

PAARA

GRAPHS

Feb 86



New Roster



Clipperton

**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.

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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

PROGRAM FRIDAY FEB., 7, 1986

Bob Vallio W6RGG

THE 1985 CLIPPERTON EXPEDITION

The first Clipperon 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 W6QAT 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 Clipperon presentation, so don't miss this one!

NEXT MONTH: Dr. D.K. Reynolds K7DEA, known for inventing the iscopole 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 KEAL
Title: REVEALING ANTENNA SECRETS
BY MAKING RADIO WAVES VISIBLE

OTHER PLANNED FUTURE ATTRACTIONS:
George KG6ZK on "the Link", a chain of VHF & UHF repeaters
Woody WANEY of coherent CW fame, the famous "Herman" from
146.76 whose sea stories not too many can challenge.

Novice Licensing Program.

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 (KA6LZI) at the meeting, or give him a call at (415) 325-9808.

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K6 BCV	Allen, Kenneth	02/85	____	K6 KYU	Feiler, Kurt	01/86	365-2857	→
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K6 FMC	Lapp, Kevin	01/84	364-2654	*K6 OL	Wallace, Robert	01/84	851-0249	
*K6 FLE	Hardion, Vance	01/86	854-0803	K6 OOO	Root, I. Eugene	01/83	323-2666	
*K6 FLX	Bartelme, John	01/86	323-6295	K6 P	Schoeller, William	01/84	325-1352	
K6 FNA	Enge, Robert	12/85	415-366-5427	*K6 PFC	Talbert, Elmer	05/84	____	
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*K6 HBJ	Lazier, John	02/83	326-0594	K6 SOI	Morton, Bob	01/86	____	
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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 Karrov 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 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 WB6V1G 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 we're 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 it's 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 switches 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.

