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RTTY/AMTOR RANKS INCREASING

IN THIS ISSUE

A large group of enthuiasts attended the RTTY forum at the DX Convention in Visalia, CA. in early April.

The topics of Clover and DSP at the Digital Digest forum in Dayton late April filled the room to capacity.

RTTY *JOURNAL*—

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HITS & MISSES

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In Memory of My Dear Friend Cole Ellsworth, W6OXP

On Saturday, April 25, 1991, Cole Ellsworth, W6OXP, passed away after suffering from Pulmonary Fibrosis for about two years. Cole had just retired one week earlier and was in the process of getting all of his affairs in order. Cole was born in North Dakota, April 4, 1929, and over the years has held many callsigns. Some of his callsigns were: W2FLJ, K5OLU, KA2MF, KR6MF, K4KMZ, KR6HN, KG6USA, and W0AAY. He was a avid Ham and accomplished engineer. He had the knack of being able to not only engineer a project, but when something went wrong, he was always the one called first to fix things.

As a friend of many years, I have learned a lot from Cole. His contributions to Ham radio can be measured by the many friendships he has made over the years and by the many articles he contributed to the *RTTY Journal* and other publications. Cole first joined the Journal staff in 1987 (CONNECTIONS Column) and has been a regular until just recently, when his heath began to fail him. But he was not one to give-up and was planning a column for this issue. Cole has been one of my Computer gurus and has also helped me with some of my electronic projects that didn't work right the first time. He is survived by his wife Peggy; daughter Ruth and son in law Gary Paff.

So, it is my sad duty to announce the departing of my dear friend Cole Ellsworth. Where he resides now, the trials and tribulations of living will be meaningless. May his soul rest in peace. Goodby, my friend.

RTTY/AMTOR GROWING

The two pictures on the front cover testify to the increased interest in the Digital modes. I was very impressed by the turnout at the RTTY forum held at the DX Convention in Visalia, California in April. Last year at this convention the RTTY forum only drew a small group and most of those were already Digital operators. But this year the turnout included many new faces. Even the Colvins, who are world travelers and very much into DX, attended this year. Maybe they will take some RTTY gear with them on one of their Expeditions. I leftcopies of the RTTY Journals on the front table as giveaways, and they disappeared at the end of the meeting. This resulted in new subscribers which I very much appreciate.

In Dayton this year the Digital Digest forum really packed them in. The room was overflowing with interested Hams. All the chairs were full and people were even sitting on the tables and floor. It was by far the best participation the forum has ever known. I watched carefully to see if many people left the room after we started the session and I was amazed that only a few chose to leave. Ray Petit, W7GHM, and Bob McGwier, N4HY, both made outstanding presentations on "State of the Art" topics. The buzz word around the convention floor this year was "Clover" the new method of transmission Ray Petit discussed here in the *RTTY Journal* during February, March, and April. Ray's working demonstration at the HAL Communications booth drew many of the top names in all Digital modes. This is a collaboration between Ray and HAL Communications and they hope to have a marketable product by about this time next year. You might want to refresh yourself about this new mode by re-reading the prior *RTTY Journal* articles.

DSP was the other buzz word at the convention, with Bob McGwier being inundated with questions and inquiries. Bob spent time in the AEA booth where the DSP-2232 unit was on display. Bob has been collaborating with AEA on this project for some time. AEA was also nice enough to send me one of these units to have at the hospitality suite as a show and tell piece and it drew lots of attention.

I am very pleased that both Ray and Bob agreed to speak at the forum this year. To me, these two gentlemen are on the threshold of technology in spear- heading digital progress for Ham radio. The RTTY Journal will have more articles on both Clover and DSP soon, as both of these fine pioneers have consented to do more writing on their favorite subject.

By the time you read this issue, I will have returned from the Digital Committee meeting at ARRL headquarters in Newington, CT. I will have a report for you in the next issue of the *RTTY Journal*.

DAYTON ADVISSORY

On page 22 of this issue I have published some of the pistures that I took at Visalia and on page 19 are pictures from Dayton. I plan to publish more of the pictures from Dayton in the next issue or as soon as space permits. If you have never been to Dayton, you will never know what it feels like be apart of something so innormous. This year, rumor had it that there were more than 30,000 people in attendance.

If you do have plans to go next year, it is advisable to make reservations for a room as soon as possible. The RTTYers and CW crowd usually stay at the Radisson Inn and I have been advised they are taking reservations now for next year but they must be in writing and should include a deposit. Trying to make last minute reservations at a hotel in Dayton at that time of year can be a nightmare. You could easily end up thirty or forty miles away in another city. Don't hesitate on this, if you are going, make reservations soon at your favorite Hotel or Inn. I had considered obtaining a block of rooms for us digital folks, but that is not going to work out. So, to those who are counting on me, please be advised, I am not going to be able to follow through with that program.

All for now, have a nice Summer, and watch for your next issue of the *RTTY Journal* (July/August) about the first of September depending on the Postal service.

de **Dale, W6IWO** ■

SOFTWARE

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

This month Aries author Thom Ashton , NY2I, discusses the Lock-up problems mentioned in the February issue and the second installment of the G4BMK software from the UK that can be used with older style demodulaors is covered.

Visalia has come and gone. Betsy and I attended and enjoyed our long visit to California and the DX/Contest group. Thanks to all for the hospitality and good cheer.

Quite a lot in the mailbag this month. First to Jim, N2HOS. The answer is yes, yes, yes, whenever you would like, but may I suggest the September issue. Joel, KD5LQ, wrote asking for information and I have passed along an answer to him via the mail service. Thom Ashton, NY2I, also known as Mr. Aries writes in response to my request on the mysterious lockups I mentioned in my February column. His discussion is so good that I have used most of his letter in this month's column. The points he makes are also good for many of the programs and systems that all of us are using.

ARIES-2 AUTHOR EXPLAINS

Of the nearly 4000 registered Aries Users, we have had notices of these lock-ups from less than 10 individuals. We realize that there may be more Users experiencing the problem even though, with every enhancement notice mailed out, we pleades for feedback. You can't fix it unless you know it's broken!

Factors known to cause lock-ups:

1. A modem or other device setup as COM3 or COM4: Since a true IBM compatible suffers from the original design limitation of only two assigned interrupts for serial communications, various schemes have been devised to fake additional ports by sharing interrupts 3 and 4. As you have no doubt noticed, very little software and even fewer devices (i.e., mouse, trackball, etc.) are able to use these non-ports. When an event polling program like Aries, which can use COM1 and COM2 simultaneously sees that an interrupt occurred while polling a COM port, it interrogates the COM1 or COM2 device using the appropriate command to elicit the response from the device and then processes that information (i.e., a character from a connected TNC or Frequency - Mode data from the Radio interface). If the interrupt was initiated by a device on COM3 or COM4 (remember they share the same interrupt with COMs 1 & 2) and Aries goes ahead and sends the command to the Radio or TNC which it thought initiated it, but that device is not in a state to be polled for its information, a lock-up may occur.

2. RF: Most of the lock-up problems have been traced to this cause. The usual scenario is for Aries to freeze all of a sudden in an AMTOR or RTTY contact. This was hard to track down because Users would report that they could use other programs like those that come with the popular TNCs and never experience the problem. We were finally able to isolate this problem after spending lots of hours on the phone with Users. By cutting back on transmitter power these Users found that the problem went away, yet they still didn't have to cut the power with their other software. How could software make the difference to an RF problem? RF was getting into the radio's computer interface. Since the radio was now connected to the computer and being regularly polled by the program, RF either causes an uninitiated interrupt to occur, or gets into the computers bus through the RS-232 connection. Although this may happen with any equipment, it appears that the Kenwood 940 is the most susceptible to RF getting into the radio/computer interface. Most Users with this problem have been able to eliminate it by the use of good engineering practices in reducing the susceptibility of these interfaces to RF.

3. Keyboard Noise: This has got to be one of the strangest problems we have ever run into. We spent a lot of time on the phone, and sent all kinds of beta versions to Bob Closs, W2RXG, and others in hopes of finding what appeared to be a rash of Users (actually 5) with XT compatibles sharing the same problem. According to Bob and the others, they could type anywhere from a couple of characters to a line or two and when they hit a carriage return, FREEZE TIME! We tried changing our routines around, even though we were convinced it had to be something special about the BIOS in these particular machines, and actually that may still have somewhat of a bearing, let me explain...

As I mentioned earlier, Aries uses a technique known as event polling to give it the unique ability to do several things simultaneously. For example, you can be typing data into a type-ahead buffer while at the same time receiving and printing data from a connected TNC, while at the same time having the frequency and mode updated as you turn the dial on your radio. By the same time, I literally mean that between each character you type, all of this other stuff is happening in real time. Should, in the middle of this, you wish to enter data in the log, you can also do that at the same time data is coming in uninterrupted from the Terminal Unit. Aries is pretty CPU intensive, as not only does it have to poll and process these events, it has to generate and keep tabs on up to 3 software cursors, update the date/time, along with looking for mouse information and special Function Key presses. Anyway back to the noise problem...

It seemed to us that these people were experiencing the same kind of problem one might expect to see if the keyboard buffer was being overloaded. With the keyboard being polled for input at every few CPU cycles it didn't seem possible that this could happen, even to the fastest typist with the slowest computer. Couple this with the fact that these people could send a file of any size from disk in Aries without so much as a glitch and it pointed more to the keyboard buffer, but how could it be?

Well, Bob, W2RXG, always booted his computer by using the reset button or powering up from scratch. He never warm booted (pressing Control/Alt/Delete) until one day a few months ago. When he did he got a continuous beeping signal from his computer and an error message generated by the system BIOS during the start-up diagnostics that told him there was a keyboard error. Examination of the computer's documentation

revealed that this message could occur from a stuck key or dirty contacts on the keyboard, keyboard plug or keyboard lock switch. After turning the keyboard keylock switch several times to clean the contacts Bob re-booted. No error message, and you guessed it... no more problems with Aries since. After Bob so graciously took the time to call and let us know of what he found we contacted other Users who had alerted us to the same problem. Bingo! The interesting thing is that most of these machines also share the same off-shore mother board and BIOS. Why didn't this affect other programs run on these machines? Good question, my suspicion is that it has to do with the event polling nature of Aries. A program technique which, by the way, will be used more and more as programs are designed to be more responsive to the User.

4. Other possibilities: As Billy B. Capers, AL7BB, mentioned in his letter (February issue), when he installed a math co-processor he forgot to set the motherboard configuration switch to reflect this. All other software including an earlier version of Aries forgave him this minor indiscretion. Aries-2, which was compiled using a later compiler version that checks for a math co-processor failed. We never thought of it though, good thing Billy persevered, or else we wouldn't even know about the conflict.

Setting the Aries configuration to reflect that a certain model Transceiver is interfaced when in-fact the User does not have the manufacturer's computer interface connected to the computer, is a common error that can cause strange happenings including lock-ups.

Some Amstrad computers (an IBM clone used mostly in the UK) use a time slicing technique to handle the mouse. Aries and other mouse driven software on these unmodified machines runs at a snails pace. There is a software patch program for these machines available through the Amstrad Users Group called "Tickrate" that fixes the problem. Many times a later version of BIOS from a manufacturer, or a different mouse driver will enhance the performance. I suspect that some Users of Aries might run into strange anomalies with certain mouse drivers used on certain hardware as well. The only thing I know for sure is that with the thousands of different hardware software Radio / TNC configurations in use by the Ham community, there will be an occasional glitch.

THE ARIES SOLUTION

What we can do, are willing to do and have done, is tackle them when we find out about them and take care of our good customers. Finally, let me remind your readers who are also Aries customers that as stated on the first page of our documentation under Enhancements and Updates..." Any registered Aries User may upgrade to the latest version for free. Just send us the original Aries disk and a stamped, self addressed diskette mailer..." We are currently shipping version 1.7 of Aries-2 and although there have been many small enhancements to the program the latest version is smaller and much faster than previous versions.

de **Thom, NY2I**

G4BMK SOFTWARE

At the end of last month's column I eluded to a new software package that was going to be reviewed this month. BMKMULTY is a multi-mode Ham radio software program for the IBM PC and clones by G4BMK. This software is unique and is currently, according to the author, the ONLY commercial software available which allows the PC to run AMTOR with a dumb terminal unit, i.e., CP-1, CP- 100, ST-6000, TU300, TU470 etc.

I am going to relate some of the features with a continuing discussion of its actual on-the-air tests in the following issue. I am going to focus in on the AMTOR ability (steal some of Eddie's wind) and a bit of regular RTTY.

The AMTOR features automatic selection of MODE-L, FEC, or ARQ-QSO depending on received signals. According to Mike Kerry, G4BMK, while in AMTOR FEC it will synchronize on any text and is not dependent on idles/phasing. This will enable a brief CQ that pops up out of the noise to be copied.

