

RTTY

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ONE DOLLAR



BO STJERNBERG, SM6ASD OF GOTEBOG, SWEDEN

PICTURE WAS TAKEN BY SM6GVV AND RELAYED TO US BY BILL SNYDER, WØLHS

THE BRIGHTEST AND MERRIEST OF CHRISTMAS TIDINGS TO ALL, MAY YOU
FIND UNDER YOUR TREE YOUR HEARTS DESIRE AND MAY IT BENEFIT YOU.
FROM THE STAFF OF THE RTTY JOURNAL-THE HEALTHIEST, HAPPIEST, HEARTIEST
NEW YEAR TO ALL !

RTTY JOURNAL

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M E R R Y C H R I S T M A S !
 December is upon us and time to pass on those greetings to each of you. As I write this the air conditioner is whirring away and the outside temperature is in the mid-seventies. It doesn't feel as if Christmas is just around the corner, but it is to be sure. wonder what will be found in the stocking this year? For some it will be that new radio, a super DX getter or a new antenna. Whatever it is we have to be thankful that we live in a society that believes in giving and thrives on the happiness it produces. God bless each and every one of you.

DX. what does this mystical combination of letters mean to you? For some it is the first contact outside their state. To others it may mean that weak and fluttering polar propagated signal from a rare country that would fill that vacant spot on their DX need list. Whatever, it has a special meaning to each of us and it is to be respected for what it is. Remember, that QSO in progress near a frequency that you are about to call that rare DX station on may be obliterated by your signal and the participants of that QSO are not going to take a kindly attitude toward that kind of operating. Give them a break because that QSO may mean as much to them as calling the DX station means to you.

Are you ready? 1985 signals the beginning of a number of contests. The one of prime importance for the month of February is the "WORLD RTTY Championship Contest", on February 23. This event is one of a series sponsored annually since 1979 by 73 Magazine and the RTTY JOURNAL. Details may be found elsewhere in this

issue of the RTTY JOURNAL and you may obtain the contest sheets by sending an SASE to the RTTY JOURNAL office so that you may have the additional time to ready the station for the upcoming event. The best of luck and I hope to work each of you that participate!

From the FCC....It has been announced that the entire 30 meter band is available without the "no mans land" restriction. Mode and power restrictions remain the same for now but the power restriction may be lifted in the near future. This band, while no good for contesting, remains a DXers paradise and many QRM-less contacts can be made. That is sheer pleasure considering today's crowded bands. Give it a try, I think you will like what you find between 20 and 40 meters. ARRL has files a petition with the FCC that, if granted, will give us RTTY privileges on the 160 meter band. This band takes a special breed of Amateur to reek success in the way of DX but nevertheless, it is there to be worked by the deserving.

I received a very nice letter from George, KB2V0, who is a recent recipient of the ARRL RTTY DX Award. In his letter, George states that he is 64, first licensed in 1979 and on RTTY since 1981. His station consists of an Icom 720A and Kenwood TS820S, Alpha 76A, Wilson 3 element tribander at 35 feet, a Morgain folded dipole at 40 feet and a "listening" all band vertical on the ground. He also uses a Heathkit 20688A antenna tuner and SB614 station monitor. His RTTY gear consists of a HAL ST-6000 interfaced to a C-64 with Hamtext and Airdisk software. Two disk drives and a Star Gemini printer round out the system.

George, at 130/106, passed on a list of stations worked over the past few weeks that took the "starch" out of my poor propagation theory. Those juicy bits of information are listed elsewhere in the "worked and/or heard" section.

Karl, K6WZ, writes that the months of October and November were good to him. On one day in October, Karl worked two new ones and on the 2nd of November picked up three new ones! This makes his total 154/136. Karl reminded me that there were no "straight shots" from the West Coast to Europe, Africa or Asia in the CARTG. Speaking of contests, Karl again reminds us to be wary of rules for RTTY contests that are printed elsewhere than the JOURNAL. Seems as if a bit of misinterpretation of contest rules has occurred in the past and despite his efforts continues to occur. Deaf ears aren't very receptive!

CONGRATULATIONS are extended to W5DOZ and OH2TI on their recent acceptance by the ARRL DX Century Club. Very nice indeed and we wish you continued success. Lee, W5DOZ, is a regular contributor of DX info.

The reports this month indicate some improvement in band conditions. Note that there are showings of 40 and 15 meter activity. There should be increased reports over the next few months, especially from the lower frequencies. On to.....

DX - Heard, worked and QSL routes....
 YV5CIV 7.086 0200Z CBA Callbook
 KH6SP 14.091 0055 CBA
 3X4EX 21.083 2100 Via N4CID
 F08DP 14.093 0055 N7RO
 ZK2WL 14.089 0215 ZL3AFH
 ZL3NF 14.083 0137 CBA

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OA4ZR 14.095 0010Z CBA
 FG7AR/
 FS7 14.086 1127 CBA
 TR8DX 14.091 1838 WA4VDE
 7P8CL 21.097 1616 SM5KDM
 ZS1AAP 21.082 1254 28 Lindenberg
 Ave., Durbanville 7550 RSA.
 CE3AA 14.085 0030 CBA
 HBØHK 14.080 1036 Box 129, 6403
 Kuessnacht/Rigi, Switzerland.
 VP9GE 14.089 0000 CBA
 3V8PS 14.090 1948 CBA
 HP1AW 14.090 1709 CBA
 ZL3NF 14.090 0322 CBA
 EL2AT 14.090 2030 CBA
 SP3CMX 14.095 1234 CBA
 CX4AAU 14.095 0142 Box 374, Monti-
 video, Uruguay.
 J28DQ 21.092 2106 Box 2720, Dji-
 bouti, Rep. of Djibouti.
 BR1RBF 14.090 2344 Box 10932,
 Georgetown, Guyana.
 9H1CD 14.087 1828 Box 144, Valve-
 ta, Malta.
 HI1KCD 14.080 0000 Box 1157, Santo
 Domingo, Dominican Rep.
 PT2ABE 14.084 0036 Buro.
 LU6DSI 14.084 0055 Box 1113, Mar
 Del Platta, Argentina.
 LU4DEQ 14.084 0109 CBA
 LU8ESU 21.090 2314 Garibaldi 838-
 1849 Claypole, Buenos Aires, AR
 YV5CIV 14.084 0115 cba
 LXØFIL 14.090 1613 CBA
 4U1ITU 7.038 2339 CBA
 5B4NG 14.079 1116 Box 1492, Nico-
 sia, Cyprus.
 EA8QS 21.094 1932 CBA
 3V8PS 21.097 1727 CBA
 ZS1AAJ 21.092 1827 CBA
 5B4MD 14.089 1852 Box 609, Nico-
 sia, Cyprus.
 ZS3TL 14.095 1925 W7PHO
 C21FS 21.090 1954 CBA
 UZ3MWC 14.083 0955 Buro
 VK6ZD 7.040 1025 CBA
 ZL2BKY 7.040 1046 CBA
 5N24BJR 21.090 1509 Box 2873, Lagos
 Nigeria.
 ZK2RS 14.080 0734 Box 37, Niue
 21.085 2250 Island
 DL3DK/
 HBØ 14.093 1746 DL3DK
 VP9BY 14.090 1830 TUUV, Box 73,
 Devonshire, Bermuda.
 CX2AK 14.092 0112 CBA
 7X4MD 14.095 1851 CBA
 HZ1AB 14.092 1248 K8PYD

