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RTTY DIGITAL JOURNAL™

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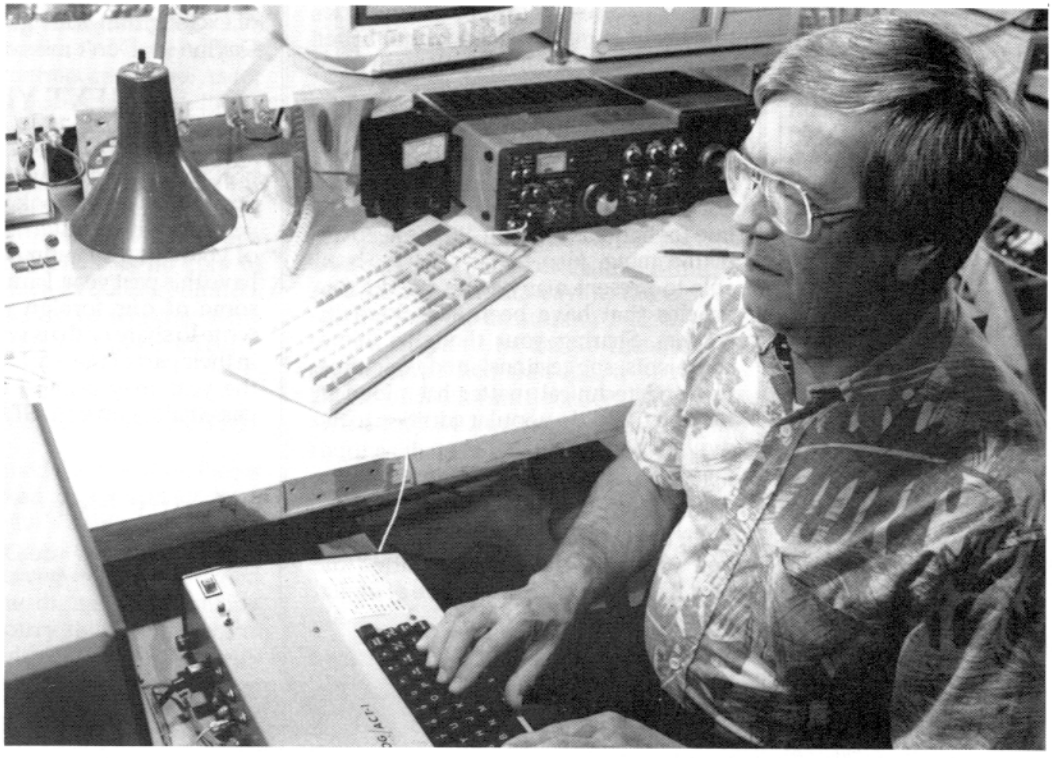

W3EKT

Ed at station controls of W3LPL. Story on page 16.

RTTY DIGITAL JOURNAL

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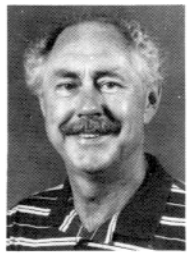

HITS & MISSES

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Fallbrook, CA 92028

REFLECTIONS

This year has pasted quickly for me. It just seems like yesterday I was in Dayton and now I am already taking room reservations for Dayton '94. I guess I must be having fun.

This year has seen one big change in the RDJ. I was able to increase the number of pages from 24 to 32 without an increase in subscription rates, making it possible for each communist to have more space. In turn they have been able to expand their material to provide more in-depth coverage of a particular subject. You have also seen some graphics added. Pictures help to make subject matter better understood. You the reader benefit from these changes.

Such changes have resulted in more reader feedback to the individual columnist. This, they are thankful for because not one of us has a crystal ball to gaze into for help each month. Please keep the mail coming. Also, this year I have been able to present many more stand alone articles that have been submitted by readers. Sharing your thoughts, hints, comments, suggestions, mods, pictures, tips and technical matter has aided in making the RDJ a popular addition to the digital Ham shack.

Not to be forgotten are the advertisers who advertise in the RDJ each month. Their help is vital and I hope that each of you will give them consideration the next time you purchase a piece of digital gear.

A special thanks to all the columnists for their input this year. Each has worked very hard to put together the best possible material for the reader each month. They have also hounded many manufacturers in order to obtain hardware and software to review. All this in an effort to keep you better informed and up to date about our phase of Ham radio. Without their dedication, the RDJ would only be a shadow of itself. GREAT JOB GANG!

DAYTON 94

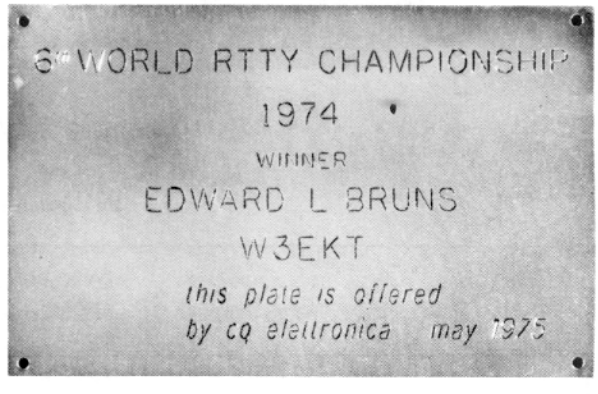
I still have some rooms available at the Radisson hotel. They are going fast, so if you plan to go and would like to stay where the digital gang stays, then now is the time to reserve a room (See page 27 for details). When you read Jay Townsend's column (page 10) this month, you will notice that he is planning some special digital sessions in the hospitality room at the Radisson for Friday, April 28, 1994. As I mentioned last month, lots of exciting things are going to happen at Dayton 94. Don't miss out! Be there!

NEXT YEAR

Guess what, I'll still be here doing my best to turn out a quality magazine for you each month. I look forward to again working with our staff. I'm hoping many of you will also submit material as you have this past year. I am also hoping that some of our foreign subscribers will write to share with us what is happening in their part of the world. Whatever news the year may bring, I am prepared to pass it along to you. STAY TUNED!

Happy New Year to all!

de Dale, W6IWO ■



See page 16 for W3EKT story.

SOFTWARE

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PC PACKRATT FOR WINDOWS PART II

To those of you who have never had the good luck to be hit by lightning . . . allow me one brief moment of grief. While the writing machines (the computer and printer) avoided even the slightest damage because of the 600 watt backup power supply/surge protector, little if anything else in this room can make that statement! The Yaesu FT1000D, the two AEA TNC's are all in one airplane, repair shop, terminal or another. Both manufacturers have been most cooperative and have fulfilled their side of the contract and more. As for me I am like the doctor who ran into a brand new disease. How can I diagnose anything (lacking a room full of test equipment) when I don't know if any one thing works as it should. Is it the TNC, the transceiver, the computer, the cables or a lousy solder joint? There is no core of knowledge on which to build a solution. And I am supposed to be working away with this new software. I can't even run it on packet!! Enough.

BACK TO THE PROGRAM

The skies brightened the next day. Pieces of hardware stacked up at the front door, and I can once again see the program and its strengths and weaknesses. I also garnered other observers whose combined experience in the digital world makes their comments carry significant weight. Bob NJ7H joins with Ed AB4PY and Peter TY1PS. Consensus lurks in the wings, but this program is not one that automatically brings the troops to attention! There are problems as well as opportunities and we will soon touch on the key issues.

Briefly, last month's last item dealt with buttons, the size and legibility of same, and the questionable need for the mandated number. News from AEA via Andy Madsen (in a letter to Bob), fails to enlighten and perhaps even darkens the discussion. Let me quote, *"Many users have commented about the buttons . . . we agree and want to make them more readable. Larger buttons would reduce the number, however . . . and already there are modes where we feel the need for more buttons."* I faxed Andy and urged him to allow the user to build his own button bar. There are already thirty buttons in the Amtor Window! How many more possible options are there? I run Amtor, and have for years, with no more than six or seven possible button applications. I ran Pactor the other day, linked for two hours and didn't use more than four of the twenty four available options. Please, please let the user customize his own screen!

The button issue is more complex than mere numbers however. Peter, who has a unique understanding of the Windows interface makes the point that "buttons create a direct path to a distinct feature." And meant, without saying these exact words, that the creators of PCPW used button quantity to dazzle the user, to demonstrate their skill and, in so doing, lost touch with functionality. AEA trivialized the button function by calling up routines that are either rarely used or require insignificant effort when used. The resulting clutter detracts from an otherwise excellent design idea. But let us move on.

PACKET

Look now at the Packet screen header (Figure I). The left half of the screen is easy to read, functional and informative. It delivers information at a glance. Boxes and arrows produce an instant status report. Then move to the right and tell me quickly how many of the nineteen buttons mean anything to you . . . if you can read them. The reproduction is as good as the screen by the way. Buttons have value, though, and if you maintain a good relationship with your mouse, a connection to a meaningful routine is but a click away. The CON button responds with a blank Packet Connect Menu. Type in the callsign of the DX Cluster or the BBS you wish to visit, click it and the Connect is made for you. The Menu disappears as the connection is made. Simple, neat, effective. NJ7H thinks it would be nice to "Have a display of the other station's callsign on the operating screen as well as the QX space on the Scroll Back Buffer." But we are told by AEA, "Unfortunately, I do not think there is room for a QX box on the main tool bar, though I agree it would be a good addition." Too bad the buttons are in the way of a needed function

However, we must say that this is simple packet at its simplest. And for those of us who live in a house full of Windows 3.1, the skill required to link with and use something like the DX Cluster is absolutely minimal. At this point, if I had done nothing except open up the program, open up the VHF packet port on the PK-900 TNC, and link with KO4J, only the slowness would bother me. I run PCPW on a 386/20 notebook computer. No speed demon, of course, but I use many other pieces of Win3.1 software on the machine and this is the most snail-like, by far. Opening up screens is sluggish, connecting is listless, even getting a transmit command to the two meter transceiver is S L O W. But remember, just two mouse clicks and I am connected; two commands later (SH/DX, SH/WWV) and I know what is going on in the world. Not bad for starters if speed is not the paramount issue.

SOME OF THOSE OTHER MODES

BAUDOT , PACTOR and AMTOR screens are cut from the same cloth. The BAUDOT (RTTY, thank you) screen comes up copying anything that is on the air, like the Packratt version of yore. Easy does it. Many users of the old DOS package will find themselves hitting the trusty F3, F4 keys for transmit/receive instead of the mouse. Worry not, that remains a politically correct method! There is a complete list of keystroke alternatives for those who find the mouse difficult. Here, time takes it toll. There is a serious lag between clicking TX and turning on the transceiver . . . a real lag! As Ed says, "It is too slow on CW and RTTY. One DX CW

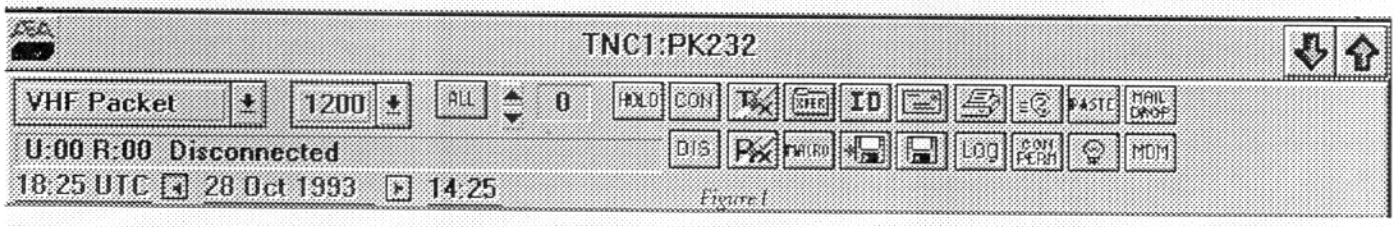

Figure I

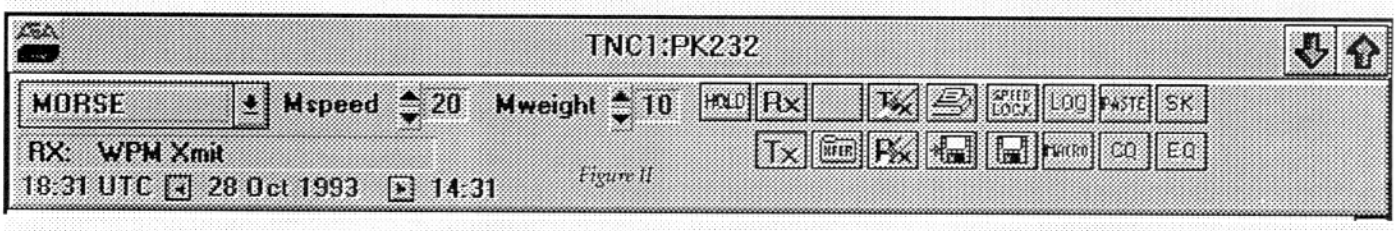

Figure II

station came back to me three times before I could fire off the 5NN TU to him."

The PACTOR and AMTOR screens toggle back and forth. The AMTOR screen has a PACTOR LISTEN button, PACTOR the ALIST. Click either and you have an immediate switch to the other mode. This is a great convenience as you patrol up and down the bands. Switching this way brings both modes up in LISTEN status as well, a fine feature. But if I switch from anywhere else, both modes open up in Standby mode. Don't ask why there is such an irritating design lapse. But we have reason to believe this will be changed in the updated version of PCPW.

Operation of AMTOR is straightforward . . . the FEC, ARQ and CQ buttons are easy to find and use. The ARQ button delivers an AMTOR Link Menu. Type in the call of the station calling CQ, click OK and your QSO is underway. Use familiar keystrokes like END for the turnover and Control D to terminate the conversation. Or, use the SK macro to terminate (more later). Remember to identify yourself regularly in this mode.

PACTOR, the new kid on the block, seems a bit strange the first time around. But it is also easy to master once the terminology sinks in. The screen comes up in standby mode. Someone can call you but no monitoring takes place. PACTOR LISTEN takes care of that. PACTOR CONN brings up the Connect Menu. Fill in a call sign (if someone is calling CQ, for example), click OK and off you go into your first QSO. CQ button sends a macro created during the installation process. Your callsign has been embedded by PCPW. Once linked, this mode is much like AMTOR. Use the END or Control Z key for the turnover and the SK macro or Control D for termination. Make certain you use the proper identification in either case.

CW (see Figure II) is much the same, but like RTTY defaults to the listen mode so there is no delay in copying the signal you heard. The TX/RX toggle, macros and file management are essentially the same as the other modes.

LOG

Each mode devotes one button to the Log. Click it and the screen shown in Figure III pops up. To some, particularly AB4PY, this is serious overkill. The details of the home station are excruciatingly complete and rarely used. Ed thinks it is a nice beginners log, but views the label/printing operation as seriously deficient. It is complete, but offers little utility. Bob raises issues with this portion of the program as well, pointing out that the Call box can take no more than nine characters. Try fitting N9NS/KH5K or UZ4FWD/UH8W in there. No way, unfortunately. He feels that at least twelve characters should be allowed and of course he is right. Ed also feels that the program should autosearch the log when a new callsign is entered. If worked before, the record should pop up on the screen as it does in most contest software. Good idea. We trust AES listens to that suggestion.

MACROS

Here's lies this program's major strength. Macros are amazingly easy to write and use. A little work in advance makes your QSO's easier, more informative and fun for both sides of the QSO. The basic task of creating CQ macros for each mode is automatic. Your role involves building the EQ (or brag sheet) macro and dozens of others that fit your particular situation. Create up to fifty of them for each TNC you use. They each can be 1024 characters long! Fifty words or so should handle about any subject except politics or religion.

Here's how to use the defaults: click Macro, click CQ PACTOR, click OK . . . and you are on the air. Nice! To create one, click Macro, then Add, name the macro, type it and it becomes a permanent part of your QSO artillery. Make brags sheets for something besides your shack, for heaven's sake. Try family, house, job, wife's job, kid's job, location, travels, DX lore, vacation, just as a start. Wind up being a better digital conversationalist. The bands need more of those. Hi!

Unfortunately, there are some caveats here. The speed with which macros load is "quite slow," according to Bob and "slow down the rate of transmission to 75 baud (apparently the loading speed)." And you can get into trouble as well. "If you try to type to the transmit buffer while the macro is loading, the characters are interspersed throughout the macro output." In other words, you send garbage. Further, NJ7H points out that only one macro can be loaded at a time. No daisy-chaining of macros, please. Each must load completely before the next can be selected. And if you don't wait you may terminate the macro program.

Ed enthuses about the macros and says that he uses them regularly now that he's learned how to embed Transmit, End and other host mode commands into the macro copy. He uses the keystrokes instead of the mouse, of course, since he is not a Windows veteran. I can tell. He

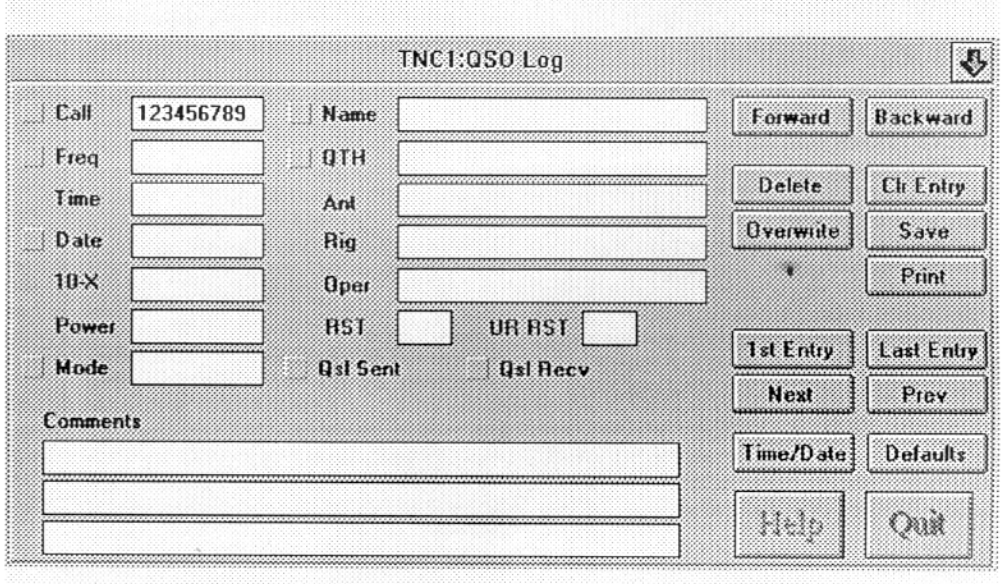

Figure III

noted that PCPW failed to create a PIF file on installation. Gotcha! Windows programs don't need or use PIF files. They are used only for DOS programs running under Windows.

