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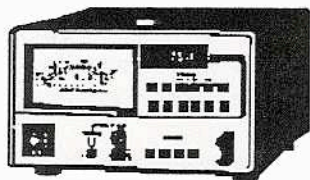


ORANGE COUNTY AMATEUR RADIO CLUB

VOL. XXXI NO. 8

P.O. BOX 3454, TUSTIN, CA 92681

AUGUST, 1990



Our August Program

DIGITAL SIGNAL PROCESSING
SPEAKER: WILL ANDERSON,
AA6DD

The bad news is:

There is another part of your radio you won't be fixing yourself.

The good news is:

There are filters being developed that will permit the filtering of complex signals.

Will Anderson will talk about how complex filters are being designed using microprocessors.

The Prez Says..... by Chris Breller, KJ6ZH

If you missed the Pizza Bust last month, you missed a swell time. My thanks to all who helped to make it happen. I also want to welcome the new Club members that showed up for the Pizza Bust and many thanks to Nancy, one of the new Club members, who has offered to take over the editorship of the RF on a permanent basis.

The Orange County Fair was a lot of fun. Jane (NONE) and I had a great time and I hope all the other Club members who worked also had fun. The Booth won 2nd Place, and Loraine McCarthy did a great job putting it together.

Just a reminder, HAMCON is being held in San Diego beginning August 24th and will continue thru August 26th. Hope to see you there!

The program for this month will be on Digital Filters and should be very interesting. Hope to see everyone at the Meeting.
73 de CHRIS, KJ6ZH ..._..

The Friday, October 19th Meeting is the Annual Auction.

Start shack-cleaning now so you can sell enough to pay for what you buy!!

September Meeting: Electro-Magnetic Radiation Hazards by Dave, WA6PMX

Minutes of July Club Meeting - 7/20/90

by Bob Tegel, KD6XO

Meeting was called to order by President Chris/KJ6JC at 7:30 pm. Absent were John/KJ6TK, Mark/KJ6JC and Bud/WA6VPP. There were 35 members and guests present.

- * The program for the night was an interesting description and history of RADAR presented by Bob Dahlin/KI6UL.
- * Tom/WA6PFA also showed a videotape of this year's Field Day. He announced copies would be available for a blank tape.
- * TREASURERS REPORT: \$560.65 checking \$860.50 savings.
- * OLD BUSINESS: None.
- * NEW BUSINESS: Moved and seconded and carried to renew club's subscription to Worldradio for \$60.00. Pizza bash July 21 at 6 pm at Roma D'Italia Restaurant in Tustin.
- * GOOD OF THE CLUB: - Bob/KI6UL has donated several Commodore com-

puters and accessories for the swap table. Proceeds to go to the club. - Alex/W6RE gave a report of ARRL activities. - Bob/KD6XO had request for operators at the Classic Carriage event to be held on the Palos Verdes Peninsula September 30 1990.

- * Guests were: Larry K6VDP; Rolf N6XSJ; Nancy N6XQR; Dave KA6NLY; and Bill N6VMS - All became new members - WELCOME.

Meeting adjourned 10:15 pm.

Respectfully submitted,
BOB TEGEL / KD6XO
SECRETARY

**Next Meeting:
Friday
August 17th, 1990
7:30 PM**

1990 CLUB BOARD of DIRECTORS

President	Chris Breller	KJ6ZH ..	(213) 866-2077
Vice President	Ken Konechy	W6HHC	541-6249
Secretary	Bob Tegel	KD6XO	531-0926
Treasurer	Bob Eckweiler	AF6C	639-5074
Activities	John Meacham	KJ6TK	842-4702
Membership	Tom Thomas	WA6PFA	771-2917
Public Relations	Mark Stanford	KJ6JC	991-7398
T.V.I. Chairman	Bud Barkhurst	WA6VVP	774-6361
Member at Large	Frank Smith	WA6VKZ	
Member at Large	John Roberts	WA6LAB	540-7368

CLUB APPOINTMENTS

Club Historian	Bob Evans	WB6IXN	543-9111
W6ZE Trustee	Bob Eckweiler	AF6C	639-5074
RF Editor	Nancy Bucher	N6XQR	537-8728
Teen Representative ..	<open>		

Minutes of OCARC Board Meeting - 8/4/90

by Jane Breller, N0NE

The Club Board Meeting was held on Aug 4, 1990 at 9:00 AM at Denny's Restaurant in Tustin.

Officers present were Chris, KJ6ZH, Ken - W6HHC, Bob - AF6C, Elmer - WA6PFA, Bud - WA6VPP, Frank - WA6VKZ, and John - WA6LAB.

There were a total of 25 members and guests present.

