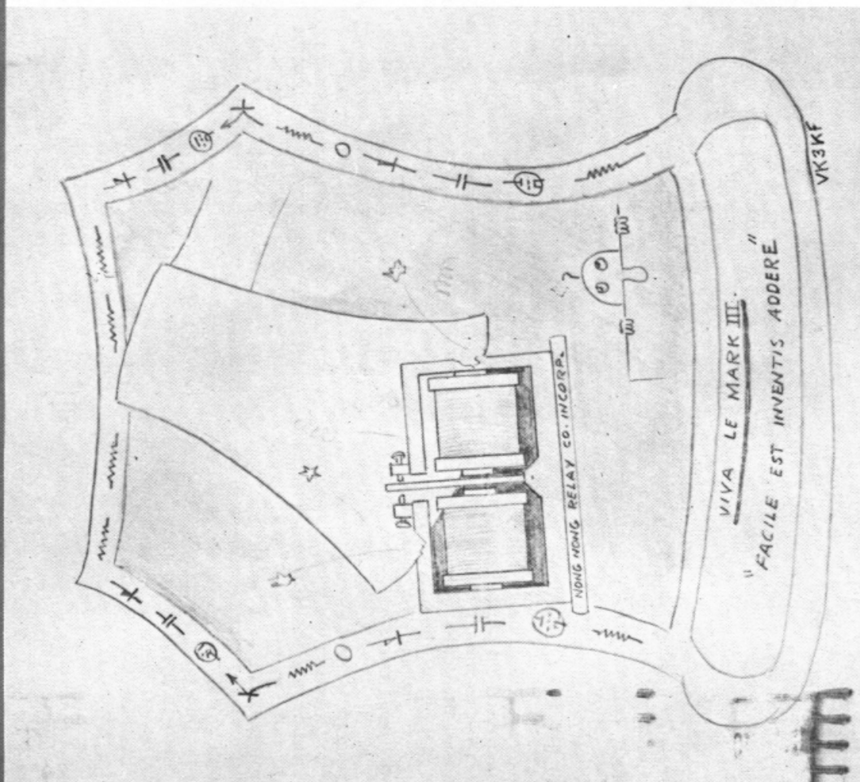
RTTY



"KNIGHTS OF THE MARK THREE"

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NEWS OF AMATEUR RTTY

30 CENTS
MAY 1963
VOL. II, NO. 5

HORSE TRADES

This page of the Bulletin is for use of amateurs who have RTTY EQUIPMENT FOR SALE OR TRADE and those looking for equipment to buy or trade. It is a free service and may be the means of getting someone on the air.

FOR SALE: Model 14 reperf with kybd, cover, end-of-line, 60 wpm, sync motor, $90.00. Model 14TD, 60 WPM, sync motor with slip base, tight tape switch, cover, $75.00. Model 14 Perforator, with built-in power supply, rapid feed out, $45.00. All in FB working condition, FOB 10756 Wyatt Circle, Dallas 18, Texas, K5BQA.

WANTED: Model 28 motors (LMU) cash or trade, K5BQA, qth above.

FOR SALE: BC-348R receiver, converted with AC power supply, in good cond. Has ANL, and relative (not calibrated) signal strength meter. Bands—thru 5 operative, band 6 has been converted to 10 meters but does not work. Will throw in 24V dynamotor and some spare tubes. Will ship anywhere east of Mississippi collect. Best price over $100.00 takes all. Dave Knight, WA2YSH, La Grange Road, Wyoming, New York.

FOR SALE: One, CZC 46223 Model RCK 110/165 mc receiver, good shape, mfd by Scott. Two, RD-92A/UX Facismile machines with spares and 250 sheets paper for machine. Fine shape. Will sell or trade for ham gear of most any kind. KL7DTR, 918 Jackson, Ketchikan, Alaska.

FOR SALE: K8EFI has mfd a limited quantity of magnesium tuning forks for 2125 and 2975 cps and these are accurate to 1/10th cycle per second, as checked against a H-P decade scaler. $10.00 a set FOB, K8EFI, 1037 Genesee Street, Mount Morris, Michigan.

WANTED: Cover for High Base Model 14 typing reperforator, Cover for FRXD. W4NZY.

FOR SALE: 87.6 VPS tuning fork to set governed motor speed. New $5.00, PP in US. 11/16" tape, 10 rolls $2.25; 40 roll case $8.00, FOB, W4NZY, 119 North Birchwood Avenue, Louisville 6, Ky.

WANTED: Manual or schematic for RCA IF TU type CV-57/URR. OZ5EL, Ved Bellahoj, 1. 8th floor Bronshoj, Copenhagen, Denmark.

WANTED: CV-182 converter (part of AN/GRC-26), AN/URA-8A (audio converter) or CV-57URR (IF converter) K8BBW.

RTTY, Inc.
372 WEST WARREN WAY
Arcadia, California
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8¢ U.S. AIR MAIL

AN INVITATION
ARMED FORCES DAY COMMUNICATION TESTS

The Department of the Army, Navy, and Air Force are appreciative of the technical skills and operating proficiencies of the Amateur Radio Fraternity. The Amateurs contributions to communications training, international goodwill, military morale and recreation, and emergency services are recognized by every echelon of the military services.

In appreciation of the United States Amateur Radio Operator's loyalty and patriotism the Army, Navy and Air Force annually sponsor a military-amateur radio communication program on Armed Forces Day. Planned and implemented by the Director, Naval Communications and the Chiefs of the Army and Air Force Military Affiliate Radio System (MARS) for their respective services, the Armed Forces Day program will be held this year on Saturday, 18 May 1963. On this fourteenth observance of Armed Forces Day all amateurs are invited to participate and demonstrate to the world the close partnership and mutual respect that the U.S. amateurs and U.S. Military enjoy.

The program this year will include a west coast station of each of the participating services in addition to the Washington, D.C., headquarters stations of previous years. This addition during the military-to-amateur contact phase will improve the receive capability of the military, and thereby provide the low power stations in the western states an opportunity to obtain the special awards which they have been unable to receive in prior years.

Each of the six military stations will offer a special one-time only QSL Card for each confirmed contact with an amateur whose call letters appear in the "Callbook."

Other awards will be special Certificates signed by the Secretary of Defense for perfect copy of the International Morse Code (CW) and Radioteletype (RATT) receiving contests. The receiving contests are open to any amateur, short wave listener, or other individual who possesses the necessary skills to obtain a perfect copy.

Elements of the Program:

A military-to-amateur transmitting and receiving test for licensed amateur radio operators. The military stations will transmit crossband on spot frequencies outside the amateur bands and establish radio contacts with amateurs in the appropriate sections of the amateur bands. This is a test of crossband operations, and contacts will consist of a brief exchange of locations and signal reports. No traffic handling will be permitted.

