

DIGITAL

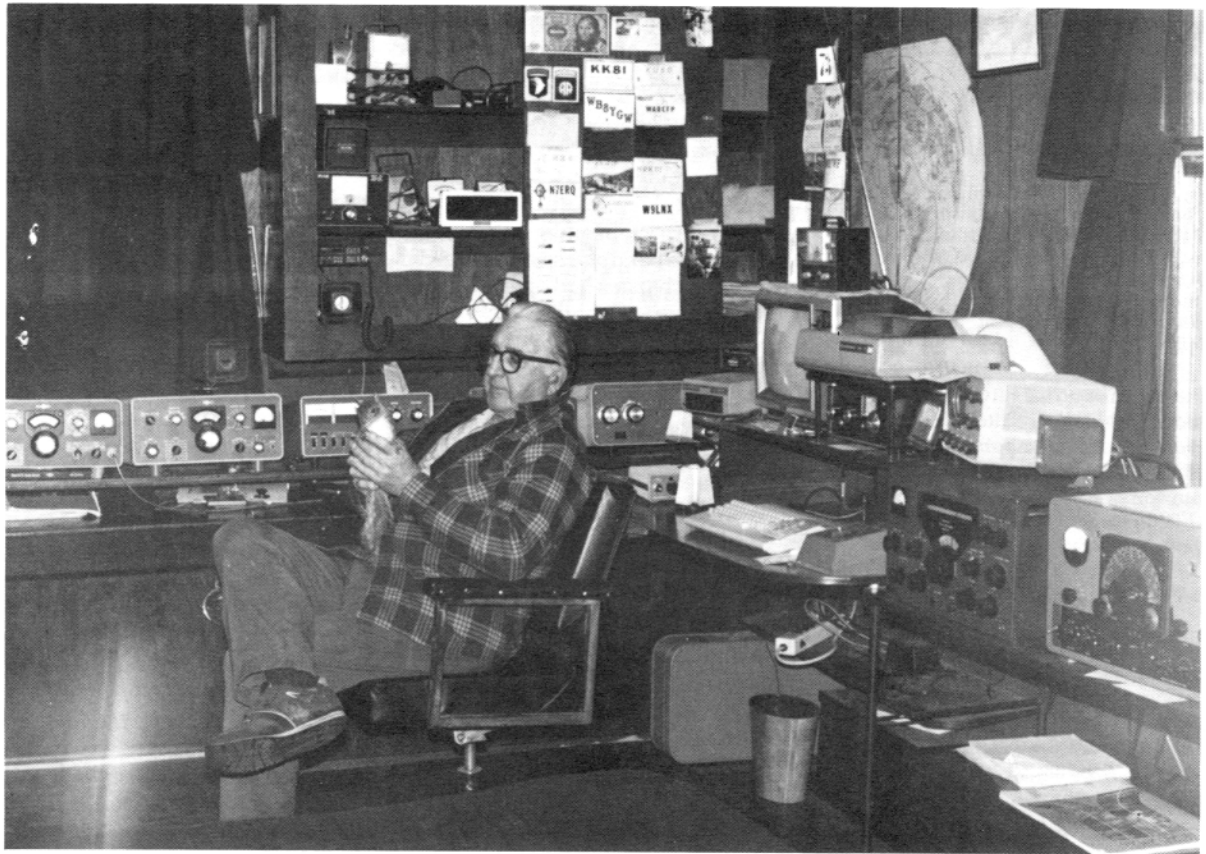
JOURNAL™

A Dedicated Digital Publication Since 1953

Volume 40, Number 8, October 1992

DC Meets With STA-5 in Dallas

See pg. 2 & 22



Is Ham Radio really Squirrely?

Hits & Misses	2	Packet	9	Digital Committee Report	18
MSOs	3	DX News	12	Digital Digest Forum	20
The Link	4	AEA Ambassador	13	Dayton 93-Rooms	20
Contesting	6	Hardware	14	APlink Station Guide	21
Software	7	SITOR Tuning	16	Classified	23

Dale S. Sinner, W6IWO
Owner, Publisher, Editor

All Correspondence:
9085 La Casita Aveune
Fountain Valley, CA
92708-2712

Phone: (714) 847-5058
FAX: (714) 892-2720

STAFF MEMBERS

Jules Freundlich, W2JGR/0 DX News
Jim Jennings, KE5HE The Link
Jim Mortensen, N2HOS Software
Richard Lawton, N6GG Contesting
Richard Polivka, N6NKO Packet
Besty Townsend, WV7Y Awards
Jay Townsend, WS7I Hardware
Dick Uhrmacher, K0VKH MSOs
Roy Gould, KT1N CQ/RTTY Contest Mgr.

SUBSCRIPTION RATES

USA/Canada/Mexico . . . \$15.00
1st Class \$18.00
Foreign . Surf. \$22.00/AIR \$30.00

Exceptions: All former USSR countries, Asia, Australia, New Zealand, Pacific Islands, Africa (other than North Africa), Indian Ocean Islands, and Middle East - AIR ONLY. (Surface mail not advised these areas) Cash, Check or money order, in U.S. funds drawn on U.S. banks only with request. No credit cards accepted.

The publisher assumes no liability or responsibility for errors, omissions or editorial content. Written permission from the publisher of the RTTY JOURNAL is required prior to and for any reproduction of all or any portion of this magazine. Mailing will be on or about the 20th of the month. Subscriptions and advertisements must be pre-paid by cash, check or money order, in U.S. funds only.

POSTMASTER:

The RTTY JOURNAL (USPS 391850) is published monthly, except combined May/June and July/August issues, for \$15.00 per year, by the RTTY JOURNAL, 9085 La Casita Avenue, Fountain Valley, CA 92708-2712. Second Class postage paid at Santa Ana, CA 92799-9998 and additional mailing offices.

ADDRESS CHANGES:

Please send all address changes to: RTTY JOURNAL, 9085 La Casita Avenue, Fountain Valley, CA 92708-2712

ISSN 0033-7161

Copyright © 1992 by Dale S. Sinner
All Rights Reserved



HITS & MISSES

Dale Sinner, W6IWO
9085 La Casita Ave.
Fountain Valley, CA 92708-2712

Digital Committee Report

Don page 18 and 19 of this issue you will find the recommendations that were made to the League BOD. Please take a little time and read and examine them carefully. Keep in mind these are only recommendations to the League and do not represent any final decisions. The BOD will decide what final action to take and also what will constitute a petition to the FCC. If you have comments or suggestions, please send them to your Director or to ARRL HQ.

You will notice some drastic changes were made over what the DC had recommended in an earlier meeting in June of this year. Also you will note that the IARU met in September and major changes to the bandplans were agreed to. These major changes had an influence on the decision process at the meeting. Also the STA-5 who were present, gave their input to the meeting. The results are as you read them.

The objective on this meeting was to come up with recommendations that would meet the needs of all digital operators and at the same time protect their individual rights as hams. To accomplish a task of this magnitude, it was important that all mode operators be united.

Spectrum efficiency is of vital importance to the digital modes because of the great influx of hams interested in operating digitally. Consequently, the representatives to this meeting gave considerable attention to our precious bandspread on each band. Trying to slice a small piece of pie into many small bites, suddenly becomes only nibbles.

Trying to find the right combination that would satisfy all digital modes is an possibility, consequently, compromises have to be made. The representatives did the best they could to find common ground where we can all live together in harmony. We must stay united in this effort. We must learn to get along with each other. I challenge you to do your part.

Dayton 1993

On page 20 of this issue, you will find the hotel room announcement. Don't waste too much time making up your mind about going to Dayton next year. The number of rooms I have will go fast, so make your reservations immediately. I do not have the room rates yet but I assume they will be comparable to last year.

CLADS

Clads stands for "Classified Ads." If you have gear sitting on the shelf or in a drawer, why not get it out, dust it off, and run a CLAD in the RJ. You will be surprised how fast things can sell using our CLAD page. The rates are reasonable and you reach people with money to spend. Remember, one man's Junk, is another man's Treasure.

RJ MOVING

My home has been sold and the XYL and I are in the process of packing up are belongings. We will be moving south about 75 miles to a town named Fallbrook. The new place has 1.29 acres and a house we think will be most enjoyable for us. Lots of room for my antennas, plus a nice orchard consisting of 150 lime trees and about 25 other assorted fruit trees. Looks like I will be trying my hand at farming or ranching.

As for the RJ. This will be a major move. Lots of things will have to take place over the next couple of months. The address change alone will be monumental. Please bear with us as we go through the trails and tribulations of moving. It is a tramatic experience when one has not moved for over 20 years.

READER SURVEY

Last month on page 21 the RJ published a "Reader Survey." Many of you have already sent yours back to us but we need more. This survey is as important to you as it is to us, so please take a few minutes to complete the form and return it to the RJ. Thanks for your cooperation.

All for now. 73 de Dale, W6IWO ■



MSOs

Dick Uhrmacher, K0VKH
212 48th St.
Rapid City, SD 57702

Hi Gang! Boy what an exciting Summer this has been! The fishing up in northwest Montana was nothing less than outstanding, we had enough rain to keep things relatively green here in western South Dakota, I upgraded to a 486/33 MHz computer, and there's enough controversy surrounding the HF Packet STA to keep a guy in print for years! Ha! But, I hope that everyone has had a nice Summer, including some well deserved vacation. We spent three wonderful weeks up a Kooconusa Reservoir, in the very northwest corner of Montana, and the salmon fishing was outstanding. I almost, (but not quite), put a HF rig, computer and some MSO software in our 5th-Wheel RV, but time got away from me, and I didn't make the grade. Maybe next year!

SAD NEWS DEPARTMENT:

It pains me greatly to pass on the news that Don Gallagher, K8WZX, of Cuyahoga Falls, Ohio, is a Silent Key. Don fought a valiant battle with liver cancer, and passed away on July 8, 1992, while staying at his daughter's home near St. Louis. Many of you know Don and Ruth, as they have been stalwart attendees at the Dayton HAMVENTION each year, and charter members of "The RTTY Dinner" gang. They attended the very first "RTTY Dinner" held down in Miamisburg in 1978, and until Ruth's passing two years ago, they never missed a one! Don was a decorated World War II pilot, an avid Amateur Radio Operator, and a digital mode enthusiast.

Don always looked on the bright side of things, always had a good word to say, and was one of the best friends a person could ask for. He helped many a person get into Amateur Radio, and helped others in their day-to-day operations. He was one of the last real gentlemen, a patriot, a wonderful human being, and I will miss him greatly!

FROM THE MAIL BAG:

I apologize for not being a bit more responsive to some of the letters I've received, but with Summer vacations, yard and garden work, plus what seems like a thousand other things going on, I am a bit late.

I had a nice letter and picture from Chuck, K8WOQ, from Hamersville, Ohio (see cover). If you think there's something squirrely about the picture, you're right! Look closely at what Chuck is so tenderly holding in his hands! He questions some of the ARRL's actions concerning the Digital Survey, and the STA on HF Packet Radio. Chuck thinks that packet radio should be relegated to VHF/UHF frequencies.

I also had a nice letter from Dave Sumner, K1ZZ, Executive Vice President of the ARRL, responding to some of my less-than candid comments concerning how "policy" is set at League Headquarters. And, quite frankly, he puts things pretty much in perspective. As we all know, the recent developments concerning "unattended digital operations" haven't really pleased anyone. The League, the FCC, the HF Packet STA group, users of the authorized digital frequencies, etc., all complain about lack of good input concerning policy making with respect to this issue. As Dave points out, the League works with information and recommendations from League committees, staff personnel, etc., and supplements this information with knowledge gleaned firsthand, or from direct input from members. Dave says, "But the truth is, those of us who look to the Board or EC (Executive Committee) for policy decisions could do a better job of supplying them with the stuff that good decisions are made of." Amen Dave, and after hearing more about the HF Packet STA debate, I don't think that those directly involved in the STA did provide timely, informative and accurate data upon which a good decision could be made. Many of us complain about the League and what might be considered an "Ivory Tower" approach to some matters, but none of us should complain unless we've done our part in informing the League in matters that count.

Hal MacArgle, W8MCH, of Five Forks, West Virginia, thinks that some of the "trash" messages on packet radio tend to slow down the overall system. I agree wholeheartedly, but at the same time point out that "what's trash to one person, is gold to another!" Without some form of censorship, and a complete overhaul of the AX.25 packet protocol, weeding out messages, (whether they be in MSO's,

BBS's, APLINK's, PAMS, etc.), would destroy the very thing we attempt to foster, namely high-speed data transfers. Hal also feels that some messages on packet are not appropriate, as they may be quasi-business in nature. He suggests that the Happy Easter message in your BBS may deprive Hallmark of some revenue. I suggest that those type of messages, (just like Amateur Radio autopatch telephone calls), are of such insignificance and low priority, that if they were specifically outlawed the person originating them would just not send the greeting, (or stop and pay to make a phone call). Finally, Hal states, "You (meaning your beloved author), also fail to mention that you may have a vested interest in forcing Hams away from an outlet for their used gear." Boy.....that really throws me for a loop, as I can't even force my charming XYL to buy me a new boat, much less influence others on what to do with their used Ham equipment! If I have somehow given the opinion that it's better to "buy new", than to "buy used", then I apologize. Quite frankly I can't remember even broaching the subject. With the ever-spiraling costs of new Ham equipment, the used market is a very lucrative one. One only has to visit the Flea Market at the Dayton HAMVENTION to confirm that.

Glen Wiebe, VE4GN, writes that he recently got into AMTOR, (after trying several other modes), and that he enjoys having "real QSOs" again. He states that when 20 meters is open, the AMTOR segment is very busy, and hopes that it will not go the way of packet. He is afraid that the increased popularity of AMTOR, along with the increase of APLINK MBOs, could ruin that mode. He hopes that someday most long distance traffic will be handled by UHF and satellite links, and that the HF bands can then be used for QSOs and experiments. Glen is having a bit of difficulty with his KAM TNC. He uses "Smartwatch" to store his operating configuration. Recently that's not working, even after replacing it. Anyone out there have a solution to that problem? If so, drop Glen a note at Box 1563, Beausejour, MB, Canada, ROE 0C0.

I would also like to thank Jim Ashby, W6FAI, Palo Verde, CA, Andy Anderson, W1ACB, Quincy, MA, Dean Showalter, WA6PJR, Yucaipa, CA, Don LaFavor,

K0WZA, Spokane, WA, and last but not least, my ol' friend Pete Buyaki, K5GV, from Harrison, Arkansas, for their input concerning some of the issues mentioned above. Keep those cards and letters coming! This "MSO Column" is just as much your forum as it is mine, and if you have something to say relative to current digital affairs, drop me a line. I'll do my best to get it in print, (and hopefully a little sooner next time)!

