

# PAARA

## GRAPHS

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Feb 86

Clipperton

New Roster



**THE OFFICIAL NEWSLETTER  
OF THE PALO ALTO AMATEUR  
RADIO ASSOCIATION  
AND  
THE MENLO PARK C.D. AMATEUR RADIO CLUB**

PARRAGRAPHS is the official newsletter of the  
Palo Alto Amateur Radio Association &  
the Menlo Park Civil Defense Radio Club.

Editors Note: -

I do not have the new copy of the Club Officers,  
They will be posted on this page next month.

#### PAARAGRAPHS STAFF

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#### PAARA POLICIES

Membership in PAARA is \$6.00 per calendar year which  
includes a subscription to Paaragraphs. Make payment to  
PAARA, P.O. Box 911, Menlo Park, Ca. 94026

Club Net 147.45 MHZ Monday @ 8:30 PM

Bob Vallio W6RGG

### THE 1985 CLIPPERTON EXPEDITION

The first Clipperton expedition since 1978, this was an international operation by 16 amateurs from the U.S., Tahiti, Costa Rica, Mexico, Japan, France and Germany. They made about 31,000 contacts with 130 countries during the 6 day venture. Rusty Epps W6OAT was designated "chef de la expedition" by the French members, and there's a chance that Rusty may come along with Bob to give us the slide show. As many of you will remember, Rusty gave us the Kingman Reef expedition slide show some years ago. Bob and Rusty have been alternating for the flood of ham club requests for the Clipperton presentation, so don't miss this one!

NEXT MONTH: Dr. D.K. Reynolds K7DBA, known for inventing the isopole antenna --- set up by Ron W6VG  
He has recently designed a new antenna for AEA which was written up in a ham magazine (QST?) according to Kurt K6AL  
Title: REVEALING ANTENNA SECRETS

BY MAKING RADIO WAVES VISIBLE

### OTHER PLANNED FUTURE ATTRACTIONS:

George K6GZK on "the link", a chain of VHF & UHF repeaters  
Woody W6NEY of coherent CW fame, the famous "Herma" from 146.76 whose sea stories not too many can challenge.

PAARA will soon be starting a novice-class licensing program. We will be teaching both code and theory sufficient for a novice class level. Any members interested in volunteering some of their time are encouraged to participate. I urge all members capable of helping out to step forward, since this is a club sponsored program. Thank you for your support.

KD6ZL

Training Co-ordinator

(for more info, call John at (415) 366-1658, or  
Alan (415) 326-6430

In this issue of PAARA-Graphs is a new Roster. If you find any mistakes, please let us know so they may be corrected. Catch Bill (KA6LZL) at the meeting, or give him a call at (415) 325-9808.

