CROSSTALK

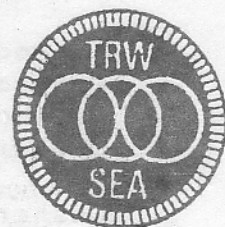## A Publication of the TRW Amateur Radio Club

SEPTEMBER 1992

CALENDAR:

Every Monday: DCS Net on 145.32 Repeater @ 7:30 PM

Every Wednesday: Emergency Communications Team Net on 145.32
Repeater at Noon

Every Friday: Club Breakfast in Bldg S Cafeteria, 7 to 8 AM

Sept 1: Executive Board Meeting, Upper Crust Pizza, Inglewood &
Manhattan Beach Blvd, 5:30 to 7 PM

Sept 8: Emergency Communications Team meeting, R3/1413, Noon

Sept 12-14: September VHF QSO Party (ARRL)

Sept 26: Swap Meet, parking lot on NW corner of Aviation and
Marine, 7 to 11 AM

Sept 26: T-Hunt following the Swap Meet @ Noon

Sept 29: Club Meeting, E2/1200, Noon

TRW/ARC Banquet Planning Under Way

Mark your calendars now! The TRW Amateur Radio Club Annual Banquet will be on November 14th at Charley Brown's Restaurant in Redondo Beach.   To make this a FUN event, we'd like to have your help. What kind of guest speaker would you like to hear, talking about what subject? We are looking for a speaker who will be entertaining to hams and non-hams alike. What kind of door prizes should we have -- lots of small ones or a few really good ones? If you have any ideas, please contact Rich Sauer, N6CIZ who is the Banquet Chairman this year.

There will be a flyer in an upcoming *Crosstalk* with all the details and a reservation form.

For Sale: Brand new, State of the Art:
Ed Farnsworth, W6TEC, has a complete HF rig which he would like to
sell as a package for $2,200, as follows:

	Net Unit Price
Kenwood TS-850-SAT (including auto-antenna tuner)	$1,400
Kenwood PS-52 Power supply 20 Amp.	$200
Kenwood YK 88C-1 (500 Hz BW): CW filter	$80
Cushcraft D4 Dipole antennas 40-20-15-10 meter, Two each (for 2 element Yagi antenna)	$300
Cushcraft D3W (3 WARC Band dipole)	$130
Autek research SWR/Watt meter instantaneous/peak	$110
Sigtronics Headphones with boom microphone	$100
Vibroplex bug with case	$80
Iambic keyer	$35
	$2435

Package savings $235

All items are in original boxes, not yet used for transmission.
Antenna boxes are unopened. The above unit net prices are well
below the current discount market prices. Prefer to sell as
package. These items are being sold as the consequence of a stroke.
Please contact Ed Farnsworth (310) 472-0697.

SEPTEMBER CLUB MEETING SPEAKER

Steve J. Noll, WA6EJO, will give a slide presentation titled:
"Amateur Lightwave Communications: The Ham Radio use of Lasers."
The presentation will include a look at the kinds of lasers
available, modulation methods, receiver choices, affordable
homebrew designs, and actual operating experiences. Included will
be a demonstration of a homebrew laser transmitter and receiver.

Steve J. Noll, WA6EJO, is active on HF through 10 GHz SSB and
has been at the forefront of Amateur Radio laser activity since
making his first two-way Helium-Neon laser contact in 1979. He has
written several microwave, laser, and computer articles for *73*, *Ham
Radio*, and *QEX* magazines. Steve chaired the 1992 West Coast
VHF/UHF Conference and is currently organizing the 1993 Conference
slated for May 21-23 in Ventura. He also built the portable
computerized antenna pattern plotting range used at the past two
Conferences. Steve works for Advanced Photonix, an optoelectronics
manufacturer located in Camarillo. He is a member of the ARRL, the
Laser Institute of America, the American Vacuum Society, and the
International Society for Hybrid Microelectronics.

ABSTRACT

Amateur Lightwave Communication

Steve J. Noll, WA6EJO

    Part 97 specifically grants the Amateur Radio Service use of all
frequencies above 300 GHz. This includes light, which starts at
about 500 Terahertz.

    The accepted requirements (ARRL) for valid Amateur contacts are
that transmitters must use lasers as the light source and receivers
must be electro-optic.

    Due to such factors as having a visible (red) continuous output,
reasonable size, and good availability, the Helium Neon laser makes
an excellent choice for the transmitter. Laser transmitters can
be economically built using surplus Helium Neon laser plasma tubes.
Such plasma tubes are currently on the surplus market for as low
as $10.

    MCW (Modulated CW) modulation can be achieved by simple means as
can AM if low modulation percentage can be tolerated. High quality
modulation does present some difficulties and warrants further
experimentation.

    A receiver is easily constructed using a lens or curved mirror
as the "antenna", and an inexpensive photodetector as the "front
end".   Presently, the "hottest" affordable detector is the
photomultiplier tube.

