



RF



ORANGE COUNTY AMATEUR RADIO CLUB, INC.

VOL. XLII NO. 9 P.O. BOX 3454, TUSTIN, CA 92861-3454 SEPTEMBER 2001

The Prez Sez:

Thank you Art Goddard for the trip to Tajikistan! Art is part of a group that takes a yearly "Ham Vacation" to far off places. Each trip is packed with great pictures that Art graciously puts into a presentation for clubs like ours. What a great way for us to learn about the countries that they travel to.

Fried Heyn has been our Southwestern Division Director for the past 18 years. WA6WZO has decided not to run for reelection. Fried was first elected as Vice Director in 1983 and in January 1984 he became Director.

Fried and Sandy have made time available for many trips to various club meetings and field day sites, and... and... you get the idea. In 1977 Fried was president of our radio club. Fried and Sandy are an asset to ham radio.

The 2001 convention in Riverside was a great time to say thanks to Fried for his efforts and to Sandy for her support of ham radio.

We have been fortunate to have Art Goddard as our Vice Director for the past 10 years. Art ran unopposed for election as our new Director. Thank You Art!!

Who will take over for Art? There

will be an election to choose between Tuck Miller, NZ6T and Ned Sterns, AA7A. Tuck has been very actively representing ham radio from San Diego. Want to hear from Tuck on a weekly basis? All you have to do is tune in to the Sunday morning directors net on 80 Meters, starting at 0800 on 3.965, there you will find Fried, Art, Tuck, and many others representing ham radio. Keep that frequency handy and you will hear the ARES 80 Meter net starting at 0900, also on 3.965. Following check-in is Newsline.

That's all for this month, 73

Bob, KD6BWH

kd6bwh@aol.com

W6IBP - Silent Key:

With sadness we report that Dorothy Watts - W6IBP, a long time member of the OCARC, passed away Sunday August 12th after a short illness. Dotty leaves behind her husband Al - W6IBR, daughter Jane - KC6TAM (both club members) and a brother Edmund.

A memorial service was held on Saturday August 18th in Moreno Valley, where Dotty and Al retired a few years back. You may send condolences to Al and Jane at their addresses in the club roster.

The September Program:

Dennis Kidder - WA6NIA will present a program on APRS - Automatic Position Reporting System. What is APRS? Dennis provided the following introduction from the ARALB newsletter *The Oscillator*:

Don't understand packet radio? Sure, you can spell "TNC", but which end is which? And what the heck is "MIC-E"? Learn just

See **Program** on Page 3

Don't miss our next meeting on:

Friday, Sept 21st
@ 7:30 PM

We will meet in the **Anaheim** Room in the east Red Cross Bldg.

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Reminder:

October 6th 2001
Next Club Breakfast
and Board Meeting

Club Auction is October 19th

It's time to start cleaning out your shack and saving up some cash. There's gold in them-there junk boxes! Share the wealth! Rules and details are found on the OCARC WEB site under "Coming Events".

**THE ORANGE COUNTY
AMATEUR RADIO CLUB,
INC.**

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Monthly Events:

General Meeting:

Third Friday of the month
at 7:30 PM
American Red Cross
(near Tustin Ave & 4th St)
Santa Ana, CA

Club Breakfast:

First Saturday of the
month at 8:00 AM
IHOP
1001 E. 17th Street
(west of Lincoln)
Santa Ana, CA

Club Nets (Listen for W6ZE):

Wednesday Evenings
28.375± MHz SSB
7:30 PM - 8:30 PM
Bob AF6C, Net Control
146.55 MHz Simplex FM
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.

Houston Area Radio

by Cindy - KC6OPI

Here in the Houston Area there are quite a few repeaters. The fun part is trying to get into the machine from your location. The American Red Cross set up it's Disaster Relief Headquarters on the 13th floor of the American General Life Building near Downtown Houston. After setting up the Yaesu FT-90, I found that I could hit some of the repeaters fairly well and get out quite far. The busiest machine in the area is on 145.330. One of the problems with getting into the machines from our Headquarters location, is our function is located on the wrong side of the building.

