

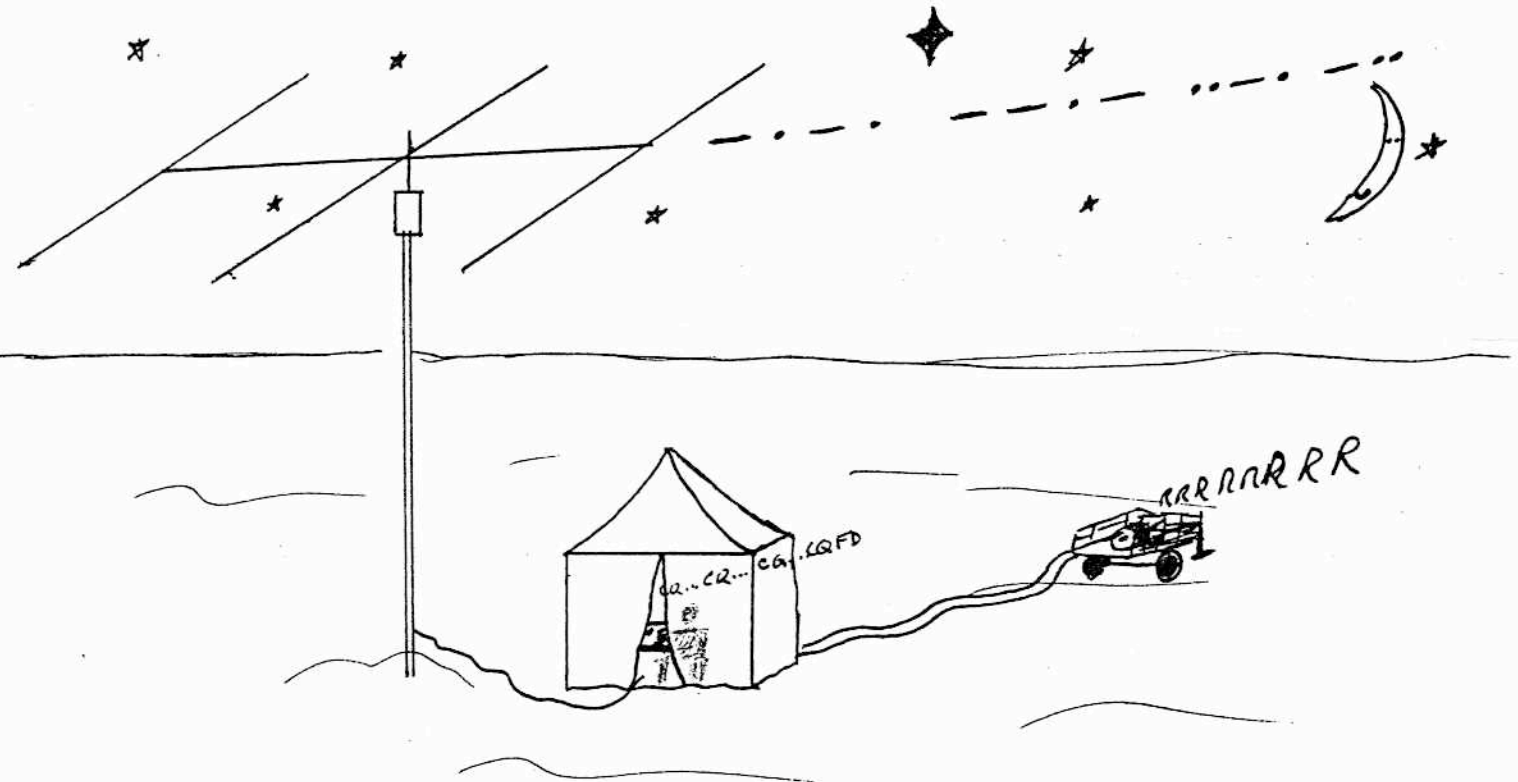


ORANGE COUNTY AMATEUR RADIO CLUB

VOL. XXX NO. 6

P.O. BOX 3454 TUSTIN, CA.

JUNE 1989



Field Day: last year's site at Centennial Park. - June 24-25 - This year: same.

CLUB BOARD OF DIRECTORS

President	Frank Smith	WA6VKZ	730-7142
Vice President	John Roberts	WA6LAB	540-7368
Secretary	Bob Tegel	KD6XO	531-0926
Treasurer	Mark Stanford	KJ6JC	991-7398
Activities	Ken Konechy	W6HHC	541-6249
Membership	Tom Thomas	WA6PFA	771-2917
Public Relations	Jim Talcott	N6JSV	838-5395
T.V.I. Chairman	Bob Eckweiler	AF6C	639-5074
Member at Large	Ron Toering	KB6EZF	971-5180
Member at Large	Kei Yamachika	W6NGO	538-8942

CLUB APPOINTMENTS

Club Historian	Bob Evans	WB6IXN	543-9111
W6ZE Trustee	Bob Eckweiler	AF6C	639-5074
R.F. Editor (Act.) ..	Mark Stanford	KJ6JC	991-7398

CLUB FUNCTIONS

MONTHLY MEETING: 3rd Friday of each month, 7:30PM at:
MAY 19, 1989 MERCURY SAVINGS & LOAN TUSTIN, CA.
1095 Irvine Blvd. (4th St. becomes Irvine)
JUNE 16, 1989 Talk-in on 146.55 MHz

JULY 21; 1989 (Take the 4th St. exit of the 55 FREEWAY
and head east. Continue about two blocks
past Newport Blvd. It's on the left.)

