NEXT MEETING: FRIDAY, MAY 16TH - DEMONSTRATION AT HEATH KIT
THE PREZ SEZ

Of the 50 currently paid-up members of OCARC, we have 45 membership survey cards on file reflecting the member's personal activity status and interests. I have reviewed each survey card and have formulated the following information as to our club's posture in various areas.

The license structure of the membership is predominately General and Advanced class, however we do have four Novices and five Technicians registered, 34 of those registered are ARRL members, which I am pleased to see as this represents 68% of the total membership. I would like to push this figure upward, towards 100% if possible, for there is great pride and benefit in being 100% league affiliated, not to mention the support it will render ARRL. If your not a member, contact WB6CQR and join through our club now.

Mode of operation of most club members is SSB and CW, with DX and NET operation being tied as the most routine activity. Field Day, rag chewing and home brew gear are all high in individual interests. 90% have fixed stations at home and 19 members have mobiles, 14 have phone patches and 9 have emergency power capabilities.

Not many commented on suggested club functions, but those that did were helpful. W6DEY sez: "Club programs should attempt at all times to include the interest of the wives and girl friends of members. I would like to see some breakfast get togethers, say at a Park or a Pancake House, if we could locate one with a dining room to hold the group. Getting the women together and making friends will cement club relations very good." W6PJU sez: "Interesting programs and social events. Would like to see more YL members and more activities encouraging attendance of XYLs." W6FMK sez: "To obtain my General I need CW work (have gotten up to 10 wpm in past years) then I would be interested in DX, Nets, etc. I formally was HSIAB (Ecuador) General." (How about that?) WN6UMB sez: "As a novice there isn't much I can do, but hope the club can continue its work."

Many favor social get togethers which it appears we need to have more of. The survey information has satisfied me that generally we are steering in the direction that is desired by the membership. Yielding to those wanting some CW code practice, commencing JUNE we will run code practice before the meeting at approximately 5:30 pm, so those of you desiring it come on down early, and don't forget to bring along a pencil or pen. And to those who think they can't do much for the club because of one thing or another, to those I say you can by active participation in the club programs: Field Day, the Hamfest and others yet to come. Everyone can contribute something, regardless of their license class. The success of our programs depends upon you - the members.

VY 73,
Jerry, WA6ROF
President
This month's meeting will be a special demonstration held on the third Friday, May 16 at 7:30 PM at the Heathkit Electronic Center located at 330 E. Ball Rd. in Anaheim. VP, Dave - W6RVM says that Bob Carrothers, W6KFF, of Heathkit will present a display and demonstration of all the latest Heath ham gear and also some of the latest Heath test equipment. There will be a station set up for operation by the club members and also a demonstration of the new UHF repeater station in the area. Dave tells me that the repeater at 'Twin-Peaks' has been used by some of the fellows in this area to talk to Orange County from Las Vegas.

There will be free coffee and donuts at the meeting and also there will be some free Door Prizes supplied by Heathkit. It sounds like a great meeting so be sure you don't miss it. And don't forget Mr. RF will be there.

MINUTES OF THE LAST MEETING -- APRIL 18, 1969

The meeting was called to order at 1945 hours by our President, WA6ROF. The officers of the club were introduced by WB6TBU. Bud Barkhurst, WA6VPP, was announced as the winner by Mr. "R. F.", and received a club badge.

C. R. MacKay, W60PS, was our speaker of the evening, and was well qualified to talk on the subject of "Quads". Mr. MacKay is Vice-President of the Fullerton Radio Club and has been an amateur since 1922. His subject was an interesting one and was well received.

Max, W6DEY, announced that the class of licence held by the club trustee, limits the type of operation for Field Day.

The proposed ruling by the City of Orange limiting the height of antennas was discussed. It was decided that representatives of the amateur fraternity would be on hand at the hearing.

Ken, W6HHC, gave an explanation of what a "Ham Fest" was, and how we could raise much needed revenue for the club by holding one in the near future.

Field Day was discussed and it appears that a site in the Turtle Rock area was the best possibility at the moment. John, W6BNX, was to do further investigative work in conjunction with Bill, WB6WOO. It was mentioned that the Fullerton Radio Club is proposing ground rules for local competition.