One of the oddities of the repeaters here is their abundance. There are so many repeaters that they have them both - 600 and + 600; some with PL and some without on normal frequencies. The 145.330 repeater is in the normal -600. On 146.660 there are repeaters both up & down 600. If you aren't careful about programming your memory channels, you could have a problem trying to get into one of these machines and find out you are on the wrong one.

After trying out some of the repeaters in the area, I can usually be found on 146.660. The group on this repeater is the NARS radio club. They have a net every Wednesday night (sounds familiar) at 2000. They also meet every Saturday morning at 0700 for breakfast at an area restaurant. No business is discussed, but they just gather to have breakfast and a lot of conversations about different types of subjects, all at the same time. It's a lot of fun. They also meet every Wednesday at 1100 for a lunch time meeting along the same lines. NARS has a web site at:

<http://www.w5nc.org>

Program - from Page 1

how easy it is to start enjoying APRS - the packet-radio-based Automatic Position Reporting System. Come to the September meeting, and find out how you can get started with APRS using just a computer and the Internet! See APRS in action. Hear the answers to these and other questions on everyone's mind:

- Just what is APRS and why is everyone so interested in it?
- How does it work?
- What can it be used for?
- What is "MIC-E"?
- What equipment does APRS require?
- Do I need a GPS to send APRS position reports?
- And, what if I don't have a computer?

Dennis was first licensed in 1969 as WN6NIA, but quickly moved on to his Advanced and WA6NIA, and eventually, Amateur Extra. The rich diversity of amateur radio has kept his interest going for all of those 32 years and he has tried many different modes. The things he has focused on lately are chas-

ing DX on 40 meters, Packet radio and APRS, and emergency communications. Dennis operates mostly from his radio shack in Long Beach, but also spends time mobile on HF and 2 meters (APRS WA6NIA-14).

Dennis is a member of the Associated Radio Amateurs of Long Beach where he serves as a director. He is a member of QCWA and a life member of the ARRL. Dennis is also an AEC for the Orange County Hospital Disaster Support Communications System, a local ARES group.

Amateur radio is a lot of fun, but it doesn't pay the bills. So, in order to do that, Dennis works as a system engineer with a large Southern California aerospace company. His present assignment is system architect of a large military air traffic control and air defense radar system. His job has provided some interesting assignments over the years, from helping launch satellites to working on the recently completed Hong Kong International Airport. He can be reached by email at:

wa6nia@arrl.net

Wednesday Nets:

See *Wednesday Nets* on page 6



The Ten-meter net on August 2nd (Zulu time) was like most club nets... except for a surprise check-in. Mark - KD6NOT, on maneuvers in a C-141C Starlifter (location somewhere over Texas), gave the net a brief call. He didn't stay long because of QRM from his high altitude, and because the aircraft's commander requested he "keep it short". Mark sent along this "QSL" photograph showing the ARC-190A(V) HF radio control-head dialed to 28.375 MHz.

Tech Talk

by Bob, AF6C

Coaxial Connectors: (Part II)

Last month we looked at the UHF and "N" series of connectors. This month we'll look at the BNC series of connectors and the inexpensive RCA Phono connectors. We'll also take a quick look at the TNC series, a derivative of the BNC.

The BNC Connector:



The BNC connector is almost universally used for commercial test equipment and is finding its way into top-line audio and video equipment as well. It features high performance and a quick-connect / disconnect bayonet style. Hams favor it for many construction projects. Here are its properties:

Impedance: BNC connectors are available in 50 ohm and 75 ohm constant impedance styles. The 50-ohm style is often used for 75-ohm impedance at lower frequencies (<30 MHz). Unlike the "N" connector, 50 and 75-ohm connectors mate with each other without damage.

Size: Three of five. Well sized for RG-58/U and RG-59/U size coax.

Voltage/Power handling: 500 volts peak.

Frequency Range: Up to 4 GHz at low SWR (<1.3:1) for the 50-ohm series. Up to 4 GHz at an SWR below 2:1 for 75-ohm series.

