RTTY Journal

EXCLUSIVELY AMATEUR RADIOTELETYPE

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Contents

RTTY JOURNAL

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HITS & MISSES by GEORGE

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

SPIN PHYSICS

Spin Physics, a division of Eastman Kodak, San Diego, has developed a new high density floppy diskette. The process was developed by Kodak-Pathe in France. The new magnetic recording process will allow 20 megabytes (20 million characters) on two sides of a 5¼" diskette.

Twenty megabytes represents the amount of data stored on 10,000 double spaced typewritten pages. It would take me 125 single density floppy diskettes to store the same amount of data with my Apple computer.

The trade name for this new disk will bw "Isomax." The new disk will be similar in appearance to present disks except the surface will have a very high gloss. This is needed to keep friction to a minimum.

The Isomax disk allows data to be packed as tightly as 200 tracks per inch. Current double density disks allow 40 tracks per inch. Spin Physics is selling samples to disk drive manufacturers. A new line of disk drives will surely follow.

The Isomax disk is expected to be available in the latter part of this year. This new ultra-high density disk was introduced at the National Computer Conference at Anaheim, California. Spin Physics is located at 3099 Science Park Road, San Diego, CA. 619-453-5410.

annual leave

I have just completed my swing thru the mid-west. The trip entailed 6,000 miles and lasted six weeks. I was pleased to meet many of the RTTY gang. Jeanne (XYL) and I had the good fortune to be in Sauna, Kansas on June 4th where we decided to stop by the Red Coach Inn and take in the 3rd annual ARRL Kansas State Convention. Bill Ringquist, KAØCUF and the Kansas DX Club really showed Jeanne and me a nice time. This was one of the best conventions I have been to. Jeanne wants Bill to know that the forgotten umbrella he retrieved, sure came in handy later in our trip.

FCC LIFTS RESTRICTIONS

Effective June 15, 1983, the FCC requirement, when using RTTY codes, to CW ID, was lifted. This was something I strongly felt should be changed. The only reason I could find for this requirement was that not all FCC monitoring stations had RTTY equipment, hence the CW ID. When using Baudot, ASCII or AMTOR, stations **may** identify using the particular code being used for communications.

I will close my column for the month with this: The FCC has chosen to have the good sense to lift the CW ID requirement for RTTY. I hope they will now choose to have the equally good sense to lift the ban on 10 meter amplifiers.

So long for now, George, WA6CQW

REGARDING "AMTOR"

by Paul Boivin, W1ZXA
242 Old River Road, RR4
Lincoln, RI 02865

I read with interest the original article on AMTOR by G3PLX in the December 1980 RTTY JOURNAL, and again in June 1981 QST. Your recent repeat of the article has finally prompted me to voice my '2-cents'! Perhaps you would like some reaction from "the guys out there" to AMTOR.

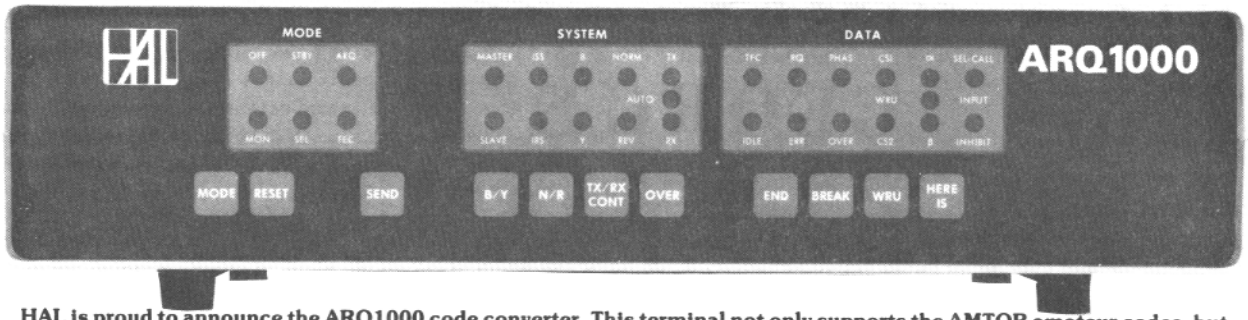
My impression is that AMTOR will be about as popular with the RTTY Amateur fraternity as "Narrow-band Voice Modulation" has been with the SSB 'phone fraternity! You remember "NBVM", don't you? No? It was heralded as the biggest thing in Ham radio since SSB! ("New Era in Voice Communication", Harris and Gorski, QST, Dec.1977). If it was, or is, such a "hot" item, where has it gone? [See note below] We don't hear much NBVM on the Ham bands. Maybe it's there but we don't recognize it! Maybe AMTOR will suffer the same fate. WHY?

AMTOR may be useful for those primarily engaged in RTTY message traffic, but I differ with G3PLX as to its practicality for use with occasional RTTY QSO's or contests. Much prearrangement seems to be necessary between "master" and "slave" to make it practical for the RTTY contacts that we "old-timers" are accustomed to. I doubt that a "CQ RTTY" on AMTOR would be recognized or printed by many, save those G's that are already geared up for it. The typical RTTYer will respond to what his existing system will print; if it cannot easily recognize AMTOR, it will be ignored! That would sure cut down on "reading-the-mail"! From what has been published so far in the USA, which contains little technical detail, the system requires a dedicated 6800 up with a custom generated ROM. The majority of RTTY Amateurs using computers for RTTY QSO's are using Apple's, HAL's, TRS-80's and VIC's. Until AMTOR works with those cassettes or disk) systems, I don't think you will see too many getting excited about it. To those versed in computer technology, that means somebody has to generate the necessary "user-friendly" software to run on these and any other system currently in use by Amateurs primarily interested in RTTY message traffic.

AMTOR requires rapid break-in, similar to what the CW traffic boys use or what is known as "VOX" in SSB fone. When your key is up, your receiver is receiving; when key is down or mouth is in gear, you are transmitting, contrary to the old-timers' method whereby you are totally "deaf" while transmitting regardless of whether you are actually saying anything, until YOU command

continued on page 14

AMTOR RTTY

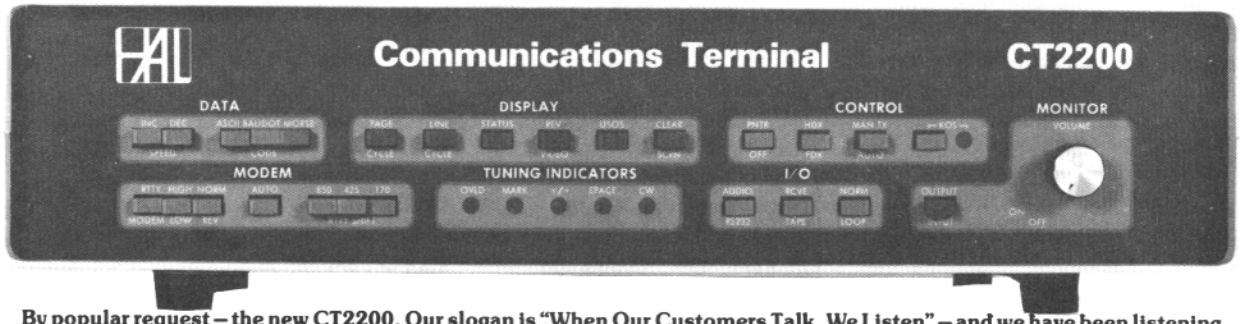


HAL is proud to announce the ARQ1000 code converter. This terminal not only supports the AMTOR amateur codes, but meets ALL of the commercial requirements of CCIR Recommendation 476-2. The ARQ1000 can be used with present and previous generation HAL RTTY products. In fact, any Baudot or ASCII full duplex 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
- 3⅜" × 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.

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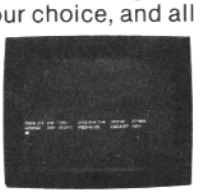
DRAKE COMMUNICATIONS TERMINALS

Microprocessor Controlled

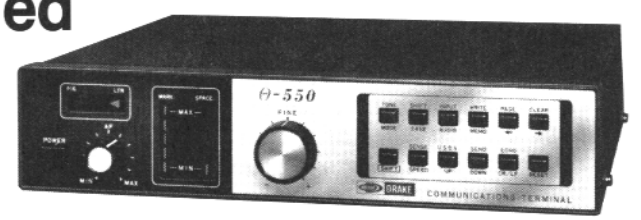
DRAKE Theta 9000E

The ultimate in communications versatility, the **Drake Theta 9000E** provides complete transceive capability of CW (Morse Code), RTTY (Baudot), and ASCII. A full computer RS232 interface, cassette tape storage port, selective calling feature with answer-back, light pen graphics, printer interface and word processing software are all standard.

