

MAY-JUNE 1980

RTTY

Journal

VOLUME 28 NO.5

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EXCLUSIVELY AMATEUR RADIOTELETYPE



AMATEUR RADIO STATION NN3SI IN THE SMITHSONIAN INSTITUTION, WASHINGTON, D.C. BEING OPERATED BY NEIL FRIEDMAN, N3DF, ONE OF THE VOLUNTEERS OPERATING IT IN THE "NATION OF NATIONS" GALLERY SINCE 1976. PHOTO DICTIPS ABOUT ONE HALF OF THE OVERALL STATION. RTTY EQUIPMENT INCLUDES A HAL KEYBOARD, VIDEO DISPLAY, AND ST-6 TU. A DRAKE TR-7 IS NORMALLY USED ON RTTY, AS IS A 7 ELEMENT KLM LOG PERIODIC ANTENNA THAT IS TOWER MOUNTED ON THE ROOF OF THE MUSEUM.

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"BLOCKBUSTER"

NOTES ON RE-INKING PRINTERS

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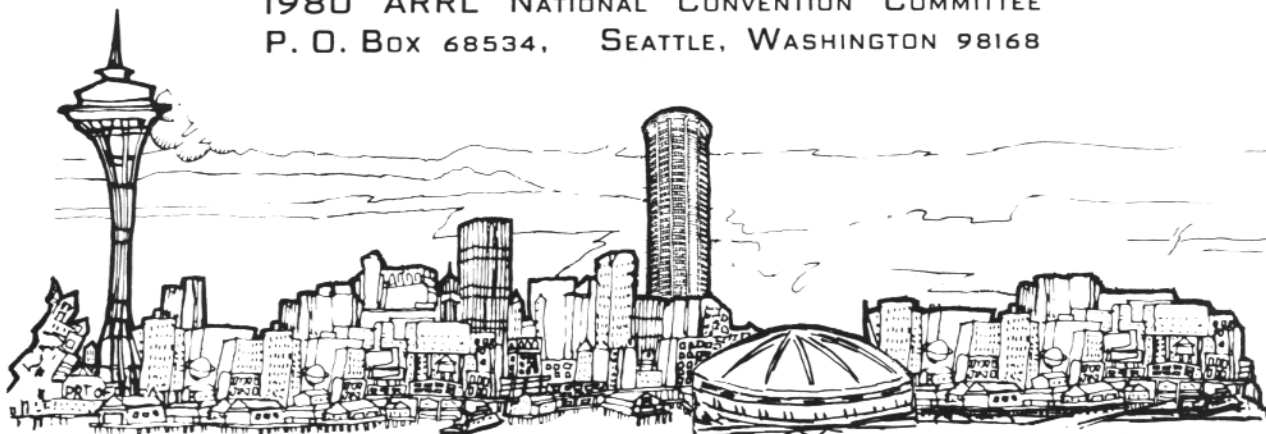
Vic Clark, W4KFC will explain the results of WARC-79 and what
it means to the future of amateur radio.

Meet ARRL President Harry Dannals.
W2HD, and other ARRL officials.

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HITS & MISSES

George Hammon WA6CQW
14215 Pecan Park Lane SP 73
El Cajon, CA 92021

FROM
THE
MAILBAG



The Hobby of RTTY is bursting at the seams. The use of ASCII, microcomputers, software for RTTY etc, makes it easy to forget the new ham just getting into RTTY. We all remember our first novice rig and who could afford a coax or TR switch. I used a knife throw switch to go from receive to transmit. I still believe in that spirit and hope it never dies especially in RTTY. In my column this month I hope to show how easy it is to get on RTTY and the amount of money you want to spend is up to you. The backbone of RTTY is lots of building and homebrew gear (Editors note: I wish you would all get into the swing and send more homebrew articles to the JOURNAL for this is what is needed-DEE). The amount of equipment available for RTTY in kit form is endless and as the newer RTTY Ham's interest grows so does the level of sophistication in their equipment. An overview of RTTY machines available appeared in the stark RTTY newsletter (full credit is given to WB8RVM Joe Ebner & the Group) this really hits the nail on the head and I hope by greater dissemination the JOURNAL will help newer RTTY Hams just getting into RTTY. EDITORS NOTE AGAIN: the JOURNAL will help any new ham in RTTY and is also seeking articles to be reprinted in the next RTTY Beginners Handbook, all hams please help. What articles that have been in the JOURNAL would be helpful and what articles are needed for the next Beginners Handbook? Send to George or to the Journal office). TELETYPE CORP. Model 15

This machine definitely comes under the heading "heavy duty". The 15 was built to last forever. Thousands are in amateur service and spare parts are no problem. The machine is quite heavy for its size. It is relatively noisy and the keyboard is quite stiff but this machine is inexpensive and will probably outlive the buyer. It should cost \$50-\$100 depending.

Teletype Corp. 14 transmitter-distributor---- Usually referred to as

a "TEE-DEE" in RTTY jargon. This is the machine that reads and transmits the punched paper tape. This machine is also rugged, noisy and a good buy. About \$25-\$40.

Teletype Corp. Mod 14 Reperf- this device punches the paper tape either by its own keyboard or directly from the loop. If you intend to copy and save those "PIX" this is the machine you need. Again, it's noisy, built to last. About \$35-\$55.

Teletype Model 19- This is 15's big brother. The 19 set is actually a 15 printer with the keyboard equipped with a tape punch. This punch will not operate off the loop but rather is directly connected with the keyboard. Because of this keyboard when pulling tape, is very stiff. A M-14 TEE DEE and a table to hold everything is usually included. Sometimes a M-14 reperf is offered along with the 19, but sits on another table. \$100-\$150.

That covers most of the "elder" Teletype stuff. I'll also mention another model in case you run across it. The model 26, STAY AWAY FROM THIS ONE, as it was only intended for VERY light duty. By now it is worn out and not worth fooling around with.

The Model 28 is probably the most desirable TTY for most RTTYers. It is actually a whole series of machines. If you are serious by all means purchase some or all of the 28 series

28KSR-The KSR means "keyboard send and receive" which means this is a keyboard and page printer in one cabinet. The keyboard as well as all the 28 series, is very smooth and a pleasure to operate. The machine itself is much quieter than the 15. As a matter of fact, you can actually hear yourself think while the machine is operating. 28's are built for long continuous service. Because they are more modern, they look prettier and cost more-\$150-\$250.

28ASR or automatic send and receive this machine includes a tape punch and reader under the same cabinet as the page printer \$300-\$450.

