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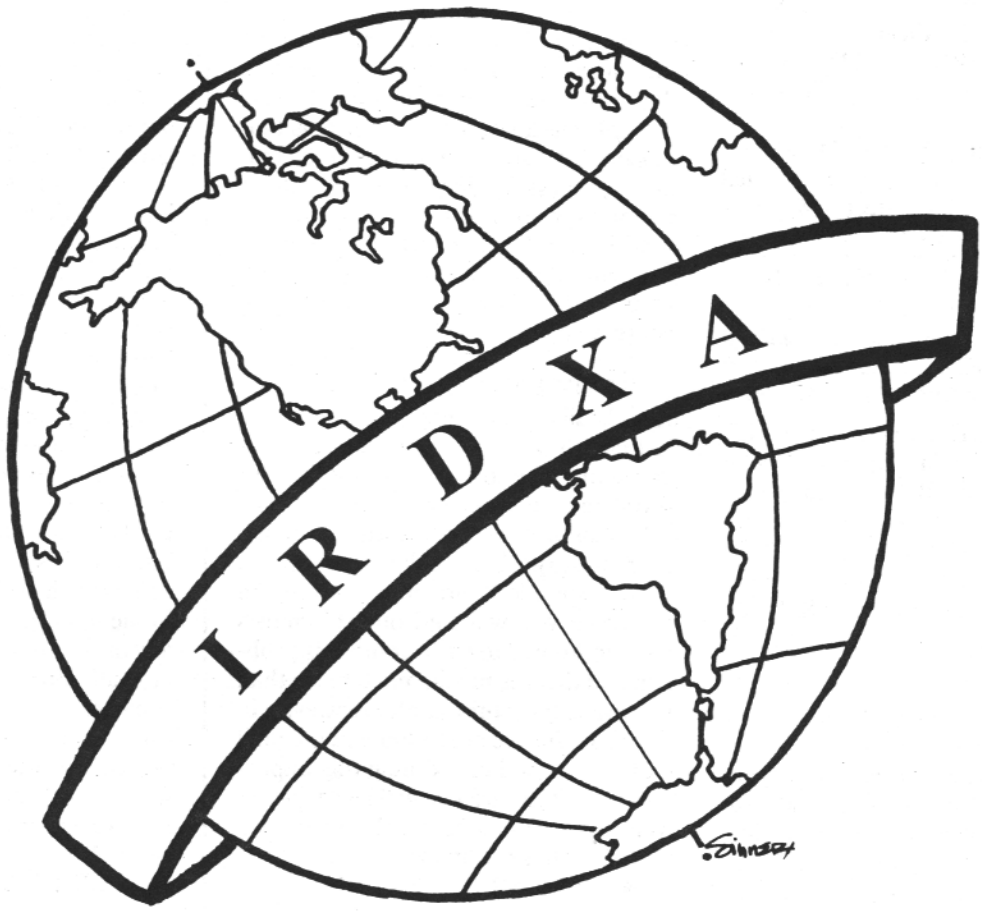
WELCOME



IN THIS ISSUE

RTTY JOURNAL

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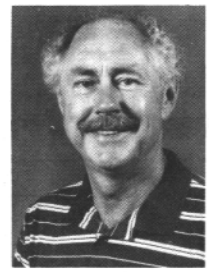

HITS & MISSES

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92708

BAD OR MIXED PAGES LAST ISSUE

If your copy of the Journal had some of the pages missing or some pages were duplicate, please drop me a card so we can get you a good copy. It seems that our printer had a problem with the collating process. We have been using these people for over three years with no trouble and they are certainly sorry this happened. So again, drop me a card with your address on it and I'll get you another copy.

BANDPLAN CONTROVERSY

It looks like we opened a can of worms last month when we began seriously addressing the band encroachment problems we have been experiencing. But I'm not complaining. I urged everyone to get behind this issue and you have responded with many letters. In this issue you will find our columnists have continued to write about this problem and there is much, much more than I have room for this month. However, in the next issue we get to some of the mail that has arrived concerning this important issue. I'm sure you will be surprised when you read some of the responses this office has received.

- A SERIOUS PROBLEM!

We are facing a serious problem which is not just local or national in scope. It is an International problem my fellow Hams. We must all band together and begin to express ourselves in the form of phone calls and letters to our Directors and those who hold office in the different Regions. If this problem persists and a Gentlemen's agreement can't again be implemented then surely we will face some sort of regulation that may not be to our liking.

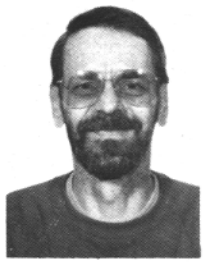
But we must also realize, some of the problem belongs to us. We spend a lot of time in the middle of the agreed areas of the bands and neglect the upper edges where communications are just as good. Now is the time to hold our QSOs in all parts of the bands. The next time you call CQ on RTTY, try the upper end of the band first. Let's take it back, by using it. We must always keep in mind, that the minute we slip, there in some one or group waiting in the wings to take advantage of our neglect. We have seen advances made in the forty Meter band by a special interest group but we faced it immediately and the problem is gone, at least temporarily.

So again this month, I'm appealing to you all, take pen in hand today and write to those who can help us eliminate this encroachment problem. If you know some good Packet folks who appreciate our position, ask them to help. You may laugh and say "lots of luck" and maybe it would be a lost cause to ask but I think it is worth a try. Recently, Westlink broadcast a news item stating that RTTY had interfered with Packet communications while passing traffic during the recent San Francisco, CA earthquake. This was a serious accusation on the part of some packeteers, in fact, they apparently even called the FFC to complain. However, the news release did not mention on what frequency this occurred or what band. I think the broadcast was incomplete and did not present the facts. If RTTY signals were heard on a Packet frequency in the "Gentlemens Agreement" area of any of the HF bands then I think we are at fault. But I think I know RTTYers pretty well after being exposed to them for some twenty-five years now and it is not their nature to deliberately jam a frequency. We as RTTYers have always found a easier way to solve our differences within the scope of our phase of this hobby. If you heard this broadcast and agree with me that it was not factually reported, write to Westlink and let them know. They have a big following around the country and probably worldwide, so it is important to defend ourselves against this sort of attack on RTTY.

IRDXA JOINS JOURNAL

The center pages of this issue announces the addition of the INTERNATIONAL

Continued on page 4



AMTOR

Eddie Schneider, W6/G0AZT
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San Pablo, CA
94806

NOT GUILTY

In my October article, third from last paragraph on page 20, third line the word "buffoons", should read, "boffins". In the Queen's English, a boffin is a slang word for a brainy or clever person. A buffoon, according to Webster's Dictionary, is a person who tries to amuse people by using low tricks, jests and ridiculous pranks. It was NOT my intention to upset the HF fraternity, however, the Editor's word is final! (Ed: Hum, guess I need a Queen's English Dictionary)

AMTOR

If there is anyone out there who still has doubts about trying AMTOR and may have missed my written attempts to calm their nerves, may I suggest some further very good reading material that appeared in the November 1989 issue of CQ magazine.

There are two good articles, one by Bill Henry of HAL communications, explaining the older CCIR 476 and the newer CCIR 625 recommendations. Another article by Buck Rogers, K4ABT who gives a "Newcomers's Guide to AMTOR", which should clear up any misgivings about this fine mode.

THOUGHT OF THE MONTH

After all the "hoo-hah" about Packet coming down below 14.100, 21.100 etc. I don't see anyone commenting on the fact that AMTOR is slowly but surely, creeping up well above .080 these days!
THE BAHAMAS (C6)

After the two very successful VP5 trips, both Don, AA5AU and I had been racking our brains to find somewhere equally as exotic to go to on our next Dx-pedition.

As many of you know, we had set our sights on St. Peter Island (CY0). Licensing was no problem but the logistics of getting equipment across the 17 mile stretch of water, the extortionate boat fare demanded by the boat owner and other problems, put the idea on the very top shelf!

After due consideration and discussions with other "enlightened" RTTYers, we chose the Bahamas. Of course there were suggestions like, Bouvet, Clipperton, Malpelo, South Sandwich and so on, but they were way beyond our limited budget, and the weather in those places would be cold enough to freeze a brass monkey.

Licensing for the Bahamas can take a fairly long time. It took over eleven weeks and three phone calls to eventually get the required paperwork in our hands. The cost of the license is only six US dollars. It is valid till the end of the year, regardless of when you applied for it and is renewable annually.

Once we had licenses, hasty plans were made for airline tickets and letters to some of the DX bulletins, at least within the USA and Japan. It was not possible to "alert" the Europeans of our forthcoming trip, due to the length of time mail takes to get across the pond, but we figured that any keen RTTYer would be tuning the bands, looking for "new" ones.

Don and I met at Fort Lauderdale airport in Florida on 25th of October. We boarded a twin engined turbo-prop called a Boeing DASH-1. (Seems like Boeing had run out of numbers or names for their aircraft when they named this one!). After just over an hours flying, we landed at Treasure Cay, Abaco Island. Immigration gave us both a bit of a hard time, to the point where the head guy accused me of giving him a load of "bull s...", (his words), when we explained our reasons for wanting to enter their country.

Customs were not to keen on us bringing in all our gear: rigs, computer, TNC, 7 inch TV, ATU and two verticals, without having prior permission from Customs HQ in Nassau. A refundable bond was on the cards, luckily Don had sufficient funds, just in case, but after some gentle persuasion by Don, we were waved through. Maybe the authorities were flexing their muscles, but if anyone plans a radio trip to the Bahamas, they may think about getting prior Customs clearance on their gear.

After an eleven mile taxi ride, we arrived at the villa and went about surveying the very small plot, trying to figure out where to place the two verticals so that they would not be to close to each other and cause inter-mod. Due to the less than postage stamp sized garden, we had to be satisfied with about 18 feet separation! Being about 300 yards from the sea, we thought that the ground would be nice and soft and knocking the ground posts into the soil would be easy. Not so, in fact about two inches below the surface turned out to be what I can only describe as "aggregate", the stuff they mix up with cement, to make concrete. After much watering, digging out some of the stones, gallons of sweat and many swear words, we both managed to get out mounting posts all of twelve inches into the ground.

Ground radials were out of the question. There just wasn't enough room to spread them out, without fear of some unsuspecting passer-by, getting entangled in them. After some "tuning" of my broadband Hustler 4BTV, I was surprised to find that the TS440 loaded up well on 10/15/20 with highest VSWR of 1.7:1 on 21 MHz.

While Don was still assembling his Butternut, I tuned on 14 MHzz and my first contact was with KE3A, Bill, at 252331Z. After a short chat, to make sure that my tones and signal were acceptable, I gave out a CQ. Business was fairly brisk for three hours, with mostly USA stations, the odd European like Joe, I0AOF, EA9JV from Africa and TG9VT, John with his 3 KW, managing to break the U$A curtain.

Meanwhile, Don had set up his station and informed me that we would not be able to run two stations at the same time. I was completely wiping out his receiver and after some tests, we discovered that he was doing the same to me. We tried various "tricks" in an attempt[to reduce

Continued on next page

AMTOR Continued from page 3

the inter-mod, but all to no avail. At 0235 on the first day, I shut down, having worked 75 stations in 3 hours. A fair QSO rate of 1.2 minutes per contact. As in the past, the USA RTTYers really are a great bunch to work in a contest style format. Thanks guys, for making life a lot easier on my very tired body. I had not slept for 32 hours prior to my first CQ call.

Don took over on 40 CW and got himself a nice pile-up of USA and European stations. In fact, nearly every time Don gave a couple of CQs, he caused a stir on CW, no matter what band he selected.

RTTY was a different matter. After the initial pile-ups on the first and second days of operation, contacts were very hard to find, despite lengthy CQ calls and lots of RF! It was strange to find 10/15/20 open to Europe but not many contacts. Very frustrating. I even tried 10 Meter SSB, in desperation, but was unable to generate more than a few contacts into the USA. There were no openings to the South Pacific, VK or ZL. Japan came in for a short time on 10 Meters during the last evening. Despite getting up before our sunrise, three days in a row, to try 20 Meters, the bands at that time were flat.
As usual, Don did the "red eye" shift on the low bands CW and after some shuteye, he spent his leisure hours, sunbathing, body surfing, drinking beer and chasing the opposite sex, of which there were not too many to choose from! At one stage, I thought he was "in love". On the other hand, most of the time, I sat at the keyboard trying to stimulate some activity, with occasional walks down to the beach and a bit of sunbathing, just to prove to my friends, that I HAD been in C6 for a week.

