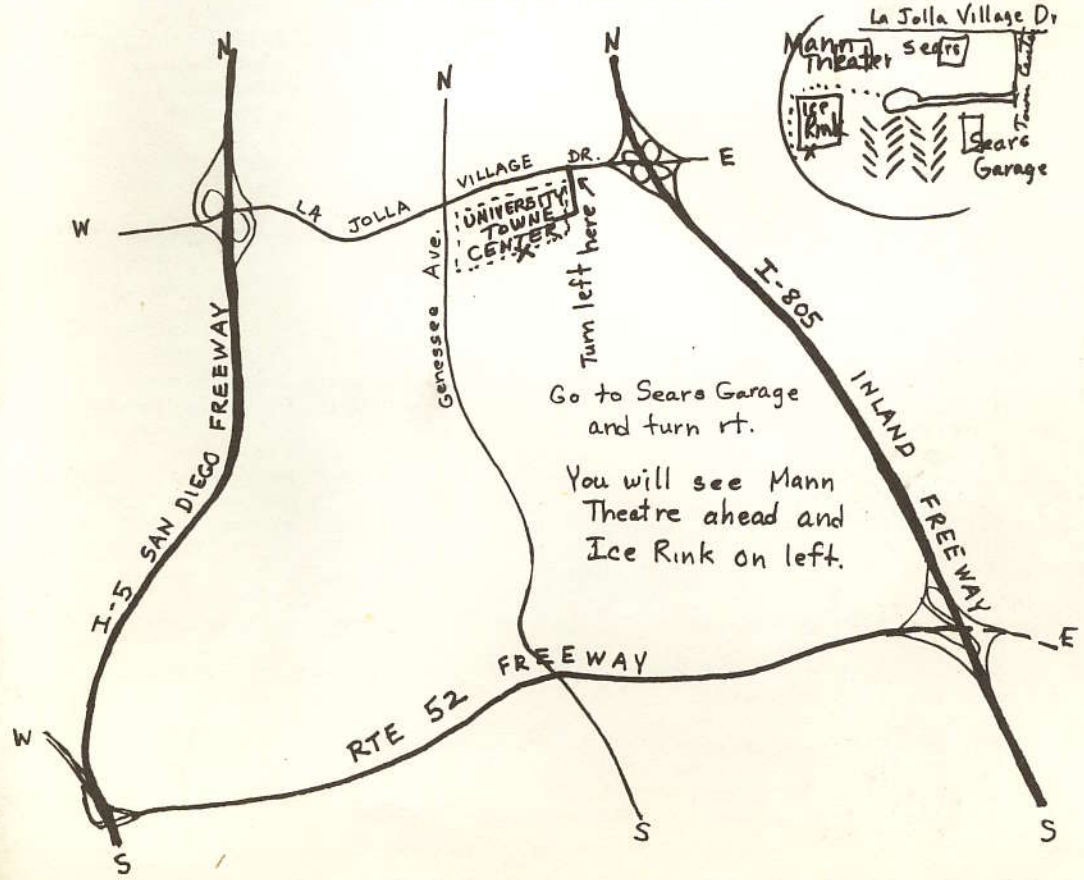
SQUELCH TALES

SAN DIEGO REPEATER ASSOCIATION

VOLUME VI JANUARY, 1978 NUMBER 1

Start the New Year Right!

Yes, start the year right! Come to the Nomination Meeting at our new Location in University Towne Center. Coming from 805 north, turn west to the first light, left into the area and right between the Sears Store and its Garage. You will see Mann Theatre ahead and the Large Ice Rink building to the left. You go (walk) around the south road to the lower level and go in where the people get their Ice Skates. The program will be on T-Hunting. Hope you can find the meeting place!



SANDRA, INC.

The PURPOSE of our REPEATER SYSTEMS is to FACILITATE 2-WAY RADIO COMMUNICATIONS WHERE EXTENDED RANGE IS REQUIRED OR WHERE NATURAL OR MAN-MADE LIMITATIONS TO SIMPLEX COMMUNICATIONS EXIST.

MANDATORY REPEATER OPERATING PROCEDURES

VALID COMMUNICATIONS:

1. Emergency communications (IMMEDIATELY acknowledging breaks).
   a) YOUR CALL - REGULAR OR TIME FACTOR TRAFFIC.
   b) BREAK - BREAK (2 breaks) - EMERGENCY.
   c) BREAK - BREAK - BREAK (3 breaks) - LIFE OR DEATH.
2. Public Service and demonstrations of Amateur Radio.
3. Short transmissions or exchange of information.
4. Announcements.

IN-VALID COMMUNICATIONS:

1. JAMMING in any form and ACKNOWLEDGMENT OF JAMMING OR INTERFERENCE.
2. LONG TRANSMISSIONS (except emergencies)
3. RAG-CHEWING - QSO's that could be handled adequately on simplex or another band.
4. BUSINESS COMMUNICATIONS.
5. TESTING ON REPEATERS.
6. ABUSIVE language of an offensive or distasteful subject matter.

INTERFERENCE REPORTING PROCEDURE

The first DO's are really DON'T's !! Don't acknowledge.
Don't discuss.
Don't antagonize,
Make the Jammer think his transmitter is not working.

OBSERVATION PROCEDURES

1. Listen on input - note frequency.
2. Note time and date of incident.
3. If you have a beam or DF gear, take a bearing (magnetic).
4. Note the signal strength and antenna you used (mobile, inside, ground plane, beam, etc.)
5. Transmission content; ie: music, carrier, talking, etc.
6. Any identifiable characteristics such as hum, background noise, off frequency or discriminator reading.
7. Personal observations and opinions as to the source.

FILING THE REPORT

1. CALL (714) 286-8550 (unlisted) - YOU HAVE 60 seconds.
2. Give your full NAME and Call.
3. Your location at time of incident, such as street address.
4. TIME of incident.
5. Bearing - magnetic as read on compass.
6. Signal strength and antenna you used.
7. Transmission content.
8. Identifiable characteristics.
9. Personal observations and suspicions.

PRESIDENT'S REPORT

Season's Greetings. Now that we are starting a New Year, let's get off on the right foot. Let's regain that positive attitude and move ahead.

It's election time again, with some things not completed, some new goals on the horizon, and this is where you come in. If you know of someone you would like to see on the board, or if you would like to be, call or write to one of the folks on the election committee: Larry, N6LY; Herb, W6KBD, and Larry, WA6AIL. Don't wait - do it now! Nominations close at the end of the January meeting, and the ballots will come out immediately following. By the time you read this, we will have had our Hospitality Room at the SAROC convention in Las Vegas, thanks to EEI, the 220 Club, and SCRA.

