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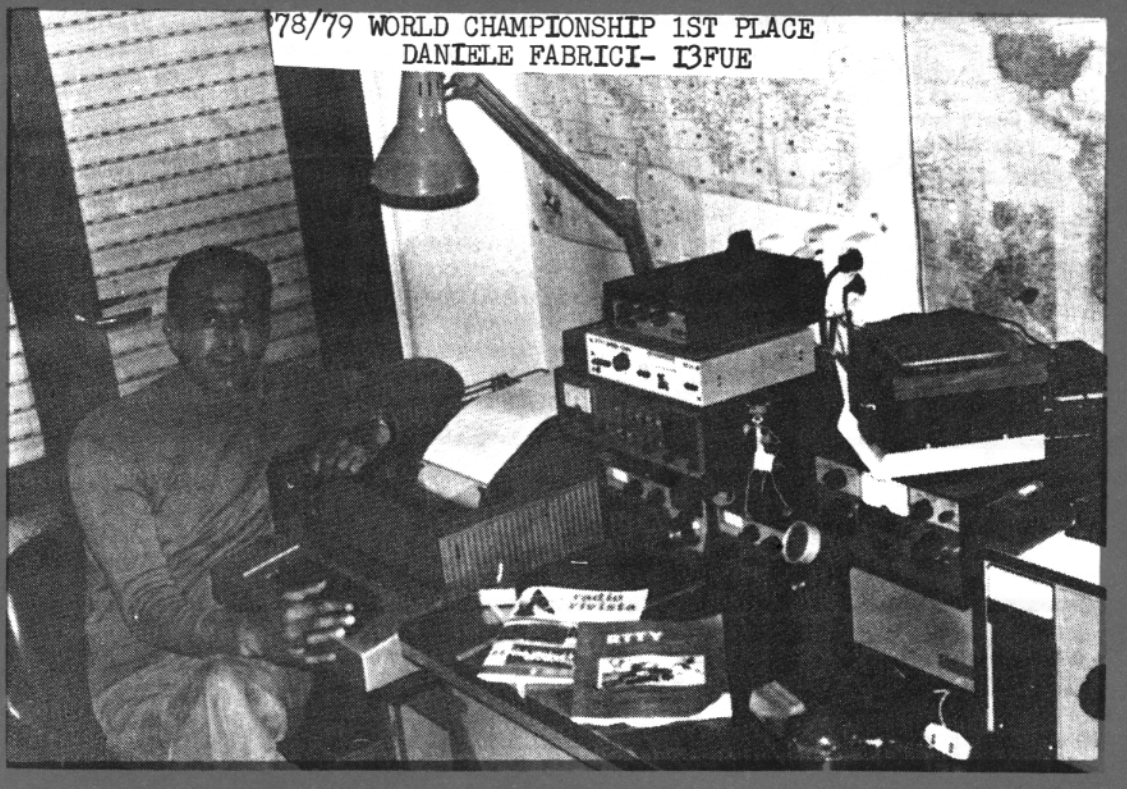

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Dee Crumpton, , Editor & Publisher
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HITS & MISSES

George Hammon WA6CQW
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El Cajon, CA 92021

FROM
THE
MAILBAG

HITS AND MISSES

In the May-June issue of the RTTY journal I reported in my column that the FCC dismissed petition RM-2360. This petition, if approved, would have eliminated the CW ID provision when using RTTY. The FCC apparently feels this rule must stay in effect in order to aid amateurs in self policing. They feel without the current ID rule a terminal unit and printer to detect the call sign of the offending station. It was also stated that the current use of automatic ID equipment makes this a minor burden.

I was very disappointed to see this petition dismissed. I feel it is a slap in the face of all users of the RTTY mode. The definite feeling of letting the green key bunch monitor and self police themselves is apparently not enough. We must be strapped with the CW ID Provision. The current trend of deregulation is working fine, but is not to be for the RTTY gang.

I cannot comprehend the rationale that a printer and terminal unit are required to determine the call sign of the amateur station using RTTY without the CW ID. Users of SSB and FM simplex are not required to ID by CW and yet, a SSB or FM receiver is required to detect the call sign of an amateur station. I cannot believe FCC monitoring stations are not requipped with a printer and terminal unit, and because the RTTY mode is relegated to such a tiny portion of the amateur radio spectrum, the need for CW ID is archaic.

The statement that the current trend to automate CW ID will make this burden a minor one is also interesting. The definite feeling is left with this writer that due to the state of the art and the initiative of the average HAM on RTTY in designing and building automatic CW iders, we must be forever placed in a different category and play by a different set of rules.

There is a definite need, particulary in this country, to make the voice of the amateur radio operator, who uses the RTTY mode, heard. It is so frustrating to see such a small amount of interest shown by the American Radio Relay League. The new league handbook is a classic example. Don't look for the RTTY section, it was deleted. New equipment comes out in radio magazines with full color ads and QST prints a paragraph or two. This apathy toward RTTY was never more apparent than at the national convention in San Diego. We were told they never get any articles or RTTY, so they don't print any. HAM radio and 73 are not having any trouble and a whole issue of 73 was devoted to RTTY. I cannot believe QST can print another article on a novice dipole or a homebrew keyer, but it goes on and on and on .... The need to write QST is very apparent, and let them know how we feel. I will be interested to hear your thoughts on this. I know we can do it, and make them realize the RTTY gang is alive and well, and want to be treated like other amateurs, and not just tolerated and negalated to a minority status.

My wife and I just completed a 4000 mile motorhome trip thru the midwest. We haven't been back that way for several years and really enjoyed ourselves. I took along a SWAM 100MX and renewed old friends on the county hunters net. I worked a little DX and was able to keep in touch with my parents thru the fine help of Dave, W6CCM. My mother requires three trips a week for kidney dialysis and with Dave's help, it eased our minds and was another plus in my XYL's mind for HAM radio.

While I was mobile on my vacation, I was constantly plagued by the "Russian Woodpecker." This interference has cost me many a contact. In the June Issue of QST, the request was made to write to "the watch officer" monitoring branch FCC, Washington, D.C. 20554, USA and report this interference. A short note with your call, time, date and frequency will aid our state department in its battle to rid the spectrum of the woodpecker.

The San Diego teleprinters society had its club picnic at Flynn Springs Park. The large crowd in attendance gathered around the barbeque and watched Wayne W6LNB cook two of the biggest steaks, they had ever seen. My wife and I had hotdogs — Ugh! The unofficial entertainment was watching my wife, Jeanne, pitching horseshoes and seeing them fall twenty feet short and rolling as far. A good time was had by all, and talk of more family club events are in the future.

I received a nice letter from Florence Friedman, WA2YSO, who is the secretary of the TU-Boro Radio Club, asking that I announce that the club auction is to be held September 20, 1979, 6:00 pm - 10:00 pm, at the TU-Boro Radio Club, Odd Fellows Hall, 149-14 14th Avenue, Whitestone, N.Y. 11357. Donation is one dollar and talk in frequency is 145.62 and 146.52 FM. So, if you are in the area, drop by and have some fun.

I have been receiving a super newsletter from a group called AMRAD, which stands for Amateur Radio Research and Development Corporation. This group consists of over 200 radio and computer amateurs. The group is incorporated in Virginia and has obtained tax exempt status as a scientific and educational organization. The purpose of the club is to develop skills and knowledge in radio and electronic technology. If this sounds interesting and you are into computers, you might drop Gerald Adkins, treasurer, 1206 Livingston St. No., Arlington, Virginia, 22205, a line.

This months' AMRAD newsletter contained an interesting request. The national weather service is requesting amateurs, who live within a 125 mile radius of Washington, D.C. to help collect weather data in severe weather conditions. A new network of amateurs and under the control of amateurs, will collect this data. For additional information, write C. Penny Pendleton, W3YBV, 4404 71st Ave., Landover Hills, MD 20784.

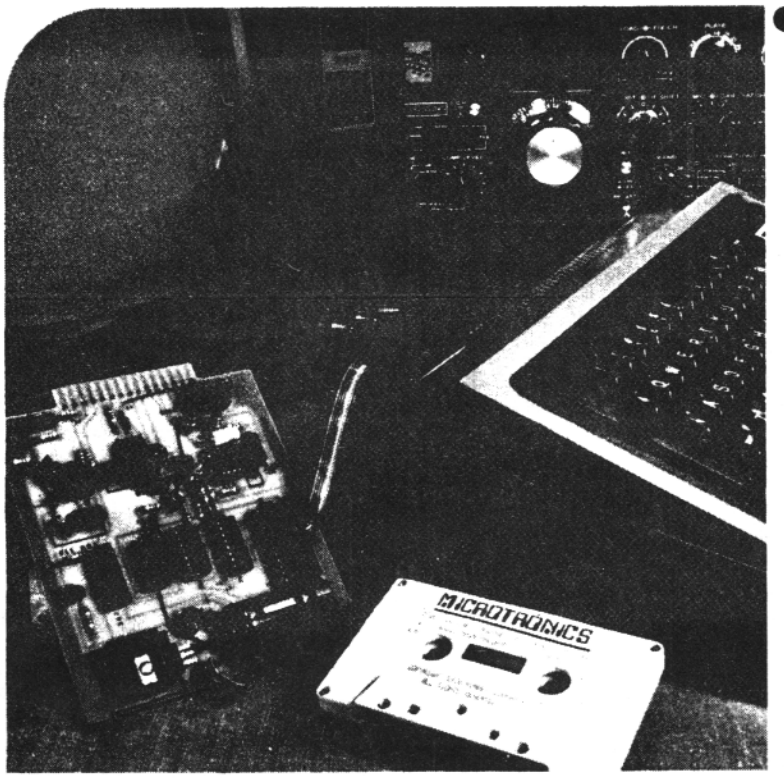
HAM radio Horizons (May Issue) has a very fine Article on RTTY covering eleven pages. The article was written by N1RM, Doug Blakeslee and covers 30 years of RTTY. A tip of the hat to Mr. Tenney, Jr. and Mr. Fisk for publishing this article and many others on RTTY.

