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FCC CITES RULES VIOLATORS

For More Details, See Pgs 2, 14, & 18

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DXER OF THE MONTH

DXer of the month Bill Mullin, AA4M/6. Story on page 12.

RTTY JOURNAL

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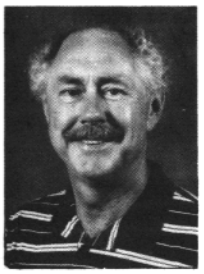

HITS & MISSES

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UNATTENDED OPERATION REVISITED

Over the past year, the Journal has presented many articles and letters to the Editor regarding the operation of Packet stations in unattended mode, as authorized by the STA (Special Temporary Authorization) issued by the FCC. At the close of 1990, the ARRL again requested and was granted another renewal of this operation. I was opposed to another renewal and wrote to the ARRL stating my feelings and of those who wrote letters to me about the matter. It did not stop the request, nor did I think it would, mostly because I wrote late in the year and also it did not carry the signatures of all those who were opposed to the renewal. The FCC did grant the extension for these operators to continue operating unattended and guess what happened? This time around, some mistakes were made for which a group of operators were issued citations from the FCC. But shouldn't they have expected it?

Again going back over the past year, the Journal has advocated the denial of this continued program on the basis that no concrete evidence has ever been published to substantiate its successes. I have requested this information from time to time and so have others but to no avail. Many have also stressed their concerns over all the "JUNK" mail being forwarded on Packet BBSs. Junk mail leaves the door wide open for all kinds of messages, much of which is trash. Since junk mail can easily be passed, then what is to stop someone from inserting a message that would be against the rules, answer; nothing!

I have no idea how many times hams have mentioned this problem to me either in person or in writing. In fact, about a year ago, a SYSOP visited me in my home for an eyeball QSO and the subject of the junk mail on Packet radio came up. This ham was running a system at the time, but assured me he did not let this type of mail pass through his station. He was not an STA operator but nevertheless valued his license and realized the importance of proper screening of messages. Isn't this the way it should be?

I have been a ham for a long time (nearly 40 years) and I can still remember the rules regarding forwarding of messages. I value my license, it is a privilege to possess one, it has given me much pleasure, has helped me to meet many wonderful people, and on and on. I'm sure the majority of hams feel this same way and would not do anything to jeopardize their privilege to be radio operators. If hams are being cited for violating the rules, this suggests they have become lax and have become complacent towards the rules. If hams follow such a path, then where is Amateur radio headed?

I'm sorry they were cited but they know the rules. Rules were not made to be broken, they were made to guide us in our endeavors. I'm sorry but I can't believe none of those cited understood the problem of "JUNK" mail and 3rd party traffic. They are all experienced operators, some with as many years in Amateur radio as I. I'm sorry for Amateur radio, especially at this particular time when ham radio is finally opened up it's qualifications so that our ranks can grow. I'm sorry, that all these newcomers to ham radio are going to be exposed to our dirty underwear as their first experience. I'm sorry, that some must pay the penalty for their misbehavior but if we do not follow the rules even when we know what they are, then the law of "no rules" takes over. Are we ready for anarchy in Ham radio? I don't think so, but maybe we have lost site of what our real purpose is and are so busy trying to forge ahead, that our thinking is all fogged up. Let's get back to reality, let's abide by the rules, let's set a good example for all those newcomers we will soon have in our ranks, let's sit back and take another look at our quest and see if there isn't a better way to do things that would preclude breaking any of the rules.

A black eye to Amateur radio is going to be very hard to overcome. These few Hams who were cited will never be able to erase what they have done in the eyes of the public. Doing wrong always outweighs all the rights done by others. I wonder how many parades we will have to cover, how many special events we will have to cover, how many disasters we will have to cover, to take away the sting of our black eye. When newspapers all over the country publish our mistakes, it hurts a lot. How about the next time a Ham goes to City Hall for an antenna permit, how will he be received?

I could on and on about this tragedy to our hobby, but I think you get the message. It is not often that I get on my soapbox here in the Journal but this time I felt I should speak out. Ham radio is too important to all radio enthusiasts all over the world, so we must all be more vigilant in our prosecution of licensing privileges. Obey the rules before more are imposed upon us, clean up our act and be Hams with a conscience of purpose, set an example for others to follow that exemplifies operators of good character with the practices to prove it, and above all not let this present adversity stop us from moving and advancing our hobby. My fellow Hams, our research has helped to advance mankind and I know we will continue to contribute to society. So, exercise your best judgment in the pursuit of your franchise as a ham radio operator. So be it!

ARRL DIGITAL COMMITTEE

I have been re-appointed to the ARRL Digital Committee for another year by ARRL president Larry Price, W4RA, so this means I will again be attending Digital Committee meetings. In preparation for an upcoming meeting, the date of which has not yet been announced, I asked for input from you the readership in my January 1991 column. I'm sorry to report that very few of you have responded. I need your support my friends, if I am to be your representative. Please write to me today with your suggestions. Even if you don't have time to write a long letter, how about the back of a QSL card? Just let yourself be heard. I don't have a crystal ball here that will tell me what everyone is thinking, I need the facts straight from you. Do it today, for a better ham radio tomorrow.

DAYTON RTTY DINNER

If you are planning to go to Dayton, then you won't want to miss this dinner. It has been an annual affair for many years and each year the group gets larger. You will meet with many of your favorite Digital people who you might otherwise miss. Trying to meet and visit with friends at the convention is a real problem because of the mass of hams in the arena.

If you can't make the dinner, try to stop by the RTTY JOURNAL hospitality suite at the Radisson hotel. We will be in the Premier room which is near room 1029. The room will be open Friday evening from about 7:30 P.M. until about midnight. Also, the suite will open on Saturday night as soon as the RTTY dinner concludes which will be somewhere around 9:30 P.M.

All for this month. 73 **de Dale, W6IWO**

AMTOR

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

Better late than never. As I write this month's column, it is raining in California and not before time! With an impending fifth year of drought conditions, how would SIXES be able to participate in contests, chase elusive DX or Rag chew, if we did now have enough water to make numerous cups of coffee, drink Scotch or water cool the infamous "California Kilowatt?"

SARTG AMTOR CONTEST

The rules for this AMTOR only contest appeared in last month's Journal. The rules state that you MUST complete the required exchange, in ARQ (mode-A) ONLY. They also say that you should call "CQ SARTG CONTEST de your SelCal." Strictly speaking, this is illegal, at least in the USA. You must identify with your full designated callsign as per your license. You never know who is monitoring. Ask a few Packet SYSOPs on the East coast, what can happen when they inadvertently allowed a "commercial" message to be forwarded via their systems. So, include your full callsign AND SelCal, when you program your contest buffers.

The exchange requirements are: RST, QSO number, Name and QTH. If you put the QSO number last, you can program a message buffer as follows, inserting the progressive QSO number at the end. My format would be: "599 (what else?), Eddie, San Pablo, 001."

Note that you do not have to repeat any part of the message like we do in Baudot. Short and concise is the way to go.

ENDLESS CHIRPING

Hopefully there will be a good turnout for this first ever AMTOR only contest. If there is a good deal of activity, here are a few of my suggestions.

To prevent a large amount of alphabet soup and endless chirping, without a successful link. I suggest that the station who wants to make contact with the FEC CQ-er, should send his/her callsign and Selcal in FEC and let the FEC CQ-er make the ARQ link, to exchange the required message. In other words, allow the station doing the CQ-ing, to be the Master and initiate the ARQ link.

If more than one station tries to call the FEC CQ-er in ARQ at the same time, ARQ will not handle the resultant mess. Admittedly a very strong signal may break through the QRM, but there is also the chance of a "three-way" conversation occurring, i.e., you think you are in QSO with station "A," but in effect, you are passing your contest message to station "B." It can and does happen, confusion rears it's ugly head and time is wasted trying to sort out who got the contact.

Just think about how you "normally" answer any form of CQ call, no matter what mode you are using. You would not normally give the DX station a contest

exchange until you have established positive contact with that station, would you? No? Okay, well don't do it in this contest.

CONTEST MEMORIES

Here are some ideas for your pre-programming contest buffers:

1. (FEC) CQ CQ SARTG CONTEST (cr/lf) de W6/G0AZT W6/G0AZT W6/G0AZT (cr/lf) Pse K FEC (ctrl D)

2. (FEC) xxxx de W6/G0AZT W6/G0AZT SelCal: GAZT pse K (ctrl D)

3. (ARQ) xxxx de W6/G0AZT (cr/lf) 599 EDDIE SAN PABLO qso # +?

4. (ARQ) W6/G0AZT de xxxx 599 ANON TOYTOWN qso# (ctrl D)

Note the absence of my SelCal in the CQ call. I would use buffer one if I was remaining on one frequency, trying for contacts and wanted the callers to respond to me in FEC. My SelCal would not be programed in my software, so anyone calling in ARQ would be wasting his and my time.

If you decide to go hunting for contacts, make sure that you put your own SelCal into the program.

Memory number two would be used to answer someone else's CQ call. Once a link has been established, memory three would be used if I were the Master and memory four would be the response I would expect from the station I called.

If you find that there is not too much action and no pile-ups, you can always revert to the normal method of answering an FEC call. You become Master and call the CQ-er in ARQ, without waiting for an FEC acknowledgment from him.

Remember, short and frequent calls are more productive than long and boring ones. Forget about sending the time, date, QRR, etc. Make sure you have included the "end FEC Transmission" control in your CQ buffer. The overall QSO rate will probably be much lower than any Baudot contest, however, it may by a lot of fun and a good test of our operating skills.

Above all, have fun and try out this new venture sponsored by SARTG. Who knows, you may get lucky and win a very nice certificate that would look good on any shack wall. Good luck and happy chirping.

HOW TO DETERMINE DIAL FREQUENCY

Please note that all references to the frequencies used as examples, 2125/2295 mark/space and LSB, only apply to the USA standards. Europe and I presume the rest of the world, still uses "low" tones (1275/1445) and USB. However, with a little calculation and a degree in mathematics, it should not be to difficult to apply the following information to your own requirements.

The following was "stolen" from APlink N0IA/7, SYSOP Bud in Las Vegas, NV. I am indebted to him for this clarification of a confusing subject.

HOW DO TWO RTTY/AMTOR/PACKET STATIONS MEET ON SCHEDULE ON HF?

"For Classical AMTOR and RTTY the convention is to speak of steady state 'mark' frequency. That is, when the single Mark tone is on, what is the measured frequency of the RF carrier? This comes from the days when the CW carrier oscillator was the Mark frequency, and it was shifted down (Yes, down) in carrier frequency for the Space condition. In such cases, the old CW of AM rig was tuned to the dial frequency for Mark and when the key was closed or Mark condition met, the measured output frequency was the same as the dial frequency. When the system was changed tot he Space condition, the measured frequency was lower than Mark frequency by the amount of the shift. This is termed Frequency Shift Keying (FSK).

"In the recovered receiver audio, the resultant Mark audio frequency is lower than the Space audio frequency by the amount of the shift. Typically, terminal units (TUs) were tuned to 2125/2295 M/S audio tones. With the advent of the use of SSB transmitters fed with AFSK tones to simulate the M/S carriers, the convention of using LSB was established, in the USA. Typical operation today is with the SSB rig in the LSB position (regardless of HF band), and a high-stability audio (AFSK) oscillator feeding the microphone audio circuit with 2125/2295 M/S tones, Viz, 170 Hertz or narrow shift. This is called audio frequency shift keying (AFSK). When the SSB transmitter is properly aligned, the resultant transmitted signal (M/S) is indistinguishable from a stable FSK transmission. When a LSB rig is fed with a tone, the measured output frequency of the RF =carrier= is the SSB dial (center) frequency, minus the audio tone.