This month we start at our new meeting room at the University Towne Center at La Jolla Village Drive just east of Genessee and west of 805. The room is in the building with the skating rink - on the same floor as the rink and at the end where you can rent skates, etc. Our room is the middle - largest room - we hope to have a few signs to help you find it. Parking is in the same area as the Mann 6 Thearer, the building to the left as you come by Sears Garage is the Ice rink, but our room is on the lower level.

Now is the time to pass the word about the 1978 ARRL National and the QCWA National which will be held concurrently on September 22-24 of this year.

What have we accomplished this year? The major project was the autopatch. Without the help of Mary, WA6NAF and Tony, WA6ZMZ and their helpers, we would not have such a fine patch. They spent many hours to build the best patch possible, and being an open patch made it harder to design and work properly.

Second, we have a new repeater on Mt. Laguna. We have had major noise problems with the antenna, which will be under control as soon as the replacement antenna and feedline are installed.

Our new project, which has been on the drawing board for the last year is our 220 system. A few months ago all the hardware and the repeater were ordered. We tried to buy a Motorola repeater, but they don't make one for 220. We then looked at the other options and finally purchased a repeater built by CW Electronics in Los Angeles.

Due to inflation and trying to hold the line on other projects, we are asking the membership to donate $10 to the 220 project. This will carry the system through to completion without having to borrow or short change other projects which need money just to keep them going. We are not going to increase the dues at this time, but we need the $10 donation. This is not in place of the annual dues, but in addition. Make a note on the check that it is for the 220 system so we can keep it separate.

Again, thanks to you who have donated your time and effort.

73's
Wayne, W6PDA
President

DIODES/ZENERS

1N914	100v	10mA	.05
1N4005	600v	1A	.08
1N4007	1000v	1A	.15
1N4148	75v	10mA	.05
1N753A	6.2v	z	.25
1N758A	10v	z	.25
1N759A	12v	z	.25
1N4733	5.1v	z	.25
1N5243	13v	z	.25
1N5244B	14v	z	.25
1N5245B	15v	z	.25

SOCKETS/BRIDGES

8-pin	pcb	.25	ww	.45
14-pin	pcb	.25	ww	.40
16-pin	pcb	.25	ww	.40
18-pin	pcb	.25	ww	.75
22-pin	pcb	.45	ww	1.25
24-pin	pcb	.35	ww	1.10
28-pin	pcb	.35	ww	1.45
40-pin	pcb	.50	ww	1.25
Molex pins .01		To-3 Sockets		.45
2 Amp Bridge		100-prv		1.20
25 Amp Bridge		200-prv		1.95

TRANSISTORS, LEDS, etc.

2N2222	NPN	(Plastic .10)	.15
2N2907	PNP		.15
2N3906	PNP		.10
2N3054	NPN		.35
2N3055	NPN 15A 60v		.50
T1P125	PNP Darlington		.35
LED Green, Red, Clear			.15
D.L.747	7 seg 5/8" high com-anode		1.95
XAN72	7 seg com-anode		1.50
FND 359	Red 7 seg com-cathode		1.25

C MOS

4000	.15
4001	.20
4002	.20
4004	3.95
4006	1.20
4007	.35
4008	.95
4009	.30
4010	.45
4011	.20
4012	.20
4013	.40
4014	1.10
4015	.95
4016	.35
4017	1.10
4018	1.10
4019	.60
4020	.85
4021	1.35
4022	.95
4023	.25
4024	.75
4025	.35
4026	1.95
4027	.50
4028	.95
4030	.35
4033	1.50
4034	2.45
4035	1.25
4040	1.35
4041	.69
4042	.95
4043	.95
4044	.95
4046	1.75
4049	.70
4050	.50
4066	.95
4069	.40
4071	.35
4081	.70
4082	.45

— T T L —

7400	.15
7401	.15
7402	.20
7403	.20
7404	.15
7405	.25
7406	.35
7407	.55
7408	.25
7409	.15
7410	.10
7411	.25
7412	.30
7413	.45
7414	1.10
7416	.25
7417	.40
7420	.15
7426	.30
7427	.45
7430	.15
7432	.30
7437	.35
7438	.35
7440	.25
7441	1.15
7442	.45
7443	.85
7444	.45
7445	.65
7446	.95
7447	.95
7448	.70
7450	.25
7451	.25
7453	.20
7454	.25
7460	.40
7470	.45
7472	.40
7473	.25
7474	.35
7475	.35
7476	.30
7480	.55
7481	.75
7483	.95
7485	.95
7486	.30
7489	1.35
7490	.55
7491	.95
7492	.95
7493	.40
7494	1.25
7495	.60
7496	.80
74100	1.85
74107	.35
74121	.35
74122	.55
74123	.55
74125	.45
74126	.35
74132	1.35
74141	1.00
74150	.85
74151	.75
74153	.95
74154	1.05
74156	.95
74157	.65
74161	.85
74163	.95
74164	.60
74165	1.50
74166	1.35
74175	.80
74176	1.25
74180	.85
74181	2.25
74182	.95
74190	1.75
74191	1.35
74192	1.65
74193	.85
74194	1.25
74195	.95
74196	1.25
74197	1.25
74198	2.35
74221	1.00
74367	.85
75108A	.35
75110	.35
75491	.50
75492	.50
74H00	.25
74H01	.25
74H04	.25
74H05	.25
74H08	.35
74H10	.35
74H11	.25
74H15	.30
74H20	.30
74H21	.25
74H22	.40
74H30	.25
74H40	.25
74H50	.25
74H51	.25
74H52	.15
74H53J*	.25
74H55	.25
74H72	.55
74H101	.75
74H103	.75
74H106	.95
74L00	.35
74L02	.35
74L03	.30
74L04	.35
74L10	.35
74L20	.35
74L30	.45
74L47	1.95
74L51	.45
74L55	.65
74L72	.45
74L73	.40
74L74	.45
74L75	.55
74L93	.55
74L123	.55
74S00	.55
74S02	.55
74S03	.30
74S04	.35
74S05	.35
74S08	.35
74S10	.35
74S11	.35
74S20	.35
74S40	.25
74S50	.25
74S51	.45
74S64	.25
74S74	.40
74S112	.90
74S114	1.30
74S133	.45
74S140	.75
74S151	.35
74S153	.35
74S157	.80
74S158	.35
74S194	1.05
74S257 (8123)	.25
74LS00	.35
74LS01	.35
74LS02	.35
74LS04	.35
74LS05	.45
74LS08	.35
74LS09	.35
74LS10	.35
74LS11	.35
74LS20	.35
74LS21	.25
74LS22	.25
74LS32	.40
74LS37	.35
74LS40	.45
74LS42	1.10
74LS51	.50
74LS74	.65
74LS86	.65
74LS90	.95
74LS93	.95
74LS107	.85
74LS123	1.00
74LS151	.95
74LS153	1.20
74LS157	.85
74LS164	1.90
74LS367	.85
74LS368	.85

9000 SERIES

9301	.85
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95H03	.55
9601	.75
9602	.50

LINEARS, REGULATORS, etc.

