

COMMON SYSTEMS  
SERVICE OBSERVING NETWORK CIRCUIT  
AUTOMATIC NUMBER IDENTIFICATION  
CROSSBAR NO. 1, PANEL OR STEP BY STEP OFFICE

CHANGES

B. CHANGES IN APPARATUS

		Replaced	Replaced by
Resistors:	CRA-, CTA-, SRE-, SRO-, STE-, STO-	KS-16311, L1 20,000Ω	221A, 20,000Ω
Capacitors:	CR-, CT-, SRE-, SRO-, STE-, STO-	527L	542-P

D. DESCRIPTION OF CIRCUIT CHANGES

D.1 The above changes in apparatus are made to reduce cost and are made without record since Western Electric

Company's manufacturing information has not yet been processed to a point where a record is necessary.

All other headings, no change.

BELL TELEPHONE LABORATORIES, INCORPORATED

DEPT. 2335-JLB-FBB-NF

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SERVICE OBSERVING NETWORK CIRCUIT  
AUTOMATIC NUMBER IDENTIFICATION  
CROSSBAR NO. 1, PANEL, OR STEP BY STEP OFFICE

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<u>SECTION I - GENERAL DESCRIPTION</u>	1	<p>This circuit is designed for use in Crossbar No. 1, Panel, or Step-by-Step Offices arranged for Automatic Number Identification (ANI). Fundamentally a resistor-capacitor network, it provides a path from the subscribers sleeve or message register lead to the service observing amplifier-detector in the Identifier Circuit when the line on which the Identifier is making an identification is connected for observing. This path is in addition to the regular identification path through the Number Network and Primary Bus Circuit. The 5800-cycle identification signal that is placed on the line circuit sleeve by the ANI trunk is transmitted through this circuit, under conditions described below, to the service observing amplifier-detector in the Identifier. When the service observing amplifier-detector receives a signal, it operates a relay in the Outputter that causes the information digit, sent before the directory number to the CAMA office, to be altered so as to show a service observing indication. This service observing information digit is used by the transverter in the CAMA office to make an "observed" entry on the AMA tape.</p> <p>Service observing may be considered in two general categories- traffic and complaint observing. For traffic observing purposes, it is necessary to provide a service observing entry on the AMA tape each time an ANI call is originated by a subscriber connected for observing when the associated Observing Line Circuit has successfully seized a Service Observing Circuit. The "observed" tape entry is made on ANI calls originated by any party from an observed party line. For complaint observing purposes, it is necessary to provide a service observing entry on the AMA tape each time an ANI call is originated by a subscriber connected for observing. To eliminate excessive "observed" entries on the AMA tape originating on calls from party lines, the "observed" information digit that is sent to the CAMA office is restricted to either ring party calls from any particular line, depending on which party is to be observed.</p>	
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			<p><u>SECTION II - DETAILED DESCRIPTION</u></p> <p>1. TRAFFIC OBSERVING</p> <p>When a call is originated on a line that is connected for traffic observing,</p>

the associated Observing Line Circuit attempts to seize the Service Observing Circuit. If the seizure is successful, the subscribers sleeve lead is closed through the Observing Line Circuit and Service Observing Circuit to the "ORO" or "ORE" input leads shown in FS3. (In step-by-step offices Option Y is provided, and the subscribers message register lead is closed through to the "OTO" or "OTE" input leads in addition to the sleeve closure). If the originating party's directory number is to be ANI identified, a 5800-cycle identification signal is placed on the sleeve by the ANI trunk. This signal appears on one of the above mentioned input leads and is transmitted through the network to the service observing amplifier-detector in the Identifier Circuit.

## 2. COMPLAINT OBSERVING

2.1 Option Z Provided (at least one office served by the identifier group has numbers connected to the tip field of the Number Network and Primary Bus Circuit).

