

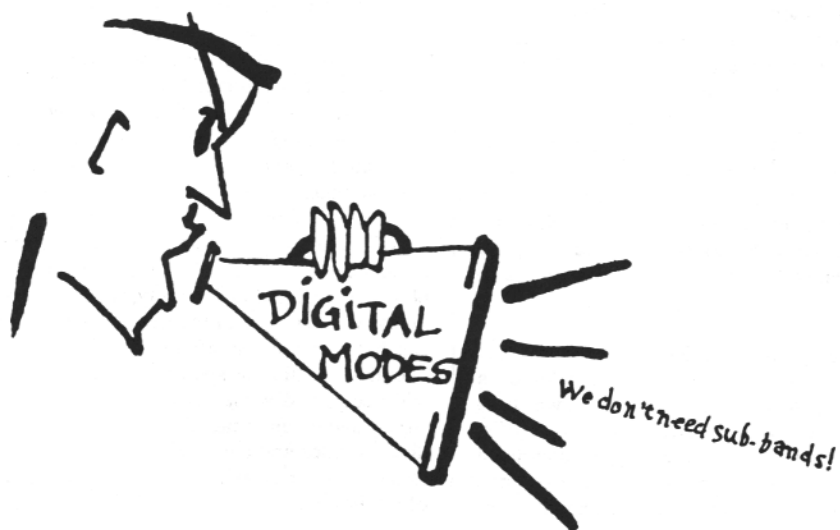
# RTTY JOURNAL

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## READ MY LIPS!



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# RTTY JOURNAL

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# HITS & MISSES

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## BANDPLAN CONTROVERSY

On and On it goes. Where will it stop, nobody knows. Unlike a Merry-go-around spinning to a tune, the present bandplan controversy spins on a sour note. It's destiny may not be known at this point in time, but the Digital Group has not finished singing.

Again this month, the Journal devotes additional column space to this very important issue. These pages are being devoted to this issue in the hopes we may reach an equitable solution to our dilemma. My apologies to our foreign readership. I realize this is not their problem but, then, maybe, ultimately this issue could affect other parts of our small world. These are no doubt regulatory bodies in other countries who have pursued such a course as we are facing, so please bear with us as we debate this important issue.

For over a year now the Digital Community has faced encroachment of the "Gentlemen's Agreement" area of the bands. First it was beacon BBSs (still around) and then Packet BBSs. These encroachments have not gone unnoticed and the Journal has reported their existence during this time frame. With the Digital Community growing every day, we are bound to face certain growing pains. In some cases pains are caused by deliberate encroachment, while in other cases they are merely accidental. Accidental incursions are not the cause of our concern, it is the deliberate actions undertaken by certain groups that have brought on this great debate. Those deliberate actions are now being forced upon the Digital Community at a time when frequency spectrum is more vitally needed because of our growth. So whether we are talking about beacons or another mode of operation, it seems completely out of place to sub-divide the frequency spectrum even farther. We do not need less frequencies, we need more.

What is this great debate all about then? It appears to me that it boils down to the loss of frequency spectrum. The ARRL petition to allow unattended automatic control in a certain portion of the bands would probably be accepted by the Digital Community if they are located in the right area of the bands. The debate also brings up the issue of cramming all automatic digital modes into one small seg-

ments of each band. These are some of the areas we should be addressing: First, loss of frequency spectrum. Second, cramming of automatic operation into small segments. Third, what segments should be assigned to automatic operation. There is a fourth if we are to recognize the ARRL's position that International criteria must be addressed.

The loss of frequency spectrum disturbs most of us, especially since we have seen such a tremendous growth in our ranks over the past few years. It is estimated the ranks of digital enthusiasts is in the order of one hundred thousand. That's not small potatoes to me and I think the manufacturers of digital equipment have done an outstanding job in bringing to the Ham community some very sophisticated gear capable of performing multiple tasks. To take away frequencies at a time of such growth is a real blow to the Digital Community, which includes industry. A squeeze of the frequency spectrum can have an adverse affect on the number of operators within the spectrum, over-crowding will occur, and some operators will go away. Going away can mean a loss of interest in the digital modes and a low of sales to industry. A loss of frequency affects a very large segment of our hobby.

Cramming automatic operation into a small group of frequencies is going to create a very delicate situation. Putting RTTY, AMTOR and Packet so close together, with the knowledge that they are not compatible with each other, seems somewhat adolescent. We who operate these modes know what is going to happen, but it appears we were not asked for our input. For the League to file such a petition, substantially ignores the true nature of digital fundamentals. In some circles, people are saying this new proposal will be called the "Chaos Zone" where signals clash and crash, with messages becoming trash. If the plan envisioned in the petition comes to pass and a chaotic condition becomes existent, then the Ham community will make the League it's laughing stock.

The fourth situation of International criteria needs not be debated in this forum. If the League cannot handle themselves during meetings of the International community, then we should consider replacing them with those who can handle the job.

This great debate brings up one of our weaknesses which is; taking an even keel approach letting the tides carry us along. Or said another way, "let George do it". This time we cannot ignore or procrastinate on this issue. We must make ourselves heard. Be prepared to write to your ARRL directors or to Headquarters when the time comes. Be prepared to vote for the right people when election time rolls around. Choose only those who will give you proper representation.

What else can I do, you may ask. Get involved in this process. Talk about it to your friends, keep abreast of the latest happenings, and give those of us who are in a position to represent you, your support. Your next question may be, what is the Journal going to do?

Sometime within the next month or so, I will be forming still another committee. It will be a study group composed of distinguished Hams from within the digital Ham and industry personnel. I will be asking for input that will establish a counter proposal to the ARRL petition. One that represents all of the Digital Community. At present, many proposals have been suggested, some of which have been published here in the Journal. The purpose of this special committee will not be to reject all proposals, but instead, to try to take all input and establish a proposal that would represent the best of all the ideas. Something we can take to the ARRL and say, "this proposal is what the digital community wants and it will be backed by one hundred thousand digital Hams". I think an approach such as this is the right way to persuade the ARRL to change the plan in the present petition to one more reasonable and definitely equitable. Such a proposal would not include the loss of frequencies to our Digital Community. I'm confident this can be accomplished even though there may be some skeptics.

This committee will have ten members. I will act as the chairperson. It will hold no meetings but instead use the media of mail, FAX and telephone to communicate. It won't be easy, for each of those I intend to ask are very busy people but I feel the gravity of this issue will bring us all together. I will report to you in the next issue of my progress and provide you with the names of those who have volunteered to serve on this, so far, unnamed committee.

### RTTY DINNER

Elsewhere in this issue you will find the Dayton RTTY Dinner information. If you plan on going to the dinner, be sure to send your money to Bob Foster ASAP. Bob needs to know how many are going because he must give the hotel a commitment well in advance of the dinner. So please don't wait until the last minute to get registered. It was fun last year and no doubt it will be again this year.

Until next month. 73 **de Dale, W6IWO**

## YET ANOTHER LETTER TO THE EDITOR

by line: Michael A. Moore, N7RY  
19029 S. Springwater Road  
Estacada, OR 97023

Dear Dale,

It appears that the Good Ole Boys in Newington have stirred up another hornet's nest with their latest digital bandplan idea. We try more and more often to legislate ideas that perhaps would best be left uncodified. If automatic operation is allowable, why not let all data/digital modes from CW on up participate? Even CW unattended operation has been shown to work, though it has never become popular. "Legislating" unattended operation to be restricted to a small area that is already extensively used appears unfortunate at best, and more like a "great leap backward." Radio amateur self-control/regulation has never been perfect but it's better than having more onerous FCC rulings made.

Our American ethnocentricity may also be getting in the way of progress. With more and more third-world countries interested in HF spectrum space, we should be thinking about more narrow bandwidth emissions and how to sandwich in more QSOs per KHz and leave space for the rest of the world, rather than how to get more space for SSB or domestic HF Packet. As it is presently conducted, Packet even at 300 baud seems suited only for 15 Meters and up, and is much less effective elsewhere. Granted, if one waits until the MUF is right above 14 MHz, packets can be sent. One could also use meteor scatter as (or more) effectively on 10 or 6 Meters.

Of course none of these spectrum constraints seem to apply to voice modes; it is likely that, as AD7I suggests, U.S. Hams will soon have SSB privileges from 14,100 KHz up. This will force further data/digital/CW restrictions, even though these modes are more spectrum efficient. We can't have digital and voice operation in the same spectrum space, now can we? I mean when a strong voice signal in Portuguese (or Russian or any other language you don't know) comes up on "your" frequency, you are clearly much better off than if the offending station were burping PACKET or AMTOR, right? Or should a really robust communication link be able to hold its own for the short periods of time it is active? No, we can't start thinking that way, what we really need is more band subsegments, more SEGREGATION.

I do wonder what folks think will happen when the U.S. gets expanded phone bands, say down to 14,100 KHz. The rest of the world will still feel the need to move their SSB away from the "U.S. QRM" and will move still lower, down to,

say 14,050 KHz. The digital modes that are really robust will probably survive on HF though, especially if they are narrow bandwidth, below about 200 baud of so. (What's all this PACTOR stuff anyway?)

You know you really can't criticize the good folks that obtained the Unattended Packet STA and then moved down into "good territory" below 14,100 KHz. Lighting off in whatever has been the traditional "other mode" frequency segment has been the time-honored way to make sure that you are noticed and that everyone is made aware of your contribution to the advancement of the state of the art. A secondary reason to run Packet below 14,100 may have been simply that they had to get away from the interference of adjacent packeteers in order to test their systems. (Could a hint of lack of robustness be suggested there?)

Reading between the lines, one gets the feeling that the FCC is the real force behind segregation of unattended operation, since they were said to have "telegraphed under the table" (!) that they did not favor allowing such operation just anywhere that data and RTTY were otherwise authorized. The ARRL was clearly just trying to accommodate this objection and still start the wheels in motion to get some sort of "authorized legislation" on the books for practices that are now done by fiat. Those of us with an interest in such things do seem poorly represented within the ARRL system, or maybe we missed their requests for input and advice. If FCC is at the bottom of the segregation concept though, we are on the short end of the stick for sure, as even if all the RTTY/AMTOR/PKT Hams sent their twelve copies of comments it would not impress the bureaucrats; those who have seen the might of the potential commercial users of 220 MHz have nothing to fear from so few of us.

Of course, yes, it's only a hobby. It is just always hard to stand by and watch while the power brokers overlegislate the Amateur service into extinction. Our long-term goal should really be to have as few band segments and as little segregation/discrimination delineated as is actually required by the WARC agreements, and let the use of spectrum space evolve a little further before we "cast it in cement." Meanwhile though, Prestroika/Glasnost may be fine for others, but the world of DC power doesn't seem much inclined to consider such concepts practical, at least as far as amateur service RF is concerned.

**de Mike, N7RY**

# CONTESTING



**Hal Blegen, WA7EGA**  
2021 E. Smythe Rd, Spangle, WA 99031

## A KINDER, GENTLER WORLD

When he feels particularly brutalized by honesty, like when I pick on something that our advertisers are trying to sell, the publisher sends me a prescription for a gallon jar of tranquilizer tablets with instructions to eat a double-handful before I fire up the word processor to do my column. I guess it's his way of trying to adjust my attitude so I can better fit into George's "Kinder and Gentler World". So far, it hasn't helped very much.

On a floating scale where watching a rat chew off my foot would qualify as amusing, I would still have had trouble finding nice things to say about the inexhaustible supply of DX operators who were willing to prove to the world that their collective IQs approached the inverse of the distance between Bovet and Oregon expressed in microns. I am considering marketing the tape I made of the 3Y's transmit frequency. I call it, "Twenty-three, Seldom Mentioned Parts of the Body". I can't believe that some of the deliberate and repeated offenders are still alive.

(DEEP IN A BUNKER NEAR GETTYSBURG, PA)

*First Voice: "We've got a confirmed heading on the guy on 14145."*

*Second Voice: "Is it the same guy?"*

*First Voice: "Yes, Sir!"*

*Second Voice: "Alright, launch battery four. A mushroom cloud rises over Salem, Oregon ... (FADE TO BLACK).*

## FIRE IN THE HOLE

Speaking of NUCLEAR DESTRUCTION, high powered RTTY operation runs a close second. My graveyard of burned and melted parts bears mute testimony to the price paid by trying to operate max-legal-out on contest weekends. Power supplies that are rated KEY-DOWN and tubes with four-digit plate dissipation are no surety against losing all the factory-packed, high-pressure smoke in the amplifier. The incentive is the simple fact that most RTTY ops are not stupid enough to risk the certain destruction associated with high power therefore running 1.5 Kw almost guarantees a full S unit advantage in a pileup. On FM, 3 Db

is a commanding advantage!

Just keying an amplifier can be a major source of headache. If you apply RF while the relay is closing (or still bouncing around), you're punching a KW into an infinite SWR and will draw arcs. Most of us key our rigs with software and if something goes sour, it can be several seconds, even in panic mode, before it shuts off. I have seen operators knock the coffee off the desk, boot the software and rip the plug out of the computer before finally punching the off button on the transceiver. Meanwhile, an arc is chewing a hole in the final loading cap.

