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ORANGE COUNTY AMATEUR RADIO CLUB

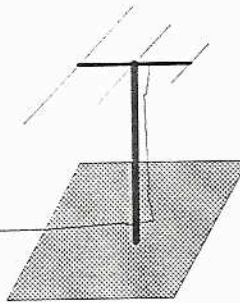
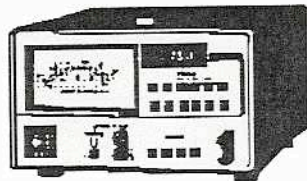
VOL. XXXI NO. 11

P.O. BOX 3454, TUSTIN, CA 92681

NOVEMBER, 1990

Our November Program

Elections
Friday,
November 16th



An Introduction to Amateur Satellite Communications

Gene Davies, AA6NP, of AMSAT
Corporation will be the guest speaker.

He will describe the efforts of the AMSAT Corporation in satellites and describe what it takes to become active in amateur satellite communications. This talk comes just in time for you to add a few items to your list for Santa!

The Prez Sez.....

by Chris Breller, KJ6ZH

Thanks to all of you who came to the auction. Everyone had a good time and the club made a little money as well.

We are taking reservations for the club Xmas dinner. This year's event should be a good time. Bring the kids as Santa will have something special for them. For more details, see the ad in this *RF*. [See Page 7.]

At the November meeting, we will be electing club officers for 1991. We have a full slate of officers at this time but if you are interested in running for a board position, contact me or Ken, W6HHC. We will also take nominations from the floor on election night. Many thanks to all of you who volunteered to serve on next year's board.

Well that's about it from Bellflower.
73 de Chris KJ6ZH ..._..

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Holiday Banquet Reservations Due by 11/19

Reward Offered for RF Articles!!!

Listen for Details at the November Meeting

Nominations for OCARC Elections

Prepared by the Nominating Committee

CHRIS, KJ6ZH REPORTED THE FOLLOWING PEOPLE HAD AGREED TO RUN FOR OFFICES IN THE OCARC FOR 1991.

PRESIDENT	KEN KONECHY	W6HHC
VICE PRESIDENT	MIKE ABREU	K6KAA
TREASURER	BILL FREYFOGLE	N6VMS
SECRETARY	BRUCE CREAGER	KC6DLA
ACTIVITIES	TOM THOMAS	WA6PFA
MEMBERSHIP	BOB ECKWEILER	AF6C
PUBLIC RELATIONS ...	JOHN MEACHUM	KJ6TK
TVI	LARRY BEILIN	K6VDP
MEMBER-AT-LARGE ...	FRANK SMITH	WA6VKZ
MEMBER-AT-LARGE ...	CHRIS BRELLER	KJ6ZH

Additional nominations are welcome from the floor at the November 16, 1990 monthly meeting.

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	WA6VPP	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
Refreshments	Jane Breller	none	(213) 866-2077

DUES

Regular Member	\$12.00	Additional Family Members	6.00 each
Teenage Members (under 20) ..	6.00	Optional Club Badge	5.00

Dues for new members are prorated quarterly from January of each year. Family members must reside at the address of a Regular Member. One RF is sent per household.

Club Auction a Success!

by Bob Eckweiler, AF6C

Last month's auction netted a \$225 profit for the Club's treasury, and helped reorganize the garages and junk boxes of many hams throughout the LA area. Auctioneers Chris, KJ6ZH; and Ken, W6HHC did a noble job with their descriptions of the various equipment brought up to the block. A committee of Frank, WA6VKZ; Bud, WA6VPP; and Bob, AF6C kept records of the transactions and handled the funds. A special thanks has to go to Frank and his laptop computer. He kept the committee focused on the task at hand, and made sure of a successful result.

A large portion of the profits came as a result of equipment donated to the club by generous members. Bob, KI6UL; Tom, WA6PFA; Bob, KD6XO; Frank, KE6ZW and others certainly deserve the club's thanks for their donations.

Xtra Quiet Radio

by Nancy Bucher, N6XQR

First order of business this month is apologies for wrong call letters last month! Larry Beilin's call in the byline of his article on page 4 of last month's issue should have been K6VDP and Bob Tegel's byline on his article on page 5 should have been KD6XO!