CLUB BREAKFAST: 1st. Saturday of each month, 8:00AM at:
JUNE 3, 1989 DENNY'S RESTURANT
2314 E. 17TH Street
JULY 1, 1989 Santa Ana, CA. (714) 543-0872
AUGUST 3, 1989 (Second building west of the Newport (55) Freeway)

CLUB NETS

BAND	MODE	DAY	LOCAL TIME	FREQ MHz	SPLIT	PL	OPERATOR
2 Meters	FM	Wed	2100 hrs.	146.550	smplx	na	W6HHC
15 Meters	SSB	Wed	2000 hrs.	21.375*	smplx	na	WB6IXN
15 Meters	CW	Thu	2000 hrs.	21.175*	smplx	na	WB6IXN
2 Meters	PKT	Wed	1900 hrs.	145.090	smplx	na	W6HHC

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

ARES DISTRICT NETS

2 Meters	FM	Mon	1900 hrs.	146.220	-600	1A	N6HQI	1
2 Meters	FM	Mon	~1915 hrs.	145.340	-600	4Z	WA6VKZ	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, N6DWF; Tustin: 146.505, WA6VKZ; Santa Ana: 147.585, W6HHC

Field Day Rules

1) **Eligibility:** Field Day is open competitively to all amateurs in the ARRL/CRRL Field Organization (plus Yukon and NWT). Foreign stations may be contacted for credit but are not eligible to compete.

2) **Object:** To work as many stations as possible on any or all amateur bands (except 10 MHz) and, in doing so, learn to operate in abnormal situations under less-than-optimum conditions. A premium is placed on skills and equipment developed to meet the challenge of emergency preparedness and to acquaint the public with the capabilities of Amateur Radio.

3) **Dates:** June 24-25, 1989.

4) **Field Day Period:** From 1800 UTC Saturday until 2100 UTC Sunday. Class A and Class B (see below) stations who do not begin setting up until 1800 UTC Saturday may operate the entire Field Day period of 27 hours. Others must begin their setup no earlier than 1800 UTC Friday and may operate no more than 24 consecutive hours; ie, once on-the-air Field Day operation has started, it must end 24 hours from that point.

5) **Entry Categories:** Field Day entries are classified according to the maximum number of simultaneous transmitted signals, followed by the designation of the nature of the individual or group participation. Below 30 MHz, once a transmitter is used for a contact on a band, it must remain on that band for at least 15 minutes. During this 15-minute period, the transmitter is considered to be transmitting a signal, whether it is or not, for purpose of determining transmitter class. Switching devices prohibited.

(Class A) Club/nonclub portable: Club groups (or nonclub groups with three or more licensed amateurs) set up specifically for Field Day. Such stations must be located in places that are not regular station locations, and must use no facilities installed for permanent station use, nor any structures installed permanently for Field Day use. Stations must be operated under one call sign (except when the Novice/Technician position is used) and under the control of a single licensee or trustee for each entry. All equipment (including antennas) must lie within a circle whose diameter does not exceed 300 meters (1000 feet). All contacts must be made with transmitter(s) and receiver(s) operating independent of commercial mains. Entrants who, for one reason or another, operate a transmitter or receiver from commercial mains for one or more contacts will be listed separately at the end of their class.

Any Class A group whose entry classification is two or more transmitters (non-Novice) may also use one Novice/Technician operating position (Novice bands only) without changing its basic entry classification. For Field Day purposes only, any Canadian "Amateur" licensee, who has been licensed for less than six months prior to Field Day, shall be considered a "Novice" to provide a means for Canadian Field Day Class A stations with two or more transmitters to participate with a "Novice/Technician" operating position. This "Canadian Novice station" is restricted to the US Novice sub-bands and power/mode restrictions. The Novice/Tech-

Send for Your Field Day Package

Send to HQ a 9- x 12-inch self-addressed envelope with 4 units of First Class US postage or 4 IRCs for the official Field Day Entry Package. This package includes 1 publicity kit, 1 Field Day summary sheet, 1 large dupe sheet with instructions and a check list to ensure that your entry is complete. If you require more dupe sheets, indicate so in your request and affix 1 unit of additional First Class postage to your SASE for each two additional dupe sheets requested.

nician station (including antennas) should be set up and operated by Novice and Technician licensees and should use the call sign of one of the Novice/Technician operators.

(Class A—Battery) Club/nonclub portable: Club groups (or nonclub groups with three or more licensed amateurs) set up specifically for Field Day and all contacts are made using an output power of 5 W or less and the power source is other than commercial mains or motor-driven generator (eg, batteries, solar cells, water-driven generators). Other provisions are the same as for class A.

(Class B) One- or two-person portable: Nonclub stations set up and operated by not more than two licensed amateurs will be placed in Class B. Other provisions are the same as for Class A. One- and two-person Class B entries will be listed separately in the results.

(Class B—Battery) One- or two-person portable: Nonclub stations set up and operated by not more than two licensed amateurs and all contacts are made using an output power of 5 W or less and the power source is other than commercial mains or motor-driven generator (eg, batteries, solar cells, water-driven generators). Other provisions are the same as for Class A. One- and two-person Class B—Battery entries will be listed separately in the results.