The circuit in my elderly, TEN-TEC, TITAN is supposed to prevent hot switching but the ICOM 751 apparently switches the relay voltage and applies RF simultaneously. By the time the Titan senses the RF it's too late: FIRE IN THE HOLE!

I gave up on the antenna-relay jack in the exciter. I key the amplifier relay with the same line that the terminal uses to key the transmitter. You may have to revert to some type of optoisolator circuit to handle voltage differences between the keying line on your transmitter and the relay keying on the amplifier but as long as you don't use some sort of mechanical circuit for isolation, it will give the relay about a .03 second head start on the RF which seems to be enough for most amps.

A stepped transmit system that keys the amp but waits for the amp to close a relay to enables the RF output is excellent but only a few rigs work this way (i.e. Yaesu). If yours is one of them, by all means, use it on RTTY.

I tried a \$300+, pin-diode device (QSK1500), so named for its ability to handle 1500 watt amplifiers. At 800 watts out, it took less than a month to fall victim to the CHINA-SYNDROME that melted the traces off the circuit board and ruined a \$150 diode. Incidentally, pin-diodes operate at 1.5:1 SWR. If anything ever happens to your antenna to increase that SWR, you will discover that pin diodes are priced exponentially, by power handling capability.

I am unaware of any amplifier that will run full power on RTTY with stock cooling. Pushing enough air through the finals is only half the battle. In the interest of quiet operation, the

power supplies are never sufficiently cooled for key down operation. Unless you also blow air through the pi-net, the circulating currents above 14 MHz are enough to melt the solder on coil taps and due to their poorly cooled, physical location under the finals, you might as well buy a spare set of filament chokes just to have them on hand.

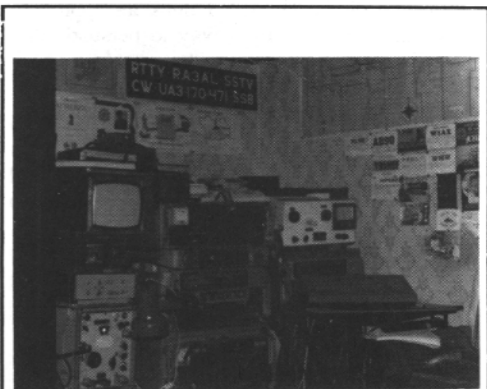
Avoid broad-banded baluns on your antennas, especially if they are inconvenient to replace. Use a coax balun or a coax RF choke (tribander) and load the antenna ONLY on the frequencies for which it was designed (forget all those weird MARS frequencies). The more power you run, the better ground you need to keep RF out of sensitive, digital circuitry.

## SCORING CONFUSION

Each time I read the official BARTG rules, the scoring confuses me. Simple scoring is to add 200 for each continent worked to your total QSO points and then multiply that by your country total. Don't forget 80 and 40 meters. There are 30 multipliers available on 3.6 Mhz and at least 50 to be had on 7 MHz. Tune from 3575 to 3650 on 80 meters (cozy deals tend to hide). The DX on 40 meters is often found below 7050.

See you during the BARTG.

de Hal, WA7EGA



Club station at UZ4FWD which Gena visited and used his call RA3AL. His QSL card below

WAZ 16 17U 20 USSR MOSKVA OBL 170

# RA3AL

QSO No 11686 LO23NE Loc K085RU

RADIO	D	M	Y	UTC	MHZ	2-WAY	RST
NGIWO	21	9	89	3 <sup>45</sup>	14	RTTY	S99

ANT 4 EL YAGI TX UZ4FWD OUTPUT 0.2KW  
PSE QSL#FNX via box 88, Moscow. 73 Gena Zubarev

QSL card of RA3AL - Gennady Zubarev



# CONNECTIONS

Cole Ellsworth, W6OXP  
10461 Dewey St, Garden Grove, CA 92640

## MURPHY VISITS

I hope you readers had better luck in the ARRL RTTY contest than I did. Murphy visited me in full force, to the extent that W6OXP did not get on the air at all during the contest. I spent a portion of the holidays working on my homebrew 3-1000Z all-band amplifier, adding a new high-pressure tube-cooling blower and a big rack ventilation fan (sounds like a jet taking off). Well, the amplifier was just about the only thing that worked.

The week before the contest, I spent building the TAPR DCD modification kit PCB and the TAPR Modem Disconnect kit PCB for the PK-232. I installed these and the new AEA PK-232 Mailbox Upgrade kit in my PK-232 all at the same time (mistake #1). Tried to bring up the modified PK-232 the Friday before the contest and found my computer could not talk to the controller! Found that COM1 port on my computer was not working. Switched to COM2 port; COM2 port works fine but still no communication. After much checking and testing, I came to the conclusion that the baud rates were not the same. In the unmodified (we are talking about the Mailbox Upgrade kit not yet installed) PK-232, I had the port set to 1200 baud and this speed is what I have always used. I understand that the old firmware defaulted the initial baud rate to 2400 baud. However, I find that the new firmware in the Mailbox Upgrade defaults to 9600 baud. Now, with a terminal or dumb terminal emulation, this is not a problem as you just send asterisks (\*) to the PK-232 until the autobaud function in the PK-232 can match whatever speed on which terminal is set up. However, if you were using PC PAKRATT program at 1200 baud like I was, you may have trouble if you try to initialize the PK-232 with the new firmware. This is because the PC PAKRATT program will send the autobaud function to the PK-232 only three times. What happens is the first character sent from PC PAKRATT causes the controller to try to communicate at 9600 baud. Because you are not sending at 9600 baud, the computer sends a second character and the controller now tries to communicate at 4800 baud. Again, no luck, so the computer now sends a third (and final) character which causes the controller to try 2400 baud. Again, no luck and now the controller causes an error message to be displayed on the computer. Once you change your computer port speed to 9600 baud, or 2400, or 4800 baud,

this will no longer be a problem. Therefore, if you are using PC PAKRATT with your PK-232, when the first screen comes up during starting the program, select the port parameters change function and set the port baud rate to 9600 baud or at least not less than 2400 baud and leave it there. If you do this after you have installed your MBX board, you should not have a communications problem.

After I got the PK-232 back on the air, I found my venerable rack-mount Millen 3-inch CRT display used for RTTY tuning was not working. Troubleshooting revealed a shorted HV power transformer. Not the easiest part to find these days. (but K6OLG Bill came to the rescue with a suitable small transformer a few weeks later, - thanks Bill). By this time I was in a blue funk, to say nothing of being surrounded by the odor of fire and brimstone, due perhaps to some choice comments uttered during the preceding events. Therefore, I was not about to enter the contest without a proper scope display (I do not care much for bar graph indicators, take too much time for tuning). So one of my New Year's resolutions is to start getting ready for a contest, including system checkouts, a month before the contest start date. That way I just might be ready.

## PK-232 MAILBOX UPGRADE REVIEW

Except for the serial port communications problem mentioned above, the AEA MailBox upgrade was easy to install, involving only one soldered connection for the daughter board, and, if you received the lithium battery, two soldered connections to install it. The system tested out with no problems and works fine, storing up to a maximum of 15 messages or 8 kilobytes of message, whichever occurs first. The upgrade comes with new PK FAX software on disk. The new PK FAX disk is required for use with the MBX upgrade.

Some cautions, however, you will lose whatever is in the message area if you change from Packet mode to any other mode except dumb terminal mode. This will occur whether you are using a terminal or using a computer and a host mode program such as PC PAKRATT. This is due to the differences in PK-232 memory variables between modes. You also have to go to dumb terminal mode to read the PAKMAIL messages. It is my understanding that AEA is

currently reviewing the firmware to make PAKMAIL directly accessible from Host Mode programs as well as dumb terminal modes, and to prevent message loss when changing modes.

AEA support in regard to my questions was excellent. I got very quick, courteous and thorough answers on my communications questions from Ryan and John of the AEA Technical Support group.

I can also highly recommend the AEA support section on Compuserve HAMNET (section 13 of the messages selection) which is overseen by Norm Sternberg, W2JUP, for AEA. He does a fine job of fielding questions on all AEA products.

## TAPR UPGRADES FOR PK-232

TAPR (Tucson Amateur Packet Radio group) offers a number of upgrade kits for their TNC1 and TNC2 packet controllers. Some of their upgrades can also be used with the various commercial packet machines and multi-mode controllers. I ordered two of their kits that are applicable to the PK-232, among others. One kit is the MODEM DISCONNECT KIT which adds a standard TAPR modem disconnect/connect to the PK-232 I/O. The PK-232 does have an external modem connector on the rear panel, but it is not the same as the ones used by TAPR. This kit still allows use of the external modem connector that comes with the PK-232 if desired. This kit also provides an easy way to connect the second kit that was installed, which is the DCD UPGRADE KIT. The factory DCD circuit in the PK-232 is an analog audio detection circuit that has some inherent delays and requires that the VHF receiver squelch be active which in turn also has its share of delays.

THE DCD Upgrade is a small PCB that contains some digital logic circuits to provide what I would call a "synchronously derived DCD". This derivation is accomplished by means of a "Finite State Machine" circuit based on an EPROM, instead of the audio derived DCD. The circuit detects the pulse train transitions in the incoming signal and compares them to a fixed clock. When they match, DCD is turned on very quickly. Likewise, DCD is turned off very quickly when a packet signal goes away. There are two main advantages to synchronously derived DCD. One advantage is that your packet "TXDELAY" can be set for shorter delays, which can increase throughput. The other advantage is that you can leave your receiver squelch open at all times, again decreasing time delays both for detection of "channel not busy" and "channel busy". A third advantage is apparent in high noise level locations. If noise level is very high, you normally have to increase the receiver squelch level, which adds even more time to detection of a valid packet signal. I have a high noise level on 2-meters at my location (it comes and goes) and a very

dramatic improvement was immediately noticed upon installation of the DCD upgrade kit. The number of retries for getting an ACK from a distant station for a packet sent, and for sending ACK for a packet received have been cut at least in half and it seems even better than that. I now have reliable connections with K6OLG where previously we could have done better on CW in half the time.

Installation of the kits went smoothly with only one bug apparent. The errata sheet that came with the first Modem Disconnect upgrade kits was itself in error. The errata sheet said to cut a trace at pin 8 of the DCD upgrade connection and add a wire between this pin 8 and pin 19 of the modem disconnect header. It should have said connect to pin 17 of the modem disconnect header. My DCD upgrade did not work worth a darn until this was corrected. By this time all TAPR shipments of the modem disconnect upgrade kit should have the correction to the correction. The January issue of the TAPR Newsletter "PSR" has the correct connections listed on page 2.

### WISH LIST FOR NEW HOST MODE PROGRAM

AEA is in process of creating a new host mode controller program to replace the PC PAKRATT program. This is expected to appear some time this year, hopefully by summer time. It will be IBM PC compatible.

Here is my wish list for changes to be incorporated in the forthcoming replacement program.

1. Change the MONITOR FROM/MONITOR TO list functions so that it will distinguish between SSIDs. Currently, W6ABC and W6ABC-1 or W6ABC-2 are all considered to be one monitored station. Thus, if W6ABC has several digipeaters up on surrounding mountains, even though I want to monitor only W6ABC (-0), I will be forced to copy all the other SSID stations with the same prefix call. This makes monitoring much like a garbage pail. At first thought, one would think that this would require a change to the PK-232 firmware, which is probably the most desirable approach. However, I see no reason why the host mode program could not perform the display string filtering function for display on the CRT monitor (with the MONITOR FROM function set to ACCEPT ALL). This approach has the disadvantage of filling up the QSO buffer quickly, unless the host-mode program can intercept the unwanted data before it is stored in the QSO buffer.

2. Double the number of monitored stations from 8 to 16.

3. Make host mode controller program provide parameter lists to include all of the parameters, including all new commands. This will allow one to change any parameter from the screen

instead of only one screen full as at present. Currently, one has to go to dumb terminal mode to change parameters not listed in the PAKRATT parameter screen. Probably need one or two more parameter screens but that is better than going to dumb terminal mode to change seldom used parameters..

4. Allow access to PAKMAIL from the host mode controller program and allow mode changes without wiping out PAKMAIL messages.

5. Allow the host mode program to call the PK FAX program directly, without having to return to DOS first.

### BANDPLAN, ETC.

Last month's issue of the RTTY Journal had many interesting comments on the bandplan/automatic-station-control/STA/RTTY vs Packet controversy. I would like to make a few comments on situations which I did not see mentioned, at least not directly. These are my own opinions and not necessarily those of the RTTY Journal.

1. ARRL made a mistake in lumping together in one segment the automatic control Packet and RTTY modes. They are inherently conflicting. The CSMA protocol of Packet cannot transmit unless the channel is at least momentarily clear. It then sends the packet and listens for the acknowledgment. On the other hand, RTTY switches back and forth between stations on the basis of "end of text" or some other delimiter with no attention to other carriers or transmissions. Transmit time on RTTY may run 10 minutes or more. Moreover, attended transmissions basically have the same situation. It is just common sense that shows the two modes are incompatible in a frequency sharing mode.

