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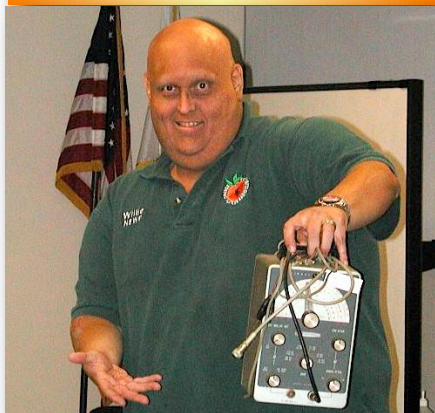


VOL. XLIX NO. 3

P.O. BOX 3454, TUSTIN, CA 92781-3454

MARCH 2008

The PREZ SEZ:



Happy March!!!

It is hard to believe that it is already March. It seems like yesterday I was getting ready for Christmas. I just bought a new truck and I will be spending the next couple weeks strategizing how I should mount my Hi-Q antenna into the pickup bed. The next DX-pedition to Clipperton Island will be underway soon. I am looking forward to working them and then hearing a first hand report from Arnie, N6HC.

Are there any new projects by club members? Be sure to bring them with you to an OCARC meeting for Show and Tell. Everyone likes to see fun projects, they are of great interest to the entire group.

It is time to get your crayons out. OCARC will be holding a contest for the best 75th Anniversary club logo. Submit your ideas soon.

Have a safe month...

73,

Willie - N8WP

YOUR LAST CHANCE...

to pay your dues! This is the last month to pay your dues for the 2008 year without being in arrears. You can pay at the March meeting or mail a check to our Post Office box. If you haven't paid you will be receiving an email in the near future as a reminder. If you have a Pay-Pal account, the email will tell you how you can pay through this service.

75th LOGO CONTEST

2008 marks the 75th anniversary of the beginning of the Orange County Amateur Radio Club. This year we will be having some special events to recognize this accomplishment. To enhance our events we are looking for a 75th anniversary logo. The rules are simple, your submission must be in by the March meeting. The logo may be based on the existing logo or be entirely new. The logo will be used on our new QSL cards and Tri-fold brochures, as well as at our special events. The logo used in this issue is one submission.

Submit your logo to Willie N8WP at his email, by regular mail or in person at the meeting. You may submit more than one entry. The board will be offering a special recognition prize.

You should have received a separate email about the contest with more information. Good Luck!

MARCH PROGRAM:

Jim Day - W6DF will be our guest speaker at the March General meeting. He will present a program and slide show about the W6BH megacountest station located in Anza, near Mt. Palomar.

The Next General Meeting is:

Friday, March 21st 2008
@ 7:00 PM

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LATE BREAKING NEWS: Lowell Burnett, KQ6JD SK.
see page 16 for details.

The Next OCARC Breakfast & open club board meeting is on April 5th. Come and join us!

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AMATEUR RADIO CLUB, INC.**
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Monthly Events:

General Meeting:

Third Friday of the Month
At 7:00 PM

American Red Cross

600 N. Parkcenter Dr.
(near Tustin Ave. & 4th St)
Santa Ana, CA

Club Breakfast:

First Saturday of the
month at 8:00 AM at the
Jägerhaus Restaurant
2525 E. Ball Rd.
(Ball exit west off 57-Fwy)
Anaheim, CA

Club Nets (Listen for W6ZE):

7.086 ± MHz CW **OCWN**
Sun - 9:00 AM - 10:00 AM
Rick KF6UEB, Net Control
28.375± MHz SSB
Wed - 7:30 PM - 8:30 PM
Bob AF6C, Net Control
146.55 MHz Simplex FM
Wed - 8:30 PM - 9:30 PM
Bob, WB6IXN, Net Control

VISIT OUR WEB SITE

<http://www.w6ze.org>

for up-to-the-minute club information, the latest membership rosters, special activities, back issues of **RF**, links to ham-related sites, vendors and manufacturers, pictures of club events and much much more.

Club Dues:

Regular Members \$20
Family Members* \$10
Teenage Members \$10
Club Badge** \$3

Dues run from January thru December & are prorated for new members.

*Additional members in the family of a regular member pay the family rate up to \$30 per family.

**There is a \$1 charge if you'd like to have your badge mailed to you.

Bob's TechTalk #38 (RF - Tech Talk #69)**New Coax Problems - NOT**

I received an email recently from Mike, a reader of TechTalk. He has a problem; but perhaps it would be best to let him explain it.

Hi Bob,

My neighbor Carol, who is an electronics buff, follows the TechTalk column in your newsletter. She got me reading it too. We're both in the same class in high school. But, right now I am at my wit's end over a problem I encountered helping a senior ham with his antenna. And Carol's on vacation with her parents so I can't ask her.

When I started, I thought I'd be befriending an elder ham, Mr. Weldon, who lives near me. He has a reputation of being quite grumpy and I thought if I helped him he'd appreciate young hams more. Instead I have managed to make him hate me; he's even threatening legal action. All this because I offered to help him replace the feedline on his ten meter antenna.

I was at Candee's, the local radio store in my town. Carl, who works behind the counter, told me elderly Mr. Clarence Weldon was looking for someone to replace the feedline to one of his antennas. Carl said Mr. Weldon was in earlier and had bought some new PL-259 connectors and a 150' roll of Times Microwave LMR-400 coax.

On the way home I parked my bike in Mr. Weldon's driveway and was walking up to the door when he came out and asked rather gruffly what I wanted. I explained that I had talked to Carl and was willing to help him replace his coax.

