

*Amateur Radio
Teletype Society*



AUGUST 1953

Another Bulletin FIRST which will be of interest to most of the gang is the complete circuit diagram of the Gonset Communicator which, with the kind permission of the Gonset Company, is reprinted in the centerfold of this issue. Some of the TT'ers have been using this set with excellent results on the two meter channel.

Next month we have scheduled the circuit diagram and full description of the Northern Radio Frequency Shift Tone Keyer Type 153. This will be another invaluable addition to your RTTY notes and never has been previously available, even on request.

One thing that everyone seems to need is paper for their machines. The Society has been fortunate in being able to uncover a supply of the large boxes of fanfold paper at a considerable saving to members. Normally this paper costs about \$7 a box, however we have 25 boxes available at only \$5 a box. Only one to a customer please.

W2MYL, Graham Claytor, recently bought two kilowatt rigs for his Virginia home on Claytor Lake some 60 miles west of Roanoke. Graham expects to retire next year and is getting a first class ham shack set up down there, teletype and all.

W9PTK, Ralph Schultz, Chicago, has a Model 12 typing unit, table, polar relay, and motor generator available. Ralph would like to sell this to some local ham and save freight.

W2RTW, John Mulligan, Elmira, "Still alive up here...I have several wastebaskets filled with copy from the 21A but still no transmitting equipment. Right after the band opened I had several 'contacts,' but it took too long to punch tape for an answer so I ordered a complete Model 12. I hope to use the 21A for portable work and demonstrations."

Bulletin No. 26

RETURN POSTAGE GUARANTEED

Amateur Radio Teletype Society

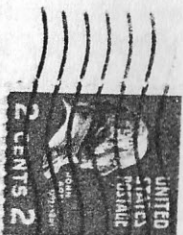
7114th Ave. Queens, N.Y. 11375

1379 East 151st Street

Brooklyn 30, N.Y.

POSTMASTER: If addressee has removed and new address is known, notify sender on FORM 3547, postage for which is guaranteed.

R. Hammer, W6HWW
17030 Via Flores
San Lorenzo, Cal.



W4OSJ, 2429 Remount Circle, Charlotte, N.C., has some gear he wants to trade. Complete Model 12 with keyboard, cover, and motor generator, in excellent condition; #12 typing unit in good condition; #12 typing unit with some parts missing, good for spares or repair if you have a spare. He wants to trade for a 400-750 watt rig, 813's or something, or what have you to offer?

W6LLP, Walter Chamberlin, went and got married. Guess that will be the end of Walt for a while. Dirty shame too, he was a good man.

W2NSD burnt out his modulation transformer, which is very bad for a phone man. Anyone got a kw modulation transformer that they might be willing to part with reasonable like? I have a table here for a 15, make an offer.

W8EYB, Rod Buszard, Detroit, now has 450 watts on 80 FSK and is taking a typing course to speed up his QSO's.

W7JRG, Ken Erickson, Billings, (VHF & SSB) has a 215H he is willing to part with.

Detroit. As most of you know, Model 26's were available in Detroit at an extremely reasonable price for a while. The report has reached me that this is a thing of the past, that no more machines are available. What happened was that someone gave out the word about the machines being available at a local club meeting and the word got back.....thats all.

W6HFK, Fred Schmidt, Berkeley, has a very good Model 12 with keyboard and keyer which he will trade all or part with cash for a Model 15 printer only.

W6NSS,, Al Browdy, L.A., has a Model 14 perforator with a new punch block, overhauled, grey crackled, radio filtered, new keytops, built in power supply: just plug in and type...\$100.

W9DDG has to sell out. Model 12 with keyboard and AC sync motor, VT Keyer on table, W2BFD converter (rack mounted), two tone test oscillator calibrated by W2BFD, W.U. Model 1A Keyboard Perforator, and a box of fanfold paper.....\$175.00 Also 4PDT autostart relay-\$1.75; Wheatstone relay-\$1.25; four 215A relays- \$3.25 each; six 206AJ relays-\$1.25 each; D.C. supply for model 12 with selenium rectifier and isolation transformer-\$3.50; Doolittle & Falknor Model FD8 Frequency Meter-\$45; Motorola Model P-8500 test set-\$25; Motorola B19-19A double conversion 10 tube superhet-\$25. Lot for \$115. Write for particulars: W9DDG, Eugene Schraut, 2524 South 12 street, Sheboygan, Wisconsin.

W9ZBK, Ben Krusniak, "Been off the air due to converter difficulties and the arrival of a new jr. op. last month."

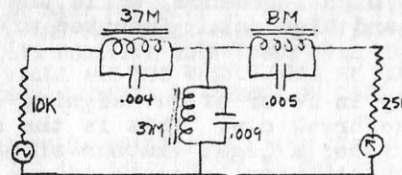
W5BCO, Ralph Hicks, "Have a Model 12 page printer for sale for \$30 uncrated. Would like to get a model 21 tape printer."

W4SBK, John Hockman, "I will be on two meter TT in about a month. I have a model 12 printer..."

W9LNI: "I saw a TT at the Starved Rock hamfest June 7 for the first time. Nothing in ham radio ever was so interesting to me as that TT. I don't know if I'll ever be able to get on the air with TT. If it so happens that I can not, I don't know if I'll even try hamming. Really, that's how RTTY has got a hold on me.....I have some equipment here that might help defray the cost of a receiving printer if you know of anyone who would take it in trade for part payment. I have a Hallicrafters Shy Chief receiver; two SW-3's, one late model, one early model (with a Velvet power pack); a Gibson Girl transmitter; and MD-7 modulator; a BC-459 transmitter; and a Mac Bug. I hope and pray that someone can help me on this score.

