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HAPPY HOLIDAYS

IN THIS ISSUE

RTTY JOURNAL

Dale S. Sinner, W6IWO

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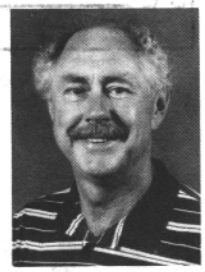

HITS & MISSES

Dale Sinner, W6IWO
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Fountain Valley, CA
92708

THE COST OF DOING BUSINESS

The price of the RTTY Journal has been the same for the last five years. During that period, I took over the publishing chores. I have tried to keep the price the same and still give you more for your dollar. You will note that the number of RTTY Journal staff members has increased dramatically, in fact, it has doubled over 1985. The number of pages has increased from sixteen (16) to twenty four (24). Our advertising percentage to total number of pages has remained the lowest of all paid Ham publications where advertising is used. This may be crazy but it provides more editorial space which translates to more news and information for your dollar. But, sooner or later, the time comes when one can no longer hold the line and that is where I am today. So, with all the changes made in the past three years and increased costs of printing, half tone work, etc., there was only one conclusion, increase the subscription price or quit.

After considerable thought and analysis, it was decided to make a modest increase of $2.50 to the domestic yearly subscription rate. This increase will become effective January 1, 1990. The price of foreign subscribers will also have to be increased at the same time. The first column of this page lists all the new subscription rates and all renewal slips will reflect the new prices.

As for quitting, I'm not ready to do that, not just yet anyway. Maybe one of these days, one of our subscribers will take my place but that's in the future some place. The Journal is almost thirty eight (38) years old and I hope it stays alive and well for another generation to enjoy and with your help and support, it will.

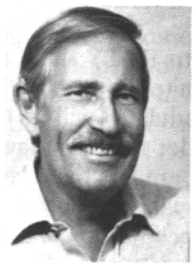
A GOOD YEAR

This year has seen many changes take place in the digital community, some for better and some for worse. Whether it be good or bad, the Journal has tried to keep you abreast of these changes as they occurred. The Journal is purposely published at the last possible minute so that all the latest breaking news can be brought to you fresh. As an example, if you are a DXer, then you can appreciate the DX news brought to you each month by John Troost, TG9VT. John FAXs his column to me about the 4th or 5th of each month for publication in that month's issue. If you receive your copy of the Journal about the 28th of the month, then John's news is only 23 days old. Compare that service with your other Ham publications! John's example is true of all the other columnists as well.

A good year also means that our quality has improved. Of course that is my opinion but it is substantiated by the many fine comments I have received throughout the year from readers. So, I'm proud our quality is better and it is my belief it is due to the fine efforts our staff has put into each of their articles throughout the year. I thank them for their dedication. But, let me not forget, that many of you have also contributed to this quality by submitting articles for publication and I thank you also. Please continue to write and share with us all your material. A special thanks to all our International friends who have submitted articles sharing stories about the digital modes in their country. Also my thanks for all the fine DXer of the Month specials we have published which have included some very nice pictures. Many of you have competed in the various RTTY contests held throughout the year which have been reported in these pages.

Some of you may say, the Journal looks a little drab because it lacks graphics. You may be right, but I have opted graphics for more material of substance. It is my belief that a journal should contain lots of information and to do that graphics have to take a back seat. However, wherever and whenever pictures, graphs, or schematics are needed they have been included. I hope you all understand and appreciate this approach and will stay loyal subscribers. In a pos-

Continued on page 9



DX NEWS

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

It has been a long time, since it has taken me this much effort to get started on the DX column. Have been sick as a dog this week, and still feel poor; hope it clears up by vacation time (or maybe I should really stop smoking that pipe, which tastes so good). Well, though, I cannot complain, just got back from a week's visit with KB2VO, George, and his charming XYL, Maj-Britt in Deerfield Beach, FL and we had a real good time; at least I did; not sure George did, who must have gotten sick of chauffeuring me around.

NOVEMBER REVIEW

I don't think many of us have reason to complain about the November propagation or about the RTTY DX activity. Here was Aure, EA9JV banging away for 3 days as S0RASD from the WESTERN SAHARA. Aure used a very nice method of sorting the pile-up: sometimes he would work split, but otherwise he would listen 2 or 3 Kc up, compile a list of 10 or 15 stations, and call them one by one on his calling frequency. Excellent job from an ALL TIME NEW ONE on RTTY, Aure!

And the end of November Bob Winters, KD7P, whose natural habitat is Guam, was doing a fine job on all bands from that Very Rare RTTY Country: MIDWAY ISLAND. Bob left the 30th of November, but those of you who worked him as ND7P/AH4, should know that his Call Book address is not current: QSL to Bob Winters, POB 8265 NCWP, MOU 3 Guam, Dededo, Guam 96912-8265, USA

And then, Raimo, OH2BGD, was up, first from 5W1VB, and then from ZK2RY, instead of from ZK3, as planned, since it was impossible for his group to find transport to Tokelaus.

Besides that we saw such goodies as ZD8BOB, UQ3FKD, 9M8AX, SU1ER, 6W6JX, TU2BB (very active), LY2BOK, 9J2AL, SV9JA, A22BW, 5W1VB, EA9JV, BZ1FB (China), HK0BKX from San Andres Island: please be merciful and come up more often, Paco!, V31AR on FEC, J6LB, UQ1GWW quite often, S92LB by SM0AGD, JY9IU, GU0/KD7TT (a new resident of Guernsey Island), VK9NS (very seldom), GJ4YMX, EA6VS, 9K2KA, 9Q5EE, UO5OK, UH8ABM, ZS3NH, BY9GA, 3A3AM, RL8PYL, KC6XO, UC1AWW, FR5ZD, YI1BIF, D44BC, and even one sighting on 10 Meters at 1410Z of the elusive ZS8MI (not by me.. hi)

Most of these stations, except the Expeditions, of course, are frequently active, and with a bit of persistence you should be able to work them.

DX COMINGS

Here is my crystal ball again, plus the input from a lot of fine guys, who are willing to share such advanced information with you. Please realize, that this is the best info we have available at time of writing (3 Dec) and of course a lot of things can change.

And here again an appeal: anyone sighting ZS8MI, MARION ISLAND, on SSB or RTTY, please call me collect in Guatemala City at 502-2340169, my 2 Meter autopatch, open 24 hous a day.

Rod, 5Z4BH has tried to convince the licensed US operator, T5CT in SOMALIA, to accept the Tono, on loan from JA1ACB, to bring Somalia again on the air, after sporadic activities by Italian operators (I got lucky). But T5CT told Rod that he pushes green keys all day long for the US State Department, and does not feel that working RTTY would be a relaxing hobby after doing the same in the office all day. But there is hope, the Lord willing: J52US had an identical job in Guinea Bissau, and felt exactly the same way, yet Dave found that RTTY was not like a job after all and made most of us happy with a new one. Prayers for light are essential.

Though VU2JX is still working on A51, BHUTAN, I have not been advised of new developments. However, it appears that the Kingdom of Bhutan is once again examining the whole matter of Amateur Radio and apparently is taking a more relaxed attitude, and Ham operations from that very rare Country may again be permitted in the not too distant future. Jim Smith, VK2NS has been working on this with the Bhutanese Authorities for over three years now, and it seems that light is shining thru a crack of the door. Again prayers are a pre-requisite!

The trip of the New Jersey DX Association to EAST MALAYSIA, has undergone some changes, as one of the operators dropped out. The call is now 9M6OO and that is the only country from which they will run RTTY, not from V85, VS6 and XX9, as reported last month. But, the good thing is that they will leave a PK232 with 9M6MU, who will then be permanently QRV from East Malaysia.

Rumors are, that the second BOUVET operation, 3Y0B, in February 1990, will also stop off and operate from SOUTH SANDWICH ISLAND, VP8. If so, that is an excellent move as that is one of the rarest places in he world (and most difficult to get to). Guess we will have details in the next few weeks (Christmas Present?).

John, W2ZWW, is now back home in THAILAND complete with his new PK232: so watch for HS0B to be on RTTY before you read this.

WC5P had bad luck in EAST KIRIBATI: customs would not let him pass his computer, hence silence.

Jim, VE3JPC, is still planning all kinds of things in Africa, as part of his visits there for the Canadian Government. He hopes to be in the SUDAN early next year, but if an operating license will be granted is not certain, as currently the Sudan is in a state of emergency. There is some indication that Sid, ST2SA, may let him operate from his station. Also Jim's plans for SENEGAL, MAURITANIA, THE GAMBIA and LESOTHO are far from forgotten, but it depends on many factors, primarily

Continued on next page

DX NEWS Continued from page 3

where: the Canadian Government Agencies will send Jim next?

Now XW9KPL, LAOS, is on the air, we may expect Laos on RTTY by early January, maybe by the time you receive this issue. The operation is being coordinated by JA1UT, who also coordinated BV4RA and CR9JA. It appears that his operation will coincide with the Norwegian Bouvet expedition.

3D2, CONWAY REEF and T33, BANABA (OCEAN ISLAND) have been recommended by the DXAC as new countries. Of course that will only become effective when the ARRL Awards Committee votes on the DXAC recommendations. Looks good!

The vote on WALVIS BAY, formerly ZS1IS, will not be out till mid January meanwhile the call of ZS1IS has changed to ZS9A. Seems that ZS9A does have RTTY gear, and could be talked into a QSO if you catch him on SSB.

It seems that OGASAWARA will finally be up on RTTY again with an expedition by JA3EMV/JD1 from 31 December thru 8 January: lots of activity around the Holiday Season.

Aure, EA9JV, ex S0RASD, plans to be active on RTTY from ALGERIA, 7X, early 1990.

Rumors are that a Tono has been sent to TT8GA, CHAD. Toes crossed that this rare one will be up on RTTY.

VU7JX asked me to publish that anyone not having received a QSL card from the March 1989 LACCADIVE operation, submit a new card, directly to J. SRINIVASAN, 340 5th Main, 2nd Cross, First Block, Kopramangala, Bangalore, 560 034, India. It appears that some of the QSLs previously sent to W2XP, may have gone astray.

And on the subject of QSLing, Steve, KU9C, manager for XX9JN, 8P6QA and 8P6RY, is looking for another station for whom to manage QSLs. Please contact Steve Wheatley at 10235 Fathom Circle, Indianapolis, IN 46256-9723. : SATISFACTION GUARANTEED.

Still further on QSL management: if you need QSL manager info regularly, think of subscribing to the "GO-LIST", published monthly by Jan O'Brien, K6HHD, POB 700, Rio Linda, CA 95673-0700 at a subscription cost of $30.00 per year.

And last, but not least, the West Coast RTTY DX Association is now the INTERNATIONAL RTTY DX ASSOCIATION, "IRDXA" and is open to all: for information write to IRDXA, 356 Hillcrest St, El Segundo, CA 90285, USA. Current IRDXA sponsored RTTY operations are H44SH, SOLOMON ISLANDS, who should be up by the time you receive this issue of the JOURNAL. Also the HS0B operation is sponsored by the IRDXA, as well as the RTTY operation of 3Y0B, BOUVET, in February '90.

WHAT GEAR DO YOU NEED?

The Journal received a letter from KA1AE, asking what kind of gear is recommended for digital modes. That is a big order. First of all, it depends on how much you want to deprive your family of? i.e. : what do you want to spend.
Next you need to know how intensive you will be in these modes: is it a Contest Station? A DX hunting station? A Ragchew station? An AMTOR mailbox? Or all combined?

You can get into the Digital modes very cheaply these days with a multimode controller, such as the PK-232 and a "Dumb Terminal", the cheapest kind of computer.