The 28 series also includes a "receive only" or "RO" which is only the printer without a keyboard. Also, stand alone reperf and TD's. When buying any kind of TTY gear, ask about the motor, or better yet, have a look at it yourself. Try to get the synchronous type and stay away from the governed motors. Another thing, don't play strongman with any of these machines. Get some help moving them around. A Novice will generally purchase a printer first. A local loop is secondary. The best plan at this stage is to look at the moving parts and see if they need lubrication. #23-25, available at most electronics stores is what I use. Many machines do not contain a power supply so here is a typical loop supply that I use:

PLEASE TURN TO PAGE 14
FOR SCHEMATIC

T1 signal 241-5-120, triad N-48X or stancor P6411 jacks 1 & 2 should be close circuit insulated from chassis, fiber washer are supplies with jacks. So much for the loop supply, merely adjusting the resistor for 60ma and you are in business. Additional jacks may be utilized and as long as they are close circuit types the loop stays intact and when you plug additional equipment in it also is now in series with the loop.

The next step is a TU or converter. Next month I will discuss this and how to hook it all together. The system on hooking up your equipment is endless and as you progress you will custom design it to fit your needs.

I hope that in some small way this helps the newcomer. In future columns the blank spaces will be filled in.

So long for now.

George, WA6CQW....

RTTY-DX

SKIP PRINSEN WB6CYA

3611 Merrimac, San Diego, Calif. 92117

714-276-3182



Greetings to all.....

The 1980 BARTG was much better this year than last. At my operation I printed all continents except South America, as I understand was the case for most operating in the contest. 9A10NU was extremely active giving out numbers reported at well over 500! this should be a record to say the least. QSL info for the contest operation go to IOLVA. George W2IUC worked WAC during the contest.

The DXCC honor roll will run in the July-August issue. Please don't wait until the last minute to give me your score. I can be found on 14082.5 on the autostart net with the Heathkit computer group most evenings from 4PM to 9PM PST. If you have any last minute changes a phone call or break into the net and I'll be happy to hear from you. I must have all of your inputs my Mid-June. Remember do not mail your input to the JOURNAL office as that adds up to several weeks of delay before I get them.

Overseas amateur radio operators may submit their QSL cards to their countries DX awards managers in lieu of sending the QSL cards to me. This will decrease their chances of being lost in the postal system. I need two copies of your list of contacts with info (band, report, date etc.) signed by the DX manager from your country's Amateur group.

Franco Fanti of the "Giant" RTTY Flash contest writes that when the dates for the March contest were chosen a calendar for 1980 was not available and as a result leap year not taken into consideration. Dr Fanti asked that we print this and he also apologizes for any confusion caused.

Here are some of the callsigns reported active during the past few weeks: 9A10NU, ZS2AR, EA8RU, HL9UN, ZS2MI, FK8CR, GJ3FKW, TU2IW, DK5BD/ST2, FK8DG, 5NOSID, HB9AVK, ZS1XR, ZL2BII, ZL4GJ, 5N9-GD, 5N0DOG, VP2AR, GI3LSM, GI4AHD, GM3KJF, TI2WR, LX2MG, CT4KQ, CT1KB, 5T5JD on 50

band, HP1XAW, A4XFW, LU5AD, OH2BMR, OH1RV, Y39XO, Y45UA, two YL's Lily, YU2CDS and Mary, I2LLT, EA9FJ was on 21.104 on 26 March.

QSL info-9A10NU QSL via IOLVA for contest (BARTG) only.

FK8CR "Eddy" via W7OK Don Brickey, POB 95, Las Vegas, NV 89101.

QSL info is needed for the following callsigns: ZS2AB, EA8RU, HL9UN. Thanks to W2IUC, W2PSU, W3DJZ, W3KV, K6WZ and WOHAH for their inputs this month

~~~~~  
 73 de Skip  
 ~~~~~

