

# RTTY

July August 1978

**JOURNAL**

**VOLUME 26 No 6**

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FROM THE DAYTON HAMVENTION RTTY HOSPITALITY SUITE-  
HANK W6SKC, DUSTY W8CQ, JOHN K2AGI, RON W8BBB  
MORE PIC'S inside

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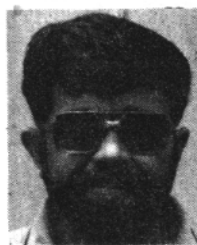
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# • RTTY-DX •

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Greetings to all:

DX news from Europe comes from Jean F8XT, who reports hearing 5W LAW BUT didn't get an answer from him. Some of the other stations that he reported as active were SVØTI, GU5TU operating from Guernsey. YBØACB is still very active. Also EL2AG and a 5N2 station. He also has heard rumors of a station on from Western Samoa. Does anyone have any info on that one? YO3KWA is the only active RTTY'er on from Romania.

Terry, WA9BOW reports working TI 2NA on 20 meters at 2200 Z. TI2NA does not have transmit capabilities yet on RTTY, but does transmit on LSB so it pays to listen for voice when working DX.

Doc, W7MI reports hearing FR7AT in the mornings but is unable to work him. Some of the stations he has worked on 20 meters are as follows: ZS6AKO, Bert, LUIDVT Luis, J1JPL Sig, VP2 SV John, 4X4MR Ariel, and ZS1Z Feruccio. ZS1Z is the QSL manager for ZD9GG who is on 50 band at 425 hy shift, look for him around 1300Z-1700Z.

Cliff W4CQI reports 'the DX has been rather slow so far this year, and the poor conditions due to all the geomagnetic disturbances certainly hasn't helped. February and March were good here, especially on 15 meters. Even 10 meters had some good openings. The latest DX worked was YO3KWA on May 6th. That is the only active RTTY station in Romania, by the way. The QSL address is: Box 1395, Bucharest 5, Romania. This is no doubt a club station, and the operator was named 'Lix'. Serge F6ALL says 5N2AMT (Lucio) is active from Nigeria on Saturdays and Sundays from 1500 to 1600 Z, but I haven't heard him so far.

The GB2ATG RTTY Bulletin for overseas listeners went live on Sunday the 2nd of April and the schedule is as follows: 0830Z Beamed to VK an ZL via the long path. 1530Z Beamed to the Far East across Europe. 1600 Z Beamed to W and VE. The group is particularly anxious to receive reports on the latter transmissions as they are tending to think that it may be a little on the early side for W and VE's. So please keep the reports coming in.

From G8CDW some comments on the BARTG Contest: 'Around 0700 on Saturday, 20 was already bring in signals from VK and ZL with the usual clutter of strong Europeans getting in every-

bodies way. By about 1200 the 28 and 21 MHz bands were opening up to the East coast W's and also ZS and ST5 were logged and these bands stayed wide open until fairly late in the evening and it was nice to hear several well known W6 calls as the band usually goes out before the skip distance reaches across the states. 20 was still going great guns right up to midnight and we were able to copy W stations working each other quite well when the European QRM had disappeared. 40 and 80 only produced a few Europeans late at night as I think most everybody was making the most of the higher frequencies. 40 is not good at night anyway due to the presence of strong commercial broadcast stations, in the upper 20 KHz of the band with the result that amateur traffic gets a bit cramped up in the remaining space! The pattern on Sunday was very similar but the 28 and 21 MHz bands did not seem quite as good as the day before.

There were a good selection of countries active and I managed to log 33 myself. I think perhaps that Asia was the difficult continent as apart from a brief showing by 4X4MR and a few weak JA's the main hope rested with VA9PP and Sid, A4XGB who did a great job and when last heard on 20 at around 2000 he had passed the 200 mark. 5T5JD and ZS6BLV provided African contacts and YV5GU and CE3EX were both active from South America. VK's were very active and VK2SG, Syd seemed to be popping up all the time. Two different FG7 stations were noted and nearer home at least 3 different GW stations were active and at least one each in GI, and GM and a great showing of G stations this year. W activity seemed to be very high and towards the end of Sunday evening many stations were passing serial numbers in the upper 200's so it looks as if everybody had a good time.'

WA9BOW, Terry Pfeiffer writes 'I would like to see everybody that is interested in RTTY contesting to send me a letter stating that there should be an American contest sponsored by the American Radio Relay League. If I can get enough letters and send all the letters at once to the ARRL I think we would stand a good chance of the ARRL maybe sponsoring a RTTY Contest. I will be glad to give it a try if everyone else is.'

W4CQI receives endorsement # 120 for his DXCC #19 Great work Cliff.

WA8CZS receives WAC all on 20 meters on 19 April 1978 this is award #57.

VK2SG, Syd reports that 3D2HAV on Fiji is trying to get on and having trouble with his gear. He is using 60 WPM gears and 50 Hz power.

YJ8 should be on soon as some of the chaps from Australia are there now so he may appear at any time. VKØLJ should be on air at any minute. He is on the mainland of Antarctica at Casey base. His QSL manager is VK2EG, Bill Storer.

Up and coming contests:

S.A.R.T.G... Aug 19 and 20th

VK/ZL/Oceania... Oct 7 and 8

C.A.R.T.G.. Oct 21,22 and 23

Rules for all three contests in this issue. D.A.F.G. 5 Aug.. rules in May-June issue OF the JOURNAL.

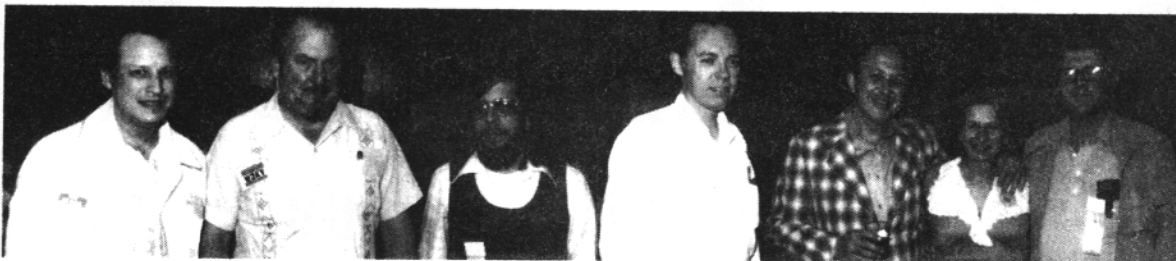
73 de Skip

## It was incredible

The warm response that yours truly received at the Dayton Hamvention. We met many old friends like Hank Scarfe, W6SKC of Dovetron. Met some we knew thru correspondence like: Bill Henry of HAL Communications and Ed Buffington of Book Marketing, Inc., Akio, JA3JM from ICOM and of course Sid May, A4XGB. There were many more that I cannot recall at the moment, please forgive me if I omitted your name. I was really pleased to meet and talk with former editor and publisher of the RTTY Journal Dusty Dunn and his lovely wife, also John Possehl, W3KV and Ron Guentzler, W8BBB former DX and VHF editors for the Journal. Dayton was indeed one busy place. We are, however, a little disappointed at the non-existence of RTTY forums, displays etc.

A few people wrote to me to inform me that they could not find us. The RTTY Group always meets at the Imperial House North. So for those that could not find us, sorry to have missed you. Perhaps you will all join us in September at San Diego at the ARRL Convention which I am assured of the fact that there will be 'plenty of RTTY' going on. Arny, K6PXA will be among the speakers on the subject. SO PLEASE join the staff of the Journal and meet us in the high rise bldg. at the Town & Country Convention.