He seemed to warm up some, and took me for a tour of his antennas and shack. His antennas consisted of an 80/40 meter trap dipole up about 80' between two tall telephone poles and fed with open-wire line - the ancient kind with the porcelain spacers and bare wires, and a ten meter beam on top of a 60' guyed Rohn tower. The tower looked old but seemed in good shape as did the guy wires. We then went into his shack. The equipment was old, but it seemed to have been good in its day. His receiver was a Collins 75A4. The transmitter was a Central Electronics 20A driving a home built linear amplifier that he said had six 6AG7 tubes in grounded grid running 120 watts. The linear was in a rack 6' high and looked like it belonged in Frankenstein's lab. He fired it up and a blue glow emanated from a plate glass window in the power supply section. He said they were 816 mercury-

vapor rectifier tubes. The glow changed in brightness as he talked into the microphone. The glow was pretty, but those tubes could be replaced with silicon diodes for a buck or two!

What happened next, I didn't realize would cause such a problem. He keyed the transmitter, set the forward power on an old Heathkit AM-1 SWR bridge and flipped the switch to show a VSWR on ten meters of 1.1 : 1.

I asked him why he wanted to change the coax if the SWR was so low, and he said because he had been using it since 1946 and his SWR changed when it rained. He then ranted on the price of coax now-a-days. I promised to visit him Saturday and change his coax, weather permitting.

Saturday turned out to be a sunny day and I soon had the LMR-400 laid out alongside the old coax. I couldn't help noticing the old coax was so worn you couldn't make out the brand, and that the outer insulation was brittle with the braid showing through in a few places. In one place the coax was nicked as if by a knife or hedge trimmer.

The trip up the tower was uneventful and the new coax was attached via a PL-259 to the connector on the antenna that had held the old cable. I used tape covered with Coax Seal to waterproof the connectors. The coax ran about 130 feet to a panel he had outside his house with heavy grounds on it and an old coaxial lightning arrestor. I terminated the 130' length there with another PL259, again well waterproofed. The remaining 20' feet was made into a jumper cable that ran from the lightning plate into the shack through a feed-thru hole.

It was past lunch when I finished and called Mr. Weldon, who looked over my job while eating a sandwich. With nary a word of approval nor offer of lunch, he led me to the front door and said I should get home. He never even said thank you, and I was a bit miffed as I rode home.

When I got home my dad called me in and told me Mr. Weldon had called and was furious. I had ruined his station! I called him back and after a long rage he complained that his SWR had gone up to 1.5 : 1; and asked what I had done? I rushed back over, only to find him on the air with his local buddies on ten meters. And they were reporting that his signal was one to two 'S' units stronger. Still he ranted to me about his high SWR.

I checked all the connections, even climbed the tower again, but everything looked fine. He finally kicked me out and said I owed him new coax and

connectors because I must have ruined his new cable.

I'm at a loss. Do you have any idea of what the problem is?

Sincerely,

Mike

[He asked I not give his full name or Ham Call]

HERE'S MY REPLY:

Hi Mike,

Sorry to hear of your difficulties with Mr. Weldon. Also, I hope you used a safety belt when climbing his tower.

Actually, Mike there is no problem. What happened is exactly what I would have expected. The high loss at 30 MHz in the old cable was masking the true VSWR, making the VSWR appear much lower than it really is. When you replaced the coax the lower cable loss resulted in a more accurate VSWR reading.

Let's look at the performance of the new coax first. Times Microwave, the makers of LMR-400, give its loss at 0.7 dB per 100 feet at 30 MHz. For the 150' length the loss is then about 1.05 dB or 21.48%. Say Mr. Weldon's output is right at 100 watts. His power at the antenna would then be 78.52 watts. In the shack the SWR says 1.5 : 1 which is 4% reflected power relative to the 100 watts of forward power, or 4 watts. To get four watts reflected in the shack the antenna must be reflecting 5.09 watts. Thus, at the antenna there is 5.09 watts reflected and 78.52 watts forward power or about 6.5% reflected power. This gives a true antenna VSWR of 1.68 : 1.

From the age and condition of the old coax we can assume that it has a higher loss; but how high? Well, I did the calculations. Since the antenna VSWR remained constant, the loss in Mr. Weldon's old coax must have been 7.25 dB. This means, of his original 100 watts, only 18.84 watts was reaching the antenna. The antenna was reflecting 6.5% of that or 1.2 watts. When this reached the SWR meter in the shack it was attenuated to 0.23 watts.) With 0.23 watts reflected with 100 watts forward the SWR meter would indicate an SWR of 1.1 : 1.

Also, since Mr. Weldon's radiated power has gone up over fourfold, that would account for his friends reporting an increase in signal strength of over an 'S' unit. Feel free to share this information with Mr. Weldon; I hope you two become friends.

Bob.

AF6C

PS The math is right from the ARRL Antenna Book. When Carol gets back she can help you review it! - Σ

Just at press time I got this reply from Mike. It looks like his problem is solved, and then some:

Hi Bob,

I showed your email to Clarence. He studied it for a while and then told me he was getting out better than he had in years. It seems he now understands that the new coax is working as it should. He insisted I stay for lunch and chat. We talked all about operating in the old days, and then he asked me if I'd help him adjust his 10 meter beam. I told him about my friend and neighbor Carol and he told me to bring her along. It seems he worked with Carol's uncle for 35 years before he retired!

73,

Mike



RF Feedback

We feel **RF**, the OCARC newsletter, is an important asset of the Orange County Amateur Radio Club. However up until now we haven't given the reader a place to give us feedback. Well, that has changed. Readers, let us know what you like and what you don't like about RF. You can do that by sending us an email to:

rf_feedback@w6ze.org

You don't have to be a member to reply; we put RF out on the web for all hams to share and enjoy. So feel free to comment in a positive or negative manner. Please be objective and keep any foul language to a minimum!

