



Smoke Signals

Newsletter of Fullerton Radio Club

April 2019

Our Next Big Event!

It's almost time for one of our largest events of the year; **Antennas In The Park** on Saturday, May 4, 2019. As always, a key feature will be the popular Joe Moell KOOV on-foot T-Hunt, but let's also have some other activities! Maybe portable HF/VHF/UHF or even microwave stations? We always like to see results of QRP. There's LOTS of room to put up antennas in the park! Or perhaps a demonstration or two – or more – from the TAG group projects? What else? It's up to your imagination!

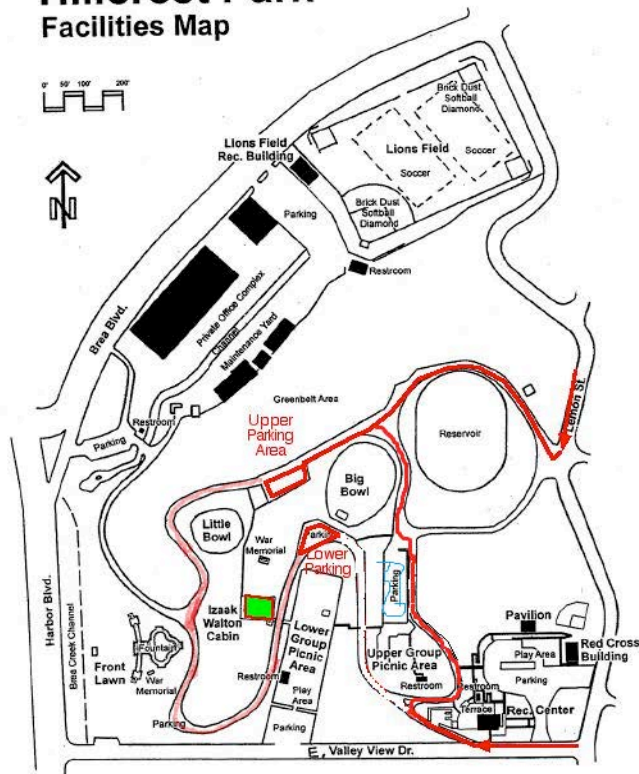
The cabin should be open by 9:00 AM for those wishing to set up antennas and radios. The T-Hunt antenna-building project table will start at about 10:00 AM, with actual T-Hunt activities beginning at about 11:00 AM. Additional details of the T-Hunt can be found at <http://www.homingin.com/park>. We are typically

active until about 3:00 PM. Burgers will be available around noon.

We'll have the usual BBQ – this year with a charge of \$5 for members and guests. And again this year the event will be at the Izaak Walton Cabin at Hillcrest Park (with restroom). There are plenty of spaces for set up of radios (bring batteries) and antennas on the cabin porch and on the lawn in front of the cabin.

Parking is available at several locations near the cabin. See the attached map for cabin location (marked in green) and parking. Note that the map shows two entrances; one off E. Valley View Drive, and one off N. Lemon Street. If you use the Lemon Street entrance you must be coming south from Brea Boulevard, because there is NO LEFT TURN allowed into the park if north bound on Lemon.

Hillcrest Park Facilities Map



from north, go south on Lemon St (from Brea Blvd) to park entrance on right. Enter park & follow roadway to stop sign, turn right & curve left to **upper parking area** on the left.

from south, go west on Valley View Dr. (from Lemon St. NOTE: there is no left turn off Lemon into main entry of the park.) to 2nd entry (1st goes into Rec Center etc) . Follow roadway to the right, curve left to stop sign. Continue straight ahead to left curve to **upper parking area** on the left.

If **upper parking area** is full, there is additional parking in **Lower Parking**. Continue following the roadway down hill to the right & back up hill.

A parking lot that requires some steps is located on around the roadway. Those who come in off Valley View Dr. pass it by the stop sign.