(Class C) Mobile: Stations in vehicles capable of operating while in motion and normally operated in this manner, including antenna. This includes maritime and aeronautical mobiles.

(Class D) Home stations: Stations operating from permanent or licensed station locations using commercial power. Class D

W1AW Field Day Bulletin Schedule

In addition to the regular schedule detailed on page 90 of April QST, extra CW bulletins will be run at 1400 UTC (10 AM EDT), and extra phone bulletins at 1500 UTC (11 AM EDT) both Saturday and Sunday mornings.

stations may count contacts only with Class A, B, C and E Field Day groups for points.

(Class E) Home stations—emergency power: Same as Class D, but using emergency power for transmitters and receivers. Work stations in Class A, B, C, D and E.

6) **Exchange:** Stations in any ARRL/CRRL Section will exchange their Field Day operating class and ARRL/CRRL Section. For example, if your club group was planning to operate in the three-transmitter, Class A category from Missouri, you would send 3 A MISSOURI. Foreign stations send RS(T) and QTH.

7) Miscellaneous Rules:

A) Operators participating in Field Day may not, from any other station, contact for point credit the Field Day portable station of a group with which they participated.

B) A station used to contact one or more Field Day stations may not subsequently be used under any other call during the Field Day period. Family stations are exempted.

C) Each phone and each CW segment is considered as a separate band. All voice communication contacts are equivalent, and packet/RTTY/ASCII/AMTOR is counted as CW. A station may be worked once on each band. Crossband contacts are not allowed. The use of more than one transmitter at the same time in a single band is prohibited, except that a Novice/Technician position may operate on any Novice band segment at any time. No repeater contacts.

8) **Scoring:** Scores are based on the number of valid contact points times the multiplier corresponding to the highest power used at any time during the Field Day period, plus bonus points. Phone contacts count one point each, and CW contacts count two points each. Power multipliers: If all contacts are made using an output power of 5 W or less and if a power source other than commercial mains or motor-driven generator is used (eg, batteries, solar cells, water-driven generators), multiply by 5. If any or all contacts are made using an output power of 150 W or less, multiply by 2. Multiply by 1 if any or all contacts are made using an output power over 150 watts. Batteries may be charged while in use for Class C entries only. For other classes, batteries charged during the Field Day period must be charged from a power source independent of the commercial mains.

A) **Bonus points:** The following bonus points will be added to the score (after the multiplier is applied) to determine the final score. Only Class A and B stations are eligible for bonuses. Just check the box on the Field Day summary sheet to indicate that you qualify for the bonus, and attach the necessary proof.

1) **100% emergency power:** 100 points per transmitter for 100% emergency power. All equipment and facilities at the Field Day site must be operated from a source independent of the commercial mains. Example: A club operating 3A, using 100% emergency power, may claim 300 bonus points.

2) Public relations

A) **100 points for media publicity.** Publicity must be obtained or a bona fide attempt to obtain publicity must be made.

Evidence must be submitted in the form of a newspaper clipping, a memo from a BC/TV station stating that publicity was given or a copy of the material that was sent to the news media for publicity purposes.

B) 100 points for physically locating in a public place (eg shopping center, parks, etc) with significant access by the public. The intent here is for Amateur Radio to be on display to the public.

C) An additional 100 points can be earned by such display stations in public places actively conducting an information booth for the visiting public and dispensing information handouts, maintaining visitor's log, etc, as an information/recruiting tool for Amateur Radio. Evidence submitted for both (B) and (C) may consist of copies of handouts, visitor's log, brief report on activities conducted, photos, etc.

3) *Message origination*: 100 points for origination of a message by the club president or other Field Day leader, addressed to the SM or SEC, stating the club name (or nonclub group), number of operators, field location and number of ARES members participating. The message must be transmitted during the Field Day period, and a fully serviced copy of it must be in standard ARRL message form or no credit will be given.

4) *Message relay*: 10 points for each message received and relayed during the Field

Day period, up to a maximum of 100 points. Copies of each message, properly serviced, must be included with the Field Day report.

5) *Satellite QSO*: 100 points can be earned by completing at least one QSO via satellite during the Field Day period. The repeater provision of Rule 7C is waived for satellite QSOs. A satellite station does not count as an additional transmitter. On the summary sheet, show satellite QSOs as a separate "band."

6) *Natural Power*: Field Day groups making a minimum of five QSOs without using power from commercial mains or petroleum derivatives can earn 100 points. Intuitively, this means an "alternate" energy source of power such as solar, wind, methane or grain alcohol. This includes batteries charged by natural means (not dry cells). The natural-power station counts as an additional transmitter. If you do not wish to change your entry class, take one of your other transmitters off the air while making the natural-power QSOs. A separate list of natural-power QSOs should be enclosed with your entry.


7) *WIAW message*: A bonus of 100 points will be earned by copying a special ARRL Field Day bulletin sent over WIAW on its regularly announced frequencies just before and during Field Day. This message can be received directly from WIAW or by any relay method. An accurate copy of the received message should be included in your

Field Day report.

8) *Packet radio*: 100 points can be earned by completing at least one QSO on packet radio during the Field Day period. The repeater provision of Rule 7C is waived for packet-radio QSOs. A packet station does not count as an additional transmitter. On the summary sheet, show packet radio QSOs as a separate "band."