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*46 AKR	Uickary, Leslie	01/86	368-5175	*K6 JK	Cline, Jack	02/81	493-5620	---
*K6 AL	Roche, Curtis	01/85	494-2643	*46 JOU	Allustiarti, Ray	01/85	---	---
*46 APZ	Stiebel, Rich	01/86	494-0122	KR6 JMR	Keely, Cliff	01/84	---	---
*46 AQL	Finkbeiner, Dick	02/85	961-6655	NR6 K	Bolton, Arthur Jr.	01/85	323-7066	---
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*46 AZP	Larson, Alan	01/86	326-6430	*K4 KYU	Brandon, Charles	04/83	328 6041	---
MB6 BCU	Allen, Kenneth	02/85	---	KR6 KYU	Feiler, Kurt	01/86	365-2857	---
*46 BIS	Winter, Patricia	02/84	---	KR6 KYY	Peterson, Bob	01/86	---	---
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MB6 CFU	Johnson, Ed	01/84	---	MB6 LML	Jenkins, Wm. D.	02/84	---	---
*46 CHI	King, William Jr.	01/86	595-0258	NR6 LNU	Tucker, Gerald	01/85	326-4908	---
*46 CHL	Swenson, Lloyd	01/86	368-8503	KB6 LT	Katz, Nolan	01/85	366-7286	---
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MB6 CNI	Manders, Ken	01/86	366-7389	*K6 MNP	Doster, Landry	01/86	368-8156	---
MD6 CUP	Hinton, Peter	01/81	---	*K6 HTZ	Christofferson, G	01/85	---	---
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NR6 DNK	Chalmers, Doug	01/84	---	KR6 NAN	Taylor, Robert	05/84	857-9138	---
KB6 DNR	Adler, Tom	02/84	---	NR6 NCX	Ferranti, Rick	01/83	---	---
*46 DU	Edberg, Eric	12/85	948-1748	KR6 NDX	McDemott, Charles	01/85	941-6556	---
*46 DUB	Tallson, Bill	01/85	326-0112	KR6 NEX	Sakols, Dan	05/84	326-1433	---
*K6 EHS	Anderson, Andy	01/86	494-0831	*46 NIR	Wagstaffe, Gerard	06/85	325-4670	---
NR6 ENC	Chan, Loren	01/85	408-629-1852	MB6 NNL	Ryan, Ralph	01/86	325-2213	---
*46 FEQ	Thekan III, Paul	01/86	367-1499	NR6 MYB	Dwight, Kenneth	01/85	856-0727	---
MB6 FFC	Bach, Mike	01/85	---	G13 OEN	Nixon, George	01/86	854-6445	---
*46 FGL	DeLiban, Robert	01/85	415-322-6910	NR6 OHQ	Clark, Vernon	01/85	---	---
NR6 FHC	Lapp, Kevin	01/84	364-2654	*K6 OL	Hallace, Robert	01/84	851-0249	---
*46 FLE	Wardlaw, Vance	01/86	854-0803	MB6 OOO	Root, I. Eugene	01/83	323-2666	---
*46 FLX	Bartelme, John	01/86	323-6295	NR6 P	Schooler, William	01/84	325-1352	---
KB6 FNR	Enge, Robert	01/86	415-366-5427	*46 PFC	Talbert, Elmer	05/84	---	---
KR6 FRK	Fraher, John	01/86	967-3822	*46 PGQ	Brodie, David H.	05/84	323-0353	---
*K6 FS	Stuntz, Steven	01/86	322-4952	MB6 OPV	Chandler, Frank	01/86	322-7678	---
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UE3 FZK	Korsak, Andy	01/86	366-5228	NR6 ABC	McCallum, Sid	01/85	321-6868	---
N16 G	Dean, Erik	01/82	408-736-0320	KD6 RG	Croft, William	01/84	---	---
*K6 GDH	Thomas, Ken	01/86	326-7701	KR6 RMR	Schutzer, Mark	01/85	366-2950	---
*46 GEP	Cary, Charles	01/86	323-6401	NR6 ROM	Stein, Seymour	01/86	967-0362	---
*46 GNX	Tiffany, Willard	01/85	324-4524	*46 RUS	Adachi, Dick	01/86	---	---
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*K6 GZR	Saith, Ron	01/85	---	*K6 SEM	Wheeler, Bob	02/85	459-2340	---
*46 HBJ	Lazier, John	02/83	326-0594	NR6 SOI	Morton, Bob	01/86	---	---
NR6 HLE	Schumacher, Len	01/85	591-4385	MB6 STW	Curry, Don	03/84	---	---
*46 HM	Krawetz, Howard M	01/84	739-7936	*46 STV	Dealley, Dale	02/84	325-5240	---
MB6 HAZ	Griffith, Bill	06/83	322-4551	NR6 SZX	Callander, George	01/86	856-1752	---
KD6 ID	Velton, Perry	01/86	366-9481	*46 TFT	Russell, Al	03/84	365-4258	---
*K6 ISH	Hatson, Walter K.	03/85	---	*K6 THV	Lile, Shannon	01/84	851-7473	---
*46 ISQ	Troster, John	01/86	854-3939	KD6 TU	Willis, Jim	01/86	---	---
MB6 IYS	Zaner, Bill	01/84	328-2677	NR6 U	Peters, Don	03/84	---	---
*K6 JBR	Scherf, Tom	01/85	365-4068	*46 UCE	Larlin, Hank	02/85	493-9046	---
MB6 JFH	Harper, David	03/84	509-276-835	NR6 UIH	Riv Rieu, Barry	01/84	326-2020	---
KR6 JHO	Dean, Wallace	01/82	---	NR6 UD	Helman, Paul	07/82	961-3165	---
*46 JIQ	Wood, Steve	08/85	---	*K6 URO	Porter, Wallace	06/85	494-7038	---



