Smoke Signals

Newsletter of Fullerton Radio Club

June 2023

PreSez

With the success of Antennas in the Park last month, we are looking forward to a FRC Field Day event on Saturday and Sunday, June 24 and 25, again at Hillcrest Park in Fullerton. Dick Palmer WB6JDH is coordinating the event and has plans from Bill Phinizy W6WHP, Bart Pulverman WB6WUW and Ethan Soe AJ6WW to participate with rigs and antennas; several others may join, and all are welcome to participate. There will be a GOTA station so do invite your friends, even those not licensed, to attend and get on the air! Gene Thorpe KB6CMO will open the Izaak Walton Cabin about 8 am on Saturday, June 24. We mainly try to have fun and make a few contacts on our Field Day events so don't expect any pressure to operate 24/7!

We have a new club member, Hunter Piper KA6HOF. Hunter lives in Placentia and has also joined our FRC-OC groups.io Group; welcome, Hunter. Summer vacations are starting so some members are traveling.

And regarding our Zoom meetings, they are going well! We still have not found a suitable location for in-person monthly meetings but are making up for that by holding weekly meetings on-line using Zoom. If you have not yet tried to join a Zoom meeting, ask an officer for the meeting ID and password to join. Zoom software and participation is easy and free. We generally have a dozen or more attending and there is lots of discussion and show-and-tell.

I've had several relatives, friends and acquaintances pass recently, some quite unexpectedly. Carl Gardenias WU6D was ARRL Orange Section Manager for many years but died recently in a tractor accident while acting as a manager of a campground. Strange things seem to be happening! I've just become an octogenarian and I'm losing friends at an alarming rate.

The FRC board is discussing ways to enhance our club presence and increase interest. We will welcome suggestions for new things to do or ways to have more ham radio fun. We have had some successful tours and welcome ideas for more. Please speak up!

Larry W6FUB

Meetings

The June regular club meeting will be held on Wednesday, June 21, at 7:00 PM, on Zoom at the usual address and passcode. If you need this connection information, please contact one of the Board members who will provide the information.

And tune in at the same time on every Wednesday for our club Zoom net.

Additionally, the TAG meetings have resumed! Walter will provide invitations each month. See this month's TAG article, pages 5 – 8.

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July 2023 FRC BOARD MEETING

The next Club Board meeting will be on

Wednesday, July 5, 2023

We will continue to hold the meeting by Zoom at the usual Zoom ID and passcode.

Meeting time: 5:30 PM

All Members are welcome

Show –and–Tell

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

Web site: www.FullertonRadioClub.org

June 2023 Board Meeting Minutes

The June 2023 Board meeting began with casual discussions at 5:31PM on June 7 by Zoom with President Larry McDavid W6FUB presiding. Additional members present were Secretary Paul Broden K6MHD, Treasurer Gene Thorpe KB6CMO, Board Members Bob Houghton AD6QF, Walter Clark and Bart Pulverman WB6WUW. Absent was Vice President Robert Gimbel KG6WTQ.

The May Board meeting minutes wer reviewed and approved.

Treasurer's Report: $6,570.39. New deposit of $230 received from Antennas In The Park, plus a donation of $100 received from Gordon Levine WB6JVP.

Membership: Records show 29 paid members and 1 life member as of June 7, 2023. One renewal and one new member (Hunter Piper KA6HOF).

Upcoming Events:
• Field Day, Saturday – Sunday, Junee 24 – 24.

Items for the newsletter: Send reminder request to all.

Old Business:
• Field Day, Saturday – Sunday, Junee 24 – 24. Operations in daylight only.

New Business:
• Club priorities for 2023. To be discussed at tonight's 7 PM Zoom meeting.

The meeting was adjourned at 5:49

Submitted by Club Secretary Paul Broden K6MHD

Continuous Improvement

Several years ago, I built an 8 element Quagi antenna for 432.1 MHz. The design and dimensions came from the ARRL Antenna Book. I have not tested its gain pattern, just made sure the SWR was acceptable. My rendition is too fragile for permanent use, so I put it on the air occasionally in contests. This past weekend I used it to work 12 contacts in the ARRL June VHF Contest.

My temporary mount was a pole made of PVC pipe, with a wooden dowel inside for stiffness. An upturned bucket at the bottom raised the pole a wee bit to place the Quagi at 11 feet above ground. I temporarily disconnected the coax from my satellite uplink antenna to feed the Quagi. An ancient Icom IC-471A radio completed the setup.

While setting up I found a bolt in the dirt. Where did that come from? It had fallen out of my Yaesu G-5400B rotator! How could that happen? I do not know, but the other 3 bolts were loose too. I re-installed the fallen bolt and tightened the others. This was the first step towards improvement.