9) *Reporting*: Entries must be postmarked by July 25, 1989. No late entries can be accepted. A complete entry consists of an official ARRL summary sheet (or reasonable facsimile) and a list of stations worked on each band/mode during Field Day, plus bonus proof. The list of stations worked on each band or mode may take the form of official ARRL dupe sheets or an alphanumeric listing of call signs worked per band and mode. This list may be computer-generated. Incomplete or illegible entries will be classified as checklogs. A copy of Field Day logs should be kept by your Field Day group but should not be sent in unless specifically requested later by ARRL.

10) *Condition of Entry*: Each entrant agrees to be bound by the provisions, as well as the intent, of this announcement, the regulations of his or her licensing authority and the decisions of the ARRL Awards Committee.

11) *Disqualifications*: See January 1989 QST, page 104. 

Resonant Frequency Formulas

$$f = \frac{1}{2 \pi \sqrt{LC}} = \frac{159.2^*}{\sqrt{LC}}$$

$$L = \frac{1}{4 \pi^2 f^2 C} = \frac{25,330^*}{f^2 C}$$

$$C = \frac{1}{4 \pi^2 f^2 L} = \frac{25,330^*}{f^2 L}$$

*in these formulas f is in kc and L and C are in microunits.

Impedance Formulas

$$Z = \sqrt{R^2 + (X_L - X_C)^2} \text{ (for series circuit)}$$

$$Z = \frac{RX}{\sqrt{R^2 + X^2}} \text{ (for R and X in Parallel)}$$

Decibel Formulas

When impedances are equal,

$$\begin{aligned} \text{db} &= 10 \log \frac{P_1}{P_2} = 20 \log \frac{E_1}{E_2} \\ &= 20 \log \frac{I_1}{I_2} \end{aligned}$$

When impedances are unequal,

$$\begin{aligned} \text{db} &= 10 \log \frac{P_1}{P_2} = 20 \log \frac{E_1 \sqrt{Z_2}}{E_2 \sqrt{Z_1}} \\ &= 20 \log \frac{I_1 \sqrt{Z_1}}{I_2 \sqrt{Z_2}} \end{aligned}$$

Efficiency (for any device)

$$\text{Eff} = \frac{\text{output}}{\text{input}}$$

Q or Figure of Merit

$$Q = \frac{X_L}{R} \text{ or } \frac{X_C}{R}$$

Transformer Relationships

$$\frac{N_p}{N_s} = \frac{E_p}{E_s} = \frac{I_s}{I_p} = \sqrt{\frac{Z_p}{Z_s}}$$

Frequency and Wavelength

$$f_{\text{kc}} = \frac{3 \times 10^5}{\lambda_{\text{meter}}} \quad \lambda_{\text{meter}} = \frac{3 \times 10^5}{f_{\text{kc}}}$$

$$f_{\text{Mc}} = \frac{3 \times 10^4}{\lambda_{\text{centimeter}}} \quad \lambda_{\text{cm}} = \frac{3 \times 10^4}{f_{\text{Mc}}}$$

$$f_{\text{Mc}} = \frac{984}{\lambda_{\text{feet}}} \quad \lambda_{\text{feet}} = \frac{984}{f_{\text{Mc}}}$$

Length of Antennas

Formulas assume velocity of propagation equal to 95% of the velocity of light.

$$L_{\text{feet}} = \frac{234}{F_{\text{Mc}}} \text{ (for quarter-wave antenna)}$$

$$L_{\text{feet}} = \frac{468}{F_{\text{Mc}}} \text{ (for half-wave antenna)}$$

Conversion Chart

Voltage and Power Ratios to Decibels

The basic chart below indicates the number of decibels (dB) corresponding to the listed ratios of voltage or power over the range of -20 to +20 dB. For voltage or power ratios greater than those included in the chart, the ratio can be broken down into a product of two numbers, the value in dB for each found separately, and the two results added. Example:

2,000:1 to dB, express 2,000 as 2×10^3 ; the number of dB corresponding to a power ratio of 2 is very nearly 3, and the number of dB for a power ratio of 10^3 is 30. Therefore, the power ratio of 2,000:2 is approximately 30 dB + 3 dB = 33 dB. In the lower right-hand corner of the chart dB values for voltage and power ratios of integral powers of 10 are given.