The weather was nice, despite rain showers everyday. Temperatures were in the mid eighties (30C), and the humidity was extremely high.

Some of the "highlights" of the trip:
Me "watering" the two antennas and pouring a few ounces of slat down the hole in the hope that our signals would be a bit louder. My actions did help to reduce the VSWR, much to Don's amazement! The 7 inch monitor I had brought along, decided to pack up after day three. Have you ever tried to use a 19 inch color TV as a monitor?? Luckily there was this monster TV in the villa, which worked, so we had glorious color copy and we could sit at least ten feet away from the screen and read the incoming print without difficulty. Two guys knocking on our door, complaining of TVI. They turned out to be the Dixie Dxers who had come down of the SSB contest and they just popped in to rattle our cages. Great bunch of guys, despite the fact that one of them was dripping sweat VERY close to my power supply vents. The computer clock gaining about one minute in two hours. the reason for that, turned out to be the 60 Hz mains power; was in fact 60.2 Hz! Persistent QRM during the one short opening we had to Japan, from a VE6 and a K6 who obviously could not read or understand English.

RTTY synopsis: C6A/G0AZT
535 Contacts in 37 hours of actual on the air time. 47 countries worked, two of which I really needed from W6-land, to boost my DXCC score. They were S92LB and OH0/DL3FQE. Sigh!

Did we pick the right place for a RTTY/CQ trip?? From most of the RTTY QSL cards received and answered to date, we have to say, YES, we did do our homework. Did we pick the right weekend, bearing in mind the CQWW SSB contest was on? Hard to say, our thinking was that the "enlightened RTTYer" would steer clear of the contest. Maybe we were wrong and there are a lot of keyboard ops, who go in for SSB contests as well. Admittedly, Mother Nature was not really on our side, with Solar flares, Proton events and Polar cap disturbances, occurring on a regular basis, prior to and during our stay.

Acknowledgments and our thanks to:
US Air and Delta for getting us to and from our destinations safely and on time. Steve Rutledge, N4JQQ for the use of his villa at a reasonable cost. WA6AHF, Rubin, for the loan of the Hustler 4BTV and the program cartridge. (He was "in the log" before we were QRV!) Hi. AA5AU, Don, of bailing me out of a cash flow problem, due to my stupidity in loosing a great deal of money and an airline ticket back to the U.K. JA3DLE/1, Chiru-San. SM4CMG, Bo. TG9VT, John. And KD2YG, Dave for their "up-front" donations. Thanks to all the hams who made it a pleasure for us to work you and to those who were kind enough to enclose a donation to help with costs.
73 GL and DX **de Eddie, W6/G0AZT**

HITS & MISSES Continued from pg. 2

RTTY DX ASSOCIATION's news bulletin. Please read their bulletin which explains their new program for all of us Internationally. From time to time, they will be issuing these bulletins to all members and they have chosen the RTTY Journal for their median to reach all at a reasonable cost. I'm very pleased to have them join us (I'm also a member) because I feel they are doing an outstanding job of supporting RTTY Dxpeditions and disseminating Dx news via their very popular Packet cluster. They will not be reporting news which you now receive through the DX NEWS column in this publication. Instead they will be reporting on what is happening within the IRDXA sphere. Such as what countries they will be sponsoring and who is helping and they will be soliciting support from the membership. Again please read the two pages they have given us to publish and join a very worthwhile organization which incidentally doesn't charge any dues to belong. How can you beat a deal like that?

CHINESE NEWSLETTER
If you read Chinese and would like a copy of the club newsletter from Fuzhou radio club, please send me an SASE and I'll forward a copy to you. They come to me about once a month and usually I receive a couple of copies. So if interested, let me know.

XMAS GIFTS

If you would like to give some one a gift subscription to the RTTY Journal now is the time to do it. Send the person's name and particulars in along with the subscription amount and I'll do the rest. Your Call will appear on the gift subscribers label for one year. If you wish to sponsor a foreign Ham, please check the subscription rates on page two of this issue. I do not recommend foreign surface mail because it is to slow except to maybe Canada and Mexico. And thanks for helping the Journal grow.

Continued on page 7

HENRY RADIO IS THE PLACE
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The TEMPO MPP1

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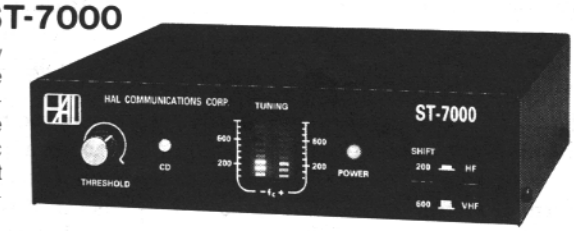
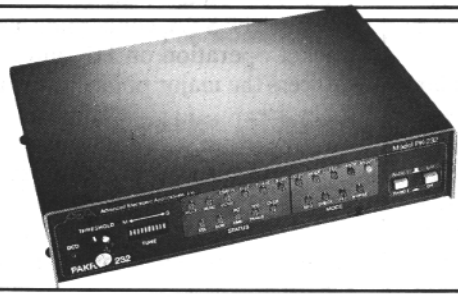
HAL Communications' ST-7000

HF-Packet Modem. . .a high performance modem designed specifically for 300 baud HF-Packet. It offers no-compromise performance to assure optimum operation under the most demanding signal conditions. Techniques developed for government and military use are used in the ST-7000. AGC-controlled AM signal processing provides a wide dynamic range. All filters and detectors are optimized for 300 baud HF-Packet. It offers the 200 Hz shift mode and a wider 600 Hz shift mode, each supported by separate 6-pole input filters and a 40 db AGC system.





The PK-232 by AEA

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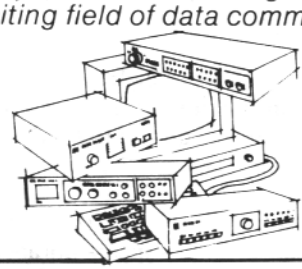
Obviously, we can fill in a system that you have already started. Or we can furnish a complete system to fit your needs and budget. For example, here's some suggestions for the amateur just entering the exciting field of data communications, or: for the amateur who wants the best available.



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NO. 2. . .top of the line! The HAL ST-8000 or HAL ST-6000 and AEA's PK-232 . . .the winning combination. You can't do better for all-mode, all-band enjoyment of hi-speed data communications.

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PACKET

Richard Polivka, N6NKO
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90602

WE HAVE A PROBLEM HERE...

Over the many years that packet radio has been around, it as a communications medium has grown at a fantastic rate. That in itself has presented some problems which need to be addressed NOW by all concerned with amateur radio and the frequency usage thereof.

Let's start at the beginning with a lesson in digital communica- tions as it applies to the amateur radio operator. We first started out using CW. Yes, CW is a digital form of communication. You have a carrier turned on and off (binary, 1 and 0) by a key in a particular pattern that is called the Morse Code. Our first form of digital communication has been around with us since the inception of radio operation. From there, someone decided to make a machine do the work of sending and receiving the characters. That gave us Radioteletype. That is a legacy in itself and is still in use today, just like CW.

Now enter the computer. In this reference, I refer to the term "computer" as an electronic device and not in the mechanical sense, like the RTTY machine. RTTY was first adapted to the computer to make the operation more quiet and versatile. Then someone had the bright idea of making the sending and receipt of the information more reliable. That is how we got AMTOR. AMTOR is a form of data that uses handshaking between the two stations that are on conversation (ARQ) or a mild form of error detection and notification (FEC). Just about all AMTOR contacts are done using the ARQ mode because of the error correction capabilities.

Now somewhere in this scheme of things, amateur operators had to decide on who was going to get what slice of the pie. So, with discussion and gentleman's agreements, a bandplan was devised so that all could live in harmony and coexist with one another. It is amazing how long that plan has held up.....until now.

Now enter packet. The new form of sending data using a computer and again, this is an error detecting protocol. Note that I said "detecting" and not "correcting". It works by sending a stream of data that is encoded in a certain format. The receiving station looks at the received data and decides if it is right or wrong. If it is wrong, it asks the sending station to repeat the last transmission or, if it is right, it tells the same station to continue with the next packet. Herein lies the rub. If so much as one bit of a packet is wrong, the whole transmission is trashed by the receiving station and a request to resend is sent back to the sending station. In comparison, if there is one bit wrong in a RTTY transmission, too bad. It appears in the received text as a "hit" but the whole transmission is not trashed. In FEC AMTOR, if a bit is off, it waits for the next transmission of that character. If it does not get the same character twice, it is not displayed and an error character takes its place to inform the operator that the particular character in question was not received right. The rest of the transmission is not trashed. In ARQ AMTOR, it works a little differently. The information sending station sends a block of three characters. The characters are encoded in a special pattern to allow for easy error checking. If the three character block is received correctly, it is displayed and the information receiving station sends an "ack" back to the sending station. If it is not correct, it sends a "nak" and the sending sends the same group over again. This process works on a tight schedule. So you end up having two stations "chirping" at each other.

The data rates are all different depending on what format to use. If you are operating packet on HF, it is usually 300 baud and there is some operation at 1200 baud. RTTY is run at 45 baud and 75 baud. AMTOR is stuck at 100 baud. They all use the same tones and shift. Because of this and other concerns, they are all mutually exclusive in terms of their operation on the same frequency. Henceforth, the need for subbands to allow the modes to coexist together.

At present, there are subbands for RTTY, AMTOR, CW, Voice, and PACKET. It all seemed to be going fine until lately. I have no concrete idea why it is happening but I can guess. The problem is that packet operation is appearing all over the HF bands. The funny thing is that I do not find AMTOR or RTTY all over the HF bands, just packet. To this and other letters I received, they all talk about bandplans for packet. Well, I want to go ON RECORD in saying that a packet subband can be created but it will not work. It will not work because the users of packet will not put up with the SLOW (AMTOR can be faster than packet when it is busy) transfer and the amount of errors that can creep in to slow down the transfer, especially if there is someone else on the channel slowing down THEIR transfer. So, what happens is that the conversation will QSY up or down the band. And it usually ends up in the RTTY subband and wreaks havoc there with the incompatible communications mode that RTTY uses.

And to continue. I received a letter from Michael, N6STA, concerning his view of packet operation on HF and I want to address the major points he brought up. They are:

1) Use a carrier-detect scheme to prevent transmitting on a busy channel. Have a carrier-detect sensitivity vs. transmitter power setting to prevent "alligators"

2) Stop transmitting after 2 repeat requests

3) Refrain from beginning a new transmission for a time period equal to the time required to send all of the previous repeats.

To answer the first statement. I believe that all TNC's incor- porate a DCD circuit. I know that my PK-232 has one in it. One of the problems with the detection circuits is how sensitive is it when it comes to digging the signal "out of the mud". As far as I know, there is NOT one TNC out there that can recover a signal that is 6 db above the received noise. As

Continued on next page

PACKET Continued from page 6

long as there is a signal on the channel, it can be trashed by someone else keying up. This ends up being the HF version of the "hidden terminal" problem that plagues VHF operation. With VHF, propagation is quite constant when you rule out weather effects. HF propagation, on the other hand, is not constant at all. Propagation can change in an instant from good to the pits in the course of one packet transmission. Therefore, there will be a high incidence of retries unless all is steady and quiet.

To implement the sensitivity vs. power rule would be a nightmare. You would have to take into account, not including ionospheric variations, receiver sensitivity, antenna gain and feedline loss, audio gain in the radio, passband response of the radio, S/N ratio of the receiver, S/N ratio of the TNC and the audio gain of the receive system. And that is just for starters. When you factor in the changes that the ionosphere can do, the whole thing goes out of whack. You can have the system designed to reach from Los Angeles to Dallas, Texas, and not interfere with the East coast. Now the skip changes and you lose Dallas but you end up down the throats of Bermuda. The whole system went to pot.

I really like the second idea. If you can't get the information across in that period of time, it is no good and the link has failed. That is easily implemented by adjusting the RETRY setting to 2. It can be done immediately and as easily as typing in the command on your keyboard to the TNC.

The third idea is like the "backoff" that is used in TCP/IP. For the scheme to work, EVERYONE would have to use it. That way, more people could use the channel and the TNC's would automatically compensate for the increased traffic. That would involve an implementation change to the AX.25 spec as it stands. If you run TCP/IP, you already have the "backoff" routine running and working.

Michael also mentions about a form of "best guess" by using the three transmitted packets and displaying a "best guess" based on the received information. I think a better idea would be to incorporate Error Correcting Coding (ECC) into the packet. At least, it would give the TNC a chance to try to fix up the packet based upon what it received. And if it can't patch things up based on one transmission, then request a second one and try that one for correctness. The idea here is to unload the channel of retries.

