

A Dedicated Digital Publication Since 1953

Volume 40, Number 2, February 1992

# CLOVER Invades Miami



*RTTY Forum ARRL Convention, Miami, FL - Bill, K9GWT gives presentation on Clover - See Hits & Misses,*

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# HITS & MISSES

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## Miami

Over the weekend of February 7, 8 and 9, I attended the ARRL convention in Miami, FL. This was my first visit to this well known convention which always enjoys big attendance numbers. I was able to have Bill Henry, K9GWT, speak on "Clover" at an RTTY forum I held. As the cover picture shows, we had a good group attend. During the question and answer portion of the forum, there were many questions that were answered in depth by Bill. All in all, there seemed to be great interest in the "Clover" method of transmission.

It was a pleasure to meet many of the RTTY Journal subscribers who live in the area and it was a great pleasure to have lunch with George, KB2VO, and his lovely XYL Maj Brit. Also attending the luncheon was Jim, N2HOS, our Software editor. Jim came over from the west side of Florida for the convention. I asked the waitress to take a picture of our group but she cut off our heads in the picture, much to my chagrin.

I don't know if I will get back again real soon but I will say, that this was a very well attended convention even though it is smaller than Dayton. The flea market is all under roof and that is a nice touch, especially when it rains. Of course there were a few items I could not pass up, so I left a few dollars in Miami.

## ARRL Survey

Jim Jennings mentions in his column this month that he heard a rumor that only 200 Hams have returned the survey to the ARRL. That seems very hard for me to believe and I certainly hope his number is incorrect. After all of our complaining and efforts to kill the last Petition regarding unattended automatic operation, I felt sure we could count our numbers of responses in the thousands, not hundreds.

My friends, if you have NOT responded at this time, please take just a few minutes of your time and fill out the survey and return it the ARRL. The ARRL is asking for your input and I'm urging you to give your input, so do it today. It won't be long before I will probably be attending another Digital Committee meeting and certainly one of the top agenda items will be this survey. I

hope I am not going to be embarrassed by seeing only a small amount of responses from our community. Unattended Automatic Operation is a serious matter and I know the Committee is going to be asked to make some recommendations at this next meeting. I'll do my best to represent you there but you must give me the input that will help me make the right suggestions.

If you do not respond and things don't go your way, please accept the decisions made for it will be to late for any re-course action. There is an old saying that goes, "a word to the wise is sufficient."

## 30 YEARS AGO

The results of the first World Wide RTTY Sweepstakes was announced. First place went to Chester Franz, W0NFA, with a total score of 33,738. In tenth place was my dear departed friend Cole Ellsworth operating from KR6MF with a score of 18,135. Also in that issue the "Switcholette" was presented by Paul Hudson, WA6AVJ. This device was designed to handle all the different polarities and ring/tip connections one might encounter in hooking up a TTY machine. The picture of the case shown in the article tells me it was quite big. Also in this issue was a wiring diagram for rewiring the Model 15 TTY machine by K5ARN. DX RTTY was covered by Bud Schultz, W6CG. The issue was 16 pages folded from full sheets and was mailed first class for seven cents.

## DAYTON

All the hotel rooms I had are now gone and it looks like we are going to have a great turnout this year. If you have not yet sent in your money for the RTTY Dinner which will be held on Saturday night, it is still not to late. The dinner information in on page 15 of last month's issue. If you are wondering who all is going to be there, stop wondering, they will all be there. You won't be disappointed in the food and the eyeball QSOs will make up for the rest of the price. Send your money to Steve, K4CJX, so he will have plenty of time to notify the hotel of our numbers. See you there.

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



# HARDWARE

Jay Townsend, WS7I  
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Spokane, WA 99210

My mailbag was completely empty this month but I do have some comments coming up soon on hooking a ST-6 to the PK232. MFJ finally sent me a package which contained the MFJ1278 and their Multi-Com software. It had an interesting manual on their 9600 baud modem which hooks up to the MFJ 1270 series, but no boards. I will keep after them for a pair of boards so we can set it up and see just what 9600 baud does on the local EWARG LAN. I have read in the last couple of weeks in either my FidoNet mail or the InterNet mail that some folks were having trouble hooking up an ICOM 751A and the MFJ 1278 on FSK. I thought that a bit strange so preceded to give it a try.

By the way a great series of pre-made cables are available from MFJ for most of the rigs complete with mic connectors and all. They just plug in and play. A very good idea for those who are a bit leery of a soldering iron.

## FSKING ICOM 751A/MFJ 1278

Hooking up the MFJ was just as straight forward as I had thought, but the message (mentioned above), did confuse me a bit since the fellow indicated that MFJ was unable to help. I followed WS7I's rules and got out the two manuals, ICOM and MFJ. The 751A is pretty straight forward and this also applies to the earlier model 751. The only big difference is the audio available on the back of the rig.

Pin 9 of the ACC Socket Connections is input for RTTY keying (MARK: High level SPACE Low Level). This is the FSK line. Pin 8 is ground and pin 3 is push-to-talk. Pin 4 is a fixed AF (audio) line. This may or may not drive a TNC sufficiently. These are the only lines that are needed to hook the ICOM 751A up to any TNC capable of running FSK. I don't use the fixed audio on pin 4. Some people do and its probably a better way to do it.

OK step one was to write all these pin-outs discussed above on a sheet of paper. Next

we get the MFJ books out and in this case there is a QUICK start manual. It explains, complete with diagram, that the FSK signal needs to be hooked up to pin 3 (Ground) and Pin 8 (FSK) of the TTL connector on the back of the MFJ 1278. OK I now know that I need to make a couple of cables. I run one from the ICOM using 3 Pins and a separate audio cable to the MFJ. I hook the Audio and the Push to talk lines to the DIN connector on the MFJ and wire the FSK line and a ground into the TTL connector. Volla another success story. Well almost. I fire up the 751 and attempt to make a couple of contacts but it all sounds pretty weird. First of all the signal is reversed and secondly the Diddle (synch) sounds very strange. First thing I did, was look again in the manual for Diddle and found out how to turn it off. Second thing, I looked for a software command to reverse the FSK. None available. Now the ICOM 751 has an internal switch that can be changed or as indicated in the mighty fine MFJ manual there is a shorting jumper that you can strap to reverse. I choose the MFJ jumper solution.

## COMPUTER NOISE TO THE EXTREME

I knew that sooner or later it would happen to me. The MFJ 1278 put out more computer hash than anything I have ever had in the shack. I presently have many computers and have seen a bit of hash from time-to-time. Usually it's on the video cables and you can get rid of it by using some torroids. A few clones have been a little leaky, but never have I seen 10 db over S9 birdies on 10 meters every 10th of a Kilo-hertz. I turned off the MFJ 1278 which was on a wooded shelf just above the ICOM 751 and it went away. After pulling off the case to change the FSK jumper I saw where the problem was coming from. The case is a nice flat black and the last time any of the screws saw metal was years ago. The probable solution would be to scrap all the paint off the screws and the sides of the case and get a good metal-to-metal fitting. Since this unit is only a demo and is on loan I decided against doing this, but simply added a cou-

ple torroids and moved the box to the other side of the table. The noise went pretty much away. A good ground lug would be another possible idea. Part of the problem that the MFJ 1278 has is a very non-tight case complete with a printer plug hole which is about 4 times the size it should be. I never had this problem with any of the 1270 TNCs. A solution seems to be a much tighter case with better screws and less paint around the holes.

The bulk of this months article will be a design discussion by a friend of mine, Clark "Rory" Davis, N7CR. Rory is a good friend who is normally found on the high seas as a Radio Officer, but who has been home for a couple of months doing some projects. The main project was the establishment of a APLINK station that serves Eastern Washington and to a large extent me. For example a message received from OH2LU going to Betsy WV7Y came in at just under 13 hours from Europe. It was handled 6 times, three of which are in the local area. The message Tapani was responding to had over 25 headers of Packet routing and the content of Betsy's message was lost. It left Spokane before Christmas and was responded to by OH2LU on February 1st.

## BMKMULTY DISTRIBUTOR

Received a nice letter from AC4IW of Schnedler Systems the U.S. distributor for the BMK-MULTY program reviewed in September 1991 in the RTTY Digital Journal. They are hard at work on getting the detailed instructions for various hookups. The ST-6000, Ktronics Interface II and the IRL FSK 1000 are finished. CP1 and CP100 are in the works.

Steven correctly points out the solution to my upside down FSK problem which is the parameter command TXR 1 for "transmit reverse." He also suggests RXR 1 which makes the front panel control on the ST-6000 work correctly. For more information contact them direct.

de Jay, WS7I ■

# 555 Timer for Icom 761 and PK232 for APLink

Clark R. Davis, N7CR<sup>1</sup>

I am working on a circuit that produces a delayed 64ms pulse to act as a switch closure to enable the scan circuit of my Icom IC761 after it has finished an ARQ contact. The delay is on the order of 7.5 seconds, in order to allow the IC761 to monitor the frequency for other callers before switching to SCAN mode.

The circuit I am building inputs a level change from the "STBY" light of a PK232MBX radio modem (that drops to a TTL logic low from +5V). This signal is present when the PK232 is in a standby condition, waiting for incoming callers. It is continuous until the PK232 receives its selcal from the calling station, when the STBY signal goes high as the LED is turned off by the LED driver.

Note: The LED driver sinks the current to the LED, meaning it acts as a common-collector switch. The output of the driver goes high to turn off the LED, as the LED is connected to +5V through a dropping resistor.

The STBY signal goes high when the PK232 switches to indicate what mode it is receiving. The desired mode is actually ARQ. When the ARQ activity is finished, the ARQ light extinguishes, and the STBY signal goes low again, activating the STBY LED.

What it is I am actually detecting is the transition of the STBY signal from High to Low, and this triggers the circuit. The circuit actually consists of two timers. The first, triggered by the STBY signal, is a monostable multivibrator which switches from low to high upon receiving the trigger signal. An RC network consisting of a 1 megohm resistor and a 6.8 microfarad tantalum capacitor cause the timer to remain on for a period of approximately 7.25 seconds ( $T = 1.1 * R * C$ ).

A special condition of a monostable multivibrator is that the trigger must be of shorter duration than the output. This prevents the monostable from locking up in an undesired state. This is accomplished by what is called an input conditioning network. This consists of a small value capacitor (1000 to 5000pf) in series with the input signal, a pull-up resistor of approximately 10K ohms connected between the trigger input and +5V. An additional 10K ohm resistor is connected between the trigger input and ground, which improves the

sensitivity of the monostable. Additionally, in order to detect the HIGH to LOW transition, and prevent the LOW to HIGH transition of the input signal from triggering the monostable, a clipping diode (1N914) is connected between the trigger input and +5v, cathode to +5v.

The input circuit is a differentiator, which produces narrow pulses (negative going on the high to low transition and positive going on the low to high transition). The positive-going pulses are clipped to +5v logic level by the diode. This prevents the monostable from retriggering on a LOW to HIGH transition of the input signal. An additional capacitor of .01 microfarad is connected to the control signal input of the 555 to improve its noise immunity. The output of the first timer circuit, which is normally LOW, switching to HIGH for approx. 7 seconds then dropping back to low, is fed to a second, nearly identical timer circuit. This circuit only differs from the first by the amount of time it remains on. The timing circuit consists of a 270K ohm resistor and a approximately 65 microseconds. ( $T = 1.1 * R * C$ ).

This second timer also has an identical trigger conditioning differentiator and clipper circuit, with the exception of the 10K resistor from trigger input to ground, as extra sensitivity is not necessary. This conditioning circuit ensures that the second timer triggers at the END of the 7 second delay, and not at the beginning.

The output of the timer is a positive going 65 millisecond pulse. This is fed through a 47K ohm limiting resistor to the base of a 2N2222A type switching transistor whose collector and emitter are connected to each side of the scan switch on the IC-761.

The system operation is as follows:

Scan is enabled on the IC-761 upon startup of the PK232 when it enters the AMTOR standby mode. The scan delay is such that the IC-761 scans each frequency programmed for approximately 2 seconds. If the PK232 does not receive its selcal the IC-761 continues to scan its frequencies.