C53CL 14.099 1109 EA8ZZ
 UB3GCP 14.095 1824 Buro
 FM7BH 14.095 2103 F2BS
 D44BC 14.087 1505 CBA
 21.084 1447 CBA
 ISØDYX 21.090 2000 Box 25, Cagliari
 Sardinia.
 G3VBW 21.090 2013 Buro

Hans, EL2AT, reports that he soon
 will be relocating to Antigua. ZP8CL
 is active from Lesotho and thinks he
 may be the first to operate from that
 country using the RTTY mode. A number
 of stations in China are now equipped
 for RTTY and are heard as propagation
 allows. The knights of Malta opera-
 tion is still to come. QSOs with Joe,
 IOAOF, are encouraged and he says
 that it is just a matter of time and
 we should keep the faith!

The newest utility frequency list-
 ings have been compiled and are now
 available through most book stores.
 The title is, "Confidential Frequency
 List" by Oliver P. Ferrell. This book
 includes, by frequency, all stations
 for military, aeronautical, embassy,
 Volmet, Interpol, wx and included for
 the first time, RTTY stations. Also,
 included is a through introduction
 on how to decode RTTY messages, a
 complete explanation of those confu-
 sing abbreviations found in the util-
 ity field, info on 'piccolo' trans-
 missions, and the "why" of the Cyril-
 lic language, and a listing of mili-
 tary identifiers. It is the perfect
 compliment to the "World Radio TV
 Handbook"! The price is \$13.95 and
 may be purchased directly from Gilfer
 Associates, POB 239, Park Ridge, NJ
 07656.

I appreciate the cards, letters and
 telephone calls that make this column
 possible and a sincere thank you goes
 to the following contributors: IOAOF,
 NIAPI, W2JGR, W1DA, W8WYK, W9CD, TG9-
 VT, KT1N, N1BNK, VE3FJB, KB2VO, EL2AT
 W5DUZ, K5FL, WB1AQA and K6WZ. Happy
 Holidays and until next time, the
 best of DX to each of you.

73, Joe, AJUX ...SK

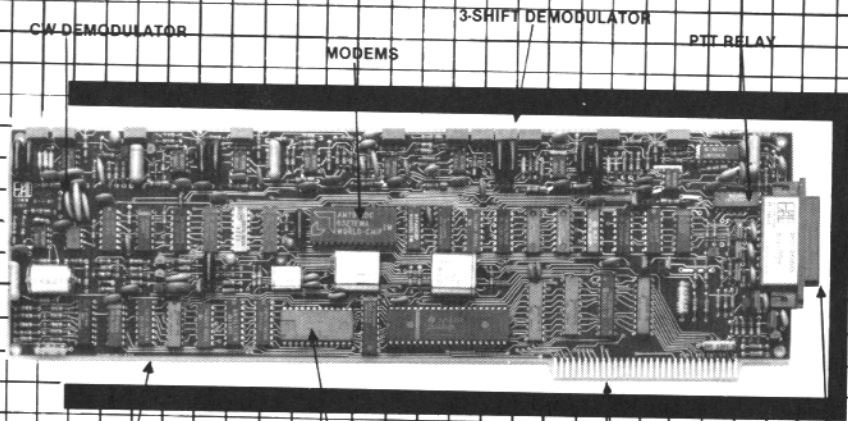
For those of you interested.....
 the company called Macrotronics of
 Turlock, California is out of busi-
 ness. Letters written to them are re-
 turned marked no forwarding address.
 And their telephone numbers are no
 longer in operation. Problem: Robert
 Glines, WB5KUI, has a TRS-80 III with
 Macrotronic, interface, Flesher TU,
 32 Teletype (Baudot) and 33 Teletype
 (ASCII). His computer will load with
 the tape program and he can send CW,
 Baudot or ASCII but cannot copy any-
 thing on the computer screen. He can
 hard copy with the 32 and 33 which
 are in series. Bob is trying to lo-
 cate someone that can repair his
 Macrotronic unit or help him with it
 any way, please write to him at: POB
 97, Floral, Arkansas 72534.

Also needing help is Ron Tinner-
 meier, WA0MYM, 4940 Hogan Drive, Fort
 Collins, Colorado 80525. Ron needs
 help in finding RTTY software for the
 Osborne 1 computer. He has the MJB
 1224 interface but doesn't know where
 to find good RTTY software for it.
 Anyone out there that can help Ron?

Bernard J. Sussman, 4201 Massachu-
 setts Ave., NW #5506, Washington, DC
 20016 also needs help. Mr. Sussman
 is not an Amateur Radio Operator. He
 works with a TTY-Telephone inter-
 change for the deaf, who have TTY de-
 vices with modems. He says, "so far
 my organization has made do with WW2
 vintage Teletype M-28's but we are
 eager to upgrade our equipment to use
 home computers. The advantages of
 even the most modest home computer
 are: silent operation, the VDT of the
 computer would display all or nearly
 all of the pending conversation and
 yet 'forget' it all at the end of the
 call rather than churn out hard copy
 on costly paper that we must store
 and then incinerate to preserve the
 confidentiality of our conversations.
 The home computer keyboard is going
 to be a lot easier to use than the
 old TTY keyboard with its 'hidden
 numerals' and punctuation and it will
 definately allow faster typing than
 our sluggish TTY-28s, and we might
 even be able to work up a little

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by Dick Uhrmacher, K0VKH

INSTALLMENT #11

Hi Gang! Holiday Greetings to one and all! My how time flies when you are having fun! Another month has slipped by, and it seems like only yesterday that we were trying to evade those long, hot summer days.

MSO's, and MSO activity continues to grow each day, and it seems that the practice of utilizing MSO's for "delayed QSO's" grows with each passing day. What better way to keep up with your friends and associates than dropping a note to them, when you have the time to write the message, and they have the time to answer it?

I have a nice note from Al Kaiser, N1API, Meriden, Connecticut, asking me to spread the word about a fine RTTY repeater, located in the New Haven, Connecticut area. This repeater can be heard on 147.255 MHz, and the input is on 147.855 MHz. Al is currently parking his HAL MSO on this repeater from approximately 2230 UTC, until 0330 UTC, and says that the repeater should be copyable throughout most of the central part of the state. Al also maintains his MSO on the 20 meter National Auto-start Frequency during the daylight hours, for everyone's use. Al will have a new HAL Disk Drive System in use in the very near future, which will enhance his overall operation greatly. Keep up the good work Al!