But multimode controllers have a disadvantage; they are a compromise. They have to be able to run 300 baud HF Packet, as well as AMTOR, and various speeds of RTTY and ASCII. That means that the filters have to be wide to accommodate those high rate modes, which is less then desirable on RTTY, in the 45 Baud range, where the filters should be very narrow.

For AMTOR, however, that type of a modem is perfectly satisfactory, providing you have a transceiver, which will switch fast enough, but most modern transceivers do.

On AMTOR, I run an APlink Mailbox, and use an IC-761 and a PK-232, plus a pretty sexy computer in multitasking, and that setup is quite satisfactory for AMTOR, even with a vertical.

But now we come to RTTY: here the requirements are quite different. Wide filters in your demodulator will be OK for ragchewing, under relatively favorable conditions, but are less than desirable to pick that weak one out of the mud. For that you need a Modem specially built for those data rates, like the HAL ST-6000 or even the ST-8000 if you are really serious and can afford it.

Next thing is what kind of a transceiver to use: the Number 1 requirement is one that has an "RTTY" position. This means that is will be able to operate in FSK, instead of feeding AFSK thru the microphone connector.

Why?

FSK (Frequency Shift Keying) gives you a minimum of spuriously transmitted products, like unwanted carriers and upper-sidebands, plus other birdies: that makes you a lot more popular with the rest of the spectrum users, though in this current era few operators seem to give a hoot about that anymore.

And FSK, like the CW position of your rig, gives you the possibility of using the narrow filters available for all rigs now. I run both my APlink Mailbox in AMTOR and my DX station with 500 Hertz filters, and the difference in reception quality is surprising. Plus, if conditions get tough, you can switch in your 250 Hertz filter.

That may be a little hard the first time, till you discover that for 2125/2295 tones, you have to offset your passband- tuning just a bit: you need the same strength "Mark" as "Space" signal. Easy to do: just put your Marker on, switch in your 250 Hertz filter and tune your passband so that the S-Meter reading is the same for Mark and for Space Frequency. A tuning scope helps and is almost a must in any event. Those "lightbars" on most multimode modems do not tell you very much.

One other thing: be sure that whatever modem you use on RTTY, is capable of sending a "synchronous idle signal", often called "diddle". That will assure

Continued on next page

DX NEWS Continued from page 4

that synchronization is maintained during the times you do not put out any characters from the keyboard, and maintain more or less perfect copy under marginal circumstances.

So, then comes the amplifier. As Eddie, W6/G0AZT has pointed out numerous times: for AMTOR you don't need or want an Amp; besides if you use one it has to be QSK. For RTTY a little amplification under marginal conditions or in Pile-ups does not hurt. I run 500 Watts max.

So after going thru various types of gear, I have now arranged my RTTY DX station with a HAL DS-3100, a dedicated computer (and the first RTTY machine I ever bought), a HAL ST-8000 demodulator with adjustable bandwidth, after various years on the HAL ST-6000 (also and excellent product), and I use an Icom 781, which I have found excellent for digital modes.

As with any mode, the better the antenna, the better the signal and the reception. I use a Four Element Quad for DXing and a Multiband Vertical for the APlink BBS on 14,074.00.

It is just a matter of which bank you are planning to rob...

PACKET IN RTTY BAND SEGMENTS

Apparently it has finally been discovered what the reason is for all the Packet activity on 14,096, 21,095, 21,097 and 21,099. It appears, from correspondence some of my friends received from the ARRL, that these incursions are sponsored by our League. Employees of the ARRL have caused so-called "STA" stations to be placed there for traffic handling, right on top of the ARRL's own W1AW bulletin frequency. "STA" is "Special Temporary Authority" from the FCC to run unattended Packet BBS operation which was granted by the FCC and administered by the ARRL for trials of unattended mailbox operation. The frequencies were specified, like 14,108, but the ARRL was given permission to be flexible and change the authorized frequencies a "few KHz" (quote). The result is the current bedlam of closed Packet BBS systems on 14,096, 21,095, 21,097 and 21,099. And this has encouraged those who are tired of the "retry mess" on 14,103 and 14,108 to invade those same frequencies and even lower.

Now the latest ARRL buletin Nr 89 has indicated the League is reminding all HF Packeteers to be aware that Part 97 rules specfically prohibits such unattended operations except where special STA approval has been granted.

So maybe a New Sub-Band Allocation has become a necessity and should be adapted by the IARU (whose recommendations are normally kept very secret). I suggest then that in each 10, 15 and 20 Meters the Digital allocations be as follows, world wide: AMTOR .050 -065 RTTY .065 - 090 Packet .090 - 110

I would think that could make everyone happy, providing W1AW is moved 10 Kc down from it's present frequency.

Please write your ARRL Division Director and tell him how you feel about ARRL employees conniving to secretly give your sub-band away!

HAPPY 1990

Well, another decade has passed and I still have not gotten any younger. As by the time you receive this, Christmas will have passed. Thus I would like to take this opportunity to wish all of you not just a Happy New Year, but a Happy New Decade, in which doubtless great strides will be made in Digital Communications, and more new countries will be seen on Digital Modes, and new Bandplans will be agreed and violated.

May I wish all of you a wonderful decade and may the Lord be with you, so that maybe most of us will be able to greet the new century 10 years hence.

Thanks for this column go to W6PQS, VK2SG, OD5NG, I5FLN, W9CD, W5KSI, W5KNE, W2JGR, KB2VO, VE3JPS, KD7P, EA9JV and many others who were kind enough to share their tidbits with us.

God Bless you all in 1990 and beyond and may all your DX be New Ones.

73 and don't let the Packet Ops below .100 spoil your QSOs.

de John, TG9VT, in the Guatemalan Mountains.

BANDPLAN CONTROVERSY CONTINUES FROM LAST MONTH!

Re: HF Band Plan/ RTTY Journal Oct. 89 pages 2 & 9

Dear OM Dale,

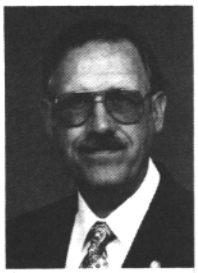
It is very interesting to read that IARU or the societies are asked to regulate the "living together" of the i.e. RTTY and Packet radio users. This is already done also for your region 2. It seems to me that the different societies have forgotten to let their members (and non-members) immediately know what was recommended at the Orlando Conference in September.

The same was done in our Region a year ago. Please find attached our band plan and the Region 2 decisions. (This info available from the Journal office for an SASE).

Our committee has still the opinion that our bands and how to divide them into different segments for different usage should not be regulated by the P&T authorities. As Hams we must be Gentlemen! We made long term inquiries about the percentage of users per band before recommending segments for the different users. Now it is the time for us "Gentlemen" to follow the band plan! As soon as we recognize a change of the quality of one or more modulation kinds, or if a new one comes up, we have to react. I am not sure that this reaction could be so fast if 150 P&T authorities are involved.

Looking into the latest history I recognized an increasing number of Packet radio stations on HF. A new toy - the modem in connection with the computer - came up and a lot of us started to play with it. After a while they (also me) found out that P.R. is not the best way to have a fluent individual QSO (see article from DJ4XN). And what did they do? They went back to that modulation mode which they used before. You may also recall what happened when we started with our old RTTY machines. A big cry was heard in our Ham community. One asked for a big spectrum the others cried because they did not want to loose a Hertz. Bad people spoke about the RTTY mode as "secondary

Continued on page 20



MSO'S

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

Hi Gang! It's been a busy month for me, and I haven't had a lot of time for monitoring of the various MSO's. However, I hope that things will slow down a bit in the next couple of months, and you'll see more of me on RTTY.

GOOD NEWS DEPARTMENT!

I'm very happy to report that the *Grand Imperial Wizard* of the highly respected and most secret Oh-Wah-Tah Society, the one and only Jerry Trichter, WA1IUF, is making steady and good progress in his recovery from his recent illness! I received a very nice note from Frank, WA1URA, via Al, N1API, (Who says these digital modes aren't compatible.....AMTOR, RTTY and Packet modes were all involved), stating that Jerry would like to pass on his Holiday greetings to his friends all over the world.

Frank's note goes on to say that Jerry is most appreciative of all of the notes, cards and calls that he has received. He looks forward to receiving them, and hopes that they will continue. Jerry's immediate family, Annette, Rhonda, Heidi and Robin, are also appreciative of all of the thoughts and prayers for Jerry.

Jerry's basic condition is good, and he is out of any physical danger at this point. He is presently bed ridden, and has some difficulties with his motor skills. Jerry has fond thoughts of his Ham friends and acquaintances, and hopes to be back among the active group soon.

The very good news is that the best rehabilitation hospital in Connecticut has accepted Jerry in their rehab program. Sometime soon he will be leaving St. Raphaels Hospital in New Haven, and going to Gaylord Hospital in Wallingford, Connecticut. The hospital has evaluated Jerry's present condition, and they believe he has a good chance of making progress towards recovery.

Keeping up with happenings on RTTY and APLINK are of great interest to Jerry of course, and here's where you can help in his recovery. Drop Jerry a line or two when you have time, in care of: Mrs. Rhonda Hawes, 204 Gorham Avenue, Hamden, CT, 06514.

We all have Jerry in our thoughts and prayers, and hope that his recovery is a swift and complete one. What would the Dayton HAMVENTION be without the *Imperial Wizard* himself holding court? Get well soon Jerry!

PACKET INTRUDERS:

I received a very nice note from Clark, W9CD, Urbana, IL, in which he discusses some of the Packet radio intrusions in the RTTY Sub-bands, which I would like to share with you. Clark's note says:

"By petition to the FCC, the American Radio Relay League (ARRL), requested Special Temporary Authorization (STA) be granted to a limited number of Amateur Radio operators to operate unattended, automatic Packet Mailbox stations on the HF bands. Specifically on 3603.3, 7091.3, 10147.3 and 14108.8 KHz center frequency. Such permission was granted starting July 7, 1987, for 180 days. This period was later extended to January 4, 1989, and has surely been further extended. The original intent was to study the feasibility of such operation so that permanent rules could be issued. Such operation was to demonstrate that it could be conducted without:

a) Harmful interference to other users.

b) Malfunction of transmitters such that they deny others the use of an operating frequency.

c) Transmission of improper communications without timely corrective action.

The ARRL was to coordinate (meaning, control), such operation. Without this "STA", operation of such stations is in violation of FCC rules. Earlier the FCC had waived the Rules to allow VHF Packet BBS operation, (above 50.0 MHz), because of the special nature of VHF and low potential for disrupting other services.

The party responsible for all HF Packet BBS operation, and most certainly that within the recognized RTTY sub-bands, is Paul Rinaldo, W4RI, Chairman of ARRL Ad-Hoc Digital Committee, (and also editor of QST). He is acting as Agent for the FCC in coordinating the "STA" program. He would seemingly be subordinate to Dave Sumner, , K1ZZ, Executive Vice President of the ARRL, and the ARRL Board of Directors. And surely he is responsible to the FCC, in the person of W3BE, Johnny Johnston, Chief, Private Radio Bureau.

What follows is a letter I sent to Mr. L. Hurder, KY1T, Deputy Manager, Field Services, American Radio Relay League, 225 Main Street, Newington, CT, 06111:

SUBJECT: Gentleman's Agreement?? There is considerable discussion among worldwide RTTY operators on encroachment of Packet Radio operation into the recognized HF RTTY band segments. I hear the Packet stations blatting away on 14096 and 21095 (Mark), and assumed they were just misguided or frustrated Packeteers trying to escape from the HF Packet bedlam above. Those stations do a fair job of jamming the W1AW RTTY Bulletins at times.