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

President

Larry McDavid, W6FUB
Phone: (714) 630-5672
Email: lmc david@lmceng.com

Vice President

TBD
(This could be YOU)

Secretary

Linda Endsley, KJ6IHB
Phone: (714) 992-4645
E-mail: lindiend@sbcglobal.net

Treasurer, Public Service, Membership

Gene Thorpe, KB6CMO
Phone: (714) 680-4258
E-mail: kb6cmo@juno.com

T-Hunt

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

License Trustee

Albert Solomon, AG6OF
Phone: (714) 476-9638
E-mail: albertsolomon18@gmail.com

Directors

Richard Belansky, KG6UDD
Email:
Phone: (714) 970-6385

Walter Clark
Phone: (714)-882-9647

Robert Gimbel, KG6WTQ
Phone: 714-657-2862

Bob Houghton AD6QF
Phone: (714) 446-0520

Newsletter Editor

Paul Broden, K6MHD
Phone: (714) 871-9478
E-mail: pbroden@sbcglobal.net

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

April Board Meeting Minutes

The April 2019 FRC Board Meeting was called to order at 7:30 pm by President Larry McDavid W6FUB. Others present: Treasurer Gene Thorpe KB6CMO; Secretary Linda Endsley KJ6IHB. Directors: Paul Broden K6MHD; Richard Belansky KG6UDD; Walter Clark; Robert Gimbel KG6WTQ. Guest: Irene Broden

Treasurer's report: Checking \$3,918.46 savings \$2,607.90

Old Business:

Discussed food for Antennas in the Park. There will be a \$5 fee per person for food to offset expenses. Checking if there is a fire permit required if using BBQ brought.

Discussed items for Field Day

New Business:

Two renewals were received. There are 29 paid members and 3 lifetime members.

April general meeting will be the second half of the movie "History of Radio; Empire of the Air".

The board has reviewed and updated all the club federal and state tax filings for 2018 and has purchased liability insurance through 3/18/2020. The state corporation information document is current but due for re-filing in October 2020 or the preceding five months.

The signature cards for bank checking and saving accounts and for safe deposit box have been updated.

A draft bylaw revision will be submitted for member review with a membership vote planned for the May, 2019 general meeting.

The following motion was made, seconded and approved:

"Because nomination of a full slate of FRC officers for 2019 was delayed and not published in the November newsletter and there was no December newsletter published, the board affirms the following were nominated for election:

President: Larry McDavid
Vice President: Unfilled at this time
Secretary: Linda Endsley
Treasurer: Gene Thorpe
Member at Large: Richard Belansky
Member at Large: Paul Broden
Member at Large: Walter Clark
Member at Large: Robert Gimbel
Member at Large: Bob Houghton

The board affirms this slate of officers and Members at Large was presented to the membership at the November general meeting and the slate was approved by members in attendance by acclamation."

End of motion.

An income vs. expense review shows we need a plan to reduce club expenses.

April 27 – Donate Life Run – Need more helpers

May 4 – Antennas in the Park

June 22/23 – Field Day

Next board meeting: 1 MAY 2019

Adjourned at 8:35 pm

Submitted by Linda Endsley KJ6IHB

April Club Meeting

Last month we showed the first half of a documentary entitled "Empire of the Air: The Men Who Made Radio". The presentation was well received, and this month we will be showing the second half. This is a wonderful Ken Burns documentary about the history of radio. Based on 1991 book of the same title, by Tom Lewis.

FRC T-Hunt Update

Did you know that Fullerton Radio Club has held a mobile hidden transmitter hunt almost every month for almost 45 years? The starting point has been the same -- the top of Acacia Avenue -- but it's no longer next to an oil field. These T-hunters welcome newcomers and they try to make it easy for them. The boundaries aren't very large and the signal is continuous on 146.565 MHz. So why not try it? Even if you don't have equipment yet, you might be able to snag a ride-along.