At this time, if you'd like to submit an article (again, you don't have to be a member) send it to us and we will give it serious consideration. If we get some serious submissions we will setup a separate email specifically for them.



A HISTORY OF THE ORANGE COUNTY AMATEUR RADIO CLUB - Part I

by Bob - WB6IXN, Club Historian

In a series of articles to follow, I will present our past history from 1932 through the middle 1980s. Much thanks is due to "Max", W6DEY, Shelley, W6BAM, Ken, W6HHC, Ted, K6LJA, Fried, WA6WZO, Sandy, WA6WZN, Ralph, W6WRJ/W6RE, Terry, WB6IHZ, and many other old timers who contributed bits & pieces to the OCARC history!

*** THE GOOD OLD DAYS ***

Amateur Radio was budding and beginning to flower in the late 1920s in Orange County. The Long Beach Radio Club probably organized around 1932. The first attempt to organize a radio club in Orange County centered around the Moore brothers, Earl W6IGO, and Harry, W6FUU, who started a radio store business in Santa Ana around 1933. According to Eleanor Walden, an old timer at Montgomery Ward, the firm had just opened its new store in August of 1933, at Fourth & Main in Santa Ana. One of the Club's first projects was a display of an amateur radio station in one of the store's new windows. Thus, the OCARC must have organized in the first half of 1933. Earl Moore was the first elected president. Shelley Trotter, W6BAM, Rod Engel, W6EEK, Harold Smith, W6HAA (who worked in radio repair), W6KQD, Don Randall (worked at radio wholesale stores), and Tommy Jentges, W6ALO (around since 1926), and Bob Haven, (call ?), are just a few of the first OCARC members.

But our shaky beginning didn't last! The Club disbanded around 1935, when Earl Moore moved to LA, leaving Harry to run the

business. And by 1978, Harry had moved to Arizona, getting a "7" call.

ARRL records show that OCARC has been affiliated since March 15, 1934. Then, on January 15, 1936, the Club once again reformed with Noral Evans, W6ADT/LYM/ADT (When he died), the elected president. In the early 20's, Noral went to Oregon, losing his ADT call. When he returned, he was assigned the LYM call. He later regained his original call.

During these days, 10 meter phone was the Saturday/Sunday band.

The Jan. 15th meeting was held at Noral's home on North Hughes. The second meeting was held in Orange, probably at the American Legion Hall, and the third meeting was in Weber's Bakery on N. Main. Later, the Club held regular meetings at the Santa Ana YMCA. At this time, Orange County was part of the Los Angeles Section!

In June, 1937, the OCARC hosted the first "DX ROUNDUP" in Southern California at the YMCA, later adopted as a NATIONAL FEATURE OF HAM ACTIVITIES!!! Noral Evans was president at this time. The fame of the 'Roundup' spread, and its members today are frequently mentioned in the QST "DX" column.

Since the beginning of national Field Days, we have always had two or more transmitters in operation, and, we always give leaders close competition at Field Day! The Club rendered efficient service during the 1936-37 flood, which cut southern Orange County off from the rest of the world! Operating in co-operation with the Naval Reserve, the OCARC PROVIDED THE ONLY MEANS OF COMMUNICATION DURING THE DISASTER!...

(To be continued - Next month)



Clipperton Atoll DX-Pedition

By the time you read this the TX5C Clipperton Island DX-pedition should be well on the air, and beginning to wrap up. The scheduled days of operation are March 7 - 17. French owned Clipperton Island, a 3.5 square-mile coral atoll, is located in the North Pacific about 795 miles WSW of Acapulco, Mexico.

This event is especially interesting because it has ties to the Orange County ARC. Club member Arnie, N6HC, is one of the ham operators who will be on the air from the site.

Twenty-one operators (at last count) from Canada, France, and the U.S. make up the operating crew headed by Bob, N6OX. Bob spoke at our club last July on the Burkina Faso - XT2C DX-pedition.

On the evening of Wednesday February 27th the *Shogun*, a 92 ft. boat with a wide 30 ft. beam left San Diego for Clipperton with the operators and equipment onboard. Dino - K6RIX, Hank - W6HTW and Bob - AA6PW



The *Shogun* departs from San Diego for Clipperton Island with twenty-one ham operators onboard.

Photo by Dino - K6RIX



OCARC Members Hank - W6HTW, and operator Arnie - N6HC with his stuffed moose mascot Moosela pose shortly before the boat departs.

Photo by Dino - K6RIX

were there to help load and to wish Arnie Bon Voyage.

Traveling in Arnie's pocket is his stuffed moose mascot Moosela, a gift from his wife Sherry. Moosela is a veteran of two earlier DX-peditions, one to Kure Island and one to St. Brandon.

You can learn more about the Clipperton DX-pedition at:

<http://www.clipperton2008.org>

See more of Dino's pictures at:

<http://www.k6rix.com/tx5c.html>



Heathkit of the Month

The IT-11 Capacitor Checker

by Bob Eckweiler - AF6C

Last month we looked at the rather unknown Heathkit GR-121 Clock Radio. Another area that Heathkit was famous for was their inexpensive electronic test equipment kits. Their first electronic kit brought them into the forefront of electronic kits. It was a 5" oscilloscope built around military surplus 5BP1 and 5BP4 CRTs that were plentiful and inexpensive after the war. The Heathkit O-1 oscilloscope cost \$39.50 in 1947. It had six tubes including the CRT. Two 5Y3GT rectifiers, a gas-filled 884 sweep generator tube and two 6SJ7 amplifier tubes made up the rest of the tube lineup. Heathkit quickly added to its family of test equipment including an RF Signal Generator - G-1, \$19.50; a signal Tracer - T-1, \$19.50; a Sine and Square Wave Audio Generator - G-2, \$34.50; an Electronic (Scope) Switch - S-1, \$34.50 a TV-FM Sweep Generator - G-3, \$24.50, a VTVM - V-1, \$24.50; and a Condenser Checker - C-1, \$19.50. Originally the part numbers for these kits appeared only on their schematic. None were not given in the 1947 or 1948 advertising flyers.