XE1WU

became a silent key on the 8th of March, 1980. "Paco" was the only XE station on RTTY for many years.

~~~~~

## RESULTS OF DAFG SHORT CONTEST PART 1

| Group :A Points |    | Group:B      |    |
|-----------------|----|--------------|----|
| 1. DJ1XT        | 35 | 1. DK6SY     | 25 |
| 2. DK2WH        | 29 | 2. OK1WEQ    | 23 |
| 3. DL8VX        | 26 | 3. SM6ASD    | 20 |
| 4. DK8GR        | 23 | 4. DK8XK     | 18 |
| 5. I1TXD        | 22 | 5. DF30E     | 14 |
| 6. DL5GH        | 19 | 6. DJ8GJ     | 13 |
| 6. DL8QP        | 19 | 7. HB9BTC    | 11 |
| 7. DF20K        | 15 | 8. DKOEM/P10 |    |
| 7. SM6AEN       | 15 | 9. DF4ES     | 9  |
| 8. DK4IS        | 8  | 10. SM6CVE   | 8  |
| 9. DF7FB        | 4  | 11. DK4IO    | 6  |

## Group: C COUNTRIES

|                                 |      |    |
|---------------------------------|------|----|
| 1. Steffen Leonhard             | (DL) | 37 |
| 2. Herbert Schwartz             | (DL) | 29 |
| 3. Andreas Schneider            | (DL) | 14 |
| 4. Ruth & Hans Bättig           | (HB) | 8  |
| 4. H. Ballenberger              | (DL) | 8  |
| H. Dieter Berretz Checklog..... |      |    |

## Group :D

|            |     |           |      |
|------------|-----|-----------|------|
| 1. DB2FB/P | 680 | 12. DL5KX | 9 92 |
| 2. DJ8QP   | 255 | 13. DK6HR | 78   |
| 3. DB1RG   | 186 | 14. DL8QP | 74   |
| 4. DB3EI   | 182 | 15. DB3XU | 71   |
| 5. DL0UF/p | 172 | 15. DD9FA | 71   |
| 6. DC1ZN   | 160 | 15. DB6JV | 71   |
| 7. DB4IW   | 148 | 16. DK4IS | 68   |
| 8. DB2BP   | 110 | 17. DK0UK | 44   |
| 9. DF1QK   | 105 | 18. DD8CL | 32   |

|           |     |            |    |
|-----------|-----|------------|----|
| 10. DD9FX | 101 | 19. DC3MY  | 17 |
| 11. DJ8GJ | 95  | 20. PE1DFF | 12 |
| *****     |     |            |    |

## NORTH & SOUTH AMERICA RTTY FLASH

SPONSORED BY I.A.T.G. Points

|            |            |
|------------|------------|
| 1. I8AA    | 18,127,036 |
| 2. I2DMI   | 9,678,800  |
| 3. I5FZI   | 8,609,700  |
| 4. VE7CIM  | 3,599,800  |
| 5. VE2AXO  | 2,279,100  |
| 6. KOPJ/6  | 1,915,100  |
| 7. W7MI    | 1,649,800  |
| 8. HA5KBM  | 1,358,550  |
| 9. VE7DLX  | 758,400    |
| 10. OZ9GA  | 697,550    |
| 11. OK3KII | 515,000    |
| 12. W6IWO  | 356,500    |
| 13. OK3RMW | 305,150    |
| 14. K8UFW  | 253,800    |
| 15. OK3RJB | 240,200    |
| 16. OH2CQ  | 183,300    |
| 17. WA6UFY | 171,900    |
| 18. G3UUP  | 144,000    |
| 19. UK4FAD | 142,800    |
| 20. I1TDX  | 128,800    |
| 21. DJ5SQ  | 114,450    |
| 22. SM6HCJ | 81,900     |
| 23. W8TCO  | 11,100     |

## S.W.Ls

|                    |           |
|--------------------|-----------|
| 1. OK1-11857       | 1,576,200 |
| 2. H. Ballenberger | 1,060,484 |
| 3. OK1-20677       | 748,100   |
| 4. OK2-21478       | 25,200    |

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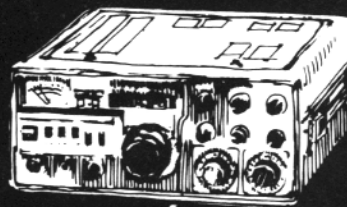
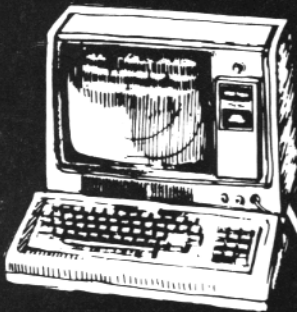
HAM HELPS

TAPESPLICE-I find that any given surface such as the glued part of an envelope or brown craftpaper cut to 11/16" and run through the perf with an all "ltrs" combination, makes an excellent splice tape for torn sprocket hole tapes...K9WRL.

PAPER HANDLING-Heavy model 19 & 28 series printers can be greatly aided in movement by a set of dolly casters found at your local hardware stores. A blessing on carpeted surfaces. W7GPP
 MODEL 28 SPEED CONVERSION- When converting a model 28 3 speed gearshift from 60-67-100 to 60-75-100 WPM, it is necessary to change gears #195263, 22 teeth and 195264 49 teeth to #145-369 24 teeth and #145374 47 teeth. W9CPD.

TYPEBOX CLEANER- A good ole toothbrush and soapy water removes ink buildup from hard to get to places on 28 series printer typeboxes. Be sure to oil properly to prevent rust buildup on hammers and springs. WBOQCD

TRS-80, PET, APPLE, SORCERER Ham Interface Systems



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- M800** adds advanced RTTY (split screen) to CM80/M80 **\$99**

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IF-2 SELCAL-WRU PRINTED CIRCUIT BOARD \$15.00 (73 Magazine, p. 254 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.

