ACCUKEYER is a revised version of the very popular WB4VVF AccuKeyer originally described by James Garrett, WB4VVF in QST magazine and the 1975 Radio Amateurs Handbook. The basic keyer provides self-completing dots and dashes, iambic operation with single dot and dash memories, automatic character spacing and low cost. This version features a revised circuit board which allows a more logical I.C. layout, provision for using 1/2-watt resistors to further reduce cost, an on-board sidetone oscillator, and facilitates attachment of an optional programmable 256 or 512 bit memory for dx or contest work.

CONSTRUCTION

Using the parts list and pictorial view of the printed circuit board (component side), install and solder jumpers, resistors, transistors, and capacitors in that order, in the locations shown. Jumpers are constructed of solid hookup wire installed straight from point to point and flat against the circuit board as shown. Insulated wire must be used, in the three locations indicated, to avoid shorts. Note polarity of electrolytic capacitors.

Soldering must be done with a small low-wattage (20-40 watt) soldering iron, and rosin core solder. Care should be taken to avoid cold solder joints and solder bridging to adjacent circuit patterns. Use of a small tipped iron and small diameter solder helps to avoid this problem. Should any difficulty be experienced with the completed keyer, a careful search for cold solder joints and solder bridges usually reveals the cause.

Install I.C.s in locations shown. Be sure to observe proper orientation (notch or dot at pin one end of I.C.) I.C.s can be soldered directly to printed circuit board, but the use of sockets or molex pins is recommended to facilitate replacement.

Attachment of the Auto-Space switch, speed adjustment pot., and a small 3-8 ohm loud speaker completes construction of the basic keyer. Operation of the keyer requires that you connect a dual contact (paddle) key as shown and a 5-volt D.C. power supply to the circuit board. A schematic and parts list of a suitable power supply is provided.

If the memory option is to be used with the keyer, the memory board should now be assembled. It is advisable to assemble and test the basic keyer before attaching the memory to the keyer. Note, however, that three jumpers (marked "X") must be installed or removed from the keyer board depending on whether or not the memory is installed.

The output circuit of keyer is designed for grid block keying, however, the circuit can be modified as shown in the schematic for cathode keying if desired.
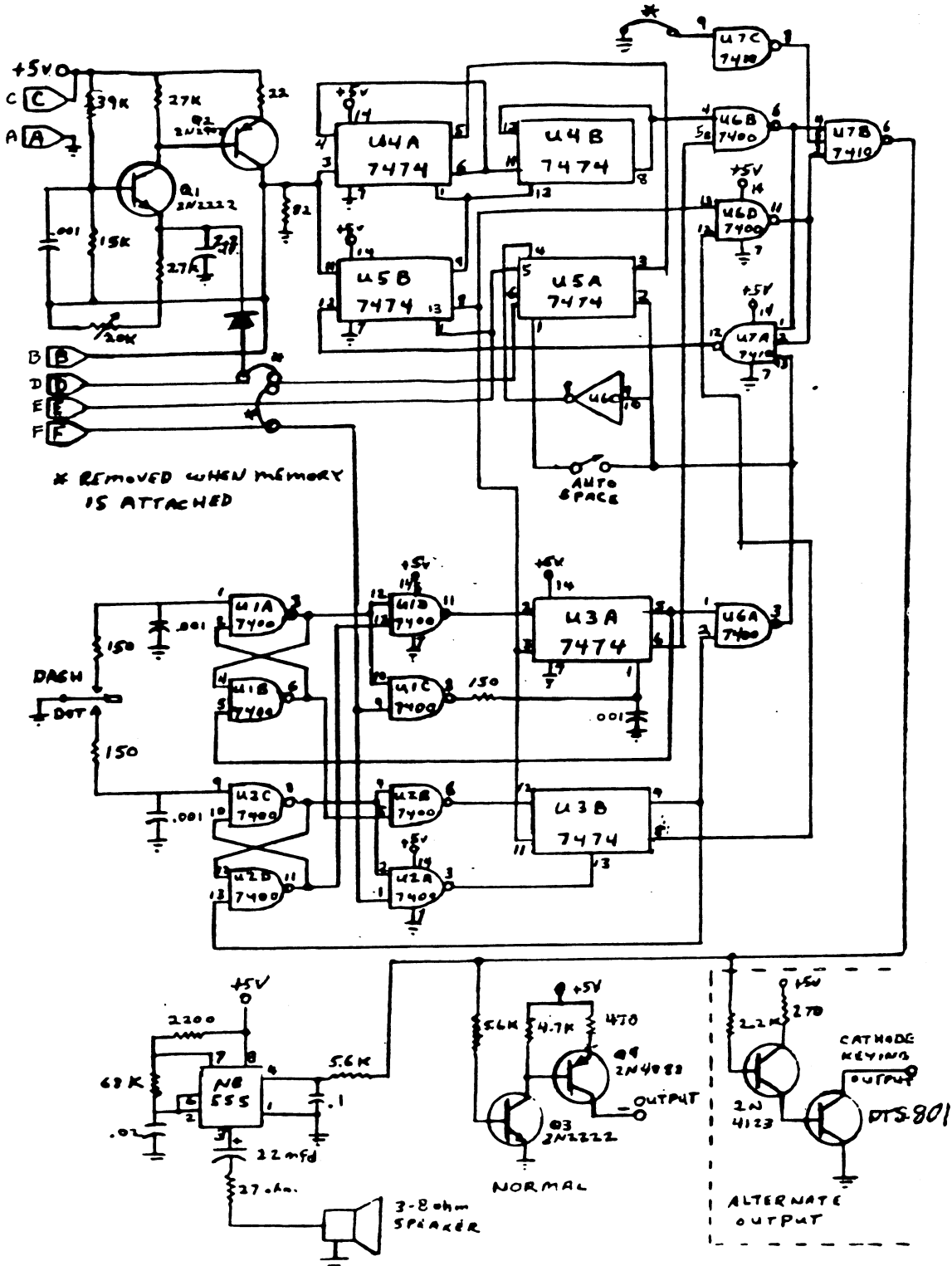
ACCUKEYER PARTS LIST