This month we will look at a later version of the C-1 Condenser Checker. It is the IT-11 Capacitor Checker and was introduced by Heathkit in 1961. It remained in production for 27 years until 1988, which shows the versatility and usefulness of this product. In the period between 1947 and 1961 the term 'condenser' was replaced by the more accurate word 'capacitor' - hence the change in the kits name. I purchased my IT-11 in August of 1966 from the Heathkit store in Redondo Beach. The store price then was \$36.50 plus 4% California sales tax. Store prices were generally higher than the catalog price.

The IT-11 is probably the piece of Heathkit test equipment I use the most now that I have a handheld digital voltmeter that has replaced the Heath VTVM for measuring voltages. Capacitors, especially electrolytic capacitors, tend to fail with age. When using old capacitors from the junk box I always check them first. That has saved me a lot of frustration.



So what does the IT-11 do? It measures capacitance from 10 pF to 1000 μ F. and it checks capacitors for leakage at DC test voltages from 3 to 600 volts. The IT-11 also measures the power factor of electrolytic capacitors. But the IT-11 does even more. It measures resistors from 5 Ω to 50 M Ω ; and with a small supply of known inductors it will measure unknown inductances. You can also measure the turns ratio of power and audio transformers.

The basic circuit used by the Capacitor Checker is a common AC Wheatstone bridge. The bridge is normally excited by the 60 Hertz power line frequency (more about this later). The bridge is balanced by adjusting a potentiometer with a large calibrated dial. The bridge balance indicator is an "eye tube" that is closed when the bridge is unbalanced and opens at balance. To measure a capacitor you connect it to the "TEST" terminals and select the approximate range on the

range switch. You then set the mode switch to "BRIDGE" and turn the main potentiometer until the "eye" opens. The capacitance can then be read on the scale. If the eye opens at one of the two ends then you must try either a higher or lower range. At the range limits this detects a shorted or open capacitor. Resistors are measured the same way using the resistance positions on the range switch. To measure inductors you must place a known inductor on the "EXT STD" terminals and the inductor to be measured on the "TEST" terminals. Again you adjust the main control until you get the eye to open. The ratio of the known and unknown inductances can then be read on the scale and the inductance easily calculated.

If the IT-11 had a fault it would be reading small capacitors and small to medium inductances. The reason for this is the low bridge excitation frequency. The result is the eye closure is not well defined and accuracy suffers substantially. Fortunately, the IT-12 allows you to use an external signal generator to excite the bridge at frequencies up to 10 KHz at a nominal voltage of 6 volts RMS. At the time I bought the capacitor checker I needed to measure numerous small capacitors and coils. Not owning an audio frequency generator, I ended up building a small unit that plugged into the EXT STD jacks of the IT-11 and produced a 2 KHz signal that would drive the checker. The little box made the "eye" much more responsive when measuring small capacitors and coils.

Though I had originally bought this unit for a specific purpose, it is a piece of test equipment that I have found to be extremely useful quite often. For a short time in the nineties it took a back seat to a fancy Radio Shack DVM that also measured capacitance; but that failed twice when under extended warranty and again almost immediately af-

ter the warranty expired. My IT-11 is going on 42 years old and still has the original tubes; I did replace one capacitor - the 2 μ F reference paper capacitor some years back with a more modern and higher accuracy mylar capacitor after the original failed. I also cleaned the switches and main potentiometer once with a neat product called *Army Oil*.

The success of Heathkit can be attributed to three things: the quality of their kit components including the accurately fabricated chassis and other metal parts, their ability to design electronics that were simple to adjust and gave high performance for the dollar, but mostly for their great manuals that detailed construction in such good detail it was hard to go wrong. Actually it was their manuals that helped in the demise of Heathkit. It turned out that their manual writing department was a highly prized asset.



The IT-11 uses three tubes. A 6E5 "Eye" tube, a 6AX4 rectifier (the power supply produces a hefty 600 VDC - though at a low current) and a 6BN6 combination triode and dual diode tube. If anyone has any of these tubes lying around the shack that they don't need, I'd love to have a set of spares.

Next month we'll examine another Heathkit - perhaps even one of their numerous ham radio kits.



Digital OTA TV: Will You Be Ready?

Over-the-Air Commercial Digital Television Starts in Less Than a Year.

by: Bob Eckweiler, AF6C

What's Going to Happen:

On February 17, 2009 television, as we've all known it, is going to change. That is unless the FCC extends the deadline for all over-the-air (**OTA**) commercial television stations to switch to digital transmission. When this event happens, sometimes called *the switch*, analog NTSC broadcasting will end in the US after about 60 years of being the standard for TV broadcasting.

At that time your analog TV will no longer be able to pick up over-the-air TV stations without a digital converter or set top box (**STB**). The same is true for analog VCRs. However you will still be able to play existing VHS tapes on your current VCR using your existing analog TV.