"Some modern radios still have an FSK position. Some manufacturers (notably ICOM) establish carrier oscillator Offset such that the dial reading in FSK mode is the Mark frequency, while others (notably Kenwood) establish the dial reading as the Space reading. The result is that three rigs can each have a different dial reading yet be operating in full transcieve on the same frequency. To determine the dial reading for a specific Mark frequency use the following guidelines: For FSK Mark reading radios - Dial in the Mark frequency directly. For FSK Space reading radios - Dial in Mark frequency minus shift offset. For LSB AFSK - Dial in Mark frequency plus the mark audio tone.

"Example: Established Mark frequency = 14072.500, 170 Hz shift, 2125.2295 M/S FSK Mark reading = 14072.500 FSK Space reading = 14072.330 LSB AFSK reading = 14074.625 To add to the confusion, each individual radio must be precisely aligned for the TX oscillator string and receiver oscillator/Mixer string.

"Your dial frequency may be off slightly due to misalignment of your receiver of transmitter. In practice, tune the other station in for absolute best tuning indicator reading and throughput. For modern rigs, put the frequency in one of the memories so you can return to it easily."

That's all folks. Next month, APlink routing of messages. I hope to work all of you in the AMTOR contest in April. 73, good luck and DX.

de **Eddie, W6/G0AZT** ■

OVER 45,000 PK-232s SOLD!

The AEA PK-232 multi-mode data controller remains the most widely used radio data controller **anywhere.** More hams own the PK-232 than *any other* radio data controller. And AEA's hard-earned reputation for quality and service keeps them coming back. The '232 gained its popularity with features like these:

STATE-OF-THE-ART TECHNOLOGY.

Since its introduction in 1986, the PK-232 has been updated **six times** to continue bringing you the breakthroughs. Six updates in four years! And even the very first PK-232 is upgradable to the latest model, with a relatively inexpensive user-installed kit. If you want a state-of-the-art multimode controller, you want the PK-232 MBX.

SUPERIOR FILTERING

The 8-pole Chebyshev filter in the PK-232 was designed from the ground up to work on HF **and** VHF. We didn't just add some firmware to a Packet modem to create our multi-mode. Our modem was **proven** superior by tests in Packet Radio Magazine over *all the others tested.* Read the fine print! You just can't beat the PK-232 for performance, quality and integrity. 45,000 PK-232 owners can't be wrong!

INNOVATION

The PK-232 has been the one to follow for technology advances. It was the *first* radio data controller with weather-fax, the *first* with Host mode, the *first* with NAVTEX, the *first* with Signal Identification, the *first* with TDM, the *first* with AMTOR v.625, the *first* with a WHYNOT command, etc, etc. AEA has always strived to "Bring You The Breakthrough," and while others have tried to imitate, only one can be the best.

The only data controller **designed from the ground up** to be a true multi-mode, the PK-232's tuning and status indicators work in all modes, not just packet. Make sure the multi-mode you buy isn't just a converted Packet TNC. There's only one number 1!

HOST MODE

Many superior programs have been written specifically for the PK-232 in Host mode language: **NEW** PC-Pakratt II for IBMs and compatibles, updated MacRATT for Apple Macintosh, and ComPakratt for Commodore C-64 and C-128 computers.

ALL DIGITAL OPERATING MODES.

The PK-232 MBX includes all authorized amateur digital modes available today...Packet, Baudot, ASCII, AMTOR/SITOR (including the **new** 625 recommendation) and Morse code, as well as WEFAX (receive and transmit). Other features include the PakMail 18K byte maildrop system with automatic normal and **reverse** forwarding, NAVTEX reception, KISS protocol support, binary file transfers and more. Also included is the TDM (Time Division Multiplex) mode for SWLing that few others have. No other multi-mode has all these features.

SIGNAL ANALYSIS.

The first multi-mode to offer SIAM (Signal Identification and Acquisition Mode) was, of course, the PK-232MBX. Indispensible to SWLers, SIAM automatically identifies Baudot, ASCII, AMTOR/SITOR (ARQ and FEC) and TDM signals, then measures baud rate and polarity. Once the PK-232MBX is "locked on" to the signal, a simple "OK" command switches to the recognized mode and starts the data display. You're even ready to transmit in that mode if applicable.
The PK-232MBX makes SWLing easy and fun, not difficult and frustrating.

REPUTATION

The PK-232MBX has helped AEA establish its hard-earned reputation for producing high quality amateur radio products. Anyone can **say** they have a good reputation, so it pays to ask around. Listen on the HF bands and see which multi-mode is getting *used*. You owe it to yourself to get the best possible value for your money. Don't settle for less!

Watch for the DSP-1232 and 2232 coming soon!

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Prices and specifications subject to change without notice or obligation.

CONTESTING

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

The VOLTA is an unusual contest. It's popularity in the U.S.has been generally spotty due to the limited publication of the POINTS EXCHANGE chart and the added complication of individual scoring of each QSO. With each QSO counting as a multiplier, it is the only RTTY contest that is strictly a rate contest.

Looking at last year's results (almost perfect conditions for a DX contest), top-gun, I2HEO worked 86 multipliers but by the time he added 256 QSOs to his multiplier score, countries were only a quarter of his total multiplier score. A quick look at the average of QSO EXCHANGE POINTS for the top third of the entries shows a range from 10.11 as a low, to high of 44.4 points per QSO. The top two places averaged a little over 17 points per QSO while third place was only 11.2. What I am saying is that the QSO points from the chart, in themselves, have ALMOST NOTHING TO DO IN PRODUCING THE WINNINGSCORE! The key to this contest is QSO total, a function of RATE.

Although with a quick glance at the chart you would assume that a ZL station could never lose to a W0 in Kansas, actually, VOLTA is unique in that there is no clear advantage to any geographic location and the ZONE QSO chart is only one, minor factor in the score. The key is in the number of QSOs.

No other RTTY contest pays such a high reward for efficiency and band agility as does the VOLTA. While May is not at the top of anybody's list for best contest propagation, barring solar flares, the top three bands should be open from/to just about everywhere for at least three hours. During these periods, a winning station must be on ALL THREE BANDS. The secret to VOLTA is NOT to sit on a frequency and call CQ for 24 hours. When an average rate of only 11 QSOs per hour can win a contest, there should be plenty of time to: (1) CONTINUOUSLY SEARCH the bands and voraciously attack anything new that so much as twitches your S meter. (2) EXPLAIN the contest exchange to every station who shows even a tiny interest. (3) MOVE every station to every other frequency that is open. (4) PLEAD, BEG AND GROVEL to get people up on 80 and 40 meters at night. The difference between 1st and 2nd place, last year, was 2.5 QSOs per hour.

It's a quick, 24-hour contest. Hope to see lots of activity, this year. 73's

de **Hal, WA7EGA** ■

THE 25TH ALLESANDRO VOLTA RTTY CONTEST

DATE/TIME: 1200 GMT Saturday May 11th, 1991 to 1200 GMT Sunday May 12th, 1991. In the future this event will take place on the second full weekend in May.

CATEGORIES: Single Operator, All Band Single Operator, Single Band Multi-operator, single transmitter SWL

SCORING: All two-way RTTY contacts will score in accordance with the EXCHANGE POINTS TABLE. The same station can count for both multiplier and QSO points if worked on a new band. Contacts outside your own continent on 3.5 and 28 MHz are worth double points. Your own country (as defined under multipliers) does not count for either QSO of multiplier points.

MULTIPLIERS: All VK, VE, USA call areas plus the ARRL DXCC list. Do not count the general country multiplier (VE,VK,W) when you count each call area (VE1..0, W1..0, etc.) An additional multiplier point will be awarded for each Inter-Continental country worked on at least 4 bands. Your own country (as defined above) does not count. To be valid, any multiplier from which no log is reeceived must appear in at least four other logs.

EXCHANGE: RST, QSO number and CQ ZONE

FINAL SCORE: Total QSO exchange points times the TOTAL Multiliers times the total number of QSOs.

SWL: The same scoring tules will apply but must be based on stations and message exchanges copied.

AWARDS: A SPECIAL TROPHY will be awarded to the top stations in each class. In addition, a certificate with special sticker to all entrants.

LOGS: Use on log per band. Each log entry must contain: BAND, DATE, TIME (GMT), CALLSIGN, EXCHANGE SENT, EXCHANGE RECEIVED, EXCHANGE POINTS and MULTIPLIER credit awarded the QSO. A summary sheet is required with a list of multipliers worked. Comments will also be very much appreciated.

SEND TO:

Francesco Di Michelle, I2DMI
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22063 Cantu
ITALY

Contest Zone Chart on page 17.

SOFTWARE

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Lot's of good news this month. The war is over, AEA has shipped me a new PK-232 and the new version 4.0D of the PKRatt II program has arrived. Even the bottom of the mailbag has been reached.

ARIES REVIEW (cont.)

I enjoyed BB's ARIES review that was the mainstay of last month's column. As I told you last time, Jim, N2HOS, sent me a letter along with some "on the air" comments from OH2LU concerning the ARIES-2 program. Jim sez basically that he was an early enthusiast of the PK-232 using the ARIES-2 software, but that some things happened that changed his mind.

The software locked up sometimes, not often, not very repeatable, but as BB said in last month's article, "most were of my own doing." However, N2HOS reports, "Every now and then, maybe when the type-ahead buffer was to full, it would freeze. The last time it happened was in a pileup". Jim says, "I had struggled for a few minutes to break it. Then, 'N2HOS N2HOS de A41JW pse KN.' Oh, how sweet the screen! And, the ....ed thing locked." Jim goes to to say that he really liked the program and that Thom, NY2I, (Aries author and owner) had been more than fair, even generous in offering a refund.

Well after this letter, I had a RTTY QSO with OH2LU and they had been using the ARIES-2 in contest situations, also experiencing lock-ups. Not often, but not acceptable. They were on the trail for some new contest software, so I turned them over to Scotchlog and its infamous author.

Finally, my chance to test the program came. I fired it up and ran a lot of QSO's on the old XT and logged a bunch of other stuff and never, never could I duplicate the problem. This was the old basic 8088 (processor) machine with a 20 Meg (million characters) hard disk drive. All my setups are non-exotic, just a monochrome screen. I then went on to test the ARIES-2 on my 80286 at 12 MHz, also monochrome. Well one day I too got it to lock up. I had logged a large number of stations using the mouse interface and had a long list of stuff in the buffer. This was kind of an unusual afternoon, though, because I had the BBS up most of the day and hadn't reset the computer. Eventually, many more sessions were tried and NEVER again did it lock up.

This is kind of strange, but it looks like that under certain conditions, the program has difficulties (Or the computer). Perhaps the author will drop us a note and clarify the problems or conditions that may cause these things to happen. It is best to keep in mind that what we have here is two computers talking to each other and several programs interacting. There are programs running in the PK-232 and in YOUR computer in ROM (read only memory) all at the same time.

TERMINAL MODE

Perhaps one of the best features (and least discussed) is the Terminal mode of the ARIES-2. The terminal mode has been added to the program so that users with other than PK-232s or KAMs could realize many of the features of the program.

Chapter 4 in the ARIES-2 manual (excellent manual) covers this option and I hooked it up with my trusty old Flesher TU470 and it worked like a charm. In fact many things were crisper than with the PK-232. Since this mode eliminates the two computers talking to each other, things happen quicker. It's nice to see an author taking time to make his program a lot more universal. Now when will Thom have it working on the HAL PCI-3000?

My overall impression with the ARIES-2 software is that it's a very useful program with a lot of features, and if you own one of the fancy radios with computer control, it should be in your library of software. KAM users should be delighted.

