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DIGITAL JOURNAL™

A Dedicated Digital Publication Since 1953 Volume 39, Number 10, December 1991

PEACE ON EARTH

THROUGH HAM RADIO

Hits & Misses 2	1st SARTG AMTOR results 12	Software 19
Packet 3	Rules 4th ARRL RTTY Roundup 13	SU1HN Story 20
Hornet's Net 6	DX Comings 14	1991 Index 22
DX News 7	ARRL Survey 15	Classified 23
The Link 10	AMTOR 18	

RTTY JOURNAL

Dale S. Sinner, W6IWO
Owner, Publisher, Editor

ALL CORRESPONDENCE:
9085 La Casita Avenue
Fountain Valley, CA 92708

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

STAFF MEMBERS:

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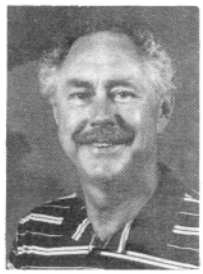
HITS & MISSES



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

ARRL QUESTIONNAIRE

After the RTTY Journal was mailed last month, I found a big typo in my Column. I had mentioned that the ARRL Questionnaire was going to appear in the December issue of QST, when it should have read January 1992 issue and the mailing date has been changed to March 15, 1992. My apologies for those errors.

The questionnaire is here though and it appears on pages 15 and 16 of this issue. Please take the time to read it over thoroughly, cut it out, fill in your answers and above all, mail it in. You will notice that it is not necessary to give your name. This is not the important issue, however, it is hoped that you don't give this form to those who are not Hams. By the way, it is not necessary to be a member of the ARRL to make your views known, so please do not let that stop you from expressing your feelings on this important issue. If you have friends who will need a copy of the form, please have it copied for them.

I also hope that all of you who have a BBS, MBO, PBBS, etc. will make announcements about the form being out. We hope that this will bring the largest response the ARRL has ever received on any issue it has ever brought before the rank and file. The ARRL has asked for our help on this important issue and we cannot let this request pass unnoticed. Do your part and act on this important issue today and thanks for being concerned.

DAYTON

By the time this issue reaches some of you, it will be January 1992. So it is not to early to start making your plans if you are going to 1992 Dayton Hamvention. Hotel rooms are hard to come by, so early reservations are important. If you have never been to Dayton before and the only rooms you can find are many miles away from the convention, please be advised, the Dayton group provides bus service from all the Hotels and Inns for miles around. These buses run every hour approximately, so getting back and forth to the arena is not a big problem. However, if you are going to be attending any of the RTTY Journal affairs, that is a different story. The RTTY Journal hospitality suite and the RTTY Journal sponsored dinner both take place at the Radisson hotel. So keep this in mind when you make your reservations. As a suggestion, if a group of you can only find a room many miles away, it might be a good idea to rent a car. Again, the Dayton buses provide service primarily for the convention and after about seven in the evening they stop running. Like the old saying, "A word to the wise is sufficient."

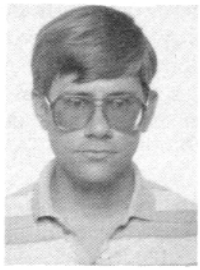
The Digital Digest Forum this year will feature Jay, WS7I, demonstrating some of the many software packages he has reviewed this past year. This will be a live demo that will help you understand the differences between these programs. Also, Vic, W5SMM, (author of APlink) will give a presentation of his famous APlink software and the new PAM (Personal APlink AMTOR.) I'm told many of the popular APlink users are coming to Dayton this year. So don't miss the action, plan on being there.

GONE AGAIN

Another year passes almost unnoticed it seems. To me it was only yesterday that January 1991 started and now here we are in December 1991. It has been my custom to thank all for their help and support throughout the year, so here goes.

Without our advertisers, your RTTY Journal would not reach you each month. The cost of doing even a newsletter these days is very high and continues to rise. Our

Continued of page 18



PACKET

Richard Polivka, N6NKO
7052 S Friends Ave, Apt J
Whittier, CA 90602

Hooking HTs up to TNCs can be annoying. Richard tackles the subject without drawings. Maybe he will get his CAD program on line soon and follow this article with the drawings. Richard also issues a challenge to TNC owners.

WHO REALLY CARES

I have a story to tell. Read this carefully and then compare the story to the real world. The story goes like this. You have the chance to buy one of two cars. Car X will go in speed from zero to 80 MPH. Car Y will go in speed from 16 MPH to 66 MPH. Aside from the speed capability difference, Car X has better fuel economy than Car Y. The pricing between Car X and Car Y is almost the same with Car X being slightly cheaper than Car Y. Other than the above mentioned differences, Car X and Car Y are equipped the same. Now, which car would you buy, Car X or Car Y? Just base your judgement on the presented facts and no other assumptions.

If you think like I do, you would purchase Car X. The speed is faster and the car is also cheaper to purchase and operate. So, why is it many people would be persuaded to buy Car Y. I say, name brand recognition or arm-twisting by a vendor! The above story is a parallel to what is happening in the CPU market for desk-top computers. The latest push by Intel to market their chips has been to "suggest" to the board vendor to include a little graphic in their ad saying "Intel Inside." There have been rumors floating around in several publications that in order for board vendors to be able to have access to the newest and fastest processors from Intel, they will have to include the "Intel Inside" logo in their ads. This is in response to the 32-bit chip that AMD is offering that is faster, more energy efficient, and cheaper that the original chip that Intel developed.

Here again, it is prudent to mention the famous saying, "Caveat Emptor." Before you buy a product, study the offerings from various vendors before buying. The motherboard market out there is a "whore's market." You can practically name your own price for a board, within reason. Bargains can be found out there, so just look and listen.

HANDHELDS, HANDHELDS, HANDHELDS

First, the storage space on this system here at the Owl's Nest has not improved. The overtime at work is practically nil and that does not help with purchases. So, we will cover the subject of connecting a TNC to various handhelds out there without drawings. Here goes . . .

In dealing with plugs, there is some terminology that needs to be explained first. This explanation will help you understand the hookup procedure and make life easier for you in the future since these plugs are used by most manufacturers.

The plugs that I will be discussing come in three sizes, 1/4" diameter, mini, and sub-mini sizes. The following terms will apply to all three sizes of plugs. They are: TIP, RING, and SLEEVE. The best way to explain the subject is to put an image into your mind. I am sure that many of you have a set of stereo headphones. If you look at the plug attached to the headphone, you will see that the part that plugs into the radio will have three metal sections to it separated by some kind of insulator. Starting from the pointed end, the first segment has a narrow segment within it. The narrowed section is what is used to hold the plug into the socket by friction. This segment is called the TIP. The next segment up is located between the two insulators. This segment is called the RING. The balance of the connector from the second insulator to the handle is called the SLEEVE. I am sure that I am ringing some bells in the minds of telephone employees. TIP and RING are also used to describe the two wires that are used in the basic telephone circuit.

The soldering points for the TIP, RING, and SLEEVE are located concentrically on the inside of the connector. The innermost connection point will be for the TIP, the next one out will be for the RING, and the outside connector, which is usually the long bar, is for the SLEEVE. Be VERY CAREFUL when soldering any wires to the soldering points. You do not want any stress on the wires during assembly. Another problem to avoid is too much heat when soldering the wires. The heat can melt the insulators inside the connector and cause you all sorts of headaches. I suggest that you spend the money and get GOOD connectors. If you buy the cheapies, you are asking for trouble. Believe me, I have found this out the hard way. It has been my experience, the cheapies usually become loose and intermittent after a while. Another nasty trait of the cheapies is that the soldering tabs do not take solder too readily. This forces you to heat the connection too long, risking damage to the plug, the wire insulation, or both.

Now that the basics have been covered for the connector, it is time to cover the wiring needed to connect your TNC to the handheld of your choice. One item to remember is that the various manufacturers do not believe in consistency. Each manufacturer has their own way of hooking up the speaker, microphone, and PTT circuits. One arrangement will not work with another arrangement. So if you have several different handhelds, you will need to make up cables for each radio.

I will cover the connection schemes for ICOM, Kenwood, and Yaesu handhelds. If your radio is different, the information here and your owner's manual should provide enough information to wire up the cable.

For ICOM handhelds, here is what you will need for parts and how to hook them up. You will need a mini-sized, two conductor plug, a micro-mini sized three conductor

plug, a 10k 1/4 watt resistor, and a .1 uf capacitor, and of course - wire of your choice.

The speaker connection uses the mini sized jack. The TIP of the connector is wired to the "audio" in of the TNC and the SLEEVE is wired to the "audio in" ground. The transmit audio connection will be a little more challenging. I will leave you to figuring out the placement of the parts that will be used. The difficulty here involves the procedure to key up the radio and get the transmit audio to the radio using two wires. The ICOM handheld uses a current draining process to engage transmit.

Use the micro-mini jack for the microphone connection. The other parts that are used will have to be wired outside of the connector because of size constraints. Only the TIP and SLEEVE will be used. The RING connection is used to supply control power to a remote microphone, if used. In this instance, the control power is not needed so the RING is ignored. The ground wire is attached to the SLEEVE connection and soldered. How you configure the next step is up to you but the electronic layout needs to be the same as I have just described. Solder one end of the resistor and capacitor with a small piece of insulated wire leading away from the connection. Attach the wire to the TIP connection of the microphone connector. This wire will carry both the PTT signal and the transmit audio. The remaining end of the resistor is connected to the PTT pin on the TNC. The PTT line for this circuit must be grounded for transmit. The remaining end of the capacitor is wired to the TX audio out from the TNC. Dress the leads carefully to fit your situation.

Once all is wired up, check your connections for shorts, bad solder joints, etc. To test the radio, transmit into a dummy load. Don't transmit on the air while testing and adjusting. That is not acceptable and ties everything up. Such a method could brand you as a LID and that can be hard to live down.

The Yaesu radio connection is done the same way except for a minor variation. The RX audio connection is done the same way as the ICOM setup. I am not sure if the plug is a mini style or micro-mini style. The difference lies with the TX side. The wiring is the same here as with the ICOM setup except that you do not attach the ground wire to the SLEEVE of the mic plug. The ground is through the receive side.

The Kenwood handheld is wired similar to the ICOM with a couple of additions. Because of this difference, you will need two diodes. You can use 1N914 or 1N4148 model diodes for this application. The microphone jack has the TIP wired up the same way as the ICOM and YAESU. The TX audio to the TIP of the mic jack has the same RC circuit as in the ICOM and YAESU setups. One of the two changes has to be performed to the wiring of the SLEEVE connection on the microphone jack. The anode of one 1N914 diode is attached to the SLEEVE of the microphone jack. The cathode end (the end with the band) is left unattached at this time. The other change involves placing a diode in the PTT resistor line that was described in the ICOM circuit. A diode is inserted into the PTT resistor line with the anode attached to the 10k resistor the cathode (the end with the band) is left free. The two free cathode ends (the ends with the band) are tied together and run to the PTT input of the TNC.

The previous discussion should allow you to hook up almost any handheld to a TNC. If you have any problems wiring up your particular handheld to your TNC, consult your owner's manual for the radio. If that is of little help, call the manufacturer. They will be glad to help out.