Voltage Ratio	Power Ratio	-dB+	Voltage Ratio	Power Ratio	Voltage Ratio	Power Ratio	-dB+	Voltage Ratio	Power Ratio	Voltage Ratio	Power Ratio	-dB+	Voltage Ratio	Power Ratio
1.000	1.000	0	1.000	1.000	.447	.200	7.0	2.239	5.012	.200	.0398	14.0	5.012	25.12
.989	.977	0.1	1.012	1.023	.442	.195	7.1	2.265	5.129	.197	.0389	14.1	5.070	25.70
.977	.955	0.2	1.023	1.047	.437	.191	7.2	2.291	5.248	.195	.0380	14.2	5.129	26.30
.966	.933	0.3	1.035	1.072	.432	.186	7.3	2.317	5.370	.193	.0372	14.3	5.188	26.92
.955	.912	0.4	1.047	1.096	.427	.182	7.4	2.344	5.495	.191	.0363	14.4	5.248	27.54
.944	.891	0.5	1.059	1.122	.422	.178	7.5	2.371	5.623	.188	.0355	14.5	5.309	28.18
.933	.871	0.6	1.072	1.148	.417	.174	7.6	2.399	5.754	.186	.0347	14.6	5.370	28.84
.923	.851	0.7	1.084	1.175	.412	.170	7.7	2.427	5.888	.184	.0339	14.7	5.433	29.51
.912	.832	0.8	1.096	1.202	.407	.166	7.8	2.455	6.026	.182	.0331	14.8	5.495	30.20
.902	.813	0.9	1.109	1.230	.403	.162	7.9	2.483	6.166	.180	.0324	14.9	5.559	30.90
.891	.794	1.0	1.122	1.259	.398	.159	8.0	2.512	6.310	.178	.0316	15.0	5.623	31.62
.881	.776	1.1	1.135	1.288	.394	.155	8.1	2.541	6.457	.176	.0309	15.1	5.689	32.36
.871	.759	1.2	1.148	1.318	.389	.151	8.2	2.570	6.607	.174	.0302	15.2	5.754	33.11
.861	.741	1.3	1.161	1.349	.385	.148	8.3	2.600	6.761	.172	.0295	15.3	5.821	33.88
.851	.724	1.4	1.175	1.380	.380	.145	8.4	2.630	6.918	.170	.0288	15.4	5.888	34.67
.841	.708	1.5	1.189	1.413	.376	.141	8.5	2.661	7.079	.168	.0282	15.5	5.957	35.48
.832	.692	1.6	1.202	1.445	.372	.138	8.6	2.692	7.244	.166	.0275	15.6	6.026	36.31
.822	.676	1.7	1.216	1.479	.367	.135	8.7	2.723	7.413	.164	.0269	15.7	6.095	37.15
.813	.661	1.8	1.230	1.514	.363	.132	8.8	2.754	7.586	.162	.0263	15.8	6.166	38.02
.804	.646	1.9	1.245	1.549	.359	.129	8.9	2.786	7.762	.160	.0257	15.9	6.237	38.90
.794	.631	2.0	1.259	1.585	.355	.126	9.0	2.818	7.943	.159	.0251	16.0	6.310	39.81
.785	.617	2.1	1.274	1.622	.351	.123	9.1	2.851	8.128	.157	.0246	16.1	6.383	40.74
.776	.603	2.2	1.288	1.660	.347	.120	9.2	2.884	8.318	.155	.0240	16.2	6.457	41.69
.767	.589	2.3	1.303	1.698	.343	.118	9.3	2.917	8.511	.153	.0234	16.3	6.531	42.66
.759	.575	2.4	1.318	1.738	.339	.115	9.4	2.951	8.710	.151	.0229	16.4	6.607	43.65
.750	.562	2.5	1.334	1.778	.335	.112	9.5	2.985	8.913	.150	.0224	16.5	6.683	44.67
.741	.550	2.6	1.349	1.820	.331	.110	9.6	3.020	9.120	.148	.0219	16.6	6.761	45.71
.733	.537	2.7	1.365	1.862	.327	.107	9.7	3.055	9.333	.146	.0214	16.7	6.839	46.77
.724	.525	2.8	1.380	1.905	.324	.105	9.8	3.090	9.550	.145	.0209	16.8	6.918	47.86
.716	.513	2.9	1.396	1.950	.320	.102	9.9	3.126	9.772	.143	.0204	16.9	6.998	48.98
.708	.501	3.0	1.413	1.995	.316	.100	10.0	3.162	10.00	.141	.0200	17.0	7.079	50.12
.700	.490	3.1	1.429	2.042	.313	.0977	10.1	3.199	10.23	.140	.0195	17.1	7.151	51.29
.692	.479	3.2	1.445	2.089	.309	.0955	10.2	3.236	10.47	.138	.0191	17.2	7.244	52.48
.684	.468	3.3	1.462	2.138	.306	.0933	10.3	3.273	10.72	.137	.0186	17.3	7.328	53.70