8266	.35
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LM308 (Mini)	.75
LM309H	.65
LM309K (340K 5)	.85
LM310	1.15
LM311D (Mini)	.75
LM318 (Mini)	.65
LM320K5 (7905)	1.65
LM320K12	1.65
LM320T5	1.65
LM320T12	1.65
LM320T15	1.65
LM339	.95
7805 (340T5)	.95
LM340T12	1.00
LM340T15	1.00
LM340T18	1.00
LM340T24	.95
LM340K12	2.15
LM340K15	1.25
LM340K18	1.25
LM340K24	.95
LM373	2.95
LM380	.95
LM709 (8,14 PIN)	.25
LM711	.45
LM723	.50
LM725	1.75
LM739	1.50
LM741 (8-14)	.25
LM747	1.10
LM1307	1.25
LM1458	.95
LM3900	.50
LM75451	.65
NE555	.50
NE556	.95
NE565	.95
NE566	1.75
NE567	1.35

MEMORY CLOCKS

74S188 (8223)	3.00
1702A	6.95
MM5314	3.00
MM5316	3.50
2102-1	1.75
2102L-1	1.95
TR 1602B/ TMS 6011	6.95
8080AD	15.00
8T13	1.50
8T23	1.50
8T24	2.00
2107B 4	4.95

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$35 - $99	5%
$100 - $300	10%
$301 - $1000	15%
$1000 - Up	20%

TREASURERS REPORT

AMENDED TREASURER'S REPORT FOR NOVEMBER 1977

BEGINNING BALANCE NOVEMBER 1, 1977		$438.67
INCOME, total	$ 917.86	
EXPENSES, corrected total (All items listed and amounts are correct as reported)	$1162.42	
ENDING BALANCE NOVEMBER 30, 1977		$194.11

TREASURER'S REPORT FOR DECEMBER 1977

BEGINNING BALANCE DECEMBER 1, 1977		$194.11
INCOME		
Dues & Initiations	$ 290.00	
Squelch Tales Ads	150.00	
Donations, volentary, 220Mhz Rptr	10.00	
Donations, volentary, Auto-patch	7.00	
TOTAL		$457.00
EXPENSES		
Administration & Supplies	$ 31.71	
Rent, Otay Site, January	50.00	
Pacific Telephone, Auto-patch	14.04	
Squelch Tales, Print December issue	150.05	
Squelch tales, 2500 covers	122.22	
Squelch Tales, Print mailing labels	7.63	
Squelch Tales, Mail December issue	43.65	
Door Prizes	50.00	
TOTAL		$469.30
ENDING BALANCE DECEMBER 31, 1977		$181.81

SAVINGS ACCOUNT

BEGINNING BALANCE DECEMBER 1, 1977	$697.19
ENDING BALANCE DECEMBER 31, 1977	$697.19

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STEVE ADAMS, K6PD, PRESIDENT

SUPER-DUPER DF LOOP

Construction notes:

1. The coax must be electrically bonded to the shield box at Note 1. This must be a very good connection. I have used BNC connectors here and they work quite well. Several of the hams here in Yuma have built loops using type F connectors and they also seem to work, but they require more care in assembly. If you are making your own shield box from solderable material, the coax shield could be soldered directly to the box at Note 1. See Fig. 1.

2. Dimensions are not critical, but the aspect ratio (dimension A÷ dimension D) should be kept close to .67 for the best trade-off between sensitivity and null quality. The actual dimensions will depend on the size of the box and whip which are available to the builder. I have been having very good luck with a 5x2.5x2.5 inch minibox (dimension A = 4 inches) and a 6 inch (collapsed length) whip on 2 meters. This combination appears to be close to the optimum size for this band. Loop performance falls off rapidly as the size gets much larger than this because the dimensions are then a large fraction of a wavelength. Smaller loops perform well as direction finders, but lack sensitivity. This characteristic could be turned to advantage. If, for example, a small loop were built into a shield box for a handie-talkie to be used as a portable RF sniffer, the lower sensitivity of the small loop would reduce the requirement for attenuation of the signal. Dimension J (See Fig. 2.) should be the minimum distance required to install the coax connector with adequate clearance from the side of the box.

3. It is very important that the loop dimensions be symmetrical.

   B = C = ½A
   G = H
   I = J

4. Circuit values given here are for a 6 inch by 4 inch loop using RG-58U coax.

   C1 - Any small air variable with a maximum capacity of 30 to 50 pf.

   L1 - Hairpin approximately 1¼ inches long by ½ inch wide made with # 18 solid copper wire.

   L2 - 8 turns # 18 solid copper wire ¼ inch inside diameter, 1 inch long. Tap at 1 turn from cold end (Tap point may vary and should be optimized for best VSWR when loop is tuned to resonance.

5. The tune-up procedure requires a grid dip oscillator. (G.D.O.)

5. The tune-up procedure requires a grid dip oscillator. (G.D.O.) The loop is brought into resonance by setting C1 (See Fig. 1.) to minimum capacity and trimming the length of L1 until the G.D.O. shows the system to be resonant at 150 to 160 MHz. C1 is then set to maximum capacity and the resonant frequency is again found with the G.D.O. It should be below 144 MHz. G.D.O. coupling should be to the straight portions of the loop itself.

6. Operation of the loop is fairly simple. The loop can be tuned to the frequency of operation either by peaking a received signal with C1 or by transmittingthrough the loop on the operating frequency and adjusting C1 for maximum indicated RF output. Be careful to be in simplex mode, however, as this is a very high Q circuit and 600 KHz will make a large difference. Once the loop is tuned to the operating frequency, a bearing is taken by extending the sense antenna approximately the same distance above the loop as the distance from the top of the loop to the bottom of the shield box and noting the direction of maximum signal. (See Fig. 3. for antenna patterns.) This will tell you the direction to the source within 10 to 30 degrees. Then the sense antenna is collapsed and an exact bearing is obtained by using the null or minimum in the response pattern. If the loop is operating properly, the null will be very sharp and quite deep. The bearing obtained from the null in the loop pattern is good to about $\pm \frac{1}{2}$ degree in a carefully constructed loop. Beware of reflections!