- * The treasurer (Bob/AF6C) reported that there were no changes to the club treasury since the last meeting. All expenses from Field Day have been paid.
- * Under old business, the board decided to continue the Mr. RF program and Elmer - WA6PFA was designated to administer it.
- * The board accepted the services of Nancy as permanent editor of the RF once she has become familiar with the procedures and format of the paper. Until such time, she will assist the monthly editors.
- * Dave - W6COJ suggested to the board that the club consider purchasing tents for Field Day instead of renting them. The Board asked Mike - K6KAA to look into the matter and present plans for a shelter similar to the one he used on Field Day.
- * The Swap Table was discussed and it will be continued.
- * Under new business, programs have been set for August through October.
- * Jane - N0NE will start to check out sites for the Christmas banquet. The board decided to hold the banquet on December 8, 9, 15, or 16. Potential locations include the Black Angus in Garden Grove and Bessie Walls in Yorba Linda.

On the Nets - June, 1990

by Bob Evans, WB6IXN

6/6 2m phone net- W6ZE/IXN checks in BPX, ZH, RE, VPP, YZG, SDU, NG7D, DLA, & ULU. BPX's back 'gives out' in the garden after Wyatt weeds the corn & beans & dries the garlic!...& Blanche fights her 2nd bout wid sore mouth! RE & NG7D tell all to use E-skip on 10 & 12m now, or you'll wait until after the turn of the Century! RE informs OPs of FCC punitive action against errant hams; works the Triathlon at Mission Viejo last Sun., & helps staff a precinct on Election day; airs interesting Newsline tapes...\$35, OPs, to replace a LOST or DESTROYED amateur license! ZH & n0ne dine wid IBR & IBP tonite..Al visited the dentist. 46 yrs. ago, YZG was flying over Allied Beach-heads...& Lu answered inquire abt Facilities & Use permit fer FD site, affirmatively. VPP saves gas as he learns to 'free-wheel' in his auto wid an intermittent engine! Bud conjures the problem as he paints the long planter box in front of the garage. ULU is mobile, on his way home frm a computer meeting. SDU joins 'we retired folk' as he retires at month's end. Foster queries the Net to help him find a QSL manager, WA3KUP?.. or WA3HUP?..Hm! After plans 'crashed' fer a New Mexico trip last week, DLA & fam. will go to the desert next week, as Bruce buys the XYL a totally automatic Olympus camera! NG7D's color TV steadfastly refuses to provide John wid entertainment! John will counter wid a new TV, & VCR, too!

6/13 2m phone net- W6ZE/IXN checks in NG7D, RE VPP, KAA (Mike), ZH, YZG, & PFA. NG7D misses BPX as John tells OPs abt his new TV wid infra-red control. John also asks PFA abt his new ATV camera. RE looks over firearms at the NRA Convention, airs Newsline tapes, invites N6ZEU to Club meeting, & tells OPs abt STS-35 postponement, & warns OPs abt new surveillance 'buzzsaw' radar that we may soon hear on the VHF bands! IXN invites VPP over to the QTH to share computer reference manuals, & investigate 'systems' disks. KAA works the VHF Sweepstakes contest last weekend, wid 44 contacts & 20 new grids on 6m! ZH reminds all abt Fri. Club meeting, looks fer a band capt. fer 20m, & buys a new PB computer wid color monitor. YZG investigates laser printers & PFA counts 106 QSLs confirmed fer DXCC. Tom also needs OPs fer 10m band on FD, as he readies his logging computer!

6/20 2m phone net- W6ZE/IXN checks in BPX, ZH, SDU, RE, VPP, YZG, KAA, PFA. Garlic & bean-picking consumes much of Wyatt's time as he and Blanche gorge on zucchinis, & BPX mows the yard! RE trouble-shoots the 220 rig..low audio..., cuts dead limbs away frm power lines, plays Newsline tapes, & prepares a folding table fer FD. ZH reminds all abt 2m talk-in to FD on 146.55 simplex. SDU will travel to San Francisco & Tempe, AZ over FD. Foster txns Alex fer help wid QSL manager problem. Foster also informs OPs that the Int'l DX Assoc. meets everyday but Wed. at 2330 UT (4:30 PDT), on 14.236 MHz. VPP will visit FD but leave early fer a trip to Kingman, AZ. Being 'up to his armpits' in lavish evergreens, Bid slashes away at them wid a vengeance! YZG, like IXN, spends time going to the doctor. IXN indulges himself wid a \$475 physical?! KAA darts back & forth between the rig & his antenna poles as he prepares fer FD, & Mike tells VPP that he voraciously attacks his 10 Italian Cypress, pine tree, 3 palms, etc., when he gets the 'thinning' urge! PFA can supply ATV equipment for the Orange County Fair/OCA venture if asked!