MSO RAMBLINGS:

I had a nice note from Larry, KA0JRQ, and he tells me that he's feeling much better now, and "doing all the right things" in order to stay healthy. It's a chore, I know from experience, but it pays in the end.

The N1API MSO, Meridan, CT, remains off the air while SYSOP Al tends to his job hunting chores. Hopefully Al will rejoin the ranks of the employed soon, and thus return his MSO to service. Good luck Al!

Ernie, W6ZRR, San Luis Obispo, CA, is having a bit of difficulty with his MSO, and needs a helping hand. If there's anyone out in his area that can give him a hand getting his MSO back up and running, please contact him at (805) 543-7641. Meeting and getting to know him is a once-in-a-lifetime pleasure!

As I write this column, (early September), SYSOP Frank, K4KOZ, is off on a trip to New Zealand and Australia! His MSO will be out of service for a few weeks, and we hope that he has a wonderful and exciting trip. Go for it Frank!

Finally, I too would like to extend my heartfelt thanks to John Troost, TG9VT, for his contributions to "The RTTY Journal" over the years. As one of the old-time MSO operators, John not only contributed to that service, but to AMTOR, APLINK, DX activities, and Amateur Radio in general. I'll miss his comments in the "Journal", and hope that he and his wonderful family prosper and enjoy life every day!

That's it for this month gang! Let me hear from you! 73 de Dick, K0VKH ■



The Link

Jim Jennings, KE5HE
Rt. 2, Box 166E
Hearne, TX 77859

We have returned to our home in Texas after too short a stay in the mountains of Wyoming. Next year will be different. I had to get back to take a 2 week trip to Russia (near Kazan, east of Moscow). Shortly I will have all this traveling shut down and I can have a little more fun and spend a little more time looking at my ham radio interests. Coming up, probably next month, I hope to report on some details about the use of the DSP filter shown in the September QST. I have ordered the kit and will see how it works in improving the signal to noise ratio on AMTOR.

As a follow-up of last month's column, let me say that I am super pleased with the performance of the modified PK-232. In addition, I have the scan circuit that was in the August issue working in my TS-850. I also installed that circuit in the 850 belonging to N5TC who runs PAMS. In both cases it is working properly. There has been a minor improvement in the circuit for installation in either the TS-850 or TS-450 which I will outline this month.

Mod for Scan Circuit For Use in TS-850/450

I found that getting a PTT line was not so easy on the TS-850 when installing the Scan Circuit Board described in the August 92 issue of RTTY Journal. A similar problem exists with the TS-450. As you may recall, the grounding of the input to the Scan Board from the PTT line is the action necessary to start the timer for the scan restart delay. There is a line on pin 7 of the Remote connector of each of these rigs which has +12 volts present while transmitting. I simply put an NPN transistor switch, keyed by this line, to ground the input of the scan circuit. Figure 1 shows the circuit. The components can be soldered directly on the existing board in a somewhat ugly, but viable fashion.

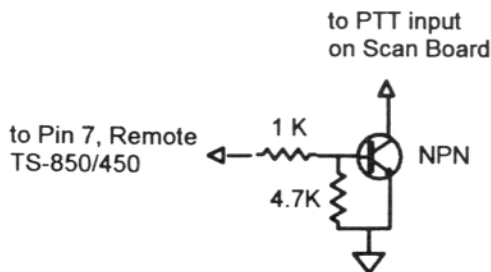


Figure 1
Scan Circuit Mod for
TS-850/450

Some Hints and Reminders For APLink Users

Surprisingly, I have found a fairly large number of users on APLink that do one or both of the following.

1. After login, they get the signon line which says:

CALL de KE5HE QRU GA +?

On the next line they enter:

RM (or LM)

And of course the system comes back and says:

NOT FOUND GA+?

QRU means "I have no traffic for you", and it is right every time.

2. After login, they get the signon line which says:

CALL de KE5HE QTC 1 +?

And they don't read the message. (QTC 1 means that the system has 1 message for you).

I often see the user that put the message on originally check in later, do an LR (list recent users), see that the addressee has checked in and wonders why his message was not picked up.

I think that a little clarification about forwarding is in order. If a message is entered without a BBS call in the "AT" field, that message will stay on the MBO it is entered on unless there is personal intervention by the SYSOP or the SYSOP has made an entry in what is called the INTERCEPT file of the APLink system to automatically route the traffic to another MBO/BBS. By the way, if such an entry exists for the Address in the INTERCEPT file, that entry will override whatever the user puts in when he enters the message.

If the message is entered with the "AT" field, i.e. HOME BBS (use complete hierarchical address always), then forwarding will occur according to the forwarding procedure used by that MBO. Normally, the message will not be held at the MBO at which the message was entered. Please limit messages to 2500 characters, if you need more space send more

messages. That helps when the SYSOP is forwarding under adverse band conditions.

As long as I am talking about operating practices on AMTOR, I think I need to touch base on what I consider the most serious problem. I had the opportunity while at my cabin last month to do a little more operating and "keyboarding" than usual. I find that we have more and more cases where someone will start chirping, usually for an APLink MBO, right on top of an existing link. Of course if the original link was marginal, then that is the end of that. I think the cardinal rule of radio communications is "Do Not Transmit While the Frequency Is In Use." I actually had it happen on two successive links to TG9VT. The bands are crowded, but things will go a lot better for everyone if all of us will patiently find a clear frequency or wait until the frequency we want is clear. I hear of a few that are wanting to elbow their way in by running higher power so that they can maintain their link. That just aggravates the problem as the higher powered stations take up more spectrum from a practical point of view.

I have also heard the comment from some that "An APLink station came right on top of my QSO." The APLink station responds to a live person and that person is the one that starts the ball rolling. We can have what is called the hidden transmitter problem (the third party trying to work the APLink cannot hear the original QSO). I think the more common situation is that the third party hears the QSO, but because the signals are not very strong he feels that both can have a go at the same time. I have found that any AMTOR signal you can hear is workable, in fact I have worked some that I can't really say that I heard anything. So if you hear any chirping on frequency, you will probably cause interference if you start chirping. By the way, I am talking here about on-frequency interference, not adjacent channel interference.

We all need to watch our operating practices, that is just part of our job of maintaining operating proficiency. I would be glad to hear from anyone who has ideas of how we can continue to promote good operating practices, especially on the HF digital modes.

More Excerpts from the APLink Help Files

You may obtain APLink/PAMS software from TAPR. This software will run on a PC compatible computer and drive the PK-232, AMT-1, or HAL PCI-3000.

A disk with all the APLINK/PAMS files may be obtained by mail from TAPR. Send \$2.00 US for a 5-1/4 inch disk or \$3.00 US for 3 1/2 disk plus cost of post-

age if outside of North America and specify that you want an APLINK/PAMS disk. If you request, TA PR will automatically send you an update when it is received with the understanding that you will mail them the costs when you receive the disk.

Tucson Amateur Packet Radio (TAPR),
PO BOX 12925, Tucson, AZ, 85732 USA

TAPR Telephone: (602) 749-9479

Receiving Your Messages on AMTOR

The quickest and simplest way to receive your messages is to give the 'RN' (meaning 'Read New') command as soon as you sign on. All messages in the system not already marked 'forwarded' will be transmitted to you automatically without further action on your part. As each message is completely forwarded to you it is marked 'forwarded' and will not be transmitted again with this command. (You may read it again with the 'R (number)' command.

If you are receiving an unforwarded message and the link is lost it will still be available to the 'RN' command.

If you have logged into the system with your automatic answerback then the system will mark your messages 'forwarded' only after it triggers your answerback at the end of each message.

You do not have to (in fact, cannot) delete a message. Once it is forwarded the system will delete it 24 or more hours later. In the meantime it may be read again using the 'R (number)' command.

Use the list commands to see what messages are available.

Entering a Message On AMTOR

Messages may be entered directly from your keyboard into the system, however it is better if you prepare a file before logging on and then send it at machine speed. This reduces the connect time to the system and the potential for transmission errors.

You may send three kinds of messages:

SP (call) which is a message to a specific station and may only be read by that station (or you or the sysop) and will appear on the message list only for those stations. For others, it simply isn't there. 'SP' messages will remain in the system for 21 days or 24 hours after being marked 'forwarded', whichever comes first.

'SP' type messages may also be entered for automatic forwarding to another MBO/BBS. They may be entered in the form 'SP (call) TO (route)' where (call) is the addressee and (route) is the hierarchical route to his local MBO/BBS. Since

AMTOR does not provide for a number sign character (unless you are in full ascii mode), use the equal sign character in its place when required in an H route address and APLINK will convert it to a number sign character.

'ST (zipcode) TO (NTS statecode)' is used to enter a message to anyone to be delivered by the National Traffic System. The subject (first line) should read: QTC (city, state) and the body of the message should be in standard ARRL message format.

'SB (id)' addresses a message to 'id' and marks it as a bulletin. You may also include a bulletin identification (BID) by adding 'BID' followed by the bin on the same line. For example:

SB ALL BID 12345W1ABC

is a message to 'ALL' with a bid of 12345W1ABC.

Bulletin type messages will remain in the system until removed (cancelled) by either the originator or the sysop.

To send a message, type the command (i.e., 'SP W5SMM(CR/LF)') and wait for a response from the system. The line will be typed back and you will be requested to confirm with 'YES' or 'NO'. At the 'GA SUBJ/MSG' prompt type the subject of the message on its own line and then enter the text of the message.

At the end of the message send 'NNNN' on a new line. 'NNNN' embedded in text is ignored. After sending 'NNNN' wait for a new 'GA' prompt to enter a new command.

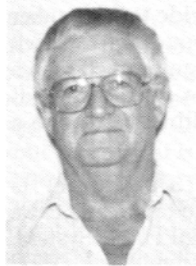
Identify your station at regular intervals by sending your identification after a 'GA' prompt. Any character sequence that is not a valid command is ignored by the system.

If you have already sent a partial command line and want to cancel the line just send three or more '/'s in a row anywhere on the line. That line will be ignored. This only works on command lines. /// embedded in a message will be passed on to the addressee.

While transmitting a message and before sending the 'NNNN' you may cancel the message with the command 'CNCN' on a new line.

After you have transmitted a message you may cancel it with the 'CANCEL (number)' command. This is normally used to remove a bulletin you have placed in the system, but it may be used to remove any message you have previously sent.

73 AND GOD BLESS de JIM, KE5HE AT KE5HE.TX.USA.NA



CONTESTING

Richard Lawton, N6GG
14395 Bevers Wy.
Pioneer, CA 95666

RTTY Contests - Coming Events

All rules are in RTTY Contester's Guide

Date	Contest:
JAN 2-3	ARRL RTTY Roundup (USA)
FEB 6-7	EA WW RTTY Contest (Spain)
MAR 20-22	BARTG RTTY Contest (England)
APR 17-18	SARTG WW Amtor Contest (Sweden)
MAY 8-9	VOLTA RTTY Contest (Italy)

The ARRL RTTY Roundup Contest is Jan 2-3 '93 PREPARE!!!

The 'Roundup is a very different kind of contest. It is bare-bones, big on QSO rates, low on multipliers, and a simple exchange. It's the only RTTY contest that has a low power category, too. For manual loggers, only ONE multiplier check sheet is needed because there are no band multipliers. (See page 28 of the RTTY Contester's Guide for a handy multiplier check sheet - just for the 'Roundup.) You'll still need separate dupe check sheets for each band, also found in the 'Guide.

For the ultimate in 'Roundup fun I highly recommend using a contest logging program. I have used the WF1B RTTY Contest logging program by Ray Ortgiesen, WF1B and found it to be a real ball in the 'Roundup. It takes some time to get used to - all the little odds and ends - but with a bit of practice BEFORE the contest, you'll find that the preparation is worth it.

- Here's some thoughts about the 'Roundup, learned from the previous ones:

- Try to plan your two rest periods before the contest starts. It's best to use the rests when your propagation is at its' poorest.
- Best QSO rates are usually made when CQing. However, when running low

power, as this contest has a category for, you will probably do better overall when Hunting and Pouncing. There's a reason for this; it takes a loud signal to command a frequency. If you are not in a rare state or country, you won't attract a huge following. Furthermore, under crowded band conditions, the weaker CQs will get QRMed a lot more - especially on RTTY bands.

c) The rules tend to focus on States/Provinces of USA and Canada. This is a mixed blessing, good for those trying for RTTY WAS, and the low power operators, but not as popular for working DX stations, as in the CQ WW RTTY contest. For this reason, W/VE stations will have their high band beams pointed more toward each other, rather than toward Europe, Japan, or South America. However, there are lots of DX operators that want to work W/VE stations so be sure to give them a break, too.

d) Those in the rarer states, like Wyoming, Montana, North Dakota, etc., can increase their QSO rates by tossing in their state abbreviation when calling CQ. You are not a run-of-the-mill "W7" if you sign, "W7ZZZ in WY"!

e) Try to follow the lead of the operator running the pileup. If he has difficulty in catching your call, he will most likely send your call and exchange twice. Even though he may be loud to you, follow his unmentioned suggestion by sending your reply twice. The overall QSO ef-

iciency will be higher this way. This technique is often used when the pileup QRM is very bad.

f) At times during a contest you will run into a big pileup, usually on a rare multiplier. Checking the multiplier summary sheet, you find you need him. But the propagation seems to be favoring another area because he doesn't come back to stations in your area. What to do? Good question! Here's what I usually do: First, jump in for a few quick tries. If he doesn't come back to you, keep asking yourself, "How much time should I spend trying right now?" Also, ask, "How fast is he picking out callers?" If the band is hot, and/or he is slow, don't waste too much time on him - especially if there is likely to be others on from that multiplier area. I will give him five or six chances to come back to me (hah!), then I'll put his frequency in the transceiver memory and move on. After that, I'll check him out quickly every 10 or 15 minutes.

HOW FAST DO YOU NEED TO TYPE TO BE INTO RTTY CONTESTING?

I've been asked this question many times, and the answer I give is that if you can type 20 WPM (even looking at the keys) you'll do just fine. The real secret to RTTY contesting is macros, not typing speed. But that still requires some familiarity with the concepts of keyboards and basic changes in how you learned to type, as compared to today's word processor techniques.

I learned to type in high school on a manual typewriter. We were taught to never, NEVER, look at the keys or the typing coming out on the paper. Our eyes were to be glued to the paper we were transcribing. In today's world of fancy computers, guess what? We must look at the SCREEN, and occasionally the keyboard for macro combinations. Thanks to word processing techniques, most composing is done right on the computer, and that minimizes the transcribing.

Can you type 20 WPM? - Here's a simple way to find out.