2. As others have mentioned, channelization requires 100 % cooperation and strict observance of the rules. Such a scheme can also easily lead to designated channels for whatever purpose. This runs counter to past and current FCC doctrine on "no one person or group can claim a specific frequency or band of frequencies" within the amateur bands.

3. I agree with Paul, AD7I, that current HF Packet practice and protocol leave a great deal to be desired. In my opinion, the signal to noise ratios have to be quite good to get throughput up to the same level as AMTOR. (That ought to generate a few letters!). Until such time as we can afford to incorporate DSP (Digital Signal Processing) into our rigs for HF packet signal to noise ratio enhancement and data recovery or use something similar to PACTOR as mentioned in Richard's Packet column, I don't foresee much improvement over current throughput on HF packet. Sure, elegant forward data correction algorithms work. Ah, but the overhead goes way up! Remember that it is throughput

that counts.

I am not saying that HF packet doesn't work, but I do say that it is not as efficient as AMTOR especially under less than ideal conditions. OK, you HF Packet enthusiasts, prove me wrong! Better yet, write a paper on why and how HF Packet is an efficient mode. Perhaps someone has already published such a paper and if so, I would like to know about it. (Don't refer me to the ARRL Packet conference publications, because I have already ordered them)

3. The original STA application mentioned that the objectives of the testing included interference potential. Again, common sense should show that, within-mode interference in packet would be minimal, the major effect being noticeable during heavy traffic periods when the automatic packet station takes up a large portion of the available time plus "the hidden station effect". But this interference is no different than any heavily loaded VHF/UHF packet channel(s). The past period of STA activity should also show that packet cannot share the same frequencies with other modes, in particular RTTY. The interference potential in this case is very great indeed.

So, the above are some of my opinions on the matter. As others have said, RTTY really does have squatters rights from 14.080 to 14.100 MHz. It has been a gentlemen's agreement almost as long as I have been on digital modes and that began when I discovered the "beedle beedle" sounds on 20 meters back in 1959/60. Actually, it was from 14.075 to 14.100 until the seventies when AMTOR became popular. Moreover, some of the MSOs on 20 meters have been located below the proposed 10 KHz segment for many years and they probably will not take kindly to moving.

The bandplan? Leave as-is. Above 14.100 for Packet, below 14.100 for RTTY/AMTOR, Same for 15 meters - above 21.100 for Packet, and below for RTTY/AMTOR. I do feel that it is important to keep experimenting and testing HF Packet, but please lets not try to mix it with other modes on the same segments of the band. It is very important to let your ARRL division Director know what your stand is in this matter. The directors are the ones who can control what happens in the ARRL. Admittedly they sometimes have a tendency to take HQ personnel suggestions at face value without any research, but enough complaints can rectify that problem. As an ARRL member for nearly all of my forty years as a Ham, I was really disappointed with the present administration's sub-rosa attempt to push this through without polling or at least notifying the membership. If the Executive committee authorized the petition, then it is time to speak through the ballot box! An ill wind blows no good for anyone. Enough!

73 de Cole W6OXP

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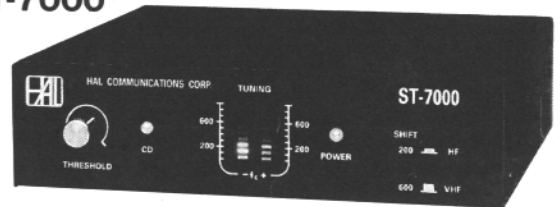


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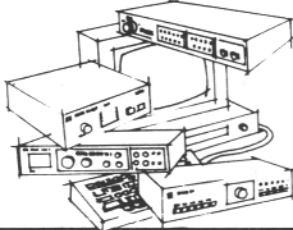
HF-Packet Modem. ...a high performance modem designed specifically for 300 baud HF-Packet. It offers no-compromise performance to assure optimum operation under the most demanding signal conditions. Techniques developed for government and military use are used in the ST-7000. AGC-controlled AM signal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



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# PACKET



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

## 9600 SAGA STARTS

A group of people in this area are attempting to get 9600 baud FSK Packet on 2 meters authorized through the coordinating committee. Well, the group was told to go to 440 MHz and do it there. And so it starts. There is no reason why the 9600 baud stuff could not be on 2 meters. I guess that the coordination committee is satisfied with the status quo 1200 baud stuff. I wonder what they will do when, after the Dayton Hamfest, Kantronics, TAPR, and I think AEA, introduce 9600 baud radios for 2 meters. I am quite sure they will be gobbled up left, right and sideways. And I am also quite sure they will pop on frequency here after the convention, without benefit of coordination. Then the problem of getting a frequency will be rendered moot. Once they are established, they will be hard to move and get rid of. Therefore, the coordination committee had better address the problem NOW before havoc reigns.

## 9600 Baud Modem

Onto a related subject. I have acquired the K9NG 9600 baud modem kit from TAPR. The parts supplied were rather sparse but I can't complain because of the \$25.00 price. The board has plated-thru holes with all the traces pretinned which is a help. There is no solder mask or silkscreened part numbers on the board but the documentation with the board supplies a pictorial showing where the parts go. There are some undersized pads on the board and some of the traces that run between IC socket pads (a No-No in my book and should be avoided) could cause some soldering problems for the inexperienced kit builder. A suggestion I could offer to TAPR would be to make one side of the board with horizontal traces and the other side vertical traces. It just looks nicer and more professional. Another suggestion would be to use larger pads on the areas where large wires pass through instead of using the same pad size throughout the board. The documentation supplied is quite adequate. I would recommend to anyone who uses this kit to get a copy of K9NG's paper on how this board works. I have also figured out how to hook the board up to a PK-232 with minimal problems. I believe I have also figured out how to use a pair of the boards as a digital repeater but I can't be

positive until I get the one I have here together and tested. It will be interesting to see how well it will work. Unfortunately, it is a half-duplex board. But I will still be able to test it. Time to have fun.

Well, I have built the board since writing the top part of this article. I spotted several things that were not too convenient. There are several locations where there was not enough real estate left to use sockets for the IC's and the bypass capacitors. Just a bit tight in a couple of places. The close spacing of the pads and some of the traces could cause a couple of solder bridges if one is not careful. I suggest using a fine conical tip on your soldering iron rather than a flat tip. Also, if you have to remove a part from the board, be very careful. The traces can be lifted very easily on the board (I lost a pad that way). To avoid that problem, use a 15-25 watt iron. The lower heat will minimize the chance of losing a pad. Even though there is a pictorial to go by when assembling the board, it would have been nice if pin #1 of the IC's was indicated by a dot or by a square pad. Another tip on assembling the board, take a fine permanent marker and label the IC numbers. It will make life easier when and if the board needs troubleshooting or if one wants to play with it. I think one of the qualifications of being a Ham is that you like to tinker with things and are not satisfied with the status quo (i.e. the Ham priest in Quito, Ecuador that invented the cubical quad). It will be fun playing with this to turn it into a digital repeater

## LAST MONTH

I got on my legalistic soapbox concerning the proposal that the ARRL made to the FCC concerning the authorization of unattended data forwarding in the RTTY subbands on HF. It is now time to stir the pot some more. I have to keep the water stirred because it keeps the macaroni from sticking to the bottom of the pot. I have to say that even though I write a Packet column and I do support Packet, I think the proposal is still BUNK!!!!!! Read my last month's article. I will still file with the FCC against it if they decide to be foolish and give it a number.

Another interesting item. I received a letter in the mail (a form letter) concerning the fact that

I have not renewed my membership with the ARRL. I was told that my membership was important to amateur radio and to keep a voice in Washington for my interests. I do not see how my interests are best served by an organization that files such a proposal which is in conflict with what I believe in. Therefore, I have decided to give this letter serious thought before I mail my check.

## SOFTWARE

Well, I now have a copy of the G8BPQ networking software, Release 1.06 of MSYS. I will be evaluating this software and will give a report concerning it's operation later in the year. I have not received any more information on PACTOR from Germany. It still looks promising though.


## MAIL

I am wondering what you are thinking out there? I want to know what you would like me to cover in this article. Just drop me a note and tell me, even if only a postcard. I am asking this because I am going to be covering the Basics of Packet in the May/June issue. So, please let me know.

The column is a little short this month because of the family taking precedence. I am sure you understand and promise a packed article next month on the K9NG board.

**de Richard, N6NKO SK CL** (shave and a haircut....)


REPLIC OF HONDURAS



## JA6WFM /HR2

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COOPERATION VOLUNTEERS  
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*Card from Hirofumi, operating in Honduras*



*Hirofumi, JA6WFM/HR2 during 1989 CQ RTTY  
JOURNAL WW RTTY Contest*



# Unattended GUIDELINES PROPOSAL

*A continuation from last month's LETTER TO THE EDITOR*

Paul Newland, AD7I  
P.O. BOX 205, Holmdel, NJ 07733

Dear Dale:

Thank you for publishing my letter in the last issue of the RTTY Journal. Attached are some follow-on thoughts as well as the current version of the proposed guidelines for unattended operation for 20 meters.

Sincerely, Paul Newland, ad7i

## Old Business

There are a few corrections that I would like to point out regarding my letter to the RTTY Journal that Dale published in the February issue.

First, I think Dale was a little over zealous in his editorial comments regarding my letter. Specifically, Dale promised more than I can deliver. Again, my letter, as well as this one, is from me as an individual, not as a member of the ARRL Digital Committee. Also, I am certainly not the "...only one person..." who can help with band-planning for digital communications. I am interested in helping, yes, but I am not the "only one" who can help. I'm not even sure I can help at all. I'm simply willing to try.

Second, a few typos were made in the letter as published. Because of the tight schedule, I FAXed the letter to Dale for publication. The typos may have been introduced during the re-keyboarding of the letter for printing in the Journal. At the top of column 2 of page 20 on the second line there begins a sentence that says "If would be almost unheard of for the FCC to take [final] action base upon the recent ARRL petition." The word "final" was inadvertently omitted from the published version. Another typo is in the second paragraph of column 1 on page 20. The second to last sentence reads "The term 'automatic' has historical significance so that's what the FCC and ARRL documentation refer to when they mean a control [operator] is not present at the control point". The word "operator", was inadvertently omitted as well. Also, NRPN should have been NPRM.

With that now taken care of let's get to the guidelines for unattended 20 meter band plan. I don't have strong feelings about where the 10 KHz of spectrum for unattended operation should be. Having it from 14090 to 14100 seems fine to me, having it elsewhere would be OK too. Certainly, if we want to use the unat-

tended segment for moving traffic between countries then 14090 to 14100 is a pretty good choice. The only down side to this choice (or any other choice, for that matter) is that some people will need to shift frequency.

There are only four kinds of reasons that I can think of for people to object to 14090 to 14100: technical, economic, operational and political. I can't think of any technical reasons that this segment is unsuitable versus another. The only economic reason that I can think of would be re-crystaling if someone wanted to move their current fixed frequency operation out of the 14090 to 14100 segment. The only station that I know of to have fixed frequency operation in this segment is W1AW. Comments from other fixed frequency users currently operating in the 14090 to 14100 segment (or other segments) are encouraged. There may be political or operational reasons for not operating on 14090 to 14100 but I can't think of technical or economic reasons (other than re-crystaling).

## Comments

What follows are some guidelines that I have written as input for the ARRL Digital Committee to provide a starting point of discussion. I haven't received any comments of substance yet from anyone (i.e., all comments to date have been either "looks OK to me" or "have not had time yet to think about it" or "dumb idea"). So, here's your chance, tell me what you think. The best way to provide feedback is by written letters; that way I can pass along your comments to others.

These guidelines are only a starting point and will, most likely, change during further discussions. I do not think any of the guidelines will ever have the force of rules or law. That was not why these guidelines were created. I think that would be too much "micro-management" by the regulators. However, if most operators choose to operate according to the guidelines then those who do not and cause interference might be considered to be operating outside good engineering and amateur radio practice. That's the only "force" I see that these guidelines might ever have.

POSSIBLE GUIDELINES FOR 20 METER  
UNATTENDED DATA TRANSMISSION  
BAND PLAN

## Introduction

Here's a possible band usage plan for unattended BBS operation on 20 meters. This paper is simply a starting point for creating guidelines for unattended operation of RTTY and data stations. Note that this spectrum is NOT the only place BBSs can operate on 20 meters. This spectrum is simply the place where UNATTENDED stations must operate, regardless of whether they are BBSs, mail-drops, bulletin transmission, etc.

## Channel Busy Decision Devices

All stations operating in this spectrum should be on notice that most stations are using machines, not their ears, to determine if a channel is busy. All amateur stations, regardless of their frequency of operation, unattended or attended, need to do a reasonable job of ensuring that they don't transmit if the channel is already in use. However, in spectrum allocated for unattended operation, the "channel busy" decision making process will most often be done by electronic equipment, rather than by a human. For most simple systems, it's likely that the machine will make the wrong decision more often than a human will. Consequently, the possibility for unintentional interference when operating within this spectrum is greater than elsewhere. That's a reasonable trade-off for the utility that unattended operation has been shown to provide in facilitating communications.