W9ERU: "I have been receiving your TT bulletin with interest for something over a year now and have never taken the time to send you any dope. So here goes. W9ERU has been on the air for some 25 years now, an old c.w. man, with a few accomplishments. I won the first Sweepstakes contest in Illinois and the latest, with another win three years ago. Have done a bit of DX'ing too (Illinois high score in 1947) and have DXCC #80. Used to run a kw before TVI. Now operate a bit with a 32V and am awaiting local TV stations so I can run high power again. Won a code contest (Chicago, 1936) at 52.2 wpm. I am an Army reserve officer and put my latest duty in Washington (1951-52), returning home a year ago. Had a bit of interest in RTTY during my tour of duty so it was natural I should carry the idea back home with me.

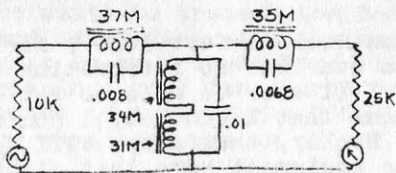
I have a model 26 which I traded a receiver for with some chap in Cleveland. It seems to be in good shape, but has the unshift-on-space which I hope to take out when I can figure out what to do. It had figures keyboard on it when I got it, but I sent in an order to the Teletype Corporation for replacement pallets and keytops. I got them without much delay and have installed them in the machine. Very reasonable in price too. Of course I have the advantage of my company letterhead. I run H & H Electronic Supply, Inc., a radio parts wholesale business, and Teletype Corporation honored our purchase order without question. I have built a couple of converters, both of which work, but not too well. The first was the one described in Bulletin #12 by some W6; uses an FL8 filter, for mark signals only. The next was a cobbled up version of my own which has produced some pretty good copy when the signals don't fade too much. I have built some filters from FL8 parts and the specs on performance are below.



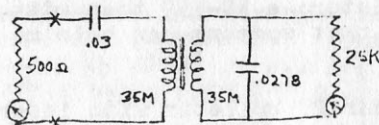
2125 cps Pass

Down	6 db	@	1680 cps.
"	6 "	@	2540 "
"	20 "	@	1340 "
"	20 "	@	2975 "

Converted FL8 Filters



Converted FL8
Filters
W9ERU



2975 cps Pass

Down 6 db @	2540 cps.
" 6 " @	3700 "
" 20" @	2125 "
" 20" @	4100 "

2100-3000 cps Bandpass

Down 6 db @	1730 cps.
" 6 " @	3700 "
" 15 " @	1360 "
" 15 " @	4800 "

"I now have two SX28 receivers to feed my converter, and as soon as I get around to hook up the AVC leads and the BFO for common injection, I think I will have diversity, polarized diversity that is, because my location will not allow space diversity. I have already arranged the two receivers to take a common HF injection signal, requiring a volt or more at the input jack. The SX28's have one valuable quality, they are about the only receivers which will operate with both AVC and BFO on without the BFO signal feeding through the I.F. channel and killing the gain. That is a little trick I learned during the last war during a short stay with the FCC monitoring station near Washington, D.C.

"Doc Lewis (W9UAW) and I discuss RTTY difficulties occasionally, but we have not yet gotten together to compare items. Nor have I seen any other RTTY hams, except W9THE, who had a new Kleinschmidt printer running down at the Starved Rock Hamfest.

"Have heard you (W2NSD) on occasionally, also W9TCJ, W3PYW, and some W6....."

"An FL8 has six chokes in it, all different, but apparently all FL8's have the same items in them. After cutting and melting them up the condensers are of little value, but the chokes come through in good shape. The three filters shown require three FL8's. The band-pass unit has two type 35M chokes coupled in transformer style; that is, the I laminations are removed and the two sets of E laminations are faced open ends together to form a complete magnetic path. The two chokes in the center leg of the 2975 cycle filter, 34M and 31M, are not coupled in any way. You will note that the 2125 and 2975 filters are high impedance, while the bandpass is low impedance in and high out. I potted mine in some other filter cans."

W2PAU, Brownie, "I am strongly in favor of our signing our calls on c.w., preferably make/break c.w. This is the only characteristic which distinguishes a legal amateur signal from some commercial or ?????? stations' signals in our bands. Proper use of the c.w. signature labels us as bona-fide hams. Anyone hearing an RTTY signal which doesn't sign on c.w. should be loudly and publicly taught that this is not a ham signal."

TELETYPE RADIO RECEIVING CONVERTERS MAY BE DIVIDED UP AS FOLLOWS:-

(1) SYSTEMS, SIMILAR TO F.M. RADIO, WHERE AN F.M. DISCRIMINATOR SUCH AS THE FORSTER-SEELEY VARIETY DELIVERS A POLAR D.C. OUTPUT WITH AN I.F. (FREQUENCY-SHIFTED) INPUT.

(2) SYSTEMS, SUCH AS THE W2BFD, W4OLL AND W6AEE UNITS, UTILIZING THE FREQUENCY-SHIFTED AUDIO OUTPUT OF THE RADIO RECEIVER; PERFORMING LIMITING AND DISCRIMINATING OPERATIONS AT AUDIO FREQUENCY.