6/27 2m phone net- W6ZE/IXN checks in BPX, ZH, NG7D, RE, DLA, VKZ, ULU, SDU, HHC, XO, KAA, & PFA! Nice check-in, OPs! BPX picks zucchinis & beans, & 'snaps' the beans indoors out of the 102 deg. heat! Fires everywhere!.. as RE announces need for OPs to work the Carbon Canyon fire! VKZ confirms Alex's request, & says that Corky Corcoran calls fer volunteers, too. Frank also announces that nearly 1700 contacts were amassed at FD, putting us in competition fer the OCARA Award! RE provides VKZ a freq. of 14.313 daily at 0500 hrs. fer the Maritime Mobile Net. HHC presents interesting FD statistics: 747 15m contacts, 131 10m, 183 2m, 440mc, packet & solar, 70 CW & 144 phone on 40m, & 366 on 20m! FB, OPs! n0ne is in bed, & Chris checks in frm air-conditioned bliss to hear that Robin, HNY, & Norm Anderson, SWL, were visitors to FD activities! NG7D gives ZE a contact, tells OPs that he questions FCC's ruling on code requirements fer handicapped hams, & John informs OPs not to order any rigs frm DIGITREX...they're junk!! ULU was involved in an auto accident yesterday, informs OPs of a presentation to OC RACES in July, & is not feeling well.. Lloyd 73's. KAA hears VKZ in So. County abt 50%, while IXN has ZH relay Frank's QSOs. DLA experiences our heat in Alamogordo, NM.. Bruce recorded 2m net last Wed., & will be wid us fer FD next year. SDU 'braves' the 120 deg. heat in Tempe & Phoenix, AZ! Bruce didn't know his classification at the QTH, so he didn't make any FD contacts. PFA joins net after a TV movie, reads max. temp. of 105 deg. fer today, & tells OPs he experienced power line voltage loss on FD..thin power cord & too far frm generator! XO FDs wid XYL at a horse show in Ojai! Bob notes an observatory dome at Thatcher School, and he can't make any 2m contacts frm his location in the valley!

de WB6IXN

On the Nets - July, 1990 by Bob Evans, WB6IXN

7/4 2m phone net- W6ZE/IXN catches BPX & DLA fer quick check-ins..just before fireworks! DLA & family are mobile on way to Disneyland, & BPX & Blanche go outside to watch neighbor's display.

7/11 2m phone net- W6ZE/IXN checks in BPX, ZH, RE, NG7D, UL, DLA KYD, VPP, ULU, & KAA. Wyatt works in the early AM to beat the 90 & 100 deg. temps.! RE brings OPs up to date on amateur licensing wid 2 interesting 'Newsline' tapes, & gives OPs Lorraine McCarthy's tel. #s for work at the O.C. Fair. ZH & n0ne are basking in air conditioned bliss as Chris informs OPs that Dick Hart, VQL, can be found on the 145.22 machine. Bob, UL, will bring Commodore 64 and VIC 20 software/hardware to Club meeting for OPs..any donations going to the Club treasury! ZH also alerts group of SW Div. Convention Aug. 24 & 25. NG7D stays cool inside as he cleaned up the shack & ponders the purchase of a new ATV camera. Mike, KYD, 'flies in and flies out'! DLA will work the O.C. Fair along wid RE, ZH, & n0ne. ZH says the A1, IBR, is on the Green River machine at 223.760 MHz. VPP's XYL undergoes chemotherapy fer bone cancer & she is in the hosp. presently for pancreas blockage..OPs wish her well! Dick Hart sends his phone number, 652-9888, to NGO & IBR via ULU. KAA announces check-ins for the ARES Dist 3 net at 7:15 pm, & the Tustin City net at 7:30 pm Mon. eves.

7/18 2m phone net- W6ZE/IXN checks in BPX, NG7D, RE, JSV, ZH, & TNK. Wyatt 'shoo-fly-shoos' the white flies as they continue to destroy his tomatoes & peppers! Undaunted, BPX & Blanche shuck 4 dishpans of corn for the freezer! RE plays 'Newsline' tapes which warn us of 'storm clouds ahead' for the amateur bands at the upcoming '92 WARC meeting! RE inquires if the FXN repeater on 145.46 will carry the 'Tele-conference Network' program on Sun at 5:00 pm...answer affirmative! NG7D & fam. brave 101 deg temps at Lake Elsinore as they visit John's sister in her new home. John also enjoys his new Canon E-53 TV camera, & warns OPs to get a UV filter to protect the iconoscope. JSV & EZS visit 11 countries wid 6 wks in the UK. They rendezvous wid Lew, GH4BQ, & are now busy sorting thru 650 slides..more at Fri. Club meeting! Jim also buys a TV camera.. a Panasonic PV-610! n0ne is still up baking & arranging dainties fer Club meeting Fri., & ZH reports the radio booth at the O.C. Fair takes a 2nd place award..congrats to all who made it a success! TNK, Craig, vacations through a plant shut-down, & uses the time to catch up..including his real estate studies!

7/19 15m CW net- W6ZE/IXN checks in NG7D, & we discuss the Iranian earthquake.

7/25 15m phone net- No formal net..but IXN talks wid KAA/M at the Marine Helicopter Air Station. Gud sigs, Mike!