A CW receiving contest for any person capable of copying International Morse Code at 25 words per minute (WPM). The CW broadcast will consist of a special Armed Forces Day message from the Secretary of Defense addressed to all radio amateurs and other participants.

A radioteletypewriter (RATT) receiving contest for any licensed amateur, individual or station that possesses the required equipment. This is a test of the operator's technical skill in aligning and adjusting his equipment, and serves to demonstrate the growing number of amateurs that are becoming skilled in this method of rapid communications. The RATT broadcast will be transmitted at 60 words per minute and will consist of a special Armed Forces Day message from the Secretary of Defense to all Radioteletype-writer enthusiasts.

Operating Schedules and Competition Procedures are as follows:

Each transmission for the CW and RATT receiving contests will commence at the indicated times with a ten minute CQ and identification call to permit the participants to select their station and frequency and to adjust their equipment.

The ten minute CQ call will be followed immediately by the appropriate competition instructions and the SECDEF message. The message will be transmitted by all stations simultaneously and one time only. It is not necessary to copy more than one station and no extra credit will be given for so doing.

Transcriptions should be submitted "as received." No attempt should be made to correct possible transmission errors.

TIME, FREQUENCY AND CALL SIGN OF THE STATION COPIED AS WELL AS THE NAME, CALL SIGN (if any), AND ADDRESS OF THE INDIVIDUAL SUBMITTING THE ENTRY SHOULD BE INDICATED ON THE PAGE CONTAINING THE TEXT. Each year there are a large number of perfect copies that do not receive the certificates because the above information was not submitted. The name and/or call sign of the individual are mandatory if the certificate is to be awarded.

Competition entries should be submitted to the Armed Forces Day Contest, Room 5B960, the Pentagon, Washington, D.C., and postmarked not later than 31 May 1963.

CW Receiving Contest

TIME 18 May 1963	Transmitting Station	Frequencies (KCS)
190300 (2300 EDST)	WAR/AIR (Army & Air Force radio Wash., D.C.)	3347, 6992.5, 14405
190300 GMT	NSS (Navy Radio Wash., D.C.)	3385, 4015, 6970, 7301, 13992
190330 GMT (1900 PST)	A6USA (Army Radio San Francisco, Calif.)	6997.5
	NPG (Navy Radio San Francisco, Calif.)	4005, 7301.5, 13975.5
	AG6AA (Hamilton AFB Calif.)	7832.5

RATT Receiving Contest

TIME 18 May 1963	Transmitting Station	Frequencies (KCS)
190335 GMT (2335 EDST)	WAR (Army Radio Wash., D.C.)	3347, 6992.5, 14405
	NSS (Navy Radio Wash., D.C.)	4012.5, 7380, 14480
	AIR (Air Force Radio Wash., D.C.)	7305
190335 GMT (2135 CST)	A5USA (Ft. Sam Houston, Texas)	4025
	AG4AA (Randolph AFB, Texas)	4455
190335 GMT (1935 PST)	A6USA (Army Radio San Francisco, Calif.)	6997.5
190335 GMT (1935 PST)	AG6AA (Hamilton AFB, Calif.)	7832.5
	NPG (Navy Radio San Francisco, Calif.)	4001.5, 7455

Military-to-Amateur Test

Military stations WAR, A6USA, NSS, NPG, AIR, and AG6AA will be on the Air from 181500 GMT (1100 EDST, 0700 PST) to 190500 GMT (0100 EDST, 2100 PST) on 18 May 1963 to contact and test with amateur radio stations. Amateur Contacts will be discontinued from 190245 GMT to 190400 GMT to allow the Armed Forces Day CW and RATT broadcast competition as scheduled above.

STATION	MILITARY FREQUENCIES	APPROPRIATE AMATEUR BANDS (MCS)
WAR (Army Radio Wash., D.C.)	4001.5 (CW)	3.5 to 3.8
	* 4020 (AM)	3.8 to 4.0
	6992.5 (CW)	7.0 to 7.2
	* 7325 (CW)	7.2 to 7.3
	*14405 (Upper SSB)	14.2 to 14.35
A6USA (Army Radio San Francisco, Calif.)	3347 (CW)	3.5 to 3.8
	* 4025 (AM)	3.8 to 4.0

*Operators transmitting on these frequencies will listen for AM and SSB signals within the appropriate bands.

,S (Navy Radio	3385 (CW)	3.5 to 3.65
Wash., D.C.)	4015 (CW)	3.65 to 3.8
	6970 (CW)	7.0 to 7.1
	7301 (CW)	7.1 to 7.2
	13992 (CW)	14.0 to 14.2
	* 4040 (AM)	3.8 to 4.0
		7.2 to 7.3
	14385 (SSB)	14.2 to 14.35
	4012.5 (RATT)	3.5 to 3.8
	7380 (RATT)	7.0 to 7.2
	14480 (RATT)	14.0 to 14.2
NPG (Navy Radio	4005 (CW)	3.5 to 3.8
San Francisco, Calif.)	7301.5 (CW)	7.0 to 7.2
	13975.5 (CW)	14.0 to 14.2
	* 4045 (AM)	3.8 to 4.0
		7.2 to 7.3
	7385 (SSB)	14.2 to 14.35
	4001.5 (RATT)	3.5 to 3.8
	& 7375 (RATT until 0200Z)	7.0 to 7.2
	& 7455 (RATT after 0200Z)	7.0 to 7.2

*Operators transmitting on these frequencies will listen for AM and SSB signals within the appropriate bands.

NPG will conduct Military to amateur RATT contacts on 7375 KCS until 0200Z (1800 PST). At 0200Z NPG will shift this circuit to 7455 KCS for RATT contacts after this time and for the RATT broadcast.

AIR (Air Force	3397.5 (CW)	3.5 to 3.8
Radio, Wash., D.C.)	6997.5 (CW)	7.0 to 7.2
	13995 (CW)	14.0 to 14.2
	20994 (CW)	21.0 to 21.25
	7305 (Lower SSB)	7.2 to 7.3
	14397 (Upper SSB)	14.2 to 14.35
	7315 (RATT)	7.0 to 7.2
AG6AA (Hamilton AFB,	3365 (CW)	3.5 to 3.8
Calif.)	7308(Lower SSB)	7.2 to 7.3
	14353.5 (Upper SSB)	14.2 to 14.35
	7832.5 (RATT)	7.0 to 7.2

Editor's Note: RTTYers, let's really turn out for this RATT/RTTY TEST, and show the CW group what RTTY can do.

READERS NOTE: Look below your name on cover for date of expiration of your subscription. Also is your call listed beside your name?

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RTTY is the Official Publication
of the
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For "RTTY" Information:
W6DEO W6CG W6TPJ W6AEE

A TREASURY OF MARK III/IV TERMINAL UNITS

Here is a series of photographs showing various models of the W6NRM terminal unit as built up over the period of time since its first appearance in the January 1961 issue of *RTTY*. Two units, "Mark IV," have been built; they are direct descendants of the original Mark III. W6CG has the first Mark Four, while there resides at W6NRM the second IV, along with the III unit.