WS7I RAMBLINGS

Jim, N2HOS, also indicated in his letter that his latest rage is the DesqView program, a multi-tasking (more than one thing at a time) program running three or four programs on the screen at once. I think this is interesting and I will try to get him to do a guest column on his results for a Summer issue (hint hint).

Had a phone call from Mr. COMPRTTY, David Rice, KC2HO, and he assures me the program is in the mail for next month. David is also working on some enhancements and I hope to help announce those next month.

The new PK-232 has pretty new lights on the front, along with some improved internal board changes. I just opened the box last night so can't really tell you much else.

Betsy and I will be in Visalia at the DX convention in April and look forward to meeting some of the RTTY Journal Staff and some of our readers. If only Dayton wasn't so far and so expensive.

EWARG (Eastern Washington Amateur Radio Group) has a new phone BBS system up and running. Telephone (509) 534-7924, select 1200, 2400, 9600 baud and the Modem is a US Robotics HST. This group is digital oriented and if you have something for me either file wise or just a note, drop it in the BBS. (Dale (our Editor) also stops by from time-to-time.)

BARTG should be history by the time you get this issue. Hope all your programs worked !

73 de **Jay, Ws7i** ■

DAYTON HAMVENTION

APRIL 26, 27 and 28

RTTY Dinner Reminder

If you have not yet sent your money in to attend this gala affair, please do so today. You will find a handy form in the February issue of the Journal. Remember Bob Foster, WB7QWG, (our host) must give the hotel caterer a firm count in advance of us even arriving in Dayton.

1990 RESULTS - XXIV ALESSANDRO VOLTA RTTY DX CONTEST

CLASS A1:

SINGLE OPERATOR ALL BANDS

NO	CALLSIGN	QSO	PTS	MULTIPLIERS 3.5	7	14	21	28	TOT.	SCORE
1.	12HEO	256	4474	1	4	49	29	3	86	98.499.584
2.	WA7EGA	195	3336	1	9	45	23		78	50,740,560
3.	G4SKA	231	2592	2	7	52	21		82	49,097,664
4.	N6GG	161	3146		4	33	26	4	68	34,442,408
5.	PA3DBS	181	2263	4	10	35	30		78	31,949,034
6.	JA3DLE/1	143	3700			26	25	6	57	30,158,700
7.	K6WZ/O	143	2027	1	6	42	10		59	17,101.799
8.	OH2LU	152	1538			31	31	3	65	12,156,352
9.	12WEG	121	1481	4	3	38	21		66	11,827,266
10.	Y41ML	113	1462		7	31	17		55	9,086.330
11.	ZL2AKI	73	3245		1	28	2	6	38	9,001.630
12.	VE6ZX	112	1385		1	29	15		45	6,980,400
13.	SP9BCH	110	1077	1	4	34	8		47	5,568.090
14.	IK8HCM/grp	101	1063	2	4	29	11	1	47	5,046,061
15.	GRMKO	110	941	2	6	20	14		42	4,347,420
16.	UV9CC	100	1098			24	15		39	4,282,200
17.	IKOCWA	79	1177			19	9	1	29	3,626,337
18.	IOWQP	73	768			46	15		61	3,419,904
19.	OZ1FGS	88	768			17	18		35	2,365,440
20.	WA8FLF	58	1033			23	13		36	2,156,904
21.	IV3ZDO	50	1066			17	15	2	34	1,812,200
22.	IT9DWO	75	714			18	9		27	1,445,850
23.	KI4MI	47	806		2	27	6		35	1,325,870
24.	I2SVA	54	844			15	13	1	29	1,321,704
25.	WF5E	47	779			21	7		28	1,025,164
26.	G3XVF	64	392	2	4	24	7		37	928.256
27.	ES7JW	82	358			21	3		24	704,544
28.	I2DJX	39	604			19	5		24	565,344
29.	EA2JO	52	321		3	12	17		32	534.144
30.	WB4UBD	34	662			17	6		23	517,684
31.	N2HOS	34	496			20	9		29	489,056
32.	DF5BX	40	341			16	9		25	341,000
33.	12HWI	39	316	1		15	9		25	308,100
34.	SN6BGE	44	235			9	7		16	165,440
35.	UA2WJ	37	212			13	4		17	133,348
36.	I2BZN	24	166			15	4		19	75,696

CLASS A2:

SINGLE OPERATOR SINGLE BAND 14MHz

NO	CALLSIGN	QSO	PTS	MULTIPLIERS 3.5	7	14	21	28	TOT.	SCORE
1	OK2BXW	116	1338			33			33	5,121,864
2	IK8GJS	102	1143			37			37	4,313,682
3	W6/G0AZT	91	1364			32			32	3,971,968
4	I2KFW	91	636			35			35	1,446,900
5	IV3KCB	61	705			33			33	1,419,165
6	VK3EBP	35	1314			23			23	1,057,770
7	SM3EZO	59	343			26			26	526,162
8	Y23IL	56	342			26			26	497,952
9	EA4BAS	49	265			19			19	246,715
10	Y21GO	39	280			18			18	196,560
11	LA2IZ	38	197			16			16	119,776
12	SM4CMG	35	262			13			13	119,210
13	SP4KEV	32	181			14			14	81,088
14	IK8HET	28	128			21			21	75,264
15	SM4GVR	32	156			13			13	64,896
16	EA3GCV	14	50			11			11	7,700
17	SP3XR	34	15			9			9	4,725
18	ON4AHG	2	6			1			1	12

CLASS A2:

SINGLE OPERATOR SINGLE BAND 21 MHz

NO	CALLSIGN	QSO	PTS	MULTIPLIERS 3.5	7	14	21	28	TOT.	SCORE
1	I1RJP	44	692				25		25	761,200
2	I1SCL	38	72				24		24	385,776
3	I2FUM	9	72				6		6	3,888

CLASS A2:

SINGLE OPERATOR SINGLE BAND 28 MHz

1	IK1MDL	31	1305					21	21	849,555

CLASS A2:

SINGLE OPERATOR SINGLE BAND 3.5 MHz

1	SP3BGD	17	62	9					9	9,486

CLASS B:

MULTI OPERATOR-MULTI BAND

1	UZ9CWA	314	4669	3	4	57	41	3	108	158,335,128
2	G3UUP	244	3846	4	4	47	29	3	87	88,642,888
3	LZ5W	189	3013	4		39	31	5	79	44,987,103
4	UZ0LWC	151	2717			27	22	3	52	21,333,884
5	OK3RJB	143	1669	4	4	37	24		69	16,468,023
6	SK6NP	72	560	2	1	5	11	1	20	806,400
7	SP2ZCD	9	37				4		4	1,332

CLASS C:

SWL

1	BRS27239	83	565		5	23	11		39	1,828,905
2	ONL 6945	76	528		5	32	5		42	1,685,376
3	DE0GMH	54	483			25	13		38	991,116
4	IN3-085	58	679			21	4		25	984,550
5	ONL 3997	51	346			17	12		29	511,734
6	ONL 4335	51	264			17	5		22	296,208
7	G8CDW	37	185			13	11		24	164,280
8	SP-01881-GD	31	116			10	6		16	57,536
9	Y22HF	8	34			2	1		3	816
10	ONL 4003	7	22			6			6	924

CONTROL LOGS: UO5OLW - LY2BZB - LY2BKF - VU2SJV - I2DMI

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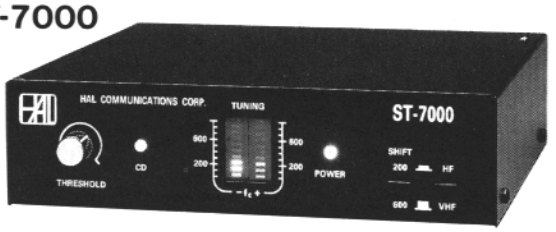
HAL Communications' ST-7000

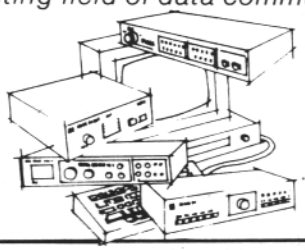
HF-Packet Modem. . .a high performance modem designed specifically for 300 baud HF-Packet. It offers no-compromise performance to assure optimum operation under the most demanding signal conditions. Techniques developed for government and military use are used in the ST-7000. AGC-controlled AM signal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



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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LIGHTWEIGHT RTTY TU FOR DXPEDITIONS

byline: Jules L. Freundlich, W2JGR *

Fig. #1 The Tandy 102 and AEA CP-1 folded flat for shipping.

FILLING A NEED

The package described herein represents one of the smallest and least expensive RTTY terminals available for HF operation. It is composed of a Tandy 102 Laptop Computer and an AEA CP-1 Computer Patch. As the computer contains its own display, the carry weight of the entire assembly does not exceed 6 lbs. including all interconnecting cables. Both units are uniquely attached to each other (though separable) and fold flat against each other for transportation (Figure 1). In the preferred operating position, the keyboard/display is set at a 60 degree angle for visual comfort as well as ease of typin. (Figure 2). And the beauty of it is that not a single hole had to be drilled to join the two units together.

I got my start in RTTY using an AEA CP-1 Computer Patch and a TI-99/YA Computer. Some years ago I purchased the phenomenal Model 102 from Radio Shack and used it briefly on VHF packet and typical computing chores such as word processing. I have since graduated to the more sophisticated IBM-PC/AT WORLD AND THAT OF THE FANTASTIC PK-232 and PK-88, and the CP-1 and Model 102 lay dormant in the shack for several years.

Recently it occurred to me that RTTY dxpeditioners (or other travelers, for that matter) don't need the over fill that $1000-$2500 laptops with special expensive boards, or other computers requiring a separate CRT display, provide. Furthermore, an air traveler likes to travel as lightly and compactly as possible.

Having already owned the two units, my investment mechanically to mate them into an integral package totalled $8.90.

The first thing that had to be done was to install the RS-232C option in the CP-1. The CP-1 instruction book tells how to do that.

SOFTWARE

Finding software for the computer seemed like an impossibility as the resident terminal program in the Model 102 is configured to handle only 6,7, and 8 bit words at speeds from 75-19200 baud! This did not fit the bill for 5 bit Murray Baudot code operating at 45.45 baud. I put out queries through the world wide APLink network, as well as on the local VHF packetcluster, looking for a suitable BASIC program. After several months of waiting, a BASIC program created by Louis C. Graue, K8TT, and published in ARRL's "QEX" of November 1985, was discovered. This proved to be the perfect answer. The program makes use of the F-keys on the Model 102. Depressing the "Label" key causes the function of each F-key to be displayed. As programed, they are: F1=RY, F2=ID, F4=Brag, F5=CQ, F6=60/100 WPM (toggle), F8=Menu (quits program).

The software is written in BASIC and the F-keys can be easily modified to your own requirements. My Model 102 uses a 100K 3-1/2" portable disk drive (Tandy Cat. #26-3808- not needed except if you wish to avoid keying in the program.). If you have one of these I can furnish you a disk. Otherwise you will have to type in the program (about 3K bytes).

If you cannot find a copy of November 1985 QEX, I can send you a copy of K8TT's article with the program listing for $1.00 to cover the cost of Xeroxing 7 pages and mailing in a 9"x12" envelope. If you want the program on disk send me a blank formatted 100K 3-1/2" disk with prestamped mailer.

CONSTRUCTION

The Model 102 and the CP-1 are mechanically joined by using an 8-3/4" long piece of 1-1/2" piano hinge attached to each unit by means of VELCRO strips. The forward edge of the hinge (pin side) should be about 3/16" and 1/4" from the front edge of the CP-1 and the Model 102 respectively.