7/25 2m phone net- BEST CHECK-IN EVER!!! W6ZE/IXN checks in UDJ, BPX, NG7D, RE, JSV, DLA, UL, XQR, VDP, AF6C, VMS, VFC, VNU, YZG, WS, SXJ, HMS, VPP, KAA, COT, & VFS!..WOW!!..Keep it up, OPs! UJD eagerly awaits 'Newsline tapes', & BPX & Blanche have 'polished off' the corn, black-eyed peas, & tomatoes frm the garden! RE works the O.C. Fair as the XYL cans some peaches fer RVS. Alex reports that SAREX may not fly 'til Sept. NG7D tells all that UPS is going on strike next week, & John works St Bartholomew Isle fer his 79th DXCC contact. JSV & EZS catch up on the yard work, & they work the O.C. Fair booth last Sat. DLA attacks the broken-down drier once more, & UL asks RE abt the time change fer the Red Cross net. XQR announces Goodwill Games on 14.342 MHz, & tells OPs to check July issue of QST fer more info. VMS works the DX Packet Cluster & contacts Greece, & announces a DX-pedition on 14.195, 21.295-300 MHz (TI2US). Dennis, VFC, checks in frm Westminster wid booming sigs, & VNU joins other OPs who worked the O.C. Fair. YZG 'sleeps' the dogs in preparation for Max's 'hunting sojourn' at 4 am in the backyard! Mike, COT and XYL, IBN, are among the hosts of the 'Insomniac Net' on 144.330 simplex! And Rolf, XSJ, finds the XYL asleep on his return frm the parking lot QSO after last Club meeting! Prayers fer VPP's XYL as Bud spends most of his spare time wid her at the hospital! KAA calmly picks up Norway on 15m after his contact wid IXN! AF6C checks in & out, & IXN wants to eyeball wid Larry, VDP, abt the NARSmen (Newport Amateur Radio Society). Also VDP is a CW man. (Hooray!) Bill, (Her Majesty's Ship),.. What did we talk abt?.. no notes! It must have been Harry, VFS, or Earle, K6WS, who was the electronics test instruments specialist (lost some notes somewhere!) But we'll determine this next net!

7/26 15m CW net- W6ZE/IXN checks in NG7D. John will get his QRP Ten-Tec back hopefully before the UPS strike!
de WB6IXN

ORANGE COUNTY AMATEUR RADIO CLUB
FINANCIAL REPORT 1989

K.A.K.
2/04/90

BEGINNING BALANCE:

CHECKING	\$70.44
SAVINGS	\$940.92
CASH-ON-HAND	\$375.90
GENERATOR FUND	(\$10.00) INCLUDED IN CHECKING ACCOUNT
TOTAL	\$1,387.26

INCOME:

FINAL 1988 CONVENTION PROFITS SHARE	\$108.35
DUES	\$480.00
CHRISTMAS PARTY INCOME FROM DINNER	\$403.90
RAFFLE INCOME	\$417.00
AUCTION PROFITS	\$99.19
COFFEE KITTY	\$82.44
GENERATOR FUND DONATIONS	\$21.00
ARRL RENEWAL COMMISSIONS	\$9.00
INTEREST-SAVINGS	\$50.80
INTEREST-CHECKING	\$19.13
TOTAL INCOME	\$1,710.81

EXPENSES:

CHRISTMAS PARTY EXPENSES FOR DINNER	\$415.20
CHRISTMAS PARTY GIFTS	\$20.10
INSURANCE (1989)	- 0.00 - (PAID IN 1988)
RAFFLE EXPENSES	\$638.57
COFFEE AND REFRESHMENTS	\$98.33
FIELD DAY FOOD	\$79.99
FIELD DAY (OTHER EXPENSES)	\$30.11
GENERATOR CABLES	\$200.00
RF POSTAGE	\$180.35
MAILBOX RENTAL	\$14.00
WORLD RADIO CLUB LISTING	\$60.00
PLAQUE	\$37.61
WESTLINK DONATION	\$25.00
WESTLINK TELEPHONE COSTS	\$49.41
FLOWERS	\$29.15
DUES FOR OCCARO MEMBERSHIP	\$3.00
TOTAL EXPENSES	\$1,880.82

YEAR END BALANCE:

CHECKING	\$145.47
SAVINGS	\$1,051.72
GENERATOR FUND	(\$31.00) INCLUDED IN CHECKING ACCOUNT
TOTAL	\$1,197.19

DX: Getting Started by Bill Freyfogle, N6VMS

Have you been bitten by the DX bug yet? If not, you will! Imagine yourself sitting in front of your newly-acquired HF rig tuning the 10 meter band. Up around 28.490 you hear a bunch of people frantically shouting their callsigns. Then, one of them says "QSL, this is November Six Victor Mike Sierra, Nancy Six Victoria Mike Sugar, you are also five and nine, the name is Bill from near Los Angeles, thank you!!" No response for five seconds, then the whole bunch begins shouting their callsigns again. Tuning down five kHz, you hear the DX station - it's 9J2AL!! Looking up the callsign in the Callbook table of allocations, you find the station is from Zambia. No wonder there's a big pileup! While listening to the DX station, you press the "split" button on your transceiver and tune VFO "B" back to 28.490 and switch back to VFO "A" and shout out the last two letters of your callsign. The DX station answers you!! He says the last two letters and gives a five and nine. Saying your callsign twice using different phonetics, you also give him a 59 and thank him for a new one. He says "73's QSL to WB4EWR, QRZ?" You're hooked on DXing!

DXing is a sport, a quest, an ambition, a driving force, an addiction! The object, of course, is to "work 'em all!" The immediate goal is getting 100 different countries confirmed. Long term, it means getting all 40 CQ Zones, 100 countries on the five major HF bands, or getting on the "Honor Roll" (within 10 of the total possible countries.) To do so requires two main elements, the QSO and the QSL.