Seven large 256 character memories are backed up with battery power so there is no need to reload information with each use. Memories may also be partitioned providing up to 29 separate storage locations. A type-ahead buffer of 3120 characters makes it easy to compose your response while still receiving. Operator controlled scrolling permits review of up to 10,720 previously received characters. Line length is selectable at 40 or 80 characters, your choice, and all mode and speed indicators are displayed on the screen for instant status recognition. The 9000E has 3 tone groups and 3 shifts which are all keyboard selected.



You won't buy any other communications terminal once you have studied all the advanced operating convenience built into the **Drake Theta 9000E**. It's complete.



DRAKE Theta 550

The **Drake Theta 550** is a compact receive-only communications terminal and is designed to demodulate and display the three most popular over-the-air modes of data communications: CW (Morse Code), RTTY (Baudot), and ASCII. Any standard TV monitor can be used.

A full-featured microprocessor controlled unit, the Drake Theta 550 has selective calling, battery backed-up memory, audio monitor, and informative L.E.D. tuning indicators. There is also interfacing to permit the addition of a dot matrix printer for "hard" copy and a keyer paddle input to permit CW transmission with full iambic operation.

CW automatically tracks over a speed range of 5 to 50 words per minute and RTTY modes offer nine selectable standard speeds of transmission. 12 volts DC is required.

This unit is ideal for shortwave listeners and hams who have been missing the increasing volume of data communications over the air.

LA7 Line Amplifier

Line output, input levels as low as 15 mV rms (47 kilohm) will result in an output of 1 mW nominal into a 600 ohm balanced line. Output level adjustable by internal preset level control. Interfaces low level audio to RTTY terminal unit or phone line that requires a 600 ohm balanced/unbalanced input. One 36″ phono to phono cable supplied.

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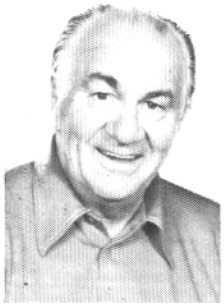
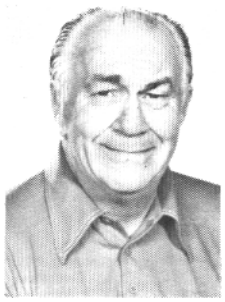


DX RTTY

BY BILL

WØLHS SNYDER, 1514 S. 12th Street, Fargo, ND 58103



"The GOT HIM smile"

"The NOCATCHEM frown!"

Well, the long, hot summer is over, and the bands are getting their autumn colors. Summer DXing was good and bad. The high points included ZD7BW making his appearance from St. Helena Island, C21BD showing up from Nauru, and ZS3GB re-appearing from Namibia. The bad news fell in the MSO area.

Perhaps I have not made myself clear about how I feel about message storage operations on our bands. First, let me state that I am not opposed to them! They have a place in our hobby, and there are a few well-run units that have been around for years. But with the coming of computers--the MSO units are proliferating like crazy. I'm worried about what will happen down the road, if hundreds and hundreds of them get on 20 meters. Will this band be able to handle them? Now everyone who buys a fancy computer will be able to park it on a discrete frequency and open it up for business. There won't be enough room and our nice little RTTY bands will wind up like that SSB jungle many of you escaped from.

So, do we need some plan or controls? I have my ideas, but I'd like to hear yours. Write me pro or con, and please offer solutions to our coming problem. It will be here before you can type two lines of RY's and one of QBF.

If you are not aware of what is going on, there is one MSO on 40 meters that averages around 100 messages in storage, most of which are offering things for sale or trade. It reads like the want ads in the daily paper. I wonder about the legality of this type of operation. One MSO operator with a long history on 20 meters says:"..it is blatant advertising, no matter how you look at it..(and) it has generated into a cat and dog fight where rudeness reigns supreme!"

To quote this ham further,: "Now the Federal Communications Commission has made it fairly clear on what constitutes business communication, and what constitutes routine conversations between two Ham Radio operators. They (FCC) state there 'should be no pecuniary (money) interest, except in the discussion of Amateur related products between two individuals on a CASUAL AND NON-ROUTINE BASIS.' In monitoring that 40 meter MSO, I find that it is neither casual, nor non-routine, and it is best described as a clearing house for Amateur radio equipment."

Listen on 40 to that one, and if it is still there, please send me your comments. This is Amateur radio, not CB.

I had two big disappointments during the summer. One happened when I discovered C3ØMF--the very last night he was vacationing in Andorra. You guessed it, he went QRT and wrapped it up for good, just as I called him!

The second low-blow came from the island of St. Martin. Mort, PJ8UG, (W1UQ), made arrangements to work JA1ACB, Gin (221/218) from FG7AR/FS's rig. Mort told me of the schedule the day before, so I was on hand when he opened up from the French side of the island. (PJ8 and FG/FS split the same chunk of Carribean land). Signals were very poor from the West Indies that day, and Mort apparently didn't hear my calls. Just when the signals started to boom up in strength, Mort printed:"Alain (the OM) has to lock up and get to work!" With that he vanished! And that was all from that side of the island for awhile. Gin and Larry, K1LPS were the only two making a contact, although Mac, K7BV, worked Mort from there during 1982.

But Mort had some good news for us: Alain, FG7AR/FS is now in France and should be back in September. He has purchased RTTY gear from Mort and will get it on this fall. Alain speaks only French, but I have been told that Arthur, ON4BX, and some of the French Hams are going to help him with his English.

Mort asked that all RTTY contact QSL's be sent directly to the 1983 callbook address of PJ8UG, not to his manager listed in the various publications. Mort's wife, K1YL, Also operates RTTY under the call PJ8YL.

HC8KA, Ted, was on briefly from Galapagos. Ted, also HC5KA, was on the island installing a business repeater on a mountain 844 meters high. I also heard Ted working with UA3HR. I wonder who QSL'd first?

CN8AT, Hans, is now on the air from EL2AT. Hans has been quite active from his new QTH. QSL's are through OE3NV and he has a pile of blank cards. I have that on good authority from George, KB2VO, the printer who made them for Hans. WB4UBD, Jim, reports Hans has only a vertical and 100 watts, but is expecting a beam and linear shortly. Jim has passed the 90/68 number and is counting hard! Recently he worked J6LOV, ZP5-JAL, A22BW and ZS3GB for new ones. He also says the following are, "saw and missed:" 3A2EE, 9K2KA, YB2BLI,

DX COLUMN CONTINUED

and a C31.

Our printer friend George has a very good idea. He sent his old call books to SP2UU, Barbara, the first RTTY station on after they lifted the martial law in Poland. He sent another pair to OK2SPS in Czechoslovakia. George says that even if they are outdated, the Hams over there treasure them. And George speaks the lingo, so he should know!

If you are trying to get a QSL card from KG4AH, I suggest you try writing Mike Waldrop, 13013 Kingswell Drive, Woodbridge, VA 22193. Mike has finished his tour of duty at Guantanamo Bay, and is now on the air from W4 land.

ZD7BW, Gerry, caused a minor sensation when he was first heard in Tokyo on 15 meters. I'll bet the DX hotline was buzzing! But what about poor Al, W6MI? He found the ZD7 in contact on 21096 but before he could call him, W1AW came on with the daily broadcast! Yes, Al reports it was a really long broadcast.

K1LPS, Larry, reports a new St.Paul Island DXpedition is scheduled for the last part of September. VE1ASJ is the leader and JA1ASD is supplying the Tono RTTY gear for their use. If you will recall, last year the DXpedition blew the RTTY xmtr after only a few days of operation, so they are going back to the island to try again.

Larry also tells that he worked the following new ones: SP8BCH, EA9JZ, and YS1GMV, plus he heard 9M2MW working with the Japanese DXers. He told me that news the day before he and I worked P29AX in New Guinea.

C21BD, Det, has been working the world from the Republic of Nauru. Det is running a Kenwood TS430 with a CWR 685E Telereader into a four-element TET beam. When I worked him (2000Z) he had a very good 20 meter signal into the states. He can be QSL'd via Box 225, Republic of Nauru.

With the RTTY population growing daily, manners are starting to become rather loose. I was watching C21BD working a small pile-up when he said: "Now calling I5FLN," a batch of stations all blasted away at him (mostly U.S. Hams.) Det came back to one of the callers, and told the others to "wait your turn." Well, it turned out that the station Det answered was on Field Day. He also was a newcomer to the RTTY game and was terribly impressed with DX on the keys. I never did find out if Det worked Luciano, the Italian station he was calling before being interrupted by those rude interlopers. Mind your manners kiddies.

A note to our newcomers: Short calls work a lot better than long strings of RY's followed by 16 x 16 calls. Give the DX station a chance to pick out one call from the pile. Keep calls short!