    Special attention must be placed on aiming aids such as sturdy
tripods, rifle scopes, and micrometer mounts. Rotating a typical
one milliradian divergent laser by only one degree would move the
beam almost 100 feet at a receiving point one mile away. The beam
diameter at one mile would be about 5 feet.

    Communication range is considerable, even with simple equipment.
The farthest the author has tried is 57.7 miles. A group in
Arizona has recently reported a 154 mile QSO!

    Reasonable care must be exercised when working with lasers.
Small Helium Neon lasers are capable of blinding, but the high
voltage power supply probably presents the most danger.

TRW/ARC Monthly T-Hunt

Rich Sauer, N6CIZ

Thanks, in large part to our guest speaker at the June club meeting, Joe Moell, K0OV, club members have expressed an interest in hidden transmitter hunting. To help fan the flames, the club will begin sponsoring a beginner's level T-Hunt on the last Saturday of the month, after the TRW/ARC Swapmeet.

This is not intended to compete with the big, established hunts sponsored by other clubs, but will be more of a training exercise intended to help new hunters get started. You don't need a lot of fancy gear or a lot of time. We are going to put a one hour time limit on our hunts. We hope a lot of folks come out, have fun and, after getting a few easy hunts under their belt, will be ready to take on the big boys.

The first TRW T-Hunt will be on August 29th at 12:00 Noon. Come on out to the swapmeet, then join us for some more fun!

TRW Amateur Radio Club Official T-Hunt Rules

1. Hunts will be held on the last Saturday of the month, following the TRW/ARC Swapmeet. The hunt will begin at 12:00 Noon and will end at 1:00 PM.

2. To be eligible to win, hunters must check in at the starting point prior to the start of the hunt. The starting point will be the parking lot across from the swapmeet lot, in front of Building 03.

3. Help (the amount of which will be determined by the hider) will be given to those hunters still in the field at 12:45. The intention of this rule is to encourage new hunters by enabling them to find the hidden T.

4. The winner is the first hunter (individual or team) to find the hidden T.

5. The winner becomes the hider for the next hunt.

6. The hidden T will transmit a signal on 144.720 MHz (input of the 145.32 repeater) with NO PL. Carrier may be continuous or intermittent as determined by the hider before the hunt begins. The hidden T's signal MUST be heard at the starting point.

7. Boundaries shall be anywhere on TRW property in the South Bay.

8. These rules may be changed or amended to keep things interesting as long as all hunters are notified prior to the hunt.

We'll try this out for at least a couple of months and see how things are progressing. We may expand the boundaries, change the day, etc. as we go on. But to make it happen at all, we need your support. Come on out on August 29th!

Community Seeks Help in Solving Interference Problem

Rich Sauer, N6CIZ

In addition to being the club's Treasurer, I am the contact between the club and SEA. If anyone calls TRW and wants information from the Amateur Radio Club, their call will be routed to me. From time to time, this has resulted in some interesting contacts.

Recently, I was contacted by a non-ham from the Frazier Park area who is looking for help in solving an RF interference problem. I had him contact Joe Moell, K0OV, who spoke at a recent club meeting about radio direction finding. I thought it would be a good idea to reprint a letter I received from him here, in hopes that someone may have a solution to his problem:

7/16/92

Dear Messrs Joe Moell and Rich Sauer:

There are five major communities within the Las Padres National Forest: Lebec, Frazier Park, Lake of the Woods, Pinion Pines and Pine Mountain Club. Each are electronically sick. The disease is electronic interference of TV reception (all of the time) and telephone service (some of the time).

The interference began approximately 90 days ago. It starts at about 8:30 am and continues around-the-clock, with only brief periods of non-interference. Most residents are on cable TV, a few are not. However, the problem is the same regardless of receiver configuration. The telephones affected are of the cordless variety.

Enclosed is a copy of articles I've published in the local newspaper - to no avail. As you may conclude, we have neither the equipment nor technology to cure this plague. I want to provide a service to these communities, and to do so requires professional expertise.

We will be very cooperative and hospitable to you, or anyone who reads this letter, concerning a solution to this problem. Please let me know how I can help.

Thank you in advance.

Dave Mokren
(805) 245-3194
P.O. Box 1593
Frazier Park, CA 93225

Dave enclosed a couple of articles from the local newspaper which details the problem and asked readers to contact him if they are having problems with TV and telephone reception. From the responses he has received, the problem is apparently widespread.

If you have any ideas of where this interference may be coming from or how to track it down, please contact Mr. Mokren directly.

BBS NOTES::::
BY DAVE HASSALL WA5DJJ

The W6TRW COMPUTER BBS is back to being alive and well. Thanks to Greg
(N6RRY) and Chris (WA2KDL) we have all the right passwords and code
names. We have upgraded the computer for the BBS to a 386-SX as our
old 286 Motherboard bit the dust with an unexplainable memory fault.
We have added a Better external 2400 baud modem and from the 4 hour
marithon unloading session I have done it appears to be working well.

I have tried to maintain the existing member list on the BBS but there
were some names that I could not identify. If you find yourself missing,
Please don't be angry. It was difficult to restart the BBS and change
hardware outputs. I just may have dropped someone accidently.