SOMETHING DIFFERENT

Out in the marketplace, there are all sorts of games and simulations that have been written for the computer. Some of these programs have the ability to talk over a phone line, using a modem, to another player running the same software. The average modem that people use on the phone line runs at about 1200 baud.

What I am proposing here is a way to save the cost of the phone call and use the radio at the same time. Almost all TNCs out there have the capability to pass raw data without formatting it for direct human consumption. This mode is usually referred to as the TRANSPARENT mode. This mode passes ALL characters through the system, even the ones that give you smiling faces and bells.

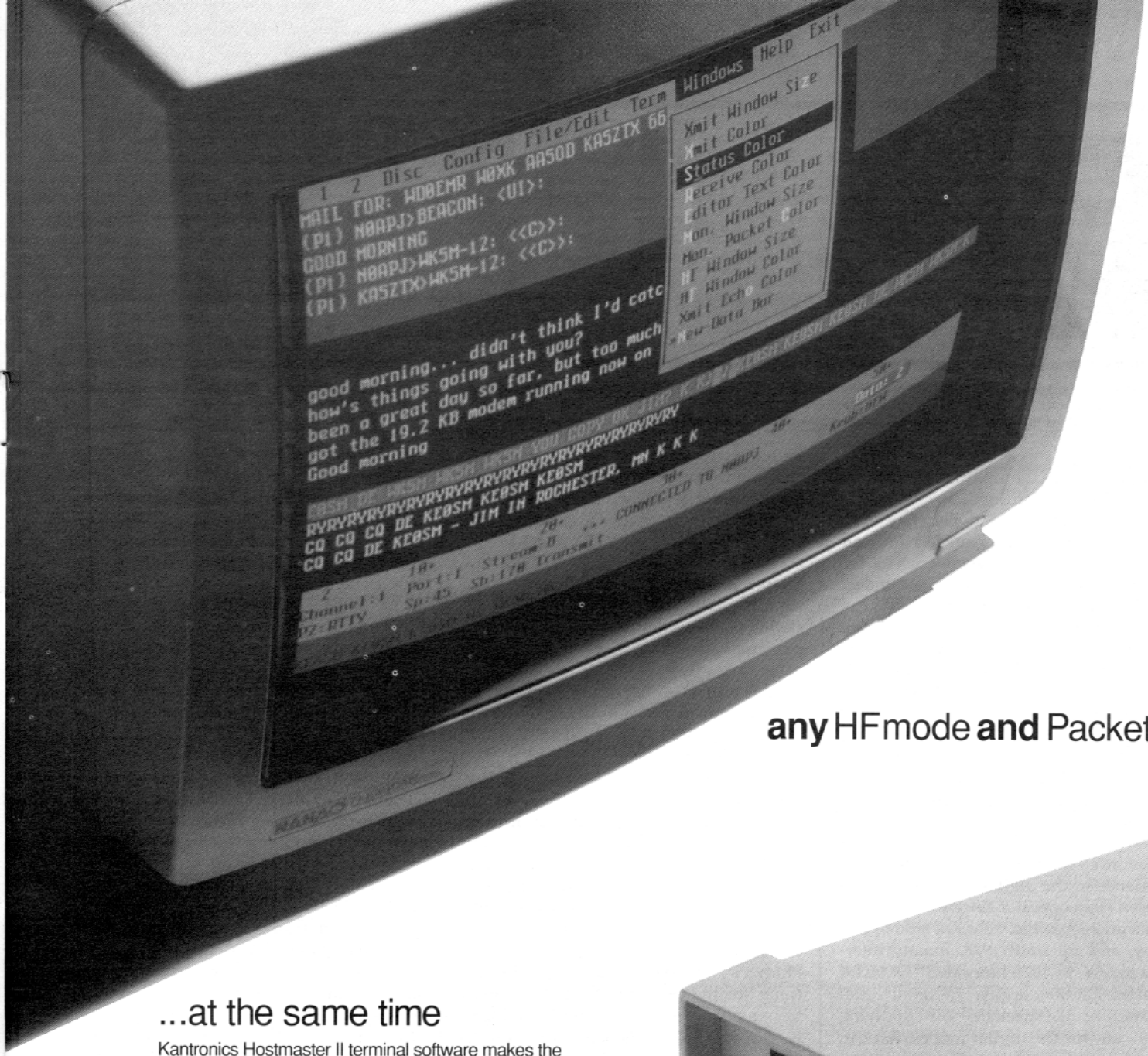
How the unit is set up is dependent on the individual package that you are using. You address the TNC like you would the modem with the exception of using the TNC commands, instead, use the modem commands. It will take some experimenting to get it right but it is a worthwhile endeavor.

THE END

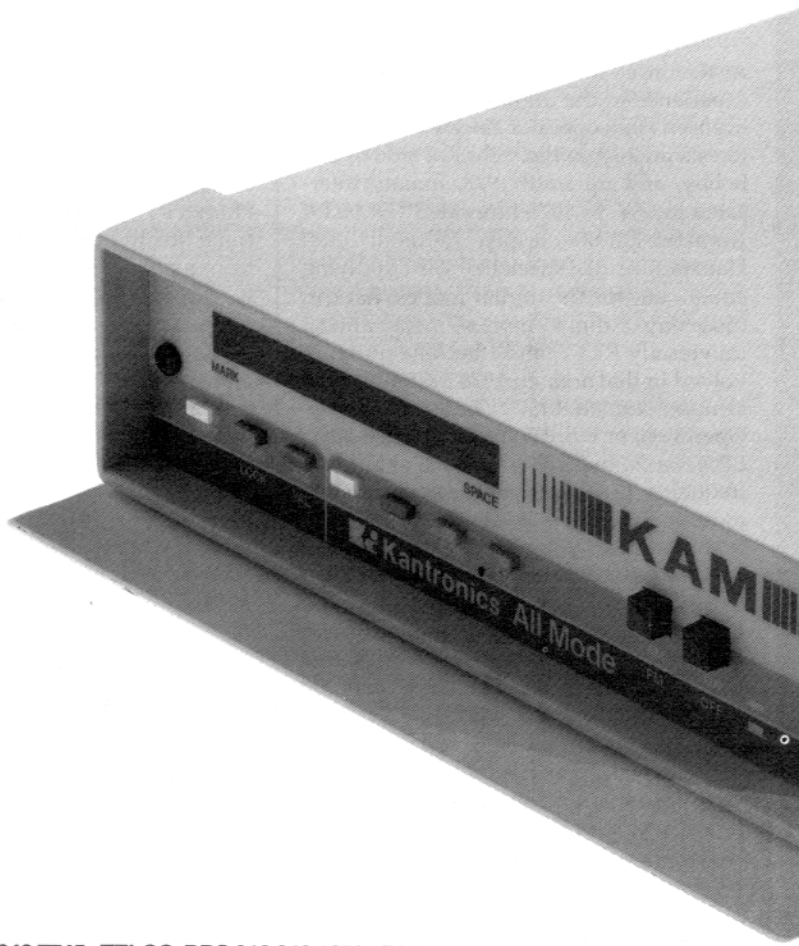
This is the end of the year. I hope that it was a fruitful one for you. Have a wonderful Holiday season and we will pick up right where we left off this month in the wonderful world of Packet data transmission.

de **Richard, N6NKO** @ WB6YMH-2. ■

John, N0FAC, submits this picture. L. to R. UA9TZ, RA9SHH, and RA9SB. UA9TZ was an operator at Turkoman, UH8EA.



any HF mode **and** Packet...



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HORNET's NEST

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

I have asked Dick to wear another hat. This month he starts a new Column that will be directed toward issues which are related to our phase of the hobby. Please help Dick with this new Column by writing to him and expressing what you would like him to write about or by submitting material relative to our phase of the hobby. Read his column and you'll get the idea. Disk's MSO Column will continue on an irregular basis.

As many of you may know, my literary efforts, humble as they may be, are usually directed toward information concerning MSOs, computer based mailbox systems, and the like. However, I have felt the need to speak out on controversial issues for some time now, and thanks to an understanding and progressive RTTY Journal editor, I find this opportunity at hand. The Hornet's Nest will appear periodically, without any particular schedule in mind, supplanting my usual monthly "MSO Column" for that issue. I hope that it will be a thought provoking column, one that is not designed to create issues, but rather one that explores issues relevant to our current digital modes, operating procedures, conflicts, etc.

At the onset, let me qualify my particular experience in the digital area. I've been a licensed Ham operator since 1957, with interests mainly on the technical side of this hobby, and up until 1978, mainly interested in CW. In 1978 I founded "DIALTA Amateur Radio Supply," a small retail Ham radio outlet specializing in supplying equipment for the digital modes. Back in those days, "digital modes" meant almost universally RTTY, and I became quite involved in that area. In 1978 I established a semi-automated MSO, (Message Storage Operation, or more commonly these days, BBS), on 20 meters, (14 085 625 Hz Mark frequency, 74 baud), and although much more sophisticated at this time, it remains in operation,(along with several other MSOs), on that frequency. I also have a half-APLINK (sans Packet interface) system running on 40 Meters, that I utilize to maintain contact with friends now on that mode. I do not claim to be an "expert" on any mode or subject, and quite frankly, living out here in the beautiful Black Hills of South Dakota, my access to current and valid information concerning digital subjects leaves a lot to be desired.

However, the past 13 years of operating digital modes has provided a bit of experience, and if nothing else, I'm a good listener. I do get letters, complaints, messages on RTTY in favor of this, and not in favor of that. To say that my RTTY and AMTOR friends are loquacious may bring a few furrowed brows, however none of them are the slightest bit apprehensive about stating their position, likes or dislikes, on a particular subject.

So, it is with this experience and information at hand that I hope to provide some interesting, controversial and informative views concerning our present digital modes. There's nothing personal in anything that I may present, only my views, and the views of those who take the time and interest to correspond with me. If you dislike what I say, think that my presentation of the subject at hand is wrong, have a better idea concerning the subject, then it's incumbent upon YOU to drop me a line stating your views. I do not set out in The Hornet's Nest to be combative, but in the same breath I certainly will not shy away from a good debate. The callbook address is correct, my MSO is active daily on the frequency listed above, I pick up my AMTOR/APLINK traffic at the KA0JRQ APLINK MBO (7 071 000 Hz Mark frequency, Southwest IA, USA), and of course I can be contacted via The RTTY Journal. Finally, I hope to hear from anyone who has thoughts or ideas concerning where we are today with respect to the various digital modes, where we should be focusing our efforts, and what lies ahead for these modes.

THE ARRL DIGITAL COMMITTEE AND THE INFAMOUS UNATTENDED HF PACKET "STA":

If the information I have is correct, the ARRL (American Radio Relay League), will again petition the FCC to have the STA (Special Temporary Authorization), concerning "Unattended HF Packet Radio Systems" extended again. And it appears to this author that continued support for this concept, and unattended HF Packet systems in general, is unwarranted.

How long does it take to determine that an authorization such as unattended HF Packet is worthy of FCC approval? This must be the third or fourth year that the ARRL Digital Committee has recommended that the ARRL again request extension to an STA which has very dubious qualities. If I remember correctly, Luck Hurder, KY1T, (Deputy Manager, ARRL Field Services), was tasked with the responsibility of surveying and gathering information from the various unattended HF Packet SYSOPs, for the purpose of analyzing the efficiency, purposefulness, and yes, political ramifications, of these systems. What has happened to this survey? In these days of light-speed communications, fax machines, modems, MSOs, APLINK MBOs and unattended HF Packet systems, does it take literally years to survey a very limited number of SYSOPs participating in the STA?

