



Smoke Signals

Newsletter of Fullerton Radio Club

April 2017

President's Message

I hope you have been enjoying the exceptionally pleasant weather we have been having for the last few weeks. Spring is a great time to plan outdoor activities, before it gets too hot.

Speaking of outdoor activities, don't forget that the Donate Life Run/Walk is less than two weeks away, on Saturday April 29 at CSUF. Gene, KB6CMO, still needs a few more radio operators. Please contact him if you are able to help out at this event. It's for a great cause, as well as being a perfect excuse to charge your batteries (as well as the ones in your radio) and practice your net operating skills. You'll get a free T-shirt and last year we were provided with a nice lunch afterwards. You might even get to see Tom G. ride a bicycle (it's not pretty).

This coming Wednesday's FRC guest speaker will be Dave Hollon from Donate Life. I'm told he has quite an inspirational story. It would be nice to have a good turnout Wednesday (and at every FRC meeting). Walter works quite hard lining up speakers for us, and one way we can show our appreciation is to participate in the meetings.

Our other upcoming outdoor activity, Antennas in the Park, is less than four weeks away on Saturday May 13. In addition to Joe Moell's ARDF session, we are hoping that you will all bring your toys (radios, portable antennas, drones, projects to show off...) or simply come and hang out with your fellow radio and technology enthusiasts. This is the club's "big event" for the year, so I hope you can stop by Hillcrest Park. Come have a free hamburger and recoup some of your club membership dues! If you chase a few foxes, April Moell has promised cake afterwards.

Looking forward to seeing you this Wednesday at the FRC meeting. (Or meet us first at Sizzler any time after 5:30.)

73,

Bob - AD6QF

April Club Meeting Speaker

Fullerton Radio Club, plus others from the local amateur radio community, have provided communication support for the Donate Life organization for the past 14 years. We're doing it again this year! This month's Club meeting speaker will be presenting information on his life as a transplant recipient and his association as a Donate Life Ambassador. You'll want to hear Dave Hollon at the April Club meeting, especially if you will be participating in the Donate Life event in April 29. (See Donate Life article on page 3 of this newsletter.)

Dave Hollon Kidney and Pancreas Recipient Fullerton, CA

As a result of adult onset Type 1 diabetes, Dave Hollon's kidneys failed in 2001. He began dialysis and was listed for a transplant. "The support of my wife, Sonya, and children Leslie and Michael (who were eight and four at the time) kept me moving along," recalled 50-year old Dave. "By my second year in dialysis, life was, in a word, agony. I could not be the husband and provider my wife deserved and could not keep up with my kids. How do you tell your little son you can't go bike riding?"

Dave's overall health was failing fast, and he was not looking forward to several more years on the transplant list. His brother, Mike, could not stand to see Dave and his family suffer. In April 2004, Mike donated a kidney to save his brother's life. "He had the love and support of his wife, my sister-in-law Sharon." Dave said, "He would have not made that life-saving decision without her support and counsel."

"After that transplant I could enjoy life again. In fact, my son asked my surgeon when I could resume bike riding. Also, Mike and his family moved from Virginia to Fullerton and we are now able to enjoy life together."

[Continued on page 3]

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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 2017 Board Meeting Minutes

The April 2017 FRC Board meeting was called to order at 7:35pm by President Bob Houghton AD6QF at 7:30pm. Present: Vice President Walter, Clark: Treasurer Gene Thorpe KB6CMO and Secretary: Linda Endsley KJ6IHB. Directors: Larry McDavid W6FUB, Paul Broden K6MHD, Robert Gimbel KG6WTQ and Richard Belansky KG6UDD, Member: Cheryl Thorpe KE6TZU, and Visitor: Irene Broden

Treasurer's report: Savings - \$2,606.94; Checking- \$4,093.01

Minutes from the March Board Meeting were read and approved.

