ADDENDUM C53.903
Issue A, January 1957
The B.T. Co. of Canada
Provisional

LOUDSPEAKING INTERCOMMUNICATION

EQUIPMENT

SENIOR MAGNAPHONE (N.E.CO.)

1. GENERAL

1.01 This Addendum to Section C53.903, Issue A, is issued to provide installation and maintenance information covering the accessory equipment:

R19807 Remote Signalling Relay Unit.
R19109-46 Substation Switch Kit.
R19109-60 Substation Volume Control Kit.
R19726A Handset.

1.02 This Addendum consists of this covering sheet and Addendum #2 to the Senior Magnaphone Instruction Bulletin, SM6A, SM12B, Issue 1.

Northern Electric

COMPANY LIMITED
BELLEVILLE, ONTARIO

INSTRUCTION BULLETIN SM6A SM12A Iss. 1 12/56

SENIOR MAGNAPHONE

ADDENDUM No. 2

RI9807 REMOTE SIGNALLING RELAY UNIT

(Supplementing information on page 20)

For long line communication between two Masters (beyond approximately 2 miles as listed in the wire size chart) an accessory remote signalling relay unit provides the required signalling current at the remote station to operate the audible signal and lamp annunciator. Two type R19807A Relays, one at each Master, are required for each such circuit. Two conductors and a good ground (3 conductors) serve to provide both annunciator and audible signalling as well as voice transmission. This results in considerable economy on long lines where full signalling facilities may be obtained over distances up to 12 or 15 miles (depending on the size of conductors).

The use of this remote signalling unit in no way effects the operation of the Senior Magnaphone as outlined in the operating instructions forming part of this bulletin.

INSTALLATION INSTRUCTIONS:

This unit is used in conjunction with a Senior Master Magnaphone to permit operation of two Master units over a long line pair or over a telephone line pair. Complete voice and signalling facilities are possible.

(a) Remove the Master station chassis from the cabinet. Use any one "Master to Sub" Selector Switch (S7 to S12 on SM12 type Masters, S10 to S12 on SM6 type Masters) as the remote signalling switch. Lift the bus from terminal 5 on this switch and connect terminal 5 to Terminal 3 of TS3 (refer to detail drawings under Selector Switch Bank Wiring Master Stations).

(b) On the underside of the Master station junction box remove the bus wire from E12. Solder both wires of the slate - white pair to this point. Move existing Substation wiring, if any, from E12 to any other E terminal.

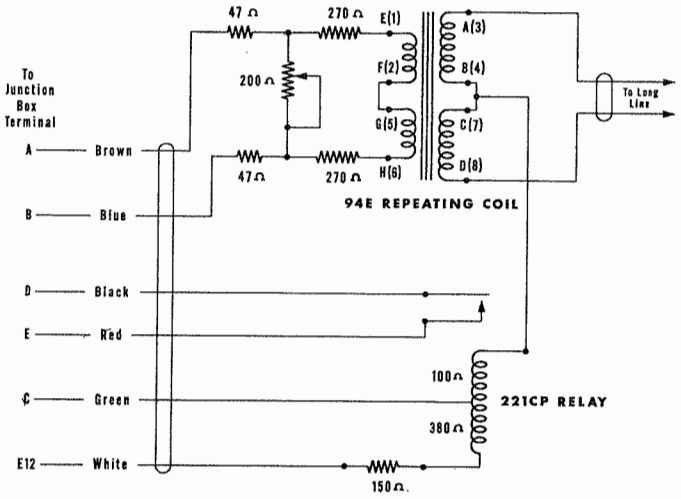
(c) Mount the Remote Signalling unit adjacent to the Master station junction box. Make connections to the junction box screw terminals associated with the above selected remote signalling relay as listed below and as shown on the accompanying wiring diagram.

RELAY UNIT WIRE COLOR	JUNCTION BOX SCREW TERMINALS
Brown	A
Blue	B
Black	D
Red	E
Green	C
White	E12

Connect the E terminal to which the red wire is connected to a good ground. Connect the two conductor cable to the long line or telephone pair wires.

LINE LENGTH - The recommended maximum loop resistance is 3500 ohms (8 miles using #26 gauge wire). This may be increased to 5000 ohms (12 miles) if the line voltages are approximately equal at each end. This distance may be increased considerably if a larger size conductor, such as #22, is used.