A note from Gerald D. Reid, 4523 Goodnight, Amarillo, Texas 79109, requesting help to FSK the YAESU FT101E. I have a circuit, which appeared in 73 magazine in Sept., 1977, and will send a copy to Gerald. The article was written by W60JF and requires only 3 connections. I hope if any reader has a better one or even some thoughts on this, they will write Gerald a line.

Well, as I wind up this months' column, I hope you found it interesting and will drop me a line with your thoughts. I would appreciate it, if your club has a newsletter, if you would send me a copy. If you need help or a question answered, I will be glad to help, but please send a few stamps for my reply — thanks. I will continue in this column to take an aggressive approach, but a fair one to those who choose to ignore or not play fair with our chosen mode. I will continue to point out and praise publishers such as Wayne Green, Jim Fisk, Etc. and encourage them in their efforts to provide very fine articles on RTTY.

So LongFor Now,

George WA6CQW



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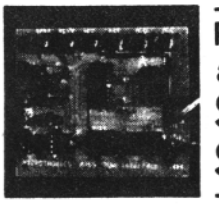

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Carriage Rtn = C/R Space = SPC
eg. Selcal #1 = W ↑ Ø ↓ K E BLK Off = N N N N

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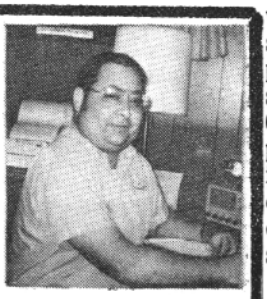
VHF RTTY NEWS



Arny Gamson, K6PXA, 8034 Gentry

N. Hollywood, CA 91605

Haven't heard too much from the VHR-RTTY world lately, looks like things are pretty routine with the Clubs and Repeaters. JIM LABO-K0OST editor of the METRO AMATEUR FM-RTTY CLUB Newsletter FM RTTY Denver Colo. has sent us some interesting articles on RTTY basics. I thought I knew it all (HI) but still learned some. And for those that do know it all please pass the info on to the neophytes.

RTTY ANTHOLOGY

Early Teleprinters and Codes. In 1849, the same year as the great gold rush to California, a crude teleprinter was developed and used on a line between Philadelphia and New York.

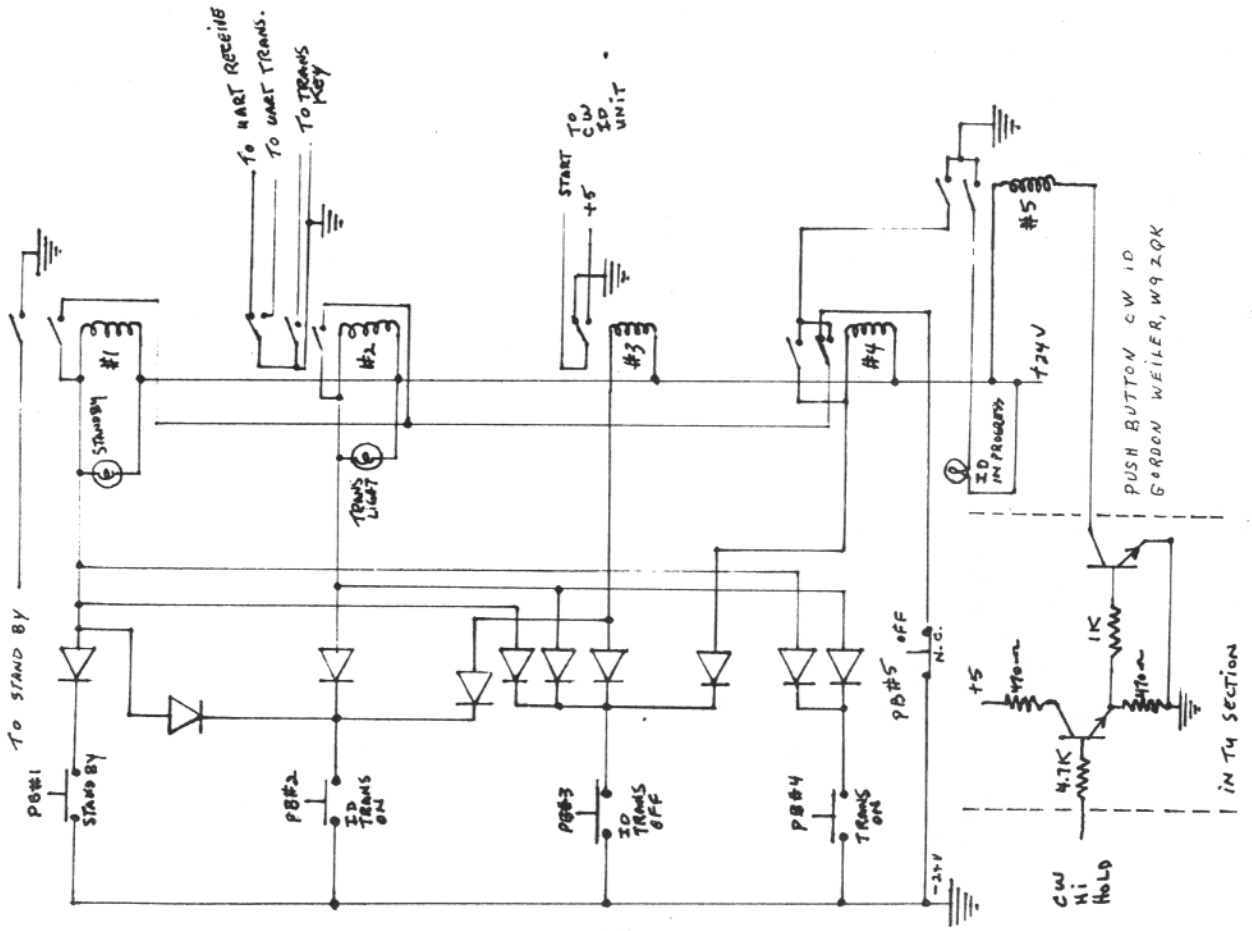
As we know Morse's original code was made up of clicks for dot, dashes, and in some letters spaces. This is the same code used on American land line telegraph operated by railroads.

For a machine a new code had to be developed using a new system. For example, a human can understand the difference between two "e"s sent together and the letter "i", but a machine would have a lot of problems making the distinction. So this new code was developed on the basis that all the letters would have the same length and the system had to work on the same parameters as the existing telegraph system: two conductors, 120 VDC, 0.06 A or 60 ma. This code took the form of a complex, compressed binary, made up of five informational segments or levels with each level having two possible conditions, on or off, which in RTTY language translates to Mark or Space.

This allowed for a maximum of 32 possible characters. With the English language having only 26 letters this was a distinct advantage; as opposed to say the Chinese alphabet which has over 600 characters. So from a technological standpoint, our short alphabet was a great advantage.

By making the machine with an upper and a lower case, it was possible to make the machine with double the total amount of characters and functions. The lower case would consist of the 26 letters of the alphabet in capitals and some machine functions. The upper case was needed for numerals, punctuations, and machine functions like the signal bell. Functions common to both cases are carriage return, line feed, figures shift, letters shift, space bar and blank key.

Ralph, WA3FOF



HOMEBREW RANGE MODULE FOR THE DRAKE TR 7

The new Drake TR7 hf transceiver has proven to be one of the best amateur transceive systems built to date. With the DR7 general coverage accessory, the receive range is from 1.5 to 30 MHz. If the AUX7 accessory is added, receive capability is possible form 0 to 1.5 MHz and operation in the transceive mode is possible in any 500 KHz segment from 1.5 to 30 MHz. The AUX7 also provides for crystal-controlled fixed-frequency receive/transmit operation, thus giving enough stability for continuous monitoring of a selected channel such as is required in RTTY autostart activity.

Before purchasing the AUX7 for my TR7, I decided that my operating requirements would include reception below 1.5 MHz which would need 3 modules to attain and, also transceive fixed-frequency operation on 3.5-4. OMHz, 4.0 to 4.5MHz, and 14.0 to 14.5MHz for a total of 6 program modules. Since Drake includes only one program module with the AUX7, and I was anxious to get my TR7 fully programmed and operational, I decided to build my own program modules.

The AUX7 uses auxiliary program modules that are packaged in a 14 pin DIP, and there are eight sockets mounted on the AUX7 that accept the program modules.