The terminal unit can be packaged in several ways. The units above have been shown in cabinet form, of dimensions to match the current crop of compact receivers, such as the Drake 2B, Hallicrafters SX117, and the Collins S/line. As a matter of fact, constructors have purchased matching cabinets from some of these manufacturers to obtain pleasing TU combinations with their receivers. W7WJ informs that Drake 2B receiver cabinets with unpunched panels are available from the manufacturer for $9.50 each; and ideal arrangement for those builders who desire to build circuits into matching units. In any case, the inexpensive California Chassis Company LTC-470 cabinet can be used and it will provide a satisfactory size match to most any of the small receivers currently on the market.

Rack panel mounting is quite practical, too. A beautiful Mark III/IV with Oscilloanalyzer has been built by W6MTJ, and details are presented in the photographs. The panel size is 5 inches by 19 inches, sufficient to contain all the circuits involved. Boxes are placed at both ends of the panel to accommodate tubes, parts, etc., while a shelf is placed between at the bottom to form a floor for the transformers, CRT box, and terminal connections. Note particularly the set-back controls and switches on the front panel. Two meters are mounted on the front, for indicating loop current and weight-of-marks (bias) reading. The 'scope can be used in one of several selectable modes, namely the phase sensitive WoHZR display, the amplitude sensitive W6AEE display, loop output waveform on 6.1 cps sweep, and a flipping line display right off the discriminator output.

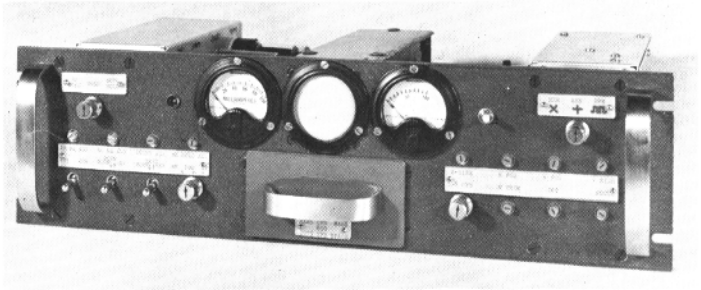
The inspiration for the shield on the front cover came from K6JLB, one of the first builders of the Mark III. Here we have an exclusive and select group, *The Knights of the Mark Three*, whose moto is evident — total elimination of polar relays from teleprinter circuits. Experience shows that it is practical to eliminate such troublesome items from station equipment, achieving at one bold stroke freedom from contact noise, relay adjustment difficulties, and similar situations connected with relays. (Tnx to VK3KF for shield design.)

de W6NRM 4/9/63

NO. 1, THE ORIGINAL MARK III WITH OSCILLOANALYZER

NO. 2, THE FIRST MARK IV, NOW AT W6CG

NO. 3, MARK IV-2 IN ACTION AT W6NRM



NO. 4, THE W6MTJ TERMINAL UNIT

GETTING STARTED ON RADIOTELETYPE

VII. THE MAINLINE FSK SYSTEM FOR THE COLLINS S-LINE AND KWM-2

By
IRVIN M. HOFF, K8DKC
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Ann Arbor, Michigan

There are several methods by which the Collins equipment may be readily adapted for RTTY. One of the easiest is the use of an audio FSK unit plugged into the microphone input plug. This system gives good results, but is usually somewhat expensive and unless the AFSK is well designed, sometimes gives a weaker signal on mark than on space or vice versa. Also you must have the carrier well balanced out, or you transmit more than just the desired two frequencies.

Another system has been recommended by the Collins factory. The unit must be "torn into" and another resistor added. This system has several draw-backs:

(1) The unit must be modified – something that does not appeal to most owners.
(2) A "shift pot" must be used – this offering certain problems such as stability of shift; and if not returned to normal each time when returning to "SSB," the upper and lower sidebands will no longer transmit on the same frequency; if returned, then it is difficult to again find the 850 cps shift unless good quality filters are used in the converter, or a frequency counter is handy.
(3) Regulated voltage is not used on the keyboard which in this particular circuit gives a most unstable shift condition and poor keying characteristics.
(4) The keyboard must be separated from the printer. (A polar relay must be used for "local copy" or else copy must be received through the converter.
(5) WORST OF ALL – the keying is upside-down and a polar relay MUST be used for normal transmission.

Thus the Collins recommended circuit has not been very popular and as a result most owners have either refrained from RTTY entirely, or else have resorted to the AFSK. Since the Collins S-line transmitters use a 2.1 mechanical filter and will not pass the standard 2975 space tone used in normal AFSK units, special AFSK for Collins only have to be used; thus automatically eliminating them from use on VHF where normal tones must be used with carrier.

There is a method of using the Collins system that would be quite successful, however, but would still have several disadvantages – one of course being that one will still have to "tear into" the transmitter.

Thus we have developed the Mainline FSK system for the Collins equipment. No modifications whatsoever need to be made to the transmitter and the resale value will not be affected. The unit need not be removed from the cabinet, either.

In fact, the following list of possibilities are inherent in this system:

(1) No modifications or adjustments to the present equipment.
(2) No change in SSB operation from addition of RTTY.
(3) "Permanent" shift when once correctly set will stay correct for days and months with no attention.
(4) Has narrow shift CW ID.
(5) No shielded wires necessary.
(6) No polar relays anywhere in circuit.
(7) No shift pot to worry about.
(8) No regulated voltage needed or desired.
(10) Has reverse bias cutoff during non-conduction for best keying characteristics.
(11) Operates with remote switch located at keyboard.
(12) Offers a "standby" switch at keyboard to mute printer while receiving CW; tuning the band, etc.
(13) All keyboards, printers, reperfs, TD's, etc., may be kept in series at all times; whether receiving or transmitting.
  (a) You may therefore transmit with any keyboard you have handy, or put a second operator at any other printer-keyboard.
(14) Offers "double transmit"; that is, a second receiver on a different frequency will trigger the transmitter; or the keyboard will trigger a second transmitter at the same time.

Now we will start with the circuit. First of all, build fig. 1 on a 5-terminal strip:

Fig. 1

The center-adjusting contact of the trimmer should be placed with the cathode end of the

diode — thus a non-insulated screwdriver may be used during mark to adjust the shift to 850 cps (or whatever you desire).

A "picture" of the diode is drawn beside the diagram to show that the small circle at one end should in this case go "up." (We will be conducting during mark with 'negative' voltage and cutting off the diode with positive voltage during space.)

Most converters of modern design offer single-ended keyer tubes. If there is a separate power supply for this tube as is usual; the Mainline Keyer of Fig. 1 may be "driven" from this circuit:

Fig. 2

Now there are still many converters around using polar relays in their output. They may be easily adapted to this circuit by substituting the polar switching contacts for the tube between point S and ground as in Fig. 3:

Fig. 3

Now if your keyer tube does not have a separate power supply perhaps you can still use Fig. 2 in this manner:

Fig. 4

You see in Fig. 4 we are substituting the power supply in Fig. 2 for that already in the converter.