A valid QSO usually consists of the DX station correctly receiving your callsign and RS(T) report. He/She then writes it in the logbook along with the time (in UTC) and the RST you sent. Any other information is fun but not absolutely required. A QSL is a written confirmation from the DX station that the QSO took place. For all awards, you must have a written QSL from the DX stations. This usually is in the form of a QSL card you obtain from the DX station by sending one of your own plus postage to pay for his/her card being sent to you.

Why should you send postage to the DX station?? Because they already have 500 cards from California, how many more do they want? Being from California is the worst curse possible for DXing, you are the most common contact in the entire world, there are more Hams in California than almost any other country in the world. Rule No. 1: The DX station is doing you a favor, not vice versa. When a DX station calls CQ and you answer, ask if you can QSL. If the DX station says no, don't waste your time and money. If there's a big pileup, you can assume the DX station expects to be QSL'ed.

Being successful requires Rule No. 2: Keep accurate records of all DX QSO's made and all QSLs sent and received. This is essential for tracking outstanding QSLs. QSLing costs money. If you are in no hurry, QSL most stations thru the ARRL's Outgoing QSL bureau. Here's how to do it: a) sort all QSL cards alphabetically, b) attach the address label from the plastic wrapper of your issue of QST Magazine (always save the labels!!!), c) include a check for \$2.00 or more made out to ARRL, d) securely wrap the cards, check and label, and e) address/mail it to ARRL Outgoing QSL Bureau, 225 Main St., Newington, CT 06111. QSLs via the bureau take 6 months to 3 years! Also, many hams are not registered with their bureaus, so the QSL rate is somewhere around 50-60%.

The most reliable way to QSL is direct. Determine if the DX station has a QSL manager - someone who answers QSL requests for him/her. QSLs are almost guaranteed when a manager is involved. Use No. 10 business envelopes. Address one envelope to yourself, fold it in thirds and enclose a \$1 bill for surface mail, two of the (called "green stamps") for air mail, or an appropriate number of IRCs (Postal Reply coupons purchased at the Post Office.) Put the self-addressed envelope and postage in the outer envelope along with your QSL card. Put the "plain" side of your QSL card towards the front. Then make the outer envelope look as much like a business letter as possible - no call signs, preferably typed. Air mail is \$.45. Write "Air Mail" in the bottom-left corner. Direct QSLs take 1

week to 1 year, usually 2 to 3 months. Have access to both Callbooks - North America and DX. Read the DX columns in the ham magazines. Look for QSL routes for those stations that did not say how to contact them. Check the W6GO list of QSL managers first, then look in the callbook. The best scenario is a DX station with a US QSL manager. All it will cost is a self-addressed stamped envelope for return postage.

The most important part of DXing is listening. Listen to all QSO's on the band and determine which country everyone is from. Remember, many desirable countries are obtained by contacting American missionaries and US Government personnel living abroad. Don't rely on accents alone when determining what is DX. Don't listen to just the strong signals, they are local! You are looking for the weak ones from far away. Rule No. 3: Determine the callsign of all stations on the band.

STRATEGY: Let's assume you're a beginning DXer with a modest station - 100 watts and a dipole or vertical antenna operating on 10 meters. You're a "small gun." The good news is that signals carry well on 10 meters, even with low power. Also, since all countries are "new ones" for you, you're chasing countries most DXers already have. The bad news is that your success in pileups will be low, and everyone has access to 10 meters - it's a crowded band when open. There are at least three ways to work DX on 10: 1) Tune the band quickly and spot the DX stations before the big guns can turn their beams, 2) go "all out" in the major DX contest - that's when the greatest number of DX stations are on the air, and 3) become a very good operator - learn to "tail end" and make your callsign stand out from the crowd. Learn to operate split frequency, tune out QRM, hear the weak ones, wait for QSO's between DX stations and their managers/friends to end (or temporarily put on hold for a few minutes) and then jump in, and develop a friendly excuse for breaking into/joining a QSO in progress.

Next month we will discuss "intermediate" DX skills and equipment. In the meantime, I highly recommend reading the book The Complete DXer by W9KNI.

A Case History in Resolving TVI Problems by Ken Konechy, W6HHC

After several years of inactivity on the lower bands because of aging rig and antennas. I finally broke down and bought a new YAESU FT-757GXii transceiver and a CUSHCRAFT A3S tri-band beam for 20/15/10 meters.

Wouldn't you know it....the next day after I got the beam up, I got a phone call from my next door neighbor that I am causing INTERFERENCE on their TV (the dreaded TVI)!!!!