Continued on page 5



SEEN AT THE DAYTON HAMVENTION RTTY SUITE- (left to right):KEN WØKE, JOHN W3KV, JOHN WBØGUX, KEITH W8SDZ, ART XEILL, DEE-PUBLISHER RTTY JOURNAL AND DAVE KØDGF. PAGE 3



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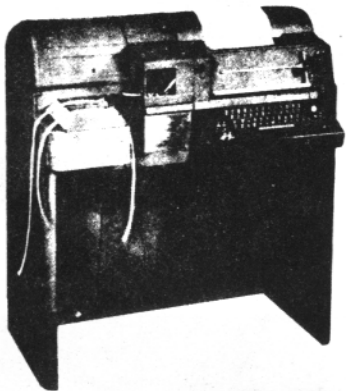
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# VHF RTTY NEWS



Arny Gamson, K6PXA, 8034 Gentry

N. Hollywood, CA 91605

In response to last (MAY-JUNE) Editions VHF-RTTY Repeaters listings we have the following updates, additions, News and some "hotbeds" of simplex activity.

The San Diego Amateur Teleprinters Group have obtained a NEW sanctioned 'clear channel' 223.22/224.82 Mhz.; now operational-WB6CYA/RPT.

Our Club The So. Counties Am. Teleprinter Society has swollen to 130 Members and still growing like topsey, making it larger than most regular A. R. Clubs. Club Meeting attendance still only averages about 25% due to the distance factor and inconvenient Saturday. Repeater activity is often continuous during evening prime time. (Mighty). JOE YOUNG-W6RLL is still running the Users Computer Service evenings and adding additional functions such as message storage ##MAIL##. Most everyone is enjoying using it.

Unfortunate news from JOHN NEELEY-K6YDW in VISALIA: The Central Calif. Am. Teleprinter Soc. has lost their choice Bear Mountain Rptr. site which used to cover the San Joaquin Valley (300 miles portal to portal).

ALAN BOWKER-WA6DNR says the San Francisco Area Rptr. now has an operational G. E. MASTR-PRO Xcvr and regenerative T.U. They are formulating plans for a 220 Machine with a Computer on it.

The North-West (primarily Oregon and Washington) U. S. have gone to 20 Khz. Channel spacing and this plan is being considered by No. Calif. and British Columbia It has been totally rejected as unfeasible

in too crowded So. Calif. Because of this and the movement of another Rptr.; WR6AJL in Portland, Oregon now has a Clear and Wide guard band channel. Even greater coverage is contemplated with the addition of a duplexer and Higher Site. The preceding info was supplied by TED PETERSON -W7WWG who publishes a very unique, versatile Newsmagazine simply called 'F1'. He combines the RTTY Society, The Oregon Radio Council, Computer Society and two Camera Clubs. Talk about something for everyone.

Thanks to MICHAEL STONE -WB6QCD President of the Bi-State VHF Teleprinter Society, in the heart of Central U.S.-Iowa for sending us a very comprehensive report on their NEW RTTY Rptr. and Club which we have reproduced. They are really stirring up a lot of RTTY activity compared to a handful of .70 simplexers which they've had for years. Would sure

like to see more of this elsewhere; It can be done. Are you as proud of your Club and Rptr? Send us a report using a similar format for publication.

The Dallas, Texas Rptr. is now a Solid-State Motorola 80 Watts. It has a link (the original Dallas Rptr.) to Oklahoma. Their Users Computer service is still going full-bore from TOM ASCHENBRENNER, WB5PUC.

The Amateur Radio R & D Corp. (AMRAD) PAUL RINALDO-W4RI President, in the Washington D.C. Area RPTA. is located in McLean, Virginia near Tysons Corner. WR4APC has voice, RTTY, and about 6 stations running computers with a great deal of experimental activity daily.

There's a sharred RTTY Rptr. in the Baltimore, Maryland area WR3ACR on 147.63/03 operated by the Baltimore Radio Amateur T.V. Society. Need more info from them.

Simplex activity in the Wilmington, Delaware Valley is picking up. The Delaware RTTY net meets Friday eves. at 2200 Hours EST on 146.46 MHz. Info from Mel Leibowitz, NNN0EYF.

In North-Central Arkansas there are a few regulars on .70 simplex and H.F. Dink Layton, WB5DZM and others would like to hear from other Arkansas area stations to form a RTTY group. Write him at : PO Box 257, Bull Shoals, Ark. 72619.

Glad to hear from Ron McFadden, VE8AD past president of the Yukon A.R. Assn. at Whitehorse; that RTTY activity will double in the Yukon (brrrr) Canada area when he gets on. The only station there has been Frank Weiczewski, VE8JW.

At the other extreme of RTTY activity; Ted Double, G8CDW briefs us on the British AM. Radio Teleprinter group (BARTG)'s mammoth membership of almost 600 members mostly residing in the United Kingdom. Due to the distance factor they only formally meet once a year. They also have a meeting in London and a Convention at Harpenden in Hertfordshire where 300 RTTYers are expected. In addition they have an annual exhibition booth in North London. They further spread the 'gospel' through attending all the major radio exhibits and rallies. Another main source of information is their unique RTTY News Bulletin Service. Transmissions are local on two and eighty meters. They now have an overseas service on twenty meterschedule for which is printed in another part of this months Journal. BARTG was first conceived in 1959 and publishes a superb News magazine.

They are also active in facsimile, data transmission and contests.

Sorry to hear of problems in the Chicago area with frequency co-ordination as explained by Sherman Klausner, K9BLX Membership Chairman-Treasurer of the Chicago AM RTTY Society (CARS) The Chicago group has up to 150 users on .70 simplex and are completely ready to set up a Rptr. on 10/70. However, they are not being sanctioned by the Illinois Repeater Council due to another repeater presently utilizing 146.10 as an 'extra' input to another rptr. pair ( and very sparcely used). This is the first we've heard of any RTTY group of any size being denied an exclusive RTTY pair. We've seen just the opposite as evidenced by the So. Cal. Rptr. Assn. sanctioning a clear channel for the So. Cal. area and on 220 MHz. for the San Diego Group. Also the Western Washington A.R. Relay Assn. and the Oregon Region Relay Council co-ordinating groups 'revolutionary' 20 Khz. spectrum planning. Somehow we think that the deterrned Chicago group will get that repeater going; hopefully with no political problems or hard feelings with other voice channels. Good luck!

In the next issue we'll include the rptr. terminal unit audio tones board diagram, not published this time due to limited space. In following editions we plan to further keep all posted on RTTY Rptrs.-simplex status, Clubs and other VHF activities, so keep us posted! Also we will be keeping you informed on the growing computer interfaces which are beginning to sprout on many Rptrs. Plan to show examples we've seen on Rptrs. and instructions for accessing them. Have a great summer. C U ENJOY -ARNY K6PXA

Continued from page 3

What was more incredible on arriving home was a letter from TELETYPE Corp. of Skokie, Illinois. They told me to cease the use of Teletype in the title page of the RTTY Journal and to further cease using the name 'teletype' in any ad therein, as the name was a trademark of Teletype Corp. exclusively. WELL, After looking up the word TELETYPE in my dictionary I wrote to Teletype and refused to co-operate with their supposition, because I see the name teletype as a generic name also, and according to my dictionary means: 'a communications system of teletypewriter machines, circuits etc. v.t. TO SEND BY TELETYPE'.....

Since this is your magazine gentlemen, what would you have me do???? Please let me know if we should delete the word..... TELETYPE from the RTTY JOURNAL or continue to use it.....

It was also incredible to find out that in the California June 6th election here in San Diego I LOST THE ELECTION ..... O well perhaps the next time I run it will be different, as the Ole Philosopher once said  
SEE YA IN SAN DIEGO  
DEE, PUBLISHER RTTY JOURNAL.....

# HITS & MISSES

From The Editor  
and  
his Mail

**CHUCK EDWARDS W6MNO**

4726 Barbarossa Drive -

San Diego, CA 92115



Here it is time again to what's in the mail. It seems like it has been a long time since I wrote last for this column. Golly, a lot of water has passed under the bridge since! Looking into my file here for some correspondence from you fellows is a bit like looking into a mail box (empty) when you are expecting a letter from someone important! Nuff said!

If you recall, we did take a nice trip to the mid-east during April and early May. Took in Greece, Turkey, Israel, and many of the Grecian Islands like Rodus, Mycanos, Crete, Malta and many others. We saw five of the ancient wonders of the world, or at least, we saw what was left of them. The Colossus of Rodus was one of the most interesting.