When the PK232 receives its selcal, it enters the ARQ mode and activates the transmitter, which disables the scan. It also extinguishes the STANDBY LED, causing the STBY signal to go high. (This has no effect on the timer circuit, as it is looking for a HIGH to LOW transition.)

Once the ARQ link has been established, the PK232 proceeds with its communication with the other station. Upon completion of the ARQ contact, the PK232 reverts to its STANDBY condition. This forces the STBY LED on, and the STBY signal switches from HIGH to LOW. This triggers the 7 second delay, which allows relinking by the distant station, or another station to

link on the same frequency. If no linking takes place, scan is enabled by the 65 ms pulse.

If the PK232 receives an FEC idle signal, the STBY LED will extinguish as the PK232 goes into the FEC receive mode. However, scan is not disabled because the transmitter is not activated by the PK232. The IC761 continues on to its next scan frequency, and the PK232 reverts back to the standby mode once it ceases receiving FEC signals.

Possible problem and solution:

In the event of relink on the same frequency, after the 7 second delay, a SCAN START pulse is sent to the IC-761 anyway. This may have the effect of causing the 761 to change frequency during the link state by enabling the scan.

This can be remedied by the addition of a SCAN INHIBIT circuit. Since scanning is desired when the PK232 is only in the standby mode, the input STBY signal to the 7 second timer can be sampled. Since it is LOW when the PK232 is in STBY, all that is necessary is to add an AND gate between the output of the 65ms timer and the switching transistor.

The AND gate has two inputs: the 65 ms pulse from the second timer, and the STBY signal from the PK232. Its output goes to the switching transistor.

Operation of the SCAN INHIBIT circuit is as follows:

The AND gate requires 2 HIGH inputs to produce a HIGH output. If either one is low, then the output is low. If the STBY signal is low, then any input on the other input (from the 65ms timer) has no effect on the output. It will be low. When the STBY signal goes high (PK232 no longer in STANDBY), and the normally low SCAN pulse from the 65ms timer goes high for 65ms, the output of the AND gate will also go HIGH for 65ms. This turns on the switching transistor for that amount of time and starts the IC-761 scan.

A possible problem exists having to do with the possibility of triggering of scan during a non-standby condition of the PK232.

Initially the solution was to provide a diode "AND" gate from the scan input line to the timer circuit. This was found to turn ON the switching transistor, instead of keeping it biased off. A better solution is to use a simple single transistor inverter, Q1, as shown in the schematic.

The input of this common-emitter circuit is connected through a 47K resistor to the SCAN input of the timer circuit. When the input is HIGH, which indicates a condition other than standby, the transistor is biased

ON, which provides a low-impedance path to ground. The collector of this transistor is connected to the base/input junction of the driver transistor Q1. This inhibits any pulses from the 65ms timer from triggering Q1. Hopefully, this will inhibit scan when a station links during the 7.5 second delay before scan starts.

Further experimentation found the 7.5 second timer would not trigger with only the 47K resistor to Q2 base. Apparently, the input differentiator was being loaded down. I tried various values of resistors to stop this effect, and values as high as 10 Megohms still loaded down the circuit! After several cranial follicles were permanently damaged due to the effects of overstimulation, I tried a pull-up resistor of 10Kohms to the +VCC line. This has the effect of raising the input to VCC when the input is HIGH. This also biases Q2 ON except when the STBY input goes LOW. And surprisingly, the circuit now triggered. It also triggered on the LOW to HIGH transition. BUT, since the 65ms pulse is inhibited by Q2 when the input goes HIGH, this effect can be ignored.

I had configured the 555 timer scan board to use the STANDBY mode LED driver as its signal input. However, this was found to have problems. The timer board performed flawlessly, the problem was in how the PK232 uses the STBY light. I found that anytime the PK232 returned to the STBY mode, the timer would be triggered, meaning if the Icom 761 were in scan already, and the PK232 went out of standby due to several conditions including a command from the APLink software during daily updates, reception of FEC signals, etc, the 761 would stop scanning and would not return to scan.

The solution was to sample the ARQ LED driver signal. However, this is normally HIGH when the PK232 is in the Standby mode. The timer requires a nominally LOW signal when the PK232 is in any mode except ARQ. So, the addition of a 2N2222A inverter stage was the solution.

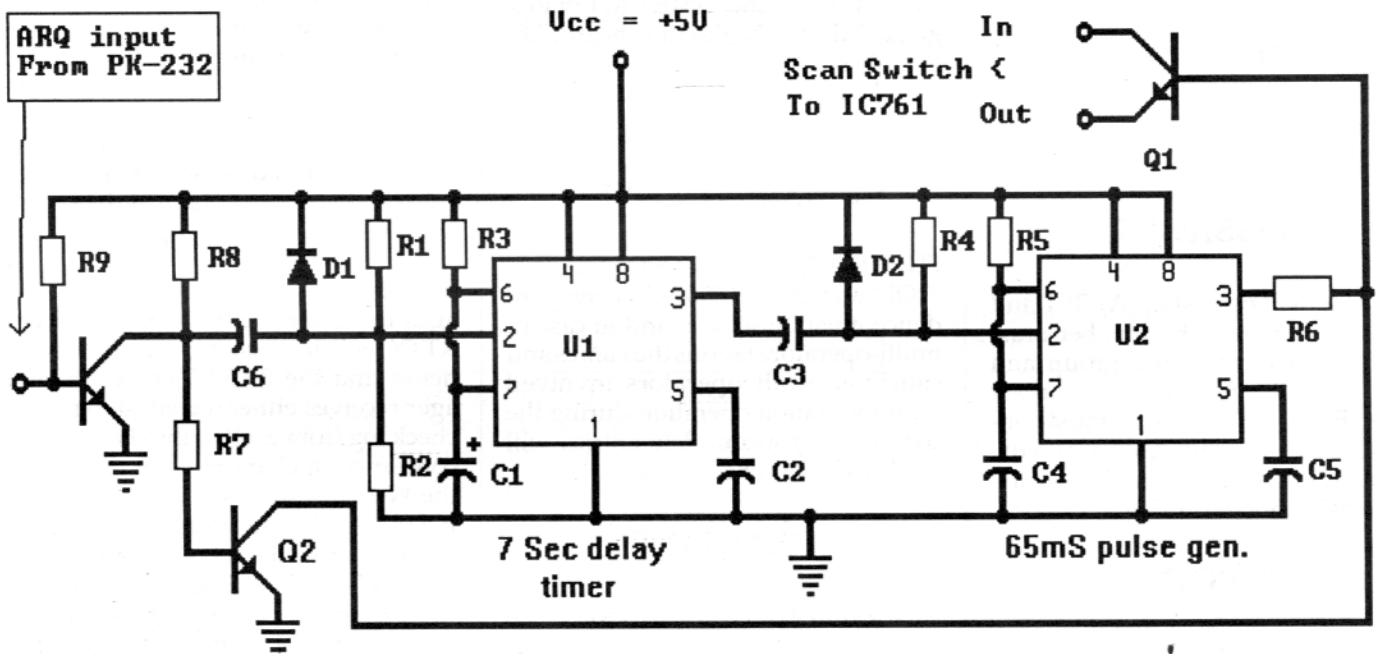
The input signal was removed from the input of the signal conditioning differentiator of the 7 second timer, (also the SCAN INHIBIT transistor Q2), and the collector of another 2N2222 (Q3) was placed there. The

10K pullup resistor was left to bias the collector of Q3. The emitter of Q3 was grounded. The ARQ input was initially fed to the base of Q3 through a 47K resistor, however this was found to be insufficient drive, since the level from the LED driver was only about .6 V when HIGH. This was still insufficient to completely turn on Q3, so another 10K pullup resistor was added, which brings the input of Q3 up to a level which is sufficient to turn it on when the ARQ LED driver is HIGH. This is only a few milliamps, which is much less current than what the LED it drives draws.

The scan circuit now only triggers after an ARQ link is completed, and is immune to other conditions.

-Clark N7CR

1.  
Clark Davis, N7CR,  
4318 N. Stevens,  
Spokane, WA 99205



- |                      |                 |   |
|----------------------|-----------------|---|
| R1, R2, R4, R8 = 10K | C1 = 6.8uF      | D1, D2, D3 = 1N914                          |
| R3 = 1 M             | C2, C5 = .01uF  | Q1, Q2 = 2N2222A                            |
| R5 = 270K            | C3, C6 = 1000pF | U1, U2 = 555 or 1/2 5556                    |
| R6, R7 = 47K         | C4 = .22uF      | Pin assignments will be different for 5556. |

# 1992 BARTG RTTY CONTEST RULES

## Time

0200 GMT Saturday March 21st to 0200 GMT Monday March 23rd 1992. Single operator and SWL stations are permitted a maximum of 30 hours operation. Time spent listening counts as operating time. The 18 hours non-operating time can be taken at any time during the contest period, but off periods may not be less than 3 hours per period. Times of operation must be shown on the contest summary sheet.

Multi-operator stations may work the full 48 hour contest period.

## CATEGORIES

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

## BANDS

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

## MESSAGES

Messages will consist of: A) RST and Message Number. The number must consist of a three figure group and start with 001 for the first contact made. B) TIME GMT. This must consist of a full four figure group and the use of the expression "same" or "same as yours" is not permitted.

## QSO POINTS

Each completed QSO scores one point. Stations may be contacted again on other bands. Duplicate contacts on the same band must be clearly marked, NO station may transmit on two or more bands at the same time.

## MULTIPLIERS

All DXCC countries (including W, VE,

and VK) and all W, VE, and VK areas count as multipliers on each band. Note: Any country or W/K, VE/VO or VK area may be contacted again if worked on a different band, but continents are counted once only. Proof of contact may be required in cases where the station worked does not appear in any other log received and does not submit a check log.

## SCORING

QSO points X multipliers X continents (max 6)

## LOG SHEETS

Use separate log sheets for each band. Logs must show BAND, DATE and TIME GMT, CALLSIGN, MESSAGE SENT and RECEIVED, COUNTRIES and POINTS claimed. SWL logs must contain DATE and TIME GMT of logging, CALLSIGN of station heard, REPORT sent by that station and CALLSIGN of the station being worked.

## SUMMARY SHEET

FULL SCORING, TIMES OF OPERATION and ADDRESS for correspondence must be shown, and in case of multi-operator stations the names and callsigns of all operators involved with the station operation during the contest. Any incomplete entries will be classified as check logs.

## DEADLINE

All logs must be received by May 25th 1992 in order to qualify.

Suitable log and summary sheets are available from the contest manager. UK entrants send large (A4) S.A.E. Outside UK please send 6 IRCs to cover postage. Computer generated logs containing all specified information are welcomed.

## All mail to:

**John Barber, G4SKA**  
32 Wellbrook Street  
Tiverton, Devon  
England  
EX16 5JW

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

## ADDITIONAL NOTES:

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

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

Your comments on the contest would be much appreciated.

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

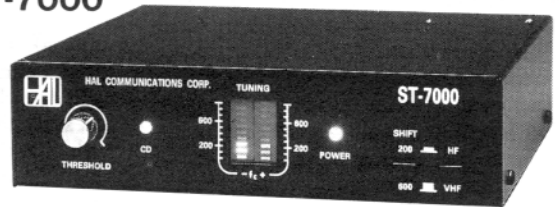


## The TEMPO MPP1

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

## HAL Communications' ST-7000

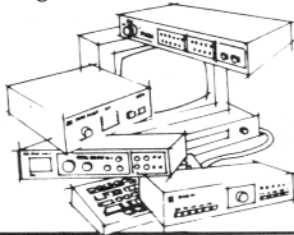
HF-Packet Modem. ...a high performance modem designed specifically for 300 baud HF-Packet. It offers no-compromise performance to assure optimum operation under the most demanding signal conditions. Techniques developed for government and military use are used in the ST-7000. AGC-controlled AM signal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



## The PK-232 by AEA

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

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



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# PACKET

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Lakewood, CA 90713

## A FEW MONTHS AGO

In a recent issue I presented a discussion on how to connect your TNC to your handheld radio. I introduced a few new terms in the article. They were TIP, RING, and SLEEVE. Back then, I was unable to present a graphical representation of the connector as described. Well, this month I do not have the drawing for you. But, hopefully, next month I will have all my bugs under control. Better late than never, they always say. The drawing will show the location on the plug in each connection area. The best advice that I can offer in relation to the purchasing of the connectors is to spend the money for quality connectors. The lower quality connectors will fall apart sooner and be more unreliable in their operation. Another defect in using the cheapies involves the solderability of the connections i.e. the wire that one may use may be able to take solder easily without melting the wire insulation. The problem lies with the plug terminations. Some connectors will not take solder at all without surface scraping. This could present a big problem with cold solder joints and connections failing. Please use the good stuff.