Cost: Two to three of five. Low-cost versions are available such as the Amphenol RFX series. BNC connectors are readily available.

Weather Handling: Varies;

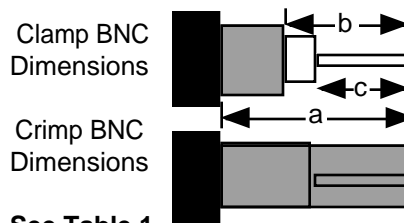
clamps with gaskets and crimp types with shrink tubing are weather resistant. However additional weather proofing is recommended for permanent outdoor installations.

The BNC connector was developed after WWII, in the late 1940's. The connector utilizes bayonet coupling that makes removal and installation quick and easy and insures a solid contact when engaged. BNC stands for Bayonet Neill Concelman after the primary developers. The 75-ohm series comes in two types and was developed for more critical 75-ohm use and computer networks. Both types of the 75-ohm BNC connectors mate with each other as well as the 50-ohm series. Like "N" series connectors, BNC is available in both clamp and crimp styles. Amphenol also makes BNC connectors in Suretwist® and Quicktrim® proprietary styles. The first style requires no soldering; the cable is stripped properly and the connector is twisted on. The second style requires soldering or crimping of the center pin, with simple installation of the connector body.

Because of the large use of BNC connectors in audio, test equipment and computer networking, low cost crimping tools are available. However, if you're going to be installing a lot of BNC connectors, a more expensive crimping tool is recommended. Normally the center pin requires a 0.068 hex crimp and the outer ferrule requires a hex crimp of 0.178" (for RG-174/U sizes), 0.213" (for RG-58/U sizes), 0.255" (for RG-

59/U sizes) or 0.324" (for RG-6/U sizes).

To install a BNC crimp-type connector on RG-58/U or 59/U, strip the cable to the specified dimensions. Place the ferrule over the cable. Crimp on the center pin so that the pin rests flush with the cable dielectric. Flare the braid out slightly and slide the pin into the connector body so the inner ferrule section of the body slides under the braid. Then, slide the ferrule up against the connector body and crimp it in place. If you're using RG-62/U, 71/U or 210/U cable, trim an additional 0.039" of insulation from the center conductor and slide the supplied bushing over the center conductor prior to crimping on the center conductor. If you're using thin RG-174/U type cable, slit the outer jacket back 0.1" and slide the metal spacer/Teflon sleeve over the cable dielectric and under the braid, butting the center pin against the dielectric.



See Table 1

Clamp-type BNC connectors install similarly to the "N" type described last month. First place the nut, washer and gasket over the cable. Be sure they are oriented properly. The groove in the gasket should point towards the end the connector will be installed on. After trim-



Top: UG-88C/U Clamp-Type BNC Connector in assembly order (Amphenol).
Bottom: Pasternack PE4016 Crimp-type BNC Connector (Both fit RG-58/U)

ming the outer insulation and inner dielectric to the proper dimension for the connector part number you're using, comb out the braid until it lies flat along the cable. Place the clamp over the cable and braid so it presses against the cable insulation. Now fold the braid back over the clamp and trim the braid so that it ends at the shoulder in the clamp (normally about 1/8th inch.) Solder the pin to the center conductor, butting it against the dielectric. With RG-62/U type cable that has the spiral air-core dielectric, trim an additional 0.032" off the dielectric and install the bushing before soldering on the center pin. Finally insert the cable and pin into the connector body, making sure the gasket mates properly with the clamp. Install the nut and tighten. Amphenol recommends a torque of about 15 inch-pounds. Check that the shoulder of the center pin is flush with the inside back of the connector body.

Since BNC connectors are so popular, adapters are available to mate them with virtually every other RF connector. There are also numerous adapters within the series such as tees, right-angle adapters, male-to-male and female-to-female adapters, etc.