I have made a lot of changes in my shack since the last issue also. I had been using a Triton IV on RTTY on the low bands. I have changed that to a Kenwood TS 820S. I found that this transceiver is one real beauty! Golly, it is one of the most sensitive receivers that I have ever used. I gess that these wide band-broad tuned receivers are real nice and easy to jump from one band to the next, in the least amount of time, but I think that you suffer a lot in that last bit of very desirous sensitivity that one really needs when the going gets tough like some of the DX. I also, made the changes that were outlined in the April issue of the Journal by Hank Scharfe, W6SKC. That's the modification where you use the optional 500 HRZ. CW filter and change FSK to AFSK, when in the FSK mode, if that makes any sense. Any way, it worked like a

charm and really made a very noticeable difference. I highly recommend making this modification to your 820 if you have the CW filter option.

The San Diego Teleprinter Society finally got off center and purchased a set of cavities for their two-twenty Rptr. It does look like this club is an up and coming group! They seem to have a lot of real good ideas for both growth and RTTY operation. Heading the technical committee of this group is none other than our DX editor Skip, WB6CYA. With his steering, we hope to eventually have one of the best 220 Rptrs (RTTYO) in the good old USA.

By the way, this group has a low band RTTY net that is on every Wednesday nite at seven o'clock local west coast time! The frequency is app. 36075. Sure would be nice if some of you fellows out there with some of those long range antennas would check in and say hello. You are hereby invited to get in and chip your teeth at me, if nothing else I am always on that net. I am usually on weekdays also on 14088 at app. two or so in the afternoon, local time. So drop in and say hello.

I have been playing with some thermistors in the last few days and have had some very interesting results with them. I found some of these little tiny gadgets ( about the same size as a 4148 diode) at the integrated circuits unlimited store here in San Diego. See their ads in the Journal (last issue). The cost of these thermistors is only 12 cents a piece so you can have a lot of fun, without much cost. I found that the resistance of these devices to be about 200 K at ice temperature (32 degrees F) and about 2K at boiling water temperature (212 degrees F), does that give you any ideas? It sure did

me-- so I installed one in the cooler fan of my new Kenwood and I found that I can now easily raise the operating wattage to better than 75 watts out put and still keep relatively cool. Sure I could reach around with my hand and tell app. what the temperature was but, after all this is supposed to be a scientific endeavor HI HI. Anyway I found that the thermister worked so good in that particular application that I have put one in all the transceivers and amplifiers that I have, with a rotary switch to move it around and check on the various operating temperatures that are going on in the shack. If nothing else, it is very impressive to visitors to the shack. If one were a bit more inventive an alarm could be worked up so that it would sound off a sionalert or a buzzer, if the operating temperature got over and preset range. Think about it and let me know what you have worked up in the way of uses for this gadget.

Don't forget that San Diego has the ARRL Convention here during the last of September. The Journal will have a Hospitality suite and maybe we can 'eye-ball' with some of you fellows. Hope that you can make it. Long time ago, of course, was the time to make reservations but I think that there are a few rooms still left around in various places. I t will be one of the better places to be at that time; so why stay at home when you can come to San Diego and enjoy our wonderful weather??

Have fun and we will be looking forward to seeing some of you at the Convention. By the way we expect to have a forum on RTTY and its ancillaries. Skip, Army and I even hope to be on the staff. 73 de W6MNO - CHUCK



MORE PIC'S FROM DAYTON - (LEFT TO RIGHT) - PAUL W8KUK, DEE, TRUMAN K8JUG, MIKE WA9WJP, BILL W5VSD, AKIO JA3JM AND DEE. PIC'S TAKEN BY RALPH, WA8GDT (CAMERA SHY)

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## HF Radios cont.

The problems surfaced when the Navy RATT/CRATT circuits were pushed to their limit by the change from 60 to 100 wpm. Error rates went up. VFCT converters were already operating with little margin against error, and now they were required to make binary decisions on code bits whose duration was shortened by almost half. In addition to bandwidth and noise considerations, the shorter bits succumbed more frequently to static bursts because more bits were now the same length or shorter than the static bursts.

Appearance of another more subtle phenomenon called multipath pulse stretching caused many more errors, compounding the problem. In this phenomenon, information bits from a one-bounce path compete with the same transmitted bits from a multihop path whose reception may have been delayed up to six bounces. Combination of these signal components creates stretched pulses which cause tones representing both binary states to be present in the converter at the same time. The binary decision is blurred and a larger portion of the shorter bits is smeared, causing greater telegraphic bias at the output of the converter. Conventional converters have few design features that will minimize this effect.

As before, the high error rates were blamed on the HF radio medium. In one sense, this blame is properly placed, because the HF propagation path modifies the transmitted signals causing errors. On the other hand, conventional converter designs share in the responsibility. They are designed for VFCT and cannot get the most out of real-world HF RATT/CRATT signals. The underlying reasons for this are treated in the following description and comparison of the conventional and modernized converter designs.

The conventional converter approach considers FSK or AFSK RATT/CRATT as binary frequency modulation (FM). This is two-state FM where 'mark' (telegraph loop current on) is represented by one transmitted frequency,

and 'space' (loop current 'off') is represented by another. The difference between these frequencies is called the 'shift,' and is expressed in Hz. Mark and space are transmitted as complementary signals. When mark is on, space is off, and vice versa.

Noise, including impulses and static crashes, is considered to be amplitude modulation. It is eliminated by a limiter amplifier placed between the input band-pass filter and the discriminator. (See Figure 1.) In this way, only frequency information is present at the discriminator, whose job is to convert from frequency to plus and minus voltage. The resulting binary voltage information is shaped and used to key the telegraph loop output to the teleprinter or secure unit. Thus, the underlying approach of a conventional converter is to mark-space decisions based upon frequency. The modernized converter

The modernized converter approach considers a single FSK or AFSK RATT/CRATT channel as two ON-OFF amplitude modulated (AM) signal paths. The two paths are separated by the shift difference, which is standardized at 850 Hz for single channel Navy circuits. Since multichannel experience and other investigations have shown that satisfactory diversity improvement can be obtained with path separations down to 400 Hz, the standard shift makes single channel in-band diversity performance achievable. To implement this, the new converter design employs this, the new converter design employs AM envelope detection of the mark and space tone frequencies separately, followed by diversity combining.

The new converter design employs no limiter. (See Figure 2.) All characteristics of the complex real-world signal from the radio receiver are preserved as linearly as possible up to the tone detectors. The only changes are caused by the mark and space tone filters. The action of these filters (Bandwidth, Transient Response, and Group Delay) is kept as near identical as possible between the mark and the space tone paths. This is done by employing filters that are identical. The center

frequency of one tone path is selected and both filters are designed for that frequency. The other tone path is then heterodyned to the selected frequency. (See Figure 2).

Envelope detectors are employed that produce DC voltages whose levels depend upon the total energy arriving at their input. The mark and space tone signals are complementary, so they are present at one or the other detector at any one time. For this reason, the detectors are designed to produce DC levels of opposite polarity. Thus, the information at the diversity combining point consists of a voltage of one polarity representing one tone path followed by a voltage of the opposite polarity for the other tone path. These voltages add, to cause the total voltage excursion at the decision point.

Noise, which is always common to both signal paths, arrives at each detector at nearly equal amplitudes. Also, the noise bursts or spikes arrive at practically the same time. Depending upon the balance and group delay mentioned above, the level and timing of the detector outputs due to noise will be simultaneously opposite in polarity and nearly equal in level and timing. In this way, data signals add constructively (coherently) at the combiner and the noise signals add destructively (incoherently). Much of the latter is then eliminated during the integration process of the post detection low pass filter.



AT DAYTON - PAUL W8IDJ,  
DUSTY, W8CQ and DUGG FREDE

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(128 Key with 128 EMO option)
- Quick Brown Fox test message
- Automatic FIGS/LTRS for RTTY
- Internal CW Sidetone Oscillator
- 120/240V, 50/60 Hz Power

DKB-2010 ..... \$395.00  
(Specify HERE IS message)

EMO-128 Buffer Option .... \$ 85.00

Write for our new catalog and RTTY guide.