## GARBAGE IN, GARBAGE OUT

GIGO. That can be the case with an RTTY demodulator that does not have the loop held closed when there is no signal present. A packet TNC will not display garbage because the transmission has to be error-free before displaying the information.

In the manual that is supplied with the TNC that you are using, it will mention how the TNC will hear a signal. Some TNC's will have to receive squelched audio to work and there are others that don't care what comes in. The TNC has to listen to what it receives in order to know if the channel is busy or not. This process is normally done by using one of two methods. The first one relies on squelched audio. If the squelch is open, the resulting signal will tell the TNC that the channel is busy. The channel could be busy with an-

other packet signal, voice, or the receiver could be just blowing squelch due to a noise burst. This type of sensing is great on shared channels where there could be mixed traffic of many kinds. This type of circuit will not be too good for weak signal work because of the squelch being in the way. The other type of sensing circuit relies on hearing and decoding packet signals. The circuit of this type does not need squelched audio to work properly. Not needing squelched audio can be an advantage for weak signal work. If it does not hear a packet signal, the TNC will assume that the channel is free. This scheme can present a problem on shared usage channels. Another problem with this design is that if the channel has a packet signal on the frequency but the circuit is not detecting the energy present, the TNC may double with the other transmission.

The two methods presented above have their pros and cons. Which circuit is better to use depends on how the TNC is to be used. If the frequency is shared usage, stick with the first type of circuit. It is more forgiving when the frequency is busy. If you are dealing with a packet only frequency, you can use either circuit design.

Usually, the TNC as shipped from the manufacturer is set to run as soon as the unit is powered up. You may have to engage the "monitor" to see packet activity on the channel. There will be times that the frequency will be dead quiet and the other times you wonder how any information can be passed because the channel is so busy. Determining when the channel is busy or not is the function of the TNC.

If you are able to talk to the TNC, you should be able to receive data from the TNC. Try the system out first on VHF. Make sure that all levels are set right and you should be able to see what is going on.

## MY FAVORITE STRIPPER

Surely You Jest, Intel. It is amazing what advertisers will do to advertise obviously substandard products. I say this after see-

ing on television, a commercial by Intel, touting the advantages of a 80486SX system because of its expandability. Now to give a little history lesson. Intel delivered the 80486DX processor as the next step above the 80386DX processor. The 80486DX chip has built into the silicon a math coprocessor for hardware floating point operations. The 80386DX needed the 80387DX math coprocessor for hardware floating point operations. The 80486SX processor needs the 80487SX math coprocessor to do floating point. This is the same idea to a point as the 80386SX/80387SX combination.

To continue this discussion, I will be pulling information from the publication "Computer Shopper" dated January, 1992. The following listings do not represent an endorsement in any form of the companies mentioned. The pricing given will demonstrate the point that will be made further on. On page 409, The Essence Group was advertising the VEGA 80486SX 25 MHz motherboard for \$595.00. The same advertisement showed a VEGA 80486DX 33 MHz motherboard for \$840.00. In the same publication on page 747, Sabina International was advertising the 80487SX math coprocessor for \$465.00. Since the 80486SX system does not come with a math coprocessor, one would have to be added to perform floating point. If we add \$595.00 for the 80486SX motherboard and \$465.00 for the math coprocessor, the total ends up being \$1,060.00. For \$1,060.00, you can have a 80486DX equivalent system running at 25 MHz or for \$840.00 you can have a 80486DX system running at 33 MHz. For 20% less money than the 80486SX/80487SX combination, I can have approximately 32% more performance. The performance value is based solely on clock speed of the main processor. There will always be several other factors involved in determining speed difference between the two systems. The choice is up to you. I suggest buying the 80486DX system and avoid the 80486SX system.

This may sound like Intel bashing but it really is not. If Intel wants to market a substandard product and "Shoot them-



selves in the foot" with their product, I will not stop them. The 80486DX is a great chip and I am looking forward to getting a motherboard based on the chip in a couple of months (a use for the Income Tax refund ... what refund?)

## TCP/IP

I now have the source code to PA0GRI's version of Phil's, KA9Q, TCP/IP program for packet. I am in the process of recompiling it to make the package smaller by eliminating unneeded features. This will allow for a smaller runtime package and hopefully I can shell out to a mailer that I like to use. The program was written for Turbo C and I am compiling it using Turbo C++. I am running into a couple of bugs with the code but the problems appear to be portability related. This will prove to be an interesting project when completed.

It is networking programs, like the TCP/IP-based suite written by Phil Karn,

KA9Q, Gerard, PA0GRI, and others that will carry packet forward. The programs are not hard to learn to use. Some people think that the setup and running of these programs are for the Techie's only. Anyone can use the programs and learn their usages. What is really needed is a good "Elmer" to help you out and show you the ropes. Once you get going, don't let the tech talk blow you off. Just get in there and start chatting. You do not have to jump in hard core. Ham radio is here to have fun with, so do so.

## NEXT MONTH . . .

Hopefully we will be able to continue with the discussion on starting a connect up. I am in the process of moving to a new residence now and that is not easy when you have to deal with a family. So, this month will be a little short and we will see if we can make it up next month.

de Richard, N6NKO ■

## UPCOMING CONTESTS

APRIL92 SARTG AMTOR Contest

MAY 92 VOLTA RTTY Contest

JUNE 92 ANARTS RTTY Contest

AUGUST 92 SARTG RTTY Contest

SEPTEMBER 92 CQ/RTTY Journal

Watch for the rules of each contest which will be published by the RTTY Journal prior to each contest. A better way to keep track of all the contests is to be the proud owner of the RTTY Journal's *contester's Guide*. See page 22 of this issue for details on how to order.

# SARTG WW RTTY AMTOR CONTEST 1992

We have the great pleasure to invite you to join the 2nd WORLDWIDE AMTOR CONTEST run by the Scandinavian Amateur Radio Teleprinter Group, SARTG

### Contest Periods:

0000 - 0800 UTC, Saturday, April 18th

1600 - 2400 UTC, Saturday, April 18th

0800 - 1600 UTC, Sunday, April 19th, 1992

### Bands:

3.5, 7.0, 14, 21, 28 MHz. the same station may be contacted once on each band for QSO and multiplier credits.

### Mode:

Only AMTOR allowed. Use FEC (mode B) for calling. Use ARQ (mode A) for exchange of contest message. Exchanging of contest messages in FEC or in any other way than ARQ is subject to disqualification.

### Message:

RST, Name, and QSO number starting with 001.

### Classes:

- A) Single Operator, All Bands
- B) Single Operator, Single Band.
- C) Multi Operator, Single TX, All Bands.
- D) SWLs, All Bands.

Note: A Single Operator, All Bands operator may also enter a Single Band of own choice.

### QSO Points:

QSO with own country five (5) points, QSO with other countries in own continent ten (10) points. QSO with other continents fifteen (15) points. In Australia, Canada, Japan and USA each call-district will be considered as a separate country.

### Multiplier:

Each country as by the DXCC list count as one multiplier on each band, including the first contact with Australia, Canada, Japan and USA. Each call-district in Australia, Canada, Japan and USA will count as additional one multiplier on each band.

### Scoring:

Sum of QSO points X sum of multipliers = Total Score

### SWLs:

Use the same rules for scoring, but based on stations and messages copied.

### Awards:

To the top stations in each class, country and district mentioned above, if the number of QSOs is reasonable.

### Logs:

The logs must be received by June 10, 1992. the logs must contain: Band, Date/Time UTC, Callsign, Message sent and received, Points and Multiplier. Use separate sheet for each band and enclose a Summary Sheet showing the scoring, class, Your Call, Name, Address, and a signed declaration that all contest rules and regulations for your license have been observed. For multi-op stations, the calls or names of all operators involved.

Your comments will be very much appreciated.

### Send Logs to:

SARTG Contest Manager  
Bo Ohlsson, SM4CMG  
Skulsta 1258, S- 710  
41 Fellingsbro  
Sweden



# SOFTWARE

Jim Mortensen, N2HOS  
P.O. BOX 328  
Indian Rocks Beach, FL 34635

## A QUICK STUDY

A good contest stresses RF gear, computer and software more than anything else we do. Twenty-four, thirty-six or more hours of constant use tests far more than just the operator. Disaster often lurks just over the horizon during those precious hours in which we hope to prove our durability, demonstrate our nimble buffers, show off our power and antennas. If it arrives, the crashed disk, flawed software, fried amplifier, deleted log or hyperactive sun upset our plans at untimely moments. We go back to square zero, scrap the logs and begin to think about the next opportunity. But when it all works as planned the adrenaline flows and removes the body clock from our consciousness, QSOs flood the machine and our fingers fly from one function key to another. Kind thoughts about software abound as our score climbs above last years'. And all is right with the world.

This year's ARRL RTTY Roundup contest provided those usual chills and thrills according to those who participated in my QCSS (Quick Contest Software survey). QCSS looked for an answer to the question: "How many out there are using the new contest software and how is it working?" I selected a baker's dozen of the stations I worked at least once, a scientific panel if there ever was one. The timing, quality and quantity of the response would delight any researcher. I learned far more than I had hoped even though not all of the software options were covered. This column is devoted to extracts from a few of the cards and letters that popped into Box 328 shortly after the contest was over. The contestants wished to communicate! I appreciate very much their effort to share their experience with all of us.

An unsolicited report arrived here the morning after the contest, one which triggered this survey. Barbara, N4LIH, my neighbor, "friendly competitor" and friend called to find out about my score. I mumbled something about "335 or so," with the certain knowledge that her score was substantially above that level. It was but we won't discuss her "almost 500" effort in this forum.

Her story is much more interesting. Seems

as though Barbara was going to use WF1B's logging program. "At 1250 local time on the day of the contest I was on the air for a final test with HK1LAQ. He was also using it for the first time. Well, even though the program grabbed the call and I inserted it into the log window, it would not re-transmit the call. I had the \$ placed into the buffer but it just did not work. Of course I did not have time to try and figure out exactly what the problem was, since by then it was 1315 local and the contest was under way. So I just went back to PC-Packratt and manual logging. I have had problems with the WF1B program trying to place my logs in it post-contest as well and I'm not sure if it is due the hardware that I am using or what." There was a report that the same thing happened to a W6 station, but I was unable to confirm that story. Fortunately, Barbara was the backup.

Other respondents used the WF1B software throughout the contest and experienced some problems but gave the product high marks. W2UP, Barry, states that "... overall, very happy with the program." However, he found that "... some of the VE multipliers were not recognized and that on-screen crashes with the Check-Partial command. There are other minor bugs as well," but it (and his KAM and 386SX) carried him through over 600 contacts.

Rich, N6GG, who has only been in RTTY contests for six years, but, has been a con-tester since 1936 says, "I won the 1938 ARRL-CW Contest for the East Bay when I was 17 years old." With a state-of-the-art computer system and antenna array he scored a mere 584 QSOs with 77 multipliers despite snow and gale winds, and several hours spent shoveling snow!

Rich selected WF1B for use in the ARRL and wound up with mixed feelings about the program. His evaluation, "It's both good and not so good for me." But he goes on at some length and his comments merit our attention.

"I used the program exclusively in the Roundup .. there is a basic problem I can't resolve. When running in "CQ" mode and someone comes in with a BIG signal, and signs once without a DE in front of his call, there is only one way to answer him; and that is by the ALT-K (Keyboard Chat

Mode). There is no time to press F8, type his call, press Enter and then F2. *There is no way to turn the carrier on during this process. The Receive Screen stops when F8 is pressed, so callers can easily go away.* As a result about one third of the time I answered callers in the Keyboard Mode (ALT-K). Since there is no transmit buffer all replies must be typed LIVE. That is embarrassing if you are not a high speed typist, which I am not!" (Note: the above italics are mine. I think Rich makes two very good points. JEM).