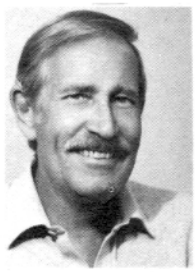
I think not, and I think the reason is that most of those involved in this special temporary authorization have found that unattended HF Packet has not lived up to its expectations, and they (ARRL) are unwilling (afraid?) to admit these shortcomings. What other reason could there be? Is there some reluctance on the ARRL's part to admit that HF Packet is not as effective in handling traffic as other modes, that long-haul traffic is more effectively handled on APLINK for instance, or that plainly the packet mode does not lend itself to the vagaries of HF communications? There's certainly nothing wrong with testing packet techniques in the HF spectrum, but it shouldn't take years to come up with some results!

I've been told that both intra-continental and inter-continental HF packet communications are poor at best, primarily because of the natural phenomena surrounding HF communications, (ionospheric conditions, naturally occurring noises like static,etc.), which detract from the very root advantage of packet radio, that of speed of data transmission. Those who have experimented with HF packet tell me that data thru-put on HF packet can be likened to that of 45 baud (60 word per minute) RTTY at times, which certainly is not impressive at all. Packet radio systems on VHF frequencies have proved to be viable, effective, reliable and a fast mode of data transmission. But isn't it time to cut the cord for unattended HF Packet radio? Let's stop stalling, call a spade a spade, and get on with designing and implementing systems which are truly state of the art. It may appear to some that I'm beating the drums for AMTOR or APLINK, but such is not the case. AMTOR, in this authors opinion, is horribly slow. It also has some design faults such as a limited character set, and total upper case conversion. However, let me hasten to point out that unlike HF Packet radio systems, AMTOR, (and its companion MBO APLINK), has become the defacto standard for HF traffic on a world-wide basis, and one only has to tune across the lower end of the digital area on 20 meters to determine its popularity. The ARRL can continue with its head-in-the-sand approach to unattended HF packet, but it appears to me that AMTOR/APLINK is currently where the action is.

Merry Christmas to one and all! I hope that 1992 brings health, happiness and prosperity to everyone. See you on the digital bands.

73 de **Dick, K0VKH** ■

DX NEWS



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

We are glad to have John back with us this month after his short hiatus. From the looks of his column, it would appear the new medicine is now doing it's job and John's prayers have been answered. You will find his usual wit is back in his column.

Seems to me like ages since I wrote the last DX Column for the Journal, and it really is: just a shorty in September on my way to Massachusetts General Hospital and for the succeeding months I have to express my deep gratefulness to Don Simon, W6PQS, for keeping you informed about the wonderful world of RTTY DX.

Well, as I sit here on 1 December, trying to get a meaningful Column together, I cannot but say that November '91 was kind of a disappointment, DX wise. Then again, maybe not DX wise, but surely propagation wise. All that, plus the disaster and mystery surrounding Jim Smith's Bangladesh operation.

NOVEMBER HAPPENINGS

Yet, in spite of all my griping, there was some pretty decent DX around, if the prop gave you a break. Such nice stations were reported in November as EM3W, LY2BX, LY2WW, UF6FJ, UG7GWY, UH8EA, UL7AAV, UL7BJ, R18BH, VP5JM, UC2SF, UC2ADX, UC2OS, UO5OT, 7X2DS, FG4FI, VQ9RB, 3D2ER ST0DX, (now QRT), J39BS, YJ0ARW, HS0ZAA, TA5C, 7Z1IS, ZD9BV, Z21HJ, XQ0X, VP25EE, TY1PS, 7Q7MM, ZA0DXC, ZA1ZDB, KH2BP, 5V7DP, 9L1SL, P40P, T77T, 6W6JX, KH3AF, 3B8CF, TU2BB, WD4KXB/VE2 in Zone 2, TJ1GG, SV5TS, XX9AS, TR8KMJ, V44KW, S79PDL, BV2DQ, BY4AA, BZ4DAB, ZS4KS, TF3EJ, A35TE, OX3EW, ZK1WL, V85XO, 5Z4TA, ZD8LLI, HL9OC, EA9MY, CN8NS, FY5AN, CT3BX, SU1AH, 9X5LJ, J6LNN, C6AAA, plus a lot of others, too numerous to mention.

DX RAMBINGS

As I sit here, against reason hoping for the impossible, the sudden appearance of Jim Smith on RTTY from BANGLADESH, I reflect on how the RTTY DX scene has been the last month or two. Propagation most of the time has been abominable, like the snowman, somewhere in part unknown.

Yet, when I look at my little tally list, the results have been outstanding. Here with all this poor prop, since 1 October, and not counting the great operation of Romeo from Burma by Romeo, XYORR in early September, I find that I worked five new ones in October, to bring my total to 293. This includes ZA1A, Luciano from ALBANIA (QSLs received Nov), 3B7/3B8CF, Jacky from ST. BRANDON, C9RKL, Kurt in MOZAMBIQUE, XQOX, John, from ST. FELIX, and old friend Dennis, ST0DX, from SOUTHERN SUDAN, who fortunately learned to work split and did a bang-up job. Dennis is now QRT but is next expected to be seen from C9, MOZAMBIQUE, possibly early next year.

Anyway, 5 new ones at my "worked level", means that the bands have been hopping with "All time New Ones". A great deal of credit goes to the International RTTY DX Association who was able to get RTTY gear to such "New Countries."

I don't expect that we will see another "October 91" for some time, but surprises are not uncommon in this sport. With Clipperton and South Sandwich both on in March, and the WX being nice, maybe a few more operations will come around by then. Also we should not forget, that ZL1AMO is planning on ZL8, KERMADEC for about this time, plus spring fever from many guys who are about sick of the winter and have nice ideas, like WILLIS ISLAND and a few other places.

Besides all that, the Good Lord willing, some kind order should have been restored one of the days, weeks or months, in what is now Yugoslavia and most likely there will be at least a new Republic of CROA-

TIA and one of SERBIA. Seems that, as of this writing, the EEC is considering sending diplomatic representations out there in one form or another.

So, I guess it will be a long time before we get bored, though that statement is disputable if we tune across the band here the early days of November and see maybe a station a few miles away, or possible one, just one, across some ocean, we have worked numerous times before.

But YES, even for GIN SAN, JA1ACB and for LUCIANO, I5FLN, there are plenty of RTTY challenges left!

QSLing

And that brings me to QSLin.; All is not exactly Kosher there. First I must say that I have little to complain about, I have only 7 new RTTY Cards outstanding, the oldest being MV Island in late May.

The outstanding action by the Northern California DX Foundation, Inc. in handling the ZA1A QSLs, has thrown a new light on what is possible in QSL management. The result is that those of us who were satisfied to wait six months to a year for confirmation on a new one, now point at the ZA1A operation and say, "That is how it should be done!" One week return for a QSL!

But I get many requests for help from guys who have had a lot less success in receiving their cards for new ones than I have. Many complaints come to me (why to me for heaven's sake) about rare ones such a YVOAA, HKOTU and others; and I have tried to be helpful writing letters to the QSL managers, but with dubious success. Not just for us, but also for fancy expeditions, a QSL is the final courtesy of a QSO.

Now, please don't think that my QSL record is perfect. Yes it is OK for the new ones, but I also have quite a few outstanding for Band/Countries. Reason is that OZ9CWA and I have some funny ideas of some day making a 5 Band DXCC. But some of those seem impossible to get: they just don't QSL, like amongst others: HH2BZ, impossible even via his QSL manager N1DRS, UA3TT for all his '89 trips to RF1F and UH4H, TJ1DL via Manager DK8SO, 5H1BK via manager JH4RHF, ES7KDQ, RC8O/UB4MZG, Z21GU, ZB2JB, PZ1ER... oh well, there are quite a few more, unfortunately.

Just shows you; GLORY and THANKS to the ZA1A Team and the Northern California DX Foundation. What a fantastic job, both from an operating standpoint as well as from the outstanding QSL service.

AMTOR

More and more good and relatively rare DX is appearing on AMTOR these days. My mailbox, APLINK, has access from all continents daily. But a lot of those rare Amtor stations are looking for some armchair QSOs. And don't be surprised to see amongst them such stations as VQ9QW, 9X5LJ, TY1PS, 9K2DZ, RV5AF, FR5ZD and many others who might be needed countries for many.

And use of the AMTOR portion of the Digital Bands is constantly increasing, in fact it is getting pretty darned crowded between 14,065 and 14,080. But dear ARQers, can you not please come properly prepared to participate in the fun on that section of the band?? The tuning indicator on a PK232 is not good for anything but to show you the very strongest stations. And if I look at the number of guys (would not think the same thing of girls), who just start calling in FEC or even ARQ on a frequency that is busy, I am appalled. No great joy when you are passing a 4000 byte DX file to a weak station at the other side of Africa, and during the last 100 bytes some LID starts calling CQ on the frequency you are linking on, breaks the link if he calls CQ long enough, and you have to re-transmit the whole message again. The Joy of Amtor.

And it is so easy and relatively cheap to get a good tuning device. Our venerated JOURNAL, not long ago had an advertisement for scopes at $125 bucks. I bought one and it really has been a God's send.