Bill Gosney, KE7C, (73 Magazine associate editor) of Oak Harbor, Washington, is looking for information concerning MSO's, particularly MSO's in the 75 meter band located on the west coast. Can anyone help him out in that department? You may contact him directly at:2665 North

MSO'S

1250 East (L-M Acres), Oak Harbor, WA 98277, or drop me a note here at the "RTTY JOURNAL". We're always looking for information concerning MSO's, whether they be HF, VHF or UHF systems. We're always happy to feature YOUR system here in the JOURNAL, so let's hear from you.

Dick Brittin, W9JBM, (ex-MSO SYSOP) wrote me a nice letter, and he's getting along well, although currently a bit too involved in activities to again become active in the MSO scene. He's been hitting the books, learning all about computers, along with some camping and travelling during the summer months. Once Dick gets some time on his hands, we hope that he will rejoin us on 20 meters!

I'd like to direct all MSO users and SYSOP's attention to Page 71, of the October 1984 issue of "QST", "Operating News". This column outlines the ARRL's position on Computer Based Message Systems, (this includes both MSO's and Packet Radio Systems), and it should be of interest to all who use and maintain these systems. It should be noted that these are "interim" recommendations compiled by the ARRL Ad Hoc committee on Amateur Radio Digital Communications and approved by the ARRL board of directors. It behooves each of us to read and understand these interim guidelines, and to correspond with the Chairman of the Ad Hoc committee, should you feel that they need to be modified, or that they do not adequately represent our goals or operating techniques, or that the guidelines, as written, detract from or interfere with already proven MSO/CBMS activity.

This author feels that these guidelines provide a generally acceptable platform for CBMS/MSO activity. The sections describing "Establishment of New Systems", and "User Operating Practices" are adequate as written. I do have a few qualms about some of the items listed under "Operational Safeguards" however. For example, my experience with on-channel interference, whether it be MSO/CBMS activity, SSB or CW modes, is that the "human element" can prevent or eliminate 99% of it. Instead of recommending that a "carrier detect" circuit be utilized to prevent QRM, I suggest that greater rewards for ALL of Amateur Radio can be realized by increased educational efforts by all involved, with emphasis on simply "listening before transmitting". This approach is nothing new to Amateur Radio of course, it just needs to be honed to a fine edge. Operator proficiency, courtesy and cooperation, rather than restrictive hardware requirements, seem to be the more realistic approach.

If these interim recommendations are to also apply to Packet Radio, I question the safeguard concerning retransmission of incoming messages, "until read and released by the CBMS operator". If my understanding of packet techniques is correct, it would appear that local operator intervention in the traffic stream, just to eyeball and approve of traffic passing through their system, would immediately detract from the systems very basic purpose, i.e. increased speed of handling traffic in automatic systems. I guess I would relate this to your local Highway Patrol establishing roadblocks every few miles on the Interstate Highway System, just to check for a valid drivers license. You can sure do it, but it would be a zoo between downtown Los Angeles and Santa Barbara at 5:00 PM!

So folks, let's hear about your feelings concerning these interim recommendations. Speak up, or live with what you see presented in QST. The ARRL's goal is to provide input to the Federal Communications Commission on these systems, and they do, believe it or not, solicit your
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Production Expertise And Service Integrity Form The Foundation For Your Long-Term Satisfaction

The fact that the Computer Patch Interface unit by Advanced Electronic Applications, Inc. is known as the best value on the market is no accident. The CP-1 was designed by Al Chandler, K6RFK (PHD-E.E.), an active RTTY user since 1963.

Given a cost per unit budget for the CP-1, Al designed as much performance as possible into the Computer Patch, including a unique new tuning indicator, referred to by one of our customers as the "Dead Eye Dick" tuning indicator. This indicator is ideal for RTTY and CW, in that it is both fast to tune and (within 10 Hz) as accurate as scope tuning. It also performs under poor signal to noise conditions in which other indicators provide no useful data.

Al's variable shift tuning was designed to move the space filter center frequency from 2225 Hz to 3125 Hz without changing the bandwidth (by varying the Q of the filter). All this is accomplished using a precision ganged potentiometer to assure proper tracking of the multiple filter stages. We could have used a pot costing a tenth as much by simply using a two-pole filter design, but we feel the advantage of a sharper filter reduces the noise bandwidth significantly and allows the variable shift control to be used like passband tuning for extra elimination of adjacent channel interference.

Some manufacturers are concerned that amateurs might try calibrating their own equipment and, therefore, have used non-adjustable components, which results in sub-optimal performance. Although more costly, trimpots used in AEA equipment allow factory adjustment for performance to design specifications. Competently designed active filter circuits need not be adjusted after leaving the factory; however, for specialized use the owner can easily change filter parameters.

Mindful of the fact that many of our customers are new to RTTY, Al made the CP-1 tuning as forgiving as possible, while providing the most critical operator a piece of equipment in which he could be proud. Even old "pro's" are surprised at the poor signal conditions under which the CP-1 will still provide good copy.

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opinions.

It's been about a year since we've printed a list of active MSO's on the 20 meter "National Autostart Frequency", and with the continuing new interest in MSO's, it's time to repeat it here again. The "mark" frequency is 14.085.625 Hertz, (but your digital readout may read the "carrier" frequency, which is 14.087.750 Hertz). The baud rate is 74 (100 WPM), "normal" sense, and 170 Hertz shift. Here's a current list of MSO's:

ACCESS CODE	QTH	OPERATOR	PHONE NUMBER
MSOICL	Yellow Springs, OH	Gaylord	513-767-1692
MSOVKH	Rapid City, SD	Dick	605-343-6127
MSOKOZ	Boca Raton, FL	Frank	305-994-1242
MSOQXK	*Richardson, TX	Don	214-235-3960
MSO9CD	Urbana, IL	Clark	217-328-4241
MSOAJUX	Laurel, MS	Joe	601-426-3486
MSOAPI	Meriden, CT	Al	203-634-0430
MSOKUW	Kenney, IL	Red	217-935-6173
MSOZRR	San Luis Obispo, CA	Ernie	805-543-7641
MSOMTC	N. Fort Myers, FL	Dick	813-995-0680
MSO5FL	Denton, TX	Brownie	817-382-0351
Guatmail	Guatemala City (TG9VT)	John	001-502-3-031547
MSONYA	Oklahoma City, OK	John	405-737-6963

*The W5QXK MSO is only active on 20 meters during the weekends

Everyone is most certainly welcome to utilize any of these MSO's. The SYSOP's take a great deal of pride in their equipment, and their dedication in providing this service is appreciated. A nicer bunch of guys you won't find anywhere!