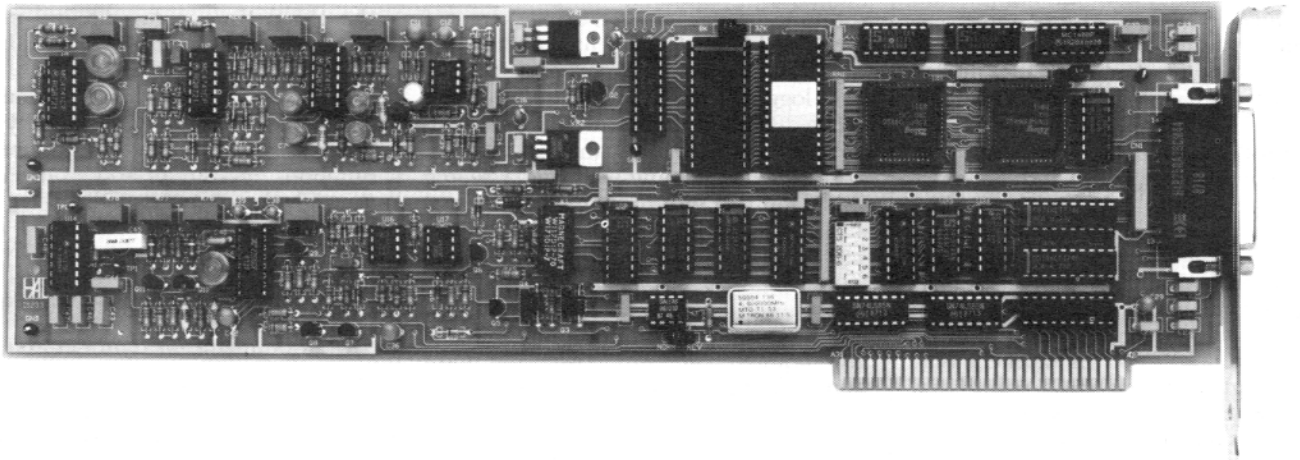
"There is a lot to like about the WF1B program. It is F-A-S-T! It has a neat, quick way of spotting a DUPE. And it's cute the way it captures a call. When you work the same guy on a different band it fills in the State/Province for you. That's slick! With capture working, only two keys then need to be pressed for a complete QSO — Insert and PgDn. That's all!"

Rich has an orderly mind and developed a first rate, one page command summary which fits right under his keyboard. I am sure he will send one to you for an SASE if you are a WF1B user.

Two responses were anonymous. Either I lost the envelopes or they forgot to put a return address on them. Nevertheless, the terse comments on the first one command respect. "783 contacts, 93 multi's: the WF1B program is PERFECT, GREAT, A MUST." Thanks to this unknown contestant who will be identified when the results are published. Look near the top on the list. And, at the last moment, John Doe number two weighed in with 614 QSOs and 91 multi's. These guys won't have to identify themselves with that kind of effort. At any rate, this was accomplished with a PK-232 and PC-Packratt. But the home-brew dBasell logging program cared for the fine details. The only complaint, and it was universal.. "Couldn't believe that I heard no LA, HA, HB9, IS0 and only a handful of I's.

KORC, Bob, commented at length about the contest, hard and software. Since his score will be astronomical (842 QSO'S, 74,096 points) and since he put Minnesota's first TAPR TNC on the air, I listened carefully. His super station includes a KAM and WF1B software: "During the RTTY contest in 1991, I used two computers with K1EA CT program for log and dupe check. This

# 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!

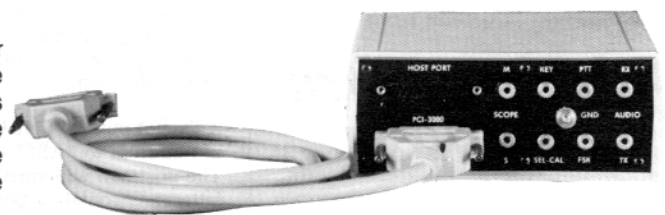
If you want to communicate on HF, do it right with the PCI-3000! Call HAL Communications—your AMTOR source—and put your PC on the air today!



## 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!



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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.)

setup forced me to double log each contact by switching between the two keyboards. This year, I ran the WF1B program which allowed me to contact, log and dupe the contest in real time using one computer."

"The program is conceptually excellent, but it is not bullet-proof. During the first few hours of the contest, I had numerous software crashes and got dumped back to the DOS prompt. I would lose the current entry, and may have lost four of five entries that way. Once I figured out the sequence that caused the problem, I had no more software problems."

"I did not spend more than two pre-contest hours reviewing the manual or playing with the program. That is my personal technique. I will use the program for all my RTTY contesting for now. If Ken, K1EA, decides to add RTTY to his excellent program, I might go back to CT for all my contesting activity. Many people have requested this but so far there has been no commitment."

"I don't know if I will be in the BARTG contest this year. I see this is scheduled for the same time as the ARRL CQ DX test. I consider that a tragedy! These are my two favorite contests."

The only thing Bob didn't do in the contest is work XQ0X, John, off the back of his beam on 10 meters, like I did. But his comment about the BARTG contest must upset a lot of other people as well. I wonder how that could have happened?

Joe, K0BX, another one that I have worked

on all bands in all contests for some years, complained only about the lack of DX in the contest. He's right. Joe uses the v1.59 Lan-Link software, both for terminal and logging purposes. "I use it every day and find that it works very well for my digital work. It has a contest mode that puts the other guys call in the exchange. It has the ability to "snatch" the call off the screen. I used that feature 95 percent of the time."

"The logging feature is what I really like. It uses a dBase III format which allows me to process the file after the contest. It does not do automatic duping, but has a search command that will check the log and put all occurrences of the call on the screen. This was handy as several of the stations I worked were on all bands."

"I have won the Roundup for Missouri with both high and low power, but find I don't miss much with the 100 watts."

There it is from the front. In this sector, plans called for the use of ComprttyII for the PCI-3000. A video bug (since resolved) kept that new product on the sidelines. So I decided to program the HAL board for contesting using the Learn function of DesQview. I created five buffers that handled everything from start to finish. The valuable Ctr-F3 (enter incoming call) and F-2 (send incoming all-my call) functions were imbedded in the macros. There was not a single slip-up (except mine) during the twelve hours at the keyboard.

One discovery made after the contest is worth noting. Having no further use for the buffers I chose to get rid of them. The erase

procedure is a bit like getting rid of a piece of gum from the sole of your shoe. You enter Learn and create a Script with nothing in it to replace the existing Script. Leave the window and the prompt says "Discard, Save Scripts?" Of course, dump the old scripts by clicking D. Wrong. Press S to save the new empty scripts. I learned this the third time around. One more of DesQview's secrets has now been bared!

Logging was another story. Without ComprttyII, I had no logging capability for the PCI-3000. So I designed one for use on the notebook 386 under EXCELL. Halfway through the contest I realized that I had made a modest little error in the design. The logs won't be submitted this year because of the effort it would take to put the data in the proper form. But, Barbara trounced me anyway!

Thanks to all the contributors to this month's column. Their thoughtful comments gave us all fresh insights into contesting software, and we appreciate it. Now it's your turn. Act now to take part in the next symposium. The subject .. MS-WINDOWS. Let me hear from you about how and when you use it, your likes and dislikes and your ideas about the platform we may have to live with for a long time. And what kind of future does it hold for the digital aficionado? Send mail, APlink or phone messages to me please.

73 de Jim, N2HOS ■

## QSLing the 3rd World

QSLing to the 3rd world should follow some simple rules that seem obvious to most of us. But when I look into my mail box, I still find many Hams who do not respect these rules and I am sure many cards to me (and other DX stations) get lost due to various reasons some of which I have listed herein.

1. Print the address correctly. Especially the name of the country which is often wrong, so the card will go somewhere else. (In my case, many cards are marked 'South Africa' and that is definitely another place than Benin, have a look at the map.)

2. Do not put any Callsign on the envelope. Do not address to "ARS" or "Amateur Radio ...". The postman will smell immediately that this letter may contain a QSL Dollar or IRCs and in third world countries a dollar is a lot of money. An African postman earns about \$100 a month so picking three QSLs a day will double his salary. Address your letter as if it were business mail and it will arrive for sure.

3. Put your IRC or 'Greens' in between some dark paper or in a carton so it cannot be seen from the outside. That seems obvious but many do not follow these simple rules.

4. Avoid sending your QSL registered mail. There is no delivery to the home in most African countries of this type of mail and I would have to go to the Post office and wait at least one hour in the long lines to get a registered letter and I would much prefer to be on the air to standing in a line. Hi!

5. One dollar is in many cases not sufficient for the return mail a QSL card mailed by Air in an envelope to the USA is about \$1.60 or 2 IRCs from here, so far I do not mind as I am not a poor man but other DX stations may not be as generous.

6. Be sure your own address is correct on your QSL card. Every month I get several cards back due to the wrong address.

You may wonder why I do not have a QSL manager. Well, the reason is very simple, I love to read all the nice letters I receive along with the QSL requests each day. Hi!

I hope to see many of you in Dayton this year. Wishing best DX to all from Africa

de Peter, TY1PS  
B.P. 06-2535  
Cotonou, Benin



**Jim Jennings, KE5HE**  
Rt. 2, Box 165E  
Hearne, TX 77859

## The Survey

I am told that less than 200 hams have responded to the automatic/unattended operation survey of the ARRL by late January. I urge you again to read the article in the January issue of QST and send in your form. The issues involved are important to anyone operating the digital modes and your response is needed.

## Scanning

One of the features that has made APLINK so popular, and useful, is the scanning feature that most of the MBOs use. As usual, there is more than one way to skin the cat. Some of us use a rather simple scheme that relies on the scan capability of the radio. The radio features that are needed are:

1. Ability to scan channels at about 2 seconds/channel.
2. Stop scan on receiving the PTT action.
3. Some simple means, i.e. switchclosure, to restart the scan.
4. Ideally, have an auto tuner which will tune only when the scan has stopped and transmitting has begun.

A number of modern transceivers will do item 1. However, it is frustrating when you have a top of the line transceiver and can't get it to behave in that department. Some, like the TS-140, 440, 450, 850, have a very nice feature of being able to adjust the dwell time on each channel with the RIT knob when in the scan mode. Many rigs will do item 2, a notable exception is the TS-940. That rig needs a switch closure to stop the scan. Most rigs that will scan only require a simple switch closure to get them started again. But getting the connections into the rig at the right place may not be for the faint of heart. Having an auto tuner that does its thing when you start transmitting is nice, especially if you use a multiband dipole antenna. But you would like to have the tuner humming along as you scan from channel to channel. The IC-761, TS-450, and TS-850 fill the bill in that department nicely. I'm sure there are other rigs which satisfy the needs in the scanning department. I am just not aware of them.

Another way of doing the scan thing, and much more, is by computer control of the rig through the computer port (if the rig is so equipped). If you take this route, as has

been done by Peter, TY1PS, then you will need 2 things. First you need a computer program to do the job. Ideally this program would be a TSR (Terminate Stay Resident) program or the program needs to run in some kind of multitasking environment (Desqview or Windows). You have to be running APLINK or some other application that is talking to the controller at the same time you would like for the scanning function to be active. I understand that Peter, TY1PS, will discuss his program for the YAESU to do the scanning shortly in the RTTY Journal.

The other thing needed to get the scanning going using the computer port is a level converter for the radio. (Most radios talk TTL and the computer talks RS-232). A recent article by KC4ES (QST, Sep. 1991, pp 24-25) and Feedback (QST, Dec. 1991, p 46) discusses such a circuit. It is possible to skin the cat a little easier if one makes use of a rather handy chip, the MAX232 or it's equivalent the ICL232. These chips will do the conversion and in addition they have onboard charge pumped voltage converters which generate the required plus and minus voltages from 5 volts which means that you don't have to provide these voltage sources in your circuit. I run such a circuit on my IC-761. Refer to Figure 1 for an example circuit diagram.

