RTTY Journal

EXCLUSIVELY AMATEUR RADIOTELETYPE

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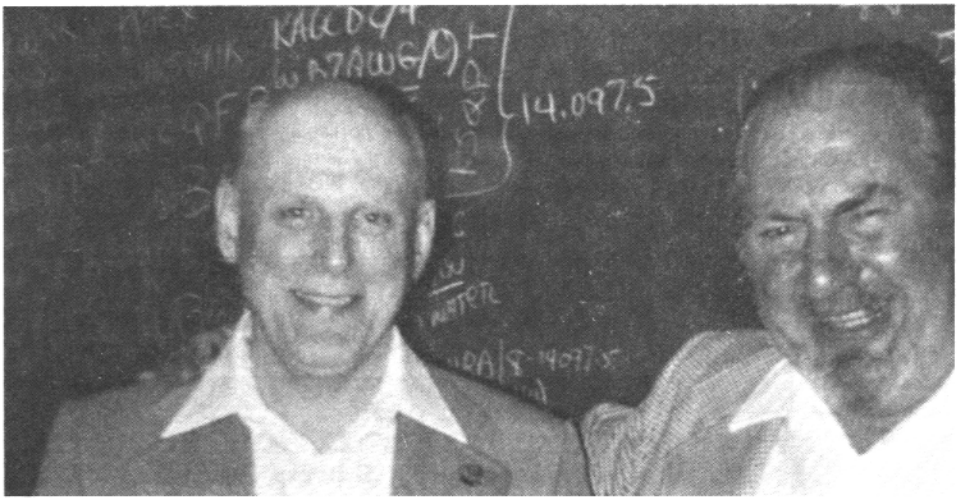

John Johnston, W3BE of the FCC and
John Possehl, W3KV at Dayton, 1983

Nana, JI1VLV, 20 year old Tokyo University student.
DXpedition in Nepal was 9N1VLV and in Kenya was 5Z4NN.

RTTY JOURNAL

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DX

Radio was somehow instilled in my blood at about age twelve. It was a difficult time, World War II had just started and the only source of parts (called components now!) was to find discarded BC receivers and strip them. My only source of information was a very old library copy of the ARRL Handbook which I somehow managed to keep checked out for three or four years! The first receiver and subsequently the first transmitter was built from the Handbook using salvaged parts. The code (thirteen wpm) and theory (from the Handbook) were mastered and I took my test in June of 1946. It was a long three months before the Class "B" ticket arrived. The time period was accentuated because school was out for the summer and I knew that the exam had been passed and that license should be in hand just any day.

In late August, I fired up on 10 meter phone and the first station worked was a G2 in England; at that moment I knew that DXing was for me. License renewal came up in 1951 so I readied myself for the Class "A" ticket and passed it along with the first class telephone exam all in one day, whew! Never again. The military called and I was tied up there for over three years active duty. Then another four years at college where I worked as an aircraft radio technician in the aerophysics lab at Mississippi State University during my school years to help put the bread on the table. I activated the dormant club station W5YD and somehow managed to get in a few contacts while maintaining a somewhat busy school,work schedule.

I was pleasantly surprised to graduate;faced the real world and spent the next twenty or so years in industry. Really started getting into DXing in 1969 and have been with it since. In 1982 while sitting in the shack pondering my DXCC totals and wondering what would happen when I had all of them worked; the computer craze was really getting a foothold and I started thinking about RTTY as a new outlet. While looking for an RTTY setup I was introduced to the DS3100 by a dealer who knew a sucker when he saw one.

At that time I had no intention of getting into MSO activity but once I had made the buy and put the unit into operation I found a new love. I think that KOVKH was the MSO that I had any experience with and felt that that was for me. What better way to communicate with a buddy when both of you could not be around at the same time? So this MSO was born. The DS3100 has undergone some maior changes since first acquired. The MPT software was installed and wow, what an improvement. Next there came along the DSK 3100 disk storage mode which made a man out of a very strong boy. The MSO/RTTY station has grown with my activity and is described by the next few lines.

Kenwood TS-520 HF transciever - Xtal controlled for MSO use.
Icom-720A HF transciever - for general RTTY use.
Heath SB-200HF amplifier - 300 watts out - seldom used.
Hygain 204BA 4 element monoband Yagi at 82 feet - for 20 meter HF.
Icom-251A VHF transciever - for two meter MSO and RTTY use.
Hustler G6 - 6 db 144MHZ vertical - Heliax fed at 105 ft.
Datong Model FL2 multi-mode filter-receive audio processing.
HAL DS-3100 ASR terminal - with MPT/DSK software.
HAL DSK-3100 dual disk storage - with 326 byte storage capability.
HAL ST-600 modem - demodulator/tone keyer.
Microline M82A dot matrix printer.

As an MSO operator I have been exposesd to the good and the bad operator. Fortunately, I have found a home on the "National Autostart" frequency (14087.750) with the nicest group of guys that exist. I also run the MSO on the local two meter repeater in the evenings and its popularity is growing every day. Frequently, the equipment is used to chase RTTY DX. This also is a new outlet and I find my MSO time reduced but not to any disadvantage. RTTY DXing to me is more challenging than any other mode, SSB included! I have established a file in my MSO which is entitled "RTTY DX INFO". The purpose of the file is to list current DX activity. Information for the file is solicited from the RTTY DXers so that it may be shared.

You are invited to check in and take a look at what may be available, and also leave any information that you feel is of interest to your fellow Amateur. The format for doing this is covered in the file. The MSO callup is MSOAJØX. It can be found on the frequency mentioned earlier in this text on a day to day basis. Fixed frequency for this type of operation is essential. It is always in one spot and not jumping around cluttering up the band. Hope to see you in here one of these days.

I am also proud to be:
Life member ARRL
R.O.W.H. member
DXCC Honor Roll (334 countries worked) (312 ARRL DX list).
MARS member
ARRL OBS
MDXA member
NCDXF member TO PAGE 9 PLEASE

PACKET RADIO PART II BY LYNN TAYLOR, W6UUT, 463 MYRTLE ST., LAGUNA BEACH,CA92651

Last month we talked about packet networks in general and how they came about: this month we get to the fun part! I'm going to show you a specific TNC, and we're going to put it on the air. Also, I'm going to tell you about the long range VHF communication and orbiting mailboxes I mentioned last month.

The Tucson Amateur Packet Radio Corporation is a non-profit Amateur radio research and development corporation. TAPR has spent over two years developing their third generation Terminal Node Controller (TNC) kit. The first phase)called Alpha test) produced 12 TNC's, and provided valuable early experience. The second phase produced 180 Beta Test boards, which were shipped to various sites in the U.S. and abroad. This large volume test provided TARP with valuable input from a large number of Amateurs, and formed the nucleus for a number of packet networks when the production TNC was completed. This extensive design.test cycle shows in the final product.