The bracket that gives the 60 degree keyboard/display angle is constructed from my old 30-6-90 draftsman's triangle (zero cost). (Figure 3) It too is attached using the hinge/VELCRO technique. When the units are configured for transport, it lies flat against the CP-1. Two small pieces of VELCRO secure it against the back of the computer when in its upright position.

Fig. #2 Model 102 sits at 60%, but can be modified easily.

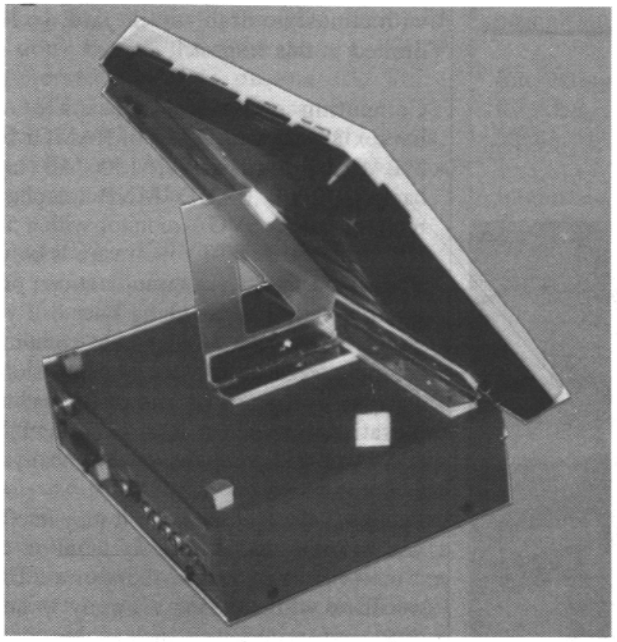


Fig #3 Model 102 held in place with old draftsman's traingle

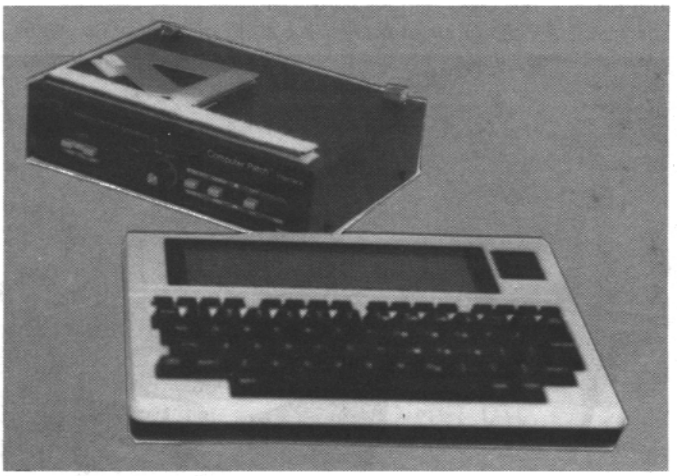


Fig #4 The units are readily separable for stand alone use.

The clue, of course, to avoid drilling any holes in either unit, is that wonderful stuff VELCRO with sticky back (available in your local Woolworths). Using full lengths of VELCRO on both sides of the piano hinge (available from your local lumber yard or hardware store) provides more than ample mechanical strength. When the two units are to be separated (Figure 4), so as to use the computer independently, it is advisable to place a "keeper" mating piece on each exposed VELCRO surface to keep it free of debris and dust.

APPLICATION

The Model 102 can operate for several hours on four "AA" dry cells. Otherwise a cube type A/C power supply (6 VDC 400 ma.) is needed. The CP-1 requires a similar type supply (13.5 VDC 520 ma).

Interconnections are straightforward. You will need three shielded cables: 1)-18" long-DB-25M to DB-25M, 4 conductors includes 1 spare (RS-232C Model 102 to CP-1). 2)-receive audio out (AFSK)-miniature plug to miniature plug (transceiver speaker jack to CP-1 RX in). 3)-transmit audio out (AFSK), PTT**, ground-4 pin (CP-1 microphone type plug to your transceiver microphone plug).

Length of cables 2) and 3) will be determined by your operating position set up. Lengths of 2 to 3 feet will fit most situations.

REPRISE

I am told that CP-1s are available at hamfests for under $50. and that a Model 102 (and its predecessor the Model 100) will sometimes show up for about $100. (The Model 102 is now listed new at Radio Shack for $399.)

In a parallel test with my PR-232, my CP-1 outperformed the PK-232 in a noisy signal environment.

The low cost, small size, low weight and transportability of this package deserves serious consideration by the RTTY dxpeditioner who doesn't need a lot of bells and whistles. The software does not provide a menu with a dozen options. It is an elegant no-nonsense approach to making RTTY QSOs at 60 or 200 wpm.

ACKNOWLEDGMENTS

Thanks are due to Hank, W2HAP, for installing the RS-232C option in my CP-1, to Alex AI2Q for finding the K8TT program, and to Clark W9CD (via TG9VT's APLink MBO) for showing me the error of my ways in keying in a computer program, and for guiding me through an understanding of how the program works, and, last but not least, my XYL, Miriam who I think is better than my computer spell checker.

*17 Nassau Blvd. Malverne, NY 11565 (516) 593 8050

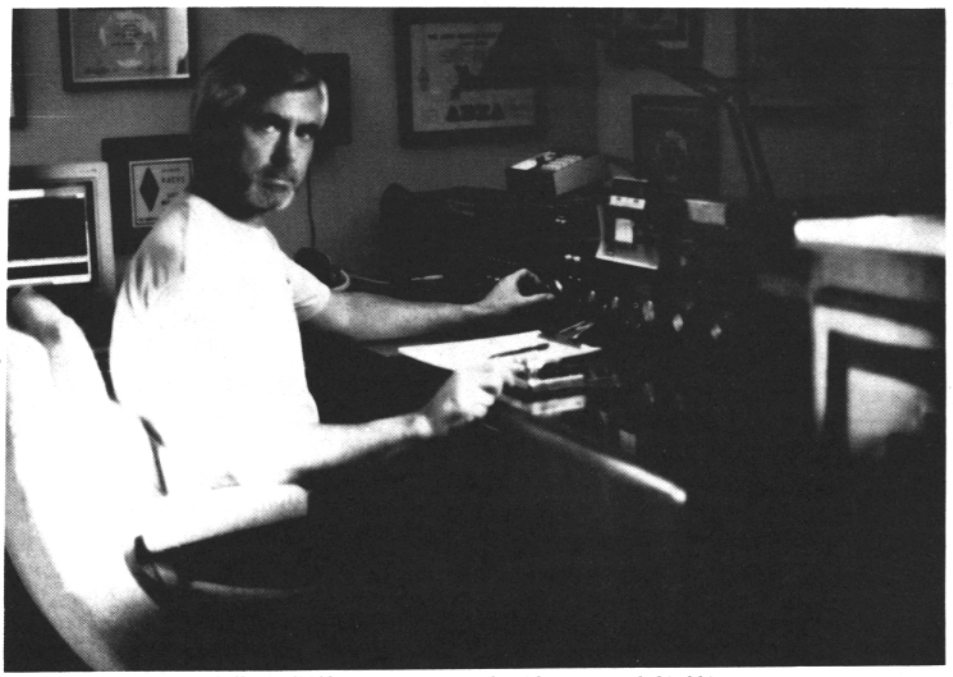
** The program as written by K8TT does not provide for keyboard PTT. It requires you manually to actuate the PTT button on the CP-1. However, I have included PTT in cable 3), as I am told that the program can be modified (along with one cabling change) to provide for keyboard

ALGERIA CALLING

Touati writes asking for help. He and another Ham novice are looking for some free equipment to get them on the air. If you can help, please contact Touati at POB 180, Constantine, Algeria. The man on the camel is not Touati. The picture was on the reverse side of the note he sent.

DXER of the Month

Bill Mullin, AA4M/6
3042 Larkin Pl.
San Diego, CA 92123



Bill, AA4M/6, at station controls with computer behind him.

Dear Dale,

I saw in the June, 1990 issue of RTTY Journal, that you had a "DXer of the Month" article. I'm a relatively new subscriber and hadn't even realized that you featured such RTTY amateurs. Anyway, I've only been on RTTY about eleven months now, and thought my story might be of some interest to the readers.

My SSB and CW DXCC totals had reached the point where there was just about nothing new left for me to work. Actually, I'm on the Mixed Honor Roll, will be on the SSB Honor Roll once the ARRL gets to my submission (sent 8/90), and only one away from CW Honor Roll! The only radio operating I had been doing in recent years, other than the occasional new country, was regular skeds with a friend back in 4-Land and various contests. I needed a new challenge!

So, after conducting an informal survey of RTTY users on the Southern California DX PacketCluster, I decided the PK-232MBX would be what I needed to start digital operations. I did in fact purchase this TNC, wired it to the XCVR, and got it on the air Dec. 17, 1989. Talk about fun I haven't enjoyed hamming more than when I first got on CW!! I subsequently worked my 100th country on March 17, 1990, exactly three months after starting digital operation. Additionally, by this March 17 date, I had worked all but three states toward W.A.S., mostly during the ARRL RTTY Roundup contest. As of the date of this letter, my country total is now 159/139, I have worked the remaining three states, and now have RTTY W.A.S. certificate #155 hanging on my wall. Additionally, my RTTY W.A.Z. total is now 38/38. I only need zones 23 and 29 to have them all. Please note that all of my RTTY work has been after work and during weekends. From the great RTTY DX, I've seen on the Cluster hours after it was put out, I feel sure that I'd now have 200 countries or so if I could have been at home during work hours on weekdays. The darn job has cost me a lot of DX, HI!

My station is a brand new IC-781 (which just replaced my old faithful TS-930), Alpha-78, PK-232MBX for RTTY/AMTOR, PK-88 for 2 Meter packet, and a KT-34A at 55 feet. Of course, the antenna is the weakest part of this setup, but I only have a 1/8 acre lot with almost no usable back yard, so I'm limited in this respect.

Computing equipment consists of an Everex 386/25 with 8 MB of RAM, a 160 MB ESDI hard drive, 150 MB tape backup, 2400 BAUD MNP telephone modem, and a SVGA monitor with a 512 KB video card. RTTY Software is only a Plain Jane modem communications program, but it does everything I need! If you wonder why such an elaborate computer setup, it's because I'm a professional computer programmer and really couldn't be satisfied with any less, even though I don't use this computer professionally.

Speaking about computers, it may interest you to know that I routinely monitor the 2 meter PacketCluster, monitor a RTTY mailbox while saving all copy to hard disk, and write letters such as this one all on the same computer AT THE SAME TIME. This is through the use of the new Windows 3.0 multitasking software. I can even configure the computer so that the screen is "split" with the Cluster alerts showing at the top of the screen while I'm having a RTTY or AMTOR QSO using the bottom of the screen! Aren't computers fun? HI

The following are "The Assorted Wisdoms of AA4M," and are listed in no particular order:

Controversial Observation #1: I do not believe that it is necessary to purchase an elaborate RTTY terminal unit. With the PK-232MBX, I've found that I can copy anything I can hear with my ear, even though the signal may not move the S-meter! Additionally, I find that a 10 Hz QSY will show on the tuning LEDs, thereby convincing me that I also don't need a scope. Moreover, I've found that I can copy ANYTHING that is put out on the local PacketCluster and am very competitive in the pileups. So why do I need a stand-alone RTTY terminal unit?

