

CONTINUITY INDICATOR FOR LOCAL PROGRAM LOOPS

1. GENERAL

- 1.01 This Section covers the description, connections and maintenance of the Tone Generator, a new type continuity indicator for local radio loops. This Section also introduces a new type connecting block especially designed for terminating radio loops.
- 1.02 The tone generator method for checking loop continuity utilizes a small tone generator placed on the line at the remote end of the loops and provides the Serving Test Center (STC) or Toll Program Board with a positive means of testing the loop without the need of personnel at the customer remote location.
- 1.03 The tone generator is connected to the loop at the customer demarcation point by the installer at the time of the loop installation and left on the line until broadcast time.
- 1.04 The Serving Test Center, the Frameman, the Repairman and the radio station can monitor the tone at any time and determine whether a loop trouble condition exists.
- 1.05 The unit operates on a tone, no-tone basis. The tone is turned on and off approximately 20 times per minute.
- 1.06 During the time the tone is "off", the loop can be monitored for noise and cross talk. When the tone is "on", the tone can be measured for level.
- 1.07 Since the success of this operation depends a lot on the cooperation of the radio station, the customer must be educated to monitor the loop a day or two before air time and report any malfunction

of the tone to the Telephone Company.

2. TONE GENERATOR - DESCRIPTION

- 2.01 The Sig Gen (Tone Generator) is a small low power solid state signal generator that will operate for months on a self contained penlight battery. This unit consists of an oscillator combined with an electronic switch that will automatically turn the oscillator "on" momentarily, a pre-determined number of times a minute.
- 2.02 The Sig Gen is encapsuled in a small plastic case, it is moisture resistant (will operate submerged in water) it is rugged and it is light in weight. Space is provided within the case for one standard penlight cell. The unit has two output leads that may be equipped with either spade lugs or banana plugs.
- 2.03 The electronic switch in the Model 700 series is programed to turn the tone "on" momentarily 20 times per minute. The tone is in the 700 Hz range, and the output level is approximately -12 dbm into a 600ohm load.
- 2.04 The Tone Generator is powered by a single penlight battery, size 'AA' or size 'AAA'.
- 2.05 The carbon zinc type battery will operate the Tone Generator for three to six months. If a longer period of operation is desired, use either ALKALINE or MERCURY batteries. These batteries are available at leading drug stores in their photo supply department or at a radio parts supply house.
- 2.06 The Tone Generator will operate for weeks after the battery starts to

"go down", the output level will decrease slightly and the frequency of the tone (pitch) will raise. On a new installation, if the condition of the battery is in question, replace with a new battery.

3. 45-R CONNECTING BLOCK - DESCRIPTION

3.01 The new type connecting block is easy to use, designed to make a safe positive connection and will accept banana plugs, spade lugs or wire.

3.02 No tools are required by the customer to make his connection to the telephone system with the use of the new 45-R connecting block.

3.03 The 45-R connecting block is designed primarily for use by the telephone company to provide a safe, rapid and positive connecting point for the final termination of a radio program supply loop.

3.04 This connecting block will accept standard plug-in banana plugs, alligator clips, spade lugs or wire looped around the shaft or clamped through the center hole. No tools are required to make these connections. The center screw holding the cover is common to the ground terminal.

3.05 A standard 216B tool "can wrench" can be used on the 3/8" terminal nuts. The ground terminal is a screw type connector and is common electrically with the center post. The 45-R connecting block is equipped with a 10,000 ohm resistor connected between the tip and ring terminals.

4. SIG GEN AND 45-R CONNECTING BLOCK - INSTALLATION

4.01 The installer shall follow Standard Bell System Practices to run the cable or wire to the connecting block. The 45-R connecting block is equipped with a 10,000 ohm resistor.

4.02 When using the 45-R connecting block in conjunction with the 245-R bracket, See Exhibit 1, mount with two 6-32 X 3/8" screws supplied with the bracket.