Second, I would like to thank the contributors of articles for each month's RF. It was mentioned at the Board breakfast that folks who write articles should get some free raffle tickets as a reward. I like the idea. What do you think?

Also, I can now accept packet messages and articles via the YMH packet BBS by dialing in with my modem. Got articles from both Ken, W6HHC, and Chris, KJ6ZH, this month. If you need any help contact one of them.

Last item is a request that information and articles for the RF be submitted a little earlier. TNX and 73s.

Minutes of OCARC Board Meeting - 11/3/90

A quorum of officers was not present for the monthly Board Meeting, so no business was conducted.

On the Nets - October, 1990

by Bob Evans, WB6IXN

10/3 15m phone net - W6ZE/HHC checks in IXN & XO. HHC & harmonic have an auto battery blow up in their faces. Ken escapes injury but his son has slight acid burns on his face & eyes! XO thanks all OPs who helped wid the CA. Classic event, & comments on the fine job done by PFA wid amateur TV! IXN mails 'Net News' items to HHC for next 'RF'.

10/3 2m phone net - W6ZE/IXN checks in ZH, BPX, KK6QE/UJD, RE, KAA, YZG, VDP, NG7D, XO, PFA, NTX, XQR, XTJ, SDU, & ULU/M. BPX rakes leaves, watches a little garlic grow, & rests his aching back! RE helps wid CA Classic event, airs Newline tapes, & joins BPX raking leaves & cutting branches. KAA relaxes outside wid the newspaper while listening to the net. YZG's canines are asleep as Lu prepares for a 'week +' trip to England. VDP lets XSJ do the DXing while Larry prepares equipment & completes the CW filter fer the Ten-Tec. NG7D misses XO on the 40m net, finishes crystal calibration fer QRPing, completes a keyer, & gets the computer back on line! PFA is slowly getting 4 hrs of 'CA Classic' tape edited to a half hr! And Tom & OPs send congrats to Phil, UJD, on the new call: KK6QE! XO offers TNX to all OPs who helped wid communications fer the CA. Classics benefit. And NTX sees NTY 'off to bed' after Tommi prepares the QTH fer an office reception. NTX remains behind to QSO wid DX8XK in a mobile home at Disneyland! XSJ works so many European & eastern countries (including DDR, E. Ger., before reunification!) that I won't mention them all here. Now Rolf prepares fer a guest frm ZL land! SDU views 3, 4 & 5 thou\$ bikes at the bicycle show! . . . & Foster tells OPs that the late Curtis LeMay was on the Laguna Hills machine mornings! ULU was mobile on his way home frm the Elk's Lodge in GG. XQR checks in wid XTJ on the side. They were 'on the track' ..racing or shooting, Nancy!?

10/10 15m phone net - W6ZE/HHC checks in ULU, IXN, & PEQ, Dan. Dan tells us that Roger, EGC, has a remission of his bladder cancer, & ULU is 'feeling chipper' as he tackles his Coast Guard course & tries to get his 'on-side' printing program to work, & IXN gives the parameters of the Juan de Fuca plate located off the coasts of Oregon & Wash.

10/10 2m phone net - W6ZE/IXN checks in NTX & NTY (early), ZH, BPX, NG7D, COT, OCB (John) & TK, JSV, VMS, PFA, XQR, RE, KAA, JVG, ZAU/M, VDP, XSJ, HHC, AF6C, QE, KDL, & VPP. Hot SA winds keep BPX & RE in the house as Wyatt tries to solve the mystery of 'no garlic'! RE airs Newline for OPs & reads a portion of ARRL bul. 36. ZH pays OCARO 90/91 dues fer the Club & tells all that W6RO, Queen Mary, is back on the air! NG7D gets himself into 48 deg. WX as he investigates the 'Ex calibre' Hotel in Las Vegas. JSV loses a half leg of his 220 & is ported by SCE to restore it after SA winds! Jim sends his guests frm