The Quick Call Exchange idea is first rate and related to the macro family of tools. Point to the callsign and double click with the right mouse button. This good feature uses the rarely used power of the "other" button on the mouse. The PAGE DOWN key should then, in AMTOR for example, send both callsigns and the "+?" turnover. In BAUDOT, the same except the buffer contains the Control D command which switches from TX to RX, etc.. Try it, get used to picking up the callsigns, and make sure you have the keystrokes right. And remember to do it all over again when you begin the next QSO. This feature, while not up to the standards of rapid-fire contest software, serves the typical keyboarder very well indeed.

MANUAL

On a scale of 1 to 10, I would give this manual about a 7.0. Logically organized, the beginner would have little trouble tracking through most problems. The early pages on installation deserve a bit of praise for their clarity and simplicity. I do believe that most newcomers would (assuming they have the TNC and computer cabled correctly) have little difficulty with the installation process. And once that is accomplished, getting into the various modes is essentially a no-brainer since the default parameters will generally serve the new user very well.

The individual modes are given a light once-over but I find few if any basic questions unanswered as I look again at each chapter. Perhaps the more involved uses like Mailbox are less than perfect, but the primary aim here is to get the user into the right mode, then in command of the right keys and/or mouse clicks. And the manual does that despite the typos, occasional misinformation and the marginal humor. Not perfect, (I have never met one!), this is a serviceable tutorial aimed at the right target. But, how could they eliminate an Index? This is a serious omission and brings down the score for an otherwise successful effort.

WHERE DO WE STAND?

We begin at the beginning . . . and look once more at this program as an important, serious and interesting move into the Windows environment. An exciting concept, it nevertheless disappoints us. And I think I know why. Neither slowness, typos, buttons nor mistaken concepts let us down. Those are but the routine symptoms of a first-draft Windows program. No, it is the combination of platform and price that dismay us. When we pay this kind of money for a brand new Windows program these days we have come to expect semi-miracles. And demand the speed and power of the new spreadsheets, the overwhelming completeness of a Windows word processor, the graphic quality of drawing programs capable of creating masterpieces, the raw power of the new data bases and so on, and on. Then we sit at our keyboard and identify with the digital bond traders in Tom Wolfe's "Bonfire of the Vanities," who truly felt like they were "Masters of the Universe." Along comes a program with a certain dissonance, a level of achievement beneath our newly acquired talents and we feel dislocated, search for the magic, find none and jump to the conclusion that we made a mistake.

The basic truth, however, cannot be denied. PCPW works and works well in its own way. It is more than PC Packratt with nice graphics and a mouse. In fact, it meets virtually all of the needs of a large majority of digitally-capable hams. And that is no small achievement. The second truth is that it will improve the next time around. An update should come along soon and most of the annoying problems will be taken care of.

PCPW can't possibly satisfy the contester who needs speed and single minded power, nor satisfy the serious DX-er who must have quick on/off switching in order to make sense in the pile ups, nor even come close to serving the single mode devotee, the one who wishes to do everything possible with packet or any other mode. PCPW is not that kind of program, and never will be. But to those it targets, the average amateur who wants to do a little bit of everything from time to time . . . the one who takes no phase of the digital hobby too seriously, the product is a near perfect fit. We congratulate AEA on achieving a credible first step on the way up the ladder of software achievement, and look forward to an upgrade in the near future.

END NOTES

Thanks to Bob, Ed and Peter for their time and thoughtful comments. They widened the scope of this review, a benefit to those who might have an interest in acquiring PCPW.

Special thanks to those who made 1993 a remarkably better year than the last one. The absence of serious health problems in the household contributed a great deal, of course. But many of you made special efforts to ease the burdens of our new life style around this QTH, and we both are in your debt.

Next month, potpourri! Catchup time. See you in 1994. Have wonderful holidays and a happy and prosperous New Year.

73 de **Jim, N2HOS SK** ■

HARDWARE

Mike Candy, KI7FX
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Fairchild, WA 99011

Seasons Greetings everyone! From our home to yours, we hope you have a wonderful Holiday Season, and the happiest of New Years. As Nancy and I reflect on adventures of past years, we can't help but realize how fortunate we are to have so many good friends around the world. From Manila to Minot, our friends are our greatest treasures.

Here is a little "wallpaper" I found while browsing through one of the communications networks a few weeks ago, and it sure struck a chord with me. I hope you find it as humorous (and close to home) as I did. I don't know who the author is, but I thank him for this little gem:

TO ALL VISITORS

WHAT YOU ARE ABOUT TO WITNESS IS AN AMATEUR RADIO STATION, LICENSED AS BY THE FEDERAL COMMUNICATIONS COMMISSION. BEFORE YOU ASK QUESTIONS, CONSIDER THE FOLLOWING INFORMATION:

1. The total cost of this equipment cannot be discussed here as it creates marital conflicts.

2. No, I cannot send a message to your brother in Hong Kong, I suggest you call Western Union.

3. This is strictly a hobby; I do not have the facilities or the time to fix TV sets, Radios or Hi-Fi. I suggest that you see a serviceman.

4. Yes, the antenna in the backyard is essential to the operation of the equipment.

5. The farthest station we have contacted has been in the Ubangiland.

6. The cards on the wall are called QSL cards. They are confirmation

of contacts made with other stations.

7. Oh, No !!! Never does this station equipment interfere with Television reception.

FURTHERMORE

IF YOU ARE INVITED TO SPEAK INTO THE MICROPHONE, PLEASE OBSERVE THE FOLLOWING RULES:

1. Speak in a low and soothing tone.

2. Do not disagree with me in any manner.

3. Say no bad words and tell no off-color jokes.

DO NOT TOUCH ANYTHING, TURN ANY KNOBS, OR SIT ON THE EQUIPMENT. I HAVE LOST SEVERAL VISITORS BY ELECTROCUTION IN THE PAST FEW WEEKS.

* MAIL CALL *

Last week, I received a letter from John Brolley from Los Alamos, NM asking about some of the new forms of digital keying. You are right, John, there are quite a few changes in keying methods in recent years. Quadrature Phase Shift Keying (QPSK) and others are compression type transmissions commonly found in commercial applications at 9600 baud or better. Unfortunately, most of these transmissions are encrypted, so chances of decoding them are next to impossible. I have learned some interesting facts about Minimum Shift Keying (MSK) and others so I plan on doing an article in the next few months describing modern types of keying, so stay tuned!

I have received some interesting information on the KAM Plus over the last few weeks, and it's worth sharing. Omri Serlin (AA6TA) from Los Altos, CA writes "The stock KAM Plus has both HF and VHF watchdog timers ENABLED. This means that on RTTY or AMTOR/PACTOR FEC mode, the TNC will, unceremoniously and without warning, drop your PTT line after about 2.5 minutes of transmitting. If you are not prepared for it, this can be a very unsettling experience ("Ohmigosh! My-rig-is-on-the-fritz" type panic). In the KAM 5, the HF watchdog timer was disabled, so I wasn't aware of it's existence. The watchdog timers , each of which is actually a RC circuit and a diode in the PTT line, can be disabled by placing the (supplied) jumper wires across the capacitors". Thanks for the good info Omri, I found out about the watchdog timer the hard way too. Like you said, I thought something was wrong with my radio! The KAM Plus manual, page 53 talks about the timer and how to disable it.

In another packet message received from Barry Kutner (W2UP), he wonders what software I am using with the KAM Plus. Well, I have been somewhat loyal to HostMaster in the past, but that is changing quickly. I recently (a few days ago) started running KAGold Ver 8.08 from Interflex Systems. It is really looking good so far, and Ver 9 is to be released soon, which will have some MAJOR enhancements and features. I will let you know how it works out.

Yet another interesting tidbit I picked up from the local Packet BBS from WA6EHA states that "If you want to correct typing errors while in the PACTOR Mode when using the KAM Plus, it is necessary to be able to send the BACK-SPACE character over the air to the station you are in contact with. Kantronics says the KAM Plus doesn't allow this character (08 hex) to be sent". He goes on to say that after a little experimenting, that he found the Control-V and Control-H series of characters result in a BACK-SPACE being sent. I haven't tried this one yet, but it might be worth a try for fumble finger typists like me. Additionally, he states "I use a terminal program to communicate with the KAM Plus that allows me to define the Function Keys as macro's. All that is necessary is to define one of the Function Keys as Control-V Control-H". Sounds like a great idea to me!

A busy month has passed and it's time to take another look at some of the latest innovations in Amateur Radio hardware devices that make our hobby more enjoyable. I have been busy checking with Ham equipment manufacturers to try an bring you reviews on the latest and greatest in Amateur Digital HARDWARE. It seems like most of my writings have centered around Multi-Mode controllers, Packet controllers, andsimilar devices. I am hoping to venture out into Digital Signal Processors, new antenna designs, computer goodies, and maybe a little satellite information as well. Anyone interested in sending and receiving SSTV with a SoundBlaster card? As a RDJ reader, your input is the most important consideration on what we take a look at. A lot of readers want to see more hook-up type information on different devices, so I will plan on a few informative "get connected" articles in future columns.

This month, as promised I am going to take a look at AEA's PK-232 Multi-Mode controller. Yeah, I know, lot's of people have reviewed the PK-232, and a lot of you already own different models and variations of the great '232. It is my understanding that this controller is the most popular in the Ham community. Ask any Ham what kind of Multi-Mode

TNC to buy and he will almost always refer you to the PK-232. I can certainly understand it's popularity, as it's pretty much the "standard" in all Shacks. For some reason (which I can't explain) I have never owned a PK-232 so I was very interested in seeing what all the fuss was about. I have been using a Kantronics KAM for quite a few years and never understood the Ham's attraction to the PK-232. The KAM is smaller and can handle VHF/HF data at the same time. Once and for all, and if for no reason other than to satisfy my own curiosity, I am going to put this question to rest - Which is a better Multi-Mode TNC: The KAM Plus or the PK-232?

* KAM PLUS VS PK-232MBX *

First of all there is no fancy testing and evaluation equipment in my house, and I am not going to analyze the design and engineering of these TNC's. That has been done before and I gladly leave that to those more qualified. I just want to know which one receives better HF signals - weak signals and hard to copy signals. A pretty basic request, but a very important one. You know, the stuff that really matters when rare DX stations are pushing through the ionosphere or you are searching for just one more multiplier 40 hours into a contest. Most people I discussed this experiment with said the PK-232 would win, hands down over the KAM. The folks at Kantronics said the KAM Plus has new filtering and design features that do a great job at copying weak digital signals. Like I said, let's find out. For a "real" testing environment I tried two controlled situations. The first test used my "old reliable" Yaesu FT-747 with the "N7CR Digital Filter" modification and MS-Windows running two "windows terminal" programs side by side at the same time, using two high speed comm ports - Com 3 and Com 4. Audio was split at the 747 by a "Y" connector to feed each TNC exactly the same audio level. Both TNC's are factory stock and no modifications to either device had been attempted. I know about the PK-232's RTTY mod which is supposed to make it more sensitive, but for this test, neither case had been opened.

With the Windows Terminal setup, you can see how each TNC is performing in a real time with signals of various intensity levels. This test checked both TNC's by entering the "command" mode and dropping into the various digital modes, RTTY, AMTOR and PACTOR. I feel this is a simple and fair way to compare the two devices on an equal level. My second series of tests were conducted using each of the respective TNC's "recommended" software packages - PC Pakratt for Windows on the PK-232 and HostMaster II+ for the KAM Plus. For this test, I used two computers, once again similarly equipped with high speed comm ports. I knew this test wasn't important for evaluating the actual hardware performance, but I wanted to give each TNC the best possible software configuration and advantage I could come up with.

* PAKRATT AND HOST-MASTER *

It's a good thing this isn't a software review or there would be a definite winner in this competition - PC Pakratt for Windows is an outstanding product for AEA's line of data controllers. I have used HostMaster II+ for the KAM for quite a few years and started up PC Pakratt for this test. Although HostMaster II+ is a good program for the KAM, PC Pakratt for Windows is the hands down winner. It's use of the familiar Windows point and click environment makes setup and mode changes FAST! Change from AMTOR to RTTY in a single mouse click. As you know, I am not crazy about MS-Windows, but in a Ham environment where the action is on the radio and not the computer, Windows really shines and PC Pakratt for Windows takes full advantage of it. Very nice software from AEA, and I highly recommend Pakratt for Windows if you are using the PK-232 - It makes operating much easier!

During the initial testing of the two TNC's I found the KAM to be decoding weak, fluttery signals a little better than the PK-232. This seemed to be contrary to what everyone was expecting, so I continued testing. After hours and hours of monitoring signals from all around

the world, I came up with this final conclusion: There is no noticeable difference in the two TNC's! Is this a disappointment, or what? I was sure that one of the controllers would come out at least a little better than the other, but there was no way I could get one to work better. As I mentioned, both TNC's were stock, from the manufacturer without any modification, although the PK-232 has a factory "approved" mod to enhance it's weak signal receive ability. I don't how well this mod works, so I can't really do more than mention it at this point. It looks like it's down to a software competition at this point, I'm afraid.

I am not disappointed in the performance of the PK-232. On the contrary, I was quite impressed with it and it performed well in this test. It's a truly first class piece of equipment that is worthy of it's position as the all mode "controller of choice" by most Hams. With new features like PACTOR and a PACTOR mail drop, a new packet enhancement for Meteor Scatter and others, it's a good choice for a TNC. A new feature that checks for framing errors in received Baudot and ASCII modes (RFRAME) to reduce garbage characters when no signal \is present is nice. My hat is off, once again to the excellent documentation that is included with the PK-232. It is one of the most organized and concise manuals around. Their use of the 3-ring binder is something I wish more manufacturers would consider - making page changes, updates, or adding notes a breeze.

Many thanks to AEA for providing me with this PK-232 to experiment with. I wish I could say once and for all that the PK or the KAM is better for receiving weak digital DX, but I just can't notice any difference. Each controller worked as well as the other, under varying conditions. If I were to compare features of the controllers, it would be a whole different story. Everyone has their own wants and needs in a multi-mode controller and the PK-232 and KAM Plus each has its own unique and outstanding features. On a scale of one to ten, I give the KAM Plus a seven. The multi-port (VHF/HF simultaneously) is a big plus in my book, but their lack of a good multi-taskable, Windows aware, modern software package is disappointing. The PK-232 also gets a seven. It has two ports, but only one at a time can be used. What I like most about the PK-232 is Pakratt for Windows. I really believe that software will make or break the hardware of the future and AEA has recognized this trend.

I wish I could pronounce a clear winner in this competition, but I can't. Both TNC's have similar features and functions, and both offer free or low cost firmware upgrades. If you cannot decide which feature you need, or which is better, I recommend you seriously consider buying from a manufacturer who you feel is keeping with the times. One who is in touch with the digital community, who is supportive of our needs and who supports our endeavors - Check the advertising pages of the RDJ and then decide.

Well, that wraps up another month of HARDWARE discussion from the Great Northwest. Please, drop me a line and say hello. I am always available on the Think Tank II BBS at (509) 244-3511. I hope you get your wish for Christmas, I already have mine (N7VQJ). Best wishes, and please drive carefully this holiday season! 73 and Ho-Ho-Ho for now.

de **Mike, KI7FX** ■

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Packet: KI7FX@WB7NNF.WA.USA.NA

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PACTOR

Phil Sussman, KB8LUJ
P.O. BOX 31
Clayton, OH 45315

*** CONNECTED: KB8LUJ

Greetings from the Great State of Ohio and welcome to the 1993 holiday column of PACTOR. Once again there was mail in the box. Thanks to Bob, AA4PB; Peter, DL6MAA; Ian, G4EAN; Joel, KK4DB; Jose, PJ2MI; Ken, N4SO; and Joe, W3/G3ZCZ for your contributions. Updated arrivals for review (update) include BMK-MULTY (3.0), PacTerm (1.01), and AEA FAX II (1-JUL-93). Look for the future reviews. Peter, DL6MAA, provided a response to my last letter concerning operational bandwidth of CLOVER, PACTOR, and PACKET RADIO (PR). He makes three points:

1. BANDWIDTH - A properly modulated PR signal occupies about 700Hz (-15db) whereas a PACTOR signal is about 500Hz. The difference is not very large, but the problem is that a PR signal does NOT fit into a 500Hz filter, leading to some deterioration of the Bit Error Rate (BER) if a 500Hz filter is used. Use of modern transmission schemes, like CLOVER or PACTOR 2, where AFSK and SSB are employed, are going to require a degree of experimentation to achieve superior results. The ability to use a 500Hz filter in SSB is preferable, but other possibilities exist. Adjusting the proper receiving tone by use of IF-SHIFT is one idea.

2. PR DRAWBACKS - The problem of PR is not really the bandwidth, but the extreme waste of channel capacity. (enormous number of retries on HF) Just look at the PR range and see all the requests and retries. Here are some noted limitations of PR:

a. Very high multi-user overhead due to 'multi-user/single channel' property of PR.

b. No full synchronism, therefore a long header must be transmitted. (This header often becomes corrupted and loses bit phase timing)

c. The 300 baud symbol rate is often too high for shortwave channels due to multipath. Without adaptivity, error control coding, or Memory ARQ, reconstruction is impossible.

d. The hidden transmitter problem (ALOHA effect) is very severe on shortwave resulting in many packet collisions.

3. FREQUENCY DISPLAY - Certainly there is confusion with transciever readouts. On one hand, normal HAM operation does not require an ABSOLUTE frequency readout since OPs tune into a CQ or another RX signal (being monitored) with the tuning display of the data controller (TNC).

On the other hand, licensed people ought to be capable of the basic mathematics needed to calculate the correct frequency readout, if absolute frequencies are required. It's a one time job, since box and sked frequencies are not changed frequently. They can be stored in the memory of most transcievers or written down on a chart.

PACTOR FUTURE

We pause this month to look back over last year and forward to the next. In the last 12 months use of PACTOR has been ever increasing. It is the fastest growing digital mode.

Digital modes are in their infancy and other developments will soon explode into reality. Looking forward to 1994, we'll witness the introduction of PACTOR-2. Other modes, such as CLOVER, will be moving more data, faster, and with greater reliability.

We ought not become entrenched in one mode, lest we be blinded by the future. Rather we should seek to explore, to enhance, to expand, to grow, and to develop. Let each mode stand by its own abilities and liabilities.

