# RTTY JOURNAL

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AMATEUR RADIOTELETYPE - COMPUTERS - PACKET

VOLUME 35 NUMBER 8 OCTOBER 1987




BARRY'S MSG:

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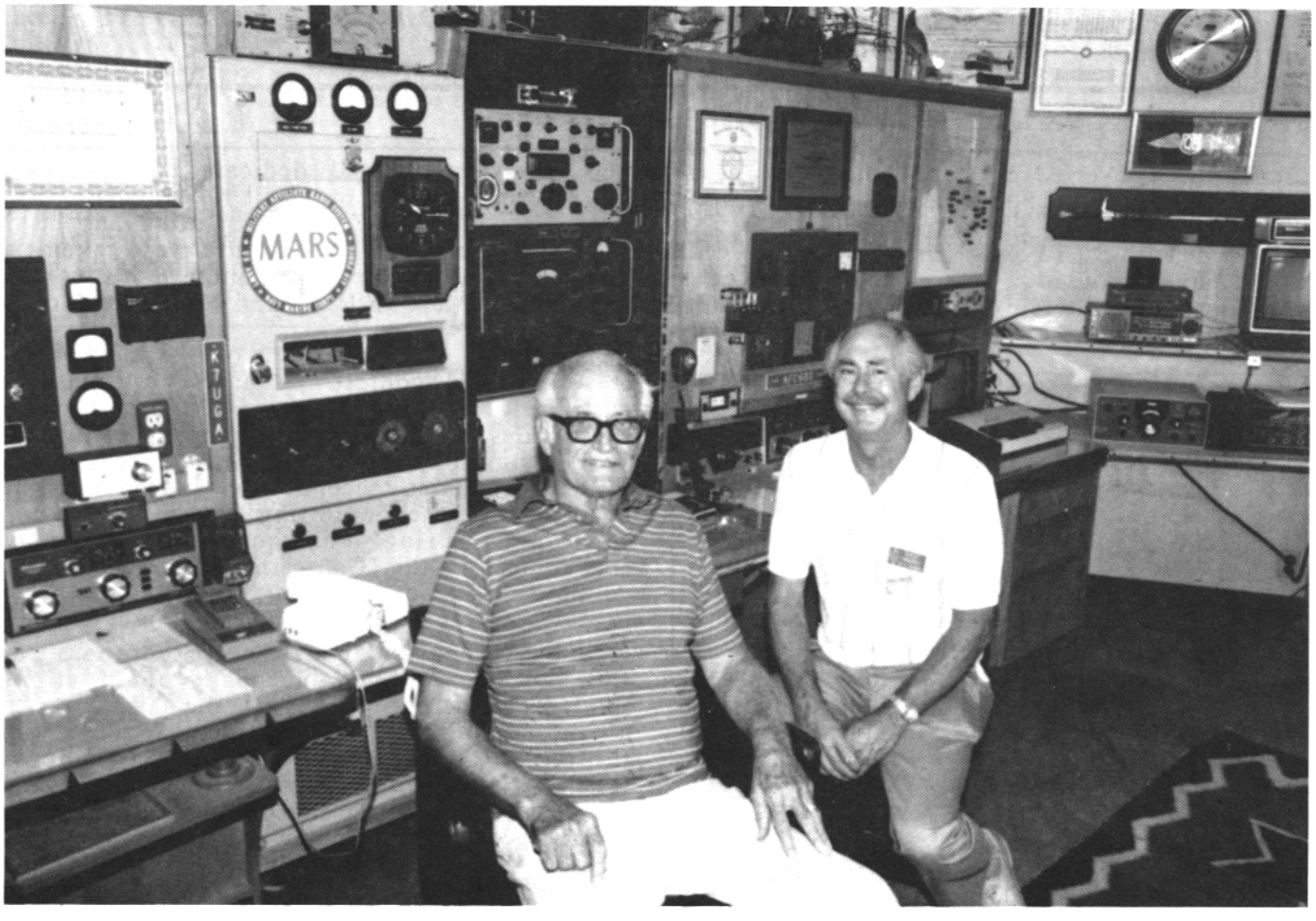


BARRY, K7UGA AND DALE, W6IWO

IN THIS ISSUE

RTTY JOURNAL
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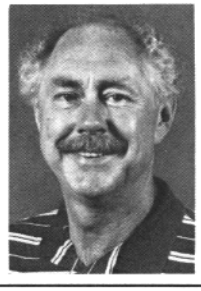
**ABOUT THE COVER**

Little did I ever dream I'd be seated next to the very famous and dedicated Ham Barry Goldwater, K7UGA. Barry hosted many of us Hams at his shack during our visit to Scottsdale, Az. to attend the ARRL Southwestern Division Convention Oct. 10,11 1987. Barry's station has been equipped with RTTY gear for many, many years. Until just recently, if this picture were taken, it would have included a row of teletypewriter machines. As you can see in the picture his station now sports computers for RTTY and the other digital modes. More in HITS and MISSES column.



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92708

## HITS & MISSES

I am writing this on the eve of my leaving for the ARRL Southwestern Division Convention in Scottsdale, Arizona and will finish it when I return. Hopefully, I will have some late breaking news to include in this issue of the Journal.

I have survived the great CQ Magazine/RTTY Journal Worldwide RTTY Contest held over the weekend of September 26-27. What a fantastic turnout for this contest! I am really pleased (to put it mildly) that so many RTTY Hams participated in this fine contest. I have been informed that logs are already starting to come in at CQ Magazine headquarters. If you have not sent yours in yet, please do so soon. Everyone who sends his/her log in will receive a certificate even if you have only worked one station. However, this offer is only good for this inaugural contest. In years to come the certificates will be handled differently and those rules will be forthcoming before next years contest time arrives. All the special awards for first, second, etc. places will be awarded at the Contesting Forum in Dayton this coming Spring. You can read more about this contest in the "Contesting" and "DX News" columns this month.

I can't say enough about the great turnout for this new contest and personally thank all of you for participating. Also, a special thanks to all those who helped to promote this contest on the air and in the many publications about RTTY around the world. The Ham responsible for this contest and the one who did all the ground work for it from our staff is Roy Gould, KT1N. This has been Roy's baby for the past year or so and he has really done an outstanding job. I feel very proud to have a great Ham such as Roy with us on the staff of the RTTY Journal. Many of you may have worked Roy in the contest as he was a part of the personal who operated the HD8CQ station on the Gallagos Island during the contest. Mere words cannot express my thanks to you Roy. You are a truly avid and helpful Ham and even with your busy schedule, you were able to find the time to put together this contest with the staff of CQ Magazine. **(cont. pg. 4 )**

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Garden Grove, CA. 92640

# CONNECTIONS

## WE HAVE MAIL

Adam, WB8TQR, has a question on how to connect a Commodore C64 to a Tono Theta 777 for packet use. To the best of my knowledge, the Theta 777 is not directly adaptable to packet. I believe some of the later Tono units advertise packet operation but it is with a packet TNC (Terminal Node Controller) added on. I do not know how they interface the TNC to the Tono unit but perhaps one of our readers can help on that question.

One way to go, without using the Tono, is to get the most inexpensive TNC (packet only) that you can find, add a RS232 adapter to the user port of the Commodore C64 for connection to the TNC, and obtain a C64 dumb terminal program to drive the TNC. This will get you on packet with the C64 at a cost of say $150-175. And you can still use the Tono on RTTY and CW. Adam would also like to know how to calculate the correct frequency for a ICOM 745 to be used on AF MARS AFSK frequencies. How about one of you AF MARS members writing a note on how this is done. It might get you some training credit!

Have one more letter here but have to write the gentleman to get some more information on his application. When you write with a question, don't be bashful about writing down all the info you have pertaining to your question/application. We need all the background we can drag out of you to give a reasonable and workable answer to your problems.

## EXCUSE OF THE MONTH

If my syntax is mixed and my grammar atrocious, please bear with me - this is being written the Sunday evening after the CQ/RTTY Journal World-wide RTTY DX contest and I am beat!!

For being in the bottom (but going up) of the Sunspot Cycle, I thought there was a very large amount of activity during the contest. There were many times when 20 meters was wall-to-wall RTTY from 14.075 to 14.100.

## MANUAL OF THE MONTH

This month's winner is MFJ with their MFJ-1270 TNC Operators Manual. A comprehensive and easy to read little book with a multi-page **INDEX** that is thorough and very detailed. With this manual, no need to flip page after page looking for that obscure command, just go to the index and scan for the page reference. Way to go, MFJ! (thanks Dale, for bringing it to my attention).

## COM PAKRATT TERMINAL PROGRAM

Just received the Com Pakratt program package for the Commodore C64/128 that is used with the PK232 Data Controller. This package consists of the program cartridge, the RS232 level converter plug-in adapter, and a well-written 28-page User's Guide. The RS232 level converter is not a true RS232 device so it may not work with some modems, but will work fine with the PK232. In last month's Rumor section, I said that a cable was included but I stand corrected, as a cable is not included. It is expected that you would use the "Y" cable that comes with later production PK232s. However, the User's Guide provides detailed instructions on making up a cable for connections between the Commodore with it's level converter and the PK232.