VK land back home wid half of 'Home Depot' in their suit cases! VMS stalks the rare DX wid 208 QSOs confirmed, enjoys Civil War documentary, & attends a German reunification celebration (XSJ missed it!) KC60CB, TK's harmonic, checks in wid his new call! . . . John, Jr is 13! . . . Congrats, John! TK is poorer now! . . . He promised John, Jr a rig wid the new license! PFA tells OPs that OT, Saul Miller, WB6FNX, becomes a Silent Key. . . & Tom's computer tells us that the race is on between the Jims & the Bobs in the Club. . . 6 Jims & 5 Bobs at present! XQR lays down her shot gun long enuf to complete 'RF' ! Nancy's new 386 computer should allow fer more time on the trap range. . . wid higher scores, too! OPs send congrats to XQR fer another fine 'RF' ! KAA backs up IN as the 3:00 AM emergency (EQ) drill is announced fer Sat. next. VDP joins VMS & XSJ wid FB DX! Larry works Faroe Is. & a ZK3 (Tokelau). KDL plans to join the Club at next meeting (another Bob!) XSJ phones FCC at (717) 337-1511, License Division, & inquires abt his license. When issued, Rolf will be KK6QW. Rolf also entertained a visitor frm ZL land, plus working numerous European countries DX! VPP puts a filter in the TS-440, & gets Yukon Sled Spec. Event Sta., & Chattanooga Choo-Choo, Ky, S.E. Sta. QSLs! HHC 'flies in & flies out'.

10/11 CW net - W6ZE/IXN checks in NG7D/QRP. John gets his absentee ballot & finds 2 Evans' listed there (no relation to IXN), & John will try to attend auction wid a VCR to go!

10/17 15m phone net - W6ZE/HHC checks in IXN, GDZ, & COU as Cincinatti is wrapping up 2 in the World Series! HHC & IXN hve 1 eye & ear on the TV, & others on the rig! GDZ is engrossed wid packet problems. HHC visits Lee Thompson, OCARC, late '70s-80s, recovering frm a stroke..HHC gets K6SR's old Drake working! And COU surprises OPs, checking in low band remote (440/15m)!

10/17 2m phone net - W6ZE/IXN checks in KAA, BPX, ZFY, NG7D, XQR, RE, VFS, VDP, HHC, ZH, COU, KDL, ESD, VMS, NTX & NTY, KK6QW/XSJ, YZG, ZAU, VPP/M, VIK, & JC... great check-in, OPs! BPX & Blanche visit MGM studios fer 1st time last Sun. No ball game fer KAA . . . Mike's watching the garage door light modulate wid his voice sigs! RE airs Newline . . . No amateur gear allowed in 6 Flags Amusement Parks! And Alex alerts OPs abt the German BSA amateur station, DA0BSA, operating on the air 10/20-21! WA6ZFY, Kent, joins Club last meeting. Kent lives in Costa Mesa. We'll see NG7D at the auction Fri, & John works 2 more states toward the 12m QRP/WAS. XQR, new computer on line, celebrates her ham license anniversary by helping her neighbor to become a ham. (Beautiful 'RF', Nancy!) VDP tells IXN that aluminum industrial epoxy is probably conductive! And HHC enjoyd the close Oakland/Cincinnatti game. ZH

Continued on Page 4

On the Nets - October, 1990 (Continued)

tells OPs that LA County declare amateur radio week fer Field Day, & Chris works too much DX on packet (145.68 connected to KK6BB) to mention here! COU tells OPs abt his 440/15 m hookup wid WA6TWF 440 system. IXN quizzes KDL, Bob, abt QTH, etc., & forgets to take notes! W9ESD tnx Club fer copy of 'RF'. Wid 30 yrs of CA. under his belt, Bob will attend the Auction. VMS, a new Club OP, has already written 3 articles fer 'RF' ! .Let's follow his lead, OPs ! The DX bug has bitten NTX & NTY..Tommi & Bob will give the Bencher paddle a gud workout! KK6QW/XSJ accepts congrats frm OPs on the new call! And Rolf & VMS work too much DX to mention here! QW will bring QSL cards to ULU fer WAS confirmation. YZG, guest of the RAF in Huntington, Eng., returns wid sore ankles, knees & buttocks frm the long air trip! ZAU wants a gud dual band ant. for 440/2m operation..The coupler must fit a 1/4ll x 20 thread/in. bolt. (Call Brian at 669-9828 wid info.) VPP gets a PK-232. Bud will venture into packet after a 2 wk. vacation in N. CA. KB6VIK 'flies in & flies out', & OPs are glad to hear JC bk agn after house problems & new job position are resolved! Mark will be working wid the BSA Food Drive.