I came up with this little trick when I was a VE for our local radio club. It was used as a guide to show just how fast 20 WPM

CW sounded on a hand key. Time yourself as you type, "Mary Had a Little Lamb". This poem has 110 keystrokes, including punctuation, space, and (Enter) keys. Using the standard five letter word, plus spacebar as a keystroke for counting WPM, the 110 keystrokes translates to 18.3 words. If you can type this poem in 55 seconds, your typing speed is 20 WPM. Try it.

MARY HAD A LITTLE LAMB. (Enter)

ITS FLEECE WAS WHITE AS SNOW.(enter)

AND EVERY WHERE THAT MARY WENT,(Enter)

THE LAMB WAS SURE TO GO. (Enter)

In the process of unlearning old typing techniques, I purchased a typing instruction program to teach me to watch the screen while I type. This program is really fabulous. Not only did it make me watch the screen, it also helped me to increase my typing speed. The program allowed me to make my own test programs. So I typed up a whole bunch of callsigns from old logsheets so that I could practice typing callsigns without looking at the keyboard for the numbers. It would grade me each time I took the test, tell me my speed, and record my progress. (The program is: Typing Instructor, from Egghead)

While on the subject of keyboards, there

is a lot that can be done to help those in the contest game to make keyboards easier to operate. I intend to pursue this subject in depth at a later time, but, for starters, let's look at some bright colored key labels that really make a difference in contesting.

COLOR CODING ON THE KEYS

After trying many different schemes for instant identification of the vital keys for macros, I came upon a way of making round colored labels 1/4 inch in diameter. These labels, made by Avery, are self-adhesive and removable, and come in bright pastel colors. Using a 1/4 inch hole punch, available from most stationery stores, simply punch the 1/2 by 3/4 inch labels. Then, using 1/8 inch decals, there is enough room for 2 capital letters or 1 cap and 2 lower case letters. I use bright orange for the "Hot keys", like the "CQ" and "GG". ("Hot keys" means that, when pressed, switches to transmit, sends the macro, and then switches back to receive.) Placing the colored circles on the lower right of the appropriate keys allows the original key label to still show.

Making up the macros for the exchange usually requires using the Ctrl, Shift, or Alt keys in combination with the assigned macro key. For the Ctrl, Shift, and Alt keys I place 1/2 inch squares of Red, Green, and Blue, respectively. (Word-

Perfect color choices) Then use 1/4 inch circular labels on the Function keys and others, in the appropriate color of the assigned macro combo. Any other macro, for example, WF1B RTTY program uses the Home key for "Call" and End key for "Log", I use a bright yellow color with the decals on them.

These labels are easily removable for changing to other contests, and seem to last through at least four or five contest sessions. The hardest part is placing the decals on those 1/4 inch circular dots. On a clean surface stick a small piece of drafting tape. Then, with a small screwdriver, raise a tiny space to slip the edge of the 1/4 inch label under the tape. This creates a non-slip base for the decal process. The next hardest part is placing the finished label on the precise spot of the key. Use an Exacto knife to separate the backing from the label, making the label stick to the knife blade. The knife will now act as a one-prong tweezers, allowing the label to be positioned over the key. Press down on the label and remove the knife. Bingo! Oh, yes... be sure that the key surface is clean and dry before installing label. I use rubbing alcohol and Q tips.

Be careful. If the label somehow drops down between the keys it could make you say, "Oh... for pity's sake!" a few times.

73, CU SOON - in the pileups!

de Rich, N6GG ■



SOFTWARE

Jim Mortensen, N2HOS

P.O. BOX 328

Indian Rocks Beach, FL 34635

GALLIMAUFRY: "Noun--A collection of things. Syn: melange, olio, salmagundi." Thanks to Roget's Thesaurus for a wonderful collection of words. Any would serve as the keynote for this column; or the name of an opera for that matter. I can hear the tenor in "Il Salmagundi" now! Regardless, the completion of this "collection of things" decreases the substantial pyramid on my occasionally visible desktop. Thanks to all of those who used the mails to create the mess. By the way, I have three word processors on the hard disk, each with a dictionary. None contained gallifmaufry, though one did list olio. It listed only hodgepodge as a synonym. Gotcha!

MINIPROP PLUS

The first and most timely stop is the latest version of this venerable propagation program. I ponied up the \$30 upgrade charge . . . and was disappointed. The MUF (maximum useful frequency) predictions are smoother and faster than ever, the world graphics improved, etc., but MPP remains the ultimate DOS program. While Sheldon acknowledges the world of color this time around, there is no mention of Windows in the index and no mouse support. And the graphics are circa 1985, not 1992. Somehow the \$60 price tag for the first time user (no credit cards, from W6EL Software, 11058 Queensland St., Los Angeles, CA 90034-3029) ought to include all of the above and more, including credit cards.

We acknowledge the need for the program. A glance at the indexes on the DX Cluster or from WWV confirms that we need all the help we get. Actual operating experience seems worse than the numbers! Conditions are ghastly and while MPP cannot change the facts, it points us to a band and time where a contact is at least theoretically possible. And it does so quickly and in more variations than ever before. But is it worth the time it takes to,

- a) quit Win3.1
- b) get to the DOS prompt
- c) change to the MP directory
- d) get the readings

then reverse the process to get back to the Windows environment? Perhaps, but the first reasonably-priced competitor that operates under Win3.1, even as a DOS

program, will win the day. Or so it seems to me.

MPP is based on the BBC prediction algorithm and extends this to predict signal levels on any QSO path. Plug in the coordinates of your QTH and the prefix of the destination, the date and the solar flux or sunspot number. MPP responds soon (a math co-processor is recommended) with the estimated MUF at half-hour intervals on seven bands! The summary table tells you the signal strength you can expect at each time and frequency. In case you need more, find long and short path length, sunrise and sunset times, gray-line directions; or get the world map up onscreen. It displays the great circle route and the day/night terminator for any time and date. Or, if you crave simplicity, MPP brings up the DX Compass and shows the bands that are open across twelve directions from your QTH at any time of day!

Modify some or all of this with antenna gain data, print it, file it, recall it. This is a rich lode of statistics. And it is accompanied by a manual that educates the willing reader on the subject both in theoretical and practical terms. I approached the manual with some misplaced trepidation for the manual is accessible, easy to read and understand. Spend some time with it.

Despite my complaints about the cosmetic shortcomings (and I do hope they will bring out a Win3.x version) this program is one whose time has come. When I bought the first version three years or so ago, I never used it. I didn't need to. Bountiful propagation seemed a permanent condition. I worked 125 countries with five watts! Those days have been replaced by a semi-permanent slump in the propagation batting average. And unless blessed with psychic powers you will need statistical power as well as RF power to reach your target QSO . . . this year and for some years to come.

SCANCAT

There is another way! John NS5Z sent me a copy of this control software (co-authored by John and N5JMZ). It has unusual powers. You could tirelessly scan 400 frequencies, identify the source of all signals, build a data base of countries heard, then consolidate the data into a DX compass of sorts. Of course, by the time you finished conditions would have changed!

Not recommended! However, this is an interesting package. SCANCAT was originally developed for the SWL crowd. John tells us, "I am an avid RTTY listener and RTTY Journal reader. Thought you might be interested. The program was created for the SWL and scanner guy but I guess with the new breed of XCVR you

could use it for a scanning APlink system. But this has not been tested! There is also a terminal program for PK-232's, Kams, M-7000, etc." SCANCAT is able to work with the RS-232 interface on most Icoms, Kenwoods, Yaesus and miscellaneous brands as well.

I haven't had a chance to give it a good workout on the FT1000D, but if it could scan, stop at the presence of my SELCAL, pause for the QSO then return to scan, there would be some enthusiastic buyers out there. But look at what it does do. Enter any one frequency and increment up or down. Enter any two frequencies and scan between them with any variable time delay. Scan a data base of frequencies, up to 400! Scan any number of such data bases. And so on. The program, in short, allows complete control of all radio functions that are addressed to the radio's microprocessor. Fascinating.

Send \$49.95 to J&J Enterprises, 4001 Parkway Dr., Bossier City, LA 71111. They have a batch of other stuff for sale as well.

WINDOWS

Item: Lazlo N9FMR volunteered to test the VE3BGB software for Win3.1 and Kenwood. He promised to get back to me soon with a full evaluation. But, he reports that I sent him a corrupted disk. A new one should be there shortly.

Item: In general, I think the Earl of Chesterfield was right--- "Advice is seldom welcome, and those who want it the most like it the least." So what can I say when Rick Arzadon sends a note thanking me for recommending Win3.1 as the only way to solve his particular problem? Rick is multi-tasking five programs with hopes of soon adding "an internal board and software. Then I can multi-task to my heart's content." Thanks Rick. Enjoy your new copy of WF1B's logging program and let us hear about how it runs under Win3.1.

Item: Among my impossible tasks . . . please note that I am undertaking a Win3.1 shareware survey. I solicit your input. This near hopeless task leads me to download more trash than can be conveniently recycled. Nuggets, as in gold mining, remain somewhere over the next horizon. In this very preliminary report two or three specialties promise lasting value. For example, fonts.

I collect them with joy and with ease for the TrueType font library grows by the hour. Win3.1's TrueType capability deserves to be your best friend. No longer need we download fonts to the printer before we print. No longer need we buy cartridges or new fonts one at a time, at a price equal to dinner-for-two at the best restaurant in town. No longer need we own a laser printer to produce a wide array of font sizes or styles. TTF is a new

and wonderful way of achieving old and expensive solutions.

Bingo! I discovered a collection of thirty fonts on CompuServe, downloaded them in a link lasting as long as the fourth quarter of the Super Bowl and then found that they were in the public domain. That's right, thirty fonts for the price of the local call to the BBS. Wonderful, and they come with the easiest font previewer/printer/installer I have ever seen. Get them. Look for TTINSTAL.ZIP, unzip and then install the file under Windows, then have a fantastic time. "Cairo" or "Polo" or "Cracklin' Plain" will make your day.

Would you believe "Whiskers?" This tiny utility adds muscle to your mouse. In a spreadsheet, for example. Normally, fill in a cell, take your hand off the mouse and hit Enter before you move on to the next cell. Not so with this little gem. Enter the data in the cell, press the "right" mouse button and go on about your business. This inexpensive bit of shareware is available everywhere. It educates the right button of your mouse for use in any Windows program and is worth many times the miniscule registration fee.

QUOTES is a gem!

Each time you boot up to Win3.1 up pops a thought for the day. I chose to keep it on the screen and can't wait to get at the new ones. It is generally available on CompuServe or AmericaOnLine. Get it.

Please let me know what you have found and please, please register when you find a program that you like. That is what shareware is all about. Own it and then feel free to pass it on to your friend with the same reminder. And don't forget: scan your disk for viruses regularly!

MORE LETTERS

Item. The DOS world beckons as well. Bob, KC9UU, outlined a new approach to budget multi-tasking. "The Desqview price was more than I wanted to invest and found FASTFLIP." Bob runs PTERM and LOG-EQF during contests and needed the fast switching between programs. "I have been playing around with the program for several weeks and find it very friendly and fast. One program will run in the background while using the other. After loading FASTFLIP I bring both programs up to the operating level. Switching is accomplished by using the left control key and respective number key . . . 2, 3, etc. The switch is instantaneous, or so it seems. This program has a

place in the library of the digital operator who has a limited budget."

Thanks, Bob. This program is available from Sunset Shareware, PO Box 1156, Ypsilanti, MI 48197, Phone 313 572 9121. No price given.

Item. I caught hell about not writing for the beginner. No, not in the RTTY Journal (though that may also be true), but in QST. Leon W2QNL, hungering for a move from VHF packet to the real world of AMTOR and APLink, found my October-November 1991 articles in QST too advanced for the beginner. He's right, of course. I not only said so in the first article, but referred them to the beginner's treatise that ran in the November 1990 QST. But he missed that.

I sent him a copy and put him in touch with Warren W2NRE, New York APLink. But I sympathize with his view. There isn't much available in print on the subject. Where does the beginner (in the event he has no friendly, helpful, knowledgeable neighbor) probe the mysteries of this strange and wonderful part of the spectrum we call home? Do we need some kind of manual? What form should it take . . . computer disk? How should it be assembled, distributed? I would surely appreciate your thoughts.

Next month is Acuterm time. New disks arrived this past week from Bill. Surveys are in the mail. So it should be interesting. Your comments as well, please.

73 G/L

de Jim, N2HOS ■

THE LATEST!

From AEA

Now available from AEA, the DSP-1232 Multi-mode Data controller featuring Digital Signal Processing. A Single port version of the DSP-2232, this controller features:

Packet, AMTOR, Baudot, Morse Code, NAVTEX, WEFAX, and more. All Satellite digital modes: 9600 bps K9NG/G3RUH; 2400 bps; Automatic identification of most types of digital signals; software DSP modems -- future upgrades installed on EPROM chips; Upload new modems into RAM from disk or telephone BBS; Software switchable radio port selection; Complete 18K byte personal mailbox -- accessible through Packet and AMTOR; Much more.

This new controller eliminates the need for external modems for satellite work or high speed data, as all the modems exist in software.

Suggested list price is \$799. For product data sheet and list of authorized dealers, call AEA's Literature Request Line at (800) 432-8873.



PACKET

Richard, N6NKO
5800 South ST #221
Lakewood, CA 90713

LETS GET HEAVY

I was involved in a discussion with a colleague of mine concerning the age old debate on what operating system is best. That is a discussion that will go on forever in some circles. You will have people say that this is better than that and so on and so forth. Now that OS/2 2.0 (Half an operating system, version 2.0) is now out in full force (?), the discussion is still getting hot. We all agreed to disagree. Me, I will stick with my UNIX system here. The displays may not be as fancy as others, but it works and allows me to run many programs at once on one machine. Oh, I have crashed several applications on this crate, but that does not bother me one bit. I just switch over to the console screen and kill the offensive process. If the process handler is not cooperating for my keyboard, I can go to a remote terminal and effect repairs from there. I have not been able to do that here with Windows. Usually, when I crash an application, it is a nightmare to recover what happened. Aside from that, Windows is a single user application. UNIX is not. Soon enough, I will have NOS working under UNIX. Then I will not have to get a separate computer for the ham radio side.

THE REVIEW

Last month, I started to review a program named PkGOLD that was released by InterFlex Systems Design Corporation. The program is a "frontend" processor for either your Kantronics KAM or your AEA PK-232. Since I have the PK-232, I will be working on that version of the program. What the program does is present a "friendly" interface to the operator for operating the TNC. The following review will compare PkGOLD with a regular communications program that is available on the market for phone modem communications.

This program is designed to work under DOS on a 80x86 based machine. Well, it will be tested on a 80386DX with math coprocessor running at 12.5 MHz. If a program is supposed to work correctly under all systems, it should work under the following configuration:

80386DX/80387DX, 6 MB ram, running under VP/ix, on a UNIX multiuser system. VP/ix is a DOS emulator that lets the user run DOS based programs. It has a couple of limitations, the biggest one of the version that I am using is that it will not allow programs which need protected mode. No simulation there. The second one is that there are several instructions that it can't emulate. No big deal. It just makes the test more interesting.