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217-367-7373

For our European customers  
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Richter & Co.; Hannover  
I.E.C. Interelec; Bissone  
Primetek Systems; Handen, Sweden  
Radio Shack of London



# SARTG

8TH S.A.R.T.G WORLD WIDE RTTY CONTEST 1978

We have the great pleasure to invite you to join the 8th W/W RTTY Contest run by the Scandinavian Amateur Teletype Group.

Rules:

- 1 Test period: 1: 0000-0300 GMT Sat. Aug 19.
- 2: 1600 - 2400 GMT Sat Aug 19.
- 3: 0800 - 1600 GMT Sun. Aug 20.
2. Bands: Use all bands 3.5, 7, 14, 21, 28MHz.
- 3: Classes a) Single operator.  
b) Multi-operator, single transmitter.  
c) SWL'S.
- 4: Exchange : RST and QSO NR.
- 5: Points: QSO with own country five (5) points, other country on same continent ten (10) points, other continents fifteen (15) points. In USA, Canada and Australia each call district will be considered as a separate country. The same station may be worked once on each band for QSO and multiplier credits. Only 2-way RTTY QSO's will count.
- 6: Multipliers: Use the DXCC list and each district in W/K, VE/VO and VK.  
NOTE: Contact with a station which would count as a multiplier must be found in at least 5 logs, or contest log from the multiplier station must be received in order to be valid.
- 7: Scoring: Sum of QSO points X sum of multipliers.
- 8: SWL'S Use the same rules for scoring, but based on stations and messages copied.
- 9: Logs: Logs must be received by October 10th 1978. The logs to contain: band, date, time GMT, Callsign, exchanges sent and received, points and multipliers. Use a separate sheet for each band and enclose a summary sheet showing the scoring, classification, callsign, name and address. Comments will be very much appreciated. Send your log to: SARTG Contest and Award Manager OZ2CC, C.J. JENSEN, Meisnersgade 5, 8900 Randers, Denmark.
- 10: Awards: To the top stations in each class, country, W/K, VE/VO and VK call district.



# VK/ZL OCEANIA

VK/ZL/OCEANIA DX CONTEST 1978 RTTY SECTION RULES

- Date.... 7th to the 8th October.  
Time... 1000 GMT Saturday to 1000 GMT Sunday.  
Bands..... All Amateur Bands, 3.5 MHz thru 28 MHz.  
Classes.... Three classes (A) Single operator (B) Multi-operator (C) SWL operators.  
Logs of Multi-operators stations must be signed by all operators, together with a list of their callsigns. Logs of SWL's must contain both number sent and the number received by the station logged. Incomplete loggings are not eligible for scoring.  
Number Exchange..... Serial number will consist of (a) RST, (b) Zone number and (c) Time in GMT.  
Scoring..... As per C.A.R.T.G. zone chart, multiplied by the number of countries worked, multiplied by the number of continents worked (maximum of six). World stations add 100 points for each VK/ZL station worked, after the above calculations. Example: 720 points from your zone chart X 29 countries worked X 5 continents worked equals 90,000 points plus six (6) VK/ZL stations worked, that is 600 points, giving a grand total of 90,600 points. A station may be worked only once on each band, but may be worked on another band for further multipliers.  
Countries.... Country count as per A.R.R.L. LIST of countries, except that each VK/ZL, JA and W/K district count as separate countries. Contacts with ones own country count as zero points for multipliers.  
Logs..... Logs must show in this order 1 date, 2 time(GMT), 3 callsign of station worked, 4 serial number received, 5 serial number sent, and 6 points claimed.  
Closing Date..... Logs must be received by the contest committee by the first of January 1979. The address of the RTTY section is: S.E. Molen, 13 Pendle Way, Pendle Hill, 2145, Sidney, N.S.W., Australia.  
Summary Sheet..... Summary sheets must show, callsign of station, name of operator/s, and the address of same, bands used, (a separate log is required for each band), the points claimed for each band, number of VK/ZL stations worked, total points claimed and signature/s. Multi-operator station logs must contain the signature and callsign of each operator.  
Awards..... Certificates will be issued for 1st, 2nd and 3rd on a world basis, and 1st, 2nd and 3rd place on a country basis.  
The judges decision regarding to the placings in the contest will be final and no correspondence will be entered into regarding the same.  
The logs become the property of the contest committee on completion of checking.

# CARTG

THE CANADIAN AMATEUR RADIO TELETYPE GROUP (VE3RTT) The 18th Annual W/W RTTY DX 'Dominion' Sweepstakes

- RULES:
1. Test Period: Saturday October 21, 0200 GMT to Monday October 23, 1978 0200 GMT. Not more than 30 hours of operating is permitted. Non-operating periods can be taken at any-time during the contest. Summary of times on and off must be submitted with score.
  2. Bands; Use all bands 3.5, 7, 14, 21 and 28.
  3. Classifications; (A) Single operator, (B) Multi-operator (one transmitter) (C) SWL.
  4. Messages; To consist of RST, time GMT and zone.
  5. Exchange Points; All two way rtty QSO's with ones own zone counts 2 points. All other contacts will receive points listed on zone chart.
  6. Multipliers; Country status as ARRL Country List, KL7, KH6, W/K, VE/VO and VK Districts counted as separate countries. Stations not to be counted more than once on any band, Additional contacts counted on different bands. One's own country counts as a multiplier.
  7. Scoring; Total Exchange Points X Number of countries worked X number of continents (max 6)..... One hundred (100) bonus points for each VE/VO contact made on all bands added to total score.
  8. Logs; Logs to contain Band, date, time GMT, RST, call signs exchanges sent and received. Use separate Log sheets for each band. Send SASE or IRC's to CARTG for Log sheets and zone charts. Logs must be received before January 1, 1979 to qualify. Send Logs, Summary and scores to Canadian Amateur Radio teletype Group, 85 Fifeshire Road, Willowdale, Ontario, Canada, M2L 2G9
- CARTG AWARDS
- |         |                     |
|---------|---------------------|
| First   | Plaque "CARTG"      |
| Second  | Plaque RTTY Journal |
| Third   | Plaque "Dusty Dunn, |
| Fourth  | Plaque RTTY Journal |
| Fifth   | Plaque "CARTG"      |
| Sixth   | Plaque "Justy" Dunn |
| Seventh | Plaque RTTY Journal |
| Eighth  | Plaque "Dudty" Dunn |
| Ninth   | Plaque RTTY Journal |
| Tenth   | Plaque "CARTG"      |

## 10th GIANT RTTY FLASH CONTEST RESULTS

1. I8AA	9,812,235	18. WAØYDJ/4	1,204,224	35. HA5KFB	118,272
2. I3FUE	8,025,965	19. VK2SG	803,946	36. G3RED	108,664
3. I5GZS	5,814,989	20. DF2KU	753,792	37. SM5EIT	100,440
4. K8NN	5,294,091	21. YV5GU	700,706	38. OZ8GA	81,060
5. I5KPK	5,194,925	22. SM6ASD	641,876	39. G4ERX	45,570
6. SM6GVA	5,142,696	23. G3UUP	522,120	40. SM6CAL	42,630
7. I5WT	4,780,499	24. WA2ØQØ	514,096	41. VE7DLX	36,680
8. I5MYL	3,312,400	25. OZ2CJ	358,092	42. DL1OY	32,880
9. HV3SJ	3,011,805	26. PAØGAY/SM6	338,140	43. OY1A	27,528
10. F8XT	2,951,795	27. OZ4DZ	292,136	44. OK1MP	26,460
11. DJ6JC	2,306,854	28. DJ9IR	272,175	45. OK2BJT	21,896
12. DKØOW	2,076,732	29. ØZ1BGq	244,296	46. DJ6QT	12,243
13. I2OLW	1,882,000	30. G3RDG	193,752	47. DL8QP	11,616
14. I2WEG	1,881,000	31. GW3IGG	193,545	48. LA2LJ	6,888
15. OK1KSL	1,746,144	32. 9H1ET	143,856	49. ISØESS	5,712
16. VK5RY	1,679,216	33. HB9AVK	130,720	50. G4EDR	1,176
17. DL6BI	1,277,640	34. I8JRA	122,740	51. VK2EL	-----