## RTTY is BAUDOT, ASCII and AMTOR

For this discussion, RTTY means the FCC definition of RTTY as described in 47CFR97.3(c)(7). Additionally, it is limited to single channel (i.e., non-multiplexed) narrow bandwidth (less than 500 Hz) data signals with rates of less than 150 baud using either ITA2 (BAUDOT) or ASCII with stop-start asynchronous framing or CCIR 625/476 (AMTOR), which is synchronous.

## Emissions

Transmitter frequency stability of unattended stations should be better than 20 Hz for all expected conditions (i.e., for all expected variations of temperature, line voltage, etc.). Care should be taken to ensure that emissions do not produce severe "clicks" in adjacent channels. All modulation products should be 20 db down at the channel edge relative to the unmodulated carrier.

## Frequency Specification

The operating frequency of a data signal shall be considered to be the half-way between the mark (B) and space (Y) signals for binary FSK (or equivalent modulation such as AFSK). For

all other systems the operating frequency shall be considered to be the center of the occupied bandwidth (this is the midway point between the two frequencies where the transmitted spectra are 20 db down from the unmodulated carrier).

For binary FSK using 170 Hz shift, that means the radiated MARK (or B) signal is 85 Hz above the center of the channel while the SPACE (or Y) signal is 85 Hz below the center of the channel. For binary FSK using 200 Hz shift, that means the radiated MARK (or B) signal is 100 Hz above the center of the channel while the SPACE (or Y) signal is 100 Hz below the center of the channel. For binary FSK using 600 Hz shift, that means the radiated MARK (or B) signal is 300 Hz above the center of the channel while the SPACE (or Y) signal is 300 Hz below the center of the channel. This is consistent with ITU frequency administration.

### Use the Proper IF Filter

We have reached the point where spectrum is now more valuable than IF filters. Therefore, for RTTY signals, this plan assumes that all receivers have IF filters of 500 Hz or less. For some users this isn't the case. However, the spectrum is now too valuable for them not to purchase the correct filter for their radio. The same holds true for Packet operation. NOTE: Not all Ham transceivers are designed for RTTY or packet operation, just as not all ham transceivers are designed for CW operation. Each transceiver may be "capable" of operating with a particular mode, but the radio may do a lousy job of it. RTTY and Packet people must consider this fact when choosing radio equipment, just as serious CW people have done for years.

1000 Hz packet channels assume that the receiver bandwidth is 1000 Hz or less. However, 1000 Hz filters are difficult to locate. That reason, plus the advent of DSP operation, is why 2000 Hz has been allocated to Packet. New modem schemes are being developed to fill that 2000 Hz bandwidth with useful modulation products. Subdivision of Packet channels is expected until these 2 KHz modems are available.

### Spectrum Partitioning Goals

When the ARRL Digital Committee met in October of 1989 it was suggested that the initial band plan for unattended operation on each band have the following characteristics:

- ensure that CW beacons at 14100 KHz have 1000 Hz guard band - only an issue for 20 meters
- maximum packet channel size should be 2000 Hz - may be subdivided to 1000 Hz or 500 Hz
- maximum RTTY channel size

should be 500 Hz

- specify frequencies as center of allocated bandwidth
- provide channels in the following manner- one channel for bulletin operation - two packet channels - four RTTY channels

Those were the starting points that I used to create this proposal.

### Frequency Sharing and Registration

It is intended that all frequencies are to be shared among many users. However, to encourage even channel loading, identifying and reducing interference, and otherwise facilitate network management, there should be a "registrar" for each unattended channel in each radio region. This person or group would NOT be a frequency coordinator. However, the registrar may suggest what frequencies to use and, in the case of the bulletin channel, suggest starting times and maximum durations. The only purpose of registration would be to provide a means for interested parties to find out who else had registered his or her intention to use a particular channel and for what mode and use. This information would then be made available, at cost, to anyone who wanted it.

### Automatic Bulletin Channel

The purpose of the bulletin channel is to provide one place on the band where a coordinated, time-shared, system of automated stations can transmit bulletins of interest to the amateur radio community without causing or being caused interference. Certainly, bulletins can be transmitted on frequencies outside the unattended spectrum, but the purpose of this channel is for stations running under automatic control with messages intended for a multiplicity of stations. The channel is available for all modes of RTTY and data communications emissions.

It's not clear that CW should be transmitted on this channel. If included, CW could be transmitted in the upper half of the channel when not in use for Packet, possibly at the same time that RTTY modes are transmitted in the lower half of the channel. The use of CW on this channel is an open issue that will need to be discussed further.

### No Beacons

There are legitimate purposes for beacons in the amateur radio service, but this spectrum is not intended to serve that need. Any transmission initiated on these unattended channels, except for the bulletin channel, should be intended for, and addressed to, only one particular station.

One exception to the beacon ban might be a coordinated system of stations that transmit

beacon signals using data emissions for purposes of automated propagation studies on the bulletin channel. If spare time slots on the bulletin channel were available and the beacon stations could stick to accurate scheduling, it might be possible to have beacons share this channel with bulletin stations without interference.

### Frequency Scanning

It's clear from current operation of AMTOR BBS systems that AMTOR BBS systems that scan several channels provide greater availability than those systems that are "parked" on only one frequency. This is somewhat analogous to "trunking" in telephone and mobile radio systems. Nothing in these guidelines should be interpreted as precluding stations (AMTOR or otherwise) from scanning several channels while they search for other stations that are calling them. Once communications have been established, that QSO should remain on the channel that the call was made on. If movement to a new channel is desired, then a new QSO should be started on the new channel. Changing channels mid-QSO (hot-switching) is not desired.

### Spectrum Partitioning

Once 500 Hz is reserved for CW beacons, 4000 Hz reserved for packet, 2000 Hz reserved for bulletins and 2000 Hz reserved for RTTY, there remains 1500 Hz. However, to be compatible with ITU channeling (i.e., channels fall on 500 Hz increments starting at 0 Hz), 250 Hz must be reserved for offset when transitioning from 2000 Hz channels to 500 Hz channels (this spectrum is actually added to the bulletin channel which now becomes 2250 Hz wide). Additionally, 250 Hz of spectrum must be reserved for the unusable unattended channel at 14090.000 KHz (later recovered). That now leaves us with 1000 Hz. How best to use this spectrum? It's too small for a full sized packet channel. Although packet today can fit in 1000 Hz channels, the next 18 to 24 months should bring DSP modems to ham radio that will make it advantageous to use 2 KHz bandwidths and provide us with more bits per hertz. Perhaps the best use is to mark it for RTTY but also consider it for Packet use at a later time. The tables below show it allocated for RTTY but that, like the rest of this document, is subject to change.

### CW Spectrum

Although all 10 KHz of the 20 meter unattended spectrum have now been allocated, there is some slight waste from 14090.000 to 14090.250. For those that may want to experiment with unattended CW operation (perhaps a robot or even a BBS) CW could be placed in this 250 Hz band without interfering with the RTTY channels at 14090.500 kHz or 14089.500 KHz. The plan shows the CW signal offset from the nominal channel frequency (which falls on the

boundary of unattended operation) by 50 Hz. With careful use of a crystal oscillator or synthesized radio it shouldn't be difficult to ensure that the CW carrier and modulation products stay within the unattended band. Such frequency control doesn't appear to be adverse considering how few will choose to take advantage of totally unattended CW operation. To ensure that modulation products stay within +/- 32 Hz of the carrier, the CW data rates should not exceed 25 baud (30 WPM).

### Current Plan

That leaves us with the following for 14090.000 to 14100.000 KHz.

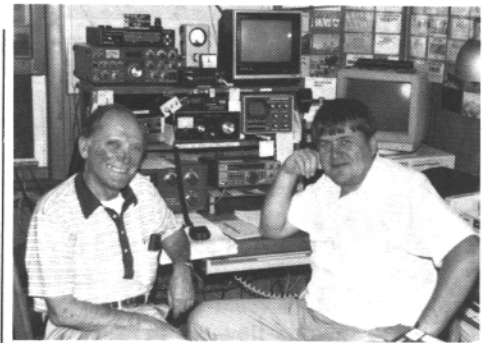
- 500 Hz for guard for CW beacons at 14100.000 KHz

- 2250 Hz for unattended bulletin broadcasts - time shared between RTTY and packet
- 4000 Hz for unattended packet radio stations -  
two 2000 Hz channels or  
four 1000 Hz channels or  
eight 500 Hz channels
- 3000 Hz for unattended RTTY stations - six 500 Hz channels
- 250 Hz for guard band - CW as alternate possible use

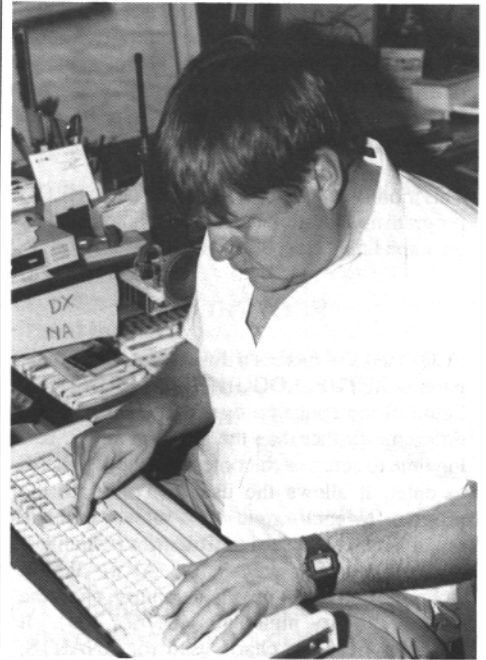
### Pictorially, the plan appears as below:

experimental CW	14089.750 14090.000 14090.050 14090.250	recommended for CW BBS/robots (14090.050 CW; 30 WPM max)
narrow FSK	14090.500 14090.750	recommended for AMTOR FSK emissions (14090.415Y/14090.585B)
narrow FSK	14091.000 14091.250	recommended for AMT FSK emissions (14090.915Y/14091.085B)
narrow FSK	14091.500 14091.750	recommended for AMTOR FSK emissions (14091.415Y/14091.585B)
narrow FSK	14092.000 14092.250	recommended for all RTTY FSK emissions (14091.915S/14092.085M)
narrow FSK	14092.500 14092.750	recommended for all RTTY FSK emissions (14092.415S/14092.585M)
narrow FSK	14093.000	recommended for all RTTY FSK emissions (14092.915S/14093.085M)
Bulletin Channel see notes at right	14093.250	500 Hz BW RTTY bulletins should be transmitted on 14093.5 or 14094.0
	14093.500	
	14093.750	1000 Hz BW packet bulletins should be transmitted on 14094.5 or 14095.0
	14094.000	
	14094.250	2000 Hz BW packet bulletins should be transmitted on 14094.5
	14094.500	
14094.750		
Packet med	14095.000	1000 Hz BW packet transmit on 14096.0
	14095.250	
	14095.500	
Packet wide	14096.000	2000 Hz BW packet transmit on 14096.5
	14096.250	
Packed med	14096.500	1000 Hz BW packet transmit on 14097.0
	14096.750	
Packet med	14097.000	1000 Hz BW packet transmit on 14098.0
	14097.250	
	14097.500	
Packet wide	14097.750	2000 Hz BW packet transmit on 14098.5
	14098.000	
Packed med	14098.250	1000 Hz BW packet transmit on 14099.0
	14098.500	
CW Beacons	14098.750	CW beacons operate on 14100 but get a 1 kHz band to include guard space
	14099.000	
	14099.250	
	14099.500	
	14099.750	
	14100.000	
	14100.250	
	14100.500	

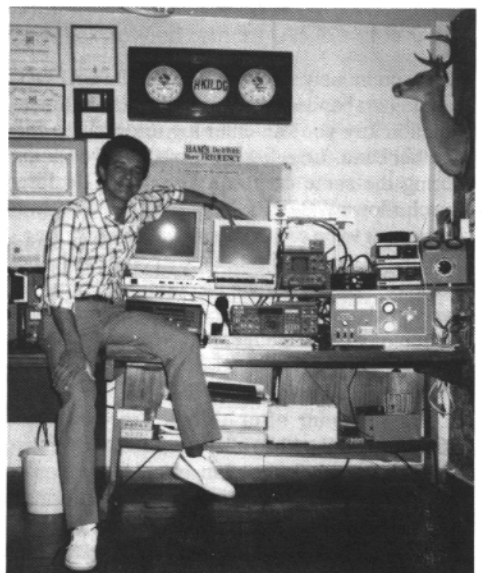
de Paul, ad7i



Famous DXer Martti, OH2BH stops for a visit with Jules, W2JGR his first contact from XF4L



Martti, OH2BH tried out the keyboard at Jules, W2JGR QTH. Maybe Martti will RTTY gear on his next DXpedition. Cross those fingers.



Raul, HK1LDG, always a contender in the RTTY contests. RTTY Roundup he was 5KIR



# SOFTWARE REVIEW

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

Have been doing a lot of letter writing on the recent ARRL automatic control issue, and like always, find that I am in the minority. Most users of most things have very little real feelings or urges to be part of the process. If YOU care about an issue, then take pen, or typewriter in hand and express your views.