Due to some fancy switching of the PTT (push-to-talk) lines the BMKMULTY allows greater distances to be worked with slower switching rigs than some AMTOR systems. It allows receive in the order of 10 milliseconds longer than many.

Mike says that it has exceptionally fast MODE-L synchronizing with retrospective printing of characters received while synchronizing and with good resistance to false locks. It has "Go faster" (DX) and "double check" (HR) modes for ARQ.

Pricing of the BMKMULTY is presently available in a wide number of options but he has a special option for USA customers. The option that I am reviewing has AMTOR + RTTY + CW + TUNER and is priced at $89. There are also FAX and SSTV modules available. I would suggest a note to Mike for details at:

Grosvenor Software (G4BMK)
2 Beacon Close, SEAFORD,
E. Sussex BN25 2JZ
ENGLAND

Ok, that's the scoop on the software. I proceeded to print the documentation that is contained in files on the diskette. The first thing I noticed was that the plug-in to the computer was a totally new way of doing things. Not surprising, but it's gonna slow me up a bit because you know I hate making more cables. Anyway, there is a detailed pin-out for either 9 pin or 25 pin RS-232 hookup.

If transmission on RTTY or AMTOR is to be via FSK, then the output from the DTR line will be used to control the transmitter FSK input via a circuit in the instructions.

Well this is as far as I got before loading up the software. It seems straight forward and easy to use. A setup file is called BMKMULTY.CTL and its a lot like the files used in packet. By the way, the unit will send to COM1 or COM2 only.

More in the continuing saga of this fun piece of software next issue. Looking forward to the Summer, its just around the corner.

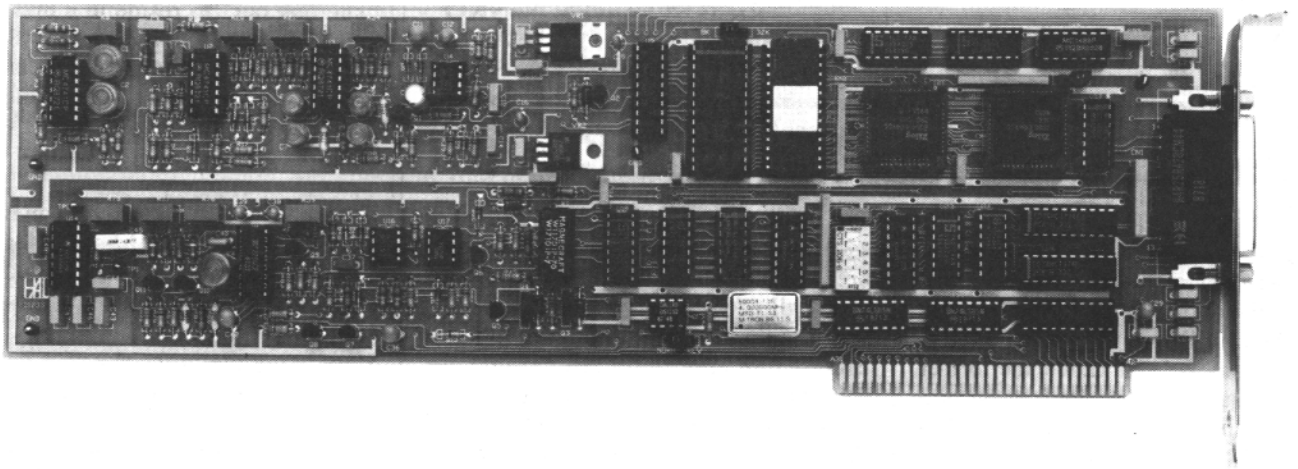
73, de **Jay, Ws7i** ■

ANNOUNCEMENTS

SSC announces PC GOES/WEFAX Version 3.0 with a bunch of new features. SSC at 615 S. El Camino Real, San Clemente, CA 92672 phone (714)496 5784.

Kantronics 1202 E. 23rd St. Lawrence, KS 66046 phone (913)842 7745 announces the Host Master II, a Simultaneous Multi-mode terminal program for the PC. This is for the KAM only and requires firmware version 4.0 for simultaneous support. Sure would like a review of this unit if one of you KAM users would care to do it I will present it here ? de **Jay, ws7i**

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



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

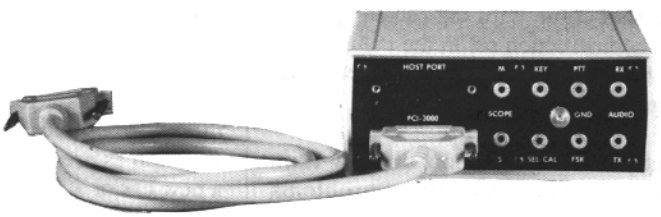
The PCI-3000 doesn't limit you to Amtor. You also get high-performance Baudot and ASCII RTTY, CW, and Search Mode. Search Mode lets you simply tune in the signal—we take it from there. The PCI-3000 automatically finds the correct code, speed, and polarity. No more guessing!

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

SPT-2 Spectra-Tune:

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

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



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

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

(Low tone export models available.)

PACKET

Richard Polivka, N6NKO
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What is it that makes TCP/IP such a popular yet controversial program? Need some help hooking your TNC to a radio, Richard has some hints.

"RESTARE IN PAX"

There was a phrase that, I believe, was made by the author Robert Heinlein that said, "Man will live forever or die trying." Well, as far as I know, the former part of the statement has not been accomplished but, unfortunately, the latter has claimed all comers, willing or unwilling. Its latest unwilling participant was one of our writers, Cole Ellsworth, W6ØXP. I have had several chances to talk with him on the telephone and in person since coming to the *RTTY Journal.* Cole was a brilliant engineer. He was what I call an "Engineer's Engineer." He had the unique ability to take something highly technical and explain it in a manner that anyone could understand. I will miss him greatly and so will everyone else in the Ham world who knew him.

ABOUT LAST MONTH

Last month, I made a request for ideas to cover in this month's column. Well, the ideas have been slow coming in to me. However, one request was relayed to me from Dayton. This request was for me to cover the instruction set for using the WØRLI packet bulletin board program. I will have to be put this request off until my copy of the latest release of the program arrives. After I go through all of the DOCs that come with the package, I will cover the instruction set in the column and come up with a brief summary listing for clipping out or copying to use.

Recently, I was helping out a fellow Ham in the area who was having problems hooking up a data controller to a new radio he just purchased. The problem was that he was not transmitting any data, but was able to receive just fine. The radio would key up just fine, but no data. All of the wiring was checked and double checked by him with a couple of calls to the factories involved to make sure that all was hooked up. He finally resolved the problem after a bit of time working on it. The problem had involved the myriad of adjustments that are available on the new breed of HF radios. Once he had tracked down all of the controls that affect the level of the transmitted signal (he was using AFSK -remember last month?), the solution was FOUND by just turning up all of the controls that were involved and then adjusting them properly. Once the levels were met, he was able to send a 599 signal with no problems.

The solution here was to turn up the levels until something happened. It must be remembered that the majority of the solid state rigs, benefiting by their technology, can handle longer periods of over-drive compared to tube-type radios of the past. So, probably the best suggestion for doing this is to use a dummy load thereby not sending out signals and causing problems on the air while you are getting the adjustments right. Here again, he adjusted his radio so that the ALC meter was about to come off of the left peg. If the needle comes off the peg, that means that the ALC circuit is working but too much movement can cause distortion to your transmitted signal making it harder to copy. So, again remember, keep the levels down.

TCP/IP ANYONE?

What do the people who hold the calls of KA9Q, PAØGRI, G1EMM, and PE1CHL have in common? They have all written software for our computers to run the TCP/IP specs over packet radio. The situation as presented is like shopping for a new car or a new radio. Each author has taken the basics and added their own embellishments to the basic package originated by KA9Q. What this means to me, is a big problem. Because my wish list encompasses parts of each package. PAØGRI's package has a process called TTYLINK that has a split screen where one part shows your text and the other part shows the other party's text. This is nice and helps keep things sorted out. PE1CHL's package does not have this feature but it is capable of operating both ports of the Kantronics dual-port machines like the Data Engine and the KPC-2. G1EMM's package supports a form of multitasking. That could be useful for running the TCP/IP package and then "shelling out" to reside in a mailer program. This could be a big help with emergency communications operations where you are just worried about moving pieces of traffic and not having to deal with the main program on a direct basis

Where can I get some information on shared-interrupt COM boards for a PC? This information would be good to use with the above programs.

Here is my pie-in-the-sky wish list which would incorporate the dual-port communications, split screen operation, and several other options. This probably would yield a humongous program, even would be humongous and unwieldy, even with 640k of memory and enough free memory left to shell out to DOS. I know that I am planning to obtain a system that will have about 8 MB of memory. This system would be able to run a program of that magnitude but it would not be practical for many hams who do not need such capabilities. It would also represent a bad image concerning the software and the abilities needed to run it. Maybe I am just greedy. About all I can say is that if you are trying to find out which one you want to run, try them all first, then decide on which one you like. Right now, I am limited to the PE1CHL software because the Data Engine that I am using will soon be in dual-port operation, one port at 1200 baud and the other one at 9600 baud.

How do you hook up a TNC to a radio?

All you need is a couple of connectors and four wires. Sounds simple? It is. For example, many of the new VHF and UHF radios have an audio out terminal in the microphone connector. Just about all radios except HTs I know of, use PTT to ground to key the radio. And just about all of the manuals that come with a radio have a description of the microphone connector and what is needed to send packet. Where it gets interesting is hooking up a TNC to a handheld radio.

ICOM, Yaesu, and Kenwood all use different schemes on their HTs to key up a radio and feed audio to it. The ICOM HTs use a voltage stealing system to key up and modulate the transmitted signal. There is

a problem waiting in the wings here. If the modulated signal is too high in level, it could "talk" the radio out of transmit.

Kenwood has the audio out appearing in the small jack and the transmit audio jack being the large one. Now comes the fun part with the Kenwood handheld. The PTT line is on the sleeve of the large jack and gets grounded to the sleeve of the small jack. It is a rather awkward arrangement to use. I guess that I am just used to portable tape recorders.

I am not sure what scheme Yaesu handheld radios follow, but I believe that it follows what I call "normal" convention, the small jack being the mic and the large jack being the speaker.

A NEW RADIO

There is a new radio that has been on the open market for a while marketed by a company named Tekk out of Kansas City, MO. It is a UHF telemetry radio that puts outs 2 watts and will directly support FSK at 9600 baud. The unit will fit in the palm of your hand. The price for the radio is in the area of $200.00 from the factory and that includes the transmit and receive rocks. I believe that this would be a good radio for a portable operation involving high speed packet.

NEXT MONTH

I would like to continue to answer the questions that people have out there. I will also start a review of the instruction set for the new W0RLI BBS package. Have a nice month

de **Richard, N6NKO** ■

Interface Your Old TU to Your New Computer

byline: **Vernon C. Spellman, K6CNJ**
229 Doyle Park Dr.
Santa Rosa, CA 95405

For those RTTY'ers who prefer to use a standard converter and an RTTY software program in their computers, here's a simple and compact interface for use between your transmitter and IBM or clone computer. The components mount on a small circuit board that fits nicely in the shell of the DB-25 female cable and plugs into the computer serial port so the interface takes up no extra space in the shack.

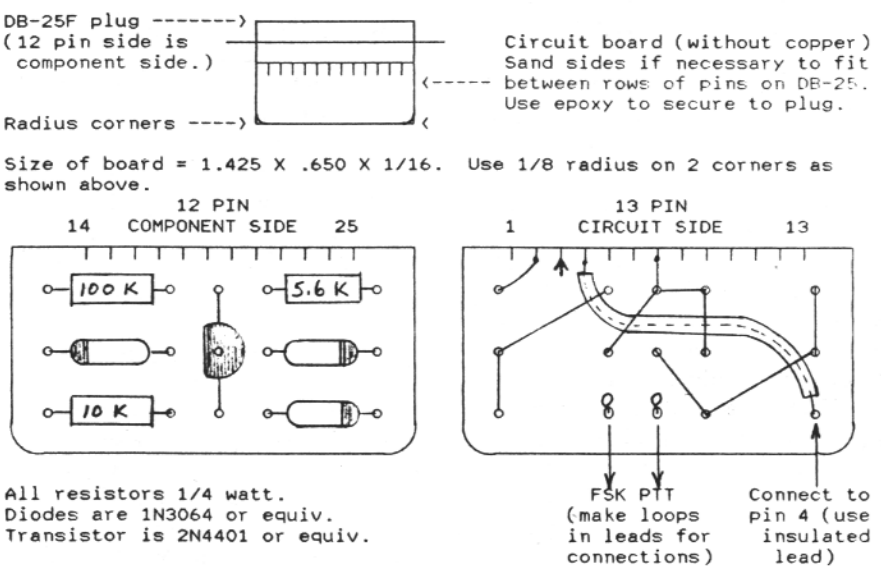
Interfacing for the PTT and FSK lines going to the transmitter, as well as the digital information coming from the converter, are all handled very easily. A keying transistor is also incorporated to key the PTT line for isolation and back-EMF protection is provided for the FSK keying line as well. Power for the PTT keying transistor is supplied by the PTT relay itself, so no external power supply is required for the interface. Component values are not critical, although the PTT keying transistor should be able to handle the current of the PTT relay in the rig. An NPN 2N4401 is an ideal low-cost transistor for this purpose.