The completes this column for 1984. I want to take this opportunity to wish each and all a VERY MERRY CHRISTMAS, and a HAPPY, HEALTHY NEW YEAR! I'll look forward to chatting with you in 1985 on RTTY!

DE: Dick, KØVKH

but some equipment in 'our' shacks just will not mate properly with it. I know time is short for us all, but your endeavours will certainly be appreciated by someone else that is struggling to get on the air...properly. Thanks.

To the above end, I might mention here that I had been having trouble in getting on to AMTOR with a VIC-20 and the AEA AMT-1. Many, many Amateurs tried to help but to no avail. Everything checked out (or so we all thought). The unit, with all its attendant cords and software were packaged up and sent to Al Chandler at AEA with a letter explaining what was 'wrong' with it. Got it back today, after a very nice phone call from Al. Seems as though it wasn't the units fault at all one (count it...one) jumper was one slot away from where it should have been. I won't name the individual that did this, for most any one of us could have. Now it works like a charm, even if my face is...very red. Things like this do happen and it is not always the manufacturers fault, as it was not in my case. I could have wrongly told everyone that the AEA equipment was at fault. This is also the kind of 'goof-up' I am looking for..things to look out for in the putting together of these complex modern day 'miracle machines'..73/88 de DEE..

computer software to display our end of the conversation with a different typeface than the deaf person's comments and to transmit a few standardized phases with just one or two keystrokes.

I know some RTTY hobbyists are now using home computer equipment with RTTY code adapters to transmit RTTY over shortwave. Naturally, for my purposes, I'd have to modify that sort of equipment to use an acoustic telephone modem. But apart from that I need some sort of hardware between the home computer and the modem to translate from ASCII to BAUDOT (TTY). I don't need high speed Telefax transmission speeds or Morse code, only TTY code at the speed of a human typewriting. I'd be grateful for any information on the various devices available to translate from computer code to TTY code, and their sources and which home computers they work with (right now, I favor replacing our TTYS with VIC-20s because they have low prices and good keyboards but I'd just as soon want to know what's available to go with all the different home computers so maybe we can accept donated computers or get used computers of a variety of brands).

Perhaps you could print this letter in the RTTY JOURNAL with my address so your knowledgeable readers could let me know of the various possibilities in this scheme." "nuff said" de DEE.....

While you are all at it. It would be appreciated here at the JOURNAL, if all of you would tell us about the configuration for RTTY that you have. So often we get letters from Amateurs wanting to know who they could contact to find how to "marry" this computer with that interface, TU, rig, etc., and find software, cassettes etc. for the various computers that are now extant. I am trying to keep such a list to know where I may send someone with a problem. Usually it is a minor problem, but it can be a major endeavour for someone just getting into the glass RTTY game. So how about helping out? Of course all Amateurs use SASEs to gain this info. I know I am biting off a lot, and hope that I can chew it, but there are so many Hams out there that need information on how to get started and more to the crux of the matter, how to get some of the bugs out, before they just give up on RTTY. So if you would all, sit down and write something short on the configuration of your RTTY gear, the problems you encountered with hooking them together and how they were solved; also any unusual things to look out for in reading instruction manuals (omissions or ambiguous or confusing statements) would be helpful. Manufacturers write manuals and some times they are non-Hams or are expecting that users have ESP or more savvy than the average electrical engineer possesses. Other manufacturers write good manuals TO NEXT COLUMN PLEASE- ON LEFT

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Crystal Controlled AFSK Modulator: A transceiver without FSK function can transmit in RTTY mode by utilizing the high stability crystal-controlled modulator controlled by the computer.

Photocoupler CW, FSK Keyer built-in: Very high voltage, high current photocoupler keyer is provided for CW, FSK keying.

Convenient ASCII Key Arrangement: The keyboard layout is ASCII arrangement with function keys. Automatic insertion of LTR/FIG code makes operation a breeze.

Battery Back-up Memory: Data in the battery back-up memory, covering 72 characters x 7 channels and 24 characters x 8 channels, is retained even when the external power source is removed. Messages can be recalled from a keyboard instruction and some particular channels can be read out continuously. You can write messages into any channel while receiving.

Large Capacity Display Memory: Covers up to 1,280 characters. Screen Format contains 40 characters x 16 lines x 2 pages.

Screen Display Type-Ahead

Buffer Memory: A 160-character buffer memory is displayed on the lower part of the screen. The characters move to the left erasing one by one as soon as they are transmitted. Messages can be written during the receiving state for transmission with battery back-up memory or SEND function.

Function Display System: Each function (mode, channel number, speed, etc.) is displayed on the screen.

Printer Interface: Centronics Para Compatible interface enables easy connection of a low-cost dot printer for hard copy.

Wide Range of Transmitting and Receiving: Morse Code transmitting speed can be set from

the keyboard at any rate between 5-100 WPM (every word per minute). AUTOTRACK on receive. For communication in Baudot and ASCII Codes, rate is variable by a keyboard instruction between 12-300 Baud when using RTTY Modem and between 12-600 Baud when using TTL level. The variable speed feature makes the unit ideal for amateur, business and commercial use.

Pre-load Function: The buffer memory can store the messages written from the keyboard instead of sending them immediately. The stored messages can be sent with a keyboard command.

"RUB-OUT" Function: You can correct mistakes while writing messages in the buffer memory. Misspellings can also be erased while the information is still in the buffer memory.

Automatic CR/LF: While transmitting, CR/LF automatically sent every 64, 72 or 80 characters.

WORD MODE operation: Characters can be transmitted by word groupings, not every character, from the buffer memory with keyboard instruction.

LINE MODE operation: Characters can be transmitted by line groupings from the buffer memory.

WORD-WRAP-AROUND operation: In receive mode, WORD-WRAP-AROUND prevents the last word of the line from splitting in two and makes the screen easily read.

"ECHO" Function: With a keyboard instruction, received data can be read and sent out at the same time. This function enables a cassette tape recorder to be used as a back-up memory, and a system can be created just like telex which uses paper tape.

Cursor Control Function: Full cursor control (up/down, left/right) is available from the keyboard. Test Message Function: "RY" and "QBF" test messages can be repeated with this function.

MARK-AND-BREAK (SPACE-AND-BREAK) System: Either mark or space tone can be used to copy RTTY.

Variable CW weights: For CW transmission, weights (ratio of dot to dash) can be changed within the limits of 1:3-1:7.

Audio Monitor Circuit: A built-in audio monitor circuit with an automatic transmit/receive switch enables checking of the transmitting and receiving state. In receive mode, it is possible to check the output of the mark filter, the space filter and AGC amplifier prior to the filters.

CW Practice Function: The unit reads data from the hand key and displays the characters on the screen. CW keying output circuit works according to the key operation.

