

RTTY JOURNAL

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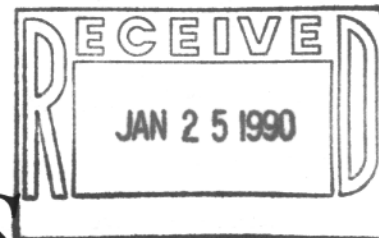
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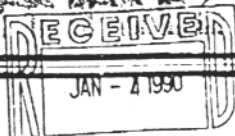
ARRL

PETITIONS

FCC



THE ARRL Letter



Volume 8, No. 26

December 29, 1989

ARRL Files Proposal for Automatic HF Operation of RTTY and Data Transmissions

On December 12, ARRL Counsel Chris Imley, N3AKD filed a petition for rule making with FCC seeking the adoption of rules to permit limited HF RTTY and data communication under automatic control.

The 24-page petition draws on the experience gained during the past 2 1/2 years under the STA granted to the League in mid-1987 permitting a limited number of packet radio stations (known as SKIPNET) to operate under automatic control on specific HF frequencies forming an organized "one haul" message forwarding network. The decision based on this experience is

The petition seeks designation of the following band segments as being available (not exclusively) for automatic control of RTTY and data transmissions.

- 3.605 to 3.615 MHz
- 7.035 to 7.045 MHz
- 10.140 to 10.150 MHz
- 14.090 to 14.100 MHz
- 18.100 to 18.110 MHz
- 21.090 to 21.100 MHz
- 24.920 to 24.930 MHz
- 28.100 to 28.120 MHz

In a separate letter to SKIPNET members, ARRL Executive Vice President Dave Sumner, K1ZZ, explained why these petitions were filed in ARRL's petition.

WITHOUT INPUT ... FROM RANK AND FILE ?

See Letter to Editor from Paul Newland, AD7I a member of the ARRL Ad Hoc Committee on Digital Communications, starting on page 19 and the MSO column by Dick Uhrmacher, K0VKH on page 3.

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RTTY JOURNAL

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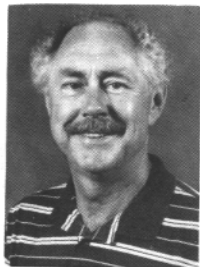
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HITS & MISSES

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DAYTON HAMVENTION

It won't be long before this annual event will be here but for those who intend to be there, now it the time begin your preparations. If you do have a Hotel room yet, best you do it NOW. Rooms go fast each year and many who go there every year, pay for or at least reserve their room before they to go home. I have had the same room for the past three years now by using this method.

If you are going to be there, don't forget the Digital Digest forum. I will hosting this forum again this year and as soon as I have the time slot, I'll publish it. I hope to have some interesting people on the forum again this year and it will be a lively section I'm sure. For those who have never attended or know nothing of how it works, here is a brief explanation. I ask a number of people to represent Industry and a number of Hams to represent the Ham community to sit on a panel. The Hams ask questions of the industry people, and the questions cover many important aspects of our modes of operation. I have noticed in past sections that those who attend almost always stay for the entire forum which lasts nearly two hours. So if you plan to go to Dayton, plan on attending the Digital Digest forum.

Each year the RTTY JOURNAL also hosts a hospitality room at the Radisson Hotel on Needmore Road. You are invited to join in with the digital gang on either Friday or Saturday night. It is a place to relax and visit with many of the digital group. If you recall the pictures from last year, the suite was packed both nights.

Another highlight of Dayton will be the RTTY Dinner which will also be held at the Radisson Hotel on Saturday night. Again this year Robert Foster, WB7WQG will be your host. Look for details in the next issue of the Journal.

RTTY TRAFFIC

Chuck Schoner, K8WOQ writes to give us some insight into traffic handling via RTTY. He writes as follows:

If you handle traffic with the NTS of independent traffic nets, think how simple and efficient RTTY handling can be. Your printer makes copies for records or reading on the phone. If you are sharp with your programs, you can transfer incoming traffic into buffers and re-transmit by just pushing keys. You can edit errors and static hits in just a minute. You can operate in a net, and talk with your XYL at the same time. No one will hear your conversation, and the RTTY whistle might drive her to greater heights.

If you want to watch an all business traffic net in action, tune the BNR Ohio RTTY traffic net at 3607 Khz every evening at 2300Z. Tune 3630 at 0200Z and watch the Mid-West RTTY traffic and good fellowship net. Most of these operations are highly skilled RTTY operators with years of experience. Next time some good fellow can't understand your SSB nasal twang, think how simple it would have been to have sent the QTC via RTTY. 73's de Chuck, K8WOQ

ABOUT THE COVER

The December 29, 1989 ARRL Letter is not re-produced here in the Journal, there was just not enough space in this issue. If you would like a copy, please contact the ARRL direct. Also the February issue of QST will contain a full explanation of the petition, I am told. I call your attention to the many comments again this month by our columnists and also to the Paul Newland letter on page 19.

That's it for this month, no more space for me. Hope you enjoy this month's issue, it is packed with late breaking information.
de Dale, W6IWO



MSO'S

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

Hi Gang! I hope that everyone survived the Christmas Holidays in good shape, and that Santa had a new TS-950 in his bag for each of you! It has been a long, cold stretch of weather for us out here in South Dakota, with temperatures in the sub-zero range consistently. "Spring" sounds pretty good to me!

ARRL PROPOSES LIMITED UNATTENDED AUTOMATIC CONTROL:

To say that I am highly disturbed after reading the contents of ARRL Bulletin 91, (December 15, 1989), is to put it mildly! Once again we see unreasonable, arbitrary and capricious actions by the American Radio Relay League concerning frequency allocations for digital modes, where user input has been totally ignored. The very people who sponsor and utilize message storage systems, computer based mail boxes, etc., have had no say in this decision to ask for specific frequencies in which to allow unattended digital operations!

Let me start off by going on the record as being in favor of the basic tenet proposed, i.e., limited automatic control for RTTY and other data communications. There's no doubt in my mind that digital enthusiasts not only have the sophistication needed to properly operate digital systems under automatic control, but have adequately demonstrated that fact for decades!

What I do strongly oppose however, is the lack of forethought, apparent lack of knowledge, and arbitrary decisions concerning what specific frequencies to propose to the FCC for automatic control. Why hasn't the ARRL solicited information from operators and users of automated systems before asking for specific frequency allocations? Why weren't RTTY automated system

SYSOP'S views represented on the Ad Hoc committee meetings? Were only Packet radio considerations part of these meetings?

For example, automated RTTY operations on the 20 Meter Band have taken place between 14075 and 14090 KHz for literally decades. The "National Autostart Frequency", consisting of approximately a dozen automated stations spread out over the United States, has been in daily operation for over 12 years on 14 087 625 Hz (mark). There are other AMTOR and APLINK systems in the 14075 KHz area that have also dedicated time, money and equipment to serving others over the years. Yet, the ARRL, secure in their Ivory Tower in Newington, proposes automated operations on specific frequencies apparently without the slightest interest in hearing what the opinions are of the system operators involved! Is it no wonder that there's such antagonism and mistrust of the ARRL? Rather than pulling together and properly suggesting changes to the FCC, it appears that the ARRL goes out of its way to cause dissension within Amateur Radio.

Why weren't long-time RTTY SYSOP's represented at the ARRL Digital Ad Hoc committee meetings? Who spoke for the Sysop's who have spent literally decades providing automated message handling and mail box services to the Amateur community? Why weren't dedicated Sysop's canvassed on their opinions concerning digital band segments to be utilized for automatic control? Come on ARRL, let's see your list of names of folks who really provide the services to the Amateur community, rather than those interested in only the politics of the game!

With respect to the digital portion of 20

Meters, (with which I am most familiar), there has been a natural "filtering process", dividing this area into basically four areas. CW occupies the vast majority, from 14000 to 14075 KHz; Automatic systems, such as message storage operations, computer based mail boxes, AMTOR and APLINK occupy the area from 14075 to approximately 14090 KHz; Ragchewing, DX chasing, ARRL bulletins, etc., occupy the area between 14090 and 14100 KHz; and Packet radio seems well established from 14100 to 14115 KHz. I hasten to point out that many RTTY and AMTOR ragchewing and DX QSO's also occur between 14075 and 14100 KHz, not just in the small area between 14090 and 14100 KHz!

Now the ARRL, apparently unaware, uninformed, or uncaring, which ever best applies, suggests that packet, RTTY, AMTOR, APLINK and the ARRL Bulletins all be stuffed into one small 10 kilohertz area, to be able to take advantage of unattended, automatic digital operation. Where is the forethought in this suggestion? Can you imagine what the bedlam would be like when the AMTOR/APLINK gang, National Autostart Frequency users, KD30 C64 System users, HF Packet links, and ARRL Bulletins were all fired up at the same time? Talk about "retries," the packet guys better have lots of time and spectrum to waste when a remote user reads several 4000 byte messages at 74 baud from one of the mail boxes! Assuming a maximum bandwidth of 2300 Hertz, how many different modes, (which can't discriminate between AMTOR, APLINK, RTTY, Packet, and CW activity to prevent stepping on each other), can you stuff in 10 KHz and still have some guarantee of compatibility? And, like it or not ARRL, your Bulletin transmissions do interfere with established communications almost on a daily basis, one of the FCC's cardinal sins! Have you ever heard W1AW ask, "Is this frequency in use?", prior to sending their bulletins?? Hardly!

The ARRL's proposal to the FCC on limited digital automatic control authority is so totally without merit that it borders on being laughable. If this wasn't such an important issue, it could be dismissed out of hand. However, we have demonstrated over a significant time period, that RTTY Sysops, (and I assume

the same for Packet, AMTOR and APLINK sysops) do have the desire, resources and management abilities to properly operate and maintain automated digital systems. If the truth was known, I'm confident that many of these automated systems were in fact also unattended (or at least attended very little).

So you ask, what is my suggestion? First of all, I highly encourage each digital system operator, and remote user, to contact their elected ARRL official and ask that the ARRL proposal to the FCC on limited unattended automatic operation be withdrawn, until it has been properly studied. Secondly, I heartily suggest that the ARRL take the very basic steps necessary to procure Sysop and user input before formulating any petitions to the FCC on this subject. And finally, it is just a common courtesy to provide the minutes of meetings concerning vital subjects to all ARRL members, including a suitable comment period, so that input can be obtained prior to asking for formal action.

Write or contact your elected ARRL official and let him know what you think about this ridiculous petition. I'm sure that 20 Meters isn't the only band that will find conflicts inevitable.

GOOD NEWS DEPARTMENT

Jerry, WA1IUF, has been moved to a Rehab Hospital in Wallingford, CT, just

recently. He will undergo some rigorous physical conditioning there, and hopefully be on the road to full recovery soon. Get well soon Jerry!

TG9VT NOW ON AMTOR:

John, TG9VT, has moved his MSO to the AMTOR mode on 14074 KHz. His activation code is TGVT. John reports that the Guatemala Radio Club is interested in receiving comments from all interested parties concerning the operation of the TG9AXB mailbox. Evidently the use of AFSK, and RF amplifier, continue to cause interference to many who use the spectrum near TG9AXB's operating frequency. Comments should be addressed to: President, Guatemala Radio Club, Post Office Box 115, Guatemala City, Guatemala, Central America.