These modules are configured as common-anode diodes that pin-out on pins 2-14 and use pin 1 as common. The receive-only modules come with pin 10 cut off at the facotry. Pin 10 performs the transmit address function on all modules and it must be connected for the transceiver to perform transmit functions on any of the program modules.

I used a 14-pin DIP adapter plug made by AUGAT* to mount the 1n914 diodes. However, any plug that permits the mounting of the diodes in a 14-pin DIP configuration should work. The AUGAT plugs are very good to use since they are designed for use in prototype construction and it is quite easy to mount discrete components on them.

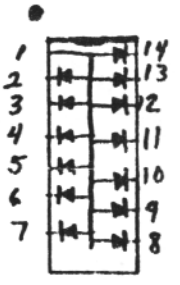
Each AUX7 is supplied with a programming chart that indicates the necessary diode pin-out for the desired operating spectrum. Where the chart indicates a cut pin on the 14-pin DIP, there is no diode connection, and, similarly, when the pin-out is left intact, the diode performs its address function.

To prepare a module, it is only necessary to determine the program needs and tie all common-anodes to pin 1. In the authors experiment a small wire was run down the center of the plug from pin 1 and the anodes of the desired diodes were tied to it. The result was a simple, compact, programmed plug that functions without difficulty.

Proper addressing is essential for normal operation of the system, and it is important to remember that a mistake in programming could possibly damage other circuits in the transceiver. Also, care must be exercised to orient the plug properly in the DIP socket on the AUX7. Pin 1 is the upper left pin on the sockets with the AUX7 positioned so that the crystal sockets are above the DIP sockets and the component side is up.

It is strongly suggested that the pin 10 diode never be connected unless the TR7 is going to be used for licensed service outside an amateur band. This action could prevent problems from occurring when an inexperienced operator is using the TR7.

The next step from this homebrew range module would be to build an auxilary programmable module using DIP switches or possibly bring the address lines outside the radio for an extremely versatile radio system.



*AUGAT components available from:

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PUSH BUTTON CW ID REVISITED

Having replaced the mechanical CW ID wheel first put into service about 1972 with a new high hold solid state unit from NU Data Electronics, I felt the need to revise the push button station control published in the December 1974 Journal. (I got accustomed to the convenience of the no hands operation.) The new unit presented here is interfaced with a UT-4 and DT600 (ST-6). The previous unit was used with a TTL/2. The update unit performs several functions not necessary on the first design. I might mention my desire to have a narrow shift on the CW ID. I found it necessary to drive a small reed relay thru a transistor from the output of the CW ID Unit thereby using the conventional CW ID Adjustment pot normally associated with the ST6 type units. Now back to the station control. The push buttons perform the following functions:

Push Button #1 Puts the T.U. on standby via relay #1. Push button #5 will release the standby or other relay functions.

Push Button #2 Performs several functions. First it closes the standby relay, second it closes the #2 (transmit relay) which turns on the transmitter and switches the U-art from receive to transmit. It also momentarily closes relay #3 which starts the ID cycle. The ID high hold output closes relay #5 which lights the ID in progress light. The light remains on until the ID is complete when relay #5 drops out. If your end of the conversation runs till ID is necessary again merely press #2 again.

Push Button #3 Also performs several functions. First the standby relay is closed. Second the transmit relay held in. Thirdly the CW ID relay is actuated momentarily. Relay #4 is also closed. At the same time relay #5 is closed and remains so via the high hold output of the CW ID unit. When the ID is complete and relays drop out. TU and U-art return to the receive mode.

Push Button #4 was provided to put the transmitter on the air without ID. The standby is also actuated via this button. As stated previously the #5 push button can be used at any time to de-activate any or all relays. 24 Volt relays were used for this project only because they were on hand. Any voltage relay could be used with the appropriate power supply and lights. The transistors are 2N2222 or similar. Most any diodes can be used.

One additional feature was added. A dual foot switch, one parallels PB#2(ID-ON). The other parallels PB#3 (ID-OFF). The foot control allows for no hands receive transmit switching. A very convenient station control arrangement.

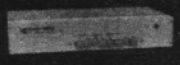
Try it you will like it.

GORDON WEILER W9ZQK

schematic page 5

FROM THE COMPANY WITH A LONG LINE OF RTTY FIRSTS

1971

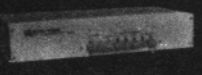


RVD-1002
1st RTTY
Video Generator

1972

DKB2010
1st RTTY & MORSE
Keyboard

1973



RVD-1005
Improved RTTY
Video Generator

1974

1975

ST6000
High-performance
RTTY Demodulator

DS3000 KSR Version 2
1st Microprocessor
Controlled Amateur Equipment
with Editing for Baudot & ASCII

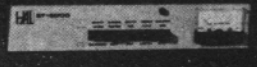
1976

1977

1978

DS3000 KSR Version 3
1st 3-mode Amateur Send-Receive Terminal
for Baudot, ASCII, and MORSE

1979



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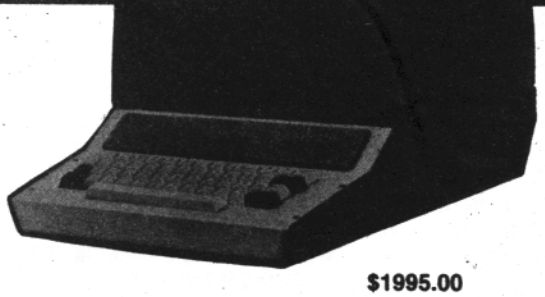

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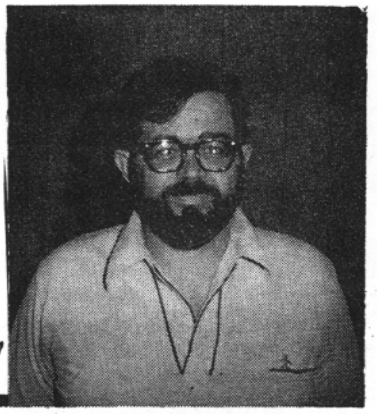


Greetings to all...

By the time this has gotten into print and through the mail our summer vacations will be over. Most of us will be brushing aside the cobwebs in anticipation of operating during the cold winter months. For some the summer months turned up a few new countries.

KZ51 and will no longer be as of the end of September due to U.S. Panama Treaty that was signed recently. The KZ5 boys will have to qualify for an HP1 callsign to active from the canal zone. (HR Report #260)

The ARRL Oversea QSL service no longer requires an SASE be sent with your QSL shipment. The cancelled check will serve as confirmation. The fee is now $1 per pound or portion of a pound. There are about 155 average QSLs in one pound (HR Report #257).

VQ9MR is active from Diego Garcia opering on 21.099 KHZ at 100 WPM.

New Lebannon station is OD5AO home call is F0BBA.

FY7BI is no longer active but has left RTTY gear with FY7AW who hopes to be active soon.

JA0BXU/SU1JA using either call operating from Egypt. JA0YJK is his QSL manager.

9V1SI is now active with a good signal into the USA.

VR3AH Doug is active from Christmas Island. His QSL manager is WB4PRU.

K4GMH/VQ9 is active on Diego Garcia but will be returning to the States soon. Mike hopes to be going to Sri Lanka (457) on his way home.

K0BJ Bruce's QSL manager W0PAH W.G. Schrenk, 444 Westview Drive, Manhattan, Kansas, 66502 has been doing a super job and deserves a well done from the RTTY community. Thanks from the staff at the Journal.

VU2YK has been active intermittently on 15MHZ around 1400Z every other day.

9M2CK has an unusual Q50 to report. Colin was chatting with Craig VK9XW telling him that he had recently worked VR3AH Doug the other Christmas Island when Doug broke in and joined the QSO for a first three-way including both Christmas Islands in an RTTY QSO.

FR7BE Jean is active on 14MHZ around 0930Z QSL rira W4LZZ.

QX3CO Chris QSL via WB3KGY.

FO8BO is active around 02007 usually in French and is very difficult to break.

ZB2EY expedition to Gibraltar QSL via DL5NJ.

KH6JHJ/KH4 Midway Island was active from the club station KM6BI QSL via 7317 224th S.W. Edmonds Wa 98020.

H44DX wes is active and QSL to P.O.Box 332, Guadalcanal, Solomon Island.

OA4BR is active again after about a year of inactivity.

9M2MW is active again using 50 band from Penan Malaysia.

Mal sends that the SOUTHEAST AMATEUR RADIO NETWORK will be having its convention in Penan W. Malaysia on 30 November thru 2 December and he hopes to see some of the RTTY gang there. Any one interested can write P.O.Box 725 Peneng Malaysia. The Hotel will be the Eastern and Mri tal Hotel.

Other stations reported active over the past several months are: 5Z4RT Hermann, 5N0SID Sid, YO3BEJ/9, YO3JX, LZ2KRR, LX2MG, 3A2GX, PZ1BF Jerry QSL via P.O. Box 184 Paramaribo. TF3UA, OX3SL, ZP5CD, HP1BS Boris QSL via P.O.Box 8577 Panama, 5N0AAS Paul, TI2JCC/W2, VA9PP, VT5RP, VA3AHM, GT3YEO (Rich GD3YEO using a commemorative call sign ID9XRU Lipari Island, 30 KM N.E. of Sicily and Bruce at KH8BJ, 5W1BJ, YJ1BJ, BK0BJ/H44, FK8CR, 5H3KS/HZ1 and VP1MTonBeliye. CSAAN cards have started showing up in Europe. GU5TU.