.676	.457	3.4	1.479	2.188	.302	.0912	10.4	3.311	10.96	.135	.0182	17.4	7.413	54.95
.668	.447	3.5	1.496	2.239	.299	.0891	10.5	3.350	11.22	.133	.0178	17.5	7.499	56.23
.661	.437	3.6	1.514	2.291	.295	.0871	10.6	3.388	11.48	.132	.0174	17.6	7.586	57.54
.653	.427	3.7	1.531	2.344	.292	.0851	10.7	3.428	11.75	.130	.0170	17.7	7.674	58.88
.646	.417	3.8	1.549	2.399	.288	.0832	10.8	3.467	12.02	.129	.0166	17.8	7.762	60.26
.638	.407	3.9	1.567	2.455	.285	.0813	10.9	3.508	12.30	.127	.0162	17.9	7.852	61.66
.631	.398	4.0	1.585	2.512	.282	.0794	11.0	3.548	12.59	.126	.0159	18.0	7.943	63.10
.624	.389	4.1	1.603	2.570	.279	.0776	11.1	3.589	12.88	.125	.0155	18.1	8.035	64.57
.617	.380	4.2	1.622	2.630	.275	.0759	11.2	3.631	13.18	.123	.0151	18.2	8.128	66.07
.610	.372	4.3	1.641	2.692	.272	.0741	11.3	3.673	13.49	.122	.0148	18.3	8.222	67.61
.603	.363	4.4	1.660	2.754	.269	.0724	11.4	3.715	13.80	.120	.0145	18.4	8.318	69.18
.596	.355	4.5	1.679	2.818	.266	.0708	11.5	3.758	14.13	.119	.0141	18.5	8.414	70.79
.589	.347	4.6	1.698	2.884	.263	.0692	11.6	3.802	14.45	.118	.0138	18.6	8.511	72.44
.582	.339	4.7	1.718	2.951	.260	.0676	11.7	3.845	14.79	.116	.0135	18.7	8.610	74.13
.575	.331	4.8	1.738	3.020	.257	.0661	11.8	3.890	15.14	.115	.0132	18.8	8.710	75.86
.569	.324	4.9	1.758	3.090	.254	.0646	11.9	3.936	15.49	.114	.0129	18.9	8.811	77.62
.562	.316	5.0	1.778	3.162	.251	.0631	12.0	3.991	15.85	.112	.0126	19.0	8.913	79.43
.556	.309	5.1	1.799	3.236	.248	.0617	12.1	4.027	16.22	.111	.0123	19.1	9.016	81.28
.550	.302	5.2	1.820	3.311	.246	.0603	12.2	4.074	16.60	.110	.0120	19.2	9.120	83.18
.543	.295	5.3	1.841	3.388	.243	.0589	12.3	4.121	16.98	.108	.0118	19.3	9.226	85.11
.537	.288	5.4	1.862	3.467	.240	.0575	12.4	4.169	17.38	.107	.0115	19.4	9.333	87.10
.531	.282	5.5	1.884	3.548	.237	.0562	12.5	4.217	17.78	.106	.0112	19.5	9.441	89.13
.525	.275	5.6	1.905	3.631	.234	.0550	12.6	4.266	18.20	.105	.0110	19.6	9.550	91.20
.519	.269	5.7	1.928	3.715	.232	.0537	12.7	4.315	18.62	.104	.0107	19.7	9.661	93.33
.513	.263	5.8	1.950	3.802	.229	.0525	12.8	4.365	19.05	.102	.0105	19.8	9.772	95.50
.507	.257	5.9	1.972	3.890	.227	.0513	12.9	4.416	19.50	.101	.0102	19.9	9.886	97.72
.501	.251	6.0	1.995	3.981	.224	.0501	13.0	4.467	19.95	.100	.0100	20.0	10.000	100.00
.496	.246	6.1	2.018	4.074	.221	.0490	13.1	4.519	20.42		10^{-3}	30	10^3	
.490	.240	6.2	2.042	4.169	.219	.0479	13.2	4.571	20.89		10^{-4}	40	10^2	10^4
.484	.234	6.3	2.065	4.266	.216	.0468	13.3	4.624	21.38		10^{-5}	50	10^3	10^5
.479	.229	6.4	2.089	4.365	.214	.0457	13.4	4.677	21.88		10^{-6}	60	10^4	10^6
.473	.224	6.5	2.113	4.467	.211	.0447	13.5	4.732	22.39		10^{-7}	70	10^5	10^7
.468	.219	6.6	2.138	4.571	.209	.0437	13.6	4.786	22.91		10^{-8}	80	10^6	10^8
.462	.214	6.7	2.163	4.677	.207	.0427	13.7	4.842	23.44		10^{-9}	90	10^7	10^9
.457	.209	6.8	2.188	4.786	.204	.0417	13.8	4.898	23.99		10^{-10}	100	10^8	10^{10}
.452	.204	6.9	2.213	4.898	.202	.0407	13.9	4.955	24.55		10^{-11}	110	10^9	10^{11}
											10^{-12}	120	10^{10}	10^{12}