There will be no easy solution to the problems of running a protocol that demands PERFECT copy to work on HF. It is not possible because of the multitude of radio system variables and the constantly changing state of the broadcast medium. Either one of two things or both will have to happen: 1) Users of HF packet will have to be content with staying in their own subband and not straying out of it into someone else's subband; 2) A form of ECC to be included in the transmitted packet so the receiving TNC can try to patch things up for display; 3) Both of the above. Personally, I would like to see choice #3 followed and I know that #1 will not be followed. If you don't believe me, listen to the 20m RTTY segment. It is filled with packet. I will say this, there is an easy way of getting rid of the packet operation there and that is to fill up the band with RTTY QSO's and just not allow the TNC's to transmit.

I do not want to be on a soapbox or behind the orator's stand spouting missives on how to operate but I was and I still will be as long as I see the need. I believe in being a gentleman on the bands and I will honor subband agreements on HF and I think that everyone else should too. We as packet users have made our own bed and now we have to sleep in it. Leave the RTTY subbands to the "green keys" users. Leave the AMTOR subband to the chirpers. And packet users stay in the subband for packet. There will be no improvement in the use of the mode as long as people do not realize the limitations that are imposed on using an error free transmission mode, such as packet, on a carrier medium that loves to wreak havoc. "A man has got to know his limitations."

BITS AND BITS AND BITS AND

Let's see....NOS is likely to be out of testing and released by Phil Karn, KA9Q, around the beginning of the first quarter of 1990. I am running a alpha level version (891022) and I like it. It is undocumented but the sources are helping.

There also should be a new release of MSYS quite soon. I think that it will be 1.06. It hopefully will have some bugs fixed like not accepting connects from certain calls, etc.

I also saw a message fly by on a local BBS that there is a new BBS program out there for the Commodore 128 computer. I have no details on it but I am sure that you can find the info on your local PBBS.

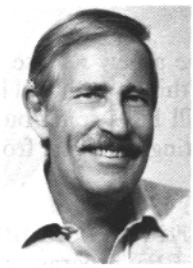
That is it for now. Now I have my timetable all screwed up but it is no big problem. See you all next month.
de Richard, N6NKO@WB6YMH-2.#SOCAL.CA.USA.NA or n6nko@n6nko.ampr.org [44.16.0.114].

HITS & MISSES Continued from pg. 7

"DOC" Watson, W7MI Responds

The International article last month from Liam Currain, EI3GC sparked "Doc" to write me. Doc vacationed in Ireland in August of 1988 and while there made an attempt to visit Liam but they did not make connections. Doc left his QSL card and a copy of the Journal for Liam and a phone number of his hotel but still they were unable to make contact. On the last night that Doc and his friends were in Dublin, one of the Hams in the party had a heart attack and died which sort of put a damper on the trip. Glad you passed this along Doc and good to hear from you. Doc and I had a nice eyeball about two years ago here in Los Angeles along with some other RTTYers including Gin San, JA1ACB.

The Holiday season is upon us, be good, be kind, be thankful, and may your season be a happy one. That's it for this month. Time sure flies by anymore, soon I'll be sixty years young, sure hope things get easy after that age!!! Until next month when we will have a very hot, jam-packed issue, 73's for now.
de Dale W6IWO



DX NEWS

John Troost, TG9VT
444 Brickell Ave, Ste. 51-265
Miami, FL
33131-2492

OCTOBER REVIEW

Propagation in October has been remarkable: there were days that the A index was an unforgettable Zero, and then the Major Solar Storms started and propagation on any band was wiped out all over the world for hours at a time.

Regardless, October was a good DX month. We saw such goodies as SV5TS, just back from vacation, with three brand-new Monobanders, HV3SJ up every weekend, FR5ZD banging away on AMTOR, 9J2AL, 3DA0AY, CT3BX with his usual good signal, TJ1MW, A22BW, ZD8MAC, GJ4YMX very active, OY7JR, JT0DX (now gone back home), EA9JV, TU2BB, ZS3GB, RL8PYL, ZK1RS from North Cook (now gone back home), J73EH, 6Y5HN, V31AR, UW3TT/UH4H, (also back home), UZ9CWA, CU3EM, UH8ABM, OD5NG, 9K2DZ, 9M8AX, FK8BK, TZ6VV, C6A/GOAZT (also now gone home), A35VB, 5A3NL (WFWL), and a lot of Turkish stations. Most of these stations are frequently active and can be worked, providing you listen 24 hours a day and scan the bands continuously (or if you have a little bit) of luck).

S92LB BY DJ6QT

No doubt, the star of the month was Walter, DJ6QT, operating from S92LB and that is quite a story. Walter decided that he would like to run the CQ WW SSB Contest from an exotic place like Sao Thome and got in touch with I5FLN to try and find a way to get the blessings of Luiz, S92LB for permission to operate from his station in return for helping Luiz activate the Tono, donated by Gin San, JA1ACB. After some Faxing back and forth between your's truly, JA1ACB and I5FLN, we finally were able to get a valid Telex number for Luiz, and I5FLN Telexed him in perfect Potagnol (mixture between Spanish and Portugese, with an Italian accent), requesting permission for Walter to come over. A reply came back in a day, saying that Walter was more than welcome. So off went Walter to Sao Thome. via some place in the center of darkest Africa, where he missed his connection and was delayed a day. But yes, finally he got to S92 and was welcomed by Luiz, who put him up at a hotel, and then Walter discovered that it would be very hard to work more that two hours per day at the radio and in addition teach Luiz RTTY, after hooking up the Tono.

Result was 310 happy RTTYers, plus 420 SSB QSOs; average cost per QSO: total cost of trip and stay, divided by the number of QSOs = $10.00 U.S.! Don't forget this cost when you send your QSL card; Walter is not a rich man, even though he has brought many new countries up on RTTY.

That was the cost for bringing this All Time New One on RTTY on the air, plus training S92LB and leaving the gear hooked up for him. We hope to see Luiz now on RTTY from time to time.

CONGRATULATIONS

In October Luciano, I5FLN received confirmation from the ARRL for 292 RTTY countries confirmed! I think that sets an example for most of us, Luciano is a working man, as most of us are, but has done an outstanding job, and continues to do so, in the limited time he has.

DX COMINGS

KD7P/NH2 and NY6M/KH2 will be operating from MIDWAY ISLAND,KH4, a rare one, from 23 to 30 November. Upon concluding the CQ WW CW Contest they will operate with two Trancievers on RTTY and SSB. Try to catch them from 27 to 30 November and get yourself a new one! They need support because they are even poorer than DJ6QT. Please contributions and QSLs go to: Bob Winters, POB 8265 NCWP, MOU 3 GUAM, Dededo, Guam 96912-8265, USA.

A new CHINESE RTTY station has been seen: BZ1FB QSL to: Hugh Dean, 420 West Rose, Lebanon, OR, 97355, USA. No current news on Rod, 5Z4BH and his plans for T5CT: time will tell; sure he will write me soon.

VU2JX is still working on his plans for A51, BHUTAN. But the news is ARRL DX Bulletin No 42, that all was arranged, is far from true, unfortunately. Besides, Jim Smith, VK9NS has been trying to get permission for three years now, but it seems that may show some results soon. Toes crossed for both of them.

ZS8MI, MARION ISLAND, has been on RTTY a few times on 20 Meters around 1500Z on Saturdays, but his habits are hard to predict. If you see him, call me collect at 340169 in Guatemala City.

WB2DND went to THE UNITED ARAB EMERATES to operate A61AD from 13 to 18 October and took a PK232 along: unfortunately he could not get it to work with the Compaq 386 Computer, due to serial port problems. He did plenty of SSB and CW, but will be back in February 1990 to give RTTY another try. We will have to wait a little longer for a legal New one, as the earlier operation by A61XL could not provide the ARRL with proper paperwork. Problem in some of these Countries is that "Word of Mouth" is the only license to be gotten.

A number of stations have been reported from CHAGOS, VQ9, but in all recent instances the QSL card showed that these were shipboard operators in the Chagos Lagoon, and counted as Maritime Mobile.

RL8PYL is still planning to bring something of: if not this year, then early next year, but the political situation in some of these countries makes is very difficult to get an operation going. Currently SPRATLEY is highest on his list with a formal license from the Chinese authorities. Alex will tell me in his next letter, what happens to XU, KAMPUCHEA and S2, BANGLADESH. Raimo, OH2BGD, has been unable to find a boat to ZK3 as of this writing. If no boat can be had for love or money (more money than love), he will go to ZK2, NIUE.

EA9JV, Aure, will be QRV on RTTY

Continued on next page

DX NEWS Continued from page 8

from S0/KA9JV, WESTERN SAHARA, from 13 to 16 November.

9M6BS, EAST MALAYSIA, will be activated by five U.S. Operators from 16 thru 23 November. After that they will move to V85, BRUNEI, from 24 thru 27 November and then to VS6, HONG KONG, and XX9, MACAO, 28 November till 4 December. QSL to N2OO.

The second BOUVET operation, by the W9 group, in February of next year, RTTY is assured. They will take along the HAL Telereader of the West Coast RTTY DX Association. The RTTY operator will be WB9CEP.

John, W2ZWW, a resident of Thailand was donated a PK232 by contributions from several hams via the WCRDXA and got training from the Long Island DX Association. In the next few weeks you will see HS0B, THAILAND on RTTY.

MALPELO, HK0, will be on RTTY in November 1990 with an all band, all mode expedition, 12-15 operators, being organized by HK3BED.

WC5P will be working from T32BE, EAST KIRIBATI in late November.

As to the planned trip of VE2JPC, Jim, there are some delays. Jim does volunteer work in developing countries. He was working on a project in SENEGAL and one in MAURITANIA, but there have been, in his words, "some hiccups" and the trip has been delayed. But when he gets there he will also operate from THE GAMBIA, though MAURETANIA is very far from certain, due to the friction between 5T and 6W. The other project in LESOTHO is of a similar nature, but that is some time off yet. Jim will keep us posted.

And, finally, the WCRDXA is working on "deals" for H44, SALAMON ISLANDS, ZD9, TRISTAN DA CUNHA and CE0Z, JUAN FERNANDEZ. They will keep us posted on that.

DXCC NOTES

By the time you read this column, the DXAC should have voted on admission of various rare spots, which have already been active, and of which you probably have your QSL by now. The vote should take place in the first half of November and affects several prospective new countries, like Conway Reef, Banaba (Ocean Island), the Marquesas Islands, the Austral islands, and Minerva Reef.

A vote on poor neglected Walvis Bay will be taken late December (a Christmas present??). That location has never counted as anything, not even as South Africa, nor as Namibia. Is there any other place in the world which does not count as a n y country? It would seem pretty evident that Walvis Bay is a separate country, part of South Africa, but separated by a big piece of another country, Namibia.

Another matter is the recent expedition to GUEMES ISLAND by Tad, KT7H. Guemes island, is a U.S. territory, part of the state of Washington, in fact. It could qualify under paragraph 3b of the DXCC Rules, as now written. But it seems that the DXAC has discovered that Rule would admit a lot of countries to the DXCC list, which by no means appear to have the right to separate country status, such as some of the U. S. and Canadian Islands in the Great Lakes and St Lawrence Seaway. So, it looks like the ARRL will change 3b retroactively (again). Well, it is all a matter of Work it First, Worry later (WFWL).

EXPEDITION SUPPORT

You can see that the West Coast RTTY DX Association (WCRDXA) has been very busy drumming up support for various operations. That is expensive and comes out of the pockets of a very small group. You can help: write Don Simon, W6PQS for details, or just send him a check!

Gin San, JA1ACB has supported innumerable RTTY operations, which brought new countries on the air, regardless of his personal needs.

Jules, W2JGR, has just bought a HAL Telereader CWR6850E and put it at the disposal of the Long Island DX Association, to lend it to needy operators or Expeditions.

Walter, DJ6QT, just spent a fortune getting S92LB up on RTTY and has not even worked Sao Thome himself.

And Heinrich, DJ6JC brought us Benin, Abu Ail, Niger and Conway Reef at his own expense.

And W6PQS brought us East Kiribati.

And I could go on and on. Were these guys on an Ego trip? I know most of them personally and say, without hesitation: by no means!

So what are YOU doing to help bring new RTTY countries on the air?

If you wish to help now, please contribute to the WCRDXA: not a "non-profit", but a "loss" organization.

Send your check to: WCRDXA, 356 Hillcrest St, El Segundo, CA 90245, USA. Even the smallest contributions are welcome and necessary if you wish to continue finding New Ones on RTTY.

