With these connections, the tape-reader motors are running off the unregulated AC supply at 230 to 240V, phase A being used for reader 1 and phase C for reader 2. The -300V supply (PL B/K) comes from the monitor power supply, the +150V supply (PL B/M) from the computer +200V line via a potentiometer on the relay board in bay 1.

2. A functional description of the external-conditioning circuits was given in Volume 2, and the reader is referred to figs 12.1, and 12.2 of Volume 2a for details of the relay connections. The layout of the relay board, which is situated behind the socket panel in bay 1, and the input/output component board, which is situated beside package row 11, are shown in figs 5.1 of Volume 3a.

**OUTPUT**

3. The standard output unit is a Creed and Co., Model 25, 5-wire high-speed reperforator. This instrument is controlled internally by a camshaft that actuates the tape-feed mechanism and the punch heads, resets the punch levers, and operates a synchronising contact to define the end of the operation for the benefit of the logical control. The instrument was designed to operate at 25 characters per second; but it has been found possible to alter the internal timing slightly to give continuous punching at 33 characters per second. Two characters are punched for each rotation of the camshaft, separate clutch coils operating stopping detents spaced 180° apart; camshaft-operated changeover contacts switch the clutch coils alternately into the computer circuit. If the disengagement of the clutch detent defines zero on the punching cycle, the punch rods are at top dead centre at 90°, the synchronising contacts are closed from 30° to 60°, and the changeover contacts operate between 75° and 90°.

4. The signal connections between the computer and the reperforator are shown schematically in fig. 12.3 of Volume 2a. These connections run between an 18-way Painton plug on the reperforator and the 12-way Plessey socket SK11 on the computer, the pin-to-pin connections being as follows:

| SK11 | Painton PL | |
|---|---|---|
| A | 2 | +300V |
| B | 15 | m.s. digit |
| C | 12 | digit 2 |
| D | 9 | digit 3 |
| E | 6 | digit 4 |
| F | 3 | l.s. digit |
| G | 18 | clutch-trip coils |
| H | | |
| J | | |
| K | | |
| L | 5 | synchronising contacts |
| M | 1 | synchronising contacts |