Controversial Observation #2: AMTOR is fantastic! I've observed that some of the guys who have been on RTTY for a few years, at least in Southern California, seem to avoid AMTOR. I made my first AMTOR QSO about a week after my first RTTY QSO and have been using both modes ever since. I've discovered that I can maintain 100% copy in conditions that would yield 50% copy or less in RTTY. Note that I always put out the good

AMTOR DX on the Cluster during my QSOs, yet have never heard one of the locals call following the QSO. Why not? I don't know - the same alerts in RTTY generate all kinds of interest. Since AMTOR QSOs count the same as RTTY QSOs toward any of the digital awards, and because AMTOR is so fun, I will not ignore this mode!

Controversial Observation #3: Shareware doesn't work! For those who aren't familiar with the term "shareware," it's simply software that is distributed on a "try now, buy later" basis. If a user likes the program, he is expected to send in a registration fee, donation, or other form of payment. The advantage to the software author is that there are no advertising or distribution costs, and the advantage to the user is that he gets time fully to evaluate a program before deciding whether or not to purchase it. In the early days of shareware, a number of the better software authors became millionaires through this method. But, I don't believe the concept works any longer. I wrote a program called QQSL (Quick QSL) which produces QSL labels for dot matrix printers, and does so through the use of colorful and user-friendly menus. Although I have gotten a lot of positive feedback from the public and a very nice write-up in "CQ Magazine" and later in this publication, shareware donations have been poor. I had heard that this is now the way things are for shareware today, and I guess it's true. Oh well, at least I got a lot of programming experience from this endeavor HI! By the way, if anyone wants a demonstration copy of the program, please send a formatted 360 KB or 1.2 MB, 5 1/4" floppy and a stamped mailer. I normally reply to requests for QQSL within 24 hours of receipt.

Interesting Fact #1: The AEA PK-232MBX manual is terrific! I have been working with technical manuals professionally for over 25 years and have written quite a few myself. I can honestly rate the 232 manual as one of the "best of the best." All the answers to any question one might have about digital operation on any of its modes will be in this manual and explained in terms that I believe the layman should be able to understand. Trust me, this kind of technical manual is a rarity!

Interesting Fact #2: AEA has free support in the HAMNET Forum on CompuServe. I have had a number of discussions with the AEA representatives in this Forum, and found that their replies are always prompt and accurate. This is also a rarity!

Interesting Fact #3: I am not a salesman for AEA, nor do they pay me for endorsements, HI.

Interesting Fact #4: I made 407 QSOs in the ARRL RTTY Roundup Contest, all using AFSK mode. This was only three weeks after I initially got started with digital modes. A few weeks after that, I rewired the TNC and XCVR for FSK operation, and now know that I will never go back to AFSK! FSK is so vastly superior to AFSK that I'm amazed that digital articles such as contained in the RTTY Journal don't do more to try to dissuade digital enthusiasts from using AFSK! The only thing I don't understand now is how I did as well as I did in that contest, HI!

Interesting Fact #5: RTTY and AMTOR have replaced CW as my favorite mode. Actually - AMTOR is my favorite mode, yet most of my digital QSOs are using RTTY since that seems to be where the "juicy" DX seems to hang out.

Interesting Fact #6: Buy FCC Class B computers only! I can't emphasize highly enough that anyone purchasing a new computer and planning to operate it near a radio station must make sure it has FCC Class B Type Acceptance. This will cost a little more up front, but will pay off in the long run since RFI problems have been reduced and/or eliminated at the source. Note that if the seller isn't sure what FCC type he is selling, it isn't Class B.

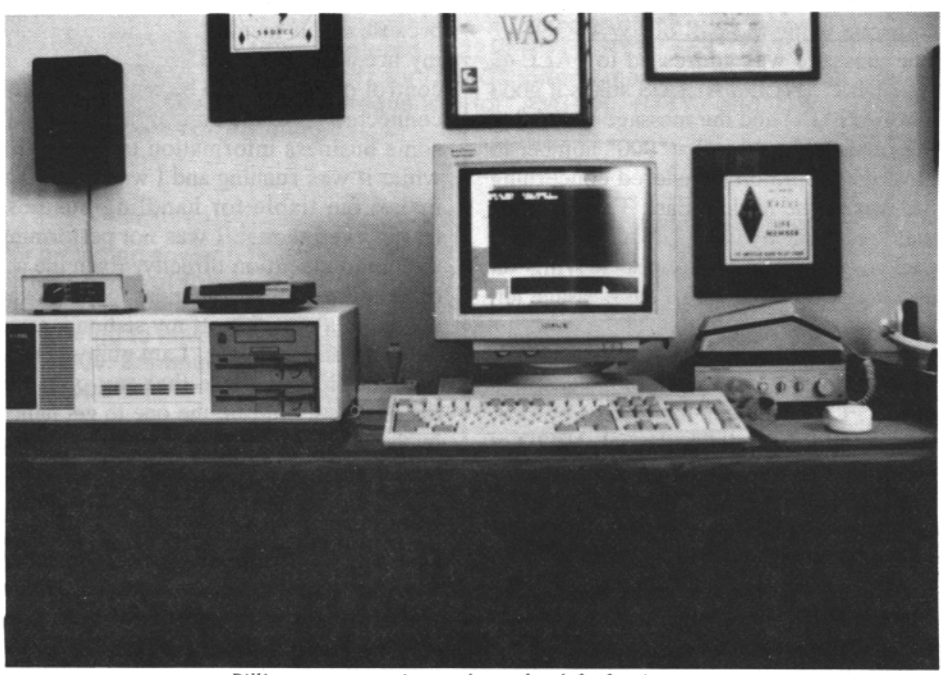
My Best Digital QSO #1: I broke through a JA pileup to work ZS9A long path one Saturday morning on 15 meters. This was my first LP QSO on 15 meters (any mode) and I've been licensed thirty years!

My Best Digital QSO #2: I worked FR5ZD for 45 minutes one evening using AMTOR, barefoot! Copy was 100% the entire time, and Reunion is a L-O-N-G way from Southern California! Oh, I put this out on the Cluster during the QSO but nobody called when I was through!

My Best Digital QSO #3: I worked VK0JR, MacQuarie Island, on AMTOR late one Saturday night. The operator told me that I was the first AMTOR QSO with MacQuarie Island, EVER! I put this out on the Cluster also, but again there were no calls from locals!

In closing, RTTY and AMTOR have absolutely "revitalized" my interest in ham radio! I highly recommend that anyone looking for a new interest in ham radio give these modes a try, you won't regret it!

73, **Bill, AA4M/6** ■



Bill's computer equipment located to left of station gear.

PACKET

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

MAJOR MALFUNCTION

I do not mean to demean the Challenger and the loss of her and her crew, may they rest in peace. We in the digital community have had just that, a major malfunction.

The majority of the information that I am presenting here this month is through the courtesy of the W5YI Report and in particular, the February 15, 1991 issue.

What I am about to present in the following discussion represents opinion on my part and I am not pointing a finger at anybody saying that they are either guilty or innocent. I have not seen the actual message or legal transcripts concerning the situation. The details are these. The Norfolk, VA office of the FCC issued "Notices of Violation" to eight ham radio operators and "Notices of Forfeiture" (i.e. fines) to three ham radio operators, citing them for violating the Part 97 sections prohibiting the use of the amateur service for business and monetary profit. This whole fiasco was started by a message that was inserted into the N3LA packet BBS by, now pay close attention, someone using the call of "WA3QNS.." The message was addressed to "ALL @ ALLBBS" (ALL@ALLUS stikes it good here, AGAIN) and the message stated that the readers should call a "900" number to have their opinion registered concerning the war in the Middle East. This message was relayed by the UNATTENDED packet forwarding network leaving an audit trail on each copy of the message left at each BBS on the forwarding chain.

This message was brought to the attention of the FCC Engineer-In- Charge by U.S. Navy officer Russell Tjepkemal, NZ2D of Virginia Beach, VA (sorry, Semper Fi) somewhere down the forwarding route. He raised a question concerning the presence of a solicitation to call a 900 number. Based on the message, the Engineer-In-Charge issued the notices to the holders of the amateur calls that appeared in the forwarding audit trail and the originator as he saw fit based on the message.

There have been several times before that I have espoused on the problems presented by the use of the ALLUS or ALLBBS routing designator. This designator appears in just about all of the messages that I see on the packet BBS that I frequent. I feel sorry for the network and the BBS operators that have to suffer with this onslaught of wasted air and computer time. The packet system that we fought so hard to build was brought down by one message and the ALLBBS designator. I am not saying that the ALLBBS designator did it, but the indiscriminate use of it, did.

The message probably would have slipped on through and not been noticed if it was directed to one individual in particular as a private message. But since it was open to all, it was easier to spot.

There are many people out there who are preaching that the packet network will die because of this one incident. That may be the case, but I think that the way messages are passed on the network will now change because of this incident. I will not gamble my license to run a BBS unless I have full control on how it is to be run. If someone connected up to the system, and uploaded some business information to my system while it was running and I was gone, that makes me liable for handling business traffic even though I was not performing the communication directly. Even the act of reading a business message that was posted is a violation. If my station is used to relay business traffic, I am guilty, There are people out there that say only the originator should be the one to get nailed by the FCC and not all of the people whose stations handled the traffic automatically. Then there are others who go by the book.

I personally believe that the responsibility for what happens on the network and on the air rests with the stations that are involved with the communication. I will not conduct business on the air. If someone starts talking business to me, I will tell them that the phone is better than the radio for that type of function and break off the conversation. That is not possible with an automatic station. The automatic station does not have the ability to determine what is acceptable traffic and what isn't. That responsibility lies with the originator of the traffic. If he or she wanted to violate the inplied trust, then they place many more people at risk than just themselves.

I believe that the FCC did right by the Notices. But it also implies that the FCC will be watching more in the future. I think what has happened has left a very big black eye on Amateur Radio and rightfully so. It will not be easy to fix and sanitize this one.

Personally, let's get rid of, once an for all, the ALLUS designator. I agree that this will not fix the problem but it can help limit the spread of the problem. The real solution to this problem is to learn from this incident and watch our operating practices with our equipment. We now have a no-code entrance option available to people who want to get their ticket. How is this going to look to them. We are supposed to set the example and teach them the way. Our credibility gets tarnished with incidents like this.

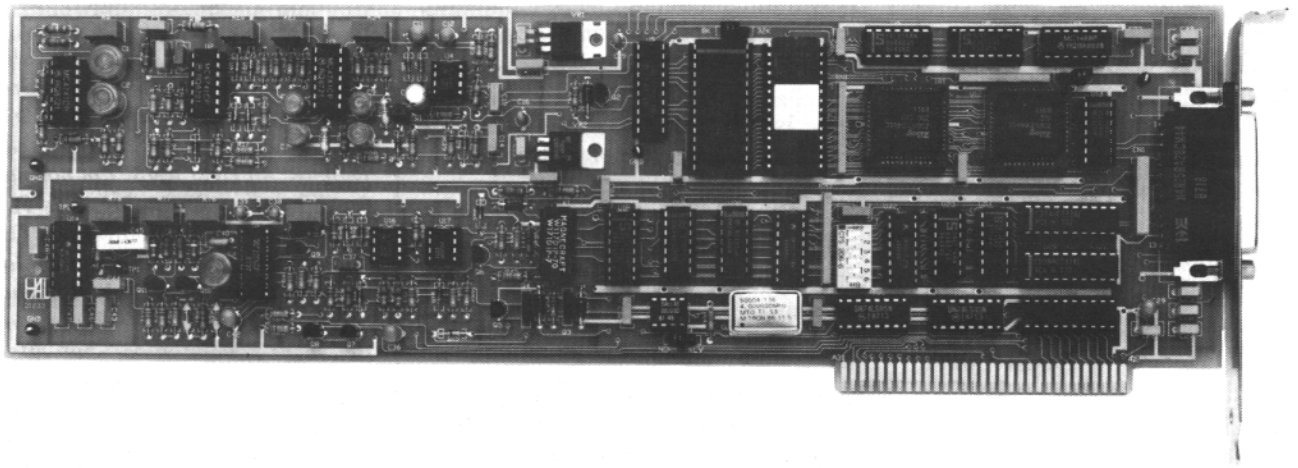
Earlier in the article, I had a section that was underlined with the wording "someone using the call of WA3QNS". The reason that I worded it that way was because with packet and most of our communications systems, it is easy to bootleg another call. It is as simple as MYCALL WA3QNS. Here is implied trust coming up again. I use the call N6NKO because that is what the FCC gave me to use. It is just as easy to use the call of 5Y3GT, RG8X, or something else. I don't do it because it is not right, how about you?