ADJUSTMENTS - Owing to the Master stations ability to provide for widely varying line losses, care must be taken to ensure that the volume levels are equalized at each end of the line so that zero level is not exceeded. Adjust the rear volume control on the Master stations for approximately equal level (set potentiometer midway for preliminary adjustment). If one Master station is already installed make the same volume adjustment on the new unit. Make the final sound level adjustments by similar adjustment on the potentiometers under the plug buttons in each Relay unit.

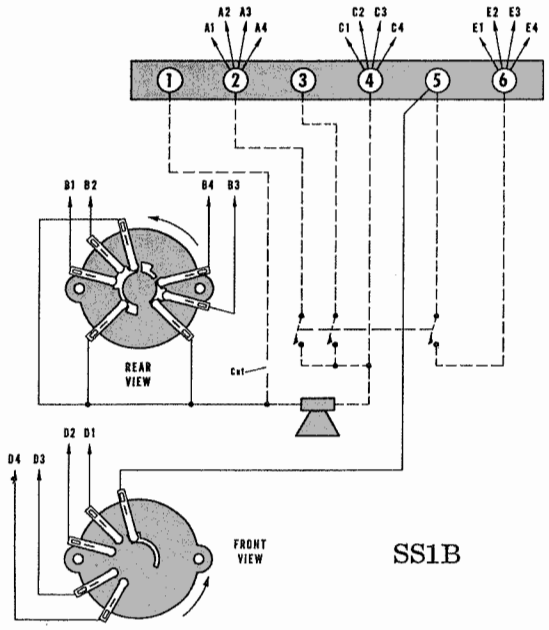


R19109-46 SUBSTATION SWITCH KIT:

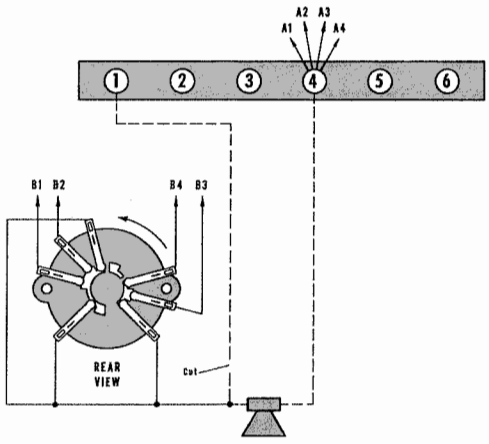
The R19109-46 Switch Kit permits the connection of one SS1A, SS2A or SS1B Substation to a quantity of up to four Master stations. Call in facilities are not affected and full privacy and secrecy are maintained on all calls.

On the SS1A and SS2A Substations, these switches can be mounted in either or both knockouts as provided in the front of the cabinet. In using the SS1B, this switch should be mounted on the left hand side (facing cabinet).

Wiring information for the installation of this kit is shown in the accompanying drawings.



SS1B



NOTE: The dotted lines indicate the existing wiring.

SS1A

OPERATION:

To originate or answer a call:

(a) Turn the selector switch to the desired position and operate in the normal manner.

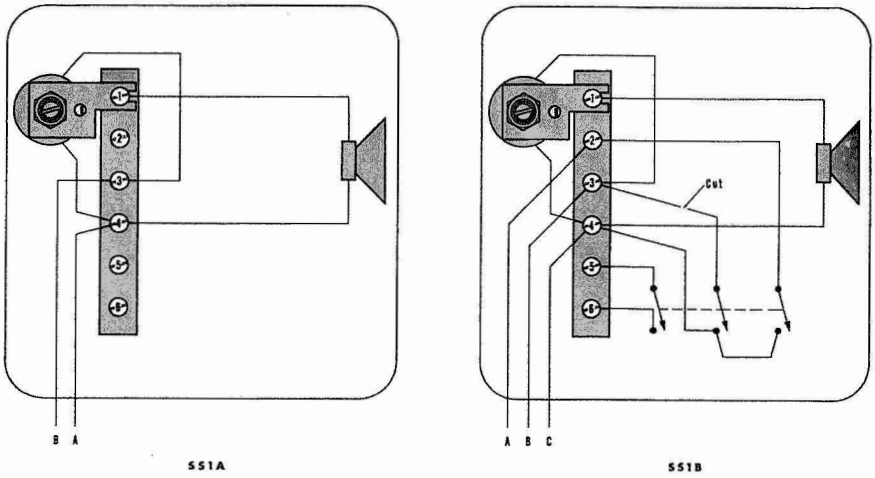
(b) When finished return the key and switch to the standby position in that order.

NOTE: The Master station must identify itself when calling a Substation.