(Figure 1)

In Figure 1, U1 is the MAX232, U2 is a 78L05 (5 volt voltage regulator), and all of the capacitors (except as indicated) are 22 MFD (16 volt). The connections to the radio/computer are as follows:

A - Computer DSR and CTS B - Computer RTS C - Radio CTS (DSR) D - Radio RTS (DTR) E - Radio Rx D F - Radio Tx D G - Computer Tx D H - Computer Rx D

Not all computer programs or radios will require the connections to A, B, C, and D. For example, the Icom Communication Interface-V uses only one bi-directional line to the radio and therefore does not use lines C and D (and consequently, A and B). For this system just connect E and F together and to the radio CI-V jack. As described by KC4ES in the Feedback article of Dec. 1991 QST, the Kenwood has all the hardware handshaking lines and some software

needs handshaking for proper operation. As far as I know, the Yaesu does not use the handshaking lines. Just put the circuit on a little board and in a box with the appropriate connectors. It might be smart to bypass all lines going to the radio with .001 disc caps. Of course you should use shielded cables to both the radio and computer.

An important point to bring up when discussing scanning is that the mode must allow for short connect times, preferably less than 2 seconds. If the connect time is too long, then the cycle time for an MBO to get around all it's channels is too long. I have found that 15 channels at 2 seconds/channel dwell is about the maximum. With that it takes 30 seconds for the MBO to get back to your frequency. So, if you are chirping for him, you must chirp for 30 seconds to find out if he is scanning or talking to someone else.

## PACTOR

Well, it looks like I'm going to have to take another fiscal leap and build a PACTOR controller. It really looks promising. Last month I mentioned that Vic was going to put CLOVER in the WINDOWS version of APLINK. After some discussions with him, I think that he will also put PACTOR in APLINK. This will make APLINK a very powerful system in my opinion. The future version will handle multiple PACKET, AMTOR, CLOVER, and PACTOR ports. This will make APLINK even more powerful than it now is. Someone will be able to check into an APLINK MBO on AMTOR, and leave a message which will be picked up on one of the other modes. Everyone will be able to do their thing, HI.

A nice feature of the PACTOR controller is that it works both AMTOR and PACTOR. If you chirp the AMTOR selcal, the PTC will answer you in AMTOR. If you chirp in PACTOR, the box will answer in PACTOR. The protocol has several nice features, it is error free and handles the complete ASCII character set. KB6BT has a PACTOR box monitoring 14.079 and 21.079 MHz. Chirp his selcal and when you get the idle coming back leave a message for him on his printer. If you have PACTOR, you will be able to leave a message for Walter on his PACTOR system. Also, W9UWE has been on the same frequencies, but without the printer

hooked up. PACTOR should run about 4 times faster than AMTOR under ideal conditions. It has the capability to change from 100 baud to 200 baud when feasible. For a more complete explanation of the protocol and necessary hardware, you should read the October issue of QEX published by ARRL or the July/August issue of RTTY Journal.

If you listen on 14.079 MHz, especially in the mornings, you should hear some PACTOR signals. They are an ARQ type of signal, but one chirp is much longer than the other. Actually, I think that one is about 1.12 seconds and the other is .32 seconds. Some PACTOR frequencies/calls are:

7.034 - DL1WX, HB9BJJ, LA0FA, DK8JN  
 14.079 - KB6BT, W9UWE, DL2FAK 14.080  
 - DL7AMW, DL0BN 21.079 - KB6BT,  
 W9UWE 28.075 - DL7AMW, DL0BN  
 28.079 - W9UWE

### More APLINK Station Setups

- **KA0JRQ, Larry, near Omaha, NE.**

Larry is an old-timer on the digital circuit, having run a RTTY MSO for many years. He runs a TS-440S scanning 14 channels on 8 bands. He also has three 2MTR rigs in the system. Larry's antenna is the Hy-Gain Hi-Tower with all 8 bands stubbed out and therefore does not need a tuner. The computer is a 286 clone, the controllers are the Hal PCI-3000 and PK-232. (Only one at a time of course). He does not run under Desqveiw at this time. In addition to the fine APLINK station, Larry has the complete Hal DS-3100 system along with the Hal RMX-3100 switch. The RTTY MSO uses his new FT-1000 in a dual diversity reception mode with the R-7 and random wire antennae. And he says that's about all.

- **ZF1GC, Frank, Grand Cayman Island**

Frank runs the TS-940S and Hal PCI-3000 on AMTOR. His antenna is a 554 ft horizontal loop tuned by an SLC tuner. He uses the TR-4000A on the packet port with a PK-88. He has an associated MSYS PACKET bbs. Each system is supported by a 286 computer with 40 Meg HD. Frank is an old-timer in the digital business also and consistently puts out a good signal up my way.

- **KB1PJ, David, near Boston, MA**

David says that his APLINK system is rather plain, AMT-1 and TS-440S. Both are modified for scanning. The antenna is the DX-88 and the computer is an 8088 clone with spare disk drives and monochrome monitor. He has a separate system for hamming and it is the TS-950S, Hal PCI-3000 and Alpha 87A. David has a full blown WORLI bbs system with 4 radios using the

G8BPQ switch. He distributes packet traffic throughout New England. He says that he is in the upgrade stages, replacing the 440 with the IC-765. He and Alan, W1FYR, work closely together on handling NTS traffic on APLINK to/from the North East. By the way, David says that he will have some AMT-3s available for distribution in the US this month. More on that later.

- **W1FYR, Alan, in Gilsum, NH**

Alan has been one of the real steady APLINK stations. He runs the IC-751A, PK-232MBX, PK-88, and ALINCO ALD-24T for UHF. The computer is an XT clone with 20 Meg HD. Alan uses the Butternut HF6-V antenna. He mentions another piece of gear that I find handy, a frequency counter. I continue to be amazed at how well the various APLINKs stay on frequency. He passes along the comment that

the biggest problem he sees with users is trying to find the frequency. The newer users seem to have the problem the worse. I guess they either figure it out or quit, HI. If it is a problem, it can be solved usually with a little practice and minimal equipment.

- **W0LVJ, Mike, Spanaway, WA**

Mike has a small APLINK operation, but he didn't tell me about his 30 MTR PACKET system. He only says that he runs the AMT-1 and IC-751A. We have exchanged notes on some of the details of interfacing APLINK with PACKET bbs systems, and he has some good ideas.

73 AND GOD BLESS de JIM, KE5HE AT KE5HE.TX.USA.NA ■

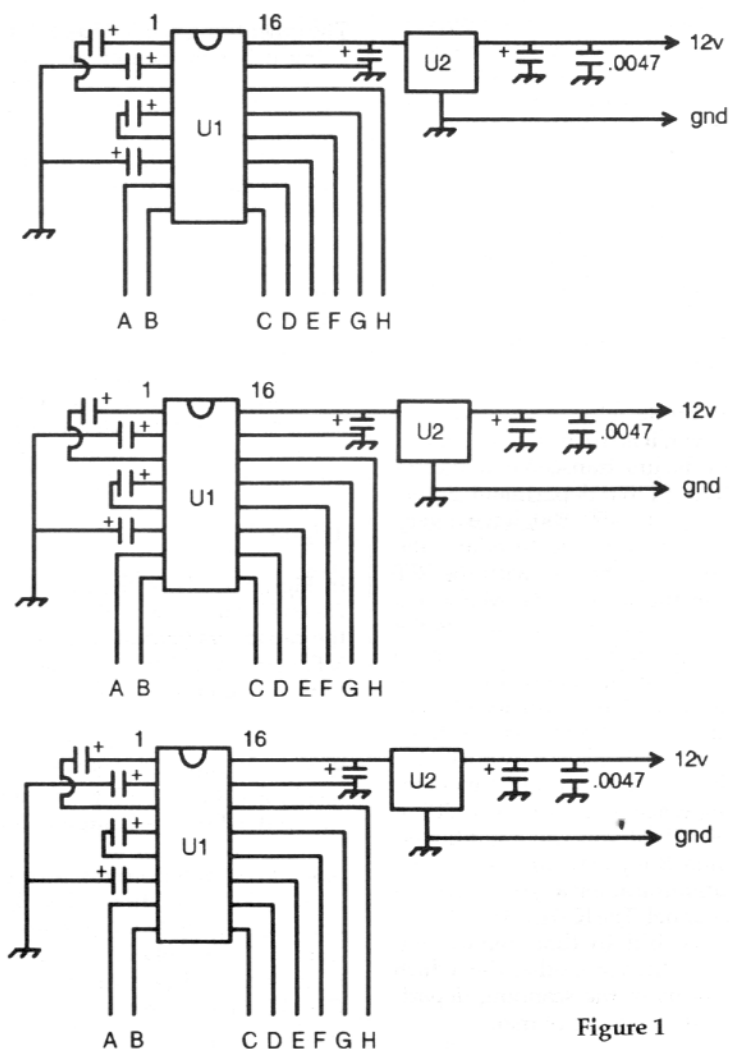


Figure 1

# Contesting Guide Introduction

On an AUGUST Saturday morning in nineteen and seventy something, I awakened to discover the SARTG (Scandinavian Amateur Radio Teleprinter Group) contest in full bloom on 20 meters. After a few experimental exchanges with stations that must have thought I was deliberately sabotaging their rate by asking questions that were indicative of a room-temperature-IQ, I concluded that the exchange required an RST and a serial number.

I worked a few more stations and began to enjoy the action. "This isn't all that hard," I told myself, "I can do this!"

I proudly sent my number 15 to then, big-time RTTY contest station, K7BV, only to gaze in slack-jawed, astonishment as my MODEL 15 hammered out his number 196. How could anyone work nearly 200 RTTY QSOs in a single weekend? I had no idea the 2nd operating period would end at 2400 and I think it might have been Carl, K6WZ, who finally explained to me why my gleeful "CQ CONTEST" pleas were falling on deaf ears.

In the years that followed, I played with contests off and on without being serious enough to send in my logs until the last year of the CARTG, a now-defunct Canadian contest that had a special category for first-time entries. I thought I had done quite well but when the long anticipated results arrived, I found that I had overlooked a portion of the rules pertaining to rest periods and my finest effort was accepted only as a check log.

In those days, RTTY contests often were poorly published and the announcements usually didn't make the regular ham magazines. Had it not been for the RTTY JOURNAL, there probably wouldn't have been RTTY contests, at least for the USA. Even after finding a copy of the rules, there was confusion. How do you use the Exchange Points Table for ANARTS and VOLTA? If USA call areas are considered country multipliers, does the first US, Canada and Australia worked on each band also count? How do you score the contest? BARTG has since simplified its scoring system but as recently as two years ago, contest director, John Barber (G4SKA) said that virtually none who submitted a log scored it correctly!

Dale Sinner, the Editor and Publisher of the new "RTTY Contester's Guide" has done an excellent job in compiling a complete package for anyone interested in digital contesting. The rules for all the RTTY contests are contained in a single package with some extremely helpful data organizer

sheets.

All contests require a summary sheet containing vital information about your claimed score but the description of this essential cover document, if included at all, is often ambiguous. The version in the Guide will work for all the major contests and will help you avoid the omission of some essential bit of information that could turn a serious contest effort into a check log.

The RTTY ROUNDUP multiplier check sheet solves all the confusion as to which VE province is a multiplier and which states you are missing.

By the 2nd day of the CQWW RTTY contest keeping track of the multipliers is a nightmare unless you have an organized listing by band. A multi-single station is completely helpless if the operators aren't absolutely sure which stations are new multis. The Contester's Guide handles it!

N6GG's band use chart gives you a ready reference to your game plan and will help you maximize your band coverage. As I have repeatedly found, this is especially important for contests that require rest periods.

Beginning with the RTTY ROUNDUP in January and ending with the WAE in November, the GUIDE walks you through the year, giving you all the information you need, whether you're an old pro or just getting started.

Depending on the complexity of the exchange and the scoring structure, all contests can be categorized as either RATE or DX contests. Rate contests are those in which the USA can work other USA stations for the same points as DX. In rate contests, it is possible for a North American station to be number one in the world for his class. In DX contests, this is virtually impossible, so the focus becomes one of winning your own country, state, or province.