Installation and hookup was straightforward and quickly accomplished. The User's Guide was very clear in this regard. Because the program comes in a cartridge rather than a floppy disk, a disk drive is not required for operation of the program. However, a disk drive does add immensely to the utility of the system. The program has a split-screen mode with status lines showing connect status, mode of operation which includes Packet, Baudot ASCII, AMTOR, and Morse as well as FAX. Dumb terminal mode is also available for direct access to the PK232.

The Com Pakratt program allows one to save incoming text directly to a file on disk if desired. Incoming text can also be saved to a printer. Saving to disk and printer simultaneously is not allowed, however. This feature, in effect, can give a virtually unlimited buffer size. This feature is an improvement over the PK64/C64 system where one had to leave the current mode and go to the entry menu to save the QSO buffer to disk or to print it.

## WORD PROCESSORS, EDITING, AND PASTE-UP

We are going to try something different this month. I will submit this column to Dale on a IBM format floppy disk. I use Microsoft Word as a word processing system. **(cont. pg. 4)**

**(Connections cont from pg. 3 )**
Dale's system uses some other word processor but it can accept plain-vanilla ASCII files. Microsoft Word normally inserts various control characters that control the format on the screen and on the printer. But it does have a "c" mode where it is all plain ASCII text, not even a carriage return in the file. This is the type of file that I will send to Dale. Thus he will be able to read the column text into his word processor and proceed with his editing, formatting to fit the Journal format, etc. There are two big advantages to this procedure.

*1. He does not have to spend all that time keying in the text.*

*2. He does not have to worry so much about typos.*

Most typos occur during entering text and it is very hard to find them later. Of course we know you readers can spot every typo in a RTTY Journal article in about 30 seconds, but try it on one of your own literary masterpieces sometime and see if you find them all! I use a spelling checker to check this column and while it catches some of the typos, it does not catch the typos that form a legitimate word. I've been told I could use a grammar and syntax checker too, but I find it easier and less expensive to just ignore the critics.

## RUMORS

Can't say that I have heard any this month. Must have scared off all my sources. Loosen up folks! play the game "An authoritative source said ....". Don't let the Washington Post get ahead of you. Lets have those cards and letters!

## CONNECTION SCHEMATICS

This column could use some schematics of your pet interface and connection systems and ideas. You will get full recognition and we will even print your portrait if you send it along with the schematic. Why this sudden generosity? Well, do you have any idea how much space a complex schematic can eat up, especially after I get it run through my CAD/CAE (Computer Aided Design/Computer Aided Engineering) programs and add a few embellishments? Why, I bet it could occupy a full page. Because I am allotted two pages for this column, I would only have to write text for one page - that way we would all win!

## SHAREWARE PK232/IBM PC PACKET PROGRAM

Lynn Taylor, WB6UUT, who is a "packet pioneer" in the Southern California area, has written a new "Operating Shell" program for the IBM PC which may be used to talk to the PK232 in the "host" mode. At present, it operates only in the packet mode, and is still in "Alpha" testing. This means the program has been distributed to interested packet operators who are doing the preliminary user testing. Feedback from these Alpha testers will then be incorporated into a new version of the program. When development of the program reaches a relatively stable condition, the "Beta" test cycle will begin with users who are not necessarily as knowledgeable as the Alpha test team. Feedback from the Beta testers will also be incorporated and the program will be ready for "commercial" distribution. In this case commercial means shareware where the user gets a copy at little or no cost and tries it out. If he is happy with it, then he is requested to send a contribution to the program author. There are large numbers of programs for the various computers that use this method of distribution. Its big advantage is that if you don't like the program or it does not fit your requirements, you are not out any money. If it does fit your requirements, the small contribution helps keep the author funded for sending out notices of availability of updates, and maybe buys a little coffee as he works late into the night working on a new ham program. The name of the program is TERM.EXE and is available from several BBS sources including Compuserve HAMNET in DL9 under TERM.EXE. Remember that this program is only for the PK232 and IBM PC or fully compatible clone. I hope to review this program in more detail in a forthcoming issue of the RTTY Journal. Until next month, very 73.

**de Cole,W6OXP**

**(HITS & MISSES cont. from pg. 2)**

I also with to thank CQ Magazine for joining us in making this contest possible. Their staff has been working with Roy for over a year putting together all the details and the results are (I feel) a really great contest. If you missed it, try to be with us next year. Even though propagation was not the best for all of us, we hope Mr. Sun will do better for next year. If you have a 1988 calendar in your shack, mark the last full weekend in September as RTTY contest weekend and let's make the Ether shake, rattle and roll.

## ELMER

Last year I started a Column called "Elmer" with the idea in mind of providing more technical information in the Journal. It started off okay but shortly thereafter I was able to add more writers to the staff and soon found many of the questions that have come into the office here were more suited for one or another of the Columns we present each month. Consequently, now when mail comes in, I usually forward it to the particular staff writer who can better answer the inquiry. So "Elmer" has not died, he has only been shifted around



**(cont. pg. 10)**

# Wide Dynamic Range and Low Distortion – The Key to Superior HF Data Communications

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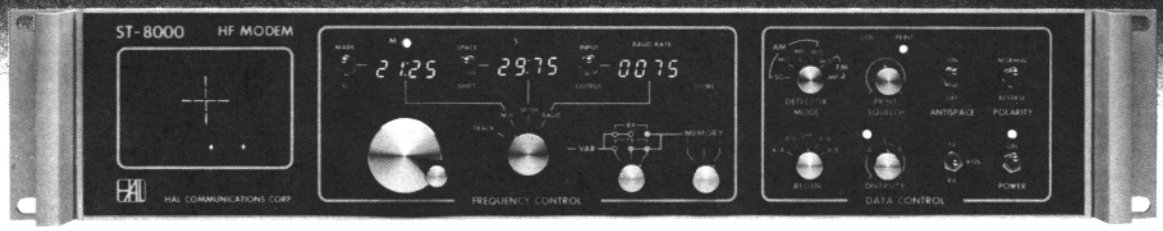


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- Split or Transceive TX/RX
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- Signal Regeneration
- Variable Threshold Diversity
- RS-232 Remote Control I/O
- 100-130/200-250 VAC, 44-440 Hz
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- 32 steps of M/S filter BW
- Mark or Space-Only Detection
- Digital Multipath Correction
- FDX or HDX with Echo
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## DX - NEWS

As I write this, I have just returned from the Galapagos Islands, where Hal, WA7EGA, Jay, KE7PN, Betsy, KE7PL along with Ted, HC5K, and a group from Guayaquill as well as the local Galapagos DX Club, whole guests we were, put HD8CQ on all bands including the 1st CQ/RTTY Journal RTTY DX Contest. Both Hal in his column, and myself will have a full report including photographs next month for you. But let me say that the hospitality extended to us by our good friend Ted, HC5K, Gunter, HC2CG, Gustavo, HC2FG and the entire Galapagos DX Club as well as the Guayaquill and Quito Radio Clubs was fantastic. What a great hobby this is!!!

There was over 400 pieces of mail waiting for me when i got home, and I have not had a chance to go through it yet. As a result there may be some letters from some of you in that pile that I will get to in next months column.

QSL cards for HD8CQ go to me. Please include SASE or return postage, IRCs etc. We will be doing a full color card so it will be about four weeks before I will able to send out any cards.

I finished my big project at work and then flew two days later to Ecquador and returned September 30th. the day this column is due to Dale on the West Coast. So therefore, this will be a little short as I try to get this in the mail so he doesn't get to angry with me. (ED: Who me?)

I called Alan Dorhoffer at Cq Magazine when I returned and gave him a short report on the trip. Alan commented that logs for the contest were already coming into CQ Headquarters (which is where you should be sending your contest logs). He also said that activity was extremely heavy, which I can attest to. What a great turnout for the First Time Contest. Don't forget that all logs entered will receive a certificate. next month I will also list the Donors of the Plaques. How did you do in the Contest??

Oh yes, one other note about the contest. It seems there is some confusion regarding how to score the contest as it applies to working USA and Canada. You may take a country multiplier for working the USA and Canada for you first contact with each. So in other words your first contest contact with a USA or VE station would count as follows:

1. The value of the QSO points as it applies to you ( either 1,2,3 points)
2. A multiplier for the Zone that the stations is in.
3. A multiplier for the state or VE province that the station is in.
4. A multiplier for the Country (USA/VE).

The country multiplier can only be taken once of course and the state, province, or zone only once. Other USA or VE stations in different States or Provinces and Zones count as multipliers for there respective States/ provinces/ zones but the country multiplier counts ONLY ONCE.

### DX NEWS

**FT8ZA** ... has been seen active again, around 1300 UTC

**4K1LPK** ... Carl, K6KW reports working this station. Alex UB5LPK, is the operator. QSL via UY5OO. This station is located at Marie Byrd Land in the Anatartica and NOT on the South Shetland Islands as have been previously reported. Carl asked Alex to send some photographs for use in the Journal. This begins the Summer Season on the ice. Alex also reported that there are a total of 9 Soviet stations active from the Antarctica. He did not say if all were on RTTY but they all have the 4K prefix.