I see PACTOR as a 'ham friendly' QSO keyboard mode. Will there be a new worldwide standard in CLOVER and/or PACTOR-II? No, I don't think so, at least not in the near future. Future trends will probably be dictated by popularity. If a new mode works well and is readily available at a modest price, from a variety of sources, more people will buy and use it.

But we don't need to throw out our TNC's every time a new mode is introduced. Just as CW was not destroyed by the introduction of AM or SSB, so too will BAUDOT remain, even facing competition from CLOVER, PACTOR, or some new mode yet to be introduced. Even PACKET RADIO (PR) may linger a while on HF. Each mode has its following and will stand by its own abilities. We all also have preferences about individual equipment. So, rather we should recognize nothing is constant except change.

In the future, I see faster transfer of Binary files, FAX's and pictures. The direct or indirect transfer of Digital voice or digital voice files will gain in popularity; however, I believe the prohibition of transmitting music (in most any other form) will continue. Frequency availability will be a sore point, but groups like ADRS will challenge us to create solutions. One of the first will be standardization of digital frequency specifications. Another will be an update (overhaul?) of the "Gentleman's Agreement" bandplan.

We shortly expect the introduction of PACTOR-II. Digital is the leading edge of technology, and we ought not be afraid of change. Rather we should see where that avenue leads us. As computers and amateur radio continue to merge together, other improvements will arise. We are leaving the dark ages of communications and entering into a new era. PACTOR and CLOVER are currently leading the way. No doubt about it, an exciting future lies ahead!

MORE BANDWIDTH

Some digital operators still have not received the message. Here's a replay:

* PACTOR signals are normally about 500 Hz wide. A PACTOR signal that is 2 KHz wide is being OVERDRIVEN. This is usually caused by using the wrong tones on AFSK, overdriving the LSB transmitter, limiting into the ALC, or overdriving a linear amplifier.

* You do NOT need to run 100 percent/full power to communicate on PACTOR. Normally 50 to 100 watts is all that's necessary.

* When setting up PACTOR operation, please carefully consider your signal.

* A 'cleaner' signal passes data faster than an overdriven one.

When you encounter a very broad PACTOR signal, please let the other operator know about it. There's no reason to be nasty or rude. Chances are they're not aware of the problem, and if you remain silent it will only continue. You can be diplomatic, showing courtesy and respect, and accomplish a lot.

DIGITAL
THE GREAT EQUALIZER

I'd like to share a thought with you that was recently passed along to me. "Digital radio is non-discriminatory. There are no prejudicial barriers in calling CQ, and no foreign accents in answering. We all misspell alike. This is a hobby of universal equality. Rich or poor, your signal is just as important. If you copy the print, who cares?" (Name withheld by request)

As the aromas of the season fill the shack, it may be hard to stay near the rig. So we'll excuse you until next month when we'll have some hints about building a PACTOR station and try to delve into ham-shack/PACTOR related software. Meanwhile, try to keep the food and drink away from the keyboard. HI!

During this holiday season I wish you all good health and happiness. Thanks to you, our loyal readers, who make this column so popular. Please keep those messages and comments headed this way. Your continued help is needed and appreciated.

Also, thanks for sharing your time with me. Until next time.

de Phil - KB8LUJ.

May God Bless you and yours. Link d-o-w-n..

*** DISCONNECTED: KB8LUJ

Sid May, G4CTQ, Moves Again

Sid May now ET3SID, writes from Addis Abeba, Ethiopia to share with us his latest picture and an update on Hamdom in Eithopia. Sid says there are 20 licensed Hams in the country but none are Eithopian. Sid and friends hope to change this and are preparing to teach and train operators in Morse code. He and friends have formed the Eithiopian Amateur Radio Society and are looking for help in the form of pamplets, brochures, and books related to Ham radio. Even posters can be used. If you can help with his request, Sid's job will be a lot easier.

Sid is one of the RDJ's quiet subscribers. Surfacing off and on from some new place on this planet of ours. Always an avid *Digital* person, you will find him on the bands operating CW, RTTY and AMTOR.

Maybe one of these days Sid will write a nice story on his many travels over the years. Although the material he has gathered over the years will no doubt fill a book, maybe just a glimpse will make for interesting reading. How about it Sid?

QTH: P.O. BOX 60229, Addis Abeba, Ethiopia

LOOKING BACK

22 +/- Years ago in RDJ

- ST-6 Demodulator described by Irv Hoff, W6FFC, is a best seller. Dusty orders a reprint.
- Editor Dusty Dunn, W8CQ, petitions ARRL to issue DXCC awards for RTTY. The Communications Manager declines.
- FG7XT pulls ahead of ON4BX with 110/102. ON4BX has 108/98. WB6RXM still at 44/34.
- Dusty has a 3-speed Model 28 but the FCC has not yet acted to permit speeds greater than 60 WPM.
- Arthur Blave, ON4BX, is awarded DXCC plaque Nr. 1. FG7XT has not sent cards to the DX Editor.
- I1KG wins first SARTG RTTY Contest. CR6CA places second. WB6RXM places 47th.
- Frank Greene, K5IQL, discusses evolution of AFSK and describes Twin-T oscillator for that purpose
- Bill Craig, WB4FPK, describes crystal-controlled AFSK generator.
- Article reviews Freeman Lang, KH6AX, and his 76 years of radio by land and by sea, his show business career and his unusual QSL cards.

Next time - 21 years back
Thanks again to Carl, K6WZ/0 for providing this material.

CLOVER

Jay Townsend, WS7I
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Spokane, WA 99210

Seasons have once again changed and with this should come a renewal of activity and projects in the digital arena. Now is the time to dig out your soldering iron and finish up one of those projects that you have been putting off or turn on the trusty computer and start typing a new program or try some new software.

D'MailBag

This month was again rather light. Guess those of you doing Clover are in pretty good shape. Ken, N4SO, sent in a couple of questions and Rory, N7CR, who is once again in the Pacific Northwest and off the ship is working hard on some interesting projects. You should be reading about some of them here in the RDJ very soon.

Tip of the Month

This Clover tip comes from the pen of K4CJX, Steve, who needs no further introduction to Clover users. Steve, scribbled, on a notepad the following tip. Steve thinks part of the problem with Clover is filtering and notes that with Kenwood 850 and 950 transceivers you can program into each memory for AFSK and LSB and regulate the Slope Tuning on the 2.4 Khz filter thru the Kenwood Command Set for RS-232 control. He notes that this can limit the band width of the filtering on the Kenwood 850 and 950's to around 750 Hz, which he thinks is ideal!

Nashville

November brought the end of autumn here on the left coast and I traveled to the home of country music and the ADRS meeting in Nashville, Tennessee. There will be a complete report on that meeting at a later date, but a couple of interesting things happened that I need to write about.

At the Dayton Hamvention the ADRS will have some additional activities at the Raddison Hotel on Friday. I have been asked to construct a program and have begun doing this. What seems to be forming up is about seven separate seminars covering everything from beginning to Amtor, Pactor, and on into some technology areas. What we have in mind is a three tier approach. These three forums will be Learning --Operating -- Technology. These are tenatively scheduled for Friday 9 to Noon and 1 PM to 5 o'clock. If you have some suggestions for these please drop me a note. I have already begun the arm twisting that is necessary to line up some fun people. These programs are likely to be about 45 minutes of each hour with a short break after each session.

AA4RE

Haven't gotten any further along with this project. I need to make a bunch of changes and frankly just haven't had time in the last month to do so. If anyone out there is running 4RE on CLOVER I would like to hear from you. My attempts to E-Mail (electronic mail) the author haven't been too successful. As I am now on the internet I find a certain amount of things bounce as not deliverable. Probably I am still a rookie at it. Sigh.

Projects

This month I hooked a bunch of my stuff back in line and finally have the KAM back working. Still waiting for an EPROM upgrade that has never arrived and I guess won't. I have a UDC-232 from AEA that is about ready to get hooked up with one of my old TU (terminal units) and ready for contest season. The major project is that I got a CD-ROM for the Packetcluster which now has three nodes here in Spokane and a total of five in the Intermountain North West. We are going to be running the BuckMaster Callbook on line and I have also decided to hook up Desqview and Qemm along with changing the computer to a 386 with 6 Megs of memory.

Installed DOS 6.2 and it works like a dream. This is the first version of DOS in quite a while that appears to be totally bug free and I am running Doubledisk and all the features. The old 40 MB computer turned into 80 and everything is working well. By the way, I hear that 6.2 was named for the amount of hard disk space that it seems to take up -- 6.2 MB. Hopefully, what I am going to do is run G8BPQ code and run the Packetcluster with a call book server and at the same time a W0RLI BBS running CLOVER and also interfaced to the Packetcluster.

Ramblings

As 1993 comes to a close I think we all have a lot to be thankful for this year. As I was pondering this column which will probably be my last regular column for a while as I move into 1994 some new challenges will be before me. Just the program and planning for Dayton is going to be a challenge.

I think one of the highlights for the Digital World was the formation of ADRS and I will continue to represent certain old time fundamental views to that group. Send me your comments and I will make them heard.

What will the future of Digital communications in amateur radio hold for us? I read a lot of sources of information these days and one was a discussion of this topic. After reading some of the things that are happening in the Express world with CLOVER and getting some of the insight from Phil Sussman on Pactor I too can only wonder.

I am sure that we will see the arrival of full digital transceivers in the next few years and that will change the world of HF for a long time to come. In the RTTY arena we have an interesting thing going on. While RTTY Qsos are not nearly as popular as they once were. RTTY DXing and RTTY contesting are two of the fastest growing interest groups.

Each contest that we have is becoming more and more popular. The "old timers" of contesting and Dxing are streaming into the digital world. We will have a Digital Honor roll by the ARRL in 1994 without a doubt. My prediction is for another new digital contest in 1994 and another real big contest for early 1995. Already plans have been in motion for the first.

In conversations with some of the CLOVER experts I can only think of what a 2.5 KHZ CLOVER signal on 2 meter SSB would be like. Heck, Rory, N7CR, and I are going to experiment with it in the next month or two. We will use the 500 Hz signal that we now have, but the real fun would be a wider signal for some real data exchange. Already DSP techniques we are currently learning can help out in the noisy environment.

1993 Products of the Year

One of the fun things about doing these columns is that you get to express your opinion on a number of things. I am going to go out on a limb and make four selections; two for hardware and two for software. Software product of 1993 in the software catagory is pcPAKRATT for Windows by A.E.A. and Express 2.0 by TY1PS. For hardware I am picking the DRSI DPK-9600 and the Kantronics KPC3. As an independent columnist I could make picks like this in the past, but you the reader should know that I haven't tried quite as many products this last year. I do feel that there is a lot of exceptional software out there these days and look forward to the reviews in the RDJ.

Happy Holidays from the "Left Coast" to each of you and hope to see you in the pileups and in the contests in the coming year. I hope that you will continue to send me your views on various digital matters and that I can express your thoughts to others.

I can be reached via Internet: jayt@comtch.iea.com, I am on Compuserve: 73543,2541 and at MciMail: jtownsend 596-3458. Or you can phone 509.534.4822 (but I am grouchy !)

73, de Jay, Ws7i ■

PacComm's PacTOR Controller

- Licensed from the German inventors.
- PACTOR, AMTOR, and RTTY modes, Packet option
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- Terminal programs included
- VHF packet card may easily be added internally at low cost
- One year warranty, 30 day return privelege.

PacComm's PacTOR Controller, Front View

See the reviews of PacComm's PacTOR Controller:
January 1993 issue of **QST**, and February 1993 issue of **Ham Radio Today** (UK).
Call or write PacComm for a reprint of these articles.

Why Can't It All Be Done In Software?

One of the key features of the PACTOR mode is Memory-ARQ. Copies of corrupted frames are saved and correlated with frames received later.

The key to proper Memory-ARQ operation is an analog to digital converter (ADC)- an item of hardware.

The ADC converts the actual strength of each received bit into an 8 bit value which is stored in memory for later comparison. Thus each bit can have an exact representation of its received value. If Memory-ARQ is attempted without the ADC, the value of each bit must be rounded down to a zero or up to a one and the 'marginal value' of the signal is lost.

Beware of cheap 'software only' PACTOR implementations. They are NOT recommended by the German inventors of PACTOR. Most anyone's implementation of PACTOR will work fine under good conditions. When the QRM is tough and the band is fading, the PacComm PACTOR will continue to decode signals too weak to hear.

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DX NEWS

Jules Freundlich, W2JGR
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Holiday Greetings to All.
'Tis the Season to be Merry. Make your New Year's Resolutions now. Here are mine. What are yours?

- I will not call the DX station endlessly.
- I will make short frequent calls to the DX station.
- I will listen between my calls to see to whom he comes back.
- I will be sensitive to his mode of operation, giving only his report, unless his style indicates he wants more.
- I will not call the DX station until he says CQ, SK or QRZ.
- I will put out a rare DX spot, as soon as I work the station.
- I will not try to steal a QSO, in progress, by overriding.
- I will not jam burst type emissions in the RTTY frequency slot.
- I will not jam any emissions.
- I will not respond to any station that sends more than half a dozen RYs, except if he is a rare DX station trying to clear the frequency of an unruly horde.
- I will not call CQ DX on a busy band.
- I will only call CQ DX on a band that seems dead.
- I will answer all direct QSLs direct.
- I will answer all Bureau received QSLS via the Bureau.
- I will not transmit RYs unless requested to do so by the station with whom I am in contact.
- I will at all times operate my station as a gentleman.
- I will always respect the rights of my fellow amateurs.
- I will not acknowledge, nor answer, anonymous mail.

If you should see me break any of the above resolutions, in 1994, you will understand that I, too, am no more perfect than you are.

During November, a milestone was reached. The DX Advisory Committee (DXAC) voted to establish a DXCC Digital Honor Roll. When ratified by the ARRL Awards Committee, it becomes part of the DX Century Club Rules.

Next year, at the Dayton RTTY (Digital?) dinner, Bill Henry, K9GWT, will be able to add to his Amateur Radio Teletype History: "December 1993 (or January 1994) - 17 years after adding RTTY to the DXCC, and 7 years after offering DXCC RTTY endorsements, the ARRL finally established a DXCC Digital Honor Roll."

Thanks to the members of the DXAC for their support. When the question stood on its own feet, unencumbered by being tied to other questions, logic and reason prevailed. And thanks to all you out there in RTTY-land who wrote letters of support. Congratulations to Gin, JA1ACB for being the first, to Luciano, I5FLN, and to the others following close behind. I look forward to seeing the first published listing.

MOST WANTED COUNTRIES ON RTTY

The subject of the Most Wanted Countries on RTTY has always been one of interest to digital DXers. It has been several years since the RDJ conducted its last RTTY survey. The years 1992 and 1993 changed our NEED priorities rather dramatically. Now thanks to Chod Harris, VP2ML/WB2CHO, there is some recent data of interest.

In his Most Wanted Countries survey, taken last August, and published in the November/December issue of The DX Bulletin, Chod included a check-off for RTTYers. He received only 26 responses, but has been good enough to provide the RDJ with his analysis of those. See sidebar.

I do not have the detailed RTTY listing but he does explain the standings, particularly in relation to the CW and SSB modes. One thing surprises me...and that is that Peter I is not tied for RTTY first place. It is my understanding that only about 30 RTTY contacts were made from Peter I during the Norwegian expedition. Surely then, the limited sample of 26 respondents was not large enough to be representaive of the overall need for Peter I. Chod notes that the RTTY operation from Nepal, 9N, and Burundi, 9U, by the DJ6SI team (DJ6JC) "should have taken the edge off RTTY demand." However, conditions, both natural and man made, during both those operations were so poor, that I am sure a new expedition to either place would draw much attention. While the inability of 9G1AA to operate RTTY disappointed all of us, the operation of Randy, K0EU as 9G1XA in August/September, certainly has diminished the need for Ghana. As limited as the results are, they do highlight those places needing dedicated RTTY operations for enabling more of the deserving to achieve Honor Roll level. The RDJ is indebted to Chod for the analysis of his survey. The RDJ will be taking its own survey of its subscribers early next year. To faciliate this, Chod has kindly offered to provide the RDJ with his Scantron forms.

DX DOINGS

ARUBA, P4 - P4/W1EKT will be the callsign of a mini-dxpedition to the island 10-17 January 1994. The operators will be Mike, NW1J, Jim, W1HL, and Bob, AA1M. they will operate all bands 160-6 meters RTTY/CW/SSB and maybe Packet. QSL to Bob Reiser AA1M, 6 Sevin St., Burlington, MA 01803.

BALEARIC ISLANDS, EA6 - Considering its size, this little country has a goodly representation in the digital mode. You can usually find one or more of the following on 15 or 20 meters bewteen 1400 and 1900Z: EA6MQ, EA6NB, EA6PZ, EA6QK, EA6VS, and EA6VU.

BANGLADESH, S2 - John, PA3BTQ, who operated from XU-land last year, is now operating as S21SAE. His main modes are CW, and PACTOR/AMTOR. If conditions are good enough he will QSY to SSB. Listen for his CW on either 14015 or 21015 khz. around 1000Z. His SSB frequencies are 14315 and 21315 khz. If operating PACTOR/AMTOR he may be found on 14065/090 or 21065/090, between 1200 and 1330Z. John's rig consists of a Kenwood TS-50/AT with mo-

bile whip, multiband dipole and a monoband 15 meter quad. John's job takes him all over the countryside, so most of the time he will be /P or /M. It is expected most of his activity will be in the "digital" modes. QSL to PA0EQ.

BELIZE, V3 - I don't know if Glenn, AE0Q and Leo, WN0B have recruited anyone to join them in their 17-27 March 1994 trip for hamming and skin diving. If you have a yen for a little mild adventure, phone Glenn at (303) 986 6379, or send him a packet message addressed to AE0Q @ W0LJF.#NECO.CO.USA.NA.

BENIN, TY - Peter, TY1PS has pretty much filled the need from here on RTTY. He is mostly active these days on CLOVER, but will sometimes jump in on RTTY to wake up a quiet band. Peter asked me to pass along the following regarding return postage for Benin QSLs.

"In spite of all discussions (up to the Director of the Postal Services) the Benin PTT is not willing to accept the new 'airmail' IRC's at a higher value than the old ones. They exchange them to stamps in the value of 200CFA (65 CTS). Please advise to either find the old models, or use green stamps. Thank you. 73 Peter TY1PS".