### S.W.L.

1. Wolfgang Geller	5,515,776	7. Roberto Giarnello	2,387,527
2. Barry Niendorf	5,281,515	8. Ida Acciani	1,955,712
3. Mario Tosolini	5,094,909	9. SM6-5835	889,785
4. Cach Lubos	4,385,526	10. Marco Cosettini	130,680
5. Ted Double	3,864,759	11. DL-DOK005	3,213
6. Ferruccio Rossi	2,766,234		

## TAD

### TEN AMERICAN DISTRICTS AWARD (TAD)

The Lockheed E.R.C. Amateur Radio Club (W6LS) is pleased to offer the TAD award as recognition of operating achievement. The information regarding this popular award is as follows:

- (1) All correspondence should be sent to W6LS, 2814 Empire Avenue, Burbank, CA 91504. USA.
- (2) The TAD award is available to all licensed amateurs and Amateur Radio Clubs.
- (3) American Amateur (USA) must submit postmarked QSL cards as proof of two-way contacts with Amateurs in all ten (1 thru 0) USA districts. We realize the value of QSL cards and yours will be returned promptly.
- (4) The postmarked envelope may be sent with a card which is not postmarked.
- (5) Cards from W6LS and W6LS members (who use club cards) do not have to be postmarked.
- (6) DX Amateurs can have their cards or logs verified by their local amateur radio clubs. The signed and verified list is acceptable in lieu of postmarked cards or envelopes. DX amateurs should NOT send both a verified list and cards; one or the other suffices.
- (7) QSL cards (if provided) are returned to you at no extra cost. The cards and award are mailed separately at the same time. The cards usually are received before the award.

(8) All ten contacts must have been made from the same call sign area, such as W6, G3, or VU2.. However, these contacts do not have to be from one location in the calling area.

(9) Contacts can be to or from fixed, mobile, portable, or fixed portable stations. Contacts count for the callsign area in which they are made.

(10) If your callsign has changed, your previous contacts still count, if they were made from your present callsign area.

(11) Cross-band and cross-mode contacts are acceptable.

(12) Contacts do not have to be after any specific beginning date nor before any closing date.

(13) Hawaii (KH6) counts for the 6th district and Alaska (KL7) is in the 8th USA district. Cards are not required from Alaska and Hawaii in addition to regular 6th and 7th district cards.

(14) Hand-printed endorsements will be added (at your request) for operating distinctions such as Bicentennial, code, one-band, Oscar, QCWA, QRP, RTTY, SOWP, SSTV, and YL. Naturally, the cards you submit must support your operating achievement request. One can request separate TAD awards for each operating achievement.

(15) Applications must be accompanied by one dollar (US) to pay award costs and postage. Payment can be IRC's, cash (US or Foreign money), check or stamps.

(16) Please pass this data sheet along to another interested amateur.

(17) If you are a member of an Amateur Radio Club which publishes a bulletin please ask your editor to bring this award to the attention of his/her readers.

(18) Awards are issued on the 19th day of each month. If you just miss a mailing, it is possible to wait 5 or 6 weeks to receive your TAD award.

The TAD Award is in memory of Tadpole, a Beagle dog who considered himself a W6LS Club member. Tad Liked the sound of code and he spent more time at W6LS than most members. Tad belonged to Marie (W6JEP) and Bill (W6DDB) Welsh and his full name was Tadpole, which was also the name of the 16th President of THE US, Abraham Lincoln's youngest son. A tadpole is a baby frog (pollywog) with a large tail for a body and Tad had a tail which he whirled around like an airplane propeller. Tad was born in 1961 and he died in 1974; he was an extremely intelligent animal with real class.

Lockheed Amateur Radio Club  
2814 Empire Avenue  
Burbank, CA 91504  
(213) 842-1863.

Sorry that this month is so full of contest rules and results.....But they will have their space also. Next month will be hopefully full of articles for you.

Please keep your articles coming. We do need them. 73's DEE

# Classified Ads

30 words \$2.00. Additional Words 4 c ea.

Cash with Copy - Deadline 1st of Month.

MODEL 28 LTK (self contained keyboard electrically coupled to type and punch tape) Reconditioned \$175, plus shipping. Model 28 miniaturized TD \$100 plus shipping. John Herring PO box 462, Weaverville, CA 96093. 916-623-4372.

YOUR TELETYPE --professionally overhauled. Non-commercial TTY machines. \$20 p/h plus parts, or by estimate. Try us for that hard to find part - send part # needed. Cash for junk RTTY. E.M.S. 1000 E. Apache Blvd. Suite 114, Tempe, AZ 85281. 602-966-0834.

TD 11/16 tape, yellow oiled. Carton of 10 rolls \$3.00 Add UPS 13lbs. Carton of 40 rolls \$10.00 Add UPS 47 lbs. Harmon, 5628 10th Avenue South Birmingham, ALA 35222.

RM-300, THE COMPLETE TU and AF-SK generator on one board. Your CW ID generated from on-board PROM. Thinking of VHF RTTY through your local repeater? This premium quality board is ideal. Complete documentation \$2.00. RM-300 board just \$21.25.. Complete RM-300 kit) less PROM \$71.25 PROM programmed with your call \$7.00. RP-400 power supply (plus 5v. & plus and minus 12v. and dual loop supply) board only \$21.25. Complete kit with heavy duty transformer and solid state autostart relay \$71.25. Calif. residents add 6%. Postage and handling \$1.00. Eclipse Communications, 5 Westwood Drive, San Rafael, CA 94901.

WANTED MODEL 28 keyboards (10) Model 40 cabinet. Lou Carbaugh, P.O. Box 398, New Cumberland, PA 17070. 717-938-6978.

HW-16 Modified for autostart. 80-40-20 meters. Receiver crystal locked or VFO. XT-1 transmit oscillator. Regulated Bt. Rack mounted with all controls on front panel. Crystals for 14075 and 3607.5 included. Modifications documented \$95.00 K7FE. Frank Exum, 1244 Granada, Casper, WY 82601. 307-265-8083.

WANTED: Crystal Impedance Meters TS-683, TS-330, TSM -15, RFL Models 531, 459 or 1207, Glenn Kurzenknabe, K3SWZ, 403 Centerview Ave., New Cumberland, PA 17070.

**YOU NEED INFORMATION ON COMMERCIAL RTTY STATIONS?** News Agencies, Telex, Weather on shortwave? I have up-to-date frequency, call sign, schedule, code lists. Write for details. Joerg Klingenfuss, Goethestrasse 14, D-7400 Tuebingen 1, West Germany.

MODEL 28 ASR's - KSR's, Repurfs - Keyboards, TD's - Printers, Parts - All priced for Hams. All in excellent condition. A.D.M. Communications, Inc., 1322 Industrial Avenue, Escondido, Ca. 92025. (714) 747-0374

FOR SALE: ST-6 excellent condition \$100.00 prepaid, guaranteed A-1 shape. Claude Sweger, Box 1842, Ft. Stockton, TX 79735.

FOR SALE: VIVITYPE vidoe convertor. Direct readout all speeds, from any loop circuit to TV display. Perfect cond. \$140 delivered. Claude Sweger, Box 1842, Ft. Stockton, TX 79735.

TELETYPE FOR SALE: Model 28 ASR's, KSR's, typing reperfs, and TD's. New and used parts available including cabinets, tables, mod kits, gears and gearshifts. Paper, ribbons and supplies. Send SASE for complete list and prices. K9WJB, Lawrence Pfleger, 2141 N. 52nd Street, Milwaukee, WI 53208.

ATTENTION FAKSIMILE OPERATORS A list with more than 200 frequencies of faksimile weather stations transmitting on SW is airmailed to you for \$3.00 or 10 IRC. It includes frequency, call sign, name, drum speed and cooperation index of each station. Write to: Joerg Klingenfuss, Goethestrasse 14, D-7400 Tuebingen 1, West Germany.