If you have cable TV, then the cable TV company's cable box will do the conversion for you and you will continue to be able to use your analog TV. If you still subscribe to analog cable TV you will likely be updated to a digital cable box. Your analog TV will still work with a digital cable box. Cable companies have pushed this change in recent years.

Is Digital TV Being Transmitted Today?

Most Los Angeles TV stations are already transmitting digital signal programming as well as their analog broadcasts. Digital TV sets have been around for a few years and analog TVs may no longer be sold without a warning label that they will not be directly usable after the switch. Currently there are 22 TV stations in the LA area that are broadcasting digital signals as well as their normal analog signal. (See table.)

What are the advantages of Digital TV?

Digital TV has several advantages, a major one being it requires less bandwidth than analog TV. Over-the-air TV stations will still have the same 6 MHz wide channel of today's analog TV, but they will be able to send much more information in that space. This additional information bandwidth allows sending higher definition video and audio, multicasting (sending multiple television programs on minor channels within the major channel), and sending **PSIP** data (program and system protocol). PSIP sends data such as virtual channel remapping (more on that later), time and date information, and program guide information.

What Channels Do Digital TV Stations Broadcast On?

With the switch, UHF channels 52 thru 69 will be converted to other use. Channels 70 to 83 were allocated to other services some year back. A few other UHF channels have been removed for other use (some varying by region). Digital TV will have available for use the remaining VHF and UHF channels. (See *A Short History of TV Channels* below.)

Since an analog channel uses the full bandwidth of the TV channel to send one program, stations also broadcasting digital TV must use a different channel for their digital transmission. But, if you've seen digital on-the-air TV you will notice that when watching a channel (let's use KABC [analog channel 7] as an example) on a digital TV, the channel says 7-1 (or 7.1); if you go up in channel you will see 7-2 and then 7-3. The seven is the *major* channel number and the 1, 2, 3... is the *minor* (or sub) channel number. Usually, 7-1 contains the primary channel, identical in programming to the analog channel but in many cases in higher definition. KABC actually uses UHF channel 53 to transmit its digital programming. The number of additional minor channels that may be

sent depends in part on the type of definition being broadcast (see below). Usually the first channel is the high(est) definition channel.

Currently all the LA stations are broadcasting their digital signals on UHF. That is only because all the VHF channels are in use. Once the switch occurs, most VHF stations will move their digital transmissions back to their allotted VHF channel. For instance KABC currently uses UHF channel 53 and that channel is one that will be auctioned off for other use so they'll have to move, presumably back to VHF channel 7.

Why is Digital TV KABC on Channel 53 when my Digital TV says Channel 7-1?

Remember earlier that PSIP was mentioned? This ability to send additional information allows a station to send data to map a virtual channel number that is displayed on the TV or digital STB. KABC is on channel 7, and it has a valued recognition associated with that channel number. For now, a virtual channel designation allows a station to be recognized by its more well know analog channel number. You can assume that after the switch KABC will be transmitting digital TV on Channel 7.

What Kind of TV Antenna is Needed to Receive OTA Digital TV?

Any good VHF/UHF antenna designed to receive stations as far away as Mt. Wilson should work. Newer antennas need only cover the UHF band up to channel 51 so they should be able to increase UHF performance for the same size/cost antenna. We'll see? Currently your TV antenna has to be pointed carefully because some of the antennas used by the stations broadcasting digitally are secondary to their main antennas broadcasting analog. At the switch the main antenna can be used if the TV station goes digital on its current analog channel.

#	Station Call	Analog CH	Digital CH	Net-work
1	KCBS	2	60	CBS
2	KNBC	4	36	NBC
3	KTLA	5	31	CW
4	KABC	7	53	ABC
5	KCAL	9	43	IND
6	KTTV	11	65	FOX
7	KCOP	13	66	MNT
8	KSCI	18	61	IND
9	KWHY	22	42	IND
10	KTCN	23	23	TBN
11	KCET	28	59	PBS
12	KPXN	30	38	ION
13	KMEX	34	35	UNI
14	KVEA	39	39	TEL
15	KXLA	44	51	IND
16	KFTR	46	29	TFA
17	KOCE	50	48	PBS
18	KAZA	54	47	AZA
19	KDOC	56	32	IND
20	KJLA	57	49	IND
21	KLCS	58	41	PBS
22	KRCA	62	68	IND

Table 1: LA TV Channels

The lack of digital stations currently transmitting on VHF in the LA area has created a belief that to receive digital TV you only need to put up a smaller UHF antenna. That is currently the case; but you will likely be putting up a new VHF/UHF antenna in another year. VHF channels are not going away

with the switch. In some TV areas digital TV is already transmitted on VHF.

What Problems Should I Expect Receiving Digital TV?

Problems like snow and noise in your picture due to weak signals will no longer be a problem. However you will encounter new problems. One comment often heard is that with digital TV either the picture will be there or it won't, depending on the strength of the signal received. In my short OTA experience, and longer digital cable experience, this is not the case. If the signal is strong enough, the picture is quite good and quality depends more on your TV and less on the signal transmission. If the signal is too weak, your TV will probably show a blue screen with a message like *Weak or No Signal Present*. However, if your reception is marginal in strength then you will probably encounter small missing square blocks from the picture, often accompanied by the picture freezing for a few seconds; this might come and go. A marginally weak signal might also lead to choppy audio instead of the noisy audio experienced on analog TVs.

Currently, many of the TV stations who are also broadcasting a digital signal are using a secondary antenna for that broadcast. These are often lower or less optimum than the main antennas they use. After having problems receiving digital TV from KABC here in the Los Angeles area, I talked with a KABC engineer who commented that they were getting frequent similar responses and that the current UHF antenna they were using was not optimal. When I adjusted the antenna direction more accurately the signal became "bulletproof". I imagine that after the switch the stations will switch over to their primary antennas if they are keeping their old analog channel. Thus you may expect signals to be stronger on those stations after the switch.