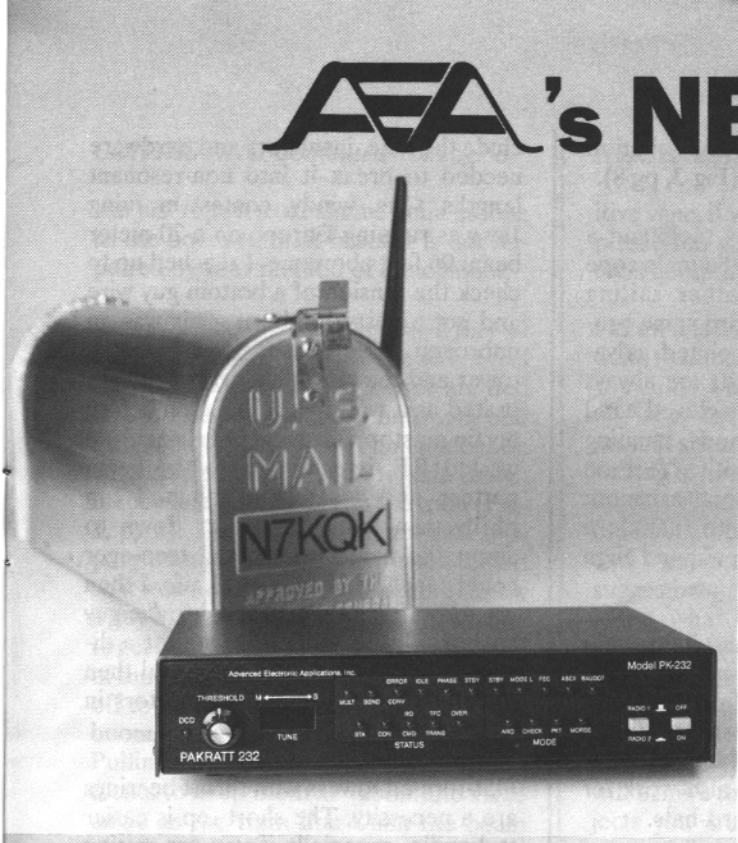
I finally took time to do some monitoring, and find to my surprise that those Packet stations on about 14096 KHz (mark) and 21095 KHz (mark) are none other that your authorized "STA" boys, operating their linked National PBBS Network stations. I hear W0RLI-2, W5XO, VE3IWJ and others on what they would call 14098. I hear KD5SL, N4QQ, and N6VV and others on what they would call 21097 KHz. I even hear N4QQ-1 on 21099 at the same time N4QQ is on 21097. (They identify frequency as the LSB frequency readout with 1600/1800 Hertz tones).

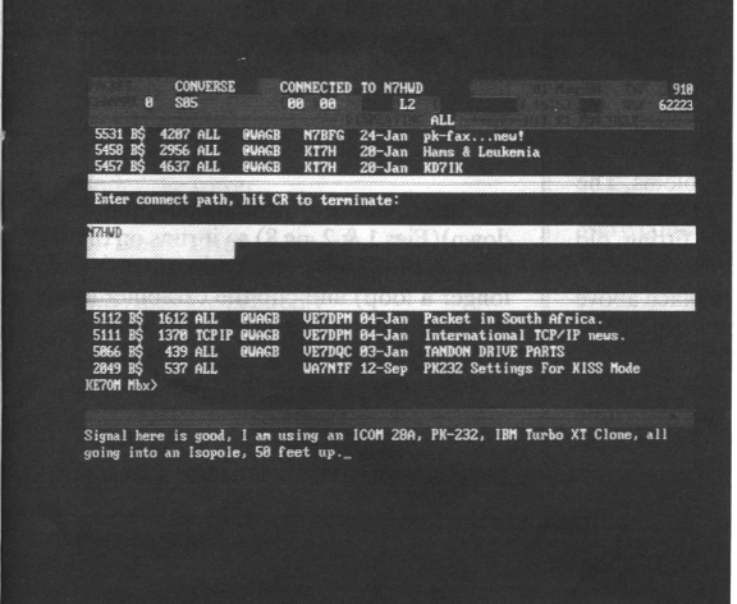
These guys are in no way misguided but are supposedly operating under carefully controlled conditions under the special permits coordinated by the ARRL. What is going on here? I take great exception to the presence of these "STA" BBS's below 21100 ands 14100 KHz Mark-tone frequency.

I have no quarrel with W0RLI, W5XO, KD5SL or N4QQ. I participated with them for months in "STA" PBBS activity, and they are all fine gentlemen. Our experience on 10 MHz was that Paul Rinaldo dictated, through VE3GYQ, the specific frequency upon which

Continued on page 17

AEA's NEW PK-232MBX With PakMail™





Now AEA's popular PK-232MBX multi-mode data controller has all of the features you've been asking for...PakMail™ mailbox with third-party traffic, seven-character AMTOR sel-call, TDM (Time Division Multiplexing) Rx for SWL and priority acknowledgment features. Compatible with almost every computer or data terminal, you can enjoy the full spectrum of digital communications with the PK-232MBX.

All Operational Modes. The PK-232MBX includes all of the **recognized** data modes available today... AMTOR, ASCII, Baudot, CW, FAX Tx and Rx, NAVTEX marine and packet.

Modem Superiority. An eight-pole chebyshev bandpass filter limiter-discriminator modem enhances the signal-to-noise ratio at the detector and virtually eliminates interference from adjacent signals. This system is superior to PLL modem technology which was designed for minimal noise interference.

PakMail.™ PakMail™ mailbox with third-party traffic is now a standard feature. Leave and retrieve packet messages around the clock. The PakMail™ plug-in board/update is compatible with all PK-232's. Contact factory for details. The upgrade also includes TDM (Time Division Multiplexing) decoding and seven-character AMTOR sel-call. Priority acknowledgment is also included to reduce packet collisions.

FAX Transmission. The **first** multi-mode TNC to transmit FAX, the PK-232/MBX supports the widest range of printers using the optional RS-232/printer cable.

Host Mode. Only AEA provides a fully functional Host Mode which enables programs to control the TNC more efficiently. Programs include PC-Pakratt with FAX for IBM PC and compatible computers, COM-Pakratt with FAX for the Commodore 64 and 128, and now MacRATT with FAX for the Macintosh.

Two Radio Ports. Independent radio connection ports allow interchangeable HF or VHF operation, selectable from the front panel for convenience.

Signal Anaylsis. The PK-232MBX internal software has the exclusive SIAM™ (Signal Identification and Aquisition Mode) feature which lets you tune an unidentified signal. The PK-232MBX can automatically determine the signal's mode, baud rate or speed and configuration.

You Deserve the Original. AEA was the first to produce a multi-mode TNC, and it still remains the standard by which all other TNC's are compared. Don't settle for less.

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

CONTESTING

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

One ingredient that keeps the pot boiling on contest weekends is the optimism generated by station upgrades and usually it's the antenna system that gets the attention. Let's face it. If manageable sized tri-banders did it all, giant monoband beams wouldn't be on the market. The drawback to building a pileup-busting antenna system is getting it up without creating an epic involving insurance adjusters and undertakers.

During October I moved my aluminum forest. My old neighbors held a house-cooling party for me (I wasn't invited) and then rushed home to re- install their made-in-Poosong telephones and the rest of the electronic marvels that haven't worked since the day I bought my first amplifier. Most of it is now back in the air including the 100-foot towers and monobanders. Easy? No. But without the right gear (and the right help), it would have been impossible.

Here are some truths gleaned from literally hundreds of hours spent hanging from the side of a galvanized tree:

You need a gin pole and a length of 1/2 inch rope that is three times the height of the tower. You cannot grip smaller rope. Use a mountain- climber quality carabiner ($8-$10) (Fig-4, pg 8)to clip the load to the rope (no knots). Thread the rope through the gin pole and tie the ends together so the ground crew can pull the hook back down after each section is raised (Fig-1, pg 8).

A tower kit also requires a couple of heavy-duty pulleys that can be clipped to tower rungs. They must have a side release to insert the rope(Fig-2, pg 8) (no threading). Put a pulley at the tower base to make a right-angle pull, AWAY from the tower. For antenna installation you will need a 4:1 block (Fig-3, pg 8).

When I climb, I carry my tools and a pulley with the middle of the main rope hooked through it. Leather sailing gloves (open fingers) afford some protection against the sharp-pointed, galvanized drips and small parts are always kept in a pocket where my gloved hand won't fit. For short periods, running shoes give me a more positive "feel" on the tower but stiff-soled boots are more comfortable. Remember to include a ream and a punch to clean out and align the bolt holes on each section.

I used to think that a hand-held radio was a nifty idea but I always ran out of hands when I needed it. Instead, I stuff a couple of rocks in my pocket. When I have communications problems, I throw rocks at the crew. Rocks also work for people who don't wear hard-hats.

A light rope hooked and a bucket to ferry parts up and down the tower never worked for me. If there were two ropes, the bucket would spin and the ropes turned into a one-hunk-of-unison snake.

I tried the copper stuff to lubricate and increase the conductivity of the tower joints. It spreads and stays messy... forever. The last thing a climber needs is greasy hands. The problem may ixist when you take it down. A tower that's been up for a few years acts as if it were welded together. I reversed the jaws on a small vice to use as a screw jack to pry the sections apart. When the crew made rude remarks about my IQ, I started hooking it to the tower to keep it from crashing down when the sections came apart. Anything up the tower that can fall, WILL.

I used tower a bargain? Even when it's in good shape, if you add the stresses on sections that have been in the air to the manufacturing tolerances between batches you can have fit problems. The ground crew refers to the pry-bar-and-sledge-hammer process of fitting old tower to new tower as "Norwegian oil". When the application takes place above 100 feet, the entertainment value compares to root canal surgery.

The cost of phillystran vs. aircraft cable or EHS seems excessive until you include the time, insulators and hardware needed to break it into non-resonant lengths. One, windy, contest morning Jay was running Europe on a 20 meter beam 96 feet above me. I reached up to check the tension of a bottom guy wire and got a nasty RF burn. This was an unbroken cable grounded to both the tower and the guy anchor. I'm not calibrated as a watt meter but even before my finger stopped smoking I recognized wasted RF, interference to the beam pattern and a safety problem. I run phillystran from the tower down to about the height that a tall teen-ager could reach with a pocket knife. I then use aircraft cable to attach it to the guy anchor. Unless you are trying for a divorce, don't wait until winter and then pot the phillystran end connectors in your basement.

Flat-topped towers with thrust bearings are a necessity. The short top is easier to handle, especially if you are raising the rotor and cable at the same time. I also suggest two inch, schedule-80 mast. A pipe top with an aluminum mast handles a light tri-bander, but forget stacking.

Use riser clamps to support the mast on the thrust bearing. The locking screws on the bearing are not fail safe and will slip.

The only way to raise an antenna is to build a tram line from a length of 3/16 inch aircraft cable approximately 1.5 times the height of the tower. Secure the top end to the mast at a point about a foot above the bearing. Attach a riser clamp on the mast a couple of feet above that and hook your 4:1 block(Fig-3, pg 8). Position the unextended gin pole on the tram side of the tower with pulley facing outward (Fig-1, pg 8). I use my pickup truck as the ground anchor for the tram and a come-along to tighten it to about the same tension as the top guys. The climber comes down before the tram is tightened.