In a late issue of the Journal I listed the RTTY bulletins by frequency and time. I recieved several nice letters on from Joe WB6PMV ex PA0ZE and from P. Van Weerlee PA0YZ here is th escoop.

The National Dutch Amateur Radio Station PA0AA is on the air every Friday on 1827, 3600, 14100, 144800 and 433765 KHZ. 1900 and 21007 news for the amateur in Dutch, 1915 and 21157 news in English. 2030Z RTTY bulletin in English language.

I would like to thank the following for taking the time and effort to send info to me. W3KV, JA1DSI, K7BV, W7MI, W2PSU, 9M2CR, 9M2MW, and W3FV. I hope that I didn't miss anyone.

AWARDS

DXCC #37 24 May 1979
DJ8BT
HAMMARSKJOLD - RING 174
D6000 FRANKFURT 50
Germany (FRG)

DXCC #11 adds endorsement 150 5 June 79 to W2LFL
"Bud" Smith
1757 Seaman Drive
Merrick, NY 11566.

DXCC #18 adds Endorsement 130 to W1GKJ
Norm Davis
Ross Road Box 846
Old Orchard Beach, Me. 04064

DXCC #23 adds Endorsement 120 to W8JIN
Jim Ringland
4514 Glenridge Dr.
Cincinnati, Ohio 45245

WAC all on 20 meters #71 to LZ1KDP
City Student's Radio Club of
Sofia, Bulgaria

WAC all on 20 meters #72 VE2JR
Fraser Jamieson

WAC all on 20 meters #73 KA7CYK
Claude T. Adams

WAC all on 15 meters #14 WB6CYA
"Skip" Prinsen

WAC on various bands
IS?TIU
DF7FB Klaus Zielski

73 de
Skip

"KONTEST KORNER"

DAFG	4 August 1979	(Mar 79)
SARTG	18-19 August 1979	(July & August
DAFG	9 September 1979	(March 79)
CARTG	20-21 October 1979	
WAEDC	10-11 November 1979	
DAFG	24 November 1979	(March 79)
Volta	1-2 December 1979	
BARTG	- March 1980	

11th BARTG VHF/UHF CONTEST

1. DURATION: — 1800-2300 GMT Saturday 8th and 0700-1200 GMT Sunday 16th September 1979.
2. Bands: — 144 MHz and 432 MHz, cross band and contacts via a repeater or satellite will not be valid.
3. Operators: — Licenced amateur radio stations within zones 14 & 15 who are permitted to use RTTY as a mode of communication. Portable operation is allowed but must be from one location or within one Km. for the whole of the contest. Contest logs from SWL's will also be welcomed.
4. Contacts: — Stations may not be contacted more than once on any one band during the entire period of the contest, however an additional contact may be attempted with the same station if the other band is used.
5. Messages: — Messages shall consist of the following:

a) Time of start of contact in GMT, to consist of a full four figure group. The use of the expressions "Same" or "Same as yours" are not permitted.

b) RST report, normal three figure group.

c) Message number. This will consist of a three figure number starting from 001 for the first contact made and consecutive from this number irrespective of the band in use. Numbers will continue in sequence throughout the total period of the contest.

d) QRA locator (normal five symbol locator see notes) is preferred or QTH given either as a town or as a bearing and distance in Km. from a town (Max. 25 Km.). The town must be identifiable on a 1:500000 Tourist or Route Planning map.

6. Scoring: — ALL TWO-WAY RTTY contacts will score in accordance with the distance chart below. Each band must be scored separately. There will be no multipliers applied to the scores from the two bands, positions will be calculated as a proportion of the band leaders total points for that band, and overall dual band totals will apply by the addition of the proportions, eg. if a station wins one band and has 50% of the leaders on the other band then his total will be 150 out of a possible maximum 2000.

Proof of contact may be required in certain cases where the station worked does not appear in any other contest log received.

As part of the contest is being run concurrently with the region 1 IARU RTTY contest then logs for submission to this contest shall be scored at one point per kilometre. All entries for IARU contest should NOT be sent to BARTG but to each countries national organiser. Thus only U.K entries for this contest (IARU Region 1) should be sent to BARTG.

0-50 km score 1 point 250-300km score 11 points
50-1000 km score 3 points 300-350km score 13 points
100-150 km score 5 points 350-4000km score 15 points
150-200 km score 7 points 400-450km score 17 points
200-250 km score 9 points 450-500km score 19 points
and pro rata on 50 km circles

7. Logs: — Each band shall be entered on separate A4 size log sheets and be accompanied by a cover sheet similar to the form 427. In addition a summary sheet should accompany the entry to summarize multiband or single band entries.

The log entry shall contain: — Date — time of start of contact — RST report sent — Message number — time received — call sign of station worked — his RST and message number (these may be combined eg. 599001) — QRA & or QTH received — estimated distance and points claimed. It will be helpful to include your own QRA at the top of every log sheet.

8. Awards: — Certificates will be awarded to the top scorers and runners up in each section.

(1) Single operation stations UK & Europe) see note (d)

(2) Multiple operator stations UK & Europe)

(3) Short wave listeners UK & Europe)

The judges decision will be final and no correspondence can be entered into in respect of entries or logs received after the closing date for entries.

ALL LOGS MUST BE POSTMARKED NO LATER THAN SATURDAY 13TH OCTOBER TO QUALIFY.

Send logs to: —

BARTG VHF/UHF CONTEST MANAGER
Chris PLUMMER G8APB
148 Porter Road,
Brighton Hill,
BASINGSTOKE.
HAMPSHIRE, RG22 4JT.
England.

Additional notes: —

(a) In order to achieve maximum compatability and to implement IARU recommendations to speed of 45.45 bauds and CCIT 2 code (Standard Murrey code) should be used although other speeds and codes may be used (if you can find anyone to work).

(b) To avoid confusion and congestion around the recognized RTTY calling frequencies and to make more effective use of the bands, the use of VFO operation by participating stations is encouraged.

(c) Stations who are Xtal controlled are recommended to announce the fact when calling CQ.

(d) Single operator stations may be fixed or portable but must be set up and operated by one operator only, otherwise entry must be made under Multi Operator section.

HAM HELPS

KB2EF Bob Christiansen, 75 Margaret Street, Staten Island, New York 10308 needs info on Loreny 15C Printer and a Kleinschmidt Model 7313.

WB3ACC Lee Wlifenbach, 1865 Elmdale Rd., Pittsburgh, Pa, 152015 needs info on FSK ing the Kendwood twins T599D AND R599D.

W.M. Minshall, 1835 Richlnad Rd., Marion, Ohio 43302 needs schematics for a teletype® model 32 and a 60 mil loop supply.

K7BV "Mac" McGinley, 4091 W. Red Wing St., Tucson, Az, 85704 has a Northern Radio Dual channel TU model #152 and can't find plug in filters for it. He had the info on the Discriminator filters. What he needs is on the passband filter.

K7SRU John Hills, 12313 129th St. Ct E, Puyallup, Wa. has built up a UT4 board and would like to see pictures of cabinet layouts for ideas for his own installation.

WA4HOC Bob Knight, 7532 Roosevelt Street, P.O.Box 7116, Hollywood, Fla. 33021 would like to build a PROM burner and is looking for companies who sell kits. Bob wants to burn 74188 and 8223 chips.

Roy Hargrave, 91 Allenby Crescent, Winnipeg, Manitoba, Canada R2C 3J3 is just getting into RTTY. He has the following: Mod 15, 33 and 35. Any help would be appreciated.

KA7CAH/PO Frankie McCowan, 1501 Colonial Drive, Eugene, Or. 97401 needs help hooking up a model 15 to a Heathkit® HW101 or Kenwood® 599D Twins. He will be using both 170/850 shift on Air force Mars. (Ed note: Frankie didn't mention what type of TU he has).

Gerald Reid, 4523 Goodnight, Amarillo, Tex. 79109 is in bad need of information for interfacing the Apple II micor-computer to and Amateur Transciever. Gerald has a program by C.H. Galfo and an ST5 but no idea how to interface everything to his Yalsu FT101E.

Single Op. 1979 B.A.R.T.G. RTTY CONTEST RESULTS. Sheet 1 of 3.