This month we will finish up the SCOTCHLOG program and then take a month off and catch up on some little projects around here.

## SCOTCHLOG

SCOTCHLOG has been divided into three main parts -- SETUP, LOGGING, and PRINTING. Setup of the contest program is what makes it different. Rather than the program author taking time to setup each contest that he may wish to enter, it allows the user to configure the program to each contest. It allows multiple multipliers, i.e. States and Countries (which just happens to work well in the ARRL RTTY Roundup). It looks up, via a country, chart the normal Country multipliers (G, ZL, VU). It supports the point charts used for ANARTS, VOLTA, and other similar contests. The SCOTCHLOG can be configured to do point differences between bands. Perhaps, the most important part of the setup program is that you can test it before hand and get it all functioning correctly.

As we previously discussed, the SCOTCHLOG can do two bands simultaneously. By hitting a function key you can enter log information for another band. Logging is allowed on two bands during the same contest. This is the feature which allows WB7RBJ, WA7EGA, WV7Y and I to appear to be on two bands at the same time. We share the middle computer and with the Lock-Out Boxes (which electronically prevent two signals on the air at once) this completes our technology contest edge.

Action occurs at the Enter Callsign [ ] box in the program after things are fired up. SCOTCHLOG will do all the normal operations and a lot more. You can change the signal reports quite easily and enter any log information that you have set up in the exchange box. You can search the database and correct things. Times are automatically stamped on the QSO. Dupes can be logged (this incidentally is a major

fault of most home programmed logging programs). Logging programs must allow the entry of dupes. Because due to confusion during the contest a station may think he has worked someone but one or the other didn't log the contact correctly. When you log it as a dupe the contest committee can verify the log data and sort things out.

SCOTCHLOG properly denotes multipliers, scores the contest on a running basis, dupe checks, adds the time and date and allows you to concentrate on the fun of the contest. It also shows you point, contact, and multiplier rate letting you know when things are slowing, allowing the contestee to change bands, or make other decisions.

Finally the program has a print program which even the author says 'I do not recommend . . .'. I have to agree with him although I haven't tried it in a long time. It does make the basic log, and then prepares that all, necessary Dupe Sheet.

Most users of contest logging programs take the finished data file and manipulate it with other tools. Some use Lotus 1-2-3, Excel, or like I do, read the file into a Pascal database program and manipulate data the way it needs to be done, my way !! As WA7EGA says the program is furnished "AS IS", he has written it in QuickBasic 4.1 and for a self enclosed disk mailer with a diskette will send it to those requesting the program. He supports it only upon a great deal of 'gripping' but I have found over the years that he can't resist a good complaint! Try it...you may like it...

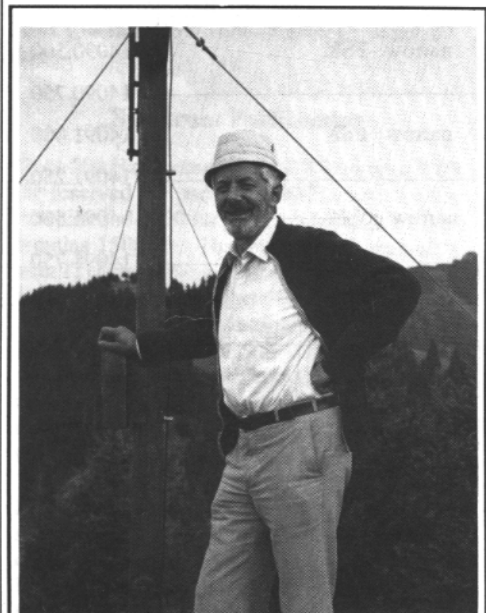
On to the Mail Bag. Ted, W8OVZ writes about a PK232 Well Ted I don't have one, but Hal, WA7EGA swears by the A.E.A. software and especially for AMTOR. Personally I would use the CP100 and the MBA-TOR, Ted. Got another one from Jim, KD2KU and I would suggest trying the RTTY-PC and all, seems to have a good word-wrap, Jim. Good question on AMTOR for the PC. Does anyone out there in Digital Land know of a good AMTOR PC program that runs with generic Terminal Units ?? Drop me a note, please. Wes, WZ7I, has just hooked up his ST6000 to the PK232 much like the RTTY Journal suggested last month. Working fine! I also have my ST6000 all interfaced, but must admit that HAL Communications should do a supplement to their manual.

Even had to call Dale W6IWO for a hand!!! Seems our last column got Mike, WD8BTU the RTTY-PC author happy again. Mike I have a suggestion for you. Get going on AMTOR, seems the market is Big.

Users who are doing some traffic handling seem to have a software problem that maybe someone has an idea for. When sending they can't access the disk drives and edit files and continue transmitting. None of the software seems to let you do it. When you get in the file the transmitter goes into steady MARK. Seems to me that's a software problem? What are your thoughts? All the programs out there seem to work the same! Why, I am not sure. The PK232 program does allow it, but so far my sources claim that's the only one.

If anyone is using DeskView of DoubleDos with some of the programs I have recently reviewed I would sure like to hear from you. Until next month....enjoy. Look for us in BARTG.

de Jay, WS7I



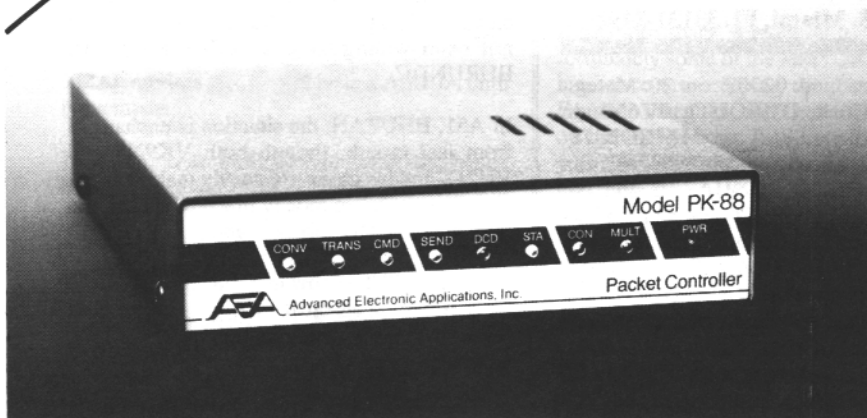
Frank, HB0/HBNL during CQ RTTY contest



Frank's nice neat station. Rep of Liechtenstein

New Low Price!  
Amateur Net \$119.95\*  
Retail \$134.95

# AEA's PK-88™ Packet Controller



Unique operating features with a proven hardware and software design make AEA's PK-88 your best choice in packet radio - now with MailDrop, an 8KBytes efficient personal Mailbox with selectable third-party traffic. The MailDrop uses a subset of the well-known WØRLI/WA7MBL packet BBS commands. When your PK-88 MailDrop is active, other stations can connect to your PK-88, leave messages for you or read messages from you. You can also store a single message or up to 15 separately numbered messages. Your MailDrop also accepts inbound mail forwarding from your local WØRLI/WA7MBL auto-forwarding packet BBSs.

The PK-88's internal KISS Mode is your direct interface to KA9Q's "NET" TCP/IP protocol suite - a single KISS command presets all packet parameters for TCP/IP operation. AEA's unique Host Mode provides the type of complete interface protocol preferred by many professional programmers for efficient control of the PK-88 by external programs and special applications. Your PK-88 also accepts special "NET/ROM" EPROMs provided by Software 2000, Inc., for Level Three node operation and networking.

In addition to all the features of a "standard" TNC, the PK-88 offers features not found in any other TNC:

- WHYNOT command - Shows reasons why some received packets are not displayed.
- AUDELAY command - Reduces spurious emissions in slow-switching radios.
- "Packet Dump Suppression" - Prevents dumping unsent packets on the radio channel when the link fails.
- Prioritized Acknowledgement (ACK) protocol improves performance on busy packet channels.
- CUSTOM command - Allows limited PK-88 customization for non-standard applications.
- Enhanced MBX command - Permits display of the data in I- and UI-frames, without packet headers and without retries and repeats.
- Enhanced MPROTO command - Suppresses display of non-ASCII packets from Level Three switches and network nodes.
- Unique MFILTER value \$80 - Suppresses all graphics and control characters except TAB, CR and LF.
- Unique DFROM command - Permits selective digipeating ("Accept" or "Reject" digipeater operation by call signs).

## Specifications:

- Processor: Zilog Z80. RAM: Battery backed, 32K Bytes. ROM: 32K Bytes
- Hardware HDLC: Zilog 8530 SCC

## Modem:

- Modulator/Demodulator: AMD 7910 "World Chip"(tm), with differential AM detection and phase-continuous sinewave AFSK generator
- Modulator Output Level: Adjustable, 5 to 300 millivolts RMS
- Input Sensitivity: 5 millivolts RMS
- Input Range: 5 to 770 millivolts RMS
- External Modem Connector for use with external modem
- Hardware Watchdog Timer: One-minute time-out

## Rear Panel Input/Output Connections:

- Radio Interface: Locking eight-pin; Receive Audio, Transmit Audio, PTT, Auxiliary Squelch, Ground
- Audio Input/Output: 3.5mm mini-plug
- External Modem: Five pins on DB-25; Transmit Data, Receive Data, Data Carrier Detect, Clock, Ground
- Terminal Interface: Standard RS-232 25-pin DB-25 connector
- Terminal Data Rates: Autobaud settings at 300, 1200, 2400, 4800, 9600. TBAUD adds 45, 50, 57, 75, 100, 110, 150, 200, 400, 600 and 19,200 BPS terminal rates
- HDLC Link Data Rates: 45, 50, 57, 75, 100, 110, 150, 200, 300, 400, 600, 1200, 2400, 4800, 9600, 19200 BPS

## Front Panel LED Indicators:

- Converse, Transparent, Command, Send, Data Carrier Detect, Status, Connect, Multiple Connect, Power

## Power:

- +12 to +16 VDC @ 550mA, coaxial power connector, (center pin positive), Model AC-1 120 VAC wall adapter available

## Physical:

- 7.5"W x 6"D x 1.5"H; Weight 2lbs.,6oz.

\* Through participating AEA dealers only.

**AEA Brings You A Better Experience.**

**Advanced Electronic Applications, Inc.**

2006-196th St. SW/P.O. Box 2160 Lynnwood, WA 98036 206-775-7373

Prices and specifications subject to change without notice or obligation.  
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# DX NEWS

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

Judging from the RTTY activity in January, I would think that the ARRL might have another look at their RTTY give-away program! Had quite a bit of mail this month, both electronic and postage paid, protesting the ARRL petition to give our .090 to .100 band segments away to Non-Attended HF Packet Systems, a mode, which is, to say it mildly, of doubtful use on the HF bands. Well I guess every one wants to play, just let it not be at the expense of our wonderful Mode. I will not say: "RTTY forever" but surely RTTY for a very long time to come.

I cannot believe that I worked seven new countries since I wrote the last DX Column, bringing my total worked up to 166 (small compared to the 302, at last count by I5FLN).

And by the time this issue of the Journal reaches you, XW8KPL and JW7SP will have been on the air and given many of us another New One. A GREAT MODE!

## JANUARY REVIEW

I can only skim the surface and give you a "few" of the stations which were active in January, and of course the DXpeditions have mostly all gone home now, but new ones are on the way.

Early January there was 3Y5X, BOUVET, who did a good job, split, on all modes, and if you did not work him, do not blame the operators, but the innumerable amount of Policemen and traffic cops on his frequency, plus those poor frustrated ones who could get thru the Pile-Up and decided to make it impossible for every one else also.

The long awaited H44SH came up from the SOLOMON ISLANDS with the PK-232 donated by the IRDXA, doing a professional job of working split on all bands. He will continue to be active, as he lives there and enjoys the new mode.

And UA1OT was having a ball on RTTY from FRANZ-JOSEPH'S LAND, until his gear went on the blink, but he is now back with a new call sign, 4K2OT. Still on 50 Baud.

Briefly, there was TT8GH in CHAD, active daily, but now gone home; 8Q7DC from the Maldives, a wonderful lady, now gone back to France; D44BC from CABO VERDE; BY1QH

almost daily around 0200Z on 20 Meters; TU2BB; J28TY in DJIBOUTI; TZ6VV in MALI; 9J2ALL; ZS8MI on MARION ISLAND (and yes, I finally got him); PY0FF from FERNANDO DE NORONHA, off and on; UZ9CWA; UA9YE, UV9CC and many others from Zone 17 and 18 on 20 Meters each day from about 2200 to 0600Z; 6W6JX; HV3SJ, PJ2MI, PZ1BS from SURINAM just about daily on 20 Meter at 0200Z; now on vacation till end of June; YN4JR from NICARAGUA often at around 0000Z (+/- and hour or so) on 20 Meters; VU2NR; 7P8DX; 9Q5DX; JX9CAA from JAN MAYEN; LY2BOK on 15 Meters around 1500Z; FR5ZD; ZS3NH now and then; 3X1SG; VP8BHF almost daily around 14.090 at 0200Z; VS6AD; GU0/KD7TT; TJ1MW; HH2BZ; HS1BV around 1900Z on 20 Meters; YI1BGD and many others, all rare or semi-rare. They are regulars, and you can find most of them, if you spend the time and don't let the Beacon Mailboxes (increasing again) and the Packet incursions bother you.