HAPPY HOLIDAYS

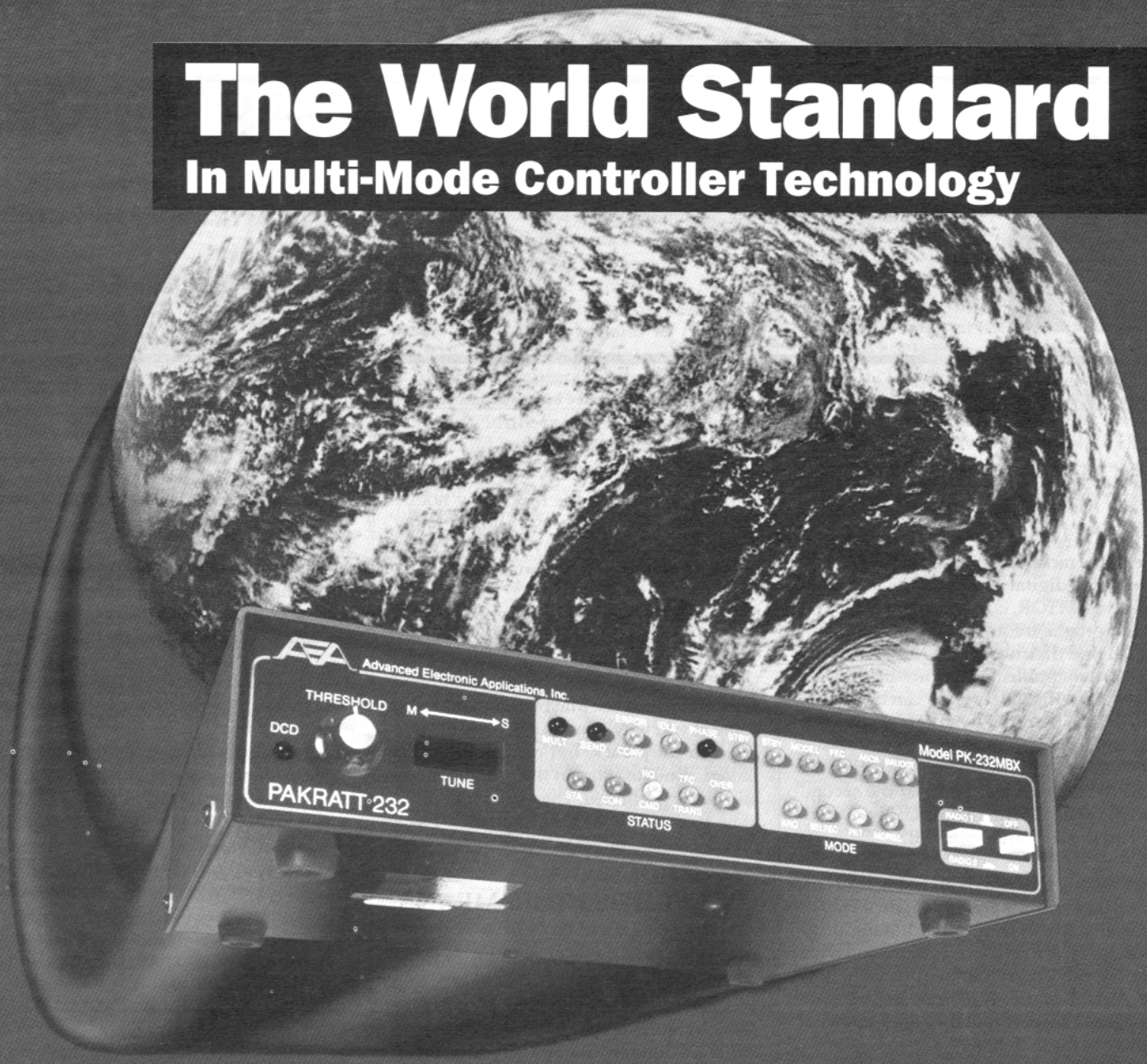
I am delighted that Don, W6PQS, has agreed on taking over the real DX meat for the Journal these days. I am glad to relieve him, but long term continuation of this Column depends entirely on how it goes with health. Since February I have been fighting and will continue to do so. Right now I am pretty optimistic that the doctors will get rid of all the undesirable symptoms and, the Lord willing, I don't expect them back soon, plus now I am able to go back to work, to make a try and support this hobby, plus my family while I am at it. But the Lord is Master. His will be done and I am in communication with him and feel a trust that I will be as good as new one of these days soon.

Special thanks this month goes to Don, W6PQS, for his help in keeping you all posted on DX, while I was gallivanting with all the pretty nurses in different hospitals. Of course, a special THANK YOU to Luciano, I5FLN, for bringing us ZA1A on RTTY. And then thanks for those of you who spoon-fed me information to keep this Column going, including VK2SG, CE3GDN, VP8BFH, WA4JQS, W2JGR, KB2VO, KW2P, OD5NG, and many others. Then many thanks for the Get-Well wishes and cards from all parts and for the nice book I received as a "get-well" present from Ed Sutton, WA8FLF, plus the great Boston Muscles, courtesy of Jack, W1DXQ. And thanks to our Dear Publisher, Dale, W6IWO, for his patience.

God bless you all and may He bless you abundantly for the Holiday Season and in the New Year and give you all the DX you need.

de **John, TG9VT**, from all the volcanos in Guatemala.

The World Standard
In Multi-Mode Controller Technology



The PK-232MBX is the undisputed leader in multi-mode controllers. Here are a few reasons why:

Filtering. With a high-quality front-end filter (seventeen-pole effective filtering), the PK-232MBX gives you the best HF performance of any multi-mode controller.

Software. Our Host Mode control programs offer unmatched power and versatility in an easy to use, intuitive format. Available for PC-compatible, Macintosh and Commodore computers.

Packet Lite™. On HF, two PK-232MBXs communicating with AEA's exclusive Packet Lite can achieve a 40% increase in throughput over standard packet.

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THE LINK

Jim Jennings, KE5HE
Rt. 2, Box 165E
Hearne, TX 77859

For the past four months Jim has been walking us through APlink and doing an outstanding job. If you are a new subscriber, you may wish to get the back issues staring with the JUL/AUG issue. APlink is the new buzz word this year and the activity on the bands attests to that fact.

GETTING ON FREQUENCY

One of the most difficult problems for new users of the digital modes on HF, and especially on AMTOR, is the problem of getting on the proper frequency when calling an MBO. I find that most of the MBOs are very close to their published frequencies, but for a user to hit that fairly close can be a problem. Really, there are two parts of the "getting on frequency" problem. The first is to get on frequency close enough to get the MBO to chirp back at you and the second is to get phased with the MBO. I will try to explain this as I understand it.

Since many of the MBOs are using the HAL PCI-3000, I will attempt to explain how that controller works during the linking process so that you may better understand what is going on. I do not know precisely how the AMT-1 or PK-232 work in this situation, but I suspect that they are somewhat similar to the PCI-3000.

First of all, the PCI-3000 has a wider bandwidth when in the FEC/STBY mode than it has when it is in the ARQ linked mode. The bandwidth in the LISTEN mode is approximately +/-70 Hz. Now let us assume that you are calling KE5HE, chirping KEHE (the SELCAL of KE5HE). We all know that in the ARQ mode we send 3 characters at a time. However, while chirping for a station you send 2 of the 4 characters of the SELCAL on each chirp. When you send the first 2 characters, they are preceded by a special control character, and when you send the last 2 characters they are followed by a special control character. (I may not have the protocol correct, but the result is the same.) In any case, the receiving station only has to receive 2 chirps correctly to get the SELCAL. All of this occurs while the PCI-3000 has a bandwidth of +/- 70 Hz. An additional complicating factor is that the MBO may not be scanning, and you (the user) do not know whether the MBO is busy on another frequency or if it is in fact scanning.

Once the controller has received the SELCAL, then the LINKING phase is initiated. The LINKING bandwidth of the PCI-3000 is +/- 40 Hz. It is intentionally tight to prevent false locks. Maybe this explains to some of you why you can chirp a MBO and get it to chirp back, but can't seem to get linked. You just stay in the phasing mode and never get linked. There are other problems that can yield similar results. I will discuss them a bit later.

WHAT DOES THIS MEAN?

It means, that when everything else is right, you need to be +/- 40 Hz to get linked. And you need to be +/- 70 Hz to even get the MBO to reply to you. As most of you realize, it is a different matter to try to bring up a station that has not been transmitting than it is to answer a station who has just broadcast a CQ in FEC mode. While he was transmitting FEC, you had ample time to tune him in and therefore should be right on his frequency. I can hear you now say, "What is he saying, that I must be +/- 40 Hz and my digital dial (if you even have one) only reads to 100 Hz?" That is what I am saying.

HOW CAN I DO IT?

There are several tricks you can use to get close enough to frequency to reliably bring an MBO up. The trick or tricks you use will depend on your radio.

- 1. Leave your rig turned on all the time. The frequency stability of most modern rigs is very good, I have found, if you just leave it powered up.

- 2. Figure out how to calibrate your rig or at least determine how far off frequency it is. You can do this by tuning in WWV on 10 MHz while in the mode that you use for AMTOR. Let us say that you are running a rig in AFSK and use LSB mode. Normally you would tune 2.125 KHz higher than the mark frequency you are looking for. If you are looking for 10 MHz WWV, then you need to tune to approximately 10,002.125 KHz. So you tune up WWV and find that when the MARK LED on your controller is lit, you show a dial reading of 10,002.3 KHz. As a starting point, then you should tune about 2.3 KHz higher than the published MARK frequency of the MBO. *Note:* You should realize that this 2.3 KHz offset may not hold for every band. This depends on how accurately all of the oscillators are set in your rig. Also, if your controller is set for 200 Hz shift, then you will tune 2.110 KHz higher than the mark frequency. If you are operating FSK, most rigs (except the TS-930S which indicates SPACE frequency) indicate MARK frequency on the dial.

- 3. Use 170 Hz shift on your controller. Refer to your controller manual on how to set up this shift. While the filters in your controller may be broad enough to not be concerned about and whether you have 170 or 200 Hz shift, most of the controllers used by the MBOs are purposely sharp and because of this when you want to work them reliably you should use 170 Hz shift.

- 4. If you have memory channel capability on your rig, simply store the frequency when you have a good link so that it will be there next time.

WHAT NEXT?

Once you have the MBO responding to your chirps, then you need to get precisely on frequency. My experience is that you need a good tuning indicator to do that. The standard tuning indicator for years has been the oscilloscope. It is about as close to being fool proof as you can get, but there are alternatives. In order of preference, my experience says you should consider the following:

- 1. Oscilloscope.
- 2. HAL SPT-2
- 3. The tuning indicator described in CQ magazine January 1991, page 24. Tune the tone decoders to 2125 and 2295 Hz. (I used a 1000 ohm potentiometer to set the input audio level.)
- 4. The LED tuning indicator on most multi-mode controllers.

The oscilloscope is a large box to put in most shacks, however I have found that it is a good addition. You may only need to use one for a short while. It can be of great help in learning how to properly read your LEDs. Once you know exactly how the LEDs should look when a station is properly tuned in, then you may not need the scope. I have found that you need to be picky. I also think you can tune within 10 Hz of the proper frequency with the SPT-2. Surprisingly, the little indicator (item 3 above) from CQ is very good. I found that it worked much better after I tuned the indicator using a frequency counter as suggested in the magazine article. The LEDs on the controllers work OK, but you first need to know exactly where a properly tuned mark signal is on the display. A scope will help you there. When you find that place, put a pencil mark or other reference on the Controller tuning indicator. Remember that one LED is about 20 Hz on the PK-232. I use the indicator from CQ with the AMT-1 system in my travel trailer and have very good results.

Why don't one of you computer jockeys write a TSR to display a cross-hair indicator on the computer screen as a tuning indicator?

YOU'VE TRIED ALL THIS AND YOU STILL HAVE PROBLEMS!

What about the time delay parameters for your controller? There are basically 2 time delay parameters to be concerned with in the ARQ mode. One compensates for the "turn on" time of your transmitter after it has received the command to transmit (PTT.) In other words, you need to wait until the transmitter is on before sending data to it. The other time delay parameter has to do with the receiver on the other end. You should not send data until the other rig has had time to turn around from the transmit to the receive mode. The way that different controllers handle the timing varies. Basically, you need at least 10 milliseconds (maybe as much as 30 ms) after you turn your transmitter on before you start sending data. Notice that this time is independent of the equipment on the other end of the link, it only depends on how fast your transmitter can come up to speed. The other time delay, which compensates for the speed of the transmit to receive transition of the other station should be from 20 to 50 ms depending on the speed of the other rig. Again, different controllers handle the timing differently. Hopefully, this discussion will help you sort out the situation in your case.

The timing gets critical in two situations. They are: when the other station is very close and when the other station is on the other side of the world. The propagation time is about 37 ms per degree. So for a station on the other side of the world, it will take 67 ms for your signal to get to him. It takes him 70 ms to send his acknowledgment, and 67 seconds for it to get back to you. That leaves 6 ms slop to play with, which is not much. So the timing has to be set right for long distance communications. With short distance communications, you have to wait long enough to allow the other station to turn around and get into the receive mode. (And he has to wait long enough for you.) Usually this is 30 ms or so. Consider all U.S. contacts as short distance.