PACKET INCURSIONS

The incursions of packet "non-gentlemen" below the .100 Mark in the RTTY band continues. You have a hard time now to copy the ARRL Bulletins as those "non-gentlemen" do not seem to care about who the rightful users of the segment below .100 Mark are. The "Gentlemen's Agreement" calls for the very efficient HF packet to operate above the .100 Mark frequency on the 28, 21, and 14 MHz bands. Does that not make those few, who insist in transgressing into the RTTY portion of the band "non-gentlemen"? Think I read somewhere that the definition of "LID" is "not a gentleman". I lived in Daniel Webster's house on 57 Mount Vernon St in Boston, must have got it there.

Syd, VK2SG, recounts a droll story: I saw a funny thing the other day from a packet station, who complained about deliberate QRM on 21097 KHz, (which is 21095 KHz Mark frequency plus 2.1 KHz Mark tone). Did not the poor child realize that was the W1AW frequency, they had been using for the past 50 years, four times per day? Or must the ARRL now move to suit the foibles of the Packet operators? Life gets very hard these days.

Continued on page 16

INTERNATIONAL

Gyorgy Osvath, HA5CP seated at his very neat station. Notice his favorite reading material is close at hand just like all loyal RTTYers. You will find his article very interesting.

The activity of Hungarian Amateur radio stations was more or less begun at the same time as professional broadcasting. In1924 the Budapest Technical University formed the first Radio Club, followed by several others in the Capital and bigger cities. Although "official" broadcasting started in 1925, numerous radio stations were in operation at the time of WW I. The Hungarian QSL Bureau has operated since 1927. In 1928 the Association of Hungarian Shortwave Amateurs was formed, with more than 500 active members. The Association joined the IARU in 1933. After the outbreak of WW II similarly to other countries, the Amateur activity was practically banned.

In 1947 the Association was reformed. At this time great effort was given to organizing education, contests, and for establishing representatives equipped with radio amateur stations in each city all over the country, thereby strengthening and widening the radio amateur activity. The changes of the fifties had influence on the Hungarian radio amateur movement, too. The direction and organization was taken over by the Federation of Hungarian Freedom-fighters.This organization operated through club-networks with several thousand members. At that time about 200 HF and VHF amateur stations were active and within a couple of years approximately 40,000 young people became acquainted with the basic of electronics and telecommunications. This effort had a great effect on the semi-skilled manpower reserves in our country. After 1956 the Federation was replaced by theHungarian Defense Sport Federation.

In 1968 the MRASZ(Hungarian Amateur Radio Society) was formed under the National Sport office, directed by the Ministry of Education. During the past few years the number of the Hungarian radio amateurs has multiplied, totaling now more than 5000. The procedure for licensing has become much easier and simpler for foreign amateurs visiting our country, alike. The organization of several International radio events in Hungary(e.i. Region I, 1975) and the results of Hungarian radio amateurs in contests and successful DX-peditions (St. Jupat sailboat voyage around the world HG4SEA/MM 1968, JT5NP, (HA5NP) 1988, 3W8CW and 3W8DX 1988, JT0DX 1989 etc.) as well as our popular Rummy and HCS diplomas has helped us achieve wide recognition.

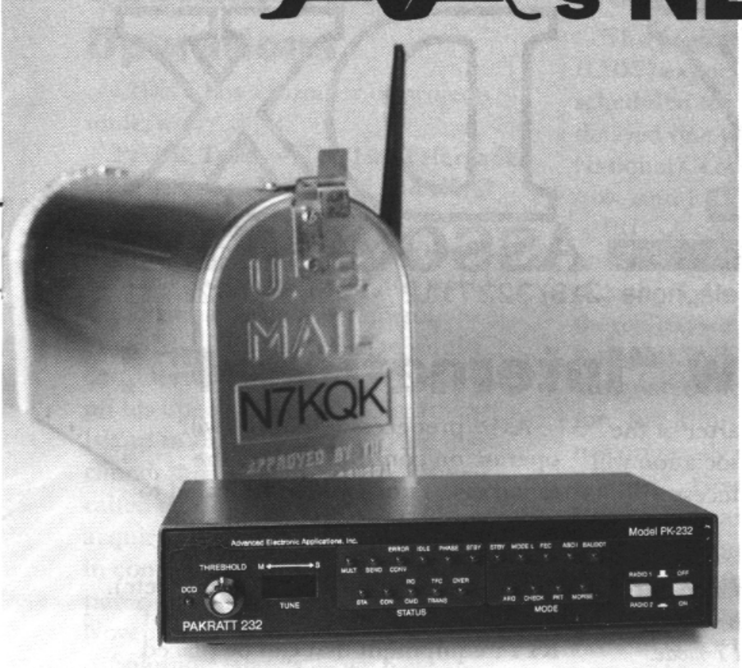
The digital amateur radio in Hungary as in most places started with experiments on mechnical RTTY. After some preliminary trails one of the first "serious" equipment was put into operation at the HA5KBM club station in 1974. This consisted of a renewed Lorenz 15 mechanism terminal unit with active filters made by the members of the club, and a FT250. Perhaps some of the readers remember this callsign, which was rather active, participating in numerous contests with good results. The former operators recall with pleasure the regular QSOs with W2LFL, Bud and W1WGE, Woody. Many amateurs attempted to repair old discarded Siemens and Olivetti machines with more or less success.

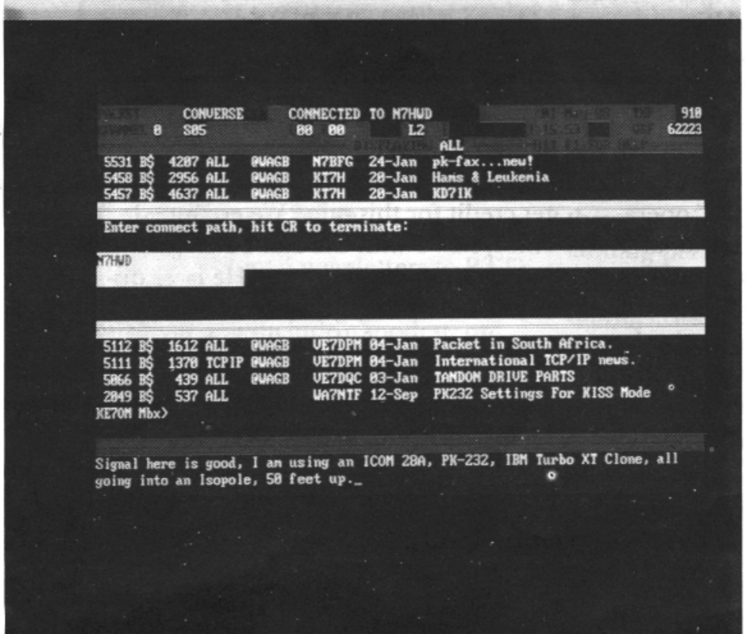
HA5KFN and HA5KFZ at this same time started experiments on SSTV with the envouragement of the enthusiastic members of mentioned HA5KBM club station. Among the first QSOs were JA1PX and SM5EEF. I must also mention HA1ZH who has been very successful with his home made monitors and cameras with 15Hz sampling frequency. By the spreading of RTTY and a significant decrease in PC prices in 1982 it became possible to build a RBBS with the help of HA5KFU and HA5BME (Budapest Technical University). Much assistance was given to this project by HA5WH, HA5OB, HA5DI among others. The RBBS worked on the R7X channel (145.787.5/145.187.5 MHz) with 1 W output, serving more than100 Hungarian and foreign regular users. The BBS was based on a ZX81 PC and operated until 1987.

In 1985 the novelty and possibilities of Packet radio caught the attention of the Hungarian Hams too. And at first, with TNC-1s and later with TNC-2s an experimental operation was started. The pioneers were HA3PMF, HA3PG, HA5OB, HA5DI, HA5OA, HA5MR, HA6FN, HA0IN and as a result of their work, since 1987 the NationalAmateur Digipeater and BBS network has continuously grown (See map). The next goal required for further development is to build a 70 Cm main-network.

Continued on page 14

AEA's NEW PK-232MBX With PakMail™





Now AEA's popular PK-232MBX multi-mode data controller has all of the features you've been asking for...PakMail™ mailbox with third-party traffic, seven-character AMTOR sel-call, TDM (Time Division Multiplexing) Rx for SWL and priority acknowledgment features. Compatible with almost every computer or data terminal, you can enjoy the full spectrum of digital communications with the PK-232MBX.

All Operational Modes. The PK-232MBX includes all of the **recognized** data modes available today... AMTOR, ASCII, Baudot, CW, FAX Tx and Rx, NAVTEX marine and packet.

Modem Superiority. An eight-pole chebyshev bandpass filter limiter-discriminator modem enhances the signal-to-noise ratio at the detector and virtually eliminates interference from adjacent signals. This system is superior to PLL modem technology which was designed for minimal noise interference.

PakMail.™ PakMail™ mailbox with third-party traffic is now a standard feature. Leave and retrieve packet messages around the clock. The PakMail™ plug-in board/update is compatible with all PK-232's. Contact factory for details. The upgrade also includes TDM (Time Division Multiplexing) decoding and seven-character AMTOR sel-call. Priority acknowledgment is also included to reduce packet collisions.

FAX Transmission. The **first** multi-mode TNC to transmit FAX, the PK-232/MBX supports the widest range of printers using the optional RS-232/printer cable.

Host Mode. Only AEA provides a fully functional Host Mode which enables programs to control the TNC more efficiently. Programs include PC-Pakratt with FAX for IBM PC and compatible computers, COM-Pakratt with FAX for the Commodore 64 and 128, and now MacRATT with FAX for the Macintosh.

Two Radio Ports. Independent radio connection ports allow interchangeable HF or VHF operation, selectable from the front panel for convenience.

Signal Anaylsis. The PK-232MBX internal software has the exclusive SIAM™ (Signal Identification and Aquisition Mode) feature which lets you tune an unidentified signal. The PK-232MBX can automatically determine the signal's mode, baud rate or speed and configuration.

You Deserve the Original. AEA was the first to produce a multi-mode TNC, and it still remains the standard by which all other TNC's are compared. Don't settle for less.

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November 1989

INTERNATIONAL RTTY DX ASSOCIATION

356 Hillcrest Street, El Segundo, California USA 90245 • Telephone (213) 322-7112 • FAX 213-322-7114

RTTY DX Association now "International" !

The West Coast RTTY DX Association was launched in 1987 with the idea that a smaller, regional organization would provide financial resources to accomplish the objective, while keeping the amount of work required to a minimum. In this regard, it has been spectacularly successful!

Regretably, the provincial title leaves many fine RTTY DXers feeling left out!

With the urging of TG9VT, JA1ACB, W2JGR and others, the "West Coast" RTTY DX Association will become the "International" RTTY DX Association or IRDXA, and "open" to all!

Under the theory, "if it's not defective, don't fix it", — the charter of the International RTTY DX Association will remain the same as its predecessor:

To provide RTTY equipment and training to DXpeditions and cooperative amateurs in DXCC countries not presently represented on RTTY mode.

IRDXA has no constitution, no by-laws, no officers, no meetings, no net and no other rules!

Don, W6PQS and Dean, WA6PJR act as managers, performing the day to day chores of coordination, equipment preparation, shipping, newsletters, etc.

As its predecessor, IRDXA will operate on contributions by the members. Funds will be allocated to the acquisition of equipment and operations related to placements (postage, telephone, FAX, freight, etc).

IRDXA welcomes the donation of RTTY equipment that can be placed permanently in DXCC countries not otherwise available on RTTY.

Members are urged to seek new RTTY DX opportunities, then call for equipment assistance.

IRDXA will not provide funds for DXpeditions, deferring that role to a foundation, if one is created.

The RDXA Record

During the two and one-half years of its existence WCRDXA operated on cash donations of just under $1000 and equipment donations of about $500.

The equipment inventory includes a Robot 800 (on permanent loan to VR6TC), a well traveled Hal Telereader, an InfoTech (on it's way to H44) and a PK-232, on its way to HSØB on a permanent loan.

WCRDXA has instigated and in many cases provided equipment for many operations, including:

Pitcairn Island — Tom Christian, VR6TC was activated after a 18 month struggle. He is on the air, using a Robot 800 donated by Henry Radio. Tom will QSY to RTTY after his Tuesday sked with W6IL (21349 at 0030 UTC). Persistance pays off!

Christmas Island — The WCRDXA Hal Telereader was acquired before the Christmas Island trip by W6PQS. Unfortunately, it developed a logic problem and was replaced by a Robot 800 borrowed for the operation.