CW Random Generator: Output of CW random signal can be used as CW reading practice. **Bargraph LED Meter for**

Tuning: Tuning of CW and RTTY is very easy with the bargraph LED meter. In addition, provision has been made for attachment of an oscilloscope to aid tuning.

Built-in AC/DC: Power supply is switchable as required; 100-120 VAC; 220-240 VAC/50/60Hz + 13.8VDC.

Color: Light grey with dark grey trim — matches most current transceivers. **Dimensions:** 363(W) x 121(H) x 351(D) mm: Terminal Unit.

Warranty: One Year Limited

Specifications Subject to Change



Everything built in — nothing else to buy!

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98 Motosoja Machi, Maebashi-Shi, 371, Japan

*Dual Amtor: Commercial quality, the EXL-5000E incorporates two completely separate modems to fully support the amateur Amtor codes and all of the CCIR recommendations 476-2 for commercial requirements.

THE "FIFTH" COLUMN

Why the "FIFTH" column? Well, we have the DX column, the MSO column, the Hits and misses Column and the Want ad column, that makes four..... right? Any more questions?

Seriously, I would like to add a few more columns if the right people could be found to write them. Anyone like to write on Packet Radio? How about AMTOR? A column on computers would be nice and so would one on U/VHF. If you know of someone or you would like to give any of the above a try contact me for details. Nothing fancy and pages and pages are unnecessary. What is needed is a liking of RTTY and a desire to help people get the most out of their equipment.

I get many letters every day from Amateurs and from now on I think I will share some of them with you. For instance, Alfonso Alvarez Calderón OA4PQ, writes from Lima, Peru that he is now on AMTOR in modes A & B. He has an auto AMTOR on 14.070 most days from 1800 to around 2400Z. His SELCAL is, of course, OAPQ. He has a TS-520 and Mosley TA-33 with the C-64 and AEA CP-1 and MBA-TUR 64. When the band is open he will also be on 6 meters.

Had a short note from Bob, WOHAH. Bob is doing needed repair work to his home in suburban Minneapolis and tells us that he is living in the basement meanwhile. We visited Bob, a few years ago while in Minnesota and wonder how he manages to stay on the air since his fully equipped Ham shack is in the basement also. Bob was out here in California a few months ago with the Olympic Torch program. I hunted all over Southern California just to have an eye-ball with him and wound up being a part of the Olympic Torch program myself. The story goes that someone did not remember that my favorite 2-meter repeater (146.73-) is shaded to the north of itself so it doesn't interfere with others in the L.A./Riverside areas, and gave the command to use it during the entire San Diego full day episode. That would have

been great except for the quirk of the repeater mentioned above. So after the torch started through the Marine Base (Camp Pendleton) there was no communication for some (nail-biting hours) between the tail of the caravan (with the torch) and the command post in San Clemente. Since I was headed towards San Clemente to see WOHAH, I was commissioned to make everyone aware of the situation and find another frequency for communications. Mission accomplished, Bob and I spent some time chatting about fellow RTTYers, band cx/lack of etc. I did manage to get some good shots of some of the cadre torch bearers and have lunch in the official lunch wagon. Bob should be easy to find on the bands now as he has just repaired his quad and has nothing else to do during those long Minnesota days and nights. Hi Hi..

WOHAH thinks my messages on his issue of the RTTY JOURNAL are nice, little does he know that I am the worlds worst letter writer and so via the cover is the easiest way to keep in touch with friends. So now that my secret is out...don't stop writing please.

John and Charlotte North, EA7EVD also keep in touch and have sent the enclosed pix. wish they had included themselves in it. They live in Cadiz, Spain. We started corresponding due to my writing them about my adventures while attending the University of Málaga. Of course, some of the little wayside places I knew were well known by the Norths also. John writes that he made contact with HB9HK, Willy in HBØ-land and also, with Hans, EL2AT. Hans is going to be stateside soon. Wonder where he heads next. John says he knows all

most of the places that I remembered and Hans has apparently been in most of them also. Small world.

John has not been too active lately mainly due to band cx. But he did say he managed to get TR8DX in Gabon on 14.095 at 2045Z and LZ1KDP on 14.099 at 1900Z+ and HA5KAG on 14.095. Wish I had that kind of 'poor' luck. One thing that John needs, he says, is input on whether or not he should toss out his Infotech 300 since it has no provision for external memory, and no split screen. He likes the M300 but not those features. Since he has the C-64 he may go that way although it does have a lot of RFI and he is not sure if that will help or hinder him. (Seems like a lot of Hams in the USA do not have any RFI problem, or do they and not know it)??? John did shake me up with the price of a C-64 there in Spain as being an "unreal" \$580 US. Further, disk drives, printers and other peripherals are just as expensive, although software for some unknown reason is about the same as it is here. Anyone going to Spain? Just to get back at me though, John relates that the price of dinner for four, at one of my favorite restaurants near the bull-ring was \$45 USA for a three course meal with an excellent wine and included the tip. McDonalds here charges about the same without the wine Hi Hi!

Anyone going to Dayton this year, may want to get their reservations in for the RTTY dinner, held at the Imperial House North. Dick, KOVKH is taking names and he may let you use his MSO for your reservation. Ask him!

Joe, AJOX has a friend, WA9ESX, Mike who has a mobile RTTY on a HARLEY "HOG". Can anyone beat that for dedicated RTTYing? 73/88 de Dee, N6ELP...

Sorry about the pix to the left, it was dark to begin with, wish it could have been lighter. Perhaps John will send another, this time with him in it. Why don't you send us a pix of your shack (preferably with you in it). Black and white are best.....



CLASSIFIED ADS

\$5.00 for 30 words. Additional words 10¢ each.- Cash with copy. Deadline 1st of month for following month.

FOR SALE :MINT AEA AMT-1 AMTOR Terminal unit in original box. SASE to: E. Alline, NE5S, 773 Rosa, Metairie, LA 70005.

IBM-PC RTTY ASCII/BAUDOT/CW Send and receive. All speeds, split screen, buffers and features beaucoup. Version 3 now faster and better than ever! SASE to:E. Alline, NE5S, 773 Rosa, Metairie, LA 70005.

NEWS-NEWS-NEWS Amateur Radio's Newspaper "WORLD RADIO". Year subscription is \$10. Send to WORLD RADIO, 2120-28th St., 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 Airmail. Ham Publishing Group. Greenville, NH 03048.