The TNC implements the VADCG and AX.25 protocols through layer 2 (layer 3 is not yet defined). The processor is a 6809 running at 921.6 kHz, or optionally twice as fast with higher speed parts. The board has 8K bytes of RAM, 32K bytes of EPROM and 128 bytes of non-volatile RAM (which saves call signs and other parameters when the board is turned off). It also has a Bell standard 202 modem (1200 Hz mark, 2200 Hz space), a parallel port and a RS-232-C port for the user interface. The memory mapping of the board is very flexible, and sufficient processor power is available to handle more sophisticated future protocols. It measures approximately 6 x 11 inches and costs $240.00 plus $7.00 for shipping.

Opening the box reveals the circuit board, envelopes containing the integrated circuits, programmed PROMs, resistors, capacitors, sockets, heatsinks and a custom transformer---everything you need to build the TNC. Also enclosed is a 234 page manual in a 3 ring binder. The asssembly instructions are 50 pages long, with drawings locating every part on the board and a box to check when each part is installed.

Assembly time is about two evenings (10 hours), with a third evening to wire the TNC to your terminal, radio and to the AC mains. Calibration is straight forward, with only a volt meter required. The frequencies are calibrated by the TNC itself -- you simply adjust the pot the TNC tells you to adjust until two LEDs light equally. While this a sophisticated kit, most assemblers have a functional TNC the first time power is applied.

Once you have the TNC assembled, you need to hook it to a terminal and a radio. The terminal can be anything capable of talking ASCII with a RS-232 interface at any standard baud rate from 50 to 4800 -- anything from a Model 33 TTY to a large mainframe computer. If a computer is used, no special Amateur Radio software is needed -- radio is taken care of by the TNC. Usually you will be using an off the shelf VHF FM transciever, but HF radios and OSCAR stations have been able to communicate quite sucessfully. The TNC keying circuits are adequate adequate for most solid state rigs (including those which require a true ground to key) and the audio output can drive almost any microphone input, including those which require a preamplified microphone.

Once you have the TNC hooked up, you turn it on and the board greets you with an opening heading and gives you 'cmd:' to ask what you want to do next. There are over 60 commands, most of which will only be set once, or perhaps never changed (many are there to allow experimentation, compensate for noisy environments, selectively monitor activity, run 'beacons', etc.). Normal operation uses only three commands.

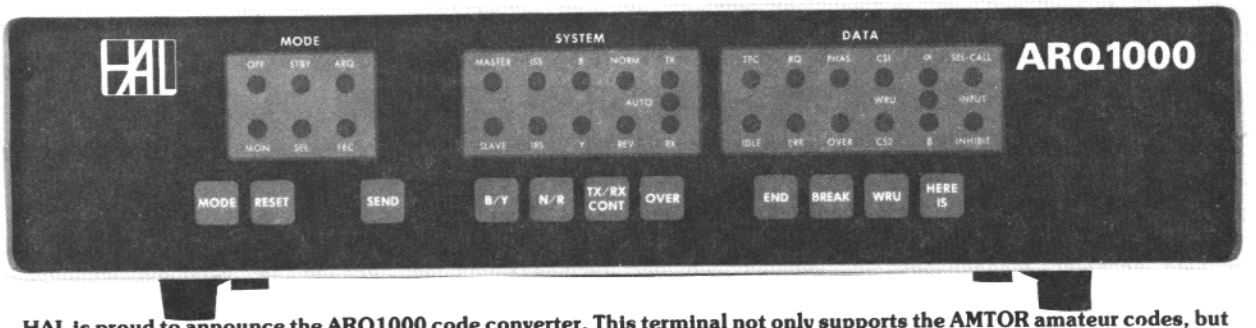
A packet QSO starts in command mode. To talk to a station you tell the TNC "CONNECT WA6CFM". The TNC sends out a packet requesting a connection with the desired station. If the station is on and available (not in QSO with someone else), you get the response "***CONNECTED TO WA6CFM" the TNC switches to Converse mode, and every single line of text you type will be transmitted to that station while every line he types will be sent to you. Since your transmitter is off until you finish a line, the other station can send to you between transmissions -- full duplex operation on a simplex channel.

Sel-Cal like operation is provided on every packet, since only packets addressed to you are printed on your screen (unless you want more displayed, up to 10 specific stations, or all stations on the channel). Every packet is checked for accuracy, and individually acknowledged. No operator action is necessary to perform these protocol functions -- you just type what you want to send. We usually do not mention our call signs in the packets themselves, since the TNC announces the call when you connect, and all identification is handled by the TNCs.

To end a QSO, we usually say something like "bye", type a special character to get back to command mode, and tell the TNC "DISCONNECT". When the TNC responds with "***DISCONNECTED", your station is free for other QSOs.

If a station is outside your simplex communication range, you may use any other station as a digital repeater. To talk to WD6FPY when conditions are bad, I tell my TNC to "CONNECT WD6FPY VIA WA6CFM, WB6HHV" -- up to 8 relay stations or digipeaters are allowed. Every TNC running full AX.25 can serve any number of stations as a digipeater, even when engaged in a QSO by it's operator. This capability allows us in the Los Angeles and San Diego network to communicate over distances of well

AMTOR RTTY

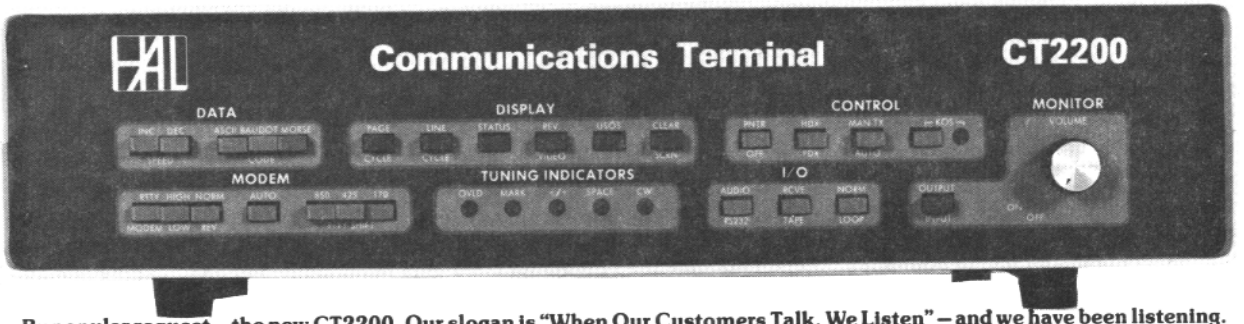


HAL is proud to announce the ARQ1000 code converter. This terminal not only supports the AMTOR amateur codes, but meets ALL of the commercial requirements of CCIR Recommendation 476-2. The ARQ1000 can be used with present and previous generation HAL RTTY products. In fact, any Baudot or ASCII full duplex terminal at data rates from 45 to 300 baud may be used with the ARQ1000. Some of the outstanding features of the ARQ1000 are:

- Send/receive error-free ARQ, FEC, and SEL-FEC modes
- Automatic listen mode for ARQ, FEC, and SEL-FEC
- Meets commercial requirements of CCIR 476-2
- By-pass mode for normal RTTY without changing cables
- Programmable ARQ access code, SEL-CAL code and WRU
- Programmable codes stored in non-volatile EEPROM
- Keyboard control of normal send/receive functions
- 30 Front panel indicators and 11 control switches
- Interfacing for loop, RS232, or TTL I/O
- "Handshaking" control for printer and keyboard or tape
- Self-contained with 120/240V, 50/60 Hz power supply
- Cabinet matches style and size of CT2200 and CT2100
- Table or rack mounting
- Built-in DM170 modem option available
- Encryption option available for commercial users
- 8½" × 17" × 10½"

The ARQ1000 is commercial-quality equipment that will give you the outstanding performance you expect from a HAL product. Write for full details and specifications of the ARQ1000.