*N6	URT	Smith, Dan	04/83	325-9995
*W6	UG	Panton, Ron	01/86	854-4814
WA6	UZZ	Edgerton, M.	03/84	965-6433
WB6	WBK	Schellenberg, C.	??/??	
*K6	WD	Hotz, Preston E.	04/84	325-8900
KB6	WP	Daniel, Dave	05/85	325-3347
*W6	WQX	Shovlin, Jim	01/85	— —
NR6	X	Reitz, Leonard	01/84	364-3022
*W1	YC	Murphy, William	05/84	— —
WA6	YSO	Dorrance, Dave	01/85	— —
*K6	YT	Canham, Fred	01/85	948-9238
KA6	ZCU	Allen, Jim	04/84	— —
WA6	ZGI	Towle, Stanley	07/83	— —
KD6	ZL	Buonocore, John	03/86	366-1658
nc		Frye, Bill	01/85	326-2610
nc		Vanderbeek, Herb	01/86	493-6397
nc		Learned, Jim	05/84	— —
nc		Bhaisa, Farokh	01/84	— —
nc		_ek, Herb	01/86	493-6397

## QST To All World Class Chess Players

I'm afraid I don't have any news to report to all you Karpov fans; but I do have some good news for the rest of us. You say you haven't played chess since high school, and there aren't any chess players on two meters anyway? Well why not join your peers in our task of putting two meters to good use with local radio chess games ?

Since you can't tell the players without a program; here's the current lineup: Jim, N6MPX in Santa Clara is the top dog so far managing to scare off the local opponents. Jim is playing in the 1800s ratings, and is the man to beat. Next in skill level is the top challenger allen, KB6BZH from San Mateo, with a high 1600s rating and looking for trouble. I've come in third so far, with my best attempt at top dog, but causing a draw-by-stalemate after a tough game with Jim, which lasted over 5  $\frac{1}{2}$  hours. Also included as part of the regulars are Pat, KB6Hzm; and Chris KB6LJF. We also have a second round going with myself and Rob, KA6NAN and were neck and neck out of the gate.

A small group of us have recently started to play chess, for the past several weeks, on two meter radio. The usual arrangement is to use 145.230 W6APZ as a calling frequency, to arrange the game which is then played on 147.300 WB6VIG repeater, the official chess repeater for the Bay Area according to the trustee; and occasionally on the 145.370 Belmont machine; and sometimes simplex where possible. The games are usually over an evening after 8PM and last into the wee hours of the morning, but were trying to cut back to two hour games. The night varies from Thurs. through Sunday, with one evening per week being all we can stand for now.

As you might have guessed, it is not that easy playing chess by radio. Firstly, we've gone to algebraic notation, using files lettered A through H, and ranks numbered 1 to 8. Secondly we have started using small chess computers, and the chess program SARGON III on various micros. In order to better referee the games, and keep the move disputes down to a minimum. The reality is that we keep an ongoing ragchew in progress during the game, with several people following along on their own boards. The distractions being provided by the players are supplemented by comments from the gallery of listeners suggesting moves which help to further interfere with the games. I really have to admit that the comments, and distractions are in themselves, as much fun as the game in progress, I mean where but on ham radio can you discuss a game while its being played, and get away with it? Certainly not at the local unfriendly chess games with rules of silence, and noisy chess clocks ticking away and sounds of people getting ill under tournament pressure...

One purpose of this brief article is to let you know that chess is alive and well on two meters, and we need all of you to help join the fun, establish a working protocol for smoother running games, and have fun with the rest of us "amateur" chess players keep a funny and entertaining form of radio on the air.

TECHNICAL NOTES ON PACKET RADIO 2 Andy Korsak VE3FZK p.1

Last month's article was a basic introduction to the nuts and bolts of packet transmissions, and I got some feedback requesting clarification, so this month I am including diagrams. Also, I left out one very important distinction between packet and RTTY: packets get retransmitted automatically when the receiver doesn't send back an acknowledgement (ACK) packet.

To review last month's notes briefly, VHF packets consist of frequency shifted tones with FM as the base modulation, using 1200 & 2200Hz for 1200 baud on 2 meters. In HF packet there are no specified tones -- they use SSB with 200 Hz shift at 300 baud. Ken WB6MLC of SPECS uses it, for further information. The NRZI (non-return-to-zero-inverted) modulation used is described by the diagram on the next page. When the data to be sent has a 1 bit, the same tone just continues to be output, and when the data has a 0 bit the tone frequency swithes to the other one. There is a rule (to prevent losing synchronization): after 5 "1" bits a 'fake' "0" bit is inserted -- the receiver is supposed to remove the next "0" that comes after five 1 bits.