Old Business:

The Donate Life Run/Walk will be on April 29 at Cal State Fullerton, 6:30am to about 11am. Gene needs four more volunteers.

Antennas in the Park event date is May 13. Larry will purchase the food and Albert will cook. \$300.00 will be allocated to purchase the food. Donations will be accepted.

The Fullerton Radio Club newsletters were updated on the web site.

Discussed changing the location of the restaurant for the pre-general meeting dinner.

Need to review the Bylaws for changes.

New Business:

Two renewal memberships were received during the month

The April general meeting speaker will be David Hollon from Donate Life.

Received information that someone has spare equipment that they would like to donate. Discussed options.

Next board meeting: 3 MAY 2017

Adjourned at 8:30 pm

Submitted by Linda Endsley KJ6IHB

April Club Meeting Speaker (continued)

Though Dave's life was renewed and he was enjoying life and work again, he still suffered from diabetes. A few months after his kidney transplant his blood sugar levels became very erratic and he ended up back in the hospital, and was then listed for a pancreas transplant.

While Dave was dealing with management of his health, 16-year old Lacey Rodia of Murrieta, CA, became aware of organ donation while preparing for her driver's license. She let her wishes be known to her parents and signed up on the Donate Life California Organ & Tissue Donor Registry. A few months later, in February 2006, Lacey was involved in a fatal auto accident. Lacey touched four lives as an organ donor, including Dave. He now has a pancreas that produces insulin. His diabetes is no longer active.

Dave and his extended family first met the Rodias in December 2006, and together they placed dedicated roses on the 2007 Donate Life Rose Parade float.

"My transplant journeys have been life-defining experiences," continues Dave, a procurement agent for Boeing Co. "My life has been truly saved by God and by the gifts of life that my family and I have been blessed to receive, and enriched by medical professionals, OneLegacy, extended family, friends, Cornerstone Church and Boeing co-workers who facilitated those journeys."

"I believe I can speak for my fellow Donate Life Ambassadors when I say that those whom we come to meet and know through our donation and transplant experiences are not simply friends, but family."

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Donate Life Service

Additional Amateur Radio Operators are still needed: To Help with the Donate Life Run/Walk Family Festival on Saturday April 29, 2017 from 0700 - 1100 hrs. or so. This will be our 15th year of participation! **YOU ARE NEEDED.** ARO volunteers should sign-up using this specialized URL below!

http://olf.convio.net/site/Calendar?id=100143&view=Detail&s_promoCode=2017ARO



Arduino Ham Radio Starter Kit

Earlier this year, I published a series of articles on my web site called the "Arduino Ham Radio Starter Kit". The purpose of this information is to encourage more hams and their clubs to engage with the local maker community as a gateway to amateur radio.

These articles explain Arduino basics in a ham radio context. They contain many suggestions about how amateurs can use Arduinos, as well as how a ham club can engage other makers in hobby activities.

Please take a moment to review the Arduino Ham Radio Starter Kit articles. If you find them to be useful, please consider passing these along to your members or contacts.

You can use these articles by linking them to your web site, Twitter feed, Facebook page or by e-mail.

The URL is: <http://play.fallows.ca/wp/series/arduino-ham-radio-starter-kit/>

Thanks for your consideration. If you have any questions or suggestions, please contact me.

73 John Fallows VE6EY_Calgary, Alberta

Transmitter Hunting News

May will be a busy month for fans of hidden transmitter hunting. Of course the main event will be FRC's annual Antennas In The Park on Saturday, May 13 at the Izaak Walton cabin in Hillcrest Park. If you don't already have a directional antenna for two meters, you can build one right there, as there will be kits and a construction table for the popular measuring tape yagi. Then try to find some of the simple and not-so-simple hidden transmitters around the park. If you don't want to go transmitter hunting, this would be a good opportunity to try out your QRP rig, Buddipole antennas and so forth.

For the hard core transmitter hunters, there will also be on-foot hunts in San Diego County on May 6 and San Luis Obispo County on May 20. Times and locations of all of these events are at www.homingin.com.