EAVESDROPPINGS: "Please call me again, old men..."....."first time I have made a WAC in a contest!"..... "....over the lazy dog's buck."..... ".....the power failed and zip went the mailbox!"...."your nine-element Yagi-quad is talking loud!"....."this is my first contact on real RTTY!"... "I'm still using my wet-noodle antenna!"...."We raise black sheep".... "Met a nice girl who really likes fly-fishing!"...."You gotta be 50% nuts to be a Ham, and 100% nuts to be a Ham with a computer!"....."73 from the welfare state."....."using a new TRANS-MASH here."...."so please bare with me...."....The QTH is Sandy Eggo."[NOTE: Sandy Guito is where the RTTY JOURNAL is located 25 miles north!).."Those hours spent on RTTY are not deducted from your total life!"...."I just radio for fun, I'm the local undertaker."...."Will AMTOR make our rice boxes obsolete?"..... "I'm a jack-of-all-trades and master of one--spending money!"....."I type with two singers."....."Did you know the leading DXer in Japan uses Collins gear?"...."The wood-decker decked you."..."The RTTYer no longer fights the elements, it's the woodpecker!"...."Today I was at a high-lever conference!"...."Gonna hit you with some Alabama Spanish:'GETCHUR STUFF N STUDY'!"...When a guy says 'QSL via buro', is that the forerunner of the Pony Express?"....."My problem is not enough sheep.."..... "FB on the hoe-brewed rig!"....."Been on RTTY one week and 18 countries now!"...."Have 11 kids between the wife and myself"..."Okay on BACK SHE COMES, but why SHE?"...."Antenna is a double bazooka inverted Vee.."..... "Your signal in Tokyo is pretty better..."..."I've bending your eyes too long, so a great big sayonara to you!"..."73 and takemcare."....."have a nice weakend!"

VP9GE, Ed recently visited Japan. The local DXers there took him to visit the Akihabara radio shops where he bought a new 430. JA1JDD, Taka, sent along pictures of the occasion.

JA1DSI, Minoru, tells us a second RTTY station on Nauru is a good possibility. The un-named Ham from the island was seen picking up some RTTY gear in Tokyo.

I had a nice QSO with YS1GMV, Mario in El Salvador. Mario now has 318 countries on SSB, the last one being Heard Island. He can be QSL'd to Box 1557, San Salvador. YS1LSR, Luis, can also be reached via Box 1493 in the same town.

KX6PO, Ian, surprised Elizabeth, KA3GIK, and myself by breaking into our QSO from the Marshall Islands. Ian is a pilot flying between the islands of the group. He told us he has 18 airstrips to land on in the course of his work. He lives in the town of Majuro, and is into SSTV as well as some RTTY. His transmitting gear is a TS 430 with a linear. His QSL manager is W4FRU. I wonder if he flies QSL cards to KX6QC, Lamarr, who works on a tracking station in Ennylabegan.

Elizabeth also reports tuning across the band and finding OD5GN calling her. When she recovered from the shock, she had a nice contact with Tom, who can be QSL'd via Box 34, Opglabeek, 3660 Belgium. Liz and her husband WB3GIK, Pat, are battling neck and neck for DXCC. They worked W9JER/9Q5 on 15 meters, and A4XJQ, HP1XLS, OD5GN and C21BD on 20.

Liz is still available as a QSL manager for any deserving overseas station. Drop her a line.

MORE EAVESDROPPINGS: "I can't see the benefit of error-less RTTY on

DX COLUMN CONTINUED

AMTOR. Then Snyder would have nothing to write about. I think sending with the left foot carries a definite personality!"

The day of the French St. Martin "almost" contact, I heard Arthur, ON4BX, calling FGØUQ/FS about 15 minutes after the island station was closed down. I called Arthur and broke the sad news to him. He then told me the day before he had QSO'd with ZA1UC in Albania, but was skeptical as to the legitimacy of the ZA. Well, the so-called Albania station also appeared as ZA1AC, so the consensus is he was a Slim (Pirate.)

If you work Carmen, CE3CEW, ask about her adventures on the Juan Fernandez Island RTTY DXpedition last December. I had an hour and 23 minute land-line-like QSO with her. The trip to JF took a three hour overwater flight in a Piper Navajo, then a three-hour fishing-boat ride to the city. Included in the boat ride was a dunking caused by her sneezing!

N1BNK, Bert in New Hampshire, has been compiling some DX statistics by computerizing over 1000 QSO's in his log. The purpose is to see what is happening to the RTTY population on twenty meters. Bert has come to the conclusion that only about 10% of his contacts are repeats, new calls are continuously showing up and old ones are dropping out. His contact percentages run like this: DL 13%, USA 11%, I 10%, G 9%, VK 5% and EA 5%. All the rest are less than 5%. So if anyone thought the bands would end up with a lot of old-timers talking to each other on RTTY, t'ain't so, says Bert. Bert also lists these heard and worked: 9H1E, 9K2KA, EA9JZ, 5B4CV, XT2AU, C21BD and TG9VT.

K7BV, Mac, back from another bout with the hospital, reports KV4BQ is new from the US Virgin Islands. He is a priest and also holds VP2VW; so he could possibly take his HAL Telereader over to the British Virgins and give out a new country to a lot of RTTY DXers.

GI4AHP, Ted, is now working AMTOR along with RTTY. He passed along some modifications for the TS-930 to improve the operation on AMTOR. If anyone would like a copy, just send me an SASE. He also sent some mods for the Dovetron that were supplied by Syd, VK2SG.

ENDORSEMENTS FOR DXCC-RTTY:

210 K7BV, June 25, 1983
200 I8AA, June 25, 1983
180 I5FLN, June 25, 1983

SHORT ROLLS: UB5SR on 14095 at 1750Z. HK4CCX would like his QSL's direct only to Box 3077, MEDELLIN-COLUMBIA. ZS6CC has a mailbox and has been heard around 1300 longpath on 20. OHØBT, Esko, QSL via OH3CV. W9JER/9Q5, QSL via WBØMZB. JA5TX, Mitsuo, worked 3A2EE 2300Z on 20 meters. IK2-BPZ was heard working YB3BHV on 15 at 1400Z. TI2DR at 0300 on 20. KV4BQ, ED, 1100Z on 20.

My biggest surprise of the summer was discovering P29AX from Papua running ASCII. K1LPS was in QSO with Michael when I first heard his signal. In between the woodpecker and local noise we managed a contact. I asked him to switch to 60 wpm RTTY, but apparently he couldn't do it. His gear is not quite complete and was using home-made software which worked only on ASCII. JA1DSI, Minoru, also made a contact with Michael. QSL info is box 332, Ukapumpa, via Lae, Papua, New Guinea. It was really fun for me, for I spent nearly two years of my life on that tropical island.

W3KV, John, stopped into my shack for a very nice visit! One of the real pleasures of Ham radio is to meet your unseen friends. When John arrived, the DX talk went out-of-control! After John's return to his home QTH he made up for time lost on his Canadian Rockies tour. He sent along this list of worked/heard stuff: LX1-DA, LX1WH, HK3OZ, HK2BEF, YC4FQ, YC4-HD, CT2AK, CT1AJW, C31CJ, FM7CR, YO3-AC, 9Y4AJC, VP9JL, VP9IM and HI8DAF. John also lists these tidbits: 4S7EA, Ernest again active; IF3IB, Ingo, who has a Vic-20 on; SP3KEY on from Poland; and 9M2CR/SM5 on holiday to Sweden.

I would like to thank those mentioned above plus JA1JDD, W2LFL, IO-AOF, K4VDM, and all those I eavesdropped on. 73 es dit dit.

Bill WØLHS..

ET CETERA CONTINUED

from page 14

we moved on to Cheyenne, Wyoming. Tried to contact RTTYers there but no one was home-possibly they knew something we did not-more snow..... in May! On we traveled, this time straight south thru Denver and into Arizona where at Wickenburg John suddenly blanked out and couldn't remember anything. At the hospital there they could not find anything wrong, so we can only guess at the cause. Needless to say we headed for home.

John has his memory back and is in great shape now and looking forward to Reno, Nevada this week-end for the Southwest ARRL convention and the Anaheim convention the first week-end of September. The Anaheim convention will be unique in that they will have an RTTY forum for YL's. That and an RTTY breakfast should be quite interesting.

You may get your JOURNAL just a little late this month due to our taking a 'vacation' in Virginia. It was at a charming school called Oak Hill Academy, in Mouth of Wilson, VA. I say it was a vacation but it really was two weeks of morning thru evening intensive studying for the Advanced

continued on page 17

NEW UNIVERSAL M-600
MULTI-MODE, CRYPTO-DECODER

UNIVERSAL M-600 RTTY CODE RECEIVER

THE ONLY RTTY UNIT THAT DECODES —

- **BIT INVERSION**-method used for security and privacy by governments, business, press and others, automatic system opens up a new world of RTTY listening. Now you can copy those stations that defied copy on standard RTTY units.

- **TOR-SITOR**-Both ARQ and FEC modes used by Marine, telegraph, World Press, Coastal Stations and Government Services. This approaches error-free copy.