4.03 When the 245-R bracket is not used, mount with two #8 X 1" round head wood screws.

4.04 Connect the cable or wire to terminals "G" and "R", Exhibit 2. The standard 216B tool or "can wrench" can be used to make the connection.

4.05 When a ground is required, the yellow wire (ground) is connected to the clamp screw (Y).

4.06 Place the special service program tag, Form SW-6520, properly filled out, under corner of bracket or block. Make the necessary tests with the STC. On disconnect orders, return the 45-R connecting block to the Serving Test Center or per local instructions.

4.07 Install the Tone Generator on the 245-R mounting bracket with the 8-32 X 3/4" screws supplied with the bracket. See Exhibit 1.

4.08 Place Form SW-6521 (Tag, "Attention Broadcaster") on the Tone Generator. Exhibit 4 shows Forms SW-6520 and SW-6521.

4.09 The Tone Generator is not a substitute for an oscillator. All applicable tests must be made with the Serving Test Center before the Tone Generator is connected to the loop.

4.10 Connect the Tone Generator to the loop and verify the tone with the STC. The STC should measure and record the level of the tone.

4.11 When the radio loop is complete to the radio station or Toll Program

Board, the STC should check to see if the radio station or Toll Program Board is receiving the tone. The Toll Program Board should record the level of the tone. The STC should review the nature of the tone with the radio station and explain that they will receive the tone until it is removed by their personnel when he attaches his equipment at service time.

4.12 On discontinue orders, the Tone Generator should be returned to the STC or per local orders.

4.13 Installation or Test Desk Personnel should review the 45-R connecting block with the broadcaster and advise that the 45-R connecting block will simplify making his connection to our loop. His connection can be made to our loop using a standard banana plug, spade lugs or wire. No tools are required to make his connection. See Exhibit 2.

4.14 Installation or Test Desk Personnel should review the nature of the Tone Generator with the broadcaster and advise as follows:

- (a) On the completion of the loop installation, the Tone Generator will be connected to their loop.
- (b) The Tone Generator will be on their loop until removed by their personnel at service time. See Exhibit 3.
- (c) The broadcaster should monitor their loop periodically until air time. If the tone fails or the loop appears to be in trouble, notify the Serving Test Center immediately.

(d) Connect the Tone Generator back onto the loop after completing their broadcast.

5. ORDERING INFORMATION

5.01 Order the Tone Generator from Western Electric as follows:
 (Quantity) ea, Tone Generator Model #700
 E/W banana plugs.

Order on: Cos Co. Research, Inc.
 P.O. Box 17
 Colorado Springs, Colo 80901

5.02 Order the 45-R connecting block and the 245-R bracket from Western Electric as follows:

(Quantity) ea, block connecting, 45-R

(Quantity) ea, bracket mounting, 245-R

Order on: VAYCO
 2280 Oswego St.
 Aurora, Colo. 80011

5.03 Form SW-6520 (Tag, Program) and Form SW-6521 (Tag, Attention Broadcaster) may be ordered from Western Electric in units of 25 forms per package as follows:

(Quantity) Form SW-6520, 25 per package

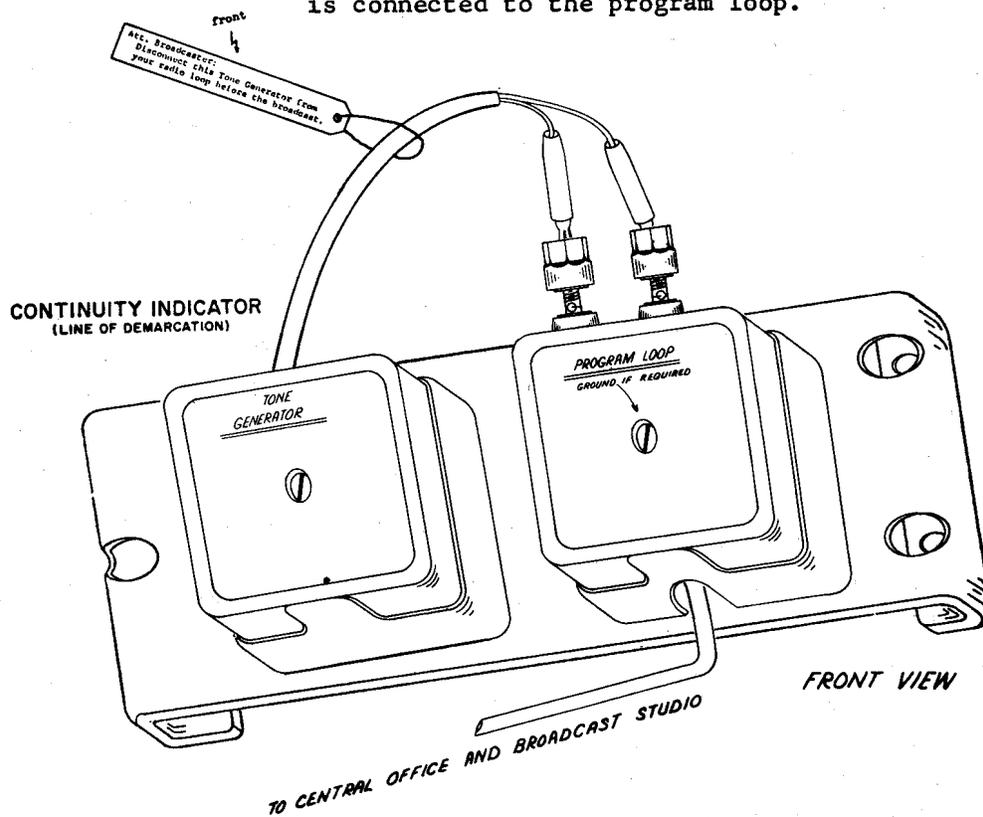
(Quantity) Form SW-6521, 25 per package

5.04 Charge all items to account code 28C.

EXHIBIT 1

FOR
RADIO BROADCAST PROGRAM LOOPS

Illustration of a Tone Generator and a 45-R connecting block mounted on a 245-R bracket. The tone generator is connected to the program loop.

**ATTENTION INSTALLER:**

On the completion of the loop installation, connect the Tone Generator to the connecting block as shown in the above figure 1., verify the tone with STC. Also attach the tag as shown to the leads of the Tone Generator. Make sure that the Special Service Program tag, Form SW-6520, is properly filled out and placed under corner of bracket.