FOR SALE-WE ARE OVERSTOCKED due to many large volume buys and are passing the good buys on. 5 level machine Model 32R0 (standard UCC 5) \$80. M-32KSR \$90, M-32ASR \$125, M-32ASR (w/UCC9 Telex config) \$175. 8 level machines-M-33R0 (standard UCC6) \$69, M-33KSR \$75, M-33ASR \$150. All above units are strapable for 20 or 60 MA. All are complete (less stands). Sold as is, but are thoroughly checked line & local prior to shipping. Stands for M-32's or 33's \$13 ea. Parts available for 32's & 33's. Please cite part number & name. Paper tape 5 level or 8 level \$1.25 roll. Roll paper ground wood grade \$2 roll. Bond \$2.50 roll, bond form paper 9 1/2 x 11 with tear away perms. Large box 3400 forms \$38. RS232 interface for M-33 \$75 ea. New 0-300 baud direct connect modems (RS-232) \$75 ea. AB RS232 switch boxes \$107 ea. Please send check for amount of item (NY residents add applicable tax). Shipping will be COD best way or your choice (most can go UPS with new 70lb limits). Any questions call 516 242-5011 Tram Teletypewriter Service 50-0 Corbin Ave., Bay Shore, NY 11706.

DRAKE 7000E, Epson MX-80 printer, covers, cables \$695. Icom 730, LDA, FL-30, FL-45, HM-5 \$495. HM-10, EX-203 \$250. Inline 105 'wireless' coax relay \$30. KILEC N. Springfield, VT 05150-0073. 802-886-8121.

FDM RTTY DEMODULATORS. Frederick 1202R series. Useful for AP/UPI news on HF radio, commodities news service on FM SCA broadcasts and UPI 'one state per channel' satellite FM/SCPC transmissions. Four models available in various conditions, \$35 to \$350. Call/write for full brochure. Electro value Industrial Inc., POB 376-RJ, Morris Plains, NJ 07950. 201/267-1117

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.

TELETYPE 33KSR's friction feed, automatic carriage return & line feed. Purchased new in 1981, used 13 months one of the last made by RTTY Corp., RS232 interface & pedestal included, only \$75 each or trade? Only a few left. IRL FSK 1000 with ASFK keyer \$325 N4BRX, 413 Seneca Ave., Louisville, KY 40209. 502/368-7845.

HAL COMMUNICATIONS STRIKES AGAIN! If you have an IBM-PC Personal Computer, then you want to utilize the new HAL PCI-2000 interface and software to turn it into the ultimate in a computer based RTTY system! Morse, Baudot and ASCII, 103/202 modems, all speeds/shifts, split screen, and a host of other features. Write or call Dick, KOVKH, DIALTA Amateur Radio Supply, 212-48th St., Rapid City, SD 57702. 605/343-6127. Our prices can't be beat!

FANTASTIC DISCOUNTS ICR-71A \$679.50, Kenwood R-2000 \$495.50, Sony 2002 \$219.50, CR-2021 \$99.50, Regency HX-1000 \$239.50, MX-5000 \$385.50, Bearcat BC-250 \$265.50, BC-300 \$359.50, HX-3000, MX-7000, CALL!! Panasonic, MFJ, Kantronics, Ten-Tec, Yaesu, Icom Cushcraft, Frequency directories, Coax, Antennas, Phones, MUCH MORE! Free UPS SHIPPING & INSURANCE to 48 states. 25 page picture catalog \$1 (refundable). GALAXY ELECTRONICS, Box 1202, 67 Eber Ave., Akron, OH 44309. 216/376-2402 (9-5 PM EST).

WANTED 28R0, New or like new condx. Sell like new model 32. George Churpek, N6FL, 839 Cambon Cr1., Ujai, CA 93023. 805/646-5296.

VIC-20 & C-64 USERS! Now you can own your own MSO-with your VIC-20 or C-64 and any of the popular interfaces and our MSO software, you will have a highly efficient machine language MSO that has a HAL compatible command structure. Our software works with or without a disk drive. The MSO software will allow you and your users to perform the following operations: List the directory of messages scan the directory, write messages, read messages, delete messages, access a help menu and also allows you or your users to select the different baud rates including 110 ASCII. The MSO also includes automatic date and time keeping, automatic identification of your call letters, memory used and remaining indication. \$59.95 plus \$1.90 postage, for Kantronics interfaces add \$8.95. MSO package includes manual, cable and diskette or cassette. VID COM Communication 3131 Foothill Blvd., La Crescenta, CA 91214 Ph.818/957-7550.

RTTY DEVICES-Model 28 keyboard typing reperfs, TD's, Model 33R0, KSR's, ASR's, modems, Model 28KSR's gearshifts, paperwinders, paper, ST-5 demodulators, video display units, Burroughs mainframe computer, line printer and control console, Model 43KSR, several Motorola 2-meter FM radios-Mocom 70, Motrac, Motran w/ synthesizers, compa-station. Send SASE for 6-page list and prices to: Lawrence R. Pflieger, K9WJB, 2600 S. 14th St., St. Cloud, MN 56301. PH. 612 255-9794.

INDEX TO 1984 ARTICLES

January-Source of Teletype manuals.
New RTTY Product for the VIC-20.
Relay Switching Revisited.
RTTY With Vic-20 Made Simple.
February-Packet Radio Part I.
Relay Switching Part II.
Terminal Program for TRS-80/100.
March-Packet Radio Part II.

TO PAGE 12 PLEASE

by **GEORGE**

HITS & MISSES

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



220 TAKEOVER

On July 21 at the ARRL National Convention, the FCC Forum was very enlightening. FCC Private Radio Bureau Chief Bob Foosaner, by his remarks and responses to questions, left little doubt that Amateur use of part of the 220 band, probably the bottom 2 MHz could end in the very near future.

The land mobile communications council in late June filed a petition with the FCC. This petition expressed the increasing needs of the land mobile service. The 220-225 MHz was cited due to its relatively low Amateur activity along with its availability to land mobile in ITU region two.

The ARRL Directory is being cited as the only source for usage of the 220 MHz band. I counted eight RTTY repeaters. I realize many repeaters are dual purpose and not just dedicated to RTTY. The use of the ARRL Directory was never intended as a single source of data representing Amateur usage of the 220 band.

The 220 band is a natural for data communications, RTTY and repeaters of a general nature. The repeater pairs are available, use it or lose it.

I hope we don't lose this band through lack of use. I believe RM4829 and or RM 4831 are dangerous to Amateur Radio. We MUST populate this band or lose it to the 'carriage trade'.

NAPLPS RTTY GRAPHICS

North American Presentation Level Protocol Syntax (NAPLPS). This system provides high resolution text and
PAGE 12

and graphics video displays. Normal RTTY methods can be used to transmit the ASCII files used to draw graphics. Several firms have developed microcomputer software and hardware to decode the information IC manufacturers have here-to-for not revealed. Manufacturers are beginning to market complete decoder chips, a revolution in computer graphics transmission is brewing. If you have conducted any experiments with this technology contact Paul Rinaldo, Technical Department of ARRL, 225 Main Street, Newington, CT 06111.

PRE-EMPTIVE RULING

The constant battle of restrictive antenna ordinances with cities, and the courts, may come to an end. The ARRL has asked for the issuance of declaratory ruling.

