President’s Message

No President’s message was submitted for this month.

June Meeting

The June 17 club meeting will include a presentation by David Holt N6VZB. David is an active electronic technologist with over 40 years of experience in electronic components, systems, and applications. He holds numerous certificates in the field of electronics including a Masters in Electronic Technology with concentration in microprocessors. He is a licensed amateur radio operator holding an Extra class License, N6VZB. David has held several positions in electronic applications, technical marketing and sales. He is currently employed as a product development manager with B&K Precision headquartered locally in Yorba Linda, CA. B&K Precision provides a wide range of test and measurement equipment used by industry and hobbyists. David enjoys the challenge of making difficult electronic topics easy to understand and applicable in every day life. He will target this presentation for people new to the hobby with something for the experienced engineers at the end.

DC Power Supply Basics

This presentation will be beneficial to anyone new to electronics, amateur radio, or to those wanting to learn more about how electronic things work.

Attendees of this presentation will:

* Understand how household power is generated and the AC waveform it produces.
* Learn how DC power supplies change household AC outlet power into battery-like DC power.
* Recognize what simple building blocks inside the power supply work together to change AC to DC power.
* How to identify basic components inside a common DC power supply used for amateur radio and other products.
* Recognize common schematic symbols used for power supplies and other electronics.
* Learn the differences and benefits of linear and switching DC power supplies.
* Learn about new power supply technologies and its benefit to hobbyists and industry.

This presentation features animated graphics and audience participation with hands-on interaction.

Mathematical theory is minimized and replaced with visual examples and discussions focusing on the benefits to the end user.

NOTE: This will be a special meeting with B&K Precision providing a door prize for FRC club members, with value over $100!

FRC Regular Club Meeting

Third Wednesday of each month
Chapman Activity Center
2515 San Carlos Dr.
Fullerton, CA

Next Regular Meeting
Wednesday,
June 17, 2015

Dinner before the meeting at 5:00 PM at:
Coco’s Restaurant, 1011 N. Harbor Blvd.
Fullerton

Meeting time: 7:00 PM
Visitors are welcome
June Board Meeting Minutes

The June 2015 Board meeting was called to order by President Albert Solomon AG6OF at 7:33 PM. Others present included Vice President Bill Preston KZ3G, Treasurer Gene Thorpe KB6CMO, Secretary Linda Endsley KJ6IHB, Board members Larry McDavid W6FUB, Robert Gimbel KG6WTQ, Paul Broden K6MHD, Mike LeFevre WD6AQB and member Cheryl Thorpe KE6TZU.

Minutes of the May Board meeting were reviewed and approved.

Treasurer’s report: Checking, $2,583.24; Savings, $3073.64.

Old Business:

Railroad Days – Was well attended by the public.

Airport Day – Was well attended by the public.

Antennas in the Park – Went well. Will suggest asking other clubs to join with our event in the future.

HamCon – Will be September 11, 12, 13 – Torrance Marriott

Ham Shak – put on hold for now

Screen for month general meetings – no info

New Business:

Need a screen (special type) for the projector.

June general meeting topic will be about power supplies

The next Board meeting will be Wednesday, July 1.

The meeting was closed at 8:14 PM

Submitted by Linda Endsley, KJ6IHB

Classified Ads

No classified ads were submitted this month
An invitation to Fullerton Radio Club Members

Now that I've got your attention, don't go running from the computer screaming from that bad visual.....

ARRL Field Day is June 27-28!! HDSCS will be having our usual Field Day operation June 27-28 at Huntington Beach Hospital, located at 17772 Beach Blvd in Huntington Beach (between Slater and Talbert). This year, we'll have an enhanced satellite setup. As most of you know (or probably forgot), the earth has a bunch of man made satellites floating around it, but before any of them came along, there was a really BIG natural one up there, about 250,000 miles away. Tom Hall, N6DGK, has graciously offered the use of his moonbounce setup and has carefully tested it out on a large block of Swiss Cheese a few blocks from his home. As for the Au Naturel part, I meant the satellite; no plans for the satellite team to streak through the tents (well at least not me, I don't know about Joe and Tom....) (besides, I think this is a family event anyway....)

We'll have 2 HF stations, 1 VHF/ UHF station with 6M, 2M, and 440 MHz, a GOTA "Get on the Air" station for newcomers to HF, and the aforementioned Satellite station (mostly just Joe Moell and I yelling at each other with some satellite contacts in between) The hospital will set up it's disaster tents for us and we will operate from 11AM Saturday until 11 AM Sunday. Woody Woodward has generously let us use his call so we will be W6PA 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.