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out timer and interface components. Board is the same as that for CW ID System. Kit was \$21.95 Now on Sale at \$19.95. UT-2B SPEED CONVERTOR, Board has transitional autostart, on board clocks, parallel buffered outputs, FSK keying output. Boards have two clocks for basis speed conversion (one speed per clock, for multi speed see XB-6 clock board.) May be used for ASCII with slight modification. Complete kit \$39.49, thru plated board alone \$14.95 TU-LOOP POWER SUPPLY, If you are looking for the ideal loop supply for your new demodulator board this is it. This board has provisions for a plus and negative supply (12 or 15 volts), a 5 volt supply, and a high voltage loop supply. All supplies need not be mounted on the board if operation of one of the supplies is not desired. Loop supply has provisions on board for keying transistor. All supplies have LED's for indication of power. Complete kit (plus and minus 12v, plus 5 volt and HV 250 volt loop supply) \$56.50, board alone \$8.50. DUEL XB-6 UART CLOCK BOARD. Develops 6 baud rates for each side of UART. Complete crystal control. Good for UT-2 and UT-4 systems. Kit \$27.85, board alone \$8.95. CRYSTAL CONTROLLED AFSK BOARD. Supplies rock solid tones of 2125 for mark and 2295 for space. Avoid drift with crystal control. Complete kit \$29.50, board alone \$8.95. MULTI VOLTAGE POWER SUPPLY M4D Supplies plus and minus 12 volts at a constant 800 ma and 5 volts at 800 ma. 5 volt supply is crowbar protected to avoid overload of chips. All supplies have LED indication for voltage presence. Complete kit \$33.95, board alone \$8.50 M4D same as above but with 5 volt supply expanded to 3 amps \$51.95. MS-512 SINGLE BOARD POWER SUPPLY, Where space is at a premium this single voltage supply fits nicely. Voltage is determined by voltage regulator. Supplies vary from 5 to 24 volts with change of regulator and transformer. All parts including transformer fit on the 2¼ x 4½ board. Current output 1 amp. May be configured for negative or positive supplies. SPECIFY NEGATIVE OR POSITIVE VOLTAGE, 5, 6, 8, 12, 13.2, 15, 18 or 24 volt. Complete kit

(5-18 volt \$13.95) (24 volt \$14.95) board alone \$5.75. Available from DATAPRO ELECTRONICS, 3029 N. Wilshire Ln. Arlington Hts, IL 60004. Add \$1.00 for shipping. Use your VISA for added convenience. Phone 312-870-0555 evenings. I PAY CASH-KLEINSCHMIDT MODEL TT-98 and TT-76 Call Dave collect (213) 760-1000.

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UT-4B BOARDS, SEE NOVEMBER JOURNAL for users report. Complete conversion and many additional extras as seen in 1974 RTTY JOURNAL plus other additional modifications such as parallel buffered outputs, transitional autostart and more. Slight modification for ASCII use. Price \$18.95 ea. plus shipping. See our other ad in the classified section for M4D power supply and XB-6 crystal clock specifications. DATAPRO ELECTRONICS, 3029 N. Wilshire Ln., Arlington Hts., IL 60004. Visa accepted. Phone 312-870-0550 eves. WANTED: MODEL 26 TELETYPE, WORKING OR NOT (with synchronous motor only). State price and condition. Richard Peterson, WA6NUT, 657 Circle Dr., Santa Barbara, CA 93108.

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through 35 machines. Send us a list of your teletype requirements. All prices are FOB Brooklyn, NY. Atlantic Sales, 3730 Nautilus Ave., Brooklyn, NY. 11224. Tele: 212-372-0349.

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MODEL 33 RO'S LESS STAND AS IS. Used/checked on line prior to shipment \$250 total, shipped prepaid anywhere in continental USA. With stand \$265. W/RS 232 installed \$300 while they last. Please specify 20 or 60MA service. All units checked for major (visible) wear. Model 33 manuals \$20 per set volume 1, 2 and parts. Paper \$30 per case of 12 rolls. Ribbons \$17 per one dozen box. Please send certified check or money order. Many supplies and various terminals as is and rebuilt. Parts are also available. Please write or call for lists. Tom Marriott, TRAM TELETYPEWRITER SERVICE, 58 E. Elm St., Central Islip, NY 11722, 516-582-9787 NEWS-NEWS-NEWS-AMATEUR RADIO'S NEWS-paper "WORLD RADIO". Trial subscription Two issues for one dollar. WORLD RADIO 2509-F Donner Way, Sacramento, CA 95818

CON'T

ON PAGE 12

8

Richard Parry, W9IF
 38 W 255 Deerpath Rd.
 Batavia, Illinois 60510

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How do you make a great mode like RTTY even better? Easy-join an autostart group. Any RTTY aficionado can join an autostart group. Autostart operation allows friends to keep in contact with each other, and best of all, you don't have to be present to receive the message. The teleprinter is controlled by the station sending the message.