## DX COMINGS

Please fill out and return the Countries Wanted Questionnaire in the January Issue of the JOURNAL. Use additional pages if the blank space provided is not enough. The results of the survey may decide where the next expedition will put in it's efforts on RTTY.

The DXAC has recommended that WALVIS BAY be considered as a separate country for the DXCC. The ARRL Awards Committee may or may not accept this recommendation: let us hope they will. ZS9A has been on RTTY a few times, but currently is in the hospital and will be back on the air towards the end of February. He can be found on 28,610 MHz SSB around 1600Z on Mondays, Thursdays and Saturdays and when he finishes his business he will pick up breakers and possibly give you an RTTY sched. Meanwhile a new station from WALVIS is gearing up, ZS9S, also with RTTY Capability.

The SOUTH SANDWICH expedition is indeed kaput for this season, but there are rumors of a late '90 effort to both the South Sandwich and the SOUTH GEORGIA ISLANDS.

Although the trip is not 100% certain, efforts are being made to provide gear to Jacky, F2CW

(and to get him to accept it), for his Mid March expedition to the SOUTHERN SUDAN, 6T0CW (not 6U0CW as mistakenly stated last month). We will keep you posted, but for the latest developments please watch the weekly RTTY DX notes from VK2SG, available in most Mailboxes, as well as on VHF Packet.

Rod, 5Z4BH, advises that he has now obtained a PK-232 and Portable Computer, which is easier to lug around on his trips, so we still hope to see him active from interesting spots in Africa, though SOMALIA is about out, as T5CT has not been willing to give RTTY a try. 9U, BURUNDI?

In A51, BHUTAN, the situation is unchanged from last month, though both VK9NS and VU2JX and his group are quietly making progress. Bet you even money that we will see this rare one on the air this year yet.

Dave, ex J52US is now in SIERRA LEONE as 9L1US. Not seen on RTTY yet, but we sure hope he will, after the great job Dave did from GUENES-BISSAU.

From LITHUANIA, besides LY2BOK, there has also been activity on 20 Meters by LY2WW, but he had computer problems, but promises to be back late February and then be very active, so that all will have a chance at him.

Some activity is expected from SVALBARD, JW7SP on the February 10/11 weekend, and latest report on LAOS, XW8KPL is still that they will come up on RTTY about 11/12 February.

Activity may be expected any day now from CROIZET and KERGUELEN: watch for the call signs FT5XA, FT4WB, FT5XH and FT4XI. The operators are there, they plan to work all bands, all modes, so toes crossed! (and by now, better buy a special pair of shoes for that!).

WB2DND has scheduled another trip to the U.A.E. A61AD and is planning to be active 26/27 March, RTTY only, as the computer interface has now been fixed.

Joe, KF6OG will be active on RTTY as ZF2ND or ZF2OG during the week preceeding the CQ WW WPX SSB contest in the later part of March. GRAND CAYMAN may not be new all but some may need this one.

Steve, KU9C plans a trip to S.E. Asia from 1-19 March. He will be active from MACAO in the ARRL SSB contest, but outside of the contest, he plans to work RTTY from MACAO, and he hopes, also from SINGAPORE, HONG KONG and possibly THAILAND. Steve was QSL manager for YO6JN, Gaby, but he asked me to tell you that due to the changes in Rumania, Gaby now does his own QSLing and is in the '90 CB.

The Lynx DX Group of Spain will activate

SOLYNX from the WESTERN SAHARA around 1 March for about two weeks, on RTTY and AMTOR. During the return trip from the WESTERN SAHARA, it is anticipated that a short operation from 7X, ALGERIA, will take place, if time permits.

JH1LBR plans to go to EAST KIRIBATI, T32, from 22 March, while JA3AUQ hopes to be QRV from the MALDIVES, 8Q, around Mid-March. There has been RTTY activity from GHANA, 9G1AG. Look for him around 1700Z on 20 Meters, when he meets his QSL Manager.

9J2AL advises that he will be in ZAMBIA until November.

JX9CAA, JAN MAYEN, works shifts, hence his operating schedule is not regular. He will stay there until October so we all have a chance. A good bet is to look for him around 2200Z on 14,085 Mark.

The International RTTY DX Association is now working for you to activate CE0Z, JUAN FERNANDEZ as well as ZD9, TRISTAN DA CUNHA. The latter will take a little time, but CE0Z should be active sometime in March. The IRDXA needs your support to continue all their projects.

The ARRL has approved endorsements to the 5 band DXCC for 12 and 17 Meters. Will we see some RTTY on those bands now?

ZS8MI, MARION ISLAND, has stated that he plans to be active on RTTY on Saturdays, 10 thru 20 Meters, that is how I got him.

## MAIL

I had a very nice letter from Serge, member of the UZ9CWA Club Station with some pictures I hope to share with you next month. UZ9CWA is working towards a 5 band DXCC on RTTY. He has 71 worked on 40 Meters and 42 on 80 Meters. He realizes that to complete 100 countries on 80 Meter RTTY will be a very major challenge. But when he gets that done, where does he submit for an Award? Looking at the 5 Band DXCC and the 5 band WAZ on my wall, I see nothing about Modes. Unless someone has contrary information, I guess it will be up to the RTTY JOURNAL to make a nice plaque to celebrate this extraordinary achievement. Comments appreciated, please.

## BANDPLANS

I had a lot of mail this month, including some early returns of the questionnaires on needed DXCC countries. There was all kinds of mail with suggested bandplans, from Europe, Asia and the U.S.

I will not quote it all, but most of it contained the definite recommendation that the ARRL took 10 KHz off the tops of our bands, the

RTTY/AMTOR segment should then shift down into the current CW portion, starting at .050 or .060, depending on the viewpoint of the writer.

After giving all this some thought, I must conclude that there is no alternative. RTTY and AMTOR activity is at an all time high. Just look at the RTTY activity quoted above and it becomes obvious that new countries come on the air every day, not just occasionally.

Also more space is required for AMTOR: unfortunately some of the AMTOR stations needing space are creeping up above .080 Mark. Don't do that guys: don't put any more pressure on the RTTY boys, they have enough to cope with the illegal "STA" operations on 10 and 15 Meters and the semi-legal, unethical ones on 20, plus the unwanted Beacon Mailboxes, which are now starting to appear on 15 and 10 Meters also.

What I do not understand about the ARRL Petition to legalize the HF Packet encroachment into the RTTY segments of the bands, is the reasoning regarding 10 and 15 Meters. First of all, I am told, that the Deputy Manager, Field Services, KY1T, in a letter dated 29 December '89 to a well known RTTYer, wrote that the current "STA" authority to operate unattended Packet in no instance involves operation on 10 or 15 Meters (quote). So, where do all the illegals come from? Or are they legal on 20, above 14,100 that is, while those same individuals are operating illegally on 10 and especially 15 Meters?

Anyway, I have never understood the "why" of the Petition by the ARRL to operate on .090 to .100 on 10 and 15 Meters: what about the "Wasteland" from 28,100 to 28,300 and from 21,100 to 21,200? Is it not there that such new experiments should be carried out, rather than loosing that band-segment eventually, due to under-utilization.

On 20 Meters the situation is different: the ARRL is bending to Region 1 complaints, and even from Canada, since in those countries the segment above 14,100 is used for SSB. As we try to protect our RTTY segment, small as it is, those boys did their homework and are not about to let Packet or other Digital Modes steal 10 KHz of their 250 KHz SSB segment.

So, if we knuckle under, is it then not logical that Digital modes all slide down, at the expense of CW, which in some of my correspondents considered an outdated form of communication anyway? So: 14,050, here we come! Courtesy of the ARRL. For sure, sooner or later.

I have little to complain about 3,605 - 3,615 for HF Packet, if they can copy thru the QRN, they are welcome to it. But 40 Meters is a little harder with the 7,000 - 7,100 crowded to the brim after dark: SSB, CW, AMTOR, RTTY and Packet. I guess by petitioning for the 7,035 - 7,045 seg-

ment for automated HF Packet, the ARRL is limiting CW operation anyway. Go ahead, if you can get thru the QRM. RTTY DX will find another operating segment on 40, it is a robust mode.

Unfortunately, I am sure, that for a long time to come, the last will not have been said. But in the meantime we are stuck with a bunch of illegal HF automatic Packet operators in the RTTY segment of the bands and no competent authority seems concerned enough to do anything about it.

## GOOD DX, IT'S THERE

As usual, I tend to run off at the mouth, maybe because the XYL does not let me get a word in edgewise. But some things need to be said frankly and I hope that it all helps a little in preserving our operating space.

So, thanks to all of you, who supplied me with data for this column, so that our beloved editor will not scratch it. There were many to thank this month, but I am particularly grateful to W9CD, I5FLN, OD5NG, VK2SG, VE3JPC, VU2JX, WA8FLF, W6PQS, EA9JV, W2JGR, JA3PFZ and my trusty Spelling Checker.

I will be partially off the air from 14 February for about a week, as Martti Laine, OH2BH is visiting me for the ARRL CW contest. In return for this, I will do my utmost to see that Martti leaves Guatemala as a confirmed RTTYer and drags a Tono or what-not along on any of his future journeys, particularly to M.V. Island, 4J.

May the Lord bless you all, and may all your DX be new ones! 73 de John, TG9VT, on the volcanos of Guatemala.

## DX FLASH!

### SPRATLY, 1S0XV EXPEDITION - MARCH

RL8PYL will go to Spratly from 15-30 March, with assistance of two JA ops. Total cost of this venture will be near \$40,000 U.S. as two helicopters are needed and a military escort.

Contributions are essential. Please give your assistance by making a contribution to the following account:

Acct. No. 37.0.070.0.579  
Acct of Jointventure "Kiulong"  
Bank of Foreign Trade of Vietnam  
Ho-ChimIn City, Vietnam

Should the trip be canceled for any reason, all money will be refunded. Thank you.

John, TG9VT

# BARTG Spring RTTY Contest 1990

## TIME:

0200 GMT Saturday March 17 to 0200 GMT Monday March 19, 1990. The total contest period is 48 hours but not more than 30 hours of operation is permitted. Time spent listening counts as operating time. The 18 hours non-operating time can be taken at any time during the contest period, but off periods may not be less than 3 hours per period. Time of operation must be shown on the contest summary sheet.

## CATEGORIES:

1. Single operator All band 2. Single operator Single band 3. Multi-operator All band 4. Short Wave Listener

## BANDS:

3.5 MHz, 7.0 MHz, 14 MHz, 21 MHz, 28 MHz Amateur bands

## STATIONS:

Stations may not be contacted more than once on any band, but additional contacts with the same station may be made on other bands. No station may transmit on two or more bands at the same time.

## COUNTRIES:

The ARRL DX Countries list will be used, and in addition each W/K/ VE/ VO and VK call area will be counted as a separate country. Note: W/K, VE/ VO and VK count once only for QCA purposes.

## MESSAGES will consist of:

(A) TIME GMT. This must consist of a full four figure group and the use of the expression "same" or "same as yours" is not permitted.

(B) RST AND MESSAGE NUMBER. They number must consist of a three figure group and start with 001 for the first contact made.

## POINTS:

(A) All two-way RTTY contacts with other stations within one's own country will score two points.

(B) All two-way contacts with other stations outside one's own country will score

ten points.

(C) All stations can claim a bonus of 200 points for each country worked, including their own. Note: any one country may be counted again if worked on a different band, but continents are counted once only. Proof of contact may be required in cases where the station worked does not appear in any other contest log received and does not submit a check log.

## SCORING:

(A) Two-way contact points times the total countries worked.

(B) Countries worked times 200 times continents worked (Maximum 6)

(C) Final score is total of "A" + "B"

Sample calculation:

EXCHANGE POINTS (320) X COUNTRIES (10)	=	3020
COUNTRIES (10) X 200 X CONTINENTS (3)	=	6000
FINAL SCORE	=	9020

## LOG SHEETS:

Use separate log sheets for each band. Logs must show BAND, DATE and TIME (GMT), CALLSIGN, MESSAGE SENT and RECEIVED, COUNTRIES and POINTS claimed.

## SWL LOG SHEETS:

SWL logs must contain DATE and TIME (GMT) of logging, CALLSIGN of station heard, REPORT sent by that station and CALLSIGN of the station being worked.

## SUMMARY SHEET:

Summary sheets must show FULL SCORING, TIMES OF OPERATION, ADDRESS for correspondence, and in the case of multi-operator stations the names and callsigns of all operators involved with the operation during the contest.

Any incomplete entries will be classified as check logs only.

ALL LOGS MUST BE RECEIVED BY MAY 26th 1990 IN ORDER TO QUALIFY.

Suitable log and summary sheets are available from the contest manager. UK entrants send large (A4) S.A.E. Outside UK please send 6 IRC's to cover postage.