STARTUP

Remember last month when I mentioned that I installed the program and did not put in the correct registration number. The program installed anyway. But, the program would not run. It kicked me out with a nice message concerning that there is a problem and I should contact InterFlex to solve it. Well, I knew what the problem was. I deliberately set it up to fail. I just wanted to see what would happen. After I was informed of the problem, I erased the files and reloaded the whole setup, correctly this time. When I started it up, the program started quite easily.

This whole idea of using your amateur call to encode the software with a key that is used at installation time can be a pain. What if you are trying to load the package on a Sunday and no one is around at Interflex to make sure that you have the correct number. That could be a hassle. Me, I do not like programs that are copy protected. More times than not, they can go crazy and the little undocumented tricks that are pulled in the name of copy protection usually end up biting the user of the software. That is why I never load off of factory original disks. I always copy them first and load off of the copies.

I read through the book a couple of times before loading the software to find out what lies ahead for me. When I test new software, I like to see if I can make it run without having to consult the manual. This is a very good test for finding out how well the software is written. This puts a high demand on the on-line help facilities, if there are any available. The help feature is a hypertext format that can prove to be helpful for finding a subject that you are not sure of but it is related to something else. The process speeds up

the quest for information. Hypertext is a design that allows you to proceed to another topic by highlighting a word that is a key to another subject. As an example, let's say that I am reading the help file on the subject of sending a string of text in Baudot. I could be reading along and find a word highlighted that talks about keying up the rig to transmit. If I click on that word, I will be kicked over to the section that describes the keyup process. The technique proves to be a great way of finding out information without having to page through a voluminous index that may not locate your particular subject.

So, with the aid of the help section, which is available by using button F1, I started again with the startup of the software. Since I have not used my PK-232 for some time, I pulled the battery to erase the memory. I then restarted the TNC for a port speed of 9600 baud, 8N1. That was performed by using my trusty comm program. After the TNC was talking again, I exited the comm program and started PKGOLD.

On initial powerup, the program asked me for a couple pieces of information and it was on its way setting up the TNC. After the program was satisfied with the setup and all was working, I was presented with the communications screen. On the bottom of the screen, there was a line stating what each function key performs. When I hit either the Control or the Alt key, the menu changes to correspond to the requests available for that particular key combination. That was nice and a big help in the process of trying out the software without the use of the book.

Let's start out by covering the Baudot screen. In the past when I have dealt with this mode, you are usually forced to wait for the other person to stop transmitting so you can send a reply. Some communications programs have the capability of displaying a split screen of what you have received and what you have typed. The communications program that I use normally will work split screen but I have to watch what I am typing because I can overrun the buffer in the PK232. There is no mention in the manual of how large the buffer is for type ahead but under the use that I have put it through, I have not exceeded it. The availability of this function is a big convenience. I have this nasty desire to stream type and a buffer such as this prevents overruns.

When in Baudot, the menu bar displays some of your more widely used options such as USOS control, CQ calling and a couple of other nice functions. The presence of these options are for ease of use. Personally, once I have all of the options set, then I just leave them and seldom need to change anything.

The AMTOR mode is a bit on the different side. This is because AMTOR has several methods of operation as opposed to Baudot. The method that I like best, is being able to type ahead in ARQ and have the buffer automatically start sending when the link gets turned around to me. That is a nice idea and makes operating even smoother.

As to the rest of the modes, especially packet, I am still going over them. One thing I can say is that I believe the interference is gone that would wipe out the whole two meter band here. I was never been able to track down its origin but it hasn't bothered me for some time. I should have the discussion concerning the most powerful section of the program, the packet side next month.

VOLUME DOWN

Last month, I wrote down some of my thoughts concerning the viability of packet on HF and presented some rather technical reasons why I was against the idea of unattended, automatic forwarding. From what I understand, there was to be a meeting of the ARRL Digital Committee and a group of representatives from the STA group to present their side of the issue to the committee. I have not heard what happened at the meeting. All I can hope for is that the session did not turn into a spitting contest. I know that the FCC watches all of this and from some of the flames that have been circulating, have probably left the FCC thinking that some hams are children and need a daddy to watch them so they don't fight and bicker. When I was in high school, I had to learn debate. Not the kind of garbage that one sees in the U.S Congress but the kind of debating where you have to argue pro or con to a given resolution. Your time is limited to present your argument and then formulate a rebuttal based on what was presented by the other side. The presentations were judged and then the judge announced who won based on a point scoring system. That class taught me more on investigating remarks than anything else. So as I can sit here reading the mail, I see through the smokescreen and realize when a person knows what they are talking about or if they are just espousing something they have just overheard.

Now we play the waiting game on the Digital Committee. I am sure whatever decision they render will be not liked by everyone and some may run to the FCC screaming (another childish act). If they decide that there will be some form of HF packet message forwarding, then I will go along with it. If not, so be it. I am sure that we, as reasonable adults, will adapt to the change and go on from there and grow.

THE FUTURE

Well, what does the future hold here? I am sure of several things and I am not so sure of a few. I know that Dale Sinner, W6IWO, is going to be putting down new roots and I will be there to help him get back on the air. I am slowly improving my computer system here. I will be informing you of the trials and tribulations of setting up a UNIX system to run NOS and feed that stuff into the resident areas of the computer. If you think that setting up ports on a DOS based machine is hard, try a UNIX crate with eight (!) ports in it. This is where the fun gets involved, especially with assembly routines that are designed to talk directly to the ports (bad programming practice). I would also appreciate your input on to what to cover here in this column. The best way to get me is to drop me a note via N6NKO@WB6YMH-2 in Southern California. Letter writing will not get to me because we will be moving again soon. Hopefully this will be the LAST move I will have to make for a long time.

So, have fun and enjoy the fun that Ham Radio offers. Until next time....

de Richard, N6NKO ■

Basic Packet Radio

By

Joe Kasser, W3/G3ZCZ

Contains 380 pages that describe:-

What packet radio is. What it takes to use it. The Local Area Network (LAN). The Packet Bulletin Board System (PBBS) and how to use it. How to Send and Receive Messages & Bulletins. The distributed LAN. Extending your range via Nodes. Packet Clusters. Servers: Dumb and smart. ELMER - The ham's expert system. LAN-LINK manual and evaluation disk.

PRICE \$29.95 add \$2.00 S & H.

Try it for 30 days. Money cheerfully refunded if you are not satisfied. Send check (US Bank) or money order (state disk size) to:-

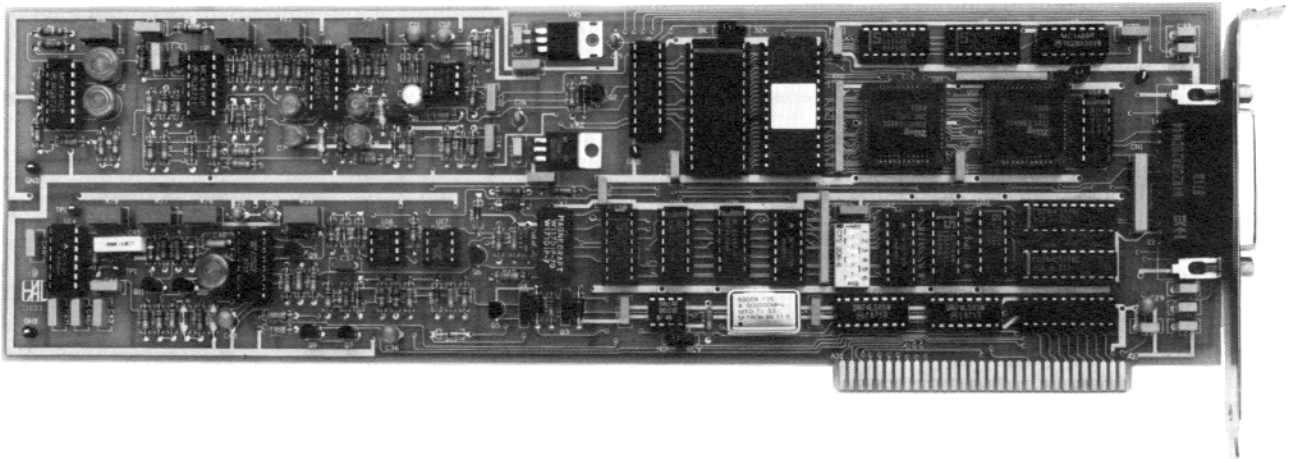
Software For Amateur Radio, #500

POB 3419, Silver Spring

MD. 20918

(Overseas, add \$6.00 for airmail)

A Winning Combination . . . The PCI-3000 and SPT-2 from HAL!



The HAL PCI-3000/PC-AMTOR system is designed to put your PC on the HF bands with outstanding performance at an affordable price. Amtor allows you to get through when other methods fail. If you've ever been DX-ing with someone on Amtor when 20 meters dies out in the evening, you know what we mean. Things may slow down, but you can usually keep up the QSO!

The PCI-3000 doesn't limit you to Amtor. You also get high-performance Baudot and ASCII RTTY, CW, and Search Mode. Search Mode lets you simply tune in the signal—we take it from there. The PCI-3000 automatically finds the correct code, speed, and polarity. No more guessing!

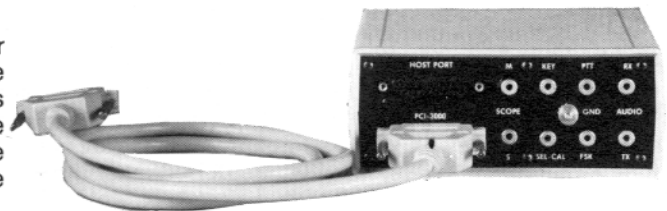
If you want to communicate on HF, do it right with the PCI-3000! Call HAL Communications—your AMTOR source—and put your PC on the air today!



SPT-2 Spectra-Tune:

For ease of tuning your PCI-3000, add the SPT-2 Spectra-Tune. The Spectra-Tune lets you tune in CW and RTTY signals quickly and accurately with a calibrated linear 30-segment bar graph. The bar graph represents a 600 Hz range of the audio spectrum, centered at 2210 Hz for RTTY and AMTOR, and 800 Hz for CW. Calibrated marks indicate the proper frequency for AMTOR, RTTY, and CW tuning.

A cable is included with the SPT-2 for providing power and control from the PCI-3000. The rear panel of the SPT-2 provides convenient "RCA" phono connectors for all radio connections. This avoids having to make radio connections directly to the PCI-3000. Enhance your PCI-3000 system with the SPT-2 Spectra-Tune Today!



HAL Communications Corp.
P.O. Box 365
Urbana, IL 61801
Phone (217) 367-7373
FAX (217) 367-1701

PCI-3000/PC-AMTOR with software **\$395.**
SPT-2 Spectra-Tune with cable **\$169.**
FIL-1 Amtor/RTTY filter (installs in SPT-2) **\$69.**

(Low tone export models available.)



DX NEWS

Jules Freundlich, W2JGR
825 Summit Ave., Apt 1401
Minneapolis, MN 55403-3188

Here we are in the middle of the fall DX season when conditions around the autumnal equinox are generally at their best. Barring any "fireworks from flares or coronal holes", it may be the last time for a long time before we again see the exceptional conditions to which we have become accustomed. After hitting a peak in mid 1989, Solar Cycle 22 is now definitely on the downside. That peak was the third highest since sunspots were first recorded back in 1749. George Jacobs, W3ASK, who has been writing the CQ magazine Propagation column for 40 years, predicts that Cycle 22 will bottom out in early 1997. So we should still see plenty of DX around for the next several years. But as time goes on, we will have to work somewhat harder for it. Optimizing antennas and keeping transceivers and amplifiers in top notch condition will make life a little easier.

Keep your ear to the WWV 18 minutes after the hour broadcast on 5, 10, 15, or 20 Mhz, and check the Northern California DX Foundation beacon on 14.1 Mhz. For a check on medium skip stateside conditions (1000 miles), I like to give a quick look at each of the four WWV frequencies to get a rough idea of the Maximum Useable Frequency (MUF) in that frequency range.

According to Tad Cook, KT7H, any time the K index is 3 or below, worldwide propagation conditions should be at their best. Remember that a low A index (the 24 hour update), a low and/or failing K index (updated every 3 hours), and a relatively high solar flux generally mean good conditions. There are so many other variables such as the state of the earth's magnetic field, time since the occurrence of flares, sudden Ionospheric Disturbances (SIDs), etc. that propagation prediction is anything but an exact science. Much of the forecasting and analysis is based on empirical data. Considering that is the case, some of the popular computer programs such as MINIPROP, BANDAID, IONCAP, and others can be quite helpful but their results can still be modulated by unexplained anomalies.

Sixteen years ago Greg Stephenson, W2OBX, (with encouragement from

yours truly) performed an analysis covering daily observed conditions over a six month period. The conditions as predicted at that time by W3ASK when compared to the actuals as reported by the National Oceanic and Atmospheric Administration (NOAA) in Boulder, CO. were found to be 88% accurate! Propagation forecasting since that time has become somewhat more sophisticated so I expect similar analysis done today show a higher percentage of success.

(If you wish to learn about this subject, to my knowledge the best fundamental tutorial, easily understood but the average ham, is "The Shortwave Propagation Handbook" by George Jacobs, W3ASK, and Ted Cohen, N4XX. It is available from CQ Bookstore, 76 North Broadway, Hicksville, NY 11801 for \$7.95 plus \$2.50 S&H)

DOINGS

ANGOLA, D2, Jose, who operated initially as D2/EA7EL, and then as D2EL, has left Luanda. This country should no longer be on many needed countries lists thanks to a fine job by Jose. QSL to the CBA of EA7EL.

ANTARCTIC, VP2 Although Gavin, VP8GAV, of the British Antarctic Survey works mostly SSB and CW, he operates RTTY and may sometimes be found on 14, 21 or 24 Mhz. He will be QRV until March 1993. QSL to D. Warburton, GM0LVI, 'Law Vista', High Street, Errol, Perth, PH27QQ, Scotland, UK.

DESECHEO, KP5 Landing/operating permits have been received from the U.S. Department of the interior and the N0TG team has made travel reservations for the 28 December thru 4 January expedition. Randy Rowe, N0TG, has a new address to which your contributions should be sent. It is P.O. BOX 891, DeSoto, TX 75123. That will be the same address for QSLs.

GLORIOSO, FR/G By now most everyone's need for Glorisos should have been filled by FR5ZU's current swing through the islands. However, for those of you who had to be at work or school when his signal boomed in to stateside, you will

have another chance with FR5AI/G. Yo-land was to have started up on October 4th and was scheduled to be QRV until the middle of November.