TELETYPE PAPER-50¢ per roll or \$5.00 per case. You pay shipping charges. 54 pounds per case. Call (714) 276-3182 or Write: Skip, WB6CYA, 3611 Merrimac Avenue, San Diego, CA 92117.

THE 'LIST OF Special RTTY and CW alphabets and codes' is airmailed to you for \$9.00 or 25 IRC. It includes code tables for Arabic, Cyrillic, Hebrew, third shift Cyrillic, Greek, Koren, Thai, and Amharic RTTY alphabets and detailed explanations on how to receive such transmissions on our normal teleprinters. Arabic, Cyrillic, Hebrew and Greek Morse code are also listed. Write to Joerg Klingenfuss, Goethestrasse 14, D-7400 Tuebingen 1, West Germany.

RTTY ID GENERATOR. Accepts 5 or 12 volt supplies, 31 characters available, please include ltrs. figs. spaces, etc. Your pre-programmed answer-back must be supplied with order. Example: DE K 9 WRL. Neil, Mt. Prospect'. Board same size as ST-6 boards. \$34.99 kit, board alone \$8.50. 5V power supply for above \$11.95. NuData/Daytapro Electronics, 104 N. Emerson St. Mt. Prospect, IL 60056.

TELEPRINTER Parts, manuals, gears, ribbons, paper, tape, converters; toroids. SASE for list. Wanted TT, KL, parts; 2BP1/etc., tubes. Typetronics, Box 8873, Ft. Lauderdale, FL 33310

SPECIAL — MODEL 28 compact receive only teletypes with 32/33 pedestal and sply with 3-speed gearshift only \$175.00. Model 28 ARS's \$350.00, with printing perforator \$375.00. Model 28 receive only in console \$175.00. Model 28 typing, printing perforator's w/32/33 pedestal \$50.00. TWX units add \$50.00 for modem. Send SASE for list, Goodman, 5454 South Shore Dr., Chicago, IL 60615, (312-752-1000)

TELETYPE PAPER single copy 50¢ per roll, have 60 rolls. \$25.00 for all you pay postage. Call 919-447-7536 or write: W.F. English, 46 Alexander Rd., Cherry Point, NC 28533.

NS-1A PLL Demodulator W/T \$24.95 ppd. Price advance effective Sept. 1st SASE FOR INFO. Nat Stinnette Electronics, Tavares, FL 32778.

HARDWARE REAL Time and calendar clock for microprocessors - month, day, hour, min., sec., AM/PM. Plugs in SWTPC 6800 I/O - No mods! Battery or AC back-up provision. Adaptable - 6820 PIA (on board) interface. Assembled - \$95. PC board and documentation - \$35. For more info write: The Data Mart, 914 E. Waverly Dr., Arlington Hts, IL 60004.

NEWS-NEWS-NEWS-Amateur Radio's Newspaper. "Worldradio". Trial subscription - Two issues for one dollar. "Worldradio" 2509-F Donner Way. Sacramento, Calif. 95818

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The no-nonsense state-of-the-art technical magazine. Dozens of exciting projects and an emphasis on quality un-matched by any other radio magazine. Subscribe now and see for yourself. 1 year ... \$12.00... 2 years....\$22.00 and 3 years .....\$30.00.  
HAM RADIO Magazine, Greenville, NH 03043

WHAT! THE ST-5 improved? You bet! The MEG-1 RTTY Demodulator is designed to be built by the beginner, modular, and easy to work on. Curious? For information and prices write to the Midnight Engineering Group, PO Box 349, Galesburg, IL 61401.

PRINTED CIRCUIT Board drill bits! You can now get carbide printed circuit board drill bits for a reasonable price. 1/8" shank, approximately 1" long. Four sizes available; .047" (approx. #56 drill), .043" (#57), .033" (#66), and .030" (approx. #68-69). \$1.25 each, includes shipping, Minimum Order Is Two Drill Bits. Illinois residents add 5% sales tax. Midnight Engineering Group P.O. Box 349, Galesburg, IL 61401.

TELETYPE BARGAINS, Model 28 ASR's \$325.00, KSR's \$165.00, all contained in consoles and ready to go, Modems add \$50.00 per unit. Also TWX units, Model- 33's and 35's. Also have a few hundred 15's and 19's (all subject to prior sale). Quantity discounts. SASE for list. Goodman 5454 South Shore Dr., Chicago, IL. 60615. (312-752-1000). Phone day or night.

MODEL 28 CONSOLES, RO's - \$135.00, KSR's - \$165.00, ASR's - \$ 325.00 with modems add \$50.00. Loads of 15's and 19's. GOODMAN, 5454 South Shore Drive, Chicago, IL 60615 (312)-752-1000. Phone any time.

THE ELECTROCOM SERIES 400 frequency shift converters are now available to the amateur. Outstanding performance, high reliability and quality construction, for which Electrocom equipment has been known for more than 17 years, is maintained by conservative design and quality components throughout. The Model 400 contains continuously variable shift which is adjustable by a 10 turn front panel control. Shift is accurately displayed by an in-line 3 digit readout. A range switch selects high or low tone combinations allowing use on both SSB or AFSK systems. The Model 402 contains individual Mark and Space frequency controls. Matched filters, baud rate selection, and precision linear detectors provide optimum demodulation. Input frequencies over the range of 1000 to 3200 Hz. are accepted. Other features include autostart, mark-hold, antispace, waveform symmetry correction, solid state motor switching, and adjustable bias correction circuitry. The loop supply is variable from 20 thru 60 ma. and maintains constant current over a wide range of loop resistance and line voltage. The 2" CRT tuning indicator/monitor contains automatic intensity control and blanking. Direct factory introductory price range \$690. For complete details and specifications write or call Electrocom - Industries, 1105 N. Ironwood Drive, South Bend, IN 46615. (219)-232-2743.

WANTED: KLEINSCHMIDT Teletype-writer parts, also Mite and Teletype Corp. Send listing for my quote. Phil Rickson, W4LNW, Rte. 6, Box 1103G2, Brooksville, FL 33512.

ELECTRONIC KEYBOARD Cabinets. Six sizes available. Depth 8.4 In., Height 3In., Width 14 In. \$15.20., Width 17 In. \$18.35, Width 20 In. \$19.25. Depth 11.4 In. Height 3 In. Width 14 In. \$16.50. Width 17 In. \$18.80. Width 20 In. \$20.75. Alum top and base. Shipping incl in price. Blue base with choice of black or white top. 10 minute timer kit, variable 1-20 min. \$8.95. Board alone \$4.20. NuData/Daytapro Electronics, 104 N. Emerson St., Mt. Prospect, IL 60056.



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...WITH "RTTY" IF DESIRED....

BEAUTIFULLY ENGRAVED

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Over pocket with pin ad 75¢

**EDCO ENGRAVING**

P.O. Box 15093

San Diego, Calif. 92115

DOVETRON TSR-200 teleprinter speed converter-signal regenerator is a 5" by 5" card designed as the digital heart of the MPC-1000CR terminal unit. May be simply interfaced to other units. Consists of programmable UART regenerator, dual crystal controlled clock and a CMOS bilateral steering section. Power requirements: 5/15 volts at 20 mls. Price \$99.50 postpaid. Add \$15.00 for front panel BCD speed switch and cable. DOVETRON, P.O. Box 267, South Pasadena, CA. 91030. 213-682-  
WANTED: MANUAL for Steuma DAC V (AN/GGM 1-5) and following sub assemblies: PS-5 power supply; TBG-5 time base generator 609-466-0021. F. burt, RFD #1, Box 152N, Skillman, NJ 08558.

M-28 KSR WITH 60/100 gears, auto CR/LF, unshift etc. \$165. M-28 typing reperf, 3 speed shift with extra reperf and tape \$90. M-28 TD LBXD heavy duty, 7.42 code, 60/100 gears, spare parts \$75. All excellent condx. K8JBL, 91 N. Lowell Rd., Windham, NH 03087. 603-434-9738.