   You may actually be taking a bearing to the point where the signal was reflected. In general, try to take bearings from the highest point in the area where you are operating. Also, if you have conflicting readings, use the one obtained with the strongest signal, as it has a better chance of being the direct signal path than does the weaker one. This is especially true if the readings were taken from points not separated very much geographically. If the sense antenna and loop bearings disagree significantly or you are unable to read a good deep single null, you are probably in an area with multiple reflections. In this case, either take an educated guess and proceed or seek higher ground and take a good reading.

7. I make no claim to originality on this type of loop. I ran across its use on lower frequencies by the military. The method of construction presented here, however, is mine, as is the matching and resonating circuit required to operate it at VHF.

by Eric Gustafson, WB7AWT
2184 5th Avenue
Yuma, AZ 85364

See Figures 1, 2, and 3. on succeeding pages.

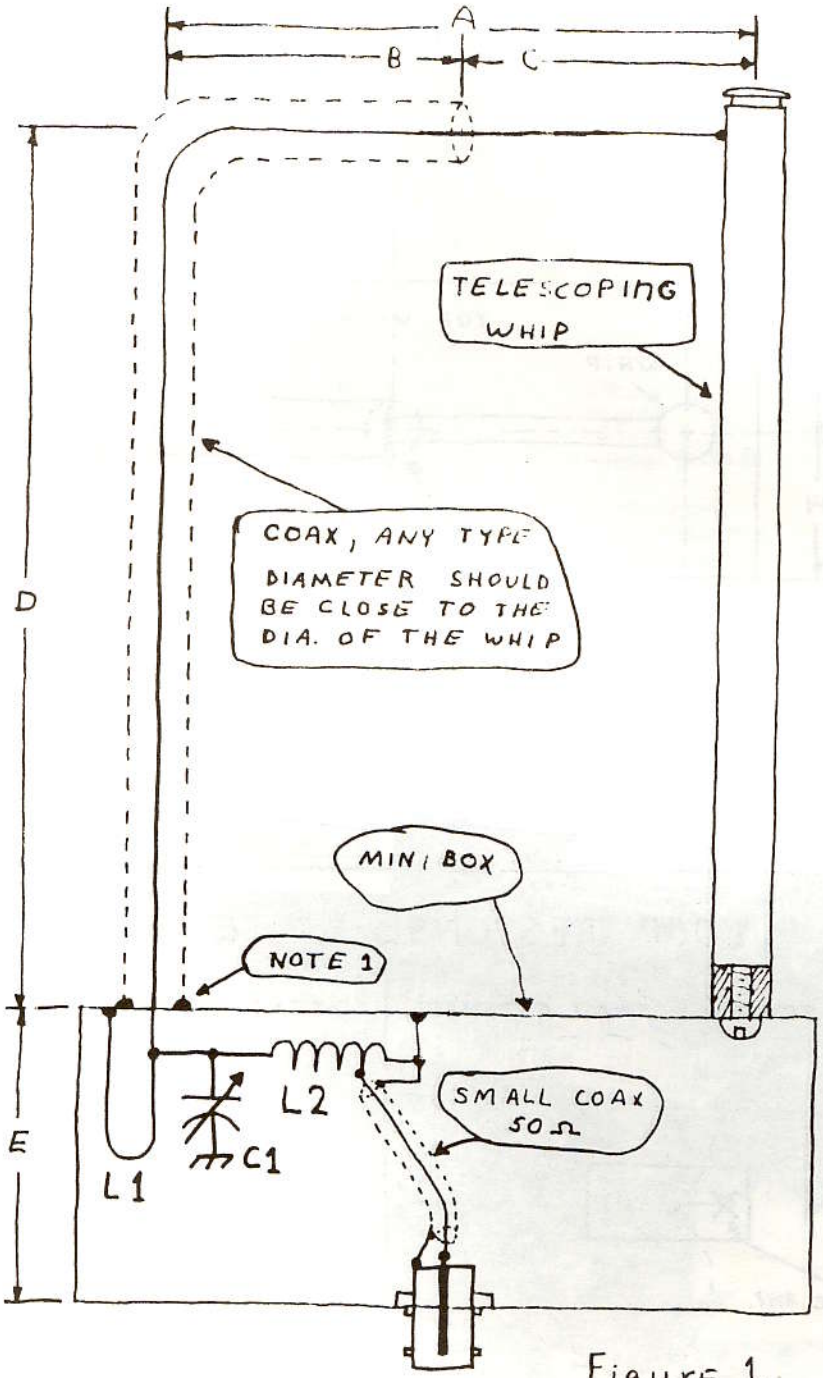
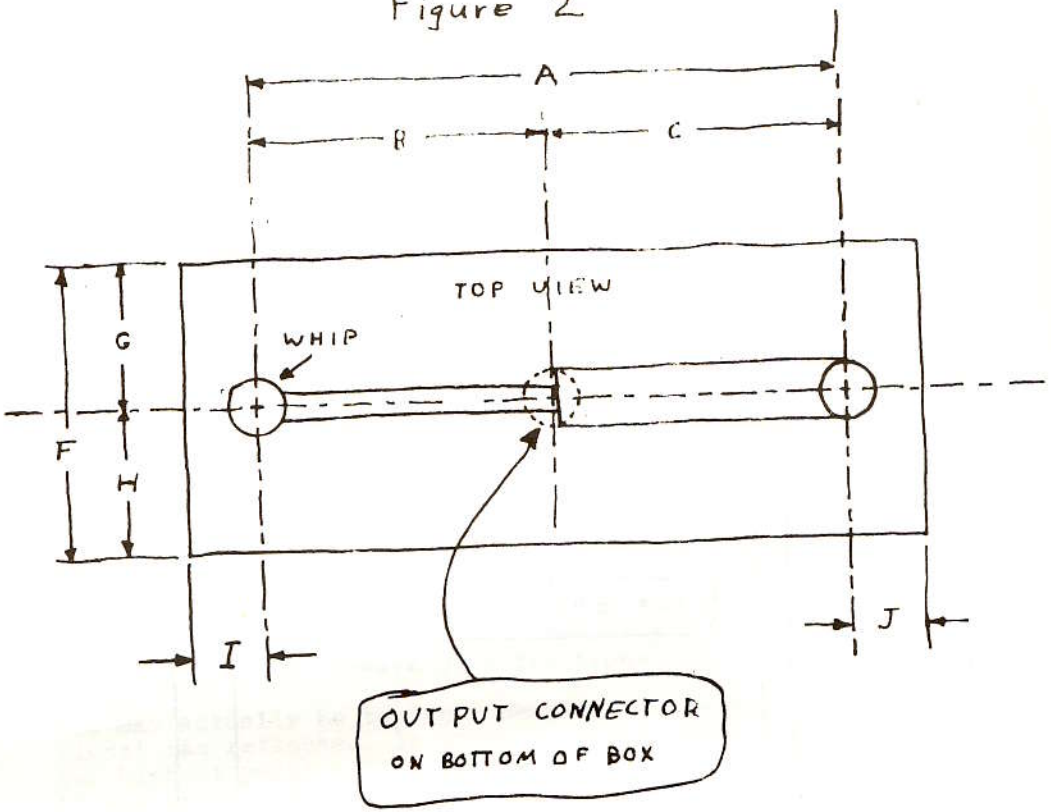