I worked along the following steps to resolve the TVI at my neighbor's set:

- 1) First I checked my own TV for INTERFERENCE. I am on CABLE, and no problems were found on any channel when I transmitted on 20, 15 or 10 MTRS. I was confused, because I thought my neighbors were also on CABLE?
- 2) Next, I rigged up the speaker from my 2 MTR base station to trigger the VOX on the FT-757 microphone. Using a little used simplex frequency on 2 MTRS, I could now use my 2 MTR hand-held rig to make the low band rig produce TEST transmissions when I visited my neighbor's QTH.
- 3) I got up my courage to visit my neighbors. Sure enough, their SONY TV (and SONY VCR) "exploded" with broad white horizontal bands across the screen as I spoke each syllable into my HAND-HELD. I was really confused as to why they were having problems on CABLE TV, until I discovered that they had discontinued the CABLE service (even though the cables still ran to their house) and had reverted back to their "ancient" outside TV antenna.
- 4) Now that I knew I was fighting TVI from an outside antenna system, I went and bought the following supplies for the attack:
 - * A HI-PASS TV filter (AMECO Model HP-75T)
 - * A 75-OHM termination resistor for

VCR ANT connectors (Radio Shack)

* A set of well-shielded cables to go between the VCR and the TV set (in case their cables were marginal)

* A 15-foot section of #10 ground wire

I also improved the solder connection on the ground wire from my rig to the 1/4-inch copper tubing that I use in my shack to run to the ground rod (about 7 feet away from the rig).

- 5) I went back to the neighbors, the TVI was still bad... the white bands covered about 75-90% of the screen when I spoke. Next I disconnected outside TV antenna from the VCR and put the plug with 75-OHM termination resistor in the VCR's ANT jack. When I tested, NO INTERFERENCE occurred at all!! That meant that NO interference was coming in through the AC power lines or through the cables running between the VCR and TV.
- 6) Next, I asked permission to go up on the roof to look at the TV antenna (which was directly under my beam). I intended to check for corrosion and then terminate the far end of the 75-OHM coaxial lead-in cable in order to repeat the test in STEP 5.

I discovered that an "ANTENNA SPLITTER" was installed near the TV antenna and that was connected to un-shielded 300-OHM twisted pair cable that led into attic (currently un-used).

I also discovered that the connector from the lead-in cable "fell apart" in my hand when I attempted to disconnect it from the ANT-SPLITTER. I ran back to Radio Shack and bought a replacement connector and installation tool and then replaced the 75-OHM connector on the far end of the lead-in.

- 7) At last, I terminated the far end of the ANT-SPLITTER with the 75-OHM termination resistor (after disconnecting the 300-ohm cable). When I did my TEST transmissions, NO INTERFERENCE occurred (same as STEP

5). That meant that the interference was NOT seeping in through faulty shielding on the TV lead-in cable.

- 8) Next, I re-connected the TV antenna to the lead-in cable, but eliminated the ANT-SPLITTER and the un-used section of 300-OHM cable. When I did TEST transmissions, the INTERFERENCE was greatly reduced!!! The horizontal bands only covered about 15 - 40% of the screen when I spoke.
- 9) I then installed the HI-PASS filter at the input to the VCR. Now when I tested, only a slight "COLOR FRINGE" occurred on Channel 4 when I transmitted on my rig. NO MORE WHITE BANDS!!
- 10) I tried a ground wire from the HI-PASS filter on the TV/VCR to the circuit breaker ground, but no improvements could be noticed. So this additional ground wire was removed.
- 11) The next weekend I installed a 50-OHM LOW-PASS filter on my rig. When I re-tested with my neighbors, the "COLOR FRINGE" on Channel 4 had vanished!! I finally had solved all their INTERFERENCE problems.

In summary, my neighbor's TV set suffered from the INABILITY to tolerate strong RF signals that were on near-by frequencies. This symptom is known as "FRONT-END-OVER-LOAD". The un-shielded 300-OHM cable just compounded the problems. At last, I was able to convince myself that a LOW-PASS filter was a worth-while investment.

Please send your *RF* comments, articles or suggestions for articles to Nancy Bucher / N6XQR, 8670 D Meadowbrook Ave. Garden Grove, CA 92644 or call (714) 537-8728 to set up transmission via packet or modem. Tnx & 73s

Balun - ced???

by Earle Grandison, K6WS

Much has been written on the use of baluns with transmatches for tuning open wire feeders to doublet antennas. Many authors recommend balanced turners and have cautioned against the use of a ferrite four to one (50 ohm unbalanced to two hundred ohm balanced) balun in the output of a "T" network transmatch to feed a balanced open wire fed dipole antenna.

Many commercial antenna tuners provide a ferrite four to one balun for this application. The acquisition of a Johnson Matchbox, 275 watt model, type 250-23 suggested an experiment to answer the question as to just how efficient the transmatch and balun really are.

With the help of Don, WB6LFC, we were able to make some measurements which might provide some answers. WB6LFC lives 38 miles northeast of K6WS, so the following experiments would not be affected by any near-field effects.

The equipment and antenna at K6WS consisted of:

1. ICOM 745 Transceiver.

2. Dentron MT-2000A "T" network transmatch. The Dentron balun showed unequal current on the parallel feeders and was replaced by a W2AU 4 to 1 balun which provided equal currents.

3. Johnson 250-23 Matchbox. For those unfamiliar with the 250-23, it consists of a parallel resonant network using an in-

ductor with a coaxial wound coupling link, a dual tuning capacitor and a dual differential matching capacitor providing a balanced feed system to the 600 ohm feeders.