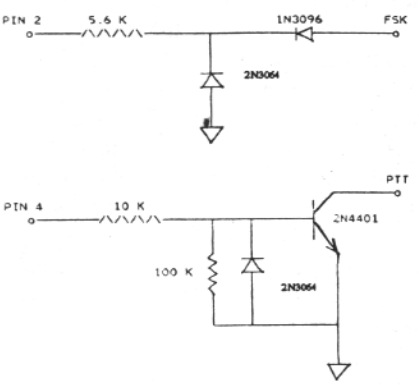
Use shielded single-conductor cables (3) to connect from the interface to the rig and to the converter. Also, it is a good idea to use a metal or shielded type shell for the DB-25 as a precaution against RF interference.

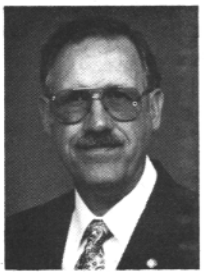
NOTES-

Bend transistor leads close to body before inserting in board. Note orientation of emmitter to ground (Pin 7.) Use small buss wire to connect component circuitry. Also run small insulated lead from shields of cables to pin 7 for grounding. Observe polarity band on diodes. Digital output from converter goes to pin 3.

While the author has used this interface on various rigs and computers with good results, he assumes no liability for any damage to any equipment or computer from its use or construction. ■







MSOs

Dick Uhrmacher, K9VKH
212 48th St.
Rapid City, SD 57702

Making the trip to Dayton can be an interesting experience as Dick points out this month. He also asks for your input. Don't let him down, write to him soon and often.

Hi Gang! Spring has sprung, the Robins are up north again, and young men's fancy has turned to RTTY! I must be getting old! But, it is nice to see the grass green again, to spend some time in the garden, and to start making vacation plans for the Summer months.

1991 DAYTON HAMVENTION

It almost seems impossible that the 1991 Dayton HAMVENTION is history again! Boy, time really flies when you're having fun. We enjoyed seeing many friends again this year at Dayton, twisted a few knobs on the new toys, and generally had a good time. Ol' Man Weather mostly cooperated this year, with a little rain on Friday, but mostly excellent Flea Market weather.

For those of you who haven't made the excursion to Ham Radio's Mecca, the Flea Market at the Dayton Hamvention is something to behold. I've never measured it exactly, but it's approximately three city blocks long, and about a block and a half wide. And, it contains just about anything that ever pertained to Amateur Radio, and a whole bunch of stuff that didn't! (It's the only place I've ever seen where you can buy Viking Ranger transmitters in one booth, and in the next one buy a complete hospital XRAY system!) It appears to this author that computers and computer peripherals are making some heavy inroads into both the Flea Market, and the commercial displays in Hara Arena. A sign of the times, I'm sure! There are many good bargains to be found, and some not-so-good ones as well. One needs to have done his homework on items he wants to purchase in the Flea Market, and "buyer beware" is certainly the catch word.

The annual RTTY Dinner was once again held at The Radisson on Saturday night, and for me it was the highlight of the trip. It's always a great pleasure for me to see friends and acquaintances, and the RTTY Dinner certainly affords that opportunity. Bob Foster, WB7QWG, was this years host again, and as usual did an outstanding job of arranging for and hosting the dinner. The food was excellent, and everyone had a good time. Bob and Dale, W6IWO, (our imperious publisher), held the solemn rights of Oh-Wah-Tah Initiation, and this years inductee was no less than Bill Henry, K9GWT, from Urbana, Illinois. One has to be present to thoroughly understand and enjoy these solemn and protected Rights, and it's enough to say that there is no higher station in life than to be inducted into this Society! We missed seeing Don and Ruth Gallagher, K8WZX, this year at the RTTY Dinner, but Don hopes they will be able to attend next year. Don and Ruth have been at every RTTY Dinner since its inception in 1980, and hated to miss this years events. We also missed seeing Don and Kathy Knollinger, WB8ZTV, and Louise Crawley, WB8JIB. We hope that things will be such that we all can attend next year, as it's always a good time. Frank Moore, WA1URA, gave some chilling, yet exciting, accounts of Abdul, 9K2DZ, tenacity and courage during the occupation of Kuwait. (See the May 1991 issue of QST for further details.)

And finally, I think that everyone enjoyed the Digital Digest forum at Hara Arena this year, particularly the portion having to do with CLOVER. If things pan out like they seem they will, then this new form of digital communications will be very popular, and will most hopefully sound the death knell for HF Packet as we know it today. A great jump in data rate, true forward error correction and a usable bandwidth approaching 500 Hertz! Ray Petit, W7GHM, and HAL Communications (the real pioneers in digital communications), are collaborating on software, firmware and hardware, and should have a product line available late in 1991, or early 1992. Stay tuned!

WA8ZRK MSO ON NATIONAL AUTOSTART FREQUENCY

In a previous article concerning Dennis, WA8ZRK, of Dearborn, Michigan, I neglected to mention that his MSO is of the dual-port type, providing not only access via HF frequencies, but also a VHF port. For those of you in the Dearborn, Detroit or Windsor, Ontario areas, you can find Dennis's MSO on 145.800 MHz, (110 Baud ASCII FM), as well as on 14 085 625 Hz on the National Autostart Frequency (74 Baud, Baudot). His access code is MSOZRK, and in the interim he is using "/EXIT" on the HF port (rather than the traditional ".EXIT" command, (disregard the quote marks). It was my pleasure to meet Dennis personally at the Dayton Hamvention, and we're glad to see his system up and running.

KB0ATQ MSO SYSTEM

Jay, KB0ATQ, Rapid City, South Dakota, has recently been on a quest to build and install a CBMS (computer based mailbox system), utilizing component parts, rather than an integrated system. His new MSO is up and running with the ever popular W9CD MSO software, on the National Autostart Frequency. Total cost, including computer, monitor, keyboard, high density floppy, etc., $200.00! Times sure have changed, and Jay's system performs flawlessly. If you're interested in the details of his equipment, drop him a note on his MSO (access code MSOATQ).

KA0JRQ MSO SYSTEM

Larry, KA0JRQ, Glenwood, Iowa, has a brand spanking new Yaesu FT-1000 Transceiver that he's dedicated to MSO service on the National Autostart Frequency, and he tells me that it's nothing less than a fabulous rig. Larry always has a good signal, and his new transceiver will certainly be an asset. I also enjoyed a short visit with Larry at the Dayton HAMVENTION, but as with most eyeball QSOs there, it was sadly too short! For the latest in DX news, RTTY bulletins, satellite information, etc., ring up Larry's MSO.

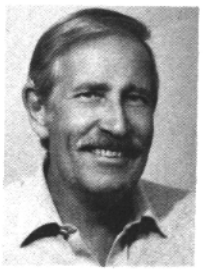
AUTHORS PLEADINGS

This is almost my tenth year of writing this column, and I feel at times that I repeat myself too often. This is YOUR column, your forum on MSO's, and without input from those of you who utilize the MSOs, or are interested in the MSOs, it doesn't take long for me to run out of things to

say. Consequently I come on bended knee, asking for any input, on just about any related subject, that you would like to see in the MSO Column. Got a gripe or complaint? Do you have a better way of doing things? We are always interested in equipment modifications that better utilize Amateur Radio equipment on RTTY, AMTOR, etc. Don't worry about putting your comments in final form, or correct English (I'm the pits when it comes to correct English, and without my faithful Word Perfect, you probably wouldn't be able to decipher my scribbling), just jot them down on the back of your napkin while you're eating at Mac's, and drop them in the mail to me. I'll take them from there. Let me hear from you!

That's it for this month Gang! The XYL and I just purchased a new fifth-wheel recreational vehicle, and if I can get Jay to help me out with one of his economy computers, I'll see you on the air from the wilds of Montana this Summer! Takeumcare and see you on the MSOs!

73 de **Dick, K0VKH** ■



DX NEWS

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

If you are an avid DXer, you couldn't ask for anything more this month. John has covered the intire DX arena with his News, DX Comings, and Most Wanted List.

This column will be a little short this month to make room for the "Most Wanted RTTY Country Survey," found elsewhere in this issue of the RTTY JOURNAL. I was sorry that I could not participate with you in the Dayton bash, which was excellent as usual, I understand, but the Doctor will not let me travel yet.

APRIL HAPPENINGS

Propagation was not much to brag about in April I would say, a K Index of 4 and an A-Index of 63 are not very helpful to good DX contacts. But that does not mean the current Solar Cycle is running out, it just means we have to be more patient than we like to be. With a lot of patience and time a lot of good DX is to be found.

The month of April brought us such goodies as: ZK1CT, ZK1AP, TU2BB, FG4FI, HZ1AB, PJ7JC, EX1HF, EX1FJ, RC2AZ, UC2LEG, LY1BXH, UH2E/UA9TZ, UH8EA, UL7MU, UM8NC, UF6FJ, UG6GC, UI8ABV, RI8BP, UO5OK, UO4OF, UQ2GC, 4LØDXC, 4X2OIL, 4K2FJL, 4K6BDU, VP8BFH, VP8AWU, VP8CGN, OH3AC/OHØ, BV7WB, BV4OB, BV4VB, BY4RSH, BY1QU, XU1DK (Most touching, lovely QSL), P29BT, TJ1MR, RH8AX, 4JØQ, PZ1BS, PZ2AC, Z21GZ, TY1PS, 7Q7LA, 9H1LR, 7X2DS, SU1ER, SU1AH, 5H3GM, 5V7DP, TJ1MR, 3X1GS, 9Y4VU, 9Y4GU, 9K2EC, 9K2DZ, OD5NG, NH8/KG6HI, VQ9TB, V51P, 3D2RW, 5W1KM, 6W6JX, T77T, VU2SJV, KC6VW, V44KW, Y11BGD, S79PDL, 9X5LJ, YN1CB (Yes, he does QSL), FW1FM, 5Z4B1, TA2N, 3D2RW, FWOBX, V73BH, TF3EJ, C311XB, J39BS, J6LOE, J6LB, J88AR, 1AOKM, 5B4ABU, 5T5BW, A41KC, ZDBVJ, HBØ/WIVXV (Gorgeous QSL), VK9NS, YBØQC, GJ4YMX, V85GA, KHO/JA1HGY, FS/JA4RED/JH4ADK & JH411F, SVØCR and HH2LT, to name a few. If you check the "Most Wanted Country List," elsewhere in this issue, you will see that this went a long way towards satisfying the requirements of many a DXer. Question is, are you a real DXer, forgetting about work, sleep and family and just sitting glued to your radio all day and night? Then you will have worked them all.

A real boon was the constant appearance of 7X2DS, almost every day around 0000Z, which will surely have satisfied the demand for ALGERIA. (X your toes for the QSL.) Also it was great to see IKØKM up again for several days, the SOVEREIGN ORDER OF MALTA: pity that it was during the Dayton Hamvention, which caused some of the needy to miss it.

SARTG AMTOR CONTEST

To my great surprise, the SARTG AMTOR Contest was a great success and the Swedes are to be congratulated for an excellent idea. Not only was there good DX (TY1PS and HBO/W1VXV on 3 Bands), it was A relaxing contest. You had time for a bit of rag-chewing in between. I worked about 16 hours, that is all the doctor would let me and totalled 240 QSOs. It was a very pleasant, friendly contest and I hope it will be repeated next year.

Talking about AMTOR though, where I spend a lot of time with my APlink Mailbox, I must say that the behavior of some Amtorites is not always the best. It is no exception that you are talking or passing a file to a weak station, the other side of Africa, and some guy will start calling CQ or Sel Call right on your frequency. Is it because they do not have scopes and cannot see what is going on, or is it pure callousness? A bit of manners would be helpful to all, specially since you cannot start berating the breaker, while in a AMTOR QSO, or the link will break. Please fellows, a little courteousness, AMTOR is robust, but is not unbreakable.