NO.	CALL SIGN	POINTS	TOTAL QSO's	COUNTRIES
1.	F9XY	445720	290	37
2.	W3EKT	428610	298	34
3.	K7BV	408292	290	36
4.	IT9ZWS	400656	287	36
5.	I5GZS	392274	252	35
6.	W3FV	372204	260	33
7.	SM6ASD	356544	265	34
8.	K8NN	346632	229	36
9.	I5FZI	321816	242	33
10.	C5AAN	319510	241	34
11.	I2OLW	299802	247	31
12.	WA9BOW	282600	199	34
13.	K9KU	275188	190	32
14.	HB9AVK	270444	174	36
15.	I2WEG	269584	236	33
16.	G3RED	256872	221	31
17.	I2DMI	256784	223	33
18.	WA6WGL	238170	173	29
19.	EA8RU	233600	201	29
20.	DL6BI	228540	177	29
21.	G3HJC	228258	168	34
22.	ISØRUH	224502	197	33
23.	ZS6AKO	216956	178	35
24.	DK3MG	215556	190	28
25.	KA7CYK	212420	218	29
26.	3D6AD	20700	176	28
27.	W4CQI	202752	188	38
28.	JA2JHR	198664	165	31
29.	W6JOX	193688	156	28
30.	K6WZ	192450	143	25
31.	P5QE	188232	176	28
32.	I2ZGP	168720	178	30
33.	WB6CYA	167552	149	18
34.	W7WHY	166036	151	27
35.	I8JRA	164552	152	27
36.	VE2QO	161400	164	28
37.	GI4AHP	161280	156	33
38.	I5HZP	159852	127	26
39.	PY2CYK	156744	164	29
40.	WØHAH	156360	164	27
41.	I7FKO	154744	207	24
42.	VE2AXO	152520	134	19
43.	W3KV	149632	63	35
44.	EA3AZX	146320	128	30
45.	WB3CCZ	142216	126	30
46.	SM6AEN	137982	111	25
47.	DK1BX	133224	100	35
48.	K1YHM	132990	125	32
49.	VK2APG	122400	124	23
50.	JA8ADQ	122208	118	27
51.	VE7DTA	121160	113	20
52.	W9RY	121100	123	28
53.	DK5WJ	120400	119	22
54.	9M2CR	120224	132	28
55.	PAØCWI	118520	82	26
56.	JH1BIH	116964	112	23
57.	DM5XNN	108300	145	24
58.	SMØIIB	102580	107	28
59.	GM3ZXL	101430	87	24
60.	VE2JR	96800	100	23
61.	VE4BF	96360	100	17
62.	F8XT	96288	105	20
63.	G3PB	96248	104	21
64.	DJ9IR	87744	106	25
65.	IØZSG	86564	124	27
66.	K4VDM	85976	77	26
67.	G4FLM	83864	101	22
68.	JA1DSI	82720	68	22
69.	SM5EIT	80324	70	28
70.	K5ZOH	80040	46	12
71.	G4EEV	78260	86	24
72.	SM7BGE	76368	100	17
73.	W4YZ	76342	96	22
74.	W5HEZ	75200	80	22

Single Op.

NO.	CALL SIGN	POINTS	TOTAL QSO's	COUNTRIES.
75.	VK5WV	74888	91	22
76.	ON7AZ	74702	104	21
77.	DJ3OE	72652	58	25
78.	N7RY	71604	90	18
79.	VE7DLX	70110	91	10
80.	VE6GL	69120	92	19
81.	PAØKFF	67640	98	20
82.	DL8QP	66748	66	23
83.	DF7FB	65754	51	19
84.	DM6AK	64596	97	25
85.	DM2CHD/A	61576	110	20
86.	W6IWO	60272	73	15
87.	WB2W2X	57720	60	16
88.	W6TDY	57456	53	15
89.	SM6BUV	55936	80	18
90.	W7CBY	54360	76	16
91.	I4GZP	53592	64	25
92.	WB2QFE	51264	61	18
93.	ZL2BR	50220	62	16
94.	JE1RWY	49728	56	22
95.	DJ1MP	47460	79	23
96.	G3RDG	46134	83	17
97.	JA4ONZ	44660	40	15
98.	JR6AG	42444	46	16
99.	IV3PVD	41820	71	22
100.	VE1AIT	41470	63	11
101.	SMØEZO	39000	70	20
102.	JH1HWN	38850	37	20
103.	W6II	38448	44	10
104.	KL7IFP	36048	71	6
105.	DJ8BT	35808	34	17
106.	DF1LX	31140	47	19
107.	DL8MY	29176	45	17
108.	DM5YYI	29052	50	19
109.	WB5QBV	28864	31	9
110.	SL3ZR	25806	33	18
111.	I1JMI	25200	14	14
112.	KZ5JA	24840	28	10
113.	OH6HJ	24120	55	16
114.	OK2BJT	23912	47	16
115.	OK3KGQ	22040	56	18
116.	DM2DLE	21690	77	12
117.	SM6CAL	18216	63	14
118.	K8UFW	17460	29	10
119.	OK1AGA	16588	57	14
120.	OK1MP	16080	14	11
121.	W2KHQ	14880	33	11
122.	PAØSOL	14240	29	12
123.	GW3ZVA	13910	27	13
124.	DM3CF	10112	44	14
125.	G3GGL	9120	16	8
126.	VK5BI	9100	11	9
127.	W2ODA	7800	20	7
128.	K2JW	7560	6	6
129.	G3SZS	7080	19	8
130.	5Z4PD	5850	25	9
131.	VE3BPM	4900	10	7
132.	W6AEE	4680	12	6
133.	PAØYZ	4250	5	5
134.	OK3YCM	3360	4	4
135.	DM3GL	2960	17	8
136.	DM4MF	2912	18	8
137.	W8TCO	2880	8	3
138.	DM2CNE	1918	9	7

Multi Operator.

NO.	CALL SIGN	POINTS	TOTAL QSO's	COUNTRIES.
1.	I5MYL	525332	373	44
2.	W1MX	384116	238	36
3.	G3ZRS	306816	211	37
4.	SM5HEV	286704	235	32
5.	G3UUP	263256	227	31
6.	DKØOW	225342	167	30
7.	OK3RMW	174848	164	32
8.	YO3KAA	160430	163	27
9.	LZ1KDP	149760	192	31
10.	UK4FAD	119520	149	25
11.	HA5KFU	106752	146	27
12.	OK3KFF	106036	118	28
13.	WBØEWV	85544	112	17
14.	OZ4IJ	79722	107	19
15.	OK3KII	77280	105	20
16.	HA6KVD	65240	88	22
17.	OZ8JYL	56770	103	23
18.	OK3KEU	46512	97	24
19.	G3RCV	32292	62	14
20.	DM4EE	28998	49	16
21.	G4HJD	17040	50	10
22.	OK2RJB	12750	25	14
23.	OK3KVT	6000	34	12

Short Wave Listeners.

NO.	CALL	POINTS	QSO's	COUNTRIES.
1.	I1-50071	568764	381	37
2.	IV3 13018	420912	292	45
3.	OK1 1057	389545	267	45
4.	P. Menadie. (USA)	354760	250	37
5.	H. Ballenberger	326890	233	33
6.	Kurt Wustner	23744	175	32
7.	Terry Musson (GB)	130744	152	29
8.	DM8987/K	120628	114	26
9.	Barry Niendorf (GB)	112394	62	32
10.	Anton Muench (DL)	95616	108	28
11.	A. Schneider (DL)	47460	81	23
12.	OZ DR-2067	46060	54	21
13.	DM0742/F	16272	32	16
14.	A. Heikhaus (DL)	10110	23	12

The Contest Manager acknowledges with thanks the Check Logs from the following stations:

9LØUP, DM3NYF, DM4DJ, DM4EB, G4FEV, G5BHC, G8CDW, IS0/ES3, LA8SA, ON4BX and VK2EG.

1979 B.A.R.T.G. CONTEST SUMMARY

Radio Amateurs equipped with RTTY gear were soon left in no doubt on the morning of the 24th of March that the annual B.A.R.T.G. Contest was under way once again. By mid morning, the 21 Mhz band was busy with signals from several stations in Africa and later in the day the 10 metre band was active with African and Asian RTTY stations. Twenty metres was full of European signals and the early W stations but many of the latter realised what was happening on the higher frequencies and a general transfer of activity took place in order to catch up on the goodies to be found. All 3 HF bands were active until quite late but a look on 80 was very disappointing. Sunday's pattern was very similar but RTTY activity on 40 was not very evident.

We extend our heariest congratulations to F9XY on his excellent achievement & it is very refreshing to see a French station at the top of the tree. In past years various F stations have taken part in our contest but it is the first time that one has managed to reach the ultimate goal. Nice to see Ed, W3EKT up there again despite some mis-givings on his part as to whether his plans were the right ones! Another welcome addition was the appearance of C5AAN in the Gambia who was able to provide many stations with an African contact. As a matter of interest, almost half of the top twenty stations were outside Europe which must be some measure of the wide interest being shown in the Contest around the World.

This interest in the RTTY mode continues to increase and the number of logs received this year was a new all time high, and was well in excess of many of the other RTTY Contests held in the previous 12 months. Wonder whether we will get to the 200 mark one of these days?

CONT. ON PAGE 11.

CONT' FROM PAGE 10

Propagation conditions seemed to favour the three highest frequency bands, although many W stations reported poor conditions on 10 metres. 80 metres was used to good effect by both European and American stations as the lower frequencies can be used to increase the band multiplier in many cases. The 40 metre band was not at all encouraging and only just over a quarter of the entries show any QSO's on this band which is very similar to the pattern of events of the previous year.