(3) SYSTEMS, SUCH AS THE NORTHERN RADIO TERMINAL, USING PULSE TECHNIQUES TO DISCRIMINATE BETWEEN THE MARKING AND SPACING (AUDIO) TONES.

EQUIPMENT IN THE SECOND CATEGORY CAN BE FURTHER CLASSIFIED AS FOLLOWS:-

(A) CONVERTERS (W2BFD, W4OLL) PROVIDING SEPARATE AUDIO CHANNELS FOR MARKING PITCH AND SPACING PITCH.

(B) CONVERTERS (W.U. TYPE 20) AMPLIFYING AND LIMITING IN A COMMON AUDIO CHANNEL, FOLLOWED BY A DISCRIMINATOR, GENERALLY OF THE FORSTER-SEELEY BREED, OPERATING AT AUDIO FREQUENCIES.

MOST AMATEUR EQUIPMENT HAS FOLLOWED THE SECOND CATEGORY BECAUSE OF THE CONVENIENCE OF SWITCHING FROM AFSK TO FSK AND THE IMPORTANT FACT THAT NO CHANGES NEED BE MADE TO THE ASSOCIATED RADIO RECEIVER. (WORKS FROM EARPHONE JACK OR LOUDSPEAKER TERMINALS).

LIKEWISE, AMATEURS HAVE TENDED TO FOLLOW THE "A" SUBDIVISION FOR CONSTRUCTIONAL REASONS. WITH THIS METHOD COMPLICATED WAVE FILTERS MAY BE DISPENSED WITH (HAVE YOU EVER PRICED A REALLY GOOD COMMERCIAL FILTER?). SELECTIVITY IS OBTAINED AT AUDIO FREQUENCIES IN THE SAME MANNER AS IN CONVENTIONAL I.F. AMPLIFIERS. (BY SLIGHTLY OVERCOUPLED COILS PRODUCING STEEP "SKIRTS" WITH A FLATTENED TOP TO THE RESPONSE)

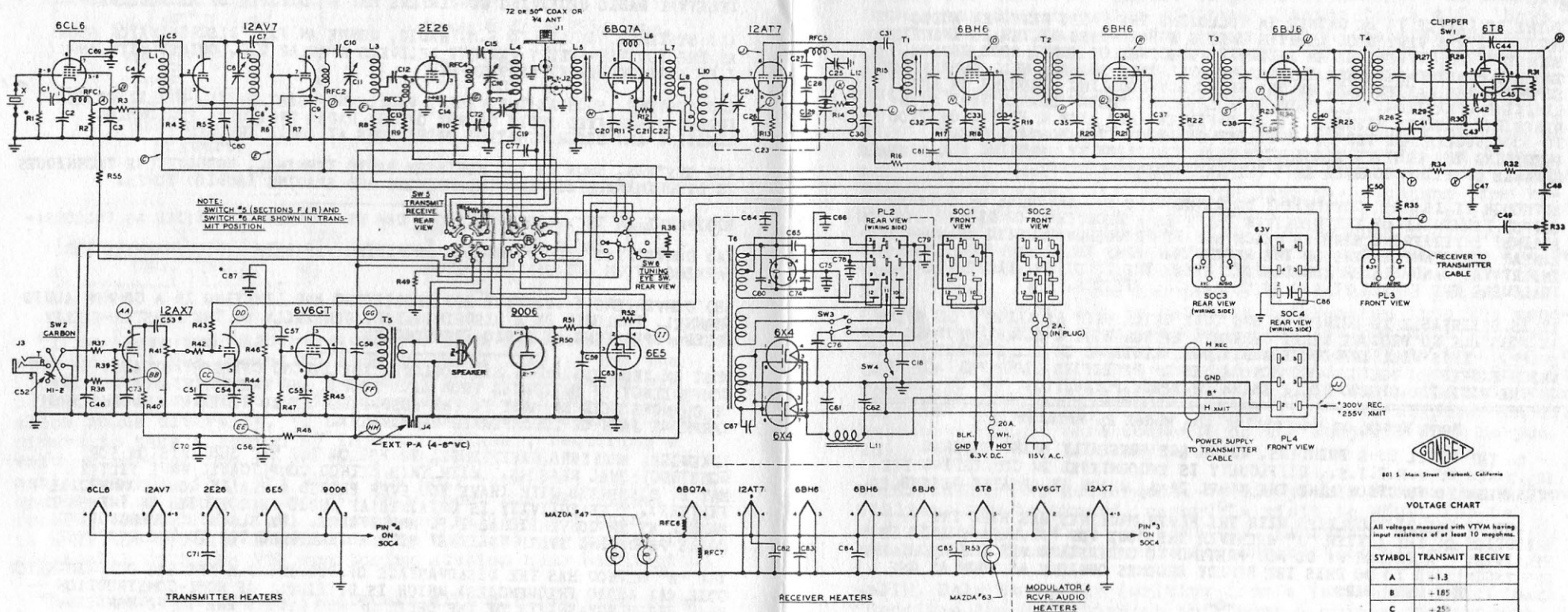
THE "B" METHOD HAS THE DISADVANTAGE OF REQUIRING A SPECIAL DISCRIMINATOR COIL (AT AUDIO FREQUENCIES) WHICH IS DIFFICULT OF HOME-CONSTRUCTION WHEN FREQUENCY-SHIFTS OF THE ORDER OF 850 CYCLES ARE TO BE HANDLED.