Becky Katzen (KI6OEM) will be leading the VE testing session if you would like to upgrade your license or know of someone who would like to get their license.

What do you need to bring? Friends and family! Something to share with everyone that you like to eat; A jacket as it gets 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; Whatever else you think you might like to have to keep comfortable.

The hospital will provide us with tables and chairs for the operating stations, the generators, and cots to sleep on (think Boy Scouts). We will probably do something for dinner Saturday night; plans are TBD.... 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 26, at 3:00PM at the hospital. 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 7:00AM Saturday for radios, tables, etc to prepare for an 11:00AM start. Teardown will start at 11:01AM Sunday until we finish. If you have any questions you can call or email me. Hope to see you there! Tom, WB2LRH

Ham Jam

Saturday, July 11 will be a day of ham radio fun at Ham Radio Outlet in Anaheim from 10AM-5:30PM.

Join us and various manufacturer representatives, Gordon West, the Red Cross, Orange County RACES, Hospital Disaster Support Communication System (HDSCS), local clubs, and other experts who will be showing us “what's new in ham radio” from C4FM digital to an antenna analyzer with a full color TFT LCD screen. See a 200w mobile HF installation in a Smart Car, and compare notes about what you learned at Field Day this year.

There will be three prize drawings throughout the day, and hot dog lunches to keep you fortified. We will offer license testing for all classes from 11AM to 3PM (be sure to call or email the store for reservations.)

Come join us to learn, to see and be seen, to laugh, to eat, and completely enjoy a day filled with everything ham radio.

Kind 73,

Janet Margelli, KL7MF Manager
Ham Radio Outlet
933 N. Euclid St.
Anaheim, CA 92801
(714)533-7373 Tel
(800)854-6046 Tel
(714)533-9485 Fax
anaheim@hamradio.com
HAMCON

We’re HAMCON, Inc., and we organize the American Radio Relay League’s Southwestern Division Convention in the Los Angeles-Orange County area every four years. HAMCON 2015—also the 2015 ARRL Southwestern Division Convention-- is produced by 13 amateur radio clubs in Los Angeles and Orange Counties committed to providing a positive convention experience for all attendees.

The ARRL’s annual Southwestern Division Convention rotates yearly from the Los Angeles-Orange County area to a location in Arizona, then to a site in Santa Barbara or Ventura County, and finally to the San Diego area before repeating this four-year cycle. The ARRL’s Southwestern Division includes the Southern California counties of Imperial, Inyo, Los Angeles, Orange, Riverside, San Bernardino, San Diego, San Luis Obispo, Santa Barbara, and Ventura as well as the entire state of Arizona. It is 2nd largest of the ARRL’s 15 Divisions in terms of amateur radio licenses issued—only the ARRL’s Southeastern Division (all of Alabama, Florida, and Georgia) has slightly more amateur licenses outstanding.

We welcome all amateur operators to HAMCON 2015 during September 11-13, 2015, at the Torrance Marriott South Bay Hotel. You don’t need to be an ARRL member to attend and hams living outside the ARRL’s Southwestern Division are also invited. No matter what your amateur radio experience level we’re sure you will find many topics, products, and people of interest at HAMCON 2015.

HamCon will be held Torrance again this year, on September 11 – 13, 2015. Check the website at Hamconinc.org for details and registration. Volunteers are needed for this event. Contact Gene KB6CMO at Phone: (714) 680-4258 or E-mail: kb6cmo@juno.com.

WARA Field Day

Western Amateur Radio Association (WARA) N6ME will be conducting their Field Day at: El Portal School, 200 N. Nada St. La Habra La Habra, CA. GOTA Station: YES
Contact: George Jacob 562- 544-7373 jac2247@gmail.com
www.warahams.net

April & May FRC Transmitter Hunts

Fullerton Radio Club continues its 40-year tradition of monthly mobile transmitter hunts. On the third Saturday of every month, hunters gather at the top of Acacia Avenue in Fullerton. The hider puts out a continuous signal on 146.565 MHz from somewhere east of the 605 freeway, south of Interstate 10, west of Prado Dam and north of Pacific Coast Highway.