10/24 15m phone net - W6ZE/HHC checks in IXN, NG7D, VDP, GDZ, RND, & ULU. NG7D makes a QRP 15m CW contact in Rwanda, Afr. VDP is ready fer confirmation of QSOs fer the DXCC award! GDZ will hook up wid HHC to correct a packet problem, & IXN registered weak sigs frm RND as John asked HHC abt program at next Club meeting. ULU installs a 3 1/2" disc drive in the computer, & now the printer doesn't work!

10/24 2m phone net - W6ZE/IXN checks in BPX, RE, NG7D, QW, KAA, JSV, XQR, RND, VDP, VMS, ULU, ESD, DLA, HHC, ZAU. BPX & Blanche go to 'apple country', & Wyatt's arthritis 'puts him down'! RE tells NG7D that BTI is prosecuted fer mail fraud, etc. Alex also helps OPs provide communications fer the Cystic Fibrosis Bikeathon 1 plus airing a very interesting Newline on upcoming WARC meeting ! VMS provides NG7D wid QSL info fer John's Rwanda contact, & QW has 87 DX countries confirmed as he works 15 new countries & loses a Morocco contact! KAA upgrades to Adv. last Sat . .Congrats, Mike ! And JSV & EZS load the car wid meatloaf as they prepare for the onslaught of 50 senior citizens at the Church tomorrow. ULU connects wid packeers HHC & GDZ. .no response. .HHC will contact ULU by landline! Will XQR increase her score by beating her present 'll out of 25' plateau at Trap shooting (as she 'zeroes in' on the beady eyes of the 'hanging racoon' at the QTH)?..more later! RND sounds great on the new 2m Alinco 110, & wid a new roof on the QTH, John asks IXN abt the Seismic Precursor Net on 145.46. VMS gives all OPs our zone #, 5903, fer the World-wide DX Contest this weekend, & Bill mentions 4 of his notable DX contacts: CY9CF, St. Paul Is.; TA5KA, Turkey; Marion Is.,

ZS8MI; & 9N1MM, Fr. Moran! ESD goes to the Club auction wid QW & VDP, & meets Bill, VMS. DLA joins the group to find a much larger net. .When? How? Why? ZAU is house hunting in the Costa Mesa area, & Brian picks up 2 more rechargeable batteries fer emergency use. VDP keeps his regular sched wid his 'Texas Tanker' OP after checkin, & DXes wid 5W1XD!

10/25 15m CW net - W6ZE/IXN checks in RND & VMS. RND finishes installation of the dipole, after re-roofing, wid center raised to 33 ft. And drool, non-CW OPs..VMS came on net wid the 3 round KO of Douglas before TV announced the outcome of the fight! See what you miss by not joining us ! And RND quips, "I'd stay down for 2 minutes too, if I was getting 10 mil. .I'd be afraid I'd get shot if I stood up!"

10/31 15m phone net - W6ZE/HHC checks in IXN & RND. IXN treats ghost & goblins, while RND investigates the mysteries of the PK-232 & AMTOR, & HHC questions IXN abt the Campout, Nov 9-12, east of Mecca. CA., near the Orocopia Mts. HHC will curl up wid a book & do some reading after net!

10/31 2m phone net - W6ZE/IXN checks in BPX, RE, NG7D, RND, XQR, KAA, VDP, JSV, ESD, VMS, QW, DLA, & ZH. Wyatt gets a rub-down fer the ailing leg, & RE gives proposed freqs. affected by Dockets 90-314 & 90-357, repairs faucets in the Dale Jolly home, & works 2 R.C. Bloodmobiles ! RND needs info. on AMTOR operation, & enjoys sojourns wid Bicycle Club of Irvine. RE recommends GDZ to RND fer AMTOR info. XQR blasts 'beady eyed hanging creature' wid RF energy as Nancy tiptoes into DX in the WWDX contest wid 28 contacts in 10 countries, only to be attacked by the 'Tennessee Valley Indians'! Undaunted, Nancy dines wid Bill Pasternak & Bert Hicks of Newline fame! KAA handles older Halloweeners as Mike 'Tahitis' on 10 & 15m Sat. & Sun. VDP works Halloween station WO00 on 7.035 MHz, in Frankenstein, MO. And NG7D passes along adr. of Regency Electronics, Inc., Customer Service Dept., 7707 Records St., Indianapolis, Ind. 46226. (Caution! . .Regency may hve been absorbed by Uniden Corp!) JSV works on neighbor across the street. .SWL now, ham in the future! ? VMS gives QSL routes to NG7D, loves XQR's logging program, works 30+ hrs in the WWDX contest, amassing 487 K points wid 603 QSOs, 87 zones, & 199 countries..congrats, Bill! ESD runs out of treats & turns the lights off at 8:00pm. QW works 50 to 60 stations (selectively) in the WWDX contest. VDP looks fer choice prefixes, too. 10 & 20m abounds wid ghosts & goblins as ZH lists some interesting calls: C0FIN, GH0UL, BLOOD, &, UB2DED! DLA investigates the mysteries of packet, too, catching RND & HHC calls as he hangs out arnd 145.070 & 145.090! de WB6IXN