AN EXTREMELY COMMON MISTAKE IN THE CONSTRUCTION OF THE W2BFD TELETYPE PANELS IS THE PLACEMENT OF A GROUND ON THE ROTOR OF THE DIODE POTENTIOMETER. FRANKLY THE CIRCUIT LOOKS AS THOUGH IT WOULD NEED A GROUND BUT IT IS IMPORTANT THAT THAT POINT (THE "APEX" POINT) BE LEFT "FLOATING" FOR THIS REASON:-

WITH SIGNAL COMING THROUGH THE MARKING CHANNEL, ACCOMPANIED BY NOISE, THIS IS RECTIFIED AND PRODUCES A D.C. OUTPUT ACROSS THE POTENTIOMETER (MARKING SIDE) WHICH TENDS TO MAKE ONE 6V6 GRID POSITIVE AND THE OTHER ONE NEGATIVE. ONE 6V6 PLATE CURRENT GOES UP TO SATURATION AT ABOUT 80 MA AND THE OTHER GOES TO ZERO. NOISE IN THE SPACE CHANNEL WHICH IS NOT AT THIS MOMENT CARRYING A SIGNAL IS RECTIFIED AND INTRODUCED IN SERIES WITH THE MARKING D.C. VOLTAGE IN THE DIRECTION TO CANCEL. WITH SIGNALS EVEN SLIGHTLY ABOVE THE BACKGROUND NOISE THE RESULTANT VOLTAGE ON THE 6V6 GRIDS WILL ALWAYS MAKE ONE POSITIVE AND ONE NEGATIVE. VOILA! THE POLAR RELAY WORKS.

ON THE OTHER HAND, WITH A GROUND ON THE "APEX" POINT, BOTH 6V6 TUBES WILL BE MADE POSITIVE AT THE SAME TIME, ONE FROM RECTIFIED SIGNAL-PLUS-NOISE, AND THE OTHER FROM RECTIFIED NOISE. IF BOTH GRIDS ARE ABOUT 16 VOLTS POSITIVE BOTH TUBES WILL DRAW SATURATION PLATE CURRENT OF THE SAME VALUE AND THE RESULT WILL BE ZERO CURRENT THROUGH THE POLAR RELAY WINDING. (RESULTS IN ERRORS IN COPY UNDER NOISY CONDITIONS).

THE ABOVE IS PARTICULARLY APPLICABLE TO THOSE PANELS OBTAINING THEIR LIMITING AND SELECTIVITY IN THE MARK AND SPACE AUDIO AMPLIFIERS. IN THOSE SYSTEMS PRECEDING THE DISCRIMINATING AMPLIFIERS WITH A LIMITER IN THE INPUT, COMMON TO BOTH MARK AND SPACE FREQUENCIES, THIS IS SOMEWHAT LESS IMPORTANT.



* VALUE CHANGED OR COMPONENT ADDED IN PRODUCTION

GONSET 2-METER COMMUNICATOR SCHEMATIC DIAGRAM

Components such as T1, T2 and others not listed below are special and should be ordered by symbol designation. All resistor values are 10% tolerance. Intermediate frequency is 6 MC. Fuses are 2 amp "silo-blo" for 115 volt operation (located in line plug) and 20 amp for 6 volt operation (in hot lead). Voltages should be measured with a diode type voltmeter having a input resistance exceeding 10 megohms and an isolating resistor in the probe (such as RCA voltohmmist). On some units, sections 4-F and 4-R on switch SW5 have been transposed.

- C1. 10 MMF Ceramic NPO
- C2. 50 MMF Ceramic NPO
- C3. 100 MMF Ceramic NPO
- C4. 25 MMF APC
- C5. 100 MMF Ceramic NPO
- C6. 5 MMF APC
- C7. 100 MMF Ceramic NPO
- C8. .004 MFD GMV Ceramic
- C9. .001 MFD GMV Ceramic
- C10. .001 MMF GMV Ceramic
- C11. 10 MMF APC
- C12. 100 MMF Ceramic NPO
- C13. .001 MFD GMV Ceramic
- C14. 100 MMF Ceramic NPO
- C15. 100 MMF 1000 V Silver Mica
- C16. 15 MMF APC
- C17. 50 MMF APC
- C18. .047 MFD 400 V. Tubular
- C19. 2.2 MMF Ceramic NPO
- C20. .001 MFD GMV Ceramic
- C21. .001 MFD GMV Ceramic
- C22. .001 MFD GMV Ceramic
- C23. Special 3 Gang
- C24. RF Trimmer on C23
- C25. OSC Trimmer on C23
- C26. .01 MFD GMV Ceramic
- C27. 40 MMF Ceramic Neg. 30
- C28. 47 MMF 2% Ceramic Neg. 30
- C29. 47 MMF 2% Ceramic Neg. 30
- C30. .004 MFD GMV Ceramic
- C31. 50 MMF Ceramic Neg 30
- C32. .001 MFD GMV Ceramic
- C33. .01 MFD GMV Ceramic
- C34. .01 MFD GMV Ceramic