GUAM, KH2 KH2Y will be active on RTTY before and after the CQWW SSB contest 24-25 October by a group of 16 operators from Japan. QSL via JA8RUZ. KH2S will be active on RTTY before and after the CQWW CW contest 28-29 November by a group of 9 operators from Japan. QSL via JH4RHF.

JAUN de NOVA, FR/J FR5ZU surprised everyone when he went to Europa/E after his stay at Glorioso, instead of, as expected, to Juan De Nove/J. He should be finished up here by the time you read this, even if you worked him as both /E and /J, that only counts for one DXCC country credit. The QSL address for Jacques, FR5ZU, had been printed incorrectly by several DX bulletins more times than I care to remember so for the record here it is as furnished by W2/F2YS: JACQUES QUILLET, P.O. BOX 347, 1 CITE METRO CHAUDRON, F-97494 STE. CLOTILDE CEDEX, REUNION ISLAND, VIA FRANCE.

KINGMAN REEF, KH5K There is an unsubstantiated rumor that we may see RTTY from this place in 1993.

LORD HOWE ISLAND, VK9 JA2NQG is planning RTTY from here in February 1993.

MALYJ VYSOTSKIJ (M-V), AJ1 A Multinational team will operate from this island in the Saimaa canal in the Gulf of Vyborg prior to and after the CQWW SSB contest. Their brief stay will be only from 22-26 October. Let us hope they will be able to squeeze in a little RTTY before and after the contest.

MARKET REEF, OJ0 A group of Finnish operators were to have taken their club call to Market Reef to operate as OH1AF/OJ0 at the beginning of October for an all mode operation. Did you work them?

MELLISH REEF, VK9M VK9NS has had to cancel this trip. I believe that the necessary financial support was not forthcoming.

MOUNT ATHOS, SV/A If you believe in the tooth fairy you will believe the third hand report that Doc, JA3PFZ, has been invited by monk Apollo to operate RTTY in November.

MOZAMBIQUE, C9 C9RJJ, is still active on 20 meters around 2300Z. QSL via W8GIO for a fast confirmation.

NEPAL, 9N Remember Kiyoko, the YL from Japan, who gave us all those nice Pacific prefixes on RTTY? Now in Nepal, she hopes to obtain a license and will surely be sought after by the deserving. Stay tuned.

NIGER, 5U Yoshi, 5U7M, continues to be very active. Check for him on 14080 or 21080 around 2200-2300Z. QSL via the JARL bureau.

NORTH KOREA, P5 Reports regarding a startup operation vis- vis the ZA experience continue to be upbeat but nothing definite yet.

SOUTH ORKNEY, VP8 Brain, VP8CFM, is still active particularly on 15 meters around 1800Z. Early in the CQWW RTTY contest (20m 0240Z) I was able to give him a quick tutorial on the contest. The last I heard he was handling the pileups quite nicely. I wonder how many of you got this Zone 13 multiplier. QSL to GM4KLO.

WALLIS & FUTUNA, FW I don't think there has been any RTTY from this place since Ron Wright, ZL1AMO, gave us FW0BX, back in 1989. JR1LZK, J11NJC and JA5VBH hope to be here 28 October - 3 November with a good probability of RTTY. Callsign is not yet known. QSL via JT1NJC.

WILLIS ISLAND, VK9W If you were fortunate enough to snag Jim Smith and company (Kristi, VK9NL, and Atsu, VK2BEX) at VK9WW, QSL to VK9NS. When I worked Jim in mid September, he was just firing up a new laptop in preparation for the trip. Many of us missed Willis on the last go round, so I hope both you and I got him.

POTPOURRI

DX ADVISORY COMMITTEE (DXAC)

A petition for new DXCC Country status is expected to be submitted by Samiel, BV4VB and Tim, BV2A for FRATAS ISLAND which is located at 21 deg N 117 Deg E. The DXAC has been requested by the ARRL Awards Committee to study and recommend additions to the DXCC rules that address abuses in QSLing practices by certain individuals and expeditions. The DXAC will probably solicit input from the DX community. Preston Smith, N6SS/VQ9SS, has requested that the DXCC rules be modified to permit DXCC accreditation to stations located on docked, moored or anchored ships.

Probably in the making is a change to the DXCC rules for field checking which would allow field representatives to check cards for any new DXCC award, not just "first ever."

KUDOS DEPARTMENT

To FR5ZU for his operating technique of giving your callsign several times at the beginning of each transmission, confirming it at the end of each transmission, and finishing with a definite SK. There is no ambiguity that you had a good contact. To Nao, P4OP/NX1L, who stated on the air recently "... THERE ARE SOME STATIONS WHO TRY TO OVERRIDE OTHERS. I WILL NEVER ANSWER SUCH CALLS." To Harvey, W2IYX, for reminding us of his original patent (issued 50 years ago) for FSK RTTY. Should we consider him the "Father of RTTY?"

NEW PREFIXES?

The I.T.U. has now allocated the callsign Block S5A-S5Z to the Republic of Slovenia. I assume there will also be new assignments for Macedonia and Bosnia-Herzegovina.

NEW COUNTRY?

Will Brunei, V85, be split into two DXCC countries because the area called Temburong is separated by an intervening DXCC country? My National Geographic Atlas doesn't show this place.

QSL HELP?

I was under the impression that all QSLs for the digital operation of YV0AA back in April 1990 had long since been distributed, but Bill, AA4M/6, has been unsuccessful in his quest. The W6GO list still shows the manager as YV5AJ. If anyone has any suggestions for Bill drop him a postcard at his CBA.

KB2VO FROM PANAMA

Don't you believe it. A highly respected amateur publication recently continued the myth that George, KB2VO, operates HP1XP. This distortion resulted from a partially overheard conversation between KB2VO and HP1XP that obviously was garbled in the listener's receiver. Our good friend George has never been to Panama and has no plans to go there.

HAVE DX NEWS?

I can be reached directly by dropping mail into my PAMs, leaving a message at the APlink boxes of TG9VT or CE3GDN, sending me a packet message addressed to W2JGR@WB0CQG.MN.NA, finding

me on RTTY, telephoning me at (612) 377-7269, or FAXing me at (612) 874-8161. When these high tech approaches fail, the U.S. Postal Service can find me. When I am not chasing DX my PAMs listens on 21074 during daylight hours, and 14074 at night in the central Time Zone. Set your chirping to WJGR.

THANKS

Thanks to the following for all the information: K2ENT, KT7H, KW1P, NA2M, TG9VT, VK2SG, VK9NS, VP2ML, VP8GAV, W2/F2YS, W2IYX, W3ASK, and 0PDX/BARF80.

See you all next month. For now bye bye from Minnesota73 de Jules, W2JGR ■

Fred Prehn, WX9W, receives AEA's Amateur Ambassador Award

As communications Coordinator for Dream Flight Wausau, Fred Prehn was instrumental in providing hundreds of students with a positive introduction to amateur radio. Because of Mr. Prehn's efforts, AEA presented him with the 1992 Amateur Ambassador Award at the August ARRL National convention in Los Angeles.

The Amateur Ambassador award is presented each year to the person who best meets the following three criteria: Dedication to Amateur Radio, Positive Influence on Those Outside the Amateur Service, and Initiation of Special Projects or Programs to Promote Amateur Radio. The award includes a check for \$1000 and a trip to the ARRL National Convention. If you know of a ham who meets these criteria, contact AEA for more information.

Dream Flight Wausau was an educational project centered around a simulated space shuttle mission. Approximately 750 students from all around Wausau, Wisconsin school district participated in the project, and amateur radio was used extensively. Packet and ATV were integral in keeping everyone involved. ATV was also linked to a local cable TV station, and the 6-day event was broadcast over the entire Central Wisconsin area. An estimated 20,000 viewers watched the Dream Flight and had a very positive exposure to amateur radio.



HARDWARE

Jay Townsend, WS7I
P.O. BOX 644
Spokane, WA 99210

Greetings from Spokane, hope you enjoyed the recent CQWW-RTTY Journal Contest. Once again Hal, Jim and I had a pretty good time and we started the arduous task of training a new operator, Mike, KI7FX, who joined in on the fun. Hope you found a couple of new DX countries and had an enjoyable time in the contest. Some big scores have been mentioned so it looks like a banner year.

The mail bag had lots of letters in it this month, so let me jump in and discuss the news. Bill, W6OWQ, writes that he is getting active again and having some troubles with his ST-6, the original one designed by Irv Hoff, W6FCC (silent keyboard). Seems the 170 Hz filters are pretty narrow on the 200 Hz shift guys, so he also uses the PK232.

Paco, ED7XC, is looking for a PC board layout and some help in interfacing the TS430S HF transceiver, anyone have any ideas?

Nice long letter with drawings from Chris, WO1V/4, who is a new ham and newcomer to Amtor. Chris uses the TU-470/HD3030 and is having lots of RFI and suggests the following:

"The RFI seemed to depend on whether I was playing with the DB25 connector on the back of the unit...To me it seems the problem is with the plastic (non metal housing) DB25 mounted directly on the PCB" (printed circuit board). Chris suggests changing the wire which grounds the board to the case to a piece of braid. He went all out and grounded the metal shroud on the DB25 and relocated the bypass capacitors from the PCB to the connector. I would have suggested just adding another set. A little tape to seal the hole might also work well.

Thanks for the tip Chris and if anyone has a suggestion for improving the receive recovery on the ICOM 735 drop Chris a note.

Julian, KC6NZN, submitted the following hints for the KAM and the Kenwood TS-850.

"If you are experiencing signal distortion on your KAM and TS-850, I might have the solution for you... and real easy it is too!

If you use the ACC-2 connector on the back of the 850 for all your connections to the KAM, you might find the following problems occur: 1) All HF digital modes suffer so badly from distortion that holding a digital QSO is impossible, and, 2) You have to unplug the KAM if you want to use SSB Phone as the signal is so distorted that it is unintelligible.

The fix! Well, the 850's manual states that the Mic line requires 20mV to drive the circuit. The KAM manual states that it is factory set to deliver 100mV of AFSK. While these both might be true, I eventually discovered (after having to send my 850 back to Kenwood and not getting the problem solved) that the KAM is infact UNDER-DRIVING the microphone circuit.

Move the internal jumper (K5) on the KAM from the LO position, to the HI position and, Presto, no more problems!!

I have seen messages from other people who have described this problem and were told how to do various modifications to the radio or the KAM... Try this first!"

73 Julian - KC6NSE @
KC6NZN.SOCA.CA.NA

That is pretty much the bottom of the mailbag. Keep them pouring in to me here at Post Office Box 644, Spokane, WA 99210-0644. The only other news this month is a couple of new pieces of gear here in the shack. I broke down and ordered the PCI-3000 from Hal Communications and will have it up and running soon. Betsy, WV7Y, my XYL insisted that I get a new radio so she purchased a new Yaesu FT-1000D for me while we were on a trip to Oregon where Betsy and I visited

the contest stations of Joe Rudi, NK7U (who you see in the Kenwood Ads) and to Rush Drake W7RM's fine new station. The Yaesu is perhaps the ultimate in the digital radio field. More on it in a later column.

AEA's ISOLOOP

Back to the review of AEA's IsoLoop 10-30 which I started last month. I now have had it up and operating for a period of time. This small loop antenna covers the 10 to 30 Mhz portion of the band. The concept behind this antenna is the small high efficiency loop antenna. And the IsoLoop is just that small and efficient. The inherent losses in this type of antenna are quite low and it should work as well as a vertical or a half-wave dipole. The antenna may be mounted horizontal, which gives an omni-directional pattern, or vertical, which yields the typical figure 8.

I mounted it horizontal on about a 7 foot mast in the back yard right where I usually have my butternut vertical mounted. (see pictures, facing page) This should give me a pretty good comparison to what the vertical does.

The IsoLoop consists of a continuous 1.5" (4cm) wide iridized aluminum strap formed into a 43" diameter circle. The loop is fed with 50 ohm coax through a shielded coupling loop to an air core inductor which is essentially loss and acts as a balun to isolate the main loop from the feedline. The ends are connected to a motor-driven variable capacitor (10,000 volt), which can be manipulated with a control box.

The IsoLoop antenna is a LC circuit and if you have forgotten all about the LC circuit this might be a good time to refresh yourself in a ARRL handbook. Tuning the antenna is quite critical and takes a lot of practice. This is one of the biggest differences between a multi-band vertical and the IsoLoop. With the vertical it is tuned to multiple frequencies and you just use it. The IsoLoop requires tuning at all times and is quite narrow. I found the resonant range to be about 25 Khz with an acceptable SWR. Towards 10 meters the tuning is less critical of course as the

antenna is so much larger physically.

IsoLoop on 10 Mhz was my first test and since I use this band a lot in talking to the East Coast PacketCluster nodes I have a dipole on the tower which is cut for this frequency. I use 10 Mhz almost every evening and after I found the correct tuning I ran some tests with the IsoLoop. First, the normal power line noise was vastly diminished on the IsoLoop, which while not surprising was very welcome. However, in almost every instance the dipole gave better signal readings. AEA's IsoLoop could hear all the stations, but seemed to certainly have less gain. In one test over 5 hours on the same frequency it was found that the IsoLoop in a hot September sun changes frequency with temperature. As the temperature went from 40 to 85 it would change its resonant frequency, again not an unexpected thing since after all we do have a large capacitor with an extremely large surface area which is changing. I have also noticed this with other devices mounted in garbage cans for tuning wire antennas.

Further tests were made over the course of the month and I found that the IsoLoop certainly functions well. I compared it to the KLM KT-34XA in a couple of DX situations and it could hear almost all the signals with just a lot less signal strength. As 10 meters opened I found that the IsoLoop really plays down in this area of the spectrum.

While visiting Joe Rudi, NK7U, who you have seen in Kenwood advertisements, he mentioned that he uses a IsoLoop while coaching baseball Spring training in Arizona. Joe probably has the largest collection of aluminum in the Pacific NorthWest. He related, the IsoLoop was the best balcony device on the market. Joe works a lot of stuff and even got in a few contest QSOs with the AEA IsoLoop. Bob, N7KJE, took the IsoLoop on field day to a forest service lookout and had very good results.

My general impressions are that the tuning device is the biggest short coming of the IsoLoop. The inability to have repeatable settings for bands is really a disadvantage. It's a lot like having a big long wire and always having to tune the capacitors in the blind. After a bit of practice tuning does become a lot easier. For the Amateur with deed restrictions or limited space the AEA IsoLoop should certainly be considered. High RF and noise environments are other places where this device shines.

Until next time, enjoy the fall.

73, de Jay Ws7i ■
WS7I@WS7I.WA.USANA

11th Computer Networking Conference

The 11th ARRL Amateur Radio Computer Networking Conference, sponsored this year by The Radio Amateur Telecommunications Society (RATS), will be held November 7, 1992, at Fairleigh Dickinson University in Teaneck, New Jersey.