On the ground end, invert a pulley (hook down)(Figs 1 & 2, pg 8) so it runs on the tram cable. Untie the main rope (no longer a loop) and clip the carabiner to the tram pulley (Figs 1 & 4, pg 8). Marty, WB7RBJ designed a boom cradle to attach the antenna to the tram but you

Continued on next page

CONTESTING Continued from pg. 8

can just rope it to a balance point as long as the boom to mast bracket is not impaired by your method of attachment.

You will need several hundred feet of light, (water ski) plastic rope to control the beam. The ends of this rope are tied to the balance point of the boom and then loosely looped over an element on each end to control side-to-side movement while the beam is on the tram (Fig-1, pg 8). The plastic rope must be slippery enough to slide clear when untied so it won't hang-up on the beam (I know a guy that had to set fire to his down line to get it off). A 2nd line goes over the top of the boom at the balance point and ties off to an element about a foot from the boom on the tower side of the beam. Pulling this line raises the high-side elements to keep them at about the same angle as the tram line when the beam goes up. Some mast brackets only bolt on one side. Be sure it is properly oriented to clamp to the mast!

It takes at least a four man crew. One person can handle the light ropes for attitude control while three are needed for the main haul. Pull by grasping the rope and walking back, in relays. Doing it hand-over-hand can start the beam oscillating which makes it difficult to control.

When the beam reaches the top, the climber goes up the tower and transfers the load from the tram pulley to the block and tackle (Fig-3, pg 8). The ground crew then releases the tram line so it can be removed from the mast (reattached it BELOW the beam). Now it's an easy, one-man pull up the mast to be bolted into position.

A friend once told me that there were two cardinal rules which apply to towers:

1) Nobody should ever stand directly under the tower.

2) Don't drink a lot of coffee before climbing. (I am not sure but I think the two rules are related.)

Good luck in the RTTY ROUNDUP on the first full weekend in January!

de Hal, WA7EGA

HITS & MISSES Cont. from page 2

itive vane, if you like the RTTY Journal, please tell your friends and QSO contacts about us.

I know it is hard to take pen in hand and write to someone, especially to some one you don't know personally. But in the digital community, we are all like brothers and sisters, so we should feel at ease writing to someone within our great fraternity. That is what all the Journal staff members would like. They really like and want your input, your ideas, your suggestions and criticisms. Try to think about what it would be like in their shoes, having to produce 10,000 characters per month ten months of the year. But, with your help and encouragement, they will do it happily, for then they know how much you care. Also your letters will inspire them to write about the subjects you are interested in. If you are unsure of who to write to about a particular subject, then write to me and I will forward your letter to the appropriate columnist. Why not start off this new year with a resolution to write to us and we all thank you.

THANK YOU STAFF

A very special thanks goes out to all the staff of the RTTY Journal. I think you have all done an outstanding job this year. Your articles have been stimulating, enlightening, humorous, encouraging, promising, informative as well as instructive, and above all very much appreciated. The many, many fine comments I have received throughout the year attest to your exempleary contributions to our digitasl mode.

WESTLINK UPDATE

In the last issue of the Journal I reported that Westlink had made a broadcast alleging that RTTY operators had interfered with some Packet operations during the San Francisco earthquake. I have since learned from Bill Pasternak, WA6ITF of Amateur Radio Newsline that the interference was from the RTTY mode but no known persons were connected to the interference. Bill also related to me that there have been numerous occasions where deliberate jamming has occurred and the latest method being used to jam Packet has been with RTTY signals.

Since broadcasts sometimes are very brief and only cover the highlights of a subject, it can seem like the stories are directed against one group when it is not necessarily so. That is what happened in this case and I'm happy to report that as far as can ascertained no known legitimate RTTYers were involved in the jamming.

POOR RICHARD

Poor Richard, N6NKO our Packet columnist. Seems Richard's computer has contracted a virus and his hard drive is brain dead. Consequently, he will not have an article for us this month. He wishes all a happy Holiday Season though and feels certain the problem will fixed soon and he'll be back with again next month. Good luck Rich.

GUATEMALAN RADIO CLUB REQUEST

The Guatemalan Radio Club requests that all those RTTY operators, who are not in agreement with the BEACON C-64 operation of TG9AXB on 1408 (+-) at 74 Baud, please communicate their objection in writing to:

President,
GUATEMALAN RADIO CLUB
P.O. BOX 115
Guatemala City
Guatemala
Central America

SEASON'S GREETINGS TO ALL

It is my sincerest wish that each of you has a Merry Christmas Season and that Santa does not get hung up in your antenna as he did on our front cover. And may your New Year be a prosperous one, filled with love, understanding and peace. 73's **de Dale, W6IWO**

Humm! Thought there was a Radio on this list for my RTTY friend _____.

ANARTS 1989 RTTY CONTEST RESULTS

SINGLE OPERATOR

	CALLSIGN	*POINTS*	*MULT*	*CON*	*VK'S*	*TOTAL*
1.	VK5RY	11647	103	6	NIL	7,197,846
2.	SM4CMG	3112	106	6	1000	1,980,232
3.	ZL2AKI	4020	56	6	6500	1,357,220
4.	4M5RY	3101	70	6	500	1,302,920
5.	UA3TT/RF1F	2496	73	6	600	1,093,848
6.	HK1LDG	2537	68	6	600	1,035,696
7.	NE4R	2706	60	6	1000	975,160
8.	VK8BQS	3380	46	6	NIL	932,880
9.	VK3EBP	3349	44	6	NIL	884,136
10.	N6GG	2228	67	5	2000	748,380
11.	VU2SJV	2252	49	6	800	662,888
12.	DJ3IW	1528	68	6	600	624,024
13.	OH2LU	1308	72	6	800	565,856
14.	W6/G0AZT	1598	49	6	1200	471,012
15.	SP3SUN	1230	57	6	800	421,460
16.	CT1BHX	1422	45	5	600	320,500
17.	CT4KO	1316	41	5	300	270,080
18.	VK2SG	1411	36	5	NIL	253,980
19.	TG9VT	1159	41	5	1500	239,095
20.	W2FCR	943	40	6	700	227,020
21.	WF5E	959	34	6	700	196,336
22.	OD5NG	728	45	5	400	164,200
23.	UA3TN	594	45	6	100	160,480
24.	K6WZ/0	1019	37	4	600	151,412
25.	OK1FGC	594	32	6	400	114,448
26.	KI4MI	719	31	5	700	112,145
27.	EA8RA	849	31	4	400	105,676
28.	KL7PQ	847	23	4	1300	79,224
29.	UC2ACT	501	28	5	200	70,340
30.	VK2FKO	1096	16	4	NIL	70,144
31.	JA2NNF	751	23	4	600	69,692
32.	W2KHQ	406	20	5	200	40,800
33.	N0FMR	461	19	4	400	35,436
34.	Y43GO	300	28	4	200	33,800
35.	VE6CNV	409	14	5	400	29,030
36.	SP0AUV	262	19	5	200	25,090
37.	K8CV	399	12	3	500	14,864
38.	LA2IZ	135	14	3	NIL	5,670
39.	WB9B	158	10	3	NIL	4,740
40.	SP2UU	34	5	2	NIL	340

MULTI-OPERATOR

1.	LZ2KIM	5169	134	6	800	4,156,676
2.	VK2RT	9236	75	6	NIL	4,156,200
3.	UZ9CWA	3283	86	6	1200	1,695,228
4.	UB4MZG	2164	46	6	900	598,164
5.	SP5KVW	666	28	6	100	111,988
6.	SP9KVF	172	16	4	100	11,108

SWL

1.	I1-21171	34	5	2	NIL	1,794

CHECK LOGS FROM: SM6APB, SM5APS, & VK2EG

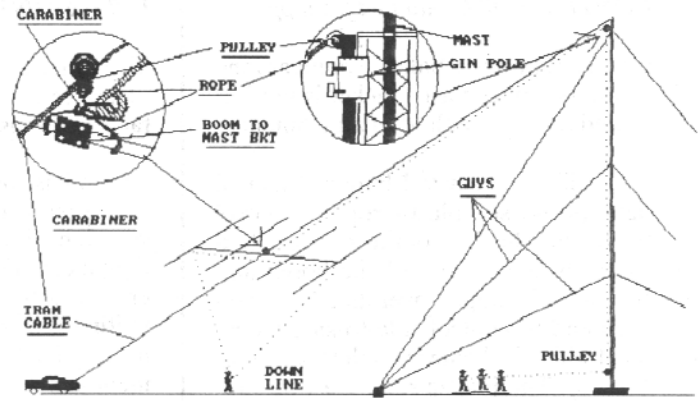


Fig-1

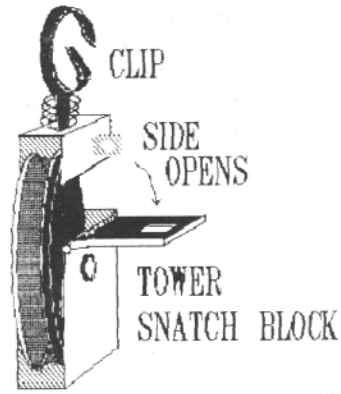


Fig-2

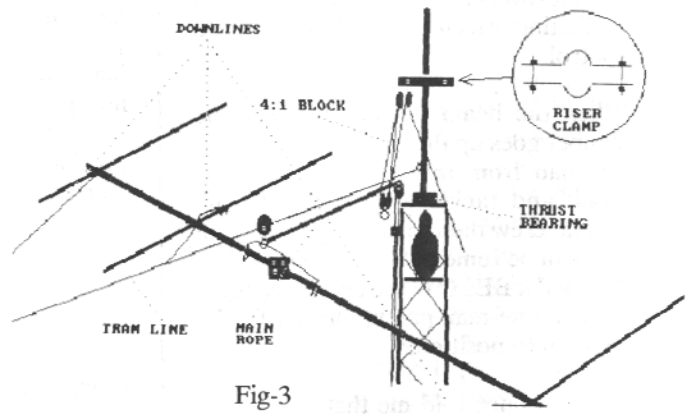


Fig-3

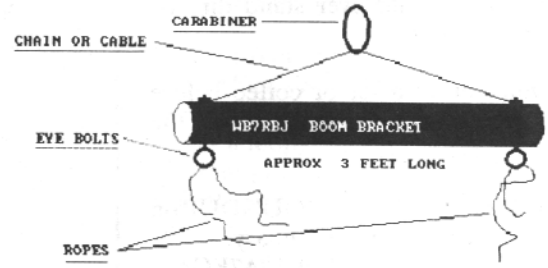
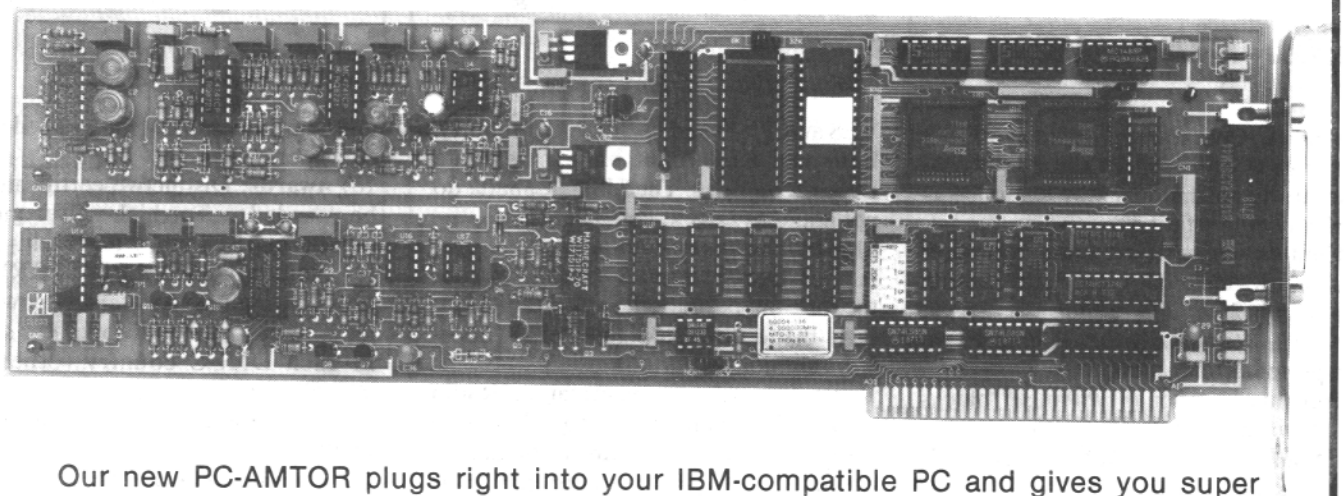


Fig-4

PC-COMPATIBLE AMTOR, RTTY, & CW . . .
THE NEW HAL PC-AMTOR



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.