**J6LIH** ...Johnny is new to RTTY and has been active around 2200-2300 hours from the Island of St. Lucia in the West Indies. QSL to his CBA.

**Johnston Island** ... In addition to Joe KL7LF/KH3, KH3/WY5L has been reported on the keys.

**Fernando de Noronha** ... did come up as scheduled. Sorry for the late notice on that last month but I had just received the info the day I wrote this column.

Last month I also had the pleasure of meeting John, TG9VT while he was on a visit to the Boston area. George, W1DA, Mort, W1UQ (PJ8UQ), Claire,K1YL, Bill, K1MM and I got together at John's favorite Boston restaurant and had a really enjoyable evening. John is a real interesting person and has many stories to tell. He was taking back with him a new ICOM 761 for use in the contest.

**(cont. pg. 7 )**

**(DX NEWS cont. from pg. 6)**

A REMINDER... when writing to me with DX information, please mark on the outside of the envelope - DX INFO. That way, I will open it right away and not get it mixed up with QSL requests. Thanks.

### DXer of the Month
### JA1ACB, Gin

This months DXer is well known throughout the world on the RTTY bands. Jim Smith, VK9NS, another well known DXer shares with us his story about Gin.

When Gin started Ham radio in 1949 the JA stations were not allowed to transmit, post war restrictions were still in force. However, after getting a license in 1953 he became very keen on SSB and many will remember that there were not to many of us around using this mode. Gin was able to achieve a number of goals DXCC,3RD. Asian Phone WAZ, first JA SSB-WAC and so on.

However work and other factors saw Gin off the air in 1962 and he did not get back on the air until 1968. By late 1969 he once again took up his interest in RTTY as a means of communication. This interest had been kindled several years previously as a result of JA2HQ. This station was used at the General H.Q. of the U.S. Occupation Forces. The operator of the station was Joe, W5UKM.

It was virtually impossible to get RTTY equipment, for example a machine would take all of three months wages to acquire. however by the time of the Tokyo Olympic Games in 1964 prices had started to fall. In mid 1968 Gin was finally able to get a Model 15 Teleprinter by Teletype Corp. However since it was fitted with 60Hz, 60WPM sync, it was impossible to read 45 Baud signals using existing 50 Hz power. Finally with a governed motor he started operation using RTTY and was indebted to Merrill, WA6AEE and Don, W0ITU for early assistance.

Things were quite lonely out in the Far EAst and even using a 16KHz filter in the receiver there was nothing to hear all day long. Those were the days of wide shift (850 Hz.) and it was very difficult to kill the hash from the governor. Faulty speed adjustments did not help but Don Stoner's TU and CV88 all made RTTY a challenge. Here are Gin's words: *" I am always chasing RTTY DX these days and I now have 268 countries worked (this is probably up a little by now). I am waiting for a fewQSL cards - as is usual with DXers. However for the record I would like to kill one station from TI9 since I have now sent 5 QSL cards to the TI2 manager without success.*

*Back in 1976 I had worked 39 Zones and only needed Zone 23 to complete WAZ on RTTY. Even since then there has not been any activity from the JT1 stations on this mode due to licensing restrictions. It was only in 1976 that Zone 17 became available with the activity of Serge, RV9FQ. There must be at least 300 stations needing Zone 23 to complete their RTTY WAZ".* (would be interesting if the BY9 station became available on this mode)

Like all of us Gin has missed countries. The list of countries and reasons for not making a QSO makes for interesting reading. Example: XV5AC announced 2 days of operation but only operated one day and I was not at home. ZL3AFH/A could never fir into his operating times. UC1CWA printed and called but was rejected since it was a USSR domestic contest. UM8MJ only a few Europeans worked this one as they went QRT due to machine problems. TT8CW this operation by Jackie, F6GXB resulted in two QSOs both with French stations. 9L1 since this operation was on 28 MHz only. Due to flat band conditions only a few Europeans were worked. CE0AA/X only 6 Chilean contacts were made and this mode of operation was suspended by the Chilean Navy UK1PAL despite lots of information I have never heard or printed this station. FB8ZZ operated with 50 baud and 425 cycle shift. Needless to say I had no such settings.

*"There were a few more but since they were before my time there is nothing to be done." " I understand and sympathize with those who would like to try this mode. Equipment is expensive but it is all magic really and I really enjoy the mode. I like to try and help get countries active on RTTY. As a result of this interest I have placed RTTY equipment in many areas. Some were of course DXpeditions and some have lost the activity since the original operation."*

Gin has never applied to ARRL for RTTY DXCC. The first station to achieve this was Jean, FG7XT who had his application refused by ARRL. "It was against policy to issue such endorsements - since this would be followed by requests for FM, Mobile, TV, FAX etc." So Gin continues his interest in RTTY DX hunting and also in developing demodulators to operate under marginal conditions.

Many thanks to Gin for helping put this short article together. To the RTTY enthusiast who also likes to work the new country in the traditions of the DXer, the following list of countries makes fascinating reading. These are the countries which Gin helped activate, many for the first time on RTTY. Through his generous assistance, we owe him a vote of thanks. (pictures pg. 10) **(cont. pg. 10)**

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CONTESTING

## HD8CQ

Operating from HD8CQ was a joy. The day of the contest the Solar flux dropped to 77, the A index jumped to 29, and K index hovered around 5 with announcements of geomagnetic disturbances. In Washington state we would have turned off the rig, left a farewell note to the contest committee and opened a vein. From the Galapagos all we had to deal with was a slightly elevated noise level on 20 meters with 10 and 15 meters wide open everywhere! And talk about timing, KT1N wandered in on Thursday, just in time to operate after the rest of us slogged through 6 inches of tropical mud for four days putting up the beams. I guess some people are smarter than others.

No towers. The monobanders we used on 10 through 40 went up on 20 and 30 foot galvanized pipes buried in three feet of mud on top of the highest hill on San Cristobal Island (2000 ft. above sea level). The techniques we used during the CQ WW contest were really no different than what we do for any other contest except that from HD8CQ, for a change, everything we tried worked! Crashes made 160 unusable but we did a fair job on 80 with a low dipole. We ran the same 751's that we run at home. Of course, when we switched to generator power at midnight the power spike blew the log/dup program even though it was on a battery supply. Since we had an up-to-date printout, we didn't lose any of the log but the on line dup file became sort of a joke and when we pounced, a lot of the pounc-ees reported a previous QSO. You cannot use computer logging for contesting without realtime, each-contact hard copy. disk saves, battery power and divine grace won't save your log when in a moment of confusion somebody looking for a place to plug in a desk lamp yanks the wrong plug (HC2LZ pointed out that if the plugs had been taped together there would have been no problem). Thanks to those of you out there that helped us by your participation, we ended up with over a thousand QSO's on five bands and what we hope is a winning, multi-op score for the contest.

## AFSK vs FSK

From the point of the station receiving your signal, there is no difference between FSK and AFSK. If we begin to talk about keying transients and continuous-phase shift, there are some differences, but they won't improve your contest score. The problems associated with AFSK rigs used for contesting (or DXing) have to do with filter selection available from LSB mode and where those filters center. But if you can send and receive on the same frequency and use a 250 Hz I.F. filter centered on the received RTTY signal (no change in S-meter reading between mark and space), you're ready for the contest.

## THE WINNING EDGE -- MULTI-OP

Here's how a multi--single teletype operation is put together. RTTY has some notable distinctions when compared to other modes. The RTTY operator is not isolated and the intense concentration required in CW or by a live microphone as in SSB. Nothing prevents operators from yelling, cheering and arguing strategy just like any other team sport. It's ideally suited to same-room multi-op.

A tactic that surfaces in conversations with people who do well in RTTY contests, even single-ops, is the use of a spotting rig. Since most of us aren't likely to duplicate out entire RTTY setup just to play six contests a year, the obvious answer involves another op. At the moment WA7EGA has better antennas than KE7PN, so Jay drags his computer, transceiver and TU to my QTH for contests. Lets say the operator is running a trap on 14091 (calling CQ in the foolish belief that the DX will come to him) and the spotter finds A22BW on 21083.4. Without a lot of fumblingaround trying to figure out which signal is DX on what frequency, he pinches A=B, sets the VFO to the new freq, tunes in the DX and switches back to keep the trap going until the spotter advises him that DX is ready for a new QSO. On cue, the operator swaps VFO's and drops his call a maximum of three times (No RY's please!!). Effectively done, he can swap bands, work the multiplier and move back to the trap before he loses the frequency to the guy that got pushed off of 14094.4 by W1AW. This assumes three things: (1) The calibration between the two rigs matches exactly. (2) All antennas are resonant so no fiddling with tuners is necessary. (3) Either the amp is no-tune or you don't need it to work the DX on the "off" band. (enter the concept of "band amps"??)