- **NON STANDARD SHIFTS**- Used by RTTY services to effect a form of security to their transmissions by the use of non standard shift of RTTY signals, quite common in commerical RTTY. The M-600 has a continuously variable shift capability over a wide frequency range.

- **WEATHER FORMAT**- Allows reception in straight text of many weather stations with the use of standard weather map symbols in everyday use around the world. This is very interesting to copy.

PLUS — All speeds of BAUDOT, ASCII and MORSE (CW). M-300 keyboard plug-in for transmit. BAUDOT, ASCII, CW.

★ AMTOR when approved.

Partial List of Features of the New Revolutionary UNIVERSAL M-600

BIT INVERSION-5 level security bit inversion for baudot decoding from key pad. Decodes any combination of bit inversion being used for security.

TOR-SITOR-Both ARQ and FEC modes with full receive only function on these codes. Amtor when approved.

WEATHER TEXT-Weather Bureau symbols, arrows and other weather type uses. Key pad Controlled.

SHIFTS-Key pad selectable shift selection, 170, 425 850 plus variable space channel allows copy on mnay non-standard shifts being used as security mode. There is a separate demodulator for 150 through 1200 baud rate high speed RTTY.

ASCII-110, 150, 300, 600, and 1200 baud rates

BAUDOT—60, 66, 75, 100 and 132 WPM

MORSE-CW-AUTO-RANGE up to 60 WPM

SPEED READOUT-ASCII and BAUDOT

MULTIPLE SCROLL INHIBIT

UN-SHIFT ON SPACE

SELF-TEST SYSTEM-Allows check out of M-600 operation.

AUDIO INPUTS-4 to 600 OHMS .25V.P-P.

VIDEO OUTPUT-Composite video. 1.5V.P-P., negative sync.

PRINTER DRIVER-Isolated loop, Mil-188 or RS232 and optional parallel ASCII. All with handshaking available. Baud rates of 45, 50, 57, and 74 in baudot and 110, 150, and 300 in ASCII. The M-600 will drive almost any printer available at any of the input modes.

PRINTER MODE-Baudot 60, 66, 75, and 100 WPM.

PRINTER SPEEDS-ASCII 110-150 and 300-parallel ASCII.

PRINTER BUFFER—A 2K printer buffer allows reasonable down conversion and handshaking of printer.

LOOP SUPPLY-60MA/20MA auto adjusting loop supply available as an option.

STATUS LINE

OPTIONS-Built-in loop supply /parallel printer output

WARRANTY-115/230V 50/60Hz 25 watts

SIZE-16 3/8 x 3-1/2 x 10-3/4 in. deep.

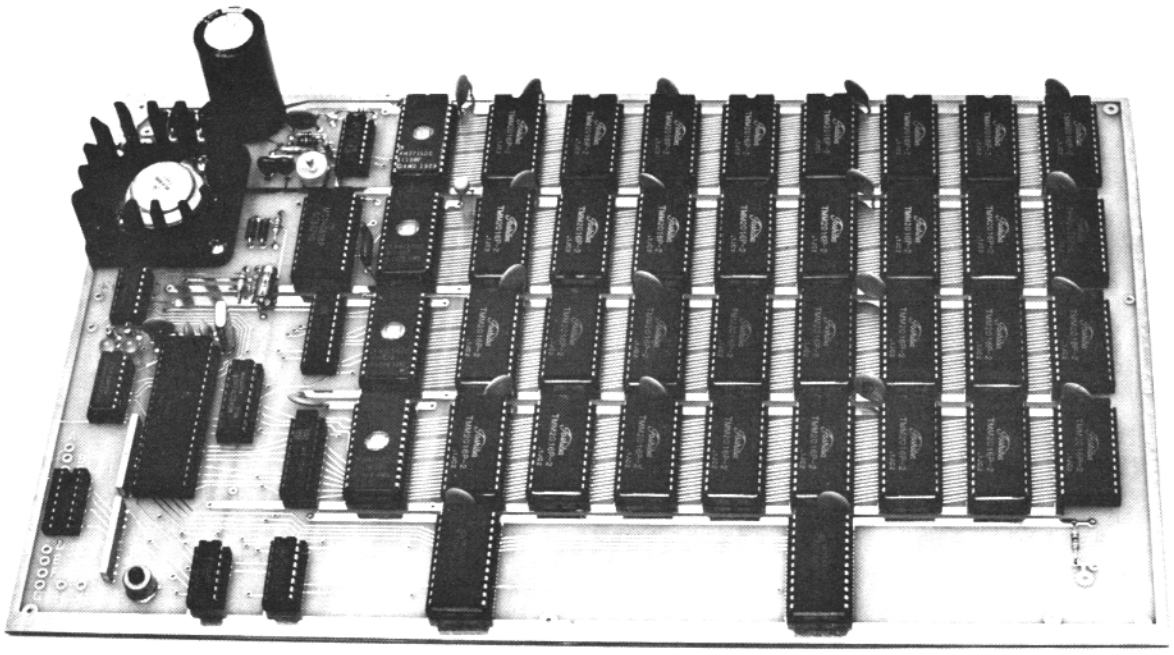
WEIGHT-9 pounds - shipping weight 12 pounds.

PHONE: (614) 866-4605

UNIVERSAL ELECTRONICS, INC.
1280 Aida Drive
Reynoldsburg, Ohio 43068

PRICE $799.95
Shipping Extra
VISA & MC Accepted

ANOTHER FIRST FOR INFO-TECH



INFO-TECH M-700A
RTTY/REPEATER CONTROLLER/MAILBOX

The M-700A is a full-featured RTTY REPEATER CONTROLLER and MAILBOX. It is NOT an add-on to a home computer.

FEATURES:

Zilog Z-8 Microprocessor	Three modes of operation (user specified)
8K Program ROM	Over 30 commands
64K CMOS RAM	User Friendly operation
CMOS Real Time Clock	On-Board regulated power supply

Provisions for battery back-up of RAM and RTC

The M-700A is NOT a kit. It is furnished as an assembled, populated, and tested board with your semi-custom software installed. (Terminal unit and housing not furnished.)

PRICE $699.95

Write or call for more information.

Digital Electronic Systems
1633 Wisteria Court • Englewood, Fl 33533
(813) 474-9518

HAL 2100/YAESU FT ONE Modification

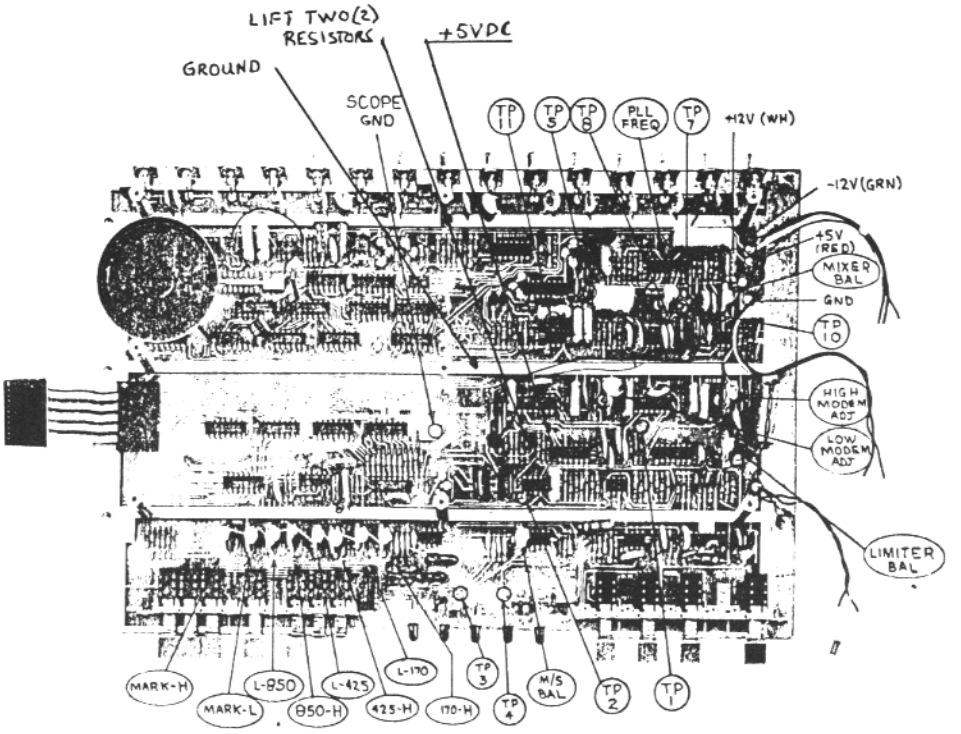
Walt Amos, K8CV
4612 Woodland
Royal Oak, MI 48073