Those of you with PACTOR and/or AMTOR, take note. There are two German hams from the Tropical Institute in Hamburg, temporarily assigned to Benin, (see GUINEA, below) who work PACTOR and AMTOR, often, in addition to occasional RTTY. They are Thomas, TY1TK, and Heiner TY1HS. They have a FT-747, a FT-890, a R7 Vertical, and a 3 element tribander. You can set up a schedule with them by sending a message via the mailbox of ZS5S or 9X5LJ. (ZS5S can accept traffic in AMTOR, CLOVER, PACTOR or Packet.)

CENTRAL AFRICAN REPUBLIC, TL - TL8NG may be found on 20 meters around 2000Z. QSL to WA1ECA.

CHAD, TT - TT8OBO is not being accepted at this time, by the DXCC desk, pending receipt of proper documentation. Steve, K0SR, after receiving a 10 meter credit for him last spring, found out, after two inquiries, that the credit had been removed without explanation. Steve said "It would be nice if the DXCC desk would let one know when they retroactively remove credit like that. Let's hope he gets his papers in order, and the DXCC desk gets their act together." If you previously had TT8OBO credited to your DXCC tally, it has probably been deleted from your total. If you have not yet worked TT8OBO, listen on 15 meters around 0930Z, or on 20 meters around 1950Z. QSL via WA4OBO.

CROZET, FT4 - Christian, FT4WD, did a minimum amount of RTTY before he left Crozet at the end of November. The ship that picked him up was to drop off another ham, either at Kergulen or Amsterdam and St. Paul. The newcomer was said to be scheduled to stay on assignment for a year. As we write this at the beginning of December, further details are lacking. Keep an eye on the weekly VK2SG RTTY DX Notes for breaking information.

FALKLAND ISLANDS, VP8 - Stephen, VP8CIL, and Bob, VP8BFH can often be found early in the UTC day, around 0033Z on 20 meters. QSL VP8CIL to P.O. Box 160, Stanley, Falkland Islands, and VP8BFH to WA3ZKZ.

GABON, TR - If you still need Gabon, TR8MD still shows up on 20 meters btween 1100-1700Z. QSL to F6FNU.

GUINEA, 3X - Sometime early in 1994, the two German hams, currently active in Benin (see above) as TY1TK and TY1HS, will arrive in Guinea on a two year medical assignment. Their exact time of arrival is not yet certain. Keep an eye on the weekly VK2SG RTTY DX Notes for new information.

IRAN, 9D - 9D2UU came up on 20 meters around 1200Z late in November, and was worked, at least, by some on the East coast. His legitimacy, and length of stay, are not known as of this writing. If you are lucky enough to snatch this one, QSL to LZ2UU, Jordan Radkov Yankov, Box 196, 7200 Razgrad, Bulgaria..

IRAQ, YI - YI1AZ continues to be active on 20 meters after about 0915Z. QSL to P.O. Box 55195, 12001 Baghdad.

MOUNT ATHOS, SV/A - We hear rumors that some members of the DXAC would like to eliminate Mount Athos as a DXCC country, because of the stand that Monk Apollo, SV2ASP/A has taken vis-a-vis the disputed operation of Baldur, DJ6SI.

It seems to me that Monk Apollo's stand has a hollow ring because, in fact, he has been operating, although sporadically, on RTTY, since last fall. It is true he has

The Most Wanted Countries on RTTY

by Chod Harris VP2ML/WB2CHO

In connection with its annual Most Wanted Countries survey, The DX Bulletin included a check-off for those DXers who were specifically interested in DXing on RTTY. The number of DXers who responded was small (26), but there is a sufficiently large smaple to yield meaningful results.

There were six countries that all respondents needed on RTTY: Libya, 5A, Heard Island, VK0, Yemen, 4W, Mount Athos, SV/A, Congo, TN, and Kerguelen, FT/X. The first five are in the top 20 Most Wanted in the overall survey, but Kerguelen ranks 32nd overall, while being tied for the #1 position on RTTY. Next time a French ham is stationed on Kerguelen, he should take RTTY gear.

The next Most Wanted countires qwere Bhutan, A5, Burundi, 9U, Nepal, 9N, and Ghana, 9G. Bhutan is #2on the main survey, and is in obvious demand on all modes, including RTTY. Interesting enough, all three of the others have been on RTTY since the survey was taken in August. Baldur, DJ6SI and company's operations from Nepal and Burundi should have taken the edge off RTTY demand for those countries, and the change in attitude towards amateur radio in Ghana cannot help but lead to a eventual such decline in 9G. Ghana would have been ranked in less demand on this survey had the RTTY gear on the 9G1AA operation worked successfully.

Those countries next Most Wanted on RTTY are Peter I Island, 3Y, Kermadec, ZL8, Andamans, VU4, Tromelin, FR/t, Macquarie Islkand, VK0, Croxet, FT/W, and St. Peter ansd Paul Rocks, PY0S. The first six are also Most Wanted on the other modes, with a major Peter I Island operation set for the first two weeks of February. St. Peter and Paul Rocks, arein far greater demand on RTTY than on the other modes; maybe RTTYers can help out with the upcoming DXpedition to this isolated spot, currently set for Spring 1994.

The next group of RTTY Most Wanted countries includes Tunisia, 3V, Auckland, ZL9, Afghanistan, YA, and Guinea, 3X. Of these, all are Most Wanted on the otheer modes except 3X, and 3X0DEX did a fine job working RTTY DXers after the survey was conducted. Guinea will be much lower in future surveys. Some other countries that are in comparatively greater need on RTTY than on other modes include: Cocos Island, TI9, Central Kiribati T31, Qatar, A7, Bahrain, A9, Rwanda, 9X, Trindade, PY0T, Minami Toroshima, JD1, Tokelau, ZK3, and Jan Mayen JX. The flip side of this listing is a list of those countries that are ranked significantly lower on the RTTY Most Wanted list than on the overall list: SMOM, 1A0KM, Juan de Nova, FR/J, Glorioso, FR/G, and Benin TY. No respondent needed TY on RTTY, thanks to TY1PS, no doubt. However, non-RTTYers wish Peter would get on the other modes; Benin ranked 55th on the overall survey!

not made himself available on a world-wide basis, but the fact remains, he has operated. Last August, SV2ASP/A was operated by Minoru, JA3MNP, with Apollo present. On 31 August, Luciano, I5FLN had a RTTY QSO with Apollo, on 15 meters. Since then Minoru has also had a QSO with him. Nikos, SV2WT has been observed having several QSOs.

Luciano has confirmed that Apollo is still busy building a new monastery on the top of the hill, where he will have a laboratory and shack for himself alone. A big expedition with an international team to celebrate the new monastery and the new radio station is planned for April 1994.

It would seem, that any action to disqualify Monk Apollo from enjoying DXCC status, because of his disagreement with a DXAC decision regarding the legitimacy of a third party's license, would not be in the best interests of the DXCC program. After all, SV2ASP/A is recognized as being legitimately licensed by a sovereign entity, and if he does not violate the rules of his licensing authority, nor accepted values of conduct on the air, he should not be disqualified from the DXCC. And certainly, personal disputes should have no bearing on the DXCC status of any DXCC country. I hope that those who might be considering negative action against SV2ASP/A, and/or the country of Mount Athos, give it a second thought.

PETER I Island, 3Y - The upcoming February 1994 DX'pedition to this Antarctic island is moving along on schedule. The callsign will be 3Y0PI. On the 18th of November 6000 pounds of gear were air-freighted from Miami to Montevideo, Uruguay, and arrived safely the next day. A few days later, Bob, N4GCK, one of the team, flew to Montevideo to oversee the transfer to the ship, to make sure everything went aboard. The first shipment, consisting of 3500 pounds of supplies and equipment, had been loaded on the ship at Bremerhaven, Germany during October.

Earlier in the month, a false rumor was circulated, on the air, which stated that the team had established certain rules regarding multiple band/mode contacts, and the use of portable station designators. Ralph, K0IR, the team leader, verified to me that these statements were completely false, and no such rules were ever contemplated. Arrival on the island is still scheduled for 1 February 1994 with a departure planned for 16 February.

ST. PETER & ST. PAUL ROCKS, PY0 - Karl Leite, PS7KM, who led a previous expedition to this place in 1989, as well as to the other Brazilian islands of Trindade in 1988, and Fernando de Noronha in 1987, will again head a group, in early 1994, to activiate this lonely crag in the South Atlantic, for three weeks.

Calls will be PS7SK and PS7SP, and will include RTTY/CW/SSB, Packet, and Satellite. The prior RTTY attempt in 1989 met with limited success due to an accident which resulted in personal injury.

PS7KM will be QSL Manager for RTTY. Contributions are needed to help defray the cost, which is estimated to be $4000. Send your support by registered airmail to Natal DX Group, Caixa Postal 385, 59001-970 Natal, RN, Brazil.

SOUTH GEORGIA, VP8 - RTTY operation from South Georgia is not apt to occur in the near future. Keith, VK8CKB advised me that they do not have a dedicated ham rig, and must use the base's station, which is their only connection with the outside world. It seems that last year, the RTTY operation overstressed that rig's power amplifier, and shut them down completely. They had no Telex facility for a few weeks. With conditions the way they are, it is not feasible to operate QRP RTTY. Keith will be leaving South Georgia in April, so it does not seem practical to try to obtain a dedicated rig for him in the limited time left. Also, his research on the fur seals will keep him pretty busy, as the first seal pups of the summmer have just been born. When he finishes this assignment, he will be doing some traveling prior to returning to the U.K. Let's hope that Keith's replacement will be a ham, and will bring RTTY gear with him.

UNITED ARAB EMIRATES, A6 - Look for A61AF on 15 meters around 1400Z. QSL to P.O. Box 2684, Dubai, United Arab Emirates.

PROPAGATION BLUES

As Solar Cycle 22 continues its slow but inexorable decline, we can only try to look ahead to better times. In one of his recent ARRL Propagation Forecast Bulletins, Tad, KT7H, stated that "the latest long range forecast shows the average Solar Flux increasing over the next few months with a short term peak near 121 in April 1994. It should then fall back to its current level by the end of next summer or fall. The Solar Minimum will probably be around early 1997, and the activity shouldn't rise back to the current level until around the fall of 1998. Although long range forecasts are risky, it looks like the peak of Solar Cycle 23 should be sometime around August, 2000." And George Jacobs, W3ASK, in his Propagation column in the December 1993 issue of CQ, states "It is very likely that 1993 was the last of the relatively good years for HF propagation conditions for at least the next four or five years." So there you have it!

With each issue of the RTTY DIGITAL JOURNAL, there is an ever overwhelming amount of information related to the new developing digital modes. In an effort to keep up with the state of the art (meaning not fall behind too much), and to make the DX NEWS column meaningful to a greater number of readers, I have been in the process of upgrading my station. I have acquired a 80486/66DX2 computer with lots of RAM and a big HD . In addition to my present capability of operating RTTY and AMTOR, I plan to be also QRV on PACTOR and CLOVER. To the extent that these modes are used in DXing, so will I try to bring such information to you. At this point, I feel I have OD'd on the Hardware/Software expertise in this publication. So it may take a little time before I have ironed out all of the station wrinkles.

HAVE DX NEWS?

I can be reached directly by dropping mail into my AMTOR PAMS, leaving a message in the APlink box of W2TKU/4(1), sending me a packet message addressed to W2JGR @ WB0GDB.#STP.MN.USA.NA, finding me on RTTY, telephoning me at (612) 377 7269, or FAXing me at (612) 374 8161. (If you FAX me, please address it with my full name, as that FAX number serves a number of people.) When these high tech approaches fail, the U.S. Postal Service can find me. When I am not chasing DX, my PAMS listens on 14074 khz. Set your chirping to WJGR.

THANKS - Thanks to the following for all your information: AE0Q, I5FLN, K9GWT, K0IR, N4SO, ON7GB, PA3DUS, TY1PS, VP2ML/WB2CHO, VP8BFH, VP8CKB, VP8CIL, W2TKU, WB2CJL, ZS5S, and 9X5LJ. Without you there would be no column.

I wish all our readers, and your families, a very Merry Christmas and a Very Happy 1994. May you enjoy our great hobby to its fullest extent, and I hope all your countries will be new ones.

See you all next year. For now bye bye from Minnesota,

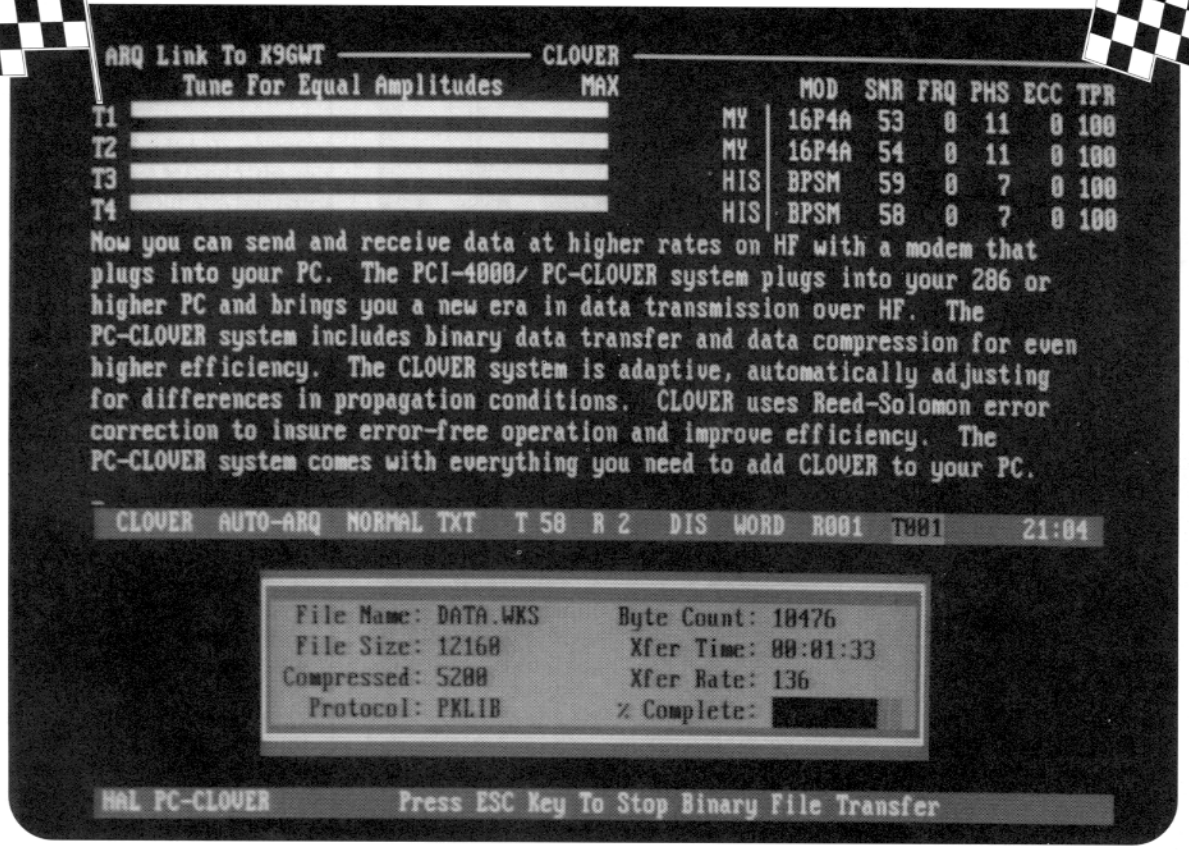
PAX....73 de Jules, W2JGR

1. W2TKU/4 scans 7070, 7076, 14072, 14086, 14078, 21074, and 21080 khz. on AMTOR. On CLOVER he scans 7066, 7068, 14066, 14068, and 21066 khz.

FLASH

Jay Townsend, WS7I says he will be operating as WS7I/7 from the state of Montana for the RTTY Roundup in January. For those who need this state, here is your chance.

HAL DOES IT *FASTER*



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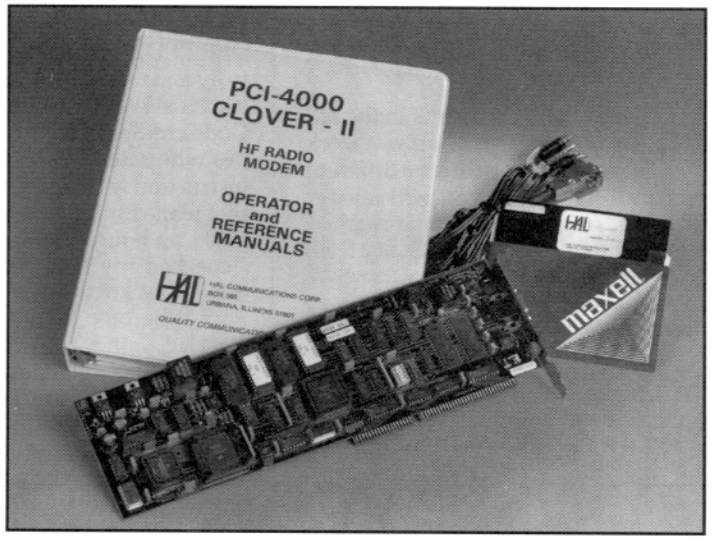

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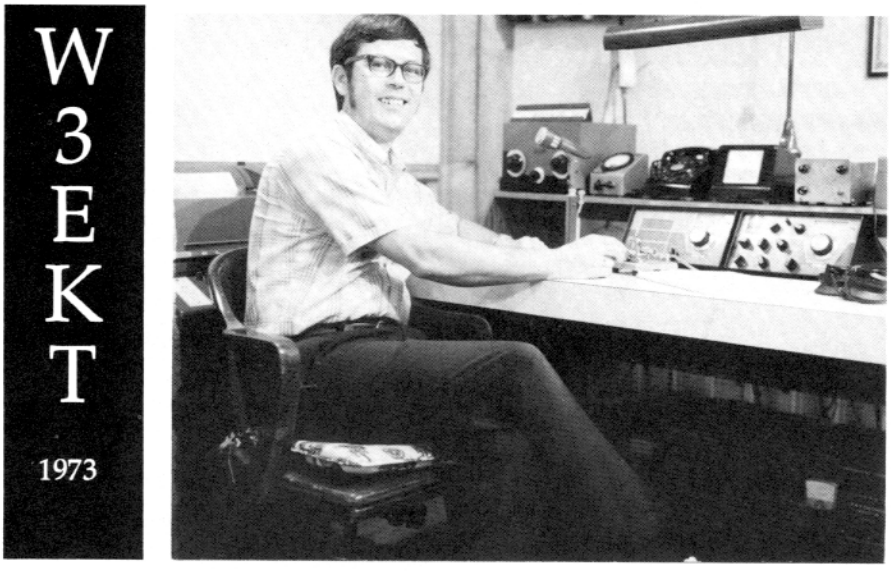
CIRCLE 140 ON READER SERVICE CARD

20 Yrs of RTTY Contesting

by Edward Bruns, W3EKT[1]



I received my Novice ticket in April of 1961 in Toledo, Ohio, but moved to Dayton to start my US government career before I got on the air. As KN8ZSZ/8 I worked 800 stations in November, December of '61 and January of '62, mostly on 80 meters with two cyrstals, a Knightkit T-50 and Hallicrafters SX-100. After I moved to central Ohio a year later, I got on 50 MHz and RTTY with a model 15 and a W2PAT TU. (Years later, W2PAT walked by my table at a hamfest and we had an eyeball QSO!) Yes, my first RTTY contacts were on VHF! As matter of fact I had thirty-something states confirmed on SIX Meters RTTY in 1967. Talk about a very lonely life. In our area we also had an autostart frequency on two meter AM AFSK. That way we didn't have to worry about frequency drift! Sometime in 1965 or so I bought a Model 28KSR machine from Ohio Bell - both my wife and I loved how quiet it was!