Three hunts have taken place so far this year. On January 19, Bob Miller N6ZHZ and David Whittlesey W6XRT chose the parking lot of Marie Callenders at Washington Boulevard and Lambert Road in Whittier for their hidden location. The winners were Bill Greganti KG6EEK and Glenn Tobey AB6PA, having the lowest mileage.

<u>Team Call</u>	<u>Odo Miles</u>
KG6EEK/AB6PA	13.6
WA6CYY	16.4
N6AIN/WA6PYE	17.9
KA6UDZ	18.7

Bill and Glenn had hiding duty on February 16. They parked just west of Chino Hills Parkway, south of Eucalyptus Avenue in Chino Hills, next to Veterans Park. Bill wrote, "We chose to hide the vehicles behind a couple of trees at the edge of a dirt parking lot, away from the revealing street lights. All hunters drove by at least once without spotting us, but all hunters found us eventually."

<u>Team Calls</u>	<u>Odo Miles</u>
N6ZHZ/KM6WZV/KM6WSV	20.3
N6AIN/WA6PYE	27.3
WA6CYY	27.7
KA6UDZ	32.0

Winner Bob Miller N6ZHZ was the hider on March 16. He put his hidden transmitter in the parking lot in front of the

US Army Reserve Center on Newport Blvd, beside the 55 Fwy in Costa Mesa. All teams arrived by 9:30 PM except for Scot Barth KA6UDZ, who got lost and didn't arrive until just after 11 PM.

<u>Team Calls</u>	<u>Odo Miles</u>
WA6CYY	21.0
N6AIN/WA6PYE	22.4
K0OV	Unofficial
KA6UDZ	50.5

The April FRC transmitter hunt will take place on Saturday the 20th, starting at 8 PM. Give it a try!

73, Joe Moell K0OV

FIELD TRIP

Attention all FRC Members!

North and central Orange County overlies a large groundwater basin managed by the Orange County Water District (OCWD). The Orange County Groundwater Basin provides approximately 75% of the potable water supply for 2.4 million people. Although the basin is vast, the average annual withdraws must be balanced by recharge from a variety of sources.

The Groundwater Replenishment System (GWRS), a joint project of the OCWD and the Orange County Sanitation District (OCSD), provides enough new water for nearly 850,000 residents and has become an essential element of local water supply.

In early May, there will be a tour of the facility in Fountain Valley. If anyone is interested, please contact me ASAP at tsgaccione@yahoo.com. We must RSVP with the number of attendees. The tour takes approximately 2 hours.

When and Where:

OCWD Facility

18700 Ward St, Fountain Valley, CA 92708

Cross Streets Ellis and Ward

Friday, May 3 ; 10AM

FIELD DAY

Fullerton Radio Club, Western Amateur Radio Association, and former Hospital Disaster Group members will be having a Field Day operation June 21-23 at Hillcrest Park, located at 1200 North Harbor Blvd in Fullerton (where Brea and Harbor Blvd meet at E. Valley View Dr).

We will be set up at the Isaak Walton League Cabin in the park. We will operate from 11AM Saturday until 11AM Sunday. [See the map and directions in the article about Antennas In The Park for location information.]

We will use the club call sign so we will be W6ULI and we will be a 2A station in the Orange Section.

We're in the Field Day Locator on the ARRL Web Site under my name should anyone need to find us.

We'll have 2 HF stations, 1 VHF/ UHF station with 6M, 2M, and 440 MHz, a "Get on the Air" station for newcomers to HF, and a Satellite station (mostly just Joe Moell and I yelling at each other with some satellite contacts in between...). Well, at least we were in 9th place in the AMSAT competition last year for the whole world!

What do you need to bring?

- Friends and family!
- Something to share with everyone that you like to eat (The cabin has a refrigerator and a small kitchen.)
- A jacket as it might get cool in the evening
- A few comfortable lawn chairs (someone always seems to be sitting in mine when I want to sit in it....)
- A sleeping bag if you want to spend the night; an air mattress would be good also; the cabin does not have cots.
- Whatever else you think you might like to have to keep comfortable

The cabin has tables and chairs for the operating stations.