A total of 67 stations managed to work all six continents this year which is quite a large increase on any previous year. As in last year's event, South America turned out to be the difficult one. Apart from PY2CYK (Now active again after a change of QTH), very few of the other stations from that continent made more than a couple of dozen contacts and in fact PY2CYK's log was the only one we received. Africa was well represented this time by ZS6AKO, ZS6BLV, 3D6AD, 5Z4PD, together with a Ghanain station and one from Nigeria. Not as many VK's as usual but ZL2BR was a very welcome station. Asia produced quite a large number of JA stations together with VS6EK and our old friend Colin, 9M2CR.

Most of the usual regulars were active during the Contest and comments seem to indicate that many of them use the B.A.R.T.G. event as an opportunity to get in touch with each other again. However there was some confusion on the status of some of the newer American call signs now showing up on the bands and it would be helpful to many of the European operators to have access to this information. It took quite a while to work out where AH6D was especially as other Hawaian stations were using the usual KH6 prefix as well!

The increased activity from RTTY stations in the United Kingdom was much appreciated and apart from G calls, there were representatives from GI, GM, GW and one from the Channel Isles. All in all over 30 U.K. stations were active on RTTY.

The number of countries active on RTTY during the Contest was again, very high and included: Alaska, Argentina, Austria, Australia, Belgium, Brazil, Bulgaria, Canada, Canal Zone, Canary Islands, Caroline Islands, Colombia, Cyprus, Czechoslovakia, Denmark, Dominican Republic, England, European Russia, Ecuador, France, French Guiana, German Democratic Republic, German Federal Republic, The Gambia, Guadeloupe, Guam, Hawaii, Hong Kong, Hungary, Isle of Man, Isreal, Italy, Japan, Lebanon, Malaysia, The Netherlands, New Zealand, Nigeria, Northern Ireland, Norway, Okinawa, Oman, Paraguay, Romania, Sardinia, South Africa, Scotland, Spain, Sweden, St. Pierre & Miquelon Is., Switzerland, Swaziland, United States of America, Wales, Venezuela and Yugoslavia.

As a result of this level of country activity, 24 new Quarter Centuary Awards will be issued in the near future as soon as the task of sending out the Contest results have been completed. It is also possible that we will be announcing the issue of the first "175" sticker to Arthur, ON4BX in the very near future. Several claims for the American WAC Award have been made but again these may suffer due to the fact the several of the vital stations did not submit Contest or check logs.

Judging by the number of "First time" entries, it would seem that the Contest is bringing together both the tyro and the old hand and this much surely be good for Amateur Radio and RTTY in particular and this gives us encouragement to carry on with it all! Many thanks to your all for your support and I hope that we may hear from you all again next year.

Ted Double, G8CDW.
CONTESTS & AWARDS MANAGER.

UART - -

REVISITED-FROM LAST MONTH

by Irvin Hoff W6FFC
Howard Nurse W6LLO

ADVANTAGES OF A REGENERATIVE REPEATER:

Numerous advantages exist from using a regenerative repeater. Many of these are subtle and would normally not be too evident, particularly in normal-to-good receiving conditions. For one thing, if you have a reperf on the same loop as the teleprinter, you are now assured that regardless of receiving conditions both machines will print identical copy. This is certainly not the case with badly distorted signals where the printer may decide the poor character was one letter and the reperf may decide it was a different letter. If reperfing messages, etc., this could be very embarrassing if the reperf had some errors not on the printer, or vice versa. It certainly makes it very simple to examine the reperf tape if you know the same copy will be on it as on the printer. This is perhaps the principal advantage of any regenerative repeater -- uniform copy. Also with the ability to copy up to 47-48 per cent bias, there should be a significantly fewer number of errors to start with in marginal copy. Even the best teleprinter would be very hard put to do that well, and even so would have to be adjusted exactly in the middle of its range. As a result, the worst possible teleprinter that could even print its own keyboard accurately would copy as well or better than the best of teleprinters in optimum adjustment, not using the regenerative repeater.

Since we try to improve copy by using better receivers with narrow i.f. filters, build better demodulators, keep the machine in good adjustment, then any device that practically guarantees superior results for low cost should be of immediate interest to the enthusiast. In marginal conditions also, many characters are distorted so badly they may not have a stop pulse. In this case the teleprinter is not stopped for that character normally, and can sail around waiting for the next stop pulse which it will expect 6.5 units later. This is not necessarily compatible with the transmitted signal coming in, and a missed stop pulse will often cause an entire word to be lost due to the machine "losing synchronization". The UART particularly is good in this environment as it always supplies the expected stop pulse. The UART may start the machine on a spacing pulse that was not really a start pulse, but there is no way for the teleprinter to get out of synchronization, since all the characters fed to it are valid characters.

cont. next month

DXCC HONOR ROLL
July 1979

Callsign	Worked	Confirmed
ON4BX	182	179
ON4CK	175	173
W3KV	173	170
W2LFL	158	155
W3DJZ	161	153
K7BV	161	148
I8AA	145	140
W4CQ1	142	137
W5EUN	145	135
W8JIN	129	126
F5JA	123	111
DJ8BT	109	105
F8XT	122	100
W7MJ	103	88
VK2SG	96	82
JA8ADQ	95	81
K4VDM	84	81
W3FV	96	79
W0MT	76	72
I2OLW	135	68
WB6CYA	85	66
W2PSY	86	64
WA6CQW	50	48
WB2VTD	53	42

The Southwestern Division HAM Convention will be held at the Anaheim Sheraton Hotel, Anaheim, California. The date is October 19, 20 and 21st. The pre-registration prize is your choice of the following: Kenwood TS 8205, YAESU FT901 or Ten-Tec OMNI, so get your registration in early. The price is $17.00 (complete program), and at the door, $19.00. The banquet is only $12.00, exhibits, tech sessions are $5.00 and $6.00 at the door.

RTTY JOURNAL HOSPITALITY ROOM

Classified Ads

30 words $2.00. Additional Words 4 c ea.

Cash with Copy - Deadline 1st of Month.

THE DOVETRON SSD-100 solid state cross display replaces the conventional CRT and accociated high voltage power supplies as the tuning indicator in the MPC-Series RTTY terminal units.
In addition to "instant-on" operation and a predicted reliability in excess of 100,000 hours, the solid state display out-performs the original CRT in every instance.
The absence (or deactiviation) of the high voltage supplies and the resultant decrease in heat generation increases the MTBF (Mean Time Before Failure) of the terminal unit more than 10 times.
The display itself consists of high intensity (4 millicandelas), red, rectangular LEDs (Light Emitting Diodes) arranged in the traditional cross pattern and operated in a baragraph mode. The two LEDs that form the apex of the cross are tied into the terminal unit's logic in such a way that they extinguish if the TU is improperly tuned to the incoming tones, or if the incoming signal is up-side down in respect to the "sense" of the terminal unit.
A separate LED in the upper left quadrant of the cross display monitors the two input channels and flashes" in the presence of time or frequency dispersive multipath distortion,indicating that the MULTIPATH CORRECTOR should be turned on.
Separate LEDs in two other quadrants monitor the status of the internal loop, the Signal Loss circuit and the Send/Receive mode of the terminal unit, making the SSD-100 a convenient display center of the various functions.
A light sensitive photocell in the fourth quadrant monitors the ambient light conditions at the operating location and automatically adjusts the display's light output. Under normal conditions, the SSD-100 may be read comfortably from 75 feet.
The new front bezel contains an anti-glare optical filter and provides 30% more viewing area than the original CRT bezel.
A retrofit kit (SSD-100K) is available to update existing CRT-equipped terminal units in the field. Your inquiry will bring complete details by return mail. DOVETRON, 627 Fremont Avenue,(PO Box 267), South Pasadena, California 91030.

TELETYPE 43 KSR RS-232 $999.95 Factory New. Postpaid USA. Data Mart, 914 Waverly, Arlington Heights, IL 60004, 312-398-8525. 6-11 PM CST.

THE RACK LINE BY DAYTAPRO, for individual or repeater these versatile uniform boards will do the job rite. All boards are 4½" X 6½" (same as the DT-600) G-10 1 oz copper solder plated with a 22 Pin edge connection. All kits have edge connector included.

CW ID SYSTEM, interfaced for digital, FSK or AFSK keying, 10 minute timer, variable speed (5-24 wpm) 12 or 5 volt use. Kit 27.90, Board alone $8.95.

MINI VERSION OF above CW ID (CW ID only) Kit $19.95. (NEW LOW PRICES)

M4D POWER SUPPLY, Plus 5 volts and 1 amp with crow bar protection, Plus 12 volts and 1 amp and minus 12 volts at 1 amp. Each fused and has LED indication. Kit $32.50 BOARD alone $8.50.

DUEL XB-6 CRYSTAL CONTROLLED CLOCK for UAR/T control develops 6 baud rates each. Kit $26.95 board alone $8.50.

CRYSTAL CONTROLLED AFSK. Now enjoy rock solid frequency with no drift. Kit $28.49 BOARD ALONE $8.75.

TU-LOOP POWER SUPPLY. Low voltage supplies (+5, +12 and -12) all rated at 800 mils each with a high voltage loop supply with the keying transistor located on board. Also has a 20 mil loop driver and keying provisions, input keying need be only 5 volts and ground. Kit $52.49 Board Alone $8.50.

EXTENSION BOARDS (available in July, 1979.) Two types. Stright for rack testing and 90 degree angle for cabinet testing. With Edge connector Kit $13.95.