- C35. .001 MFD GMV Ceramic
- C36. .01 MFD GMV Ceramic
- C37. .01 MFD GMV Ceramic
- C38. .001 MFD GMV Ceramic
- C39. .01 MFD GMV Ceramic
- C40. .01 MFD GMV Ceramic
- C41. .001 MFD GMV Ceramic
- C42. 50 MMF Ceramic Neg. 30
- C43. .01 MFD GMV Ceramic
- C44. .004 MFD GMV Ceramic
- C45. .001 MFD GMV Ceramic
- C46. .001 MFD GMV Ceramic
- C47. 0.1 MFD 400 V. Tubular
- C48. .01 MFD GMV Ceramic
- C49. .01 MFD GMV Ceramic
- C50. .01 MFD GMV Ceramic
- C51. .001 MFD GMV Ceramic
- C52. .001 MFD GMV Ceramic
- C53. .005 MFD GMV Ceramic
- C54. 25 MFD 50V
- C55. 25 MFD 50V
- C56. 8 MFD 450V
- C57. .001 MFD Ceramic
- C58. .0047 MFD 1600 V. Tubular
- C59. .001 MFD GMV Ceramic
- C60. .001 MFD GMV Ceramic
- C61. 12 MFD 450 V Electrolytic (85°C)
- C62. 30 MFD 450 V Electrolytic (85°C)
- C63. .001 MFD GMV Ceramic
- C64. .001 MFD GMV Ceramic
- C65. .001 MFD GMV Ceramic
- C66. .001 MFD GMV Ceramic
- C67. Two .0068 MFD 1600V Tubular in parallel or one .015 MFD 1600V

- C68. See C67
- C69. 10 MMF NPO Ceramic
- C70. .01 MFD GMV Ceramic
- C71. .001 MFD GMV Ceramic
- C72. 470 MMF 1000V Ceramic
- C73. .01 MFD GMV Ceramic
- C74. .001 MFD GMV Ceramic
- C75. .01 MFD GMV Ceramic
- C76. .001 MFD GMV Ceramic
- C77. 470 MMF GMV Ceramic
- C78. .001 MFD GMV Ceramic
- C79. .001 MFD GMV Ceramic
- C80. 5 MMF NPO Ceramic
- C81. .01 MFD GMV Ceramic
- C82. .01 MFD GMV Ceramic
- C83. .01 MFD GMV Ceramic
- C84. .01 MFD GMV Ceramic
- C85. .001 MFD GMV Ceramic
- C86. .001 MFD GMV Ceramic
- C87. 100 MMF Ceramic NPO

- R1. 100K 1/2 W
- R2. 82 Ohm 1/2 W
- R3. 18K 1/2 W
- R4. 27K 1/2 W
- R5. 82 Ohm 1/2 W
- R6. 4.7 Meg 1/2 W
- R7. 27K 1/2 W
- R8. 2.2 Meg 1/2 W
- R9. 22K 1/2 W
- R10. 22K 2 W
- R11. 120 Ohm 1/2 W
- R12. 470K 1/2 W
- R13. 1500 Ohm 1/2 W
- R14. 6800 Ohm 1/2 W
- R15. 82K 1/2 W
- R16. 22K 2 W
- R17. 270K 1/2 W
- R18. 680 Ohm 1/2 W
- R19. 10K 1 W
- R20. 270K 1/2 W
- R21. 120 Ohm 1/2 W
- R22. 10K 1 W
- R23. 270K 1/2 W
- R24. 120 Ohm 1/2 W
- R25. 10K 1 W
- R26. 1.2 Meg 1/2 W
- R27. 270K 1/2 W
- R28. 270K 1/2 W
- R29. 1.2 Meg 1/2 W
- R30. 1.2 Meg 1/2 W
- R31. 2.2 Meg 1/2 W
- R32. 100K 1/2 W
- R33. 250K Pot audio taper
- R34. 100K 1/2 W
- R35. 4700 Ohm 4 W
- R36. 270K 1/2 W
- R37. 100K 1/2 W
- R38. 680 Ohm 1/2 W
- R39. 1.2 Meg 1/2 W
- R40. 47K 1/2 W
- R41. 100K Pot AF taper
- R42. 100K 1/2 W
- R43. 270K 1/2 W
- R44. 3900 Ohm 1/2 W
- R45. 820 Ohm 1 W
- R46. 470K 1/2 W
- R47. 470K 1/2 W

- R48. 12K 1/2 W
- R49. 390 Ohm 1 W
- R50. 39K 1/2 W
- R51. 39K 1/2 W
- R52. 1.2 Meg 1/2 W
- R53. Mazda 63 lamp
- R54. 27K 1/2 W
- R55. 100K 1 W

CONNECTOR	MATING CONNECTOR (Not Furnished)
J1	AMPHENOL #83-15P
J3	PL-68
J4	CINCH #M-99

- SOC4 - 6 PIN SOCKET - JONES #S306-AB
- SOC3 - 4 PIN SOCKET - CINCH #2765
- J4 - P.A. SPEAKER JACK - CINCH #8171
- J3 - MICROPHONE JACK - SWITCHCRAFT - JK-43
- SW2 - DPDT SLIDE SWITCH - WIRT #726
- J1 - UHF CONNECTOR. ANTENNA - AMPHENOL #83-1R OR SO-239
- HOOD - UHF CONNECTOR - AMPHENOL #83-765 OR UG-177-U
- SW5 - TRANSMIT-RECEIVE SWITCH - SPECIAL
- T5 - MODULATION TRANSFORMER - SPECIAL
- SW6 - TUNING EYE SWITCH - SPECIAL
- VIBRATOR - MALLORY #625C OR 825C
- VIBRATOR BASE CLAMP - MALLORY #GC7
- 4 PIN SOCKET-VIBRATOR - AMPHENOL #77-MIP-4
- PL2 - 12 PIN CONNECTOR - JONES #P312-AB
- PL4 - 6 PIN CONNECTOR - JONES #P306-FHE
- SOC1S - 12 PIN SOCKET - JONES #S312-CCT
- SOC2S