A
B
C
TELESCOPING WHIP
COAX, ANY TYPE
DIAMETER SHOULD BE CLOSE TO THE DIA. OF THE WHIP
D
MINI BOX
NOTE 1
L2
C1
L1
SMALL COAX 50Ω
E

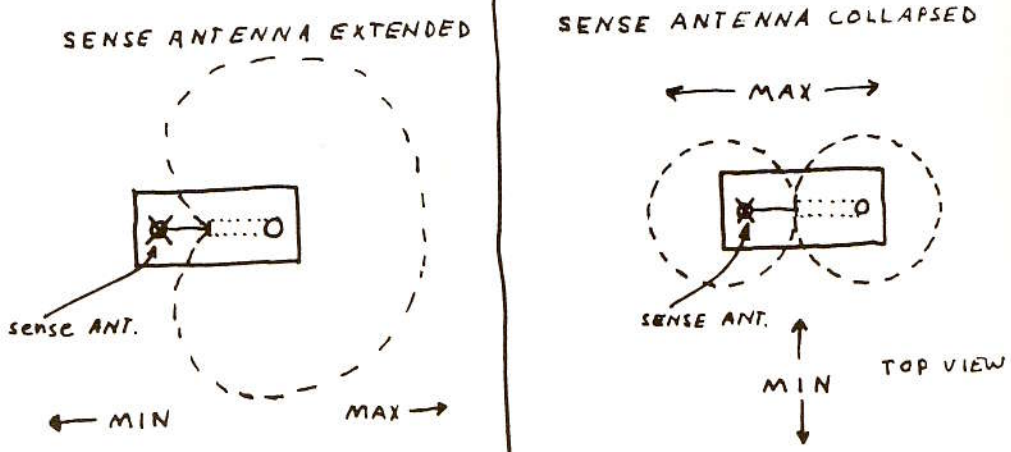
Figure 1

Figure 2



LOOP RESPONSE PATTERNS

Figure 3



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2MSSB	ICOM	216.00
IC502	ICOM	210.00
600RC	SWAN	449.00
700CX	SWAN	539.00
35-40SL	SWAN 40M mobil	25.75
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~~1200-X~~	~~SWAN~~ SOLD	~~282.95~~
3501	SWAN	54.00

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~~2B~~	~~DRAKE~~ SOLD	~~179.00~~
ML-2	DRAKE	169.00
HQ110	HAMMARLUND	119.00
HT37	HALLICRAFTERS	119.00
~~IC230~~	~~ICOM~~ SOLD	~~245.00~~
250	SWAN	189.00
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NEXT MONTH

13-513

MIDLAND INTERNATIONAL
Communications Division

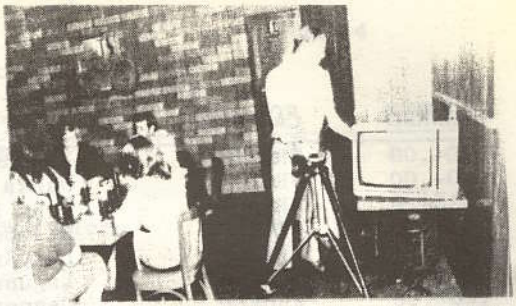
SYNTHESIZED "220"