Why Use OTA Digital TV when you have Cable or Satellite TV?

If you are able to receive your local digital TV stations over-the-air well, either by a good antenna system or being close enough, you will experience a better picture than over cable. This is because OTA digital TV does not go through the compression, sometimes severe, that are required on cable and satellite TV to bring you the large number of channels that they do. The down side of this, at least for the ham community is that TVI might again become an issue that was buried in high population areas by cable and satellite TV. It will be interesting to see how digital OTA signals will be affected by TVI.

Okay, What About High Definition TV?

Many people are confused about the difference between digital TV (DTV) and high definition TV (HDTV). Many think that digital TV is all high definition; it isn't. If you are on digital cable TV and using a standard TV you are receiving digital TV. If you change your TV to an HDTV and look at the same channel on your cable, chances are you won't be impressed. That's because DTV can be transmitted in different resolutions.

Currently there are three common resolutions. Each resolution can either be an interlaced or progressive picture. Not all of these picture modes are currently going to be used in broadcast. The resolutions are 480, 720 and 1080, a number that relates to the vertical resolution (the number of horizontal lines) that make up the picture. This number is followed by a letter designation, either 'i' or 'p'. These stand for interlaced or progressive scanning. **Interlaced scanning** means that the picture is swept twice, the first time every other line is drawn and the next time the in-between lines are drawn. This is how analog TV is sent and it was originally done to prevent flicker on older CRT picture tube

TVs. With **progressive scanning** each line is drawn one after the other. The newer plasma and LCD TV monitors have less of a flicker problem than the older CRTs (cathode ray tubes) and progressive scanning can be done without noticeable flicker.

The 480i resolution is similar to current analog TV and you will not notice much difference in picture quality except for the lack of snow or ghosting if you have a good signal. The 720p resolution is stunning on smaller HDTVs, but loses some detail on those large screen TVs. The 1080i resolution is even more detailed, and looks great on the large screen HDTVs. However if your HDTV has less than 1080 horizontal lines then the TV will convert the picture down to 720p resolution. The picture should still look great if your TV can make the conversion well. Some do, some don't.

At this time 1080i is broadcast by some TV stations, but 1080p is not. The latter is available on high definition Blue Ray and HD DVD players. (Note: at this time it looks like the HD-DVD system that was in competition with Blue Ray is fading fast.)

When the switch occurs I expect to see more TV antennas to show up on rooftops. You might even be able to find antenna hardware at your local hardware store again.

ANTENNAE - DID YOU KNOW?

The plural of Antenna is Antennas. You often see people use *Antennae*. However *Antennae* refers to those funny things sticking out of a bug's head! It has nothing to do with those aluminum and wire wonders hams treasure so much!

A Short History of TV Channels:

For many years there were only 12 TV channels - 2 through 13; these were all in the VHF band. Channel one was originally proposed, but was set aside for other use before the current band-plan was finalized. Not all of the channels could be used in one market because of adjacent channel interference. Adjacent channels that were not separated by other spectrum are not used in the same area. This is why today in LA channels 2, 4, 5, 7, 9, 11 and 13 are used. Since channel 4 and 5 are not adjacent in frequency they can be used simultaneously. this is also why San Diego stations are in-between LA channels.

In the fifties UHF broadcasting began, but it wasn't until the mid-sixties that the FCC required UHF TV tuners on all TV sets. UHF went from channel 14 to channel 83. As on VHF, adjacent channels were not available in the same community; in fact separation was originally six UHF channels. Since UHF broadcasters were not plentiful, it wasn't long before UHF channels started disappearing and being put to other uses. Channel 16 was converted to public safety use. In 1974 Channel 37 was designated for radio astronomy use (though it is rumored to instead be used by the *black helicopter* group). In 1978 channels 14 and 20 disappeared to the mobile radio service (at least in many urban areas). More recently in 1982 UHF channels 70 - 83, which were originally set aside for low power translator TV stations in small communities were withdrawn and turned over to the cellular phone industry.

When the on-the-air switch to digital TV occurs we will lose UHF channels 52 - 69. These frequencies will be auctioned off, supposedly for billions of dollars that will go into the government coffers.

SUPPORT OUR SPONSORS

The following organizations support our club's events in various ways. Please consider them when making your Amateur Radio and Electronics purchases:

ADI / Pryme Radio Products

<http://www.pryme.com/>

Burghardt Amateur Center

<http://www.burghardt-amateur.com/>

The DX Store

<http://www.dxstore.com/>

Elecraft

<http://www.elecraft.com/>

Ham Radio Outlet, Anaheim, CA

<http://www.hamradio.com/>

Hamstore.com

<http://www.hamstore.com/>

Heil Sound

<http://www.heilsound.com/>

Hobby Radio stop

<http://www.bearcat1.com/scanners.htm>

MFJ Enterprises

<http://www.mfjenterprises.com/>

NGC Company / Comet

<http://www.cometantenna.com/>

Nifty Ham Accessories

<http://www.niftyaccessories.com/>

Universal Radio

<http://www.universal-radio.com/>

UPCOMING EVENTS

Join us at our club activities. Here is a list of scheduled activities and events that are still in the planning stage:

March 21st General Meeting - Program:

W6BH Radio Ranch Contesting Station

April 5th Breakfast and Open Board Meeting

Jägerhaus Restaurant

April 18 General Meeting - Program:

3B7C St. Brandon DX-pedition

May 3rd Breakfast and Open Board Meeting

Jägerhaus Restaurant

Spring/Summer (date TBD)

D - Star© Demonstration and Talk

June 28 - 29:

ARRL Field Day

July (dates TBD)

O. C. Fair Ham Radio booth

Summer/Fall (date TBD)

Potluck Party

Sept. 19 General Meeting:

75th Anniversary Club Reunion and Party

Oct. 17

OCARC Annual Radio Auction

Dec. (date TBD)

Christmas Dinner and Party

For more Information and maps:

General Meeting:

<http://www.w6ze.org/MeetingInfo.html>

Breakfast Meeting:

<http://www.w6ze.org/MeetingInfo.html:Breakfast>

Upcoming Events:

<http://www.w6ze.org/Events.html>



OCARC Board Meeting Minutes**2008 - 03 - 01**

The OCARC Board meeting was held at the Jägerhaus Restaurant in Anaheim at 8:15 AM on Saturday, March 3, 2008. There were a total of 15 members and visitors attending. There was a quorum of directors present, with all officers present.

DIRECTOR REPORTS:

- ★ **Vice President** - Nicholas AF6CF reported that the following programs are planned:
 - March is W6BH mega-station in Anza.
 - April is 3B7C DX-pedition to St. Brandon
 - May is D-STAR (to be confirmed)
 - September is OCARC Club Reunion
 - October is OCARC Auction
- ★ **Treasurer** – The treasurer reported that the club currently has over \$6,100 in the bank. The board agreed to transfer about \$2,000 more into the interest-earning savings account.
- ★ **Secretary** – Ken-W6HHC reported that he had submitted the form for renewing the ARRL Special Service Recognition status for OCARC.
- ★ **Membership** – Chris W6KFW reported that OCARC currently has 77 members.
- ★ **Publicity** – Rich-KE6WWK led a discussion about “do we want to grow the membership...or just stay status quo?”. The board agreed that a membership size between 50 and 100 people is a very good size for the club. We still need to advertise at HRO, WEB, OC Fair... because the club loses members every year and they need to be replaced.
- ★ **Activities** – Kristin K6PEQ and Dan reported that they will plan for a backyard potluck this summer.

OLD BIZ:★ **RF NewsLetter “Rotating” Editors**

- March is Bob - AF6C
- April is Nicholas - AF6CF
- May is Cheryl - KG6KTT
- June is Kristin - K6PEQ
- July is Ken - W6HHC

★ **Field Day 2008**

Willie - N8WP reported that Clara was interested in participating at the OCARC FD site this year.

★ **New Aluminum Tower**

Willie-N8WP reported that the new tower will be ordered in March.

★ **OCARC 75th Anniversary**

Logo Contest - Willie-N8WP reported that rules for the new club 75th Anniversary logo will be printed in the March RF newsletter. Designers should send a copy of LOGO to the Board. Willie-N8WP will announce the winning LOGO at the March 21st meeting.

QSL Card – Dan N6PEQ will send info on a good QSL company to Bob AF6C.

OCARC Reunion – Nicholas AF6CF outlined his plans for the special “Reunion Meeting” in September. Plans include inviting out-of-town ex-members, setting up a display of Old Radios, and even the possibility of creating a “Time Capsule” for the 100th Anniversary.

★ **Pay Pal for WEB Site**

Paul W6GMU reported that he would obtain a Pay Pal account for OCARC in March.

★ **OC Fair**

Kristin K6PEQ reported that OCCARO had found a director for heading up

planning for the Ham Radio booth at the OC Fair.

★ Working With Scout Troops

Willie N8NP wants members to send him contact info on local Scout troops, CAP, etc.

★ CERT Training

- Willie N8NP reported that he is waiting for a response to his call into Anaheim CERT.

★ OCARC Tri-Fold Brochure

Bob-AF6C reported that he had finished updating the club's Tri-Fold Brochure about the OCARC. He will send it out to all board members for comments.

★ Standard Form Letter for Inquiries

WEB master, Ken-W6HHC, said he received a copy of Willie's response to a recent inquiry and will add it to our existing "new to ham radio" WEB page.

★ OCARC Coffee Mugs

Rich KE6WWK reported that he had been provided with info on two companies that will make low quantities of custom coffee mugs. As soon as the new club 75th Anniversary logo is available, the project will continue.

★ Plans for 40M Net

Willie N8WP reported there was not enough interest to start up a new club 40M net.

GOOD OF THE CLUB:

- ★ Cheryl-KG6KTT reported that she plans to start making and selling Embroidered Hats with Call Letters sewn on.

Submitted by:

Ken Konechy - W6HHC
Secretary



OCARC General Meeting Minutes

2008 - 02 - 15

The OCARC February General Meeting was held at the Red Cross complex in Santa Ana at 7PM on Friday evening, Feb 15th. There were a total of 34 members and visitors present. [That is good attendance for a DX-contest weekend!] A quorum was present with all of the club directors attending.

PROGRAM:

A great program was presented by our speaker Bob Farrow - N6OPR, who gave a talk on:

"10-10 International"

Bob - N6OPR explained that the current purpose of the 10-10 organization is to promote ham activity on the 10M band during this low spot in the solar cycle.



Fig 1 – Bob Farrow N6OPR (center) explains the organization and activities of 10-10 International.