The (USA) ARRL Roundup, in early January, is a stateside, rate contest. It combines a simple exchange (RST and STATE) with sufficient rest periods to make the contest both easy and comfortable to run. It is also the only RTTY contest with a separate, low power category. The fact that multipliers can only be worked once, regardless of which band, tends to eliminate the advantages of having a lot of big antennas. With only 60, non-DX multipliers available (48 states and 12 VE provinces), even the top stations seldom work more than 100 Mul-

tis. Competition is stiff, especially in the high power categories but all certificates are awarded by ARRL sections. The Roundup is THE fastest paced RTTY contest on the list and the top stations will typically work more than 700 QSOs in the 24-hours of allowable operating time.

The February, (Spanish) EA WW contest is a newcomer. This is a hard-core DX contest in the strictest sense of the word. QSOs with your own country, defined by the DXCC country list, count zero QSO points. Scores for USA stations will be low but there could be some rewarding DX available, especially if you need EA6, EA8, and EA9 on any bands.

The March equinox heralds the ever-popular (British) BARTG, a rate contest but with a lot of DX stations, probably due to the generally excellent band conditions. There is no scoring advantage for DX and call areas in VK, VE and W count as multipliers (don't forget to count the DXCC countries of Australia, Canada and USA as well.) It is essential, though, that you work at least one station on each continent since your total score is multiplied by the number of continents worked. Single operators must take 18 hours off as rest time during the weekend. The rules for 1992 allow multi-operator stations to run the full 48 hours. Winning QSO totals are typically in the 700s.

The (Swedish) SARTG AMTOR only contest takes place on the 3rd full weekend in April before the band conditions begin to slip into the summer doldrums. This high-tech contest requires all exchanges to take place in ARQ mode. Although the scoring fits into the DX contest category, AMTOR is such a technical mode that it can be won from any QTH with the right equipment and a good understanding of the mode. The connect overhead and switching adds so much overhead to the exchange that the rewards for operator efficiency are greater in AMTOR than any of the rest of the RTTY contests. If you would like to experiment with DX paths in ARQ, you should try this, already popular, contest. Except for the exchange, the rules are very similar to the standard SARTG RTTY contest with the same eight-on, eight-off format. Last year's winners submitted around 300 QSOs which is plenty busy considering that 90 percent of the North American activity takes place during the first two, eight-hour segments.

The (Italian) VOLTA is a no-rest, 24-hour, ironman contest that runs on the first full weekend in MAY. It begins early Saturday morning and finishes in the wee hours of

Mother's day, an unfortunate coincidence that may have some adverse affects on overall participation. It also uses a unique, chart based, scoring system that awards points depending on the zone on each end of a given QSO. While this may well be the fairest scoring method of any contest, until you actually try it, the system appears to be overly complicated. Despite a scoring system that tends to favor DX working the more numerous USA stations, VOLTA is actually a RATE contest. At the end of the contest, the total score is multiplied by the total number of contacts. Every QSO becomes a multiplier! If you can work enough stations, even if they are relatively low scoring QSOs, any DX advantage can be offset by rate. The top stations will work between 200 and 300 QSOs.

June in North America is an unfortunate choice for a DX contest. However, the 2nd full weekend in that month is a great time for a contest designed and sponsored by the Australians. ANARTS is a true DX contest. Like VOLTA, it uses the Exchange Points Table to score QSOs, a scoring system that ensures a level playing field for the VK/ZL stations who usually find themselves facing a rather staggering QTH disadvantage. Unlike VOLTA, you do NOT multiply the final score by total QSOs which makes it virtually impossible to win from any QTH closer than 6000 miles of North America. As in most DX contests, the idea is to focus on winning your own country not to worry about the rest of world.

Trophies to the top, NON-AUSTRALIAN in each class! The QSO rates vary widely with band conditions.

The (Swedish) SARTG RTTY contest is another summer-time offering for which solar conditions and lightning storms generally make it a real challenge. In contrast to the trend toward 48-hour, no-rest contesting, SARTG is an example of the old-time, gentle, RTTY contest. It takes place in three operating segments, each separated by an 8-hour rest period. The first 16 hours can be lively but the final 8 hours can be a killer and will require a lot of operator dedication. This is a DX contest and the top single ops will work about 400 QSOs.

With the blooming of the DX season at the end of September, the RTTY section of the (USA) CQWW arrives. Since there is a 3 to 1 scoring advantage awarded off continent QSOs, the CQWW qualifies as a DX contest but it is much more. With states and Canadian provinces included as multipliers and an easily typed exchange this makes for a lot of participation which is the key to having a good time. Unlike the traditional, iron-man CQWW contests, singles must take at least 18 hours of rest time. This is the only contest, so far, offering a single-op, packet assisted category. It also offers a full, unlimited, multi-multi class. Activity and DX are aplenty and as a US, single operator it is possible to work as many as 900 QSOs!

The RTTY section of the (German) WAE is the final competition of the year, taking place on the 2nd weekend of November. This DX contest is extremely demanding and generally only appeals to the serious operators. The simplified, RTTY ONLY rules included in the Contest Guide eliminate the long-standing confusion on the differences between RTTY and other modes but to run this one, you will need maximum efficiency from all facets of your equipment, including the ability to save, send and print hard copy on files. Read the part about QTCs very carefully because they are the key to winning this contest. In the WAE you only compete against stations on your own continent and the contest committee gives nice plaques to the continental leaders in each class. QSO totals run as high as 350 for the top operators with the QTC total running around 250.

Whether you're an old hand at contesting, or have never worked a contest but thought that some day you might want to, you will quickly recognize the usefulness of the Contester's Guide. It is my hope that RTTY contesting will be as much fun for all of you as it has been for me over the years and that you find the CONTESTER'S GUIDE an essential, well-used tool throughout the year. See you on the air!

73 Hal, WA7EGA ■

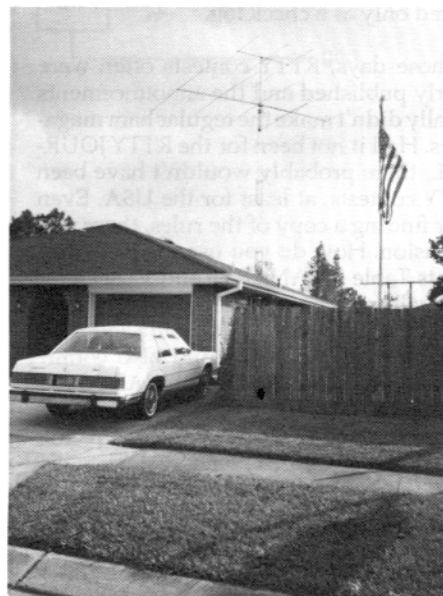
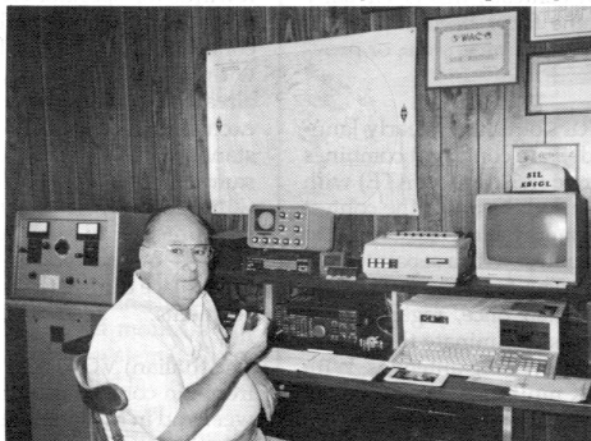
## Silvano, KB5GL

I am on the Honor Roll with 323/329 valid DXCC countries in phone and mixed and at present do not need any DXCC countries. I was I1SEM in 1948, 1T9SEZ, in 1969 and now I am KB5GL since 1978. I became an American citizen in 1984. I started in RTTY about 13 months ago and I have worked 191

countries with 174 confirmed. I enjoy very much this mode for chasing DX.

I am 62 years old and I have enclosed two pictures for your use. Recently I was part an Expedition to VP2 from January 16-20 along with Mike, W5ZPA. We had 4600 QSOs with 375 of them on RTTY. QSL cards are being sent out and please with your request, a small donation would be much appreciated.

See you in the pile-ups.





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# MSOs

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

Hi Gang! How time flies when you're having fun. I missed this month's deadline for this column, and if it weren't for a very tolerant editor, I would be still be listing along, unaware of my commitments! But, I do have somewhat of an excuse, and in this case it's our lovely "spring" weather here in the Dakotas. We have been experiencing temperatures in the 60's and 70's for the past month or so, and I've used that for an excuse to do a myriad of outdoor tasks, such as raking last Fall's leaves, trimming trees, working on the flower gardens, all tasks which are normally taken care of in late March or early April. Can Winter really be over? (I haven't put the snowblower in storage yet!)

## ARRL AUTOMATIC UNATTENDED OPERATION SURVEY:

How many times have you heard derogatory statements like, ".....that darned automated MSO/APLINK/PAMS/CBMS/HF PACKET/CW BEACON station came on the air just as I was hooking up with the most rare DX station I've ever heard, and I think those blankety-blank systems should be outlawed!!!" Or, applauding statements like, ".....I use the MSO/APLINK/PAMS/CBMS/HF PACKET/CW BEACON stations frequently, and I think they are the neatest things since sliced bread!" There's no doubt that some controversy, and difference of opinion, exists concerning "unattended" digital systems, and you now have the opportunity to express yourself on this subject.

The American Radio Relay League (ARRL), in its January 1992 issue of "QST" magazine, (page 41), has taken the bull by the horns and included a reader survey on this very subject. Although long overdue, I applaud the ARRL for finally removing its head from the sand, and providing a vehicle for digital enthusiasts to express themselves on this subject. The deadline for comments to be received by the ARRL, is March 6, 1992, which doesn't leave a lot of time for you to complete this questionnaire, and get it in the mail.

Your input counts! There are those of us who obviously are in favor of some form of unattended digital system authorizations.

There are others who feel that these systems are a detriment to already crowded HF bands. But, the important thing is that we do not set on our hands and complain vociferously that "nothing can be done," when we do have the opportunity to express ourselves to the ARRL. Although it is this author's feeling that the ARRL's influence with the Federal Communications Commission (FCC) is not what it used to be, the ARRL does sponsor, formulate and forward requests for rule making to the FCC, and thus we, (the users of the HF digital spectrum authorizations), need to keep the ARRL as well informed as possible, particularly from the users viewpoint. Let's face facts. It's very easy to set in a plush office in Newington and make policy. It's a totally different ball game however, for those of us who consistently use the HF digital spectrum, and who actually experience the joys and heartaches involved in this pursuit!

If you use the HF digital spectrum, fill out the survey! If you don't fill out the survey, don't complain about being covered up by another form of digital communications that others enjoy using!

## UTILIZING "OFF THE SHELF" AMATEUR RADIO EQUIPMENT IN DIGITAL SERVICE:

I've been meaning to write a bit about utilizing off-the-shelf amateur radio equipment on the various digital modes for some time now, and although I'm going to take a stab at starting it in this month's "MSO Column", I think it's a subject that will necessarily be spread out over two or more months issues of the "RTTY Journal." There are a lot of mysteries, rumors, advertising hype, and just plain unsubstantiated information floating around the airwaves these days concerning various techniques to be employed when utilizing this or that piece of ham radio equipment. Most of the negative information concerning a particular piece of equipment is usually based upon someone's unfortunate experience with that equipment, (the smell of smoke does terrible things to one's ability to honestly rationalize what really happened to a piece of equipment). This rationalization usually ends up with some form of, "you can't use (insert brand/model number of

your choice here), on (insert digital mode of your choice here)." And, the real unfortunate part of this scenario is that in one persons shack this particular make/model will perform flawlessly for years on end, without the slightest tendency to offend ones nostrils.