MSO RAMBLINGS:

MSO Sysop Al, N1API, is now back on the air with a new antenna. He is planning a very ambitious tower and antenna project later this year.

MSO Sysop Ernie, W6ZRR, also has a new tri-band beam up at his QTH in San Luis Obispo, California. Signal reports indicates he has a real barn burner! --- Happy New Year to each and every one of you! I hope that 1990 brings you health, happiness and prosperity. See you on the MSO's! --73--

de Dick, K0VKH

RYRYRYGHRHRHRYRYRYRYR"
BROWNIE:
"WOOF"

When the dog died I replaced him with a PK232. On RTTY copy, the most noticeable improvement is that the PK232 has never had an accident on the rug.

RECEIVER: "DIDDLE DIDDLE WHINE DIDDLE DIDDLE FADE DIDDLE DIDDLE"
PK232: "WOOF"

For HF PACKET and AMTOR, the PK232 does fine. Although ASCII and Swahili are used with about equal frequency on HF, the 232 also seems to work okay on 110 baud ASCII. Those of us who know the true meaning of QLF will also attest to its credibility on CW! But on RTTY, if you feed it a weak or wobbly, noise-ridden, DX signal the PK232 tips over the garbage can and howls at the moon. Although four out five ain't bad, during a contest, effective RTTY operation is an absolute requirement.

After all, RTTY (Baudot) isn't exactly a new mode and there are a lot of "old dogs" out there that were designed to copy it: DT600s and ST6s with toroid filters. The Flesher 170, 170A and Heath's version of the 170A all work well. Fredericks made an excellent RTTY modem. The list includes some out-of-production stuff from AEA like the CP1 and the ATU1000. Dovetron has been making RTTY units for over 20 years and, of course, if you're sweaty-palmed serious about RTTY, don't forget the current ST6000 and the (GASP) \$T8000 by Hal. All of these are contest-quality RTTY units. Unfortunately, nobody wants just RTTY.

The trend is obvious. Unless it is priced below \$400, operates all digital modes (Swahili?), interfaces directly to an RS232 port and is software supported on an IBM compatible computer, it won't sell on the ham market. This trend isn't all bad. The demand for multi-mode has driven the price of used, RTTY-only modems, down into the \$50 range which makes them financially attractive to those of us that run RTTY for contesting.

Incidentally, I saw no, measurable, weak-signal improvement when I added bypass caps to the op amps in the

CONTESTING



Hal Blegen, WA7EGA
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OLD TRICKS FOR A NEW DOG

My dog Brownie could copy teletype! I'm not making this up. Well, okay, he didn't exactly understand all the print but when he was asleep in the shack and someone started sending, he would bark. The following is an actual tran-

script from a tape recorded by a hidden microphone.

RECEIVER:

"DIDDLE DIDDLE WHINE DIDDLE DIDDLE FADE DIDDLE DIDDLE"

TTL-2:

"RYRYRYRYRYRYRYPQRFERYRYRY

PK232. It may help those of you who are approaching the current limit of your power adapter but the primary factor in overall HF-RTTY performance of the PK232 is inherent in the filter design. A handful of caps isn't going to fix it.

But there is new hope for the dead! When AEA painted themselves into the corner with the PK232 filter design, they left an open door called EXT MODEM. Adding a switch to the front panel of your PK232 to replace the strapping function on P4 allows you to select quickly between EXT MODEM and PK232 input data. Continue to feed audio to the PK232, use the threshold control and tuning indicator normally, but copy RTTY with one of the "old dogs" using its TTL DEMOD OUT data between pins 1 and 4 of the EXT MODEM.

Although using this approach lacks a certain elegance in terms of technological advancement, it preserves the flexibility of the PK232 and maintains the convenience of the AEA's, IBM-compatible software while providing affordable RTTY operation that can only be achieved with a unit specifically designed to copy it.

PLUS OR MINUS A FEW Hz

Neither the FCC, the ARRL, or the Broken Pelvis, Montana, PTA recognizes 14080 to 14100 as an exclusive preserve for American Baudot. Trying to make up for a general lack of use (which is the real reason the PACKET people want the frequencies) by applying the Neanderthal solution of dashing up to anything that squawks below 14.100 and clubbing it to death with RY's doesn't cut it.

*COULD COST YOU
YOUR LICENSE AND
SEND YOU TO JAIL!*

If it turns out that the PACKET operation was handling emergency traffic

(and how are you going to know?), intentional interference could cost you your license and send you to jail.

On contest weekends, sheer numbers make any PACKET vs. RTTY controversy academic, but for my money, the whole band-plan concept needs an enema. For over a year, bandplans have been ebbing and flowing across the pages while this group, or that individual quotes FCC/ARRL/IARU documents suggesting PACKET be "allowed" or banned below 14100 KHz.

Before we get our knuckles all skinned up, let's at least try to identify the factors that are causing the problem. Multiple-user, single-frequency PACKET operation only works satisfactorily when all stations can hear each other. When a few BBS users try to download 5K bulletins, at the same time that a W4 is running skipnode traffic and two guys who got PK232s for Christmas try to figure out how to set their parameters, the data movement stops. Collisions between two stations who are transmitting from the same skip-zone are unavoidable (they can't hear each other) and the whole idea of PACKET on HF in its current form is a waste of resources.

It might improve slightly if an attempt were to be made to limit the BBS stations to point to point forwarding, BBS CONNECT ONLY, with all other users excluded. BBS users should be on VHF where information moves at effective baud rates and frequency sharing will work. Maybe if no BBS stations allowed users to connect on HF, they would quit trying, but somehow I doubt it. In fact, I have no faith in any solution that involves user discipline or self-regulation.

If more frequencies are needed to alleviate the strain on the three main channels currently in use above 14100, there is a simple, technical solution. A 200 Hz shift, 300 baud packet signal requires a receiver passband of approximately 540 Hz (1.2 X shift + baudrate). A PACKET station operating 2-KHz-plus sideband filters, uses four times more space than is actually needed for effective communication. The area between 14100 and 14115 KHz could easily support 20 PACKET frequencies with no interference between them if the PACKET stations were all using the appropriate receiver filter for the mode. I

have little sympathy for the owner of who can afford an HF transceiver and antennas, a PACKET controller and the computer to run it, but is too cheap to install or too stupid to use an \$80 filter which is designed for the mode he intends to operate.

RTTY operators have no room for self-righteousness either! On 170 Hz shift, 45 baud RTTY, 250 Hz is all that is required for effective operation, yet I constantly hear stations running AFSK on LSB filters who complain about crowded-band QRM. If we just utilize the available technology in conjunction with a tiny sprinkling of common sense, we can intelligently share the digital sub-bands but if we insist on going back to the FCC all the time to arbitrate all our parochial squabbles, then we might as well settle for 40 channels on 27 Mhz.

SARTG

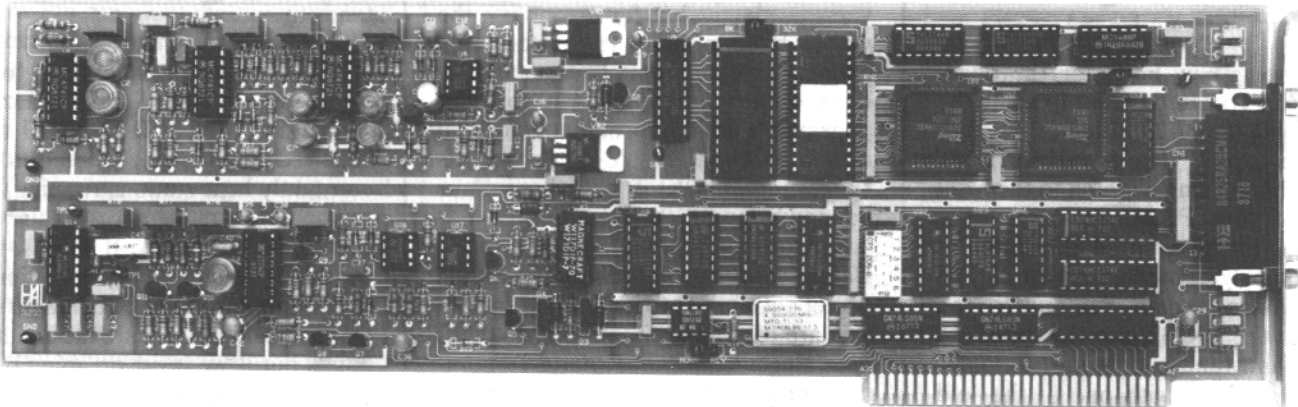
Congrats to **KB2VO** on his 1st place SARTG effort from **HD8S**, another first place from the El Junco site on San Cristobal Island (Galapagos). It's the first time a South American call has shown up in the winners circle since I started keeping records nearly ten years ago and to find three in a row at the top three places should be a little disturbing to the European operators. A nice effort by Luiz (**HC2LZ**) from **HC2G** near Guayaquil (Ecuador) for a close 2nd place. Ted, **HC5K** operating from his home QTH in Quenca, earned a strong 3rd out of 87 logs received in the single-op category.

LZ2KIM, a familiar call in the MULTI-OP class claimed 1st place in that category followed by **RW9C** in 2nd place. I think there is a coming trend of increased Soviet involvement in RTTY contesting of which this is just a beginning. Another well-known call, **SK4RY**, finished 3rd in a field of 10 logs submitted in multi competition.

A tip of the stove-pipe hat to **G4SKA** for a nice job on 20 meters. John won a close race with **WF5E** for 1st place while 3rd went to **DJ7BU**. **5Z4BH** dominated the single band entry on 15 meters while **YV6PM** submitted the only 10 meter log (something to think about for next year).

Hope you all do well and have a lot of fun in the ARRL RTTY ROUNDUP. See ya on the band, **de Hal, WA7EGA**

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

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



CONNECTIONS

Cole Ellsworth, W6OXP
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Health, Happiness and Prosperity to all for the new decade. The Eighties have been very interesting and I expect that the Nineties will be even more so.

PK-232 TANTALUM FILTER CAPACITOR ADDITION/MODIFICATION

Readers may recall that last month I mentioned I had made the tantalum filter capacitor modification on the PK-232 but had not made any "before and after" measurements. I now have my oscilloscope working once again, and did make the measurements. It was a very educational exercise. I use the Archer (Radio Shack) 1 Amp 12-volt, wall-mount plug-in power supply to power my PK-232. The following test results were recorded:

1. My Archer power supply provides about 900 ma at 11.8 volts to the PK-232. However, it seems to be overloaded as I measured a 0.8 volts (800 mv) 120 Hz triangular waveform on the 13-volt power bus in the PK-232. The presence or absence of the 6 tantalum 1 mfd capacitors had no effect on this 120 Hz ripple voltage. The Archer power supply ripple drops to about 50 mv under no-load conditions and the output voltage rises to 14 volts. Such results are typical of power supplies with inadequate output filter capacitance and overloading, even though Radio Shack specifies this power supply to provide one ampere at 12 volts.

2. I substituted a variable voltage laboratory power supply to provide 13 volts to the PK-232. When I did this, the ripple voltage was no longer measurable, being less than 5 mv.