Some years back I turned a Yaesu FT757 into ashes during a CARTG test. Upon hearing of my misfortune a sympathetic competitor summed it up, "Gee, Hal, smoking a new brand lately?".

**(cont. pg. 9 )**

( CONTESTING cont. from pg. 8 )

If the transmitter has an output antenna port which mutes on transmit, the spotter can chase DX on the same band as the transmitter without danger of overload damage. With a tri-bander he can also ride herd on new band openings from the same port. But unless you COMPLETELY DISABLE the spotter's send function, the transmit rig is history! (Don't worry, I'll be careful, Ooooops!").

A full-time spotter isn't necessary. During slow times, the off duty op can do things like saving his friend's life with a pastrami sandwich at zero-dark-thirty Saturday morning when the QSO rate is 3 an hour. By not being forced to do an iron-man shot, both ops get enough rest to be mostly conscious for the sunrise European opening.

An effective spotter will never be bored. During peak openings he prospects multipliers from the 20 meter QRM. If he is doing his job, the log will show number 003 from an African who was fiddling with the contest and made only five RTTY contacts before going back up to feed the jackals on SSB. He is first to discover that 15 meters is open to Australia. At 2AM local, he's usually available to join in the celebration appropriate to the successful decoding of zone, number and RST out of a screen full of garble from a lip-reading QSO with 9V1JY. Don't expect that attitude from your XYL. In fact, your fellow operator may be the only human being you know who will contemplate the arrival of a contest weekend with happy anticipation.

The key to multi-op success is mobility. You still only have one signal on the band but the ability to improve the use of that signal can double your contact rate! This is especially true when more than one band has activity on it or when the rate slows enough to keep tabs on more than one band at once. Be careful. Once you get hooked on multi-op, working as a single becomes almost painful and two divorces are NOT cheaper than one.

### W.A.E. TACTICS

Of the six contests now sponsored, W.A.E. is perhaps the most demanding of operator skill and equipment flexibility but don't let that scare you away.

The first thing to remember when reading the rules is that North American stations compete only with their own continent. Continental winners receive a plaque. Country winners get certificates and there's more wall paper for logs with over half the continental top score. You don't have to beat Jeff at 9H1EL to get a nice, two-color, metal-on-teakwood plaque.

Since most of the stations who wake up Saturday morning asking "Golly, whatcontest is this" are going to be intimidated by the rather complicated rules, there will be fewer stations actually competing. This makes the exchange of QTC's absolutely essential and to do so, you must be able to work enough Europeans with signals loud enough to pass traffic. East coast stations are going to find that considerably easier than those of us on two-hop paths. WA7EGA (Washington) won the continent in multi and WB9IVC/5 (now AA5AU in Texas) took the single op plaque. If you Easterner's ever needed a better deal, this is it!

While we're talking about participation, the time to get folks interested in contesting is before, not during the contest. Those of you who are planning to go for that plaque could do a lot worse than to get on the air during the first couple of weeks in November and explain the what and when of the contest, letting some of the stations know where to find the rules and generally expressing some enthusiasm. Two or three times during each contest I talk to someone who says, "It sounds like fun, I wish I had known about it before it started!"

The W.A.E. is a buffer memory delight. When things get slow, you start putting QTC's in buffers, ten QSO's to each buffer. They need to be labled, QTC 1/10, QTC 2/10 etc. When the band opens into Europe, you start dumping the QTC's at ten extra points per European. As few as 150 contacts can win this contest for North America.

The Europeans get a multiplier boost for the lower bands. Contacts for them on 80 meters are 4X, 40 meters 3X as opposed to 2x on 20/15/10 meters. This should be incentive enough to generate some low band activity during the late hours of Saturday night when most contests roll up the sidewalks for curfew. Non-Europeans do not get this multiplier bonus. We score only one multiplier for each European, regardless of frequency (QTH already plays a factor in scoring without adding a multiplier advantage for 80 meter openings which are almost exclusively an Eastcoast phenomenon).

This is a tough contest made tougher by this year's changes in rules. You MUST work Europe for multipliers. N.A. stations can work each other at 1 point per QSO and each non European you work has the potential to be re-sent as a QTC for another point! A European has the potential to be 21 points plus a multiplier. The contest finishes up with a European opening allowing you to dump your QTC's.

(cont. pg. 10)

**(CONTESTING cont. from pg. 9 )**
The winning station will be one that successfully sends all his QSO's as QTC's while receiving as many as possible from the Europeans. Don't let low QSO's numbers discourage you.

Thanks again to everyone who worked us from HD8CQ. QSL's should be out in about three months via KT1N. See you in the W.A.E.!! de Hal, WA7EGA.

**DX NEWS cont. from pg. 7 )**
This represents a tremendous financial outlay and has obviously resulted in many countries being available on RTTY which may never have been printed.

Come to think of it, all is magic these days. With these "all electronic, all singing, RTTY terminals", things have changed since the invention of the Murray Code all those years ago.

Why not drop Gin a letter of thanks. 73 Jim, VK9NS

Thanks to Jim for this interesting story on Gin, also since this was written Gin has gotten that elusive Zone 23 and I am sure added a few more DXCC countries to his total.

Well that is it gang, have to get this in the mail. Drop me a note and let me know what you are doing. See you next month with a complete report on HD8CQ.

Thanks and a tip of the hat to K6KW, W1DA, TG9VT, and the DX Bulletin. **de Roy, KT1N**

**ED:** ROY'S BANDPASS NEXT MONTH, RAN OUT OF SPACE THIS MONTH. SORRY!

**(PACKET cont. from pg. 14)**
So to everyone, have a nice month and remember that the change of seasons is coming and now it is time to how all your antenna work will pay off. Just remember, if you can't hear them, you can't work them, so get out there away from the football games and GO FOR IT!! Braaaaaaaaaaaaaap

**de Richard, N6NKO**

**GIN, JA1ACB**
**Looking angry, must have just missed a new one!**

**JA1ACB SHACK**

**(HITS & MISSES cont. from pg. 4)**
a little. Please continue to write to either the RTTY Journal address or to the individual staff writer. We want to help you with your problem and we want to share your ideas with everyone of our readers. If you need a specific answer, it would be best if you included an SASE with your request. That way you are more guaranteed a quick reply and also it helps out on the postage cost.

**BACK FROM ARRL CONVENTION IN SCOTTSDALE, ARIZONA**

With not much room left in this issue to write about the convention, I guess I'll just have to say, next month we will have more.

However, one of the highlights of the trip to Scottsdale was my visit to Barry Goldwater's shack. He was also kind enough to allow the front cover picture which I will always be proud of. Barry was also the keynote speaker at the convention banquet and gave some history about himself and his station. He was first a member of the ARRL back in 1923 but can't prove it due an unfortunate basement flood. Having been a Ham for that long certainly gives him the right to give us some good advice regarding Amateur Radio. To him, there have been two things in life which have given similar feelings. One being a pilot for over 60 years and the other Ham radio. In both instances he has no doubt received many hours of enjoyment. But to hear him tell of the

**(cont. pg. 19)**

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# PACKET

Well, another month has passed in this year 1987. There are many hams out there, including yours truly, who are praying for the resurgence of the sunspots so I guess that the propagation Gods are getting an earful and then some from the novices and the 10 Meter users let alone everyone else. Soon enough, they will come back and make the bands more lively. Since novice licensees can use both voice and data forms of transmission on the 10 Meter band, they are the most anxious. So, the Beginners Corner will address the needs of the new operator to Packet and to the people who are considering getting into Packet radio.

## BEGINNERS CORNER

So you have heard from your buddy in town about the new mode of communication called Packet radio. You set up a time where the two of you can get together and he can show you what it is all about. You get there and see a computer attached to a small box and then attached to the radio. You are probably thinking that this is just like talking to a computer over the phone lines. Well, it is true in that sense considering that the TNC is a dedicated computer programed to process information into audio signals and transmit them to a destination station over the radio. With that in mind the demonstration continues and you start getting interested at how you can talk to all of the people over the radio with out any errors caused by the communications medium. So after spending several hours having fun and enjoying yourself, you decide that you want to get into Packet. Now comes the seemingly hard task of what kind of TNC do I get. Should I buy a TNC that does just Packet or should I get one that does more than Packet. Admittedly, the full blown units hit you harder in the pocket so you have to sit there and weigh the advantages versus the cost of the unit. If you decide on just the Packet only units, they are just about the same size with some minor packaging variations. The majority of them are just a little larger than your hand and operate off of 12 volts DC. The two all- mode units that are on the market right now are like night and day when it comes to their size. What I mean by all mode is that they also send and receive Baudot, ASCII, AMTOR, Morse, and in the case of the AEA PK-232, FAX. There are some other variations between the two units but that is not important at the moment. The PK-232 is about the size of a good thick book and the Kantronics KAM is about the same size as a regular Packet TNC. Aside from all of the cosmetic variations, just about all of the units have a RS-232 port for communications. There is one unit, the AEA PK-64, that will only work with the Commodore 64 computer and I do believe, but I may be wrong, that there is a TNC that fits into one of the expansion slots of an IBM compatible computer. Because of the RS-232 port, you can operate the TNC with either a dumb terminal or a computer. The computer would give you message storage and processing capabilities but the dumb terminal is a cheap way of going. If you want hard copy, a computer would be one of the ways to go or if you are using a terminal, you can use a printer that uses a serial port and adapt the three units together by building your own adaptor. The PK-232 will support a printer directly that uses a parallel port via a special cable. Now that we have discussed something involving the units on the market, lets now assume that you have the system all set up and you look at the listing of the commands available on the unit that you chose. It does look like the proverbial "laundry list" but just about all of them are set and forget types. so here goes with some of the more technical settings.