First of all, (and I hope the following words don't offend too many of my loyal readers/associates/friends and other digital enthusiasts), you do have to use a little more of that "gray matter" between your ears to fully exploit and enjoy the digital modes, as compared for example to some of the activities I hear on 75 Meter Phone in the evenings! In other words, digital enthusiasts have found through experience with various brands and models of equipment, that a bit more technical knowledge, experimentation, and yes, down-right "horse sense", is required to efficiently utilize equipment optimized for other modes, without experiencing the dreaded smoke factor. Just about anyone can pick up a microphone and demonstrate to the world how important, knowledgeable and boisterous he can be, without learning much more than how to crank up the "audio gain." But, let him venture into the digital world with the same equipment, (and mental conditioning), and he quickly learns how to find the address for equipment repairs! So in the final analysis, we digital enthusiasts think of ourselves as a special breed, capable of not only utilizing equipment designed mainly for other purposes, but also enjoying it at the same time.

Number one on my "hit list" concerning utilization of ham radio equipment on the various digital modes, is adequate equipment cooling. Nothing is more traumatic, disheartening and down-right expensive, than experiencing the melt-down of your favorite HF transceiver while utilizing it on RTTY, AMTOR, etc. More ham radio operators fear this situation than all of the other problems associated with the digital modes combined. And, quite frankly, it is one of the easiest to overcome. Let's face it..... the Collins KWM-2, the Kenwood T-599, the early ICOM transceivers, (and many others too numerous to mention), were not designed for use on RTTY. I can guarantee you that unless you properly ventilate and cool transceivers of this ilk and era, load them up to 225 mils of plate current, and then transmit your favorite

full-length RTTY pix of Brigitte Bardot, final amplifier component melt-down is almost assured. Yet, many of us have successfully utilized these very transmitters in RTTY service by simply assuring that the transmitter was not loaded so as to extract every last watt available, and was adequately ventilated and cooled.

As an example, a simple "whisper fan" mounted over the RF cage of the Collins KWM-2, positioned so as to extract air out of the cabinet, will maintain operating temperatures for the 6146 final amplifier tubes, and associated components, well within design specifications, providing that one is a bit conservative about final amplifier loading. Yes, the KWM-2, (and other transmitters utilizing a pair of 6146 tubes with 800 volts on the plate), will output 110 to 120 watts quite easily. However, the heat generated by the final amplifiers at this power level is considerable, and from my experience over the past 14 years, limiting output levels to the 50 to 60 watt power range will greatly extend tube life, while at the same time provide adequate communications capabilities. In more simple terms, 60 watts of RTTY signals will do almost as good as 110 watts in most cases. When band conditions are poor, it's much more efficient to fire up your favorite amplifier, drive it reasonably with 30 to 50 watts from a cool transceiver, than to attempt to extract every last watt out of a transceiver that also doubles as your "coffee warmer!"

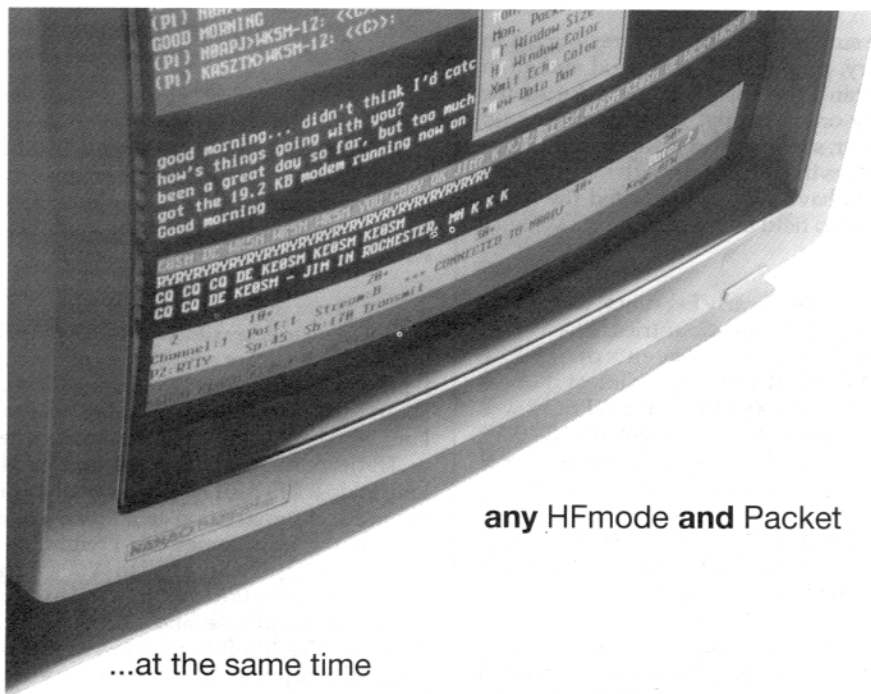
A "whisper fan" is just that. It's quiet, yet moves sufficient air to provide adequate cooling. Some of the older rotary fans, (like those removed from video arcade games, older computers, etc.), can be quite noisy, as they are made of metal, and turn very high RPM. They'll certainly provide adequate cooling, but they will also make your shack sound like the active runway at O'Hare airport! Whisper fans, and other more quiet types are available in catalogs, at flea markets, and at electronic equipment auctions. They are a very good investment, and coupled with a little horse-sense when it comes to amplifier loading, will provide years of good service. As with all things purchased at a flea market, it's a good idea to know what you're looking for. Not too many years ago I found what I thought were some very clean whisper fans in the flea market at the Dayton HAM-VENTION. The brand name was right, they looked liked the right item, and of course the vendor assured me they were of the "whisper" variety. After purchasing a couple to add to my collection, and hauling them back to the beautiful Black Hills, I hooked them up to 110 volts, only to find that Bell Helicopter is probably looking closely at them to determine if they provide enough lift for a new aircraft! For a moment I actually thought it was turning so fast, and making such a racket, that it might literally lift off the test bench! Caveat Emp-tor, (let the buyer beware, because he buys

without recourse).

That's it for this month Gang. Some further comments on equipment cooling, (with respect to more recent solid state equipment), and then on to other subjects, such as frequency stability, frequency calibration, frequency conversion, etc. I hope to see many of you at Dayton this year, and don't forget about the annual "RTTY Dinner", (see K4CJX's information on this subject). Have fun on the digital modes, and fill out that Digital Survey NOW! —73—  
de Dick, K0VKH ■

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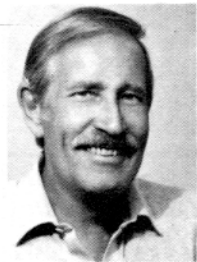
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# DX NEWS

John Troost, TG9VT  
P.O. BOX 524263  
Miami, FL 33152-4263

There surely was a lot of interesting DX in January, propagation was good and all in all I think the month made a lot of the "needy ones" happy. What is coming up however, spells a bit of disappointment, as it appears that problems with the economy seem to have seriously affected the Amateur Radio field and particularly DX-peditions.

This month and early February, we had the pleasure of seeing Countries, like PAKISTAN, long not seen on RTTY (AP/WA2WYR was active almost daily at 1300Z pm 10.) XQOX from ST. FELIX was active several days per week on 10-20 M; C9RTC was active from ANGOLA several days per week and of course, there is VP8CFM, bringing us the SOUTH ORKNEY ISLANDS with IRDXA gear. NAVASSA ISLAND came off on schedule and made lots of us happy.

Some of this euphoria may have been offset by the mess in BANGLADESH, where red, green or purple tape is still delaying the issuance of an Amateur Radio Law, even though several locals have taken and passed the test.

## JANUARY HAPPENINGS

Some of the goodies worked since the last column were: VQ9SS, Z211IQ, 3B8CF, 5V7DP, FJ5BL, VP8BFH, ZD8LII, V85GA, C9RTC, A92FG, A15ZX, SU1AII, SVODV/9, 7Q7BW, 7Q7MM, P29BT, J73WA, J37ZY, CO6AA, LY1BY, U18DAM, UL7MU, UF6AF, RF6FC, RII8AX, UM8MMV, RX3KB, U050K, YL2KF, FG4FI, UC20CJ, ZKIWI, P30XA, BY1QH, TY1PS, TU2BB, 9X5LJ, Z55S, 6V6BMT, KII3AE, T77FC, EA9TL, 5B4ABU, 9K2EC, 9K2DZ, 9K2ZZ, 9K2TC, 5NOALE, VP5JM, 0D5NF, 0D5NG, 7P8SR, VP2V/KB5GL, 9Q5TE, 6W6JX, KP1/KW2P, 9M8ZZ, XX9AX, FR6FC, CU3EM, VK9NS, C30LER, C31LHK, OHONA, VS0AI, BV2BR, PJ9JT, PJ8UQ, FS5UQ, 7X2DS, 7Z2AB, 6Y9Y, S79PD1, V51GB, YS/WD4IFN, V2IGI, KG4DD, plus many, many more; enough rare ones or semi-rare ones to fill up this whole RTTY JOURNAL.

## A "FUNNY" STORY

And, as usual, "funny" stories are not very funny, and this one is no exception. It specially hurts me to say so, since I lived in Costa Rica for six years and enjoyed the Country immensely. But sometimes things get messed up in a terrible way, and this is what this "funny" story is all about.

A few years ago, IRDXA got wind of a HAL Telereader available at a reasonable price. As they were a little short of money, I proposed to finance the acquisition at about \$400. Then, about mid-May last year, I am advised by TI2JJP will spend a week as TI9JJP on COCOS ISLAND and would love to do RTTY, but no gear is available in Costa Rica. Importation is no problem as long as the gear comes Air Freight, as a temporary import. So, a call to W6PQS and the gear is on Costa Rican National Airlines bound for Sand Jose and arrives well in time. So, TT2JJP off to customs at the airport, all happy, as this will bring a rare, long sought after Country on the air on RTTY.

Customs, however have a different idea: No Way Jose, unless you put up a hefty bond plus get new shipping documents from IRDXA in Los Angeles. Replacement gear not to be found, time not sufficient to do what Customs wants, so on Saturday end May, TI2JJP is off to Cocos Island without RTTY gear. The Hal Telereader stays in Costa Rican Customs.

TT9JJP was a successful SSB operation, but upon his return he found that it was not that easy to get the Telereader returned to Los Angeles, in spite of the fact that IRDXA was willing to pay all expense involved.

Time goes by and in August the well known Costa Rican RTTYer, Minor, TT2YO decides on all RTTY expedition to Cocos Island as TY9YO. He also thought that the Telereader was a fantastic solution to a difficult problem, but this time Customs cannot even find it, let alone release it to Minor, but Minor is able to take his own RTTY gear and has a first class trip and operation, except for the QSL portion,

which seems to be shrouded in mystery. People come, for some reason to me, to complain about such things, possibly because I write this column, and some have even made the suggestion that Cocos Island really does not exist, but is just a source for importation of some Green Stamps into Costa Rica; a fact I must vehemently deny.

Thus continues the saga of the Hal Telereader; not to be found, really no one gives a hoot, it is all so long ago (3 months). Time has come to find some outside help; here I am lucky, I have a friend since over 30 years in Costa Rica, TI2HP. Humberto, who has been at the top of the Honor Roll since before I knew him. He also is a well known industrialist and has many connections others fail to have. So Humberto, and his Customs Agent go to work on the apparently simple problem of getting a Re-Export license to get the Telereader returned to Los Angeles.

But they find that it is not such a simple problem as it has become a political ball of contention between the head of Customs and his boss in the Ministry of Finance. All this resulted in a Legal Opinion, dated 6 January '92, by the General Counsel of Customs, saying more or less that the equipment arrived on 10 May 1991 in Costa Rican Customs, and that since now more than 60 days have passed without any serious effort having been made to re-export it, the Director of Customs should not permit an extension to the export privileges, but the gear should be kept in the Customs Warehouse, as "it has been completely abandoned."

The next step is that the Hal Telereader will be auctioned off by Customs to the highest bidder and from there everyone washes their hands, like Pontius Pilatus. Humberto, TI2HP is still working to try and get this opinion reversed, but the likelihood is that the gear will actually be auctioned, and in that case, Humberto, acting on my behalf, and at my expense plans to be sure to be the legal buyer.

Guys and Gals, please a prayer or two for that one and keeping the toes crossed. And

how does this sad story compare to the Kam that was sent without documents through Chile for Port Stanley and is now serving you from the South Orkneys without any "Customs Problems." There must be a lot of difference in ethics, even between countries in South America!