WHAT ABOUT FILTERS?

I always use 500 Hz filters on AMTOR. You should be aware however that using narrow filters may make tuning more critical. Be especially careful of filters that "ring." While IF filters are useful in reducing adjacent channel interference, audio filters have no effect on this problem. I have found that a notch filter can be useful to reject a nearby carrier. Tuning of the notch filter is enhanced when you have a scope on line. Just tune the notch to make the desired signal look better.

IDEAS

Please send me your ideas about what you would like to hear about in future columns. You can put them on any APLINK MBO. Just address them: SP KE5HE AT KE5HE.TX.USA.NA and I will get them. I have covered the preliminaries of APLINK in the first four columns, and now I would really like to know how you think the column should go from here.

AN ASIDE

I am a glutton for punishment. Recently I got APLINK, the G8BPQ node switch, and the W0RLI packet BBS software all running under DesqVeiw on one computer. It's easy after you get it going, HI. So on HF, I scan 80 through 10 meters and on packet I have 450 MHz and two frequencies on 2 meters. This gives me much greater flexibility in forwarding messages on packet. My whole purpose for having the MBO and associated equipment on line, is to handle traffic, especially during emergencies.

73 AND GOD BLESS HAVE A NICE HOLIDAY SEASON DE **JIM, KE5HE**, AT KE5HE.TX.USA.NA

Dima, UT5RP, August 1991

1st SARTG AMTOR Contest Results

Class A Single Opr - All Bands

Nr	CALL	QSO	PTS	3.5	7	14	21	28	SCORE
01	WA7EGA	264	3220	5	9	36	40	15	338,100
02	TG9VT	218	2745	2	3	34	30	28	266,265
03	HA6PX	216	2795	1	7	31	28	14	226,395
04	G3RED	181	2440	2	2	34	21	15	180,560
05	JA3DLE/1	170	2240		3	20	32	18	163,520
06	G3XTL	156	1955	2	9	34	24	7	148,580
07	W1BYH	154	2075			25	28	18	147,325
08	LZ2BE	137	1560	5	6	27	24	11	113,880
09	Q6/G0AZT	133	1650			27	34	4	107,250
10	GM3UTO	109	1355	1	1	27	33	10	97,560
11	AA4M/6	123	1445			20	29	14	91,035
12	WA3ZKZ	115	1475			22	25	10	88,500
13	LA0CX	109	1445		1	21	26	9	82,365
14	SP5ALV	103	1310	4	2	22	19	13	78,600
15	Y23IL	92	1140	5	6	26	20	5	70,680
16	DL2BR	106	1350			30	19		66,150
17	SM6ASD	79	1070			23	25	10	62,060
18	W2UP	83	1155		1	21	23	7	60,060
19	VU2SJV	69	975			9	22	18	47,775
20	AH6JF	74	1085		2	11	23	4	43,400
21	LA7AJ	78	860			27	20		40,420
22	OZ3TQ	60	785		4	16	18	10	37,680
23	TI2UU/4	65	835			13	21	9	35,905
24	PA3EWP	64	830			17	17	9	35,690
25	N7GVV	62	760			17	19	3	29,640
26	JA1JKG	51	715			16	18	3	26,455
27	W4/TF3KX	50	650		2	16	14	6	24,700
28	SM6BSK	52	620		1	18	11	4	21,080
29	SM4RGD	55	665	1	3		26		19,950
30	FB1LNR	49	590			23	4		15,930
31	EI3GC	50	545			20	4		15,260
32	JA3FJ/1	38	530		1	1	16	7	13,250
33	JA1WYQ	34	485			4	17	6	13,095
34	I4XQG	37	465			15	12	1	13,020
35	KI4MI	34	475			5	16	5	12,350
36	SM7ABL	34	420		1	18	6	3	11,340
37	SM7BGE	37	440			16	7	1	10,560
38	G3XVF	34	360	1	2	7	10	6	9,360
39	HB9BL	31	330	1	3	18	3	2	8,910
40	AM6EKP	29	330			11	10	1	7,260
41	SM4CDA	29	340			14	6		6,800
42	HBO/W1VXV	29	320			14	5	2	67,20
43	SM1DUW	25	295		2	11	8		6,195
44	SM4CMG	22	290			11	9	2	5,800
45	G4ZKJ	18	245			7	9		3,920
46	DK7FP	17	230			3	5	8	3,680
47	SM5CZD	15	210		1	7	3	3	2,940
48	SM4RIK	18	195			4	11		2,925
49	OZ7SAC	14	175			7	4	4	2,625
50	KF6YL	15	155			1	10		1,705
51	VK2EG	9	115			4	6		1,150
52	OE1TKW	8	120			5	3		960

Class B Single Opr - Single Band

3.5 MHz

01	SM4LLP	1	5						5

14 MHz

01	4M5RY	88	1295			41			54,390
02	DL2BR	79	955			30			28,650
03	Y23VB	38	430			25			10,750
04	HK4DUM	35	505			21			10,605
05	EI3GC	44	465			20			9,300
06	GI4LKG	46	495			17			8,415
07	HK4EGW	29	420			18			7,560
08	DL2SDE	36	395			19			7,505
09	SM0TGG	34	365			19			6,935
10	I4IBR	30	325			18			5,850
11	SP7FQI	34	350			14			4,900
12	GW0ANA	16	165			11			1,815
13	VK2BQS	8	85			9			765
14	VK2SG	5	55			5			275
15	SM4AWC	3	45			4			180

21 MHz

01	JA3DLE/1	91	1250				32		40,000
02	W6/G0AZT	86	1040				34		35,360
03	AA4M/6	70	845				29		24,505
04	W6/G4ACU	69	760				32		24,320
05	WA3ZKZ	58	760				25		19,000
06	W2UP	51	725				23		16,675
07	SM4RGD	51	635				26		16,510
08	JA3FJ/1	25	365				16		5,840
09	JA1WYQ	23	320				17		5,440
09	PA3EWP	23	320				17		5,400
11	G4SKA	26	355				15		5,325
12	KI4MI	22	300				16		4,800
13	JA3RTU/9	16	220				16		3,520
14	JA2NNF	15	205				16		3,280
15	G3XVF	12	150				10		1,500
16	SM4CMG	9	105				7		735

28 MHz

01	VU2SJV	23	320					18	5,760
02	WB4ETY	3	35					4	140

Class C Multi Op

01	SK4RY	170	2210	2	7	45	25	15	207,740
02	HA6Z	130	1560	5	5	27	11	17	101,400
03	LZ2KIM	121	1325	1	2	27	25	5	79,500
04	LA3T	105	1275			16	25	10	65,025
05	SK4BX	87	1110	2	1	11	36	1	56,610
06	KA3DSX	29	350		3	7	8	3	7,350

Class D SWL Op

01	DL/BRS 86650	63	790	2	4	22	17	8	41,870
02	JA7-3147/1	11	115			6	2	2	1,150

Operators of Multi Op stations

HA6Z - HA6QD, HA6VZ, HA7VV, HA6GQ

KA3DSX - KA3DSX, KA3HNM

LA3T - LA7ECA, LA7QM, LA7SP

LZ2KIM - LZ2MP, SWL (ZORRY), SWL (KRASSIMIR)

SK4BX - SM4RGD, SM4RIK, SM4TKJ

SK4RY - SM4CMG, SM5CZD, SM4AWC

CHECK LOGS: G4SKA, DJ9XB

Results submitted by:

Bo Ohlsson, SM4CMG, Contest Manager

Rules 4th ARRL RTTY Roundup

Packet - RTTY - AMTOR - ASCII

Object: Contact and exchange QSO information with as many stations as possible on digital modes. Any station may work any other station.

Contest Period: First full weekend of January. Begins 1800 UTC Saturday, January 4, and ends 2400 UTC Sunday, January 5, 1992. Operate no more than 24 hours. Two rest periods (for a combined total of six hours) must be taken in two single blocks of time, clearly marked in the log.

Modes: Baudot RTTY, ASCII, AMTOR and Packet (attended operation only!)

Bands: All amateur bands 3.5 to 30 MHz (excluding 10, 18 and 24 MHz.)

Entry Categories:

A) Single Operator, multi-band - One person performs all operating and logging functions. Use of spotting nets (operating arrangements involving assistance through DX-alerting nets, etc) is not permitted. Single operator stations are allowed only one transmitted signal at any given time.

1. less than 150 W output

2. 150 W output or more

B) Multi-operator, Single transmitter only - More than one person operates, checks for duplicates, keeps the log, etc. Once the station has begun operation on a given band, it must remain on that band for at least 10 minutes; listening time counts as operating time. Multi-operator stations are allowed only one transmitted signal at any given time.

Exchange: US: Signal report and state. Canada: Signal report and province. DX: Signal report and serial number, starting with 001. Note: Both stations must receive and acknowledge the complete exchange for the contact to count.

Scoring:

A) QSO Points: Count one point for each completed QSO (anyone can work anyone.) A station may be worked once per band for QSO credit (but not for additional multipliers.)

B) Multiplier: Count only one (not once per band), each US state (except KH6 and KL7), each VE province (plus VE8 and VY1) and each DXCC country. KH6 and KL7 count only as separate DXCC countries. The US and Canada do not count as DXCC countries.

Misc:

A) Crossband and crossmode contacts are not permitted. Packet radio contacts made through digipeaters or gateways are not permitted.

B) The use of non-Amateur Radio means of communicating (eg, telephone) for the purpose of soliciting a contact (or contacts) during the contest period is inconsistent with the spirit and intent of this announcement.

Reporting: Enties must be postmarked no later than 30 days after the end of the contest (February 5, 1992.) Any entrant making more than 200 total QSOs must submit duplicate check sheets (an alphabetical listing of stations worked.) No late entires can be accepted. Use ARRL RTTY Roundup forms, a reasonable facsimile or submit entry on diskette.

1. Official entry forms are available from HQ for an SASE with two units of First Class postage.

2. You may submit your contest entry on diskette in lieu of paper logs. The floppy diskette must be IBM compatible, MS-DOS formatted, 3 ½ or 5 ¼ inch (40 or 80 track.) The log information must be in an ASCII file, following the ARRL suggested Standard File Format, and contain all log exchange information (band, mode, date, on and off times, time in UTC, callsign of station worked, exchange sent, exchange received, multipliers [marked the first time worked] and QSO points.) One entry per diskette. An official summary sheet or reasonable facsimile with a signed contest participation disclaimer is required with all entries.

Awards: Distinctive certificates will be awarded to: Top high-power and low-power single operator and multi- operator scorers in each ARRL/CRRL Section; top high-power and low-power single operator and multi- operator scorers in each DXCC country (other than W/VE); each Novice and Technician entrant; each entrant making at least 50 QSOs.

Conditions of Entry: Each entrant agrees to be bound by the provisions as well as the intent of this announcement, the regulations of his/her licensing authority and the decisions of the ARRL Awards Committee.

Disqualifications: For excess duplicate contacts and call sign or exchange errors. See January QST 1992 for complete details.