Also, with AMTOR becoming more and more popular, we note more and more AMTOR incursions in the RTTY subband. Please, AMTOR goes up to 14,080 Mark frequency. Or 14,082 LSB dial frequency, if you still have not converted to FSK. Please respect the RTTY subband, which is so heavily threatened by HF Packet on the upper end: I would think that all will agree that at least 15 KC should be reserved purely for RTTY, still the largest digital mode. Even some APlink Mailboxes are parked on 14,081 and higher. Please let us be reasonable!

ADIOS

Seems like a very short column, but our dear Publisher will get mad with me running off at the mouth, as the write up on the "Most Wanted RTTY Countries" got a "little" longer than I had planned, so better say 73/88. There is a lot of good exotic DX coming up, and others that were planned to come up but did not pan out. See the "DX COMINGS" in this issue. And a special word of condolences to that fine expeditionary and DXer, Jim Smith, VK9NS. Luck has not been with him, either in Bangladesh or in Bhutan. But Jim is tenacious and you will see him up from a rare spot shortly. Think that maybe a few contributions to him at C.B address will finance him for the next expensive venture.

A lot of thanks for those who helped me get this column off the ground: I appreciate every bit of DX information I can get to make this column more readable and informative. Special thanks to I5FLN, VK2SG, OD5NG, W6PQS, UZ3AYR, WB2DND, OH7BU, and others. Without you: no column!

So for now 73 or 88, whichever is appropriate and I hope to be instrumental in helping you get some of the rare ones coming up (Delay your summer vacation, etc).

God Bless you all and keep you and give you the time to be a DXer Unlimited

de **John, TG9VT** and from all the "sleeping" Guatemalan Volcanos ■

Most Wanted List begins on Page 20.

DX COMINGS

There are lots of goodies coming up in the next few months and some of them will have passed by the time this month's *RTTY Journal* reaches you. But there is also some bad news.

After traveling to the Country, VK9NS, Jim Smith had to call off his **BHUTAN** operation, **A51JS**. The details are not in yet, but it appears that the typhoon in S.E. Asia had something to do with it and some of gear that was pre-shipped, was a victim of the typhoon.

That also took care of the new **BANGLADESH, S21U**, operation he had planned. But do not despair, Jim is a very tenacious man and as soon as things clear up he will more than likely try again. Meanwhile S2ØVT hopes to be active later this spring with equipment furnished by the **IRDXA**.

Unfortunately the Group activating **ST. PETER & PAUL'S ROCKS, PYØSK**, had again computer problems, as happened the last time. Hence it appears that the needy ones may have to wait for the next expedition, before they can work this rare Island Group on RTTY, unless the computer by miracle gets fixed.

Ron Wright, ZL1AMO did go to **WALLIS ISLAND** and operated **FWØDX**. He made a reasonable number of QSOs on RTTY till his Modem started giving him problems. He is back home now and getting his Modem in shape and now plans an early trip to **VK9X, CHRISTMAS ISLAND** or to **ZL8, KERMADEC**. Don't rule out **CHATHAM ISLAND** either,.**ZL7**.

And the gear for **ET2A, ETHIOPIA**, has been shipped by IRDXA to Jack, W4IBB, who is now on leave in the U.S. and waiting for a Visa to return there. The reason that the Visa is somewhat delayed is that Jack is not going as an International Aid Executive, but as a tourist, to complete his ET2A commitments. Please a word of prayer for him.

Both **3B9FR, RODRIGUEZ ISLAND** and **7Q7LA, MALAWI**, both equipped with IRDXA gear, will QSY from SSB or CW if you request an RTTY QSO.

ROMEO, ex YAØRR, is now planning a trip to **BURMA, XZ**, in the June/July time frame. This will be a four-operator trip, with two transmitting sites. If you know the quality of Romeo's expeditions, you will be assured that this one will be first class. And yes, with RTTY. After that, Romeo does plan another trip to **AFGHANISTAN**, this time accompanied by RL8PYL of Spratly fame.

5R8AL, Alain, will back in the **MALAGASY REPUBLIC** mid June, with a 3 Element Beam. He has RTTY capability and is the only Ham with a permanent Operating Permit. Find him on CW or SSB and he will QSY to RTTY.

Ham radio operations have now been declared legal in **C9, MOZAMBIQUE**. We therefore assume that much activity will come from that country, including RTTY.

In the **SOUTHERN SUDAN, STØDX**, Dennis, ex TZ6MG, has received the IRDXA gear and should be on the air any time now. The delay is caused by the terrific load of his Humanitarian efforts, the reason for which he is in that country.

It is now pretty sure that WA4JQS does have transport for late '91 to **VP8, SOUTH SANDWICH ISLANDS** and the RTTY gear from IRDXA is in his hands. Will that be another all time new one on RTTY that will be in minimal demand after this trip?

By the time you receive this issue of the *RTTY Journal*, the expedition to **MALYJ VYSOTKIJ, 4J1FS**, will probably be history. This is a great venture by six Finnish and 5 USSR operators, to a spot not previously on RTTY ever But this time it will be an All Mode Operation and RTTY is planned for 14,082 +/- QRM.

OD5NG, Tom, in **LEBANON** is back on the air after a lengthy radio problem. Look for him 21,074 or 14,074 ARQ. Welcome back to the world, Tom.

Those still needing **CLIPPERTON, FOØX**, take heart that it will be on the air on RTTY in spring of 1992.

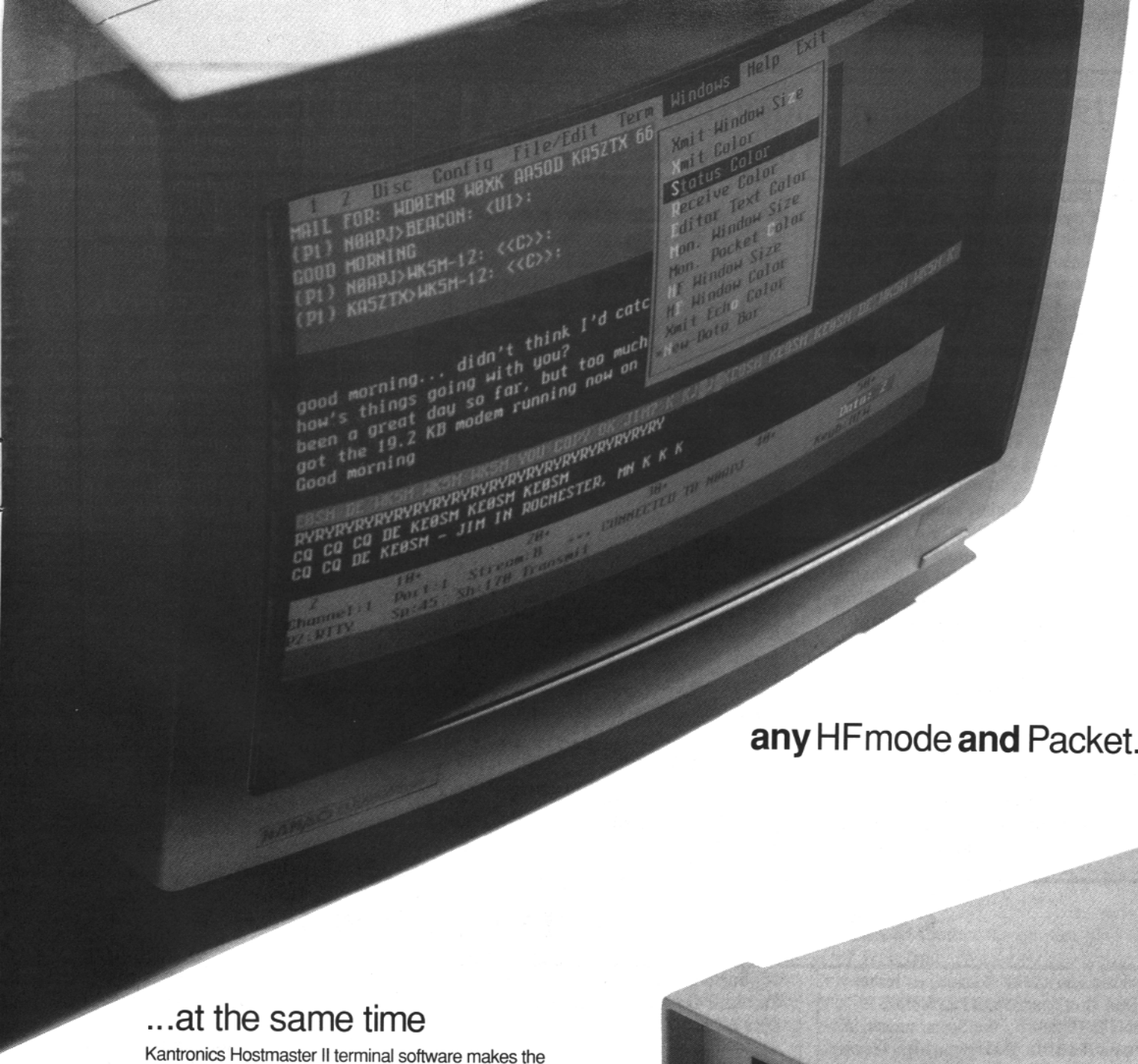
And, as I write this, a one week expedition is being planned by Jose, TI2JJP, to operate as **TI9JJP** from **COCOS ISLAND**, starting about 21 May. Equipment for RTTY, a Hal Telereader, has been air shipped by **IRDXA** to San Jose, Costa Rica and is ready to go. The only problem is that Jose had been offered free transport on a fishing boat, but the engine of that one broke down (better in the harbor than at sea) and now Jose needs to pay $2,500for commercial transport and is short of money. Any help towards this venture will be appreciated, please your contributions to Mario, TI2MCL, at the C.B address.

By the time you read this, WB2DND's expedition to **A61AD, U.A.E.** will be history. Time schedule May 11-17.

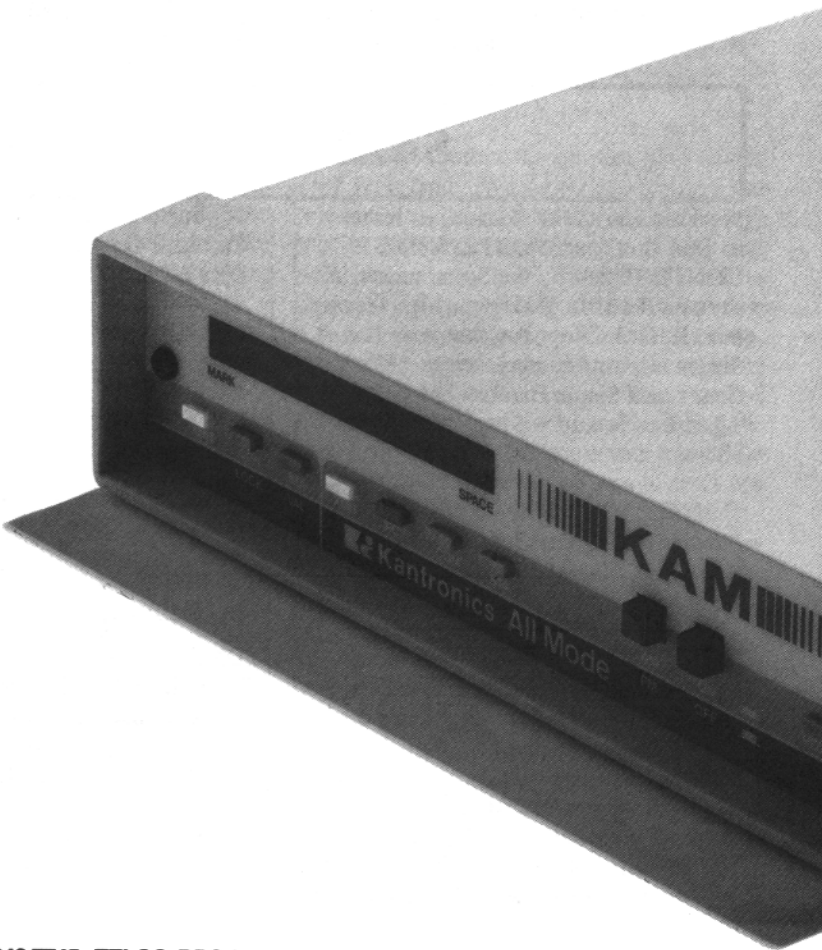
RUMORS: **VP8BFH** is planning to go to **SOUTH GEORGIA ISLAND** in November '91 with heavy emphasis on RTTY. **HPOPOL** in the **SOUTH SHETLAND ISLANDS**, has stated that he plans to be on RTTY in May.. if he can get his computer repaired. From all I hear, computer maintenance places are not abundant in those Islands.

Finally, keep an eye out on what is happening in **YUGOSLAVIA**: there may soon be a multitude of new DXCC Countries there, if the evident National aspirations of some of the minority groups in that country are realized.