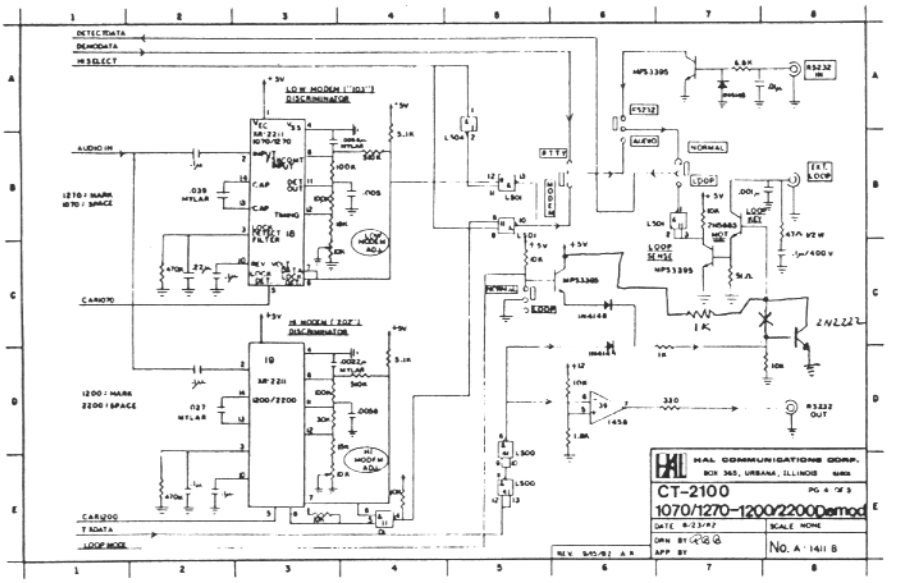
This is a modification to make the HAL CT-2100 work FSK with the Yaesu FT-One. Hal CT-2100 loop jack used. Loop jack, normally a short on mark and open on space. Mod converts to open on Mark and short on space.

1. Get 2N2222 transistor (NPN) and a 1,000 Ohm resistor.
2. Remove covers- -top and bottom- from CT-2100.
3. Remove 7 screws on top CKT board. (warning-watch for any insulators under screws and brace the center of the bottom board while pushing down on screws.) Disconnect the power connector and the IC type connector on right side of board. (Board viewed from the rear.)
4. Carefully remove the top board!
5. Follow small black wire from loop transistor. (See pictorial for location of resistors to be unsoldered.) Unsolder the two resistors and twist the free ends together and connect the base of the 2N2222 inverter to the twisted ends. Connect the 1,000 Ohm resistor from +5 volts to left hand hole vacated. The 2N2222 collector lead to the other hole and the emitter lead to the near by ground buss. (Use about one inch wires on the 2N2222 for these connections and mount it dead bug to the right of it all.)
6. Do steps 4, 3, 2, 1 to put it all back together again.
7. You will still need a lead to PTT from KOS for turning the FT One on.
8. This should work also with the IC-720 and any radio needing open on mark and closure on space!

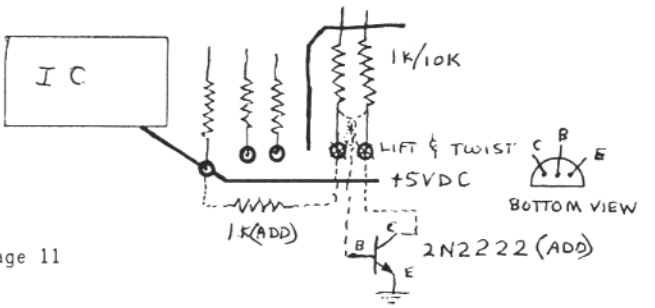
Good luck!

top view of analog board





Analog board-modem demodulators



CLASSIFIED ADS

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

PRINTERS MODEK 28, 32, 33 RO, KSR and ASR. Also 35 ASR all in top conditions. Siemens M-100 and T-100 for 45.5 and 50 bauds. Schematics on all models. Send SASE to quote on specific model and type of service desired Telecommunications Enterprises, Inc., POB 4842, Hialeah, FL 33014.

COMMODORE VIC 20 OWNERS:At last! CW/RTTY send-receive software by RAK Electronics with schematics for simple homebrew interfaces. Will work with popular TU's also. Low, low prices. SASE for information on these and many other cassette programs for games, finance, education, Ham radio. Amateur Accessories, 6 Harvest Ct., RD7 Dept.R, Flemington, NJ 08822. 201-782-1551.

-RTTY-MARS-RTTY-MARS-RTTY-MARS-RTTY Have you heard about the new HAL "Message Processing Terminal" software for the DS-3100ASR? Throw away your paper tape and roll paper! Complete inmemory message and traffic handling. Call or write Dick, KØVKH Dialta Amateur Radio Supply. 212-48th St., Rapid City, SD 57701. (605)-343-6127. All of your HAL and Info-Tech equipment needs. Our prices can't be beat.

IBM PERSONAL COMPUTER RTTY Program. "PC/RTTY" program to send and receive RTTY BAUDOT or ASCII using your own PC and Tuning Unit. Features include; Split screen receive and type ahead, up to 1200 baud continuous speed coverage, five one-line message buffers, auto FIGS/LTRS, built-in CQ, RYRY, CW-ID, CLOCK, SIGNOFF MESSAGE and BRAG TAPE. Disc save and send text, status line and buffered keyboard features are included. Requires minimum 48K memory, one disc drive, 80 column monitor, Asynchronous Communications Adapter and your own EIA level RS-232C compatible Tuning Unit. Furnished on single-sided disc with user manual. Price $19.95 AMPWARE, POB 30279, Cincinnati, OH 45230.

TRY NEW 10MHz RTTY! New KT3O antenna ready to use only $27.50! KT5B Multiband 160 thru 10M only $59.95. Complete line of antenna materials-Kilotec, POB 1001, Oakview, CA 93022. Call 805-646-9645.

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

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

FOR SALE: MODIFICATION KIT 163359 to provide variable speed to M28 machine Make offer. Kenwood TS520 Mint $475. VFO 520 mint $85, SP-520 mint $25. Other gear available. Inquire to H. Galbraith, W9RDJ, 1214 S. Alvord, Evansville, IN 47714.

AMTOR-AMTOR-AMTOR-AMTOR-AMTOR ******* The new HAL ARQ1000, Error Correction Terminal, will provide no compromise AMTOR capability for your RTTY station. This full featured unit must be seen in operation to be appreciated. For full details write or call Dick, KØVKH, Dialta Amateur Radio Supply, 212-48th St., Rapid City, SD 57701.(605) 343-6127. All of your HAL and INFO-TECH equipment needs. Our prices can't be beat!

IBM-PC & MC-DOS OWNERS..Full featured all speed RTTY and ASCII for your computer. SASE for complete details. E. Alline, NE5S, 773 Rosa, Metairie, L 70005.

HAL DS3000 ASCII-BAUDOT video display unit with matching 12 inch Electrohome monitor. $600 will UPS. Contact: Tom Laus, KH6ILT, 27059 Pinewood, Roseville, MI 48066. (313) 773-6473.

*** DISK DRIVES in the HAL DS3100 *** Now you can have almost unlimited mass storage with your DS3100 ASR! Over 326,000 bytes on two diskettes with the new HAL DSK3100! If you are into traffic handling, then the DSK-3100 will make those long traffic runs a snap for you. Call or write Dick, KØVKH, Dialta Amateur Radio Supply, 212-48th St., Rapid City, SD 57701. (605) 343-6127. All of your HAL and INFO-TECH equipment needs. Our prices can't be beat!

WANTED-FREDERICKS TTY EQUIPMENT-State Model, condition, and price. Ben Grokett, KR6E, 853 N. Alexandria, Hollywood, CA 90029.

FOR SALE:9th edition of the "RADIO-TELETYPE FREQUENCY LIST", now contains 2463 frequencies monitored in 1982-83 of commercial stations like press, aeronautical, weather, telex, military, diplo, maritime etc., on shortwave. Schedules of 89 press service stations on 673 frequencies are given, and these stations are also filed in a comprehensive chronological list for easy access around the clock. Hundreds of commercial SITOR (AMTOR) and FEC stations are also listed. The price of $20 includes the SUPPLEMENT SERVICE which keeps you up to date with two quarterly supplements. Book and supplements are AIR-MAILED to anywhere in the world.-Furthermore, available are really up-to-date callsign, code and general (non-RTTY) frequency reference books compiled from nonstop monitoring the complete shortwave spectrum. Write to Joerg Klingenfuss, Panoramastrasse 81, D-7400 Tuebingen, West Germany.

TELETYPE EQUIPMENT & PARTS M-33 wiring diagrams $5. M-33 manuals-3 volume set $15 new, unused. Purchase the set of three manuals for the M-33 and receive the wiring diagram free. M-40 RO printer friction feed serial interface-good condition $750. M-40 ribbons $2.50 each. M-40 cabinets 132 columns $100 each. M-43 with built-in modem like new $450. Lots of parts in stock. Send me a list of what you need-for a price quote. Lou Carbaugh, POB 398. 384 Old York Road, New Cumberland, PA 17070. 717-938-6978.