• **AMTOR:** We have an entirely new algorithm that is really great! No more long waits to synchronize, no more strange link failures. This AMTOR *works*! Want to try CCIR 625 AMTOR? It's now legal and HAL has it!

• **RTTY:** Baudot or ASCII with an optimized 170-shift two-tone modem; from 45 to 110 baud.

• **CW:** A new algorithm for CW—the best yet!

• **AUTO-MODE:** Yes, that's right—PC-AMTOR is intelligent. It knows the difference between AMTOR, RTTY, and CW. Tune the receiver and sit back—we do the work. PC-AMTOR automatically finds the correct speed, code, and polarity—no more guessing!

• **FRIENDLY SOFTWARE:** Split screen with status indicators and pull-down menu selections. No more confusing key combinations.

• **TWO CONTROL PORTS:** PC-AMTOR is unique. It has two control ports—one using the PC bus and the other for serial I/O control. Run HAL software for normal AMTOR/RTTY/CW operation; use the serial control port and run your APLink or mailbox software. Now you can have both worlds!

• **WHAT—NO PACKET?** That's right. We offer the RPC-2000 and ST-7000 for HF Packet. HF packet uses different data rates and has special requirements. It deserves special treatment. Also, your High Frequency AMTOR, RTTY, and CW deserves better treatment than a compromise "do everything" gadget.

THE PC-AMTOR (Model Number PCI-3000) from HAL . . . . . $395.

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

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

RULES, 2nd ARRL RTTY Roundup

Packet - RTTY - AMTOR - ASCII

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

2) **Contest Period:** First full weekend of January. Begins 1800 UTC Saturday, Jan 6, and ends 2400 UTC Sunday January 7, 1990. Operate no more that 24 hours. Two rest periods (for a combined total of 6 hours) must be taken in two single blocks of time, clearly marked in the log.

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

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

5) **Entry Categories:**

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

1) less than 150 W output
2) 150 W output or more

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

6) **Exchange:**

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

7) **Scoring:**

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

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

8) **Miscellaneous:**

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

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

9) **Reporting:**

(A) Entries must be postmarked no later than 30 days after the end of the contest (Feb 7, 1990). Any entry making more than 200 total QSOs must submit duplicate check sheets (an alphabetical listing of station worked). No later entries an be accepted. Use ARRL January VHF SS forms, a reasonable facsimile thereof or submit entry on Diskette.

(1) Official entry forms are available from HQ for an SASE with two-units of first class postage.

(2) You may submit your contest entry on diskette in lieu of paper logs. The floppy diskette must be IBM compatible, MS-DOS formatted, either 3.5 or 5.25 inch (40 to 80 track). The log information must be in an ASCII file and contain all log exchange information (band, date, on and off times, time in UTC, call of station worked, exchange sent, exchange received, multipliers (marked the first time worked) and QSO points with spaces as delimiters. The summary sheet must be in a separate ASCII file. One entry per diskette.

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

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

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

Recommended Novice Digital Operating Frequencies (KHz)

10 meters: 28100-28150*
suggested simplex Packet -radio frequencies:
28102.3 28104
* Authorized power output 200 watts maximum for Novice/Techs only on the 10 meter Novice subband.

Canadian Multipliers

Prefix	*Province*		
VO1NO2	NFLD/LAB	VE4	MB
VE1	NB	VE5	SK
VE1	NS	VE6	AB
VE1NY2	PEI	VE7	BC
VE2	PQ	VE8	NWT
VE3	ON		VY1

Starting/Ending Time Conversion

	UTC	*EST*	*CST*	*MST*	*PST*
Starts Saturday, January 6, 1990	1800	1:00 PM	12:00 PM	11:00 AM	10:00 AM
Ends Sunday, January 7, 1990	2400	7:00 PM	6:00 PM	5:00 PM	4:00 PM

CONNECTIONS

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

How time flys! Hard to believe that next month begins my third year with this column. In retrospect, this was a very good year. I had the good fortune to attend the Dayton Hamvention for the first time, meeting many fine Hams of the digital persuasion, including quite a few of our RTTY Journal subscribers. I enjoyed reading your letters and helping where I could. For those whose patience was tryed and those who did not get the answers they sought, my apologies. Will try harder next year. Without you readers and your letters, questions, suggestions, ideas and complaints, there would be no column. And speaking of letters, lets see what the mail box contains.

WE HAVE MAIL

Our first letter concerns availability of software for computers other than the IBM PC and COMMODORE 128/64 The following letter is from H. W. Hitchen, KL7PG, 39331 Brentwood Circle, Anchorage, Alaska 99502.

"Gentlemen: The digital part of our Amateur Radio hobby is ever increasing as you are all too well aware.

"My personal experience has been very frustrating in that, unless the Amateur happens to have one or two brands of computer, the availability of software suited to and specifically written for Morse, Baudot, ASCII, AMTOR etc. and that specific computer, is sadly lacking.

"Most hardware is fine but the software that must be searched for separately is dismal. Modem programs, to which the vendors invariably refer me are not satisfactory and, if they do work, are clumsy and slow - fine for uploading and downloading large files but too cumbersome and, in most instances too limited in capability for the Amateur use during a normal RTTY QSO.

"What I am trying to do is encourage Manufacturers of TU/TNC's to write user friendly software programs for a greater variety of the more popular computers that have recently been, or are now on the market, for their particular TU/TNC so that the Amateur who is ot a PHD in computer programming can easily operate his equipment in an efficient and enjoyable manner.

"In my case I use an Enhanced Apple IIe and have enjoyed about 5 years of RTTY/AMTOR etc., using and old Kantronics Interface II with a software program they (Kantronics) wrote for their TU and the Apple II series of computer. Recently I "upgraded" to a new TU/TNC with the hope of improved performance. To my dismay it has been a disaster, not that the hardware does not work well but that I have been unable to locate a really suitable software program to tie the whole package together. As a result, unless I can find a software program written for this purpose and this computer and TU/TNC I will be forced to return to the "old standby" Interface II.

"Copies of letters to various Manufacturers are inclosed. Any suggestions?" Very truly yours, H. W. Hitchen - KL7PG

COPY OF LETTER TO MANUFACURERS

"Gentlemen: I believe you may be overlooking a significant market for your TU/TNC's by not including the older, and very numerous Apple computers in your portfolio of software available for the Amateur Radio users.

"While I do not have firm statistics as to the number of Apple II, II+, IIe and IIc Computers out in the field I know they are very numerous and increasing their usefulness by availability of a straightforward, simple user friendly software package for Morse, Baudot, ASCII, AMTOR, and perhaps, Packet would surely be welcomed by those who depend on these machines for their domestic and small business computing.

"The software should include buffers readily inserted (transmitted) directly into an ongoing QSO or as "stand alone" messages, such as CQ, etc. The Kantronics Hamtext AMTORSOFT program, written for their Interface II and the Apple computers is an ideal operating package, that, if adapted to present TU/TNC's would be very much welcomed.

Please see attached copy of letter to Apple Computer for further comment." Signed H. W. Hitchen KL7PG

COPY OF LETTER TO APPLE COMPUTER

"Gentlemen: As a long time (7 year) satisfied user of Apple products I pose the following comments and questions, both to help my dilemma and perhaps enhance your sales/demand acceptability:

"As a major supplier of popularly priced Personal Computers, I find it difficult to understand why one facet of PC application is being universaly ignored because of the lack of suitable software.

"Specifically I refer to the use of PC computers with Amateur Radio. For some reason, the manufacturers of Terminal Units for Amateur Radio have only provided software and dedicated hardware for this application for the IBM, Commodore, and now a few are looking at the MacIntosh. What is to happen to those of us who have the Apple II, II+, IIe etc. series computers for example?

"I have just experienced the most exasperating experience of my 52 years in Communications, having recently purchased an AEA-RS-232 terminal unit, and AE Serial Pro Card to support the AEA-232 and a Software Program recommended by both vendors to hopefully upgrade my former Morse, Baudot, AMTOR ASCII system using a Kantronics Interface II and the associated Hamtext AMTORsoft software program, for use in conjunction with my Apple Enhanced IIe PC. The software program recommended is oriented toward conventional wire-line modem communications and totally unsuitable for Amateur Radio multi buffer transmission inclusion. Extensive search among various vendors and software distributors has failed to disclose a suitable workable solution for this series of Apple computers. I would refer you to the Kantronics Hamtext AMTORsoft as an example of the type operation our group would require, but utilizing the more recent terminal units available from the major suppliers of such hardware.

"The volume of potential users would seem quite considerable in that within the United States there are approximatly 600,000 Radio Amteurs and throughout the remainder of the world approximately 700,000 Amateurs, a total of approximately 1,300,000 possible users of this mode of communication. Supposing 10% of these licensees elected to use digital communication modes, a very conservative estimate I am sure, (Morse, Baudot, AMTOR, packet, etc.) that would still make a market of 130,000 potential users.

"Inasmuch as so many families have used your

Continued onnext page

CONNECTIONS Cont. from pg. 13

computers, as a result of primary and secondary school programs, to introduce themselves and their family students into "computerese" through their school's presentations, wouldn't it be logical to expect that, if the hardware manufacturers would include your Apple computers, in their software programs, that a very considerable number of those would utilize your product in their hobby/avocation of Amateur Radio?

"As it stands now, the Amateur Radio fraternity, 1,300,000 strong, worldwide, are being forced to abandon your Apple products in favor of the more currently favored PC computer brands.

(Note: At this point Mr. Hitchen lists the four major manufacturers of multi-mode controllers)

"These United States Manufacturers must be made aware of the existence of your substantial portion of the potential Amateur Radio Fraternity Market which already exists, because of their school computer purchases for basic education which already exist in their homes, or the current trend will totally exclude your product, both prior and future, from this portion of the world's Amateur Radio digital market.

"Hopefully, a "prod" from you, the manufacturer of Apple products, will encourage these companies to include your past, present, and future PC's in their offerings of Terminal Units oriented to the Amateur Radio Fraternity, worldwide.

"All else failing, might not your organization develop software programs similar to the Kantronics Hamtext AMTORSOFT for use with the most poplular Terminal units compatable with the Apple computers, past, present and future models, for the AEA RS-232, Kantronics KAM, HAL PCI-3000, and MFJ 1278, and future versions, and make these available, through the respective TU vendors, for their products as they now do for the IBM, Commodore and a limited selection of the MacIntosh?" -"Very truly yours, H. W. Hitchen - KL7PG".