## MY or MYCALL

In some of the units it is by the command MY while in others, the command is MYCALL. Either way, this command programs your call into the TNC. If you fire up the unit and look at what is in location you will probably find the model name of the TNC. Just type in the command followed by your call sign and the unit then knows and so will everyone else thus making transmissions legal. Reason being is that when someone wants to connect to you or if you want to connect to them, you just connect up with the unit with their call sign. That way, every unit on the network has an unique identifier with it.

## DWAIT

The timer DWAIT is used to help prevent collisions on the channel that you are using. Essentially, this timer keeps the radio from starting the transmit sequence until the channel has been quiet for the given amount of time. If there is a transmission during that time, the timer resets and has to start all over again when the channel quiets down again. The idea of this is to keep all of the TNC's quiet so that the digipeaters can transmit their traffic with the least possible hindrance. Ideally, all packet users should use the same value out of mutual cooperation. Because of the various delays in

**(cont. pg. 12)**

(PACKET cont. from pg. 11)
the system as a whole, everyone ends up with a fair shot at the channel. By choosing the proper setting for the channel everyone using it, channel throughput can be greatly enhanced. In the case of most TNC's, the setting for DWAIT is 160 milliseconds.

### FRACK

FRACK is used to keep the TNC from re-sending an unacknowledged frame again for a period of time to allow the frame to reach its destination and to allow receiving TNC's response to the transmitted packet. If the sending TNC does not get a response from the receiving TNC within the specified time, then it assumes that there was a collision or something that blocked the channel and will re-send the frame. The TNC will keep sending out the frame until it gets a response or the limit set by RETRY is exceeded. When RETRY is exceeded, the TNC will do one of two things depending on how the TNC is configured. It will say that the retry count has been exceeded and that the TNC is disconnected or it will try to reestablish the link on its own. If the connection path has digipeaters involved with it, the total FRACK time is changed according to the following formula: total FRACK = n * (2*m+1) where m is the number of digipeaters used in the path and n is the specified FRACK setting. So if FRACK is set for a 3 second delay then the connection uses 4 (ugh...) digipeaters, based on the above formula, the total FRACK delay will be about 21 seconds.

### MAXFRAME

MAXFRAME performs two functions: 1) the maximum number of unacked frames that a TNC will send out and, 2) the maximum amount of frames that can be sent in one transmission. If the channel is busy, it is better to use a smaller MAXFRAME setting because a shorter transmission has a better chance of getting through than a long transmission. Collisions can be reduced also by reducing the following parameter.

### PACLEN

PACLEN refers to the amount of user characters sent in a frame and not the total frame length. The maximum setting for PACLEN is 256. Of course with the larger settings of PACLEN, there is a larger chance of collisions and bit errors. But of course, the larger the PACLEN setting is, the more information can be sent in a transmission. Therefore, if the channel is busy or quite noisy, like it is on HF, keep PACLEN short and you will help with the transmission and if the channel is quiet, like it is on VHF in the middle of the night, then you can set PACLEN to a larger value. The usual default setting for PACLEN is 128 characters.

### TXDELAY

TXDELAY is used to allow your radio equipment to switch to transmit from receive. It also compensates for a receiving station's squelch opening delay time. What happens at the beginning of a transmission is that the TNC keys the radio and at the same time begins to send a continuous stream of flags out to the radio until the TXDELAY timer runs out. When that occurs, the TNC starts the actual data transmission. The best value for this timer is determined experimentally. What I did was set it to a large value and connected to myself through two digipeaters. I kept sending the same line and brought down the TXDELAY value a small bit at a time until there were many retries per transmission. Then I increased the value in small amounts until there was reliable operation plus I padded it a bit because the external amp that I am using has a relay in it and its switching time varies a little.

### RESPTIME

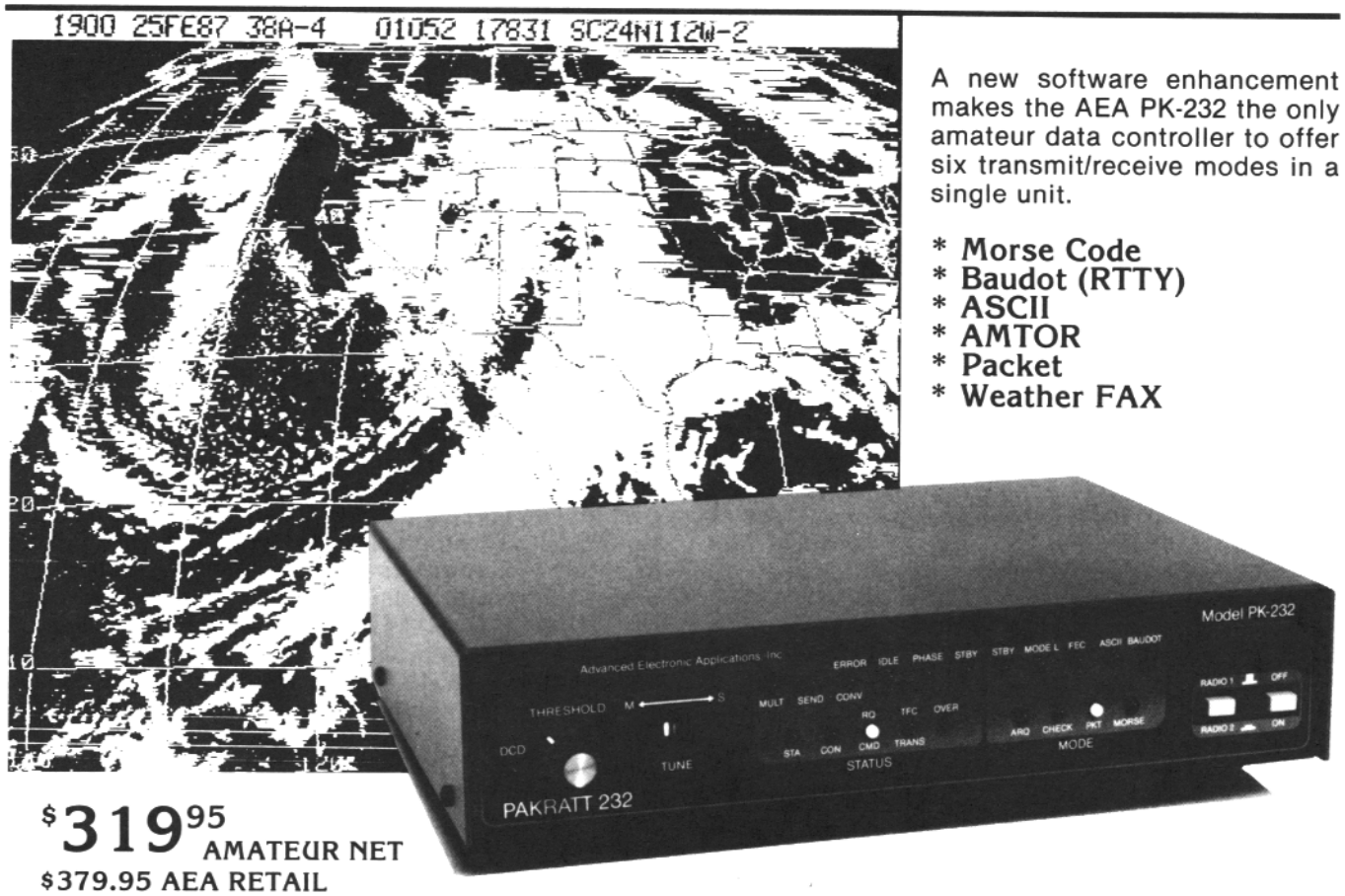
This timer tells the TNC when it can send an ACK or REJ packet. The idea is to allow the sending TNC a chance to complete its transmission while the sending TNC is formulating a packet. If the receiving TNC's RESPTIME is set too short, there is a greater chance of the receiving TNC's ACK packet colliding with the transmitting TNC's data packet causing retries on both ends of the circuit. The usual setting for this timer is 1 second.