Mail Logs to:

ARRL Contest Manager
225 Main St.
Newington, CT. 06111

Canadian Multipliers

Prefix	Province
VO1/VO2	NFLD/LAB
VE1	NB
VE1	NS
VE1/VY2	PEI
VE2	PQ
VE3	ON
VE4	MB
VE5	SK
VE6	AB
VE7	BC
VE8	NWT
VY1	Yukon

Starting/Ending Time Conversion

	UTC	EST	CST	MST	PST
Starts:					
Saturday, January 4, 1992	1800	1 PM	12 PM	11 AM	10 AM
Ends:					
Sunday, January 5, 1992	2400	7 PM	6 PM	5 PM	4 PM

DX COMINGS

The **SOUTHERN SUDAN** operation by Dennis, **ST0DX**, is now history. What a success story! Once Dennis got used to operating split, he made most of the RTTY DXers happy.

John, **XQ0X**, came up on schedule from **St FELIX**, with his **IRDXA** RTTY gear and the computer donated by Don, CE3GDN. And John rapidly got the hang of RTTY DXing, going split when necessary. John is a Lobster Fisherman and the peak demand for Lobsters in Chile is for Christmas and New Year. So do not be dismayed if you hear nothing from John for a while, he will be back early in 1992 and be active till April, so the demand for that rare spot will be satisfied.

KP1, NAVASSA ISLAND, will be activated from 17 to 21 January, '92 by a group of five operators on all modes, including of course RTTY. On RTTY, Navassa is very high on the Wanted Country List, so many can look forward to a New One. Anyone feeling generous, please contribute via N0TG, Randy Rowe. Of course the RTTY gear is provided by **IRDXA**.

VP8, SOUTH ORKNEY: Equipment has been air freighted by the **IRDXA** to Bob, VP8BFH, in Port Stanley, Falkland Islands, to be transferred to Brian, VP8CFM, on **SIGNE ISLAND, SOUTH ORKENY GROUP**, to bring that rare one up on RTTY. Pray that nothing goes wrong at the last minute; the gear is now in Southern Chile for a Air transfer to Port Stanley and from there by Navy Supply ship to Signe Island. It has been both expensive and time consuming.

WA2WIJ and the **CLIPPERTON CLUB** EXpedition are still all set for Spring '92 with **IRDXA** RTTY gear.

A major effort was made to convince Father Moran, **9N1MM**, to drag RTTY gear back to **NEPAL**, but he just cannot get the interest up and turned down the offers. However, it looks likely that there will be a team of JA operators, under the auspices of **UNICEF** in **NEPAL** around Christmas for an all mode operation, as has happened in the past. Eyes open is the word.

Any of the following stations you hear on CW or SSB will gladly QSY to RTTY for you with their **IRDXA** furnished RTTY gear: **3B9FR, RODRIGUEZ ISLAND, ZD9BV, TRISTAN DA CUNHA, 7Q7LA, MALAWI**, and **4K2OIL, FRANZ JOSEPH'S LAND**.

The mystery of the month of course is what happened to **Jim Smith** in **BANGLADESH**? It appears that the first few Hams of local nationality who had to make the first Amateur contacts from that country, were not there; being in Scandinavia to eat herring and for chasing what-nots (about forty years ago when I lived in Sweden, chasing "what-nots", a species of two legs, was my principle endeavor. Apparently Jim has finally returned to Norfork Island, but please do not think that this is the end of the story; Jim will be QRV on all modes from S21 in the near future.

Dave Reil, **9L1US**, finished his operation from **SIERRA LEONE** on 10 November. After a well deserved vacation, Dave will probably appear from **BOTSWANA**, **A22**, early next year.

In **MOZAMBIQUE**, Kurt Nygren, **C9RKL** has been fairly active on RTTY until early November. Possibly Kurt had some gear trouble, as he has disappeared from the AMTOR circuit also. Kurt is Swedish and holds the call SM7ERJ, but he has a work contract in Mozambique thru the middle of next year. Kurt is no stranger to Africa, having held the call of 5H3MM in the early 70s. Anyway, Kurt is on a vertical, but has a Log-Periodic ready in his backyard, which he has not had time to put up.

And we are hoping for Ron Wright, **ZL1AMO**, to stick to his planned itinerary and visit **ZL8, KERMADEC** in March of '92. If he can swing it will depend on contributions. Transportation is the main item of cost and runs near 20K, much more that Ron can swing. CB address is good for anyone who wishes to be generous. IRDXA has contributed a KAM and N2HOS a laptop computer.

It may be a little early to discuss, but **Apollo, SV2ASP/A** on **MOUNT ATHOS**, is seriously interested in RTTY and IRDXA is of course equally interested in providing equipment. When will this come to pass? That is the $64 question. Seems that the current controversy of Baldurs operation has caused the monks to ban all radio operators for the time being, so not until that is resolved can the matter be pursued.

KB5GL and **W5ZPA** will be active on all bands and modes from the **BRITISH VIRGIN IS.** on January 16-20. Calls will be VP2V/KB5GL and VP2V/W5ZPA.

ZS0Z will be active from the **PENGUIN IS.** December 16-23, all bands and some modes, including RTTY.

73 and GL de **John, TG9VT**

Automatic Unattended Operation Survey

The ARRL seeks your help for planning automated message systems below 50 MHz.

If you have comments or suggestions about planning for automated message systems operating below 50 MHz, we would like to get your views.

This issue is more complex than it appears from a casual look. Read the following explanation and definition of terms and then fill out the survey below and return it, **by March 6, 1992**, to Chairman, Committee on Amateur Radio Digital Communications, American Radio Relay League, 225 Main Street, Newington, CT 06111. If you need more space, please use additional sheets of paper.

In the context of digital communication, "automatic operation" means using a computer to send and receive commands and messages over the air without direct control operator intervention. "Unattended automatic operation" means doing so without an operator being present to observe or intervene in the operation of the station.

It is possible for an unattended automatic digital station to work another station that is being controlled by an operator who is present and can listen to the frequency that is to be used to ensure that it is free before initiating a contact. In this style of operation, the frequency can be shared by more than one digital mode. Setting the frequency aside for a specific digital mode is not essential. For the purpose of this survey we will call this *semi-automatic* operation. RTTY and AMTOR MBOs typically operate in this mode.

It is also possible for an unattended automatic digital station to work another unattended automatic station. In this style of operation, the frequency used must be set aside for the specific digital mode the stations are using at the time such communications are to take place. Sharing the frequency with another mode is not possible since there is no practical means of listening to the channel to determine if the channel is already in use by another mode of signal. For the purpose of this survey we will call this *fully automatic* operation. Packet BBSs typically operate this mode.

All digital modes are capable of either *semi-* or *fully automatic* operation.—*Paul Rinaldo, W4RI*

Automatic Unattended Operation Survey Questions

Please print or type.

1. Optional: Name _____ Date _____

Address: _____

2. What modes do you use (check all that apply)?

- ☐ HF Packet
- ☐ HF Baudot RTTY
- ☐ HF AMTOR RTTY
- ☐ HF SSTV
- ☐ HF CW
- ☐ HF Phone
- ☐ VHF Packet
- ☐ VHF FM Phone
- ☐ Other _____
- ☐ Other _____
- ☐ Other _____

3. Do you own or act as System Operator (SYSOP) or Remote SYSOP for any of the following systems (check all that apply)?

- ☐ HF Packet BBS
- ☐ HF Baudot MSO
- ☐ HF AMTOR APLink
- ☐ VHF Packet BBS
- ☐ Other _____
- ☐ Other _____

4.1 Do you think the FCC rules should permit *semi-automatic* digital station operation on the Amateur Radio HF bands?

☐ Yes ☐ No ☐ Maybe ☐ No Opinion

4.2 If *semi-automatic* operation is permitted on the Amateur Radio HF bands, should all frequencies where digital modes are permitted be available for *semi-automatic* operation? If not, should there be a subband within each band that is available for *semi-automatic* operation?

- ☐ Permit *semi-automatic* operation on all digital mode frequencies
- ☐ Permit *semi-automatic* operation in subbands only.
- ☐ Other

_____

_____

_____

_____

_____

5.1 Do you think the FCC rules should permit *fully automatic* digital station operation on the Amateur HF bands?

☐ Yes ☐ No ☐ Maybe ☐ No Opinion

5.2 If *fully automatic* operation is permitted on the Amateur Radio HF bands, should all frequencies where digital modes are permitted be available for *fully automatic* operation? If not, should there be a subband within each band that is available for *fully automatic* operation?

☐ Permit *fully automatic* operation on all digital mode frequencies

☐ Permit *fully automatic* operation in subbands only.

☐ Other

6.1 Do you think the FCC rules should provide for protected or exclusive-use subbands for specific modes using *fully automatic* operation?

☐ Yes ☐ No ☐ Maybe ☐ No Opinion

6.2 If so, which modes do you think should receive exclusive-use subband assignments (check all that apply)?

☐ AMTOR
☐ Packet
☐ RTTY
☐ Other _____

Future Modes:
☐ Clover
☐ PACTOR
☐ Other _____

7. Please state in your own words why you made the choices you did in questions 4.1 through 6.2.

8. Is there another alternative that would be better than any of the options outlined above?

9.1 Should there be a limit on the number of stations that are permitted either *semi-* or *fully automatic* operation?

☐ No limit
☐ Limit the number of *semi-automatic* stations
☐ Limit the number of *fully automatic* stations
☐ Limit *both*
☐ Not sure
☐ No opinion

9.2 If you believe the number of *semi-* or *fully automatic* stations should be limited, what should those numbers be?

9.3 If the number of *semi-* or *fully automatic* stations is to be limited, what are the criteria that should be used to decide who will and will not be permitted such operation on the HF bands?

9.4 If the number of *semi-* or *fully automatic* stations is to be limited, what person or group should make the final decision as to who will or will not be permitted such operation on the HF bands?

10. Ten years ago, packet and AMTOR were being used by only a few people. Now they have become a major part of Amateur Radio. Today, new technology such as Clover, PACTOR, fax and digital voice are being discussed. How do we ensure that *semi-* or *fully automatic* operation of these future systems can be implemented without additional rule changes?

11. Please provide any other information that you feel would be useful on any aspect of automatic unattended operation on HF.

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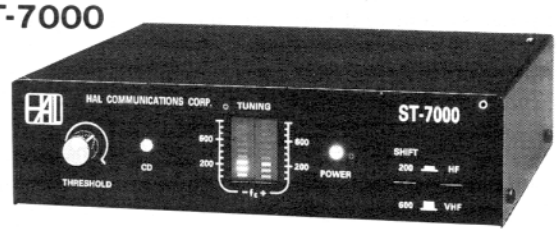

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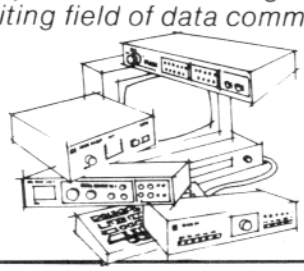
Obviously, we can fill in a system that you have already started. Or we can furnish a complete system to fit your needs and budget. For example, here's some suggestions for the amateur just entering the exciting field of data communications, or: for the amateur who wants the best available.



NO. 1 For the fun (and very affordable) mode, VHF Packet, AEA PK-88 with personal mailbox, 8K programmable memory and TCP-1P compatability.
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AMTOR

Eddie Schneider, G0AZT/W6
1826 Van Ness
San Pablo, CA 94806

Eddie is going to leave us temporarily. He has been covering the AMTOR circuit for some time now and feels he has reached a saturation point on the subject. He therefore, is going to only contribute three for times a year. Please continue to direct your mail to him and he'll maybe be back sooner. Thanks Eddie for your dedication to AMTOR.