Please send your contest or check log to:  
**John Barber, G4SKA 32 Wellbrook St.  
Tiverton Devon EX16 5JW ENGLAND**

The judge's decision will be final and no correspondence can be entered into in respect of incorrect or late entries. All logs submitted shall remain the property of the British Amateur Radio Teledata Group. Certificates will be awarded to the leading stations in each category, the top station in each continent and the top station in each W/K, VE/VO, and VK area.

## ADDITIONAL NOTES:

If a contestant manages to contact 25 or more different countries on two-way RTTY during the contest, a claim may be made for the quarter century award (QCA) issued by B.A.R.T.G. and for which a charge of 6 dollars US or 30 IRCs is made. Holders of existing QCA awards should indicate and list new countries to be added to their existing records. Make your claim at the same time you send in your log.

Additionally, if any contestant manages to contact stations on two-way RTTY within each of the six continents, and the B.A.R.T.G. contest manager receives either a contest log or check sheet from each of the six stations concerned, a claim may be made for the WAC award issued by the American RTTY JOURNAL. The necessary information together with the fee will be forwarded to the Journal, who will issue the award. However, in view of the high volume of work which the contest manager will have to deal with, it will not be possible to process awards claims until the final results of the contest have been evaluated and published

Your comments on the contest would be much appreciated.

**John Barber, G4SKA, Contest Manager,  
BARTG**



# DXPEDITION OF THE MONTH

## SORASD, WESTERN SAHARA

by Aure, EA9JV  
Hermanos Miranda 12  
Melilla, SPAIN

Dear John, I have received your letter and first of all, thank you very much for your kindness towards me and your wonderful words to me.

I am very sorry dear John, but my English is very poor for writing a story about my trip to Western Sahara, because I'm self-educated on RTTY mode and with my dictionary.

I wish to write the little story in Spanish, of course, is much better for me and I hope you have an OM in USA who speaks Spanish for the translation, okay? (I had a gorgeous young lady in Guatemala) Aure, EA9JV

### This is the story:

First of all, my friend John, in spite of having everything confirmed and the promise that a member of the R.A.S.D. Embassy would be waiting for me at the Algiers Airport, I was very worried about all the inconvenience that could occur at Customs trying to get through with my Tono 7000E, but I must honestly tell you, everything was friendliness from the authorities and this way ended the first part of my journey with my Tono at the Algiers Hotel. This part was really tough since all the waiting at the airports was endless and since I had to take planes from Melilla-Malaga, Malaga-Palma de Mallorca (Balearic Islands) and Palma de Mallorca to Algeria, arriving on the evening of November 11, 1989, having to wait for permission from the Algerian authorities to board the airplane from Argel to Tinduf, as that flight is prohibited for foreigners.

On Monday 13, a member of the R.A.S.D. Embassy accompanied me to the airport with all the permits to able to take the Boeing 727 up to Tinduf, a flight that lasted no less than 2 1/2 hours but you could spot beautiful sights of the Great Sahara Desert, which seemed more as if I was flying over the moon.

After going through all the custom and police formalities, in a Land Rover (Spanish car, all terrain) we got into the desert; at that moment my heart was beating at 100 per minute as I was anxious to get to the shack and let my friend Juan, EA9KQ and my XYL, EA9LI know that everything was okay and without mishap.

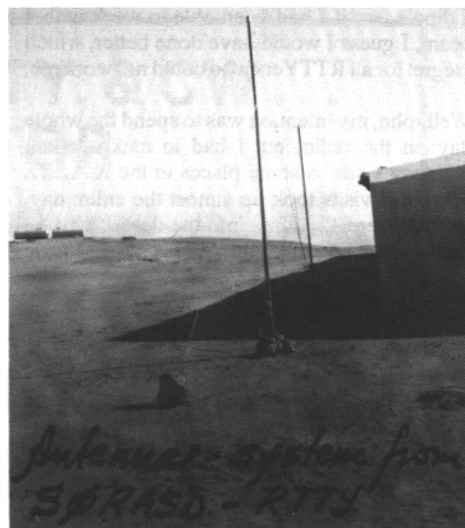
We reached a place to rest a bit late, as night was falling. On the 14th we continued our trip

through the desert until we reached the shack, where after a short time Mahafud, S01MZ showed up, whom I didn't know personally, as my friend Naama, S01A, with whom I have been together in several conventions of the Spanish DX Group, (The Lynx DX Group).

When I asked Mahafud where Naama and his shack could be found, he gave me some bad news. Mahafud had been notified that we could not get as far as where Naama was due to the difficult incidents that the war was causing and that it would be too dangerous for me. He decided to assemble a triband on a pole for me.

After a hard job by my friends, the Saharais, misfortune arrived. I found myself checking the antenna's SWR when a strong wind came up, turning into an amazing Sirocco, (Strong Sand Storm), which knocked down the pole with the triband, which was all smashed and without us being able to come out of the shack, as all the flying sand would perforate your body as if it were needles.

After the Sirocco went by, and almost at night, helped by the lights of a truck, we saw that the repair of the antenna was impossible, so I asked Mahafud to bring me some cables and hurriedly I made some dipoles, one for 14 MHz and other for 21 MHz; from the picture I am enclosing, you can see, my friend John, how rustic an assembly we were able to build, the guywires were secured with rocks, hi hi hi ..., it was the only solution and I had already lost a lot of time and besides Juan, EA9KQ and my XYL would be very worried. I made my first family QSO and quickly started working in order to put the station in satisfactory condition. But here it was, problems did not finish, as when connecting the Tono 7000E to the TS-400S, the cabling I had been carrying from Melilla did not work, since I didn't know the TS-830S. There was a DIN connector missing for the transmit relay in AFSK and also the instruction book, so our good friend Mahafud had to drive over 40 Km to look for it, in spite of the danger there is in driving at night through the desert!!! Finally!! with the book in my hands and with inestimable help of my friend Juan on SSB I managed to start the station up and on the same frequency we made our first QSO and our friend Mahafud remain amazed of how we received Juan's message on the screen, it was a really beautiful moment.



Rocks were used to support the antenna masts after the first antenna was blown away by a Sirocco

I arranged the shack a little bit to be comfortable and as EA9KQ was passing the information to Jules, W2JGR, we went to get something to eat, as the night was going to be rough under the conditions I had to work and as I had only taken tea for breakfast. While we were having dinner Mahafud told me that the following day he would get me a vertical for 40, 20, 15 and 10 Meters, but that he did not know in what shape it was, which made me very happy, but the following day I found out that the vertical did not work as we expected.

At 0055 GMT on the 15th I made the first QSO and there was Jules, W2JGR, waiting and from that QSO the tremendous pileup gathered, confirming that all USA friends were there to contact SORASD.

Having managed pile-ups from my shack in Melilla without the need of working split, I did not take the precaution of checking the handling of the TS-440-S VFO and to tell you the truth, it was really hard working only with the RIT, sitting down on a blanket and with the Log Book on the floor and even though the QSO rate was not that good, I felt very pleased and happy.

The following day I was able to practice a little with the VFO and the truth is, my friend John, that the pile-up was impressive, covering 5 KZ. The rate of operation increased to working a complete QSO in less than a minute, thanks to the cooperation of all OM. That night Mahafud had the greatest joy and was overcome with amazement of how could such a big pile-up be worked with a machine, signals from all over the world were received, USA, JA, EU, etc., etc.

During the 16 effective hours, which I was able to operate, I was able to make 481 QSOs, which I believe is a good score in spite of having only

a dipole, so, if I had been able to work with a beam, I guess I would have done better, which I regret for all RTTYers who could not work me.

Well John, my intention was to spend the whole day on the radio, but I had to make certain courtesy visits to some places in the R.A.S.D. and these visits took up almost the entire day, as they were 150 Kms into the desert; plus all the incidents that occurred, it delayed the trip some 5 hours, as happened when I visited Mahafud's XYL in his "HAIMA" "TENT", welcoming me with a tea ritual in their hospitality.

On the 16th at 1607 (having to return on the 17th early morning), I had to QRT unexpectedly, as Mahafud showed me part of the war, when they said a big battle was taking place not very far from the shack and I had to move to secure place. So this is how this wonderful adventure of putting the SORASD station on the air on RTTY ended.

I had a friend, Naama, S01A, but now I have left behind more friends to whom I will be eternally grateful for their kindness and hospitality, specially to Mahafud, S01MZ, as well as to the R.A.S.D. Authorities for having given me the opportunity and I hope to go back again soon and bring them a gear and probably for working from 7X on RTTY.

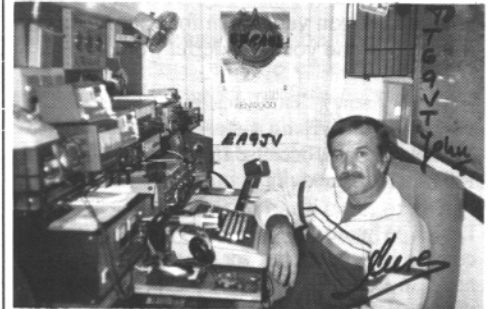
Hope this little story has pleased you, my friend John.

73 Aure

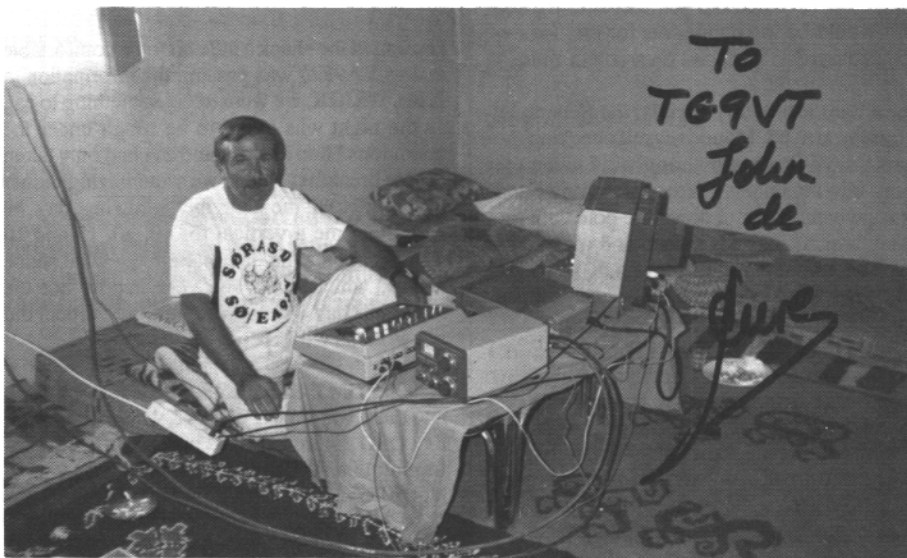
Note: If any operator or any Club wants to get rid of an old Tono 7000-E or similar, to take it to our friends at the R.A.S.D., please write me and I will be very grateful. Having had no help in making this trip, all has been financed from my own pocket.

I Have been seeking in Spain for an AEA PK-232 for my Commodore 128-D, so that I may give my trusty old Tono to Naama, but up to now that has not been possible for me.

## STAY AWAY FROM BEACONS, THEY WILL HURT YOUR REPUTATION



Aure, EA9JV at home QTH station in Melilla

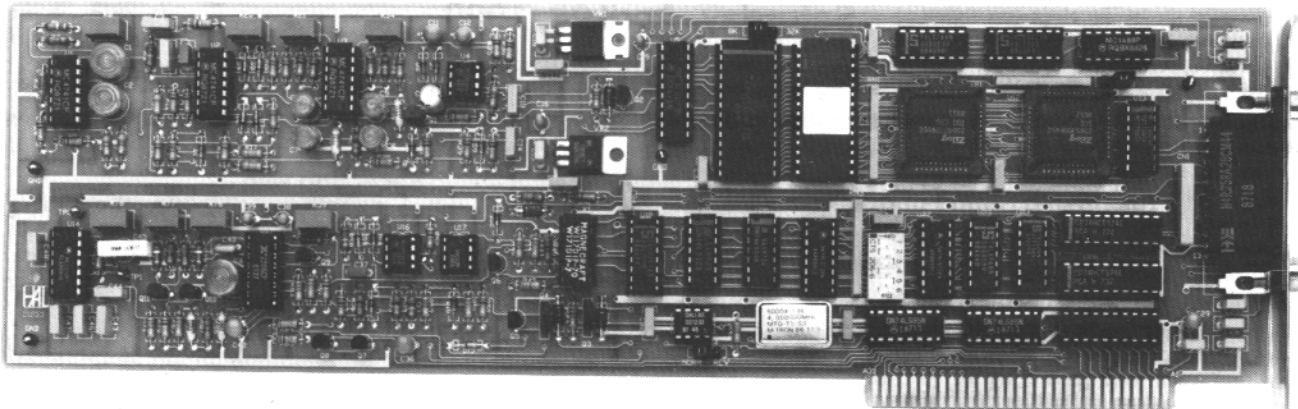


Aure at the operating position of SORASD. Not to comfortable, I'd say. With a war going on near by, Aure in the spirit of adventure stayed on making as many QSOs as possible before being forced to leave. Our hats are off to Aure for this outstanding effort.