Now we are almost finished. However, you can have remote control of the Collins transmitter at the keyboard where it is particularly convenient. You must use the CW position for transmit (and receive). This will give a loud sidetone in the transmit position on the KWM-2 which may be silenced by plugging in the headphones or an empty jack. In the regular S-line it may be silenced by pulling out the "CW Sidetone" plug on the rear of the 75S-1 or S-line transmitter.

Both S-1 and S-2 should be located right beside the keyboard so that "instant" transmitter and printer control can be obtained. This system offers single-switch transmitter control. (By the way, don't forget to set the VOX gain in the transmitter sufficient for the CW position to turn on the transmitter when the switch is shorted!)

Fig. 5

If using the Mainline converter shown in Jan. 1963 RTTY, S-3 may be discarded and Fig. 2 connections, etc., would replace those shown on the current diagram for the Mainline Converter. The Electrocom FSC-250 and the Model K Altronics-Howard adapt readily to this circuit, as will most others if a bit of ingenuity is used.

The Mainline keyer in Fig. 1 hooks to the S-line by placing a small loop of wire at point *K* and placing beneath the cathode pin of the PTO tube, which is then replaced in the socket. The terminal strip is held on the rear of the PTO by placing it under the nut on the right side (as shown in the picture). If narrow shift is desired, it is recommended a second shifter be constructed and the voltages switched externally from one unit to the other. Neither then need to be ever readjusted, which certainly offers a great many advantages.

T-1 Stancor 8421, etc. (150 VAC at 50ma or more)
R-1 22 ohms 2W surge resistor
R-2 10K 10W for 20-30ma; 25K 25W for 60ma; (adjustable)
R-3 7500 25W 20ma; 5K 25W 30ma; 2500 25W 60ma; (adjustable)
R-5 5K 5W isolation resistor for CW ID
R-6 50K carbon pot used as rheostat for narrow shift CW ID
R-10 470K one-half watt carbon bias resistor for keyer tube
R-11 18K 1W current limiting resistor for diode
C-1 40 MFD 200 WVDC or more
C-2 3-12 MMFD trimmer with steatite dielectric
D-1 Silicon rectifier at least 100ma at 400 PIV
D-2 Not critical — we recommend the 1N270; 1N100; etc.
S-1 SPST toggle located at keyboard for muting printer
S-2 DPST toggle located at keyboard for operating transmitter
R, S All RTTY equipment — keyboards, printers, reperfs, TD's, etc.
RFC 2.5 mh choke, miniature (only carries 4-5ma current)
Point X, Fig. 1 hooks to Point X of Fig. 2
Point K hooks under the cathode pin of the PTO tube (pin 7)
Point C is the "heart" of the Mainline FSK system. Open the keyboard for a "space" signal and adjust the tap near the end shown for a *positive* 15 to 20 volts at *D* with respect to ground. You are finished with this adjustment. It will then automatically reverse to about negative 100-125 volts during mark and will conduct about 4-5ma current through the diode D-2. (Which completely saturates D-2 and makes regulated voltages entirely unnecessary.)

Note to KWM-2 users: Since you use the same PTO for both transmitting and receiving, it will be necessary to open the FSK line to the PTO during receive like this:

Fig. 6

S-2* can be a CRL 1458 4-pole two position non-shorting switch.

ADJUSTMENT OF SHIFT

Place the transmitter on space signal by opening the keyboard or holding down the break key if one is installed. Tune the receiver for a maximum deflection on the converter indicator.

Then return the keyboard to normal mark condition. Take a screwdriver and adjust the trimmer (Fig. 1) C-2 for maximum mark presentation on the converter indicator. You are finished. With this circuit, it is a "one-shot" adjustment. The 3-12 mmfd trimmer

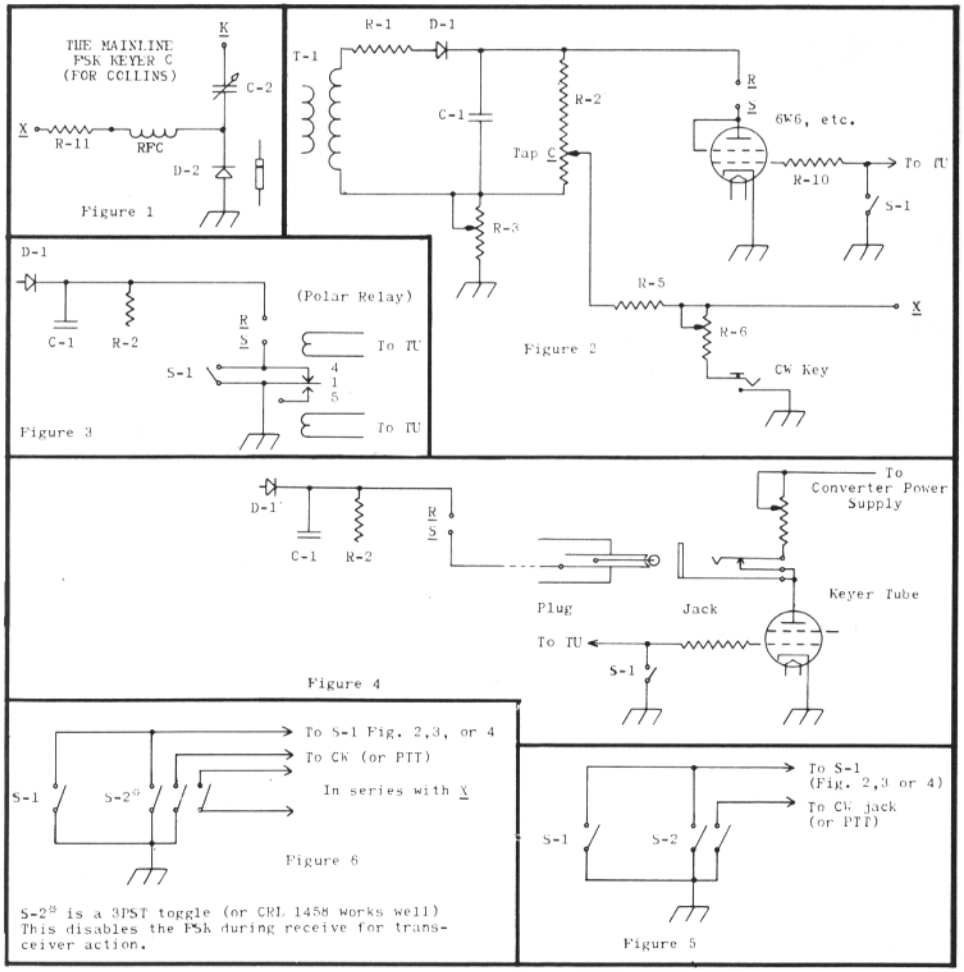
condenser mentioned will give a shift of about 60-2000 cps. If this is not suitable, a 1.5-7 mmfd capacitor will give about 25-100 cps shift.