I left Ohio for the DC suburbs in the fall of 1967 - DC is the place to be if you work for Uncle Sam - you may drive a different direction to work but you will always have a job. August of this year marked the end of my 37th year with my Rich Uncle, all as an electronic technician. And yes, at age 57 I am thinking about retirement! But I am getting ahead of myself.

While in a rented house years ago, I built the TTL-2 when it was first published in QST by Irv Hoff. We bought our first home in January of 1970, I put up a tower, and got serious about HF. I built my first ST-6 from a HAL kit. I still have it, along with five others! My first RTTY contest was the 1972 CARTG (Canadian Amateur Radio Teleprinter Group). I finished 70th! *All of us have to start somewhere.* In late '73 I bought a new Drake C - Line, built an amplifier with a single 4-1000, put up monobanders, and started chasing DX for real. During the '74/'75 contest season, Mike Simms, K4GMH, a co-worker at the Naval Oceanographic Office was pushing me all the way to the World Championship. Mike was always right behind me, or very close. After I won the RTTY WORLD CHAMPIONSHIP in 1974 and received DXCC #22 in the world for RTTY, I got away from radio for a while. Then I changed jobs. Mike moved to Florida. I BOUGHT AN AIRPLANE when I was 40! (Talk about midlife crisis. Flying was a life long dream that was shattered when I got glasses at 16.) Al Whiting, K3BRS, was my partner in a 1957 Forney Aircoupe with NO RUDDER PEDALS! Neither of us knew how to fly and to make it worse, no one would teach us! We finally found an old guy at Goddard Space Flight Center in his sixties who said he'd be happy to give us instruction with no rudder pedals. I flew that plane for 200 hours at a cost of eight bucks an hour. (Those days are GONE.) I coached my kids soccer teams when none of us knew anything about soccer! Fun! When the kids left home and got married, not necessarily in that order, my wife, Jeannette, and I moved from the DC Beltway to the country side 25 miles north of the city. QUIET! My new flying buddy, Tim Bowen, K3DPT, and I sold the Cessna 182 we owned. I rediscovered 80 meters! I also met Frank Donovan, W3LPL, in the spring of 1986 and worked every Saturday for six months building towers and antennas at his place. I have what you call REAL sweat equity in that station, for sure! Frank's wife Phyliss, never saw me CLEAN for months and ASSUMED that I was always dirty and sweaty!

During this period of time I was also actively chasing DXCC RTTY. I built several ST-5 TUs amd sent them to countries that were not on RTTY. I made silk screens for the PC boards, bent aluminum chassis, wired everything and mailed them off to exotic places. Colin Richards, 9M2CR, got one in Malaysia on the air and many worked him. I don't recall his original call. Ed Thompson got another on the air from Botswanna. Gin, JA1ACB, was the supplier of machines and later on TONO terminal units. Those were fun times.

The Washington DC area was (and still is) full of BIG GUNS. One I recall was W3AU. It was awesome. It had 185 foot tower with a 70 foot boom for 20 meters. It was spread out over 20 acres of the city. I knew I would never be able to compete from a 1/4 acre lot on CW/SSB, so I changed modes. It worked for me because now I now longer had to compete with thounsands of Hams, only hundreds. Meanwhile, I was getting the urge to play RTTY contesting again. I was multi-oping at 'LPL on CW and SSB, mostly on the low bands, like 160. I found out that 160 meters DESTROYS YOUR EARS!

Looking for cheap ways to get back into RTTY with computers was not easy - this was six years ago. I found a Microlog ACT-1 multimode terminal for $75.00 at the local radio store and married it to my ST-6 and it worked great. Since I only had one system and Frank's place is all over the basement, I built a table ON WHEELS to move from station to station at his place. I came in fifth in the 1989 BARTG. During the off season, I found FOUR more of the ACT-1s and four more ST-6 TUs. I won the 1990 BARTG for the world and I found out that single-oping in your mid fifties is HARD. Therefore, I planned to multi-op on RTTY for the 1991 season. Only Frank would be crazy enough to allow his station to be abused like that!

I won the RTTY Roundup for 1991 and that was the last single operator effort. Hauling everything over to Frank's is a chore even though it's only one mile. It takes a couple evenings to put up the little tables for the RTTY gear. And now it takes another evening to hack out the computer network, packet linkup, and all that. Fortunately, Tyler Stewart, KF3P, is the computer "weenie" and HE takes care of all that! And Tyler is YOUNGER, and can stay awake for days on end without killing himself! I can't get by on four hours sleep anymore; the minimum is five to six. Wayne, N3UN,

and Dave, N3II, live up the road a few miles. Bernie, WR3E, just moved next door to LPL and also came over to sit down and operate RTTY - a contester is a contester, mode don't matter much! And of course, Mike, K4GMH, came up from Fredrickburg, VA.We have fun!

The stations at W3LPL are now all Kenwood TS-830s, Microlog ACT-1, ST6 TUs, 3-1000 amps on each band. The common high voltage power supply runs 3800 VDC at 6 (YES, SIX) AMPS! Although every band will put out 1500 watts, I try to have the guys hold it down to 900 or 1000, especially when we are on all five bands at once! As for the antenna field. Four 195 foot towers with the antennas just under the 200 foot limit, and three more towers at 100 foot or so. A rotating three element on 40, another three element fixed on Europe, big and little beams for 15 and 20. Ten has one beam, a big one, at 200 feet. Wire quads and diples for 80. Etc, etc, etc.....

My home station is also a TS-830, ACT-1, ST6 TU and have several amplifiers including a pair of old Collins 30S-1s. But no tower. Citizens association shot it down. Dipoles, 40 foot mast with ten meter beam which I am about to replace with a small tri-bander. And after months of agonizing, I took my 28KSR to the local landfill - it had no value, other than centimental, and my wife needed the space! Time to clean out the basement and get on with retirement and move off to a warmer climate! Perhaps not Florida, but maybe North Carolina or the eastern part of Tennessee. My projected retirement date is the Summer of 1995.

Our three children are married. The youngest lives 20 minutes away and is a mailperson, has two daughters, 3 and 5. The oldest girl lives about an hour away on the Chesapeake Bay south of Annapolis, MD, and also has two daughters, 3 and 5, plus a one year old son. She is expecting again in the Spring. How can anyone afford four children today? My son-in-law must make more money than I think! Our son lives in Orlando, FL, has a 5 year old daughter and a 3 year old son, having married a local girl. None of the kids or the XYL are licensed hams, no interest. Soooo, we currently have SEVEN grandkids and another one on the way. It was a shock to me but grandma loves it. Jeannette had a chance to retire early two years ago and TOOKIT at age 53! That left ME with the house payments and other bills! We have 18 house payments to go and I have not been at the current agency long enogh to learn to "hate my job"! And I too, enjoy all the grandkids --- but usually glad to see them go home!

Take care, see you in the pile ups.

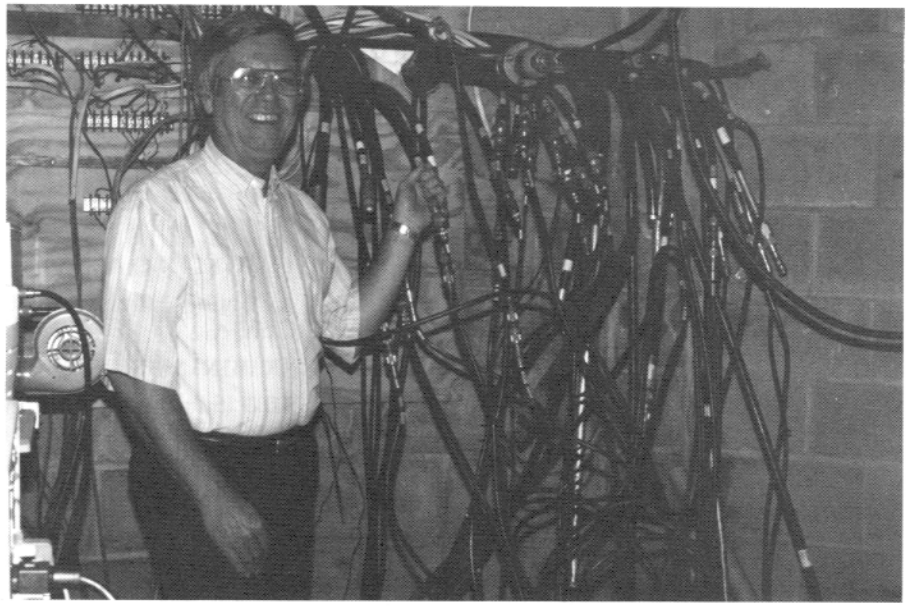
Ed, W3EKT

1. 3429 Shady Lane, Glenwood, MD 21738

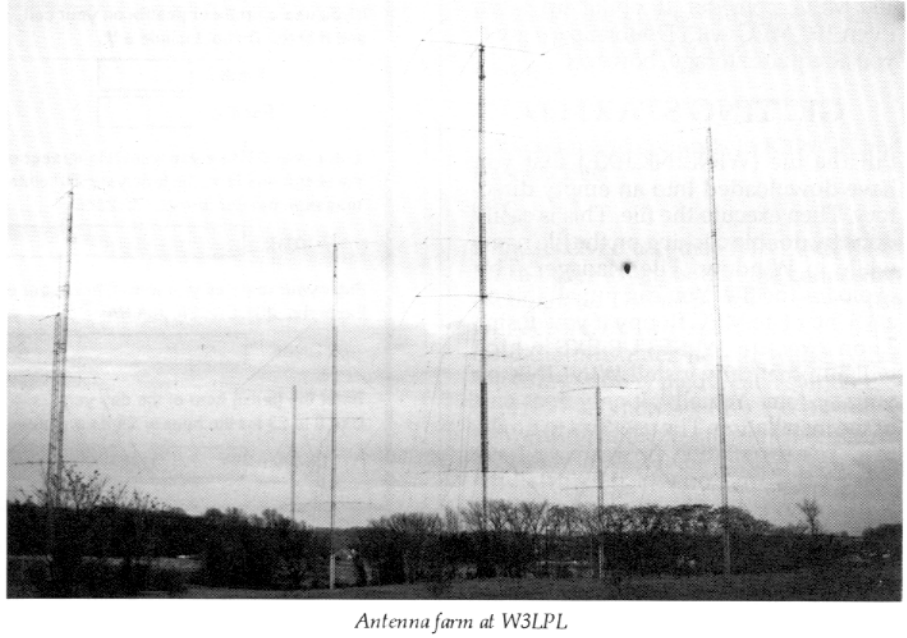
RTTY CONTEST RECORDS OF W3EKT.

YR	CARTG	SARTG	BARTG	WAEDC	VOLTA	FLASH	CQWW	73	RR
1972	70th!								
73	40th!					3			
74	2	1	29	2	2	1			
75	1	8	2	3	2	3			
76	2		2						
77	1								
78									
79		2	2						
80									
81			1						
82			1						
83									
84									
85	Last year with a Teletype machine, 28 KSR.							1	
	MOVED, SOLD AIRPLANE, BELOW AS W3LPL.								
89			5 SO					SO	4
90			1 SO				1 M/M		2
91							1 M/M		1
92							1 M/M		
93							1 M/M?		

Also 1st place World Champianship in 1974 and 2nd place in 1975.



Feed lines at station W3LPL. Ed says, "Who said it was wireless?"



Antenna farm at W3LPL

THE LINK

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

MORE ON INSTALLING WINLINK

This month I will expand somewhat on my October 93 column concerning the installation of WinLink. I would like to reiterate that I think this is a good program for all digital users, even if you don't plan to run a full time BBS. This is especially true if you frequent one of the many **BBS**s or **MBO**s and want to drop or pick up mail. In other words, you can use WinLink as a personal mailbox. The software is available from the **ADRS BBS** (212-698-2102).

Windows will be undergoing more improvements sometime next spring. As I understand it, Windows 4.0 will not require **DOS**. Windows will be the operating system. As with Windows 3.1, you will be able to multitask DOS programs within Windows so you will not lose any DOS capability. I urge you to move to Windows if you have the hardware to support it and have not already done so. The hardware requirements keep going up, but the cost of the hardware keeps going down. I run a 486DX 33 MHz with 16 MEG RAM and a 343 MEG harddrive and Windows zips right along. You can get by with a 386SX and 8 MEG RAM very well. Harddrives are really coming down in price, so if your drive is less than 100 MEG, consider stepping up a bit. Even 100 MEG with DoubleSpace gives you adequate storage, however.

GETTING STARTED

Put the file (WINLINK.EXE) that you have downloaded into an empty directory. Then execute the file. This is easily done by double clicking on the file name while in Windows File Manager. This explodes the file. You can put all this on a 3.5 inch 1.44 MEG floppy if you desire. Then execute **WLSETUP.EXE** which will automatically install **WINLINK** on your system. Actually, it only does part of the installation. The user has to do the rest. The installation program will ask you for the drive on which to install the software. It is simpler to use the default values.

During the installation the window shown in Figure 1 will come up.

Fill in the blanks, leave the Route box blank if you only plan to run a personal BBS. This will keep **WINLINK** from putting your header on messages that you create. Mark the squares Message Manger preferences box as you desire. Any file of the type with an "X" will appear when you bring up the Message Manager. If you are not going to leave the program running 24 hours a day, put 99 in **UPDATE**.

In addition to putting all the files into your **WINLINK** directory, the **INSTALL** program puts the following 2 lines in your **WIN.INI** file. This file is in your **WINDOWS** directory.

[WINLINK]

APDATA=C:\WINLINK\APDATA

Enter the following 2 lines in your AUTOEXEC.BAT:

C:\WINLINK\BIN\MBBIOS.COM

SET TZ=EST05 (Substitute your Time Zone and offset for EST05)

CONFIGURE MBBIOS.COM

After you have finished the above installation, all **WINLINK** programs will appear as icons in the **WINLINK** group in **WINDOWS**. Double click on the **MBBIOS** Configuration icon to open that program. **WINLINK** does not use the **WINDOWS COM** port routines, it uses **MBBIOS** instead. You will see a full sized **DOS** Window come up since the configuration program is a **DOS** program. You will see the window shown in Figure 2.

In this example, we will configure **COM2** for a **PK-232**. You can configure any **COM** ports you desire as long as your serial port hardware will support the **COM** and **IRQ** settings. You will need to make the required changes and then before leaving the **MBBIOS** Configuration Program (F-10), press F-3 to save the configuration. In this example we have put a "1" in the slot number we wish to change. After we hit "ENTER" Figure 3 comes up:

Be sure to indicate hardware handshaking with a "Y" in the appropriate box. When you select B (Specify all card parameters exactly),Figure 4 will appear:

This window will be used primarily to set the base address and interrupt number for COM ports other than 1 or 2. To close this program down, hit F-3 3 times and then hit F-10. The next time you boot up, **MBBIOS** will be loaded with the new parameters.

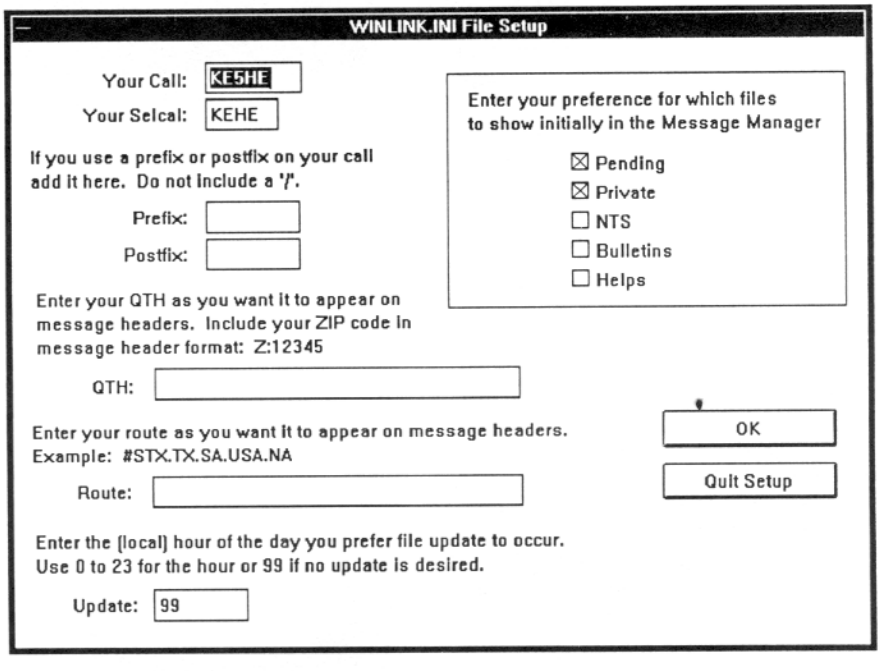


Figure 1

```
MBBIOS Configuration Program

Slot  Com #  IRQ  Slot Type
----  -----  ---  ---------
 1     2      3   IBM ASYNC Card addressed as COM2
 2     4      5   Parms specifed exactly
 3     5      5   Parms specifed exactly
 4     6      5   Parms specifed exactly
 5                Slot is unused
 6                Slot is unused
 7                Slot is unused
 8                Slot is unused
 9                Slot is unused
10                Slot is unused
11                Slot is unused
12                Slot is unused

Enter slot number to changed or
press a function key          [1]

F3 - Save configuration   F-10 Quit
```

Figure 2

```
MBBIOS Configuration Program

Slot number 1

A – Slot is unused
B – Specify all card parameters exactly
C – IBM ASYNC Card addressed as COM1
D – IBM ASYNC Card addressed as COM2
E – QuadRam QuadPort card addressed as 280
F – QuadRam QuadPort card addressed as 288

Enter port type for this slot ———————— [D]

COM Number to use for this slot ———————— [2]

For Quadport, enter port letter ———————— [ ]

Hardware handshaking? (Y or N) ———————— [Y]
Transmit blocking? (Y or N) ———————— [N]
More than 9600 bps? (Y or N) ———————— [N]

F3 - Return   F10 - Quit
```

Figure 3

```
MBBIOS Configuration Program

Slot number 1

Enter port type for this slot ———————— [1]
    0 - Not used
    1 - IBM Compatible ASYNC port
    3 - PACCOMM PC-100 Card in AX25 mode
    4 - QuadRam QuadPort
    5 - Shared Interrupt IBM Compatible ASYNC Port

Enter base address for this slot ———————— [02F8]

Enter Interrupt number for this slot ———————— [3]

Enter PACCOM type (7910 chips on card: 0=two, 1=one) – [0]

Enter PACCOM PC-100 clock speed in MHz ———————— [0.000]

F3 - Return   F10 - Quit
```

Figure 4

THE WINLINK CONFIGURATION FILE

The WINLINK configuration file (WINLINK.INI) is shown in Figure 5.