Of course the monthly FRC mobile transmitter hunts are still taking place on the third Saturday of each month, beginning at 8 PM from the top of Acacia Avenue in Fullerton. The winner is determined by elapsed odometer mileage, so you can take your time and still finish first. On March 18, Ron Allerdice put a hidden transmitter in the parking structure of Mariner's

Church in Huntington Beach. Everyone arrived by 9:30 PM, ready to go find something to eat.

<u>Team Calls</u>	<u>Odo Miles</u>
KG6EEK/AB6PA	23.0
N6ZHZ/W6XRT	23.5
N6AIN/WA6PYE	25.8

The team of Bill Greganti KG6EEK and Glenn Tobey AB6PA arrived last but had lowest mileage, so they will hide a transmitter on April 15. Rules call for the signal to be continuous on 146.565 MHz. Come on out and you might get a chance to ride along.

73,s

Joe Moell K0OV

March Meeting Review

At the March Club meeting Rich Belansky, KG6UDD, presented a basic introduction to optical fiber with an application topic called "RF Over Fiber" and demonstrate a simple RF fiber optic link. See photo, below.

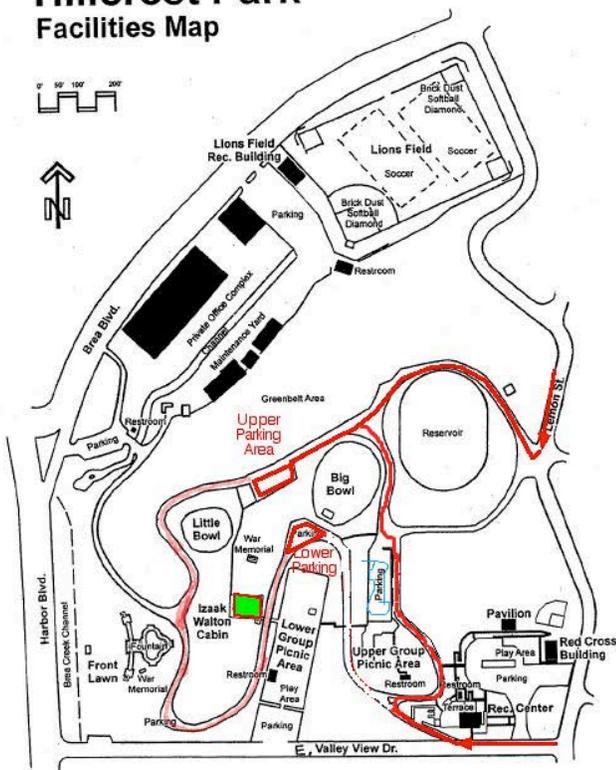


Antennas In The Park

Its almost time for our largest event of the year; ***Antennas In The Park*** on ***Saturday, May 13, 2017***. As always, a key feature will be the popular Joe Moell K0OV on-foot T-Hunt, but let's not limit other activities! Last year we had one portable HF station, several pieces of equipment on display, and a drone demonstration. What can we/you think of for this year's event? How about additional portable HF/VHF/UHF or even microwave stations? Or perhaps a demonstration or two – or more – from the TAG group projects? What else? It's up to your imagination!

We'll have the usual BBQ – club funded, but donations accepted. And something **NEW**: 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 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 around the roadway. Those who come in off Valley View Dr. pass it by the stop sign.

Mobile Radio Use

Attached is an email from the Office of the Commissioner of the California Highway Patrol regarding how the new California distracted driving ordinance is to be enforced regarding various communications devices. You may wish to keep a copy in your vehicle.

This clarification is for CHP officers, so local and county law officers are not bound by it. Work continues in Sacramento to amend the law to clearly allow use of Amateur Radio and other radio transceivers.