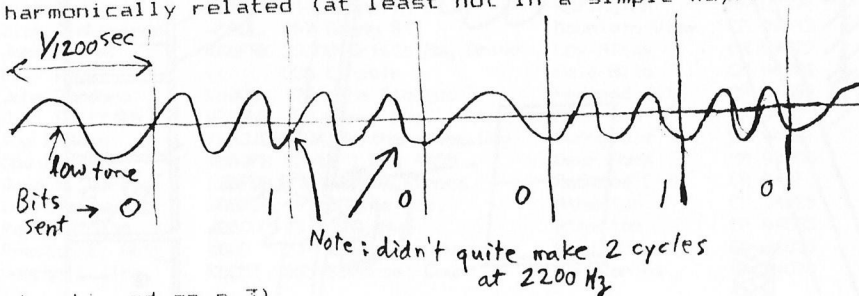
p.2

ASCII text

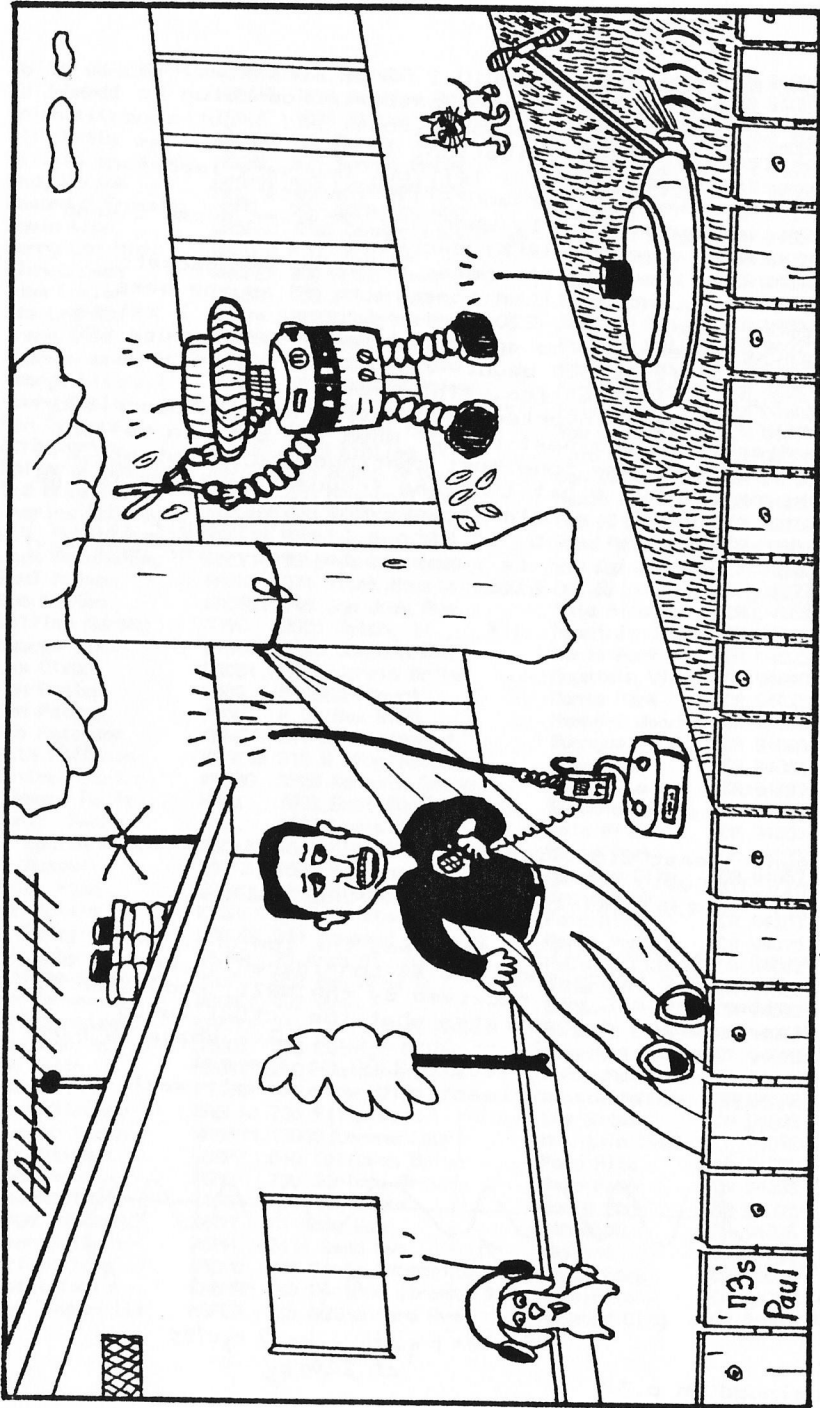
R A D I O

Bits sent (least significant first) & tone freq. sent  
 01001010 10000010 00100010 10010010 11110010  
 LHHLHLHL LHLHLHLHL HLHLHLHL HHLHLHLH LLLLLHLHL...