I fixed another problem while restoring my satellite antennas after the contest. My satellite receive antenna was misaligned with the rotator. It was pointing about 10 degrees too high in elevation. The photo shows the misalignment before I fixed it. Using a level, I determined that the transmit antenna was aligned correctly, level with the horizon when the rotator indicated zero degrees. I repositioned the receive antenna (the second step towards improvement).

So, what value did I get from the contest? I solved two problems! Making contacts in the contest was fun, but the real value was in the discovery, and correction, of problems with my equipment.

Tom Smith KB6A

Eight element Quagi

Quagi at 11 feet elevation

Missing bolt

Saving Your Connector

We are all familiar with a DB25 rectangular connector, common in computer usage. However, these "D" connectors have a long history in aerospace applications that need high-reliability electronic connectors.

All connectors have specified lifetimes for mate/de-mate cycles and this is especially important in aerospace instruments. Consequently, the number of times connectors in "Flight" (the models that are actually flown into space) are mated is important to their reliability and is carefully monitored and controlled.

But, these instruments are also extensively tested during construction and qualification. The problem is, how can the lifetime of connectors not be compromised by the connection and testing that always gone on, often for many months and at different locations.

The answer is shown in the picture, which depicts two identical DB25 "Connector Savers." These are high-quality male/female connectors that seemingly have no purpose, as they do not contain any electronics and they do not change the gender of the connector.

In use, when the aerospace instrument is first assembled, a "Connector Saver" is installed on every instrument connector and fastened securely with attachment hardware. The result is one (only) mating cycle of the "Flight" connector but allows many matings of the accessible side of the connector saver during instrument testing and qualification.

The connector saver is left attached until the instrument is mounted in and connected to the spacecraft. At that point, the connector saver is removed and discarded, and the Flight mating cable connected. This greatly reduces the number of times the Flight connectors are mated and ensures maximum reliability of the connector.

Recently, while clearing some excess electronics around my house, I found a box of connector savers. I tried passing some around and asking what is the purpose of this thing and had no answers, so I thought it worthwhile to explain what use this strange-looking part is used for!

"D" Connectors

TAG Activity Report for June 2023

Walter went to some trouble to assemble snacks from Trader Joe's. Coffee, and soft drinks of course, a strange new chocolate covered corn chip and an even weirder ice cream sandwich which is half dipped in chocolate. But the real hit for the evening was my apricot tree. Just the slightest shaking brought town a dozen or so tree-ripened candy-like fruit. Further shaking brought down those that will be ripe tomorrow. The lawn was lush and unmowed which meant all of them were recoverable.

Larry McDavid started the show-and-tell with a bit of a mystery. We learned that what he's holding in his hand is called D connector. [See separate article on page 4 for complete explanation.] Clearly it is old but quite

prevalent before serial communications brought down the number of conductors. It's a D connector no matter how many pins. The mystery is why is there male on one side and female on the other.

Walter said it's a 5 mm long cable. (Humor.) Turns out it's a way of preserving the use of chassis mounted connectors in a satellite for example so that repeated testing can be done without adding to the number of insertions for the connector that will go into space. It's a reliability thing.

There was much discussion on giving stuff away; from philanthropy to making room in the garage. No breakthroughs were uncovered in this discussion. About this time in the evening Charlie Armstrong showed up. A new face, at last. We got to know him, and I think we inspired him to join the activities during Field Day and the normal FRC Zoom meetings.

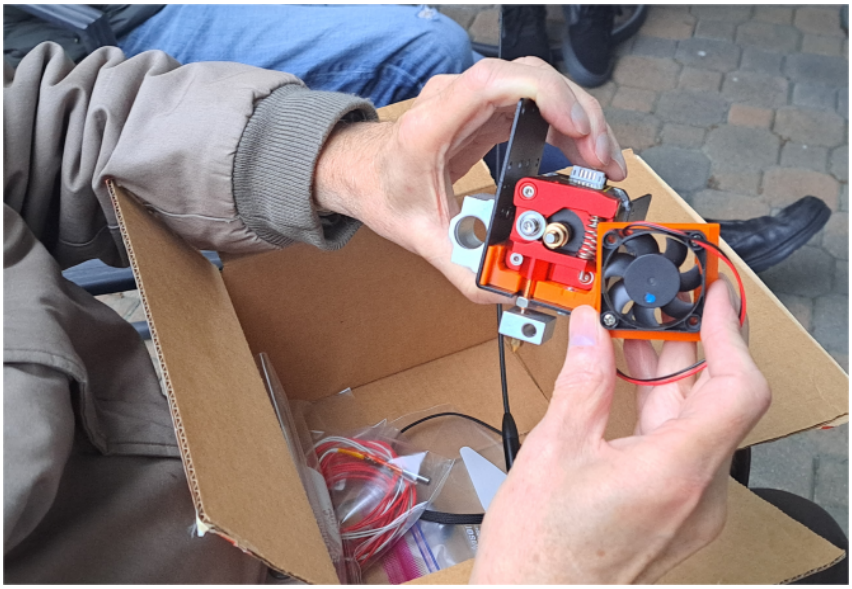
Larry is still enjoying the novelty of his renovated upstairs bathroom and shared with us solutions to unusual aspects of construction. One was a screen to prevent bugs from using a small vent as a home. The other was a magnetic catch he invented to hold the door open. Ah, a magnet; just the excuse he needed to buy more tools. He already had a Gauss Meter for strength, but he just had to have a north/south polarity device. (It's just a tiny magnet that can rotate to line up with the one you are testing.) This simple tool had a very complicated name.