Kingman Reef/Palmyra — Jin, JA1ACB sent us a Tono 5000e for the Kingman Reef and Palmyra operation by WA2MOE as K9AJ/KH5K and WØRLX/KH5P. In spite of lots of cockpit problems, many night owls worked this one.

Minami Torishima — Charlie Carpenter, KA2CC took the Hal Telereader to JD1/M to the delight of many RTTY DXers world wide.

Bermuda — Victor, KD2HE operated /VP9 as a warm-up run for the Mellish Reef operation. Many JA's, European and West Coast DXers added one to their score.

Mellish Reef/Willis Island — Our first, "first time ever on RTTY" operation activated Mellish Reef (and later Willis Island) by Victor KD2HE using the Hal Telereader. Cards from VK9ZM and VK9ZW are now prized treasures by many.

Kure — Rick Senones, KH6JEB took the Hal Telereader to Kure for another "first time ever" operation as KH6JEB/KH7. Rick's persistance and technical prowess saved this operation when a power supply failed. Rick also invented "acoustic coupled AFSK" with his mike taped to the internal speaker when a cable failed.

Marion Island — we encouraged Peter to take RTTY and offered to provide the equipment. Peter liked the idea but purchased his own gear for his extended stay. He is giving the world ZS8MI contacts, even as this is written. Another "first timer"!

Aruba — New RTTY DXer and DXpeditioner, Bill, KC6EDP packed the Hal Telereader to Aruba as P40MA. Bill insists "everyone who wanted it, worked it".

Conway Reef — well we really don't get credit for this one. We equipped Vince, K5VT with the Hal Telereader and put him on the plane. He later discovered Henri DJ6JC was on the same expedition and fully equipped. Henri gets the credit as 3D2HL — the Telereader had a nice boat ride. Thanks to both Henri and Vince.

Flash • Bob, KD7P/KH2 will activate KH4 on Nov. 23-30 with RTTY !!!

Upcoming RTTY Operations

IRDXA has a number of projects underway:

Pacific Tour — The Hal Telereader is on its way to KC6, KH2 and KHØ with Ed, NT2X. Many East Coast, European and new RTTY DXers need contacts from this part of the world.

Christmas Island — we wrote to Paul, WC5P and asked if he would consider taking a RTTY box with him on his upcoming trip to Christmas Island in Eastern Kiribati. Paul declined, then changed his mind and called to announce that he had acquired a RTTY unit that would work in conjunction with his logging computer. Watch for Paul as T32BE on November 22nd for one week.

Solomon Islands — we have arranged with Stuart Honeysett, H44SH to come up on RTTY. He should receive equipment in late November.

Thailand — With the assistance of very generous donations by TG9VT, W2JGR, W2FG and K2FF — John Zajo, W2ZWW will fly to Thailand November 9th with a PK-232 under his arm.

John, a resident of Bangkok, is a member of the Radio Amateur Association of Thailand (RAST) and a frequent operator at the club station HSØB. He will have to get the equipment past customs in Thailand — success is not guaranteed! John will cover the cost of any duties.

John is receiving assistance and training here. In Thailand, he will operate and train other members.

RTTY QSL's ONLY — to John Zajo, P.O. Box 12-1004, Suanphul Wannawa, Bangkok, 10120 Thailand, Asia. Other modes to RAST, P.O. Box 2008, Bangkok 10501 Thailand, Asia.

Membership

IRDXA will mail newsletters to RTTY DX nutz who send $5 a year for postage. If you include a modest, or even immodest, donation it will be accepted as well. The treasury was totally depleted for the HSØB project, so IRDXA can use all the help you can provide. More cash = more countries!

Personal checks gleefully accepted!

Bouvet... Bouvet...

The Legion of Indianapolis DXers (LIDS) expedition, was originally scheduled for the Spring of 1989 It was delayed one year at the request of the National Geographic Society , and will now land February 2nd, 1990.

IRDXA contacted Mike Koss, W9SU and requested the Indianapolis group take the Telereader to Bouvet. Shortly thereafter, we received a call from Jim Rinehert, WB9CEP who has been designated the "special modes" operator. Jim informed us that RTTY was not originally planned because of "little interest". However, after receiving our letter and hearing of the difficulty we have activating rare ones, the LIDS gang agreed they would help us.

The landing is scheduled for February 2nd, after the bird and marine mammal breeding season (Bouvet is an ecological reserve). An 18 man team of scientists and amateur radio operators will conduct scientific experiments and man 7 stations. Operations are scheduled for all bands and all modes with a stateside QSL route!

The expedition will be filmed by the National Geographic Society for its magazine and Explorer program. The trip is entirely paid for by the Saturday Evening Post Society, the Saturday Evening Post Magazine and other corporate sponsors. Yasue is providing seven of its new, FT-1000 transceivers, as well as Chip Margelli, K7JA as escort. OH1BH and W6OAT will be aboard.

During the summer of 1989, DXpeditioners LA1EE and LA2GV, of Peter 1st fame, created **Club Bouvet** to finance a trip to the remote island. They were probably not aware of the "paid-up" LIDS operation in February.

The LA group was invited to participate, at no cost, in the LIDS operation, but declined and launched what now amounts to a boat race. Unfortunately, they also tried to block licenses and landing permits for the LIDS group. The LA group is continuing their fund raising efforts and have scheduled a landing before Christmas.

Einar took RTTY to Peter 1st Island, but attempted only a few scheduled contacts, and worked a few dozen others who happened to have propagation at that moment. His RTTY plans for Bouvet are unknown.

Projects...

IRDXA is presently corresponding with resident operators in a large number of rare RTTY DXCC countries including **Juan Fernandez, Mayotte, Djibouti, Jan Mayen, Somalia, Tristan da Cunha and Swaziland.** We have carefully chosen our correspondents based on frequent activity, as reported on the PacketCluster Networks.

We encourage resident amateurs to find a way to begin RTTY operations on their own. If that is neither possible, nor probable IRDXA will offer to help.

We also have been encouraging operators in Guadalupe, Faroe Islands, Central African Republic, Kalingrad, Antigua, Falklands, South Georgia, South Orkneys Syria, and Singapore to re-activate for the new RTTY DXers.

If you can contribute to any of these projects, please drop us a note.

United Arab Emirates... a near miss!

Well we almost got UAE on the air last month.

At the urging of IRDXA, Don Greenbaum, WB2DND agreed to take RTTY equipment with him on his quick trip to UAE. We offered to provide a PK-232 but Don purchased his own for the trip. We did send him an FSK cable set rigged for the 781.

Upon arrival the Customs service confiscated the PK-232 and wrapped it up in red tape. When it was still not available on Don's original departure date, he extended his visit. On Don's next to last day, the PK-232 was liberated and he tried to get it on the air.

The PK-232 would not start and a major "fire drill" was instigated on Snookies Net as Don attempted to get help. Troubleshooting suggestions were relayed over the air through W2JGR and by FAX. All for nought!

Don had no way of knowing the 12 volt power supply had fried the PK-232's innards.

Don will be returning to UAE March 23rd, 1990. Meanwhile he is shipping a KW amplifier and 4 element tri-bander which should be in service before he returns with the PK-232.

If you hear Don on the air, thank him for trying and have patience!

The ARRL HF Packet Challenge

By Line
Steve Hall, WM6P
664 Bristol Ave, Simi Valley, CA 93065

In the May issue of QST, the ARRL announced a development program to improve HF Packet communications. In conjunction with FEMA (FEDERAL EMERGENCY MANAGEMENT AGENCY), the ARRL has received funding to aid amateurs who wish to participate in this project. In an effort to fully utilize the capability of HF Packet in an emergency situation it is understood that the state of the art needs improvement. FEMA realizes that to develop an improved capability within the cost restraints of a few hundred dollars per station it would have to find a solution outside of the typical government procurement process.

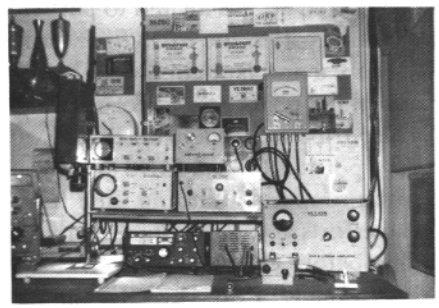
I attended the 8th Annual ARRL Digital Conference in Colorado Springs, CO on October 7th. Paul Rinaldo, W4RI, Editor of QST presided over the Digital Committee meeting. The major topic of discussion during this public meeting was the HF Packet development program. In an effort to improve HF Packet, areas of difficulty were discussed and major problem areas were identified. It was believed most packets were lost due to collisions.

improved DCD needed

In an effort to avoid collisions both improved DCD operation and the ability to adapt or dynamically change timing parameters based on network performance were proposed. *Poor frequency* and *network utilization* were believed to be a problem. The poor but common amateur practice of attempting to operate on an HF frequency with 20 other stations simultaneously was cited as a major problem. Just because a Packet will allow the use of sharing a frequency, it does not mean you MUST use a busy frequency, as this typically results in poor performance. (By all means if the frequency is busy, make your connection and QSY as you would with any other mode.) New developments in modem technology are being explored to optimize the mode.

Work is being done in the area of digital signal processing (DSP), which will allow a single modem to be used on a number of different applications such as satellites, HF and VHF Packet. As the processing of the signal is done digitally, new software may be written to add capabilities to DSP modem hardware as new modes are developed. No longer will you be required to build a new-modem for each satellite using a new modulation technique.

At the digital conference I presented a paper based on my experimentation performed involving HF Packet diversity reception. I found that the addition of a second antenna with differing polarity and a second receiver, improved reception 61%. Because of this success, diversity was identified during the meeting as an area to be explored under the ARRL/FEMA program. At the conference several manufacturers expressed an interest to me, to add an HF diversity capability to their current TNC products. Under the rules of the ARRL/FEMA project, the use of available funding is generally restricted to out-of-pocket expenses for parts purchases. This will allow amateurs with creative ideas to put them into hardware prototypes with funding provided by the project. At this point anyone interested in participating in this design project may contact Lori Weinberg at ARRL HQ or if your particular interest is in the diversity development you may contact me directly as I am forming a participating team at this time. **de Steve, WM6P**



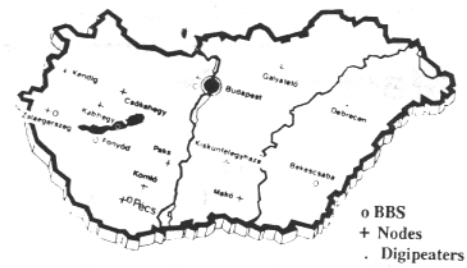
RTTY and SSTV setup at HA5KBM

INTERNATIONAL Cont. from pg. 10

The AMTOR/FEC modes are not to wide spread in Hungary. Perhaps the evergrowing and versatile Packet shaded the advantages of these modes, especially within the younger generation. I should mention that more than 2000 licenses were issued during the last few years mainly for novices,i.e. for VHF bands only and it takes time to enter higher classes and build or acquire the necessary equipment. The most popular PCs and Modems are: ZX Spectrum, C-64, C-128 and IBM XT or clones with TNC-2, PK-1, PK-232 as well as the-Modem designed by HA5OB. Many amateurs try to build modems and for example HA5OA was the first in Hungary who received OSCAR 12 with a home brew PSK modem in February 1988. Based on experiences gained in PR, HA5BME helped successfully to build up the first Soviet Packet Radio station hoping to spread this mode in USSR. I strongly believe that more and more Hungarian radio amateurs will join with the enthusiasts of digital radio and become useful members of this gang.

I would like to express my thanks to Dale, who granted me the opportunity to acquaint the readers of the RTTY Journal with the radio amateur movement and digital radio in Hungary. 73's
de Gyuri, HA5CP

HA5CP Background: Licensed since 1954, devoted to digital modes since 1983, worked 168 countries and all Zones on RTTY (not all confirmed, still awaiting some QSLs). Equipment: FT-757GX, FP757HD, FC757AT, FL2100Z, Commodore C-64, C-1541, MPS 803, Phillips BM 7552 monitor, PK-232 and AMT-2 modem, Fritzel GPA50 and 5 band dipole antenna.



Hungary's National Amateur Digipeater and BBS Network Map

MSO'S

Dick Uhrmacher, K0VKH
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Rapid City, SD
57702

Hi Gang! Can it be hobgoblin time already?? Where did the Summer go? It seems like just the other day that we were getting ready for Dayton 1989, and now I'm already making reservations for 1990!! Time sure goes by in a hurry when you're having fun!