FUSED PLUG - ELEMENTO

- TFE HOLD DOWN CLAMPS - REMLER #W73317
- SW4 - SPST SWITCH - CARLING #110 OR SMITH #510
- SW3 - DPST SWITCH - CARLING #216-6 OR SMITH #522
- T6 - POWER TRANSFORMER - SPECIAL
- L11 - CHOKE - MERIT #C2974
- SW1 - DPDT SWITCH - OAK MFG #22
- PL3 - 4 PIN CONNECTOR - CINCH #2770



801 S Main Street, Burbank, California

VOLTAGE CHART

All voltages measured with VTVM having input resistance of at least 10 megohms.

SYMBOL	TRANSMIT	RECEIVE
A	-1.3	
B	-185	
C	+255	
D	-2.7	
E	-50	
F	-40	
G	-160	
H		+1
I		+2
J		+42
K		+6.8
L		+133
M		+1.4
N		+2
O		+152
P		+1.4
Q		+0.6
R		+144
S		+1.4
T		+0.9
U		+100
V		+1.2
W		+78
X		+127
Y		+190
Z		+300
AA	+185	+300
BB	+0.9	+25
CC	+1.3	+1.6
DD	+100	+145
EE	+225	+290
FF	+12	+21
GG	+235	+295
HH	+255	+300
II	+255	+260
JJ	+255	+300

THERE IS LITTLE TO BE GAINED IN FOLLOWING THE RADIO RECEIVER AUDIO OUTPUT WITH A VERY GOOD LIMITER UNLESS A BAND-PASS FILTER IS INSERTED BETWEEN THEM; OTHERWISE AN INTERFERING SIGNAL OF (SAY) 1000 CYCLES, THREE D.B. STRONGER THAN THE DESIRED TELETYPE SIGNAL, WILL COMPLETELY SUPPRESS THE LATTER AND, BY THE FREQUENCY-DOUBLING OCCURRING IN ANY LIMITING OPERATION, WILL PRODUCE A SPURIOUS "MARK" SIGNAL THAT OVERRIDES THE DESIRED SIGNAL. A BAND-FILTER (FOR AFSK A FILTER OF 2100 TO 3000 CYCLES AND FOR FSK A FILTER OF ABOUT 1700 TO 3400 CYCLES) PRECEDING THE LIMITER ELIMINATES THIS CONDITION BY REMOVING ALL SIGNALS CAPABLE OF BEING DOUBLED INTO THE DISCRIMINATOR RANGE.

ALTHOUGH IT IS MOST CONVENIENT TO CONNECT TO THE EARPHONE OR SPEAKER OUTPUT TERMINALS OF THE RECEIVER THERE IS A REDUCTION OF DISCRIMINATION AGAINST INTERFERING SIGNALS WHICH MAY BE FREQUENCY-DOUBLED IN NON-LINEAR AUDIO AMPLIFIERS IN THE RECEIVER. THE IDEAL SETUP WOULD INSERT THE BAND-FILTER IMMEDIATELY AFTER THE DETECTOR. DISTORTION FOLLOWING THE FILTER WILL HAVE NO HARMFUL EFFECTS.

IT IS DESIREABLE TO DRIVE THE 6V6 TUBE GRIDS WITH AS LARGE A DC SWING AS POSSIBLE TO PRODUCE RELAY CURRENTS APPROACHING A SQUARE WAVE IN SHAPE. THIS WILL INTRODUCE ADDITIONAL LIMITING ON ALL SIGNALS WHICH EXCEED 16 VOLTS. COMMON VALUES OF RECTIFIED DIODE VOLTAGE ARE IN THE VICINITY OF 200 VOLTS (MARK OR SPACE POLARITY). 73 DE W2BFD

Some Notes On Converting the Model 25 Printer

ON THE MODEL 25-A PRINTERS, WHICH ARE PRESENTLY BEING SECURED BRAND-NEW BY V.H.F.T.S., DIFFICULTY IS ENCOUNTERED IN CONVERTING THE MECHANISM TO FUNCTION LIKE THE MODEL 21-A, WHICH IT GREATLY RESEMBLES.

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ONE OF THE DIFFICULTIES WITH THE NEWER MACHINES HAS BEEN THE SELECTION OF THE LETTER "J" WHENEVER THE CODE FOR "FIGURES-SHIFT" IS RECEIVED. ALTHOUGH WE DO NOT PRETEND TO UNDERSTAND WHY THE MACHINE WAS ENGINEERED TO DO THIS THE REMEDY BECOMES OBVIOUS AS SOON AS ONE EXAMINES THE CODE BARS.