I am not trying to beat this subject into the ground, it has already arrived there. Let us learn from this incident and keep our slate clean, or steps may have to be taken by either us, or rules may be imposed upon us by the FCC.

My apologies to you for having a short article this month. I am not sure what a home life is like, now what with all of the overtime hours I have been puting in at work lately. Hopefully, that will change soon.

Peace, de **Richard, N6NKO** ■

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



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

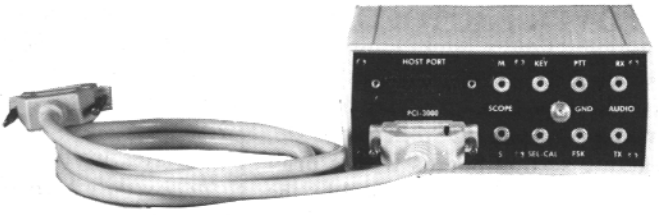
The PCI-3000 doesn't limit you to Amtor. You also get high-performance Baudot and ASCII RTTY, CW, and Search Mode. Search Mode lets you simply tune in the signal—we take it from there. The PCI-3000 automatically finds the correct code, speed, and polarity. No more guessing!

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

SPT-2 Spectra-Tune:

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

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

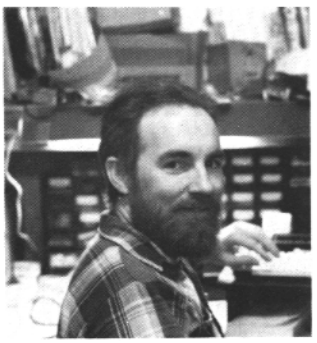


HAL Communications Corp.
P.O. Box 365
Urbana, IL 61801
Phone (217) 367-7373
FAX (217) 367-1701

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

(Low tone export models available.)

CIRCLE 58 ON READER SERVICE CARD



Ray Petit, W7GHM, POB 51, Oak Harbor, WA 98277

CLOVER (Part III)

Hello again, everyone! In this third of the series, I'll describe the Clover protocols, but first some news:

REQUIREMENT FOR FREQUENCY PRECISION BEING RELAXED

I have found a way to compensate for frequency offsets of up to 10 Hz between the sending and receiving stations. This now makes it practical to operate Clover with HF transceivers of existing modern design. I don't yet know how much this will affect on-the-air performance.

NEW ON-THE-AIR TESTS IMMINENT

As of this writing, AK0X and I are preparing for a new series of on-the-air tests, this time using the Clover DSP modems. Our previous tests last year operated one-way only; these tests will be two-way and they will help me fine-tune the fully automatic adaptive protocol.

CLOVER PROTOCOLS

At present, two Clover protocols are defined. The first is a broadcast protocol resembling AMTOR FEC. In this mode, the sending station begins with a brief synchronizing sequence followed by the data in Reed-Solomon codeblocks. The modulation mode will be the most robust one available. The second mode, the two-station "connected" mode, will have features resembling both AMTOR ARQ and packet. In the engineering literature, it's called "hybrid ARQ." It combines the Reed-Solomon error-correcting code with provisions for repetition of blocks which fail to decode. The choice of modulation mode and RS-Code will be made automatically on an ongoing basis to match the channel conditions as closely as possible. The modulation mode will be set with the goal that no more than about 1 in 10 of the codeblocks fail to decode. The ones that fail will be retransmitted without requiring repetition of blocks which were successfully received.

Here is a humorous description of how the two way protocol works:

Imagine that each Clover modem talks to itself and the other, as a connection is established and maintained. I'll call the two stations "A" and "B." All names and numbers are fictitious!

A: (Listens on the frequency for perhaps a minute, and if no other stations are present:) *"Attention, everyone who can hear...set your time markers...ready...now! This is the Clover modem at station A. I have 84 bytes of data for station B. Are you there, B?"*

B: (Hearing the call from A:) *"Wake up, wake up, someone's on the channel! Wow, he's sorta strong...hum...signal to noise about 25 bB.. his phase spectrum is pretty broad though, looks like the path is sorta mediocre...OK, awaiting your time marker...zap! Oh, station A...only 84 bytes? ...ok, let's see now...that would fit nicely into 2 codeblocks in Format E, and he'll have to send it in 4-level phase mode if I am to have a chance of decoding it OK... Hey there up at the application level, I've got station A on the line here, do you have anything you want to say to him? Only 20 bytes? OK...(Transmitting:) Attention everyone, set your time markers... ready...now! This is the Clover modem at station B, responding to a call from station A. Send me your data in two Format E codeblocks, modulation mode 4-phase. My next transmission will begin exactly 134 framelengths from the time of my time marker, and I have 20 bytes to send."*

A: (Hearing the reply:) *"Aha, someone's there...only 8 dB signal to noise, rather wide phase spectrum...OK, awaiting time marker... pow! Aha, station B, there you are...ok...ok...gotcha... ok, switch to 4-phase, I wouldn't have made that choice, but he's the one who has to read it, so give him what he wants...hey Reed and Solomon, he wants it in format E! Ya ready? OK...time's running short...here we go! (Transmitting:) Ahem everyone, it's just us again... OK B, send your 20 bytes in 1 Format C codeblock and use 2-phase, and here is my data for you...and no new data is waiting."*

My next transmission will begin...

B: (Receiving:) *"OK, there he is, right on time...alright, 1C, 2- phase...here's incoming...OK, R&S, here's his first block, what do ya make of it? Great, but error count a little high...here's his second...Ow! Give me a break out there, Thor! ...All right R&S, I'm not surprised, my ears are still ringing...his S/N down some, only 50% recovery...(Transmitting:) OK, A, I got your first, lost your second. Send it in mode B 2-phase, my original request a little too optimistic...here's your data...my application has 1270 bytes in the que for you now..."*

A: (Receiving:).. *".OK...OK...didya getit, R&S? Wow, he's loaded now, let's see, I have to take just his first 768 this time...nothing new, application? OK...(Transmitting:) Give me 16 Format G codeblocks in 2-phase...*

B (Receiving:) *"Uh, this looks bad...what's the verdict, R&S? It's the pits: OK, everyone, plan B! (Transmitting:) Alarm! Alarm! A this is B, hold everything! What follows isn't what you asked for, I failed to decode your instructions that time, so send 'em again!*

A: (Receiving:) .. *".oops, standby everyone, link is getting marginal...(Transmitting:) OK, B this is A, no new data, send me 16 Format G codeblocks in 2-phase..".*

B: (Receiving:) .. *".got it this time? All right! (Transmitting:) Data block 1... block 2... ... ...block 16; my application now has added some more bytes to que, now it's 845.*

A: (Receiving:) ... *"OK, lets move the data... block 1? ...block 2? ....block 16? Reports, everyone! R&S? OK, all except 3 and 12, average errors corrected on successful blocks: 4. Stats? Mean frequency offset, 1.8 Hz, deviation 0.6 Hz. Average signal-to- noise: 14 dB. Recommendations? ...OK, we lucked out that time, let's stay put...(Transmitting:) All right, B, repeat blocks 3 and 12 and we'll fill the holes, follow with 14 more G blocks in 2- phase.."*

And so goes the chatter. The modem-to-modem conversation is contained in a terse 40-bit block that is sent right along with the encoded data.

"ECONOMY FOR EFFICIENCY"

My overall goal is to get the greatest number of error-free data bits per second through a channel having the narrowest possible bandwidth. Reaching this goal requires that Clover's economy in use of bandwidth must be matched in its use of time.

For the communication protocol, there are several obvious ways of gaining efficiency in time: Don't send anything unless it's necessary. Use recognized abbreviations. Prevent "collisions," more than one station transmitting at one time. Keep pauses between transmissions to a minimum. For the persons or computer programs that generate and "consume" the data, make messages terse and use data compression.

Skillful CW operators in a traffic-net setting offer an example of wonderful efficiency in time. AMTOR, with its tightly-coupled ARQ strategy, makes excellent use of time except when no data is waiting to be sent. RTTY does well except that a large fraction of the total time is spent sending start and stop pulses which carry no data. Packet on HF offers the example of what not to do: collisions, retry frames, and lots of overhead in each transmission arising from the need to have full routing information in each packet.

Clover uses a synchronous protocol. Once timing is established at the outset, data flows in a continuous stream without start and stop bits. The exact moment when a block of data is to begin is known by the receiving station in advance: resynchronizing at the beginning of a transmission is not necessary. Callsigns are exchanged in accordance with the regulations, but not more frequently unless the link gets marginal. The Clover "connected" protocol will resemble AMTOR, except that transmissions are much longer and of variable length, and changeovers much less frequent. It will be during communication of large amounts of data that Clover will reach its highest efficiency.

Networking protocols are yet to be defined. But one thing is for sure: great care will be taken to make a Clover frequency free of collisions! The DSP Clover modems will also adjust their audio power output levels (and hence the transmitter RF power levels) for the minimum power needed to maintain the communication.

INTERFACE TO APPLICATIONS

Packet and AMTOR operation has been made all the more interesting and useful on account of software authors who have supplied bulletin boards, MSO's, nodes, and all kinds of neat terminal programs. To encourage authors to write applications for Clover, I am going to make a very "easy-to-use" application interface. Clover will have few adjustable parameters and a simple command set. Please write me if you wish to write an application!

This concludes the Clover series, but don't despair. I am working on some new and exciting things that I will share with you in the future. Until then, I hope to meet many of you in Dayton this year.

de **Ray, W7GHM** ■

ED: Thank you very much Ray for this exciting series about a new method of improving throughput on our HF bands. Good luck and keep us informed of your future progress in this area. We look forward to premiering your next venture into the Digital modes of travel.

EXCHANGE POINTS TABLE

YOUR zone \ CORRESPONDENT zone	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
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MSOs

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

Hi Gang! Another Winter is almost behind us, and a rough one it has been up here in the Plains States. "Global warming" sure hasn't had made things uncomfortable in this area yet! Just a few weeks now and the annual migration to the Dayton HAMVENTION will occur, and we hope to see and visit with many of our Digital friends and acquaintances there. Dale, W6IWO, has a very interesting Digital Digest scheduled again during the HAMVENTION, and I would encourage all attending the HAMVENTION to make room in their schedules to attend.

MSO HINTS:

It's a pleasure to see new users on the various MSO's on the National Autostart Frequency, (14 085 625 Hz, Mark frequency), and if there is one helpful hint that I might pass along to new users, it is the use and function of the Carriage Return/Line Feed (CR/LF). When you press the RETURN key, (or ENTER or NEW LINE keys, or however they are labeled) on your keyboard, it causes a very distinct set of actions to occur. In the old days, (I have to be careful about using the word "old," because the state-of-the-art is changing so rapidly these days, that "old" pertains to yesterdays $5000.00 RTTY rig, that today is worth one-tenth of that...!!!) when mechanical page and line printers were still in vogue, reception of a CR/LF did just that. It returned the mechanical carriage to the leftmost position, and started (or fed) a new line of text.