We will probably do something for dinner Saturday night; pizza is my first thought; but we can do something else if we decide....

What can you help with?

- We ALWAYS need another pair of hands for setup and ESPECIALLY take down of radios, antennas, and equipment.
- Setup and stringing of antennas will commence on Friday, June 21 at 3:00PM at the park. We have to hurry to get all the antennas up Friday afternoon before it gets dark. We have enough supervisors; but we'll need a few more workers.
- Setup will resume 7:00 AM Saturday for radios, tables, etc. to prepare for an 11:00 AM start.
- Teardown will start at 11:01 AM Sunday until we finish.

If you have any questions you can call or email me.

Hope to see you there!

Tom, WB2LRH
tsgaccione@yahoo.com

Donate Life Run/Walk Event

This Year's 2019 Donate Life Run/Walk & Family Festival Event is just around the corner. The event is held at CSUF at 6 am to 11:30 am. or so with the Family Festival afterwards. We still need a few more Amateur Radio Operators to help Us with this event. Please check your calendar and if you can help out, please send me your info: Name, CallSign, E-mail Address, Phone Number; to Gene Thorpe KB6CMO@juno.com. Thanks to those who have volunteered already.

Gene Thorpe KB6CMO

By-Laws Revision

Our club bylaws originated many years ago and have occasionally been revised. The club board of directors has been discussing the bylaws for about six months and has identified the need for some changes. At the April board meeting a final revised version of the bylaws was approved to submit to the club members for their review. The bylaws provide that members must be provided a copy of a proposed revision and must have two weeks to review the new revision before a general vote is taken. Paul Broden has prepared the final revised version and has distributed it to our members so that a vote can be taken at the May 15, 2019 general meeting.

Here is a summary of the changes in this revision:

1. Provide a legitimate basis for the Life Members we already have.
2. Clarify that the Membership Chairman may delegate roster maintenance.
3. Clarify that non-dues-paying Life Members count toward a quorum.
4. Clarify that annual nominations include officers and at least one Member at Large.
5. Provide a shortcut that *may* be used to eliminate the need for an annual nominating committee.
6. Clarify that a past president may serve again as president after a one-year hiatus.

Please review the draft bylaws Paul distributes. If you have questions or other suggestions, please contact Paul by replying to his email. We plan to hold a vote on this revision at the May general meeting.

Regards; Larry W6FUB

Club Field Trip

The Republic Services Anaheim Recycling Facility is a 35-acre site handling a wide variety of materials, including single-stream residential recyclables, commercial and multi-family mixed waste, organics, construction and demolition debris, white goods, and scrap electronics.

What we will be seeing is the Materials Recovery Facility, where the stuff in your green barrels is separated into piles that can be sold for more than the cost of separating. What is new is software that can identify the material of objects that fly by cameras that look down at changes in momentum and other places where there are changes due to air resistance, magnetism and color. These are separated by puffs of air and trajectory at speeds no army of workers can do.

The system currently utilizes the following equipment to sort single-stream recyclables and recover materials from mixed waste: a BHS Metering Bin, 70-foot trommels, BHS OCC Separators, BHS Debris Roll Screens, BHS NewSorters, BHS Polishing Screens, NRT optical sorters, an eddy current separator, a magnet and a BHS controls package.

The Anaheim Recycling Center covers 250,000 square feet and includes an education center utilized by customers and sustainability-minded school and community groups.

Republic has over 300 employees at the Anaheim Recycling Center. More than 80 of those workers handle quality-control duties.

**The tour date is April 18 at 10:00 AM.
>---that's next Thursday, the day after
the next Fullerton Radio Club general
meeting.**

[Additional information and location maps on
following pages]

ANOTHER FIELD TRIP

Attention all FRC Members!