Registration and informal demonstrations will begin at 5:00 PM Friday, November 6, at the Best Western Oritani Motor Inn in Hackensack, New Jersey. Registration will continue Saturday morning at 8:00 AM, November 7, at Fair-

leigh Dickinson University. Opening remarks are scheduled to begin at 8:30 AM, followed by the presentation of Networking conference papers 9:00. Along with the all-day technical paper presentations, introductory and how-to seminars are scheduled for the evening.

For registration and where-to-stay information, contact this year's sponsors, The Radio Amateur Telecommunication Society (RATS), PO BOX 93, Park Ridge, NJ 07656-0093, or phone (201) 387-8896.



SITOR TUNING

A Sequel by Cliff Buttschardt, W6HDO

ED: Cliff Buttschardt, W6HDO, recently returned to sea as a Radio Officer after retiring from the teaching profession in the San Luis Obispo, CA area. Reading the RJ has to wait until he returns from a sea voyage and so keeping up to date is a problem for him. Upon seeing the RJ request for material pertinent to our phase of the hobby, Cliff is submitting his method for checking out equipment at sea to copy TOR (Teleprinting Over Radio).

Cliff suggests the reader also refer to the article on page 20 of the July/August issue of the RJ. For those interested in copy-

ing commercial TOR, Cliff also has included some frequencies and station call-signs he has gleaned over the past year.

Here is Cliff's input:

When a new piece of equipment is first put on line it is useful to first copy some FEC broadcasts. Then ARQ can be attempted with added confidence. This list of Frequencies has been gathered over two years operation on a merchant ship operating on the West coast of the U.S. from the Panama Canal to Alaska and out to Hawaii. Quite often additional broadcasts will occur on these frequencies but in general these times will produce some

information. Especially valuable are those put on by VAI in Canada. Often weather information lasts for over half an hour allowing tuning and other adjustments to be made at that time. Be sure and note that if lower SSB is used, tune the receiver 1700 Hz HIGHER in frequency. Conversely, when USB is used, tune the receiver 1700 Hz LOWER in frequency as this list contains CENTER frequencies. These center frequency shift keyed signals are shifted plus/minus 85 Hertz.

73 de Cliff, W6HDO

950 Pacific St., Morro Bay, CA 93442

FEC (SITOR) Weather and Information to Mariners by Time in GMT--Pacific Ocean

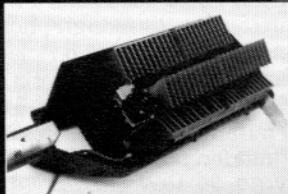
Time	Stations	Time	Stations
0000	NMC S	1300	Astoria Navtex
0040	Honolulu	1330	NMO
0130	NMO	1500	Kodiak Navtex - NRV (180 W)
0230	NRV Hydropac	1540	Adak Navtex
0300	Kodiak	1600	SFran Navtex
0340	Adak	1640	Hono Navtex
0400	SFran	1645	LBeach Navtex
0430	NMO	1650	KFS
0440	Hono	1700	NMO
0445	LBeach	1730	Astoria Navtex
0450	KFS	1800	NMC
0500	NRV (180 W) - KPH	1900	Kodiak Navtex - KPH-NRV (180 w)
0530	Astoria		VAI (12 MHz)
0600	NMO	1930	VAI (8MHz)
0700	Kodiak Navtex	1940	Adak Navtex
0730	NMO	2000	SFran Navtex
0740	Adak	2030	NMO
0800	SFran	2040	Hono Navtex
0900	NRV	2115	Kodiak Navtex
0930	Astoria	2130	Astoria Navtex
1045	LBeach	2230	NMO Hydropac
1050	KFS	2245	LBeach Navtex
1100	Kodiak	2250	KFS
1140	Adak	2300	Kodiak Navtex
1200	SFran	2315	NRV (180 W)
1240	Hono	2340	Adak Navtex

Frequencies in use - FEC only

NMO	12585.5	17022.5
8416.5 24 hrs	12600.0	22487.0
12579.0 24 hrs	16813.0	
22376.0 1730-0330 GMT	16817.5	KFS
	22382.5	8417.5
NRV	22395.0	12580.5
12579.0 24 hrs		16808.0
16806.5 24 hrs	WLO (weather 35 mins past hour)	22377.5
22376.0 24 hrs	4462.5 May 31 to Nov 30	
	6344.0 (hurricane season)	VAI
NMC	8534.0	4214.5
8416.5 24 hrs	12992.0	8428.5
16806.5 24 hrs	16997.0	12599.5
	22688.0	
KPH	4343.0 Dec 1 to May 31	NAVTEX Worldwide
6320.0	6416.0 (non-hurricane season)	518.0
12590.0	8514.0	
8422.5	12886.5	

FREEDOM OF SPEECH

The IsoLoop 10-30 HF Freedom Antenna frees you from restricted areas.



The IsoLoop 10-30 HF Freedom Antenna frees you from antenna restrictions.

AEA's engineering team has put together the most efficient small loop antenna you'll find for HF performance. It's the technical answer needed to send and receive from your apartment, condo or anywhere zone restrictions apply.

The reason you get such big performance in a

small package is the efficiency of the IsoLoop 10-30: it's 72% on 20m, rising to 96% on 10m. Your IsoLoop delivers lower SWR and extended frequency coverage because the loop is isolated from the feedline. Your radiated power goes into the antenna, not into the shack.

Electrically, the large diameter main loop serves as an inductor and is tuned with a 10,000 volt variable capacitor to form a very high Q resonant circuit. That gives you the added benefit of suppressing both transmitted and received off-frequency signals. The capacitor itself is a heavy-duty, split stator design.

The 35" main loop is made of Iridited aluminum and is welded to the tuning capacitor to reduce loss. All welded connections and the custom capacitor further minimize losses. The very low impedance of the radiating loop (typically 0.06 ohm) is matched to 50 ohms using the technique of mutually coupled air core inductors—essentially lossless impedance matching.

Technically speaking, the IsoLoop 10-30 HF is the big value in small antennas.

To connect with the AEA dealer nearest you or for product sheets, call (800) 432-8873.



Advanced Electronic Applications, Inc.

PO Box C2160, 2006 196th St. SW, Lynnwood, WA 98036

Sales: (206) 774-5554

Connect with us

Report and Recommendation to the ARRL Board of Directors, from the ARRL Committee on Amateur Radio Digital Communications September 26, 1992

At the request of the ARRL Board of Directors, the ARRL Digital Committee met today with five elected representatives from the group of amateurs operating automatic HF message forwarding under FCC Special Temporary Authority originally dated July 7, 1987. What follows supersedes and replaces the Committee's June 13 report. Additional data, not available at the time of the Committee's June 13 meeting, included:

A. Revised IARU Region 2 band plan resulting from the September 4, 1992 meeting in Curacao.

B. Additional feedback from amateurs at large, and the STA community, received since the June 13 meetings.

The committee is revising its previous recommendation to include fully-automatic, unattended operation on the IARU "packet priority" sub-bands and semi-automatic operation in all digital sub-bands.

IARU BAND PLAN

The Digital Committee, at its June 13 meeting, was concerned about frequency usage and allocation in the U.S. and other countries, in effect at that time.

The September 4, 1992 IARU Region 2 meeting in Curacao produced a substantially revised band plan for digital modes. The new plan includes segments on all amateur bands between 80 and 10 meters for "digital modes," defined as including RTTY, AMTOR and packet (including new systems like PACTOR and CLOVER), but not FAX and SSTV. Within those segments, "packet priority" sub-bands were defined (except on 40 meters) in which digital modes other than packet are permitted, but may not claim protection from packet. It was agreed that CW remains a permitted mode throughout all amateur bands.

The Digital Committee and STA representatives believe strongly that no distinction should be drawn -- in terms of spectrum usage -- between digital modes. Technology development is advancing quickly. Any mode could be outdated and replaced with better, more efficient technologies at any time. Mode-specific plans will limit spectrum from development, and may reserve spectrum for modes soon to be obsolete. For that reason, and in light of what follows, the

Committee prefers the term, "automatic priority," instead of the IARU's term, "packet priority."

The Committee believes the following recommendations will better align the U.S. band plan to the IARU Region 2 agreement.

ADDITIONAL FEEDBACK RECEIVED

There is reason to believe that many VHF and UHF operators overlooked the QST survey, assuming a "below 50 MHz" issue had little effect on them. The impact on message traffic between widely separated VHF and UHF packet bulletins boards was not immediately understood. As mentioned in the Committee's June 13 report, every Committee member read every written comment submitted by the respondents. Those comments emphasized areas of great concern by many amateurs, and significantly influenced the Committee's previous recommendation. The concerns remain quite valid. The Committee believes new means are now available to address them, while, at the same time, enabling additional activities and developments that will benefit amateurs and the public interest.

A primary concern, among many amateurs is interference to stations under human control by stations under automatic control. Except for a very few special situations, by tradition (and rule), one amateur station must not unwillingly or knowingly interfere with a contact already in progress, regardless of mode or the perceived importance of the communication in progress.

Semi-automatic operation has been defined by the Committee as requiring a local control operator at the calling station, to guard against interference to existing communications. The station being called operates automatically, but on a "speak only when spoken to" basis. Semi-automatic operation received a 2:1 majority (those favoring vs. those opposed) in the QST survey. The Committee interprets that response as a strong vote in favor of automated message handling, provided it can be a "good neighbor" to other spectrum users.

Initial survey respondents, while not favoring automatic operation, said (if automatic operation is permitted) they preferred sub-bands by a 4:1 ratio over any other scheme. They did not favor the idea of exclusive sub-bands for specific modes.

The STA participants point to their record in creating a nationwide network for moving hundreds of thousands of messages efficiently and without technical difficulties. Their efforts have lived up to Part 97.1 (a), Basis and Purpose of the Amateur Service, "Recognition and enhancement of the value of the amateur service to the public as a voluntary non-commercial communications service, particularly with respect to providing emergency communications."

Countless pieces of traffic have been transported in national and worldwide emergency situations. Messages of a "hobby" nature have been an important vehicle allowing the network to be developed and maintained in a state of readiness.

The technical effort required to construct this network, both in hardware and software technology has been considerable, and certainly meets 97.1 (b), "Continuation and extension of the amateur's proven ability to contribute to the advancement of the radio art."

Thousands of bulletins board operators (sysops) and tens or hundreds of thousands of digital operators have learned to originate, relay and deliver message traffic by means not previously available. Part 97.1 (d), "Expansion of the existing reservoir within the amateur radio service of trained operators, technicians and electronics experts," has also been served.

There is no question of the value provided by this message network to other amateurs and to the public at large. The Committee acknowledges the success, both technically and functionally, of the STA experiment. There have been a few reports of interference to foreign phone stations where international band plans conflict. There are few if any reports of problems with other U.S. stations. The IARU accord minimizes or eliminates the concern for interference to foreign stations.

A major concern had remained, however, that unrestricted HF automatic operation permitted to all General, Advanced or Amateur Extra class licensees, could easily result in interference to other stations on a completely unacceptable level. Subdivision of bands by rule was previously rejected, in part because, "it will not work on a world wide basis because of the differences in the rules between regions and between individual administrations." The IARU has now provided a subdivision plan which has already met with international approval.

RECOMMENDATIONS

I. The Committee wishes to enable as many amateurs licensees as possible to contribute to, and enjoy, our service. The previous recommendation stands, to permit semi-automatic operation in any digital portion of any band. This privilege will permit a variety of experimentation and operations such as personal mailboxes and MSOs to co-exist with "live" users, on a non-interference basis.

II. By using the IARU Region 2 band plan, U.S. operation will be in compliance with international agreement. Since the sub-bands designated by the IARU as "packet priority" will offer no protection from interference to other users of that space, including U.S. amateurs, the Committee proposes fully-automatic operation by U.S. amateurs within those segments of the band, using any approved digital data mode. It is recommended that those segments be dubbed "automatic priority," as a more accurate, descriptive term.

III. No packet priority segment was specified by the IARU on 40 meters, yet automatic networks have been operating there since the beginning of the STA. As we approach the sunspot minimum, and the MUF lowers, 40 meters will be badly needed for many propagation paths. The Committee therefore urges approval of a small automatic priority segment from 7.100 to 7.110 MHz. Similarly, no digital segment was specified by the IARU for 160 meters. While there is little or no digital activity on this band, developing modes show promise of improving operation in this somewhat hostile (digitally) environment. The Committee feels it would be a valuable testing ground, and requests an automatic priority segment from 1810 to 1820 KHz. Specific frequencies recommended for automatic priority are listed in Appendix B

IV. The Committee cannot overemphasize our concern for protecting other spectrum users from the potential interference of automatic stations. To this end, the recommendation for automatic operation is made on the basis that protection by rule will be provided in the form of specific sub-bands to which fully automatic operation is restricted.

There is precedent for special use, by-rule sub-bands, as in 97.203(d) for beacon stations. Any other usage plans, within digital segments, should be by voluntary plan, not by rule.

The requested sub-bands should not place an additional enforcement burden on the FCC. Amateurs have always been largely self-regulating. The Committee views the requested rules not as some-

thing else the FCC must spend time monitoring, but rather tools to enforce reported infractions.

V. By current standards, AX.25 is considered the least efficient protocol in use for digital modes. The STA representatives request, and the Committee wholeheartedly agrees, that AX.25 protocol be struck from 97.109(e) as a requirement, and replaced with the ability to use any accepted digital protocol.

Because the investment in technology development is large, developers hesitate to widely publish details (competitive disadvantage) in the early stages. To address this issue, it is proposed that developers be allowed the latitude to use new protocols during the development phases, so long as they file details of the protocol, privately with the ARRL.

VI. Because digital technologies are developing rapidly, the Committee proposes to compile, and provide to the Board, a proposal for any desirable adjustments to Region 2 band planning, prior to future IARU Region 2 conferences.

VII. The Committee reinforces its previous suggestion that the League undertake publication of a tutorial-style operator's guide for HF digital operations clearly defining acceptable operating practices, voluntary-use band plans, DX windows and beacon frequencies.

Appendix A

The following is suggested wording for an addition to Part 97 authorizing automatic and semiautomatic digital mode operation. Note that RTTY, AMTOR, packet, CLOVER, PACTOR and future digital data modes are treated equally as "digital modes."

97.3 Definitions

() Unattended Digital Station-A station in the amateur service, using any accepted digital mode protocol for data or message transmission, and operated without a local control operator present.

() Semiautomatic operation-A two-way communication in which the control operator of a locally controlled amateur station manually initiates, monitors and controls communication between that station and an unattended digital station.