On April 18, 2015, Steve Wallis WA6PYE put his transmitter in a parking lot at 19th and Fullerton Avenue in Costa Mesa. The first hunter must have taken the freeways, arriving at 8:45 PM. Here are the results:

<table>
<thead>
<tr>
<th>Team Calls</th>
<th>Odo Miles</th>
</tr>
</thead>
<tbody>
<tr>
<td>N6MJN</td>
<td>20.6</td>
</tr>
<tr>
<td>WA6CYY</td>
<td>22.6</td>
</tr>
<tr>
<td>N6AIN</td>
<td>23.6</td>
</tr>
<tr>
<td>N6ZHZ/KK6JDC</td>
<td>24.1</td>
</tr>
</tbody>
</table>

With lowest mileage, Dave Balgie N6MJN was the winner and thus the designated hider for the hunt on May 16. He found a hiding spot on Stewart Lane in Huntington Beach. Here are the results:

<table>
<thead>
<tr>
<th>Team Calls</th>
<th>Odo Miles</th>
</tr>
</thead>
<tbody>
<tr>
<td>N6AIN/WA6PYE</td>
<td>9:05</td>
</tr>
<tr>
<td>WA6CYY</td>
<td>9:47</td>
</tr>
</tbody>
</table>

Winner Deryl Crawford N6AIN and his helpers Steve Wallis WA6PYE and Theodore will be responsible for hiding on June 20, so come on out and find them.

73,
Joe Moell K0OV

Meeting Presentation Requests

If you or someone you know would like to present a topic at one of our regular club meetings, please contact Vice President Bill Preston KZ3G at hillpreston@roadrunner.com, or Newsletter Editor Paul Broden at Pbroden@sbcglobal.net. All members are requested to identify at least one topic and presenter. Have you contributed this year?

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
July 1, 2015
QSO and dinner; 7:00 PM
Meeting: 7:30 PM
The driving force behind this little project was the desire to have an 80 / 40 meter NVIS (Near Vertical Incident Skywave) antenna to use on the NTX ARES HF Net each month and for HF Winlink. One of the major drivers at least in my property situation is that it had to fit in my back yard which already has my HF Vertical, VHF J pole and two trees leaving very little space. So off I headed to the Internet to start my search for a home brew design. There are a lot of NVIS designs out there for 80 / 40 meters but they all need space which I don’t have. After lots of looking and reading I came across a one page article by BUDDIPOLE™ (The BUDDIPOLE™ Quick-Fix for NVIS http://lib.store.yahoo.net/lib/buddipole/nvis2008.pdf) on how to turn a standard BUDDIPOLE™ into an 80 / 40 meter NVIS antenna. So using the information from the BUDDIPOLE™ article as a starting point here is my version of a BUDDIPOLE™ 80 / 40 meter NVIS that will fit in a small typical city lot back yard.

Needed parts:
- Standard BUDDIPOLE™ - mast, tripod, antenna arm (2), VersaTee™, and Coil set
- Qty 2 – 3/8 x 24 stainless steel bolts 1/2” long
- Qty 4 – 3/8” ring terminals for 18 gauge wire
- 50ft RED – 18 gauge insulated wire
- 50.5ft BLACK – 18 gauge insulated wire
- Qty 4 – Dog bone insulators or similar (can be made out of a cutting board)
- Qty 2 – 2ft non-conducting stakes / posts (1 x 2 works well)
- Qty 24ft of antenna guy rope (550 parachute cord works just fine)
- Qty 2 – small stakes for the guy rope
- As required color contrasting heat shrink to mark the wires for easy adjustment

The ultimate goal is to create an off-center-feed dipole that when erected 9 to 10 feet off the ground in an Inverted V configuration will yield a NVIS antenna for 80 / 40 meters depending on the wire set used. Figure 1 is a depiction of the final antenna configuration.

The first step was to create the insulators for the wire ends and attach the guy ropes. I fashioned 4 insulators out of a cutting board that I had in the materials stash and attached 6 feet of 550 paracord to each one. 4 are needed as we are building 2 antennas an 80m and a 40m unlike the BUDDIPOLE design which was a single long wire for both bands.
The second step is to cut the antenna wires to length and attach 3/8” ring terminals. The BUDDIPOLE design was for a single wire for 80 and 40 meters wound on a kite winder for adjustment. I decided to take a different approach and make one set of wires for 80 meters and one set for 40 meters. This approach meant that I didn’t have to hunt up kite winders and it is easier to adjust. You will want to use different colored wire for the two sides of the dipole that you are building, since they are different lengths, to aid in identification. You can use the same colors for the 40m and the 80m since the lengths are quite different and easy to identify.

80m RED – 30ft
80m BLACK – 31ft
40m RED – 16ft
40m BLACK – 19.5ft

Now attach each wire to an insulator / guy rope assembly and secure by folding 2ft of the end over and wrapping it around itself. This is done so that the antenna can be adjusted close to the center frequency that you which to operate on. I used a piece of Velcro next to the insulator and at the loose end to keep the wire from unwrapping and to allow future adjustment. The wire / insulator / guy assemble should now have the following dimensions from the ring terminal to the insulator.