UT2B SPEED CONVERTOR (Available in October 1979) Write for additional information.

UNIVERSAL BOARD (Available in September 1979) Write for additional information. DAYTAPRO ELECTRONICS, INC., 3029 WILSHIRE LN, ARLINGTON HTS, IL 60004. PHONE 312-870-0555 EVENINGS. Add $1.00 for shipping, Visa accepted.

TELETYPEWRITER parts wanted for all machines manufactured by Kleinschmidt, Mite and Teletype Corp., New only, Also sub-Assembled. I pay shipping. Phil Rickson, W4LNW, Rt. 6, Box 1103G2, Brooksville, FL 33512.

WANTED: ST-6 Demodulator factory or kit. Modified (UT-4 etc.) or stock. T. Mathews, W6CVU, 2322 Huntington Lane, Redondo Beach, CA 90278. 213-374-0345.

DIGITECH TELETYPE DISTORTION Anaylzers — excellent condition-working-$125.00 to $225.00 Variable shift audio frequency TTY converters-good condition-$60.00 to $125.00. TUNHO Inc., RFD #1, Box 152N, Skillman, NJ 08558, 609-466-0721 nites.

FOR SALE MODEL 15 W XRT (metal) table new keyboard assy stored 14 years $35.00: two model 14 TD new from Teletype 1961 used approx. 3 hrs. each. Two model 14 typing reperf w/end of line ind. new from Teletype 1961 (covers are used) reperfs used approx. 4 hrs. $25 each. W6CVU, Tom, 2322 Huntington Lane, Redondo Beach, 90278, 213-374-0345.

UT-4 COMPONENT UPDATE. AY5-1013A Uart $5.00, FC33512DC Fifo $12.00, 1408L-6 D/A $3.25, 74LS221 $1.25, MJE-340/2N5655 $1.25, Also: programmed proms (74S288N tri-state $3.25 each) for following: VE3CTP Ascii/Baudot/Ascii converter (HR Aug77) (also OK for SWTPC converters); Scan or Decode proms for TVT-6 video displays for KIM-1 micro; HEX to 7-segment LED decoder/driver (73 Mag Nov 78), DIP 1% resistor pack for AZCD mod (for ST-6) (Sept & Oct JOURNAL 78) $2.00. Peter Bertelli, W6KS, 5262 Yost Place, San Diego, CA 92109. 714-274-7060.

Ham Radio Magazine - The no-nonsence state-of-the-art technical magazine. Dozens of exciting projects and an emphasis on quality unmatched by any other radio magazine. Subscribe now and see for yourself. 1 year..$12.00.. 2 years $22.00 and three years..$30.00. Ham Radio Magazine, Greenville, NH 03048.

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.

SOLID STATE TIME Delay relay. 10 MW input signal can control up to 1 kilowatt of load power. Great for teletype users in the Microcomputer and/or Amateur Radio environments. Plans or PC Board $5.00, information $ .50. Keith Ryan, Dept. RTTY, Box 3103, Ottawa, CANADA KIP 6H7.

TELETYPE SUPPLIES, Technical manuals, equipment. 11/16" and 7/8" perforator tape. Page paper. New ribbons. Teletype Corp. maintenance manuals. Let me know what you need. Send 75 cents postage for 3 current catalogs. JIM COOPER, W2JC/W2BVE, Box 73, PARAMUS, NJ 07652.

SALE! SALE! SALE!SALE! SALE! RTTY ID GENERATOR. Accepts 5 or 12 volt supplies, 31 characters available, (please include letters, figures, spaces etc.) Your pre-programmed answer-back must be supplied with order. EXAMPLE: DE K9WRL NEIL ARL HTS ILL. Board is the same size as the ST-6 Boards. WAS $34.99 SALE PRICE $24.95. BOARD ALONE WAS $8.50 SALE PRICE $6.95. ADD $1.00 FOR SHIPPING. DAYTAPRO ELECTRONICS, 3029 N. Wilshire Ln. Arlington Hts., IL 60004 VISA AVAILABLE. PHONE ORDERS 312-870-0555 EVENINGS.

UT-4B KITS NOW AVAILABLE, All logic, resistors, capacitors, diodes and transistors to fill board, edge connector included. See November 1978 RTTY Journal for users report. Kit 109.95, UT4B Board alone $17.95 M4D POWER SUPPLY for UT-4B, Kit $32.50, Board alone $8.50 DUEL XB-6 OPTIONAL CRYSTAL CLOCK for UT-4B, Kit $26.95 Board alone $8.75. Additional information available with a stamp. DAYTAPRO ELECTRONICS, INC. 3029 N. WILSHIRE LN, ARLINGTON HTS., IL 60004 VISA ACCEPTED, PHONE EVENINGS 312-870-0555.

TELETYPE EQUIPMENT-Model 28 KSR with three speed shift, multiple transmitter distributor (3) and base, with adjustment and parts manuals. W.E. Baird, W8MBB, 4189 Louis Rd. Broadview Hts., Ohio 44147.

INFO-TECH M-300 Keyboard, M-200 Trimode Converter, Hitachi VM-905 Monitor; all with manuals and in new condition; value over $1,100; $750 takes all including UPS shipping. Gary, WB3DAW, 1804 Ladd St., Silver Spring, MD 20902.

WANTED: CRYSTAL Impedance meters. RFL Models 531, 459 or 1207. Military versions are TS-683, TS-330, TSM-15. Glenn Kurzenknabe, 403 Centerview Ave., New Cumberland, PA, 17070, 717-938-3655.

FOR SALE: 3rd edition of the "List of special RTTY and CW alphabets and codes", now contains code tables for Arabic, Cyrillic, Hebrew, third shift Cyrillic, Greek, Korean, Amharic, and Thai 5-units CCITT3, and SITOR codes. Detailed descriptions of the "decoding" of Arabic and Cryllic transmissions received on a normal machine, and of ARQ/SITOR/FEC error protection systems are included. Arabic, Cyrillic, Greek, Hebrew, and Japanese morse codes are also listed. This offset printed list is airmailed to you for $11.00 or 28 IRC from Joerg Klingenfuss, Goethestrasse 14, D-7400 Teubingen 1, West Germany.

Surplus TD Paper yellow and oiled. 11/16 carton of 10 $3.00 Wt 13. carton of 40 $10.00 Wt48. 7/8 carton of 8 $3.75 Wt 13, carton of 32 $12. Wt 48.7/8 Blk carton of 8 $3.00.Wt 13, carton Of 32 $10.00 Wt 48. Add UPS wt. Harmon, 5628 10th Ave So. Birmingham AL 35222.

FOR SALE: RTTY Demodulator, designed especially for the reception of shortwave RTTY signals with various types of speeds and shifts. The PLL circuit is adapted automatically to the shift of the station received! Printing usual stations like press, military, amateur, diplo, weather, etc., is rather easy with this LED-controlled unit. Features: switchable audio filter; autostart relay; power supply 220 V AC 50 Hz; outputs: loop supply for mechanical RTTY machine, and/or TTL-compatible for VDU. Price, including packing and surface mail postage to anywhere in the world, DM 460.00 or $260.00. Some more information is air mailed to you for DM 10.00 or $6.00; this amount is credited on the final price of the unit if ordered later on. Joerg Klingenfuss, Goethestrasse 14, D-7400 Tuebingen 1, West Germany.

HAL RKB-1 Keyboard RTTY Only. No CW. Dick Mills, 26760 Shadowwood Dr., Rancho Palos Verdes, CA 90274. 213-375-2758.

UP-DOWN SPEED/CODE Converter $69. Select any input/output combination of 60,66,75,100 WPM Baudot and 110 baud ASCII. FIFO buffer memory of 128 characters prevents down conversion overruns. Complete kit includes PC boards, all parts and full instructions. Operates on 115 VAC. RTTY ID Message Generator option add $29. Supply desired message with order (63 char max length). LYNCOM, PO Box 2346, Gaithersburgh, MD 20760.

TELETYPE MANUALS — Model 28ASR, 3-volume set $24.50 plus $1.00 postage. Manuals also available for Model 15, 19, 32, 33, 35, plus thousands of others on military surplus receivers, transmitters, test sets. Send 50c (coin) for large list. S. Consalvo, W3IHD, 7218 Roanne Drive, Washington DC 20021.

ELECTROSENSITIVE FAX paper $4 roll (19" x 450') TS- 1060 ($25), HO-10 ($50), HP-400 ($25), HP-415 ($20), HP-430 ($20), RCA voltohmist ($30). ALL FOB. W6UBS, (714)462-6316.

IF-2 SELCAL-WRU circuit board, $15. (73 mag. Nov.78). Contains all circuits to control TTY and transmitter. Programmable to any access code in minutes. Easily interfaced to any station. Connects to UT-4(UART), or IF-1 regenerative repeater PCB, $12.00. Complete documentation. Commercially fabricated boards. R. Parry, 38 W. 255 Deerpath Road, Batavia, IL 60510.