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MANY OF THE GANG HAVE ERRONEOUSLY BEEN CALLING THESE MACHINES 6-UNIT PRINTERS, IN FACT THE TELEGRAPH PEOPLE THEMSELVES HAVE BEEN DOING THIS ALSO. ACTUALLY THE 6-UNIT CODE (ALSO KNOWN AS THE "TELETYPESSETTER CODE") IS ENTIRELY DIFFERENT. THE MODEL 25-A MACHINE USES THE CONVENTIONAL 5-UNIT CODE, PRECISELY AS IN THE MODEL 21-A AND OTHER PRINTERS WITH WHICH WE ARE MORE FAMILIAR, BUT GETS ITS SHIFT TO UPPER-CASE THROUGH A RELAY AND SOLENOID ACTUATED FROM A LOCAL IMPULSE FROM THE DISTRIBUTORS WHICH WERE USED WITH THEM. UNSHIFT IS ACCOMPLISHED AUTOMATICALLY AFTER THE PRINTING OF EACH UPPERCASE CHARACTER BY DE-ENERGIZING THE LOCKING CIRCUIT OF THE RELAY. THE MODEL 21-A AND MOST OF THE OTHER MODELS USE A MECHANICAL FUNCTION-LEVER TO PERFORM THE SHIFTING.

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THE NOTCHING OF THE FIVE CODE BARS IS IDENTICAL IN THE 21-A AND 25-A PRINTERS WITH THE EXCEPTION OF THE NUMBER 5 BAR, THE BOTTOM ONE, WHICH HAS A TOOTH MISSING OPPOSITE THE "J" PULLBAR. THIS ALLOWS THE "J" PULLBAR TO BE SELECTED IF THE CODE FOR "J" (MARKING ON PULSES 1, 2 & 4) OR THE CODE FOR "FIGURES" (MARKING ON PULSES 1, 2, 4, & 5) IS RECEIVED. TO BLOCK SELECTION OF "J" WHEN THE "FIGURES" CODE IS RECEIVED THE NUMBER 5 CODE BAR NEEDS AN ADDITIONAL TOOTH AS INDICATED IN THE ACCOMPANYING DRAWING. FORTUNATELY THE CODEBARS ARE SUPPORTED NEAR EACH END AND THE BOTTOM SURFACE OF THE NUMBER 5 CODE BAR IS FAR FROM ANY OBSTRUCTION. BY SOLDERING A TINY STRIP OF METAL TO THE BOTTOM SURFACE AT THE CORRECT POINT THE "J" BAR WILL BE CORRECTLY BLOCKED. THE STRIP OF METAL CAN BE THIN AND SHOULD PROJECT TO THE SAME HEIGHT AS THE OTHER TEETH ON THE CODE-NOTCHED SIDE BUT NOT AT ALL ON THE OTHER SIDE (OR IT WILL INTERFERE WITH THE SELECTOR PAWLS) THE WHOLE JOB SHOULD BE DONE IN ABOUT FIFTEEN MINUTES. 73 DE W2BFD

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W3QLC, Joe Hibberd, "Expect to get a TT machine, no charge, from a man that has nine of them. Hoping for a #15. Have a complete set of manuals for installation, maintenance and adjustment of models 12-14-15-19-26. They were put out by Bell Telephone, AT&T, W.E. Co. and Teletype Corporation so they are the real stuff.....hope to see you on 80M TT."

WLBGW, Jack Berman, "Picked up a used 75A2 and like the stability on RTTY. Now it is just up to the fellow I am working.....that award for working 100 RTTY stations will be something to shoot at! Hope you drop the date and time requirements on the TT copy though as it is seldom given. It doesn't make any difference what time or when a guy was worked as long as he was worked. We have to take the fellows word, so if he wants the certificate dishonestly, give it to him." (Well, the date and time stipulation was put in the rules in order to try to get this information into the message text of RTTY transmissions. Many fellows have written in suggesting that these things should always be included in the preamble of at least the first transmission of a QSO. The form used by the wire services is simple and would make your copy serve as a log; e.g.....1138P 8/1. The stipulation will hold until I get more comments on the subject. What do you think about it.....wayne).

W9TCJ/W6NRM, Bob Weitbrecht, on his yearly summer jaunt from Williams Bay to Oxnard, reports a visit to W0UVL (So.Dak) and also a gal friend in Hamilton, Montana. Guess we'll be hearing Bob from California for the next couple months.

W6JIE, Dale Hammersly (writing from a Navy tanker in Japan), "Received the Bulletins at this port a couple of days ago and it was 2 am before I got torn loose from them! Have a 26 printer aboard which I bought from W6OZE. Built up the converter a la January QST with remarkable results. Had no test equipment for peaking the mark/space, but have been having fairly good results on commercial copy....am going to incorporate a pair of 6Y6's to eliminate the polar relay. Right now there is quite a bit of local QRM produced on the BC bands to the receivers of the old man and the crew. Ham operation is not permitted aboard these Navy tankers so I am going to try to make a change to a commercial vessel where I can have a ham rig and will be able to sign W6JIE/MM again, but this time on RTTY."

W200G, Cecil Bastian, Freehold, NJ, "Just wound up an exciting weekend working fixed portable at the annual Boy Scout Camp-O-Ree located near Holmdell, N.J. on the farm of Mrs. Edward Ellis who offered use of it for some 1600 Scouts. The RTTY equipment was a Model 15, a BC-610 feeding a half-wave on 80 meters with a converted Meissner Signal Shifter as the exciter, and an experimental selectobject model converter." 61 messages were handled by W2PAT. W2JAV called in but most of the remaining traffic went out via phone. Ops were W200G Cecil, his XYL Mac W4LW, W2SLW Eddie, and Windy W2RWV.