R1,2,3   150 Ohm
R4   1000 Ohm
R5, 12   5.6K Ohm
R6   39K Ohm
R7   82 Ohm
R8   2.2K Ohm
R9   22 Ohm
R10   68K Ohm
R11   27K Ohm
R13   2700 Ohm
R14   470 Ohm
R15   4700 Ohm
R16   15K Ohm
R17   24 or 27 Ohm ½W

CAPACITORS

C1,5,7,11 .1 mfd (or 104)
C2,3,4,9 .001 mfd (1000pf
(or marked 1uK)
C6 .015 - .02mfd (or 203)
C8 22 mfd or 25 nfd (Elect)
C10 2.2 or 2.0 mfd Elec.

TRANSISTORS

Q1,Q3   2N2222 (Yellow dot)
Q2   2N2907 (Blue dot)
Q4   2N4888 (White dot) or 2N5401

ICs
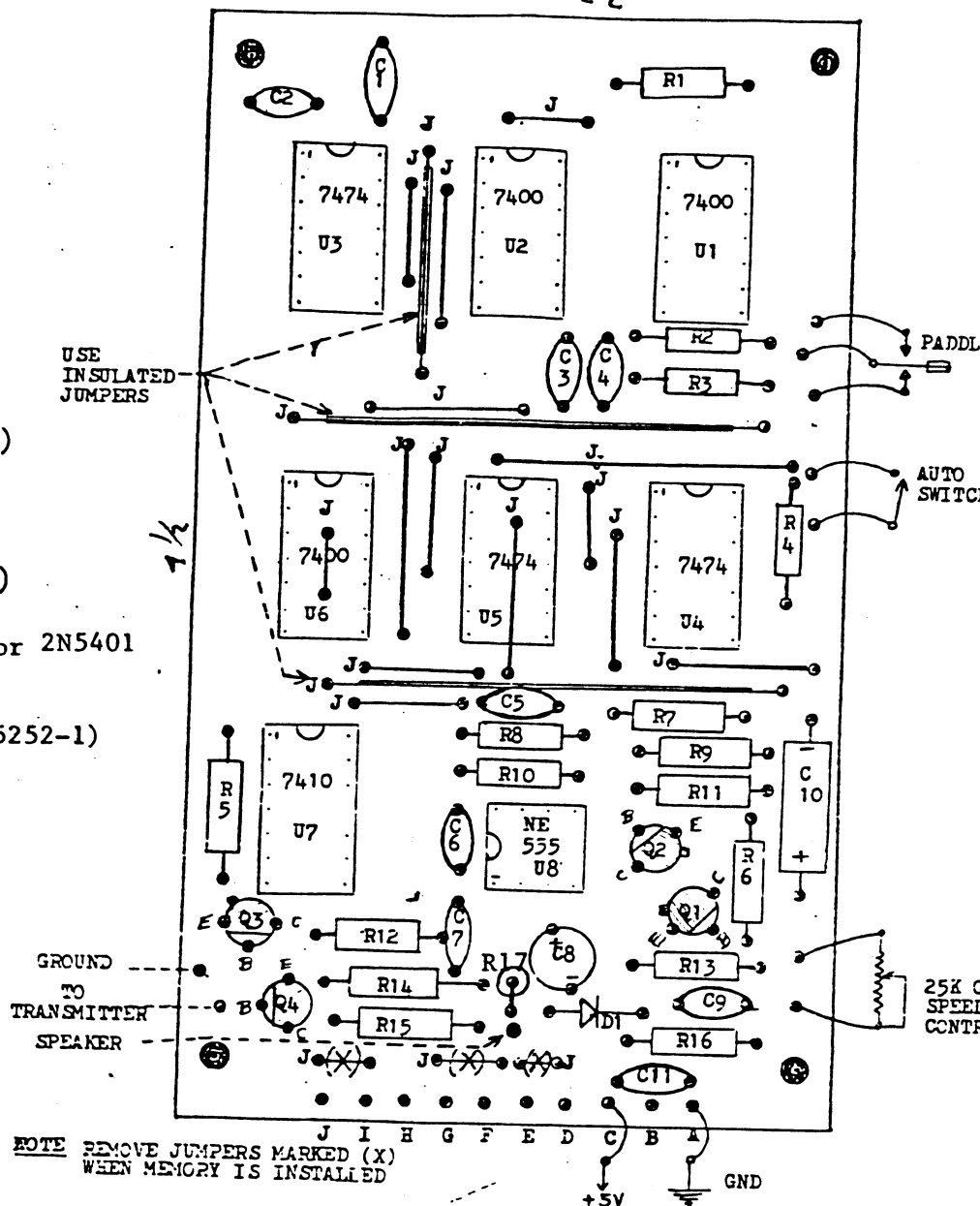
U1,2,6   7400 (May be marked 5252-1)
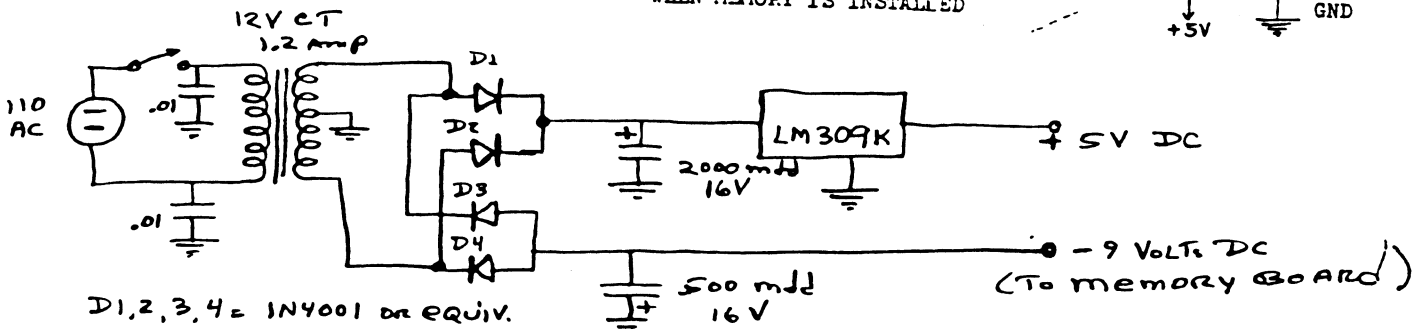U3,4,5,   7474
U7   7410
U8   NE555