This beautiful multi-colored card was loaned to the Journal by John, TG9VT. This picture does not really do it justice. Aure is going back again to the Sahara soon so be ready! See DX NEWS column in this issue for details of upcoming trip by Lynx group.



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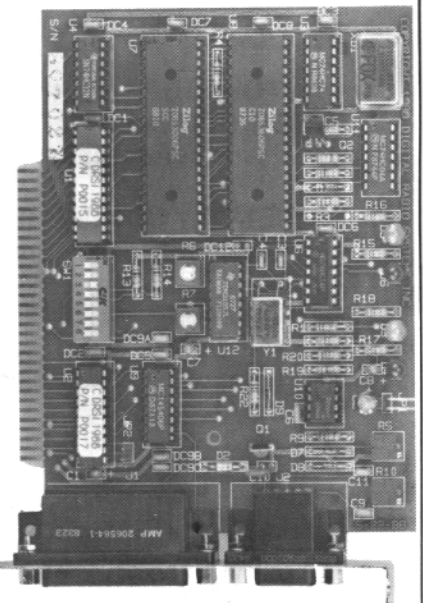
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# MSO'S

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

Hi Gang! I have received several interesting letters in the past couple of weeks, which should provide some interesting information for automated system users in this month's column.

## DIGITAL MODE OPERATING ETHICS:

First of all, the subject of what constitutes good "operating ethics" to use on the automated system frequencies, has been asked by two users. One user, new to digital communications generally, asks for some basic operating guidelines, and the other long-time RTTY user, offers a bit of criticism.

Although there are some operating techniques that are specific to RTTY operations, just plain old courtesy, and good operating techniques that apply to all of Amateur Radio, fare well on the digital modes. For example, with the spectrum allocated to the digital modes becoming more crowded every day, it's vitally important that one make sure the frequency on which he selects to operate isn't already occupied. Listening before transmitting is the Golden Rule, supplemented with "Is this frequency in use?", being very appropriate. There are many times that the frequency may appear to be free, only to find out that you are only able to copy one side of a QSO, due to atmospheric (skip) conditions. Fulfill your side of the obligation by asking if the frequency is in use!

Properly identify your station. As simple as this sounds, I see many "unidentified" stations on the air. They appear out of nowhere, use the MSO's, computer based systems, etc., never once identifying their station. Are you ashamed of your callsign? Many of the System Operators with whom I am familiar deny access to those who fail to properly identify their stations.

Prevent "leap frogging". Frequency conservation is important as more and more stations use the digital modes. It's important for your station to be as close to the same frequency as the station you are working. The temptation to turn on the RIT (receiver incremental tuning), and follow the other station, should be avoided. If the other station drifts in frequency, re-zero on his frequency as close as possible, being sure that the RIT is off, or you'll leap-frog up or down the band!

Believe it or not, I still hear RTTY stations sending CW identification. It is not a requirement that you identify your station on CW, (while operating RTTY), and if your computer program has that requirement, it should be deleted or disabled.

In the "old days", synchronization between two RTTY machines, (line or page printers), was essential. Out of this requirement was developed the RYRYRYRY transmission sequence. The newer demodulators do not require this synchronization, and sending line after line of RYRYRY only wastes frequencies, equipment and time.

Equipment "brag lists" are fine. But, as with all things, they can be taken to extreme. I've seen some lists that were so much in detail that I was surprised not to find the serial numbers of the equipment included! It's fine to tell the other fellow what you're running, but don't take two pages of text to do it.

When operating on one of the automated system frequencies, let the current user finish using the automated system before breaking in to chew the fat with him. Most likely your comments will be over-ridden by the automated system as it replies to the remote users commands. But, your interruption may cause interference to commands being issued to the system, or may distract the current user and cause him to forget to close the system, delete files, etc.

When calling a DX station, it's YOUR callsign that is important to get across to the DX station. Sending the DX stations callsign more than a couple of times is wasteful of time and frequencies, and accomplishes nothing. He knows what his callsign is, .....it's your callsign that he wants!

Finally, I received a letter from a disgruntled user of the National Autostart Frequency, (Mark is 14 085 625 Hz), complaining that he had to wait quite a considerable length of time to use one of the MSO's parked there, while two of the SYSOP's had a lengthy QSO on the frequency. I can appreciate his frustration, yet I offer a bit of history in hopes that he can understand one of the basic features of the National Autostart Frequency

The National Autostart Frequency was con-

ceived more than 12 years ago as more or less a meeting place, where friends and acquaintances could find friendship, interesting QSO's, and socialization with others interested in this form of RTTY. Automated systems, especially as we know them today, were not part of the scheme of things at that time. However, it wasn't long until we found the usefulness of the automated systems, which basically allow for "delayed QSO's". With automation, it's no longer necessary for two stations to be on the air at the same time in order to exchange comments....., you simply open up one of the MSO's, drop your comments to a file, and at some later date or time, the recipient picks up his mail.

Even with the apparent usefulness of the automated systems, the SYSOP's on the National Autostart Frequency desire to maintain some of the old friendliness of times gone by, and allow for ragchewing on the frequency, as well as use of the automated systems. They have never decreed that this frequency was dedicated strictly to use of MSO traffic. These two uses are not mutually exclusive, in that one only needs to monitor the frequency for a short time to determine that MSO use accounts for only a small amount of time.

As I stated above, I can appreciate the frustration involved when one wants to use one of the MSO's, only to find two other stations ragchewing on the frequency. And in an attempt to satisfy both sides of the issue, I suggest that those who do engage in ragchewing on ANY well known automated system frequency simply "drag their feet" a bit when turning it over to the other station. This would allow those waiting to use one of the systems the opportunity to break in and ask if they could use the frequency. It's not like our transceivers are crystal controlled, and QSY'ing up or down a bit is all that tough. Yes, "cooperation reigns supreme" is still one of my favorite sayings, and if practiced, life will be easier for all of us!

## RTTY PIX MSO:

Gene Wagner, WA7RCR, of Longview, Washington, is looking for an MSO that will accept and output a straight text file, including line feeds and carriage returns, (but without word wrap). He would like to use such a system to transmit and receive RTTY art on Two Meters. If you are familiar with such a system, Gene can be contacted at 2440 46th Avenue, Longview, Washington, 98632.

## JERRY TRICHTER, WA1IUF, UPDATE:

Our long-time friend Jerry Trichter, WA1IUF, continues his battle to return to good health. Recently he was moved to a nursing home, where long term therapy can be provided. On January 23, 1990, I spoke with Jerry's son-in-law, and he told me that Jerry certainly appreciates all of the thoughts and prayers for him, and

that he especially enjoys hearing from his friends. You can write to Jerry at: Jerry Trichter, Sound View Nursing Center, Care Lane, West Haven, CT, 06516. Let's all drop Jerry a note soon!

### 1990 HAMVENTION, "RTTY DINNER":

Bob Foster, WA7QWG, is the RTTY Dinner host again this year. Details for formally registering for this prestige event, held annually during the Dayton HAMVENTION, will be provided in a later issue of the RTTY Journal. Those of you interested in pre-registering, can have your name added to the RTTY Dinner list maintained in the K0VKH MSO, on the National Autostart Frequency.

### UNATTENDED AUTOMATED SYSTEMS UPDATE:

I've had several letters and QSO's recently where individuals have expressed their dislike and frustration with the ARRL's Petition to the

FCC concerning UNATTENDED automated digital systems. It has been suggested that a counter petition to the FCC be generated, outlining a more realistic and useable system. As with most controversial subjects, (and this one is certainly no exception), there are many and varied ideas as to how automated systems should be regulated.

In order to compile a constructive and useable petition to the FCC, one must have facts about current automated system usage, information on spectrum usage, the number and type of systems presently in use, etc. If you are interested in continuing to provide automated digital services, are thinking about starting an automated system, or have thoughts about automated systems in general, drop me a line at the address above, or in care of "The RTTY Journal". I'll attempt to evaluate the information received, with thoughts about presenting a more realistic proposal to the FCC concerning unattended digital systems.

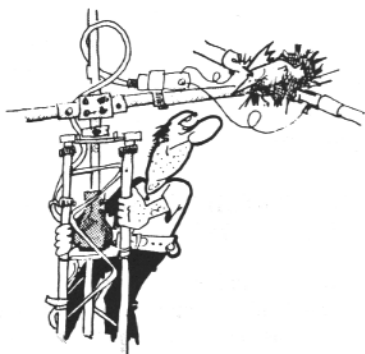
For a bit of insight on the ARRL's position on

unattended automatic control, interested persons should read "It Seems to Us", Page 9, of the February issue of QST magazine, written by Dave Sumner, K1ZZ. It's apparent to me, after reading this article, that my thoughts on the ARRL's Petition to the FCC, (as expressed in this column in the February RTTY Journal), hit the nail exactly on the head. Current RTTY, AMTOR, and APLINK operations, some decades in operation, were completely ignored by the ARRL in their proposal. Many automated systems now exist on 20 and 40 meters. Where are these "range wars" that K1ZZ refers to? The ARRL is either misinformed, or doesn't care about current systems, and is prejudicial in its petition to the FCC, in that only Packet Radio interests have been considered. The wars will really start if the ARRL's proposal is accepted by the FCC, and currently operating automated systems move into those small areas to avail themselves of unattended FCC provisions.

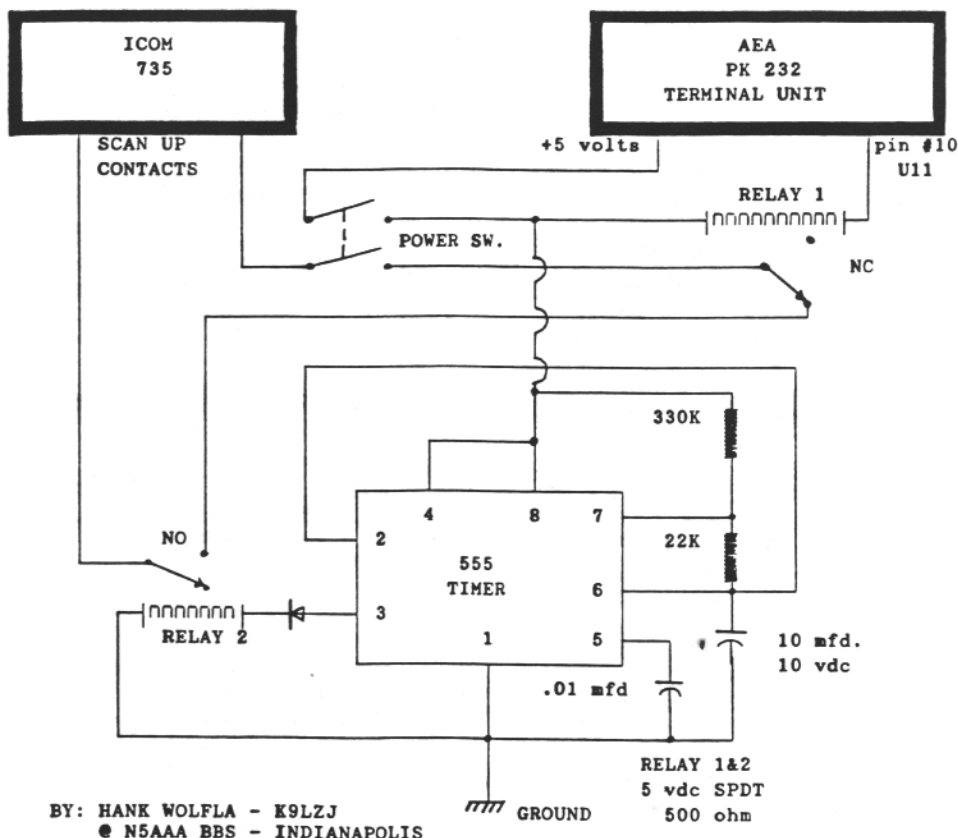
That's it for this month Gang. Drop me a line with your thoughts about digital systems. --73--

**de Dick, K0VKH**

There have been some requests to publish this drawing of the scanning set-up used by Bob, WB7QWG (fig. 1). This arrangement scans a number of AMTOR frequencies and Bob has it tied to his APLink software. For the full story, see October 1989 issue of the Journal, page 18.



AMTOR SCANNER FOR WB7QWG  
USING A  
ICOM 735 AND PK232



BY: HANK WOLFLA - K9LZJ  
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Fig 1

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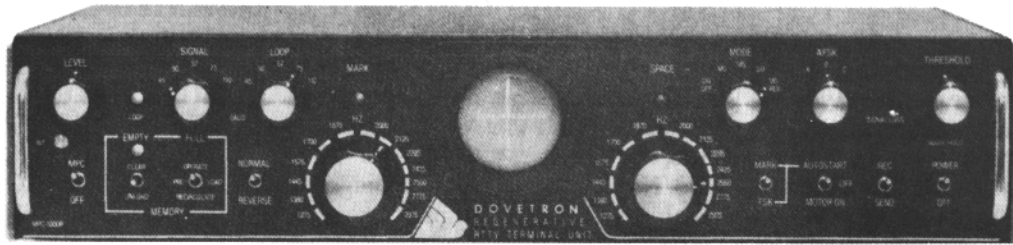
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