In today's world of microprocessors, computers, smart terminals, etc., the CR/LF does exactly the same thing, except that instead of a mechanical action, it causes the "cursor" to move to the leftmost column, on a new line. With respect to MSOs and other CBMS (computer based mailbox systems), reception of a CR/LF at the end of a command line, "executes," or causes that particular command to take place. For example, if you are asking the system to output a copy of its Directory, then the command would most likely be .SDIR (CR/LF). If you fail to include the CR/LF (pressing of the ENTER key on your keyboard) at the end of the command string, then your command will not be processed by the system, and you'll be left wondering what happened.

Typically the new user then activates his transmitter again, sends a couple of CR/LF's, another request for the Directory, only to find out that as soon as he sent the first CR/LF on the second try, the MSO came up, processed the command, and output much of the information he wanted while he was still typing the second .SDIR command. So, just remember to end all command strings, whether they be directory requests, "write" or "read" commands, etc., with a CR/LF, and you'll find the system will respond each time without difficulty.

A GATHERING STORM:

At the risk of delving into a subject that is becoming very emotional and controversial, I feel that it is time for a few comments on the subject of HF Packet Radio. I see and hear more and more disparaging comments about this mode, particularly with reference to the 20 and 40 Meter digital areas. In some cases, I've been told that with respect to 40 Meters, Packeteers in southern States have boldly stated that it is their task to run RTTY, CW and AMTOR out of the long established digital areas, so that they may install both intra and inter-state HF Packet radio communications links. On 20 Meters specifically, we observe a steady downward expansion of HF Packet signals, to the point that the area from approximately 14087 KHz to 14099 KHz, is rapidly becoming unavailable for routine RTTY QSO's, DX QSO's, etc. In short, between HF Packet, MSO's, CBMS's, AMTOR and APLINK BBS's, it won't be long before 20 Meters will be filled to the point with automated systems, that routine RTTY QSO's and DX chasing will be a thing of the past.

Now you might think that it's strange that I would speak out on this subject, being that my automated system on the National Autostart Frequency has over the past 13 years contributed to this decrease in available frequencies for routine and DX use. However, MSO SYSOPs on the National Autostart Frequency do not operate in an unattended mode, and in fact do all they can to prevent their systems from inadvertently interfering with established communications, regardless of the type of QSO. More importantly, we have banded together, with six to twelve independent MSO's sharing a common set of frequencies. We have concluded 13 years of cooperation, good will, service to Amateur Radio, and enjoyment by both remote users and SYSOP's. We thrive on the fact that we can co-exist with many other automated stations on a common frequency, thus providing national and world-wide services without excessive frequency tenancy.

It appears to me, as well as to others with much more technical expertise than I, that Packet Radio, as it is utilized on the HF bands, is an inefficient, frequency wasting and argumentatively unworthy mode of operation. I cite as proof of this unworthiness the continuing efforts of the American Radio Relay League (ARRL), in petitioning the Federal Communications Commission (FCC) for extensions of the Special Temporary Authorization (STA) for "unattended HF Packet operations" on 20 meters. In this world of over-night technical advances does it take almost three years to determine the worth of HF Packet Radio? I don't think so. And if the reports I receive of systems clogged with messages directed to every cat and dog who can figure out how to fire up a Packet BBS, coupled with a data throughput of about the speed we attained on RTTY prior to World War II, then I wonder who's interests the ARRL is serving when it continues to persuade the FCC to extend the 20 Meter STA? Let's require that the ARRL publish some facts and figures as to the viability of HF Packet Radio, gleaned from the experience gained under the STA umbrella. Could it be that the facts are such that no one with any technical background could support them? And, if my information is correct, it is the ARRL who is charged with the responsibility to authorize which stations participate in this study, and to limit them to a set of pre-determined frequencies. It's obvious to anyone listening from approximately 14095 to 14115 KHz, that there's a lot more going on in that area

than what's authorized!

As Ray Petit, W7GHM, so eloquently points out in his article in the January 1991 issue of the RTTY Journal, Packet radio certainly has its place in Amateur Radio. In VHF, UHF and hard-wired configurations, Packet radio excels in passing error-free digital communications. It is only when it is mis-used, as in HF radio applications, that the problems I alluded to arise. The X.25 commercial protocol was not designed to be utilized in an environment where atmospheric noise, data collisions, QRM, etc., exist, and because these very detriments all exist in the HF spectrum, HF Packeteers attempt (demand?) to find a "clear channel," thus spreading out and gobbling up available spectrum in a hurry.

As we found out during the ARRL's unsuccessful bid to have unattended digital operations approved through R-7248, we have the means and ability to influence FCC decisions in this area. I personally feel that we should at this stage in the evolution of digital communications, attempt to work through and with the ARRL Digital Committee, provided we find that entity willing to accept outside input. If past experience is any indicator, this ARRL Committee is both managed and staffed by those who would trample upon tradition and existing protocols, in a headlong rush to be on "the cutting edge" of technology. Progress is great, but not at the expense of existing technologies that still serve, and serve well!

Those of us who care about RTTY ragchewing, RTTY DX chasing, MSO's, AMTOR QSO's, APLINK systems, etc., have a unique door into the ARRL Digital Committee through Dale Sinner, W6IWO, who was recently appointed to that Committee. Although Dale is quite knowledgeable about most all forms of digital communications, and is willing to work for the betterment of all digital modes, he doesn't have a crystal ball, and cannot be expected to present a codified input without hearing from you. We have no one to blame if HF Packet continues to expand and cause disruption to the 20 and 40 Meter digital areas, unless we provide meaningful input and solutions concerning this area. It's not my thought to place this burden entirely and only upon Dale, but rather to suggest that each of us has a responsibility to express our views on this subject, or to live with the status quo. There isn't a day that goes by that I don't either engage in a QSO where someone complains about HF Packet encroachments, or see a QSO containing the same objections. Why not put your thoughts down on paper, send them to Dale, to your ARRL Division Director, and especially to Paul Rinaldo, W4RI, ARRL Technical Development Manager, and Luck Hurder, KY1T, ARRL Deputy Manager of Field Services. (It's Luck Hurder, KY1T, who is responsible for implementing and complying with the FCC STA on unattended HF Packet operations.) Let's give Dale some ammunition to use during his attendance at the Digital Committee meetings.

MSO RAMBLINGS:

If you're interested in eavesdropping on some of the communications going on in the Persian Gulf area, Jay Roman, KB0ATQ, has a well developed list of frequencies that bear watching. Jay has spent a lot of time listening to various broadcasts from the Gulf area, and his list will provide some "real time" action for you. Jay's MSO is on the National Autostart Frequency, and his access code is MSOATQ.

Al Kaiser, N1API, has had to curtail his MSO operations temporarily, as he is working a different shift in support of the Persian Gulf activities.

Dennis Kwasny, WA8ZRK, will soon join the National Autostart Frequency with is MSO. Dennis lives in Dearborn, Michigan, and will operate the time-proven HAL MPT-3100 system. His access code will be MSOZRK. Welcome aboard Dennis!

That's it for this month Gang! I'd like to congratulate Cole Ellsworth, W6OXP, on his excellent "Connections" column in the RTTY Journal. The technical end of things has always been my favorite, and Cole does an excellent job of presenting them. —73— de **Dick, K0VKH** ■

DX NEWS

by line: **Don Simon, W6PQS 356 Hillcrest St., El Segundo, CA 90245**

ED: *Don has volunteered to fill in this month for John, TG9VT. Don is a very active DXer and heads up the IRDXA group. Thank you Don for being a guest Op this month.*

Jules, W2JGR, did a great job filling in for John last month. Unlike Sugar Ray Leonard, Jules retired a winner.

John, TG9VT, is now resting at home after his surgery. He is feeling better every day, but still uncomfortable. According to John, the operation took nine hours... he says, "it took them that long to make sure they got all my money!"

John is monitoring the TGVT, APlink, scanning 14,074, 21,074, and 28,074. Please check in, he would love to hear from you all. Simply send TGVT in ARQ mode until the machine answers. To log in, send LOGIN (your call) followed by a CR/LF or Enter. The machine will log you in, then send GA+? Then send a single "T" to alert John. If he is there, he will break in. If not, leave him a message using the command SP TG9VT (just follow the instructions) .. have fun.

Another grand OM of RTTY, Irv Emig, W6GC, is suffering the effects of a fall in his home. He recently went under the knife to correct pressure on his spine and is resting comfortably. He should be home shortly and back in the pileups.

Too Late News

Mayotte - FH - Hopefully, by the time this column appears you will have logged FH for a new one! Several JAs are activating both D68 and FH with their RTTY gear in March. If you get the chance, work both, because there is still no sign of the D68VT cards from last October. QSL, JL3UIX, for the JA group.

Afghanistan - YA - Alex, UL7UAE, a frequent RTTY operator at RL8PYL reports he and a gaggle of friends will try to operate from Afghanistan in April as YA2A ... RTTY of course. Another rumor has Romeo, YA0RR, going back for another run in April as well.

Armenia - UG - Many who worked UG7GWG in September 1990 have not received any response to their QSL efforts. Recently, UG6GG, has been re-

ported on 28 MHz around 1530 UTC offering another opportunity.

Bahrain - A9- In spite of frequent AMTOR operations by A92FG, A92ET, and A92FB they continue to elude many in the Western US and Pacific. Anyone who can talk one of these operators into switching to RTTY mode will certainly earn the gratitude of the weak signal crowd.

Bangladesh - S2- Jim Smith, VK9NS, reports the political situation, following elections on February 27th, is not good. As a result, he has delayed his S2 trip at least two weeks and possibly more. Jim is keeping his bags packed and intermittently testing his new laptop computer and RTTY grinder in anticipation of a change in the situation.

Bhutan - A5 - Jim Smith, VK9NS, reports his April trip is on as planned. He should have a stronger signal this time which will be very welcome in Europe and North America.

Christmas Island - VK8X - In March a group of DLs and in April a gaggle of JAs will activate this relatively rare one. Unfortunately, both groups will be RTTY-less. And, even more unfortunately, all this commotion has driven off the US group planning an all mode (CW, SSB, RTTY, SAT, 6 Mtr) operation for May. There is still some hope the US all mode bunch may go anyway.

Clipperton - FO0C - Jay, WA2FIJ and friends have joined forces with the Clipperton DX Club and are now planning a major, all mode storming of the Clipperton beach in March of 1992.

Ethiopia - ET - Peter, WAWOW, (QSL manager for ET2A) says he may have some tricks up his sleeve and asked IRDXA to have RTTY gear standing by. Needless to say, the gear is packed ... and ready.

Franz Joseph Island - AK2 - The IRDXA gear originally scheduled for YA0RR was delayed in Tokyo, and Gin, JA1ACB, scrambled to provide other equipment. To capitalize on the situation, the IRDXA equipment was forwarded by devious means to 4K2OIL, (QSL, UA9MA) and is already in operation.

Kermadec - ZL8 - Ron Wright, ZL1AMO is presently practicing from home using the laptop furnished by N2HOS and KAM by IRDXA. There is no word when the anticipated ZL8 trip will materialize.

Malyij - Vysotskij - 4J - In a recent conversation with the editor, Martti Laine, OH2BH, reported the political situation in the USSR has adversely affected the trip to MJ Island and it has been postponed indefinitely.

Pakistan - AP - AP2NK continues to appear regularly, and tantalizingly, in the VK2SG DX News. Unfortunately, these appearances are well before the band opens to much of the US. Cheers and beers to anyone who can talk Nasir into working long path on 20 Mtrs in the 1430 - 1530 window.