If an all-call system is used rather than a selective calling system like the one described in this article, chances are you will come home to a teleprinter with an empty roll of paper. If you don't mind culling through the print-out looking for your note, and if you are one of the amateurs with plenty of teleprinter paper to spare, the simple all-call circuit will be just fine. However, most autostart members prefer a selective calling system (Selcal) to ensure only notes addressed to them are received.

Before the burgeoning of integrated circuits, the selective calling system used a mechanical stunt box. The stunt box is a sub-system of the model 28 teleprinter which allows the user to program control functions into the teleprinter by inserting code bars. Typically, an autostart enthusiast would program the stunt box so that the last three letters of his call would turn on the teleprinter, and four consecutive Ns (NNNN) would turn it off. While this system works well, few amateurs are fortunate enough to own a model 28.

One other pleasant feature of an autostart station is the WRU system. Leaving a note for a friend can be a hit or miss affair unless you are sure his equipment is up and running. While some autostart members leave their equipment on 24 hours a day, it is still reassuring to receive some feedback informing you that the equipment is functioning and that you are not just talking to the air (no pun intended). An answer-back system, also referred to as a Who-Are-You (WRU), allows one to, in essence, interrogate the condition of the equip-

ment. To interrogate the station's status, one typically types the last three letters of the station's call followed by the characters Figures, Blank, and H. When the WRU circuit detects this sequence, the receiving station's transmitter is turned on briefly and a short message is sent. Some stations transmit a short message giving the station's call and location. Other stations transmit, in addition to the above, the present time and date.

The WRU has an additional feature-it can be used to ascertain present propagation conditions. Imagine being able to turn on a transmitter thousands of miles away to confirm the present propagation characteristics. Thus, if there is no signal, or perhaps only a weak signal in answer to your WRU attempt, you may then decide not to attempt a full message.

Note that, unlike the Selcal system, a licensed amateur must be on the premises in order to legally have the WRU system operational.

Fig.1 shows the block diagram of the Selcal and WRU system described in this article. The circuit was fabricated on two printed circuit boards: IF-1 and IF-2.

The IF-1 circuit has two functions. It changes the serial output data of the demodulator to parallel data and simultaneously regenerates it. Parallel data simply indicates that all five bits of the Baudot code are available simultaneously. This parallel data is then fed back into the UART chip, giving us serial data once again. However, it should be noted that this serial data has been regenerated and is free of distortion. For this reason, it is called a regenerative repeater. If you built only this portion of the project, you would already have improved your station.

The IF-2 circuit decodes the parallel data and determines what operation is called for (i.e., turn on the teleprinter, turn off the teleprinter turn on the transmitter).

Building this particular Selcal and WRU system has several advantages.

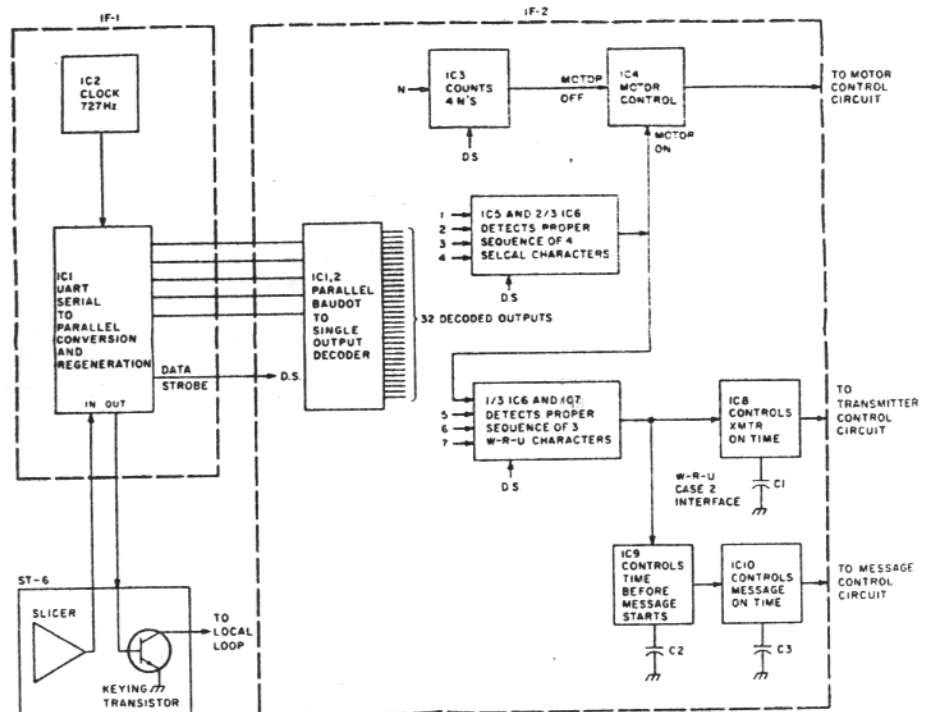


Fig. 1. Block diagram.

CON'T ON PAGE 10

For example: The Selcal and WRU access code can be programmed in a matter of minutes. The Selcal and WRU access code may be programmed for any Baudot code character. The WRU circuit automatically shuts down after a predetermined time out period. Therefore, the transmitter cannot be latched in the "on" state simply because a shut-down command was not received. Open collector outputs allow easy interfacing between the unit and the station. Many interfacing techniques are available. One method allows the WRU circuit to turn on the transmitter for "x" seconds (typically 10) before the WRU message is sent. This grace period allows time for tuning and actuating switches by the receiving station if necessary. For those with a UT-4 or some other serial to parallel circuit, the IF-1 board is not required. For those simply wishing a regenerative repeater, the IF-2 board is not required. For those wishing only a Selcal, only a portion of the IF-2 circuit need be used, and construction of the unit is facilitated by the use of professionally fabricated and drilled printed circuit boards available from the author.