BY POPULAR REQUEST



By popular request – the new CT2200. Our slogan is "When Our Customers Talk, We Listen" – and we have been listening. The CT2200 includes these often requested features:

- New AMTOR connections for use with ARQ1000
- Keyboard programming of all 8 "brag-tape" messages
- Programmable selective call code
- Expanded HERE IS storage for a total of 88 characters
- Non-volatile storage of HERE IS, "brag-tape," and SEL-CAL code
- 3⅝" × 17" × 10½"

All of the proven CT2100 features are retained. Some of these features are:
• Tuning scope outputs (a MUST for AMTOR) • Built-in demodulator for high tones, low tones, "103", or "202" modem tones • 36 or 72 character display lines • 2 pages of 72 character lines or 4 pages of 36 character lines • Split screen or full screen display • Baudot or ASCII, 45 to 1200 baud • Full or half duplex • Morse code send/receive at 5 to 99 wpm • Send/receive loop connection • Automatic transmit/receive control (KOS) • Audio, RS232C, or Loop I/O • On-screen tuning and status indicators • Clearly labeled front panel switches, not obscure keyboard key combinations • Separate convenient lap-size keyboard • Internal 120/240, 50/60 Hz power supply • Attractive shielded metal cabinet

In addition, an update kit is available so that all CT2100 owners can update their CT2100's to include CT2200 features. The kit even includes a new CT2200 front panel! Rather than making a proven product obsolete, HAL put even more behind the buttons. Pick up a CT2200 at your favorite HAL dealer and join the RTTY fun. Write for our full RTTY catalog.

HAL COMMUNICATIONS CORP.
Box 365
Urbana, IL 61801 (217) 367-7373

PACKET RADIO CONTINUED

over 100 miles without mountaintop sites, and despite terrain obstacles.

• Commands may be abbreviated, and lower case may be used for all commands and call signs. Special modes are available for OSCAR use, and for computer file transfers. The length of a packet is adjustable, and we have found that in noisy environments that shortening the packet is superior to slowing the baud rate, since smaller packets are smaller targets for noise bursts.

The TAPR TNC may be ordered from Tuscon Amateur Packet Radio, POB 22888, Tucson, AZ 85734. Other TNCs are available now, and others will be available soon -- before buying a TNC, make sure it supports AX.25 including 8 digipeats, and that it has plenty of extra processor power to support future protocols (such as layer 3 routing). I highly recommend that you use a seperate TNC instead of a program/hardware combination for your computer -- this leaves more free time for your computer to do file transfers, store to disk, run mailboxes, etc. Running the protocol directly on your computer probably won't allow time for these tasks -- maybe not even enough to read the key board often enough!

Present packet technology provides a local area network. The next step is to link the local areas together into a national, international, and eventually worldwide network. A number of approaches are being studied: AMICON (AMSAT International Computer Network) is planned to use present day Amateur sattelites to connect local networks; TERRACON will use high-speed terrestrial links (approximately 56,000 baud) to tie various areas together on bands above 450 mHz. METCON will use 6 meters and meteor scatter. SKIPCON will use HF skip propagation.

Using any of these modes will only require you to access a 'gateway' station in your local network -- you will not have to know about or own the equipment necessary for any of these specialized techniques, and more than one technique may be used before they reach their destination.

Plans are advancing rapidly on PACSAT (Packet Sattelite). This sattelite will orbit 531 miles up in an OSCAR 6-7-8 type orbit (circular) giving 2-4 passes a day over every spot on earth. Plans call for two downlink transponders on the 2 meter band, and 4 channels for uplink to the sattelite on the 70 centimeter band.

Pacsat will be a genius compared to previous sattelites. It will carry 6 NSC-800 microprocessors (similar to the Z-80) and 2 Megabytes of RAM (compared to a single 1802 in OSCAR-10). The sattelite will be capable of accepting messages from users and storing them until the addressee calls for them -- anywhere in the world. All you will need is 10 watts on 436 into a $\frac{1}{4}$ wave ground plane, and a similar antenna for receive. It will not be necessary to track the sattelite. Plans call for a launch on the Space Shuttle from Vandenburg AFB in 1986.

Pacsat is being funded by Volunteers In Technical Assistance as a prototype for a later, commercial-type network. VITA disseminates technical assistance to third world countries, and needs a relatively inexpensive, relatively fast worldwide communications system. Pacsat will be for Amateur use only. As with meteor scatter, this is an Amateur development which will lead to viable commercial communications.

Packet voice is possible with present hardware (but not in real time). Those who like sending pictures should benefit from the faster, error free method of sending data. Traffic handlers can store traffic on disk to be sent or printed later -- perhaps picking it up from the local net transferring it to Pacsat. CP/M program (.COM) files have been swapped between W3IWI, NK6K and ZL1AOX via HF and Oscar-10. I have shown the past, present and a glimpse of the future -- the possibilities are as endless as your imagination. See you on packet!

*** DISCONNECTED

OOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOO

DX NEWS FROM ALL OVER

From Tom, VE7VP:

Not much activity on 80 meter RTTY to date but have made two contacts with ZL3MA. He made one QSO with F8XT Jean. ZL3MA transmits a bulletin on 3545 on his Sunday at 0730Z running 50 baud.

JA5TX is also intrested but have had no contacts with Japan for the past week.

From Renunion Island comes FR7AZ, Lucien of St. Denis, on 14.087 at 1725Z with good print. The DX net Friday evenings at 2400Z to 0300Z on 14.095Z with LU4EGE/N6ELP was not too good the last two weeks.

The 80 meter RTTY international calling spot is revised to 3635 to 3650 to provide more room to dodge commercial QRM.

From Carl, K6WZ:TZ6FE Franz, via DL4BC.

5N3HDM, "Sepp" F. Gruebee, BBC, PMB77, Effurun, Via Warri, Bendel, Nigeria.

VP2MIX, Tony, via WOIJN.

6W1CK/6W8CK, Conrad via DL1HH.

YBOEBS, Ben S. Samsu, POB 286/KBY, Jarkarta, Indonesia.

YV5GZU, Carlos Costa, POB 2288, Caracas, 1010.

XE1TU, David reports Jon, OY9JD is not active from the Faroe Islands.

W2FGR reported received a QSL from ZF1GC-QSL info uncertain though as the QSL manager a VE has died. ZF2BD may be out there.

8P6MY, Ivan reports 5W1ET and 5W1EJ QRV from Western Samoa.

Deo, JA1ZF, says Warwick, ZL8-- is ocassionally on from Kermadec Island.

Someone sez FB8WJ is QRV from Crozet-that's only 11,474 miles from here.

