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CIRCUIT DESCRIPTION
AMERICAN TELEPHONE & TELEGRAPH CO.,
BELL TELEPHONE LABORATORIES, INC.
PRINTED IN U.S.A.

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Issue 2-A, App. 5-D
June 28, 1934
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PANEL SYSTEM
"A" SWITCHBOARD
AUDIBLE RINGING SIGNAL, VACANT CODE TONE,
DIAL TONE AND LINE BUSY TONE CIRCUITS

CHANGES

B. CHANGES IN APPARATUS

B.1 Superseded

Superseded By

66A Repeating Coil, (Fig. 1) 103B Repeating Coil (Fig. 1)

D. DESCRIPTION OF CIRCUIT CHANGES

D.1 The 66A repeating coil has been rated "Mfr. Disc." and is superseded by the 103B repeating coil to provide the latest type of apparatus.

D.2 A 1 mf. condenser was not specified to be furnished with 584DF subset in Figs. 3 and 4.

D.3 Circuit note 113 is added.

All other headings - no change.

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CIRCUIT DESCRIPTION
AMERICAN TELEPHONE & TELEGRAPH CO.,
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PANEL SYSTEM
"A" SWITCHBOARD
AUXILIARY RINGING SIGNAL, VACANT CODE TONE,
DIAL TONE AND LINE BUSY TONE CIRCUITS

CHANGES

B. CHANGES IN APPARATUS

B.1 Superseded By Superseded

66A Repeating Coil, (Fig. 1) 103B Repeating Coil (Fig. 1)

D. DESCRIPTION OF CIRCUIT CHANGES

D.1 The 66A repeating coil has been rated "Mr. Disc." and
is superseded by the 103B repeating coil to provide
the latest type of apparatus.

D.2 A 1 Mf. condenser was not specified to be furnished
with 584DP substat in Figs. 3 and 4.

D.3 Circuit note 113 is added.

All other headings - no change.

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PANEL SYSTEM
"A" SWITCHBOARD
AUDIBLE RINGING SIGNAL, VACANT CODE TONE,
DIAL TONE AND LINE BUSY TONE CIRCUITS

CHANGES

A. CHANGED AND ADDED FUNCTIONS

A.1 No change.

B. CHANGES IN APPARATUS

B.1 No change.

C. CHANGES IN CIRCUIT REQUIREMENTS OTHER THAN THOSE APPLYING TO
ADDED OR REMOVED APPARATUS

C.1 No change.

D. DESCRIPTION OF CIRCUIT CHANGES

- D.1 The connecting information for the D lead, Fig. 2, formerly read: "To misc. tone and int. ckt. or to misc. ckts. for final selector frame".
- D.2 The latest standard relay winding terminal designations are added to the circuit relays.
- D.3 The B lead to the miscellaneous interrupter frame is added to the cross connection diagram.
- D.4 Equipment note 202 and circuit note 112 are added.

DEVELOPMENT

1. PURPOSE OF CIRCUIT

1.1 No change.

2. WORKING LIMITS

2.1 No change.

OPERATION

3. FUNCTIONS

3.1 No change.

4. CONNECTING CIRCUITS

4.1 No change.

DETAILED DESCRIPTION

No change.

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D.1 The connecting information for the D lead, Fig. 3, formerly read: "To misc. tone and int. ext. or to misc. ext. for final selector frame".

D.2 The latest standard relay winding terminal designations are added to the circuit relays.

D.3 The B lead to the miscellaneous interrupter frame is added to the cross connection diagram.

D.4 Equipment note 203 and circuit note 113 are added.

DEVELOPMENT

1. PURPOSE OF CIRCUIT

1.1 No change.

2. WORKING LIMITS

2.1 No change.

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PANEL SYSTEM
"A" SWITCHBOARD
AUDIBLE RINGING SIGNAL VACANT CODE TONE
DIAL TONE, AND LINE BUSY TONE CIRCUITS

CHANGES

A. CHANGED AND ADDED FUNCTIONS

A.1 No change.

B. CHANGES IN APPARATUS

B.1 Superseded

1 - 534S Subscriber's
Set

Superseded By

1 - 584DF Subscriber's
Set

C. CHANGES IN CIRCUIT REQUIREMENTS OTHER THAN THOSE APPLYING
TO ADDED OR REMOVED APPARATUS

C.1 No change.