3. Next, oscilloscope measurements were made on the 13-volt power supply bus at the operational amplifier farthest away from the PK-232 power plug and nearest the microprocessor section of

the controller (U32). These were made WITHOUT the six tantalum capacitors. 10 mv of average noise and 30 mv peak to peak spikes were measured across the U32 +13 volt and ground pins. The spikes were about 80 microseconds apart. The spikes are typical of microprocessor high speed signal and clock line interference.

4. The six tantalum capacitors were then soldered back into the PK-232 (on the solder side of the board) and the same measurement procedure was performed once more. Now, the spikes were reduced from 30 mv to about 5 mv or less, and the average noise was down to about 1 mv or less. From this, it is quite obvious that the addition of the six capacitors reduce, the high frequency noise on the power buss a great deal. They have no discernable effect on low-frequency power supply ripple and probably contribute little to reduction of noise or ripple frequencies under several KHz. Tantalum capacitors have excellent high frequency characteristics. Garden variety aluminum electrolytics do not work quite so well at these frequencies due to higher ESR (Equivalent Series Resistance) and greater self inductance.

When using the Archer power supply, I noticed that the bar graph LEDs had two segments illuminated with one of these segments flickering on and off. This noise effect disappeared when I switched to the lab power supply, leaving only the one segment illuminated.

To sum up, the addition of the capacitors to the six op amps in the PK-232 will reduce the high frequency noise and digital logic section "coupled spikes" on the 13 volt power bus to at least one sixth of the original level. As to what effect this "clean up" will have on digital signal reception and demodulation is debatable. The Motorola MC34074P operational

amplifier is a single voltage high performance chip and according to the spec sheets, has at least 70 dB of common mode noise rejection and 70 dB of power supply rejection. This means that it takes a fairly high level of power supply bus noise to affect the operation of the circuit and probably accounts for the fact that my PK-232 continued to operate reasonably well, even with 0.8 volts of 120 Hz ripple on the bus. You analog circuit experts out there can correct me if the above is a false assumption.

You can bet that I am going to get a different power supply for my PK-232 or modify the current supply to clean up the 120 Hz ripple. Don't forget that the simple act of looping the 12-volt power source feed cable, especially if it is unshielded, around or over a CRT monitor can pick up a lot of high frequency noise and spikes. So, to be sure, shield everything and common-point ground all the equipment chassis.

OTHER PK-232 MODIFICATIONS

The Tucson Amateur Packet Radio group (TAPR) has made available several PK-232 modifications that will be of interest to Packet Radio users. These are available directly from TAPR, P.O. Box 12925, Tucson, AZ 85732. Phone (602) 323-1710. One modification kit, the "State Machine DCD Modification", adds an EPROM-based State Machine to derive DCD based on lockup of a digital phase-lock loop. This upgrade will DRAMATICALLY improve DCD operation, allowing you to run your radio unskelched. This alone reduces the other station's TXDelay requirements, improving channel throughput (and we could really use improved channel throughput here in Southern California). By the way, this kit is applicable also to most Kantronics TNCs and to the AEA PK-87 and PK-88 as well as many other brands of Packet TNCs.

The other modification kit adds a "standard" TAPR modem disconnect upgrade to your PK-232 or HK-232. This kit adds a modem disconnect header for plugging in the TAPR PSK modem for satellite operation for example and also provides a convenient place to connect the DCD State Machine Upgrade kit. The cost of either of these kits is about \$17.50 or \$21 for the DCD Upgrade with Internal Clock. Write TAPR for additional information.

I have both of these kits and will be adding them to my PK-232, now that I have it all apart. Both of the TAPR kits are compatible with the AEA PK-232 MBX Mailbox modification. As mentioned last month, my early PK-232 had metric PCBA standoffs holding the board to the chassis. The Mailbox mod kit provides standard US 6-32 thread studs to hold the daughter PCB to the main PCB. While I had the unit apart for the capacitor mods, I found two 6-32 thread standoffs of the proper length in the junk box and installed them in place of the two metric thread standoffs. My MBX Mailbox PCB will now be properly mounted!

WE HAVE MAIL

Mr. P. Welch, 970 Rollinghills Dr., Lake Havasu City, AZ 96403 writes a note relative to previous discussions on wide versus narrow shifts, etc. Herewith we publish his letter with only slight editing.

"Dear Cole: I have been reading the articles in the RTTY Journal about the PK-232 problems with interest. Your article about the "Possible Modifications to PK-232 for standard wide shifts" reminds me of a letter from a Plant Manager to the Corporate Engineer regarding the elimination of "Pigeons" in his plant.

"Like any good engineer would do, hours were spent at the library and consulting with specialists, researching the many ways to eliminate "Pigeons" in the plant such as poisoning, using sounding devices, etc. The Engineer wrote the Plant Manager listing all the alternatives along with all the problems that he may encounter in each of the alternatives suggested.

"Several days passed and the engineer received a TELEX from the plant manager stating the following: "The pigeon problem has been solved, we just opened the doors and "shoosed them out". This is the way I eliminated the PK-232 problem without all the hassle. I now have a unit with standard tones and shifts, no compromise and I dont have to convert files from paperclip, etc. from Commodore to ASCII for transmitting, along with other advantages.

"I also have a Info-Tech M-500 and the article by AEA indicates that they have done little research on the capability of units available. The Info-Tech M-500

requires a program change and a new EPROM to properly add 170 Hz shift to ASCII 300 baud and up.

"Present program for ASCII in the M-500 is:

- 1) ASCII 110- 170 Hz. shift
- 2) ASCII 110 + 850 Hz. shift
- 3) ASCII 150 850 Hz. shift
- 4) ASCII 300 850 Hz. shift
- 5) ASCII 600 850 Hz. shift
- 6) ASCII 1200 850 Hz. shift

"We that have the M-500's, and other standard tone and shift TNC's can communicate with each other with little error at 300 baud and up. We chose not to eliminate the 850 Hz shift by changing it to 170 Hz. shift just to communicate with PK-232's. We find the wide shift is superior on FM at the higher speeds and it does not take up any more band width, so why not take advantage of the wide shifts on FM. /signed/ P. Welch "

Thanks for a most interesting letter. I really liked the "Pigeon" part!

Juergen Wenck, DL2HAJ, P.O. Box 1208, D-2058 Lauenburg, Federal Republic of Germany is a new RTTY Journal subscriber with a special interest in QRP (10 watts into a GPA) RTTY. He uses a homemade RTTY-TU and is looking for information on Commodore C64 software in EPROM for RTTY, Amtor, etc. I know of one C64 program in EPROM that works quite well, at least for me, although I no longer use it

since I acquired an IBM clone PC. This program is or was sold by AEA (Advanced Electronic Applications) and is called "AEA-SOFT MBA-TOR 64 for Morse/Baudot/ASCII/Amtor. It consists of an EPROM cartridge and a cable that attaches between the C64 User Port and the TU or other computer interface such as the AEA CP-1. The instruction manual is included. Function Key Overlay cutouts for the C64 are also included. As I recall it sold for somewhere around \$59 or \$69. I do not know if AEA still sells this program, but if not, some dealers may still have one in stock. I am sure Juergen would like to hear from anyone who knows of other C64 RTTY software.

Les Boisvert, 13 Sunset Dr., N, Whitehorse, Yukon, Canada Y1A 4M7 is another new subscriber to the RTTY Journal who is looking for a Terminal Program for the TRS80 - Model 3 for use with either the PK232 or the MFJ 1278. Les, most any modem communications program that will run on the TRS80 will work with the controllers you mentioned. If anyone knows of a source of communication/terminal emulator programs for the TRS-80 model 3 please drop a note to Les at the above address. He says not to use the call book address as that is out of date.

Next issue I may have a few words about digital bandplans and what my opinions are on same. It might even be controversial! Very 73

de Cole W60XP



PACKET

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

V-I-R-U-S

Yes, I was hit by one. It is apparent that my machine was hit by one of the many embedded programs that float around out there that are written by the people who have more time on their hands than intelligence. Well, whoever it was, did a lousy job of writing this one. Reason

being, it was on one of the backup disks that I had and it tried to go after the system after I reformatted the hard drive. I can say that because I did a write protect on my COMMAND.COM file and every time I ran the infected program, the system would reboot. It could not get past the write protect. Dumb....real dumb. Heck, I wrote a

virus program that all it did was sit there in a multi-processing system until a certain requirement was met and then start taking all of the core memory that was on the system. Slowly, the system was to slow down throughput and then all of a sudden, it was gone. It would look to the operators and users that the system just had processed a big program. Here is the kick, I never ran it!!!!!!! All of the program simulation was done on PAPER! After it was checked out, I burned the papers that had all of the information on it. I just did it as an exercise.

I think that the difference between me and the simps that write that kind of disk-damning software is that I am happy with the knowledge that I can write a virus and that it would work and not having to prove it to the whole world.

Here is the yank in the whole thing. We, as global users of communications via this thing called packet, can send someone a program that unknowingly is infected with a virus. The source system may never be attacked while the virus lays dormant yet the poor soul that received the software gets bit BIG TIME.

I guess what I am saying is if you use your system to receive programs and send programs, get an anti-virus program or two and use them frequently. There are several out there and they will help. Whatever happened to "THE HONOR SYSTEM"?

THE NEXT FRONTIER?

I received a letter from John Troost, TG9VT, concerning a piece of traffic that he received from OD5NG. I have to give out my sincere congratulations to a group in Germany, of which DF4KV is one of the leaders, to coming up with "PACTOR". It appears that there is a group of about 5 German hams running this mode. It appears to be a hybrid of PACKET and AMTOR. The following is an excerpt from the letter:

THAT'S EXACTLY THE PROBLEM SOME GUYS HAVE WORRIED ABOUT HERE IN GERMANY...AND NOW DEVELOPPED SO CALLED PACTOR, WHICH IS A MIXTURE BETWEEN AMTOR AND PACKET RADIO, IT USES SAME CRC METHOD, WHICH MAKES IT TOTALLY ERROR FREE, IT EITHER RUNS ON 100 OR 200 BAUDS WITH

AUTOMATIC DATA SWITCHOVER, IT USES SEVERAL METHODS OF GETTING DATA THRU DURING BAD CONDX, LIKE HUFMAN CODE FOR SHORTING TEXT DATA TO 5 BIT LENGHT IS AVERAGE AND ADDITION OF SAMPLED BIT VOLTAGE DATAS, THEY USE 8 BIT ANALOG DIGITAL CONVERSION TO THE COMPUTER AND STORE THE INCOMING SIGNAL SEVERAL TIMES PER BIT AND AFTER SOME ERROR TRANSMISSIONS THE SYSTEM WILL FIND OUT THE ORIGINAL CONTENTS OF THE RECEIVED DATA.... BIT COMPLICATED TO EXPLAIN, THEY WROTE A SHORT DESCRIPTION XXXX SEEMS TO BE PRETTY COMPLICATED, BUT VERY VERY EFFECTIVE ON HF, THEY TRIED IT WITH 5 MILLIWATTS ON 80M AND STILL COULD HAVE A GOOD QSO.....