SAD NEWS DEPARTMENT:

I'm very sorry to report that Jerry Trichter, WA1IUF, is hospitalized in very serious condition. We are saying a very special prayer for Jerry, his XYL Annette, and his family, and hope that he is well on the road to recovery by the time this is published. Jerry entered the hospital in mid-October for a planned surgical technique. However, Jerry experienced a stroke during the surgery, and as of this date, (late October), is recovering from that event.

I spoke with Jerry's son-in-law on October 24th, and he did have some very good news. Jerry's doctors now feel that he will make a complete recovery, although it will be a long, rough road for him. Evidently there is some good news however, in that Jerry was squeezing his daughters hand rather rhythmically, and she thought that he might be trying to communicate with her via Morse Code! Sure enough, a couple of Jerry's friends took a key and oscillator to his bedside, and he was able to tap out the alphabet for them! (Who says that CW is a thing of the past????).

Many of you may know that Jerry is an avid Amateur Radio operator, a veteran of countless trips to the Dayton HAMVENTION, and the spirit and driving force behind the International Mailbox Frequency. The Dayton HAMVENTION will not be the same without Jerry holding court at the Radisson Inn! But, he needs to hear from his friends, and this is where YOU can help! Drop Jerry a note whenever you have time, telling him about your activities. His daughter is reading every letter and card to him, and as I can testify from personal experience, those letters and cards are a tremendous lift to a persons spirits when you are sick. Jerry's daughters address is: Mrs. Rhonda Hawes, (Bob), 204 Gorham Avenue, Hamden, Connecticut, 06514. Let's all pitch in and brighten Jerry's day a bit!

KB0ATQ TEN METER MSO'

Jay, KBOATQ, from Rapid City, South Dakota, tells me that he is seeing an increase in the use of his ten-meter MSO. Improving band conditions, and more on-the-air exposure has brought and influx of new users.

Due to some frequency conflicts with other stations, Jay has decided to move his MSO System to a new frequency, effective on November 1st. The new frequency will be: 28 117 000 MHz (mark). For those of you having Technician Class operating privileges, and desiring to experience using a first class Message Storage Operation, dial in Jay's system on 10 Meters and give it a shot. Jay's MSO is on 24 hours a day, operates at 74 baud, (100 WPM), and he keeps his KLM beam pointed East. His access code is: MSOATQ.

HAL COMMUNICATIONS "PC-AMTOR BOARD

Hal Communications Corporation, of Urbana, Illinois, has just announced their new 'PC-AMTOR' digital board, which looks like it will be a real winner! It provides the digital mode enthusiast with RTTY, CW, ASCII and AMTOR modes, with no compromise features which is sure to make for operating ease along with sophistication. Designed to be installed right into your IBM compatible computer, this board will provide a one-card digital system, complete with a demodulator, ready to dig out those weak signals. Install the HAL RPC-2000 Packet board in the same computer, and you really have a machine that will satisfy your digital tastes! HAL has led the way in providing user-friendly software for their product, which really becomes important when you consider the multitude of commands one must remember when using the various digital modes. Being able to "point and shoot", versus having to memorize hundreds of commands, certainly is a blessing!

RTTY 'GENTLEMAN'S AGREEMENT' REVISITED:

Lots of flak, four letter words and recriminations floating around the bands these days, concerning the utilization of primarily the digital portion of 20 meters. It's unfortunate that we can't get our heads together and solve this problem without calling for outside, governmental interference. This clashing of modes reminds me very much of the 1956 through 1958 era when single-side band came on the horizon, to the dislike of those using amplitude modulation. The situation was quite different however, in that SSB was most certainly an improvement over AM, (I can hear the sabre's rattling now!!!), and has now almost completely replaced AM as the most popular voice mode. Packet radio, (now classified as the "intruder"), has not shown this same distinction, by replacing RTTY. In fact, RTTY and Packet are so much different, that classifying them both as digital modes only serves to muddy up the waters. If those I talk to are in the majority, then Packet is one heck of a super traffic handling mode, quick, sophisticated, efficient, but unfortunately, not user-friendly. And therein lied the crux of the problem we see today.

All one has to do is tune between 14070 and 14100 to see that RTTY is most certainly a very popular mode. It is slow, but it is very conversational, with QSO's between friends and acquaintances abounding. Ragchewing, DX'ing, RTTY bulletins, MSO"s and CBMS's, etc, all flourish in this small part of the spectrum. Packet activity on 20 Meters seems to be mostly concerned with BBSs and traffic handling. You don't see a lot of packet DX activity, packet ragchewing and other one-on-one packet activity. So the impression that this mode provides, (although most certainly not true), is one of computers talking to other computers, rather then hams talking to other hams. In other words, packet radio has lost the personal touch.

Packet does not lend itself toward one-on-one conversations, particularly between stations who are foreign to each

Continued on next page

MSO's Continued from page 15

other, nor does it lend itself toward DX'ing.

Several years ago I suggested that digital modes make more use of the spectrum above 14.100 MHz. And, now I again think that it is time for the digital modes, particularly Packet Radio, to move upward from this frequency. I'm, somewhat troubled by Packet stations who move downward from 14.100, ever compressing the very small portion of the spectrum available for DX'ing, RTTY bulletins, one-on-one QSO's, MSO's etc., when there is an abundance of space available above 14.100 MHz. It is my opinion, however valid, that RTTY and Packet Radio satisfy different operating needs, are not basically compatible as operating modes, and as such should be informally segregated.

The RTTY/CW "Gentleman's Agreement", was just that. An informal agreement between aficionados of RTTY and CW modes, stating that RTTY folks would stay out of the CW portion of 20 Meters, and CW folks would stay clear of the RTTY portion. Packet radio wasn't even a gleam in its inventors eyes when this agreement was first hatched, and with respect to current operations, not really relevant.

I've always felt that the less governmental regulation our hobby has, the better! We need to solve our intra-national problems with less dependence upon "big brother", as once it's down in hard copy, then our hands are really tied. So, I'm suggesting that we update the "Gentleman's Agreement" by stating that the CW mode should (with an emphasis on "should") be utilized in the area of 14.000 to 14.070 MHz, RTTY and AMTOR should be utilized in the area from 14.070 to 14.100, and that Packet Radio should be utilized from 14.100 upward. If past experience is any kind of indicator, seventy kilohertz is adequate for CW. thirty kilohertz has been adequate for RTTY and AMTOR, and the area above 14.100, MHz, (a virtual no-mans land prior to packet), can absorb many Packet channels. This kind of informal agreement would provide for adequate space for all digital modes, yet provide the flexibility for each mode to grow. The last thing we want is stringent governmental policy, dictating where each mode must reside.

My crystal ball isn't any clearer nor prophetic than anyone elses. But I do know that where rational people have the opportunity to express their desires and needs, things usually work out in the end. So let's hear your ideas about how the 20 Meter digital area should be apportioned. I challenge YOU to come up with a "better plan"!! The RTTY Journal is an excellent forum to express ideas from any person or group. My ideas are no better, or worse, than anyone elses, but unless YOU enter the fray by outlining your thoughts, then mine reign supreme! It's time to get your feet wet!

That's it for this month Gang! Time to get your Christmas list in order! Let's see...how do I spell 'transceiver'? --73--
de Dick, K0VKH

CONTESTING

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Spangle, WA 99031

LIFE IN THE LOOPHOLE

(contest philosophy for the 90's)

I remember when there were only six kinds of dry cereal and it never occurred to me to look farther than the "100% PURE" or "MONEY BACK GUARANTEE" assurance on the package. But now, in our document conscious, loop-hole driven society, the process of meaningful description has become more complicated. One hundred percent pure what? A "GUARANTEE" causes a reflex scrutiny of the fine print. Insurance policies have become testaments to the art of creative obscurity. In contrast, the rules for our radio contests haven't changed much from the days when we were still sending weather reports by beating on hollow logs.

When we interpret a document the ethics of the process often boils down to whose found the loop hole, our corporate shark or theirs. The hard core competitor usually treats contest rules the same as the fine print on his credit card contract. *(Continued on page 20)*

DX NEWS Continued from page 9

APLINK

Vic Poor, W5SMM caused me to receive a new version of Aplink, which I park on 14,074 Mark, 24 hours per day. Version 3.90. I went to Boston for a week the end of October (to personally hand my CQ WW RTTY Contest score to Roy Gould, KT1N.. Hawr). I left the Aplink up with my Compaq Portable III and and Icom 761, plus an R-5 vertical. The box did it's own maintenance and I had over 200 messages come thru the box in that week and it performed like a charm. The weekly DX Notes by VK2SG were placed in the Aplink by him and lifted numerous times by operators from all over the world.

It is easy to use Aplink for the accessing station, and if you wish to find the latest DX news, 24 hours a day, you will find it by accessing TGVT on 14,074.00 Mark. I hope that I will soon be scanning 15 and 10 Meters also, since 20 is really nothing to brag about during the day. And yes, you can use either CR/FL or +? after your commands.

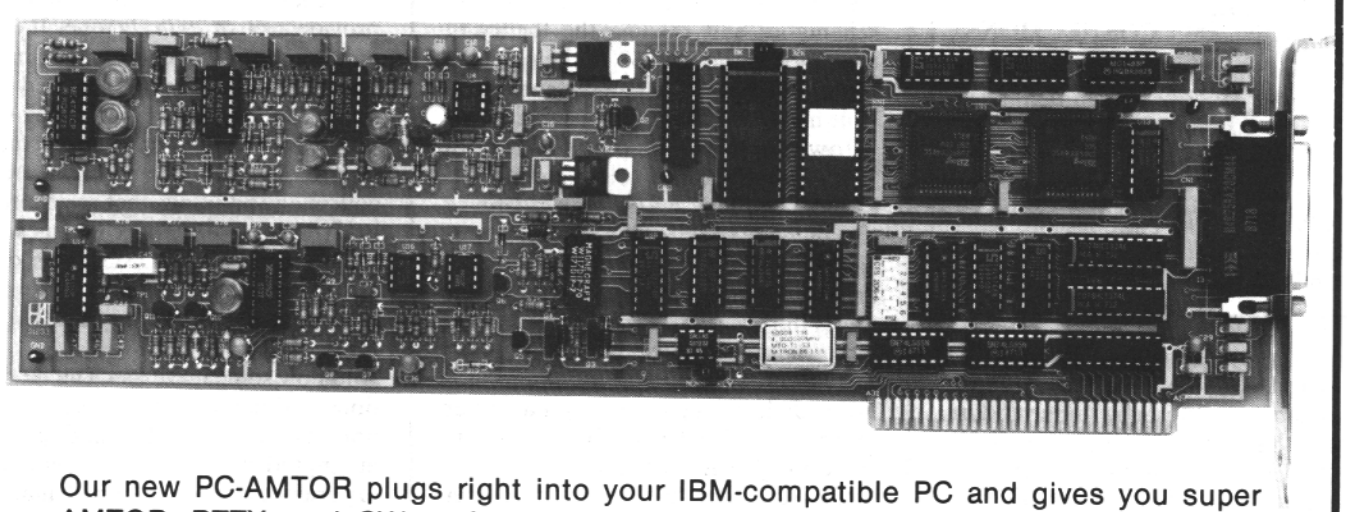
ADIOS

I hope it is not too early to wish you a Blessed Christmas, but knowing how the mail is, you might not get the December issue of the Journal until the day after Christmas. So I will hold New Year's wishes for next month and hope that someone loves you enough to give you some nice new RTTY gear this season. If you get a PK232, don't forget to read the modifications suggested in my mailbox to improve it's hearing. It only costs $3.50 or so from Radio Shack for six 1 MFD capacitors and it is well worth the effort.

My thanks for the information in this column go to VU2JX, OD5NG, I5FLN, VK2SG, W2JGR, W6PQS, DJ6QT, VE3JPC, HK3HEU, RL8PYL, KD7P/NH2 and the many others who gave me enough info during the month to keep this column going.

I, MS Word and my Spelling Checker say: God Bless you all and give you lots of New Ones. 73, stay clear of the packet incursions and go get the DX!
de John, TG9VT, in the Guatemala Mountains.

PC-COMPATIBLE AMTOR, RTTY, & CW . . . THE NEW HAL PC-AMTOR



Our new PC-AMTOR plugs right into your IBM-compatible PC and gives you super AMTOR, RTTY, and CW performance. We've combined the best features of many of our other products to give you an easy to use, low cost, and very high performance PC terminal card.