73 and Good DX de John, TG9VT



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



...at the same time

Kantronics Hostmaster II terminal software makes the multi-mode single keyboard system a reality. With a PC compatible computer, Kantronics All Mode (KAM ver. 4.0), your own HF\VHF transceivers and just a few keystrokes, you can work any mode on HF and packet on VHF at the same time.

Now with KAM version 4.0 firmware, you can operate CW, RTTY, FEC, ARQ, packet or copy NAVTEX on HF and packet on VHF/UHF simultaneously. Toggle back and forth between any HF mode and packet, view monitored and connected packets and HF data at the same time, or output text to your printer.

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1991 Australian National Amateur Radio Teleprinter Society World-Wide RTTY Contest

1. TEST PERIOD: Saturday 8 June 1991 0000 UTC, to Monday 10 June 1991 0000 UTC.

* Not more than 30 hours of operating is permitted for Single Operator stations. Non-operating periods can be taken at any time during the contest.
* Multi-operator stations may operate the entire contest period.
* Summary of operating times must be submitted with each score.

2. BANDS: Use all Amateur Bands 3.5, 7, 14, 21, and 28 MHz.

3. MODES: All digital modes permitted (RTTY, AMTOR, FEC, PKT) Note: No satellite operation permitted.

4. CLASSIFICATIONS: (A) Single operator (one transmitter) (B) Multi-operator (one transmitter) (C) SWL Listener

5. MESSAGES: To consist of : RST, TIME (UTC), & ZONE

6. SCORING: As per CARTG Zone Chart, multiplied by the number of countries worked, multiplied by the number of continents worked (max. 6.) After the above calculations, world stations add 100 points for each VK worked on 14MHz, 200 points for each VK station worked on 21 MHz, 300 points for each VK station worked on 28 MHz, 400 points for each VK station worked on 7 MHz and 500 points for each VK station worked on 3.5 MHz. EXAMPLE: 720 points from Zone Chart (**see March issue page 17**) X 29 countries worked X 5 continents worked = 104,400 points, plus (+) 6 VK stations worked on 14 MHz (that is 600 points), giving a grand total of 105,000 points. A station may be worked only once per band, but may be worked on another band for further multipliers.

7. COUNTRIES: Country count as per ARRL list of countries, except that each VK, JA, VE, W/K districts count as separate countries. Contact with ones own country count as zero points for multipliers.

8. LOGS: Logs must show in this order:
1. Date
2. Time (UTC)
3. Callsign of station worked/heard
4. Message information sent/received (RST/TIME/ZONE)
5. Points claimed.

9. CLOSING DATE: Logs must be received by the Contest Committee by 1st September 1991. The address for logs is:
W.J. (Bill) Storer, VK2EG
55 Prince Charles Rd.
French's Forest, NSW
2086, Australia.

10. SUMMARY SHEET: Summary sheet must show: Callsign of station, name and address of operator, bands used (a separate sheet is required for each band), the points claimed for each band, number of VK stations worked, Total points claimed and signatures. Multi-operator station logs must contain the signatures and callsign of each operator.

11. AWARDS: Awards will be issued for 1st, 2nd, and 3rd on world basis and also on a country basis.

The judges decision regarding the placings in the contest will be final and no correspondence will be entered into regarding same. Logs become the property of the Contest Committee on completion of checking. 73

de **Bill, VK2EG (VKEG)** ■

SARTG Worldwide RTTY Contest 1991

We have the great pleasure to invite you to join the 21st WORLDWIDE RTTY CONTEST run by the Scandinavian Amateur Radio Teleprinter Group, S.A.R.T.G. New for this year is that a Single Operator may enter either All Bands or a Single Band as before, or both ALL bands and a Single Band of own choice.

CONTEST PERIODS: 0000-0800 UTC, Satruday, August 17th 1600-2400 UTC, Saturday, August 17th 0800-1600 UTC, Sunday, August 18th 1991

BANDS: 3.5, 7, 14, 21, 28 Mhz. The same station may be contacted once on each band for QSO and multiplier credits.

CLASSES:
A) Single Operator, All Bands
B) Single Operator, Single Band
A+B) Same as "A" but with the addition that you may also enter a Single Band "B" of your choice.
C) Multi Operator, Single TX, All Bands
D) SWLs, All Bands

MESSAGE: RST and QSO number starting with 001

QSO POINTS: QSO with own country five points, QSO with other countries in own continent ten points, QSO with other continents fifteen points. In Australia, Canada and USA each Call-District will be considered as a separate country.

MULTIPLIERS: Each country as by the DXCC list count as one multiplier on each band, including the first contact with Australia, Canada and USA. Each call-district in Australia, Canada and USA will count as additional one multiplier on each band.

SCORING: Sum of QSO points X sum of multiplers = TOTAL SCORE.

SWLs: Use the same rules for scoring, but based on stations and messages copied.

AWARDS: To the top stations in each class, country and district mentioned above, if the number of QSOs is reasonable.

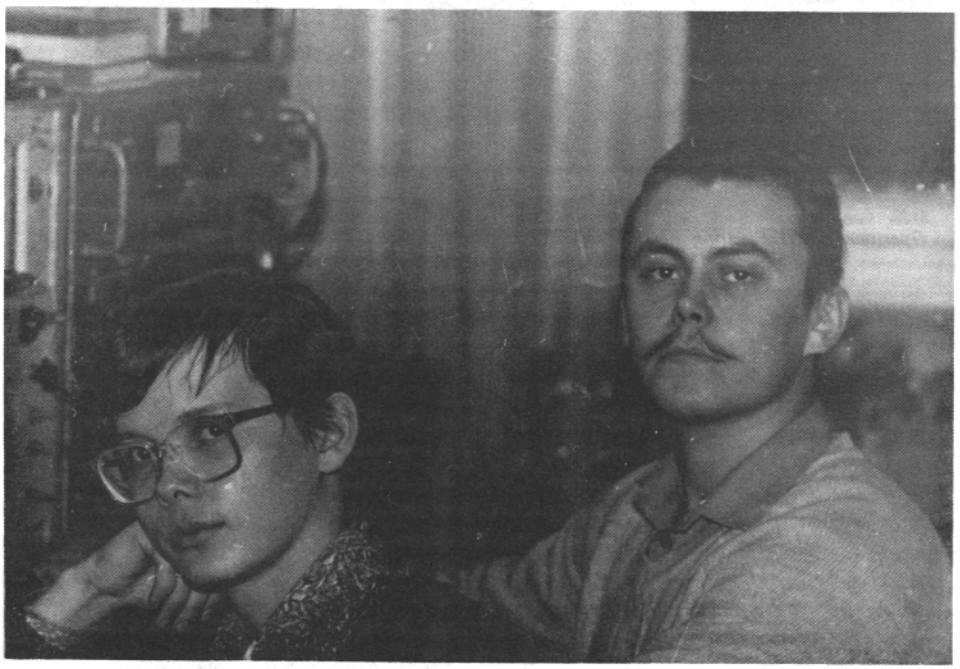
LOGS: The logs must be received by October 10, 1991. The logs to contain: Band, Date/Time UTC, Callsign, Message sent and received, Points and Multiplier. Use a separate sheet for each band and enclose a Summary Sheet showing the scoring, class, YOUR CALL, NAME, and ADDRESS. In case of multi- operator station, the CALLS or names of all operators involved. Your comments will be very much appreciated!

Send logs to:
SARTG Contest Manager
Bo Ohlsson, SM4CMG
Skulsta 1258 S-710 41 Fellingsbro
Sweden

RH7E

If you are a serious Contester and want to win, sometimes it is necessary to make a special trip to some new place where a special callsign can be obtained. This story tells how the UZ3CWA club went about just such a plan. However, even then, a win cannot be guaranteed.

byline: **MikeUV9CAF**
c/o UZ9CWA
Tchaikovsky Str
88/1 96 Sverdlovsk
620130 USSR



Mike, UV9CAF and Serge, UA9CGA

It looked like many guys were greatly surprised during the 1990 CQ WW RTTY contest, seeing RH7E on their screen. The great number of questions, like: "What does RH7E mean?" or "RH7E/??," etc. proves it. That's why I want to share how it all took place.

Those who operate in any RTTY contest are surely familiar with the UZ9CWA callsign. Our club first appeared on RTTY in 1986 and since that time there have been no contests without our participation. At first all went fine, there was almost no one else from Asiatic Russia and everyone was happy to get a rare multiplier. But, time goes by and last year we noticed we are not DX anymore. We tried to find a way out by obtaining some special contest call to attract the crowds but nothing helped. Even operating with the RW9C callsign did not put us up to the highest place. Most of all, our northern position (latitude is 57 degrees N) doesn't allow us to use the HF bands as they should be used. That's why, when our friend Serge, UA9TZ, suggested a visit to Turkoman, where Victor Pechorkin, UH8EA, has his magnificent station, we had no doubts at all. So, the choice was made and we started to solve all sorts of problems, even some not thought of before.

Gear weights over 60 Kgs!

First of all, we had no experience on how to go about such an adventure. We knew one thing for sure; we would have to take as much equipment as possible along having no confidence that it all would work okay after transporting it so far. We finally were ready to start with: 3 computers, 2 TRX, and 3 RTTY Modems (one of them - an old professional Army Communications unit with the weight of 60 Kgs)! All of this made a heavy load for us to take, but otherwise we were sure that at least something from this heap would work at the location. To be quite sure, we decided to arrive there a week before the contest, in order to have time to repair what may have been broken (or at least to have time for rest).

We started our travel by train (no tickets for airline were available, as they like to make a big problem over nothing in our country) on a Thursday evening, one and one half weeks before the contest date, and reached the exact QTH 3 days and 4 nights later. We were tired but happy, and filled with famous Turkoman melons and fruits. It didn't take to long to go 2,000 Km?

Our way was along the Silk Camel Caravan Trail of Marco Polo from Persia to China. It is a beautiful ancient land, architecture, with lots of picturesque folks. It reminds you of one of those Eastern fairy tales until you see four monobanders in the very center of the Karacumes desert surrounded by sand. The lowest tower is not less than 30 Meters, and the highest is more than 60 Meters. One look at them gives a feeling of confidence.

A few words about the owner of all this. Victor, UH8EA, was well-know as one of the best SSB and CW contest men until 4 years ago. His many awards are evidence of his achievements. But in 1986 he was accused of all sorts of sins by our famous bureaucracy, and lost his license. However time changes and now Victor is back on the air again with legal 1Kw and excellent antennas.

The week before the contest gave us lots of free time. We spent it enjoying the beauties and climate of Turkoman (in daytime the temperature rises to +50C, and falls down to +15 at nights!!), while preparing and cabling all equipment. We found everything okay after transporting, but the computers could not get adjusted to such high temperatures. They worked fine at night, but gave trouble during the heat of the day. The same was true of the TRX. Another great job was to erect one more tower, 60 Meters high, containing 4 vertical elements for a 3.5 MHz antenna system, with lobe switching. That was the one that helped a lot during the contest.

Enjoying the propagation, we found 10 meters to be excellent. Sometimes, the F layer was strong day and night, with great propagation 24 hours a day. The low bands were also fine with a couple of pages of U.S. worked on 80 M CW in the middle of September. This was impressive.

I had heard before that Karacumes is filled with all sorts of scorpions, poisonous spiders, and snakes, but I could not imagine at all that one of these creatures would make me limp for almost 2 weeks. Its bite made my leg swell to twice its size and become red and blue, and I still don't know which creature got me. That is the only thing that spoiled the trip for me.

Contest Time Arrives!

Finally, the 1990 CQ WW RTTY contest itself and we were again someone important. We knew we were DX that everybody would be wanting. I will never forget those hectic pile-ups that saturated the consciousness throughout those 48 hours. But we had little use of our second TRX which we were going to use for spotting, because it had no immunity to TX RF. So all of our 1325 QSOs were really the minimum possible. We could have done much more if all the gear had worked okay. But regardless, we now had the main thing - experience, and we learned what to do next time (first of all, a better radio, small TRX, well immune to TX RF is needed).

Leaving the day after the contest, we donated to Victor the old type military Modem (The best one I have ever seen. By the way, it would receive tones which were almost inaudible.) So now all he needs is a computer and he will be ready for RTTY. Victor was really impressed by the capabilities of RTTY and is looking for any possibility of getting a computer.