D. DESCRIPTION OF CIRCUIT CHANGES

- D.1 The 584DF subscriber's set supersedes the 534S subscriber's set to provide the latest type apparatus.
- D.2 The latest standard ringing and tone supply leads designations are shown in Figs. 1, 2, 3 and 4.
- D.3 The (IB) interrupter is removed from Fig. 5 and shown as part of the "miscellaneous circuit for miscellaneous interrupter frame."
- D.4 Circuit Notes 101, 102, 103 and 104 are changed and circuit notes 109, 110 and 111 are added.
- D.5 The main cross connection diagram figure is designated Figs. 1-K, 2-K, 3-K, 4-K and 5-K; Fig. 5-L is designated and rated "Mfr. Disc.", and Fig. 5-I and equipment note 201 are added.

DEVELOPMENT

1. PURPOSE OF CIRCUIT

1.1 No change.

2. WORKING LIMITS

2.1 No change.

OPERATION

3. FUNCTIONS

3.1 No change.

4. CONNECTING CIRCUITS

4.1 Add: SD-21247-01 Miscellaneous Circuit for Miscellaneous Interrupter Frame.

DETAILED DESCRIPTION

5. No change.

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PANEL SYSTEM
"A" SWITCHBOARD
AUDIBLE RINGING SIGNAL VACANT CODE TONE
DIAL TONE AND LINE BUSY TONE CKTS.

CHANGES

A. CHANGED AND ADDED FUNCTIONS

A.1 No change.

B. CHANGES IN APPARATUS

B.1 No change.

C. CHANGES IN CIRCUIT REQUIREMENTS OTHER THAN THOSE APPLYING TO ADDED OR REMOVED APPARATUS

C.1 No change.

D. DESCRIPTION OF CIRCUIT CHANGES

D.1 The multiple strap symbol, formerly associated with the lead between the (1-B) interrupter and the primary winding of the 103-B (T) repeating coil, is removed and is now connected to the lead between the (1-B) interrupter and LTI terminal on the fuse board.

D.2 Circuit notes 107, 108 are added.

DEVELOPMENT

1. PURPOSE OF CIRCUIT

1.1 No change.

2. WORKING LIMITS

2.1 No change.

OPERATION

3. FUNCTIONS

3.1 No change.

4. CONNECTING CIRCUITS

4.1 No change.

DETAILED DESCRIPTION

5. No change.

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PANEL SYSTEM
"A" SWITCHBOARD
AUDIBLE RINGING SIGNAL VACANT CODE TONE
DIAL TONE, AND LINE BUSY TONE CIRCUITS

CHANGES

A. CHANGED AND ADDED FUNCTIONS

A.1 None.

B. CHANGES IN APPARATUS

B.1 Superseded

Superseded By

1 - 6-D Resistance
Lamp

1 - 8-E Resistance
Lamp

C. CHANGES IN CIRCUIT REQUIREMENTS OTHER THAN THOSE APPLY-
ING TO ADDED OR REMOVED APPARATUS

C.1 None.

D. DESCRIPTION OF CIRCUIT CHANGES

D.1 Added circuit note 106 and reference to it at
the resistance lamp to show improved type resistance
lamp.

DEVELOPMENT

1. PURPOSE OF CIRCUIT

1.1 No change.

2. WORKING LIMITS

2.1 No change.

OPERATION

3. FUNCTIONS

3.1 No change.

4. CONNECTING CIRCUITS

4.1 No change.

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PANEL SYSTEMS
"A" SWITCHBOARDS
AUDIBLE RINGING SIGNAL VACANT CODE TONE
DIAL TONE AND LINE BUSY TONE CIRCUITS

CHANGES

A. CHANGED AND ADDED FUNCTIONS

A.1 None.

B. CHANGES IN APPARATUS

B.1 None.

C. CHANGES IN CIRCUIT REQUIREMENTS OTHER THAN THOSE APPLY-
ING TO ADDED OR REMOVED APPARATUS

C.1 None.

D. DESCRIPTION OF CIRCUIT CHANGES

D.1 The following information has been added to the con-
necting information for lead "D" of Figure 2 "or two
miscellaneous circuits for final selector frame".