Note that the letter clearly permits holding the microphone of a "mounted" transceiver. However, it would appear to prohibit use of a handi-talkie unless the HT is "mounted" by having an antenna or power connection to the vehicle.

Please drive carefully.

73, Joe Moell K0OV

Enforcement of Section 23123.5 of the California Vehicle Code Hands Free Law

-----Original Message-----

From: Comm-Net Message [mailto:noreply@chp.ca.gov]

Sent: Tuesday, March 28, 2017 8:23 AM

To: @CHP

Subject: Comm-Net: Enforcement of Section 23123.5 of the California Vehicle Code

Enforcement of Section 23123.5 of the California Vehicle Code

To: All Commands

Reference: Action Required

Subject: Enforcement of Section 23123.5 of the California Vehicle Code

Effective January 1, 2017, Section 23123.5 of the California Vehicle Code (CVC) was amended by Assembly Bill 1785, which substantially expanded the scope of Section 23123.5 CVC, from simply prohibiting the use of a wireless phone to text while driving, to prohibiting holding and operating a handheld wireless telephone or an electronic wireless communications device while driving.

However, a driver may still use a handheld wireless telephone or an electronic wireless communication device while driving when:

The handheld wireless communication device is mounted to a windshield (in compliance with Section 26708[b] CVC), dashboard, or center console in a manner which does not interfere with the drivers view of the road, and;

The drivers hand is used to activate or deactivate a feature with a single tap or swipe of the drivers finger.

Pursuant to Section 23123.5(f) CVC, the definition of an electronic wireless communications device includes, but is not limited to: a broadband personal communication device, a specialized mobile radio device, a handheld device or laptop computer with mobile data access, a pager, or a two-way messaging device.

Section 23123.5 CVC does not apply to manufacturer-installed systems which are embedded in the vehicle, nor does it apply to an emergency services professional using a wireless telephone while operating an authorized Emergency vehicle, in the course and scope of employment.

For the purposes of Section 23123.5(f) CVC, a radio installed and mounted in a vehicle with a wired hand microphone (e.g., business band or citizen band [CB]radio) is not considered a wireless communication device, nor is it considered a specialized mobile radio device, and therefore is not subject to enforcement under this section.

This information will be added to an upcoming revision to Highway Patrol Manual 100.68, Traffic Enforcement Policy Manual, Chapter 5, Other Enforcement Issues.

CHP Headquarters/Office of the Commissioner/061/18227

It Hertz to Loose Time

Continuing my Clock Mania, I have my newest GPS Clock sitting atop my oldest digital clock, one that uses the 60 Hz power mains frequency to maintain accurate time. Traditionally, I have set this old digital clock using a portable WWV receiver, seen just above that old clock in the attached (admittedly poor) cell phone picture.

By using the Slow, Fast and Hold controls of this old clock, I have been able to set its time to within at most a few tenth-seconds of the WWV UTC time broadcast. In fact, by listening to the on-minute WWV tone and watching the clock display, I believe I can set the clock better than one tenth-second by very briefly pressing the HOLD clock-set button to adjust its displayed time.

But, as we all know now (I hope we all know), the various power generation facilities no longer maintain an accurate 60 Hz power frequency. Previously, not only did they maintain the 60 Hz accurately but also they maintained the total number of cycles per a 24-hour period to the correct value. Alas, this is no longer true. If you use one of these old digital or analog mechanical 60 Hz-powered clocks, it will no longer necessarily maintain accurate time.

Last night I set my old 60-Hz digital clock to GPS time accurately, at least within one or two tenths of a second. Yes, it does take some care and a Type-A personality!

This morning, about 12 hours later, I looked at the two clocks to compare the GPS Clock time with that shown on the 60 Hz digital clock. Note the time difference in the attached picture! The observed ~2-second (the old digital clock does not display tenth-seconds) time difference developed after only 12 hours. As I have typically found, the 60-Hz clock loses time. The power generators are running slow.