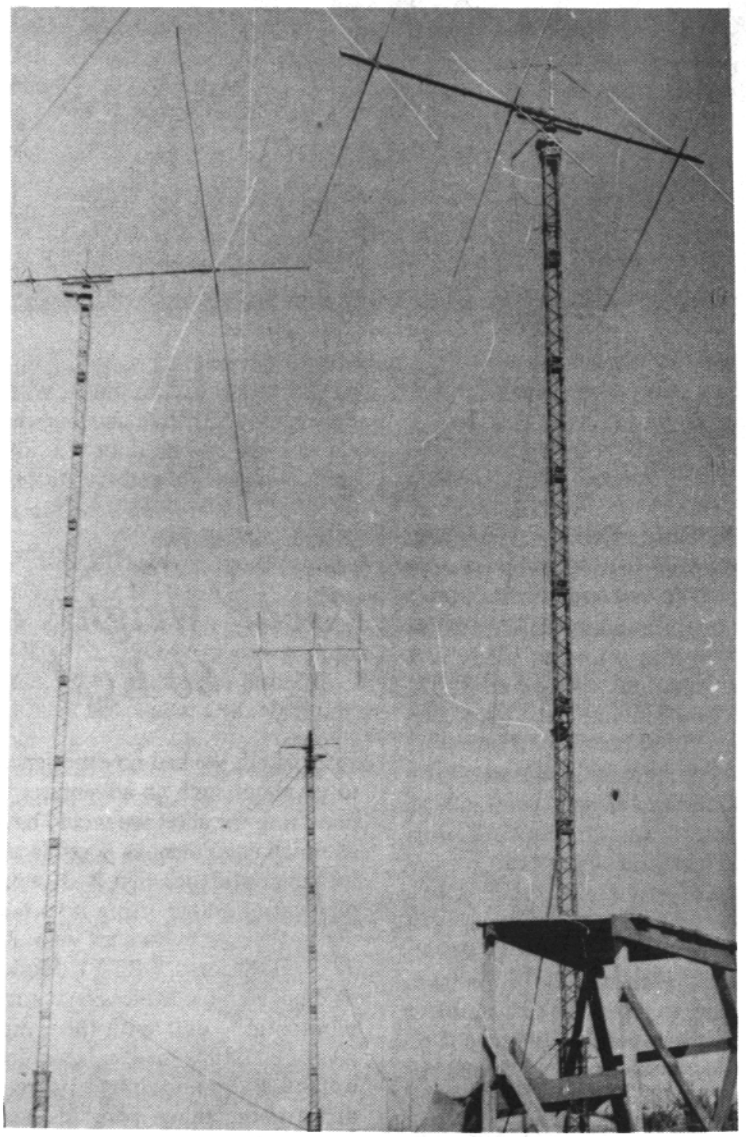
All QSLs to RH7E or UH7E/UZ9CWA will be answered by John, K8NN, who kindly volunteered to be our QSL manager.

The team operating at RH7E consisted of Alex, UH1E/UA9CR, married with 2 children, the acknowledged chief of the club; Tony, UH2E/UA9CFV, 35, married with 2 children, a computer expert, and author of our RTTY software; Serge, UH3E/UA9CGA, 23 and still unmarried, fan of RTTY; myself, Mike, UH4E/UV9CAF, 20, unmarried like Serge; and Andy, UH5E/UZ0CU, a technical expert and fine operator.

Our sincere thanks to Victor together with his gracious XYL and very pretty daughter for their nice hospitality. Thank you all and see you in the next contest. 73 from the gang at UZ9CWA.

de **Mike, UV9CAF**

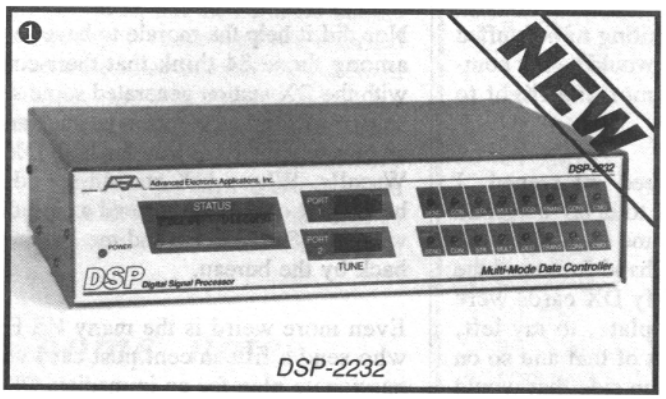
Operators at RH7E during the 1990 CQ/RTTY WW RTTY Contest. Standing: Mike, UV9CAF; Alex, UA9CR; Serge, UA9CGA Seated: Tony, UA9CFV; Andy, UZ9CU.



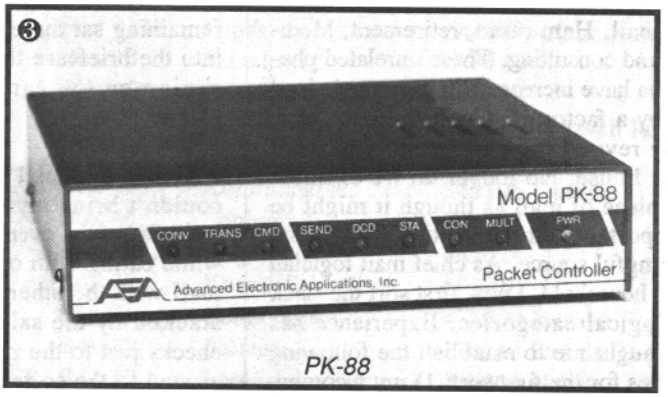
Antennas used during the RH7E contest operation were located at the QTH of Victor, UH8EA.

high-quality AEA low-cost

Digital Data Products

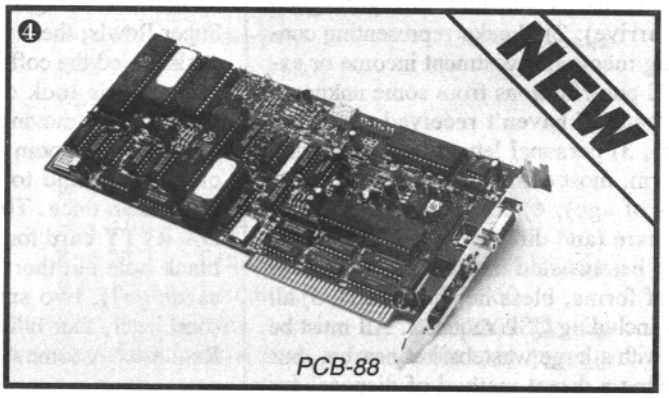


DSP-2232



PK-88

PK-232MBX



PCB-88

① ***NEW!*** **DSP-2232 (pictured) and DSP-1232:** *state-of-the-art controllers utilizing digital signal processing technology with the Motorola 56001 processor; built-in software modems include all standard FSK modems, G3RUH/K9NG 9600 bps modem, 400 and 1200 bps PSK telemetry modems for PACSAT and OSCAR 13 & 15 satellites, AEA's V.26b 2400 bps DPSK modem and more; modems for SSTV, multi-level grey scale WEFAX and WEFAX APT coming soon; includes all features of the PK-232 and much more; dedicated parallel printer port; DSP-2232 has two simultaneous radio ports and a front panel LCD display; DSP-1232 has two switchable radio ports (no LCD display) and can be upgraded to the 2232 at any time* **DSP-1232 $789.00**
. . . . . **DSP-2232 $999.95**
. . . . . **DSP-1232 UPGRADE KIT $299.95**

② **PK-232MBX Multi-mode Data Controller:** *most popular multi-mode controller ever made; RS-232 compatible controller for Packet, Baudot and ASCII RTTY, AMTOR/SITOR ARQ and FEC, Morse code and WEFAX; also receives NAVTEX/AMTEX and TDM; superior Chebyshev filter design for better copy; built-in 18K byte PakMail™ personal packet maildrop with auto forwarding; SIAM™ for automatic RTTY signal identification; KISS mode for TCP/IP compatibility; Host Mode for user-friendly software interface; cables and connectors included* **$349.95**

③ **PK-88 Packet Controller:** *the easiest way to get started with amateur digital communications; same packet commands as the PK-232; includes Host Mode and 18K byte Packet maildrop; AX.25/L2/V2 compatible; requires 12 – 16V DC @ 500 mA (not included); advanced features such as KISS mode and NET/ROM compatibility for the advanced user, easy to learn for the new user* **$119.95**

④ ***NEW!*** **PCB-88 IBM Compatible Plug-In Packet Adapter:** *full-featured Packet controller; plugs into 8-bit expansion slot in your IBM PC, XT, AT or compatible; includes all features of PK-88 controller and more; packet-only version of PC-Pakratt II (called PC-Pakratt-88) terminal control software included at no additional charge; external 12V DC input (power supply not included) so your unattended TNC and mailbox can operate with the computer turned off; true packet DCD sensing circuit included; built-in modem disconnect header* **$169.95**

Specifications are subject to change without notice or obligation. Prices listed are suggested Amateur Net through participating AEA authorized dealers (DSP upgrade kit available through the factory).

Technical support may be obtained through CompuServe's Hamnet forum. Messages should be addressed to user ID #76702,1013.

Advanced Electronic Applications, Inc.

P.O. Box C2160 / 2006 196th St. S.W. Lynnwood, WA 98036-0918
Technical Support & Sales: (206) 775-7373 Fax: (206) 775-2340

ARE WE HAVING FUN YET?

(Or, a day in the life of a QSL manager)

Jim Mortensen, N2HOS, explains the fun and frustration of being a QSL manager. Reading this interesting article may help you immensely the next time you need a QSL card from a rare country.

Junk mail, Ham radio, retirement, Medicare, and consulting. These unrelated phenomena have increased the postman's load here by a factor of at least four, and have totally revised the mail opening protocol at our house. No longer do we examine each piece of mail as though it might be an important communication from some meaningful source. As chief mail logician in this household, I now first sort the stack into logical categories. Experience has now taught me to establish the following priorities for the first sort: 1) my incoming DX QSL cards (oh, how rarely the good ones arrive); 2) checks representing consulting income, investment income or expected contributions from some unknown benefactor (I haven't received any of the latter); 3) personal letters (a disappearing art form, most come from friends over 75 years of age); 4) communications from Medicare (and directed to Gen XYL who so far has insisted on handling the mountain of forms, bless her heart) and; 5) all other including QSL requests. All must be done with a large wastebasket nearby, thus allowing a direct method of disposal for the onslaught of junk mail and the second, third or fourth copy of the few catalogs that we wish to keep. It is a wonderfully efficient system.

Organization and logic aside, let's not kid each other. When arriving home to an empty house (Gen was already in Florida) at 6PM on a dark and cold winter's night after seven days absence, the last two spent leading a grinding two day planning session for a client—the last night spent on a pool table they called a bed—the sight of a two foot high pile of mail was not a vision that triggered many kind thoughts, thoughts further dimmed by the knowledge that the overwhelming majority of the stack was either junk mail or inbound QSL requests.

Undismayed, with an appropriate beverage in hand and a frozen dinner in the oven, I tackled it (the trusty waste basket at my right side). I quickly culled the "disposables." Out to the garage went the garbage can, filled to the gunwales with paper. The neat, albeit substantial stack remaining sat there waiting to be stuffed into the briefcase that would be my companion on the early morning flight to Florida.

DX and financial greed intervened. I couldn't bring myself to delay a second look. Out of the oven came the dinner and, while eating with one hand I resorted the mail with the other. My DX cards were stacked by the salad plate, to my left, checks just to the right of that and so on around to the coffee cup side that would be home to the QSL requests. Like recent Super Bowls, there was no balance. Soon, cards buried the coffee cup. Then the QSL request tide took over the center of the table and kept moving to the left until there was scarcely room for even a handful of other mail. Sad to say that happened to more than once. The final tally was one DX RTTY card for me (oh, where is that black hole out there.. the one where my cards go?), two small checks, one personal letter, four bills and eighty four QSL Requests! A somewhat lopsided score.

Not One Card For N2HOS!

Though somewhat dazed by life's cruelties, I couldn't stop. There just had to be some good news in that pile of 84 envelopes, even if they all looked like they were carrying the wrong kind of cards. Surely at least one of them would be for me. I opened every one of the doggone things right at the table. This time I threw the old envelopes on the floor and they stacked up like coin wrappers around a slot machine. Not one card was for N2HOS. That bruised my morale.

The 84 Hams who initiated all those requests added fuel to the fire. Their QSLing habits dampened my spirits. Scotch tape, for example. The act of opening an envelope from a US Ham is often a bit like trying to open a safe with only the first number of a three digit combination lock. They use it to anchor everything in its place, to hold the oversized return envelope painfully stuffed into the undersized exterior envelope, to hold a note on the card, to double and triple seal the flap. Secure? Yes, but also impossible to open without risking damage to the card or the SASE or the note that says "PLEASE QSL !!!!!" We should bring some JA Hams over here to teach us all how to do it the right way.