North and central Orange County overlies a large groundwater basin managed by the Orange County Water District (OCWD). The Orange County Groundwater Basin provides approximately 75% of the potable water supply for 2.4 million people. Although the basin is vast, the average annual withdrawals must be balanced by recharge from a variety of sources.

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In early May, there will be a tour of the facility in Fountain Valley. If anyone is interested, please contact me ASAP at tsgaccione@yahoo.com. We must RSVP with the number of attendees. The tour takes approximately 2 hours.

When and Where:

**OCWD Facility
18700 Ward St, Fountain Valley, CA 92708
Cross Streets Ellis and Ward
Friday, May 3; 10AM**

SMOKE SIGNALS INPUT

The newsletter of Fullerton Radio Club is our means for transmission of information, events and other “happenings” related to the club. But the information presented is completely dependent on input provided by members. We are constantly in search of new (and maybe not so new) contributions to ensure that we offer something of interest. We’d like **YOUR** input too. Maybe your recent travel and portable station operation; or DX contact; or a construction project (Focus; TAG group). Contributions can be sent to the Editor, preferably in MSWord format. See the list of club officers on page 2 for Editor’s email address.

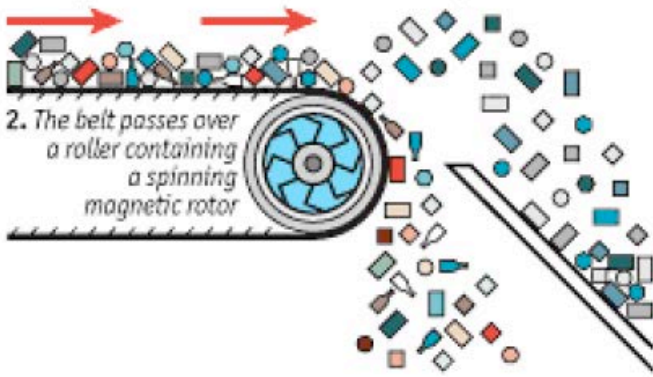
Green fingers

Eddy-current separator

1. A stream of waste material travels along a conveyor belt

2. The belt passes over a roller containing a spinning magnetic rotor

3. A secondary magnetic field is induced in metallic items, and magnetic repulsion pushes them clear of the waste stream



Sources: TiTech, The Economist

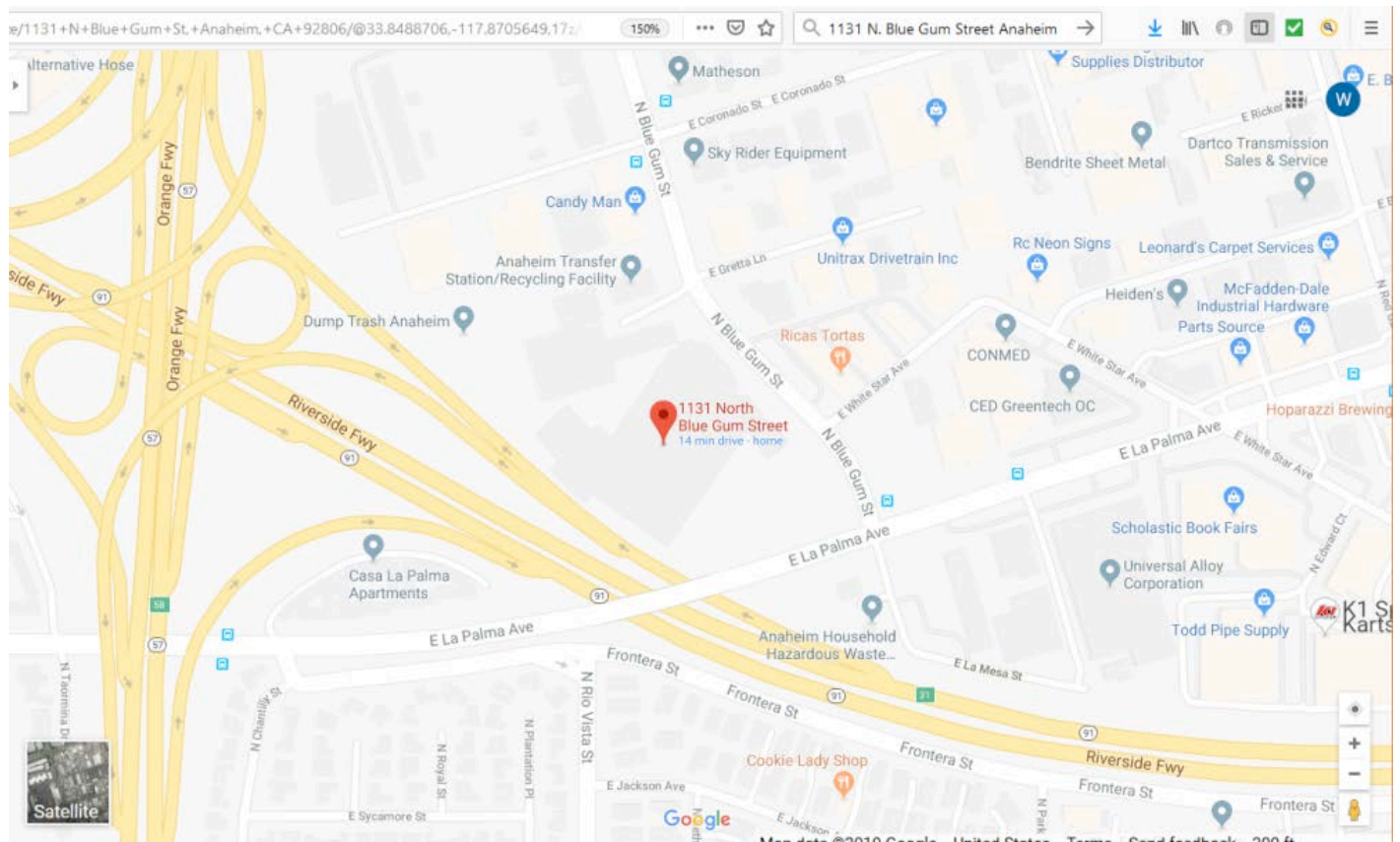
Spectroscopic sorter

1. A stream of waste material travels along a conveyor belt and passes under a camera