Specifically, the ARRL seeks a declaratory ruling pre-empting all local ordinances which preclude or significantly inhibit effective reliable Amateur communications and which are not clearly necessary to insure the safety of a proposed antenna installation.

Recently the State of New Jersey tried to license and place restrictions on Satellite Master antenna TV systems such as are found on hotels and apartment houses. The FCC files against the State of New Jersey. The court ruled it was a restriction of Interstate Commerce.

ARRL asked that Amateur Radio be included in this same ruling. The FCC decided that the ARRL must file it's own declaratory ruling. Meanwhile, the FCC is asking for comments.

The commission has now come out asking for comments on this subject.

This is dangerous in the respect that it is taking the offensive in asking the commission to preempt. They could say NO, and every court in the United States then could say that even the FCC does not want to preempt local ordinances so why should we? This in turn will give local government (that is not always friendly towards Ham antennas, much less any antennas) jurisdiction and they just might regulate our towers down to the basement level.

A lot of public comments will be necessary and YOU AND I are going to have to do it. Our basic argument is that the regulations interfere with the reliable performance of our antennas.

Comments on this issue should be filed as follows: original and four copies with the Secretary, Federal Communications Commission, 1919 "M" Street NW, Washington, DC 20554. Refer to PRB-1.

I will close my column for the month and, of course, year. I still cannot believe the year of 1984 is drawing to a close.

The best Holiday Season from our house to yours. So long for now.WA6CQW

INDEX TO 1984 ARTICLES-CONTINUED

April-RTTY TU Circuit for Sinclair ZX81.

TRS-80 III Basic Program for Baudot May-Heath SB-303 RTTY Modification.

Scanning with the TS-930S.

Modification of the Sagem TX-20. July-VIC-20 Repair.

AMTOR Part I.

IRL Modifications Part I.

September-IRL modifications Part II. RTTY For Heath-Zenith Computers. AMTOR Part II.

Passive RTTY Scope Adaptor.

October-AMTOR Part III.

Using the Kaypro II for RTTY.

Modifying the Kenwood 930S for RTTY Parallel Line Printer Part II.

November-Parallel Line Printer Part II.

Kaypro II Part II.

B.A.R.T.G. SPRING RTTY CONTEST 1985 RULES

The judge's decision will be final and no correspondence will be entered into in respect to incorrect or late entries, and all logs submitted shall remain the property of the BARTG.

WHEN: 0200 GMT Saturday 23, March until Monday 25th March 1985. The total contest period is 48 hours, but not more than 30 hours of operation is permitted. Time spent as listening periods counts as operating time. The 18 hours of non-operating time can be taken at any time during the contest, but off periods may not be less than 3 hours at a time. Times ON the air must be summarised on the summary sheet.

WHU: There will be separate categories for single operator, multi-operator and short wave listener stations.

BANDS: 3.5, 7.0, 14.0, 21.0 and 28.0 MHz Amateur bands.

STATIONS: Stations may not be contacted more than once per band.

COUNTRIES: The ARRL DX Countries List will be used, and in addition, each W/K/N, VE/VO and VK call area will be counted as a separate country. NOTE: W/K/N (USA), VE/VO and VK count once only for QCA purposes.

MESSAGES: Messages will consist of: Time in GMT, and must consist of a full four figure group. The use of the expression "same" or "same as yours" will not be acceptable. RST.. Message number, which must consist of a three figure group and start with the first contact being 001.

POINTS: Points may be claimed as follows:

ALL two-way RTTY contacts with stations within one's own country = TWO points.

ALL two-way RTTY contacts with other stations outside one's own country = TEN points.

ALL stations may claim a BONUS of 200 points for each country worked, including their own. Note that any one country may be counted again if worked on another band, however, Continents are counted only once.

NOTE: Proof of contact will be required in cases where the station worked does not appear in any contest log received or the station worked does not submit a check log.

SCORING: Two-way contacts X total countries worked.

TOTAL country points X 200 X number of continents - Max. 6

Add above scores together for final score.

Example: Exchange points (302) X Countries (10) = 3020

Country points (10) X 200 X Continents (3) = 6000
added together = 9020

LOG AND SCORE SHEETS: Use separate sheet for each band, and indicate all times on air. Logs must contain - Date, GMT Time, RST given and received, Callsigns of stations worked and points claimed plus message numbers.

NOTE: SWLs must include Callsign of station heard, their report, GMT, and other stations callsign and date logged. Incomplete loggings are not eligible for scoring and will be used as check logs. Summary sheet must show the full scoring, times on the air, full name and address. For multi-operator stations, names and callsigns of all participants must be included.

ALL LOGS MUST BE RECEIVED BY 31 MAY, 1985 TO QUALIFY.

LOG AND SUMMARY SHEETS are available from the contest manager, PETER ADAMS, G6LZB, 464 Whippendell Road, Warford, Herts, England WD1 7PT for 3 IRCs. (In the UK an A4 envelope will do). Send contest/check log to above address

Certificates will be awarded to the leading stations in each of the three groups, the top station on each continent and to the top station in each W/K/N, VE/VO and VK call area.

NOTE: 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, for which a charge of 3 dollars US or 15 IRC's is made. Holders of existing QCA should indicate and list any 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 each of the six continents and the BARTG contest manager receives either a contest log or check log from each of the six stations concerned, a claim may be made for WAC issued by the RTTY JOURNAL.

AWARDS

WAC - all on 14 MHz. to Bill, WA6VZG October 11, 1984.

WAC all on 14 MHz. Ron, VK5RY, October 14, 1984.

WAC all on 14 MHz. Eric, G3KQS, October 15, 1984.

We have decided to change our procedures concerning awards. In the future there will be a charge for awards. A plaque will no longer be given for DXCC, but a certificate will be issued instead. Charges are as follows:

DXCC, WAC, WAS certificates \$3.00 (USA) or 15 IRC's. Endorsements for DXCC (increments of 25) \$2.00 USA or 10 IRC's.

WAZ and Worked all Counties (USA) are new certificates and will be charged for as above.

All certificates will be mailed folded, unless additional postage to cover is provided. (Varies by country.)

Certificates may be obtained by submitting proof of contact of two-way RTTY QSO's. Proof may be a listing of contacts (certified by an officer of a recognized Amateur Radio Teletype Group) and at least one other Amateur Radio Operator, or by sending photocopies of both sides of the QSL cards with at least two Amateur Radio Operators signatures attesting to fact that the photocopies have not been tampered with. We will not honor the ARRL DXCC award photocopy without a listing of stations contacted.

If there are any questions pertaining to any award, please drop a line to us at the RTTY JOURNAL office with a SASE and we will answer it ASAP. Also, if you would like to see more awards categories please let us know what kind of categories you think would be the most productive in promoting the special hobby of Amateur Radio Teletypewriting.