Nor did it help the morale to have several among those 84 think that their contact with the DX station generated some secret source of funds for return postage and/or an envelope. That is true for both DX and W calls. Why a DX station spends the better part of a dollar to send a card direct without a SASE is beyond me. So they go back by the bureau.

Even more weird is the many US Hams who send a fifteen cent post card with a passionate plea for an immediate QSL so they can get their DXCC. Please don't do that.

At one time I would bend a bit because many cards appeared to be from the inexperienced DXers among us. A post card would go out explaining the facts of life and asking for a SASE. Since I had but a 50% response to such requests I stopped the practice. I also formed a permanent impression of those who send such post cards. Now, they just get marked "NO SASE" and go to the pile for ultimate forwarding to the appropriate DX station.

While I must admit that very few cards contain erroneous QSO details, I do weary of other bad habits. For example, about one fourth of the cards are for QSOs back several months to several years! That is difficult for me to understand. If you work some DX and you want the card why not send it out right away? Puzzling for sure, it also takes a lot more effort for the QSL manager.

But, you say, the "Green Stamps" and the IRCs make up for all the trouble. Right? Well, let's see. Out of the 84 cards I received $9.50 in both forms of currency. That happens to be a bit above average. Outbound postage cost amounted to $3.60 that left me a net of $4.90. Aha, a free lunch! (Maybe in Florida but not in New York.) Wrong. Since I furnish the cards, forward the incoming cards to the DX station, etc., my net cost per card is about twelve cents, or about $10 for this batch. Being out of pocket that much doesn't dismay me for I have spent that much, one dollar at a time, chasing one DX card that

I have yet to receive. It is convenient to have the IRCs, of course, but no one is in this business for the coin. Show me a QSL manager who is in it for the money and I will show you a genius who has access to free cards and postage!

A little butter pecan Haagen Dasz helped ease the pain. And I began to read what was on the cards, not the numbers but the words (whoops! There was one returned to me because I had inverted the letters in the callsign.. my first ever mistake.) Almost half the cards lacked personal messages of any kind. That makes a mockery of the "A QSL is the final courtesy of the QSO" school of thought and strikes me as a sterile approach to the chase. But to each his own.

Some notes grab you!

Some notes were the normal few words, but some were letters with pictures and clippings attached. One even had a holographic photo of the shack taped to the QSL card. Impressive! The notes that grabbed me most were also the ones that restored my morale to normal. Reminding me just why I was performing this crazy chore and why I would keep on doing it and having fun doing it for years to come.

A few examples:

A 3 call who said "Thanks for my BEST DX contact. New country." Or another from 4-land who said "Thanks for a Ham radio experience that I will never forget." Or how about "Thanks for the new country. I'm new to Ham radio and trying for WAC and DXCC." Or "I have been a Ham for only five months and am thrilled with contacts from afar." Or, one signed "Thanks from a 12 year Ham." Or, "I have been a Ham for 37 years and you are my first VU contact. I'll never get over it." Nor will I. I bundled the cards and placed them in their proper slot in the overloaded brief case. I went to the shack and found a few of my pals on RTTY. And all was again right with the world.

byline: **Jim Mortensen, N2HOS,**
65 Holly Place,
Briarcliff Manor,
NY 10510

■

WV7Y QSL ROUTES FOR MAY 1991

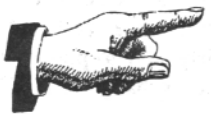
From Serge, a member of UZ9CWA club, comes a fantastic listing of RTTY QSL routes for Soviet Union stations:

UM8NC	Box 5,	Majli-Saj,	715420 Kirgiz Rep
UG7GWY	Box 1,	Yerevan,	375038 Armenia
UH2E/UA9TZ	Box 13,	Gaj,	462630
RA9MH	Box 4117,	Omsk	644089Asiatic Russia
UAØQBR	Box 13,	Udachnys,	678189
UA1ASM	Box 200,	Leningrad,	198328
UL7LR	Box 97,	Dvetygara,	459430, Kazakh Rep
UA9MBO	Box 971,	Omsk,	644018
UB5MW	Box 173,	Kommunarsk,	349105 Ukraine
RA1AEG	Box 46,	Leningrad	199155
UW4HB	Box 875,	Toljatti,	445024
RAØFW	Box 37,	Yuvno Sakhalinsk,	693010
UL7BJ	Box 7,	Celinograd,	473000 Kazakh Rep
RL7RBU	Box 38,	Balhash,	472210 Kazakh Rep
UI9GWA	Box 15,	Fergana,	712000 Uzbek
EKØRR/AM	via RW3AM		
UB4UFZ	Box 12,	Borispol,	256300 Ukraine
UA6HZ	Box 1,	Yessentuki,	357600
UA9CR	Box 293,	Sverdlovsk,	620145
4K2BDU		via UA9MA	
UA3YCA	Box 271,	Bryansk,	241000
UT5JCF	Box 72,	Sevastopol,	335055
UA6LU	Box 416,	Rostov on Don,	344007
RC8/UM4MZG	Box 22,	Schastie,	348903 Ukraine
UA3PNN	Box 1123,	Efremov,	301860
RV4F/RT4UY	Box 73,	Kiev,	252209 Ukraine
UJ8JCQ	Box 1102,	Dushanbe,	734032 Tadzhik
UAØKCI	PrijskVostochnyj, Chukotka		686818
RF6FC	Box 21,	Tbilisi,	380000 Georgia
UW3QW	Box 122,	Voronezh,	394000
UW3TT///	Box 96,	Nizhnij Novgorod,	603000
UC2OCJ	Box 68,	Gomel,	246027 Byelorussia
UA9UG	Box 7,	Nagym,	626711
UD6DM	Box 222,	Baku,	370000 Azerbaijan
UA4NM	Box 850,	Kirov,	610030
UZ3AYR		via WF2S	
RC2AZ	Box 80,	Minsk,	220083 Byelorussia

Do not forget to add "USSR" to the end of all Russian addresses.

Now let's see if we can help Serge with a few of his wants: he needs routing for A61XL (1987), P43IDP (Feb 91), 3V8AL (Aug 90) and 9K2TX (Oct 89). Jay sends a special thanks to Serge for the help on the UA9YE card and WAZ.

73 and 88, de **Betsy, WV7Y** ■



RTTY JOURNAL SUMMER SCHEDULE REMINDER

The RTTY Journal is publisked ten times per year. To meet this schedule, the May/June and July/August issues are combined, with the May/June issue mailed near the end of May, and the July/August issue mailed near the end of August. We will be back to our regular schedule in late Summer with more exciting articles for you.

AMTOR

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

Eddie explains some of the ins and outs of participating in an AMTOR contest. If you were uncertain about entering, you need not be in the future because it really is quite easy as Eddie tells it. He also gives us another look at tuning RTTY/AMTOR signals.

You can tell that Summer is close at hand, at least in this part of the world. The HF bands have been very poor. Let's face it, if I can just about copy someone in Florida on 20M Baudot, with many "hits," it is time to think about doing antenna or yard work. On the other hand, not being over keen on either of the latter, I think more AMTOR contacts are called for. At least with ARQ, one does not have to guess what the other person is trying to say!

I missed Dayton again this year, however I did manage to get down to Visalia in Southern California, where I met, among others, my arch-rival in RTTY contests, Rich, N6GG and some of the other West coast RTTY guys and gals.

SKOL TO SARTG

Congratulations to Bo, SM4CMG (alias SK4RY) and the Scandinavian Amateur Radio Teleprinter Group for a very successful, first time ever, AMTOR only contest! SARTG is to be applauded for coming up with the idea and let's hope that they will continue to provide an annual AMTOR only contest for many years to come. I am sure that Bo and SARTG will be happy to receive your comments, so please drop a note, either via TG9VT APlink (SP SM4CMG) or direct, to Bo Ohlsson, Skulsta 1258, S-710 41 FELLINGSBRO, Sweden. Please send your logs, no matter how good or bad you think you did, to the above address, before June 10th, 1991. There is always the possibility that you could qualify for some very neat "wallpaper" and the more logs received, gives the organizers a "feel" of how the contest went.

Opinions and Observations

When I received the rules for the AMTOR only contest, I must admit that I was rather skeptical about its chances of being a success and whether the contest would be well patronized by other AMTORites. From my observations, it would appear that my doubts were groundless. From this location, even with a beam that thinks it is a dipole, there appeared to be a considerable amount of activity on the higher bands. If my little pistol station can work all ten W-call areas, four VE provinces and 34 DX countries, including V85GA and TY1PS, (Peter, where were you when I needed Africa in BARTG?!) on 15m, then there is hope for the rest of you. In fact, I bettered my last year's single band Baudot score, by over 12K!

I bet the Europeans had a good time on the low bands, despite the 30 over nine commercials on 80M! It is a pity that the majority of USA stations tend to ignore the low bands for good multipliers and extra points. Why?

As I anticipated, one of the biggest problems in this contest, turned out to be those stations with few or no phasing "idles" in their FEC transmissions. Unless the RX station was exactly on the same frequency as the TX station when he began his CQ call, the RX station either did not get any print, or if he was lucky, he saw "pse kk." Not much use without a callsign or Selcal and VERY frustrating! Waiting for the TX station to call again, wastes a lot of time. I even tried a few "WRUs" (Who are U), in FEC but no response. Sending QRZ, which means "who is calling me?" on someone elses frequency, is something I have yet to understand.

I saw some stations giving the exchange in FEC, naughty, naughty, but maybe they did not read the rules? One or two tried that with me, but once you get their callsign, it was fairly easy to punch in their Selcal and get the exchange in ARQ.

The contest exchange was good. Sending your name, gave the exchange a bit of a personal touch. I give a lot of credit to the stations who gave out an accurate RST, although a 429 from a fellow G-lander in London, upset me a little, Hi. I assume that the organizers wanted the location (town or city name) rather than a general area like Kansas. I am glad that I did not work someone in Sturminster-Marshall. No room on my log sheets for such a long town name!

My fears of being "over-whelmed" by lots of stations calling me in ARQ at the same time, was somewhat over enthusiastic. (Who needs California anyway?) There were times when two or three stations would try to respond in ARQ to my CQ call, resulting in a "no-link" situation. The wiser operators soon figured out that it was futile to keep calling for longer than 10 to 20 seconds. Powering through the other QRM did not seem to work. It was far better to quit calling and either wait for me to request a callsign and Selcal in FEC or move on to another contact.

When I was tuning the band, looking for contacts, I found it quicker to type in the other stations Selcal first, establishing a link, then program the other stations callsign de mine and then pass the exchange. If I first entered the other stations call, then his Selcal in my software, someone else had usually beaten me to the draw.

90 Millisecond Delay!

It appears that one or two stations in an attempt to work some DX, changed their delay times and ended up without a link. I heard from VK2SG, that a European station set his delay to 90 milliseconds in an attempt to work "down-under." With that extended delay, he would have been lucky to work someone at the bottom of his garden!

INCREASING your transmit delay will REDUCE your maximum working distance. ARQ allows 170ms for your signal to travel to the other station AND back. Have you ever wondered why it is extremely difficult to work ARQ long path to certain destinations? At 300km per millisecond, (the speed of light in metric measurement), your range is going to be around 25,500km.

I think that most of us who entered this contest, will have learned a bit more about AMTOR and its capabilities. I know I

did! Three years ago, who would ever of thought about contesting in ARQ?

To the guys in the SARTG, thanks for an interesting weekend, despite the fact that I started two hours late and only worked two hours of the third session!

AMTOR DX

Some unusual but most welcome DX before and during the SARTG AMTOR contest. My first ever ARQ link with Franz Joseph Land in 4K2FJL. LZ2, HA6PX, SP, V85 and TY, with other nice DX in April in the from of VU, 9X, SV and FR5DL (Reunion).

What is a RTTY/AMTOR Frequency?

In response to my "stolen" notes from N0IA that I published in the March issue, Jules, W2JGR, sent me the following graphic explanation (see diagram below.)

When reporting a received RTTY frequency. Standard practice is to report the "Mark" frequency. Add or subtract to your dial reading to determine the "Mark" frequency.

To tune to a specified RTTY frequency ("Mark"), add or subtract to the given "Mark" frequency to determine your dial reading.

