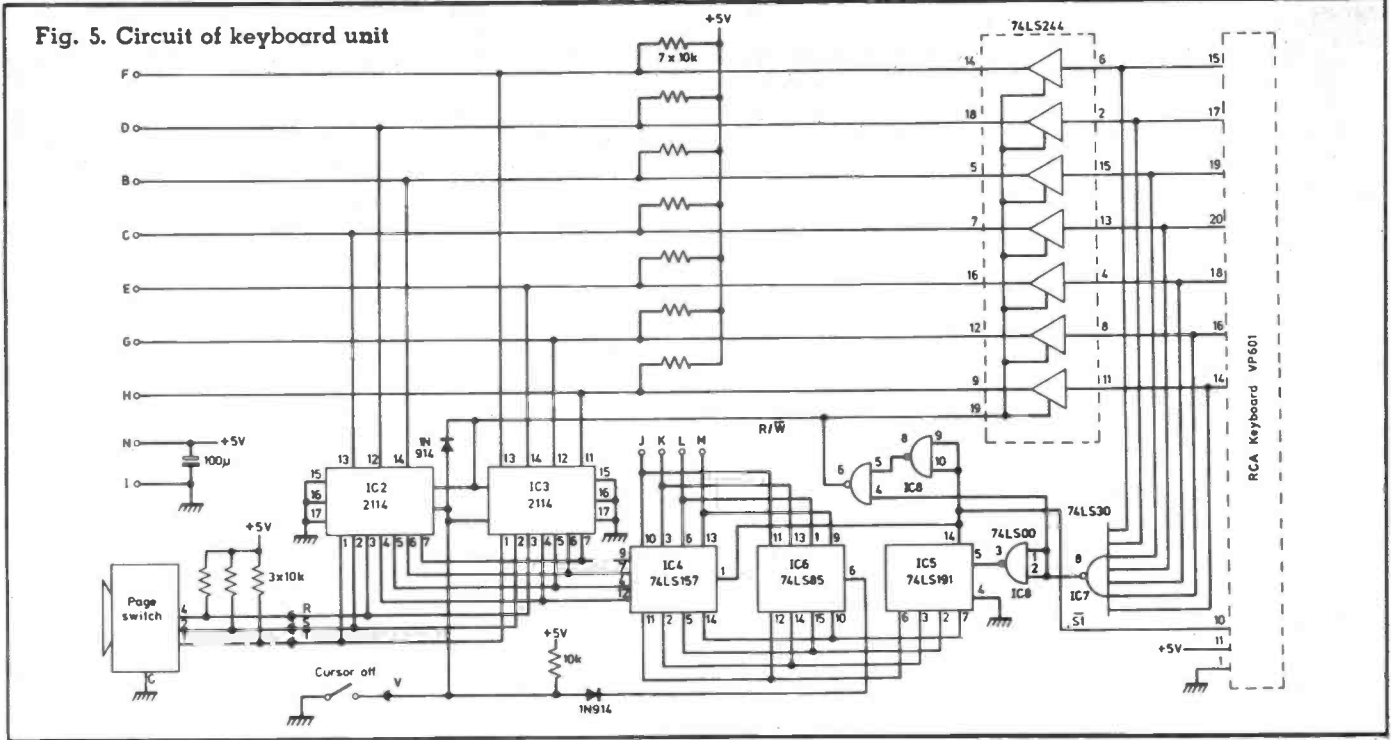


Fig. 5. Circuit of keyboard unit



If all the data bus bits are high then our character generator will generate a white block, which makes an excellent cursor.

The full ASCII code provides many things besides characters including cursor functions such as CURSOR HOME, BACK SPACE, DELETE etc. In order that this circuit is kept simple I have not decoded or used these functions, except code 7F (or keyboard outputs equal to 1, 1, 1, 1, 1, 1, 1, if you prefer). This is the DELETE code. IC7 (74LS30) is a 8-input NAND gate with 7 of its inputs looking at the keyboard output, so when the delete

code is presented by the keyboard, the output of IC7 will be low. This signal is inverted and fed into our counter which has the following effect: when our counter is clocked by the strobe pulse it will count down instead of up. The output of IC7 is also used to inhibit and write signal to our RAM so the cursor will step back and the information in the RAM remains unchanged. In effect we have created a 'backspace' function; probably the most useful cursor function for a small character generator. The use of the DELETE key for this function instead of the backspace key simplifies our circuit

and does not cause too much operator confusion as keys like this are rarely used in a touch type mode.

S1 is used to remove the cursor. Closing it inhibits the chip enable input of the RAM from going high, the state that generated the cursor.

The page switch is optional and if not required pins 1, 2, 3, of the RAM should be connected to ground. Note provision is not made (on the PCB) for the 3 x 10k pull-up resistors associated with this switch. These are best fitted directly to the back of the switch.

The only problem left is in connecting up a keyboard. I used an RCA CP601. The output is via a PCB mounted socket, which takes a 3M connector No. 3421-6020. I have shown how to connect that particular keyboard to my circuit by indicating pin numbers.

Those of you with other keyboards the strobe required is active low. The data outputs connect to pins 11, 8, 4, 13, 15, 2, 6 of the 74LS244 in that order, with pin 11 being the least significant bit.

If you want to avoid buying a keyboard the *Amateur Television Handbook Vol. 2* gives details of how to build your own, or how to control ASCII codes by using BCD switches.

The book is available from BATC Publications, c/o G31QU QTHR.

Fig. 6. Component overlay. Unused holes should be linked through