THE REGENERATIVE REPEATER

The IF-1 circuit has two functions: It changes the serial data to parallel, and it regenerates the signal at the same time. The regeneration process removes bias distortion from the signal. Other distortion, such as that which comes from dirty keyboard contacts, is also removed. All this is accomplished by a super chip, The UART. UART is the acronym for Universal Asynchronous Receiver Transmitter. A knowledge of the operation of this sophisticated integrated circuit is not necessary to build this project. However, for those interested in more information on the Uart, see the series of articles by Irv Hoff listed in the references. Note that the UART is a MOS device and as such is sensitive to any electrostatic or high voltage charge. This is why the device is shipped in a conductive material. Because of possible damage the UART must be handled properly. Rather than define "properly" here, I refer the reader to J. Magee listed in the references.

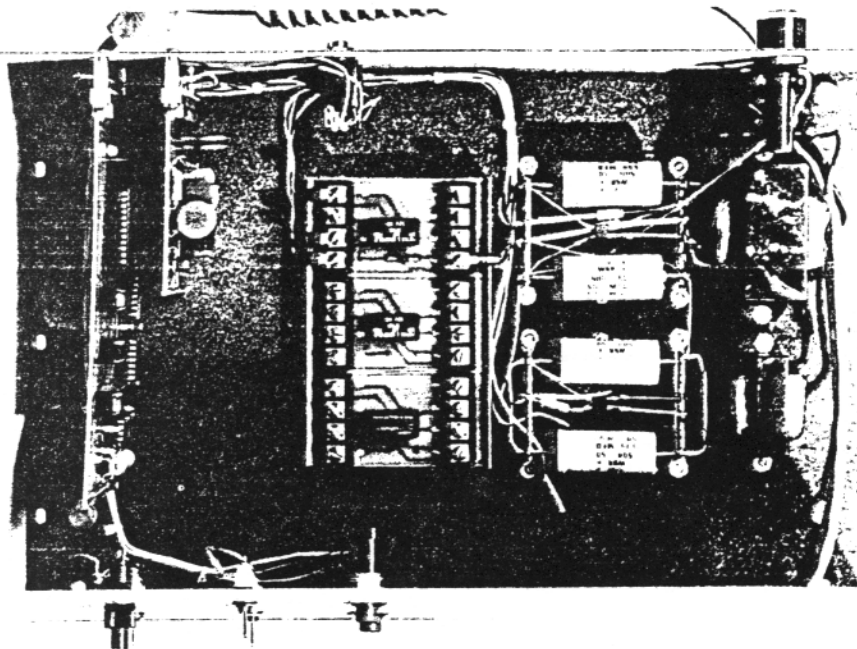


Photo 2. Top view of the unit. The IF-2 Selcal and W-R-U board is shown at the extreme left. The IF-1 regenerative repeater board is located to its immediate right. The relays to control the teleprinter, transmitter, and W-R-U message generator are shown slightly left of center. The power supply uses the remainder of the chassis.

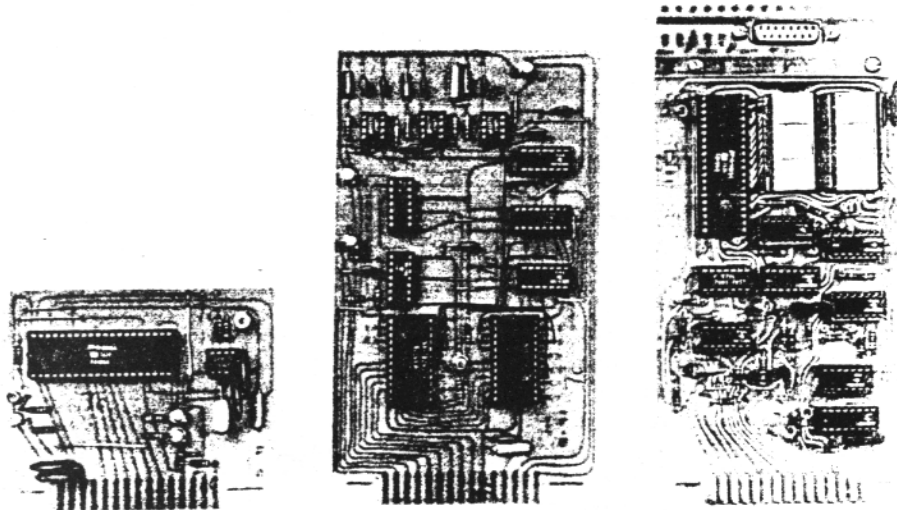


Photo 3. The small IF-1 regenerative repeater board is shown at the extreme left. In the center is the IF-2 board which contains the necessary circuitry for the Selcal and W-R-U. To the right of the IF-2 board is a UT-4 board that contains a UART. This board is not required for this project; however, it is shown here to indicate how those amateurs with a UT-4 using commercially fabricated boards may pick off the parallel data from the UART. Note that an extension was added to the board which contains a multi-pin connector. Wires from the output of the UART were run to the connector under the board. Using this method to obtain parallel data obviates the need for the IF-1 board.

CONTINUED IN JULY-AUGUST ISSUE.



L O O KING BACK
to

"TAPE OFF THE FLOOR"

WBØESF

R. Wilson, 4011 Clearview
Drive, Cedar Falls, IA 50613



FROM MAY 1954

Spring is certainly in the air! The Dayton Hamvention on April 25-27 will be one of the best ever (despite what Wayne Green says). It will be very nice meeting the people with whom I have worked on-the-air with or corresponded with. Hope to see all of you there.

When "QCD" goofs, he really goofs and admits it. My March column featured HF ASCII bandplans and suggestions. My friend Nat Stinnette, W4AYV, advises that some of the frequencies recommended fell into the "Novice-CW" bands. It has been a long time obviously, since I have worked that portion of the Amateur Spectrum and my apologies to our new operators. Monitoring the HF bands, I hear very little ASCII as yet. No doubt it will grow as stations get set up. I am still a firm believer that ASCII RTTY is best served on VHF/UHF bands and would like to hear from my readers on what is happening with the new 8 level code since its' FCC approval on March 17th. You ASCII/HF'ers let the JOURNAL know where you are running it, OK? (Thanks Nat!) W4AYV recommends 25 KHZ. downward. KOVKH Dick-where are you testing it at?

Last months' initial "RTTY MICRO COMPUTING" column by K6AEP should have been of interest to many of you involved with personal computers used in Amateur Radio. Clay spoke to the West Valley Amateur Radio Club on the 16th (April) and continues to fascinate us SSTV'ers and can be found at 28.680 on weekends. No matter how hard you work towards perfection, there is always errors or omissions on any project. Such was the case on February's VHF RTTY Repeater Roster. WA4WHD/R needs to be added to the list. It is owned and operated by Ed Webb, W4FQM, and his XYL, on 146.100/.700Mhz. and covers an area in the