97.109 (e) No station may be automatically controlled while transmitting third-party communications, except a station retransmitting digital radio communica-

tions using an accepted protocol on the 6m and shorter wavelength bands, or on 10m and longer wavelength bands in sub-bands where automatic control is specifically authorized. The retransmitted messages must originate at a station that is being locally or remotely controlled.

07.216 Unattended Digital Station

(a) Any amateur station licensed to a holder of a General, Advanced or Amateur Extra Class license may be an unattended digital station.

(b) An unattended digital station may operate on any frequency authorized for digital transmission modes.

(c) No unattended digital station may initiate contact with another station or broadcast any undirected signal unless operating in a band or band segment where fully-automatic operation is authorized.

(d) The transmitter of an unattended digital station must be equipped with a functioning time-out timer that will insure no signal is transmitted for longer than five minutes in the event of the malfunction of control equipment or loss of contact with another station.

(e) Unless operating in a band segment where fully-automatic operation is authorized, the control operator initiating contact with an unattended digital station must be present at the local control point. The control operator must first ascertain that no interference will be caused to existing communications, must remain present for the duration of the contact, and must discontinue the contact if it becomes evident that communications with the unattended digital station is interfering with other amateur communications.

Appendix B

It is recommended that all stations under automatic control be restricted to the following sub-bands...

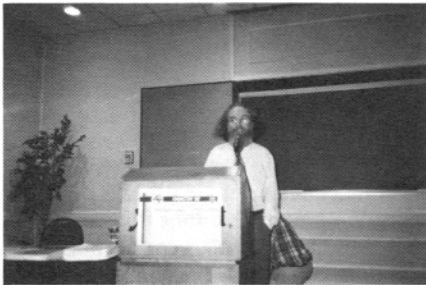
10 M:	28.120	28.189	MHz
12 M:	24.925	24.930	MHz
15 M:	21.090	21.125	MHz
17 M:	18.105	18.110	MHz
20 M:	14.095	14.0995	MHz
	14.1005	14.112	MHz
30 M:	10.140	10.150	MHz
40 M:	7.100	7.110	MHz
80 M:	3.620	3.635	MHz
160 M:	1.810	1.820	MHz

DIGITAL DIGEST FORUM

Los Angeles ARRL National
Convention, 1992

Ray Petit, W7GHM, presented his Clover II program for a large LA audience. This was a first for the LA area group even though the program had been shown previously in San Diego, CA. However, late improvements were shown at this convention and later demonstrated in the HAL booth. HAL Communications has indicated they intend to ship the first Clover II units in November of this year.

As we go to press, I am advised that HAL will ship Clover II units on November 16, 1992. We hope to have a Clover II update in the next issue of the RJ. The first units will have "adaptive ARQ and FEC modes," fully functional. All additional features are scheduled for release mid-January. If you hear a strange "twittering" sound on the digital bands, it may just be Clover II. Stay tuned for more on this exciting new digital mode.



Ray Petit, W7GHM, Lectures on Clover II



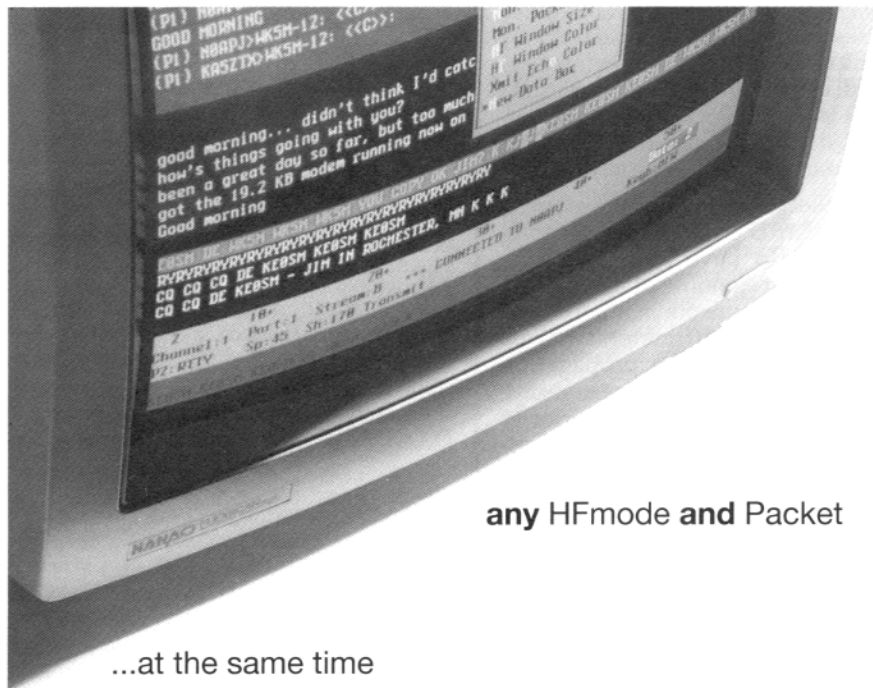
One first of the group for the forum on Clover II



Second half of group attending Clover II forum

Hotel Rooms DAYTON 1993

If you are going to Dayton 1993 and need a Hotel room, the RTTY Journal has a block of rooms reserved for the digital gang. The rooms are all at the Radisson hotel where the hospitality suite and the RTTY Journal dinner are held. All rooms have two double beds, so if you wish to share a room with someone, it is your responsibility to set up your own partner. A \$50.00 deposit will be required by January 1, 1992 to secure your room and this money must be sent to the RJ, not the hotel. So if you are going to need a room, please let me know immediately, either by phone, FAX, or letter. I will need your name, address and phone/FAX numbers. Do not send money at this time, you need only to register. Upon your registration, I will send you a post card confirming that a room has been reserved in your name. You will receive a letter around December 1, 1992 advising you of when to send the deposit. Do NOT hesitate, I only have a limited number of rooms available and they are on a first come, first served basis. de Dale, W6IWO



any HFmode and Packet

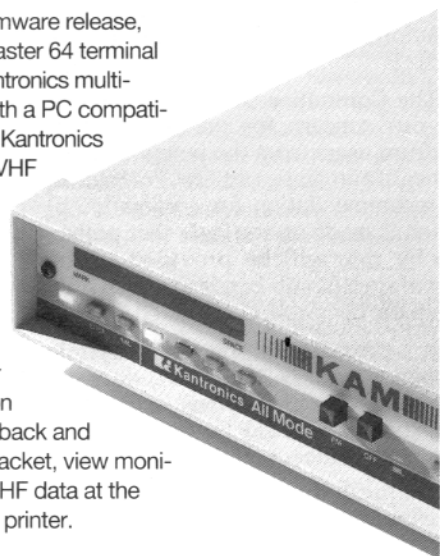
...at the same time

The new Kantronics version 5.0 firmware release, the Hostmaster II-Plus and Hostmaster 64 terminal software upgrades expand the Kantronics multi-mode single keyboard system. With a PC compatible or Commodore 64 computer, a Kantronics All Mode (KAM 5.0), your own HF/VHF transceivers and a few keystrokes, you can work any mode on HF and packet on VHF at the same time.

Now with KAM version 5.0 firmware, you can operate CW, RTTY, ASCII, FEC, ARQ, packet or copy NAVTEX on HF and packet on VHF/UHF simultaneously. Toggle back and forth between any HF mode and packet, view monitored and connected packets and HF data at the same time, and output text to your printer.

The Hostmaster/KAM combination . . . the next step in the state of the art from Kantronics.

Kantronics 1202 E. 23rd St., Lawrence, KS 66046
913.842.7745 TELCO BBS 913.842.4678



APLink Station Guide

Information current September 1992, submitted by Craig, WA8DRZ

These APLink stations and compatible mailboxes in Europe and Africa operate 24 hours a day (unless noted) on the mark carrier frequencies listed. (Separate directories are published for other parts of the world.) Please send comments/changes to WA8DRZ.

9X5LJ XXLJ Jacques in Kigali, Rwanda (.#KGL.RWA.AF) 14071 14073 14074 14075 14078 (1500-0500z) 21071 21073 21074 21075 21078 (0600-1500z)

DK0MHZ DMHZ Werner in Sachsenwald (Hamburg), Germany (.DEU.EU) 14081 14081.5 14082 14082.5 14083 14083.5

DK0MUN DMUN Gerd (DL3MFH) in Munich, Germany (.DEU.EU) 14076 14078 14079 14081 21079 21080 21081

GB7EMX GEMX Kit in Aberdeen, Scotland (.#75.GBR.EU) 3587.5 GETII 3588.5 3589 7038 7039 7040 10145 10146 14075 14076 14077 14078 21080 21081

GB7PLX GPLX Peter in Gosport (Portsmouth) (.#48.GBR.EU) 3587.5 3588.5 3589 7038 7039 7040 10145 10146 14076 14077 14078 21080 21081 28075

GB7SCA GSCA John in Plymouth (.#44.GBR.EU) 3587.5 3588.5 3589 7038 7039 7040 10145 10146 14075 14076 14077 14078 21080 21081 28075

GB7SIG GSIG Blandford in Dorset (.#45.GBR.EU) 3587 3587.5 3589 7035 7036 7037 10140 10141 10146 14076 14077 14078 21081 28075

HB9AK HBAK Paul in Meilen (Zurich), Switzerland (.CHE.EU) 3581 3583 3588 3589 7038 7040 10141 10146 14071.5 14072 14075 14078 21080 21085 28075 28080

IK0NNT INNT Sergio in Rome (ITA.EU) 14078

LZ2BE LZBE Bob in Razgrad, Bulgaria (.BGR.EU) 7038 (2000-0600z) 14074 (0600-2000z)

OE4XBA OXBA Rudi in Eisenstadt, Austria (.AUT.EU) 14067.5 14073 14075 21067.5 21073 21075.5

OH2BAW OBAW Staffan in Esbo (Helsinki), Finland (.FIN.EU) 3581.5 3587 7038 10146 14071 14076 21077.5 28077.5

ON6RO ONRO Rene in Louveigne-Sprimont, Belgium (.BEL.EU) 14074 14076 16-2400z Beam NA 21074 21076 07-1600z Beam AF-OC

PA0QRS PQRS Piet in Krimpen (Rotterdam), Netherlands (.NLD.EU) 7034 7037 7040 14070 14071 14072

PA0RVR PRVR Richard in Papendrecht, Netherlands (.ZH2.NLD.EU) 14068 14069 14070 14071 14072 14074 14075 14078

SL5BO SLBO Claes in Enkoping (Stockholm), Sweden (.SWE.EU) 14077 (or 14078)

SM4CMG SCMG Bo in Fellingsbro, Sweden (.SWE.EU) 3581.5 7038 7039 7040 10145 10146 14074 14075 14076 14077 18105.5 21074 21075 21076 (Mon-Fri only)

SM6FMB SFMB Sven near Gotenburg, Sweden (.SWE.EU) 7037 7038 7039 10109 10128 10145 10146 14069 14070 14075 14076 14078 18202.5 18105.5 21072 21074 21075 21076 28074

SU1ER SUER Ezzat in Heliopolis, Cairo .EGYPT (CALEGY.AF) 14066 or 14070 (1600-2000z) 21070 Fri/Sat (0800-1000z)

TU2BB TUBB Felix in Abidjan, Ivory Coast (.CIV.AF) 14076 night, 21076 day (weekends closed)

TY1PS TYPs Peter in Cotonou, Benin (.BEN.AF) 14072 14078 21072 21078 28072 28078 0630-1400z Beam 120, 1400-1900z Beam 010, 1900-0630z Beam 310

U5WF UUWF Vladimir in Lvov, Ukraine (.LVV.UKR.EU) 14075 (except major contests)

V51NH VVNH Nico in Windhoek, Namibia (.NAM.AF) 14070

ZS5S ZZSS Joe and Mary in Howick, South Africa (.NTL.ZAF.AF) 7037 14069 14073 21069 21073 28073 NA 0000-0600 1900-2400 EU 0700-1330 1600-1900 OC/AS 0600-0700 1330-1600

ZS6KC ZSKC John in Brakpan (.ZAF.AF) 21079 (0530-1400)

ZS6KM ZSKM Mario in Pretoria, RSA (.TVL.ZAF.AF) Weekdays (M-F) only: 14075 (0500-0700z) USA 21075.5 (1500-1700z) EU 14075 (1700-1900z) EU

ZS6ZQ ZSZQ Henk in Benoni (Johannesburg) (.TVL.ZAF.AF) 7036

These APLink stations and compatible mailboxes in Asia and Oceania operate 24 hours a day (unless noted) on the mark carrier frequencies listed.

9K2DZ KKDZ Abdul in Kuwait City (.KWT.AS) 7071 10128 14066 14070 14074 14076.5 14079 21076 21076.5 21079 18105.5 24925.

9K2EC KKEC Mohsin in Kuwait (.KWT.AS) 14071 14072 14079 18102 18105.5 21071 21081 24925 28079

BV5AF BVAf Bolon in Taiwan (.TWN.CHN.AS) 14072

BV5AG BVAG Katy in Taiwan (.TWN.CHN.AS) 21072

DU1AUJ DAUJ Lynn in Quezon City (.SCAN.PHL.OC) 14070 (1300-2300)

21070 (2300-1300)

DU9BC DUBC Fred in Davao City, Phillipines (.DVO.PHL.OC) 7012.8 (2300-1000z) 14072 (1000-2300z)

DU9WX DUWX Dodong in Iligan City, Phillipines (.PHL.OC) 7012.8

FK8BK FKBK Louis in Noumea, New Caledonia (.NCL.OC) 14066 (0700-1300z)

HL9TG HLTG Gary in Camp Humphreys, Korea (.#APL.KOR.AS) 10140.5 10146 14069 14069.5 14070.5 14071.5 14072 14072.5 14073.5 14074.5 14075.5 14077 14079.5 28074 28125 28128 28147.9

JA1JTA JJTA Mike in Sagami-hara (JPN.AS) 14070 (Sat/Sun only)

JA5TX JATX Mitsuo in Kochi, Japan (JPN.AS) 14071 14072 14074 14076 14078 (both PACTOR and AMTOR)

VK2AGE VAGE Gordon in Goonellabah (Lismore) (.NSW.AUS.OC) 7045 10109 14075 14077 21076 (0000-0600z NA 0600-0700z SA 0700-0800z NA 0800-1030z ASEU 1030-1130z NA 1130-0000z EU AS)

VK2CBF VCBF Jeff in Glenbrook (Sydney) (.NSW.AUS.OC) 14069

VK2EHQ VEHQ Peter in Kulnura (Sydney) (.NSW.AUS.OC) 14.070.5

VK2OG VKOG Peter in Quaker's Hill (Sydney) (.NSW.AUS.OC) 14069 (USA 2000-1200z, EU 1200-2000z)

VK2FPV VFPV Paul in Sydney (.NSW.AUS.OC) 21069 (weekends)

VK3WZ VKWZ John in Melbourne (.VIC.AUS.OC) 14075

VU2DPG VDPG Dieter in New Dehli, India (.#DLL.IND.AS) 14079 (0200-1400z) 21079 (1400-0200z) 29220 (packet)

ZL1ACO ZACO Neill in Pukekohe (Auckland), New Zealand (.PUK.NZL.OC) 10128 14070.5 14072.5 14073.5 14075 14075.5 21076 21079

ZL4AK ZLAK Bill in Oamaru, New Zealand (.OAU.NZL.OC) 14069 14070.5 14072 14074 14075 14077 21074 21076 21079 28074

These APLink stations in North and South America outside of the USA operate 24 hours a day (unless noted) on the mark carrier frequencies listed.