What does it all mean? The commonly-available, most-accurate time-of-day is derived from our GPS satellite system. If you still have any of these old mains-powered synchronous clocks, analog or digital, don't expect them to keep accurate time.

And, we've come a long way since we once used sundials to set our mechanical clocks!

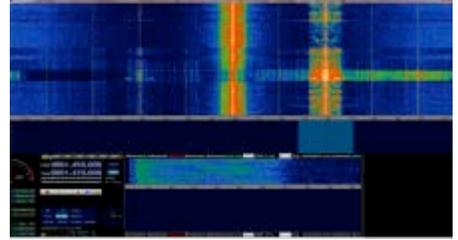
Want an accurate desk clock? Look into that tindie.com \$59 GPS Clock.

Larry McDavid W6FUB



TAG Activity Reports of the Fullerton Radio Club

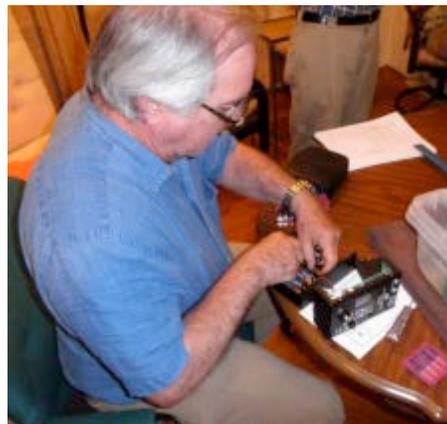
For the past month **Dick Palmer** has been working with his SDR radio. It is a Tony Parks design incorporating a Dan Tayloe mixer. Rather than going in through the microphone or line level input, Dick chose to invest in an external sound card. Not only are external sound cards better in frequency response (down to DC and above audio) but most laptops are not stereo and stereo is needed for the “I and Q” response from the radio. That is essential for single side band. He has many radios that cover the same band as this (160 meters to 10 meters) but the main advantage of SDR is the computer to do the fast Fourier Transform for showing a water fall display of the signals.



Tom Fiske, AA6TF has gotten PSK31 working with his 7600 Transceiver. He's been working Russians and Japanese easily with this non-verbal form of communicating. (Think of PSK31 as a computer version of Morse code that works about as fast as you can type.) For some reason working DX is much more polite than it has been compared to several months ago. At least the guys are he is reaching on the other side of the world going west.

Bill Webb brought his latest Raspberry Pi project. This newer version, the Pi-W, has a built in WiFi and his first use for it was to radio signals out of the refrigerator to tell him the temperature. Or rather so that Alexa can tell him the temperature. The rest of us were surprised to learn that a refrigerator is not at all a Faraday cage and he has no problem with range. This temperature gage application is appropriate because he has another Pi managing a weather station. He is a member of The Weather Underground a network of weather enthusiasts who together are their own weather bureau. It is amazing what this group can do in the way of forecasting. Just enter into Google “weather underground” and then the name of your city.

Bill also led a discussion on the use of sensors with Arduinos. Last month he told us of how Amazon approves apps which Alexa can speak to anyone on. His weather station was not submitted because of password is needed to be part of the network. But his summary of what Alexa can do was approved.



After the meeting **John Norman** and **Brooks Kachner** used some equipment they both brought to help John Norman evaluate an antenna. The method of tuning was simply to adjust the length. The yardstick was used so that John could adjust the antenna to the right length in the field.

Brooks Kachner is shown here replacing batteries in his SWR meter he brought to help John Norman.