Visitors at the meeting were as follows:

Tim Donovan WA6UBR
Paul Taylor --
Eddie Lohse WN5YJJ
Ray Owens K5SAN
Bob Mercer K6EIS
John Mason K6MLU
Mel Bittner Seth Lover
Steve Wilkens Larry
Ben Frances Bob Huard

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Using semiconductors in power supplies is really the same as designing with vacuum tubes, except that semiconductors operate more efficiently. Except for some very high voltage applications, semiconductors are better because they don't (1) lose power to heat up filament, (2) lose power in huge voltage drops across the rectifiers, and (3) waste the space consumed by tubes and sockets.

**UNREGULATED POWER SUPPLIES**

The three basic types of rectification circuits remain the same whether you use vacuum tubes or semiconductors. You still must pay careful attention to the ratings of the devices, because not only will your circuit not work correctly, but you are more likely to destroy the rectifiers if they are semiconductors. The most important ratings are **MAXIMUM INVERSE VOLTAGE** ($V_r$) and **MAXIMUM AVERAGE-FORWARD-CURRENT** ($I_f$). Figures 1, 2, and 3 show the three basic circuits and what kind of voltages and currents the diodes will see in each case.

**FIGURE 1 -- HALF-WAVE RECTIFICATION**

- $V_r = 1060V$ ------- 1300V
- $I_f = 1$ AMP ------- 1.5 AMP

**FIGURE 2 -- FULL-WAVE RECTIFICATION**

- $V_r = 2120V$ ------- 2500V
- $I_f = 0.5$ AMP ------- 0.75 AMP

**FIGURE 3 -- BRIDGE FULL-WAVE RECTIFICATION**

- $V_r = 1060V$ ------- 1300V
- $I_f = 0.5$ AMP ------- 0.75 AMP

It is very important to check the specifications of the diodes you plan to use in a particular power supply and make sure the ratings are adequate. However, sometimes it is impractical to obtain devices with proper ratings. For example, you may have trouble locating a semiconductor diode with a 2500V $V_r$ rating. However, lower rated devices may be connected in series to give good operation and little loss in efficiency. If, for example, you have diodes rated at $V_r = 650V$, then you can put four of these diodes in series to make a rectifier rated at 2600V. The author recommends putting 100k resistors in parallel with each diode to distribute the voltage evenly. Some experts recommend also putting a .05μF disc capacitor also across each diode to prevent damage from transient voltage spikes. Figure 4 shows the circuit of Fig. 2 redesigned using lower rating diodes.
RIPPLE IN SIMPLE POWER SUPPLIES

Usually filter chokes are not used in low voltage power supplies (0-75V) and many times not in high voltage supplies. The reason is that the voltage drop across a filter choke is usually excessive. For example, in a one amp supply with a 3Hv choke (100 ohms), 100V will be dropped across the choke. This may be OK with a 1kV supply, but can you imagine what this would do to a 12V power supply? Therefore, a large filter capacitor is the main source of ripple suppression in a simple power supply. The heavy line in Fig. 5 is what the output voltage (voltage on the capacitor) looks like for full-wave rectification. The ripple factor is expressed as the percentage of PEAK-TO-PEAK RIPPLE divided by PEAK VOLTAGE. How large the ripple is, depends on how much the capacitor voltage decays (discharges) between half-cycle peaks. How much the capacitor discharges depends on the value of the time constant formed by the filter capacitor, \(C_f\), and the load resistance, \(R_l\).

For example, if the output voltage is 1000 vdc and the current is 1 amp, then the load resistance is:

If you desire 10% ripple, then make the time period of one half-cycle (.008 sec.) equal 10% of the time constant formed by \((R_l)(C_f)\). Therefore since \(T=R_lC_f=.08\) sec,

\[ C_f = \frac{T}{R_l} = \frac{0.08 \text{ sec}}{100 \Omega} = 80 \mu F \]

Figure 6 shows what value of capacitor you need, depending on what the load is and what amount of ripple you can tolerate. Use twice the capacitance shown if you are using only half-wave rectification.