Wow! One certainly has to give KL7PG a capitol E for Effort. Thank you very much, H. W., for sending Dale a copy of your correspondence. However, being a Cynic of the first order, I think your letter would have had more effect if the "two Steves" still owned Apple Computer instead of the Bean Counters currently running the operation. It is a sad fact that applications software availability often lags computer hardware by many years. Hardware firms like Apple Computer want to sell hardware and will only create software when it is required to sell the hardware. Apple created their own operating system software because it was needed to provide a working computer. But operating system software is not applications software (software that does something useful for the computer user). Apple is not alone in this regard. Many hardware firms, Apple included, try to interest independent software developers in writing applications software for their product. Microsoft Corporation is a classic example of an independent developer creating applications software such as word processors, draw programs, spreadsheets, programming languages, and the like. However, they normally conduct a market survey before they start on a project, and if it looks promising they go to work on the applications program. Then they cover their bets by "pre-availability announcement" (sometimes called "vaporware") to see if there is really enough interest to make the project worthwhile.

Programmers write programs for two reasons, to fill a specific personal need, or to make money. If it is to make money, they are going to go with the biggest numbers, i.e, IBM hardware. H. W., I wonder if you have tried the Ham Radio forum on Compuserve? It is called HAMNET. That forum has some Ham Radio specific software for different types of computers. I was just on HAMNET but could not find any references to Apple. However, it is a good place to leave a "request for help" message. Someone might know of a program that would fit your needs. Also, I found an "Apple Support Group" which supports Apple and MacIntosh in Fairbanks AK. The name is 1496-Apple Mousse, Farthest North Apple U., P.O. Box 80176, Fairbanks, AK 99708. There is also a computer BBS in Anchorage at (907)258-6666 running 300 - 1200 Baud, 8 data bits, no parity and 1 stop bit. It is called Galactiserve and may have an Apple SIG (Special Interest Group). I found these two groups in Computer Shopper magazine.

AEA AND ICOM ON COMPUSERVE HAMNET

I see that both AEA and ICOM have forums on Compuserve HAMNET. I have just been reading the traffic on those two forums and it is quite interesting. If you are on Compuserve, "GO HAMNET" and see what I mean. Happy to see that these two firms are doing what I (and no doubt, others) suggested several years ago.

NEW PRODUCT ANNOUNCEMENT

HAL PC-AMTOR Personal Computer Interface Card is a new HAL product designed specifically for radio amateur AMTOR, RTTY, and Morse code operation. The PC-AMTOR circuit board plugs directly into an IBM-compatible personal computer and includes user-friendly terminal software on a 5.25" diskette.

PC-AMTOR features improved AMTOR performance and simplified use. Both CCIR-476 and the NEW CCIR-625 AMTOR protocol are included. HAL software uses pull-down menus - there are NO confusing and cryptic commands to remember. Modes and features may be changed either via menu or by using "EXPERT" key letter commands.

PC-AMTOR also includes standard Baudot and ASCII RTTY and an improved Morse code send/receive algorithm. a new AUTO RECEIVE mode takes the guess work out of monitoring - no more "trial-and-error" searching for the right combination of code, rate, and polarity of a signal.

PC-AMTOR includes a new "HOST MODE" serial I/O port. This port allows you to use PC-based APLink or mailbox programs, programs that only support PC serial I/O modem connections. PC-AMTOR therefore gives the best of both worlds - user friendly HAL terminal software or third party network software.

PC-AMTOR is a full length PC-compatible card and requires a standard PC-XT or PC-AT with 640K of RAM and a minimum of one 360K floppy disk drive. Monochrome, CGA, and EGA video are also supported. PC-AMTOR does NOT require use of standard PC serial or parallel I/O interrupts or addresses.

Continued on page 17

AMTOR

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

My goodness, time really flies! Here we are, close to another year's end. I hope you all had a very good 1989 and that the Thanksgiving turkey did not survive long enough, for you to have it for Christmas Dinner as well! (Turkey comments, naturally only apply to Stateside subscribers).

What has happened on the AMTOR scene in the past twelve months? Well, there have been numerous APlink mailboxes appearing on most of the HF bands. More about that system later.

There have been a lot of new Amtorites savouring the delights of this fascinating mode. Some having a bit of trouble at first, but usually getting a helping hand from the more experienced operators, which is very encouraging to see.

More AMTOR signals are creeping above .080. There is no way of telling if these are the new guys, gals or not, but please, let's all try and remain within the .070 -.080 portion of the DX bands. Of course there are exceptions, like when I see a rare or much needed country calling CQ in FEC at 14.098 and no takers. Wouldn't you??

At least two TNC manufacturers have brought out updated software, implementing CCIR 625 (1986), which has become the New AMTOR standard. DON'T panic folks, your "old" CCIR 476 version software is not obsolete. You will not have to go out and spend those hard earned dollars, pounds, lira etc., to still be able to operate the finest mode there is.

CCIR 625

1. A CCIR 625 set-up, must be able to communicate with all of the older 476 systems. (good job too, I cannot afford a change!)
2. There is now provision for a SEVEN (7) letter SelCal, which should prevent any duplicate Amateur SelCals.
3. Automatic identification of BOTH stations when in ARQ mode. This feature will help prevent interference by another station who may call, when he sees the link drop between you and the station you were originally connected to. Most useful when you are extracting information or messages from a mailbox and the link drops due to QRM etc.
4. Phasing or synchronous code while in FEC (mode B). A Subject very dear to my heart! CCIR 625 recommends 16 idle pairs at the beginning of a transmission in FEC, then 4 idle pairs every 100 characters. This is somewhat better than CCIR 476, but by no means adequate under HF conditions. We can only hope that the software programmers will "insert" more phasing codes into their programs so that FEC transmissions will be more readily decoded at the receive station.

What appears above, is only a tip of the NEW AMTOR mode iceberg. For more details on the subject, I suggest you read November 1989 issue of CQ magazine. There is a very good article on the subject of CCIR 625 written by Bill Henry, K9GWT. Copyright, prevents me from quoting verbatim and Bill may not buy me another Bacardi and coke if we meet at Dayton next year. Hi!

APLINK REVISITED

I received a very nice letter from Vic Poor, W5SMM, the author of the widely used APlink mailbox program. Thank you Sir. You remember that I was getting a bit frustrated with the CR/LF method of changeover used in this system.

Vic informs me that his latest versions of the program, will accept EITHER a CR/LF or the + ? changeover at the end of a line. Vic realized that there were quite a few ying-yangs, like me, who found the System changeover (cr/lf) a bit difficult to comprehend. Vic goes on to explain that the reason for the System (cr/lf) method in preference to User + ? method, is mainly due to the fact that Packet BBSs use this format of CR/LF to signal a BTU command. AP stands for Amtor Packet and can be tied into the National Packet network by the SYSOPs. Using similar commands for both modes, is a very logical reason for making the commands short and as Vic says, "since I am writing the program codes, I get to have it my way!" How right he is and point taken Vic.

Regarding my comments about the CR/LFs I send before text. Vic maintains that after you "logon" with the system, you can send as many CR/LFs as you wish, the system will ignore them. It is even recommended that you send the odd CR/LF before each command, especially if you have been idle for any length of time. Well, after I received Vic's letter, I gave the APlink at WB7QWG/7, a hard time and I must admit that despite the profuse use of CR/LFs on my part, there were no "if you need help" prompts at all! Maybe my earlier experiences were due to Murphy's Law or cockpit error on my part, time will tell.

As I have said before, APlink is a good system, there is NO BEACON to announce its' presence and pollute the crowded airwaves and judging by the amount of stations, worldwide,using it, this system may become the standard for AMTOR BBSs.

BANDPLAN

I wonder how many RTTY operators realize that some of the recent Packet "excursions" on 14.096 and 21.095, are actually sanctioned, by the ARRL!

I was not aware of this, until TG9VT brought to my notice,the fact that there were two files in his mailbox, labeled, R985 and R1020, written by Clark, W9CD. One file is an open letter to the ARRL, questioning the "Gentlemen's Agreement" bandplan and the encroachment of Packet operations in the recognized HF RTTY band segments. The other file, is a partial response from the ARRL. Both files are "required" reading for any RTTYer who feels that something ought to be done about the present situation. I am sure that Clark would very much like to hear your comments and suggested remedies, NOW.

It appears that the ARRL petitioned the FCC for a SpecialTemporary Authorization (STA), to permit unattended, automatic Packet mailbox stations on the

Continued on page 17

SOFTWARE REVIEWS

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GREETINGS, well amidst all the controversy that is occurring in the tiny world of RTTY another month is upon me. This month we are taking the final look at some RTTY software. December brings us an examination of RTTY-PC an easy to use communications program in the $25 range from COMTECH RESEARCH, 5220 Milton Rd., Custer, OH 43511, telephone 419-278-6790. Along with the software from Mike Waters, WD8BTU, came a letter of introduction and an order blank. A couple of very 'famous' W6's were involved with the BETA testing of this product, and frankly it shows -- rather nice job.

One of the things I have never understood about people doing software for limited markets is the reason that they don't contact some of the major types of users and get some feedback on just what it is that people are looking for in software.

As I have just looked at several of the major programs that are on the market, and believe me, some of the multi-mode folks oughta be real glad that I don't have any of their equipment and thus can't review the software. Frankly the most famous multi- mode that many, many of you are using has the worst software I have ever encountered. In fact it is so bad that I made WA7EGA buy a couple of Commodores to contest with !!

Anyway, back to the RTTY-PC. As usual I put the disk in the drive and copied it over to the hard disk.Without reading a single instruction, I first always find the main program and run a utility I have on it to see in what language the code was written. This appears to be Turbo Pascal, an early version with assembler routines.

Then I check out any copy protection schemes, on RTTY-PC there are none. Copyrighted and serial numbered, but with no embedded tricky schemes. I don't know why, but it's a great challenge to me to dis-assemble code and see how people are trying to protect their code. The best way is to embed the user's callsign with-in the program. This is the only way to keep software from spreading without the author or company being compensated !! It just prints your callsign in nice big letters at the top of the screen while running.

Unfortunate, for most authors I then try to crash the program and figure out how to work it while 'live' on the keyboard, with RTTY-PC this proved to not take long. Quickly I got it to go into Transmit with the trusty old Control-T after I had typed in about four lines of text. Of course the next thing I did while it was transmitting was try to activate the ESC and Alt-H (Help) that the bottom of the screen indicates is available for use. Ah ha...Gotcha Mike...You can't do it while transmitting !! Not un-reasonable I know, but the two indicators should be blanked while in transmit if they are unavailable !

I must admit at this point I broke down and printed the manual which is conveniently in a file called manual on the diskette. Now RTTY-PC is not a high priced piece of software so to keep costs down for the user, they let you print the manual yourself -- a good idea.

Nice manual with well indexed ideas and easy to read and understand from my perspective. A few of the quirks of the system are documented there, although, not all. (See Above) The biggest complaint that I had with RTTY-PC was also one of it's highlights. They use an embedded Control-R to return to receive while in transmit (the Good Idea). But typing more in the transmit buffer overrides this (the Bad idea). For Dxing or many other uses the ability to pre-play a set of events in the transmit buffer is a good thing. For example if you are in the pile-up for the NH4 and want to set up a line like ... DE WS7I WS7I WS7I KKK then [Control-R] Then since you are going to get him on the first call from Spokane !!! DE WS7I 599 TU BOB 73 FM JAY WS7I SK [Control-R] you can't do it very well.

RTTY-PC comes up running with regular old RTTY 45 baud and all working pretty good. The program has good buffers, a nice utility to utilize F11 and F12 keys on the newer keyboards, it handles disk files (send and receive). As an additional feature it does ASCII. I find this rather nice and tend to get together with a friend on VHF and run ASCII on a local RTTY repeater.