Papua New Guinea - P2 - Dave, P29BT, is once again active on RTTY with his new IRDXA furnished PK-232. Most recently, his laptop computer failed and was rushed off for repairs. It is now back in hand and his manager is making and effort to get Dave out of bed early to work the US on 10 Meters.

San Felix - CE0X - Local CE RTTY enthusiasts are attempting to activate XQ0X now.

South Shetlands - VP8 - The RTTY operation mentioned to W2JGR by HF0POL has not materialized yet.

South Sandwich - VP8 - Tony, WA4JQS, and his gang may have discovered transport for late 91. IRDXA will provide RTTY equipment .. keep your fingers crossed for Tony and the boys.

Southern Sudan - ST0 - IRDXA equipment is in route to Dennis, ST0DX (ex RTTY op TZ2MG.) It should be in Nairobi by March 20th, then will follow a bent path to ST0. Other groups are providing improved station equipment and antennas. QSL via WA2WOW.

St. Peter and Paul Rocks - PY0 - Karl Leite, PS7KM, and the NATAL DX Group are passing the hat in hopes of another attempt to activate this rare RTTY location again. Their first effort got cut short when foul weather blew the gang off the rock and destroyed much of their equipment. Financial support would be appreciated.

United Arab Emirates - A6 - The end of hostilities in the Persian Gulf will probably allow Don, WB2DND, to make his long delayed return to UAE where he will attempt to resolve the technical problem which has prevented RTTY operation by A61AD.

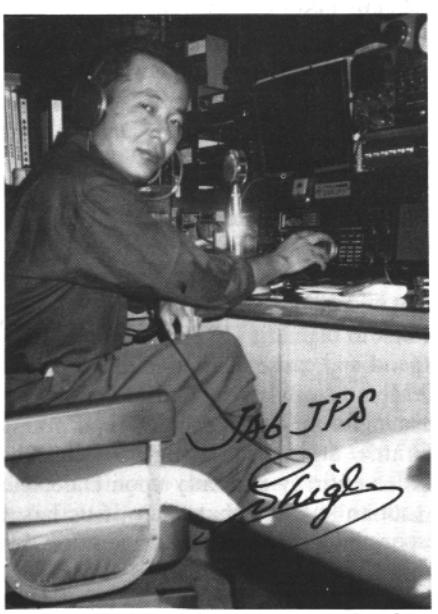
Wake Island - KH9 - OX3EW, quite active lately on RTTY, is planning a trip to KH9 in April. IRDXA has agreed to provide equipment for the trip if a transfer can be established.

IRDXA Stuff

IRDXA is once again in need of surplus RTTY gear for permanent placements. Particularly useful are older, self-contained units like the Robot 800, Microlog ACT-1, VIC- 20 with AIR-1 card, Tono 5000 or 9000 and Drake 7000. Call me at (213) 322-7112 for a fast decision. And, of course, we can always use green stamps for cables, parts and freight. News of IRDXA activities is posted at the end of each month in the APlink system. Please feel free to upload it into your Packet Cluster.

Well that's about all I can think of for now. Hopefully, John will be back at the typewriter soon and save you all from this plethora of "guest ops." Many thanks to Gin, JA1ACB, John, TG9VT, Jules, W2JGR, Ted, W2FG, Peter, WA2WOW and the VK2SG DX News for details. See you in the pileups.

de **Don Simon, Whiskey 6 Poor Quality Scotch** ■



Shigemi Tashima, JA6JPS, Kumamoto City, Japan

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It's the most flexible and evolutionary all-mode on the market! Since its first appearance in 1986, we've generated four major firmware upgrades, adding new capabilities each time. With release 3.0, in August of 1990, we added software carrier detect for squelch-free operation, reverse personal bulletin board forwarding, the new AMTOR 625, NAVTEX/AMTEX, a command to restore parameters and more!

And the KAM is tops in flexibility. The HF demodulator is user programmable, allowing keystroke selection of tone pairs. You can select any of the standard shifts (170, 425 or 850 Hertz - handy for MARS ops!) or you can set the MARK SPACE tones to any desired value within the unit's range, in one Hertz steps! You can program baud rate too, allowing for the operation or listening to off-rate baudot or other HF digital transmissions.

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And the unit is PC or C-64 friendly: an internal jumper allows TTL or RS-232 serial port operation without the additional need for a TTL/RS-232 adaptor for the C-64 serial port, saving you money.

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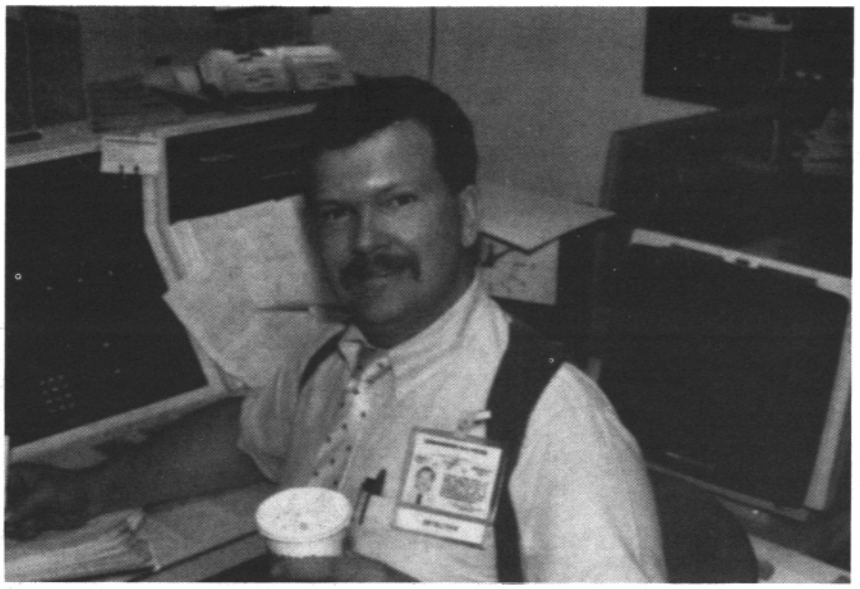

Scott Saunders, WA1SVU at operating position where he works.

RTTY RELIEVES STRESS

byline: Scott Saunders, WA1SVU, POB 736, Londondery, NH 03053

I've been a ham for about 29 years now, which at age 32 makes me feel older than it should. And like a lot of hams I know, I've gone through long periods of inactivity. In fact, I've only recently returned after nearly 10 (inexcusable) years of dormancy in Amateur radio. When last I left ham radio, I had never heard of Packet, TNC's, AMTOR and a host of other strange and wonderful acronyms. But I had heard of RTTY.

I remember my early days, when my greatest challenge was building and using my first rig, a Heathkit HW-16. I was hooked on the ultimate in Digital communications - CW. I fell in love with CW back then, and even when I upgraded to General Class, I never left it. Phone simply did nothing for me.

One of my ham radio friends took me to his shack - which was literally that: a shack in the back yard - and showed me his teletype rig. This was in the days of real RTTY - a paper tape machine clattering away rhythmically, the heavy smell of oil, and the bulk of equipment filling what little space he had available. I was impressed. But I considered RTTY a technical achievement that would forever elude me. Though I'd built some kits, and some simple home brew, I considered the challenge of RTTY beyond my abilities at the time.

I continued along with my trusty CW, but only for a few years. Time and circumstances had taken their toll on my ham interests, and it wasn't long before I was off the air altogether. I sold most of my equipment, save for the ubiquitous 2 meter rig. But with time, even that fell into disuse.

I spent my early 20's in the electronics field, which also failed to hold my interest. So, despite having worked my way up the ladder to an associate engineers position (and, I suspect, being a living example of the once-famous 'Peter Principle' rule of rising to one's level of incompetence), I chucked it all to become a police officer. It was to be the wisest move I had ever made, for within just a few years I had garnered a detective's position, where I remain today.

What's that got to do with RTTY?, you say. Just this: being a police officer in these troubled times is not easy. The stresses and strains of such work can take a heavy tool; it had begun to take one on me. I needed a hobby and I needed it bad. RTTY was just what I was looking for.

The fateful day was December, when something just clicked in my head. I don't know what it was, maybe a shuttle flight with a ham on board, or some other little stimuli in the back of my cerebral cortex, but I got the bug all over again. Wisely, I had kept my license current. I knew it would take a lot of work to regain if I lost it, so all I needed was a rig to call my own. I called a friend on mine who happened to be a ham. Did he have any advice as to what I should get for equipment? I wanted to get back on the air, and the sooner the better. It was this friend that reminded me of just what hams are really like.

My friend told me to come on over, he had something he wanted to show me. When I arrived he had it all packed and ready to go - a Heathkit SB-303 and matching transmitter; an antenna; wires and cables; everything I needed to get back on the air ... for free. My only requirement; when I upgrade I too must give the equipment to someone just starting out. A promise I will keep.

I set up shop in a spare bedroom; my XYL - who had never bargained into this kind of thing, surprised me. She was all for it. Apparently, my stress was affecting her too, so anything that might help was a welcomed addition to the family unit. Besides, she had once been very active in CB (something that I forgave her for, after explaining why that calls for forgiveness), and so she took a strong interest in my radio shack of new.

Immediately I started prowling the CW portions of the bands. I was surprised at how quickly it all came back to me. I was copying code effortlessly at my old comfortable speed of 25 WPM (Hey, I never said I was that good), and really loving it. Phone still held no interest for me, which was only reinforced when I listened to some of the things being said in those areas (which is another story.)

But back to my fateful day in December! Within a month I wanted more; more bands, more range, more gadgets. I went to the ham radio store 'just to look around.' I walked out with a PK-232 and attendant software. My intent was to use it for deciphering code .. what a luxury! That lasted about 5 minutes.

I remembered my time in that fellows RTTY shack; the strange noises, the clattering of the machine, the thrill of watching the words form on paper. So when I saw Baudot on the PK, how was I to resist. I cued it up and hoped for the best. Though I hardly knew what Baudot sounded like, I started tuning around the appropriate areas... Nothing. Lots of signals, but I couldn't get squat out of 'em. Just a lot of jumbles of letters, numbers, and bizarre characters I hadn't known existed.

RTTY Stress continued next page

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RTTY Stress continued from page 22

My frustration was growing as I searched for something - anything - that was at all intelligible. I knew somebody out there was getting their messages across. Why couldn't I pick up on it?

I still remember the moment to this day, nearly one year later. I was tuning through the band, and for a moment my eyes were following the radio dial instead of the computer screen. I glanced up after passing by several signals and there it was ... ENGLISH! I couldn't believe it. Nestled peacefully among a pile of garbage were actual English words, real words, readable words. About 7 of 'em.

For those brief seconds as I tuned around, I must have done it. I had deciphered some RTTY signal without even knowing it. The proof was on the screen. It may not mean much to you, but to me it was like the breaking of the German cipher code of World Was II. I was hooked.

After that first giant step for man, the rest was easy. I learned my way around the PK-232 and was soon decoding PACKET, AMTOR and all the rest. But RTTY remained my favorite. It wasn't long before I returned to the ham radio store, parted with a little green (though 'little' is an exaggeration here), and walked away with an ICOM 735, for my RTTY pleasure.

And what a pleasure it has been. Since then, I've made many new friends by RTTY, which remains my mode of choice. I've found RTTY operators to be the friendliest, most helpful and courteous of any hams on the ether. I've worked about half of what I need for RTTY WAS, and numerous countries. (It was quite a bonus to find out I had returned to ham radio at one of the sun spot cycle peaks). My stress from work is left at work.. the second I crank up the rig. And best of all, my XYL loves RTTY too! Tell me that's not the best of all possible worlds!

See you on the bands.

de **Scott, WA1SVU** ■

RTTY JOURNAL

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