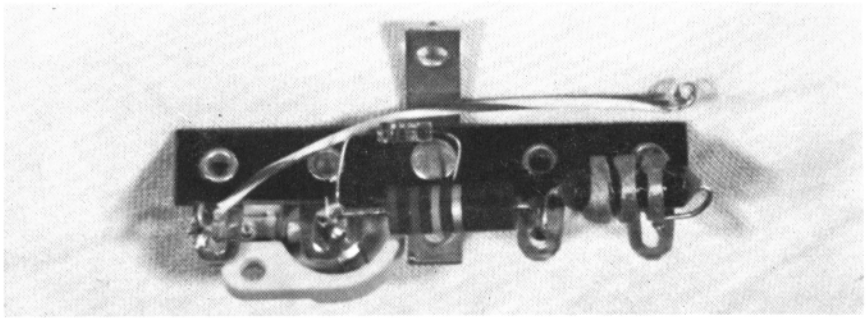
Additional Hints

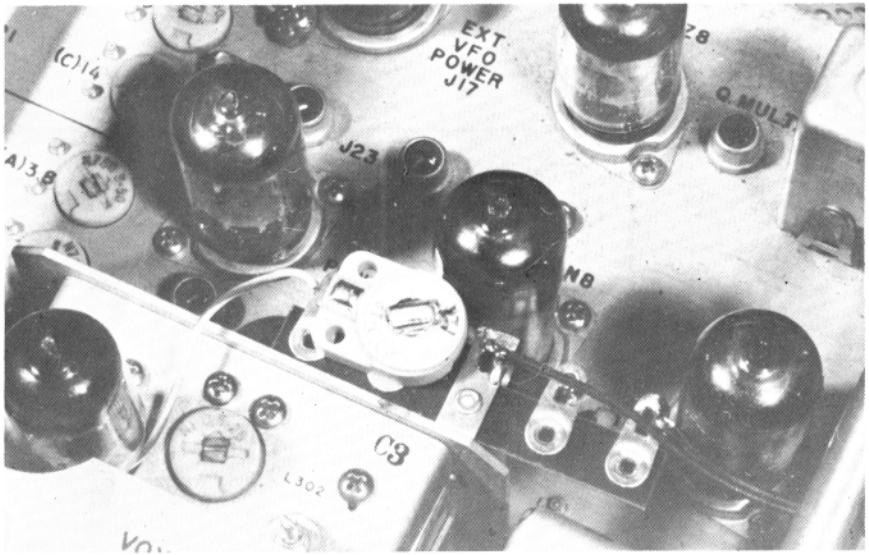
You might measure the current passing through point *X* during mark (conduction on the Collins equipment). It should be about 3-7 milliamps current. If it isn't reduce the size of R-11 by paralleling it with additional resistance until this condition occurs.

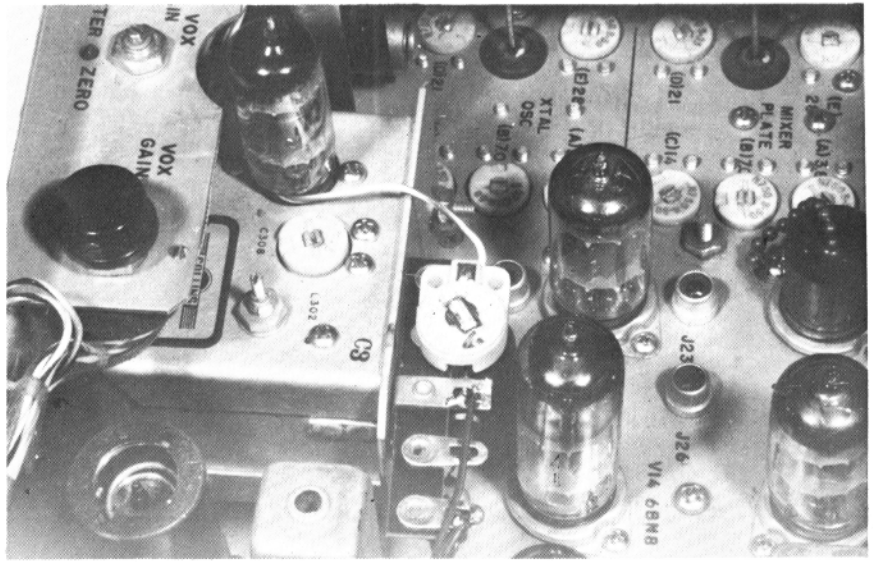
Another small item that will be of assistance to keeping the type of stability that is appreciated by all those who copy you is to wire across the relay contacts in the VOX relay that open the plate voltage circuit to the oscillator tubes during receive. These circuits should normally have plate voltage on them at all times to keep the drift to a minimum. Since the mixer stage is biased off anyway, no interfering signals will be heard in the receiver. This is standard practice in most single-sideband transmitters, and this small change should be made for maximum stability and minimum "come-on drift."

Depending upon the particular station operation, the push-to-talk jack may be used if desired in place of the CW jack, since the CW jack merely operates the VOX delay circuit anyway. However you may be using the push-to-talk jack for other purposes. At any rate if the CW jack is used, remember that the VOX gain control must be set properly to allow the transmitter to operate at all!









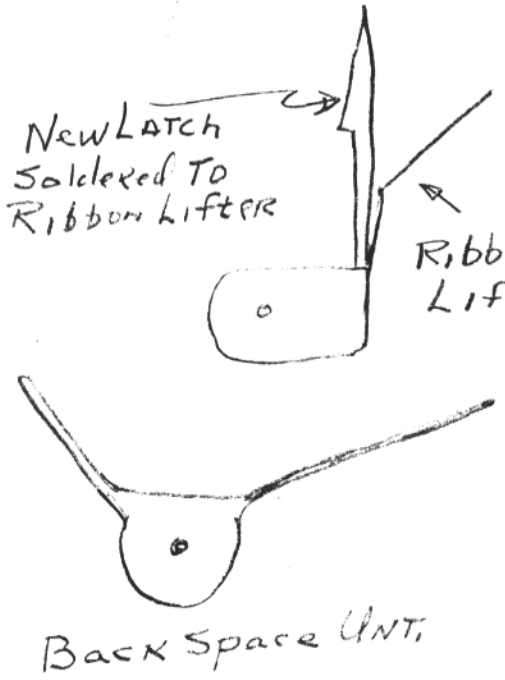
Model 14 Tape Saver

HOWARD H. WOLFF, KØEPT
415 E. Elm St.
Redwood Falls, Minn.

For those of us who are using Model 14 keyboard for transmitting as well as receiving.