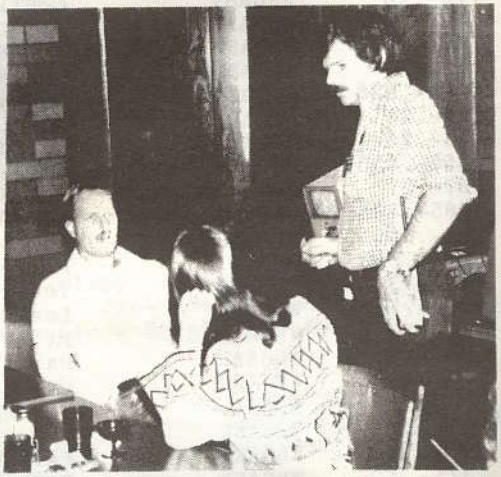
TWO METERS - 146 to 147 MHz

CHANNEL	CALLSIGN	LOCATION	SPONSOR	NOTES
.01-.61	WR6ABB	Hollywood Hills	P.A.R.C.	1
.01-.61	WR6AFR	Palmdale		ITS
.625-.025	WR6ARW	Lompoc		1
.04-.64	WR6ACF	Mt. Otay, San Diego	SANDRA	ITS
.655-.065	WR6AVJ	Mont.		1
.07-.67	WR6ABJ	Los Angeles	Henry Radio	
.07-.67	WR6AIF	Baker		1
.07-.67	WR6AHF	Thousand Oaks		ITS
.685-.085	WR6AWM	Los Angeles	Private	RTTY
.685-.085	WR6AWL	Corona		RTTY
.10-.70	WR6ACA	Contractors, L.A.	SCATS	1
.715-.115	WR6AOQ	San Diego		Local V.
.13-.73	WR6AGX	Lancaster		Local P.
.13-.73	WR6AGH	Ventura	Sulphur Mt.	Autopatch
.13-.73	WR6AEF	Pomona		Autopatch
.13-.73	WR6AII	Palomar, San Diego	Palomar ARC	1
.745-.145	WR6AWS	Palos Verdes	WB6IZC	NIS
.16-.76	WR6AFX	Barstow		1
.16-.76	WR6AKX	Lukens		& S.D.
Both .16 & .76 are much used simplex channels in S.F.V., L.A.,				
.775-.175	WR6AID	San Diego		1
.775-.175	WR6ALH	Rosemont		1
.19-.79	WR6ACD	Anaheim		
.19-.79	WR6ANW	Santa Barbara		
.19-.79	WR6AVF	Lake Hughes	WB6NRL	
.805-.205	WR6ACK	Santa Monica	Marina Rtp Asn	1
.805-.205	WR6AYT	Malibu	" " "	1
.22-.82	WR6ACD	Johnstone Pk.		
.22-.82	WR6AEL	San Luis Obispo		
.22-.82	XE2RBC	Ensenada, Mexico		
.835-.235	WR6AQS	Palos Verdes	Experimental	
.25-.85	WR6ACJ	Crestline		1
.25-.85	WR6AFC	Thousand Oaks		
.865-.265	WR6AIW	San Fernando Valley	Litton ARC	1 Local
.865-.265	WR6BAX	Monterey Park	Jap- American ARC	ITS Local
.28-.88	WR6AOX	Sulphur Mt. Ventura	Sulphur Mt ARC	1
.28-.88	WR6ACQ	Fullerton		
.28-.88	WR6AFV	Riverside		
.28-.88	WR6ANE	Escondido	Escondido RC	
.895-.295	WR6ADO	Orange	Orange County Comm	Reserved
.31-.91	WR6AED	Running Springs	Gen. Tel RC	1
.31-.91	WR6AOC	Santa Barbara		
.31-.91	XE2RMX	Mexicali, Mexico		
.925-.325	WR6AKG	Baldwin Hills, L.A.	City Schools	
.925-.325	WR6AFJ	Palos Verdes		Private
.34-.94	WR6ADA	Palm Springs	Desert Rats	1
.34-.94	WR6ADQ	Victorville		
.34-.94	WA6EYH	Operates on SPECIAL EVENTS ONLY, L.A.		
Both .34 & .94 are much used simplex channels and are protected pair, LA				
.955-.355	WR6BAE	West Los Angeles		ITS
.37-.97	XE2SPM	Del Diablo, Mexica		Clear Channel
.985-.385	WR6AJX	San Diego		Private
.985-.385	WR6ALR	Mammoth	WB6EGR	Private

TWO METERS - 147 to 148 MHz

CHANNEL	CALLSIGN	LOCATION	SPONSOR	NOTES
.60-.00	WR6ABW	Los Angeles		1
.60-.00	WR6AFI	Santa Barbara		
.015-.615	WR6ABI	Long Beach		Private
.63-.03	WR6APG	Mt. Soledad, San Diego, Pac Beach ARC		
.63-.03	WR6AGP	Los Angeles		Private
.045-.645	WR6AKV	Laguna Beach		
.66-.06	WR6AEG	Canoga Park SFV		Private
.66-.06	WR6AEH	Palos Verdes		Private
.66-,06	WR6ABU	Los Angeles		Private
.075-.675	WR6AQD	San Diego	RACES	Private
.075-.675	WR6ALZ	Redondo Beach	RACES	Closed
.09-.69	WR6AAA	Catilina Island	Henry Radio	1
.105-.705	WR6ANY	Glendale	Pasedena RC	1
.105-.705	WR6AQD	San Diego	CLARA	Autopatch
.72-.12	WR6ADH	Los Angeles	SWAPS Ntwk.	Autopatch
.72-.12	WR6AEB	Lompoc		
.135-.735	WR6AHM	Magic Mtn. L.A.	Flake Radio Ntwk	Autopatch
.135-.735	WR6AEW	San Diego	WB6OFX	
.75-.15	WR6AJL	Mt. Laguna, San Diego	SANDRA	1
.75-.15	WR6ACT	Barstow		
.165-.765	WR6AGV	Mt. Wilson, L.A.	San Gabriel RC	
.78-.18	WR6ABV	Contractors, L.A.		Private
.195-.795	WR6AJN	San Diego	RACES	Reversed
.81-.21	WR6ABA	Mt. Baldy, L.A.	WB6GGL	Reversed
.81-.21	WR6AHZ	Santa Maria		
.225-.825	WR6BBV	Huntington Beach		Reserved
.84-.24	WR6ABN	Mt. Lee, Los Angeles	W6MEP	
.84-.24	WR6AHA	Palmdale		Autopatch
.255-.855	WR6BBV	Fullerton		ITS Private
.87-.27	WR6ABQ	Los Angeles	RACES	Closed
.285-.885	WR6ASM	San Diego	SANDRA	Autopatch
.90-.30	WR6AEJ	Los Angeles		1
.315-.915	WR6...	Los Angeles		ITS Private
.93-.33	XE2RBC	Tecate, Mexico	Clear Channel Allocation	
.945-.345	WR6AOV	Los Angeles		Reserved
.96-.36	WR6AAD	Mt. Wilson	Disaster RN	Private
.96-.36	WR6AAE	Palos Verdes	" "	Private
.96-.36	WR6AAH	Mt. Disapointment	" "	Private
.96-.36	WR6AAI	Verdugo Pk.	" "	Private
.96-.36	WR6AKK	Beverly Hills	" "	Private
.96-.36	WR6AKW	Malibu	" "	Private
.375-.975	WR6AHX	Santa Ana		Private
.99-.39	WR6ADW	Mt. Otay, S.D.	Dronk R.N.	Private
.99-.39	WR6AFL	Pt. Loma	Dronk R.N.	Private
.99-.39	WR6ACY	Mt. Palomar	Dronk R.N.	Private
.99-.39	WR6AKN	Los Angeles		Private
147.435-146.40	WR6AMD	Mt. Wilson, L.A.	WB6JPI	