AA6IH In Hawaii 14068

AA6VY/XE2 AAVY Reg in Punta Banda, Mexico (.BCN.MEX) 21080 (1600-1900z beam EU) 14078 (0400-0700z, beam AUS) (0000-0400, 0700-1600, 1900-2400z beam NA)

AL7LS ALLS Bruce in Delta Junction, Alaska (.AK.USA.NA) 14072.5

CE3GDN CGDN Don in Santiago, Chile (.#STG.CHL.SA) 21074 (or via TG9VT)

HC5K HHCK Ted in Cuenca, Ecuador (.ECU.SA) 21074 or 28047 (1200-0500z)

KP4GE KPGE Ramon in Caguas, Puerto Rico (.PR.USA.CAR.NA) 14066 14067 14068 14069 14070 14071 14072 14073 14074 14075 14076 14077 14078 14079

NH6VT NHVT Mark in Waialua, Hawaii (.HI.USA.OC) (temporarily QRT)

TG9VT TGVV John in Guatemala City, Guatemala (.GTM.NA) 7068.5 10128 14066 14068 14069 14074 18105.5 21070 21072 21074 24915 28074

VE3PAO VPAO Peter in West Hill (Toronto), Ontario (.#SCON.ON.CAN.NA) 7070 0000-0400z 14070 0400-2400z

VE6PD VEPD Joe in Lethbridge, Alberta (.AB.CAN.NA) 10126 10128 10139.5 10140 14069 14070.5 14076 21072.5 21076 28075

VE7CTJ VCTJ John in Squamish, British Columbia (.#SQU.BC.CAN.NA) 7072 14072.5

VE7DYT VDYT Dave in Port Alice, British Columbia (.#NWVI.BC.CAN.NA) 7073 (0700-0300z) 3629 (0300-0700z)

VO1BBS VBBS Hugh in Seal Cove, Newfoundland (.NF.CAN.NA) 14068.5

VP8BFH VBFH Bob in Port Stanley, Falkland Is. (.STLY.FALK.SA) 21070 day, 14066 nite

W6HTH WHTH William in Honolulu (.HI.USA.OC) 14068

ZF1GC ZFGC Frank in Bodden Town, Grand Cayman Island (.#GC.CYM.CAR.NA) 14070.5 14071.5 14072.5 14073.5 14074.5 14075.5 14076 21080

These APLink mailboxes in the Eastern continental United States operate 24 hours a day (unless noted) on the mark carrier frequencies listed.

K1UOL KUOL Bob in Bethel (.CT.USA.NA) 14071.5

K4CJX KCJX Steve in Nashville (.#MIDTN.TN.USA.NA) 3622 7068 7070.5 7072.5 7075.5 10126 10128 10139.5 14068 14069.5 14070 14072 14076 21074 21076 28128

K4YZU KYZU Bill in Louisville (.KY.USA.NA) 7069 7071 14069.5 14071.5 10140.5 10141.5 14079.5 21072.5

K5CVD/4 KCVD Jay in Windsor (.#WIN.SC.USA.NA) 7070 7072 7074 10126 10128 10140

KB1PJ KBPJ David in Boston (.NH.USA.NA) 3622 3625 10126 10128 18102.5 18105.5 24915 24925

KK4CQ KKCQ Harvey in Pensacola (.#PNSFL.FL.USA.NA) 3622 7070 7070.5 7071 7076 10126 10128 21074 21076 14070 14071.5 14072.5 28070 28128

N2JAW NJAW Ron in Trenton (.NY.USA.NA) 3622 7071 7072.5 7075.5 10128 10140.5 14068 14071.5 14073.5 21072.5

N3EXW NEXW Louis in Rockville (.MD.USA.NA) 14070.5

W2NRE WNRE Warren in Scarsdale (.NY.USA.NA) 3620 7068 7070 7072 7074 10126 10128 10140 14070 14072 14076 21072 21074

W2TKU/4 WTKU Al in Sarasota (.#SRQFL.FL.USA.NA) 3622 7070 7072 7076 10126 10128 10140 14066 14068 14070 14076 14078 21072 21074 21080

W3GL WWGL Ralph in New Castle (.#APL.DE.USA.NA) 7071 7072.5 7075 7075.5 14068 14069 14071.5 14073.5

W4NPX WNPX Bob in Charlottesville (.#CVA.VA.USA.NA) 3620 7068 7070 7072 7074 10126 10128 10140 14070 14072 14074 21074 21076 28128

W7IJ/8 WWIJ Bill in Cleveland (.#NEOH.OH.USA.NA) 3622 7071 10126 10128 14066 14069 14071.5 18105.5 21070

W9MR WWMR Ken in Keensburg (.#SEIL.IL.USA.NA) 3622 7070 7074 7076 10128 10140 14068 14070 18104 21072 21074 24925 28128

WA1URA/9 WURA Frank in Grabill (Fort Wayne) (.IN.USA.NA) 3622 7071 7075.5 7076.9 10128 10139.5 10140.5 14068 14069 14070.5 14071.5 14073.5 14075 21076 21079 24925 28076.5

WA9FCH/4 WFCH John in Reston (.VA.USA.NA) 7070.5 7071 7072.5 7075.5 10128 10139.5 10140.5 10140 14068 14070.5 14071.5 14072.5

WA9WCN WWCN Bob in Lapel (Indianapolis) (.IN.USA.NA) 3620 3622 7072 7074 10126 10128 10140 14066 14068 14070 14076 21072 21074 18104 24925

These APLink mailboxes in the Western continental United States operate 24 hours a day (unless noted) on the mark carrier frequencies listed.

AA5CQ/7 AACQ John in Las Vegas (.#SONEV.NV.USA.NA) 7071 10140.5 14070.5

AA7HS AAHS Steve in Yakima (.#APL.WA.USA.NA) 7069 or 7071 evenings 14.072.5 days

K7BUC KBUC Del in Phoenix (.AZ.USA.NA) 7071 10140 14071.5 14073.5 14074 21073.5 day 3627 7071 10140 14071.5 14073.5 14074 night

K7SLI KSLI Jim in Marysville (.WA.USA.NA) 7073 day, 3629 evening

KA0JRQ KJRQ Larry in Glenwood (Omaha) (.IA.USA.NA) 3622 7075.5 7071 10126 10130 14071.5 14074 14072.5 18105.5 21074 21071.5 24915 28.074

KC7J KKCJ Ron in Tacoma (.WA.USA.NA) 14069

KD7UM KDUM Dave in Salt Lake City (.#SLC.UT.USA.NA) 3623 3627 7073 7075 10127 10141 14069 14073 14077 21071 21075 28075 28127

KE5HE KEHE Jim in Hearne (College Station) (.#STX.TX.USA.NA) 3622 7068 7069 7071 10126 10128 10139.5 14070.5 14071.5 14072.5 14079.5 21072.5 24925 28125

N0IA/7 NNIA Bud in Las Vegas (.#SONEV.NV.USA.NA) 3625 3627 7069 7071 7072.5 10128 10139.5 10140.5 14070.5 14072.5 21072.5 21074 28070 28128

N6EQZ NEQZ Ted in Renton (Seattle) (.#APL.WA.USA.NA) 3605.2 3629 7071 7073 10126 14068 14069 14071 14073 14075

N7CR NNCR Rory in Spokane (.#SPOKN.WA.USA.NA) 3622 7069 7075.5 10126 10128 14070.5 14072.5 18105.5 21072.5 21079 24915 28073

NA7P NNAP Greg in Edmonds (Seattle) (.WA.USA.NA) 14069

NZ2T/5 NNZT Bob in Southlake (Dallas/Ft Worth) (.#DFW.TX.USA.NA) 7069 7071 7073 7075 10123 10125 10127 10135 14069 14071 14073 18101 18107 21073 21077 24915

W0LVJ/7 WLVJ Mike in Spanaway (.WA.USA.NA) 3605.37

W2USA/7 WUSA Ft. Lewis ARA, Fort Lewis (.WA.USA.NA) 28147.9

W5KSI WKSI Angelo in New Orleans (.#NOLA.LA.USA.NA) 7069 7071 7075.5 14068 14070 14073.5 14074 14079 21074 21075 21079 28074 28075

W5VBO/7 WVBO Brian in Peoria (Phoenix) (.AZ.USA.NA) 3622 7069 10126 10128 14070.5 14071.5 14072.5 18102.5 18105.5 21072.5 24915 28074

W7DCR WDCR Gary in La Pine (.OR.USA.NA) 3622 7069 7075.5 10126 10127 10128 14069 14070.5 14072.5 18105.5 21072.5 21076 21079 24915 24925

WA8DRZ/6 WDRZ Craig in Redwood City (San Francisco) (.#NO-CAL.CA.USA.NA) 10128 10129 14068.5 14069.5 14070.5 14071.5 14072.5 14073.5 14074.5 14075.5

WB5UJO WUJO Hoppy in Marlin, Texas (.TX.USA.NA) 7075

WI7D WWID Jeff in Las Vegas (.#SONEV.NV.USA.NA) 3621 3623 7069 7075 10129 10137 14069 14073 14077 18099 21073 21075 24925 28073 28077 28125

CLASSIFIED AD DEPARTMENT

First 30 words \$7.50, additional words 10 cents each. Cash with Ad. Deadline for ads is the 1st of month of publication..
(Example - Ad arrives by the 1st of September, will appear in the September issue.)

NEWS - NEWS - NEWS -- NEWS

Amateur Radio's Newspaper "WORLD RADIO". One year subscription is \$12.00. Contact: WORLD RADIO, P.O. BOX 189490, Sacramento, CA 95818

Complete back issues for RTTY JOURNAL, ATVQ, and SPEC-COM RTTY & Amateur Television. SASE for prices and listing. ESF Copy Service, 4011 Clearview Dr, Cedar Rapids. IA 50613

DIALTA AMATEUR RADIO SUPPLY

212 - 48th Street, South
Rapid City, South Dakota 57702
(605)-343-6127

Specializing in Digital Communications
for over 13 Years

- = Authorized **HAL Communications** Dealer = -
- = Kenwood, ICOM and YAESU Transceivers = -
Equipment and Accessories
- = IBM Compatible Computers & Accessories = -
Call Dick, K0VKH

CQ Magazine (now including Ham Radio) — The Ham's magazine. All year long CQ brings you the best writers, the best reading in Amateur Radio. Written and edited to be enjoyed as much as you enjoy, Ham Radio itself. Subscribe now and see for yourself. One year \$22.95 U.S., \$25 Canada/Mexico, \$27 Foreign. Contact CQ Communications, Inc., (also publishers of Popular Communications, Modern Electronics and Electronic Servicing & Technology), 76 North Broadway, Hicksville, NY 11801, Phone (516) 681-2926.

NOW AVAILABLE: RTTY Journal INDEX for years 1984 thru 1991. If you are tired of looking through back indexes or issues for an article you wish to re-read, then you will want to have this new INDEX in your shack. Order today, by sending \$2.00 to the *RTTY Journal* and we will rush your copy to you.

RS-232C and COM PORT booklet: This is a compilation of all articles published in past issues of the *RTTY Journal* on these two very important topics. If you are using a computer in conjunction with Ham Radio, you will find this booklet an invaluable tool to have in your shack. The booklet contains information about COM ports 1,2,3 and 4 as well as the RS-232C information. Send \$5.00 to the *RTTY Journal* and you will receive a copy of this invaluable booklet by return mail, post paid.

HENRY RADIO — Your Data Communications Place. If you are looking for new data communications gear, come in or call for quotations. We are distributors for HAL Communications, AEA (Advanced Electronics Applications and others. PK-232s, ST-8000s and PCI-3000s in stock. Call Henry Radio at (213) 820-1234 in Los Angeles or (800) 877-7979 outside California. Ask for Fred, N6SFD.

GENERAL
PRINTING

GRAPHIC
ARTS

LAY - OUT

PASTE
UP

QSL CARDS

**FOR THE DX'ER
BY A DX'ER**

W6AHF
MEMBER
NO. CALIF. DX CLUB
NO. CALIF. CONTEST CLUB

Hughes SERVICES UNLIMITED
17494 VIA ALAMITOS
SAN LORENZO, CALIF. 94580

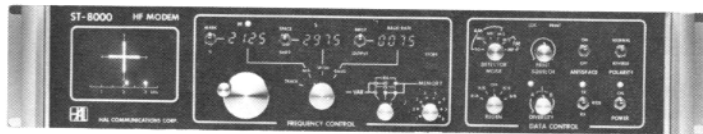
(510) 278-3573

WRITE FOR SAMPLES

IBM-PC RADIO COMMUNICATIONS SOFTWARE! CompRtty II/PCI for the HAL PCI-3000. CompRtty II/PK for the PK-232. Or original CompRtty II/STD for RTTY/CW with standard TUs and all modes with the KAM or MFJ-1278. With new CONTESTING features: mouse support, automatic duping, log default entries, much more. Numerous features including: adjustable split screen display, break-in buffer, file transfer, 24 programmable messages. CompRtty II/PK uses host mode for complete control of PK-232 — including new mailbox feature! Complete, printed manual. Ideal for MARS, traffic handling, RTTY pictures. \$65 any single version, \$95 for two versions. Mention *RTTY JOURNAL* and take \$5 off. Send Callsign letters (including MARS) with order. David A. Rice, KC2HO, 144 N. Putt Corners Rd., New Platz, NY 12561

HAL COMMUNICATIONS CORP. - THE HF SPECIALISTS

The next time you're in the market for HF Data Equipment, think of HAL Communications. We specialize in high-performance modems and PC-based products for HF radio use.



ST-8000 HF MODEM

Whether you're chasing that rare DX or simply trying to keep up a QSO when the band isn't cooperating, you'll appreciate the engineering involved in high performance equipment designed for HF operation.

To those of you who use HAL equipment, we thank you and look forward to serving you again. To those of you who haven't, call or write for our free catalog and examine our range of products for yourself.



HAL COMMUNICATIONS CORP.
1201 West Kenyon Rd.
P.O. BOX 365
Urbana, IL 61801-0365
Phone (217) 367-7373 FAX (217) 367-1701