Bill Webb had a remarkable story about a record changer he obtained at a yard sale. It was a working record changer, but no matter he couldn't resist cleaning it up, where upon it no longer worked. As old as it was, he found a manual for it, and it showed two different viscosity oils for two different mechanisms. He obtained the appropriate oils, and it worked fine. It's a case of slowing down one action to allow another one to happen first. Larry told of his set of viscosity oils and the vendor that makes them; William Nye, the oldest continuing company in the country. (They used to sell whale oil for lamps.)

That reminded Charlie Armstrong, our new guy, of an awfully clever idea for adding friction to a door. (He saw it on youTube) Take out one or both hinge pins and beat the crap out of them. Make them ever-so-slightly curved so they are tough to pound in place.

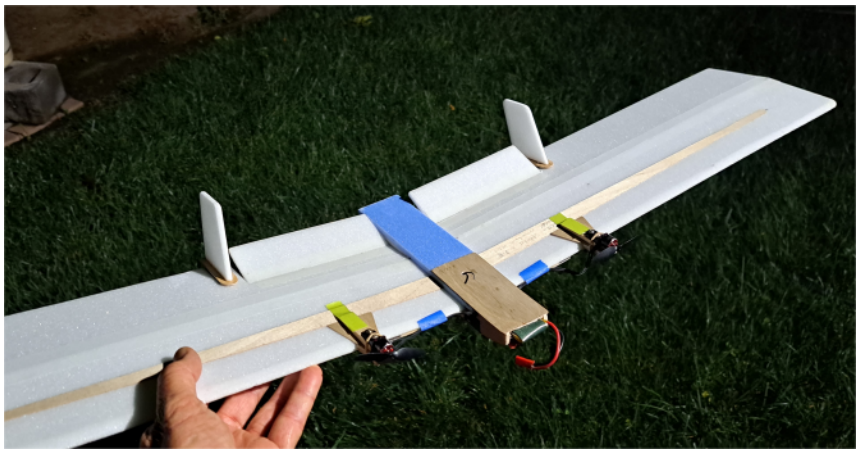
There was a very long discussion on laying of fiber optics in Fullerton. The real expert, Bob Houghton was absent, so we had to poke fun at him. It was pretty clear he doesn't need the extra horsepower of fiber since he's not a gamer and there's only he and his wife. It's of course, so he has bragging rights. One day he will tell us how he had a movie going on in each room while he's uploading a 4K video of their vacation. In olden days hams bragged about the power of their final, but now it's how many countries you can do with only 5 watts. Or how much bandwidth you have access to.

Bill Webb is showing us here one of his recent 3D-printer projects. It is a print head for an improved version of the vary machine that made it.



A 3D-printer in the hands of an amateur is quite often used to improve itself. Historically the lathe was famous for being "a machine that could make itself." Not that it is a category so much as the lathe was such a very useful too. Note the fan in this upgraded print head. It keeps cool the filament feed. The plastic goes in solid and comes out molten.

Walter hasn't been doing electronics in a long time but shared his latest project which was to use the automatic pilot of a toy airplane in a much bigger plane where the point was to make a very efficient but highly instable airfoil stable with electronics.



Yes, flying toys now are easy to fly because they have autopilots; three axis rate gyros and three axis angular position gyros.

On the subject of model planes, turns out Dick Palmer went through a phase of interest in high-speed model airplanes. He machined the cylinder of the motor, so the exhaust port faced backwards. That allowed a tuned pipe to be in a low drag position. (Motors in those days had the exhaust port on the side.) His best flight, on 50-foot lines, he was going around and around more than one revolution per second. He was quite sure he could do the Kessle Run in 12 parsecs with this motor.

Dick Palmer brought an rf sig gen to test Dick Bremer's HP power meter. Dick Palmer also brought his own HP power meter. They both agreed within .5db.

MEMBERSHIP RENEWAL / APPLICATION

Fullerton Radio Club
PO Box 545, Fullerton, CA 92836

(Please Print)

Name #1 _____ Call: _____ Class: _____

Name #2 _____ Call: _____ Class: _____

Address: _____ City: _____ State/Zip: _____

Phone #1: _____ Email #1: _____

ARRL Member ☐ Yes ☐ No

Dues are $20 per member, or $25 per family. Students (full time) $10

Mail to the above address.