80m RED – 28ft
80m BLACK – 29ft
40m RED – 14ft
40m BLACK – 17.5ft

The next step is to assemble either the 40m or 80m antenna and adjust the length for your desired operating frequency. So assemble the tripod, mast, VersaTee, antenna arms, and coils as you normally would for a BUDDIPOLE dipole. Attach the 40m or 80m RED wire to the RED coil and the 40m or 80m BLACK wire to the BLACK coil using the 3/8 x 24 bolts. DO NOT use a wrench to tighten these. They only need to be finger tight. If you use stainless steel as I did, to prevent corrosion, you will damage the threads if you use a wrench and no anti-seize compound. The 80m antenna coils should NOT be tapped. The 40m antenna coils should be tapped as indicated in the table at the end of this article. Extend your mast to 9 to 10 feet. Decide on the height you are going to use and stick with it because if you change the height you change the center frequency of the antenna. I used 10ft because it was easy to determine, 2 lower mast sections fully extended and the 3rd mast section extended the length of my 2ft stake equaled 10ft. Use the 2ft stakes to elevate the wire ends off the ground and secure with the guy lines. The wires from the coils to the 2ft stakes should be tight enough so they do not sag.
I would suggest that you mark your coils with nail polish or paint at the appropriate tap points for 40m for ease of assembly during later employments of the antenna.

Now comes the time consuming part so that your antenna is easier to setup and use later. As I mentioned earlier my goal for this antenna is the NTX ARES HF Nets. The 80m net is on 3.860 MHz and the 40m net is on 7.285 MHz. So I started with my 80m setup and adjusted the wire lengths until I established minimum SWR at 3.860 MHz using my Youkits FG-01 graphic antenna analyzer. As you go through this process change the RED and BLACK wire lengths in equal amounts, if you shorten the RED 6 inches shorten the Black 6 inches. During this process I found that I needed to use my BUDDIPOLE adjustable BALAN at a setting of 2:1 to reduce the SWR below about 3. Once you have located your desired operating frequency wire length, mark each of the wires at that location with contrasting heat shrink. This will make it easy later to return to this frequency. So since I didn't just want to use the antenna at a single frequency I installed heat shrink at 6 inch intervals on the 80m wires and 1 inch intervals on the 40m wires and spent the afternoon constructing the tables below for easy setup of future operations. Consistency in setting up your BUDDIPOLE NVIS antenna is the key so that all the hard work you put into developing a table similar to the one below will pay off in the future. If you are consistent with your setup the markings will at least get you into the infield of the ballpark for your desired operating frequency and your antenna tuner should be able to handle the rest. Or if you have your antenna analyzer handy you can check the center frequency and adjust your length if needed.
Once you have all your markings and measurements complete store each set of wires and guys in a labeled zip lock bag and you are ready to deploy or just setup for occasional use in the back yard.

### 80 m Buddipole NVIS

Using Buddipole 2:1 Balun  
Markers counted from Coil  
Markers spaced 6 inches apart  

Note: Always count tap settings from the WIRE SIDE of the coil.

<table>
<thead>
<tr>
<th>Marker #</th>
<th>Low 2.0 SWR Freq in MHz</th>
<th>Center Freq in MHz</th>
<th>High 2.0 SWR Freq in MHz</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>3.930</td>
<td>3.946</td>
<td>3.962</td>
</tr>
<tr>
<td>2</td>
<td>3.884</td>
<td>3.900</td>
<td>3.916</td>
</tr>
<tr>
<td>3</td>
<td>3.836</td>
<td>3.860</td>
<td>3.867</td>
</tr>
<tr>
<td>4</td>
<td>3.802</td>
<td>3.819</td>
<td>3.834</td>
</tr>
<tr>
<td>5</td>
<td>3.761</td>
<td>3.777</td>
<td>3.793</td>
</tr>
<tr>
<td>6</td>
<td>3.721</td>
<td>3.738</td>
<td>3.754</td>
</tr>
<tr>
<td>7</td>
<td>3.681</td>
<td>3.698</td>
<td>3.714</td>
</tr>
<tr>
<td>8</td>
<td>3.645</td>
<td>3.662</td>
<td>3.677</td>
</tr>
<tr>
<td>9</td>
<td>3.612</td>
<td>3.627</td>
<td>3.643</td>
</tr>
<tr>
<td>10</td>
<td>3.577</td>
<td>3.592</td>
<td>3.608</td>
</tr>
<tr>
<td>11</td>
<td>3.540</td>
<td>3.556</td>
<td>3.571</td>
</tr>
<tr>
<td>12</td>
<td>3.506</td>
<td>3.522</td>
<td>3.536</td>
</tr>
</tbody>
</table>

80m Wire Lengths - Initial  
**Red** - 30ft folded back to 28ft than adjusted for above  
**Black** - 31ft folded back to 29ft than adjusted for above

### 40 m Buddipole NVIS

Using Buddipole 2:1 Balun  
Markers counted from Coil  
Markers spaced 1 inch apart  

Note: Always count tap settings from the WIRE SIDE of the coil.