The above quote, typed as received, is from Frank, DL1SBR.

I LOVE IT!!!!

I remember when I have been on my soapbox screaming that packet was a joke on HF and that AMTOR was a better mode to move data on HF. So, it seems that an enterprising group have decided to go forth and attempt to FIX the problems of HF packet. I hope this system will fly and clean up the retry problem in HF packet. This acknowledges that you can't use a form of transmission that requires a perfect medium of transport on HF when the medium of transmission is so unreliable. Packet works great on VHF and lousy on HF and AMTOR works great on HF. Put the best of the two together and go for it. Congratulations to the group in Germany and I will be looking forward to receiving more information on this method in the future.

BBS BULL

My sympathies to the courageous individuals who run packet bulletin board systems and not to the group that forward packet traffic in the RTTY sub-band. To them, SHAME!!!!!!! Getting back to the subject at hand. Just think of all of the messages they have to sort out

that have ALLUS on them. Just think of all of the traffic that has to be passed, in total, to get all of the ALLUS messages to all of the linked BBS's. I check into the BBS I use about once a week and I usually get greeted with a message which says there are xxx messages waiting to be looked at. I go scrolling through the list and just about all of the listed messages are to ALLUS. There are usually very few messages I see addressed from one ham to another. Maybe they are stored as private messages but still the idea is the same. WHAT A WASTE! I saw one message that was addressed to ALLUS that one ham had put on the system which had listed for sale, a straight key because he went to a keyer.

I am not sorry for what I am about to say and I think and KNOW the majority of messages I see addressed to ALLUS could stay within the state of origin and get the same effectiveness. I do not think that my preaching is going to make a bit of difference but I am still going to preach anyway. If I was going to put up a BBS, it would not allow any messages addressed to ALLUS out and any messages that come in addressed to ALLUS would get trashed the next day during automated housecleaning. That designator(ALLUS), in my book, is basically useless and is only used to disseminate garbage and I hate cleaning up the trash.

AUTOMATIC DIGITAL STATIONS

It appears to this author the League has stuck their collective derriere's in the wringer with ARRL Bulletin #91. It seems that the Old Boys Network in Newington has decided to petition the FCC to allow "automatic digital stations" to be operated between 14.090 MHz and 14.100 MHz. Let us now do some logical extrapolation from the statement "automatic digital stations". The bulletin sent reads something like this:

ON DECEMBER 12, ARRL COUNSEL CHRISIMLAY, N3AKD, FILED A PETITION FOR RULE MAKING WITH FCC SEEKING THE ADOPTION OF RULES TO PERMIT LIMITED HF RTTY AND DATA COMMUNICATION UNDER AUTOMATIC CONTROL. THE PETITION SEEKS DESIGNATION OF THE FOLLOWING BAND SEGMENTS AS BEING AVAILABLE, ALTHOUGH NOT EXCLUSIVELY, FOR AUTOMATIC CONTROL OF RTTY AND DATA TRANSMISSIONS. (they are...ed.) 3605 TO

3615 KHZ, 7035 TO 7045 KHZ, 10140 TO 10150 KHZ, 14090 TO 14100 KHZ, 18100 TO 18110 KHZ, 21090 TO 21100 KHZ, 24920 TO 24930 KHZ, AND 28100 TO 28120 KHZ.

THE FCC HAS NOT YET ASSIGNED AN RM NUMBER. AR

What happened to the "Gentleman's Agreement" which has been in place for many years in which, Packet generally starts above .100 and goes up in frequency from there. I think that AMTOR is below 14075 KHZ.

With the STA already in force to allow unattended packet forwarding, the crew led by the ARRL, in my opinion, sat themselves in the BAUDOT subband to avoid the retry Hades that is life on HF packet because of the high usage of the frequencies allotted to packet. I guess they moved there because it was quiet. This move violated the "Gentleman's Agreement". I suppose all hams are created equal but are some hams more equal than others? This looks like a legitimizing move by the ARRL to violate the "Gentleman's Agreement". Another thought is the term "limited" which could be applied to just the stations that are presently operating under the STA to allow automatic, unattended operation of packet stations for the purpose of forwarding packet traffic.

Another point to ponder. Let's pick apart the statement "RTTY and data transmissions". First off, the American Heritage Dictionary defines "data" as follows:

... 2. *Numerical information in a form suitable for processing by a computer.*

Each character in the BAUDOT code is a combination of five digital bits (1 and 0) which is processible by a computer. Each character in the AMTOR code is a combination of 5 digital bits (1 and 0) which is processible by a computer. The image that is sent by FAX when sending line images is represented digitally (1 and 0) and can be processed by computer. Each character of the Morse Code is a combination of digital bits (1 and 0) where a dash is three periods on (111) and a dot is one period on (1) and there are other periods of off time (0, 000) and that is processible by a computer. Each character of the ASCII code is represented by combination of 7 digital bits (1 and 0) which is processible by a computer. Now comes the fun

part....what is common between all of the above listed modes of communication? They are all digital. Well then, you say, they should all work together, right? WRONG!!!!!!!!!! On a bit by bit basis they should work but because of the particular standard that may be used and the way the bits are transmitted over the air this makes them all MUTUALLY exclusive modes of communication.

Let's now add more fuel to the fire. With some suitable processing by computer, you could send SSTV, FAX with gray scale, and the human voice. Here is the reason why. It is amazing what one could do with two devices made out of silicon: the Analog-to-Digital converter and its complement, the Digital-to-Analog converter. The computer can recognize the human voice and print it out with the appropriate software. There are SSTV converters that send pictures as a series of variable frequency tones. Gray scale FAX is sent out using a series of tones.

Now let's get really devious. Software could be written that accepts data transmissions in one format and sends it out in another format. How about receiving gray scale FAX at one time and then repeat it using SSTV the next. All sorts of things could be done with the computer and software. And all the above could be done using spectrum-hogging techniques (gray scale representation).

So, in a nutshell, we can't let the "Gentleman's Agreement" be trashed by the ARRL for the whole world-wide amateur community. If packet users think HF packet frequencies are bedlam now, wait until this goes through and ALL of the digital modes are being used in a 10 KHZ segment of the 20 meter band and for that matter, all of the other bands.

I heartily suggest that everyone out there keep an eye out for a NPRM number and file AGAINST IT! I know I will and will file an engineering report against it. That of course means sending 12 copies of the comment to the FCC by certified mail return receipt requested.

ANOTHER THOUGHT!

FAX uses a shift of 800 Hz. Packet uses shifts of 170 HZ, 200 HZ, and 600 Hz. BAUDOT uses a shift of 170 Hz. ASCII

uses a shift of 170 Hz. AMTOR uses a shift of 170 Hz. Morse Code uses no shift (but it could).....Hey, K9GWT, how about some theoretical workups between you and me on this (carrot dangling time..).

Do not get me wrong on this. Even though I write a column on packet radio, that does not mean that I am for it regardless. I believe that everything has its place. I will still stand on the fact that packet should NOT be used on HF in it's present configuration. It doesn't make good sense to use a protocol that requires a stable, quiet propagation medium, like VHF, on a noisy, always changing medium, like HF. Instead of using packet on HF to forward messages, how about using AMTOR (a plug for APLINK) or PACTOR. Here is an offer for 20 meters: 14050 to 14075 KHZ for AMTOR, 14075 to 14100 KHZ for RTTY, and 14100 to 14025 for packet. I know that will not be agreed on because of the few who think that they are more equal than others. 25 KHZ for each is generous and solves the problem.

THE COMING YEAR

A little forecasting here. Maybe PACTOR will be a big hit. I get a 386 type processor instead of this box. My XYL learns how to use this machine. Packet is pulled out of the RTTY subbands for good. I get to go to Dayton. Maybe I should slow down and smell the roses.

A sad note. Skip, WB6YMH will be taking down his WB6YMH-2 PBBS very soon. He cites bootleggers deleting messages involving the NET-ROM/TheNet debacle, and several other problems caused by the users of his system. I, personally, can't blame him for his decision because I do see the reasons. Skip is one of the premier people in the Los Angeles packet community and he will be sorely missed. So, I will be without a PBBS to receive messages for a while. Oh well.

Remember, the easiest thing to give away and takes no effort at all is a smile. Try it.

de Richard, N6NKO

P.S. The above article is guaranteed under the right to free speech and a free press. My opinions still stand.

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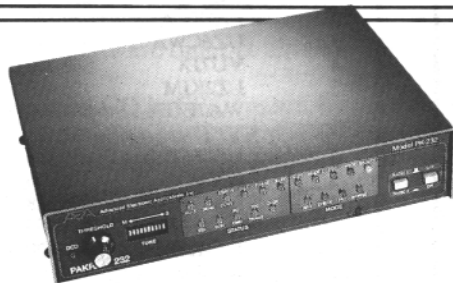
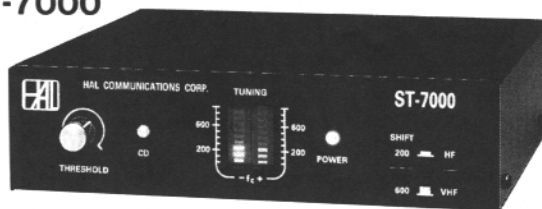


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HAL Communications' ST-7000

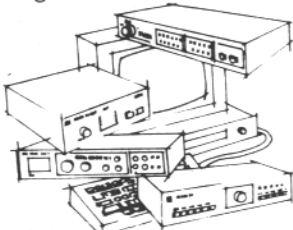
HF-Packet Modem... a high performance modem designed specifically for 300 baud HF-Packet. It offers no-compromise performance to assure optimum operation under the most demanding signal conditions. Techniques developed for government and military use are used in the ST-7000. AGC-controlled AM signal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



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BARTG 1989 RTTY CONTEST RESULTS

SINGLE OPERATOR

1.	TG9VT	1,326,650
2.	4M5AY	998,690
3.	HK1LDG	997,500
4.	I2OLW	946,680
5.	W3LPL	942,144
6.	IA5PLB	864,248
7.	AA5AU	655,690
8.	FF1NZK	614,592
9.	KB2VO/4	576,162
10.	OK1DXS	575,904
11.	I2HEO	559,308
12.	DJ6JC	549,283
13.	9J2KF	544,680
14.	HB9DCQ	529,856
15.	OE2QWM	512,734
16.	VK5RY	507,180
17.	G0ATX	501,594
18.	HA6PX	473,620
19.	FD1LVW	465,052
20.	YU7KMN	463,915
21.	PA3DBS	438,240
22.	SM5FUG	412,728
23.	SM4CMG	364,110
24.	N6GG	351,628
25.	K6WZ/0	350,126
26.	I0VHL	337,272
27.	I2IQU	332,200
28.	OK2FD	325,494
29.	W6/G0AZT	323,640
30.	HB9CAL	309,672
31.	IK4BWC	286,926
32.	W5SL	278,718
33.	JA6GJ	276,094
34.	VE6ZX	270,814
35.	WF5E	269,984
36.	DF1IK	269,928
37.	ZC4NC	263,856
38.	W8PBX	263,700
39.	HA5CP	253,692
40.	I6OZP	252,416
41.	W6JOX	240,246
42.	CT1AUR	229,614
43.	SP9BCH	221,336
44.	OK1-32783	221,336
45.	LZ1KX	218,026
46.	NA2M	212,610
47.	W7MI	202,920
48.	KI4MI	202,720
49.	HP1AC	197,680
50.	IV3UT	189,024
51.	OH2LU	184,164
52.	NO1Y	183,292
53.	SP5CWQ	181,580
54.	KD3YG	180,640
55.	N2FF	177,622
56.	LA4LN	170,880
57.	WB6ZHN	167,352
58.	WB9B	166,320
59.	Y27AO/A	165,648
60.	HA6VV	164,016
61.	G4MVA	164,016