Except for the [AUTOFORWARD] section in the WINLINK.INI file listed above, all entries were made by the install program. You can change these values at any time by editing the file and making the appropriate changes. To edit the file, just double click on the Configuration icon in the WINLINK Group. The [AUTOFORWARD] section needs a little explanation. This section controls autoforwarding to PACKET stations. Autoforwarding is not supported on other modes at this time.

In Figure 5 the line:

BBS01=K3WGF, VHF, 20

means that BBS number 1 is K3WGF and forwarding to that packet station will be done on VHF packet at 20 minutes past the hour (if you have traffic to be forwarded to that station).

The second line:

C SAT09

is the packet command that you need to send to the TNC in order to make the first part of the connection. In this case it is to the node "SAT09." Once the connection is made to the node, we know that the text "CONNECTED" will be sent back to you in last line the node sends to you. The line:

CONNECTED

is the received text that WINLINK looks for in order to know that the connection has been made. After getting that, WINLINK sends the next line of the connect script:

C K3WGF

This command connects to K3WGF, and the next line:

4RE-

is the received text that WINLINK looks for in order to know that the connection is complete. The actual text that you use will depend on your specific case, but this example illustrates how it works. Once the connection is made, each station recognizes the other as a BBS and the traffic forwarding or reverse forwarding occurs. You may have to coordinate with your BBS in order to have your station set as a BBS on his end.

```
; You may comment this file by starting a line with a semicolon.
; Don't place a comment between 'BBS...' and the following 'END'
;
; Be sure the SET TZ=... is set just in your autoexec.bat
; file just as in APLINK.
[WINLINK]
APDATA=C:\WINLINK\APDATA
MESSAGES=C:\WINLINK\MESSAGES
BINARY=C:\WINLINK\BIN
LOGS=C:\WINLINK\LOGS
STATION=KE5HE
SELCAL=KEHE

; Do not include '/' when setting a prefix or postfix for your call
PREFIX=
POSTFIX=

; Be sure to show the zip this way: Z:12345
QTH=
ROUTE=

[MESSAGE MANAGER]

UPDATE=99
PENDING=YES
PRIVATE=YES
NTS=NO
BULLETINS=NO
HELPS=NO

; Leading spaces are ignored so may be used to make reading the
; file easier. Blank lines are ignored.

[AUTOFORWARD]

; This is an example only. Change to fit your station...
BBS01=K3WGF, VHF, 20
C SAT09
CONNECTED
C K3WGF
4RE-
END
```

Figure 5

the controller and click **OK** to make the values active.

You may wish to edit the **MESSAGES, PREFERENCES,** and **SYSOP ALARM** settings in your configuration file. When you click on **MESSAGES** in the **CONFIGURATION** pull-down, you will get the window shown in Figure 8.

Similarly, **PREFERENCES** will open Figure 9.

Fill in the boxes as appropriate for your station.

Next, from the **FILE** menu item save the configuration as shown on the next window, Figure 10. Just click on **SAVE**.

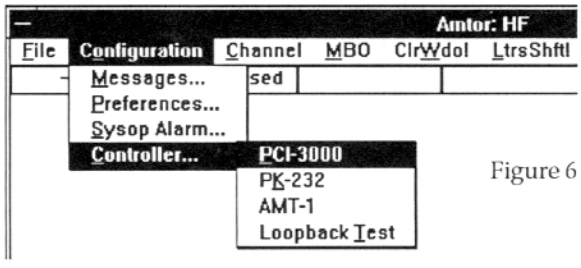


Figure 6

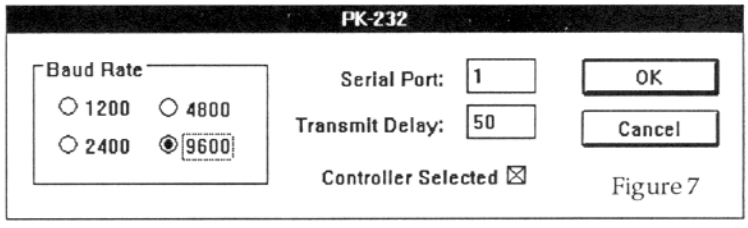


Figure 7

FORWARD AND INTERCEPT FILES

The **FORWARD.APS** file controls where you send your messages when you forward. You may edit this file by double clicking on the **FORWARD** icon. Here is an example of a **FORWARD.APS** file:

KE5HE KE5HE

W4NPX W4NPX W2NRE

AF W4NPX

NV N0IA

*** W4NPX W2NRE**

The first item in each line of the forward file is a **CALL** or **TOKEN** (* is a wildcard and means everything). In the above example, a message addressed **TO** or **AT KE5HE** will stay on **KE5HE**. The second line directs that any message addressed **TO** or **AT W4NPX** will be forwarded to **W4NPX** or **W2NRE,** whichever is the first to be involved in a forwarding session. The third line uses the **TOKEN AF** to assure that traffic for **AFRICA** will only be forwarded to **W4NPX,** similarly traffic for Nevada (**NV**) will go to **N0IA**. The last line of the forward file dictates that any traffic not handled by the first 4 lines will go to **W4NPX** or **W2NRE**.

The **INTERCEPT.APS** file contains the instructions to change the AT field of a message. Here is an example intercept file:

W4NPX W4NPX.#CVA.VA.USA.NA

W2NRE W2NRE.NY.USA.NA

W4TKU W4TKU.#SRQFL.FL.USA.NA

TY1PS TY1PS.BEN.AF

N2HOS W2NRE.NY.USA.NA

The first four lines above will just put the hierarchical address on messages to the calls in the those lines. In line 5, messages to **N2HOS** will be forwarded to **W2NRE**. The **AT** field is changed at the time the message is entered.

CONFIGURING THE CONTROLLERS

Double click on the **HF AMTOR** icon to configure the **AMTOR** port. The **AMTOR** port will open. Move the mouse to the **CONFIGURATION** menu item and click your left mouse button. The window shown in Figure 6 will appear:

Click on the controller that you have (PK-232) and Figure 7 will pop up.

Fill in the appropriate values and select

You may configure **CLOVER, PACTOR,** and **PACKET** in exactly the same way. Be sure that you **SAVE** the configuration file as explained above before you shut things down. You will not be able to configure the **PACKET** port until you have rebooted your computer and have **MBBIOS** running.

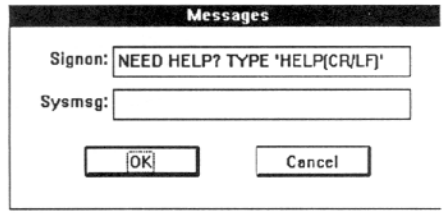


Figure 8

Review my October 1993 column to see how to properly set your **PACKET TNC. WINLINK** does not set the TNC parameters. You must do that before **WINLINK** is run. Use the battery option so that the TNC does not lose its parameters when you shut things down.

MESSAGE MANAGER

The **Message Manager** is used to view, edit, create, modify, and delete messages. When you double click on the

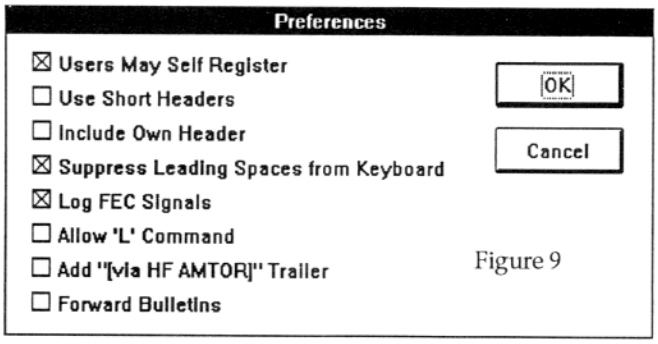


Figure 9

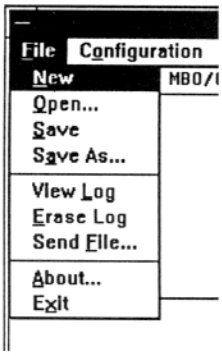


Figure 10

Figure 12

Messages icon, you will get the window shown in Figure 11.

To enter a message click on the **FILE** menu item to get Figure 12.

Click on **Sysop Message** to enter a message. (Click on Reply Message to send a reply to a message that is highlighted in the Message Manager. Click on Copy Message to send a copy of the message to a third party). The window shown in Figure 13 will come up.

File in the blanks as required. Note that since **W4NPX** is in the **INTERCEPT** file, I did not have to enter the hierarchical address. It will be automatically inserted by the system.

After hitting **OK**, the window shown in Figure 14 will appear.

I have entered an example message. When you hit Exit from the **FILE** menu item, the message is saved and now the **Message Manager** will show Figure 15 after it is Refreshed.

You may change any of the Message Control Block parameters by clicking on the **MCB** menu item while the message is highlighted. You will get Figure 16.

This window allows you to change all the MCB parameters for the message.

When you click on the **SEARCH** menu item in Message Manager, you will get Figure 17.

With this window you can set the search parameters for Message Manager, which determines which messages to show when you hit the SEARCH menu item. This is a very powerful feature which allows you to display lists of just those files you want to examine. Notice that there are inclusive as well as exclusive parameters. For example, if you want to list pending, private files to **N2HOS** you would click on the Exclusive To box and put **N2HOS** in the associated blank box.

When you hit **OK**, only pending files to **N2HOS** will appear on the listing.

To view a file, just double click on it or click on **VIEW** when the file is highlighted in Message Manager.

If you want to change the status of a single file, click on the **STATUS** menu item to get the window shown in Figure 18.

You can change the status of a number of files at the same time. Select all the files you want to change by holding down the **CNTL** key while clicking on each file in the Message Manager. Then perform the **STATUS** operation which will change all the highlighted files.

SUMMARY

I hope this helps you out and that you will give this software a try. The software is free for the phone call and if nothing else you will learn a lot about **WINDOWS** by running it. I think you will like the software if you are the typical rag chewer casual operator. Let me know how it works.

73 and GOD BLESS

de **Jim, KE5HE** ■

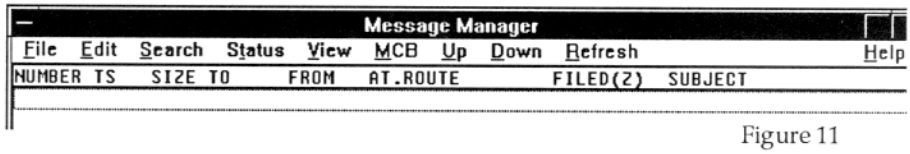


Figure 11

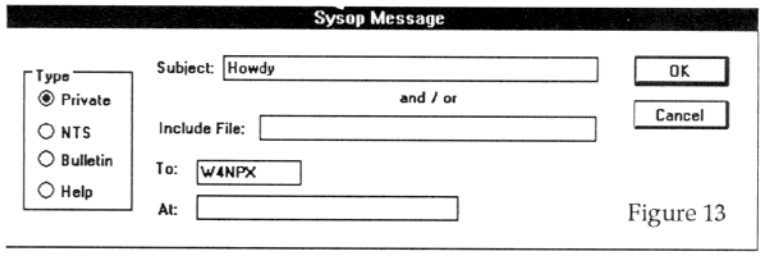


Figure 13

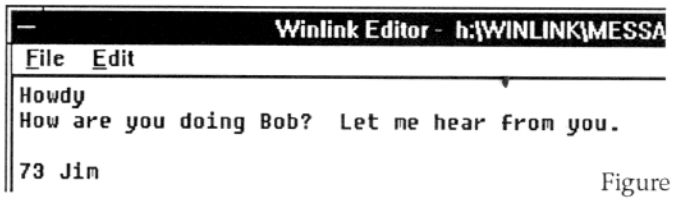


Figure 14

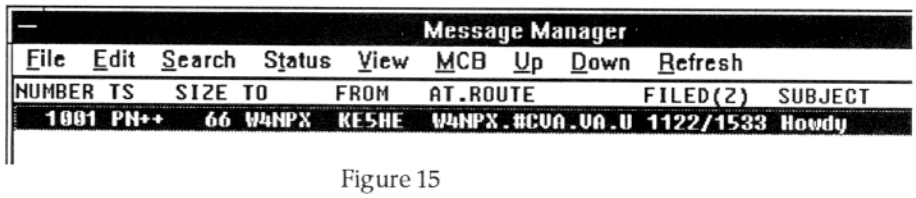


Figure 15

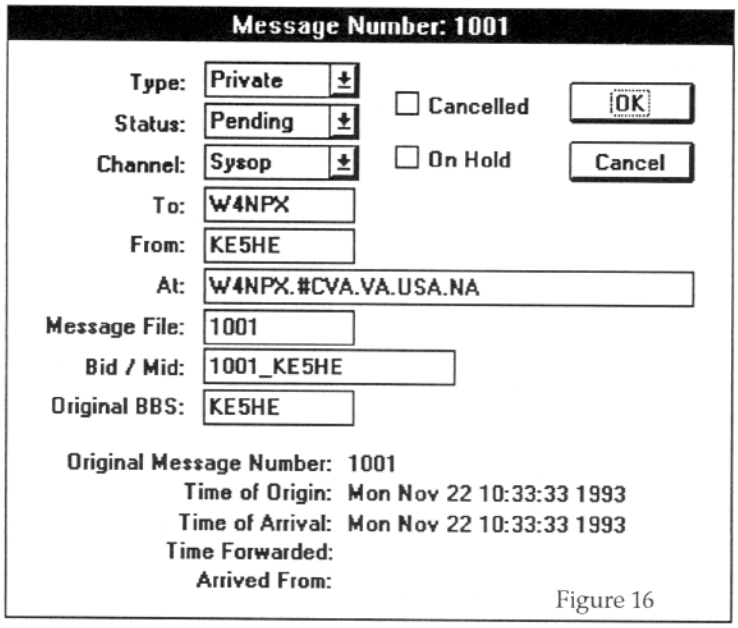


Figure 16

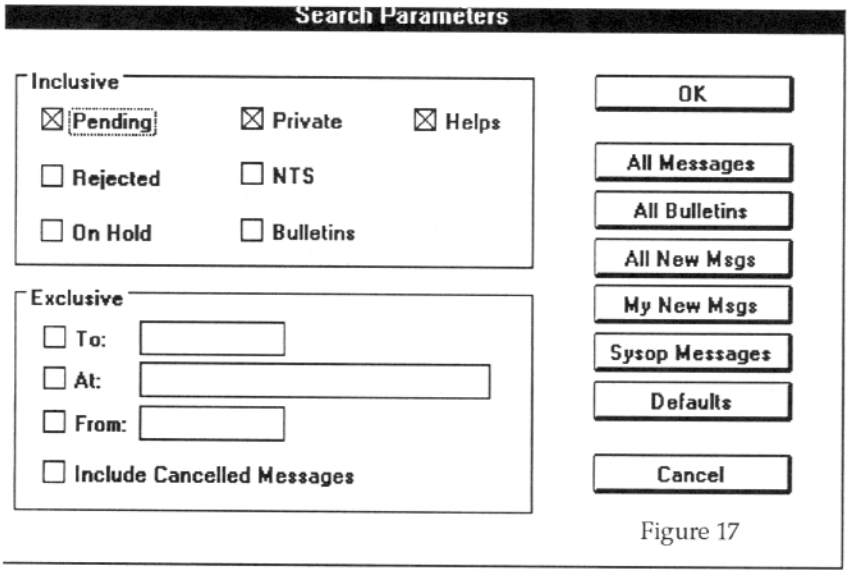


Figure 17

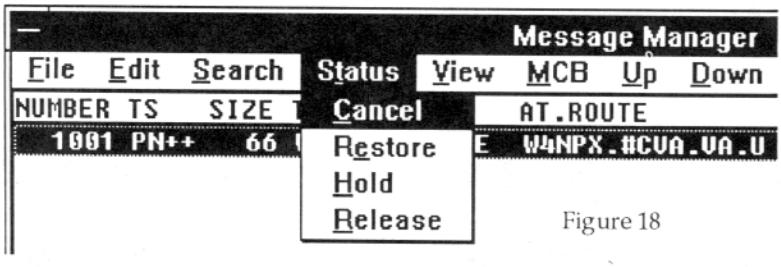


Figure 18

QSL ROUTES

Seasons greetings to all our friends in the wonderful world of digital radio. Boy, Dale rather surprised me with the picture on the cover last month and all the kind words. Thanks Dale.

I got quite a lot of input this month. Thanks to all. Ray, KG7YQ is looking for a QSL route for T46RR, can anyone help? Ed, WA0FLF passes along the route for TT8OBO (Chad). He operated on 14.081 in November as WA4OBO. Thanks Ed.