Gulf Coast area from West Palm Beach to Homestead, Florida. N4ML, Milt there is your RTTY representative. Ed's regenerative repeater has an ERP of 180 watts and accepts 170 shift at 45 baud. Special features include a "RTTY-ID" after the normal "CW-ID". 147.78/.18 phone repeater in Miami Beach (1/4 KW) is PL access and serves the area as a RTTY technical/computer discussion group facility. Thanks for the info Ed. Gary Budas' address is updated to WAONDN, 17251 W. 67th St, Eden Prairie, MN 55344. Gary still has some copies left of the RTTY JOURNAL Bibliography, a condensed listing of some of the past JOURNAL article listings.

Chris Plummer, G8APB BARTG contest manager writes the results of September '79 contest as well as rules for the new spring contest. See Contest column for details. From AMRAD newsletter, W4RI reports on a March 17th "ASCII QSO PARTY" in which as many people as possible sent ASCII mode communications after the stroke of midnight. Any stations qsoing on ASCII on the 147.81/.21 repeater send proof of contact to AMRAD for qualifying certificate. WBOKFB, Jim in Cedar Rapids reports hot RTTY activity on 10 meters as well as the local 146.600 simplex RTTY circuit. Jim is also a member of the Southwestern Iowa ATV Society where they are putting up a fast scan TV repeater in the Quad City area. WOYMW, Mike Hunt reports a new "specialized communications-digital repeater" at 147.63/03 Mhz for RTTY (Baudot and ASCII) and SSTV (A5) operation along with Phone-FM and "autopatch". KOFXM, John Baker in Muscatine, Iowa now active on Navy-Mars RTTY on 40 meters as well as 146.700 local FM circuit. Send more photos of RTTY repeaters!

See you in July!.....Mike

..Do you copy Walt and how are things have only worked BYB and LKK so far but was having trouble with final amp yesterday.-so guess what sa, were you on yesterday-W8HP de W8GWA.....
...Good morning and thanks for the call. Name is Cecil, W8GWA, W9CNN de W8-GWA. Good morning Cecil, name here is also Cecil but never go by that name so Dick is it. That is the middle name and have used it for some twenty years....
...W8ZM Detroit de W1BGW, Boston. Good afternoon Bob, and how do you copy me this afternoon? Guess condx only working between Boston and Detroit today! Had a QSO with Earl before. Have asked with VE2ATC but no hear, so what say Bob?..
...W9TCJ de W3PYW. You with us Bob? So far we have reported in the net W2PBG W2JAV. Any other stations wish to check in?..
...Well I guess I used enough of your paper for this time so back to you there Earl. W8BL de W2PBG, Bayside, NY.
...W1BGW es W2JAV es W2BDI de W2PBG, Bayside, LI NY. Roger and solid on all the xmissions. Good morning Jack and nice to hear you agn.

"KONTEST KORNER"

VK/ZL/Oceania	14-15 June	80	coming
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FOR SALE:TEMPO 2020 LIKE NEW,Can be used for RTTY has 600 ohm output, phone patch,AC/DC speakers,filters, built-in.\$495 plus UPS.E.Shafer,N8ES, 3479 Kersdale Rd.Pepper pike.OH,44124 Phone 216-831-9198.

TELETYPE & ALLIED MACHINES & ACCESSORIES.SASE for list.20% off on all pick-ups.10% off on all shipments. B.Goodman,5454 S.Shore Dr,Chicago,IL 60615 (312-753-8342).

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TELETYPE EQUIPMENT & SUPPLIES,Model 28 RO \$125,28ASR \$350,ROTR (60-75-100)\$150,28 TD (LXD) \$100.New roll paper (12/case)\$21 (4½ diameter),\$25 (5 diameter).Ribbons \$10/doz.FOB Rochester,1980 list now available SASE. P.Andersen,115 Boyhen Rd,Rochester, MI 48063. 313-652-3060.

MODEL 28ASR WITH KEYBOARD PERF and TD \$350.For reperf instead of perf add \$50.Model 28KSR \$175.Model 28 reperf with keyboard \$150.Model 28 reperf (no keyboard) with 60-75-100 gearshift \$150.Model 28 stand alone TD \$100.Model 32ASR \$350.Model 28RO (receive only)\$150.Model 35 RO (AS-CII) in model 28 cabinet with 20 MA power supply \$200.All equipment rewired and ready to plug in.FOB Akron. Bill Parker,K8NCV,984 Amelia Ave., Akron,OH 44302.

HAL ST-6 TERMINAL UNIT 850 and 170 shift \$200 plus shipping.Model 28 Miniatur TD (LXD) includes 60 and 100 WPM gears \$100 plus shipping. Bud Herring,POB 426,Weaverville,CA 96093. Phone (916)623-4371.

NS-CQ,solid state automatic CQer. Board and PROM programmed your call \$21.50 PPD.SASE for info.Nat Stinnette Electronics,Tavares FL 32778. STELMA TDA-2 ANALYZER,MANUAL,GOOD. 20 lbs UPS €75,W4YZ,2304 Dogwood, Huntsville, AL 35810.

NOTES ON REINKING RIBBONS

BY Dave Chapman,W9DPY since 1927.