*** ON THE NETS ***

5/3 15m phone net - W6ZE/XO checks in IXN, VKZ, % WAØFBN (Jerry, Minneapolis, Mn), & YZG. XO says that NG7D is back frm Vegas, & XO & XYL spend all day at a horse show in San Diego, & Bob goes on a ride-along wid the Santa Ana P.D. this Fri. VKZ calls fer volunteers to help wid the American Diabetes Assoc. Bikeathon to be held 5/13. Frank needs 7 or 8 volunteers wid 2m handhelds, one portable & 1 semi-portable packet stations. Editor of next (May) 'RF' is VKZ. IXN listens to Seismic Precursor Net on 146.460 MHz, & YZG checks in at net's end. Were you feeding the dogs, Lu? 5/3 2m phone net - W6ZE/IXN checks in BPX, VKZ, IMP, JC, JSV, RE, PFA, RND, HHC, AF6C, W9NQ (Bob, Mojave Desert), & YZG. IXN & Net interfere wid Bob & his QSO. Bob graciously QSYs to another freq. BPX weeds garden & plants okra. VKZ repeats plea fer OPs fer Bikeathon (above). Lew, BHQ, leaves fer London tomorrow, & YZG & OPs wish Lew a safe journey home. IXN gives Lew a copy of 'RF' for the Guildford Club. RE plays vy interesting W.L. tapes, & Alex volunteers fer ADA Bikeathon on May 13! RE's XYL has colon exam wid successful negative results! Russian MIR Space Station blows a fuse & 2 amateurs exit space station & return to Earth. HHC has an 'intermittent auto', & OPs open up wid suggesstions: IXN:- the coil; RE:- the fuel pump or gas filter; PFA:- stuck float in carb; AF6C:- watch tachometer fer analysis of problem. We will eagerly await HHC's solution! RND can't go to watch 'Shuttle' landing, & John mentions freqs. fer OPs to monitor shuttle communications. JSV says Lew will be back in Sept. PFA also volunteers fer ADA Bikeathon. IMP & Jane attend 'RV' show in Long Beach. NØNE takes Chris thru every vehicle...& now Jane suffers frm 'tiredlegitis'! Chris picks up a new Yaesu dualbander fer 2m-440MHz! JC can't copy VKZ & Mark gives OP, Ed, instructions abt joining Club. RE mentions that Lakers just won the Division title! 5/10 15m phone net - W6ZE/XO checks in IXN, NG7D, YZG, & COJ. IXN copies over 500 earthquakes to disc frm Jan. 13 on. NG7D gets a FREE catalogue frm Dick Smith!!(but refuses to pay \$15 member's fee!) & John recovers frm a virus attack in time to dry out in Vegas fer 2 wks. XO feels last Sat.'s E.Q. at 11:08 pm, & YZG can't tell the difference between his 2 dogs after their 'butch' haircut!..& Lu discovers a break in the kitchen plumbing...A plumber & \$38 later, & Lu is back in business! Lu will also bring a geology book fer IXN at next Meeting. COJ will bring 2 silk screens of old 'RF' letterhead to next meeting fer Bob, UL. Dave also givs Lu info. on 'Flyer's Net', which meets on 7250 KHz at 8:00pm Thurs. eves. 5/10 2m phone net- W6ZE/IXN checks in LAB, IMP, SDU, YZG, AF6C, COJ, RE, PFA, BPX, HHC, N6NFA(Chino), UJD, & JC. LAB relays NFA info. to Net Control, & John rquests at least 2 more OPs fer Diabetes Bikeathon. IMP goes fishing wid the CLARA Rptr Grp at Lake Skinner (no luck!) Chris reports Dotty, IBP, & Al, IBR, in gud health (& nØne didn't even say 'Hi'!) Chris also picks up 2 Gen. Electronics pwr adaptors fer the HTs. SDU has a cheery fire in the fireplace. Foster is shopping fer a computer, & spent time getting a rental house ready to rent. YZG & PFA discuss Lu's experiments wid a 'pipe' capacitor. And AF6C tells OPs abt 3 fellow workers killed in a recent plane crash. RE plays 'Westlink' tapes, & calls Rep. McCandless abt 220MHz up-coming congressional committee meeting, collects 5 cans of trash frm arnd the QTH, & will help the Red Cross collect blood at Rockwell International tomorrow! BPX 'flies in & flies out'! HHC gets home leate frm work...pres. of company is in Europe! UJD is mobile & his sigs improve as he gets closer! COJ has 2 towers fer sale! JC checks in and says 'Hi' to all. 5/11 15m CW net- W6ZE/IXN checks in N6UYF/TEJ (congrats, RJ, on the upgrade), NG7D, & RND. NG7D tells IXN (confirmed by JSV) that Paper Clip III is a gud word processor fer the C-128 computer. RND is working on his photo QSL wid a pix of Bencher paddle on it. UYF is preparing to attend his homeowner's assoc. annual get-together, where RJ will discuss earthquake preparedness. NG7d says that Tom, PFA, has been experimenting