Motel Packet - A Way to Pass Some Time

by Jim Roberts, N6XTJ

Living in a motel room for two weeks didn't sound like fun when in a small town with little entertainment in the evenings. One can only read so much, I didn't know anyone in town and TV is not a favorite entertainment. The light is fading fast in late October so outside activities could only entertain for an hour or so after the end of my day in the class room. I was looking forward to the class I was to attend a great deal but what to do with my evenings in Susanville was a mystery.

It shouldn't have been. All I had to do was look at what I did in the evenings at home. I packed batteries as a power supply and a little charger, a TNC, some wires, connectors, a soldering iron and a spare Mobile antenna beyond the little Radio Shack M-100 lap top computer that I take on trips and the 2 meter rig that I was going to use on a T-hunt on the way back anyway (meeting friends on Saturday's return to hunt didn't quite work out, but that is a different story). This could be my own little field day, how effectively could I set up and run temporarily somewhere else? And more interestingly what would it be like out of the crowds that are the Ham community of Southern California. What was VHF like in a small mountain community in Northeastern California?

I arrived on Sunday night got unpacked and put the parts of my station in the bureau drawer that I chose as my shack to keep out prying eyes if the maid should leave the drapes open (she usually did even when asked not to). I was tired from the trip so put off doing the rest and went to dinner. On Monday I wired the cable for the TNC to Radio (not a normally used combination), made a harness for the batteries (12V) to radio (12V), TNC (12V) and computer (6V). Then plugged in my new wiring, the antenna (a mag mount on a metal ice chest) and the RS232 cable. I tuned to a Packet frequency that is always busy here and nothing! I had check the cables all out and the radio and could hear the packets with a Handy when I tried a connect. I tried another frequency and still nothing. This was not working well, but I had come prepared, I told myself, as I went to my

paper work for the list of Nodes and frequencies for northern California I had downloaded at home before I left. It wasn't there! Well I'll just try the local repeater, the repeater guide wasn't there either. In the morning a check of the computer screen showed no overnight long haul traffic on 145.01 into the valley.

A few questions in town that evening did net me the information that a local shop sold all kinds of radio gear, commercial, Amateur, "everything!" they said. Not so, but he did sell scanners and did have a list of local frequencies for them, it listed a "Ham simplex repeater" sic. I still hadn't heard anything in three days of scanning the 2 meter band with my mobile, so what could I lose? I guessed at a -600 mhz offset and... I was in business, at least the repeater could hear me. I was able to make one contact and asked about local packet then "N6XTJ this is KJ6MD, the name is Benny." I really was in business now. We had a long chat and I now had frequency and Calls for the local node as well as what and where I could reach. I had left my MBX and station on the air and had mail waiting shortly after getting on the air and later that evening; a nice keyboard to keyboard chat.

It turned out to be a close knit amateur community. I met the wife of another local operator (who "takes care of the repeater" I was using) at the historical society (I had noticed the call on the license plate on the only other car in the lot). She asked right away if I'd met Benny yet and if I'd talked to her husband or son. There are only about 6 packet operators in the Susanville area and the voice repeater seldom has traffic on it. If you want to chat with someone you don't feel like you are hogging the machine no matter how long you talked. At rush hour there might be 4 people in the group on a busy night and I'm not sure I heard anyone asking for a break, kind of like 1.2 Ghz is here.