On February 7,1984, 2211Z , 15 meters while looking for T2ITA, et al-found Ron, ZK1XL South Cook Island. Ron's home call is K6OZL but QSL via Vic, ZK1CG POB 618 Raratouga. Ron will go

TO PAGE 11 PLEASE

ICOM IC-R71A

The Best Just Got Better

IC-GC4
World Clock

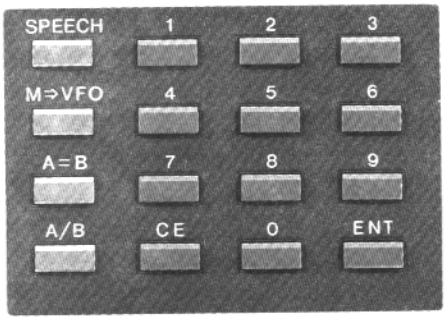
ICOM introduces the IC-R71A 100KHz to 30MHz superior-grade general coverage receiver with innovative features including keyboard frequency entry and wireless remote control (optional).

This easy-to-use and versatile receiver is ideal for anyone wanting to listen in to worldwide communciations. Demanding no previous shortwave receiver experience, the IC-R71A will accommodate an SWL (shortwave listener), Ham (amateur radio operator), maritime operator or commercial operator.

With 32 programmable memory channels, SSB/AM/RTTY/CW/FM (optional), dual VFO's, scanning, selectable AGC and noise blanker, the IC-R71A's versatility is unmatched by any other commercial grade unit in its price range.

Superior Receiver Performance. Utilizing ICOM's DFM (Direct Feed Mixer), the IC-R71A is virtually immune to interference from strong adjacent signals, and has a 100dB dynamic range. Passband tuning, a deep IF notch filter, adjustable AGC (Automatic Gain Control) and noise blanker provide easy-to-adjust clear reception, even in the presence of strong interference or high noise levels. A preamplifier allows improved reception of weak signals.

IC-RC11
Infrared
Remote



Keyboard Entry. ICOM introduces a unique feature to shortwave receivers... direct keyboard entry for simplified operation. Precise frequencies can be selected by pushing the digit keys in sequence of frequency. The frequency will be automatically entered without changing the main tuning control. Memory channels may be called up by pressing the VFO/M (memory) switch, then keying in the memory channel number from 1 to 32.

VFO's/Memories. A quartz-locked rock solid synthesized tuning system provides superb stability. Three tuning rates are provided: 10Hz / 50Hz / 1KHz.

32 Tunable Memories. Thirty-two tunable memories, more than any other general coverage receiver on the market, offer instant recall of your favorite frequency. Each memory stores frequency, VFO and operating mode, and is backed by an internal lithium memory backup battery to maintain the memories for up to five years.

Options. FM, synthesized voice frequency readout (activated by SPEECH button), RC11 wireless remote controller, CK1 DC adapter for 12 volt operation, MB12 mobile mounting bracket, two CW filters FL32 — 500Hz, and FL63 — 250Hz, and high-grade 455KHz crystal filter FL44A.

ICOM
The World System

ICOM America, Inc., 2112-116th Ave NE, Bellevue, WA 98004 **(206)454-8155** / 3331 Towerwood Drive, Suite 307, Dallas, TX 75234 **(214)620-2780**

MSO'S

by *Dick Uhrmacher,* K0VKH

INSTALLMENT #4

Hi Gang! It's nice to see 'new faces' on the 20 Meter National Autostart Frequency, ("mark" is 14 085 625 Hertz), and hope that each of you will get your feet wet soon! The MSO's are there for everyone to enjoy, and you sure can't hurt them, so jump in at your convenience and give them a try.

Before we get into the password protection system utilized by some of the MSO's, I do want to mention one thing. MSO Sysop's (System Operators) derive a lot of pleasure and enjoyment from seeing others utilize their MSO's. A lot of time and expense goes into operating a MSO, concurrent with a lot of dedication as well. So, I hope to start 'featuring' different MSO stations in this column each month, in order to provide a bit of insight as to equipment, RTTY gear, transcievers, antennas, etc., and to provide a bit of recognition as well. Here's where YOU can help out, by sending me data on your favorite MSO, regardless of frequency, band or mode. Give me the facts, and I' ll see they are included in the RTTY JOURNAL!

MSO HINT OF THE MONTH: MSO's can only respond to data, as it is RECEIVED at the MSO! If your signal is noisy, takes 'hits' from QRM, is being unduly effected by QSB, or simply isn't strong enough, then here's a way to help get your command across. The demodulator is the key unit in converting your tones to useable data by downstream RTTY equipment. So, get it 'in the mood' by prefacing your command with a few RY's. You don't need a lot of them, eight or ten will do, then a couple of CR/LF's to insure your command is left-justified, and then the command. Try it, you'll like it!!

Password systems built into the various MSO systems are designed to protect individual files written to the MSO memory systems. Since I am more familiar with the HAL Communications systems for protecting data, the following information will describe their way of getting the job done. It isn't the only way, but I think you will find that most all of the other MSO's utilize a system very much like it. Why would you want to protect a file, you say? Basically there are two reasons. The first is called "Delete Protection", and is designed to protect individual files from accidental or purposeful deletion. This is called a READONLY file, and can be read by the remote user without inclusion of any passwords in the filename, but cannot be deleted from memory by the remote user, unless the DELETE PASSWORD is known. The second type of protection is 'Read Protection', and is designed to protect individual files from being read by anyone who does not have the 'Read' password. This is known as a 'Private' file.

MSO systems must, of course, have some method of differentiating passwords from the other text it routinely receives. In the HAL MSO system, this is accomplished by adding a 'delineator' to the filename. In this case it is the 'slash bar', (/). The slash bar separates the file name from the other text as it is received. For example, let us say that you wanted to place a public service announcement concerning Red Cross RTTY traffic in one of the MSO's and you wanted to 'protect' this file from inadvertent deletion from the MSO. You have decided on the filename of RED CROSS, and the 'delete password' of SAVE. When you .WRITE the file to the MSO, you would use the filename of:

.WRITE RED CROSS/SAVE

The "/SAVE" attached to the filename makes this a 'READONLY' file, and it cannot be deleted from memory, unless the password "/SAVE" is sent as part of the delete command. I should point out two things at this point. Remember, that although you have password-protected a file from deletion, you still have transmitted that password over the air, and it may well have been intercepted by any number of stations. Secondly, even though the passwords are NOT transmitted as part of the DIRECTORY, the SYSOP can see the passwords on his screen, and can delete the message should it contain something not appropriate.

To make a file completely PRIVATE, (so that it cannot be read or deleted without the appropraite passwords), two delineators, and two passwords must be used. For example, let's say that you would like to leave a note in one of the MSO's for a friend, which contains material only of interest to him. If we use the same subject as in the previous example, the filename would look like this:

.WRITE RED CROSS/SAVE/TEXT

The delineator "/SAVE" makes this file password protected so that it cannot be deleted unless "/SAVE" is added to the delete command. Furthermore, the delineator "/TEXT" makes the file read protected, and it cannot be read by the casual reader unless the "/TEXT" is added to the filename.