## MONEY

After this sad affair, it might not be the right time to talk to you about money to fund D-Expeditions, but things are bad all over. I sure can complain about my own business, which has disappeared almost completely; but then, maybe at 68 it is time to retire. But the bad thing is that several Expeditions we all had looked forward to, seem to be dying for lack of funding, or for inability of operators to bear their own cost. Such it seems to be with the Clipperton Expedition; neither enough operators who can pay for their own trip, nor sufficient funding for the Expedition; that one is in danger. The Ron Wright's trip to ZL8, KERMADECK seems to have little chance of proceeding, as Ron has not been able to collect even as little as 10 percent of the cost of transportation.

I know many of us grip at the idea of supporting a D- Expedition and think that the Operator should bear his own expense. In this day and age that is a little optimistic. Financial help has become an absolute ne-

cessity if you want to work such as Heard Island, Kermadec, Peter 1, and yes, even the SOUTH SANDWICH ISLANDS, which are not funded in relation to the tremendous expense. Guess it is a matter for every-one and his conscience.

## ADIOS

Guess we said enough for today: in addition to that a new Word Processor, which I don't know how to handle yet (M/S Word 2 for Windows 3).

The bad happening this month, is that my good friend for many years, Tom, OD5NG will be leaving Lebanon and should be in South Africa by the time this reaches you. Good luck, Tom. Hope we see you under a new call-sign soon, make it Swaziland, coming to think of that!

So, I wish you all the best of DX, plus Good Health and a happy home life, i.e. May the Good Lord Bless you in all respects.

Thanks this month go to: VK2SG, OD5NG, I5FLN, TI2IIP, N2HOS, W6PQS, WB2CJI, W2JGR, KB2VO, W6RSZ and the many others, whose input made it possible to write this column. God Bless you all.

de JOHN, TG9VT, on the Guatemalan volcanos. ■

# 3B9FR

A big Hi to everyone at the RTTY Journal gang. I am enclosing a picture of myself and my first QRP of seven months. Please notice he is sending a message. My deepest thanks to the IRDXA (International RTTY DX association) for helping me put 3B9 on RTTY.

Thanks to John, TG9VT, for the complimentary copies of the RTTY Journal. Regards to Jim, N2HOS, and his family. Also regards to the Northern California DX Association.

de Robert, 3B9FR  
Victoria Street  
Port Mutham  
Rodriguez Island  
Indian Ocean  
via Mauritius Island.



## DX COMINGS

By the time this RTTY JOURNAL reaches you there will have been a lot of god DX come and gone. There are a number of attractive operations scheduled for late February. Late February the Venezuelan DX club has another Expedition to AVES ISLAND, YX0, but if RTTY is involved, is doubtful.

XFOC, REVILLA GIGEDO will have come and gone, though at the time of this writing, not much as been seen of the "coming"

CLIPPERTON is/was scheduled to start 29 February: now a big financial may-be: see the DX Column; as well as ZL8, KERMADECK: guess no tickey no laundry, and it is inevitable that this will become more and more the standard for the big expensive D-Expeditions, as money gets tighter and tighter.

Jim Smith, VK9NS has stated

that he is by no means beat and preparing himself for the next expedition, which will be either A5, BHUTAN, or S2, BANGLADESH, depending on where formal licensing for non-citizens is approved first.

The globe trotting Gerard, F2JD, is now in TOGO as 5V7JG. He writes me that he hopes to be on RTTY soon.

VP8SSI, SOUTH SANDWICH ISLANDS is fortunately still on schedule for Mid-March, all Modes, all Bands. Here again, the cost is horrendous and contributions would be appreciated to: Gerry Branson, AAK6B, 938787 Dorsey Drive, Junction City, Oregon 97449. And that group is very hot on a following expedition to PETER 1 ISLAND.

The JA operators who will have finished an operation in WEST KIRIBATI, T30 from February 8-14, plan to move on to TU-

VALU, T2 and operate all Modes from 14-25 February.

Seems that the AFGHANISTAN, YA5MM, Expedition by UJ8JMM has been cut down in length a bit, from late February to early March, and if RTTY will be available is highly doubtful.

Except for the disaster in Costa Rica, the IRDXA (INTERNATIONAL RTTY DX ASSOCIATION) has been doing extremely well for the Digital Gang. SOUTH ORKNEY, VP8CFM, is now up, RODRIGUEZ ISLAND, 3B9FR, has been up for some time; NAVASSA, KP1/KW2P was an undisputed success; FRANZ JOSEPH'S LAND, 4K2OIL, remains very active: 7Q7LA, MALAWI is a major success, as is XQ0X in SAN FELIX and the many others to whom IRDXA has furnished gear. Currently, IRDXA's pending operations includes the equipment we are trying to place with FH8CB,

MAYOTTE, and the gear on it's way to CHRISTMAS ISLAND with W5KNE, Bob Winn, for mid-late February operation.

With the immense amount of effort and money that IRDXA spends on getting new RTTY Countries on the air, they surely deserve your support: either in cash or in used RTTY gear that might be sitting in your closet somewhere: please contact Don Simon, W6POS, IRDXA, 356 Hillcrest Street, El Segundo, Ca. 90245. USA.

And finally an Indian Group is planning to activate the LACCADIVE ISLANDS, VU7, on all modes, including RTTY. Their license is good all month of February, but it appears, logistics would make it hard to start before around February 23.

GL, GD DX de John, TG9VT

# BARTG 1991 HF RTTY CONTEST RESULTS

## • Single Operator all Band

Call	QSO	Mltis	Cnts	Pts
01 W3FV	509	184	6	561,936
02 I2HEO	511	162	6	496,692
03 HA6PX	532	150	6	478,800
04 NO2T	438	178	6	467,784
05 H27DCQ	468	164	6	460,512
06 DF1IK	441	156	6	412,776
07 SM5FUG	389	150	6	350,100
08 I2TQU	413	141	6	349,398
09 G0ARF	409	142	6	348,468
10 W1BYH	343	168	6	345,744
11 K6WZ/0	383	135	6	310,230
12 N6GG	329	148	6	292,152
13 OH2LU	324	144	6	279,936
14 IV3ZDO	312	127	6	237,744
15 I2WEG	366	152	4	222,528
16 R04OA	362	114	5	206,340
16 UW0LZ	362	114	5	206,340
18 AL7BB	365	107	5	195,275
19 HA5CP	270	120	6	194,400
20 HA8EK	259	109	6	169,386
21 G0IXE	236	107	6	151,512
22 N2HOS	204	117	6	143,208
23 N9CCI	251	95	6	143,070
24 WA6DSM	195	98	6	114,660
25 KB9DO	192	92	6	105,984
26 K14MI	177	111	5	98,235
27 RB5QV	181	87	6	94,482
28 IK0CNA	174	106	5	92,220
29 JA1AYC	223	78	5	86,970
30 AL7BK	205	73	5	74,825
31 AH6FJ	204	72	5	73,440
32 FB1MUX	146	82	6	71,832
33 WA6WGL	137	86	6	70,692
34 W8LNL	132	89	6	70,488
35 W2RXG	124	86	6	63,984
36 9Y4BU	194	76	4	58,976
37 IO0KHP	161	72	5	57,960
38 W7MI	121	78	6	56,628
39 VE6KRR	165	67	5	55,275
40 WA3ZKV	137	74	5	50,690
41 W1VXV	126	78	5	49,140
42 VE7SSS	140	63	5	44,100
43 KA8WAS	116	74	5	42,920
44 K8CV	118	69	5	40,710
45 DJ0JU	126	63	5	39,690
46 G3VLL	114	61	5	34,770
47 I4IBR	116	71	4	32,944
48 LA7AJ	117	69	4	32,292
49 G4MKO	130	62	4	32,240
50 W3AOH/4	114	70	4	31,920
51 RA9JB	137	57	4	21,236
52 G3XVF	91	67	5	30,485
53 SM4RGD	103	59	5	30,385
54 DF5BX	81	59	5	23,895
55 HA0HG	100	47	5	23,500
56 LY1BZB	100	57	4	22,800
57 WA8FLF	89	63	4	22,428
58 SM7BGE	79	51	4	16,116
59 SP7FQI	100	53	3	15,900
60 G14TSK	95	55	3	15,675
61 EA1JO	108	36	4	15,552
62 Y21IC	64	50	4	12,800
63 WA6VZI	55	40	5	11,000
64 N2EIK	117	39	2	9,126
65 KC7UO	52	41	4	8,528
66 W3/VK1GN	66	41	3	8,118
67 HE7AWS	78	32	3	7,488
68 WA0WHT	51	29	5	7,395
69 DK5KJ	58	39	3	6,786
70 IK2LOL	43	34	4	5,848
71 VK3EG	32	26	6	4,992
72 JA3BSH	46	27	4	4,968
73 SM4CDA	46	34	3	4,692
74 U0SOK	38	20	4	3,040
75 OZ6EI	34	29	3	2,958
76 OZ7SAC	30	24	4	2,880
77 G3HJC	22	19	6	2,508
78 W3KV	22	18	6	2,376
79 LY2BBF	45	25	2	1,250
80 VK2SG	17	17	6	1,734
81 G3COJ	17	16	5	1,360

## • Single Operator Single Band 10 Meters

01 SM4CMG	326	68	6	133,008
02 YU3HR	260	43	6	67,080
03 W6/G0AZT	239	53	5	63,335
04 IK1LQB	224	47	5	52,640
05 IK8ERL	140	44	4	24,640
06 IV3UT	114	30	5	17,100
07 JR4GPA	69	30	5	10,350
08 ON6NL	61	21	3	3,843
09 G3WFM	20	12	3	720
10 I2FUM	19	11	3	627

## • Single Operator Single Band 15 Meters

01 WS7I	402	75	6	180,900
02 VE6ZX	349	58	6	121,452
03 4M5RY	156	38	5	29,640
04 JA9MJR	97	42	6	24,444
05 UW1YY	77	37	5	14,245
06 HK4EGW	70	27	5	9,450
07 9M2NA	62	18	5	5,580
08 SP3BGD	22	17	6	2,244

## • Single Operator Single Band 20 Meters

01 WA7EGA	283	64	6	108,672
02 JE2UFF	153	47	5	35,955
03 I2KFW	151	45	4	27,180
04 SP3XR	153	43	4	26,316
05 VK3EBP	90	44	4	15,840
06 SP2FN	80	35	3	8,400
07 G3DKO	50	29	4	5,800
08 VK2BQS	53	26	4	5,512
09 VE6SH	47	27	4	5,076
10 RH8AX	41	21	3	2,583
11 SM3EZO	45	19	3	2,565
12 UBIKA	32	17	3	1,632

## • Single Operator Single Band 40 Meters

01 FF1NZH	96	36	4	13,824
02 YU3BQ	50	27	2	2,700

## • Single Operator Single Band 80 Meters

01 YB2OK	37	20	5	3,700
02 YT3T	13	10	1	1,305

## • Multi Operator

01 UZ9CWA	633	206	6	782,388
02 LZ2KIM	464	150	6	417,600
03 K7DSR	395	131	6	310,470
04 OK3RJB	269	110	5	147,950
05 WN1G	161	79	4	50,876
06 HA6KVD	125	76	5	47,500

## • SWL

01 ONL 383	509	172	6	525,288
02 BRS 86650	274	122	6	200,568
03 G8CDW	222	101	6	134,532
04 G6LAU	197	113	6	133,566
05 DE0GMH	169	104	6	105,456
06 DE1TER	237	96	4	91,008
07 BRS2739	168	79	4	53,088
08 UA3-142-794	59	41	3	7,257
09 JA7-3147	34	23	6	4,692
10 ONL3997	43	29	3	3,741
11 I7-237/BA	55	32	2	3,520

## • Check Logs

DA1PE, DL6NDI, G6EPN, I2HWT, OE1-1001007, OH5MN/2, OZ7FN, RA9UK, SM3PYB, SM4CMG, SM5APS, SM5EIT, UA3DHC, UB4CO, W0EGV, WN4UBD, Y22SA, Y23YE

Submitted by Bo, SM4CMG

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