The organization was started in 1962 during low solar activity. 10-10 conducts two open nets on the 10M band at the same time each day, at 1800Z on 28.8 and 28.38 MHz. It was interesting to learn that member Larry-K6YUI has 10-10 number #62!! The OCARC's 10-10 number is 18,000. More info can be learned on the 10-10 WEB sites at:

<http://www.10-10.org>

OLD BIZ:

Field Day – Field Day Chairman, Willie-N8WP, announced that he is looking for Band Captains for Field Day. Bob AF6C of-

ferred to head up 20M SSB this FD. Current Band Captains are:

GOTA – Steve N1AB
 40M SSB – Larry K6YUI
 20M SSB – Bob AF6C
 VHF/UHF – Tom KI6GOA.

GOOD OF CLUB:

Rich-KE6WWK reported that Ken-W6HHC was celebrating his 29th birthday again.

[Editor's note: It's a lie, Ken is really 39.]

Ken-W6HHC reported he had presented some flowers from the OCARC to Lowell-KQ6JD at Kaiser Permanente Hospital. Lowell had caught the flu and was having breathing difficulties. He now was making good progress and comfortable.

Submitted by:

Ken Konechy - W6HHC
Secretary



LATE BREAKING NEWS: Lowell Burnett, KQ6JD, SK.



Sadly, longtime club member Lowell Burnett, KQ6JD, became a silent key (SK) on Monday March 3rd. Lowell had been hospitalized a few weeks back with the flu that added to an existing breathing problem. He

had recuperated enough to be transferred to a rehabilitation home in Orange. Notification of his death was not announced until March 10th.

Lowell, who was first licensed in 1996 as KF6BGT, is a past officer of the club, holding numerous board positions. In 2002 he was elected Vice President and the following year President. He was also a frequent attendee at the monthly radio club breakfast and board meeting, even in the years when he was not participating on the board.

Lowell was also a member of the informal *Watson Radio Club* group - a group of hams who meet on Fridays at Watson's Drugstore near The Circle (er - The Plaza) in downtown Orange on Friday mornings. There he enjoyed the camaraderie of other hams, many members of OCARC and COAR.

Lowell was also active in COAR, the City of Orange Amateur Radio team that supports the Orange Police Department, providing communications during times of need as well as supporting police activities such as the Baker-to-Vegas Relay race and other police activities.

Lowell was born in California in 1937, but spent much of his younger days in Gabb, Nevada. As a young man he served in the U.S. Navy for 24 years as an avionics specialist. He was stationed in Hawaii for his last five years of service.

Lowell's Navy experience helped him get a job at McDonnell Douglas (Douglas Aircraft Company Division) in Long Beach. He worked there, until retiring in 2002, as an instrumentation technician in the Flight and Laboratory Test Department. He worked on numerous programs including the C-17. It was during his employment at DAC that

Lowell became interested in Amateur Radio working alongside engineers and other technicians who were radio hams, including Mike - WB6VUB, Gil - N7GH (SK), Dave - WA6LNC, Jack - WA6LOH and Bob, AF6C.



Lowell Burnett, KQ6JD at our 2004 "First-Ever OCARC Club Reunion

Lowell enjoyed checking into the OCARC Wednesday nets. He frequented the two meter net quite often and the earlier ten meter net on occasion. He was always a pleasure to hear, and kept us informed of the interesting things in his life.



Then club President, Lowell Burnett, KQ6JD works at the OCCARO booth at the 2003 Orange County Fair.

He was an active participant in our Field Days, and I remember a shy Lowell taking what was probably his first turn at the mike during a Field Day contest and being assisted by one of our experienced FD operators. It wasn't too long after that that I returned to the tent to find Lowell working down a real pileup of contact like a pro and with a young operator logging next to him.

In the years we have known Lowell, he has contributed a lot to the success of our radio club. It is sad to see such a fine advocate of our club and our hobby pass on. Like the other members who have left us, Lowell's smile will remain in our hearts and memories.

73 to Lowell,
de W6ZE



Wiki What?

The Internet is full of all sorts of information. The challenge is providing an easy way to locate the item you are looking for. A wiki is a collection of websites in hypertext, each of them can be visited and edited by anyone. "Wiki wiki" means "rapidly" in the Hawaiian language. I have just found an amateur radio wiki that seems like a good item to keep in you list of bookmarks. This website has information from *Antennas* to *Websites* and I just learned about DX Beacons in just a few minutes.

Do yourself a favor and check out:

<http://amateur-radio-wiki.net>

you could find it useful.

Willie - N8WP



75th Anniversary OCARC Club Reunion,

In 2004 the Club held it's first ever club reunion. At the time it was a crazy idea of Bob, AF6C who opened his mouth at a board meeting and was given the task. The 2004 reunion was so successful that the club has decided to hold another reunion, this time to celebrate the club's 75th anniversary.

If you are a former club member please join us at our September meeting dedicated to you. More details and a confirmation of the date will be in a future RF.

If you have moved away and are planning on visiting the area around that time. Consider adjusting your plans to be here for the reunion.

If you can't make it, but would like to participate, send an email to us at:

rf_feedback@w6ze.org

and tell us what you are up to. Be sure to include your recent ham activities if you are still 'on the air'. Feel free to email any pictures you'd like to share. They can be current photos or ones from back in your club days!

We will read your emails at the meeting; it won't be as good as you being there but we'll enjoy the memories. If you are on Skype, let us know. Maybe we can find a way for you to join us in audio via Skype (Internet telephony). But better yet it would be special to see you at the reunion in person.

The 75th club reunion is still in the early planning stages. Please follow our plans here in *RF* and, if you can, join us at our reunion (hey, it's only the second one in 75 years!)



Next RF Deadline is: APRIL 7th

The **ORANGE COUNTY AMATEUR RADIO CLUB, INC.**
P.O. BOX 3454
TUSTIN, CA 92781-3454

First Class Mail
Time Dated Material.
Please Expedite!