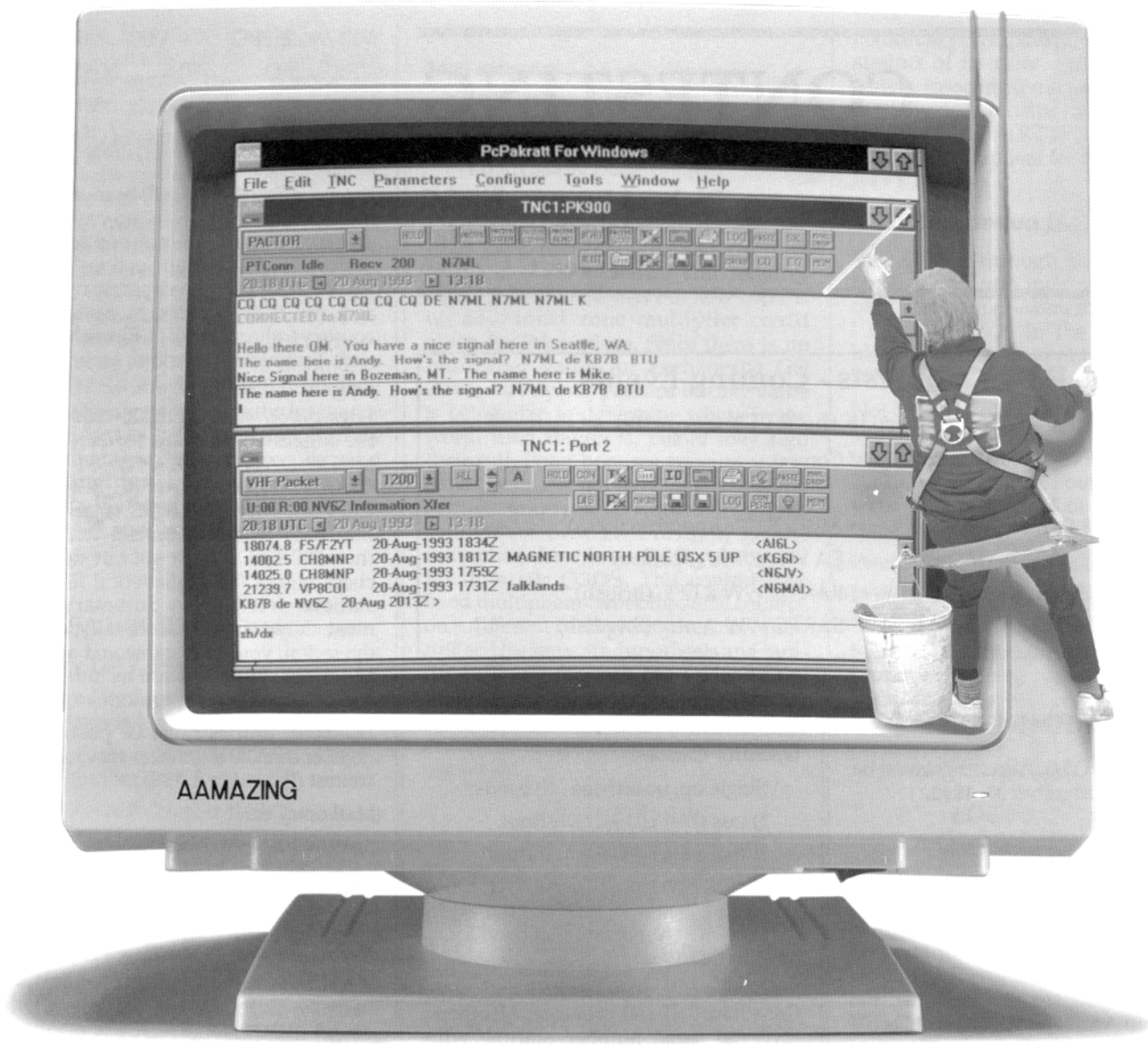
Serge, UZ9CWA, send me a long thoughtful letter and I will answer it here and on Packet. He sent me a copy of a lovely RTTY Award that is called the URAL AWARD. Serge notes that the Ural Award is issued by Radio Sports Federation of Sverdlovsk oblast and is available for all amateurs and SWLs for contacts with amateurs in the Ural mountains area of Russia after January 11, of 1957.

Serge is the award manager and for information I would suggest dropping him a line. UZ9CWA Award Manager, Box 1, SF-01280, VANTAA, FINLAND. You might note that all QSLs for UZ9CWA should go via this route also, as mail is not getting through. Serge's Packet address is to UZ9CWA@OH2BAR or UA6CL.

Happy New Year. I hope all of you have happy holidays and that 1994 brings to everyone all the DX, the contest plaques, and the special Qso's desired. See you at Dayton '94.

4N7N QSL BRANKO, BOX 34, NOVI SAD 21101, YUGOSLAVIA
5K3W QSL HK3SGP
5N/DF8QB QSL DF8QB
7Q7LA QSL G0IAS
9J2HN QSL JH8BKL
9U5DX QSL DJ6JC
9V1ZM QSL VE3MMB
CU1AC QSL W2FXA
FT4WD QSL F6AAX
J28BM QSL K1SE, P.O. Box 685, Manassas Park, VA 22111-0685
J88BS QSL WA4WIP
RJ7JYZ QSL BOX 126, DUSHANBE, 734000 TADZHIKISTAN
KH2/KN4DG QSL 22 Turner Rd., Nimitz Help, Asan, Guam
OH0/OH3TY QSL OH3TY
ST2/G4OJW QSL is via P.O. BOX 4016, Khartoum, Sudan
TL8NG QSL WA1ECA
TR8MD QSL F6FNU
UH5E/UA9TX QSL DL1FCM
UZ9CWA QSL Box 1,SF-01280, VANTAA, FINLANDXU3DWC QSL PA0RYS
VQ9TV QSL W4TV
XE1/JA1QXY QSL JH1HGY
YI1AZ QSL P.O.Box 55195, 12001 Bagdad, Iraq
ZC4ML QSL G4LSL
ZD8VJ QSL G4ZVJ
ZS9/ZS4KK Qsl to ZS4NS

de Betsy, WV7Y ■



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CONTESTING

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Pioneer, CA 95666

RTTY Contests - Coming Events

All rules + logsheets are in the RTTY Contester's Guide

Date:	Contest:
JAN 8-9 1994	ARRL RTTY Roundup (USA)
FEB 12-13	EA WW RTTY (Spanish)
MAR 19-20	BARTG WW RTTY (British)
APR 16-17	SARTG WW Amtor (Swedish)

-- -- -- REMINDERS: -- -- --

JARTS Contest Deadline: Logs must be received by December 31, 1993.

Mail logs to:

JARTS Contest Manager,
Hiroshi Aihara, JH1BIH,
1-29 Honcho,
4 Shiki Saitama 353
JAPAN

TARA 2nd Annual RTTY Sprint Deadline: Logs must be received by January 17, 1994.

Mail logs to:

Bill Eddy, NY2U
c/o TARA
2204 22nd St.
Troy, NY 12180

-- -- -- COMING UP -- -- --

ARRL RTTY ROUNDUP CONTEST

January 8-9, 1994

Sponsored by ARRL

Contest period: Starts at 1800 UTC Saturday and ends at 2400 UTC Sunday. Operate no more than 24 hours of this 30 hour period. Two rest periods (for a combined total of six hours) must be taken in two single blocks of time, and must be clearly marked in the log.

Bands: 80, 40, 20, 15, and 10M (five bands).

Modes: Baudot (RTTY), ASCII, AMTOR, or Packet (attended operation only).

Operator Classes:

a) Single op, unassisted, all bands:

1) less than 150 watts output.

2) more than 150 watts output.

b) Multi op, single transmitter. Once station has begun operation on a given band, it must remain on that band for at least 10 minutes.

Exchange: U.S. stations: RST and state. Canadian: RST and province. All others: RST and serial number, starting with 001. *Both stations must receive and acknowledge complete exchange for QSO to count.* Neither cross-band nor cross-mode QSOs are permitted. Packet QSOs through digipeaters or gateways are not permitted.

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.

Multipliers: Count only **once** (not once per band), each U.S. 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 U.S. and Canada do NOT count as DXCC countries.

Canadian Multipliers:

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

Final Score: Total number of QSOs times total multipliers.

Awards: Certificates will be awarded to: Top scoring low power and high power single operators and multi-op scorers in each ARRL/Canadian Section; Top low power and high power single operators and multi-op scorers in each DXCC country (other than W/VE); each Novice and Technician entrant; each entrant making at least 50 QSOs.

Logs and Summary: Logs should contain the suggested standard format: BAND, MODE, DATE/TIME, ON/OFF TIMES, CALLSIGN, EXCHANGE SENT/RECEIVED, MULTIPLIERS (marked the first time worked). Entries with more than 200 QSOs must submit duplicate check sheets (an alphabetical listing of stations worked). A Summary Sheet must show: claimed score tally, class of operation, your call, name and address. Multi-ops stations please include names and callsigns of all operators.

Deadline: Entries must be postmarked no later than 30 days after the end of the contest (February 8, 1994).

Mail entry to:

ARRL RTTY ROUNDUP
225 Main St.
Newington, CT 06111

Recommended Operating Frequencies (MHz):

3.580 to 3.620	14.070 to 14.095
7.040 -- RTTY DX	21.070 to 21.090
7.080 to 7.100	28.070 to 28.150

Comments: The Roundup is the most popular domestic contest. It's much like the SS contests on CW/SSB. To make a high score one must concentrate on high QSO rates and lots of CQing. There are no band multipliers, meaning that once you work Utah on 15M, you will not get another multiplier for working Utah on any other band. If maintaining a high rate is just not your thing, you can set yourself another goal: see if you can work all states or provinces in the 24 hour period. In past sessions, all states have had RTTY stations on the air. This goal is especially exciting when using contesting software, such as the the WF1B RTTY contest logging software. It automatically keeps track of states/provinces worked and always shows you on the receiving screen whether you need that particular station for a new multiplier.

The Roundup is one of the few RTTY contests that has a low power category.

This means that there should be more activity, primarily on the high bands. (Low power stations have a harder time cutting through the D layer absorpsion and QRN (static) on the low bands.) Those operating low power RTTY should pay close attention to picking out a frequency to start CQing. On RTTY it is difficult to find a clear spot on a crowded band, and when running low power, you just get clobbered easier when you're a bit weaker. You can't always assume that everyone has sharp filters in their radios. And on the high bands you can't always hear stations within the skip distance of your QTH. Sending a "QRL? BK" is a good way to interrogate whether the frequency is in use, just as in CW and SSB. It really helps when skip distances are long. And it shouldn't upset anyone - unless the frequency IS in use, and the time between the "QRL?" and the CQ is less than one second!

EA WW RTTY Contest

February 12-13, 1994

Sponsored by Seccion Territorial Comarcal De Aranda De Duero.

Contest Period: From 1600Z Saturday to 1600Z Sunday. (24 hours)

Bands: 80, 40, 20, 15, and 10M (five bands)

Classes: A) Single op, all band; B) Single op, single band; C) Multi-op, single transmitter, all band; D) SWL.

Exchange: RST + CQ Zone. EA stations send RST + Prefix of Province.

Multipliers: DXCC Countries and Spanish Provinces on each band. Spanish Provinces are: A, AB, AL, AV, B, BA, BI, BU, C, CA, CC, CE, CO, CR, CS, CU, GC, GE, GR, GU, H, HU, J, L, LE, LO, LU, M, MA, ML, MU, NA, O, OR, P, PM, PO, S, SA, SE, SG, SO, SS, T, TE, TF, TO, V, VA, VI, Z, ZA. (Total of 52)

QSO Points: On 20, 15, and 10M: 1 point for QSO within own continent, and 2 points for QSO outside own continent. On 40 and 80M, 3 points for QSO within own continent, and 6 points for QSO outside own continent. **QSOs within same DXCC country are only valid for multiplier credit, but have ZERO QSO point value.**

Final Score: Total QSO points on all bands times total multipliers on all bands.

Awards: Plate to winner in each class. Certificate to winner in each DXCC country in each class. (Must have 50 or more QSOs.)

Logs: Use separate logsheets for each band. Include a Summary sheet to show scoring and other essential information.

Deadline: Mailing deadline is April 9, 1994.

Mail entry to:

EA RTTY Contest Manager
Antonio Alcolado, EA1MV
P.O.Box 240
09400 Aranda de Duero (Burgos)
SPAIN

Comments: This is a 24 hour contest. The rules have been changed slightly from last year... the exchange still requires sending your CQ Zone, but now there is no additional zone multiplier credit given for EA stations. Since there is no multiplier value for exchanging CQ Zones for anyone, perhaps its only value is being able to determine where in the world each station is, before they sign their call. Point bonuses encourage low band operation, but only for chasing DX, because once you've worked your own country (or own EA Province) for the multiplier, **there is no QSO point value for domestic QSO's.** This contest uses band multipliers - work the same country on a different band gives you a new multiplier. Use separate dupesheets and multiplier sheets for each band. Handy tip: make an alphabetical checkoff list of EA Provinces for each band, as keeping track of suffixes can get confusing when changing bands.

Reflections on WAE RTTY Contest

The WAE (Worked All Europe) RTTY rules are quite complicated. They are very similar to the SSB and CW, except that on RTTY, worldwide QSO's are permitted. But QTC traffic is not permitted within your own continent.

The WAE RTTY rules as appeared in the RTTY Conteser's Guide were to be used to write this column. But in the July '93 QST, page 110, a major change appeared in the WAE Contest rules: "Exchange Signal report and serial no. W/K stations also give state." Since neither I nor the RTTY Journal had ever received an official rules summary from the German WAEDC Committee, I assumed that ARRL's QST had the latest word. That is why my column stated that "... USA stations must also give state." The September and October "93 issues of the RTTY Journal so stated. (Note that CQ magazine's Contest Calendar by John Dorr, K1AR, November '93, page 103, never mentioned state exchange.)

It now appears that QST was wrong. States don't count for anything, and need not be sent in the exchange.

As far as final scoring is concerned, the QST rules never mentioned that states were to be multipliers.

I apologize for any confusion I may have caused in the WAE RTTY Contest. Out here on the West coast, it is a difficult contest to participate in, given all the constraints of its rules. But for RTTY contesters, inserting the state in the exchange is no big deal. It helps those state hunters for their WAS on RTTY, but states do not count as multipliers for anyone for WAE RTTY contests.

Reflections on JARTS Contest

In perusing through the JARTS RTTY contest log I was interested in just how old - and young - were RTTY contesters. I had 444 QSOs in the contest. So, in blocks of 10, I looked at the 196 QSOs on 20M.

Not counting multiops and YLs, the average age was 47.38 years. The oldest 5 were: 84, 81, 80, 80, and 79. The youngest: 20, 25, 26, 29, and 30. Four of the 5 oldest were USA ops, and 4 of the 5 youngest were Asian ops.

From all this I am reminded of a saying:

Middle age is half way between your age and the oldest person you know.

Now we RTTYers can all say we are approaching middle age - except the 84-year-old youngster. (But wait... Maybe his dad operates 75M SSB!).

-+- Hint of the Month -+-

LOOKING FOR A QUIET COMPUTER?

We all know that today's fast computers generate lots of RF noise. The general rule is: the faster it is, the more likely it will generate interference to your HF radio. Do you really need all that speed? Not for normal ham radio use. Lots of memory? YES. Lots of speed? NO.

Here's an idea that you might consider: using a pocket-sized AM battery-powered radio and a pair of earphones, walk in to your favorite computer store and start probing with your radio around the different computers on display. You'll surely attract a curious salesperson - maybe even the manager. But you can certainly find out which computer is the noisiest and which is the quietest. Be sure to check the connecting cables, too, as they act as antennas for the noise generators. All connecting cables should be of top grade shielding and and its wires well filtered. Try changing the programs being displayed. Different programs give different kinds of whistles and chirps.

Oh yes... be sure you look for the FCC Approval label that should be on each computer item: "Class B" is the best. It should appear on the computer, the monitor, the keyboard, and the printer.

If the manager gets a bit edgy about your scientific approach to interference, ask him if he would consider loaning you his quietest computer for home testing, sit-

ting next to your ham radio station. And, a-a-a-h, good luck!

((73))... and Happy New Year!

See you in the pileups,

de **Rich, N6GG** ■

P.S.

Drop me a line with an idea to share,
Or, drop me a line with an item to air.
Drop me a line with anger to bare...
But don't drop ME... 'cause I care!