It has built in color features for those of you running color computers. RTTY-PC has some of the nicest colors and screen layouts that I have seen.

I must admit I am addicted to color at work and program most days all day in color, however, around the Ham Shack color computer are just asking for the old interference god's to getcha. Overall a nice value in a pretty decent program.

This completes our review of some of the communications programs on the current market. I have attempted to give you a look at programs that are generic in nature and should run on any IBM clone type of computer. I must admit to you, that having just looked at programs from the $25 to the $100 dollar range that none of them does the job that I think they should. Now its not that I think we have a huge market with 1,000's of RTTY hams waiting to spend lots of hard earned dollars on software, but rather, as I compare the old MBA-TOR cartridge that retailed for about $70 as I recall from the old days -- NONE come close. (Just sending two more MBA-TOR cartriges to HC5K and HC8GR in Ecuador).

They give you 80 columns, some nicer feature controls, and great disk file ability. NONE do AMTOR, NONE has Control-X Buffer for quick callsign embedding (or I think they don't), NONE has serial number generation for contesting. And I must admit for an old, MBA-TOR addict none has replaced the Commodore with the C64. Now I have another TU the HAL ST-6000 with the IBM...and I must admit for ragchewing nothing is nicer than 80 columns...for as my good friend Marty, WB7RBJ

Continued on next page

SOFTWARE Continued from page 16

says...less than a screenful..isn't even friendly !!!!

Moving on to 1990 we are gonna look at contesting programs and dxing tools. All lined up is a program that we have been using for a while in contesting and some goodies that John, TG9VT, sent down. Hope your Holiday Season brings Joy to you and your family and that 1990 will bring a 24 hour-a-day QSO on 14.098.0. Look for me I might be testing one of those new programs.

73, de Jay WS7I

MSO'S Continued from page 6

authorized "STA" activity would occur. I can only assume that ARRL has misguided the above operations or that the "STA" operations there are clandestine.

I strongly request that you take steps as necessary to relocate all "STA" PBBS activity to avoid the recognized HF RTTY sub-bands."

W9CD's points are well taken. Our RTTY sub bands seemingly are shrinking with each passing day. And, with the increased interest and use of the RTTY mode, head on collisions seem inevitable. This author feels that with respect to 20 Meters, there is abundant room for Packet radio activity above 14100 KHz, and there is no need for Packet activity within the 25 KHz (14075 to 14100 KHz), designated in the so-called "Gentleman's Agreement". Is 25 KHz of 350 KHz on 20 Meters too much to ask for the RTTY mode? I don't think so, and one only has to do a small amount of monitoring to show that it's a very crowded part of the spectrum, without the intrusion of Packet stations.

That's it for this time Gang! I want to take this opportunity to wish each and every one of you the Best of Holiday Greetings! I hope that each of you has a very Merry Christmas, and a Healthy, Happy and Prosperous New Year! A very special Holiday Greeting to our friend and buddy Jerry, WA1IUF!

73--de Dick, K0VKH

CONNECTIONS Cont. from pg. 14

PC-AMTOR will be available in December, 1989 or $395, including software. The model name is PC-AMTOR and the model number is PCI-3000. A new SPECTRA-TUNE tuning indicator, the SPT-2, will be available with integral cable expansion and simple connections to other devices.

PK-232 MBX MAILBOX MODIFICATION

I have just received the PK-232MBX modification kit but have not completed installing it as yet. I immediately noticed one problem - the mounting post/studs furnished with the kit are threaded for 6-32 threads. My early model PK-232 has metric thread standoffs for mounting the pc board. Upon inquiry, I learned that approximately 500 of the first PK-232 units had metric hardware. So if you have ordered the kit, and have metric threads, you will have a problem. I just plugged the daughter board that was in the kit directly into the vacated PROM sockets on the main board without fastening the daughter board down with the two threaded posts. Should work OK until I get the proper hardware, as long as I don't shake it or turn it upside down. Hope to have the review completed for you in the next issue.

I also installed the 6 tantalum capacitor across the 13-volt power bus in the PK-232 per the note on TG9VT's BBS. My scope is on the blink so was not able to measure the before and after noise levels on the power bus. I would like to hear from anyone who has actually measured the before and after noise levels and was it 120 Hz ripple, high frequency noise or what? What 12-volt power supply was used, the AEA power supply, or Radio Shack (the PS I use) or something else? Remember that the +13 volt line is not regulated by an IC regulator, although it does have a filter capacitor on the bus after it enters the PK-232. An IC regulator can greatly reduce noise and ripple on a line. There are many things that could cause noise to appear on this power supply line, many of them external to the PK-232. More next month. Until then, 73 **de Cole W6OXP**

AMTOR Continued from page 15

HF bands on 3603.3, 7091.3 and 14108.8 (center frequency). There were certain clauses pertaining to harmful interference, malfunction of equipment and transmission of improper communications without corrective action, etc. There also appeared to be a clause in the STA, permitting these trails to, "retain the flexibility of changing a few KHz, in order to avoid interference".

A FEW ??

How many, is a FEW ?? One, Two or maybe Three or so, but from 14.108.8 down to 14.098 is TEN, plus/minus the difference between dial, mark or space frequency! What are these Gentlemen doing on 21.095 (mark)?? Have a listen above 21.100 folks, do you hear much, if any, Packet activity? I think not!

This revelation is rather staggering, to the point where itdoesn't make any logical sense. A few months ago, the ARRL kindly moved their Morse code practice sessions on 20M, down and out of the "gentlemen's agreed" RTTY section. That move,helped some of the Amtorites to remain between .070 and .080 and we say, thank you ARRL. Then all of a sudden, up pops these high power Packet stations, taking up a fair amount of spectrum, due to the nature of the shift used, plus three times the Baud rate formula.

It is interesting to note, that the Packet trials are doing a fairly good job of interfering with W1AW bulletins, sent out by, none other than, ARRL! Rather silly, don't you think?

That's it for this month, have a Very Happy Christmas, a Prosperous New Year and I hope that Santa fills all your stockings with lots of new Ham gear. 73 GL and DX **de Eddie,W6/G0AZTF**

AWARDS

Betsy Townsend, WV7Y
POB 644
Spokane, WA
99210

AWARDS AWARDS AWARDS
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Thanks to everyone who wrote to me with information to update the RTTY Journal DXCC Rankings. With your periodic updates I can keep the listing interesting reading for everyone.

As I read my first bit of fan mail it became apparent that I had made a glaring error in my last article. I confused two different methods of verification and unfortunately confused everyone about how to get your call and scores listed.

To redeem myself, I now offer the official rules for scoring the RTTY Journal DXCC Ranking:

The number worked AND the number confirmed is based on the operator's word. All I need is a postcard from you indicating how you correctly stand.

Gee, that's so simple it's amazing I messed it up so badly!

While we're at it, please note that a great way to claim a RTTY Journal award for your wall (WAC, WAZ, DXCC) is to send me a copy of the verification slip from a national organization or society. For example, if you've sent your cards off to Don Search and he sends you back confirmation then your cards are acceptable. Also, some organizations will verify your log and endorse it as meeting DXCC qualifications.

This saves you the sweat of mailing precious cards to me or the great expense of xeroxing cards. Please note, though, that I do not want your Uncle Buford from Duluth endorsing your log as qualifying for an award!

To help hams "Down Under" I am adding ZL2GX, Jock White, as an acceptable endorser for awards.

Congratulations are in order for several recent award winners.

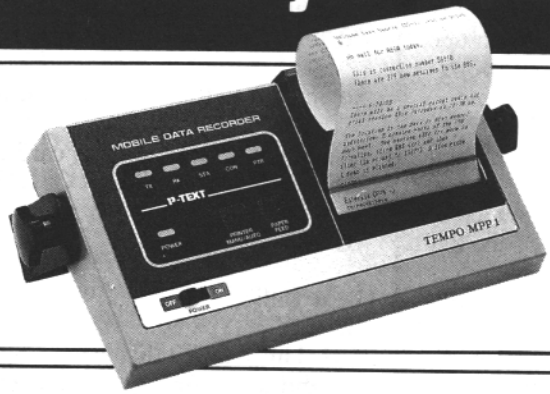
WAC has added : Stanislav Starzyk, SP6IPY; Don Field, G3XTT; Marco Ibridi, I4IBR; and Satoshi Nagayama, JR2PAU.

DXCC adds to their ranks: Satoshi Nagayama, JR2PAU; Ikusuke Miyazaki, JA6TMU; Robert Canning, G0ARF; and Eddie Schneider, G0AZT/W6.

The awardees for WAZ are: J. W. Watson, W7MI; Satoshi Nagayama, JR2PAU; Tapani Juhola OH2LU; and Mikio Kuwayama, JR2CFD.

A final note on the DXCC ranking:

HENRY RADIO IS THE PLACE
. . .THE BEST PLACE
to fill all your data communications needs

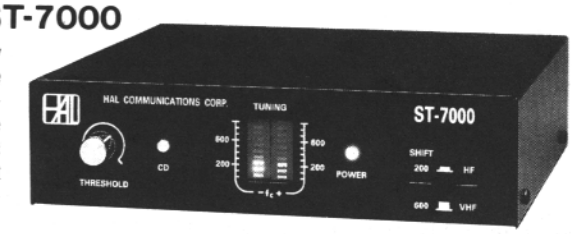


The TEMPO MPP1

. . .a unique new mobile data printer, includes a packet controller and a 13.6 VDC printer that interfaces with any mobile radio. in a recent user test it proved to have about twice as much audio level range tolerance as other TNCs. It is also an ideal unit for emergency work and a commercial version is perfect for dispatching service, emergency and police vehicles.

HAL Communications' ST-7000

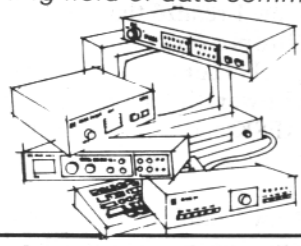
HF-Packet Modem. . .a high performance modem designed specifically for 300 baud HF-Packet. It offers no-compromise performance to assure optimum operation under the most demanding signal conditions. Techniques developed for government and military use are used in the ST-7000. AGC-controlled AM signal 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.



The PK-232 by AEA

. . .the only controller offering Morse Code, Baudot, ASCII, AMTOR, Packet, and facsimile Transmission & Reception plus the ability to monitor the new Navtex marine weather and navigational system. . .7 modes in one controller. The PK-232 makes any RS-232 compatible computer or terminal the complete amateur digital operating position. All decoding, signal processing and protocol software is on ROM. Only a simple terminal program (like those used with telephone modems) is required to interface the PK-232 with your computer. **Watch for the new and exciting AEA FSTV-430. Have fun on amateur TV!**

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



NO. 1 For the fun (and very affordable) mode, VHF Packet, AEA PK-88 with personal mailbox, 8K programmable memory and TCP-1P compatability.
For serious 20 M world-wide DXing on Packet, 200 or 600 Hz shift. . .add the superb HAL ST-7000.

NO. 2. . .top of the line! The HAL ST-8000 or HAL ST-6000 and AEA's PK-232 . . .the winning combination. You can't do better for all-mode, all-band enjoyment of hi-speed data communications.

If you have any questions concerning these units, or would like to discuss your requirements with a knowledgeable specialist, please call or ask for Fred Daukantas, N6SFD. We also carry a large selection of excellent commercial products for data communications and emergency systems as well as a complete inventory of amateur equipment and linear power amplifiers.