62.	W6CN	163,178
63.	W1BYH	159,896
64.	HA9OA	154,696
65.	SP3SUN	145,874
66.	ZL2AKI	143,960
68.	G3XTT	135,432
69.	Y22LE	133,468
70.	IK1DFH	126,000
71.	YU3MJ	125,396
72.	I4IBR	124,236
73.	I0ZSG	123,372
74.	SM4AAAY	122,688
75.	IT9LFO	117,000
76.	IV3ZDO	110,484
77.	Y23NI	109,100
78.	Y23IL	108,680
79.	EI9CB	108,392
80.	W8CNL	104,760
81.	JH1QDB	104,500
82.	WA6FIT	95,232
83.	WA8FLF	94,476
84.	VE7DTA	90,984
85.	WA6GWL	84,496
86.	W3KV	86,016
87.	I4XQC	80,100
88.	WA4SSB	76,944
89.	Y51RF	76,728
90.	SM7BGE	76,360
91.	Y48YN	75,136
92.	G0IXE	74,960
93.	LZ2OV	74,492
94.	F6IIE	73,796
95.	W0YR/9	69,648
96.	Y58VA	69,644
97.	SM4SSY	69,604
98.	W8LNL	68,456
99.	Y24UD	67,680
100.	VK3EBP	66,348
101.	VK3BQS	65,534
102.	OH1NSJ	64,100
103.	VK2SG	64,084
104.	DJ9UY	63,596
105.	XX9KA	60,700
106.	K9VQK	59,910
107.	IK2IKW	59,120
108.	GI4TSK	58,680
109.	W6IWO	58,656
110.	DL9YAJ	57,440
111.	HB9AWS	56,608
112.	Y23NE	54,432
113.	LU8FDZ	54,016
114.	K1LXJ	53,710
115.	Y22SA	53,650
116.	I0KHP	51,840
117.	VK2EG	46,020
118.	N0FMR	43,772
119.	Y22HF	43,908
120.	DLIIE	43,036
121.	EA6ZS	40,642
122.	4X6RA	37,440
123.	K8CW	34,140
124.	DF8ZW	33,904
125.	IT0DWO	33,656
126.	IT6IAS	32,950
127.	HA8AL	30,940

128.	WA3INX	30,294
129.	Y51XO	26,500
130.	WB3CTC	25,800
131.	SP-0180-GD	25,250
132.	W0TIV	24,034
133.	YO6JN	23,774
134.	SM6BUV	23,764
135.	G4PLR	22,772
136.	OH5V	20,450
137.	G3HJC	20,060
138.	I1VTX	19,800
138.	Y23ZL	19,800
140.	Y33IO	16,050
141.	HB9IX	14,436
142.	WB8SSF	13,280
143.	Y21OC	12,954
144.	OK3CPY	10,588
145.	KG6AO	9,636
146.	HA6QJ	8,800
147.	CT1BHX	8,550
148.	WB6ITM	7,000
149.	Y23WO	6,504
150.	ON4AGV	3,430
151.	SP3BGD	3,276
152.	SM3MID	2,916
153.	N2HKI/AG	2,530
154.	EA8RA	1,040
155.	Y26EH	468

MULTI-OPERATOR

1.	HG1W	1,282,320
2.	LZ2KZA	1,240,148
3.	UZ6CWA	1,055,592
4.	VU7JX	868,780
5.	LZ2KIM	796,618
6.	WA7EGA	654,000
7.	YT3T	653,428
8.	LZ1KSP	636,328
9.	OK3RJB	316,996
10.	LZ1KAA	250,328
11.	OK3KGI	201,456
12.	LZ1KFM	112,230
13.	KA3DSX	38,284

SWL

1.	ONL383	898,950
2.	G6LAU	303,016
3.	BRS27239	174,200
4.	I1-21171	160,720
5.	Y32-10-F	134,316
6.	OK-1-33209	131,068
7.	F11ADB	79,120
8.	Y68-05-F	53,694
9.	Y42-O2L	15,912

CHECK LOGS

LA0BX, G4YPN, KA9IMX,
SM6EZI, KP4BJD, UZ3DWH,
W1UDB/4, DA1PE, W1HFN,
Y21IF

AMTOR



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

Welcome to a new decade folks. Let's hope that the digital fraternity can get together with the ARRL AD-HOC Committee, IARU Region coordinators, FCC and sort out a reasonable solution to the Digital Bandplan for 1990 and foreseeable future.

NEWCOMERS TO AMTOR

I will start off the New Year with a few tips on how to establish an ARQ (mode-A) link. One or two phrases that may pop up from time to time are, Master and Slave. The Master is the station that initiates the ARQ link; i.e., he types in the SelCal of the station he or she wishes to link with. The Slave, is the station that called CQ in FEC and is awaiting a link in ARQ.

Operation Tips:

1. Make sure that you have entered your SelCal into the program.
2. Leave your software timer at 20ms or less.
3. When you call CQ in FEC (mode-B), do not use the infamous RYRY. FEC relies on a system of synchronous "idles", periodically inserted between bits of text, to ensure that both stations remain in sync. Without sufficient sync idles, the receiving station will not get any text! If you are in doubt about your software capabilities, type your CQ call directly from the keyboard, in preference to using a "canned" buffer. you may be pleasantly surprised at the response you get.
4. Switch off your VOX, set the AGC to FAST or OFF. Do not use your processor or microphone amplifier and keep the Mic gain within the ALC recommendations for your rig.
5. The Master chooses the frequency, so it is up to the Slave to "net" onto him by using his MAIN VFO. If one station drifts slightly or if there is a small frequency off-set, the Master should "tune" with his RIT to re-establish good traffic flow.

6. If the link breaks down, let the Master attempt to re-establish contact, either in ARQ or FEC.

7. Please do not use an amplifier in ARQ, unless you are absolutely sure that your transmissions are as clean as driven snow. The HF bands are crowded enough without having to put up with key clicks, five Khz above the actual transmitted frequency!

Good luck and happy chirping.

Carl, K6WZ apparently wrote to ARRL earlier in the year regarding their supported and proposed digital sub-band policies. As of 21st December, he has not had a reply! This failure on the part of the ARRL to respond to Carl's letter has prompted him to write again. This time, Carl has asked for the name of the person directly responsible for receiving appeals and complaints. Once the cat is out of the bag, may his desk be swamped with mail!

Paul, AH6D, operator of one of the many APLink systems, kindly volunteered to send me a complete list of all the 'help' messages available for APLink, thus saving on 'air' time. Thanks for the offer Paul. By the time you read this, I will have the most updated information of version 3.93 in my greasy palms.

I first accessed an APLink system in late July, 1988. It was probably the prototype of Vic Poor's hard endeavors and was being run by W5SPJ. Since then, there obviously have been many new and updated versions of the software. One major improvement, has been the facility to use EITHER User control OR System control in the ARQ changeover command.

Like any new software, there are always up-grades, so it is probably wise for users to keep up to date with the latest version. Don't be like me and rely on old information! Hi!

CHANNELIZATION

There have been some suggestions that we ought to channelize the Digital sub-bands. Say 15Khz for AMTOR, starting at 14.068 (mark) with 500Hz spacing. For Baudot, start at 14.083.5 (mark) with 500Hz spacing. HF Packet above 14.098 with whatever spacing they need. (500Hz ??). In theory, channelization sounds like a very good idea! It would give 30 channels for the three main digital modes on each band.

However, I personally see many problems occurring. Here are some of them, in no particular order of priority.

1. What happens when a DX station comes on frequency and runs a split operation? Does he listen only on the channelized frequencies, assuming that he starts his operation on Baudot Ch. 1? Do the DX chasers only call him on channels 3 and 6? Sadly, methinks not!
2. What happens in a Baudot contest?? Admittedly there are only seven contests in a year, but....
3. It only takes ONE station to transmit out of the channelized system, to ruin the whole idea, thereby forcing "conformists to do likewise.
4. Everyone would have to have a VERY "clean" signal. They would also have to make sure that their tones are correctly spaced, not inverted and the baud rate would probably have to be set at 45. Remember, higher baud rates require slightly more frequency.
5. How do we persuade ALL the digital operators throughout the world, to adhere to the channelization method, without making it a legal requirement.

There will always be non-conformists to contend with, and one has only to listen to the increase in regular AMTOR signals, above .080.

YOUR opinions, whether in favor or against, would be greatly appreciated.

NEW YEAR'S RESOLUTIONS?

Owners of PK232s, please type your FEC CQ call, directly from the keyboard instead of using a pre-programmed buffer.

RTTYers, promise not to use the BBS's that send out incessant BEACONS.

Use the frequencies ABOVE 14.096, 21.095.3 (mark) for Baudot, before we lose them to HF packet!

Observe the "Considerate Operator's Frequency Guide" and try to stay within the "allocated" bandplan for each digital mode, despite ARRL's attempts to sanction HF Packet anywhere and everywhere.

If you MUST use an amplifier in ARQ, ensure that it doesn't spew out key-clicks.

Be kind to the unfortunate operator, who transmits on the DX station's transmit frequency when the DX is working split! Sending, UP, UP, achieves more than any amount of abuse, or questioning the operator's dubious parentage.

If you are using AFSK, make sure that you select LSB (USA) and normal tones for transmit and receive. If you use FSK, make sure you have the TNC to rig leads, wired up the correct way.

Write to your ARRL District Director, ARRL AD-HOC Digital Committee Chair-person, when you find out who he or she is, and the RTTY JOURNAL, expressing your opinions and possible solutions to the current bandplan may-ham.

May you all have a very Happy, Healthy and Prosperous 1990, with lots of good DX. 73
de Eddie, W6/G0AZT

thing!! The other thing that Vern pointed out, and correctly so, is that while writing the review I got the ALT-R and the CTL-R keys confused. Since these keys have functions that are somewhat similar, I confused a lot of my readers who are using the program. Just replace the CTL with the ALT key and all should work well. Functionally, the keys work great. The example I gave was totally misunderstood by both Vern and Mike..I found the way that ALT (woops almost typed it in wrong again!!!) ALT-R works to be a major highlight and feature of the program.

Vern discussed in detail how the Function keys work and argued that they work at least as well as my famous Commodore MBA-TOR Control X buffers. It is true that you can program the F keys while receiving, but I still have to say that I like the way the MBA-TOR control X functions. And it may be that the F keys are more functional for some things, but the simplicity just isn't there. Vern indicated that he took issue with me on a number of others that I found in RTTY-PC. Now I have to take exception, actually with the one little thing on the ESC function, I found NO faults with RTTY-PC!!!