4. The antenna was a 102 feet inverted vee (G5RV) with the apex at 45 feet and the ends at 30 feet. This antenna was fed directly from each tuner with a 600 ohm 75 foot long parallel wire feedline.

The equipment and antenna at WB6LFC consisted of:

1. Yaesu FT-767 Transceiver. The "S" meter was calibrated with 10 dB equal to three "S" units.

2. The antenna consisted of a HyGain 18HT vertical.

Eleven o'clock am was selected for testing the efficiencies of the two commercial tuners to eliminate interference, QRM and QRN, and minimize the skip effects more common during nighttime conditions. Two interference free frequencies were used: 7040 kHz and 3950 kHz.

The ICOM 745 was adjusted for 100 watt CW output into each tuner, one at a time, that had been previously tuned for a one to one VSWR into the antenna system. The 600 ohm feeders were switched quickly from each tuner and at the same time a DIAWA two position switch activated the appropriate tuner. RG-213 coax of equal lengths connected each tuner to the DIAWA coaxial switch which automatically grounds

the coax to the unused tuner.

For reference purposes, 10 dB on the Yaesu FT-767 equals three "S" units. The following results were noted:

FREQ	DENTRON (4:1 balun)	MATCHBOX (balanced)
7040	"S" 5 3/4	"S" 6
3950	"S" 5 3/4	"S" 6

(For some reason, the same "S" units were observed on both frequencies.)

The Johnson Matchbox was consistently .83 dB better than the "T" Network, four to one ferrite balun system. Just for comparison, a Bencher, one to one, air core balun designed for 3 to 30 MHz was installed on the Dentron tuner and compared with the Matchbox on 3950 kHz with the following results:

FREQ	DENTRON (1:1 air balun)	MATCHBOX (balanced)
3950	"S" 4	"S" 6

The Matchbox was 6.66 dB better than the "T" Network and 1 to 1 balun. (The 1 to 1 balun windings overheated quickly during this 100 watt test.)

On the air reports have also been very satisfying since I began using the Matchbox on the G5RV tuned dipole.

Don't hesitate to acquire a Matchbox if you use an open wire fed antenna system.

NEW MEMBERS

JOINED AT JULY CLUB MEETING

KA6NLY	David Mofford	Orange	
KA6VDP	Larry Beilin	Costa Mesa	557-7217
N6XQR	Nancy Bucher	Garden Grove	537-8728
N6VMS	Bill Freyfogle	Huntington Beach	964-9336
N6XSJ	Rolf Franzke	Fountain Valley	

JOINED AT AUGUST BOARD BREAKFAST

N6XTJ	Jim Roberts	Glendale	818 246-5446
KB6VFC	Dennis Kimbell	Westminster	898-3685
N6ZBI	Richard Hardy	Newport Beach	723-1408
N6YDQ	Diana Freyfogle	Huntington Beach	964-9336

Club Receives Donation From Estate of Ted Glick, K6LJA

Ted was a long time member, past President and a driving force within the Orange County Amateur Radio Club. He past away last spring.

Through the assistance of Will, WB6GDZ, who helped in the liquidation of Ted's station, Ted's estate generously donated \$200 to the OCARC from the sale of his radio station in recognition of the importance of the OCARC to Ted.

What is Electricity?

by Carl Lindberg, N6RTC via Bob Evans, WB6IXN

Today's scientific question is: What in the world is electricity? And where does it go after it leaves the toaster?

Here is a simple experiment that will teach you an important electrical lesson: On a cool, dry day, scuff your feet along a carpet, then reach your hand into a friend's mouth and touch one of his dental fillings. Did you notice how your friend twitched violently and cried out in pain? This teaches us that electricity can be a powerful force, but we must never use it to hurt others unless we need to learn an important electrical lesson.

It also teaches us how an electrical circuit works. When you scuffed your feet, you pick up batches of "electrons" which are very small objects that carpet manufacturers weave into carpet so they will attract dirt. The electrons travel through your bloodstream and collect in your finger, where they form a spark that leaps to your friend's filling, then travels down to his feet and back into the carpet, thus completing the circuit.

Amazing Electronic Fact: If you scuffed your feet long enough without touching anything, you would build up so many electrons that your finger would explode! But this is nothing to worry about unless you have carpeting.

Although we modern persons tend to take our electric lights, radios, mixers, etc. for granted, hundreds of years ago people did not have any of these things, which is just as well because there was no place to plug them in. Then along came the first Electrical Pioneer, Benjamin Franklin, who flew a kite in a lightning storm and received a serious electrical shock. This proved that lightning was powered by the same force as carpets, only in incomprehensible maxims, such as "A penny saved is a penny earned." Eventually he had to be given a job of running the post office.

