1. This diagram shows the circuits which control the operation of reading a number from the perforated tape into a store, the accumulator or the drain. For this operation AS, ER, QRA and QRB are operated.

2. Each cycle of operations consists of the three steps:

   (a) selecting a shift or equivalent relay in the sequence

   1st cycle; monitor space or block marking code.
   2nd cycle: read in sign
   3rd to 7th cycles: read in 1st to 5th digits.
   8th cycle: either read in 6th digit or finish
   9th to 10th cycles: read in 7th to 8th digit.
   11th cycle: finish

   (b) reading a character from the tape into the sign inspection circuit, the translator input relays or the spare character decoding circuit;

   (c) selecting the conditions for a positive or negative transfer after a character has been read into the translator, or passing onto the first step in the other two cases.

3. When AS operates, five digits of the order are marked out and checked, and the first digit operates ER, QRA and QRB. AX in the secondary sequence circuit and AA in the subsidiary counter are then operated. VSB, VR also operates to connect the translator as the apparent sending store.

   Earth from AS 2.3 - AZ 2.1 - AX 25.26 - ED 24.23 - AL 22.21, etc. - AA 22.23 - QRA 2.3 operates CN. (CN operates CG by a circuit not shown on this diagram and so closes CG contacts connecting the five unit code into the C decoding circuit (see C 47579). Another circuit not shown causes ENT, UNT to be operated whenever CN, CM and similar relays operate.)

   At the same time a circuit shown on C 47581 routes earth via AZ 2.1 - AX 25.26 - VR 1.2 to operate VZA and VZB. These relays allow the translator scaling tube to cycle until it reaches zero. The high speed relays VCA and VCB then operate.

   CN 6.5 extends the earth over CM 4.5 - CK 22.21 - UNT 29.28 - HJX7.8, etc. HAX 7.8 - VCA 3.2 - VCB 2.3 to the "step on" line.

4. The secondary sequence circuit operates AY and releases AX. Earth via AX 2.1, etc. finds neither EN or EP operated since the sending store sign (i.e. the sign recorded on the tape) has not yet been read in. There is an alternative route over ENT 2.3 to ER 4.5 - BRV 24.25, etc. CG 25.26 and also by connector 18 Z to the tape reader contacts. The code from the reader contacts is marked into the C decoding circuit. If this is the space character or one of the ten block marking characters there is a route through the decoding tree (shown as a triangle) to CN 28.29 - CG 23.24 and the "step on" line.

5. The secondary sequence circuit operates AZ and releases AY. Earth via AY 2.1, etc. - EP 25.24 - ENT 25.26 is connected to the "step on" line, and at the same time the subsidiary counter is advanced so that AB is operated.

6. When AX re-operates, earth from AZ 2.1, etc. - AB 22.23 - QRA 5.6 operates CM and CMR. Again CG, ENT and UNT are operated. The translator recycling relays VZA and VZB operate. CM 5.6 extends the earth as before to the "step on" line.

With AY operated the next row of tape is read and the code marked into the C decoding circuit. If the code is plus or minus there is a route through the decoding circuit to C 71 or C 73 and FSP or FSN are operated. If the code is the asterisk character there is an output from the decoding circuit at C 75, QRC is operated (see C 47580) and holds over QRB, and then FSP is operated. When FSP or FSN operates earth is forwarded over CM 28.29 - CG 23.24 to the "step on" line. At the same time the registration of the sending address sign allows EN or EP to be operated (see C 47592).

With ENT operated the third step (AZ operated) is again passed over, and AC in the subsidiary counter is operated.

7. With AX and AC operated earth from AZ 2.1 is routed over AC 22.23 - QRA 8.9 to operate HBX and HBY and HBZ. This connects the output of the translator scaling tube to the input of Transfer circuit No.1. HBX 9.8 extends the earth over VCA and VCB contacts to the "step on" line. ENT and UNT do not operate.

With AY operated earth from AX 2.1 is routed over EN or EP operated to mark the first digit into the C decoding circuit. A genuine digit code gives a route through the decoding circuit to operate one of the ten relays VA - VK in the translator. The operated relay holds and extends the earth over CK 28.29 and CG 23.24 to the "step on" line.

With AZ operated earth from AY 2.1 is routed over ER 22.23 and either EP 25.26, etc. to operate GST or over EP 25.24, etc. to operate GCA, etc. GCA 9.8 then forwards the earth to operate GST. After a single transfer GF operates and the earth is extended to the "step on" line.

8. This cycle of shift, read tape, transfer is continued with shifts B to F. Then with AH operated and QRC normal (sign plus or minus) the sequence continues with shifts G, H and J; finally with AL and AA operated the first step of the cycle earths the "order completed" line. Alternatively, with AH operated and QRC operated (sign represented by an asterisk) the first step earth is routed over AH 22.23 - QRB 3.4 - QRC 5.6 to the "order completed" line.