First of all, I must apologize for not writing too much about AMTOR in the last two editions. After the CQWW/R.J. RTTY contest in September, I seem to have spent all my spare time in front of this new fangled IBM XT, entering callsigns, times etc, etc, so that I can send in our contest score before the deadline! Using a totally unfamiliar computer system and software, has created quite a few problems and excessive "re-doing" of files, has driven me to smoking even more cigarettes. However I have not taken up drinking, just yet!

Secondly, I would like to thank all of you and especially, Dick, KOVKH for electing me as "Author of the Year". I accept this great honor with all the respect it deserves. Unfortunately, it appears that the "Buyaki Trophy" has been lost by USPS (United States Postal Service) and it will never find a deserved place on my mantelpiece this century! (sic).

MAILBOX

Not much in my Amtor Mailbox this month. Roger, K7NTW has his soldering iron hot and ready in anticipation. He requested modifications for his IC-745 as it appears any ARQ link he gets into, cannot be maintained for more than a few minutes. As far as I know Roger, your rig will work FB in ARQ without mods. Try using the FSK/RTTY position, (16ms is the quoted delay) and set your AGC to fast or off. If that doesn't work, try LSB/AFSK (12ms), however you will not have the benefit of any narrow filters on RX. You may want to check your ARQ parameters in the Kam. I do not know what the ARQTX and ARQRX defaults are, but it would be in order to set both TX and RX to 20ms. An easy way to check out your gear, would be to try and access one of the APLINK mailboxes. If conditions are favorable, you should be able to hit TG9VT on 21.074 or 14.074 (mark.) If traffic flow is good out of the "box", there is not much wrong with your system because you will be the Master station and will be setting the "timing" parameters. I owe you a letter Roger and thanks for the SASE. I hope the delay in my response has not burned out your soldering iron tip! Mea culpa.

EPITAPH

Over the past few years, I have really enjoyed writing the AMTOR column for the RTTY JOURNAL. I think and hope that I have covered most, if not all, there is to write about on the subject of AMTOR. I feel that there is no more useful information that I can write about on a monthly basis, so with regret, I will be hanging up my ARQ-hat for the time being.

I would like to express my appreciation, firstly to Dale, the editor, for giving me the opportunity to write about the "ins and outs" of AMTOR. Secondly, to you the readers for your kind comments, both on the air and via the mail. All your comments were most welcome and very encouraging. Thanks.

If any of you are still require rig modifications, help with getting started on AMTOR etc., please do not hesitate to write to me at BOX 5194, Richmond, CA. 94805, (Please enclose and sase.)

Merry Christmas and a Happy, Healthy and DX filled New Year.

73 GL **Eddie Schneider, W6/GOAZT** ■

Hits & Misses continued from page 2

advertisers help to defray that cost and a special thanks to them all. The next time you are considering buying a piece of gear for the digital modes, I hope you will give our advertisers first thought. And, should you buy a piece of their gear, please mention you appreciate their support of the RTTY Journal.

My thanks again to all of the RTTY Journal Columnists, who have done an exemplary job covering the stories and action throughout the year. They have brought you many fine reviews of equipment new to the market place, technical articles on 'how to", up-to-date QSL data, DX forecasts and alerts, hints and tricks on how to contest, build, test, hookup equipment, and much, much more. The 1991 Index on page 22 listed the entire year for you. You have also been kept abreast of all the digital contests that took place and the results as they have been provided to the RTTY Journal.

WHAT'S COMING

I don't have an surprises to announce yet. But, we are going to have Jim Mortensen, N2HOS, join the staff to write the Software Column. As mentioned in the Software column this month, Jay is going to move over into the hardware department. I'm sure we will have some up-date stories on Clover II, more reviews, and much more. So stay tuned in, to the RTTY Journal.

We do need to hear from you, the readership. What do you want? It is your publication also. I'm just the go-between putting it all together. I'm sure you have noticed that I do very little writing each month and the subject material each columnist comes up with is taken from your mail primarily. So in 1992, keep writing to the Columnists and feed them input so their columns will continue to be top notch.

Maybe you have a story to tell, if so, submit the material. I assure you, I turn down very few. How about that picture of you in your shack - send me one, when I have space, there you will be for everyone to see.

As this year closes and we look forward to next year, I wish you all, Happy Holidays and a Properous New Year.

73 de **Dale, W6IWO** ■

SOFTWARE

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

This month Jay answers the mail and then continues his review of the Kantronics Host Master II software for the KAM TNC. Upon completion of this review (probably next month), Jay will be moving over into the realm of hardware. He is asking for your help and input, I hope many of you will respond to his request.

The mail bag only had a couple of letters this month. A really nice letter from Ed, WA8FLF who I work in nearly every contest. He is a dedicated contester and like lots of folks is moving up to the IBM Clone PC and some logging software. He indicated that WF1B looked like the ticket and thought the review of that piece of software was one of my best. Ed says, "Your October column has been very helpful on the use of WF1B's RTTY, thanks WA8FLF." Another Ed, N3FDW sends in a note that my rumor on David Rice's CompRtty II version for the HAL PCI-3000 was correct. David is at 144 N. Putt Corners Road, New Paltz, NY 12561.

I have not received ANY reports on any of the logging programs used during the CQWW RTTY contest. I thought some of you users might send a note about what worked or didn't. Only thing I can say about the latest version of the WF1B is that DC (Wash.D.C. the other Washington not the real one!) is NOT a state in any RTTY contest.

KANTRONICS HOST MASTER II

The Host Master II has nice, short, documentation and I really like the way it has a quick start feature. Naturally I wanted to get it running as fast as possible. Quickly you get used to using the manual while looking up words. The Host Master II has a copy protection scheme that requires registration or looking in the manual. I needed to call Kantronics and get mine registered!

First Impressions

I fired up the Host Master and found it has a very nice color display. In fact color might be one of the necessary features since so many things are happening on the screen. I used Betsy's call, WV7Y, and connected up to the PacketCluster on VHF. Couldn't use mine as the Cluster won't accept two connects from me. Without reading the manual, I managed to get everything up and working. Fired up the scope on RTTY and it has the same pattern that the AEA PK232 has on the screen. The ellipse is more of a 170 Hz shift which is nice.

Since the W.A.E. was almost non-existent as a contest I worked a few of the guys and had a nice ragchew with Carl, K6WZ about upcoming DX and a few QSL routes. While this was happening the PacketCluster kept on rolling in with DX spots. Very nice.

Some Hints at the Start

I kept getting a little confused on how to switch from HF to VHF packet and vice versa. I also had a problem not being able to see the transmitted RTTY. HMII uses pull down menus, but they work kind of funny. The menus take a little bit of practice to get used to the different feel. I use very similar pull downs in Turbo Pascal. In short order I was able to catch onto the menu usage and found I could quickly adjust the screen sizes. The secret to the transmit echo line was found on page 20 of the manual. You must turn XMITECHO ON from the Command Channel, and also set up the monitor and that should be MCON ON.

Kantronics HMII supports automatic setup and shutdown text files. To do this the files with the names HOSTBEG.TXT and HOSTEND.TXT are executed. This is where to place the start up commands like the above examples. Buffers are also supported. Ten buffers named BUFFER followed by a number 1 to 10 are the ticket. These buffers are further separated into modes by using file extensions of CW, RTT, ASC, AMT, PAC. Let me give you an example of how to use one:

- In Amtor ARQ you want to send a brag file about your station.
- Press CTRL-F4 (Hold down Control Key and Hit F4 Key)
- This will send the file with the name BUFFER4.AMT

Last Hint

If you are running FSK (Frequency Shift Keying) and using the RTTY mode on many radios you need to set the mark and space of the KAM. Do this by using the commands MARK 2125 SPACE 2295. The KAM comes using 1600 and 1800 tones and won't receive HF packet until configured.

As a matter of course you should review all the settings in the KAM using the Commands manual and set them to your favorites. I found PacLen of 128/128 to be too long for HF and to short for VHF. For VHF a PacLen of about 230 is perfect. Most Digis (Simplex Digital Repeaters) add about 25 bytes (characters) to the packet, so if you set up 255 it actually chops it into two Packets.

Kantronics should take the "RYRYRYRY" and all mention of it from all of their manuals. I finally see why so many of the "newcomers" get stuck sending out all the RYRYs. It is always the first example in loading a buffer that is used in many software manuals. Trust me. Load something like: DE BETSY, WV7Y, SPOKANE WA — RTTY CAPITAL OF THE WORLD, in a buffer and you will never have a bit of trouble typing ahead of the machine again.

Both Ports and Switching Back and Forth

HMII is actually a very simple program that allows you do both ports simultaneously on the KAM. According to my friend Jim, WB7AVD, who is the only guy I know locally who has a KAM, the Host Master II solved his big problem which was the previous software for the KAM. After reviewing the Help Screen with ALT-H (hold

down alt key and hit H), I found that by using the right and left arrow keys you could switch back and forth between HF and VHF. Very neat. I carried on a QSO on RTTY and VHF Packet for a couple of hours while monitoring all on the Test Standard, my HAL ST-6000. The filters in the KAM work quite good and it didn't miss a beat on receive copy.

An Example of Amtor and PacketCluster

Let's take a look at a typical evening of activity using the Kantronics KAM. First I have made up my HOSTBEG.TXT file and have all the commands set up. I fire up the computer and turn on both of the rigs.

In case I forget. Shift F7 in the Amtor mode is the WRU (who are you) buffer and for APLINK can be set with the typical QRA DE WS7I WWSI +? response to make things easy.

Type in HOST and the program starts. Then I move from the command screen to Channel 1 by using the PageUp Key. Connect up to the local PacketCluster or your local BBS by hitting the F1 (Function Key) and when asked in the box "connect to": type in just the Callsign. In this case we connected to SPOKN a digi. Now check the status box with the left and right arrow keys making sure the big "P" for packet is indicated. I next connected up to WB7NNF our local MYSYS (type of BBS software).

Hit the other arrow key and check that status "Keyb:HFC" is shown. It might be HFW for word mode (indicating character or word output.) Next bring up the menu for Port 2 and select LAMTOR. This puts us in "Listen Amtor" mode so we can listen around the band.

In this case I was looking for the APLINK (Amtor Packet BBS) of TG9VT as John always helps me if I am testing software. I dialed up 14.074 and found him. I now once again changed modes to ARQ and then hit the F2 Key to connect on Port 2. It asked who to connect to and in this case I gave it TGVT which is the Selcall of TG9VT.

Off and running in Amtor it went and as I had my trusty RTTY Journal open to the Link Column, I tried several of the commands and checked out various offerings on the APLINK board.

During this time as I was waiting for a response, I hit the arrow keys and logged on to the VHF packet BBS and checked my mail and read a couple of messages. Back on AMTOR, I captured the RTTY DX Bulletin to a file by using the menu option of saving to a file.