Passwords and file protection have several uses, primarily aimed at the inadvertent deletion of files in the MSO, and for traffic or data destined for a specific person. Some of the MSO directories list the protection status by the words READONLY and PRIVATE, and some use identifying symbols attached to the filename. For example, The new HAL DSK3100 Disk System identifies PRIVATE files with

MSO'S CONTINUED

an exclamation point (immediately in front of the filename). READONLY files are not identified, but should a REMOTE USER attempt to delete a READONLY file, the MSO system will reply with "FILE IS PROTECTED."

It should be obvious that the REMOTE USER should NOT use the delineator (/) routinely as part of the filename, as the eight characters following the 'slash bar' will be treated as a 'delete' password. Since tradition has established the 'slash bar' as part of the Amateur Radio callsign to indicate the location in one of the ten radio districts, (i.e. KØVKH/4), the temptation to include these delineators must be carefully controlled.. Should you accidentally password protect a file, you should attempt to delete the file, (using the exact filename you used to store the file, INCLUDING the delineator and password), and re-write it without the password. If you are unsuccessful in deleting it, leave a second message addressed to the SYSOP, asking him to rename the file, sans the password.

Baudot characters LTRS, FIGS, or BLANK, plus ASCII characters for NULL and DEL (rub out) must be avoided in passwords. Additionally, 'space' characters (space bar characters) should also be avoided, as they can be extremely confusing for all concerned.

BAUD RATE CHANGE: Effective January 1, 1984, the standard baud rate used on the National Autostart Frequency, ('mark' equals 14 085 625), will be increased from 45 baud to 74 baud (Baudot). This action is being taken to facilitate traffic on this frequency, and the decision to move to the higher baud rate was made after a six week user-survey was conducted. Over 96 percent of the stations participating in the survey approved of the higher baud rate, and 100 percent of the SYSOP's agreed with this change. A change to 110 baud ASCII was suggested by some respondents, but experience has shown that the increased character bit-length, coupled with the increased baud rate, make ASCII less reliable on HF bands then Baudot. For those of you who may need or desire information on speed conversion, (UART type actions), so that you can use equipment designed for slower baud rates, at higher baud rates, please drop me a line (with SASE) and I will attempt to provide you with some helpful information.

This wraps up this months column. Next month we will cover some of the "do's and don't's" of MSO operating, aimed at making your use of the MSO as enjoyable as possible. Your input to this column will determine its course in the future, so I hope to hear from any and all who have questions pertaining to the MSO's. Have fun on RTTY! DE:Dick, KØVKH

ØØ

JOE WOOD CONTINUED

Call signs held over the years: W5LPG, W4ZZD, W9KQF and AJØX.

The equipment used for RTTY DX chasing is essentially the same as that used for the MSO with a few exceptions and/or additions:

Icom 740 transciever.
5 element Hygain on 15.
5 Element Hygain on 10.
4 element Hygain on 20
Rotatable dipole for 40.
Delta loop for 80 meters.
HAL DS3100-ST-6000 with the DATONG Audio Filter.
Home brew kilowatt - band switching with single Eimac 8877.

Have just been appointed ARRL bulletin manager for Mississippi.

"RTTY DX BANK"

You are invited to leave DX notes in this MSO! If you run across an operation that would be of interest to other RTTY DXer's fell free to "deposit" that information. Name the file, DXINFO:(last three letters/numbers of your call). Example:
DXINFO:JØX

Your DX note should contain: the DX stations callsign, frequency, QTH, QSL information, date and time worked or heard. I will give credit to all stations reporting, so please don't forget to leave your callsign. Your DX note will be edited and listed here as it is received. This information will ultimately be found in "popular" DX columns but its value may be after the fact. This MSO reference may be used daily if you wish!

If you feel that you need information on how to write and file a note, please read the "MSO HINTS" file. Take your time and enjoy.

Looking forward to hearing from you and in the interim, good DXing and thanks.

73 de Joe, AjØX-Laurel MS AR.

NOTE: Feel free to write to Joe with your DX information as he will appreciate it and any other help he can get in getting the DX column out to our readers. If you want an answer please enclose S.A.S.E.

Any award (DXCC, WAS, WAC etc.)inquiries should be sent to the JOURNAL.

DX CALL	QTH	FREQ.	QSL TO	Date & time	Stn Rptng.
ZS6CC	S. Africa	14.087.15	CB	09 Feb. 2300Z	AJØX
EA7CLH	Spain	21.190	CB	10 Feb. 1800Z	WB2IKL
TG9VT	Guatemala	14.087.75	CB	daily	AJØX
KD7P/KH2	Guam	14.087.75	KS7L	13 Feb. 1535Z	AJØX
YOUR REPORT WILL OCCUPY THIS SPACE!!					

Mail DX information to:JOE WOOD, AJØX
P.O. Box 84
Laurel, MS 39440

Mail Contest information and certificate/plaque inquiries to the RTTY JOURNAL office: POB RY, Cardiff-by-the-Sea, CA 92007.

Articles, pictures etc. should also be sent to the RTTY JOURNAL office.

INFO-TECH PRESENTS:

THE M-44 AMTOR CONVERTER

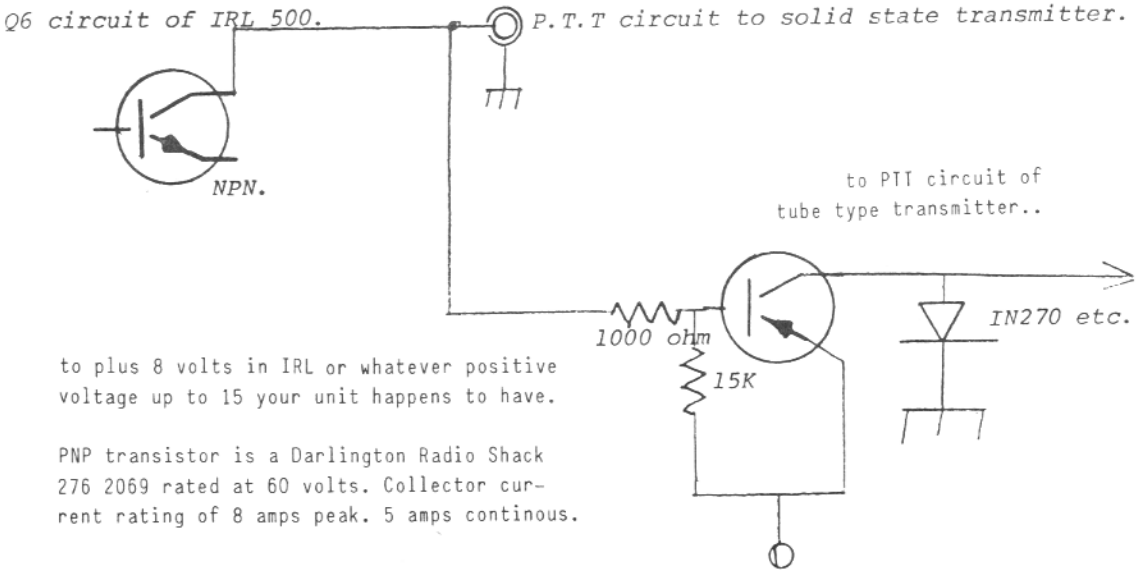
Features:

- Usable with most ASCII or Baudot video terminals
- Fully programmable from keyboard
- Built-in, high quality, modulator & demodulator
- TTL and RS-232 interfacing levels
- Commercial quality construction
- Designed & built in the USA
- Suggested List Price $379.95

DIGITAL ELECTRONIC SYSTEMS
1633 WISTERIA COURT, ENGLEWOOD, FLA 33533

SOLID STATE T/R RELAY FOR TUBE TYPE TRANSMITTERS by: AL MIERAU, VE5WZ..1821 Easthi 77, Saskatoon, Sask.Canada

This circuit, when added to a terminal unit, designed for transistor type PTT circuits, is ideal for tube type transmitters such as the Drake C line. The components were mounted on a small PC board, and installed inside the IRL 500. The existing PTT circuit is left intact for use on two meter work.