• **AMTOR:** We have an entirely new algorithm that is really great! No more long waits to synchronize, no more strange link failures. This AMTOR *works*! Want to try CCIR 625 AMTOR? It's now legal and HAL has it!

• **RTTY:** Baudot or ASCII with an optimized 170-shift two-tone modem; from 45 to 110 baud.

• **CW:** A new algorithm for CW—the best yet!

• **AUTO-MODE:** Yes, that's right—PC-AMTOR is intelligent. It knows the difference between AMTOR, RTTY, and CW. Tune the receiver and sit back—we do the work. PC-AMTOR automatically finds the correct speed, code, and polarity—no more guessing!

• **FRIENDLY SOFTWARE:** Split screen with status indicators and pull-down menu selections. No more confusing key combinations.

• **TWO CONTROL PORTS:** PC-AMTOR is unique. It has two control ports—one using the PC bus and the other for serial I/O control. Run HAL software for normal AMTOR/RTTY/CW operation; use the serial control port and run your APLink or mailbox software. Now you can have both worlds!

• **WHAT—NO PACKET?** That's right. We offer the RPC-2000 and ST-7000 for HF Packet. HF packet uses different data rates and has special requirements. It deserves special treatment. Also, your High Frequency AMTOR, RTTY, and CW deserves better treatment than a compromise "do everything" gadget.

THE PC-AMTOR (Model Number PCI-3000) from HAL . . . . . $395.

HAL

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

*STEP UP TO THE **BEST**, STEP UP TO HAL!*

CONNECTIONS

Cole Ellsworth, W6OXP
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Garden Grove, CA
92640

Last month we were discussing RTTY tones and shifts and the departure from the defacto standards by some vendors. Getting back to the complaints on the PK-232, I note that the narrow shift tones are not really that far off from 2125/2295 (2110/2310) which results in being 15 Hz lower on the low tone (Mark) and 15 Hz higher on the high tone (Space). These narrow shift PK-232 tones would probably fall within the capture range of most demodulators including, I would think, the Info-Tech M-700. On VHF FM it should pass through most repeater regenerators. I know that I do not have any trouble using my PK-232 narrow shift tones on local narrow shift AFSK FM VHF repeaters.

So going to narrow shift (from the current wide shift practice) seems to be one way the Missouri VHF repeater group might get around the wide shift tone incompatibility problem. However this would not be feasible for any members of the group whose demodulators/AFSK tone generators cannot get on narrow shift. I don't know how many of the referenced group are in this situation. However, if the wide-shift-only demodulators are of the ST-5, ST-6, W2JAV, or similar type, only the SPACE tuned circuits in the filter/discrimminator would have to be retuned to 2295 Hz, a task involving changing some capacitors on the Space toroid. . The AFSK tone generator might prove to be a bit more difficult as the SPACE tone would have to be changed from 2975 to 2295 Hz. The complexity of the changes depends on the type of AFSK tone generator.

POSSIBLE MODIFCATION TO PK-232 FOR STANDARD WIDE SHIFTS

After looking over the PK-232 schematics and reading the theory of operation in the PK-232 Technical Data Reference Manual, I can see some possible hardware modifications that would allow the Pk-232 to operate on 2110/2960 Hz tones (close enough to 2125/2975). This can be done creating a fourth mode of "HF wide". It is not possible in my limited space to describe the entire system modification in detail but this is the gist of it.

1. INPUT BAND PASS FILTER - for HF wide leave the input bandpass filter in the wide or VHF PACKET condition. According to AEA's specifications the band pass filter has a 1700 hz center frequency with a range of 2600 hz, which I assume means the upper limit of the bandpass is 3000 Hz and the lower limit is 400 Hz. As we only need 2110/2960, this should work reasonably well with out modification except for switching (see sheet 2 of the schematic diagram (analog schematic)) reference analog switches U22, 24, 25, 27.

2. MARK/SPACE FILTER DISCRIMMINATOR - for "HF Wide" add a 3rd analog switch to the SPACE filter (currently U29-pins 4-3 and U29-pins 1-2) to change the space filter tuning from HF mode frequency for narrow shift of 2310 to 2960 for HF Wide. Actually it could just as well be tuned to 2975 Hz for all practical purposes. The MARK filter will not require any change so it is left in the HF mode.

3. LOWPASS FILTER - Because the RTTY data rates do not change for wide or narrow shift RTTY, the lowpass filter does not require any changes so it is left in the "HF mode" The lowpass filter is that circuitry just below the THRESHOLD control near the center of the Analog Schematic (Fig 3 in sheet two of the schematic in the Technical Reference Manual).

4. AFSK GENERATOR U40 - Items 1, 2, and 3 above were changes to the receive circuits of the PK-232. For HF wide shift (don't forget that when we say HF wide shift it can apply just as well to VHF FM operation) we have to change the AFSK generator (U40) on sheet 2 of the schematic to provide a space tone of 2975 instead of the normal narrow shift tone of 2310. This can be done by adding a spdt switch to R164 and U35-4 to select another added potentiometer to provide 2960 or 2975 Hz tone. If you use a mechanical switch you will have to manually set it for the desired space tone. If you use an FET analog switch similar to U35, you can control it manualy or by the controller firmware but of course any additions that are controlled by firmware will require changes to the microprocessor PROMS. This discussion of manual/firmware switching applies to items 1 - 3 above as well.

And now some Caveats - The modifications outlined above are neither simple nor easy to accomplish and should be attempted only by skilled people with experience in modifcation of analog circuits on Printed Circuit boards. This writer cannot and will not warrant the changes will work even if accomplished properly as the analysis was done by skimming the schematic and specifications for about ten minutes. Remember also that any modifications to the PK-232 will VOID THE WARRANTY!. ANY MODIFICATIONS ARE DONE AT YOUR OWN RISK! As for myself, I am not going to even attempt it as I have no need for the change.

ANOTHER PK-232 MODIFICATION

John, TG9VT, has placed on his BBS what I consider to be a really worthwhile modification to the PK-232 to reduce the it's ambient noise level. John has reported that a number of PK-232 owners in different countries have added 1 ufd tantalum capacitors between pin 11 (ground) and pin 4 (+13 volts) of ICs U23, 26, 28, 30, 32, and 34. This is done directly at each IC. Someone discovered that there was a lot of noise on the +13 volt power bus at these ICs and with the addition of the tantalum capacitors, owners of the PK-232 have found that they can now copy much weaker RTTY signals that were formerly obscured by circuit board noise. The capacitors should be rated at not less than 20 volts dc working and are available at most Radio Shack outlets at very reasonable cost. Don't forget that tantalum capacitors are polarized which means that the positive side of the capacitor should go to pin 4 and the

Continued on next page

CONNECTIONS Cont. from pg. 18

negative side to pin 11 ground of each of the referenced ICs. Looking at a number of packet BBS stations in this area, I find most of them are listing the modification. Now this is a modification that I will make on my own PK-232. More power bus filtering is always good!

CONNECTING THE PK-232 TO THE ICOM IC-781

A reader has written me asking for suggestions on connecting the PK-232 to the ICOM IC-781 HF transceiver. He has made some attempts but without much success. He also needed information on connecting a computer's ASCII output to the IC-781 so it can be displayed in the 781's CRT in the Data mode. After reviewing the IC-781 operator's manual (alas, I only have the manual, not the transceiver), I believe the best connection method is as follows:

For RTTY Operation:

1. Audio tone output from IC-781 to PK-232 demodulator Connect Pin 5 of ACC(1) socket on the rear of the IC-781 to Pin 1 of J4 or J6 on the rear of the PK-232.

2. FSK transmit keying to IC-781 from PK-232 Connect Pin 1 of ACC(1) socket on rear of IC-781 to J7 Pin 1 of PK-232 for normal keying or Pin 4 for inverted transmit keying. If your transmitted signal is reported as being "upside down" then select Pin 4 if you had been using Pin1. Don't forget to set the tones in the IC-781 as shown on page 48 of the ICOM instruction manual as well as the desired shift. I recommend "High Tones" and "170 Hz Shift".

3. Both cables should be shielded and the grounds carried through from socket to socket as indicated in the s chematics.

For Data Mode (Display Data On IC-781 CRT)

The correct connections are shown in the ICOM instruction manual on page 36. The incoming data must be ASCII format (not Baudot or Amtor code format) and it must be RS-232 levels (plus and minus voltage of 5 to 15 volts in range). To connect to the PK-232, you would use J2 pin 3 for the RS-232 data and J2 pin 7 for the RS-232 signal ground. Note that this would have to be a parallel tap off the connector as J2 on the PK-232 is already used to connect to your computer or terminal. To the best of my knowledge, the data on this PK-232 connector J2 pin 3 is always ASCII format, regardless of operating mode.

Note that the above RTTY connections use the FSK output (not AFSK) of the PK-232 to key the IC-781. I like to use FSK whenever possible because you don't have to worry about audio levels to the transmitter. The IC-781 filters work very well in the RTTY mode and this is much much better than running AFSK in LSB mode and not having the really narrow filters available. Now if only I had the transceiver to go along with the instruction manual! Dream on my lad, dream on.

WE HAVE MAIL

Mel Ladsky, WB6FDR, needs info on converting a Western Union Teletype Model 43 TELEX machine to RTTY. I recall that the Model 43 is a dot matrix printer with integral keyboard. However, the model 43 I have seen was for ASCII code format. When I hear the word TELEX, it makes think of five level (Baudot) machines. Perhaps Teletype Corporation made the Model 43 in both formats. Anyone out there know for sure? If the unit Mel has is ASCII then he could use it as a terminal in place of a computer for Packet or other modes if he had a TNC or multimode controller.. If it is Baudot code (five level) then it is probably good only for direct keying of a transmitter and receiving RTTY with the output of a standard demodulator. Has anyone used a model 43 for RTTY? Please let us know if you have.

Thats all for this month. Keep those cards and letters coming. Any discussion, comment or critique is welcomed. If I don't start getting more mail soon, I am going to have to create some controversy, one way or another. Say, something like a short article on "How to be famous on Digital Modes or I ran my beacon every minute 24 hours a day on twenty meters until somebody put a load of double ought buckshot through my TNC" Ahh Fame, truly 'tis a fleeting thing. For now, 73 and see you next month. De Cole W6OXP

AEA REBUTTAL TO MISSOURI REPEATER GROUP (SLATS-1) PK-232 COMPLAINTS

Shortly after I wrote the above column and before we went to press, Dale received a communication from AEA giving their side of the story in connection with the SLATS-1 VHF repeater groups problems with the PK-232 and the communications between SLATS and AEA. This was first covered in last month's column and continued above. Therefore, we feel that the digital communications community can best be served by reproducing, with only minor editing, at least a portion of the letters the Journal has received from those involved. This method gives equal exposure to both sides of the story and should be most fair to all concerned. We are not doing this to stir up controversy but rather as an attempt smooth troubled waters and try to solve a problem.

It is the Policy of the RTTY Journal to contact the manufacturer whenever we receive complaints from subscribers about a product or firm. We feel this is particularly important when the product in question is advertised in the Journal. The Journal is pleased to provide a forum wherein both subscribers and advertisers can air their complaints, corrections, modifications, etc., where all readers can benefit. With this in mind, the following edited letters are reproduced:

LETTER FROM SLATS-1

Dear Dale,

I am Vice President of a RTTY club in St. Louis, Missouri (SLATS 1). Our club operates a RTTY repeater on 146.700 Mh. This repeater is a unit built by Info-Tech (M-700) that has mailbox and bulletin memory. We are having a lot of problems with new equipment manufacturers that are building and selling the TNC all mode equipment. They run advertisement in all Ham magazines telling everyone that their equipment is the latest in the state of the art equipment. Even in your Journal one of the ads states (ONLY ONE CAN BE BEST). When a fellow Ham buys a nice new piece of equipment and tries to use it on our repeater he finds that it can't work our repeater. Well here comes the phone calls or they will tell other Hams that we are running a repeater that don't work. When they call me, I tell them that the equipment was not designed to work RTTY or ASCII because the tones are not compatible with the repeater. Most of these Hams are new

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He puzzles out EXACTLY meaning. It is normally not enough to imitate what everyone else does in hopes that somehow you will be able to do it better. To win a contest you must read the rules and find the edge which allows you to better exploit your personal resources. Sometimes this requires you to invent a better mouse trap. When you scrutinize the rules, be sure that you have an original set PUBLISHED BY THE SPONSOR. If it is not their contest, news-hole- conscious magazines often chop the original two pages of rules down to a single paragraph.