AVAILABLE NOW! in color or B & W! Full featured, all speed Baudot and ASCII for your IBM-PC. SASE for complete details. E. Alline, NE5S, 773 Rosa, Metarie, LA 70005.

CLASSIFIED ADS CONTINUED

DT-600 RTTY DEMODULATOR is still your highest performance per dollar choice. See Ham Radio Feb.'76. Don't be fooled by fancy boxes, PLL's, active filters at expense of linear discrimination, or full-page Wall St. ads you're paying for. Cheap computers have resulted in a lot of poorly designed demodulators. Ask the DX and AMTOR operators what works best. The DT-600 circuit board is one of the finest ever offered on the Amateur market. The data package contains an 11 by 17 fold-out schematic diagram, half-toned parts layout drawing, and 29 other pages of theory, construction hints, parts list and other useful information. Circuit board and manual $16.50 , pot set (recommended) $2.25 PPD. Florida and Tennessee residents include sales tax. Foreign orders add $1.50 per board. Payment by money order or cashiers check only payable in U.S. dollars and drawable on a U.S bank. Data Technology Associates, Inc., POB 18255 Knoxville, TN 37928-2255.

WANTED: TELETYPE SPARE PARTS and/or unused Teletype equipment and subassemblies. Any quantity, model 28, 35, 37, 40, 43. Send list for best offer to:Morris Precision Parts Co., Box 157, Morris Plains, NJ 07950 or call 201-993-9669.

MORE AWARDS

DXCC # 82 Koji Shibata, JA2VFW 7-1-83.

WAC all on 20 meters to: Peter Payarolla DF1UO.

ET CETERA

The FCC authorized Amateur operation on 10 MHz on October 28,1982 for CW and RTTY operations only. A 250 watt input level was also authorized. The most important restriction needs to be pointed out. The 10.109 to 10.115 MHz portion is forbidden.

The temporary Amateur allocation is on a secondary basis. The FCC makes this point very clear, as they have started to issue pink citation slips. The RTTY gang must realize that this amendment is effective only until official action by the United States and the commission regarding the final acts of WARC-79. This will determine the final configuration of the 30 meter band.

The FCC has issued notices to remind the Amateur operators that they must be within the band allocated to them 10.100 to 10.109 and 10.115 to 10.150 and stay off the 6 MHz between to avoid interfering with government operations.

The same notice also issued a very ominous warning. "Amateur radio operators in the United States would be ill advised at this time to invest heavily in equipment which can be used only for this frequency band. A word to the wise!

Use of the AMTOR radioprinter system was approved earlier this year. The change includes reorganization of the Teleprinter rules along logical lines common to the three modes, Baudot, ASCII and AMTOR. Baudot users operating below 28 MHz have the same 300 baud speed limit as for ASCII, instead of being limited to 75 baud. 1200 is allowed on the 28 MHz band. In the 50 and 144 MHz bands a speed up to 19.6 kilobauds may be used while up to 56 kilobauds may be used in the 220 MHz bands and the bands above.

Fred Jones, WA4SWF commenting on his new station says, "I use the Vic-20 computer with my Kenwood TS-520SE, the AEA interface unit CP-1 and Kantronics Hamtext . I love this set-up the way is is for it does a great job for me on RTTY & CW. I have the Data Ham Super Log ! and it stores by logging for me. I have Call Letter and 10-10 Number dupe tape to check out stations worked before. I am thinking about a printer next. My antenna system is a R3 vertical at 70 feet, TA-33 beam at 33 feet, inverted Vee at 50 feet and I use a MFJ-984 tuner and Bird 43 wattmeter. As far as the Vic-20 and my Ham radio goes, it was the best buy I have made in the shack under $100."

Those having problems with their Vic-20's and RTTY might wish to contact Fred to see if he could help.

Varian Associates, Electron Device Group Marketing, 301 Industrial Way, San Carlos, CA 94070 has announced they have available a **FREE** wall size copy of the Frequency Allocation List from 3 KHz to 300 GHz. Use your callsign when requesting this freebie.

The RTTY JOURNAL and staff have really covered the US this year. Starting with the Dayton Hamvention, which was so crowded few new items could be inspected. On leaving Dayton we ran into thunderstorms and tornado warnings were out for some two days. We stopped by HAL in Urbana,Illinois to get a better look at their new products. They have the ARQ1000 for AMTOR and a CWR6750 RO RTTY/CW demodulator and display generator for the SWLs. Their products are sure to please the most discriminating RTTYer.A plus is that their staff is also very helpful and friendly.

After visiting with brother George (newly KF9YM) and son Glenn WA6AQR both in the Chicago area we moved on to Minneapolis where Bob, WØHAH took us on a grand tour (including my old stamping grounds at University of Minnesota). Bob works for Ma Bell, but is a professional clown on weekends. He doesn't clown around when it comes to RTTY and Ham radio for he is most knowledgeable, a fine tour guide to boot. Minneapolis has a fine radio club as has rival St. Paul. We visited with both clubs and met with Gar, KØGA, new ARRL VP,who tells us that things on the RTTY scene will be looking up shortly.

A visit to Fargo, ND and Bill,WØLHS found us on Mothers day with a dead battery. Battery was recharged (it just wasn't used to below freezing weather) and we had a very nice eyeball with Bill.

At Rapid City we found Dialta Amateur Radio Supply and purchased a new ST-6000 from him. Dialta stands for Dick and Alta (Dicks XYL). We stayed in Rapid City, SD two nights and had dinner with Dick and Alta both evenings after touring the surrounding countryside. Dick called us via 2 meters the following morning to inquire if we liked snow. Being true Southern Californians we of course said NO, to which Dick replied,"then you had better not venture outside today!" There was about a half inch of snow over everything.

Not finding the snow to our liking continued on page 8

REGARDING AMTOR CONTINUED

THE RECEIVE SWITCH! I can see where AMTOR would work in systems where AFSK is fed into the microphone jack of modern-day SSB transcievers, since these systems will then work in "VOX" break-in. But how about all of us with these "old-fashioned" Class-C "final" shifted-carrier transmitters? These were built to operate with a manual T/R switch operating a "big relay" in the antenna and in the hi-voltage supply primary. I somehow just cannot see AMTOR rapidly keying the big sloppy T/R relays in my 813 transmitter! Some might say "why not get rid of that old thing and update to state-of-the-art equipment?"; well, I doubt that AMTOR can excite me into spending that kind of money! I can have just as much fun with the old reliable and 50% print on hit-and-miss RTTY QSO's!

Maybe someone can tell me why we "absolutely must have" sophisticated and complex "commercial-grade reliability" with "Amateur-grade" procedures and equipment? If you have communications that "absolutely must" get through, then you should "absolutely go" to commercial circuits, no?

NOTE: There has been a sequel to NBVM: "Baseband Communication System" by Harris and Cleveland in Nov. and Dec. '78 QST. No one has yet come up with a follow-up article on building an AMTOR generator for use by the average RTTYer with vintage equipment!

Paul Boivin, W1ZXA

Comments will be welcomed by the RTTY JOURNAL and any information pertinent will gladly be shared with the RTTY community.....Dee, N6ELP

CONTESTS*CONTESTS*CONTESTS*CONTESTS*

S.C.A.T.S.

September 1, 1983 through November 30 ,1983 RTTY ART CONTEST

Entries must originate by means of manual inputs to a teleprinter using standard communications keyboard, and may be submitted only by the originator of the art,or by the Amateur on behalf of a family member.

Art may be any subject transmittable.

Each entry must have a short title.

art may contain overline shading.

Tapes of entries shall be formatted to permit a reasonably short running time, and be compatible with machines that do and do not down shift on space. Compatibility with machines which interchange the bell and apostrophe is not required. At least 3 functions must be used between each line, normally: carriage-return, line feed and letters.

Each line of art is limited to a maximum of 68 characters (including spaces). Prints may be in 2 panels, no splices. Tapes are limited to 40 minutes running time for each panel, at 60 wpm.

Entries must be transmitted for the first time via teleprinter, after September 1,1983 and must have a confirmation by at least one receiving station,identifying the title and the callsigns of both stations. All confirmations must be in writing-not by RTTY transmission, and must be obtained by the entrant from receiving station.

Tape and prints of entries will carry full name of author, callsign of submitting station and mailing address. Write this information on the leader of the tape and have it punched into the tape to appear on copy when reproduced.

Submit one five-level paper tape and 5 prints with authorization to reprint them. Tape on 11/16" only.

Tape, prints and confirmation must be securely packaged and sent to:Norb Kock, POB 1351 Torrence, CA 90505, Postmarked November 30,1983.

