

DIAGRAM NOTES (ISSUE 1)

concerning

DIAGRAM GBW.14270

titled

50/1200 LINE P.A.B.X."O" LEVEL CIRCUIT1. GENERAL.

This diagram shows the "O" Level Circuit. The following diagrams should be considered in conjunction with this diagram.

Extension Line Circuit	(GBW.14080)
1st Group Selector	(GBW.14090)
Incoming Selector	(GBW.14100)
Inter Switchboard Line Circuit	(GBW's.14170 or 14180)
Rack Common Services	(GBW.14380)
Cord Circuit	(GBW.14210)

2. FACILITY SCHEDULE.

Provision is made for:-

- (1) Lighting the "O" level circuit lamp on the manual board when the digit "O" is dialled.
- (2) Returning ring tone to the calling extension until the operator answers the call.
- (3) Holding the 1st Group Selector and "O" level circuit till the cord circuit plug is inserted in the multiple jack, when they release.
- (4) Lighting the calling lamp of an interswitchboard line when the digit "O" is dialled.
- (5) Ancillary working if required.

3. CIRCUIT DESCRIPTION.3.1 Outline.

When individual extension lamps are not provided, "O" level circuits are connected to the "O" level bank multiple to which the 1st group Selectors, and Incoming Selectors, associated with dialling-in interswitchboard line relay sets, have access.

If an automatic extension dials "O", the 1st Group Selector hunts for a free outlet on the "O" level. The calling extension's loop is extended to the "O" Level Circuit and ring tone is returned to the calling extension. The lamp of the seized "O" Level Circuit lights and an audible alarm is given. When the operator answers the call the ring tone, lamp and audible alarm circuits are disconnected. The operator then ascertains the calling extension's number, withdraws the cord circuit plug from the "O" Level Circuit jack, and completes the call via the extension's multiple jack. The "O" Level circuit and 1st Group Selector release on the operator plugging into the multiple jack.

When the "O" Level Circuit is seized by a dialling-in interswitchboard line, an 1150 ohm battery is connected to the L lead, to operate a relay in the inter-switchboard line circuit. The operation of this relay disconnects the holding loop to the "O" Level Circuit, and lights the interswitchboard line lamp concerned. The "O" Level Circuit and 1st Group Selector are released, and ring tone is returned from the inter-switchboard line circuit until the Operator answers the call.

If all the "O" Level Circuits are engaged, busy tone is returned from the eleventh step of the selector.

3.2 Detail.

The free condition of an "O" Level Circuit is indicated by a 250 ohm battery on the H lead. When seized by the previous selector the calling extension's loop, or the loop from an automatic interswitchboard line relay set, is extended to the A relay of the "O" Level Circuit, thereby operating it.

Relay A operating

- A1 operates relay G (slow operate).
- A2 connects an 1150 ohm battery to the L lead and thereby operates the CR relay in the inter-switchboard line relay set, which lights the calling lamp of the inter-switchboard line circuit concerned and disconnects the -ve and +ve leads, releasing the incoming selector and "O" Level Circuit. The A relay in the "O" Level Circuit is released before relay G has operated.

Relay G operating

- G1 applies ring tone to tone winding of relay A.
- G2 connects earth to ringer start lead.
- G3 connects earth to audible supy. thereby sounding the audible alarm.
- G4 lights the "O" level call lamp.
- G5 connects a 40 ohm earth to H lead to hold previous selector.

When the operator answers the call, the earth from the sleeve of the cord circuit operates relay S.

Relay S operating

- S1 operates relay SR and extinguishes calling lamp.
- S2) disconnect relay A from the -ve and +ve leads,
- S3) thereby releasing it; extend the calling extension to the tip and ring of the jack and disconnect ring tone.

Relay SR operating

- SR1 provides alternative hold for relay SR on withdrawal of the plug, and releases relay G.
- SR2 provides alternative circuit to maintain the 40 ohm earth on the H lead on release of relay G.

Relay A releasing

- A1 further disconnects operate circuit for relay G.
- A2 disconnects the 1150 ohm battery on the L lead.

Relay G releasing

- G1 further disconnects the ring tone.
- G2 disconnects the ring start earth.
- G3 disconnects the audible alarm earth.
- G4 disconnects the earth on the calling lamp.
- G5 disconnects the original connection of the 40 ohm earth to the H lead.

The "O" Level Circuit and 1st Group Selector are, therefore, held under the control of the manual board operator. Having ascertained the calling extension's number, the operator withdraws the cord circuit plug from the "O" Level Circuit jack and completes the call via the extension multiple jack. When the cord circuit plug is removed from the "O" level jack the S relay releases.

END