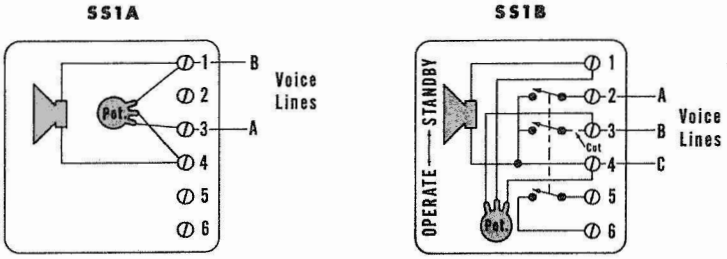
R19109-60 SUBSTATION VOLUME CONTROL KIT:

(Supplementing and superseding information on Addendum No. 1)

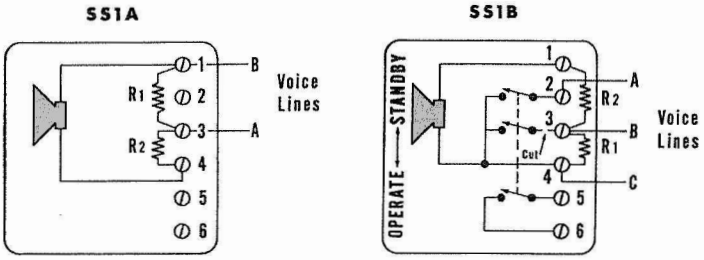
This kit is available as an accessory for installations where it is required to arrange for different sound levels at the Substations. It consists of a 200 ohm, screwdriver adjusted potentiometer assembled on a bracket for mounting directly to the terminal strip.



Where an external adjusted volume control is desired a conventional type potentiometer such as the Centralab Model 2, 15/16" dia., 250 ohms (carbon type) or the Mallory C200P, 1-1/16" dia., 200 ohms (wire wound type) can be mounted in one of the knockouts provided in the case and wired in accordance with the following diagrams.



If a fixed level adjustment is preferred the following wiring details and attenuation/resistance table is provided for your guidance.



Attenuation	Value R1	Value R2
3 db	100 ohms	10 ohms
6 db	100 ohms	47 ohms
9 db	100 ohms	100 ohms
12 db	100 ohms	180 ohms
15 db	100 ohms	270 ohms
18 db	100 ohms	470 ohms

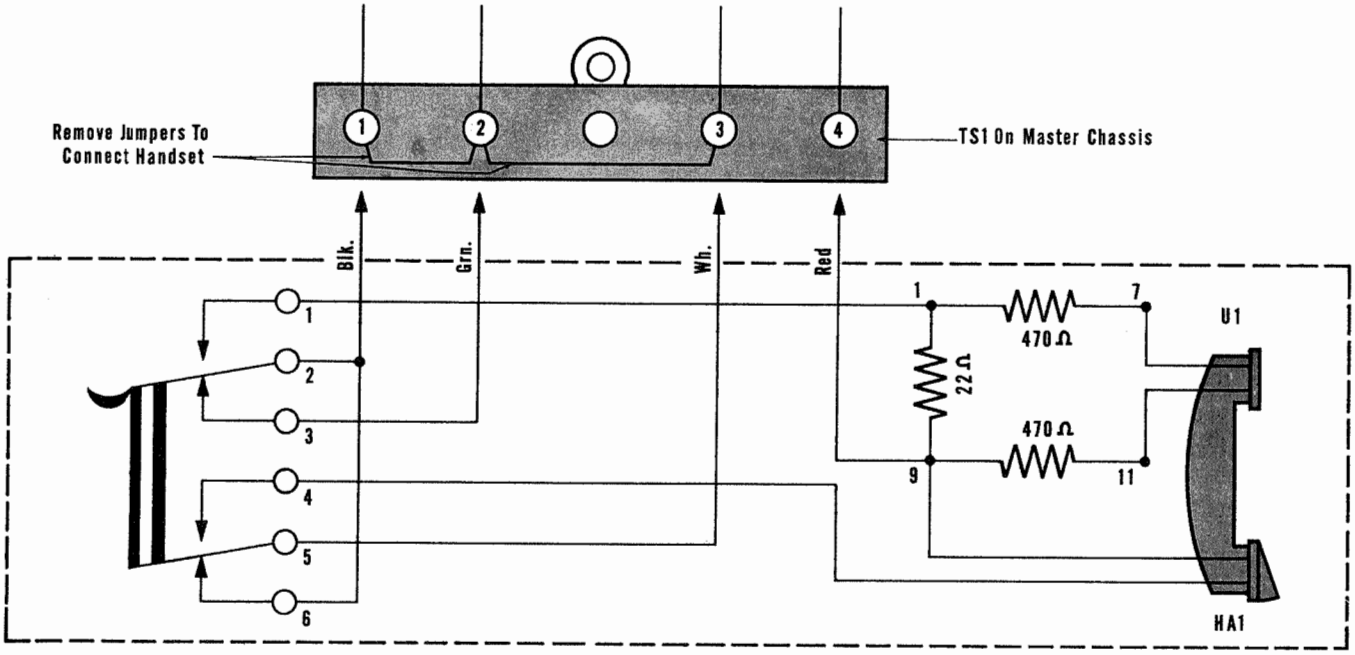
R19726A HANDSET:

(Supplementing and superseding page 15 and part of Addendum No. 1)

Where confidential listening communication is desired or essential a telephone handset is available. As illustrated, the R19726A Handset mounts in the same manner as a regular telephone set. It connects directly to the SS1A and SS1B Substations or to the Master Station and without modification to the units. When the handset is to be used with the SS2A or SS2B Substation, the #6017B key can be used to switch the handset to either half of the station. No modification to the present wiring is necessary for this application and all circuit connections remain as illustrated throughout the bulletin. The following block schematics provide the required wiring information.

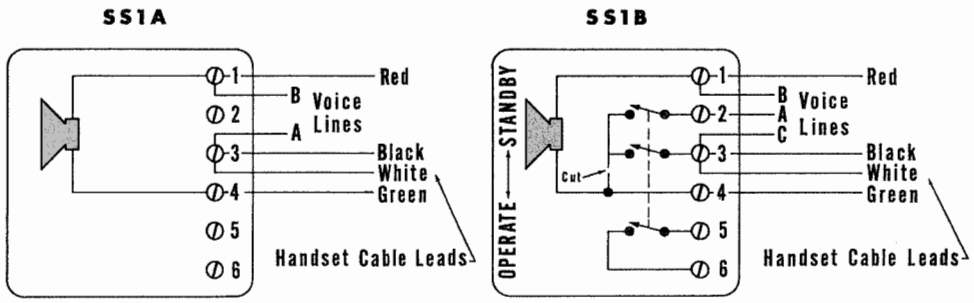
Remove the Master station from its cabinet and insert the grommet supplied with the handset attachment into the hole (covered by a plug-button) provided in the back plate. Bring the handset attachment cable through the grommet to the far four lug terminal strip. Knot the cable inside the chassis to prevent strain on the terminals. Remove the two jumpers on the terminal strip and connect cable as shown in the following sketch.

MASTER STATIONS

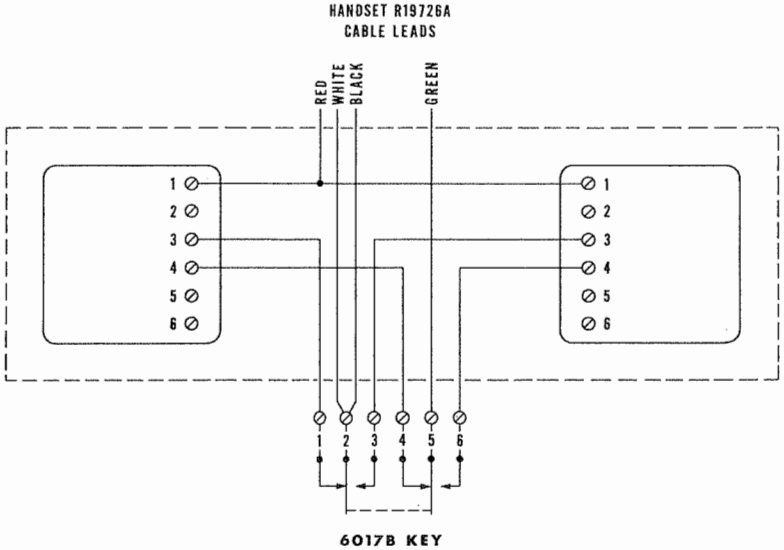


Optional Handset Attachment R19726A

SUBSTATIONS



CONNECTION TO SS2A OR SS2B SUBSTATIONS



OPERATION:

(a) Remove Receiver from hook (which substitutes the handset for the speaker).
(b) Operate unit in normal manner.

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