Also received a nice letter from Mike, WD8BTU, the author and marketer of RTTY-PC. The way he writes a letter indicates to me that we need to get him to do a guest column (and I am going to bug Dale on that one!!!). He was a little concerned with some of the errors in my writing also, and pointed out most of the same things as Vern. Seems I need to begin these reviews a little earlier and let Betsy check out the clarity of my thoughts. Mike, I think also that I would agree with you on the use of Pgup and PgdN keys (the alternate keys for manual transmit and receive). Using these exclusively is not a bad idea, because as Vern indicated the single key stroke is much easier to use.

Thanks to all the letter writers and a special thanks to Carl K6WZ who is actively engaged in a letter writing campaign to the ARRL on a little matter of the ARRL suggesting to the FCC that we have channelized areas 14.095 to 14.115 or something like that. I hope Carl will get a letter into the Journal so we can start working on this. Never think that you are powerless with the ARRL. ARRL is our organization



SOFTWARE

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

Another year is upon us and its nearly time to once again select the Dxpedition of the year. Please forward any suggestions to Betsy, WV7Y the Awards Manager at our address. In response to my mail bag, a couple of things needed to be cleaned up, including several letters that were received, so I have split the review of WA7EGA's Logging program into two short parts.

Received a letter from Slawa, UO5OLW, who is the chief of the UO4OWQ radio club, and he is looking for specifications for CW, RTTY, and AMTOR. He is trying to find out the standards for those types of communications to enable them to build a universal interface. Is there anybody out there with the information? Perhaps someone at HAL Hcommunications has it and can send it on?

Wilson, KA1AE, wrote us a nice letter and says that he is looking for some Amtor software as well as CW and RTTY for the PC. I think that the ARIES program may work, but frankly I haven't seen it. Can anyone give any help? The RTTY-PC reviewed last month and briefly mentioned this month

may be the interim ticket for you, Wilson, and should work fine on the CP-100. Also received a fine letter from one of our nearby locals in Seattle (only 350 miles) !!

Wes, WZ7I (love the call) has also just picked up an HAL ST-6000. And like many others out in the RTTY world, has a PK-232 that isn't performing up to his expectations. Wes, I will be phoning you shortly, but take a look at the contest column this month and that should give you a couple of ideas. Hal and I don't agree much on the multi-mode jobs, but his is a nice idea on how to correct some shortcomings in the PK-232 filters.

Received a nice letter from Vern, K6CNJ, whom I had just talked to the other evening on my frequency (14.098.0). And boy did he take me to task on my December review on RTTY-PC. I must admit that I am not sure if my statements about the ESC key were very clear. What I meant was that you can't press ESC to bring up the menu while in transmit. The Help does work fine!! And it was just something that the programmer didn't find, and being an old master tester I just had to find some-

(U.S.A.). WS7I and WA7EGA got our own contest, the ARRL RTTY ROUNDUP with just a few simple arm-twists, talking to our directors, spreading the word over the air and getting many of you also actively involved.

CONTEST LOGGING

Now, finally, on to this month's review. Hal, WA7EGA, our famous (infamous) contest columnist created a logging program a couple of years ago. It was primarily put together so that he and I could do multi-user RTTY contests. The early versions ran on an ATARI computer, and as you may have read in earlier RTTY Journals, was responsible for many near disasters in our contesting. Hal is not a programmer by vocation or even avocation. He writes in BASIC and structure to him is the name of the program. Nevertheless the stuff actually works. After many near disasters on the ATARI junk (you may re-call when HC2DZ pulled the plug on the computer and the program crashed during 1987 CQWW from HD8CQ), Hal, with much resistance moved on to the IBM and Microsoft's QuickBasic. With a little prompting from me, he fixed many of the early problems with the software and created a tool that we have used and still use with great success. The program has only two major faults. It is totally unfriendly to users (Hal's secrets 1 thru 94 or more). The other problem is both a fault and one of it's greatest achievements. It is totally flexible and can be configured (usually only by Hal) for nearly any contest. Now most of us know about AK1A's contest program. Nice program with all the nice user stuff. But

ever try it on ANARTS, VOLTA, or even ARRL 10 Meters? The ability to configure many multipliers, point charts, different scoring by band, call districts as Countries; all are included in Hal's program.

As most of you know WV7Y, WA7EGA and I -- WS7I, along with others WB7RBJ, NG7P, HC5K, HC2DZ and HC5T spend a lot of time contesting. Most of which is done as multi-operators. We have enjoyed a great deal of success in our endeavors and along with the black boxes which Hal described to you a couple of issues ago. This program was partially responsible. I am NOW going to give Hal's program it's first official name...."SCOTCH LOG"..the reason is that most of the ideas and half the code was developed under the influence of that wonderful substance (Tea-totalers need not respond).

Next month we will examine the features and functions of the program. And as he indicated, maybe between now and then I can pressure him into writing a decent set of Documentation and a user-friendly configuration program, who knows?

Another NEW YEAR is upon us and hope that with the ever changing world more friendships will evolve and that Amateur Radio will help in that spread. From our cats (DX & CQ), Betsy WV7Y and me..73. **de Jay, WS7I**

right now, though I have been a member since 1961. More below also.

DECEMBER REVIEW

Although, unfortunately, no RTTY activity was seen from LAOS this month, there was still plenty to keep the bands active. ZS8MI shows up unpredictably, from time to time, though you cannot prove it by me.

EA9JV, Aure, has been very active since his return from S0RASD, and he has the story of that trip in the mail to me, so you may be able to read it in February.

BY1QH and BZ1DX continue almost daily activity from Beijing around 0100Z and on, about 14,090.

JA3EMV came up at month-end from OGASAWARA as scheduled and has been very active.

BOUVET, 3Y5X, came up early January and continues to be very active, often transmitting on 065, listening 20 Khz up.

And many desirables were rather active recently, such as GJ4YMX, BV00A, UZ9CWA, 6W6JX, TU2BB, D44BC, RL8PYL, YI1BGD, UH8ABM, GU0/KD7TT, V44KW, V31AR, FR5ZD, LY2BOK, UR2WW, 9Q5EE, C31ON, CT3BX, JX9CAA, UQ1GWW, UO5OK, J73EH, V85GA, PJ2MI, 3B8FP, ST2SA, 4U11TU, VU2JX, J28TY, 5H8TY, 5H3NL, OD5NG, TZ6VV, BV2B, ZD8BOB, FP5HL, 5V7DP, TK/DL7HZ, HV3SJ, SV9ABG, SV5TS, A22BW, UM8MTF, 5Z4BH, AP2NK, TR8CJ, TJ1MW, J6LIH, and PZ1BS; so there were plenty of challenges for the active DXer.

DX COMINGS

It seems that the second BOUVET (3Y0B)/ SO. SANDWICH expedition scheduled for February, has been cancelled; no suitable vessel has been found, which would land the group on both spots during the "accessible period," i.e., before winter conditions made it impossible. But 3Y5X has been doing a great job on all modes.

The 3Y5X RTTY operation is run by Jacky Calvot, F2CW (normally a CW type, as his Call Sign indicates), but his RTTY management has been very skilled. As Jacky is scheduled to go to the SOUTHERN SUDAN, 6U0CW, about 2 weeks in mid-March, I sure hope



DX NEWS

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

Have been off the air for a little over two weeks "vacation" in a foot of snow on the beach in Georgia; does not beat DXing, but then the family gets a little tired of DX. As I am a little behind in the upcoming news, the column will be a little short this month, but that will make

room for a "Survey Sheet" on "NEEDED COUNTRIES"; about that, read on.

And so it is that I sit here typing this column this weekend, instead of participating in the ARRL RTTY Roundup; but very happy with the ARRL? I am not

that he puts his excellent RTTY skills to good use - from SOUTHERN SUDAN that is.

No further news from Rod, 5Z4BH regarding his efforts to get T5CT in SOMALIA on the air.

A51, BHUTAN looks more feasible all the time. J.S., VU2JX and Group have made progress with the Licensing Authorities and Jim Smith, VK2NS is coming along as well. Jim and J.S. are trying to get together to join their efforts, so I would not be surprised to see A51 back on the air in this new year of 1990.

No sign of HS0B, THAILAND yet; but do not despair, the operation will come off and be on the air for a long time.

3D2, CONWAY REEF and T33, BANABA cards may now be submitted for DXCC credit, effective 1 March (no earlier). And the DX Advisory Committee should come up with their recommendation on WALVIS BAY any day now, surely before this issue of the Journal reaches you. They are also considering the application for separate country status on the PUYALLUP INDIAN TRIBE in the USA. and they are recommending that endorsements be added to the 5BDXCC for 12, 17 and 30 Meters.

Nothing has been heard from TT8GA, CHAD, though the Tono is apparently delivered. Keep those toes crossed a little longer.

UA1OT, FRANZ JOSEPH'S LAND has been reported on RTTY at 1200Z, 6 January on 14,090 Mark, 50 Baud and reverse tones and again at 1240Z on 7 January. If the report is correct, then this was the last country of the USSR pending on RTTY. A challenge for all of us.

H44SH, SALAMON ISLANDS should be active any time now. The operation is sponsored by the INTERNATIONAL RTTY DX ASSOCIATION, IRDXA.

And finally, though not directly related to digital modes, 6 Meter DX information is available and updated daily, by calling my APLink Box on 14,074 and typing: (lt 6m). The "SMIRK" bulletins on 6 meter DX activity are entered each day by Ray Clark, K5ZMS and are very complete. K5ZMS writes the monthly 6 Meter News in the "DX Magazine"

NEEDED COUNTRY SURVEY

At the request of several Expeditioners, this month we include a Survey Sheet to try and determine which DXCC Countries are most needed by the RTTY crowd. Plenty of such surveys have been made for CW and SSB, and they have served a very useful purpose; before a Dxpedition is arranged, it is then known how much demand there is for such a country. Surely 99 percent need Albania on any mode (tell that to the Albanian Government).

However a survey for Needed RTTY Countries has never been made and some of our traveling friends have only a slight idea of how much demand there really is for a certain country, except for Yeman, Bhutan, and others that have never been on RTTY.

Would you please be so good as to spend a few minutes to fill out the form on page 18.

Some countries are shown on this list as an example. "X" -off the ones you need, write in others you most need. Write in your Call and DXCC worked total, as well as your continent.

Please return the filled out forms to me no later than the last day of February at the address shown on the form. Your replies will be computerized and the need for countries will be tabulated and published (hopefully) in the May issue of the RTTY Journal and also be released in Dayton at the HAMVENTION.

The results and totals will be of great help to those now contemplating expeditions; to organizations like the International RTTY DX Association in determining where to place the limited funding they have; plus, maybe it will cut bait with the NCDXF, to obtain their help in funding the RTTY portion of expeditions for other Modes.

Please help by completing this form and mailing it back to me. Thank you.

WHAT IS MY KICK WITH THE ARRL?

We all know by now that the ARRL has attempted to turn the top portion of the RTTY Bands into a Packet Bedlam. Lots of complaints have been written to the ARRL, but it appears, not nearly

enough.

