

## 1.2 Modification History

1.2.1 Two types of board only are in circulation, viz Issue 3 and Issue 4. Only a small number of Issue 3 boards are in existence. They differ from Issue 4 boards in that certain components have been manually wired in. In Issue 4 boards, the printed circuit has been amended to accommodate these components. The relevant components are listed below:

Resistors : R80, R81, R82. In addition R23 (100k) has been relocated in parallel with D9.

Capacitors : C31, C32.

Transistors : T25.

Diodes : D28, D29, D30.

Preset potentiometers : RV2.

1.2.2 On Issue 3 boards, resistors R52 and R75 have been removed from the circuit and leave gaps. There is also a gap where R23 has been removed in order to be relocated in parallel with D9.

## 2. FAULT DIAGNOSIS

### 2.1 Techniques

2.1.1 In a highly complex electronic device such as the Z88, it is not possible to fully categorise the fault-finding procedure. It is anticipated that practical experience of machine faults, perhaps comparing measurements on a known good unit, will build up the knowledge to pinpoint most faults.

2.1.2 Due to the proven reliability of the electronic components, particularly the integrated circuits, it is expected that most faults will be of a mechanical type, eg faulty connectors, broken RS232 wires, faulty switch operation.

2.1.3 It is believed that as yet few service centres will have the facilities to change surface mounted components - in particular the gate array IC4. To check on a suspect gate array that all legs have been soldered correctly, run a small screwdriver over each leg array. Any poorly connected leg will distort. When a fault has been definitely narrowed down and assigned to this component, the complete unit should be returned to the manufacturers for repair. Faulty memory cards containing surface mounted components should also be returned to the manufacturer.

2.1.4 An initial physical examination of the board can sometimes indicate an obvious fault such as a burnt-out component or over-heated track. If it is suspected that an amateur has been at work on the board, it should be remembered that short circuits caused by hairline solder 'splatter' can cause some very misleading effects.