a kit which included a resistor to make up for the lower forward drop of silicon.

Bill Webb said he enjoyed working with Larry making handles and gaining more skill with Fusion 360, the program that makes STL files for the printer. His own work in the last month, however was much more technical than his work with Larry. In this photo he's holding thin wall boxes that are tests for how the molten material sticks to the previous cured line. We normally think of 3-D printed parts as over night, certainly hours to make. But if the walls are thin, just minutes. There are software tools Bill uses to "tune" you might say, to get the best product. In this case it is how the corners come out. He makes some kind of measurement of the finished box and that changes a variable in the program that makes where the head turns around to be just right.



John Mock had nothing in the way of a recent project to talk about but describe his activity in ham radio as Rip Van Winkle like. He was active in ham radio from 1958 to 1980. From then until now he devoted himself to the world of computers and became something of an expert on teletype machines where computers can be used remotely. But he's interested in radio again. He still has an ARC-5. That's an Army Surplus radio that works in the HF ham bands. Other old stuff includes BC467, Heathkit SB-300. And more recently Yaesu FT-101. John's call sign is K6AHY and would appreciate more action on Wednesday night Fullerton Radio Club sponsored net. The picture below, is John holding a sample of Bill's fine-tuned 3-D printer.