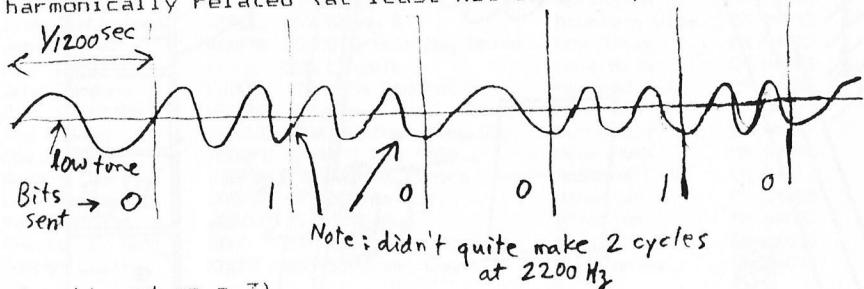
p.2

ASCII text

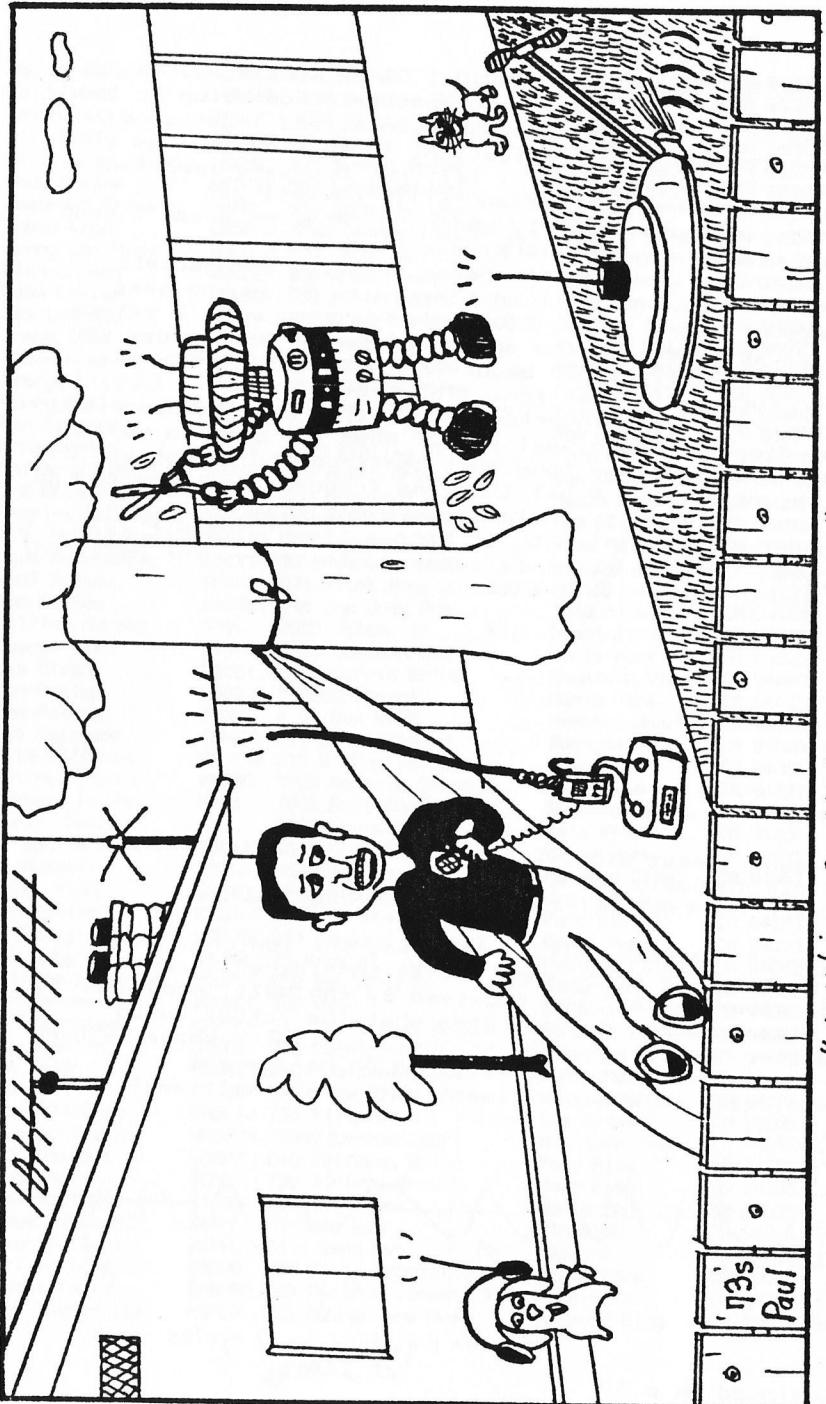
R A D I O

Bits sent (least significant first) & tone freq. sent
01001010 10000010 00100010 10010010 11110010
LHHLHLLL HHLHLHLL HLHHHLLL HHLHHHLH LLLLLHLLL...

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"

(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 PID 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
Information..	1....2....3....4....5....6....7....8...
Supervisory..	0....(tx.sequence#)...P/F....(rx.sequence#)
"Unnumbered".	1....0....S1....S2...P/F....(rx.sequence#)

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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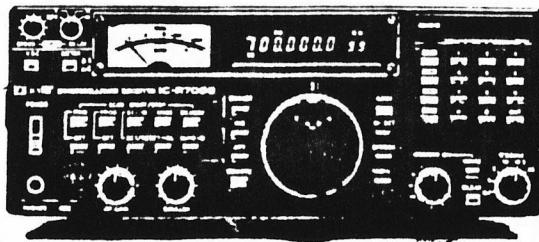
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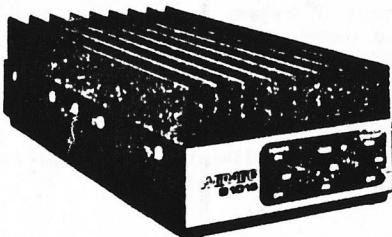
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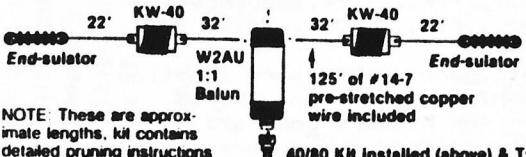
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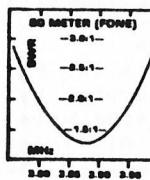
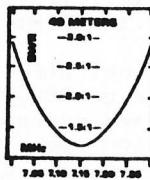
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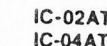
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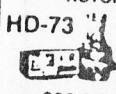
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