"A short while ago, I had a lengthy QSO with a ham using my model 14. After it was over I looked at a pile of tape on the floor and realized that a great share of it was my transmissions to him and thus was a waste of paper since I did not need a record of it. This had to be changed. It was as follows:

"On the front of the Model 14 are two levers. The left one turns the tape backward one space. The right one lifts the ribbon so that you can see the last letter typed. Both of these in turn work levers inside the case. Take off the case. On the right hand unit, solder a small strip of thin metal bent so that it will catch and hold the left hand unit when it is pressed down. That is all you do. When you wish to type and not use any tape, press down the left lever until it locks on the new metal strip. Now you can transmit without wasteful use of tape. When you receive or wish to punch a tape simply press the right hand lever and it releases the catch. Original operation of the machine has not been affected at all. Should save up to 50 percent or more in tape."



TAPE CLIPS

E. W. KOCH, W8QMI
2911 Dartmouth Drive
Midland, Michigan

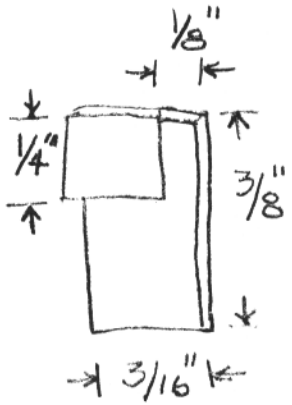
Material: Thin sheet metal (aluminum siding scraps are perfect).

Cut a long strip of metal 3/4 inch wide, then slice off strips 3/16 inch wide. Bend by hand over a 1/8 inch piece of sheet metal held in the vise, then grasp the sides with a parallel-jaw plier and tap the top edge with a hammer – this gives a sharp bend. If, as shown in the sketch, one leg is made longer than the other, the long leg is pressed against the outside diameter of the rolled tape and the clip is then pressed down into the tape.

I suddenly realized that if you would cut a 1/8 inch wide slot in the side of a 25-cigar box, it would make a nice gadget for holding a reel of tape for transmission. It works real sticks – you tuck the reel of tape in the box, with the end protruding through the slot, close the lid and clamp it with a rubber band or a metal clip, set the box on edge, and feed the tape to the TD. It doesn't tangle or bind.

Previously I had been using two pieces of 1/4 inch plywood separated by a base strip, with a removable 3/8 inch dowel for the center, but have had trouble finding the center of the reel when in a rush (as always), and at times unevenly wound tape would present a greater width than that of the holder. The cigar box has none of these drawbacks.

You know, this system could develop into the cartridge tape system. Have a box for each tape, with a label on the same clearly indicating the subject of the tape, and some clip method of holding the tip of the tape in the slot so it could be easily reached. Perhaps a wedge of foamed plastic would do it.



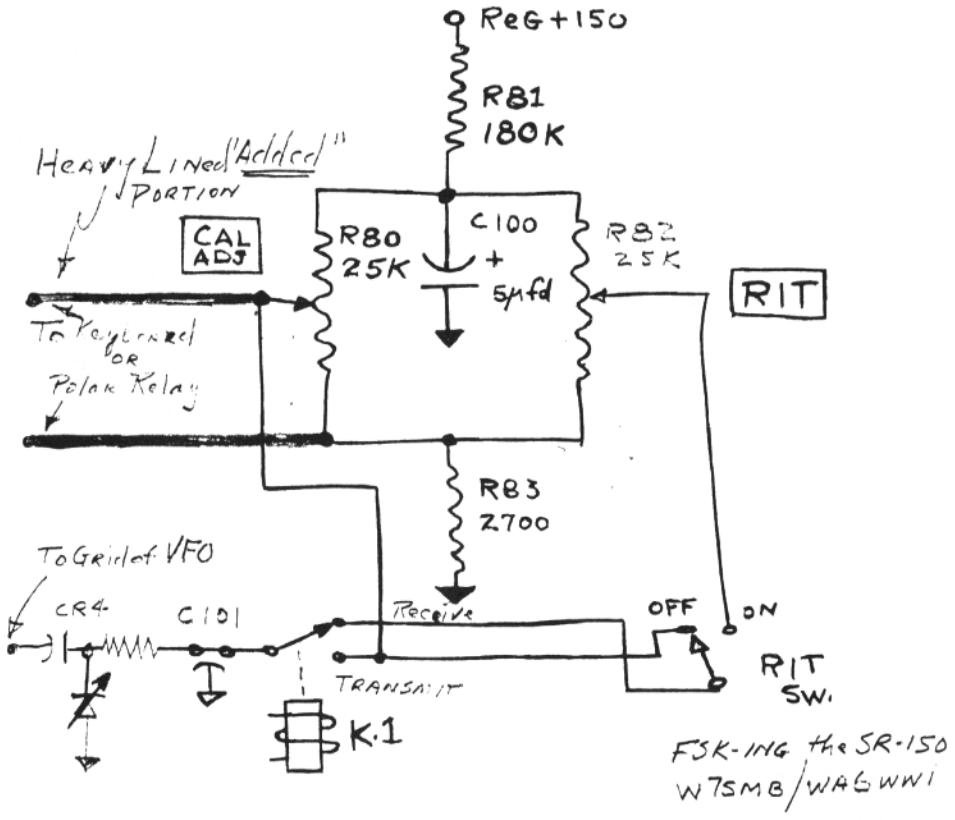
FSK-ING THE SR-150 TRANSCEIVER

E. M. LENN, WA6WWI
1928 Elm Place, Anaheim, California

One of the first things I looked into was putting the transmitter section of the SR-150 on RTTY and lo and behold I saw the unit used a varicap with a voltage divider to change the UFO frequency during calibration. As you can see by the drawing, the Varicap is also "tuned" during receive by the "RIT" (receiver incremental tuning) knob switch. It appeared to me that I could add a miniature piece of coax across the "Cal Adj" pot, run that out to my polar relay and have FSK, all shift widths, even with a "built-in" shift adjustment.

Hi—it works like a charm, shift is right side up and when the KBO is disconnected it has no effects on the operation of the transceiver. One characteristic of the shift is that the mark is somewhat "rubbery" as John (W6EEP) put it. It's very slight but its there, It's noticeable on 850 cps but not on 170 cps or narrower.

I've sent this drawing along in case anyone should ask you the feasibility of the SR-150 on RTTY, the transmit portion is no problem.



MEMORANDUM

TO: Tom Howard, W1AFN
Phil Catona, W2JAV

March 27, 1963

FROM: Elston Swanson, W2PEE

SUBJECT: 1963 RTTY Dinner

This will summarize the dinner held on Monday, March 25, at The White Turkeys, 260 Madison Avenue, New York, N.Y.

Excellent technical talks were given by Don Wiggins, W4EHU, who spoke on the subject of "Limiter and Discriminator Action in the Detection of RTTY Signals" and by Phil Catona, W2JAV, who spoke on the subject of "Narrow Shift Terminal Units and the Effects of Distortion in Teleprinter Operation." Other brief talks were given by W3ITO, who exhibited a new transistor converter, and by W3DTH, who explained a new electronic distributor he had constructed for the Model 21 strip printer.