2. Each type of material reflects a unique combination of wavelengths in the infra-red spectrum and can thus be identified



3. By firing a jet of air, it is then possible to pick out some items from the waste stream



Most of you will take the Kramer off ramp of the 91 to La Palma; then left. Notice it is a block north of the Hazardous Waste place.



THEODORE ROOSEVELT



On a recent trip to New York's Long Island, I had the opportunity to visit the home of one of the most fascinating men ever to lead our nation. Theodore Roosevelt (chiseled in stone, third from the left), our 26th president from 1901- 1909, was sworn in after the assassination of William McKinley after just a few months of service as Vice- President.

The fifth cousin of our 32nd President Franklin Delano Roosevelt, Teddy Roosevelt had over twenty years of public service before he became our youngest President in history. Born in 1858, he graduated Harvard College (now University) before

serving in the New York State Assembly through 1884. Taking a different tack in life, he spent the next two years as a cattle rancher in the Dakota Territory. His writings of western life and subsequent publishing of 3 books (out of the 27 more he would later write) began a long career of writing and formed the foundation of his model of conservation of the nation's national resources. A series of severe storms in the winter of 1886-1887 wiped out his herd of cattle and those of his competitors. He returned to New York after losing half of his \$80,000 investment.

After serving several local positions in New York, he became the Assistant Secretary of the US Navy. Roosevelt called for a build-up in the country's naval strength, particularly the construction of battleships. After the explosion of the USS Maine in Havana harbor, Roosevelt's military career was about to begin as the US declared war on Spain. As the leader of the Rough Riders, leading the charge up Kettle Hill, he posthumously earned the Medal of Honor for his actions.