The TNC Connector:



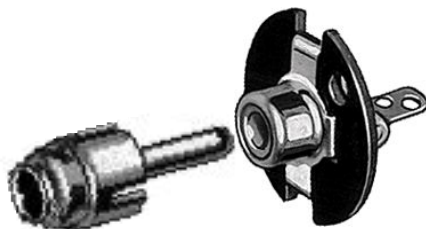
Twist-on Right-angle TNC connector

The TNC, developed in the fifties, is a derivative of the BNC connector. Instead of a bayonet, the TNC threads together (hence the "T"!)

Though it is used with coax from 50 to 93 ohms, The TNC connector has 75-ohm constant impedance. It is similar in size to the BNC but has a slightly higher voltage rating (600 volts peak), higher frequency

handling (up to 11 GHz) and higher vibration capability. With all these advantages, it lacks the quick connect / disconnect bayonet feature that makes the BNC so ideal for test equipment and other environments where connections are changed often. Still, the TNC is a good choice for lower power RF connections that are semi-permanent and need a reliable low-loss connector. They are popular enough to be handled by Radio Shack. Installation is similar to the BNC connector.

The RCA Phono Connector:



Impedance: non-constant impedance.

Size: Two of five. Well sized for RG-58/U, RG-59/U and RG-62/U type coax.

Voltage/Power handling: 250 volts working. The Switchcraft RF-Jax and RF-Plug series have been used successfully to 1 kW at 30

MHz under ideal conditions.

Frequency Range: Up to 30 MHz.

Cost: one of five.

Weather Handling: None.

The RCA phono connector is very popular in the consumer electronics industry. It is used for audio in-out and video in-out on recorders, TV monitors and stereos. These connectors are designed for audio and video frequencies. They can be used on HF successfully, but are recommended only for the least critical RF uses. Due to their size, they are ideal where space is at a premium. The Switchcraft RF-Jax and RF-Plug series are designed specifically for RF use.

Heathkit used this type of connector successfully in amateur gear for lower level RF signals such as VFO input and connecting BFO, HO and LMO signals between transmitter and receiver (such as on the SB300 / SB400 twins.) The simplest style of the phono connector such as the Switchcraft 3504M is also the best suited for RF. The coax can be trimmed; the center conductor soldered to the pin, and the braid

See **Tech Talk** on Page 6

BNC Clamp-Type Cable Trim Dimensions:							
Amphenol Part #	Mil Part# and Connector Type	Cable RG-/U	a.	b.	c.		
31-2	UG-88/U Plug	58	0.312	-	0.094		
31-202	UG-88C/U Plug	55, 223	0.274	-	0.094		
31-3202	UG-88E/U Plug	55, 58, 223	0.250	-	0.094		
31-212	UG-260B/U Plug	59, 62, 210	0.250	-	0.094		
31-2-RFX	(none) Plug	58, 141, 142	0.315	-	0.118		
BNC Crimp-Type Cable Trim Dimensions:							
Amphenol Part #	Connector Type	Cable RG-/U	a.	b.	c.	Tool	
31-317, 318	Jack (317),						
& 318-RFX	Blkhd Jack (318)	174, 188, 316	0.593	0.250	0.156	1	
31-320	Plug	58, 141	0.593	0.250	0.156	2	
31-320-RFX	Plug	58, 141, 142A	0.630	0.303	0.156	2	
31-321	Plug	59, 62	0.593	0.250	0.156	3	
31-321-RFX	Plug	59, 62	0.630	0.303	0.156	3	
Tool: Crimping tool hex cavity size (ID: pin, ferrule): 1: 0.068, 0.178; 2: 0.068, 0.213; 3: 0.068: 0.255 (inches).							

Table One

**OCARC Web Site Tops
10,000 Visitors!!**

Ken - W6HHC, Webmaster for:

www.w6ze.org

the OCARC web site reports that the number of visitors has reached over 10,000 by the 1st of Sept. The visitor counter was first installed in May 1998.

