- 1. This diagram shows the circuits which control the operation of printing or perforating out a number from a store or the accumulator. When AS operates the five order digits are marked out and the first digit selects relay ES and a pair of relays such as TAN and TAM determined by a relay such as TAL which has been operated previously by a print layout order. (Diagrams C 47592 and C 47588 refer)
- 2. Each cycle of operations when printing out a number consists of three steps:
- AX OPERATED (a) selecting a shift position, Shift J
 being used to print out the first
 digit and Shift A the eighth digit
 or alternatively selecting one of
 the ten non-numerical characters
 which are generated by relay set U.
 At the same time the translator is
 recycled to zero;
- Ay " (b) if a shift has been selected, the appropriate transfer conditions are set up, the transfer start relay GST is operated, a single transfer takes place into the translator and GF operates. If a non-numerical character has been selected no action takes place on this step;
- AZ " (c) the character, available in 5 wire form in the translator or relay set U, is marked out to the printer or perforator and the printer start magnet is operated. The printer completes one cycle and closes its check contact and also repeats back the five unit code which is stored mechanically.
- Note that this diagram has the 1st step circuit on the right and the 3rd step circuit on the left.
- 4. When AS operates to mark out the order digits, ER?((ES?)) and a set of T relays operate (the relays TCL, TCN and TCM in relay set T₁ have been taken as an example, these control the print layout for an eight digit number printed as the first or as an intermediate number on a line). AX in the secondary sequence circuit and AA in the subsidiary counter operate. Relays VSA and VSB connect the translator as receiving store.

- Earth from AS 2.3 via AZ 2.1 AX 25.26 is routed via VSA 1.2 to operate VZA and VZB, recycling the translator to zero, and via ED 24.23 to AA 22.23. This selects the Figures shift character, not shown on this diagram. On the second cycle, with AB operated, the first step earth is routed via AB 22.23 TCN 3.4 to operate UL. UL also operates ENT and UNT (not shown) UL 5.4 forwards the earth over UNT 29.29, etc. VSA 3.2 VCB 2.3 (when the translator has recycled) to the "step on" line.
- 5. When AY operates and AX releases earth via AX 2.1 AY 25.26 ED 4.3 MPD 1.2 ENT 2.3 ES 5.6 EP and an ENT contact operated is passed directly to the "step on" line.
- 6. When AZ operates and AY releases earth via AY 2.1 -AZ 25.26 - MPD 25.24 - ES 22.23 marks out five unit code via O12 (see C 47579) and also operates a printer start magnet selected by a PBX or PBY contact. The printer clutch is engaged and the five unit code transferred from the input magnets to the combination lead. Shortly before the end of the printer cycle the finish contact PF closes and extends the earth to operate PS. PS 1.2.3 disconnects the start magnet and completes a hold circuit for itself and also marks the stored five unit code from the printer into a comparator circuit (see C 47579) via P 14. If the mechanically stored code agreed with the input to the printer the relays PCA to PCE release and forward the earth to the "step on" line.
 - When the selected output organ is a perforator there is no mechanical storage, the code on the perforator input magnets is transferred directly to the punching head. There is also no check-back and the perforator input is fed back to the comparator in order that the PCA PCE relays may be released.
- 7. On the next cycle with AX and AC operated the first step earth is routed over TCN 5.6 to operate the shift relay HJIX (and HJY, HJZ). UNT is not operated. HJX 9.8 forwards the earth to the "step on" line over VCA and VCB contacts when the translator has recycled.
 - When AY operated the second step earth passes via either EN or EP operated ENT 5.4 ES 5.6 EP 25, and hence either from EP 26 over a chain of back contacts to operate GST or from EP 24 over another chain of back contacts to operate first GCA etc. and then GST. The digit or its complement is transferred into the translator and GF operates to complete a circuit to the "step on" line.
- 8. This sequence of shift, transfer, and print continues until eventually, in this case with AL and AG operated, there is a connection to the "order completed" line.