Now ARRL Bulletin #91 of 15 December 1989 states that on 12 December, ARRL Counsel Chris Imlay, N3AKD filed a Petition for Rule Making with the FCC to permit Data (Packet) and RTTY Communications under automatic control in the band segments: 3.605-3.615, 7.035-7.049, 10.140-10.150, 14.090-14.100- 18.100- 18.110, 21.090-21.100 and 28.100-28,120 KHz.

I guess the ARRL has lost sight of the wishes of its members and is off on its own tack, bureaucratic decisions being made by Non-Elected employees, such decisions even including an ARRL MasterCharge Card, (I thought that was the business of banks, not non-profit Amateur Radio).

I guess that Mr. Imlay little realizes that the 7.0325-7.049 portion of 40 Meters is now shared by RTTY DX, by high speed CW, and by the USSR phone DX band. Nor may he know that the .090 to .100 portions of the HF bands are under the "Gentlemen's Agreement" used exclusively for RTTY, not for other data communications.

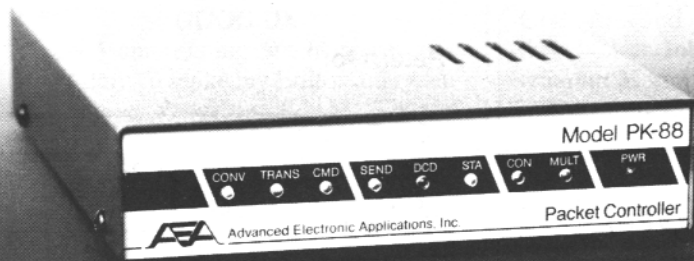
Neither may he know that you cannot find any signals above 21.100; seldom Packet, never RTTY, but, instead, a bunch of inconsiderate Packet operators have misguidedly appropriated 21.095 and 14.095, right on top of the ARRL's own bulletin frequency.

Plus, putting automated RTTY stations on the same frequency as automated Packet stations is sure going to be rough on Packet, which is most sensitive to interference, as this mode was really designed for the quiet VHF bands, where Packet is perfect, not for HF, where it is of dubious value... Oh, Man, wait until an automated RTTY BBS comes up and transmits 45 or 74 Baud for 30 minutes on top of an unattended Packet station.. Haw! Or if the AMTOR Mailboxes all gather unattended around 14,095.

Carl Steavenson, K6WZ, wrote a nice letter to Mark Wilson, AA2Z, managing Editor of the ARRL, objecting to the Request for Rule Making. He wrote it to Mark, fully realizing that Mr. Imlay did not write the Petition as his own initiative. I understand a reply has been received and a copy is in the mail to me. (Continued on page 19)

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.

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RTTY MOST WANTED COUNTRY QUESTIONNAIRE, 1990

Afghanistan (YA)	Mozambique (C9)
Albania (ZA)	Mountain Athos (SV/A)
Angola (D2)	Nepal (9N)
Aves Island (YV0)	Nicaragua (YN)
Bangladesh (S2)	Niger (5U)
Bhutan (A51)	Ogasawara (JD1)
Bouvet (3Y)	Qatar (A7)
Burma (XZ)	Rodriquez (3B9)
Burundi (9U)	S. Georgia Is. (VP8)
Chad Rep. (TT)	S. Orkney (VP8)
Chagos Is. (VO9)	S. Sandwich Is. (VP8)
Cocos Is. (TI9)	Shetland Is. (VP8)
Congo (TN)	South Yemen (7O)
Ethiopia (ET)	Sable (CY0)
Europa, Juan de Nova (FR/J)	San Feliz (CR0X)
Franz Joseph Land (UA1)	Solomon Is. (H44)
Ghana (9G)	Southern Sudan (ST0)
Glorioso (FR/G)	Spratly (IS)
Heard Is. (VK0H)	St. Brandon & Agalega (3B7)
Iran (EP)	St. Paul Is. (CY9)
Jan Mayes Is. (JX)	Swaziland (3D6A0)
Juan Fernandez (CE0Z)	Tokelaus (ZK3)
Kerguelen Is. (FT8X)	Tristan Da Cunha (ZD9)
Kermadec Is. (ZL8)	Tromelin Is. (FR/T)
Cambodia (XU)	Tunisia (3V)
Kingman Reef (KH5K)	United Arab Emirates (A6X)
Laos (XW)	Upper Volta (XT)
Libya (5A)	Willis Is. (VK9Z)
Lithuania (UP)	Yemen (4W)
Lord Howe Is. (VK9L)	Zimbabwe (Z21)
Malagasy (5R)	
Malawi (7Q)	
Malpelo (HK0T)	
Malyi Vysotakij Is. (4J)	
Marion & P. E. Is. (ZS8)	
Mayotte (FH)	

Return to:

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

YOUR CALL _____

CONTINENT _____

COUNTRIES WORKED ON RTTY _____

Please return by February 28, 1990

YOUR COMMENTS PLEASE

(DX NEWS Continued from page 16)

F I G H T, if you wish to keep your RTTY bands, then PROTEST as much as your conscience lets you. And don't forget, the ARRL is supposed to represent all of its members, not just a small "interest group" promoting HF Packet.

CONDOLENCES

My sincere condolences go to Clark, W9CD, whose mother passed away at 86 on Friday, 5 January. Our prayers are with your family, Clark.

GOOD DX

Guess I am running out of space and don't dare to make my Editor angry, he can be a tough cookie (hi hi hi). Thanks

to all of you who contributed information, that made this column again hit the press this month; particularly VK2SG, KB2VO, OD5NG, W2JGR, W9CD, DU1AUJ (moral uplift), W5KSI, K6WZ, EA9JV, plus the many others who fed me bits and pieces to share with you all.

So hope to see you next month, a bit better prepared, as I do not plan to travel now till Dayton runs around (am out of money).

God Bless and go get that DX. It is out there! 73 de John, TG9VT, in the Guatemalan Mountains.

What evidence do people have to support these claims? This allegation seems silly to me.

Near as I can tell the people who have decided to ignore the RTTY/Packet bandplan convention and operate Packet below 14100 are few in number. For several years the norm has been that RTTY goes below 14100 and Packet goes above 14100. What documentation does anyone have to think the ARRL supports anything other than this?

There is a petition from the ARRL that recommends that the band from 14090 to 14100 should be available for unattended RTTY and Packet operation. That suggests that there will be, at some time in the FUTURE, a revision to the bandplan guidelines that are currently in effect. However, this petition/NPRM process will probably take more than a year to complete. There was also a letter from Luck Herder (ARRL) that says Packet STA does permit some minor adjustment in the frequencies used by the STA people. Fine, but this explanation could hardly be considered supportive of the group running Packet below 14100. First, Packet is certainly legal from 14000 to 14150 as long as there's a control operator at the control point; it's not nice to run Packet below 14100 but it is legal. For those of you who haven't read the STA authorizing letter from the Commission to ARRL that permits identified Hams to run unattended Packet on HF, the FCC doesn't say ANYTHING about frequency. The ARRL, in its request to the FCC, specified some nominal frequencies but the FCC didn't seem to hold the ARRL to them. I'm not a lawyer. I don't know if someone on the STA list who operates more than a few KHz away from the ARRL frequencies is in violation of the STA. But, of course, if they are not unattended then they appear to be legal; again; not nice but legal.

I speculate that those operating below 14100 KHz with Packet are either (a) running with a control operator present (b) simply claim to be doing so or (c) feel that the STA permits them to run unattended on any frequency where Packet would otherwise be legal. I don't know of any evidence to suggest that the ARRL has told the Packet people to "move below 14100 KHz." If someone has some documentation to the contrary, I would like to see it.

LETTER TO THE EDITOR

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

ED: Paul Newland, AD7I is a member of the ARRL Ad Hoc Committee on Digital Communications. He is very knowledgeable with the subject herein discussed. He is also the one person who can best help our entire Digital community with the Bandplan, Gentlemen's Agreement, and proposed automatic operation now before us. Please take the time to read Paul's comments and help him by responding with your own comments. Your support is needed NOW!

Dear Dale,

Please consider publishing the following paragraphs of this letter in the next issue of the RTTY Journal as a letter to the editor.

There's a lot of information and mis-information about some changes that seem to be coming from HF RTTY and Packet, especially those operating unattended (automatic in FCC language). Most of this has been prompted by the recent ARRL petition to the FCC for spectrum on each HF band for unattended RTTY/Packet operation. I wonder how many of the commentators actually read the ARRL petition before making their comments! Additionally, there's also talk about Packet stations moving below 14100 KHz and the ARRL's alleged support of that activity. I would like to take a few inches of column space to let others know my understanding of the situation. I think this

information will be of interest.

The opinions that follow are just that: my opinions. Some of you may know me as a member of the ARRL Committee on Digital Communications, or as someone involved with commercial HF radio, or just another Ham interested in RTTY. I want you to know that I am writing today as an individual and not for, or on behalf of, the ARRL or anyone else. However, I do have some information that may be different from what has been floating around on different BBSs or printed in the RTTY Journal.

First, let's talk about some Packet operators moving below 14100. I have seen comments that these operations of Packet below 14100 are being recommended or supported by the ARRL. Even more wild is the suggestion that there is some sort of conspiracy sponsored by the editor of QST to get these Packet stations to operate below 14100.

Folks, let's face some facts of the '80s (now '90s). I don't like a lot of what Hams shove at microphones connected to their 75 Meter SSB transceivers. However, unless they respond to my polite suggestions to move or change the content and style of their language there isn't much I can do about it except ask the FCC to intercede. Most operators are considerate but a few aren't. The same holds true for BBS Packet operation. I suggest that most of the operators who are on the STA Packet list are considerate and operate above 14100. However, like any group composed of more than one person, there are probably a few in the group who are not considerate. That may explain why some Packet operators have chosen to use frequencies below 14100 Khz.

Second, let's spend some time talking about the ARRL "automatic operation" petition. I prefer the term unattended as I think it provides a better description of what's going on (i.e, BBSs are all automatic, the computer does the work and the control operator decides if the plug should be pulled or not -- an unattended BBS has no one ready to pull the plug -- both, however, are "automatic"). The term "automatic" has historic significance so that's what the FCC and ARRL documentation refer to when they mean a control is not present at the control point. I use the terms "automatic" and "unattended" interchangeably.

It's unfortunate that the ARRL didn't solicit comments from the general RTTY/Packet population before submitting the petition to the commission. I tend to think that 10 KHz is the right amount of spectrum to set aside on each band for unattended operation. I don't really care where it is in the band but feel that 10 KHz is about the right amount. Maybe you feel the same -- maybe you feel differently. However, it's nothing to get worked up about yet. What's most important to realize is that the ARRL doesn't write the rules, the FCC does. The public gets two major opportunities for comments and that's with the FCC. If I had my choice, I would much rather provide input to the FCC than the ARRL. Many people are getting bent out of shape over something that's really pretty small potatoes at this point.

As I understand it, the ARRL has merely petitioned the FCC to change the

rules regarding automatic control of RTTY and Packet stations on HF. It would be almost unheard of for the FCC to take action based upon the recent ARRL petition. If the FCC takes any action, it's 99% likely that the FCC will only issue a SPRN where they ask the public (that's you and me) what issues are important for automatic operation of RTTY and Packet stations on HF. That's when your comments count the most. If you don't like the frequency segments or the rules that the ARRL suggested to the Commission then tell them so during the NPRN process. But wait for the NPRN to be issued - - don't kill the process before it gets going.