I assumed that the initial tone was the low one. Note that the hi/lo state below each bit is considered to be the one right after the bit was received by the NRZI "modulator". The diagram below demonstrates what the actual audio frequency might look like -- the actual wave shape is hard to represent because the 1200 & 2200 Hz are not harmonically related (at least not in a simple way).



(continued on p.3)



"caution : HAM AT WORK "

'73s  
Paul

(packet article cont'd

p.3)

OK, now you know how packets work at the "hardware level", which is Level 1 of the 7 ISO (International Standards Organization) established levels. By the way, another thing I forgot to say last month: there is a very good description of packet radio, including the ISO levels, in the ARRL handbook of 1985 (I guess the 86 version is even better).

Now let's clarify the Level 2 packet aspects I described last month. Packets are sent using bits grouped by 8 into bytes. The first thing always sent is one or more "flag" bytes of the form 01111110 which are used to get the sender and receiver initially synchronized. The next 7 bytes are the destination call sign -- the 7-th byte is used for a single digit station "extender" when a ham sets up a digipeater using his call sign. Next comes the sender's call sign and up to 8 digipeater call signs, also 7 bytes each. Next comes a "control" byte. In a regular "information" packet, next comes a FID byte (Protocol-Identifier) and the information bytes (cont'd on p.4)

(packet article p.4)

(text or graphic image data or whatever, but must be in bytes, i.e. a multiple of 8 bits). Then comes a 16-bit checksum and finally one or more flags, used to define the end of the packet. The information can't exceed 256 bytes, of which only 128 are to be used for data, the others being recommended for network control, according to the AX.25 PROTOCOL as of Oct.10, 1982.

The control byte is as follows:

PACKET TYPE	CONTROL BITS
.....1.....2.....3.....4.....5.....6.....7.....8...	
Information..0....{tx.sequence#}...P/F....{rx.sequence#}	
Supervisory..1....0.....S1....S2...P/F....{rx.sequence#}	
"Unnumbered".1....1.....M1....M2...P/F....M3....M4....M5	

where:

P/F is the Poll/Final bit, S1 etc. are supervisory function designator bits, e.g. QSL, and M1 etc. are "unnumbered modifier bits", used presumably for network control.

All information packets get assigned a sequence number, so the QSL's can apply to the right packet! I'm presuming your first packet may get to the receiver after your second one, if the first one gets clobbered somewhere in a network of digipeaters, but I'm just learning all about this stuff myself now -- maybe that's not the reason for sequencing.

Don't forget the digital communications net on 145.23 Wed. 7:00PM & the Bay Area computer net on 147.33 Wed. 9:00PM. 73 Andy



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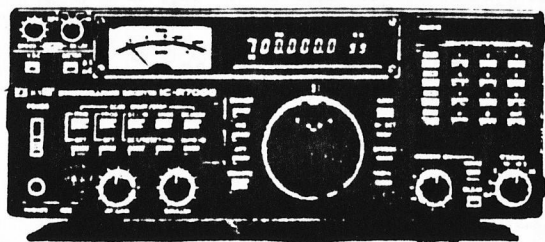
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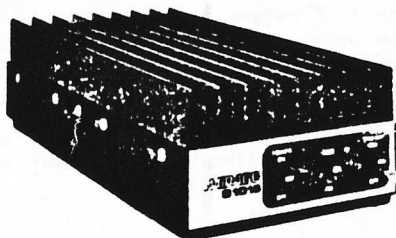
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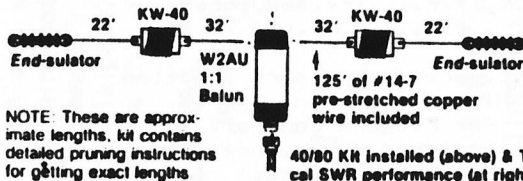
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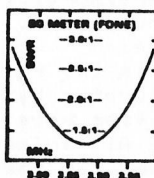
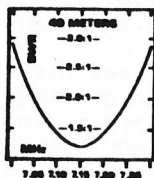
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NOTE: These are approximate lengths. Kit contains detailed pruning instructions for getting exact lengths



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