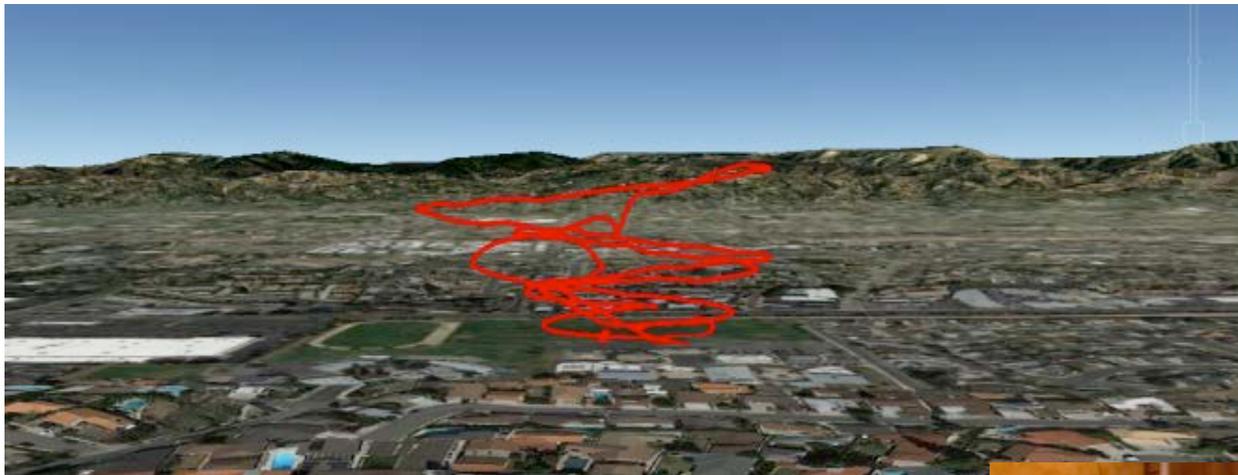
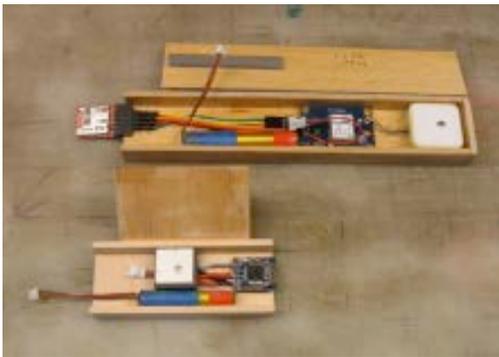
Art Boondry brought his EDM (electrical discharge machining) machine. He was inspired by an article in a 1968 issue of Popular Mechanics. The original article used light bulbs in series with the discharge head which made it a bit dangerous but Art used a power supply that pulsed the current. The pulsing was of course with the use of a capacitor. Art said the pulsing blows away the debris to clear the way for the next discharge of electricity. There was an unresolved disagreement on whether it was an actual arc and molten metal that was blown away or whether it was electro chemical process. He said it works with either water or kerosene.



Walter Clark described his second version of a GPS flight recorder. He's trying to get more involved with Arduino, but it turns out the output of a GPS module (\$15)

can go directly into a microSD recorder (another \$16). That is then read into a PC as ascii characters called sentences. GPS sentence are almost readable, but a particular website he uses can convert that "too much information" into really neat columns of lat, long, altitude, speed or anything you want. That website can also convert it into format which can overlay either Google Earth or Google Maps as shown below.

Bill Webb offered Walt help with Walt's goal of making an example of recording every kind of sensor Sparkfun has.



Dick Bremer brought SWR meters to help John too. Dick led a discussion on SWR meters which everyone participated in. He's always been involved with the microwave frequency of 2,304 MHz but has recently gotten an amplifier for it and so will be using that in the next microwave contest. Most of what he had to share with us was his bad luck in buying a composite video to VGA converter. Yes we pointed out that he's a little behind the times with VGA, but that's what he has a lot of.



Bob Houghton (our president) talked about his work installing an antenna on his truck. He mentioned a problem he anticipates with the call sign that will be on his license plate. Turns out Larry McDavid has had lots of encounters with Orange PD on his license plate. Some police he encountered were even unaware that a call sign isn't a vanity plate.