After his election as Governor of New York in 1898, he envisioned his concept of "The Fair Deal". The rules for the Square Deal were "honesty in public affairs, an equitable sharing of privilege and responsibility, and subordination of party and local concerns to the interests of the state at large". As governor, Roosevelt developed the principles that shaped his presidency, especially insistence upon the public responsibility of large corporations, publicity as a first remedy for trusts, regulation of railroad rates, mediation of the conflict of capital and labor, conservation of natural resources, and protection of the less fortunate members of society.

After he was sworn in as President in 1901, he built on his principles from his earlier days as Governor of New York. Acts in 1903 and 1906 regulated railroads, and his use of the Sherman Antitrust Act, along with decisive action on corruption in his administration, saw his popularity soar. His strengthening of the US Dept of Agriculture to fight corrupt food processors and creation of the US Forest Service enabled the creation of 5 National Parks and established 150

National Forests and set aside 230,000,000 acres for conservation.

His achievements were not limited to the domestic front, however. His mediation led to the signing of the Treaty of Portsmouth on September 5, 1905 ending the Russo-Japanese war. For this, he was the first American to win the Nobel Peace Prize.

America's growing influence in the world along with the war with Spain led Roosevelt to support a canal across the Isthmus of Panama would be beneficial for American military and commercial interests. In 1914, the Panama Canal was completed.

In March 1909, shortly after the end of his presidency, Roosevelt left New York for several expeditions in Africa and South America to collect over 10,000 animals and specimens for the Smithsonian Institute. His later years would see him to support a League of Nations and a stronger and earlier involvement in World War 1.

He passed away in his sleep on January 6, 1919 at his residence on Sagamore Hill on Long Island.

Tom WB2LRH

Activity Reports of the Fullerton Radio Club (Technical Advisory Group) for April 2019

Walter Clark (the host for TAG) shared his newly renovated living room which the TAG meetings are held in. He hired a contractor to refinish the floors, and paint the walls. His own contribution to the effort was wiring behind the fireplace that utilized a commercial radio switch to brighten the wall around the digital canvas. Yes, that is a 55" video display that is designed to emulate a print; any of an infinite number of great works of art. The radio switch turns on the two spot lights in the ceiling and at the same time the sconce lights triple in light level. The way the video display simulates a canvas is by adjusting its light level to match that of the room. It even adjusts to be the same color temperature of the lighting in the room.



Walter is the one organizing the field trip to the Recycling Separation Facility in Anaheim. He was able to get the Operations Manager to conduct the tour by telling them that retired engineers will be present and the questions and perhaps some suggestions will be fairly technical.

Bob Houghton has been on vacation recently near Borrego Springs. He described the experience with wild flowers to be one of Disneyland style crowds. The weather was perfect and the experience of seeing the mountain covered with flowers was worth the effort.

Art Boondry, on the right below, brought in a box of old projects but like all of us, couldn't pass on his legacy and had to take it all back with him. Art is Walt's neighbor and is not only a ham, but a serious amateur astronomer with an 11" Meade in a roll-roof observatory. He also has a Lyman Alpha solar telescope.

Tom Gaccione shared multiple items again with us.

- Starting off with how LEDs are used optically in signal lights. He showed us with the green light how the "antenna pattern" of the light was directed toward the traffic that is intended to see it. The arrow light was similarly constructed with the addition of course of the cutout to make the arrow.



- Tom shared with us a few samples of a rather long recording of the control room chatter of Apollo 11 with us. Hundreds of hours are available from some website. Certain moments are indexed. He played for us the famous “ . . . one giant leap for mankind.”
- He found an article on the volcanoes of California/Oregon which led to a discussion on geothermal power plants. It turns out that geothermal is now projected to become the cheapest source of energy within the next few years. Coal and nuclear need very little government pressure to be the least efficient.