There is some really nice software to down load in many areas. I tried
to upload a variety of different types to provide for our wide interest
span. If your interested in a particular piece of software, let me know
as I have a fairly large sellection to draw from. Please Upload your
favorite Shareware or Public Domain program. The BBS is suppose to act
as a clearing house or Library Repository for all the available software
resources that our club members have been able to obtain. The more
variety of programs are uploaded, the better selection is available for
everyone's use.

There will be new software added each month. Some additional changes to
the BBS will be instituted gradually, hopefully, preventing it from becoming
stagnant. If you have an idea, leave me a piece of mail about it and I
will try to incorporate it into the BBS.

For the ones who have not logged on, here is some information that will help
you get started into a very interesting part of our hobby. The BBS can be
reached at phone # 812-4970. You need to set your communications program and
modem on your computer for 300 or 1200 or 2400 baud speed, 8 bits, no parity,
and 1 stop bit. Most IBM commucications programs have an autodialer built
into them so you can insert the phone number in there. Then have your system
call the BBS. If you leave your speaker on, you will hear the dial tone, then
the touch tones of the phone number, then the phone ringing, and then you
will hear the modem tones of the bbs. Your screen will usually say something
like "CONNECT 2400" and You will be asked if you support ANSI Graphics, to
start answer "N". The automatic Billboard for W6TRW will scroll
across your screen.   The BBS will then ask for you to enter your Number or
Name or New. (Our BBS operates on a Number system once your an Established
member) Type in "NEW" and hit ENTER. The BBS will then ask your for your
full name or alias which you will type in on your keyboard and hit ENTER.
The BBS will then ask for your REAL first name which you will enter. The
BBS will ask for your VOICE phone number which you will enter. (I need the
phone number to contact you about your access) The BBS will ask you for
your AMATEUR RADIO CALL SIGN which you will enter. (If no call sign, Just
hit enter) It will ask your SEX, Month you were Born, Day of the Month
you were Born, Year you were Born, (you can still lie gals) Your computer
type, How wide your screen is (usually 80 characters), How tall your screen
is (usually 25 characters), Can you support ANSI Graphics (if you have an
IBM PC with EGA/VGA Monitor, You probably answer yes. All others No.)
The BBS will then print out all the information you have given it in a
little table. (If any of it is incorrect, type the number of the item
and correct it. THIS IS A GOOD PLACE TO CHANGE YOUR PASSWORD TO SOMETHING
YOU WOULD LIKE IT TO BE!) If there are no changes, type Q to quit. The BBS
will respond with a statment with your user number and your password, and
its a great time to write this information down for lapses in memory.
At the colon (:) prompt type in your password and read the screens that come
up. The BBS will then put you into the Message section so you can type
your Validation Message. The sysop uses this message to raise your

access level so the more information you can put into it, the easier it is for me to identify you. The help file for the editor is /HELP if you need it. To Save your Validation message type /ES. The BBS will give you some more information screens and then the MAIN MENU. Your first LOGIN is only good for 10 minutes. Since this is such a short time, it is probably a great time to just log off. To Log Off just type the letter O and you will see the prompt Log Off? to which you answer yes. The BBS will Thank you for your visit and terminate the connection. When I or one of my Sysops reviews your Validation message we will upgrade your access level and then you will be able to Upload and Download files and do the rest of the functions of responsible BBS membership.

If you are looking for a certain kind of software, leave me a message and I will check my files. I have over 600 disks in my personal files and access to others. If you have a shareware or public domain program that you like, Upload it so the rest of us can also enjoy it. I am going to try to operate this BBS with as few restrictions as possible. So it will take ALL of us to make it work.

I am also looking for some Co-Sysops for the Amiga, Commador, Macintosh, and Apple Software files. I am strictly IBM Compatable and have no access to any of the other computers to check software that is uploaded for these machines. I don't think the job will be Too Demanding but really Necessary. I also need Names and Addresses of Shareware Houses so that Software can be obtained for these computers for our BBS.

Again I want to thank Greg (N6RRY) and Chris (WA2KDL) for their help in getting me through the "Mine Field" of getting this BBS back on line. I couldn't have done it without you. Next month.... Software Highlights of the New Software that is on the BBS

                                        73..... DE WA5DJJ

HELP!   HELP!   HELP!

     We are looking for about 10 hams with hand-held/mobile 2-meter capability to act as coordinators for the first annual King Harbor underwater clean-up on October 18, 1992 (Sunday). This event is being sponsored by the (ex-TRW) Sea Divers club and will last throughout the morning. Operators with extra battery packs, mobile, or "cigarette lighter" plug-in adapters to provide continuous coverage for about 5 hours are required. Scuba-diving hams a plus, but not necessary. It is anticipated we will work 2-meter simplex. This is turning out to be a big event, with participation by Edison, the four Redondo Beach marinas, Redondo Chamber of Commerce, etc. Hams will man five or six command posts spread along the marinas plus a central parking area. If you are interested in helping with this worthwhile event, please contact Phil Bergeron at 813-0511.

                                        de N6PB