DEVELOPMENT

1. PURPOSE OF CIRCUIT

1.1 This circuit is used at a panel "A" switchboard for
instruction purposes. By this means the various
tones may be connected to a subscriber's line for a
check of the tone or for instructions.

2. WORKING LIMITS

2.1 None.

OPERATION

3. FUNCTIONS

- 3.1 Connects dial tone to subscriber's line.
- 3.2 Connects line busy tone to subscriber's line.
- 3.3 Connects ringing induction to subscriber's line.
- 3.4 Connects tone to a subscriber's line when calling a vacant code.

4. CONNECTING CIRCUITS

- 4.1 Intercepting cords which are used with special service trunks having 34 ohm sleeves.
- 4.2 Special service cord circuits which are used with special service trunks having 34 ohm sleeves.
- 4.3 Special service and intercepting cord circuits which are used with special service trunks having 34 ohm sleeves.
- 4.4 Miscellaneous tone and interrupter circuits.
- 4.5 Miscellaneous circuits for final selector frame.

DETAILED DESCRIPTION

5. FIGURE 1 - DIAL TONE - When the plug of a special service or intercepting operator's cord is inserted in the multiple jack the (SL) relay operates from battery on the sleeve of the cord. The (SL) relay operated connects dial tone through the (DT) condenser and through the 25 ohm winding of the 66-A repeating coil to ground. This tone is induced into the 500 ohm winding of the 66-A repeating coil through the repeating coil in the cord circuit and back over the answering cord to the calling subscriber. When the plug of the calling cord is withdrawn from the jack the (SL) relay releases and the circuit is restored to normal.

6. FIGURE 2 - LINE BUSY TONE - When the plug of a special service or intercepting operator's calling cord is inserted in the multiple jack the (SL) relay operates and connects interrupted ground from the miscellaneous tone and interrupter circuits or from the miscellaneous circuits for final selector frame through the contacts of the (SL) relay and operates the (T) relay. The (T) relay operates and releases following

interrupted ground thereby connecting interrupted tone through the ring of the jack and cord to the repeating coil in the cord circuit through the answering cord out over the trunk to which the subscriber is connected to the subscriber's station. When the plug of the calling cord is withdrawn from the jack the (SL) relay releases in turn releasing the (T) relay and the circuit is restored to normal.

7. FIGURE 3 - RINGING INDUCTION - When the plug of the calling cord at the special service or intercepting operator's position is inserted in the multiple jack the (SL) relay operates. The (SL) relay operated connects machine ringing current to the ring of the jack through the (R) relay and the (R) condenser. This tone is induced into the repeating coil of the cord circuit to the subscriber's line over the trunk to which the answering cord is connected. When the plug of the calling cord is withdrawn from the multiple jack the (SL) relay releases and the circuit is restored to normal.

8. FIGURE 4 - RINGING INDUCTION CIRCUIT SEMI-SELECTIVE RINGING - When the plug of the calling cord at a special service or intercepting operator's position is inserted in the multiple jack the (SL) relay operates. The (SL) relay operated prepares a circuit for the operation of the (PU) relay which operates. When the (PU) interrupter on the ringing machine is closed immediately after the 2-ring period the (PU) relay locks through its own make contacts and closes a circuit connecting machine ringing current through the (R) relay and the (R) condenser, the ring of the jack and the ring of the cord. This tone is induced through the repeating coil in the cord circuit to the calling subscriber's line over the trunk to which the answering cord is connected. When the plug of the calling cord is removed from the multiple jack the (SL) relay releases. The (SL) relay releasing releases the (PU) relay and the circuit is restored to normal.

9. FIGURE 5 - VACANT CODE TONE - When the plug of the calling cord at a special service or intercepting operator's position is inserted in the multiple jack the (SL) relay operates from battery on the sleeve of the cord. The (SL) relay operated connects interrupted tone through the 25 ohm winding of the 103-B repeating coil to ground on the make contacts of the (SL) relay. This tone is induced into the 500 ohm winding of the 103-B repeating coil through the (T) condenser and through the repeating coil in the cord circuit

through the answering cord to the calling subscriber's line over the trunk to which the answering cord is connected. When the plug of the calling cord is withdrawn from the multiple jack the (SL) relay releases and the circuit is restored to normal.

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