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- **FREQUENCY RANGE:** Receive and Transmit: 144.00 to 148.995 MHz, 5KHz steps (1000 channels). + MARS-CAP.*
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- **TRUE FM:** Not phase modulation - for superb emphasized hi-fi audio quality second to none.
- **4 CHANNEL RAM SCANNER WITH IC MEMORY:** Program any 4 frequencies and reprog.am at any time, using the front panel controls-scan all or part of the memory-search for occupied (closed) channel or vacant (open) channels-with internal Ni-Cad to retain memory. (No diode matrix to wire or change)
- **MULTIPLE FREQUENCY OFFSETS:** Three positons A,B,C, provided for installation of optional crystals: EXAMPLE - 1 Mhz offset Duplex Frequency Offset Built in - 600 Khz plus or minus 5 Khz steps, plus simplex, any frequency.
- **INTERNAL MULTIPURPOSE TONE OSCILLATOR:** 1750Hz tone burst for "whistle on operation" and sub-audible tone operation possible by simply adding a capacitor across the terminals provided. Internal 2 position switch for automatic and manual operation, tone burst or sub audible tone PL - adjustable 60-203Hz (100 Hz provided).
- **RIT CONTROL:** Use to improve clarity when contacting stations with off frequency carrier.
- **MODULAR COMMERCIAL GRADE CONSTRUCTION:** 6 Unitized modules eliminate stray coupling and facilitate ease of maintenance.
- **ACCESSORY SOCKET:** Fully wired for touch tone, phone patch, and other accessories. Internal switch connects receiver output speaker when connector is not in use.
- **MULTI-PURPOSE METER:** Discriminator Meter, Provides "S" reading on receive and power out on transmit.
- **RECEIVE:** Better than .25uv sensitivity, 15 pole filter as well as monolithic crystal filter and automatic tuned LC circuits provide superior skirt selectivity.
- **HIGH LOW POWER OUTPUT:** 15 watts and 1 watt switch selected-low power may be adjusted anywhere between 1 and 15 watts-fully protected-short or open SWR
- **OTHER FEATURES:** Dynamic microphone-mobile mount-external 5 pin accessory jack-speaker jack-and much, much more-size 2½ x 7 x 7½. All cords, plugs, fuses, microphone hanger, etc. included. Weight 5 lbs.

Also in stock: KLM - ICOM - YAESU WILSON - KENWOOD - and many more.

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THE TRANSISTOR CELEBRATED its 30th birthday this week — it was on Tuesday, December 23, 1947, that Drs. William Shockley, John Bardeen, and Walter Brattain succeeded in making a slice of germanium amplify a 1-kHz signal. First public announcement of the new device, christened "transistor" as a contraction of "transfer resistor," wasn't made until the following summer, and it wasn't until the early 1950s that practical commercial transistors appeared on the market.

The Nobel Prize For Physics was awarded to the three inventors in 1956. Interestingly, Dr. Shockley began experimenting with semiconductor amplifiers in 1938, 10 years before he and his co-researchers succeeded in making one operate.

Think How Far the field of electronics has come in the past 30 years, largely a result of that invention, and consider how different Amateur Radio would be without semiconductor devices! Thanks K3YV and the Nittany Amateur Radio Club, who celebrated this important anniversary with a handsome 4-page pamphlet.

MUCH UNFINISHED AMATEUR RADIO BUSINESS remains in the FCC's hopper as 1977 draws to a close. Most significant of the still open Notices of Proposed Rule Making that concern Amateur Radio are: Docket 20282 (restructuring); Docket 20777 (bandwidth); Docket 21033 (repeater deregulation); Docket 21116 (10-meter amplifier ban); Docket 21117 (Type Acceptance); and Docket 21135 (elimination of secondary station licenses).

The Commission's First post-holiday meeting is scheduled for January 12 and none of the above NPRMs is on the agenda. With a heavy burden of other urgent non-Amateur matters facing the Commissioners on their return, it's not considered likely we'll see any action on any of the above before very late January or — more probably — sometime in February.

23-CHANNEL CB SET SALES must end December 31, as the courts upheld the FCC's cutoff of the earlier set's sale in a decision announced Friday. The result could be a real bonanza for Amateurs wanting 23-channel sets for conversion to 10-meter operation, as retailers realize their inventories will become worthless as of next Sunday.

23-Channel AM Rigs were discounted heavily before Christmas, with $19.95 (or less) common for low end radios and even fancy AM models at a $50 maximum. 23-channel SSB sellouts have been much harder to find, with a few rare offerings at $50-60 and $100 or more not unusual. None-the-less, a shrewd hamfest-trained horsetrader should be able to make very good deals this week as dealers realize their situation.

THE "220 CLUB BULLETIN" from San Diego's 220 Club is another fine 220-MHz band publication that's just about to celebrate its first anniversary. Editor W6GIC is anxious to exchange publications with other 220-MHz groups at Box 80404, San Diego, CA 92138.

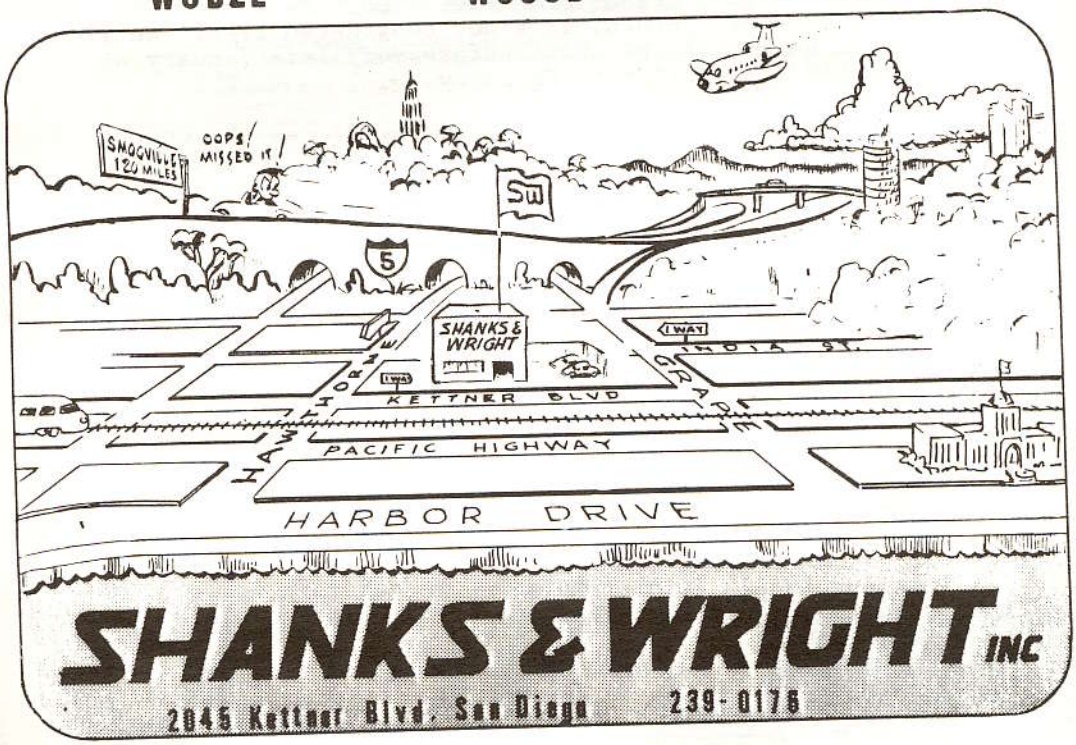
CB Interest in 220 still remains — CB makers E.F. Johnson and Kris hold current FCC experimental licenses for the band, as does General Motors.