This has been the second in a series of articles on the KAM and in particular the Host Master II software. Hostmaster II is a very well done piece that uses the flexibility of the Kam. While doing some testing in the last few weeks I ran upon John, AA0GD, who runs Windows on a very nice computer setup and is also a computer software and hardware man. He had a KAM running Host Master II and had a lot of problems with the software under the Windows platform. Seems that a 'Stacks' error occurred while running the program as a DOS application. He was unable to resolve the problem and has since moved on to PacketGold and the PK232. It was kind of refreshing to note, however, that John knew of many that were having no problems with the HMII. I didn't have an opportunity to test the HMII under windows. But with my experiences in the last few weeks while at work with Lotus and Windows I would only urge you to be very selective when using Windows with any communications software. It is a very complex issue.

Next month a final look at Host Master II and a few comments about some of the Contesting Software and the Kantronics KAM. Have a very Merry Christmas and Happy Holidays.

de **Jay Ws7i** ■

WS7I@WS7I.WA.USA.NA

Hi Dale,
First, I would like to thank you very much for sending me your fine publication, RTTY JOURNAL, on a regular basis. I am really impressed with the quality of the articles, especially those of my friend, John, TG9VT. The last time I talked to him was on Baudot about 6 months ago, then came the gulf crisis which disrupted everything on our side, including Ham radio activities. Thank God it is over! To Celebrate this occasion, I have taken myself a picture at my shack. This is the first picture since I became a Ham, nearly two years ago. Thousands have made QSOs with me, but none has ever seen my picture - you are the first! This shows my PK-232 which I use for my RTTY activities.

About Ham radio in Egypt, it is progressing very slowly. We managed to recruit a new Ham in 1991. Our numbers now officially stand at 25, but the active ones are about seven. Of the seven, four operate RTTY. They are Ezzat, SU1ER, who prefers AMTOR, Fathy, SU1FN, who prefers HF Packet (Yuck), and Ahmed, SU1AH, who has no special preference, and myself. I love Baudot.

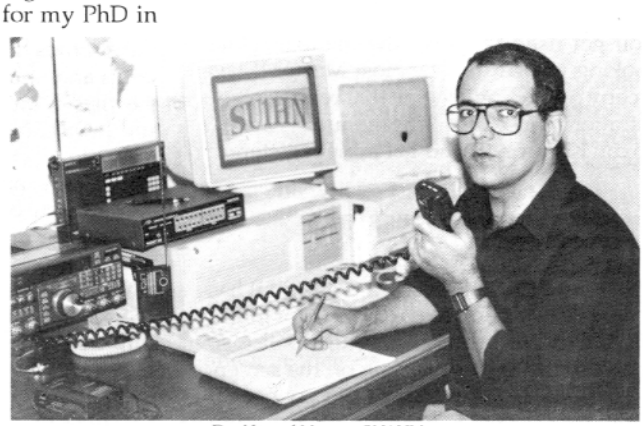
Oddly enough, RTTY was the reason why I became a radio Ham. This goes back to 1987 when I was studying for my PhD in the USA. To that date, I was an enthusiastic SWLer. And I always was confused by the noisy sounds between the Broadcast bands. I later found out from a magazine (Popular Communications) that the noisy sounds were in fact data being transmitted. Moreover, I found that the data can be displayed on a computer if I had the right equipment! Friends of mine who were radio Hams confirmed the fact. They told me that I can also transmit data, besides receiving it, only if I became a radio Ham.

I studied for the license in the State of New Jersey, where I was studying. In May 1980 I got the ticket, with the callsign KB2HVS. Two months later I moved to Egypt. I studied again for the Egyptian license. I carry now the Egyptian callsign SU1HN. I am now the secretary of our only Ham radio club, EARS, and the Editor of the club's newsletter, Egyptian Echos. The newsletter was disrupted by the Gulf affair, but it should resume soon.

I enjoy working RTTY, but I have a hard time handling large pileups. The pileup problem is solved on SSB by DX nets. I hope something like a RTTY DX net can be arranged.

Well, Dale, I thank you again for the fine job you and the guys are doing. If you want to publish my letter, or part of it, edited or un-edited, go ahead. Please give my regards to John Troost and to the rest of the fine people working with you on the Journal staff.

73 **Hamed, SU1HN**



Dr. Hamed Nassar, SU1HN

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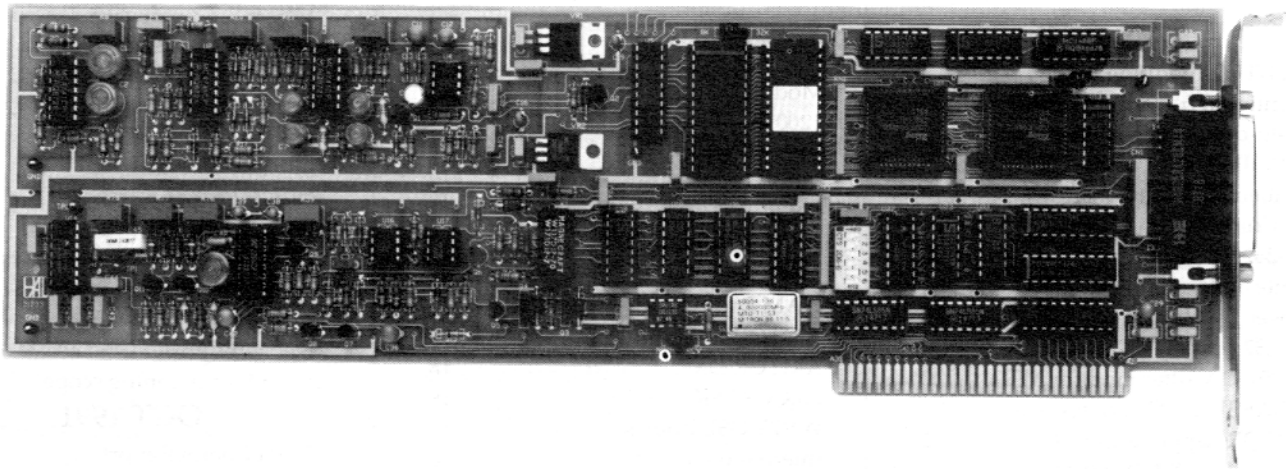

The HAL PCI-3000/PC-AMTOR system is designed to put your PC on the HF bands with outstanding performance at an affordable price. Amtor allows you to get through when other methods fail. If you've ever been DX-ing with someone on Amtor when 20 meters dies out in the evening, you know what we mean. Things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

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

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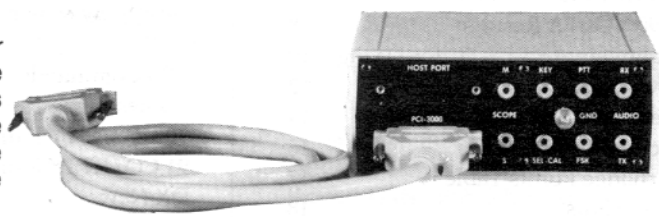

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1991 INDEX

JAN 1991

HK0TU DXpedition 3
Intentional & DX interference 7
Up-to-date factual Digital info 7
TCP/IP versus Packet 8
Gentlemen's Agreement 10
DX Comings 12
PK-232 Review 13
Contesting 14
Clover Part I 16
PK-232 & HAL ST-6000 hookup 20
FT-757 CW filter mod for RTTY 20
91 BARTG RTTY Contest rules 21
AMTOR happenings in 1990 22

FEB 1991

NAVTEX update 2
Setting up a Packet station 3
Kantronics 9600 4
DX Dissa & Data 6
Operating Split 7
Move NAF 8
ARIES Review 8
Clover Part II 12
Can APlink handle ASCII? 14
How to do AMTOR (1st time) 16
1990 ANARTS Contest Results 17
DSK-3100 disk drive system 18
APlink guard channels 18
1st SARTG AMTOR Contest 19
WV7Y QSL Routes 20
Most Wanted Ctry. Questionnaire 22

MAR 1991

Unattended Operation 2
Getting ready for AMTOR Contest 3
Determining dial frequency 4
Contesting 6
25th VOLTA Contest Rules 6
ARIES Review Part II 7
1990 VOLTA Results 8
Lightweight RTTY TU for DXing 10
DXer of the month 12
Major Malfunction 14
Clover Part III 16
Exchange Points Table 17
MSO Hints 18
A Gathering Storm 18
DX News 19
RTTY Relieves Stress 22

APR 1991

The passing of a legend 2
Contesting 3
COMPRTTY II 6
Apple Software 7
Software Frustration 7
Modulation & Packet 8
1200 Baud HF Packet 8
Clover Part IV 10
MSO Hints & Kinks 10
DX News 12
DX Comings 13
A Sea with AMTOR 14
HAM Radio Peace Corps & USSR 16
AMTOR H-Routing 18
AMTOR DX 18
FSK v AFSK 19
WV7Y QSL Routes 19
International 20
EA RTTY Contest Rules 22

MAY/JUN 1991

My dear friend Cole, W6OXP 2
RTTY/AMTOR Growing 2
ARIES II update 3
G4BMK software 4
TCP/IP Anyone? 6
Interfacing TUs to computer 7
MSOs 8
DX News 9
DX Comings 10
1991 ANARTS Contest Rules 12
1991 SARTG Contest Rules 12
RH7E 13
Are we having fun yet? (QSL mgr) 16
WV7Y QSL Routes 17
90 millisecond delay 18
What is a RTTY/AMTOR Freq. 19
Most Wanted Countries list 20

JUL/AUG 1991

Digital Comm. Report 2
PACTOR 3
Unattended Packet racket 5
DesqView & Ham radio 6
DSP 8
BBS Commands 9
Contesting 10
90 CQ/RTTY Journal Cont Results 12
91 CQ/RTTY Journal Cont. Rules 16
DX News 18
DX Comings 20
APlink (getting started) 21
APlink station listing 22

SEP 1991

Oh-Wah-Tah presentation 2
This is my Frequency 3
Hardware/Software availability 3
Color monitors & the Ham Shack 4
DX News 4
MM-3 Keyer 6
Greetings from Odessa 7
BMKMULTY software 8
AMTOR Channel Commands 11
Listing AMTOR APlink msgs. 12
APlink msg. explanation 12
Reading an APlink msg. 12
PBBS Commands 13
TNCs & RS-232 14
Master v Slave 15
CQ/RTTY "All Years" winners 16
1990 SARTG contest results 18
DX Comings 19
West helps East 20
Cheap & easy tuning scope 22

OCT 1991

Digital Comm Report 2
Contesting 3
Contest Programs 4
Packet Glossary 8
TNCs & HF radios (wiring) 8
Acronyms 9
DX News 14
1991 RTTY Roundup Results 16
OMNI-V auto mode switch 18
Great AMTOR story 20
Touring Kantronics 22

NOV 1991

ARRL questionnaire 2
KAM review Part I 4
QSL routes 4
BayCom 1.2 modem 6
Diversity reception 8
Basic MSO/Digital info 10
APlink - entering a msg. 12
SARTG New Year Contest 13
G0AZT/W6 & AA5AU Xpedition 14
Contesting 16
RTTY Journal Awards program 18
DX News 22

DEC 1991

Hooking HTs to TNCs 3
Hornet's Nest 6
DX News 7
The Link 10
1st SARTG AMTOR results 12
Rules ARRL RTTY Roundup 13
DX Comings 14
ARRL Unattended Survey 15
AMTOR 18
IARU Monitoring system 19
3B9 Story 21
SU1HN Story 21

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