MISC

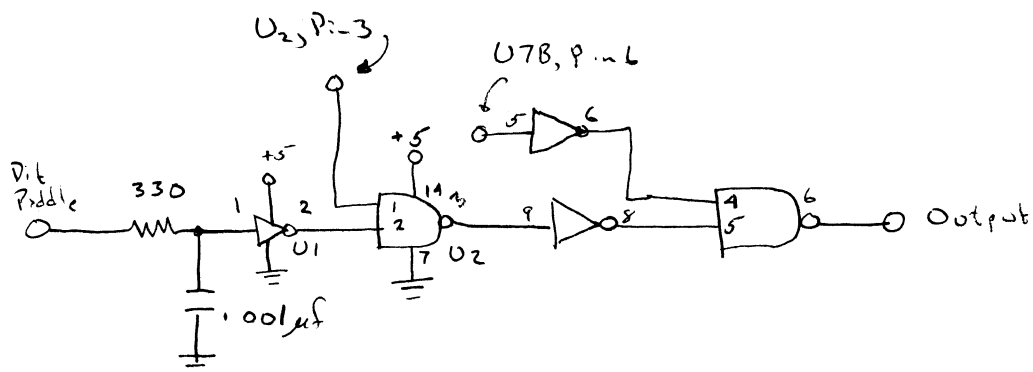25K Ohm pot
1 - on/off switch
Speaker
D1 1N914 or Equiv diode

TYPICAL- POWER SUPPLY

TRANSISTORS TOP VIEW
E C   E B C   FLAT SIDE E B C

NOTE - J DENOTES JUMPERS
2½

USE INSULATED JUMPERS

7474 U3   7400 U2   7400 U1

R1
R2
R3
C3 C4
PADDL

7400 U6   7474 U5   7474 U4

AUTO SWITCH
R4

1½

C5
R7
R8
R9
R10
R11
7410 U7
C6
NE 555 U8
Q2
C
10
R
5
R
6

GROUND TO TRANSMITTER SPEAKER

Q3
R12
C7
R17
C8
R13
C9
Q1
25K O SPEED CONTR

Q4
R14
R15
D1
R16
C11

J (X)   J (X)   J

J I H G F E D C B A

NOTE REMOVE JUMPERS MARKED (X) WHEN MEMORY IS INSTALLED

+5V   GND

110 AC
12V CT 1.2 AMP
.01
.01
D1
D2
D3
D4
2000 mfd 16V
LM309K
+5V DC
500 mfd 16V
-9 VOLT DC
(TO MEMORY BOARD)

D1,2,3,4 = 1N4001 or equiv.

To eliminate trailing dits

U₂, Pin 3

U7B, Pin 6

Dit Paddle

330

+5

+5

U1

U2

Output

.001μf

U1 : 7104
U2 : 7400