ELECTRONIC SUPPLIES

SINCE 1945

S:W

W6BZE W6OSD W6DWA



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"SACRAMENTO COUNTY Sheriff's Amateur Radio Observer Project," in which 45 area Amateurs were given surveillance training, paid off so handsomely during its 90-day trial period it's now a permanent program. Amateurs in cooperation with Sheriff's deputies in unmarked cars used 2-meter FM to report suspicious activities in shopping center parking lots. During the evaluation period, the observers helped catch two parolees in the process of stealing a car, and foiled a number of car burglaries.

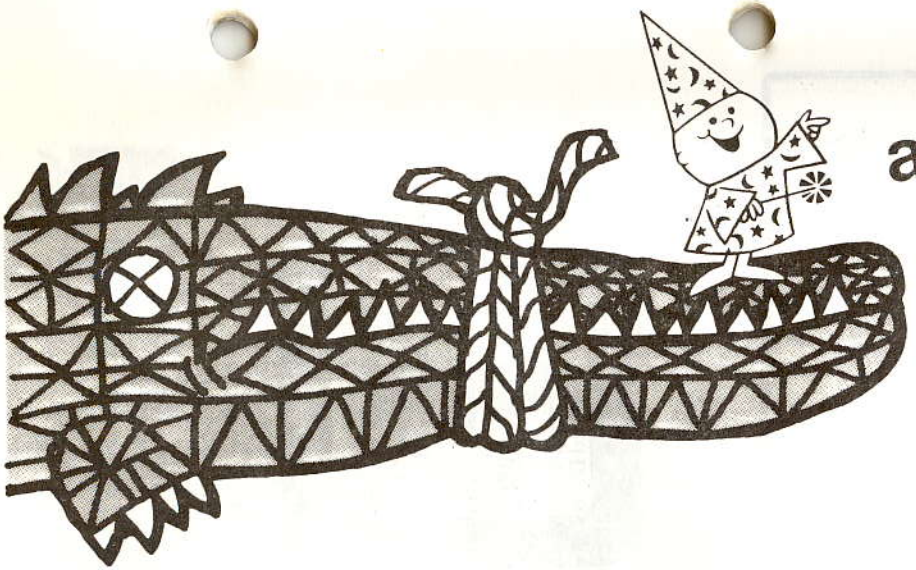
Sacramento Sheriff Duane Lowe has now made the program permanent and is recruiting more Amateurs to take part in it. Thanks K6PWA and WR6AEN News.

AUSTRALIA'S NEW CB BAND is in the 470-MHz region, with 40 simplex channels assigned. The new band becomes available January 1, 1978, and after that date no new licenses for the present Australian 27-MHz CB band will be issued. The Australian government plans to phase out 27-MHz CB operations entirely over the next few years. Thanks VK2OD via CARF News Service.

WORLDRADIO'S "WORKED 100 NATIONS" Program offers a non-competitive, sociable approach to international communications. Details of the program, which begins January 1, and awards, appear in January Worldradio or are available for an SASE from Worldradio, 2120 28th St., Sacramento, CA 95818. Thanks WA9INK.

W9JUV

HR REPORT



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FREE SPACE ATTENUATOR

$$W = IE = \frac{E^2}{R} = I^2R$$

$$db = 10\log \frac{W_2}{W_1} = 20 \log \frac{E_2}{E_1} = 20 \log \frac{I_2}{I_1}$$

All the above are true and then somehow when we put it on the air, things change.

Usually, the results are, "I don't understand...George only lives 12 miles away and I should be able to talk to him with a quieting signal at one watt.

Let's assume for our hypotheses that the desired communications is on the 220 band.

The formula for free space is: $A = 37 + 20 \log d + 20 \log f$.

This is using half wave dipoles in optical line of sight. A = db, d = distance in miles, f is frequency in Mhz.

Example: Xmt at the antenna 100 watts
d = 5 miles
f = 220 Mhz
Receiving antenna .0000001 watts
A= 97.82 db

Needless to say, it's a good thing we have good gain antennas and very sensitive receivers.

So the next time you're cruising down the ole freeway and trying to simplex with someone just a couple of miles away and you wonder why there is a lot of noise, (QRN) now you know!

de Paul, WA6HGK

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DECEMBER, '77

MEETING

EXCHANGE AT DOOR

SANDRA OPERATES TWO NETS:

Sunday Evening at 8:00 p.m. on 04/64
Wednesday Eve. at 7:30 p.m. on 75/15

SANDRA, Inc. operates the following repeaters for service to the San Diego area and environs. The policy of the organization is that the repeaters are available for all licensed Amateurs to use, so long as applicable rules and regulations are observed, whether members of SANDRA, Inc. or not. Further, the following priorities **must** be observed: (1) Emergency traffic, concerning the safety of life or property take priority over **all** other traffic. Failure to yield to any station indicating the need for such traffic is prohibited, and may render the offender subject to legal action. Indication of the need for such traffic may be "Break Emergency," "Break-Break," or any other clearly indicated statement. (2) Call-ups should be permitted. If an operator "breaks" into a conversation, he should be permitted to make such a callup. He should not, however, "take over" the repeater and exclude those who were already using it. (3) "Rag-chewing" is not prohibited, but care must be exercised to assure that the repeater is not tied up for extended periods. Remember, there are almost 400 members, and several hundred non-members, who have as much right to use the facilities as you do. It is extremely discourteous to monopolize them to the exclusion of these other users. Long QSO's should be limited to simplex frequencies or the lower bands.

		IN	OUT
WR6ACF	Otay	146.040	146.640
WR6ACF	Otay	* **444.50**	449.500
WR6AJL	Laguna	147.750	147.150
WR6ASM	San Diego (Sharp Hospital)	147.285	147.885

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(Only for those who live outside of the San Diego area. Voting privileges are not included.)	$ 3 FOR BADGE

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Coming Events . . .

JAN 19: NEW MEETING PLACE!!! This meeting will be at the meeting hall near the lower entrance to the skating rink at University Towne Center. Program: T-Hunting. Talk in on .04-.64 and then .52 when you are near.

JAN 21: T-HUNT starting at 7:30 PM from Del Cerro Heights. Fun for everyone. Try it, you'll like it!

JAN 26: SANDARC Meeting at 3650 Fifth Ave. Red Cross Bldg. at 7:30 PM.

BREAKFAST EVERY SATURDAY at the Clairemont Mesa Blvd. "Hamburger House". 9 AM to 11 AM.

ARRL, QCWA National Conventions
San Diego, September 22-24, '78