If you feel the concept of permitting unattended RTTY and Packet BBS on HF has merit, then let the FCC know that you want an NPRN to be issued. When the NPRN is out (probably in 2 to 5 months from now) write down your thoughts using clear, concise language and send them to the FCC. If enough Hams tell the FCC that the ARRL's recent petition has no merit under any circumstances (i.e., "the whole thing stinks" without proposing alternatives), during the next few weeks, the FCC may never issue the NPRN. That would be unfortunate because the rest of us will not have an opportunity to provide input to the FCC in an NPRN forum. The FCC may choose to simply never issue the NPRN. My thinking is that the FCC will consider automatic operation on HF only once during the next five years. If a large segment tells the FCC that automatic operation is the pits, it may be dropped for quite some time.

Here are some additional recollections from my "fuzzy" memory on how the proposal developed. One school of thought was that "automated" operation should be permitted everywhere RTTY and data were permitted. There were many problems with this, most notable from the CW folks as well as regular RTTY and Packet people. Rumor has it the FCC had telegraphed that under the table, they were not keen on this idea. The next thought was to provide 4 KHz for Packet at an edge of the Packet band and another 4 KHz between the AMTOR and RTTY segments. This, too, was not considered workable because there might be some future need to re-allocate spectrum as new modes become available. Also, again rumor has it that the FCC may have telegraphed

under the table their displeasure with revisiting this issue in the future. So, thinking leaned toward one segment per band where "automated" operation could take place. The FCC would not be asked to sub-divide the segment, Hams themselves would work that out (next month we will publish Paul's proposed plan -- PROPOSED). That's my recollection of how the plan developed.

One question I have seen raised by several people is: "WHY SHOULD ANY SPECTRUM BE GIVEN TO HF PACKET SINCE IT DOESN'T WORK?" I will be the first to admit that I'm no fan of HF Packet as currently implemented. I, myself, rarely run Packet. But, in all fairness, HF Packet does work under special circumstances. I don't think HF Packet is for the casual user. Yet people who have their Packet stations configured exclusively for Packet Mail/Bulletin forwarding (most are on the STA list) do move a significant amount of traffic through it.

To cite a specific example, I communicate with about five people on the West coast through WA8DRZ's ALink BBS in San Francisco. However, I don't leave messages on WA8DRZ via AMTOR. Instead, I generate a message on my local VHF Packet BBS and request that it be forwarded via Packet to WA8DRZ's system in San Francisco. The reverse occurs to get messages from WA8DRZ's system to me. WA8DRZ's ALink system knows that any message that comes into his BBS via ALink should automatically be forwarded to me in New Jersey via Packet. The average delay from WA8DRZ near San Francisco to my station near New York is less than 18 hours. And those messages get to me via HF Packet; reliably and consistently. No one is more amazed than I. HF Packet does work and I can't dispute that. I must disagree with those people who state Packet can't and doesn't work.

I think what's happening is there is enough time during each day when the MUF drops to near 14 or 15 causing no multi-path problems. Certainly HF Packet can't move traffic any time the user wants to; one must wait until the MUF is optimum. HF Packet does move traffic although it requires a lot of tinkering with frequency stability and filter characteristics. I don't think AX.25 HF Packet is suitable for casual conversa-

tion. Quite frankly, AX.25 Packet is poorly engineered (or hasn't been engineered at all is probably a better description) for HF communications. But it does work under special circumstances. Additionally, the ARRL Digital Committee is in the process of locating volunteers to develop new HF Packet protocols and modems (an attempt to do the engineering that was never done). If you are interested in this work, you might consider volunteering your services (to do so, call Lori Weinberg at ARRL, 203-666-1541).

Finally, in a year or two from now, *IF* unattended RTTY and Packet operation is permitted on 14090 to 14100, where do we put everyday AMTOR, RTTY and Packet on 20 Meters? That's a good question. I suspect that we will see 14100 and up becoming available for SSB to U.S. Hams sometime in 1991 or 1992. That means all data modes will

need to be below 14100. If we further assume that we will be good people and leave 14090 to 14100 to automatic stations and those stations working with automatic stations, that puts person-to-person and ATTENDED BBS operations below 14090. The highest CQ calling frequency that I'm aware of is 14060, the QRP calling frequency. That would leave 14062 to 14089 (about 27 KHz- for AMTOR, BAUDOT and Packet. My opinion is that this is plenty of spectrum. My observations of tuning from 14070 to 14100 on weekends reveal many vacant channels. My starting point would be to give 14062 to 14070 to AMTOR, 14070 to 14074 for shared AMTOR and Baudot, 14074 to 14080 for Baudot and 14080 to 14090 for Packet. I also call your attention to the PROPOSED (emphasis on PROPOSED) plan for the spectrum reserved for unattended operation at the end of letter. (Ed: sorry no room for all this month. The rest to be

continued next month). For now, I ask that you not focus on the absolute frequencies but instead on the concepts of the plan. I assume that the 10 KHz of spectrum could be re-originated most anywhere. I, personally, don't care where the 10 KHz (or 5 KHz or 15 KHz) of spectrum sits on each band. I leave that to others to suggest better places for it if they don't like where the ARRL proposed they be placed.

Write to me with your thoughts on these proposals or your own alternatives. Be sure to include any supporting data or evidence you may have that I can use to reinforce your comments and suggestions. I promise that I will forward any written comments to the ARRL Digital Committee for its consideration. Thanks also for bearing with me through this long letter. And remember, it's only a hobby.

Sincerely, Paul Newland, AD7I

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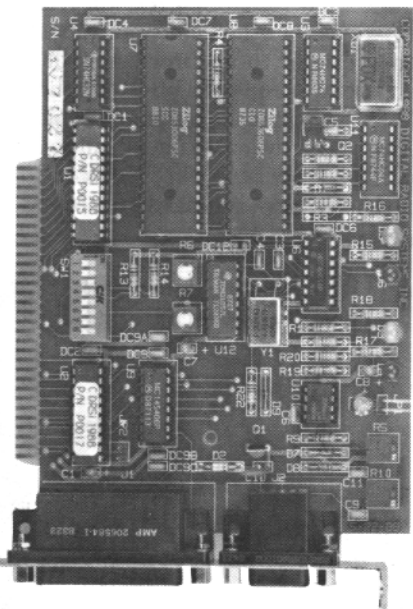
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UH8W & UI8U

This story submitted by Dan Davitt, N6CGB

DXPEDITION OF THE MONTH

by Winnie, UA1FFG
Interpreted by Dale, W6IWO

The UZ1FWD DXpedition to UH8W and UI8U was prepared by three Hams of the UZ1FWD group. They were: Andy, UA1FLA; Winnie, UA1FFG; Yuri, RA1FEP, all are 21 years old. Winnie explains they are all students of the Penza Polytechnic Institute of Radiotechnical Facility. They encountered many problems putting together the equipment and antennas needed, all during Spring exams.

On June 25th they departed via train taking with them the radio (all tubes), linear amplifier, homebrew computer and modem. Leo, UA1FBQ supplied the RTTY technical equipment which worked perfectly even under difficult conditions. They were very thankful to Leo for his help. A standard TV set was

used as monitor, a tape recorder was used for loading the programs and a 10 meter folding tower was also taken. For antennas, 2 element full size quads for 20, 15, 10, along with cables, guy wires, etc. In total the equipment weighted in at about 350 KG which was a lot of weight for only three Hams to handle. Lots of problems on the train with all that equipment, especially the tower sections which were about 8 feet long.

Upon arrival at UI8U, Urgench of the Uzbek Republic, local Hams helped to install the antennas and by the 27 of June they were on the air. They were immediate pile-ups, so split frequency operating was necessary. Many of the local Hams saw a computer in operation for the first time and by the time the DXpedition was ended at this location, the locals expressed great interest in RTTY and computers.

As a side trip the group visited Khiva-City which is an old historical place of the Middle East. From this location the group traveled about 100 KM north to UH8U land via car and trailer. By July 10 they were operating RTTY at UH8U, giving many Hams a "new one".

The temperature during their stay, ranged between 15 to 17 degrees C and no rain. The equipment was located in a small shack with one cooler which served to cool the equipment and operators. They operated mostly at night due to lack of propagation during the daylight hours and the heat. Over 7000 QSOs were made during the stay, which included 1700 on RTTY. Of that count, 1000 were with US stations and 760 with USSR stations. They were able to obtain DXCC and WAS.

The trip cost a lot of money, especially for students and there was no outside help financially. Winnie indicated, they all saved their money all year long for this trip. They wish to thank all those who have sent QSL cards. This will not be their last DXpedition but in the future they will need some financial support for such far away places.

Winnie also thanks Vern and Al of their club, who helped with pile-ups and QSLs and to the many who worked them from these locations. The QSL information is: UZ1FWD (Four Wheel Drive), POB 101, Penza, 110600 USSR.

UZ1FWD/UH8W, near Triller

L. to R.

Radir, UI8UAC
Rashid, driver of car
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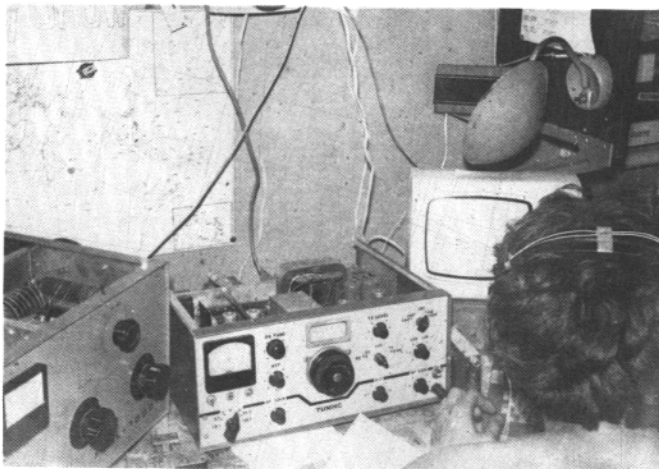
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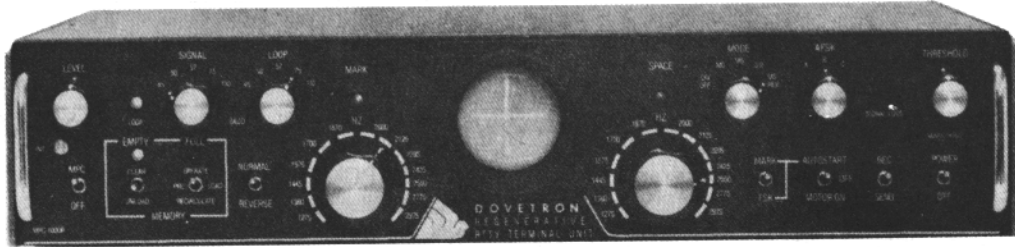
The station setup at UH8W



L to R - Standing Mike, SW1 from UI8U, brother and sister of Radir, UI8UAC, Radir, UI8UAC, Andy, UA4FLA & Winnie, UA1FFG. Picture of UI8U group taken at Khiva

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