CLASSIFIED ADS

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

JVC 4800 COLOR TV Camera and reel to reel color portable recorder, work but have FLAWS. Trade for glass RTTY. W3MEO. 301-757-1991.

FRED SAYS:"Cash in those unused teleprinter repair parts." Trades too. Send SASE for list of parts, supplies gears, manuals, tools, toroids. Fred Schmidt, N4TT, TYPETRONICS, Box 8873, Ft. Lauderdale, FL 33310. 305-583-1340 after 9 PM.EST.

FOR SALE:TELETYPE Model 32ASR with 60 wpm gears ready for Amateur use. All machines in good condition. $425. KL7HDY. 907-563-6209.

MICROLOG ACT-1 with new AMTOR upgrade including all manuals & cables in perfect condition. $850 UPS PD. L.H. Connelly 305-842-1861.

BARN FULL OF USED 28, 33 and 35 machines AS IS. Lots of used parts (some for 43). Two GE Terminet 1200 RO printers without covers, with new parts and service manual all 3 for $300. Consider trades or offers. Aaron Dickey, K7GCP, 51 North 850 West, Orem, UT 84057. (801) 225-0678 or 227-9666.

BUMPER STICKER- "My Favorite Radio Station is (your callsign)." Display on car, in shack, anywhere! Nice gift for Ham friends. Only $3. ARPRESS, 1556 (R) Hicks Pike, Walton, KY 41094

IBM-PC/ASCII/RTTY/CW All speeds, full featured, split screen, buffers beaucoup, and more-color or mono. SASE for full details. Emile Alline, NE5S, 773 Rosa, Metairie, LA 70005.

WANTED:REINKER KITS for M-14, M15, and Kleinschmidt machines. Any quantity. Also need replacement felts. Bill Johnson, N5KR, 1808 Pomona Dr., Las Cruces, NM 88001. 505-522-2042.

PC BOARDS * VERSATILE CKTS RTTY and SSTV Highest quality double sided plated through hole PC boards with silk screened legend. GUARANTEED! Complete instructions and parts ordering information. Assembly service available. Send SASE for information to: DYNAMIC SPECIALTIES, POB 20903, San Jose, CA 95160.

WORLD PRESS SERVICES FREQUENCY LISTS AND MANUAL-new expanded 4th edition, covers all needed information on press services. 3 master lists-4.1 World Press Radioteletype Stations in Order of Transmitting Times- 24 hours, 4.2 Radioteletype Press Stations Listed by Frequency with Transmitting Times, 4.3 World Press Stations Listed by Country, Service with frequencies in Alphabetical Order. All stations transmit in English. Contains list of abbreviations of all World Press Services and other vital RTTY information- the original Radioteletype Press Book - by Thomas Harrington, W8OMV. $8.95 PP, USA and Canada. Write for free RTTY Publications List. Universal Electronics, Inc., 4555 Groves Road, Suite 3A, Columbus, OH 43232.

ASR 33, ASR 28 and TC71 Selectric I/O for sale. Best offer-Pick-up.J.R.Doak 45 Allen Dr.,Woodstock,NY 12498. 914-679-8723.

TELETYPE EQUIPMENT, Parts, gears, supplies. Expanded list now available. Some lower prices. SASE for list. Will be at Dayton. Order now, pick up at Dayton and save shipping. P. Andersen, 37249 Hebel Rd., Richmond, OH 48062. 313-727-1964.

FOR SALE:EXCEPTIONAL 28ASR Teletype. 3 speed gearshift typing unit with reperforator, dome mounted reperforator with 3-speed gearshift, 2 amp regulated loop supply, separate here-is unit 60 wpm. Very clean $375 plus shipping, price negotiable with removal of accessories. Also Model 28TD and keyboard reperforator, both 60 wpm. Bill K3PGB, 1257 Wunderland Rd., Roslyn, PA 19001.

DX NEWS FROM ALL OVER CONTINUED

to North Cook later this month (he is newly arrived at S. Cook.)
Jules, W2JGR, snagged SP3CMX at 1510Z on 15 meters QSL via buro.

From Carl, K6WZ comes the following:Friday, December 30th, I looked at 15M about 2000Z and found no RTTY signals but very skillfully called CQ to the dead band. Back came 5N3HDM running 25 watts out. QSL direct to Warri, Nigeria per 1984 callbook or

TO PAGE 12 PLEASE

by GEORGE

HITS & MISSES

GEORGE HAMMON, WA6CQW
14215 Pecan Park Lane Space 73
El Cajon, CA 92021

MONITOR

In a prior column I discussed different monitors for computer or RTTY. I recently purchased a new monitor. The monitor is made by Leading Edge Products, under the trade name 'Gorilla'.

The twelve inch tube is a P31 green phosphor. This is a non-glare tube which eliminates any annoying glare. The video bandwidth is a minimum of 18 MHZ with a maximum of 25 MHZ. This high resolution display gives a crisp, bright image. It provides a full 80 column by 25 lines. The impedance is 75 ohms. The unit weighs 14 lbs. The dimensions are: width 36.6 by depth 11.8 by height 11.9". The color is close to the Apple tan. The unit is wired for 110v 60 cycle. I really debated on the matter of which color to choose, amber or green. It seemed to me that the green would cause less eye strain therefore my choice of green screen. I fully recommend this unit for its price, quality and a super crisp display. A tilt bracket is included which allows the user to adjust the monitor to a convenient viewing position.

SAROC

The SAROC Hamvention was held on January 13-15,1984. I left for Las Vegas around five A.M. (ugh!) and arrived at the Hacienda Hotel about eleven. The initial plan was for Dee and John to meet XYL Jeanne and good old George in Victorville for breakfast. My handy-talkies'battery decided that this was the time to act up and we missed connections (an ominous warning of things to come).

My initial walk thru of the equipment display room showed a lot of familiar names missing. Kenwood, Icom and HAL Communications, to name a few, were not there. The computer companies and most supply houses were also absent.

The program was as follows:
Friday 200 to 300 PM-Lou McCoy antenna tuners.
300 to 400PM Dale Clift ARRL Happenings.

Saturday 9 to 10 AM Tri-service MARS.
10 to 11 Service group meeting.
11 to 1230 BIP Backman reducing RF interference.
1230 to 130PM OCWA Hal Leary.
100 to 200 Ladies program.
130 to 230 FCC Forum.
230 to 330 ARRL Forum.
400 to 500 Awards.