If an individual is 1st place winner, they will not be eligible for 1st place the following year.Not applicable for 2nd, 3rd or 4th place.

Decisions of judges are final.

CANADIAN AMATEUR RADIO TELETYPE GROUP

23rd Annual RTTY DX "Communications" sweepstakes

Test Period:Saturday October 15- 0200 GMT to Monday October 17-1983 0200 GMT.

Not more than 30 hours of operating is permitted for single operator stations.Non-operating periods may be taken at any time during the contest.

Multi-operator stations may operate the entire 48 hour period.

Summary of operating time must be submitted with each score.

Bands: Use all bands 3.5, 7, 14, 21 and 28 MHz.

Classifications: Single operator, multi-operator (one transmitter) S.W.L. printer.

Messages: To consist of RST, GMT time and Zone.

Exchange Points: All 2-way RTTY QSO's with ones' own zone counts two (2) points. All other contacts will receive points as listed on CARTG Zone Chart(send SASE for chart.)

Multipliers: Country status as ARRL Countries List, KL7, KH6, W/K, VE/VO, VK districts counted as separate countries. Stations not to be counted more than once on any one band. Additional contacts counted on different bands. One's own country counts as a multiplier

Scoring: Total exchange points x number of countries contacted x number of continents (6 maximum). Two hundred bonus points for each Canadian contact made on all bands added to final score.

Logs: Logs to contain band, GMT time, RST, Callsigns, exchanges sent and received.

Use separate log sheet for each band.

Multi-operator logs must be signed by each operator.

Send SASE or IRC's to CARTG for log sheets, zone charts etc.

Logs must be received before 1-1-84 to qualify.

Send logs, time summary and score to: Canadian Amateur Radio Teletype Group, VE3RTT- 85 Fifeshire Road, Willowdale, Ont, Canada M2L 2G9.

12th GARTG RTTY Contest 1983

Sunday October 16th 0800-1200 UTC

Bands: 80, 40, 2m and 70 cm.

Contest call:CQ GARTG contest. After each QSO the station having called last keeps the QRG. The previous holder should QSY.

Exchange:RST, QSO number, name, QTH

Scoring: Each station may be worked once per band. Each complete QSO counts 1 point. Contacts via repeaters are not valid. Final score

contests continued

Total of QSO points.

Classifications: (A)stations with more than 200W input.
(B) Stations with less than 200W input.(C) SWL stations. (D) VHF stations.

LOGS: To contain:Call, name and complete address, Classification, UTC time, Call, QTH name of station worked, message number given and received, band, final score.

Results: The results will be published in the GARTG newsbulletin and the club magazine "RTTY".

LOGS:to be received **NOT** later than 20 days of closing.

Contest manager: Wolfgang Punjer, DL8-VX, POB 901130, D-2100, Hamburg 90,Germany.

2nd DARC FAX CONTEST 1983

Test period: Saturday, October 29,1983 1400Z thru Sunday, October 30,1983 1400Z.

Classes:(A) HF bands 3.5, 7, 14, 21, and 28
(B) VHF/UHF bands 144 and 430 MHz. Repeater traffic not allowed.
(C) FAX SWL stations 3.5 up to 430 MHz bands.
Participants must select one class only.

Exchange: Name, QTH, RST and QSO number. FAX only.

Points: 1 point given for each FAX-QSO. A station may be worked only one time per band.

Multipliers: Each different country worked on each band gives a multiplier of one. The current ARRL countries list will be used. In addition, each JA, PY, VE/VO, VK, W/K, ZL, ZS and UA9-0 call area will be counted as a separate country.

Scoring: Final score will be computed from total QSO points multiplied by the sum of all band multipliers

Logs: Should contain all exchanged information, Participation class, and final score.

Deadline: All logs must be received on or before December 1,1983, in order to qualify.

Manager: Hans-Jurgen SAchalk, DL8BT, Hammarskjoeldring 174
D-6000 Frankfort 50, West Germany.

Awards: Certificates for top scorers in each classification indicated as above. Additional honorable mention certificates will be awarded according to the number of entries presented.

FAX frequencies: 3600 kHz-7040 kHz-14100 kHz-21150 kHz-28200 kHz +/-5kHz

BRITISH AMATEUR RADIO TELEPRINTER GROUP 1983 SPRING CONTEST RESULTS

SINGLE OPERATOR

1.ON4UN	716690	9.**W3FV**	**243212**
2.YU7AM	341736	10.**W2IUC**	**225792**
3.I1HUH	339600	11.GI4AHP	223380
4.DJ6JC	289100	12.YO2IS	211684
5.Y25DL	288696	13.**KB2VO**	**195506**
6.YB2BLI	280578	14.I4JXE	182188
7.HB9AAA	280200	15.VK2SG	167570
8.SM6ASD	270940	16.IØUIQ	164604

CONTESTS**CONTINUED

17.I8JRA	159510	61.VE7VP	47740
18.K4AGC	**158796**	**62.W2KHQ**	**45960**
19.GM3ZXL	158148	63.ON6ZM	45760
20.W3FJZ	**154100**	64.SM7ABL	42664
21.IØZSG	142400	65.YU2CB	41664
22.WB3HAZ	**141858**	66.DF5BX	39234
23.UT5RP	137350	67.JR6AG	38976
24.ON7EP	133080	**68.WA6WGL**	**38760**
25.DK9MBZ	131216	**69.WA3ZKZ**	**37590**
26.KØJH	**126852**	70.Y37UF	36120
27.9M2CR	121968	71.G4MKO	32660
28.K6WZ	**119048**	72.SM6AEN	32344
29.WD5ELJ	**118320**	73.G4NJW	30144
30.JA2VFW	109300	74.XT2AU	28130
31.GW3EHN	101332	**75.W3AOH**	**27360**
32.W6JOX	**101332**	76.OZ1GRF	26180
33.G4NYO	96000	77.IK1AAW	25200
34.JR2CFD	94188	78.JH2PDS	24886
35.JR2TXL	92610	79.DJ8WCY	22288
36.SM5BKA	91800	80.SM7BGE	22088
37.IØWQP	88920	81.OH5YW	21630
38.OK2SPS	88896	82.DL3YBU	20480
39.VE2AXO	87710	83.F3IJ	19418
40.LA7AJ	86940	84.YO8FR	16942
41.OH8TA	82560	85.JF2PZH	16768
42.VK1GM	74400	**86.W7CBY**	**16586**
43.JA1BYL	73800	87.Y55ZF	14490
44.VK2BQS	72068	88.SMØBYD	14436
45.DK1BX	71516	89.PY6SL	13468
46.SM5FUG	70684	90.G3RDG	12996
47.OH2BDN	69144	91.TI2DO	12900
48.DK9CK	66144	92.ON7EU	12492
49.KB9DM	**62968**	93.Y53VA	12236
50.PY2ERA	61440	94.Y71SH	10008
51.DL8QP	60420	95.**K2TY**	**8736**
52.WB4UED	**60104**	96.YO2AC	7548
53.SM7LSU	59544	97.PY2FWX	5808
54.PY6ACP	56440	98.F3PI	4928
55.DF9XI	56364	99.SM5AAY	4860
56.WB3IGR	**56160**	100.HA6VX	2512
57.VE8CM	55020	101. OK3TZL	1596
58.OK1MP	53690	102.**W8TCO**	**720**
59.N7AKQ	**50928**	103.Y59ZF	672
60.OK1AWC	48112		

Multiple Operator Section

1.LZ1KDP	441604	9.HA6KVD	102700
2.OH2AA	413996	10.OK3KJF	92312
3.G3ZRS	378566	**11.KD4RT**	**73950**
4.LZ2KRR	310460	12.OK3KGI	69888
5.GW4RDO	182700	13.G4LLR	63900
6.OK1RJB	159256	14.KL7RS	25116
7.G4ALE	156996	15.Y83KMF	20256
8.HA5KBM	133052	16.SM6LTO	5408

Check Logs: DF7FB, EI3CN, G4KZE, G8--CDW, **K4VDM**, PAØANK, JM1OFJ, Y24NL, Y24UD, Y47YM, Y75OL & Y82ZN.

S.W.L.

1. ONL-5566	354348
2. OZ-DR2135	312984
3. I1-053GE	261096
4. NL-4483	194668
5. **John Mathews-US**	**111936**
6. OK2-21478	95900
7. FE-3700	66290
8. Y2-19600	51768
9. BRS-31976	32214
10. FE-1107	27432
11. W. Ludwig	13160
12. NL-5288	9880
13. HE9DFN	2310

UPCOMING CONTESTS

DARC "Corona" Contest 10 meters only September 3. Part 3 of 4.

CARTG DX Sweepstakes October 15 & 16.

DAFG short contest 40 & 80 meters October 15th.

DARC "Corona" contest 10 meters only November 6, final part.