2001 Date	Visitor Total	Monthly Increase
01-Sep	10,055	(355)
01-Aug	9,700	(400)
01-Jul	9,300	(320)
01-Jun	8,980	(280)
01-May	8,700	(265)
01-Apr	8,435	(360)
01-Mar	8,075	(315)
01-Feb	7,760	(320)
01-Jan	7,440	(210)

In addition to use by OCARC members, it is quite interesting to note the many visitors from other countries. Here is just a sampling of international visitors during the month of August (highest number of "hits" are listed first):



Tech Talk - from Page 5

then soldered directly to the shell around the whole body of the connector. Two piece phono plugs are not recommended for RF with the exception of those similar to the Switchcraft 3507, that have a metal shield and sleeve terminal for the braid.

I was unable to find any history on this type of connector. The first time I recall seeing one was on an RCA Victrola record changer designed to play the large-hole 45-RPM records of the fifties.



The phono connector is ideal for inexpensive QRP rigs. However, the connector does not hold up to repeated insertion and removal without degradation. Cracks in the shell of the one-piece plug and loosening of the center contact in the jack are common after repeated use. Fortunately the connectors are usually easy and inexpensive to replace. For simple low frequency and power projects, these connectors are worth considering.

Next month we'll continue exploring more of the RF coaxial connectors available to hams. The SMA and F-type and perhaps some others will be covered.

-73-

**Minutes of the Sept. 2001
Breakfast Board Meeting**

Nine people including five board members attended the Labor Day weekend breakfast at IHOP in Santa Ana. Some regular attendees were supporting the Orange Street Fair. The board members present were President Bob - KD6BWH, Secretary Bob - AF6C, Treasurer Ken -W6HHC, Members-At-Large Bob - KD6XO and Larry -K6LDC. Because there was no quorum, an informal meeting was held.

Bob brought up the Riverside ARRL convention occurring next week. There will be a special presentation given to ARRL Director Fried Heyn - WA6WZO who is not seeking reelection. Fried was a member of the OCARC when he was first licensed.

October is the club auction. Rules will remain unchanged. Ken will have some flyers made for distribution at the convention and HRO. "Ken will be taking a class this semester on Friday nights. Larry - K6LDC agreed to handle finances during the September meeting and Bob - KD6BWH agreed to handle the finance collection during the Auction.

The Christmas party will be on December 16th at Mimi's Fountain Valley.

The September meeting speaker will be Dennis Kidder from the ARALB. He will be talking on APRS.



Wednesday Nets from Page 3

Have you checked into one of the club nets lately? See page two for times and frequencies. Net frequencies are chosen so all members, no matter the class of license, can check into at least one of the nets. **Join us!**

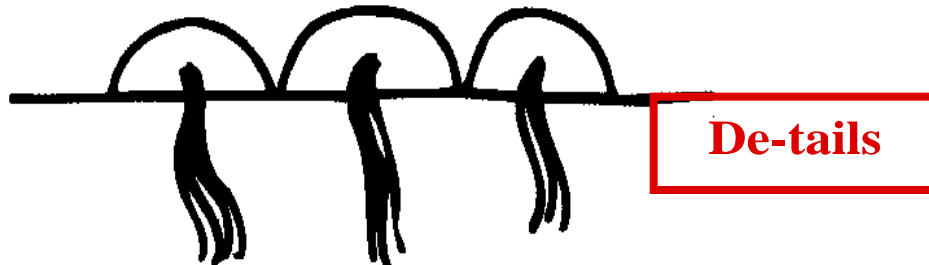
August Check-ins (Both 10-meter and 2-meter nets):

AB8AA	KF6AXJ	KD6BWH	AF6C	K6CCD
KD6CFE	W6HHC	WA5IMI	WB6IXN	K8JAA
KQ6JD	W6KFW	K6LDC	KF6LEX	WA6NOL
KD6NOT	KA6RCI	KF6REU	KE6UCH	K6VDP
AC6VW	K6WHB	KE6WOX	KE6YZW	KE6ZGR
KJ6ZH				

The “Hopefully not Last’ NotSo Dx-pedition”

Hold on to your guy wires; here comes the last activity event of 2001. By popular demand, a new “NotSo DX-pedition” is in the works. Everyone, including guests, are invited. So spread the word!