It was a quiet and peaceful little mountain valley with a quiet and peaceful little amateur community that reflected the town's life style. You could talk all you wanted or you could get on packet. It was a little tough to get to a PBBS but you could get to RNO

in Reno or RDG in Redding and out from there with little problem anytime you wanted if the nodes antenna was pointed at the one you wanted. If not you just connected to the other. The delays were no longer than here from node to node.

My station operated well and ran about 80 hours on the batteries and charger before I shut the station off for the weekend to let the batteries recharge while I went to Lassen Volcanic National Park. I'm sure that a handy talky and wall adapters to power the station would have worked as well but I wanted to test this system. I finally found my repeater directory, once I didn't need it but am still looking for the node list (I'll just have to download another some time). More importantly I enjoyed my time in Susanville, in many ways it reminded me of my home town when I was young. The air was clean, the people friendly and the pace of life much slower. I got in some hiking and fly fishing and enjoyed the peace and quiet. The class was a good one and the time away from Homicide detectives who needed answers was also a pleasant break. The amateurs on 2 meters added to that enjoyment and I need to get a packet message to Benny with my thanks for that.

I enjoy my work and life here as well as 2 meter in So. Cal. but, as in Susanville, it seems to reflect our life style, a little rushed and crowded. As I said the 1270 band reminds me of the Susanville repeater a bit, so if you have heard of a lot of work for the Lab and me on the news and can't reach me on 2 meters I may have slipped away to the fresh air, peace and quiet (try me on 1.2, it's a long drive to Susanville).

LOST!

Did you find a manual for an EICO Engine Analyzer after the Club Auction?

It was lost by Dick, WD6X

Please call him at

(714) 432-8951

if you can help.

Commercial 900 MHz Spread-Spectrum Radio LANs

by Kent Hastings, WA6ZFY

Rumors that amateur spectrum will be turned over to commercial users are circulating again. There is talk of 220 MHz, 440, and even the 146-148 MHz portion of the 2-meter band going away if some international committee decides against us. Of course, these threats are not new - Wayne Greene predicted certain doom last time, yet we got more bands, so perhaps all is not lost.

From listening to 2-meters, I hear about activity on shortwave, 220, 440, 1.2 GHz, 10 GHz, but I had never heard of anything happening at 900 MHz until I read about spread-spectrum packet LANs. It seems that 902-928 MHz is a shared allocation amateur band, and in April of 1989 the FCC authorized the use of low-power spread-spectrum by commercial vendors for unlicensed end users. So here is an actual case of an unused amateur band being used for other purposes.

Spread-spectrum is a modulation technique that was originally designed for signal security in military applications. In the 1950's, the approach was to transmit random thermal noise in a resistor on one band, and the same noise modulated with a message in another. The authorized receiver would detect the difference between the unmodulated and modulated noise signals to recover the message. This was called a Transmitted Reference approach, and was not the most secure way to do things because the key was broadcast on the air. Now, spread-spectrum systems use a Stored Reference approach, usually a digital pseudo-noise code generator, to synchronize the transmitter and receiver. Three popular techniques (which are often combined) to spread signals are frequency-hopping, direct-sequence, and time-hopping. Frequency-hopping spreads a signal by changing the carrier frequency many times a second. Amateur systems using direct-digital synthesis can hop up to 2000 times per second. Direct-sequence (not to be confused with direct synthesis) combines each message bit with several pseudo-random "chip" bits to increase the bandwidth. Time-hopping introduces jitter into a signal to thwart a regular periodic jamming signal. For example, picture a TV image of a letter sent at random intervals,

through heavy noise, and each transmission adding more details in memory at an image-processing receiver.

Spread-spectrum adds complexity to a communication system, and reduces maximum throughput because of all the redundancy needed to spread a given message signal. But there are benefits. A spread signal is very dilute at any one frequency, and is often below the noise threshold of a conventional receiver. A channel is defined as the spreading code used to spread the signal, instead of a given frequency, so spectrum management can be avoided! Imagine, no TASMA group to worry about, just pick one of an infinite number of mathematical codes to spread your signal and go to it. This feature is called CDMA (Code Division Multiple Access). Current amateur regulations restrict us to a set of known shift-register sequences, and prohibit hybrid combinations of frequency-hopping or direct-sequence. In other words, the general prohibition against codes and ciphers still apply. But our commercial competitors for the band are under no such restriction.