### OPERATION CRITIQUE

I do not know how many of you participated in this past Field Day but I know by watching the data flow on the VHF packet channels that I was on that several contester's had changed their values to channel hogging levels. That is not being fair at all to everyone else on the channel. When working HF and you are trying to bust through a pileup and go one on one with the Big Guns and you are a Little Pistol, it usually takes a little operating savvy to get the DX to come back to you. With Packet, it does not work that way. The TNC is supposed to help the channel carry the most amount of users but when someone upsets that, then only a few can use the channel and the vast majority are Aced out. But of course to be the best, some people have to be more equal than others. Enough of the soapbox. All I am trying to say is to keep the values to accepted norms and then everyone will be able to use the channel in peace and the system will work out better for it. **(cont. pg. 14)**

New PK-232 Breakthrough

# Six Digital Modes - Including Weather FAX




A new software enhancement makes the AEA PK-232 the only amateur data controller to offer six transmit/receive modes in a single unit.

* **Morse Code**
* **Baudot (RTTY)**
* **ASCII**
* **AMTOR**
* **Packet**
* **Weather FAX**

**$319.95 AMATEUR NET**
**$379.95 AEA RETAIL**

Your home computer (or even a simple terminal) can be used for radio data communication in six different modes. Any RS-232 compatible computer or terminal can be connected directly to the PK-232, which interfaces with your transceiver. The only program needed is a simple terminal program, like those used with telephone modems, allowing the computer to be used as a data terminal. All signal processing, protocol, and decoding software is in ROM in the PK-232.

The PK-232 also includes a no compromise VHF/HF/CW modem with an eight pole bandpass filter, four pole discriminator, and 5 pole post detection low pass filter. Experienced HF Packeteers are reporting the PK-232 to have the best Packet modem available.

Operation of the PK-232 is a breeze, with twenty-one front panel indicators for constant status and mode indication. The 240 page manual includes a "quick start" section for easy connection and complete documentation including schematics. Two identical back panel radio ports mean either your VHF or HF radio can be selected with a front panel switch. Other back panel connections include external modem disconnect, FSK and Scope Outputs, CW keying jacks, and RS-232 terminal interface.

The RS-232 connector is also used for attaching any Epson graphics compatible parallel printer for printing Weather Fax. Weather maps and satellite photos, like the one in this ad, can be printed in your shack.

Contact your local AEA dealer today for more information about the one unit that gives you six modes for one low price, the PK-232.

## AEA Brings you the Breakthrough

2006-196th St. SW
Lynnwood, WA 98036
(206) 775-7373

(PACKET cont. from pg. 12)

## DUALPORTING

I received a short note from Edward Brown, N4JVB in Tuscaloosa, AL. in the mail. He recently joined the Packet fraternity by becoming active on VHF Packet. After purchasing the Kantronics KAM All-Mode data controller, he had a question as to what "Dualporting" is since the KAM supports the function. Basically, Dualporting is where two TNC's are connected to each other and the radios that are attached are on two different frequencies. As an example, one radio can be on 145.05 Mhz and the other radio can be on 145.03 Mhz. Dualporting allows cross channel communications. In the case of the KAM, it does the job with one physical unit between the two ports. There are commands within the KAM to allow the dualporting to be activated. Ed, I hope that answers your question on dualporting and if there are any other questions, just feel free to drop me a letter and I will answer it in the column or leave me a message in the WB6YMH-2 PBBS on WESTNET-.05. The offer is extended to everyone.

## SKIPNET

Several months ago a proposal was put forth by the ARRL to the FCC concerning unattended, automatic Packet message routing and forwarding on the HF bands. Well, the FCC has granted a STA (Special Temporary Authority) to the ARRL to try out the SKIPNET idea. SKIPNET is a proposed network of HF Packet stations throughout the United States that will receive Packet traffic at one end and forward it to the destination. It amounts to a WESTNET or EASTNET system covering the whole United States on the HF bands. As all radio operators know, propagation conditions govern where you are going to talk to and when it can be done. The SKIPNET proposal also mentioned that the stations involved will be able to band switch to the most effective band at the time to get the traffic through the system.

The network will not be directly accessible to the normal user. What will happen is that the user will leave his traffic in a designated PBBS system. Routinely, the SKIPNET station will pool its assigned group of PBBS's and then try to forward the traffic on the SKIPNET channels to the destination PBBS's. If propagation does not allow for the transmitting station to contact any of the other stations in the network, it then will hold onto the traffic until the conditions are right.

The SKIPNET stations will only be able to use a small group of frequencies to minimize interference and to simplify finding where a station is operating at. Hopefully, this form of automatic, unattended traffic forwarding will be granted the FCC's blessing and from there maybe approval by the other worldwide radio governing bodies. Think of it, a worldwide (!) automatic Packet forwarding system in place so that traffic can be passed everywhere despite the propagation conditions.

## WILDFIRE

Paradise does have its price sometimes. In the winter you can go skiing in the mountains in the morning and go swimming in the afternoon. In the summer, it is HOT everywhere. The warmth is great for people who have medical conditions that require warmer climates and for the above average sun worshiper. But when it comes to vegetation, heat is a killer. Everything just dries up at the blink of an eye. So because of this, I have heard people say that fires can start by just looking at the brush. Well, this is one situation where looking at it wasn't enough and someone decided to help it along. They managed to cause a forest fire that consumed several thousand acres of timberland in the Cleveland National Forest in Riverside and Orange counties of California. Because of the mountainous terrain and the dry conditions, these fires can and do spread rather rapidly. So because of this, communications that are reliable are needed to relay fire information and health and welfare traffic in and out of the fire area. Again, because of the need for communications, there were several call-outs for Amateur Radio support (yours truly was called but not needed). There was a Packet link established between the Orange county side of the fire and the Riverside county Emergency Communications and another link was set up between the fire site and San Diego, Ca. Despite the situation, very little traffic was passed on the Packet links. Participation is really not judged by how much traffic is handled but by just being there to be of assistance if needed. I want to add my personal congratulations to the unnamed Amateurs that put in their own time and effort to help the various agencies involved to put out the fire as soon as possible.

## UNFORTUNATELY

This is the end of it for this month. Danny, N6IHQ, and I participated in the Worldwide DX RTTY Contest on Sept. 25-27. Murphy had his hooks in us. We were late getting on the air because the finals went and because of our combined work schedules, had to pick up the new tubes the afternoon of the start of the contest. We fought computer hash, bad propagation, and Murphy most of the time but we went into the contest to have fun and we did. That is basically what this hobby is about, just to have fun and meet different people from every walk of life. **(cont. pg. 10)**

Dick Uhrmacher
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57702

# MSO'S

Hi Gang! My goodness, where has summer gone? It seems that time goes by so fast these days, that my blisters from pulling weeds in the garden aren't healed, before I have blisters from shovelling snow! The Summer MSO activities have been somewhat slower this year, as I suspect many RTTY'ers have been involved in all kinds of warm weather pursuits. Band conditions seem to be steadily improving, at lease out here in the Plains States, and we've enjoyed some very nice short skip recently, allowing us to utilize some of the closer MSO's, and visit with friends on a 'live' basis. In this months MSO Column, you'll find two requests for assistance in RTTY projects, both computer related. If you're looking for a way to tidy up the Shack, or make a little room in the storeroom in the basement, I'm sure that LZ2MP would greatly appreciate receiving back issues of the "RTTY JOURNAL", or any other information concerning digital communications. Let's see if we can give a helping hand to these folks. (ED: see Hits column this month)

## TI-99 COMPUTER HELP NEEDED

Paul Boller, W8IRT, needs help in finding some sophisticated RTTY software that will run on his TI-99 Computer. Paul is presently active on RTTY, but is utilizing a somewhat limited version of RTTY software, without "bells and whistles". He would like to find a disk based RTTY program that would provide features such as split screen, keyboard type-ahead capability, and a few message buffers for storage of repeatable information. Paul's present equipment consists of a TI-99 computer, with disk drives, and the Kantronics "UTU-XT" demodulator. Any assistance in this area would be greatly appreciated, and Paul can be contacted via the RTTY Journal, the K0VKH MSO, or by writing directly to him in care of: Paul Boller, W8IRT, Route 2, Beaverdam, VA. 23105, phone number (804) 449 6257.