After Franklin came a herd of Electrical Pioneers whose names have become a part of our electrical terminology: Myron Volt, May Louise Amp, James Watt, Bob Transformer, etc. These pioneers conducted many important electrical experiments. For example, in 1870 Luigi Galvani discovered

(this is the truth) that when he attached two different kinds of metal to the leg of a frog, an electrical current developed and the frog's leg kicked, even though it was no longer attached to the frog, which was dead anyway. Galvani's discovery led to enormous advances in amphibian medicine. Today, skilled veterinary surgeons can take a frog that has been seriously injured or killed, implant pieces of metal in its muscles, and watch it hop back into the pond just like a normal frog, except for the fact it sinks like a stone.

But the greatest Electrical Pioneer of them all was Thomas Edison, who was a brilliant inventor despite the fact that he had little formal education and lived in New Jersey. Edison's first major invention in 1877 was the phonograph, which could soon be found in thousands of American homes, where it basically sat until 1923, when the record was invented. But Edison's greatest achievement came in 1879, when he invented the electric company. Edison's design was a brilliant adaptation of the simple electrical circuit: The electric company sends electricity through a wire to a customer, then immediately gets it back through another wire, then (this is the brilliant part) sends it right back to the customer again.

This means that an electric company can sell a customer the same batch of electricity thousands of times a day and never get caught, since very few customers take the time to examine their electricity closely. In fact the last year any new electricity was generated in the United States was 1937; the electric companies have been merely re-selling it ever since, which is why they have so much free time to apply for rate increases.

Thanks to men like Edison and Franklin, and frogs like Galvani's, we receive almost unlimited benefits from electricity. For example, in the past decade scientists developed the laser, an electronic appliance so powerful that it can vaporize a bulldozer 2,000 yards away, yet to precise that doctors can use it to perform delicate operations to the human eyeball, provided they remember to change the power setting from "Vaporize Bulldozer" to "Delicate."

3-ELEMENT 20 METER BEAM FOR SALE

I HAVE A USED 3-EL MODIFIED HY-GAIN BEAM FOR 20 METER DX-ERS.

IT HAS A 20-FOOT BOOM FOR WIDE SPACING AND HAS BEEN MODIFIED TO USE A GAMMA-MATCH FEED TECHNIQUE (BY A REAL ANTENNA PRO).

THE ALL ALUMINUM CONSTRUCTION SHOWS ITS AGE A LITTLE, BUT STILL SHOULD BE GOOD FOR ANOTHER TEN YEARS OF FOG AND SANTA-ANA WINDS.

NEEDS NEW BOLTS AND NUTS. I AM ASKING \$50 FOR THIS DXCC-KILLER!!

.... CALL KEN KONECHY/W6HHC
541-6249

Seismometers Seismographs & Other Shakin' Items by Bob Evans, WB6IXN

Carl Lindberg, N6TRC, Seismic Analyst & Consultant, has graciously provided us with plans for a home-made seismograph, and schematics for a USGS Radio Seismometer Terminal which features warning alarms and audio voltage converter to drive pen recorders, etc. IXN will provide copies of Carl's materials upon request. You can catch Carl on the FXN machine (145.460 down 600, no PL; don't know the 220 freq.). If you call RTC, please remember that he will not answer if in the shack with the seismometer. RF transmissions from the shack disturb the seismometer! Also, Carl is generally on freq. on the Seismic Precursor Net meetings at 10:30 pm Wed. eves. When calling Carl on the air, give him a few minutes to get outside with the handheld!

CLUB FUNCTIONS

MONTHLY MEETING: 3rd Friday of each month, 7:30PM at MERCURY SAVINGS & LOAN
 1095 Irvine Blvd. (4th St. becomes Irvine)
 Tustin, CA. Talk-in on 146.55 MHz

Aug 17th
 Sep 21st
 Oct 19th

(Take the 4th St. exit of the 55 Freeway
 and head east. Continue past Newport Blvd.
 about two blocks. It's on the left.)

CLUB BREAKFAST: 1st Saturday of each month, 8:00AM at DENNY'S Resturant
 2314 E. Seventeenth Street Santa Ana, CA. (714) 543-0872

Sep 1st
 Oct 6th

(Second bldg. west of the 55 Freeway)

CLUB NETS

BAND	MODE	DAY	LOCAL TIME	FREQ MHz	SPLIT	PL	OPERATOR
2 Meters	FM	Wed	2100 hrs.	146.550	smplx	na	WB6IXN
15 Meters	SSB	Wed	2000 hrs.	21.375*	smplx	na	WB6IXN
15 Meters	CW	Thu	2000 hrs.	21.175*	smplx	na	KB6NAX

(Listen for W6ZE, net control) *Plus or minus QRM

ARES DISTRICT NET

2 Meters	FM	Mon	1900 hrs.	146.220	-600	1A	N6HQI 1
2 Meters	FM	Mon	~1915 hrs.	145.340	-600	4Z	K6KAA 2
2 Meters	FM	Mon	1930 hrs.	noted	smplx	na	noted 3

1 - ARES Info net.
 2 - ARES District 3 net starts after info net is completed (Usually about 1915 hrs).
 3 - City Nets: Orange - 146.565 N6OWF; Tustin - 146.505 WA6VKZ; Santa Ana - 147.585 W6HHC

ORANGE COUNTY AMATEUR RADIO CLUB, INC.
P.O. Box 3454
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