A LAN is a local area network, which is a system of connecting PC's together with high-speed (compared to modems) data connections so that members of a work group can efficiently share peripherals and access the same set of data. A LAN is composed of full-power computers, in contrast to a time-sharing network, where a central computer controls low-cost "dumb" terminals. Computers in a LAN configuration are said to be "networked" and typically are connected to a central "server" or to each other using coaxial cable. Before the ink was dry on the FCC authorization for commercial spread-spectrum, Telesystems SLW of Don Mills, Ontario, Canada began shipping a product that could connect nodes 6 km apart at 200,000 bps. A few months later, Agilis Corp in Mountain View announced their Agilis System, a portable notebook computer with a communications "slice" (hardware module) that provided 230,000 bps speed up to 1 km outdoors and 100 meters indoors. The receiver required 2 watts and the transmitter about 15 watts, and supported up to 16 user defined chan-

nels. O'Neill LAWN system and Hillis Tech's Airlink system were announced at the end of 1989. They are low-priced, very simple peripheral wireless peripheral connectors using spread-spectrum packet radio. Inserting a circuit board in your PC is easier than running coax between workstations or between floors in a building. In October of 1990, NCR announced its Wave-LAN network. It transmits data at 2 Mbps (2,000,000 bps - compare that to 9,600 bps fax or data modems). The NCR product is a single card that fits in the PC AT, and has a 3-inch square box containing an omni-directional antenna that is mounted nearby, such as on the PC cabinet or a nearby wall or office partition.

A month after the NCR announcement, Motorola unveiled its WIN (wireless in-building network) system. WIN moves data around at 15 Mbs! But, unlike the other systems described here, it doesn't use 900 MHz spread-spectrum. WIN uses 18-GHz licensed channels (Motorola obtained the spectrum and will let you use a number of channels if you buy their system). An article in *Electronic Engineering Times* (10/29/90 issue) casts doubts that the system will be approved internationally, since the spectrum will have to be coordinated on a country by country basis. Does this mean that 900 MHz spread-spectrum is already an international standard? While most amateurs involved with packet struggle with 1200 and 9600 bps modems, industry is providing multi-megabit per second speed via radio to the public. Have we lost our technological edge? Does amateur radio deserve to be dumped into the bit bucket of history? Have we failed to read the graphics on the display? Maybe not. The ads for the ARRL Handbook mention spread-spectrum and 2 Mbps microwave projects. 75% of the world's population live in a rural setting without any access to phone service. Perhaps creating a wide area network using radio will prove effective in getting these folks in touch with emergency services and conveniences we take for granted. If hams can move in and consistently provide service where the conventional providers have not, we will truly win the hearts and support of the public, and we won't have to worry about losing precious bandwidth.

O.C.A.R.C. HOLIDAY BANQUET

WHEN: SUNDAY DECEMBER 9, 1990
TIME: 6:00 PM
WHERE: BLACK ANGUS RESTAURANT
 12900 EUCLID AVENUE
 GARDEN GROVE, CA
 (714) 638-9981

COST: \$15.50 ADULTS (INCLUDES TAX & TIP)
 \$ 3.95 CHILDREN (UNDER 12 YRS. OLD)