WANTED: MODEL 28 teletype transmitter/distributor (TD), 7.42 code, preferable 100 wpm, single or double head. Sync motor. Contact VE2BTT, Gilbert Bosse, PO Box 185, Riviere au Renard, P.que., Canada GOE 2AO 418-259-5686 or 418-269-3256.

TU LOOP SUPPLY BOARD. Contains all necessary for plus 12, minus 12 low voltage supply with provisions for high voltage loop supply. Similar to that of ST-5. Ideal for most TU's including DT500 and DT600 units. \$5.95 per board plus 85¢ shipping. NuDATA/DAYTAPRO Electronics, 104 N. Emerson St., Mt. Prospect, IL 60056.

NEW CW ID UNIT. Includes many extras, on board interface for FSK and AFSK plus H.V. Interface, 10 minute timer, variable speed 5-24 WPM, on board 7805 allows 5 or 12 volt use. \$37.90 kit. Mini version of above, ID only with 7805 regulator \$21.95 kit. Board alone (same for both units) \$9.45. Power supply for above 5V 1A \$11.95 kit. NuData/Daytapro Electronics, 104 N. Emerson St. Mt. Prospect, IL 60056.

UT-4 BOARD. Full documentation. Extras include: parallel data buffered outputs, transitional autostart, memory hold, two 3 speed 555 clocks, TD control, MC1408L-6 D-A converter, signal output indicator and edge connection for easy servicing. Size 9x 5-5/8 inch. \$17.95 plus \$1.00 for shipping. Complete power supply kit for UT-4 using 78 & 79 series regulators with edge connector and transformer included, kit \$31.50. NuData/Daytapro Electronics, 104 N. Emerson St., Mt. Prospect, IL 60056.

EXPERT REPAIR WORK done on Non-commercial teletype machines. CHICAGO AREA ONLY. Trouble with working machine \$20.00 plus parts. Others by estimate. Call 312/392-2358 and ask for Neil.

WANTED - TTY etc., Prefer ASR 33 or compatible ASCII Hard copy with tape. Good working condition. Will take KSR - Baudot -Video. Also acoustical couplers-cable etc. Computers? Send name and numbers along with particulars to: RC, Box 505, San Marcos, CA 92069.

UT-4 COMPONENTS: VE3CTP PROMS (Sept 77 Journal). Also reprint of UT-4 trouble-shooting articles from 76/77 issues. See May-June ad for update. Peter Bertelli, W6KS, 5262 Yost Place, San Diego, CA 92109. 714-274-7060.

TELETYPE Equipment, Model 15 with stand and loop supply, Model 14 typing referf & TD. This equipment in very good condition and appearance. Has switch panel for transferring units or keyboard from local loop to TU. ACT-I computer terminal with Sanyo nine inch monitor. Used few hours cost \$570 will sell for \$450. W8TOM, 616-926-6332, 360 Clar-dell Dr., Benton Harbor, MI 49022.

CUSTOM BUILDING--amateur radio equipment repair specialist -- digital & solid state circuitry a specialty -- large or small projects. John Roache, WISOG, J&J Electronics, Waterbury, VT 05676.

FOR SALE: 32 ASR with stand. Perfect condition. Reperf \$300. Pick-up only. J. Schwartz, K2VGV, 43-34 Union St., Flushing, NY 11355.

DYNAMIC MUTUAL Conductance tube tester model TV-7U. Very Handy to test many of the early receiving as well as industrial tubes. Outside appearance rough, Inside good. \$19.95. Harmon, 5628 10th Ave., South Birmingham, AL 35222.

HAL COMMUNICATIONS will buy 88 MHY toroids (unpotted, as furnished in the ST-6 Kit). Contact Jim, Box 365, Urbana, IL 61801. (217) 367-7373.

PRINTED CIRCUIT BOARDS: RTTY Selcal with TTL logic, (73 magazine, Nov. 72) \$12.00. ST5A-W/P.S. (2 boards) \$6.25. AK-1 (AFSK) \$4.25. CW IDer (Feb.73, 73 magazine)\$4.75. New CW IDer(dec. 76, 73 magazine) \$8.50. Synthesizer-75-S Collins rec. (Dec.75 Ham Radio)(2 boards) \$12.50. Digital capacitance tester - W/PS (Radio elec. Dec 77) (2 boards) \$11.00. Speech compressor (QST Mar.76) \$9.50. New logic probe (board and parts)READ:TTL-open -low-high \$6.95. Hefty 12v. supply regulator 5A.-50A \$2.50. Warble alarm/siren (5w) (board & parts) \$3.95. Instructions and parts list included: S.J. Zalewski, 29307 Red Cedar Dr., Flat Rock, MI 48134. 313-782-9316.

## BUY YOUR RTTY BEGINNERS HANDBOOK \$4.50

### RESULTS 13th ALEXANDER VOLTA RTTY DX CONTEST

1. I5GZ5	18,091,755	26. DM2AYC	634,784	50. DJ4XRA	76,697
2. I3FUE	17,993,040	27. TF31RA	539,224	51. W2DUS	73,132
3. I5WT	10,458,877	28. oZ2CJ	511,744	52. I1JMI	58,995
4. SM6GVA	6,977,490	29. F5XM	506,000	53. IOZ59	58,938
5. EA8IY	6,535,704	30. I8JRA	472,464	54. OH1AD	55,440
6. I5KPK	5,340,608	31. OZ65M	432,125	55. VK3KF	47,596
7. HB9AVK	4,837,369	32. DJ1QT	409,780	56. DM3X50	43,264
8. I5FZI	3,451,350	33. K6WZ	333,112	57. DLLOY	39,340
9. DJ6JC	3,295,830	34. KOPJ/6	315,185	58. F6BIQ	37,800
10. DJ6QT	2,824,270	35. G3RDG	299,660	59. DJ8BT	33,764
11. I2WEG	2,786,210	36. DJ9IR	284,775	60. SMOEZO	27,192
12. I2OLW	2,434,432	37. OE1WHC	205,740	61. I3ZCP	26,316
13. WA3JTC/4	2,118,300		(224,740)	62. 3A2FB	23,448
14. HB9HK	2,031,120	38. SM6BVB	206,674	63. DL9QP	18,096
15. G4ALE	2,026,996	39. DL8QP	194,171	64. DKOTA	16,536
16. SM6ASD	1,892,350	40. G4FZF	191,590	65. G3TLC	16,256
17. OK1KSL	1,671,936	41. OZ8GA	161,856	66. K2RYI	15,180
18. G3UUP	1,749,960	42. DJ2YE	161,566	67. I8KRN	12,168
19. I1COB	1,636,128	43. DK6DC	146,625	68. OH2MD	11,075
20. SK5AA	1,632,258	44. OZBGQ	141,320	69. DL8KQ	10,032
21. WOHAA	1,538,300	45. OK2BJT	140,520	70. F6AQJ	6,276
22. HA5KEM	1,169,112	46. DL6WZ	137,785	71. VK2ATQ	6,175
23. IOLVA	962,560	47. YV5GU	111,486	72. W8TCO	2,107
24. WB1CRG	960,807	48. DJ8GJ	87,390	73. SMOIIB	1,216
25. K1YGF	757,972	49. SM6CAL	83,200		

#### SWL'S

1. OK2-5350	LUBOS CECH	8,175,638
2. W. GELLER	DL-SWL	6,139,356
3. B. NIENFORF	G-SWL	4,945,400
4. BRS-18456	TED DOUBLE	3,312,016
5. I-1-50071	F. ROSSI	3,265,119
6. P. MENADIER	US-SWL	1,874,496
7. i3-14258	M. TOSOLINI	1,267,350
8. 13-13018	R. GIARNELLO	1,220,472
9. F. ALBERTI	I. SWL	710,640

#### AWARDS

1. I5GZS US. & DX CALLBOOKS & SILVER PLAQUE
2. I3GFUE DX CALLBOOK & SILVER PLAQUE
3. I5WT TELTPRINTER HANDBOOK
4. SM6GVA 1 YR. SUBSCRIPTION TO RTTY JOURNAL
5. EA8IY " " " " " "
6. I5KPK " " " " " "
7. OK2-5350 THE ARRL RADIO AMATEUR HANDBOOK

## COUNTRIES REPORTED

Portugal, West Germany, East Germany, Spain, France, England, Hungary, Switzerland, Italy, Sardinia, Japan, Norway, Austria, Holland, Sweden, USA, Australia, Canada, Yugoslavia, Canary Islands, Scotland, Northern Ireland, Guadeloupe, Tromelin Is, Columbia, Venezuela, Martinique, Argentina, Belgium, Denmark, Finland, Czechoslovakia, Iceland, Guatemala, Monaco, South Africa, Brazil, West Malaysia, Ivory Coast, Indonesia, Dominica.