<table>
<thead>
<tr>
<th>Marker #</th>
<th>Red Side - TAP 16</th>
<th>Black Side - TAP 20</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Low 2.0 SWR Freq in MHz</td>
<td>Center Freq in MHz</td>
</tr>
<tr>
<td>1</td>
<td>7.256</td>
<td>7.303</td>
</tr>
<tr>
<td>2</td>
<td>7.242</td>
<td>7.285</td>
</tr>
<tr>
<td>3</td>
<td>7.220</td>
<td>7.265</td>
</tr>
<tr>
<td>4</td>
<td>7.195</td>
<td>7.240</td>
</tr>
<tr>
<td>5</td>
<td>7.169</td>
<td>7.215</td>
</tr>
<tr>
<td>6</td>
<td>7.149</td>
<td>7.196</td>
</tr>
<tr>
<td>7</td>
<td>7.120</td>
<td>7.165</td>
</tr>
<tr>
<td>8</td>
<td>7.098</td>
<td>7.149</td>
</tr>
<tr>
<td>9</td>
<td>7.076</td>
<td>7.127</td>
</tr>
<tr>
<td>10</td>
<td>7.059</td>
<td>7.107</td>
</tr>
<tr>
<td>11</td>
<td>7.036</td>
<td>7.084</td>
</tr>
<tr>
<td>12</td>
<td>7.022</td>
<td>7.072</td>
</tr>
<tr>
<td>13</td>
<td>6.999</td>
<td>7.050</td>
</tr>
<tr>
<td>14</td>
<td>6.977</td>
<td>7.026</td>
</tr>
<tr>
<td>15</td>
<td>6.958</td>
<td>7.005</td>
</tr>
</tbody>
</table>

40m Wire Lengths - Initial  
**Red** - 16ft folded back to 14ft than adjusted for above  
**Black** - 19.5ft folded back to 17.5ft than adjusted for above

NTX ARES HF Net setting

The above article was reproduced, with permission, from *On Your MARC*, June 2015 newsletter of the McKinney Amateur Radio Club, Inc., located in McKinney, TX. Our thanks go to the members of *On Your MARC*, and especially the author.
After 0.6 inch of rain fell in Fullerton on Thursday and Friday, the hills were a bit muddy and slippery on Saturday. But cloudy skies meant comfortable temperatures as members and friends of the Fullerton Radio Club gathered in a new location for the annual "Antennas In The Park" event. The usual HF operators didn't show up this year, but fans of ham radio direction finding had fun building antennas and searching for hidden transmitters.

Many of the attendees were newcomers this time. They tested their antennas with three practice voice transmitters near the gathering point. Then they set out on the five-transmitter ARDF course within the 40-acre park. Here are the results:

**TWO-METER COURSE RESULTS -- 5 FOXES**

<table>
<thead>
<tr>
<th>Name and call</th>
<th>Time</th>
<th>Foxes</th>
</tr>
</thead>
<tbody>
<tr>
<td>David Smith W6DPS</td>
<td>2:09:55</td>
<td>4</td>
</tr>
<tr>
<td>Ron Frank KK6DWD</td>
<td>1:03:00</td>
<td>2</td>
</tr>
<tr>
<td>Kate Hutton K6HTN</td>
<td>1:28:00</td>
<td>2</td>
</tr>
</tbody>
</table>

I put out two transmitters on the 80-meter band, one close by for training and a second one in the northeast corner of the park. Here are the results for the second transmitter, which sent CW continuously.

**EIGHTY-METER TRANSMITTER RESULTS**

<table>
<thead>
<tr>
<th>Name and call</th>
<th>Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ron Frank KK6DWD</td>
<td>0:26:30</td>
</tr>
<tr>
<td>Robert Haggard AD6XJ</td>
<td>1:12:00</td>
</tr>
<tr>
<td>Roman Kamienski KG6QMZ</td>
<td>?</td>
</tr>
</tbody>
</table>

Thanks to Marvin Johnston for putting on another excellent antenna/attenuator building session and to April Moell WA6OPS for bringing another beautiful and scrumptious Foxhunting Weekend cake for all to share. Also thanks to the officers and board members of Fullerton Radio Club for sponsoring this fine event.

Joe Moell KØOV

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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.