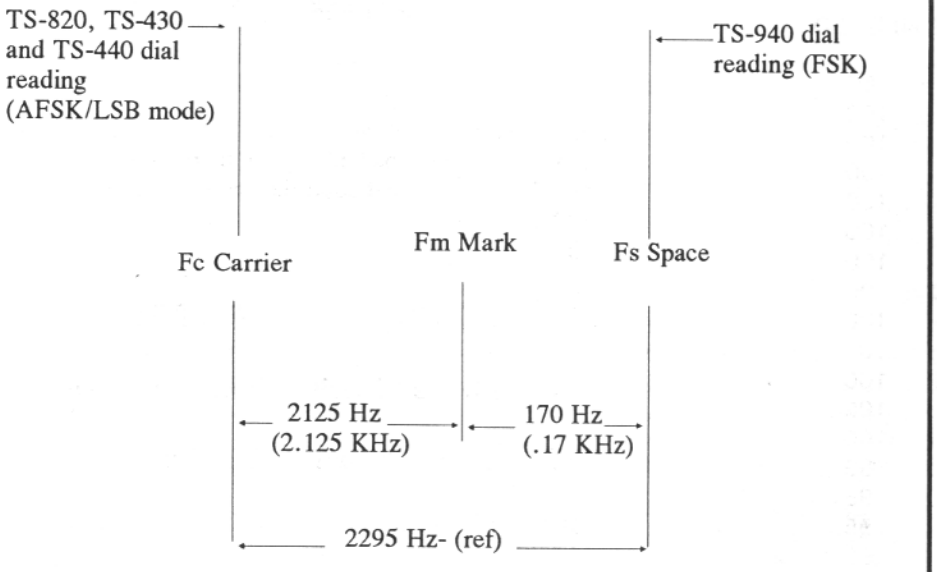
What does the dial reading represent on your transceiver? I would appreciate a short message from you regarding transceiver dial reading for others than those shown in the diagram. (Reply to Jules L. Freundlich, 17 Nassau Blvd. Malverne, NY 22562) Tnx 73 de Jules W2JGR.

As Jules says, a picture is worth a thousand words and I must agree with him. Of course, the diagram is biased towards the High Tones used in the States, however, Low Tone users need only change the figures to suit their application. Note also, that the "shift" is 170Hz! Nowadays, the majority of multimode TNC manufacturers tend to use 200Hz shift, in an attempt to make more sense out of HF Packet!

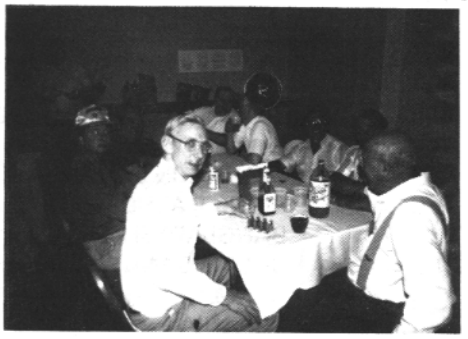
That's all for this edition. In the July/August issue, I hope to divulge some information on PACTOR.

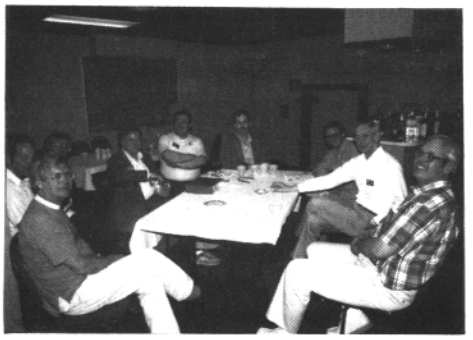
73 GL and DX de **Eddie, W6/GOAZT**

See diagram below for some popular transceivers.



Hospitality Suite Dayton Hamvention 1991





MOST WANTED COUNTRIES

The results of the survey have finally gotten in. The response was neither as great or as rapid as last year, but valuable information was obtained. And the amazing, or not so amazing thing is that some of the top "Most Wanted" of last year, have now practically disappeared, such as Malpelo, Aves Island, Malawi and Afghanistan.

We received replies as follows:

COUNTRY	# REPLIES	AVER. DXCC SCORE
U.S.A.	31	184.78
Japan	4	250.75
Italy	4	250.85
Siberia	1	233
Ireland	1	144
Australia	1	149
Portugal	1	198
Guatemala	1	285
Finland	1	245

I did have to make some adjustments, aided by Luciano, I5FLN, as a number of people with moderate DXCC Scores had erroneously added Countries, such as Libya, to their list (not been up since 1965) and other countries, which have never been active on Digital Modes (see below).

MOST NEEDED COUNTRIES ON RTTY

PERCENT OF RESPONDENTS NEEDING THESE COUNTRIES

SURVEY AS OF 28 FEBRUARY 1991

PREFIX	COUNTRY	% NEEDED
CEØX	SAN FELIX	100
FR	TROMELIN	100
FR	JUAN DE NOVA, EUROPE	100
FR	GLORIOSO IS.	100
STØ	SOUTHERN SUDAN	100
SVØ	MOUNT ATHOS	100
S21	BANGLADESH	100
VP8	SOUTH SANDWICH ISLAND	100
XZ	BURMA	100
ZA	ALBANIA	100
3B6	AGALEGA & ST. BRANDON	100
4J	M.V. ISLAND	100
7O	YEMEN	100
5A	LIBYA	99
C9	MOZAMBIQUE	95
EP	IRAN	95
VP8	SOUTH GEORGIA ISLAND	93
5R	MALAGASY REPUBLIC	92
VKØ	HEARD ISLAND	92
9U	BURUNDI	91
D2,3	ANGOLA	91
VP8	SOUTH SHETLAND	91
ET	ETHIOPIA	91
TI9	COCOS ISLAND	89
TN	CONGO	88
FB8X	KERQUELEN ISLAND	88
5X	UGANDA	88
KH5K	KINGMAN REEF	87
FH	MAYOTTE	86
A5	BHUTAN	85
VP8	SOUTH ORKNEY ISLAND	85
9G	GHANA	85
ZL8	KERMADEC	84
VK9	COCOS-KEELING	85
3V	TUNISIA	83
PYØ	TRINIDAD & MARTIN VAZ	82
VK9	CHRISTMAS ISLAND	82
A7	QATAR	81
XW	LAOS	81
9N	NEPAL	81
FB8W	CROZET	80
PYØ	ST. PETER & ST. PAUL ROCKS	80
XU	KHMER REP. (CAMBODIA)	80
A6	U.A.E.	79
KP1	NAVASSA	77
VE1	SABLE ISLAND	76
3D6AØ	SWAZILAND	75
VKØ	MACQUARIE IS.	75
VKØ	WILLIS	75
A9	BAHRAIN	75
ZL	CHATHAM ISLAND	73
AP	PAKISTAN	71
FO	CLIPPERTON	71
CX	REPUBLIC OF GUINEA	71
3Y	PETER ISLAND	71
YK	SYRIA	71
KH1	BAKER, HOWLAND & AM PHOENIX ISLAND	71
OJØ	MARKET REEF	71

Now let us have a look at the status of the rarest DXCC countries. For that I had plenty of help from, Luciano, 15FLN. First of all, what countries have never been active on RTTY? To the best of our knowledge, they are the following:

CEØ San Felix	**FR7/T Tromelin**
VP8 South Sandwich	**FR7/G Glorioso**
STØ Southern Sudan	**XZ Burma**
FR7/E Europa	**SVØ Mount Athos**
ZA Albania	**3B6 Alegea**
4J1 M.V. Island	**7O Yemen**

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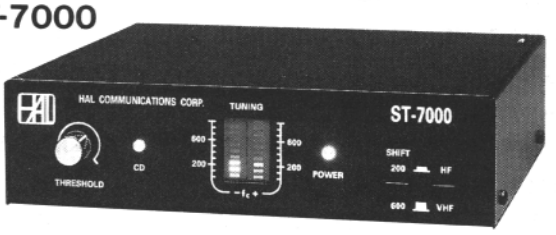

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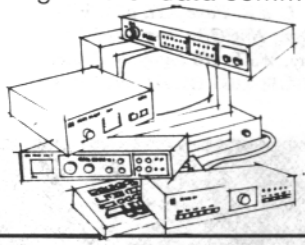

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Now, these are not the only countries needed by practically every RTTYer: that is evident from the Survey. So what is up with the other difficult ones? With much help from Luciano, 15FLN, we have prepared for you this little study and any comments or further information will be greatly appreciated.

I hope that this will give you a good idea of what countries need to be activated on Digital Modes, and their Status. I fervently hope that some of the future DX-peditions will see this Survey, so that they will realize that the country they are planning to visit for a CW or SSB expedition, and make a lot of RTTYers happy, as it is needed by 90 or 100 percent of the RTTY DXers, but with a far smaller demand for other modes.

Wishing you 73 and best of DX:

de **JOHN, TG9VT**, in GUATEMALA

COUNTRY	PREFIX	CALL	DATE 1ST ON	LAST TIME ON
ORD. MALTA	1AØ	1AØKM	25 JAN. 1981	1AØKM APRIL 91
MONACO	3A	3AØAV	04 NOV.1966	3A/DJ6QT MARCH 88
RODRIGUEZ	3B9	3B9RS	07 NOV. 1979	3B9FR STILL ON
SWAZILAND	3D6	WA6QFN/3D6	01 JUL. 1979	3DAØ STILL ON
LYBIA	5A	5A5TR	22 MAY. 1965	WE STILL WAIT
MADAGASCAR	5R8	5R8AL	15 AUG. 1979	5R8AL MAYBE
UGANDA	5X	5X5FS	13 FEB. 1966	NOVEMBER 86
MALAWI	7Q7	7Q7JO	13 OCT. 1966	7Q7LA NOW
MALDIVE	8Q7	8Q7CC	15 NOV. 1981	8Q7DC. JAN. 90
MOZAMBIQUE	C9	CR7DB	22 APR. 1971	ON WAITING LIST
SABLE	CYØ	CYØSAB	21 NOV. 1985	ON WAITING LIST
ANGOLA	D2	CR6CA	18 JUN. 1970	ON WAITING LIST
IRAN	EP	EP2CH	01 JAN 1969	ON WAITING LIST
ETHIOPIA	ET	9E3USA	30 OCT. 1970	ON WAITING LIST
AMSTERDAM	FBB	FB8ZZ	08 NOV. 1969	FTJ8ZA, MAY 87
KERGUELEN	FB8	FB8XX	16 NOV. 1966	FT8XA, SEPT. 85
CLIPPERTON	FOØ	FOØX	10 APR. 1985	ON WAITING LIST '92
SOLOMON	H44	H44CD	11 FEB. 1979	H44SH, APRIL 90
JAN MAYAN	JX6	JX6XF	07 MAY 1967	X9FDA, DEC. 90
WAKE	KH9	KW6DS	13 MAR. 1966	AH9AC. STILL ON
EGYPT	SU	JAØBXU/SU	18 JUL. 1979	SU1ER, STILL ON
GEORGIA	UF6	4L3A	23 NOV. 1967	UF6FJ, STILL ON
ARMENIA	UG6	UG6LR	28 SEP. 1966	UG6GG, STILL ON
LATVIA	UQ2	UW2KAX	18 JUN. 1966	UQ2HO, STILL ON
ESTONIA	UR2	UR2KAR	12 DEC. 1965	LY1BZB, STILL ON
HEARD	VKØ	VKØJS	10 FEB. 1983	ON WAITING LIST
MACQUAIRE	VKØ	VKØKH	22 SEPT. 1980	VKØSJ JULY 86
CBAGOS	VQ9	WB6EWH/VQ9	16 JAN. 1977	VQ9TB, STILL ON
PITCAIRN	VR6	VR6BJ	12 APR. 1979	VR6WH, DEC 90
BURKINA F.	XT2	XT2AV	18 JAN. 1979	ON WAITING LIST
VIETNAM	XV5	XV5AC	10 FEB. 1974	3W3RR, APR. 90
LAOS	XW8	XW8HJ	05 OCT. 1974	XW8KPL, FEB. 90
AFGHANISTAN	YA	YA1OS	16 JAN. 1972	YAØRR, JAN. 91
SYRIA	YK	OE5CA/YK	01 MAY 1975	OE8HGB/YK,APRIL 85
COUCH	ZD9	ZD9GC	18 FEB. 1973	ZD9BV, STILL ON

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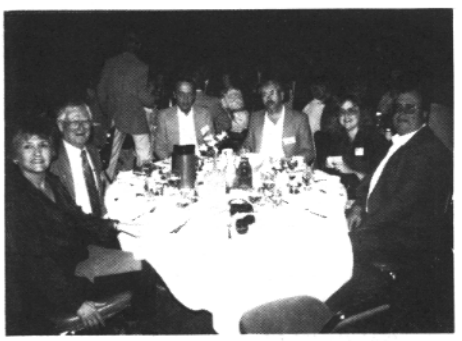

L. o R. Faye XYL of W6IWO, Rich, N6GG, Dan, N6CGB, Don, W6PQS, Betsy, WV7Y, and Jay, WS7I. All enjoying dinner and conversation.

Ctr. L. to R. Steve, KE6FV, Bob, KN6J, Barbara, XYL of KN6J, Eddie, G0AZT/W6, Craig, N6ITW, Wayne, WU6A, Rag, OZ8RO, Bob, N6OXR

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