EXHIBIT 2

45-R CONNECTING BLOCK
FOR
RADIO BROADCAST PROGRAM LOOPS

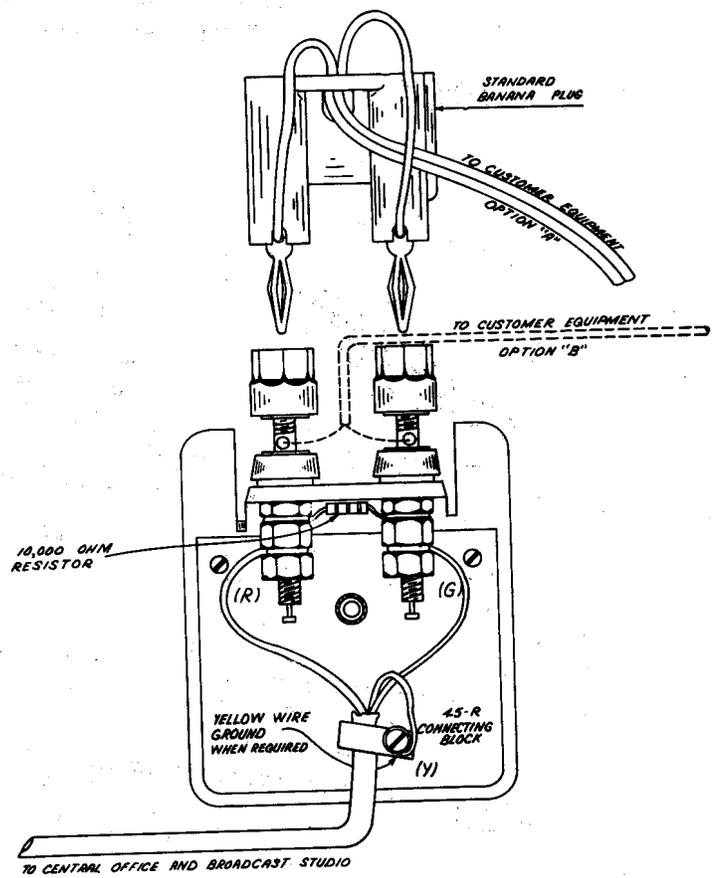
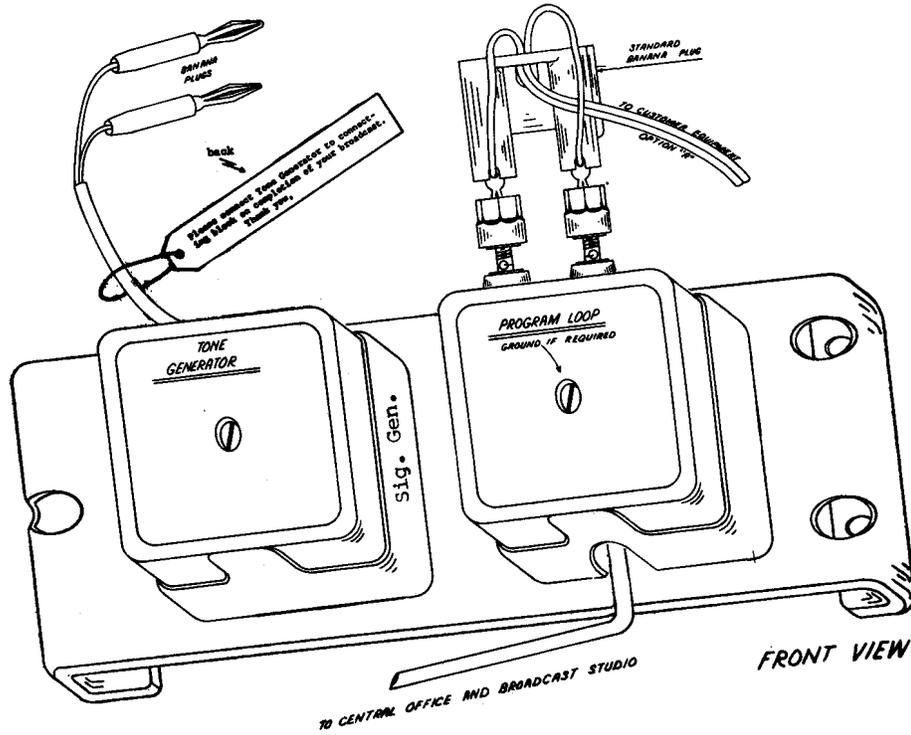


EXHIBIT 3

FOR
RADIO BROADCAST PROGRAM LOOPS

Illustration of a Tone Generator and a 45-R connecting block mounted on a 245-R bracket. The tone generator is disconnected and the customer has his equipment connected to the loop.

CONTINUITY INDICATOR
(LINE OF DEMARCATION)



The broadcaster should remove the Tone Generator from his loop when he gets ready for his broadcast. On completion of the broadcast he should reconnect the Tone Generator to the loop.

EXHIBIT 4

FORM SW-6520

FORM SW-6521

SW 6520

SPECIAL SERVICE-PROGRAM

<p>Loop Designation</p>	<p>SERVICE DATE _____</p>
<p>Customers name</p>	<p>ORDER NO. _____</p>
<p>PROGRAM FROM _____ TO _____</p>	

NOTE: Broadcaster call _____
for assistance or trouble reports.

SW 6521

ATT. BROADCASTER:
○ Disconnect this tone generator from
your radio loop before your broadcast.