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BANDPLAN CONTROVERSY CONTINUES

● MORE MAIL RECEIVED THIS PAST MONTH

(BANDPLAN Cont. from page 5)

communications". But the time and IARU recommendations solved the most. Let us go on this way by working constructively within our National and Regional societies. 73's
Hans Berg, DJ6TL
R 1 HFC Chairman

Letter to Hans from DJ4XN and published in CQ/DL magazine. Authorization given per DJ6TJ.

Radio amateurs like to keep up with the latest technology -- much to the delight of the business community of a certain Far Eastern island.

Packet Radio seems to be the latest craze.

I am the proud owner of a C-64, a homemade interface with AM- 7911, TF-440S, TL-922 and a program with all mode coms. My system, can certainly stand up to comparison with much more expensive hardware.

As I understand it, the original idea behind Packet Radio was to provide a means of communications, on VHF, which would enable those in poor locations to communicate with stations situated some distance away, by linking them up via other stations.

My experience of VHF Packet Radio is limited, however, readers might be interested in my account of what seems to be a fairly typical Packet QSO on the HF bands.

In theory, there should not be much difference between Packet Radio on VHF and HF .. except for the difference in speed, i.e. 300 Baud on HF as opposed to 1200 Baud on VHF. What happens in practice, however, is a different story. Yes, the system does work -- providing there is never more than one station on the same frequency at any time. The moment another station appears (and wasn't multiple use supposed to be one of Packet Radio's main selling pints?) things will start to go wrong.

Here then, comes an account of a typical QSO on HF Packet:

My partner's station (S2) is transmitting, mine (S1) is on "receive". Also on receive, on the same frequency, is another station (S3). S3 can hear S2, but propagation is such that he cannot hear me.

As my partner drops the carrier, my station goes to "transmit" .. as does S3, as we both assume that we have a clear frequency. S2 receives both of us, but cannot read either signal as mine interferes with S3's and S3's interferes with mine. As soon as the frequency is clear, S2 therefore requests a repeat of my transmission. At the same time, however, S3 is called by another station, S4 (who is not receiving S2 and therefore assumes the frequency to be clear). I am receiving both S2 and S4 but cannot read either. My station duly transmits another request for re-transmission of S2's transmission requesting a repeat of my transmission. At the same time S3 requests a repeat of S4's transmission, as he was unable to copy S4's packet due to interference from S2.

S2 cannot read me (due to interference from S3), so he now requests a repeat of my transmission requesting a repeat of his transmission requesting a repeat of my transmission.

At the same time, S4 directs a transmission at S3 asking for a repeat of his transmission requesting a repeat ... etc.

I realize I'm not getting anywhere, so, in frustration, I switch on the amplifier. At last -- S2 is copying my request for a repeat of his transmission requesting a repeat of my transmission requesting a repeat ... etc. He sends an acknowledgment, but my receiver cannot read him and asks for a repeat of his transmission .. so, equally frustrated, S2 turns on his amplifier. With a bit of luck we should now be able to hear each other and have a QSO... but, unfortunately, it's S3's turn to get frustrated and turn on his amplifier, so we're back to Square 1.

There is nothing more I can do, so I go off to lunch, leaving the rig to it's own devices. An hour later, I return to the shack and - Bingo - there is a message on the screen. "Great", I think, "We made it after all" -- until I take a closer look at the message. It says "Timeout".

So much for efficient communication ..

Some weeks later, a QSL card arrives from S2, "tnx fr ufb packet QSO" it says, "RST599 + 20DB".
DJ4XN

Dear Dale,
Band Plan, Yes ?
Dale I must admit that you got my interest and as I came across a packeteers band plan the other day that had made its way to my local VHF BBS ....I have decided you are right...the time is NOW.

This little message addresses to ALLUSA indicates that the 'new' plan that they are putting forward includes .. channels in the traditional RTTY part of the band (14.097, 14.099). Now we all realize that in this country at least there are no specific authorized frequencies in most of the bands. But over time areas tend to get created as part of the 'gentleman's' agreement.

I personally have no problem at all with Packet in the RTTY part of the band because if you move 300 cycles off the frequency where they are heard in the RTTY position of my ICOM 751 with the 250 Hertz filter I use, they disappear. Now I realize that some aren't running filters...and more important these packeteers are usually in the LSB (Lower Sideband) position running AFSK and using 2.5 KHZ or wider filters.

Now I think that WE (Rtty folks) have only one problem and that is that we fail to use part of the little chunk that we have so carefully staked out. AMTOR seems to have fitted in quite well with us, and with a few exceptions we seem to be able to get along. The big problem seems to be when the Packet Folks are on top of things like the ARRL bulletins.

Continued next page

Continued from page 20

Now I for one am not a big fan of where they run the bulletins and for some reason the old adage listen before transmitting seems to not apply to the ARRL and W1AW as they fire up exactly on top of you or anyone when on 14.095 or there about.

Now what I suggest is that we move into the parts of the band that the packet folks seem intent to take over since we are not utilizing them and carry on the regular fun of ragchewing and contesting, and Dxing, and what would be a better place for Autostarts and BBS systems ?

If Packet needs more HF spectrum, and I think they very well may, then it seems to me that a move to tighter filters would be a good idea. Lets see 200 Hz shift at 300 baud, hmmm....seems like it oughta fit OK in 1 Khz. That's 500 Hz on each side of center I would then recommend a 1.2 Khz filter and get rid of the LSB. In the spectrum from 14.100 to 14.150 there should be adequate space for a lot of Packet. Now I know...the DX phone place...well maybe its time for those folks to go back up the band where the rest of us operate ?

My recommendations for a Packet band plan are:

3.620 to 3.650 Packet
7.090 to 7.100 Packet
14.100 to 14.150 Packet
21.150 to 21.200 Packet
28.200 to 28.300 Packet

But above all else I think ....USE it or LOOSE it ...maybe we old RTTY folks need to be 14.085 14.095 ... maybe we don't need so much ? But most of all turn OFF the RY's ... can't you just call CQ, I will talk to you !!!!

Just an opinion....73....**Jay, WS7I....**

Dear Dale,
Greetings to you and the readers from New Zealand. There have been a couple of things mentioned in the Journal lately which I felt I might just pound the keys about.

The Bandplan. I agree that the "gentlemen's agreement" seems to have gone out the window. Packet has pushed its way into the top 5Khz of RTTY and pity help any poor steam RTTY operator caught in this area. It is just drop the signal on top of the QSO. What ever happened to the definitaion of "deleberate interference"? Surely with the published success of APLINK systems there must be less pressure on HF Packet, but it does not seem to have happened that way. So please continue to campaign to keep Packet above the .100 point on the dial on the DX bands.
Gary J. Moles, ZL2AKI

Dear Dale,
I have read the article in the RTTY JOURNAL about the need for a formal band plan and totally agree. I enjoy operating on AMTOR and RTTY and do not in any way shape of form want to see a loss of frequency spectrum. If anything I think the allotment for AMTOR and RTTY should be increased. There are many, many more of these stations on than there were in just the year and a half that I have been active. Let me know what else I can do to further this cause.
Peter A. Perrino, KA1QWC

Dear Dale,
I think instead of a regulatory bandplan what we need is a change in the regulations to force Packet (and AMTOR ARQ and any other auto-request-for-repeat protocol) to be a little more spectrum (and transfer rate) efficient.

It seems to me that you can make a fairly good argument that Packet in its current form is a pretty poor method of conveying information, especially on HF. The major problems are the perfect copy requirement and the lack of collision avoidance.

The September issue of CQ quoted portions of two address that N4RH, the head of the FCC Private Radio Bureau, had just given in Washington. He mentioned "two significant examples of how the Amateur community goes forward on its own." One was the repeater network, the other the VE program. While he stated that digital systems might lead to greater spectrum use efficiency, he not only did not praise packet, he never mentioned it at all.

Even more interesting is an interview with Doug Lockhart, VE7APU, the "father" if you will, of Packet radio, in the March issue of QST. When asked about HF Packet, his reply was "I don't know that packet radio is well suited to HF communication. .. it was intended for VHF, UHF and microwave. It requires a 99.9% reliability.."

So we could argue that Packet should just be banned from HF. I think a better idea is to force HF Packeteers to reconsider the current packet protocol. Choose a cutoff frequency in or above the 10 Meter band. Below that frequency, ANY mode that incorporates automatic-request-for-repeat must: 1. Incorporate a carrier-detect scheme and refrain form transmitting until the frequency is clear. We might need a carrier-detection sensitivity vs transmitter power rule to cut down on /alligators/. 2. Stop transmitters after 2 repeat requests (3 transmissions of the same data). 3. Refrain from beginning a new transmission for a time period equal to the time required to send all of the previous repeats. The more retries, the longer the quiet period.

I think the combination of carrier-detection, a limited number of repeat requests, and quiet periods between bursts would allow an in-progress RTTY or CW QSO to continue almost unimpaired. At the same time, a Packet QSO on an active frequency would probably become so frustrating that the participants would QSY to someplace quieter (like their own subband).

I also think that my proposed rules would motivate the Paketeers to develop a protocol that doesn't require bit-for- bit perfect copy. With a 2 retry limit, if none of the 3 packets are perfect, they could be compared and a 'best guess' prepared. Then if necessary, the receiver could initiate another round of retries, after the timeout period, and after determining if the received data is acceptable. And people would probably find a lot of imperfect copy perfectly acceptable if they had to wait a few seconds (or more if the carrier-detect signals a busy frequency) for a retry.

With new protocols and my suggested transmission limits, you might even be able to have a couple of Packet QSOs sharing a single frequency, with each transmitting during the other one's silent period. That kind of spectrum efficiency is exactly what N4RH seems to be looking for.

Michael Morris, N6STA

1989 INDEX

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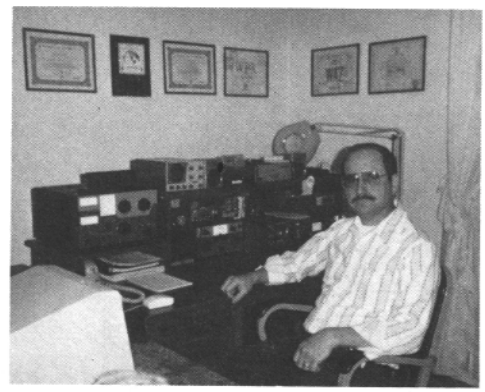
CQ DX RTTY AWARD WINNER NO. 1

Recently James A. Sladek, WB4UBD applied for and received the first CQ magazine CQ DX AWARD issued. This new award program is managed by Billy Williams, N4UF in Jacksonville, FL for CQ magazine. The award has a green background (especially selected for the "green keys") with black text and red CQ logo and "CQ DX AWARD" title. James says it is quite impressive on his radio shack wall. To apply for this award from CQ magazine simply follow the rules outlined by them for their other awards.

Jim is employed by the Navy Department as an Electronics Engineer; he is graduated from the University of New Mexico 1966; he has been licensed since 1964 (WA9MOT until 1971); upgraded to Advanced Class and started chasing DX in 1977. Began RTTY DXing in the Spring of 1981 and currently holds the following awards: 5BDXCC, DXCC Honor Roll (Phone & Mixed), DXCC RTTY, CQ DX SSB Honor Roll, 5BWAZ. His station mainly consists of the AEA PK-232 with AT-clone, Kenwood TS- 440S, Drake L4-B Amp and HyGain TH3MK3 at 53 feet.

Congratulations to Jim for his achievement in reaching all these prestigious goals. Jim should also receive an award for a very neat station (see pix this page). The only thing missing on his desk is a copy of the RTTY Journal and CQ magazine. Hi!



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