In general the basic machines of most teleprinter systems with permanent copy use paper and need a ribbon for the printing mechanism.

The two most popular are the "nylon" or the cotton. The cotton ribbon gives a much heavier print and holds it's ink much longer. The nylon,while giving a lighter print and getting "thin" much quicker has a much longer mechanical life, and wears many times longer.

It is very easy and low cost to reink the ribbons. My favorite method is not original.--It came from Truman Boerkoel,K8JUG 10-15 years back.

I use NCR Corp.K575F black ink that can be purchased in 1½ oz.tubes for \$1.25.Purple is also available #K764F one tube lasts me several years.

Take an old usable ribbon spool and trim off one side. Pix #1 shows the modified ribbon spool on my 32 page printer,ready for reinking. Note a;; the ribbon should be on one spool.

The same scheme works on my 28LP page printer and the 28 typing reperf and 26 machines. It will also work on the 33.

I use a "SPUDGER" pix 2 to wind the ribbon on the spool.

The Spudger is 3" long to the crank and mine is made of #10 tinned copper wire for easy soldering and bending. The little fork has two prongs (forget the center) and is bent to fit the ribbon spool. The fork is about ½" long and the crank about 1¼" on a side.

Being lazy I have one Spudger only 1" long with no crank. It goes in my variable speed electric drill.--Caution--do not tighten chuck tight as it must slip.

The reinking gives me fresh heavy print at a minimum cost.

Try it fellows.--Luck Dave.

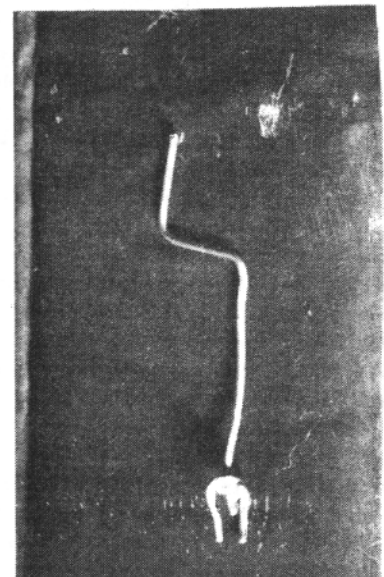
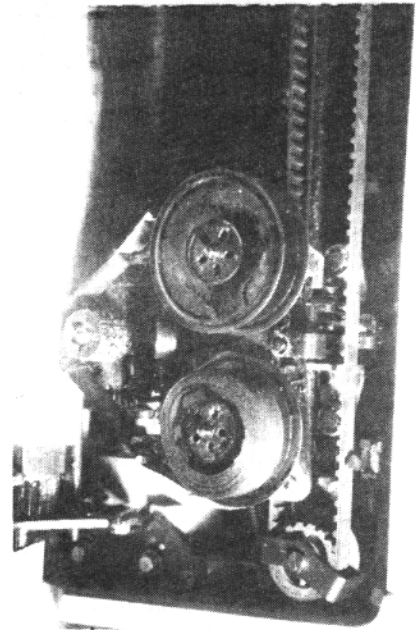
NCR Corporation,1920 Beach St.,Broadview,IL 60153

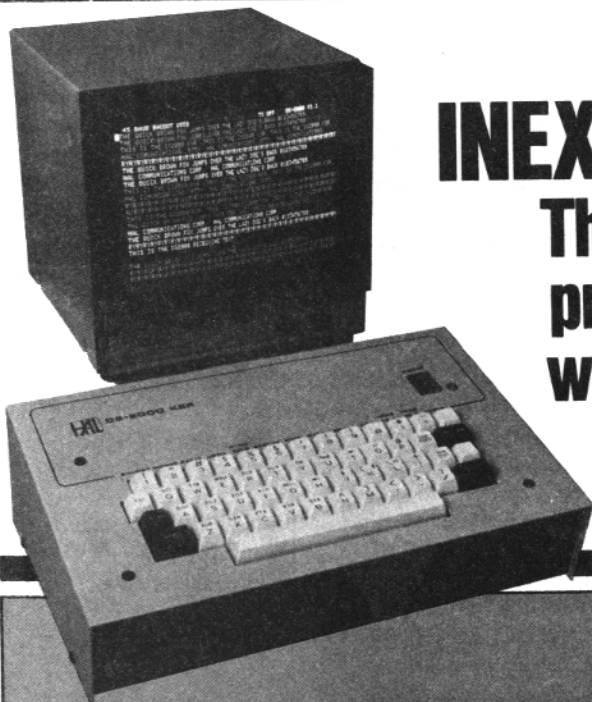
Prices as of 3-1-80, are \$3.00 pick-up from counter.Mail order add UPS.

ATTENTION

Vaction in the beautiful Pacific Northwest and enjoy the 26th National ARRL Convention,SEANARC'80 in Seattle Wa., July 25-27,1980.The theme "world

friendship through Amateur Radio"head lines a featured program of seminars, tours,ladies programs,displays,forums and major equipment exhibits. Roy Neal,K6DUE will be the featured banquet speaker. Not enough room to list everything so get program and registration details from--1980 ARRL NATIONAL CONVENTION;POB 68534,Seattle, Washington 98168..... THE RTTY JOURNAL plans attending, see you there?





INEXPENSIVELY SUPERIOR

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JOE'S SWITCH BOX BY J.L.Kofron, K7GW, 2038 Palm St. #225, Riviera Vegas Park, Las Vegas, Nevada 89104

Here is a simple switch box that will make life a little easier. With it you will not have to switch plugs to change modes of transmission.

S1-A is for the Drake T-YXC only, it grounds "J-2" for RTTY operation.

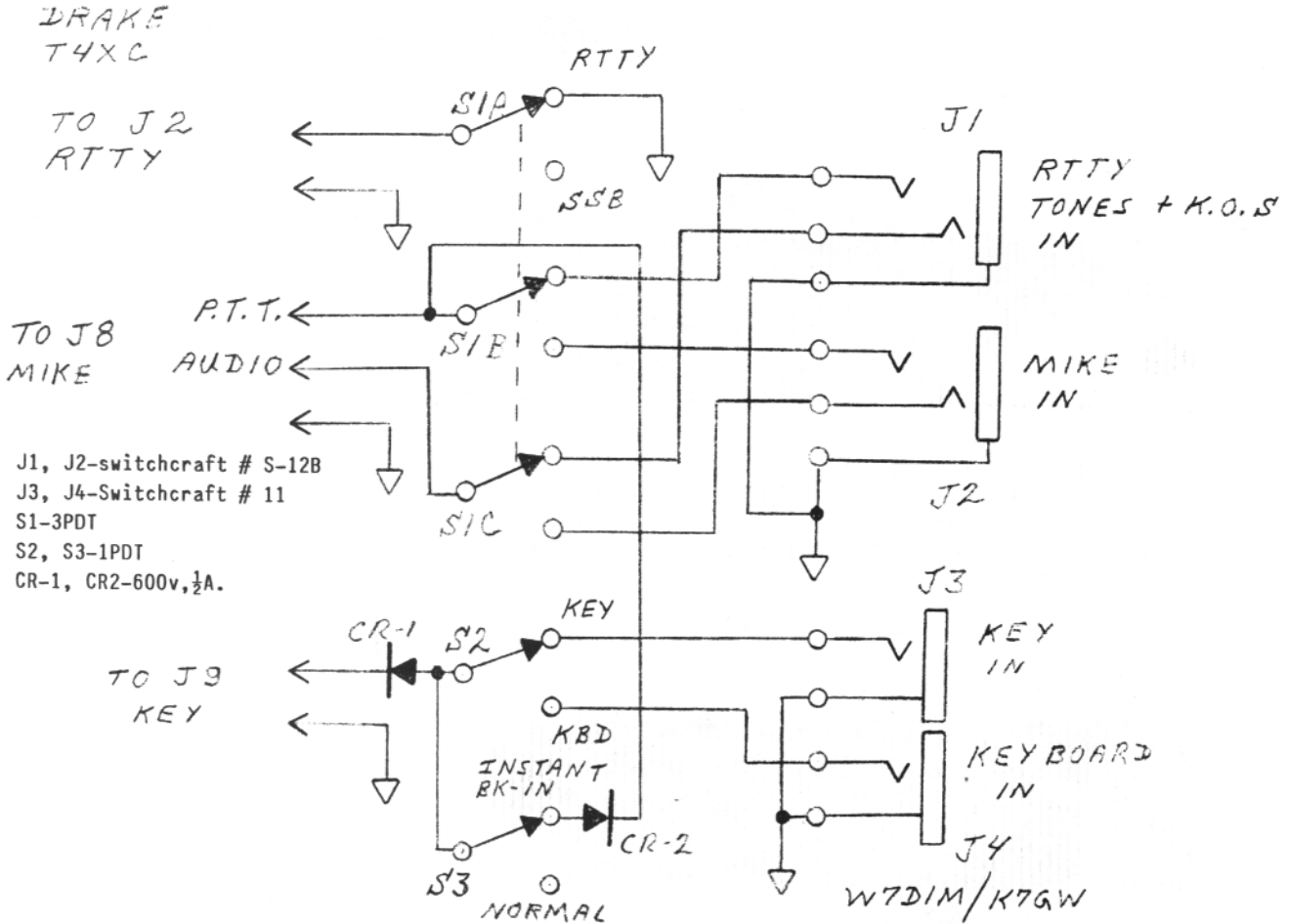
S1-B and S1-C switch the microphone and RTTY tones and control switch.

S-2 would be for those who have a CW keyboard. Switching it and your keyer to the transmitter.

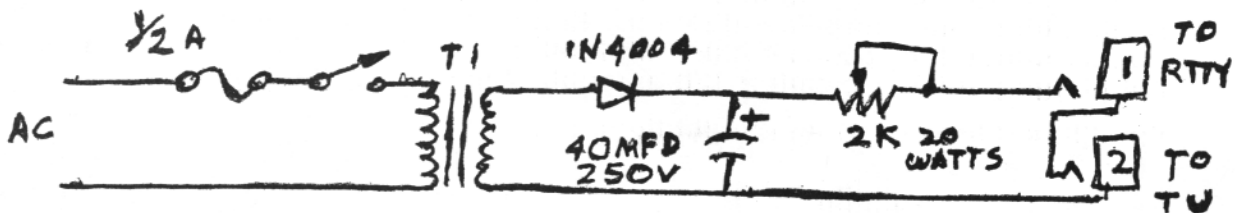
S-3 will give "instant CW break-in" to Drake TR3/4/4C, T4/4X/4XB/4XC transmitters.

It can be built into a 4 1/2 X 2 1/2 X 1 1/2 chassis box, such as the LMB # C.R.-425.

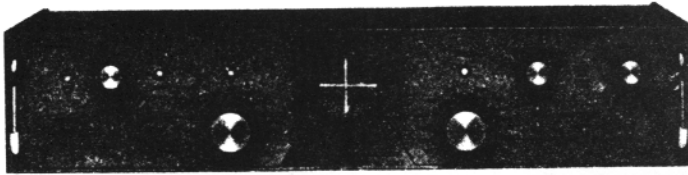
73's Joe..



W46CQW's 'TYPICAL LOOP SUPPLY'



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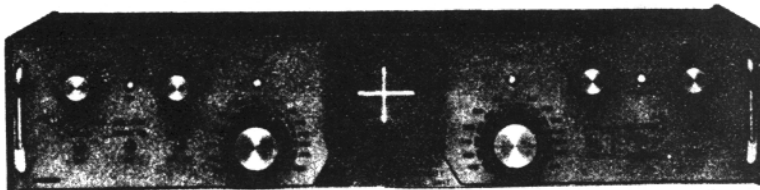


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Multipath Correction
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Standard features include CONTINUOUSLY tuneable Mark and Space channels (1000 Hz to 3200 Hz), Dual Mode (MARK or FSK) Autostart and internal high level neutral loop keyer (20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

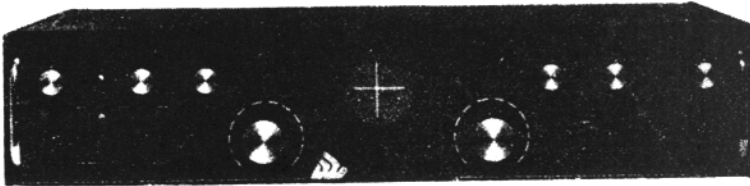


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The MPC-1000R/TSR-500 provides Preloading and Recirculation of the 200 character FIFO Memory, a keyboard-controlled Word Correction circuit, Variable Character Rate, Tee Dee Inhibit, Blank/LTRS Diddle, a Triple Tone-Pair AFSK Tone Keyer and a Character 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

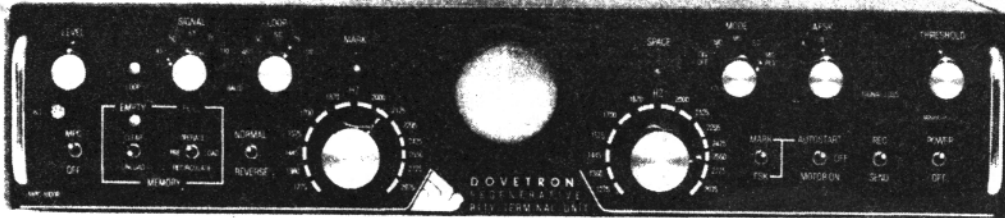
Your QSL will bring complete specifications, or call: 213-682-3705.



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MPC-1000R BY DOVETRON

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THE MPC-1000R REGENERATIVE RTTY TERMINAL UNIT

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