The ARRL forum was well attended with a full room. The introductions were made by W6ZR, Pacific Division Director. The main topic was the volunteer examiner program. The cost (minimal) is the aim of the ARRL. So far 3,000 volunteers have expressed interest.

The FCC forum was hosted by John Johnston, W3BE (see front cover). The no code was discussed at length and John was happy to report that no code was laid to rest finally. Also discussed were the proposed HF phone band expansion and power rules. This was a year end report on the FCC 1983 activities.

I purchased a new battery for my hand held from Henry Radio on Saturday and Dee purchased a tower from Lou Tristao so watch for a healthy new signal from RTTY headquarters.

The journey for home started on Sunday and ended (on Sunday) 55 miles from Las Vegas in the desert. My new car has a bearing failure. I called Dee on the handheld and with Dee and Johns help a tow truck was dispatched.

Jeanne and I checked back into the Hacienda for another night while the Las Vegas Chevrolet dealer repaired our car. We finally got back on the road Monday around five in the evening.

This years SAROC will be remembered for its length, the good and bad luck. The good luck to have friends like Dee and John and the bad luck for our car to break down. Also in the good luck department was that it was winter and the weather was pleasant and clear.

So long for now....GEORGE, WA6CQW...
OOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOO

DX NEWS FROM ALL OVER CONTINUED

via buro.
Later while in QSO with a W8, John, W3KV broke to say 6W8CK was on 21093. He went QRT but I then found Franz, TZ6FE, Manantali, Republic of Mali running 30 watts. QSL via DL4BC.
A week later about 0500Z, while experimenting with C and R changes in some old toroidal filters, HC2FG called CQ on 20M also a dead band. Gustavo was running 80 watts. QSL via buro or to Box 1233, Guayaquil.
You just never know about those "dead" bands or the power to make the bounces.
Carole, 6Y5CP is another Jamica contact supplementing Mac, 6Y5MC. For those having missed FG0UQ/FS, another station on St. Martin has been active on 15 and 20M:FG0HYJ/FS7. QSL via VE2EWS.
K6PWP said he worked an A2 on 10M recently. KS9V worked VK9WCY, Norfolk Island on 15M QSL via VK9NS.
I have been operating more than usual for the last two months and am amazed at the number of relative newcomers to the mode, many of whom expressed an interest in RTTY DX. Of the stations worked about 70% were using either the Vic-20 or C64, and most of those use the AEA interface.
Thanks to all correspondents with DX info....de Dee, N6ELP.....

AEA Brings You The RTTY Breakthrough

NEW MBATEXT™ $109.95 VIC-20 MBATEXT or C-64 MBATEXT

MBATEXT™ is the most advanced MBA (Morse, Baudot, ASCII) software plug-in cartridge available for the VIC-20 or Commodore 64 computer. Compare our outstanding features and price to the competition.

• KEYBOARD OVERLAY instructions to avoid constant referral to the manual • RTTY and ASCII SPEED ESTIMATE MODE • BREAK-IN CW MODE •QSO BUFFER RECORD TOGGLE •WORD PROCESSOR style insertion, deletion, and correction in TEXT EDIT MODE • CW AUTO SPEED TRACKING plus SPEED LOCK • BREAK-IN BUFFER that is easy to use • Low speed FARNSWORTH CW TRANSMISSION (between 5 and 14 WPM) • RE-TRANSMIT RECEIVED TEXT DIRECTLY without need of disk or cassette • DISK, CASSETTE, OR PRINTER storage of message and QSO buffers • RECEIVE AND TRANSMIT 5-99 WPM MORSE • 10 SOFT-PARTITIONED™ MESSAGE (OR TEST) BUFFERS • WORD WRAP • TIME OF DAY CLOCK • PRECOMPOSE SPLIT SCREEN OPERATION • STATUS INDICATORS on screen • EASY START-UP by simply typing SYS 44444 or SYS 33333 • DEDICATED FUNCTION KEYS for quick operation • Ability to IMBED CONTROL FUNCTIONS in type-ahead buffer • WORD OR CHARACTER mode • SELECTABLE BAUDOT UNSHIFT ON SPACE (USOS) •SEND/RECEIVE 60, 67, 75, 100, 132 WPM BAUDOT PLUS 100, 300 BAUD ASCII • RTTY BLANK-FILL and MORSE BT option for idle transmit periods • AUTOMATIC PTT • computer control of TONE REVERSE • MASTER MENU, COMMAND MENU, and OPTIONS MENU makes MBATEXT™ easy to use with no prior experience • INCLUDES CABLE TO INTERFACE WITH AEA model CP-1 COMPUTER PATCH™ • POWERED BY HOST COMPUTER.

NEW MICROPATCH™

MICROPATCH™ IS A NEW LOW-COST, HIGH-PERFORMANCE Morse, Baudot and ASCII SOFTWARE/HARDWARE computer interface package. The MICROPATCH™ model MP-20 or MP-64 incorporates the complete MBATEXT software ROM (described above) for either the VIC-20 or Commodore 64 computers. All circuitry and software is incorporated on a single, plug-in cartridge module featuring the following: • TRUE DUAL CHANNEL MARK AND SPACE MULTI-STAGE 4 POLE, CHEBYSHEV ACTIVE FILTERS • AUTOMATIC THRESHOLD CORRECTION for good copy when one tone is obliterated by QRM or SELECTIVE FADING • EASY, POSITIVE TUNING with TRIPLE LED INDICATOR • NOT a low-cost, low-performance phase-locked loop detector!!! • SWITCH SELECTED 170 Hz or WIDE SHIFT on receive • 800 Hz multi-stage active CW FILTER • AUTOMATIC PTT • RTTY ANTI-SPACE • demodulator circuitry powered by external 12VDC (not supplied) to AVOID OVERLOADING HOST COMPUTER and for maximum EMI ISOLATION • EXAR 2206 SINE GENERATOR for AFSK output • SHIELDED TRANSCEIVER AFSK/PTT INTERFACE CABLE PROVIDED • PLUS or MINUS CW KEYED OUTPUT • FSK keyed output.

The Micropatch is structured for easy upgrading to the AEA Computer Patch ™ advanced interface unit without having to buy a different software package! Simply unplug the external computer interface cable (supplied with the Micropatch) from the Micropatch and plug it into the Computer Patch.

$149.95 MP-20 or MP-64

RECEIVE ONLY VERSIONS **$129.95 MPR-64 or MPR-20**

COMPUTER PATCH™

COMPUTER PATCH™ is the name of our most advanced computer interface equipment for Morse, Baudot, ASCII, or AMTOR operation. The CP-1 will allow you to patch most of the popular personal computers to your transceiver when used with the appropriate AEASOFT™ TU software such as AEA MBATEXT, AMTOR TEXT™, or the MBATEXT RESIDENT ON THE MICROPATCH units. AEA also offers a full feature software package for the Apple II, II plus and IIE; TRS-80 Models I, III and IV; and the IBM-PC. The CP-1 will also work with certain other computers using commonly available software packages.

