on until full bias is available for the packages (see fig. 2.7). The bleeder resistor across the -10V supply also provides a tapping point at -4V for the special bias requirements of the 'clock' waveform.

21. The bias supplies are routed as shown in fig. 2.6. As only one set of alarm fuses is provided for all the supplies to the three bays and the desk, a Jones-plug link is fitted in the top left-hand corner at the back of each bay so that the bay supplies can be isolated separately to assist in tracing the source of an overload. As a safety measure, each plug carries a link in the HT-switching circuit (see fig. 2.7). The bias voltages can be monitored on the percentage meter in the engineer's panel or on the direct-reading voltmeter in the power-supply cabinet. A switched ammeter with a 75 mV movement is provided in the power-supply cabinet to measure the currents through suitable shunts connected after the bleeder resistors in the earthed sides of the rectifiers, i.e. the currents consumed by the computing equipment.

## HT SUPPLIES

### Switching

22. As soon as contactor RL1 in the power-supply cabinet closes, which occurs after the Sunvic thermal delay unit has operated, the 'heaters ready' lamps on the engineer's panel and the lamp panel come on, (fig. 2.4). The HT supplies can then be switched as shown in fig. 2.7, provided that relays RL5, RL6 and RL7 are closed, i.e. the bias rectifiers are developing full outputs, and that relays RL10, RL11 and RL12 are closed, i.e. power is being fed to the stabilising units. The HT switching is done by contactor CR2, which connects the regulated AC supply to the HT transformer, TR5 (fig. 2.4). Contactor CR2 is switched on by one of the five 'HT on' buttons, of which one is in the power-supply cabinet, one on the engineer's panel and one in each of the three computing bays; it is held on by a circuit passing through contacts CR2/4 and RL8/2. Relay RL8 is energised when the regulated output appears; it is de-energised if one of the five 'HT off' buttons (in the power-supply cabinet and computing bays and on the engineer's panel) is operated, if one of the heater alarm relays, RL2, RL4 and RL6, is de-energised or RL14 in bay 1 is energised, if one of the bias links is removed, or if one of the emergency buttons on the ends of the programmer's panel is operated. Note, that any of the operations that switch off the heaters (see para. 13) will, by de-energising contactors CR1 and then CR4, automatically switch off the HT supplies.

### Generation and Routing

23. The generation and routing of the three HT supplies (-150V, +200V and +300V) are shown in figs. 2.8, 2.9 and 2.10. (See also fig. 2.11/3). Metal rectifiers are used - two type 12L309 for the -150V supply, three type 12L255 for the +200V supply, and one type 12L271, and one type 12L272 for the +300V supply. These are fed from the three star-connected secondaries of transformer TR5 in the right-hand bay of the power-supply cabinet. Smoothing is done by 0.2H chokes and 100μF capacitors. The choke associated with the +300V supply is in the left-hand bay; the two other chokes and the three capacitors are in the right-hand bay, inter-bay connections from the capacitors being made to the small tagboard at the rear of the left-hand bay.