Contest Call _____ State/Province/Country _____

Station Owner _____ Call & License Class _____

Address _____ State/Country _____ Zip _____

Equipment _____ Amplifier _____ Power Output _____ Watts

Antenna(s) _____

Operator Class Single Operator, Single Transmitter Multi-Operator, Single Transmitter

If Multi-Op, Calls of Participants _____

Entry Category Single Band All Band

CONTEST SUMMARY

	10M	15M	20M	40M	80M	TOTAL
Contacts Made.....	_____	_____	_____	_____	_____	_____
US States Worked (max of 48)	_____	_____	_____	_____	_____	_____
Canadian Provinces/Territories worked(Max 13)_____	_____	_____	_____	_____	_____	_____
DX Countries Worked.....	_____	_____	_____	_____	_____	_____

TOTAL QSO POINTS X TOTAL MULTIPLIER POINTS = CLAIMED CONTEST SCORE
 X =

I have observed all competition rules as well as regulations governing the operations of Amateur Radio in my country. My contest entry, as submitted, is true and correct to the best of my knowledge. I agree to be bound by the decisions of the contest committee.

Date _____ Signed _____ Call _____

MULTIPLIER CHECK LIST

10 METERS			15 METERS			20 METERS			40 METERS			80 METERS		
AL	MN	TX	AL	MN	TX	AL	MN	TX	AL	MN	TX	AL	MN	TX
AR	MO	UT	AR	MO	UT	AR	MO	UT	AR	MO	UT	AR	MO	UT
AZ	MS	VA	AZ	MS	VA	AZ	MS	VA	AZ	MS	VA	AZ	MS	VA
CA	MT	VT	CA	MT	VT	CA	MT	VT	CA	MT	VT	CA	MT	VT
CO	NC	WA	CO	NC	WA	CO	NC	WA	CO	NC	WA	CO	NC	WA
CT	ND	WI	CT	ND	WI	CT	ND	WI	CT	ND	WI	CT	ND	WI
DE	NE	WV	DE	NE	WV	DE	NE	WV	DE	NE	WV	DE	NE	WV
FL	NH	WY	FL	NH	WY	FL	NH	WY	FL	NH	WY	FL	NH	WY
GA	NJ	ALT	GA	NJ	ALT	GA	NJ	ALT	GA	NJ	ALT	GA	NJ	ALT
IA	NM	BC	IA	NM	BC	IA	NM	BC	IA	NM	BC	IA	NM	BC
ID	NV	LAB	ID	NV	LAB	ID	NV	LAB	ID	NV	LAB	ID	NV	LAB
IL	NY	MAN	IL	NY	MAN	IL	NY	MAN	IL	NY	MAN	IL	NY	MAN
IN	OH	NB	IN	OH	NB	IN	OH	NB	IN	OH	NB	IN	OH	NB
KS	OK	NF	KS	OK	NF	KS	OK	NF	KS	OK	NF	KS	OK	NF
KY	OR	NS	KY	OR	NS	KY	OR	NS	KY	OR	NS	KY	OR	NS
LA	PA	NWT	LA	PA	NWT	LA	PA	NWT	LA	PA	NWT	LA	PA	NWT
MA	RI	ONT	MA	RI	ONT	MA	RI	ONT	MA	RI	ONT	MA	RI	ONT
MDC	SC	PEI	MDC	SC	PEI	MDC	SC	PEI	MDC	SC	PEI	MDC	SC	PEI
ME	SD	QUE	ME	SD	QUE	ME	SD	QUE	ME	SD	QUE	ME	SD	QUE
MI	TN	SAS	MI	TN	SAS	MI	TN	SAS	MI	TN	SAS	MI	TN	SAS
		YUK			YUK			YUK			YUK			YUK

IMPORTANT: CIRCLE STATES WORKED ON EACH BAND

RTTY

Journal &



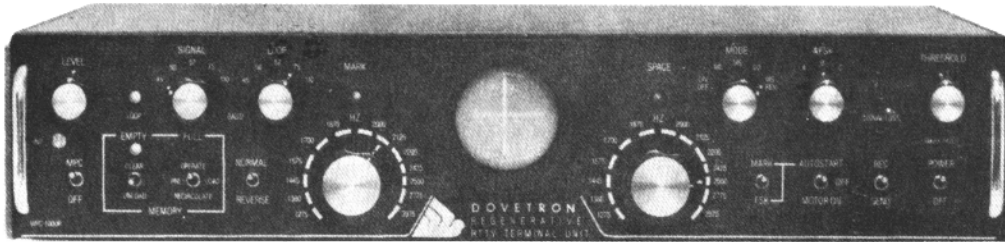
magazine

-4th ANNUAL-
RTTY WORLD CHAMPIONSHIP CONTEST

- Sponsored By: The RTTY Journal and 73 Magazine.
- Contest Period: 0000Z to 2400Z February 23, 1985
- Misc. Rules: The same station may be worked ONCE ON EACH BAND. Crossmode contacts do not count. Single operator stations may work 16 hours maximum, while the multi-operator stations may operate the entire 24-hour period. Off times are NO LESS than 30 minutes each and MUST be noted in your log(s).
- Operator Classes: (A) Single Operator, Single Transmitter.
(B) Multi-operator, Single Transmitter.
- Entry Categories: (A) Single Band.
(B) All Band, 10-80 Meters.
- Exchange: Stations within the 48 Continental US States and Canada must transmit RST, and State, Province/Territory. All others must transmit RST and consecutive contact number.
- QSO Points: 5 QSO Points for contacts with W/VE stations located within the Continental US and Canada. 10 QSO Points for all other contacts.
- Multiplier Points: 1 Multiplier Point is awarded for each of the 48 Continental US States, (A District of Columbia contact may be substituted for a State of Maryland multiplier), Canadian Provinces/Territories and DX Countries worked on each band (excluding US and Canada).
- Final Points: Total QSO Points times Total Multipliers equals CLAIMED SCORE.
- Contest Entries: Entries must include a SEPARATE log for EACH BAND, a dupe sheet, a summary sheet, a multiplier check list, and a list of equipment used. Contestants are asked to send a SASE to the Contest address for Official Forms.
- Entry Deadline: All entries MUST be POSTMARKED no later than April 16, 1985.
- Disqualifications: Omission of the required entry forms, operating in excess of legal power, manipulating scores or times to achieve a score advantage or failure to omit duplicate contacts which would reduce the overall score more than 2% are all grounds for immediate disqualification. Decisions of the contest committee are final.
- Awards: Contest awards will be issued in each entry category and operator class in each of the US Call Districts, Canadian Provinces/Territories as well as in each DX Country represented. Other awards may be issued at the discretion of the awards committee. A minimum of 25 QSOs must be worked to be eligible for awards.
- Contest Address: Enclose an SASE to: RTTY WORLD CHAMPIONSHIP CONTEST
% THE RTTY JOURNAL
P. O. BOX RY
CARDIFF, CA 92007

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