Please help to inform as many Hams as possible of next years contest.

### SPECIAL MESSAGE...

The message of I2LLO is a passage of the letter that Alessandro Volta wrote to Sir Joseph Banks announcing the discovery of his battery. The text is a translation of the original in French language.

Dalla Lettera Di Alessandro Volta A Sir Joseph Banks Como 20 Marzo 1800. "... Ho Il Piacere Si Comunicare, A Voi Sir, E, Tramite Voi, Alla Societa' Reale, Alcune. Risultati impressionanti Ai Quali Sono Giunto Proseguendo le Mie Esperienze Sull' Electtricitata' Mossa Dal Semplice Contatto Mutuato Da Metalli Di Differente Specie... L'apparato Di Cui Vi Parlo E Che Vi Stupria' Senza Dubbio, Non E' Che La Collezione Di Un Numero Di Buoni Conduttori Di Natura Diuersa, Sistlamati In Modo Opportuno, 30, 40, 60 Pezzi, O Piu, Di Rame, O Meglio D' Argento, Applicati Ciascuno Ad Un Pezzo Di Stagno O, Che E' Ancor Meglio, Di Zinco, E un Numero Uguale Di Strati Impregnati Di Acqua, O Di Qualche Celtro Umore Che Sia Migliore Conduttore Della Semplice Acqua, Come L'Acqua Salata, La Liscia Ecc..

The OM's who submitted a copy of message will receive a prize.

### DXCC HONOR ROLL

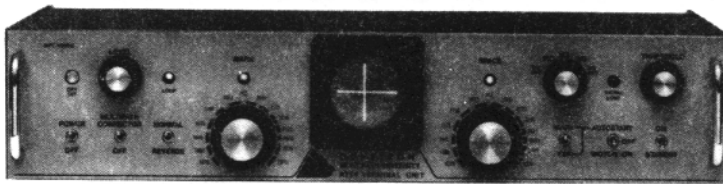
1. DK3CU	154/150	11. KH6AG	103/78	20. WONP	79/62
2. W3DJZ	148/145	12. W0HAH	81/69	21. WA0YDJ/4	77/60
3. W4CQI	130/124	13. K0BJ	75/68	22. VE2JR	60/54
4. W1GKJ	121/120	14. W0MT	71/67	23. N6LQ	62/42
5. W8US	122/115	15. W7MI	85/66	24. K1LPS	47/40
6. W8J1N	118/114	16. VK2SG	84/66	25. K9MD	46/35
7. W5VJP	-/113	17. JA8ADQ	73/64	26. K4RN	51/31
8. F5JA	109/98	18. W1MX	83/63	27. WA8CZS	28/24
9. K7BV	105/97	19. W8JMG	79/62	28. WB6CYA	48/22
10. G8LT	102/97				

### 9th WORLD RTTY CHAMPIONSHIP

	BARTG	DARC	SARTG	CARTG	GIANT	FINAL SCORE
1. I5GZS	0	25	30	25	22	102
2. I3FUE	3	30	22	18	25	95

- |  |   |
|--|---|
| <ul style="list-style-type: none"> <li>11. Canadian High score Gold Medallion and ribbon-Director C.R.R.L.</li> <li>12. Most contacts on 80 M. Plaque RTTY Journal</li> <li>13. Green RTTYer (first RTTY Contest) Sidney Burnett Memorial Plaque</li> <li>14. Most two-way RTTY Contacts made with Canadian Stations - Plaque VE2JR</li> <li>15. High score for "low power Canadian stations" (under 100w input) Vic Bright Memorial Plaque sponsored by VE7AKW</li> </ul> | <ul style="list-style-type: none"> <li>16. Most two-way 40M contacts. Plaque "member of CARTG"</li> <li>17. Multi-Operator staion with one transmitter</li> <li>18. SWL Printer Plaque "Canadian RTTYer"</li> <li>19. Most two-way 10M contacts Plaque "CARTG"</li> <li>20. Certificates to be issued to top scorers in each USA, VE/VD and VK District and each country</li> </ul> |
|--|---|

# DOVETRON

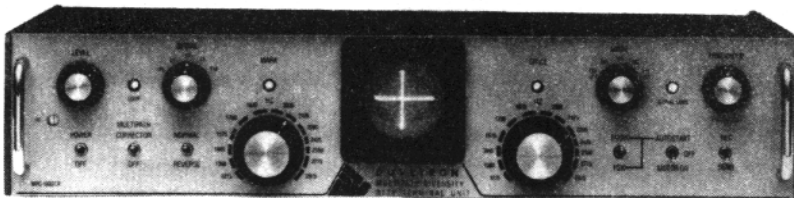


## MPC-1000C

Multipath Correction  
In-Band Diversity &  
AFSK Tone Keyer

Amateur Net: \$545.00

Standard features include CONTINUOUSLY tuneable Mark and Space channels (1000 Hz to 3200 Hz), Dual Mode (MARK or FSK) Autostart and internal high level neutral loop keyer (20 to 60 ml). Both EIA and MIL FSK outputs are provided for direct interface to microprocessor and video terminal peripherals.

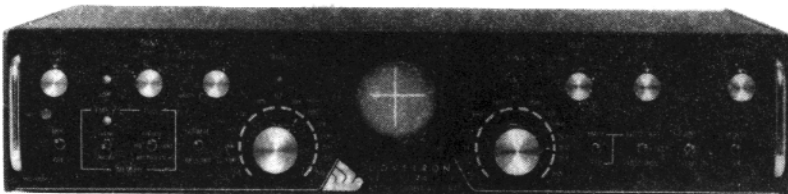


## MPC-1000CR

Signal Regeneration &  
Speed Conversion

Amateur Net: \$645.00

A front panel switch permits internal TSR-200 Signal Regenerator-Speed converter assembly to electronically "gear-shift" between 60, 67, 75 and 100 WPM. All incoming and outgoing signals are regenerated to less than 0.5% bias distortion. Also available with DIGITAL Autostart (TSR-200D): Amateur Net: \$695.00



## MPC-1000R/- TSR-500

Dual UART Regeneration,  
Speed Conversion, 200  
Char. Memory, Word Cor-  
rection & DIGITAL  
Autostart

Amateur Net: \$895.00\*

The MPC-1000R/TSR-500 provides Preloading and Recirculation of the 200 character FIFO Memory, a keyboard-controlled Word Correction circuit, Variable Character Rate, Tee Dee Inhibit, Blank/LTRS Diddle, a Triple Tone-Pair AFSK Tone Keyer and a Character Recognition/Speed Determination DIGITAL (DAS-100) Autostart mode.

\*The MPC-1000R is also available without a TSR assembly and functions as a MPC-1000C with a Triple Tone-Pair AFSK Tone Keyer. This "Basic-R" permits future expansion with a TSR-100, TSR-200, TSR-200D or TSR-500 by simply lifting the lid and plugging in the appropriate TSR assembly: Amateur Net (Basic-R): \$595.00

Your QSL will bring complete specifications, or call: 213-682-3705.



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(P. O. BOX 267)  
SOUTH PASADENA, CA. 91030

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MULTIPATH CORRECTION, IN-BAND DIVERSITY, SIGNAL REGENERATION,  
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KEYBOARD-CONTROLLED WORD CORRECTION & DIGITAL AUTOSTART



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