W2RHN, Lou Letendre, Flushing, "Have a new 32V3 and 75A3 in operation. My activity should increase with f.s.k."

W9AKP, Phil Kennedy, "Just released to inactive duty from the Navy. Worked with RATT in service and hope to continue experience in ham work. How come QST never published more than an article or two on this subject?"

WØCIH, Paul Leslie, Superior, Nebraska, "I am now regularly on 7140 kc, having vacated 3620 kc after a very short occupancy because of static...Activity on 7140 seems to be in short supply at the present time. I work W9TCJ, WØBP, WØUVL, and W6AEE. Merrill and I have been saying hello almost every evening lately. Bob, W9TCJ, is on a western trip at the present time and his vacation makes a considerable hole in the teletype activity. As far as I know there are no other TT stations on the low frequencies in Nebraska. I have heard that there are a handful of stations active on two meters in the vicinity of Omaha, but they are beyond my range....WØNME in western Nebraska has borrowed my extra Model 12 and at last report was nearing completion of his terminal equipment a la W2BFD plans.....I have a new Collins 75A2 receiver which is a God-send here where I have been plagued by a rapidly fluctuating line voltage for some time. A new final with about 400 watts is in operation on the RTTY frequencies. The Model 12 uses the W2BFD panel, complete with auto-start, and has the W9TCJ vacuum tube keyer and f.s.k. oscillator. I have a 21A that is not yet connected up and am looking around for some tape equipment."

W5MXJ, Bill Kelly, New Orleans, "I have six model 12 printers with tables, receiving distributors, a.c. motors, and covers which are available for those that want to get started in TT." Here is a chance to pick up a printer at a bargain. Bill has been unable to get keyboards for the printers, but they are complete for receiving purposes and require only the conversion of a typewriter a la W2BFD and a simple transmitting distributor for two-way work. If you want to get on the air and are stewing about the months of waiting for regular delivery here is your opportunity. Write Bill at 100 Bellaire Drive, N.Or.

There has been quite a bit of discussion about the W2PAT converter circuit which appeared in the January QST. A lot of the fellows have, because of its simplicity, tried the circuit. Some have had troubles with it, some have it doing the job. Marvin points out in a letter that he did not intend to imply that this was the ultimate in converters and that obviously the use of filters costing more than 76¢ will result in improved performance. Thus it is natural that those who have compared it with, say, the W2BFD converter are not well satisfied. It would be helpful though if every one that has had a chance to compare two or more types of converters would make their opinions available to us. Also, I would like to furnish any improvements that may have been found for any of the converters so far printed up.

W2QCF, Fran Sherwood, Fairport, NY, "In addition to my outside projects, which keep me off the air too much, I work for a BC station. I have a converter finished and it works FB on the station's AP news printer. Some day we'll miss a hot news bulletin and that'll put the kibosh on my fun!!!"

W9SPT, George Boyd, "The old model 12 is printing --- and without waiting for the keyboard from John. Bob built up the electronic distributor in the May "RTTY," and after switching the grid and screen resistors on the phanastron stage, finally got it down to work. Timing is slightly a problem, but we got it licked, I think. As long as Commonwealth Edison gives us 60 cps I think we can find 45....I am thinking about going to work on a keyboard a la W2BFD. Have been working on the 21A. Rewired the harness and re-wound the selector magnets and print relay with #40 wire. I just won't have magnets that take all the plate current a 50L6 can pass to pull them in. Bob is running the #12 with 50L6's and the original selector magnets, but had to rewind the print magnet to about 3400 ohms to get it to work. In addition, to get enough plate current through the 50L6 he is using to run the print magnet, he had to use a neon bulb direct from the plate of the final multivibrator to the grid of the keyer tube."

W9DDP, Bill Stange, got hold of a model 26 with the fiber gears stripped and hopes that someone will be able to help him out of this difficulty. The sync motor overheated in the process and he also needs that.

W1WB, Blackie, just back from Europe, "Got invited to spend two days in the TT department of Olivetti Company at Ivrea, but couldn't due to a dose of appendicitis. Did try their version of the model 12 and it stinks, but I hear that their new ones are very good: their new typewriters are the world's best."

Mark Wayman of Fontana, California, mentions an interest in a would-be hobby of mine: the Aqua Lung. I have a set of fins and mask with which I have plumbed some of the depths of the Brooklyn, Virginia, and Florida coastal waters, but even though I can hold my breath for quite a long time it is nothing like using a lung. W6LLP, Walt Chamberlin, is another diver and I'll bet we have a good time if I can figure some way to get out to California. Say, if you have a chance to get down to Florida, don't miss a swim in Silver Springs.

W8BYB, Rod Buszard, "I have been able to secure another #26 machine complete with keyboard. I would like to trade it off for a reperforator if possible. This is the only way I will part with it so no cash offers please."

WØTGQ, Lee Blodgett, "I am a physics student and work at the S.U.I. Cosmic Ray Radiotelemeter Rocket and Balloon Electronic Research project for the Office of Naval Research."

VE8AV, Berube, Whitehorse, "Extensive listening on the 40 meter band here has failed to reveal any amateur RTTY stations so far. We were quite sure that the W6's would be coming in and we are ready to copy them on an experimental set-up if they ever come through."