## STUDENT RADIO CLUB LZ2KIM, TECHNICAL UNIVERSITY, RUSSE, BULGARIA

In a recent issue of the MSO Column, I noted the operation of a "LZ" mailbox from Bulgaria. And, in response I received a very nice letter from Milen Postadshieff, LZ2MP, who is a Computer Science Engineer, at the Russe Technical University, in Russe, Bulgaria, in reference to their Student Radio Club LZ2KIM, and computer based mailbox system, (CBMS). Since we hear little about mailbox systems from Milen's part of the world, I'll take this opportunity to reproduce his letter at this time:

Milen writes: *By the courtesy of Dee, N6ELP, and Dale, W6IWO, our Student Radio Club LZ2KIM, received free of charge the May 1986\ February 1987 RTTY Journal, as an award for our participation in the RTTY Journal\73 Magazine world Championship Contest 1986. Unfortunately as no Money Orders abroad are possible here, we are not able to renew our subscription to this really very interesting and helpful Journal. I'm writing this letter in reference to your comments about the RTTY Mailbox, LZ2KIM. This first LZ Mailbox is sponsored by the Student Radio Club LZ2KIM, at the Technical University in Russe. The system is based on an Apple II compatible computer with two drives, slightly modified SUPER-RATT program, and a home-brew terminal unit. LZ2KIM is active on RTTY since the 6th of January 1986, running Apple II compatible computer, very simple homebrew RTTY program written by me, and a home-made terminal unit with active filters for both channels. Now we have several RTTY programs, but prefer SUPER-RATT. In May 1986, using a home-made circuit card, and HAMTEXT from Kantronics, I activated LZ2KIM on AMTOR. On the 9th of March, using a home-made 300 baud modem, XR2211\2206 and DL2MDL AX.25 program for the Apple II, I activated LZ2KIM on Packet radio. At the moment I am wiring a home-brew Packet radio TNC, developed in DL land. After that we plan to turn our eyes to the Packet satellites. In taking the opportunity of this letter, I hope you can help our Club. The fact is that Apple II like compatibles are very expensive here. That is why we are looking for some simple RTTY computer/video display unit schematic diagrams, to increase digital mode activity here. I noticed an advertisement in the RTTY Journal about a sale of a COCO Computer for $100.00, and there have been several articles devoted to this computer in the Journal. Any info about this and other simple computers, schematic diagrams, software, photocopies of the articles mentioned, etc., would be greatly appreciated. Almost weekly I check PA0RYS, PA2AGA, G3PLX, HB9AK, DK0TV, DJ4KW and LA9OK on AMTOR, as well as the LA6OIA and DL1WX Packet mailboxes. I am 30 years old, single, and a computer science engineer. I've been into Ham radio since 1973, and a member of LZ2KIM since 1977. The ham radio club is very popular, and since the digital modes are so new to us, we do not have enough*

**(cont. pg. 16)**

**(MSO cont. from pg. 15 )**
*information concerning this aspect of our hobby. We are not able to send any remittance abroad, so we do not have access to U.S. Ham radio books, magazines, journals, etc. So if, some of the RTTY Journal readers want to clean their bookshelves, we would appreciate any documentation that we can add to the LZ2KIM Club library. Good luck, good DX and hope to hear from you 73! de Milen, LZ2MP.*

So Gang, here's your chance to not only please the XYL by shaping up the Ham Shack, but to also extend the hand of friendship to Hams in another country. Let's give them a hand!

### SIGN OF THE TIMES DEPARTMENT

To all of my good friends on the International Mailbox Frequency, and the National Autostart Frequency, who have for years utilized computer based mailbox systems, and to those who still tune, adjust, oil and clean up after their ever-faithful Model 15's, I dedicate the following to them: ACHTUNG!! ALLES LOOKENS PEEPERS. DAS PROCEZZIN MACHINE IS NICHT FUR GEFINGERPOKEN UND MITTEN GRABBEN. IS EASY SCHNAPPEN DER SPRINGENWWERK, BLOWENFUSEN, UND POPPENCORKEN MIT SPITZEN!! IS NICHT FUR GEWERKEN BY DAS DUMKOFFEN. DAS RUBBERNECKEN, SIGHTSEE'EN, BUTTONPUSHIN KINDER KEEPEN DER KOTTEN PICKEN HANDS IN DAS POCKETS --- RELAXEN UND WATCHEN DA LIGHTENBLINKEN UND DAS PAPERMOVIN!! (Courtesy of Vince, WD0EVD, Fountain Hills, AZ.). Thanks Vince!

### MSO HINTS

Since we are seeing quite a few newcomers to the MSO system, I would like to stress the importance of the "carriage return/line feed" character, when using these systems. It is the CR/LF characters that cause execution of the command within the MSO, as well as insuring that your command to the MSO is "left justified", (received by the MSO on the left-most margin). For example, if you are remotely commanding the MSO to provide its "directory", the command is: CR/LF .SDIR CR/LF. The first CR/LF left- justifies the following: .SDIR command, and the last CR/LF causes the MSO to execute that command. Whether it's named the "enter", "newline", or "something-else key", it's mandatory for you to correctly place these in your commands to the MSO! Anything less, and I can guarantee you that the MSO will not respond!

That's it for this month, and a Happy Haloween to each of you! Let me hear from you on any item you'd like to see in the MSO Column! 73 **de Dick, K0VKH**

From: Bill Snyder, W0LHS
1514 South 12th St.
Fargo, ND 58103

### THE PACKRATT-232 -- A SECOND LOOK

It has been over a year since I first wrote a review of the AEA PK-232 for the Journal; So now, months later, I'm taking another look at it.

I recently received the latest up-grade kit for the unit. It consisted of two chips with new software, a cable to send information to the printer and a revised version of the instruction book. The newest feature in the software is the FAX system which permits you to copy facsimile on a dot matrix printer. And it works! But more about that later.

If this sounds like a review of the instruction manual and not the PK-232, please forgive me. I was impressed with the first book I received with the PK-232, but I would like to rave about the latest edition. One of my pet peeves is sketchy instructions that sometimes accompanies new equipment. This is particularly true from many small or beginning manufacturers. The instructions sometimes look like they were an after thought.

Well, AEA has been around long enough to know that the manuals that go out with new equipment must be complete, easy to read and answer all the questions the readers will probably ask. They accomplished this with the Pakratt-232 manual.

The new version is excellent. It is complete for RTTY, AMTOR, ASCII and Packet radio. If you are a beginner, the AEA book will walk you through getting started on all the modes. You should have no trouble with any of them.

The FAX documentation comes in two additions to the manual. The updates are in the same style as the main book, and most people should have no trouble getting the printer to produce weather maps,etc.

The operating manual includes information that will help beginners in any digital mode. The bibliography appendix to the main book is a good place to start to find information on AMTOR, RTTY and Packet. Other appendices include AMTOR operating suggestions, AMTOR theory, and Data Transmission Codes.

One very handy thing in the main manual is the Command List which shows the command, the nmemonic, the default setting and an abbreviated statement of the function. With three pages of commands, this listing saved me

**cont. pg. 17)**

**(PACKRATT PK232 cont. from pg. 16 )**

a lot of time in hunting the proper command to use when setting up my bulletin board with new software.

The hook-up instructions are easy to follow and seem to cover all present-day equipment. If you have not been into digital modes before, I suggest you read the instructions before you turn on the soldering iron.

I use the PK-232 as one leg of my dual-port BBS where, most of the time, it monitors packet on 20 meters. It is hooked to an ICOM 761 so I can use it for HF Packet, Morse, ASCII, AMTOR and RTTY.

The computer is a Xerox 6040 with two RS-232 outputs to run the BBS. The other TNC is a TAPR TNC-2 with a PM-1 by AEA in front of the TNC. This makes the TNC-2 work like a charm on the HF bands. The PK-232 incorporates all the features of the PM-1 into the total package, so I can switch either one into the HF or VHF channel.

I use the oscilloscope outputs from the PK-232 to run my Kenwood 220 monitor. I like the scope for quick tuning, but the bar-type tuning indicator built into the AEA equipment works fine. Even the most Pecksniffian digital fan will find the bar indicator easy to use and accurate.

The real surprise in the new software is the SIAM (TM) addition to the firmware. It stands for Signal Identification and Acquisition Mode. SIAM will "listen" to a signal for a few seconds and then display on the CRT the type of signal and the its speed. Besides identifying regular digital signals, it can identify the Russian Cyrillic alphabet and the Japanese Katakana code. With the large number of shifts and speeds, it is very handy for identifying what you are listening to. When it has displayed the type of signal, all you have to do is type OK and the PK-232 shifts to that mode and starts copying -- even if the signal is upside-down.. I use it for scanning the band with FEC, AMTOR and varied speed and shift RTTY.

The version with SIAM has a BITINV command that you can use to decipher certain signals that have been encoded by bit inversion prior to transmission. This feature makes the PK-232 useful to the short-wave listener as well as the ham operator.

The Morse mode of the PK-232 works fine on machine-sent copy, however, if you are going to use any computer for copying the code, you want to keep in mind they are designed to work with machine-sent code, not sloppy fists.

The PK-232 is really a packet terminal controller with the other modes added in order to make it a versatile digital ham package. Basically it is a TNC-2 clone with RTTY, AMTOR, FAX, ASCII and Morse added. For my money, it does all modes nicely.

I had good success with the first try at copying FAX with an Epson printer. The AEA FAX manual lists station frequencies that transmit facsimile, so getting started is easy. The signal strength of the weather bureau station was not too great here in North Dakota, but the first copy came out reasonably well. It was a lot of fun to watch the weather maps come out on the paper. The second addendum to the manual included a long list of dot matrix printers and the necessary commands to make them copy FAX.

I began AMTOR a number of years with an AEA AMT-1 working with a C-64 computer. Now I chirp with the PK-232 and the IBM clone. The latest software for the PK-232 does a fine job on the AMTOR mode. Since the new software arrived I have rediscovered the joys of chirping on 20 meters.

All in all the PK-232 is a very versatile unit, the instruction book is superb, and any red-blooded ham will have a great time exploring the modes and the airwaves.