Although door prizes are not an important part of the dinner, the following were distributed by drawing of stubs:

Two Hallicrafters loud speakers donated by Hallicrafters

Two subscriptions to *73 Magazine* donated by Wayne Green

1963 RTTY DINNER

Auld—W2DXD/A2DXD
Boivin—K2SKK (ex W1ZXA)
Catona—W2JAV/WA2LKF
Gadbois—W1UIZ/W3FEY
Green—W2NSD/1
Gilson—W3NQA
Haire—W1LLY
Dubbs
Hopper—K2VAM
Howard—W1AFN
Bastian—W2OOG
Kretzman—W2JTP
Longley—W2ANB
Makinson—W8DBC
Mastropole—WB2AFH
Blakeley—WB2CNA
Mendelson—W2OKO
Merkel—WB2CVN
Polin—K3KVS
Roland—W3NSI
Straub—W2PBG
Swanson—W2PEE
Trossman—W2DTJ
VanAller—W3DTH
VanBrunt—W3TUZ/W3ITO
Wiggins—W4EHU

LATE COMERS

Hurlbut—K1YZG
Milner—WA2DMY
Wolf
Guiggi—W1SRY
Soltoff—K3IUV
Esteban—W2ZKU
Dubbs
Hamilton—W2RMB
Glazer—K7GCO

A printed circuit board for transistorized TU donated by W2JAV

A printed circuit board for a transistorized AFSK oscillator donated by Byron Kretzman, and a

Maintenance manual for a Model 14 TD donated by Byron Kretzman

When the question as to whether future dinners of this type should be held was put to those in attendance, the response was loud and unanimous that we should have the same kind of an affair next year. It would seem that publicity should be arranged somewhat earlier next year to insure adequate coverage in all the magazines and perhaps some better exploitation of "on the air" publicity could be made to insure a better attendance.

For future reference, attached hereto is a copy of the complete list of those in attendance.

NEWS

The March, 1963, issue of RTTY will, I predict, go down into the annals of amateur radio literature as one of those outstanding masterpieces which will be discussed, referred to, and quoted for many years to come. Allow me to join with literally thousands of fellow RTTY enthusiasts in extending the heartiest congratulations of the fraternity to you, Don Wiggins, Bob Weitbrecht and the others who participated in the preparation and production of this exquisite number.

We are indeed fortunate to have in our midst such "pros" as W4EHU, W6NRM, W6AEE, WB6ABF and others who unselfishly devote their time and energies to bring us the latest results of their research, experimentation, design, and studies – all of which adds immeasurably to the knowledge and pleasure which we derive from our avocation: RTTY. When you stop to consider how few of us have either access or opportunity to peruse the vast – and often highly abtruse – literature that pertains to our hobby, we can then begin to appreciate the true value of the insight and the new ideas which these men bring to all of us.

I want to take this opportunity to wish you and all of the fine authors and contributors continued success and a warm "thank you" 73.

Sam Goldfish, W5TVG
Secy., Tulsa Amateur
Radioteletypers Society, Inc.
(TARTS)

DX-RTTY

BUD SCHULTZ, W6CG
5226 Willmonte Ave.
Temple City, California

Hi DX'ers:

Thanks a meg to all of you your response to my urgent request for DX news. The mail bag here is nearly bursting at the seams with juicy morsels. Let's start with the latest scoop from K3GIF: Ed reports that I1RIF was sick for three weeks and then went to Monaco where he operated SSB as 3A2CL. Bruno says that Monaco is not too hot as a base of operations but he hopes to return there shortly and operate RTTY from 3A2CL. Watch for this one!! Ed points out that KR6BE is putting fine signals into the East Coast about 2400 GMT. KR6BE hopes to get on the band each day about that time. He works a tfc sked with Walt, WØAJL, starting about 2200 GMT. K3GIF reports also that the Europeans are booming thru to both coasts starting about 1300 GMT on 14 Mcs. The standouts are I1RIF (as usual!), DL4IA, DL4GG, and DL4WL/P. SVØWT on Crete tries to get on each week-end about 1400 GMT. Frank, W3PYW, in a newsy letter describes what must be the first two-way RTTY contact between the USA and Switzerland when he worked HB9KU on March 31st. This was quickly followed by still another contact with HB9FM! Louis, HB9KU, is using a barefoot "S" line and a CV57URR Converter. Frank cautions that because HB9KU is using the World Standard Baud rate on his printer USA stations should slow their typing down to a "deliberate" pace to help compensate for the difference in the two systems. Since the initial contact, W3PYW and K3GIF had a fine four-way QSO with HB9KU and HB9FM so it appears that the Swiss lads are now ready and willing. In conclusion Frank says to tell the gang that daybreak on the East Coast is "DX TIME" for Europe. He finds that signals peak up to S-9 for about 30 to 45 minutes, then down – on 14 mcs – of course.

Dick, W6CQI, sent in the actual copy he made from I1RIF reporting on the Monaco situation and judging from the landline type material, Bruno must have really been tearing things up in Redwood City!! Dick also reports printing SVØWT but says the signals were weak and copy was poor. Both Dick and K3GIF tell of making good copy of the VERON newscasts from PAØAA taken on Fridays at 2000 GMT. Hope more of you will try to make copy on the PAØAA transmissions and give those lads a boost by letting them know that they are getting across. W6CQI reports keeping regular skeds with Bruce, ZL1WB at 0500 GMT on 14090. Speaking of ZL1WB—while I have been sitting here typing these deathless lines—Bruce has been banging away on the old printer at my elbow with fabulous signals. On checking the landline copy he has been putting in here for the past several hours I note the following calls—all in QSO with ZL1WB—either singly or in big bunches: W6UGA; W6AEE, WØJRQ, VK3KF, W5SH, VK4RQ, W6NRM, W6MTJ, W6LFF, K3GIF, W6CG, K6OWQ. Not bad for about three hours work, Bruce!! It appears that Eric, VK3KF, is having a hard time keeping his resolution to remain off the air until he can complete his new ham shack. He still turns up at the oddest times and places with his usual fine FSK signals!! Once the RTTY bug gets in the blood it's hard to shake it—even for a few months.

BRAGGERS CORNER: In all modesty—your humble reporter is busting his buttons to announce the first two-way RTTY contact with Cas, HL9KK, on April 7th at 0200 GMT. Although we had made some prearranged skeds, the actual contact was strictly an "off the cuff" deal. Both of us just happened to be running test tapes on what appeared to be a dead band and the result was quite startling to all concerned. Cas's signals make excellent copy and you can be sure he will keep things humming from over there in the next few months. He is in the States at this time on a short leave but by the time this hits the street he will be back in Korea looking for anyone interested in adding a new country to their list. Before winding this HL9KK piece up I should add that my XYL (K6OWQ) crawled out of a sick bed to be nr.2 in Cas's log. It proved to be better therapy than all the pills in the medicine cabinet! HL9KK is also planning on regular operations on 7040 Kcs in the early hours so you night owls should watch there, too.

