

STATION SYSTEMS  
CONTROL STATION CIRCUIT  
FOR USE WITH CENTRAL OFFICE  
GROUP ALERTING SYSTEM

CHANGES

B. Changes in Apparatus

SUPERSEDED

500DR Telephone Set  
Fig. 3

SUPERSEDED BY

500S Telephone Set  
Fig. 5

D. Description of Changes

- D.1 Fig. 3 is rated Mfr Disc. and replaced by Fig. 5.
- D.2 Circuit Note 106 is rated Mfr Disc. and replaced by Circuit Note 108.

BELL TELEPHONE LABORATORIES, INCORPORATED

DEPT 5324-ADA-GAP

STATION SYSTEMS  
CONTROL STATION CIRCUIT  
FOR USE WITH CENTRAL OFFICE  
GROUP ALERTING SYSTEM

**1. PURPOSE OF CIRCUIT**

This circuit permits a dispatcher to alert selectively and pass information to telephone customers who are members of community volunteer fire departments or other similar organizations.

**2. WORKING LIMITS**

The maximum external loop resistance for proper operation of the (R) relay, Fig. 1, is 1500 ohms based on a minimum 20-cycle ringing current of 80 volts and 10,000-ohm minimum insulation resistance.

**3. FUNCTIONS**

This circuit provides for:

- (a) Initiation and termination of an alert to select groups by dialing a preset code.
- (b) Idle line termination to permit a continuous test of line facilities by the central office control circuit for trouble indications.
- (c) Dual line facilities to ensure uninterrupted service.
- (d) An associated 2A telephone answering set to permit recorded announcements to be connected to the alerting network and for the announcements to be repeated until the termination of the alert.
- (e) Signal and voice monitoring arrangements to permit a check of system integrity.

**4. CONNECTING CIRCUITS**

When this circuit is listed on the key sheet, the connecting information thereon is to be followed. The following are typical connecting circuits:

- (a) Common Systems - Control Circuit for Alerting System - SD-95883-01.
- (b) Common Systems - Line Circuit for Alerting System - SD-95884-01.

**5. DESCRIPTION OF OPERATION**

**5.1 LIVE AND RECORDED ANNOUNCEMENTS AND MONITORING, FIG. 1, 2, AND 4**

This circuit is designed to work in conjunction with a 2A telephone answering set. Power for operation of the line and control circuit, Fig. 1, is provided by a 48-volt dc supply in the 2A telephone answering set. Therefore, the answering set ON-OFF switch must be turned to ON at all times for proper operation of all circuit functions.

**5.11 Initiation of Alert**

With the receiver off-hook at the key telephone set, Fig. 2, and the first pickup key operated, the telephone set is connected to the regular control line. A path is prepared for the operation of the (ON) relay, Fig. 1, through operated contacts of the pickup key and the switchhook.

When an alert code is dialed, the operate path for the (ON) relay is completed through the off-normal contacts of the dial. Operation of the (ON) relay (a) removes the idle line termination (A) inductor, Fig. 1, from across the line and (b) removes the 2A telephone answering set input from across the telephone set. Upon the completion of pulsing, the off-normal springs of the dial open, releasing the (ON) relay. The idle line termination is restored to the line, and the answering set input is reconnected to the telephone set. If a recorded announcement is desired for repetition of the alert, the answering set function switch is set to ANNOUNCEMENT-DICTATE and the OPERATE button is depressed when making an announcement. The alert announcement is simultaneously recorded and sent to the alerting network.

**5.12 Repeat Recorded Announcements**

In order to repeat a recorded announcement to the alerting network, the 2A telephone answering set function switch is set to AUTOMATIC-ANSWER and the second pickup key, Fig. 2, is operated. The operated pickup key operates the (TR) relay, Fig. 1. The (TR) relay on operating (a) connects the output of the answering set to the regular line and (b) grounds the "ST" lead, Fig. 1, which causes the answering set to recycle and repeat the recorded announcement to the network over the regular control line. The handset may be replaced

on hook. Release of the second pickup key will release the (TR) relay. The released (TR) relay removes the 2A telephone answering set from the regular line and stops recycling of the 2A telephone answering set.

#### 5.13 Termination of Alert

In order to terminate an alert, the first pickup key must be reoperated, the handset taken off hook, and a termination code dialed.

#### 5.14 Alternate Control Line

An alternate control line may be provided in case of failure of the regular line. The alternate control line is selected by operation of the third pickup key, Fig. 2. Operation of the circuit functions is the same as described in 5.11.

In order to connect the 2A telephone answering set to the alternate line, the fourth pickup key is operated. A contact on the operated pickup key operates the (TR1) relay, Fig. 1. The (TR1) relay operating (a) connects the output of the answering set to the alternate control line and (b) grounds the "ST" lead, Fig. 1, which causes the answering set to continue to recycle.

#### 5.15 Monitoring

A monitor line is provided to check the integrity of the alerting network. When an alert is dialed, interrupted 20-cycle ringing current is connected to the monitor line by the central office alerting line circuit. The interrupted 20-cycle

ringing current causes the (R) relay, Fig. 1, to operate and release. The (R) relay flashes the lamp in the fifth pickup key, Fig. 2. This indicates that the alert has been received and that the alerting network is being signaled. After the answering set is connected to the control line, operation of the fifth pickup key, which is nonlocking, will connect the (C) inductor across the monitor line to trip the ringing signal and hold the line. With the key held operated, the rebroadcast of the recorded announcement to the alerting network can be monitored.

#### 5.2 LIVE ANNOUNCEMENTS ONLY, FIG. 3

With the receiver off-hook, the idle line termination (A) resistor, Fig. 3, is removed from across the control line to permit dialing of an alert code. An alert is terminated by dialing a termination code. Restoration of the handset to on-hook reconnects the idle line termination across the control line.

#### 5.3 IDLE LINE TERMINATION

The idle line termination is provided on the control lines to permit a continuous test of line facilities by the central office control circuit for trouble indications.

#### 5.4 RESISTOR TERMINATIONS

Both M12 of the (ON1) relay and M1 of the (ON) relay, Fig. 1, are used as mounting terminals for the (D) and (E) resistors, respectively, and have no circuit function.

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