Now that software is the key to ham radio, it is gratifying to see that the manufacturers are bringing out up-grades on a regular basis. In the past I have had equipment become obsolete in less than a year. So lets hope they all keep making new chips available from time to time for a reasonable fee. Also, I think a publication like the RTTY Journal should print a list of the latest available releases so everyone can keep up to date. The latest firmware for the AEA PK-232 is certainly worth installing. **de Bill, W0LHS**

## RTTY JOURNAL AWARDS PROGRAM

Last month it was mentioned that we are going to have an Awards Manager and indicated that Hal, WA7EGA and Jay, KE7PN would be taking on this important job. Well it now appears that Jay and his XYL Betsy, KE7PL will be handling this program. So again, please be patient, we are just about ready to start catching up.

# THE EUROPEAN DX - RTTY CONTEST

**Contest period** : 1200 UTC Nov. 14 to 2400 UTC Nov. 15
**Bands**: 3.5, 7, 14, 21, and 28 Mhz
**Classes**:
Single op - all band
Single op - high band (14, 21, 28 Mhz only)
Multi op - single transmitter (all band only)
SWL ( single op all band only)
Single operator entries operate only 30 hours out of 36. Rest periods must be clearly logged and taken in no more than three, separate periods.
**Exchange**: RST + QSO number beginning with 001
Contacts between two European stations or two Non - European stations is permitted for QSO points. QTC's can be exchanged between European and Non - European stations ONLY *(this is a change from previous years!)*
**Multipliers**: Non European entries count only European DXCC countries. European stations count only non- European DXCC countries.
**QTC's**: Count one additional point by reporting back the data of a previous QSO.
a) A QTC contains the time, call and QSO number of the station being reported.
b) A QSO can be reported only once and not sent back to the station reported on. *(WA7EGA cannot send a QTC reporting a previous contact with OH1AF back to OH1AF for QTC points.)*
c) A maximum of 10 QTC's can be sent to any one station however the same station may be worked several times until a total of 10 QTC's have been sent to him. Only the first contact with a station can be counted for QSO credit or reported for QTC points.
d) Keep a list of QTC's sent. QTC 3/7 means that this was the 3rd series of QTC's sent and that 7 QSO's are reported.
e) If more than 100 QTC's are claimed in the final log, a complete list of all stations that QTC's were sent to or received from must be part of the submitted contest log.

**EXAMPLE**: K6KW received number 004 from WA7EGA at 1800 GMT. At 1805 GMT K6KW makes contact with OH1AF. K6KW, who has worked 5 other stations asks OH1AF to copy "QTC 1/5 meaning that this is the first batch of QTC's sent to any station and there will be 5 QTC's to copy. He sends 1800/ WA7EGA/ 004 and four other reports in that format of stations he has previously worked. upon confirmation from OH1AF, K6WZ would add five QTC points to his score. He sends the final four more reports and is QRU. OH1AF and K6WZ both count five extra points to their log. If OH1AF also sends QTC's to K6WZ, each QTC received will count one additional point each.

**Scoring**: Count one point per QSO (the same station can be worked for points on a new band)
Count one point per QTC sent or received
**Final Score**: QTC points + QSO points X multipliers
**Awards**: Certificates to highest scorer in each category in each country.
Continental winners will receive a plaque
Certificates will also be awarded to all stations with at least half the score of the continental winner.
**Logs**: Submit a dup sheet for each band with more than 200 contacts
Submit a separate log sheet for each band
Submit a list of QTC's sent and received
Submit the CALL of all stations QTC's sent to or received from
**Send Logs To**: WAEDC Contest Committee
P.O. BOX 1328
D-8950 Kaufbeuren
Fed. Rep. of Germany
**No later than December 15, 1987**

## W.A.E. RESULTS

A first-rate brochure published by DL2DN (WAEDC) with the 1986 WAE results was in the July's mail. The exchange of reports of previous contacts counts for score in the WAE making it a real test of operator skill and station efficiency. Join us on the 2nd weekend in November and see how you measure up.

**NORTH AMERICAN STATIONS**

*SINGLE OP* -----

| | | | | | |
|---|---|---|---|---|---|
| WB9IVC/5 | 9th | 36,378 | | | |
| K6KW | 10th | 35,712 | --- | W2FG | 15th 24,752 |
| AA2Z/1 | 17th | 18,848 | --- | W2UP | 24th 10,614 |
| WN4KKN/5 | 25th | 9,600 | -VE2SQO | | 46th 1,488 |

*MULTI OP* ----- WA7EGA 265,680

**CONTINENTAL WINNERS**
TOP FIVE (WORLD)

*SINGLE OP*

| | | | |
|---|---|---|---|
| ZB2IN | 253,528 | RA4LM | 128,502 |
| DJ1XT | 94,920 | Y79XN | 93,318 |
| DF7JC | 90,097 | | |

*MULTI OP*

| | | | |
|---|---|---|---|
| LZ2KDP | 436,975 | OH1AF | 293,913 |
| WA7EGA | 265,680 | UZ3AYR | 160,256 |
| UZ3TYL/UF | 141,250 | | |

FROM 91 LOGS RECEIVED

**The same station cannot win the same category in consecutive years so there will be some new calls in this years test.**
(These results prepared by Hal, WA7EGA.)

## CLASSIFIED ADS

**30 words $3.00, additional words 5 cents each. Cash with copy.**
**Deadline for copy is 1st of month for following month**

**SUPER MORSE CODE SUPEREASY** -- Subliminal cassette, $10.00. LEARN MORSE CODE IN 1 HOUR. Amazing new supereasy technique, $10.00. BOTH $17.00. Moneyback guarantee. Free catalog: SASE - Bahr, 2549- RT3 Temple, Palmbay, FL. 32905

**FOR SALE**: We've made a large buy on these, special while they last, and will become scarce after this lot is gone, New Model 32 or 33 manuals Vol I, II and Parts $10.00 per set. We also have a few 4 volume Model 35 sets available for $20.00 per set. Roll paper G/W white or canary $2.75 per roll, 8 level 1" tape $1.00 per roll, 8 level 1" fanfold tape $4.00 per box, 8 1/2 X 80 ft. thermal rolls $4.00 each (fits most small to medium thermal printers and has 7/16 core). 20ma to RS232 interface - hooks easily to Model 33 UCC-6 or Model 32 UCC-5 - Please specify 32 or 33 - Special $75.00 with instructions and interface board with approximately 6 ft. cable terminating in 25 pin RS232. Our complete list of paper, tape, ribbons etc. will be available soon. Please write and ask for "New List". To all our past customers, thank you for your patronage. To those that made inquires for their specific needs and did not receive an answer promptly, we are truly sorry. Sometimes, time does not permit answering every inquiry and if you did not get an answer, it was probably because we are out of stock on the item requested or it is no longer available. TERMS: FOB Tram Teletypewriter Service, 50-0 Corbin Ave., BayShore, NY. 11706. Phone (516) 242-5011. Prepaid or C.O.D. All shipping charges will be C.O.D.

**HENRY RADIO** - RTTY Headquarters for all your needs in the World of digital communications, is overstocked with used equipment. We have HAL 3100's, MPT/MSO's. Demodulators, and the latest new pieces in stock. ST-8000, DS- 3200 Computers, Multiplexers, etc. We also have some used Robot RTTY and Slow Scan TV units. Complete line of Advanced Electronics Applications (AEA), used CP1, PK64, and the newest PK-232 all band, all mode, all computer system. Also UDC-232 (Use your own demodulator or TU) Call Henry Radio at (213) 820-1234 in Los Angeles, or 1-800 421-6631 outside California. Ask for George, AB6A.

NEWS - NEWS - NEWS Amateur Radio's Newspaper "WORLDRADIO". One year subscription is $11.00. Contact: WORLDRADIO P.O. BOX 189490, Sacramento, Ca. 95818

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BACK ISSUES: A duplicate of any back issue of the RTTY Journal may be obtained from: Red Wilson, WB0ESF, 4011 Clearview Dr., Cedar Falls, IA. 50613, $1.50 PPD & SASE. Reprints of both UART articles $2.00 PPD.

(HITS & MISSES cont from pg. 10)

fullfillment of the many years of service provided through Ham radio was most interesting and heartwarming. Having been a member of Air Force MARS for many years, Barry's station has handled many messages and phone patches for Service Personnel. In 30 years of operation of his shack has handled over 300,000 phone patches and 95,000 messages via RTTY between the U.S., Hawaii and the far Pacific. Of course Barry is the first to thank all those who operated his shack and made this service possible.

Having served as Chairman of the Communications Sub-Committee in Washington, D.C. for many years, he was very instrumental in helping Ham radio and thanked the ARRL for its support during this time.

To Barry, Ham radio is not just a hobby but more importantly, it is a service to help others. And he encourages us to continue in this spirit in the years to come. In his final comments, Barry said, he will be a Ham until he dies and then just to bury him with some of his old Ham equipment.

It was a great experience to visit with Barry and speaking for all of us who made the visit, we thank him very much for his hospitality, it will long be remembered.

That's all for this month. **de Dale, W6IWO**

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