

concerning

DIAGRAM GBW.14140

titled

50/1200 LINE P.A.B.X.

PULSE CIRCUIT

1. GENERAL.

This diagram shows the circuit of the relay set used to provide tone and earth interruptions. Closely associated with this circuit is the Ring and Tone circuit (GBW.14130) whose circuit description should be read in conjunction with this one.

The provision of this relay set is one per 200 lines.

2. FACILITY SCHEDULE.

Provision is made for:-

- (1) The distribution of earth start conditions to Start Chains A, B, C and D.
- (2) Interrupted earth supply to ringing and busy interrupting relays.
- (3) Flicker earth supply.
- (4) Interrupted earth supply.

3. CIRCUIT DESCRIPTION.

3.1 Outline.

The circuit is brought into use by the connection of an earth to the start lead, from extension line circuits, or to the pulse start lead, from the ring and tone circuit.

A Uniselector switch is stepped at approximately  $2\frac{1}{2}$  steps per second by the inter-action of two relays, which also supply the flicker earth. The banks of the uniselector are used to produce start chain pulses, pulses which operate and release the ringing and busy relays, which interrupt the ringing and tones extended from the ring and tone circuit, and interrupted earth for code calling equipment.

3.2 Detail.

When interrupted ringing or tones, flicker earth, or start distributions are required by any circuit in the P.A.B.X., the circuit is brought into use by earthing the line start or the pulse start leads, which operate relay PA direct or via contact LH1.

Relay PA operating

- |     |  |
|-----|--|
| PA1 | operates relay PB and disconnects the earth on the flicker earth B lead.   |
| PA2 | disconnects the earth on the flicker earth A lead, energises the PS magnet which is then held operated via a 200 ohm resistor. |

Relay PB operating

- |     |                    |
|-----|--------------------|
| PB1 | releases relay PA. |
| PB2 | spare.             |

Relay PA releasing

- PA1 releases relay PB, and re-connects earth to the flicker earth B lead.
- PA2 re-connects the earth on the flicker A lead, and releases the PS magnet which causes the switch to step to the next outlet.

Relay PB releasing

- PB1 re-operates relay PA.

As long as an earth is maintained on the Pulse Start lead the inter-action of relays PA and PB will cause the switch to step at  $2\frac{1}{2}$  steps per second and produce flicker earth. (.2 sec. on, .2 sec. off, .2 sec. on). The combined operate and release lags of relays PA and PB produce the .4 sec. intervals.

Start condition distribution.

Earth start conditions are received on line start leads, from extension line circuits to operate relay LH and are distributed by wipers PS5, 6, 7 and 8 to start chains A, B, C, and D. (One start chain per group of 50 line circuits). The start pulse to the 1st Group Selector can vary from .4 sec. to 1.2 sec.

Interruption Relays.

The earthing of the Pulse start lead also earths wipers PS1, 2, 3 and 4 and as the switch steps round the bank the interruption relays operate and release in accordance with the strapping of the banks.

Relay BT operates for .8 sec. at intervals of .8 sec.

Relay BT pulsing

- BT1 interrupts the dial tone supply to give busy tone A.
- BT2 interrupts the dial tone supply to give busy tone B.

Relays RA and RB operate for 2 sec. release for .4 sec. re-operate for .4 sec. release for .4 sec. and again operate for 2 sec., whereupon the cycle is repeated.

Relay RA pulsing

- RA1 interrupts the continuous ringing supply to give interrupted ringing A.
- RA2 interrupts the continuous ringing supply to give interrupted ring tone A.

Relay RB pulsing

- RB1 interrupts the continuous ringing supply to give interrupted ringing B.
- RB2 interrupts the continuous ringing supply to give interrupted ring tone B.

Bank PS1 strapping produces an interrupted earth for code calling equipment.

END

ADDENDUM NO. 1

for DIAGRAM NOTES (ISSUE 1)

concerning

GBW.14140

- Changes (i) Amend title (3rd line) to read "Diagrams  
GBW.14140 and GBW.14141".
- (ii) Para. 1, (3rd line) delete "GBW.14130".
- (iii) Para. 32. In sub. para. headed Relay PA - delete  
"200 ohm" from description against PA2.

E N D