MSG-1 PARTS. 4"x6" P.C.B. drilled and tinned $5.50. All parts except PROM, I.C. Sockets and edge connector $10.50. 74S811 PROM programmed with your message $5.00. MSG-1 assembled and tested $29.95. Power supply P.C.B., 4"x6" drilled and tinned $4.00. All parts (including heatsink), except XMFR & connector $3.00. 12.6 VCT, 1A, XMFR $5.00 Power supply assembly and tested $16.00. Please add $1.00 or $2.00 for postage and packaging depending on the size of your order. J.W. Young, W6RLL, 16808 W. Goodvale Rd., Canyon Country, CA 91351. (805) 251-2135.

DDT MG-W1HAB. Sorry-insufficient response to continue this project. W6RLL.

FOR SALE: 4TH Edition of the "LIST OF RTTY STATIONS IN FREQUENCY ORDER", now contains more than 2800 frequencies of commercial stations like press, military, diplo, telex, weather, etc. on shortwave. Schedules of around 100 news agency stations are also included. This offset printed list is air mailed to you for $15.00 or 39 IRC from Joerg Klingenfuss, Goethestrasse 14, D-7400 Tuebingen 1, West Germany.

ST-6 FOR SALE, factory wired, very clean with AK-1 $235.00 plus shipping. Melvin Leibowitz, 25 Holly Hill Rd., Wilmington, DE 19809.

MODEL 28ASR TELEYPES $350-$375. RO CONSOLES $175. PAPER WINDERS $35. RO-3-SPEED TELETYPES $175. TAPE PERFORATORS $50. MUCH MORE. STATE YOUR WANTS. SEND SASE FOR PARTIAL LIST. GOODMAN 5454 SOUTH SHORE, CHICAGO, IL. 60615 312-753-8342.

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

FOR SALE-RTTY JOURNALS July 1972-June 1973 inc. Ham Radio Sept., 1972-May 1976 inc. Will accept best offer for all or either lot. F. Eichner, 914 Oakcrest, Charleston, IL 61920.

SPECIAL PRICES on TELETYPE machines & Equipment picked up in Chicago for one (1) month only to help reduce inventory. C.B. Goodman, 5454 South Shore, Chicago, IL 60615 (312) 753-8342.

FOR SALE: Model 28 KSR/W selectable overline non overline, reinker and 3 speed gearshift $395. Model 28 KSR/W selectable overline nonoverline, reinker and 60 WPM gears. $250. I will crate you pay the freight. Model 28 stand alone reperf. Chadless, 3 speed gearshift $140. Model 28 stand alone reperf. Chad type, 3 speed gearshift, and lesu. $175. Model 28 TD/W 3 speed gearshift $275. Model 28 TD/W 60 and 100 WPM gears $125. Distortion analizer $30. Jesse Blanchard, K7WTA, 549 Craig, Walla Walla, WA 99362 (509) 529-7506.

ST-5X TERMINAL Unit. Copies all shifts, auto start, copies reverse or normal shift keying, provisions for UT-4 on board, & all other desired features. Board $12.00/kit $49.50. ST-5X power supply. Includes FSK keying, provisions for CW-ID. Board $6.50/Kit $19.50 less transofrmer. ST-5X AFSK. Crystal controlled solid state dual tone generator. Can be used with any T/U. Board $12.00/kit $49.50. RTTY Scope Amplifier: Perfect cross display, amplifies signal 100X. Board $5.25/kit $17.50. WRU. Complete on one board. Turns transmitter & other equipment on and off, fail safe timer, fully atuomatic CW-ID and RTTY-ID, triggered with pulse to ground-manual, selcal or stunt box, uses pre-programmed proms available at modest charge. Board $18.00/kit $64.50. Bomark, Inc., P.O. Box 7116, Hollywood, FL 33021, 305-962-7219. Send cashier's check or money order plus $1.50 for shipping and handling. Please write for price on assembled kits.

SELL: 28 ASR $295. 28 KSR $220. 28 RO new unused variable speed governed motor. 60 to 100 words per min. 28 TD 60 speed gears $75. 28 Typing reperf 3 speed shift 60-75-100 $95. 33 KSR Rebuilt $350. 33 ASR used good $395. Wiltek DS-3 buffer tape storage unit $250. Lou Carbaugh, P.O. Box 398, New Cumberland, PA 17070.

FOR SALE: NEW Special ST-6 $300, Collins rotery 10KW $100, UCS-300 new with hardware $50, BTC-4905B 3,000 volt xtfmr new $40. K1MOU, Russ, 124 S. Grand St., West Suffield, CT 06093.

The MEG-1 RTTY Demodulator is a low priced, high quality unit designed to be built and used by beginners and advanced amateurs. For information and prices write to the Midnight Engineering Group; P.O. Box 349; Galesburg, IL 61401.

The Midnight Engineering Group offers a large line of quality new components, including ½ and ¼ watt carbon film resistors; electrolytic, mylar, tantalum, disc, and silver mica capacitors; trimpots; miscellaneous other items including enclosures, and Printed Circuit Board Carbide Drill Bits. 1/8" shank, 1" long. Four sized available; .047" (approx. #56 drill), .043" (#57), .033" (#66), and .030" (approx. #68-69). $1.25 each, or set of one each size, $4.50, postpaid in North America only. Minimum order $2.50. Illinois residents add 5% sales tax. For catalogue sent 15 cents stamp. Midnight Engineering Group; P.O. Box 349; Galesburg, IL 61401.

TELETYPE EQUIPMENT and supplies. Specializing in Model 28's. Limited quantity of excellent 28 RO's (friction feed) $225. Special clearance on console cabinets. KSR/RO $15. ASR less TD sheet metal $20. ASR with LXD sheet metal $60. 20 fo each type to choose from. Pick-up and save packing and shipping charges. Fresh roll paper $19 per case of 12 4½ inch diameter rolls (plus shipping). SASE for equipment list. Wanted: gears for all Teletype machines. P. **Ander sen,** K8JOF 115 Boyken Rd., Rochester, MI 48063. 313/652-3060.

ST-5, DT500, NS-1A owners. Get increased selectivity with our active bandpass filter 2125/2295 Hz. See February JOURNAL. Kit $11.95, wired/tested $16.95 postpaid. Nat Stinnette Electronics, Tavares, FL 32778.

9th S.A.R.T.G. WORLD-WIDE RTTY CONTEST 1979.

We have the great pleasure to invite you to join the 9th W/W RTTY Contest run by the Scandinavian Amateur Radio Teletype Group.

Rules:

1. **Test Periods:**
   1: 000-0800 GMT Sat. Aug. 18
   2: 1600-2400 GMT Sat. Aug. 18
   3: 0800-1600 GMT Sun. Aug. 19

2. **Bands:**
   Use all bands 3,5 7 14 21 28 MHz.

3. **Classes:**
   a) Single operator.
   b) Multi operator, single transmitter.
   Note: Logs from Multi operator stations must contain the names and call-signs of all operators involved.
   c) SWL's.

4. **Exchange:**
   RST and QSO nr.

5. **Points:**
   QSO with own country five (5) points. Other country in same continent ten (10) points. Other continent 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/VC 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.

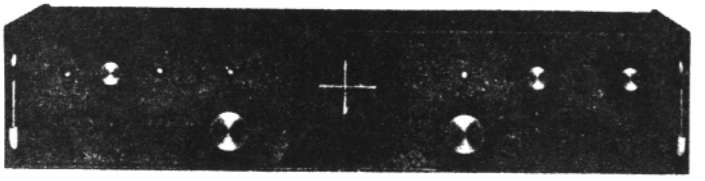
9. **Logs:**
   Logs must be received by October 10th 1979. The logs to contain: band, date, time GMT, call-sign, exchanges sent and received, points and multipliers. Use a separate sheet for each band and enclose a summary sheet showing the scoring, classification, call-sign, name and address, and in the case of multi operator stations the names and call-signs of all operators involved. Comments will be very much appreciated. Send your log to:
   S.A.R.T.G. Contest & Award Manager
   OZ2CJ C.J. Jensen
   Meisnersgade 5
   8900 Randers
   Danmark.

10. **Awards:**
    To the top stations in each class, country, W/K, VE/VO and VK call district.

'Til next month

Prosit!

DOVETRON

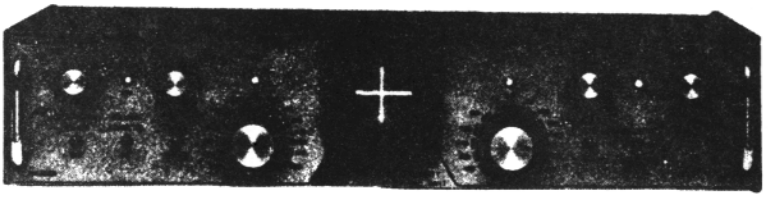


MPC-1000C

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.

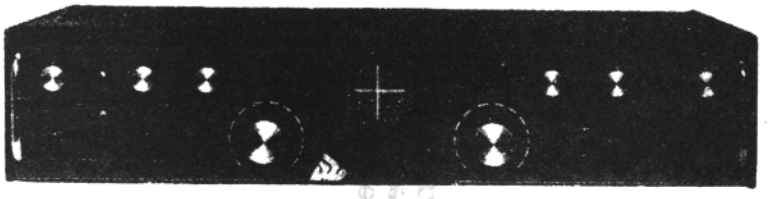


MPC-1000CR

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 Correction & 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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