(On The Nets...cont'd -2): wid his 'Sam Says' program on packet...sounds intriguing! RND was going to the Mts. this weekend wid the RV...too cold, now! After net, IXN invites UYF to come & join the fun wid OCARC at FD! 5/17 15m phone net- W6ZE/NG7D, filling in for XO, who talks wid IXN before 2m net, checks in LAB, WZO, & IXN.. LAB loads the 40m ant. on 15m wid his TS-440 & an ant. tuner. John reminds OPs abt Armed Forces Day 40th Anniversary this weekend wid QSL card opportunities!...info in last QST. Then John 73s to have supper before 2m net. WZO announces a new BBS packet station, NN6U, linked wid W6US & W6QBS, on 145.68 MHz, & IXN tells Fried abt OCARC packet net. NG7D gets a hot lead on a local store that sells gel cell battery packs, 10 amp., wid charger! John may also win the Nev. QSO PARTY award for CA. once agn! Question!... What was Sandi, WZN, watching on Candid Camera?! 5/17 2m phone net - W6ZE/IXN checks in LAB, BPX, JSV, RE, ATK, UJD, PFA, & IMP. RE plays interesting 'Newsline' tapes (no longer Westlink)! Alex also reads Bull.#21 (5/12) which concerned a House committee meeting wid ARRL reps, etc., to hear the reasons why FCC should not remove the 2 bottom MHz. of the 220 MHz amateur band. If any OPs wish to make contact wid Alfred McCandless, a member of this committee, phone (202) 2255330, Al's phone in Wash., D.C., or address letters to him at Rm 2158, Rayburn House of Representatives, Wash., D.C. 20515. RVS is back in the Vet's Hosp. fer abt 2 mo. BPX sprinkles, rakes leaves, etc. Wyatt says, "No sun, no heat, no grow!" (hw abt the weeds, Wyatt?!) JSV finishes big QSL card fer Lew, BHQ, fer all OPs to sign at Club meeting. And UJD suggests that all OPs bring individual QSL cards to be sent to Lew. PFA announces 'Angels' are winning, & he will discuss C-128 wid IMP & JSV after net. IXN suggests that ATK bring manuals to Club meeting so OPs can help iron out some problems. LAB reminds OPs abt Armed Forces Day. We missed the 'Ken & Bob' show! RE says FD site overgrown wid weeds. And JSV says Tim Black, new Ham, may join us at meeting! 5/18 15m CW net - W6ZE/IXN checks in NG7D/QRP & N6UYF. RJ goes fer his General theory test next week (gud luck, RJ), & NG7D tells IXN that he hasn't seen any gud computer deals lately. IXN must soon upgrade his computer. John has had 'minor ground motion' last 2 mornings as pavement is being removed on MacArthur Blvd. near the QTH. RJ thought he felt a small quake just before net. IXN can't confirm it on the FXN repeater! We missed RND tonite! 5/24 15m phone net - W6ZE/XO checks in IXN, NG7D, & YZG. XO & XYL spend last eve. wid the horses, in utter chaos during fire which burned vy close to their barns! NG7D says new Ten-Tec QRP rig will be vy expensive, & XO & IXN comment on DX OP who charges for QSL cards! 5/24 2m phone net - Agn, W6ZE/IXN misses the 'Ken & Bob' show as he checks in BPX, LAB, IMP, JC, RE, NGO, & YZG. BPX finds 'worms' around garlic bulbs..Wyatt will 'declare war' on them tomorrow! He & Blanche will attend Union picnic on Sat. & Wyatt will receive his 45 yr pin! LAB checks in early, having talked wid an OP in Calif. City up to net time. John also reports success on numerous Armed Forces Day contacts. Bring the QSLs to meeting for all to see, John! IXN & IMP discuss IBR's XYL, Dotty, IBP, who will enter the hosp. in GG fer shoulder surgery next Wed. All OPs wish Dotty a quick recovery! RE congrats. LAB on Armed Forces Day successes, & Alex plays interesting 'Newsline' tapes! Alex also puts car in 'hospital' to get rid of 'humps & dents'...daughter borrows 2nd car..so Alex borrows a 'strange' vehicle! NGO, just back frm JA land, discusses gladiolas wid IXN, & tells all abt hsi new KW TM-231A wid pwr outputs of 5, 10, & 50 Watts fer mobile operation. 'My dogs walk all over me' says YZG's T-shirt..Lu reports everything quiet at the QTH..even the dogs!! Wedding bells ring fer JC's harmonic this Sat...Mark loses a daughter & gains a son-in-law! 5/25 15m CW net- W6ZE/IXN checks in John, NG7D. John works Armed Forces Day last Sat., & copies Secy message frm Dept. of Defense, & sent in his copy fer a QSL card. (RE & LAB also copy message). IXN gets an XYL & a YL in the shack wid Set Theory problems in math, & 73s net to involve himself wid 'Union' Sets & 'Intersection' Sets! 5/31 15m phone net - W6ZE/XO turns net over to IXN...Bob develops a bad feedline problem! We check in COJ, ULU, &

(On The Nets...cont'd -3): NG7D. COJ is looking fer screens of old Club logo back in the 60's. He will contact Cliff Frazier abt the logos. JSV is mentioned as a possible source fer artwork if Club uses the old, or wants a new logo designed. ULU's QTH is undergoing major house repairs inside & out...new fence, new kitchen & painting! YZC battles dog fleas as he & Fran contemplate a 'hot tub' fer the QTH! NG7D has worked all 50 states on 17m! Congrats, John! And NG7D also makes contact wid long-silent N6PEI, Dan, on 40m! ULU looks fer an accordion mike cable (10 strands) fer the rig. Call Lloyd if you know where to get one (not Kenwood, pse!) 5/31 2m phone net- W6ZE/IXN checks in IMP (wid I Burn Radios, on the side), YZG, RNA, ATK, RE, RND, PFA, OUE, & AF6C. IXN asks Alex to play 'Newsline' tapes..most interesting! Alex also trims a Spanish Palm.. all trash cans are full! IMP, IBR & nØne, all prepare for IBP's upcoming shoulder surgery, & we say a few prayers fer her quick recovery! IMP talks abt impending lay-offs at Hughes. AF6C talks abt reorganization at McDonnell-Douglas, and, IXN says that Northrup is laying off...gud luck, guys! AF6C asks abt former Club member, Monte, WD6AUS. Monte, Vic, & Al (I Burn Radios) were all involved wid the OCARC's VIP program fer handicapped kids. AUS is fine, but his XYL is fighting cancer. Vic, (Real Nutty Amateur), reminds all abt help needed fer the upcoming Wheel Chair Olympics events. PFA finishes construction of a spectrum analyzer, & WA6OUE, Mike, informs IXN ~~abt office improvements at Garden Grove H.S.~~ ATK wants sig reports, & most OPs hear him FB! YZG reminds all of the Club breakfast Sat. morning. AF6C will call ULU if he can find a source of a 10 strand mike cord for ULU's rig. RND copies Armed Forces Day message & works NG7D frm Wrightwood between the 23 & 28th of May. John also tells OPs abt 2 new USSR satellites....de WB6IXN