DARC WAEDC HF Bands contest- November 12 & 13, 1983.

RTTY Journal/73 World Championship contest February 25,1984.

AWARDS

WAC #103 all on 14 MHz to: Rolanda A. Rossi, I8JRA Aug.1,1983

WAC #104 all on 14 MHz to:Kari Syr-Janen OH5YW-Aug.1,1983

WAC mixed bands to:John Bennett, G4NYO-Aug.1,1983.

WAC #22 all on 15 meters to: Larry Filby, K1LPS-August 1,1983

WAC #13 all on 10 meters to: Larry Filby, K1LPS-August 1,1983.

The RTTY JOURNAL gives certificates for the following achievements:

Worked all (6) Continents on mixed bands or exclusively on 10-80 meters, RTTY mode only.

Worked all (50) States on mixed bands or exclusively on one band 10-80 RTTY mode.

In addition we do have a certificate for SWL's for the above catagories.

Any Amateur Radio Station having contacted 100 or more different countries by RTTY is eligible for the RTTY JOURNAL DXCC plaque. SWLs are also eligible.

For certificates send proof of eligibility along with enough postage to have QSL cards returned to you. Please specify means of remailing. QSL cards may be verified by at least two board members of a recognized RTTY club with said members shall put in writing that they have seen and verified that the QSL cards are valid and the callsigns of both stations are included. This list along with the members signatures and callsigns shall be sufficient proof of contact.

It is permissible to send photocopies of the front and backside of your QSL cards also if witnessed by at least one other Amateur.

The DXCC plaque can be obtained by the above method also and it is advised that QSL cards be verified rather than sending them by mail, as there have been cases of lost cards never having been found. Even if registered and insured-what value can be placed on them?

Charges of one dollar per certificate and five dollars for the plaque will be waived if members of the RTTY JOURNAL magazine.

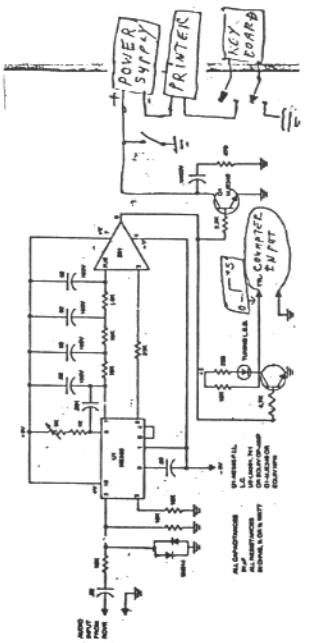
Address all requests for certificates or plaques to: RTTY JOURNAL, POB RY Cardiff-by-the-Sea, CA 92007-0179.

HAM HELPS

I am looking for some info on an audio start (auto start?) for my RTTY system. I have a M28 Teletype printer and I have enclosed a copy of my decoder.

I am also looking for info on where I can buy a computer type head for the M28 so I can use it for a computer printer, and I also need a program (software) for a Timex-Sinclair 1000 computer with 16K memory. I have a program for TRS-80 but I cannot make it work because my computer does not have a read and data simbilies.

Steven Eizenberg T/SGT Civil Air Patrol USAF Aux. Comm Dept. POB 84176 WLA, CA 90073.



ET CETERA CONTINUED

Class license. Carl, K4DNJ, director of Oak Hill Amateur Radio Session is aptly described as a pixie in green and white t-shirt. Carl never ran out of jokes in the two weeks there. Instructors Fred, W4NMU, Cathy, WA1RAQ, Jim, W4PPB and Lew, W4VRV certainly know how to teach Amateurs and mixed teaching with fun such as after school canoe trips and watermelon feasts, and of course my birthday party where I was surprised with cake and home-made ice cream (3 flavors). I still don't know who told!

Lew is fantastic on the guitar and can sing or play just about any song written. He writes his own hilarious lyrics also to "camp-fire" songs.

It was indeed surprising to find an RTTY JOURNAL subscriber there. Robert Milligan (age 17), KA4WPS was there along with mother Mary and brother Len. Mary and Len will be on the air as novices when you read this. Father Bob is also a Ham and is in the process of writing some articles for the JOURNAL on M28s. Quite a Ham family. I hitchhiked with them from Mouth of Wilson to Arlington in order to take the FCC exam at Baltimore (the closest in place and time). I should have waited because over the weekend I had 'travelers trots' and on Monday was weak from it and lack of sleep. I failed it, but Robert is now an Advanced and his father and I will study some more and pass it at the next opportunity,he in Baltimore and me in San Diego.

Carl, K4DNJ says he is going to get on RTTY soon and we can expect other Oak Hillers to do the same. Look for: Ed, KA4DRS; Jim, KA4RGI; Chuck, KAØMDO; Frank, W3ABF; and Dave, KA3-JSJ.

Perhaps some of the other 35 will get into RTTY also. By the way the youngest was 11 and the oldest was 83 years young.

Have you heard this one?
This is a story about four people named Everybody, Somebody, Anybody, and Nobody. There was an important job to be done and Everybody was asked to do it. Everybody was sure that Somebody would do it. Anybody could have done it, but Nobody did it. Somebody got mad about that, because it was Everybody's job. Everybody thought Anybody could do it. But Nobody realized that Everybody would not do it. It ended up that Everybody blamed Somebody when Nobody did what Anybody could have done.
Think about it.

RTTY OPERATION WITH DRAKE EQUIPMENT

It is possible to receive RTTY, either wide or narrow shift, on any of the Drake R-4 series receivers without modifications. The passband tuning allows proper passband positioning for reception of the 2975 space tone normally used in 850 Hz shift. All that is required is a terminal unit which can be driven from the receiver audio.

Narrow shift (2125-2295 tones) can be received on the TR-4/TR4C without modification. To receive wide shift the terminal unit must be modified to use lower frequency tones as the 2975 tone is above the cutoff frequency of the filters in the TR4/4C.

To transmit RTTY, some method of frequency shift keying (FSK) must be employed. Two methods are available:

The first method is referenced to as the "AUDIO" (AFSK) method. This method makes use of the fact that a single tone fed into an SSB transmitter produces a single frequency output. Therefore, if the output of an AFSK generator is fed into the microphone audio input of the SSB transmitter, the output of the transmitter will be an FSK signal. For this method to work properly, the audio from the AFSK generator must be free of distortion and the SSB transmitter must have excellent unwanted sideband and carrier rejection; otherwise, additional undesired frequencies could be present in the output. This method may be used with the T-4XC transmitter which has a "RTTY SHIFT" circuit to shift the audio response of the transmitter so that tones as high as 3000 Hz can be passed. This makes it possible to use the Audio method for wide shift RTTY.

Even when using narrow shift, this shift circuit provides additional carrier and opposite sideband rejection. When the R-4C receiver is used with the T-4XC, the RTTY SHIFT circuit will also shift the receiver so that true transcieve operation with either PTO may be used.

This method can be used with the T-4X/T-4XB and the TR4/TR4C transcievers for narrow shift (2125 and 2295 Hz audio tones).

NOTE: T-4X transmitters, TR-3 transcievers and TR-4 transcievers with serial numbers below 26000 use four-pole crystal filters. These filters don't have as much carrier and unwanted sideband rejection as the newer eight-pole filters which are used in the T-4XB/T-4XC, TR-4/TR-4C above serial number 26000. Use of the audio method with the earlier models is not recommended.

Because the T-4X/T-4XB transmitters and TR-4/TR-4C transcievers do not have the RTTY SHIFT provision, the AUDIO method cannot be used for wide shift with the 2975 Hz tone as this frequency will not pass through the crystal filter. Another combination of tone frequencies could be used: with the highest frequency tone below 2600 Hz and the lowest frequency tone above 1500 Hz.

Note: the lower limit is determined by the second harmonic frequency of the tone which should fall well above the filter cutoff.

The second method consists of direct frequency shift keying of the PTO. This can be accomplished by connecting the proper amount of capacity to the FSK terminal on the PTO and keying the added capacity with a diode switch. Sample circuits are shown below. The shift circuit illustrated is based upon the use of a terminal unit which provides a negative voltage on mark and a positive voltage on space, such as described by Irv Hoff in QST, May 1965. A similar circuit is shown here along with the shift circuit for the Drake PTO. The resistor Rx should have a value which will limit the current through the diodes to appr. 1ma. The capacitor values given are based on 859 cycle shift. If narrow shift is desierd, smaller values will be required. The shift circuit can be constructed on terminal strips and mounted under nearest screw.CONTINUED NEXT MONTH.

RTTY Journal & 73 magazine

-3RD ANNUAL-
RTTY WORLD CHAMPIONSHIP CONTEST

Sponsored By: The RTTY Journal and 73 Magazine.

Contest Period: 0000Z to 2400Z February 25, 1984.

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 15, 1984.

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

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 _____

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
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Cardiff by the Sea, CA 92007

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