The details are as follows:



Date: Friday, November 2nd, 2001 through Sunday AM, November 4th, 2001

Location: El Mirage Dry Lake Bed. About 90 miles North of the City of Orange
(Maps available at the October meeting, by fax, or by e-mail)

Food: Bring it! (We suggest that we partner in groups for cooking)

Power: The club generator. (bring your own extension cords)
Light bulbs for tenters may be a good idea.

Tents, campers, trailers, motorhomes are all very usable there. There are **toilet facilities** about 400 yards from where we will camp and they are easy to drive to.

Bring **water**, there are no facilities for getting potable water.

Campfire each night, please bring as much wood as you can.

Rigs: You can bring your rigs (HF and VHF/UHF) or if you haven't one to bring, there should be plenty of time available on the rigs that are there. Bring whatever antennas you wish to use.

License: Bring your FCC license. It's a club function, therefore we can use the club call, W6ZE or, in the case of good DX, you may wish to use your own.

I'll ask for commitments at the September meeting. Don't miss-out on the fun.

73, Larry, K6LDC

August Meeting Minutes:

President Bob Buss KD6BWH called the meeting to order. Roll call for the board of directors began with the following present Bob KD6BWH, Cory KE6WIU, Ken W6HHC. Dick W6RWY, Elmer WA6PFA, Lowell KQ6JD, Larry K6LDC. Lowell was appointed acting secretary. A total of 29 members and visitors were present.

SWD Vice Director, Art Goddard - W6XD presented his program on DXing from Tajikistan. He also gave us an update on ARRL happenings:

- ARRL is planning a way to receive QSLs via Internet and count for DXCC
- The 2002 Field Day will be open to all countries in Region 2
- After 18 years, Fried - WA6WZO will not run for reelection as Southwest Division Director (SWD) of the ARRL.
- Art-W6XD will run for SWD Director
- Tuck Miller NZ6T (SM for San Diego Section) and Ned Stearns AA7A (from the Arizona Section) will be voted for Vice Director.

Bill Phinizy K6WHP reminded everyone of the upcoming Riverside HAM

Convention on Sept. 7-9. There will be an extra focus on QRP this year.

Treasurer Ken - W6HHC reported over \$2,800 in the Bank, with the only known major disbursement still due being the club insurance.

Publicity chairman Chris - KJ6ZH is moving to the Bay Area. It was decided to keep the position open since we have new elections in November.

Ken - W6HHC received a letter from Norma Ludwick saying that her husband Earl K6BIX was a SK, and she needed help his radio equipment. Larry K6LDC, Larry K6VDP and Tom K6CCD volunteered to contact Norma and help her.

The 2002 Baker-to-Vegas was discussed. Lowell to get dates of race. Frank WA6VKZ asked if the club couldn't support several cities at the same time? Bob KD6BWH appointed Frank to investigate the possibility of this happening, Maybe supporting other events.

Larry - K6LDC proposed another Not Too Distant DXpedition for the end of

October, at El Mirage Dry Lake.

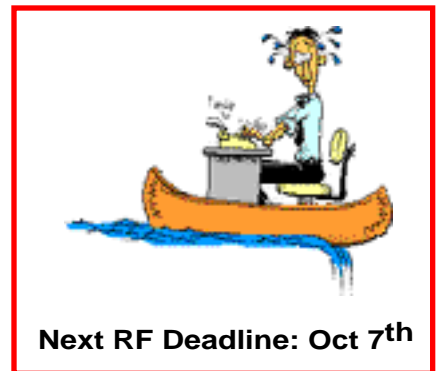
Ken - W6HHC made a motion to send \$100 to Newslite. Larry K6LDC seconded the motion and it was passed.

Dick - W6RWY announced five new members : Allan Avnet - AB8AA, Jane Avnet - K8JAA, Dave Coulter - KE6YZW, Bill Phinizy - K6WHP, and Kyle Lutz - awaiting call [KG6HPZ].

Ken sadly reported Dorothy Watts - W6IBP has become a Silent Key.

At 2200 hours a motion was made to adjourn and second by Al - N6TEZ.

Submitted by Lowell - KQ6JD
(with input from W6HHC)



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

First Class Mail

Time Dated Material.
Please Expedite!!