<table>
<thead>
<tr>
<th>PERCENTAGE OF RIPPLE</th>
<th>DESIRED</th>
</tr>
</thead>
<tbody>
<tr>
<td>10%</td>
<td>(C_f = 40 \mu F)</td>
</tr>
<tr>
<td>4%</td>
<td>(C_f = 320 \mu F)</td>
</tr>
<tr>
<td>0%</td>
<td>(C_f = 480 \mu F)</td>
</tr>
</tbody>
</table>

**FIGURE 4 -- POWER SUPPLY USING LOW VOLTAGE DIODES**

**FIGURE 5**

**FIGURE 6 -- CAPACITANCE VS. RIPPLE CURVES**
CITY OF ORANGE ANTENNA ORDINANCE

A hearing before the City of Orange planning commission concerning the proposed new antenna restrictions ordinance is planned for sometime on Monday, MAY 12. The new ordinance would add severe restrictions to the building of antennae by not permitting any antennae to be high enough to fall on neighboring property or power lines. It is the author's opinion that the proposed ordinance is too severe and should be modified to only restrict the quality of construction used in antennae and towers. Let's hope that concerned hams in the area can convince the government leaders of Orange of the unjust punishment imposed by such an ordinance on the amateur fraternity. If we fail now, Your city or town may be the next one to try such a law.

In addition to the above requirements the following rules will be applied:

1. Phone, C.W., or SSB, on any authorized amateur band mobile, fixed, maritime mobile, or portable station.
2. Only one contact with anyone Neth. Antilles station in the same cell area will be recognized.
4. Contacts made during contests will qualify.
5. The decision of the award Committee for granting the award is final.
6. Applications must be accompanied only by a list of the stations worked, date, time, signal report, etc.

CUSTODIAN: ALPHONSO J. GEERLINGS, PJ4AE, AWARD MANAGER, ARUBA AMATEUR RADIO CLUB, BOX 273 OR 186, SAN NICOLAS ARUBA, NETHERLANDS, ANTILLES.

via SIGNAL REPORT

... what I like most about Field day is roughing it.
I hope that you enjoyed my first column of DX FROM ORANGE COUNTY. There has been quite a good deal of activity on the bands from all over the world since last month.

The CQ WPX contest was held on the 12th and 13th of April. Band conditions were not as good as one would have liked for this type of activity. The object of this contest by the way is to work as many different prefixes as possible. These include all K, W, VE and any other prefix in the list of recognized prefixes. We were missing many European prefixes on the high bands due to the poor band conditions. There was also very little activity on 75 and 40 meter phone compared to the ARRL DX contest a month ago. Incidentally this contest is limited to two way SSB contacts only.

This month we have some FB contributions from Ron, WA6FIT. These inputs are not necessarily those contacts that he has made personally but from others as well. (There are some FB prefixes in this list)

<table>
<thead>
<tr>
<th>Country</th>
<th>Prefix</th>
<th>Name</th>
<th>Time</th>
<th>Mode</th>
<th>Time</th>
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<tbody>
<tr>
<td>Yugoslavia</td>
<td>YU2REB</td>
<td>Andre</td>
<td>21280</td>
<td>CW</td>
<td>1629</td>
</tr>
<tr>
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<td>SP3AIJ</td>
<td>Ted</td>
<td>28025</td>
<td>CW</td>
<td>1629</td>
</tr>
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<tr>
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<td>G3UHR</td>
<td>Charley</td>
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<td>CW</td>
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<td>Jack</td>
<td>28550</td>
<td>SSB</td>
<td>0032</td>
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<tr>
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<td>Andy</td>
<td>14240</td>
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<td>0245</td>
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<td>Bill</td>
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<td>Americo</td>
<td>28530</td>
<td>SSB</td>
<td>0125</td>
</tr>
</tbody>
</table>

The following are from the authors log:
FOR SALE.... A HEATHKIT SB-300 receiver with AM, SSB, and CW crystal filters included. In excellent condition.....only $195.

JIM TRIPP, WA6DIJ--774-2072

COMPLETE STATION... Collins 75-S1 RX, HEATHKIT DX-60 TX, CDR rotor and control, 40 foot TV pole, 10 and 15 METER QUAD, SWR bridge, transistorized keyer, and a code practice oscillator.

wayne STIMSCN, WN6YA—536-6783

FOR SALE.... A 1KW transmitter with the following features; 4-400A final with Pi-tank output, AM-CW-SSB (SSB exciter not included), final input power and class of operation completely adjustable (class C through linear), extra tubes including 4-400A, ...professionally designed and built......only $200.

Also a HI--GAIN Gamma match for tri-band beam, new, only $10.

GLEN CHAFFIN, K6CAF—735-4791
1939 S. Main St., Corona