The CP-1 offers the following advanced and high quality features: • HANDSOME ALL METAL ENCLOSURE FOR MAXIMUM RF IMMUNITY • DUAL CHANNEL, MULTI-STAGE ACTIVE MARK AND SPACE FILTERS • AUTOMATIC THRESHOLD CORRECTION • RECEIVE 170 HZ FIXED OR 100-1000 HZ VARIABLE SHIFT • 800 HZ multi-stage CW FILTER • PRE—LIMITER AND POST-LIMITER FILTERS • SERIAL RS-232 FIELD INSTALLABLE OPTION • 117 VAC WALL ADAPTOR SUPPLIED • PLUS (+) and MINUS (-) CW OUTPUT JACKS • MAGIC EYE STYLE BAR GRAPH TUNING INDICATOR • SCOPE OUTPUT JACKS • NORMAL/REVERSE front panel switch • MANUAL (override) PTT switch • VARIABLE THRESHOLD for CW • ANTI-SPACE RTTY • KEY INPUT JACK for narrow shift CW ID on RTTY, CW practice, or keyboard bypass.

The CP-1 is made in the U.S. with high quality components including double-sided glass epoxy through-hole plated boards, complete with solder mask and silk screened parts designators.

$239.95 CP-1

PACKAGE SPECIALS
$274.95

Combine the VIC-20 or COMM-64 MBATEXT™ software with the CP-1 at time of purchase and you receive a SPECIAL PACKAGE PRICE. NOW the best RTTY COMPUTER INTERFACE SYSTEM is available at prices comparable only to vastly inferior systems.

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Money orders ok - personal checks must clear - California residents add sales tax.

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CONTESTS*CONTESTS*CONTESTS*CONTESTS

18th A. VOLTA RTTY DX CONTEST

TEST PERIOD: Saturday, May 12th, 1200 GMT to Sunday, May 13th,1200 GMT (in the future it will be held every 2nd weekend of May).

Bands: 3.5, 7, 14, 21, 28 MHZ.

Classes: Single operator all bands/ single operator single band.
multi-operator,single transmitter (list the names and callsign of all operators involved).
SWL.

Exchange points: Contacts between stations of the same country are not valid (count for 0 exchange points, zero multiplier and zero QSO). All two-way RTTY contacts will count for points in accordance with the exchange points table. The two-way RTTY contacts, with stations outside one's own continent, made on 3.5 or 28 MHz are worth double.

Contacts: Stations may not be worked more than once on any band. Additional contacts may be made with the same station if a different band is used.

Multipliers: A multiplier of one is given for each country contacted. The same country may be claimed for extra multiplier if a different band is used. An additional multiplier for each Intercontinental Country worked at least in 4 bands. Contact with a station which would count as a multiplier must be found in at least 4 other logs, or contest log from the multiplier station must be received in order to be valid.

Scoring: Total exchange points times the total number of multipliers times the total number of QSOs.

Country List: ARRL Country list plus each USA, Canada and Australia call area (1 through 10) will be considered as seperate country.

Message: RST, QSO # and Zone #.

Logs And Score Sheets: Use one log per band. Logs must be received by July 16,1984 to qualify. The logs must contain:Band/date/time/ GMT/Callsign/message # sent,message # received/points and multipliers. Enclose a summary score sheet with a list of multipliers worked. Comments will be very much appreciated. Send logs to the contest manager: I2DMI Francesco di Michele, POB 55, 22063 Cantu,Italy

SWLs: The same rules for scoring, but based on stations and messages copied.

Awards: Trophy to the top stations in each class; certificates to top score in each USA, Canadian and Australian call-area and each country.

WANT ADS CONTINUED

NEWS-NEWS-NEWS Amateur Radio's Newspaper "WORLDRADIO". Year subscription is $9.00. Send to WORLDRADIO, 2509 F. Donner Way, Sacramento, CA 95818.

HAM RADIO MAGAZINE. The no nonsense state-of-the-art technical magazine. Subscribe now and see for yourself. 1 year $19.50 in USA. Canada and foreign surface $21.50. Europe, Africa & Japan $28.00. Ham Publishing Group, Greenville, NH 03048.

OSCAR 10, RTTY AND AMTOR/FEC

Since about New Years I have a set up to work Oscar 10 on mode B. This Amateur satellite opens entirely new frontiers. There are not many stations (yet) and the first one I had the pleasure to print on RTTY was David, XE1TU. Signals are not strong, but of sufficient quality for any reasonable RTTY set up. The mode that really prints well however, is AMTOR mode B (FEC). How about setting up a sked or just getting on the bird around 145.890 MHZ where the RTTY activity seems to be.
73 and CU on Oscar 10.. Walt, KB6BT..

17th A. VOLTA RTTY DX CONTEST RESULTS

1. I5KGK	50,268,120	21.W7MI	829,725
2. I2OLW	47,480,256	22.VE2QO	788,424
3. OZ1CRL	37,774,379	23.W2KHQ	665,280
4. DJ6JC	36,481,536	24.K6WZ	286,200
5. IØZSG	15,591,114	25.OK2SPS	214,326
6. UT5RP	11,648,520	26.DK9CK	212,382
7. DL1VR	11,573,760	27.W8KV	189,504
8. WB3FIZ	11,560,890	28.SM6AEN	165,575
9. G3HJC	9,983,488	29.WB4UBD	132,132
10.IØUIQ	8,482,194	30.G4MKO	125,460
11.KB2VO	5,619,240	31.WB5QBV	104,940
12.OH8TA	5,445,000	32.YO3RF	102,200
13.I8JRA	4,571,385	33.I8VJB	74,464
14.I6YPK	2,689,164	34.SM5RE	73,260
15.K4VDM	2,022,933	35.SP2UU	64,736
16.SM7LSU	1,922,544	36.SP2FF	25,220
17.DL9MBZ	1,493,622	37.DK5KJ	7,380
18.SM5FUG	1,455,552	38.JR3QFB	4,980
19.TI2DO	1,365,900	39.DL8FAN	3,440
20.SM5AAY	1,010,100	40.DF7FB	3,150

Multi-Operator

1. SP3KEY	11,598,132
2. OK3RJB	8,832,024
3. OK3KGI	5,813,808
4. JR2CFD	4,412,792
5. AH6DV	3,326,400
6. DL6SAA	56,550

SWL

1. NL4483	1,897,728
2. RS45019	860,545
3. DE1KWD	357,001
4. OK1-20677	233,280.

Control Log:
Fred Bodenhagen (SWL), I2DJX, I2DMI

Stations worked:
Europe 287 (47.72%)
North America 259 (43.07%)
South America 12 (1.99%)
Africa 6 (0.99%)
Asia 24 (3.99%)
Oceania 13 (2.24%)

Awards:
Trophy to: I5KGK, I2OLW, SP3KEY, NL4483.
Certificate to: OZ1CRL, DJ6JC, UT5RP, WB3FIZ, G3HJC, KB2VO, OH8TA, K4VDM, SM7LSU, TI2DO, W7MI, VE2QO, W2KHQ, K6WZ, W8KV, WB5QBV, YO3RF, PA3CAU, OK3RJB, JR2CFD and AH6DV.

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