ADULT'S MENU

SOUP OR SALAD

ENTREE: CHOICE OF ONE

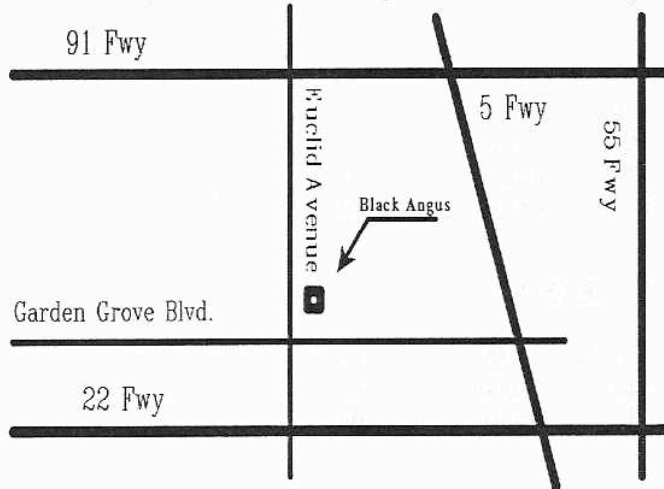
PRIME RIB
 TERIYAKI CHICKEN
 BBQ CHICKEN
 STEAK
 FISH

CHILDREN'S MENU

CHICKEN
 HAMBURGER

VEGETABLE
 RICE OR BAKED POTATO
 DESSERT

VEGETABLE
 POTATO
 DESSERT



Please call Jane Breller at (213) 866-2077 with choice and number of people that will be coming. She needs the information by Monday, November 19, 1990.

A GIFT EXCHANGE WILL BE HELD FOR THE ADULTS, SO -- OM'S BRING A GIFT FOR AN OM & XYL'S BRING A GIFT FOR AN XYL (\$5.00 LIMIT). CHILDREN WILL BE PROVIDED WITH A CHRISTMAS STOCKING BY THE CLUB.

LOCAL FIELD DAY SCORES - 1990

by Ken Konechy, W6HHC, and Frank Smith, WA6VKZ

CLASS	# IN CALIF	# IN USA	CLUB/ORGANIZATION	CALL	QSO's	POINTS
2A	9	204	McDONNELL-DOUGLAS ARC	W6VLD + KC6EXM	1,267	2,788
2A	12	257	MORENO VALLEY ARA	K6KB + KC6EHY	513	2,282
2A	14	335	ORANGE CO. RACES	W6HK + N6WOW	703	1,814
2A	15	382	FULLERTON RC	W6ULI	489	1,546
3A	1	2	HUGHES FULLERTON ARC	N6AW + N6RNG	3,840	11,306
3A	5	31	JAPANESE-AMERICAN ARA	W6AN + KB6GIT	1,555	5,068
3A	10	76	CORONA/NORCO ARC	KJ6B + K6LEF	1,452	3,854
4A	5	28	RIVERSIDE CO ARA	W6TJ + KB6ZCX	1,452	4,438
4A	6	33	ORANGE CO ARC	W6ZE + WA6PFA	1,624	4,292
5A	2	3	UNITED RAC	K6AA + KA6AAA	3,113	10,410
6A	1	4	WEST COAST ARC	WD6X + N6YLQ	2,968	9,044
8A	1	4	ARA LONG BEACH	W6RO	1,426	4,110

Welcome to the New OCARC Members!

(At the September Meeting)

Julie Schneck KC6HRM
 James Moe N6ZOB
 Kent Hastings WA6ZFY

(At the October Breakfast)

Richard Heryford WD6ESZ
 Ricardo Belletti KC6FMF
 Jim Roberts N6YLQ
 George Shelton KK6KN

CLUB FUNCTIONS

MONTHLY MEETING: 3rd Friday of each month, 7:30PM at MERCURY SAVINGS & LOAN
 Nov. 16th - Elections, Speaker 1095 Irvine Blvd. (4th St. becomes Irvine)
 Tustin, CA. Talk-in on 146.55 MHz
 Dec. 9th - Banquet (Sun. 6:00 PM)
 Jan. 18th - Meeting (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 Restaurant
 Dec. 1st 2314 E. Seventeenth Street Santa Ana, CA. (714) 543-0872
 Jan. 5th (Second bldg. west of the 55 Freeway)

CLUB NETS

BAND	MODE	DAY	LOCAL TIME	FREQ MHz	SPLIT	PL	OPERATOR
2 Meters	FM	Wed	2030 hrs.	146.550	smplx	na	WB6IXN
15 Meters	SSB	Wed	2000 hrs.	21.375*	smplx	na	W6HHC
15 Meters	CW	Thu	2000 hrs.	21.175*	smplx	na	??????

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

ARES DISTRICT NETS

BAND	MODE	DAY	LOCAL TIME	FREQ MHz	SPLIT	PL	OPERATOR
2 Meters	FM	Mon	1900 hrs.	145.220	-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 - 146.535 WB6FCP; Tustin - 146.505 WA6VKZ; Santa Ana - 147.585 W6HHC

ORANGE COUNTY AMATEUR RADIO CLUB, INC.
P.O. Box 3454
TUSTIN, CA 92681



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Please Rush!!