Tom Gaccione WB2LRH is the club repeater expert. He reported that the Raytheon repeater had an amplifier failure. The problem is unresolved. It is an Alinco 220 MHz transmitter.

Larry McDavid gave a very interesting talk on WWVB. This is the signal that is picked up by the so-called atomic clocks you can buy at Walmart or a drug store. There's two modulation schemes involved with that broadcast and the newer one has been on the air for several years and only now is a receiver for it available. He is holding it. It is said to be more sensitive by a factor of a hundred and he tested that compared to the older clocks with his own house which has had some metal foil installed with the house insulation that has made the old clocks unreliable. (Use Google with the keywords: "amazon 14 Inch UltrAtomic")



Joe Moell told of his involvement in a ham radio drill with the Hospital Disaster Support Communications System earlier that day. It involved a simulated earthquake event with hams going to 20 hospitals in the county to send damage reports and resource requests. Most of the hospitals have rooftop ham radio antennas with coax going to the Command Center room that is activated in disasters. Responding hams connect their own radio gear to these antennas. In most cases, it is a handi-talkie. That often works OK, but sometimes the wide-open front end of the handi-talkie receives interference or blocking from other radio systems with antennas atop that hospital. At other times, the handi-talkie may not have enough power to reach the net repeater. So for better results, Joe made an improved

response kit with a VHF/UHF mobile transceiver and power supply. It's all built into an inexpensive metal case that he found at Harbor Freight. The design allows quick removal of the entire radio assembly for modifications and servicing.



John Norman brought a small pouch he carries with him on all his search and rescue missions. He emptied the contents onto the table and talked about each one. It is gear that would be backup to the gear provided by the sheriff rescue group he supplements. One thing that seemed to interest us the most was a small 5 mw red laser that you are supposed to shine on an aircraft if you want to be rescued. The beam is a line about 4 degrees wide to make hitting the plane easy.

The group was quite interested in helping with his need to have more antenna gain for his handy talky when used way away from anyone or any repeater. He just needs a bit more gain than the rubber ducky the radio normally comes with. But he doesn't want to carry a Yagi. He found a very long antenna and was hoping that it could be tuned by adjusting its length to work with the emergency frequency. The longer antenna is cheap as dirt and will make it available to others on his team

if it works out. Bill and Brooks found a length that antenna can be pulled out too that is best; but they are not sure how much better off he will be than with the small antenna.

Monthly FRC meetings are held at:

Chapman Activity Center

2515 San Carlos Dr.
Fullerton, CA
March meeting will be:

**Wednesday,
April 19, 2017**

Dinner before the meeting at 5:00 PM (new time)

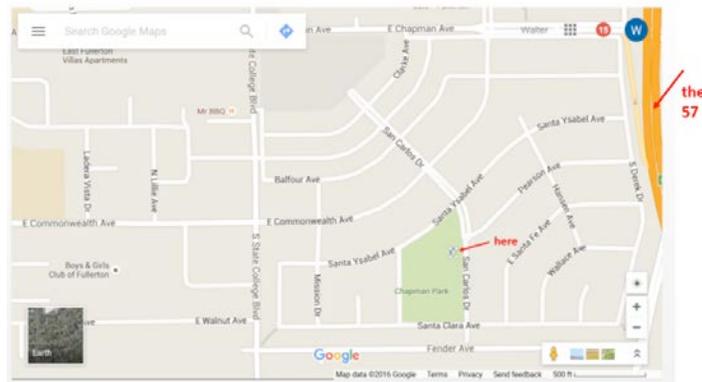
at:

Sizzler

**1401 N. Harbor Blvd.
Fullerton**

Meeting time: 7:00 PM

Visitors are welcome



Chapman Activity Center

FRC Board Meeting

Open to all Club members

Marie Callender's Restaurant
126 Yorba Linda Blvd., Placentia
First Wednesday of each month.

Next Board Meeting
May 3, 2017

QSO and dinner; 7:00 PM

Meeting: 7:30 PM

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.