ANARTS 1992 WW RTTY Contest Results

Single Operators

Nr	Call	Pts	QSO	Q-pts	M1	C	VK
01	G0ARF	1,855,234	230	3187	97	6	400
02	AA5AU	931,720	200	1939	80	6	1000
03	OH2LU	686,510	129	1759	65	6	500
04	K6WZ/0	387,886	96	1133	57	6	400
05	JA3DLE/1	375,670	67	1629	46	5	1000
06	VK3EBP	291,200	66	2080	35	4	
07	WA6VZI	285,520	68	1080	44	6	400
08	K2PS	280,426	93	993	47	6	400
09	SP3SUN	272,232	63	1054	43	6	300
10	VK2EG	237,600	43	1584	30	5	
11	W1BYH	157,882	70	673	39	6	400
12	KI4MI	143,256	76	627	38	6	300
13	VK2BQS	107,996	35	1421	19	4	
14	VE70R	81,575	60	651	25	5	200
15	VE6ZX	66,805	81	431	31	5	
16	SP3BGD	64,822	29	469	23	6	100
17	W2JGR/0	48,732	50	393	31	4	
18	VK2SG	35,784	13	497	12	6	
19	SM6BSK	32,340	37	385	28	3	
20	KE9CU	27,108	37	251	27	4	
21	W9HR	20,600	27	206	25	4	
22	SP2TCE	19,840	15	282	14	5	100
23	I6KYL	9,880	13	237	10	4	400
24	JA2ESR	4,694	8	214	7	3	200

Multi-operator

01	UZ9CWA	5,883,324	420	7779	126	6	2400
02	W3/VK1GN	51,592	58	474	27	4	400

SWL

01	ONL 383	427,120	100	1524	56	5	400
02	ONL 4335	13,596	30	206	22	3	
03	ONL 3997	1,032	8	43	8	3	

Check Logs: OH5MN/2 & SM6APB

1993 EA RTTY Contest Results

Legend: T= Trophy Winner (1st Place), C= Certificate Winner

Class A (Single-op all band)

Nr	Call	QSO	Pts	Multi	Score	
01	EA7TL	281	458	128	58624	T
02	EA1JO	221	385	121	46585	C
03	ES5FEL	174	292	93	27156	C
04	EA7GXX	126	195	87	16965	C
05	EA1QK	167	246	48	11808	
06	EA2CNT	117	172	67	11524	C
07	EA7DRK	107	164	68	11152	
08	EA1MV	138	165	60	9900	
09	EA5FVQ	125	245	39	9555	
10	EA7MA	83	121	73	8833	
11	EA2CNG	77	93	64	5952	
12	EA4BAS	81	95	63	5895	C
13	EA7CVL	119	179	28	5012	
14	EA1FFS	64	91	46	4186	
15	EA1EZY	59	67	51	3417	
16	EA3BT	50	63	53	3339	C
17	EA1ZL	69	82	40	3280	
18	EA4AU	50	63	49	3087	
19	EA1FDO	53	60	47	2820	
20	EA3GCV	33	55	38	2090	
21	EA5SM	41	68	30	2040	
22	EA4DET	54	66	29	1914	
23	EA1BL	40	42	44	1848	
24	EA3FNI	38	40	24	960	
25	EA1AHA	25	33	23	759	
26	EA7CP	17	20	27	540	
27	EA1DVY	19	31	15	465	
28	EA7CWA	18	25	18	450	
29	EA1DAX	8	10	12	120	

EA6 Stations

01	EA6AE	426	792	155	122760	T

Non-EA Stations

01	UH8EA	692	1760	182	320320	T
02	ZD8LII	511	1082	131	141742	C
03	OH2LU	327	520	161	83720	C
04	G0ARF	310	597	130	77610	C
05	OE1MBB	193	391	137	53567	C
06	HA8EK	241	432	118	50976	C
07	SV1ATS	215	317	107	33919	C
08	LA7AJ	206	289	105	30345	C
09	GW0ANA	153	254	112	28448	C
10	DL9GGA	150	252	102	25704	C
11	I0REP	151	249	89	22261	C
12	4X6UO	128	232	82	19024	C
13	W1BYH	130	221	83	18343	C
14	W4GIV	148	197	86	16942	
15	GW4KHQ	109	186	84	15624	
16	VE6ZX	213	307	50	15350	C
17	HK1LAQ	117	265	53	14045	C
18	I2HWI	132	243	55	13365	
19	IK1HXN	92	164	79	12956	
20	VE7SAY	165	213	56	11928	
21	JA3DLE/1	105	193	61	11773	C
22	W8PBX	107	174	67	11658	
23	KI4MI	82	165	67	11055	
24	UW3AT	105	164	61	10004	C
25	SP2JPG	87	147	66	9702	C
26	S53AA	122	184	49	9016	C
27	TA2FT	86	170	48	8160	C
28	KC9UU	64	143	55	7865	
29	WA1MPB	70	142	48	6816	
30	N6GG	82	126	53	6678	
31	WA3AOH/4	59	105	59	6195	
32	IK0NHC	52	74	67	4958	
33	IV3ZDO	55	153	30	4590	
34	GMO/WN1G	74	92	45	4140	C
35	IK0CNA	71	89	46	4094	

Nr	Call	QSO	Pts	Multi	Score	
36	K7WUW	47	93	43	3999	
37	IK8HCM	57	85	47	3995	
38	HP1AC	73	101	27	2727	C
39	SM7BGE	50	64	41	2624	C
40	DL8DUL	46	88	29	2552	
41	SM7BHM	41	77	30	2310	
42	LA3YU	60	88	26	2288	
43	N7GVV	40	60	32	1920	
44	IK0PHW	55	72	25	1800	
45	OH2OM	51	62	22	1364	
46	DF5BX	29	47	29	1363	
47	KE9CU	36	44	29	1276	
48	DK5KJ	32	36	28	1008	
49	I1QBI	26	53	19	1007	
50	I0PYK	30	56	17	952	
51	KF9EZ	29	47	19	893	
52	AC4HF	15	28	14	392	
53	IK2PFZ	21	26	15	390	

Class B (Single-op mono band)

EA Stations 21 MHz

01	EC1CTH	112	206	44	9064	T
02	EA4EKB	82	104	37	3848	C
03	EA1EVY	39	49	19	931	
04	EC1DJU	26	33	24	792	
05	EA1DME	24	32	18	576	

EA Stations 14 MHz

01	EA4EOG	16	16	13	208	

Non-EA Stations 28 MHz

01	TA2FT	40	80	22	1760	

Non-EA Stations 21 MHz

01	OH2GI	222	344	56	19264	T
02	CT1AUR	209	309	42	12978	C
03	DL9MBZ	153	248	46	11408	C
04	UA9LEO	79	152	29	4408	C
05	HA5ALP	62	72	38	2736	C
06	UB4HQ	60	72	37	2664	C
07	YO9ALY	15	16	13	208	
08	DF2EY	15	18	10	180	
09	JF3BTL/1	5	5	5	25	

Non-EA Stations 14 MHz

01	S51DX	349	515	76	39140	T
02	4M5RY	221	434	63	27342	C
03	IV3FSG	162	215	63	13545	C
04	I2KFW	110	140	41	5740	
05	SP7IIT	104	126	44	5544	C
06	S52SK	63	96	40	3800	
07	LZ1IA	75	88	42	3696	C
08	OK2BXW/P	73	96	38	3648	C
09	SP3BGD	65	91	39	3549	
10	ON4NG	68	78	43	3354	C
11	SP3SUN	60	70	37	2590	
12	TA2FT	46	90	26	2340	
13	OK2TBC	55	65	34	2210	
14	SP6CYV	58	61	36	2196	
15	LU8FDZ	54	84	18	1512	C
16	YO3FRI	20	21	15	316	
17	IK6TIJ	22	25	12	300	
18	SP4MPH	11	13	8	104	

Non-EA Stations 3.5 MHz

01	RA9LR	17	87	11	957	

Class C (Multi/Multi)

Non EA Stations

01	SP3PLD	125	235	98	23030	T
02	OM3RJB	51	69	40	2760	C

Class D (SWL)

EA Stations

01	URE 117B	94	137	87	11919	T

EA8 Stations

01	URE 102GC	62	104	31	3224	T

Non-EA Stations

01	ONL 383	312	591	135	79785	T
02	G8CDW	239	378	119	44982	C
03	I1 21171	117	312	110	34320	C
04	DE0GMH	103	164	74	12136	C
05	DE7TXL	108	131	63	8253	
06	DL Geller	69	122	57	6954	
07	SP4-208	41	57	41	2337	
08	F-10024	51	77	30	2310	C

Check Logs: EA1PJ, EA1AVN, EA2NO, EA4DZR, EA1FER, I0-1961 RM, I0-1773 RM, LA2KD, SM6APB, SM3BJV, IT9MRW, VK3EBP, OH6UP, LA4WJ

Results submitted by Antonio Alcolado, EA1MV

DAYTON 94 ROOMS UPDATE

If you have made plans to attend the Hamvention in 94 and need a room, the RDJ still has a few rooms left. These rooms are at the Radisson hotel where all the *Digital* action will take place. Seminars, hospitality, RTTY dinner, and more are on the list of things for you to do at the Radisson. So, if you plan to go and want a room with the *Digital* gang, I urge you to contact me immediately. Rooms are going fast and the Hamvention is creeping up on us at a fast pace.

Call, FAX, or write today for your chance to meet a lot of *Digital* folks from all parts of the world. There is something for everyone at Dayton. Consequently, I have no doubt in my mind that if you go, you will go back home with fullfillment beyond your imagation. Dayton is the "One of Kind" show!

de Dale, W6IWO

UPDATE ON LAN-LINK

by: Phil Sussman, KB8LUJ[1]

LAN-LINK is a shareware computer program for the IBM-PC (and compatibles) by Joe Kasser, W3/G3ZCZ. It is a control system which takes maximum advantage of the TNC2 (MFJ-1270), TNC1 (HK-4040), KPC2, KAM, Heath HK-21, PK-232, or MFJ-1278.

I used LAN-LINK with an AEA PK-900. Since the PK-900 is not yet fully supported by the program, I turned off the second port (RAD 1/0) manually when running LAN-LINK.

NEW AND IMPROVED

Since "LAN-LINK REVISITED" in the SEPT-92 issue of RJ, the Table of Contents has grown from 8 to 11 pages. The latest version, 2.20B, includes many updates and improvements. Here are a few of the changes:

- Start up mode and packet terminal mode are both start-up programable.
- PACTOR mode has been added.
- Use of ANSI color files with internal ANSI.SYS
- New commands for Packet Cluster operation
- Customized BBS ZAP commands
- Special "SAREX ATTACK MODE" for Space Shuttle/MIR operation
- Three dBase compatible LOGBOOKS
- Logbook search through 2 different LOGBOOKS for hunting previous QSOs.
- A new EXPERT mode allowing for special customized operations

INSTALLATION

The more things change, the more they stay the same. LAN-LINK is no exception.

The program is huge (now even bigger) and the manual is large. (now even larger) If you want a hard copy of the manual, rather than browsing the documentation with a word processor, be prepared to print over 180 pages PLUS another 25 or so of changes and updates. (Holy computer ribbon!)

Frustration and complexity are the enemies, when you first run LAN-LINK. It is one of the most comprehensive programs ever written for digital data communications. Even with all the pull down menus, it's pretty easy to become 'lost'. Fear not:

- You do not need to learn every possible feature
- LAN-LINK will do almost anything you want it to do (and more), if you approach the task one step at a time
- Don't attempt to configure LAN-LINK if you are fatigued
- Be prepared to spend some time to learn how the system runs
- No matter what you want to know, it's somewhere in the manual, so all you have to do is find it
- The average ham will not utilize a majority of the capabilities and features of the program
- Once you get LAN-LINK set up to do what you want it to do, you are certain to be satisfied (for the moment)

The key to being successful with LAN-LINK is not to become intimidated. You are not going to quickly run this program in a matter of minutes. It will take some work and study. In addition, it takes practice and patience. (lots of patience) Many hams take a quick look at this program, become bewildered, and give up without even trying. LAN-LINK can be that imposing.

The robotic nature of LAN-LINK leads to some confusion. In most cases, you do not have to type a plethora of commands to your TNC to accomplish some goal; the program does that for you. Instead with one or two keystrokes, you can set into motion an entire sequence of events.

For example, suppose you occasionally check in to a local BBS and look for bulletins about PACTOR. LAN-LINK can:

- Scan the mail overhead looking for your call sign. If it locates your call sign, it will 'log-in' to the BBS, retrieve your mail, and store it in a file on your computer.
- Log into a BBS at a particular time, scan the BBS listing for certain words or phrases (like PACTOR, ARRL, DX, etc), determine the associated message numbers and then 'read' those messages. The session is put in a buffer and saved for you.

CONTESTING

Here's an example of one feature. I recently used LAN-LINK to operate in the JARTS contest. I started by creating a separate log file (called JARTS) for the contest and activated the contest mode. A QSO starting number is assigned (usually 001) which is incremented each time a new entry is 'written' to the log and the contest exchange is established. Special character sequences can be incorporated into the contest text string:

will be replaced by the current QSO number

#1 will be replaced by the call sign of the current station being worked

#T will be replaced by the Time/Date in UTC

There are ten available Macro strings for each mode. I customized a some of them for "DUPE", "CQ TEST", "QRZ..", etc.

When working another station, here's how it is done:

- ALT-E is used to enter the call of the station to be worked. A list of the last few calls is shown on the screen. Although there is no 'dupe' check, the current log (and secondary log, if desired) is scanned for previous QSOs, which are displayed. By establishing a log just for this contest, and disabling the secondary log search, the primary search acts as a dupe check.
- F10 is used to turn on the transmitter, F3 gives an automatic call sign exchange, and the "END" key sends the contest text string and turns off the transmitter.
- ALT-L is used to log the call, advance the QSO counter, and puts you in the log "comments" field to allow you to enter the other stations exchange. At the same time you can change the 599 RST defaults or note a change in band. The band shown on the main screen defaults to the last entry in the log. To change band, just change the last entry in the log. ESCape exits the log.

While this might seem like a lot to do, remember, this program can do all that is required for most any contest. Although the JARTS contest does not require the exchange of a QSO number, a record of a sequential number in the comments section of the log certainly helps keep the records straight. The program does not keep score, but it is fast and efficient. Moreover the files are in dBase format, to allow export to another program.

LIFE ON THE CLUSTER

For most anyone who chases DX, using digital or not, a Packet Cluster offers a wealth of information. Unlike a usual Packet BBS where a user logs on, obtains whatever information he wants, and then logs off; a Packet Cluster keeps a multitude of user connections active and 'feeds' DX spotting announcements, WWV flux reports, and other general information to all of the connected users. Several clusters are usually tied together through nodes and information distributed throughout the entire network.

LAN-LINK has some interesting and customized features of interest to those Packet Cluster users. For those who would rather not remain constantly connected to a local cluster there is a "ZAP" command. If the cluster is "zapped", LAN-LINK will issue a connect to the cluster, get the last WWV report and the last 5 DX spotting reports for you auto-

matically. (This is NOT the same as 'zapping' a PBBS, different command, different results)

A newly added feature allows you to SET/ANSI on the cluster (thereafter the cluster will insert ANSI color codes in its transmissions to you) and LAN-LINK will flash colored DX alerts for you. In addition, if you desire, a custom search of your HF log will be made according to specifications you desire.You can also customize Packet Cluster alerting by controlling such items as CW ID dit time and alert tone frequency.

PACTOR MODULE

PACTOR operation is a recent addition to LAN-LINK. Of course it will only operate if the associated TNC is equipped to operate PACTOR. Some updates to operational PACTOR control follow:

- ALT-D and F8 (function key 8) toggle between monitor and standby
- Huffman Compression Enable/Disable
- Forced 100, 200, or AUTO baud (should be AUTO unless special conditions)
- 'END' key is used as 'OVER'
- CONTROL-T adds the time/date string into the outgoing buffer
- ALT-B issues BREAK (ACHG)
- ALT-F flushes buffers (all PC buffers and those in AEA TNC's)
- F6 institutes an auto CQ routine
- F10 starts an FEC broadcast
- ALT-A/ALT-C issues connect to call (! ahead of call for long path with AEA)

ANSI COLOR FILES

LAN-LINK reacts to and passes ANSI color codes, which start with the Escape character (^[), a couple of numbers, and ends with the lower case 'm'. (ie. ESC [40m) This feature allows you to send or display colorful brag tapes and other files using text mode graphics of the PC character set when operating in Packet or PACTOR.

You don't need to worry about whether ANSI.SYS is loaded on your PC, because LAN-LINK has its own ANSI files in code.

When transmitting lines of color, the ANSI control codes add more characters to your lines. As a result, some lines may contain more than 80 characters.It may be a good idea to reset the TNC parameter for line length to a higher value to avoid carriage returns being inserted in the middle of color files.

EXPERT MODE

ELMER is a smart server or second operator feature. It is a routine that allows you to build an expert system. It take 'brag tapes' a step farther. The ELMER contains a list of words to be matched. By parsing the incoming, ELMER will recognize certain words, and automatically transmit certain text files containing replies and further questions, just as if an operator was at the keyboard. (On HF at least, one should be hanging around, hi)

The server can be programmed to prompt people and teach about most any subject. ELMER can be programmed to recognize certain languages and respond to questions in that language. An ELMER STATE TABLE (file name: ELMER.QSO) of procedural knowledge (logic which you map out on paper) is required. Then ELMER is programmed, exercised, and debugged.

There are two versions, one for Packet mode and the other for stand alone development. (which requires additional registration)

This topic could have a review of its own. Perhaps one day I will garner enough courage to tackle the assignment.

MANUAL

The printed manual has over 200 pages. It has a good Table of Contents and a big index. If you prefer to use a word processor, there are about 500KB of documentation files on disk to scan.

I printed out a manual on the printer and punched it for a three ring binder. So, I have no problems keeping the manual and the supplements together.

MY WISH LIST

LAN-LINK can be very imposing. An often voiced concern is that the documentation is so massive that finding something on a particular topic or problem is not easy. As a result, many don't even bother to try.

It would be nice if there was a little 'handbook' that covered 90 percent of what most people use. In fact, what about a bunch of little handbooks, like:

"A HOOK-UP PRIMER FOR LAN-LINK", "COMMUNICATING WITH MIR", "AMSAT-OSCAR ON YOUR TNC", "PACKET/SHUTTLE COMMUNICATION", "GET THE MOST FROM YOUR PACKET CLUSTER", "USING PACKET BBS AUTO FUNCTIONS", "ZAP...HOW TO USE IT", "COLOR FILES AND PACTOR", "LAN NETWORK FUNCTIONS", "CONTESTING WITH LAN-LINK", "ELMER..PROGRAMMING GUIDE TO ARTIFICIAL INTELLIGENCE", ETC. Perhaps I'm being a little sarcastic, but the idea is the manual is literally jam packed and overflowing with information. Another idea would be to have a 'crib sheet' for the most popular modes.

ATTA BOY

LAN-LINK has a lot of novel features not found in any other software. There's little it will not to do. It took years to develop and is continually being updated.

Of most renown are the special color graphics, the various forms of 'zap', the MIR and SAREX modes, four internal Z-modem type protocols, NC/L commands for passing control and messages to other LAN-LINK equipped stations, the 'Meta-Beacon' (for special event stations), and ELMER. (of course)

The auto CQ routine, where you can set the time interval between tries, was neat. I used that method when the band was quiet and it worked well.

You might say Joe Kasser wrote the definitive book on Packet radio. It's called "BASIC PACKET RADIO". And if you don't relish printing the manual, you'll find a copy starting on page 153. (More on Joe's book another day)

OVERALL

First you need a good TNC that is supported by LAN-LINK. An important consideration is whether any of the specialized modes or features will be of benefit to you. The good news is that you do not need to pay for the program until you have had a chance to preview it.

The program is always being changed and updated. The next major upgrade will be support for the PK-900, which is due to be released after the first of the year.

LAN-LINK is not a quick and easy software program to digest or run. Instead it is a complex program that offers nifty features with superior results. Luckily the cost of finding out is relatively inexpensive, and like most of us you'll find some handy applications. That's why LAN-LINK will probably find a home in your program library, too.

LAN-LINK is a shareware program and is available from a variety of sources, such as landline BBS's or book stores (usually for a small copy fee). It can be downloaded from the LAN-LINK BBS at (301) 593-9067 or is available from the author for $5.00US. (specify disk size) Shareware is a 'try it before you buy it' system which relies upon the honesty of the user. You may review a copy of the program on your computer. If you like it and want to keep it, you should 'register' your copy by sending $45.00US to Joe Kasser, W3/G3ZCZ, Post Office Box 3419, Silver Spring, Maryland (MD) 20918, USA (Ph: 301-593-6136). When you register your copy, you will receive the latest upgrade disk.

Thanks for reading and sharing your time with me.

de **Phil, KB8LUJ**

May God Bless you and yours. -73-

1. P.O. Box 31, Clayton, OH 45315

1993 INDEX

CLASSIFIED AD DEPARTMENT

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

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