In winding this up, let me once again thank all of you who sent in bits and pieces of DX news. It's a big help and your efforts are appreciated. Please keep it coming!!

See all of you on the high end – 73.

Bud, W6CG

P.S.: Just got a note from Al, W6UGA, announcing the fact that he made WAC-RTTY!! Congratulations, Al – good show! Also—I just found out what happened to G3CQE. I just saw a squib in the FOC bulletin that "G3CQE has completed his SSB exciter." (Shame on you, Bill!! I never thought you'd leave your friends for a microphone.)

HORSE TRADES

TRADE: Technical manual for model 14, 15, 19 or 28 for technical manual on AN/GRC-26 or AN/ART-13. K8BBW 1861 Barberry Drive, Mansfield, Ohio.

WANTED: For model 14 S-R reperf; pair of levers which attach to back of the front cover to operate back-space mechanism without lifting cover. W8TEZ, 710 Thomas Court, Ann Arbor, Michigan.

FOR SALE: OR TRADE Trade for RTTY gear, Hickok Cardomatic Model 123 Tube checker, includes cards and newvistor adapter. W8VAJ, 3254 Marvin Avenue, Cleveland 9, Ohio.

FOR SALE: Limited quantity Teletype #117852 Outlet, jack and junc. box for Model 15 page-printer, metal table. New, unused, $5.00, plus postage. Wt 8 lbs. W4AAS, 1452 Hannaford Road, Winston-Salem, N.C.

FOR SALE: Model 26 and table, $55.00. W6NCP, 1987 Skyline Drive, La Habra, Rt. 2, California.

FOR SALE: OR TRADE Model 14 strip printer, excellent cond. Kleinschmidt TT-4G, Model 15 Receive only. Polar relays and socket pair for $5.50. Need KW matchbox with SWR built in. W9RDJ, 1214 South Alvord Blvd., Evansville 14, Indiana.

FOR SALE: RADOT (Press Wireless) FSK receiver, TU, scope & 60 ma loop supply in grey metal rack 30" high. Receiver xtal controlled osc & 455 kc BFO. Audio output is 1 kc bandpass. TU is audio type with disc output for 900 to 200 cycle shift. Tuning indicator is 2AP1 scope. Printer drive has provisions for dual space diversity. All units complete with AC power supplies (115V 60 cy) & schematics. This is a real goodie, copy the TU, make a simple converter for the xtal controlled converter (3.201MC input) with your receiver and you have dual space diversity. Best offer 30 days after publication this issue of RTTY, W1TLZ, Creeping Hemlock Road, Norwalk, Conn.

FOR SALE: Model 14 non-typing reperf $50.00. Two covers for 14 reperf, one has cut away front, other standard, $10.00 ea. One 14 TD slip base. Don Stocker c o RTTY, 372 Warren Way, Arcadia, Cal.

WANTED: 3600 RPM motor for Kleinschmidt, Model 20 Kleinschmidt also wanted, or Model 28. Also wanted CV-89a/URA 8-B or later model converter. W4AIS, 7 Artillery Road, Taylors, So. Carolina.

FOR SALE: Model 14 TR, new keyboard and base, 60 wpm sync motor, end of line indicator, rapid feed, cover. Model 14 TD, 60 wpm sync motor, cover and slip base. All in good working cond. Will crate and ship FOB $100.00. K9FNX, 336 West Washington, Ft. Wayne 2, Indiana.

FOR SALE: Brand new scope monitor units for URA type converter, complete with 2BP1 shield, 1Z2 and 12AX7. Original package, for TU indicator or modulation indicator. W3LST, 228 Plummer Street, Oil City, Pa. . .

TRADE: Recently overhauled Model 15 for Tri-Band beam or good 20 meter model. Will consider other items. Write to K5RAV, 315 North Main Street, Grapevine, Texas.

FOR SALE: Model 15 typing unit, $30.00. John Riley, 914 North Cordova, Burbank, California.

FOR SALE: Model 14 FRXD (combination TD and typing reperf) holding magnets, sync motor. Like new condition. 75 speed (60 speed gears, $5.00) $60.00 plus $10.00 crating FOB Chicago. Also 14 typing reperf 60 speed,sync motor, comm, holding magnets, Receive ONLY, $45.00 with keyboard base, $55.00. Model 15 page printer in excellent cond, sync motor, 60 speed, comm type, holding mags, complete with cover and copy holder. #15 XRT table with all conn. blocks, good cond, $10.00. All FOB Chicago. $10.00 crating extra on #15. K9QDQ, 16038 Cambridge Court, Markham, Illinois.

FOR SALE: AN/URT-2 transmitter; frequency synthesizer gives any frequency between 300 kc and 26 mc. 4-400A Final.. AM, CW, FAX, FSK variable 0-2000 cycles. 110V AC 60 cy. Tunes automatically to any frequency within 5 cycles. W6BJI, 1260 West San Ramon, Fresno, California.

FOR SALE: Cover for model 14 typing reperf or tape printer, no glass, $10. Intermediate gear assembly for model 14 typing reperf, or tape printer. To transfer motion from main shaft to kybd., $5.00. 88D filter for polar relay contact, $2 PP. NEED—Complete govn assembly. Model 14 High Base cover, FRXD cover, Tape container for 14 reperf. End of line indicator for 14 typing reperf. Paper crank for 15. Complete cover for 15, or top, front door only. Frequency indicator panel for FGC-1. W4NZY, 119 North Birchwood Avenue, Louisville 6, Ky.

NEWS

The RTTY equipment at this station is a Model XXA1 printer. It has a built-in garbler and Greek printer. The type is in sandskrit. The machine has the latest balsa wood gears and the frame is made of bamboo. The springs have all been replaced by rubber bands. The keyboard is built low for manipulation by foot. Recommended lubrication: high grade whale blubber.

The shifter is guaranteed to shift any cycles from zero to 1000 (when it pleases) and is apt to do it at any time.

The converter is a highly efficient home brew unit employing the best features of all the other brands, it takes the mark and space signals; amplifies them, distorts them, changes their phase, and beats them together to produce a third frequency which is fed through a narrow band filter with the two original tones (a tight squeeze).

The one which succeeds in coming through first is fed back to the input to help push the other two through.

When they all arrive at the output the stronger two gang up on the weaker and cancel him out for good.

The two remaining are fed to a phase inverter and split personality generator which causes the two to meet head-on at the output circuit and as a result they stop dead and leave a zero current condition at the output terminals.

This results in very quiet machine operation.

The equipment at this station is being improved frequently and any new equipment that may be added will be reported to you as soon as possible.