Tom led a discussion on digital broadcast.

He also told us of upcoming JPL and Mt. Wilson tours.



Joe Moell brought two 6 meter band antennas for an upcoming 6 meter RDF transmitter hunt. The round one is the traditional shielded type and the other one handles the separating of electric field and magnetic field in a different way. The latter is a Korean War era RDF used to locate enemy transmissions. It has, of course, to be as wide a band as possible. It should be noted that this is just an antenna. Those switches are how it handles the ambiguity problem that all RDF antennas have. One lesson worth memorizing is that loops that are less than a full wavelength and tuned to bring up the efficiency are narrower in bandwidth than the loop of the correct size. This has little to do with RDF, but Walter (the author of this article) found it interesting.

Larry McDavid impressed us the most with more from his antique scientific instruments collection. On the left is a simple but rather interesting way to reduce the size of cardboard box.



It doesn't cut the box but perforates it so it can bend to form a lid. Larry ships a lot of stuff and finds this useful. The lovely instrument in the middle is a planimeter. His is mechanical integrator, but go to this 37 second YouTube (https://www.youtube.com/watch?v=zh9Gu_mFn9w) to see how the digital version is used to measure areas. On the right is a rather precious looking optical thing. It isn't. That's the cover glass to a pocket electrometer or electroscope.



The glass thing he's holding was made for him by a glass blower friend of his. Notice that it is a flattened bubble shape. It is evacuated with a blob of ultra-pure mercury that can slide around by moving the hand. With the lights out it was easy to see an orange glow from inside, on the surface of the mercury. Because the mercury has to be moving it wasn't easy to see any detail.

Bill Webb brought an ESP-32 board to show the local weather by way of OpenWeatherMap <https://openweathermap.org/>. (His cellphone is connected to the internet and the ESP-32 is talking to the cellphone on Bluetooth. OpenWeatherMap is the best alternative to WeatherUnderground which was recently gutted by the new owners; IBM. The amateurs who upload their home weather data to WeatherUnderground are very upset with the new owners because the data from WeatherUnderground is not the familiar JasonStrings. In fact, there appears to be no data out at all. Bill is getting to be a real expert at ESP-2866 and ESP-32 <https://en.wikipedia.org/wiki/ESP8266>. It is a cheaper and more powerful version of a Raspberry Pi. And they both leave the Arduino in the dust.

<p>April 2019 MEETING</p> <p>Wednesday, April 17, 2019</p> <p>Chapman Activity Center 2515 San Carlos Drive, Fullerton (Second street east of State College Boulevard off Commonwealth)</p> <p>Meeting time – 7:00 PM</p> <p><u>Visitors are always welcome</u></p> <p>Dinner before the Meeting: Black Bear Diner 5:00 PM</p>	<p>May Board Meeting</p> <p>Open to all Club members</p> <p>Marie Callender's Restaurant 126 Yorba Linda Blvd., Placentia First Wednesday of each month.</p> <p>Next Board Meeting <u>Wednesday, May 1, 2019</u></p> <p>QSO and dinner; 6:30 PM</p> <p>Meeting: 7:30 PM</p>	<p>Classified Advertisement</p> <p>The family of a close friend, DeWitt Lyon N6NLS (SK), is offering the following HAM equipment for sale. See at the April meeting. I've not operated any of the items, so do not know their status.</p> <ul style="list-style-type: none"> • Yaesu FT-757GX; \$350 or best offer • Yaesu FC-700 Antenna Tuner; \$75, or best offer • Diawa DC Power Supply (Model not identified); make offer • Coil loaded vertical HF antenna (brand unknown); make offer. [Not at the meeting. Make arrangements to see, if interested] <p>Paul K6MHD</p>
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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: _____	
Phone #2: _____	Email #2: _____	

ARRL Member ☐ Yes ☐ No

Special Amateur Radio Interests: _____

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

Bring your application and dues payment to the next meeting or mail to the above address.