As a popular euphemism, "Contesting Ethics" has become a buzz word that is treated like there is a kind of gray area where you could be sort of pregnant. Forget it! You are either cheating or you're not. There is no gray area. If the rules say you can't and you do it anyway, you are cheating. As nearly as I can tell "A tricky ethical consideration" occurs when one operator figures out an edge that the other guy never thought of and wins the contest. Keep in mind, the only one that's always sure that the better mousetrap is unethical -- is the mouse.

For a single-op entry "One person performs all operating and logging functions." is supposed to be a limit to equalize competition. How about an extra guy who works on the equipment and antennas? What about the advantage to an operator who can afford computer logging with real-time stats, dupe checking, multiplier lists and propagation checks. How about if he just uses the packet cluster to check WWV solar indices?

At the QSO rate for RTTY contests, how much of a limitation is a rule that states: "Single operator stations are allowed only one transmitted signal at any given time?"

If one contest defines a single transmitter as one signal on the air while another has no definition at all, it is illogical to interpret the word more restrictively than the most complete definition published. If you chose to interpret single transmitter as "...one amplified stage capable of RF emissions connected to an antenna at any one time," then you have placed yourself at a disadvantage due to an assumption NOT contained in the rules!

THAT WHICH IS NOT WRITTEN A LIMITATION IS PERMITTED!

Here is a scene easily imagined with current technology. Three interfaces each controlling separate transceivers and are tied into a single computer through multiple ports. A function key toggles split-screen segments where the respective received copy from each unit is separately displayed. Logging is handled by the computer by port. At the slow QSO rates of RTTY, one operator at the computer could seamlessly work three bands simultaneously throughout the contest. With a little buffering for the rigs, he could even operate without violating the single-signal limitation.

Contests rules do not make everyone equal. They are designed to reward operators who are motivated, efficient and technically innovative. In fact, Billy Lunt (ARRL Contest Manager) confirmed that some contest rules are deliberately left a "little vague." He said that this tends to encourage original techniques and new stategies for contests where competition is not especially close.

ARRL ROUNDUP is coming up January 6/7 with no rule changes. This one is a must for all hands! See you then. de Hal WA7EGA

SOFTWARE REVIEWS

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DSRTTY from HAL Communications Corp, Urbana, IL

Sometimes its very difficult to separate software from the hardware when trying to do a review. Software is the instructions that make or permit hardware to do certain things. In the case of this month's review of HAL Communications Corp's DSRTTY program such is the case.

Clearly the software was made by HAL to run with their products and in this case the DS3200 system which is essentially their computer and work with HAL's modems the ST6000, ST8000 and their PC board products.

Well back to the review. I had the computer all interfaced with the ICOM 751 and my Flesher TU470 for the last review and when I finished one evening I decided to fire up the DSRTTY program. Alas, the whole computer locked up....figures..the one thing with the software programs is they never bother to tell you just what nice little things they are doing to your computer. And as I stated up above HAL didn't exactly make this program to be generic, but with computers there are standards and HAL like most other good manufactures followed those RS232 specs and made things so they could be figured out.

Previously when first received quite some time ago I spent a lot of time studying the manual that HAL has for the DSRTTY. Now in the computer/electronics world there are two types of manuals that are very good. The now standard little IBM types that I spoke about with COMP RTTY II and HAL's is the other type the old military/engineer style. Unfortunately, I happen to thing the latter is my preferred style. Having spent some of my youth in the military and still rubbing shoulders with them a bit through the MARS program it seems to satisfy all my needs and wants. Dale, the RTTY Journal Editor, however, clearly likes the more modern type of manual. In fact he spent some time telling me how HAL could fix the old manual. Personally I wouldn't.

DSRTTY is a small program; 3 files as received here with the main program less than 50K. Written in assembler code its fast, efficient, and quite nice. Users are started in the manual and gradually worked up through standard, how to get started type of things, to the meat of the program which is a set of functions using the Alt..Shift..and Control keys in conjunction with the Function Keys. Wish that HAL had bothered to make a hard plastic or cardboard template of the commands that would make the user's life easier. (Ed: A plastic lay-over is available for the function keys of early keyboards)

HAL's Atl-Fn keys are essentially used to configure the program for the Terminal Unit and computer. The Shift-Fn Keys are used to deal with the buffers. Buffers we have, from the 36 RY's that I guess are an old..old standard to Block operations, two main buffers called B1 and B2, all the way to disk file operations.

HAL uses the Ctrl-Fn keys to set some DOS operations as well as the most important Ctrl-F2 which is where you configure the system. At first I was very disappointed in the Colors that were being used in the DSRTTY program, but, again I hadn't found where to modify them...not to worry...just get in Ctrl-F2 and the spot is quickly found and modified to anyone's delight.

DSRTTY has used Alt keys for more functions and the most important one to find is Alt-H for Help. It will point the user in the area of the nicely done help screens. And other Alt keys will appear and be explained quite nicely there.

Most important to any program is its functionality and DSRTTY copies 45 baud Baudot code very well. I printed a few BBS systems as well as played with the Russian Robot system which I just discovered in my favorite operating place on 20 meters. Which brings up just a small grip....why not put that kinda stuff about 14.098 or so ? Sure makes more sense to me.

Moving along...back to the review...I must admit I had to break down and get a used ST6000 to finish the review, but with all the things happening around here and at WA7EGA's the last four weeks, haven't got it hooked up to the DSRTTY program yet. So my next comments I am sure apply probably only when using strange old TU's. The way in which DSRTTY has chosen to operate and how it releases to transmit is very difficult to adjust and just not fast enough for me. I played with the adjustments and frankly, since picking up the ST6000 I knew it would work different with the KOS system, so never bothered to fine tune things. I realize that the purist at digital likes that nice tail off, but ME I chase DX and contest and just want it to drop...NOW.

After studying the program it looks like there is a way to get it to function the old (new)...way that I want, but frankly I just haven't bothered yet.

MARS..military support on DSRTTY. This is by far and away the most complete, easy, and accurate system yet encountered. I am in Air Force Mars and dabble a bit with it. I think from time to time about joining Navy MARS but they want it all machine perfect...DSRTTY...handles that. Exact, easy to use and looks like to me I could handle hundreds of messages going to disk...just like my old Tape Relay days.

I just operated a bit in the W.A.E. contest here on RTTY this weekend and found the DSRTTY handles it quite nicely. Moving QTC's was easy. Only problem I found is the lack of a Serial Number generator in the Program. To be great RTTY software the author is going to have to be able to generate Serial Numbers from 0001 to 9999 and keep track of them and be able to increment and use them for contesting. Not that hard to do.

My only other complaint with DSRTTY

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SOFTWARE REVIEW Cont. fm pg.21

is not being able to embed callsigns easily, but I think you actually can use a regular buffer and do this...but it doesn't seem to function as nicely as the old MBA-TOR Control-X buffer.

DSRTTY a great program..old in style in many ways...fast and functional as many of you who are using it can tell me I am sure. HAL's manual needs some examples and a nice demo run to walk the first time user through to make it a more complete and functional tool for the end-user. Some examples especially of the complex buffering and message capability.

Well much to my surprise when I received the last RTTY Journal and after much reading found the 'new' HAL communications Ad. The board looked kinda fun...but after just buying a used ST6000 and not having it hooked up in the system yet...I just looked at it briefly. But what caught my eye...was the new software...its billed as 'Friendly Software: Split screen with status indicators and pull-down menu selections. No more confusing key combinations.' Sounds like a good idea and I am looking forward to checking it out for YOU.

Again like all HAL Communications products you get this program and its designed to function with the new Terminal Unit/Modem board. Its really quite a test when you can move a product like that out of its environment and test it with other devices and computers.

Another month has come and gone...we are going to examine another RTTY program....PC RTTY next month. Then for January if I am still able and wanted, we will look at some of the contest programs for a while. If we can get it, I would like to look at HAL's new product and check that companies evolution of software and hardware.

Some mail has arrived from some of the 'New Guys' and always glad to give my opinion and help if I can. So far to me, it looks like those putting out Ham Software are all doing a fine job.

de Jay, WS7I

CONNECTIONS Cont. from pg. 19

to digital communications and don't know what they have gotten into. They believe the ads and think that we should change our repeater to accommodate the new equipment. I have spent several hours telling them that they have a nice new piece of equipment that was designed by engineers that don't know anything about RTTY and especially ASCII and wide shift on FM. In fact one of AEA's people told a fellow Ham that all he had to do was to tune the signal in.

Luckily this Ham was a fellow that had been in RTTY and FM for many years and knew better. AEA also told this Ham that there is no such think as standard tones on RTTY. Well he is right according to ARRL.

We as amateurs have made another mistake not getting a standard set up for tones on RTTY. I think it may be too late to do it now. Dale you and most of us know what has been the most used tones and why.

Now there are a great number of Hams around the world that have these All Mode TNCs that can't communicate with repeaters and other units using the so called standard tones of 2125 Mark and 2295/2975 Space tones. The club (SLATS 1) has been contacted by AEA about changing our tones on the repeater. This was brought before the membership at our monthly meeting. The vote was almost 100 percent against changing our tones. Our members are using a lot of different equipment and it would be very unfair and expensive to change the tones on their equipment, even if it could be changed.

We here at SLATS 1 would like you or one of your writers to do an article in the Journal about this subject. This would do a lot to inform the people of what is going on and why. AEA and MFJ are using Modem tones I think. I have been informed that MFJ has changed their wide shift tones to 2125/2975. I think AEA is using 1200/2200 for wide shift. Kantronics on their KAM unit are using tones that can be set. They are using 170, 425, and 850 shifts for RTTY both Baudot and ASCII, these tones are the old standard that we are used to.

Thank you for time and I hope to read an article in the RTTY Journal on this issue.

H. Paul Sharp, W0PIQ

LETTER IN REPLY FROM AEA

Dear Dale,

Mike Lamb, N7ML passed your letter and the copy of H. Paul Sharp's letter on to me for technical comment.

First for some history of RTTY shifts: In the late 40's and early 50's RTTY operation on HF was limited to on-off keying which is the worst possible keying mode. In 1953, the FCC, allowed FSK on HF and required 850 (plus of minus 50) Hz shift. I expect this was due to the availability of commercial 850 Hz shift equipment that could be used for monitoring purposes. In 1956, the FCC allowed any shift of 900 Hz or less (now 1000 or less). Initially "narrow" shift HF RTTY ranged from 150 to 180 Hz and finally settled on 170 Hz.

There were only two reasons for using 850 Hz shift on HF. The first was the lack of frequency stability of amateur transmitters and receivers. The drift with narrow shift would require one hand on the receiver tuning dial to maintain copy. The advent of SSB brought much better amateur equipment and that eliminated that reason for 850 Hz shift. The second reason is still valid. It is the frequency selective differential fading that occurs on HF. A properly designed demodulator will still function on the remaining tone although not as well as with two tones.

The amateur SSB transceivers also brought something else. The audio response at the 2975 Hz Mark tone was generally 3 to 10 db down from the 2125 Hz response. This reduced the effectiveness of two tone demodulators and caused a substantial amplitude modulation component to the FSK if the transmitter was fed AFSK audio instead of modulating an oscillator in the system. I expect that this was another reason for the popularity of narrow shift on HF.

Neither of the reasons for 850 Hz shift on HF applies to AFSK operation on VHF. In fact, the audio response of most VHF radios is down 3 db or more at 2975 which adversely affects weak signal operation.

Paul Sharp stated that "The Club (SLATS 1) has been contacted by AEA about changing our tones on the repeater." AEA did more than contact the club. We offered to pay for the modernizing of their repeater to 170 Hz shift (2125/2295 Hz). Paul also said that their members "... are using a lot of different equipment and it would be very unfair and expensive to change the tones on their equipment..." I can't think of any commercial amateur RTTY equipment made in the last 15 years that does not have 170 Hz shift. What are the club members using on HF? The last 850 Hz HF contact I made was in about 1967.

In regard to the PK-232, we use 2110/2310 Hz tones for narrow shift. This choice straddles the 2125/2295 pair with no more than 15 Hz offset from either tone. Most 170 Hz users in contact with PK-232s are aware of the 200 Hz shift and vise versa. This choice allowed a modem optimized for HF use to be used for 300 baud Packet, 300 baud ASCII and the usual 170 Hz modes. The PK-232 as well as a number of other amateur and commercial modems was tested by RF Harris and the PK-232 was selected as the best modem for use in Harris marine HF applications. 73'

Alan, K6RFK , AEA, Lynnwood, WA

ED: That sums up this article and surely will answer many questions about the use of the different tones. Again, the Journal welcomes all papers regarding subjects pro or con concerning the digital modes and the equipment now available to us on the market.

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