When a line is connected for complaint observing, the subscribers sleeve lead (and also the message register lead in step-by-step offices) is connected to the "ORO", "OTO", "ORE", or "OTE" input lead shown in FS1. The connection is through a party selection key and an Identifier Group Key (when provided) in the Observing Entry Control Circuit. When an ANI call is originated on a line that is connected for complaint observing, the 5800-cycle identification signal that is placed on the sleeve by the ANI trunk appears at one of the above mentioned input leads. If the party selection key is positioned for ring party observing, (or tip party observing on two party message rate step-by-step lines), the signal appears on an "OR-" input lead. If the key is positioned for tip party observing (other than tip party observing on two party message rate step-by-step lines), the signal appears on an "OT-" lead. Relay TPS operates on tip party identifications (tip party calls from two party message rate step-by-step lines are identified as ring party calls) over an ST ground on lead TPS from the Identifier and releases when the ground is removed at the end of the identification. The path to the Identifier from the "OT-" and "OR-" leads is through a front and back contact, respectively, of the TPS relay. Thus, when the key is positioned for tip party observing and relay TPS is operated, the 5800-cycle signal is transmitted through the network to the service observing amplifier-detector in the Identifier. The signal is similarly transmitted to the Identifier when the key is positioned for ring party observing and relay TPS is normal.

2.2 Option Z Not Provided (None of the offices served by the Identifier group have numbers connected to the tip field of the Number Network and Primary Bus Circuit).

The 5800-cycle signal from the Observing Entry Control Circuit appears only on the "OR-" input leads (no tip party identifications) and is transmitted to the Identifier on all ANI calls originated by a line that is connected for complaint observing.

## 3. TIP PARTY SELECTION CHECK CIRCUIT

When Option Z is furnished, an "up check" and a "down check" is made of the TPS relay when the Identifier is scanning the Secondary Network in office O. Leads TPS and RPS (shown in FS2) connect to the "up" and "down" check paths, respectively of the bus connector relays in the Secondary Network of office O. The Identifier must receive a continuity check through either the "up" or "down" check path to complete its identification. When Option Z is not furnished, the check path is wired to give the Identifier a continuity check for both the TPS operated and nonoperated condition.

## 4. FUNCTION OF NETWORK COMPONENTS

The capacitors shown in FS1 and FS3 are furnished to provide D.C. blocking between the service observing network and the subscribers sleeve or message register leads. The resistors shown in FS1 and FS3 are furnished to provide the same signal attenuation as the Number Network and Primary Bus Circuit and to reduce backup of the 5800-cycle signal from one sleeve to another. The resistors shown in FS2 are furnished to provide the same signal attenuation as the Secondary Network and Bus Connector Circuit. The TPS relay is furnished for reasons as described in Section 2.1.

## SECTION III - REFERENCE DATA

### 1. WORKING LIMITS

None

### 2. FUNCTIONAL DESIGNATIONS

TPS - Tip party selection

### 3. FUNCTIONS

To provide means of transmitting a 5800-cycle identification signal to the service observing amplifier-detector in the Identifier on ANI calls originated from lines that are connected for service observing.

4. CONNECTING CIRCUITS

- 4.1 SD-95810-01 - Identifier Circuit
- 4.2 SD-95814-01 - Secondary Network and Bus Connector Circuit
- 4.3 SD-90647-01 - Service Observing Circuit for observing local originating Service.
- 4.4 SD-32247-01 - Observing Entry Control Circuit.

5. TAKING EQUIPMENT OUT OF SERVICE

Before testing relay TPS, the MB relay in identifier O should be blocked nonoperated then both identifiers should be made busy by inserting plugs in the I-B jacks in the Misc. Ckt. for trouble ticketer frame. Failure to block relay MB will result in a "Both Identifiers Made Busy" alarm.

Caution: the above should be done only in periods of light traffic, as the automatic identification feature is taken out of service and all traffic must be operator identified while both identifiers are made busy.

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