N3 CARRIER TELEPHONE SYSTEM
GROUP TRANSMITTER AND RECEIVER UNIT
SWITCHING

The substitution of an alternate group transmitter or receiver unit for a working group transmitter or receiver unit may be accomplished by the use of a switching set. The resulting interaction on the system for a typical switch, properly executed, is approximately a 1-db reduction in amplitude for an interval of 7 milliseconds. This substitution facilitates the maintenance of N3 carrier systems. To replace a group unit, the N3 switching set is connected to one of the appropriate switching jacks on the channel group combining and switching unit. A connection is also made to another jack on this unit to supply power to the switching set and to the alternate group unit which is plugged into the switching set. A control is provided for adjusting the gain of the alternate unit to match that of the working unit. A key in the switching set provides means for switching transmission from the regular group unit to the alternate unit and vice versa.

Caution should be exercised in following the operational procedures to avoid errors and, thus, prevent excessive hits on the system.

APPARATUS:

1 — Group Unit (same type as unit to be switched)

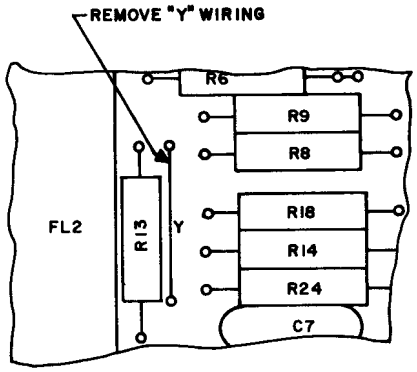
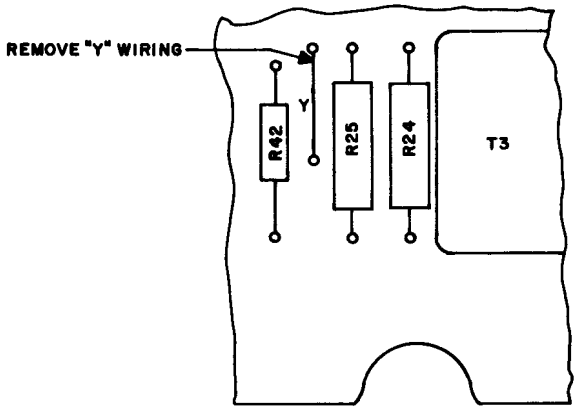
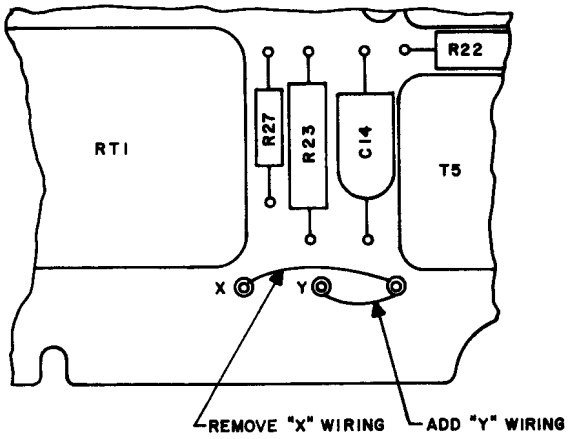
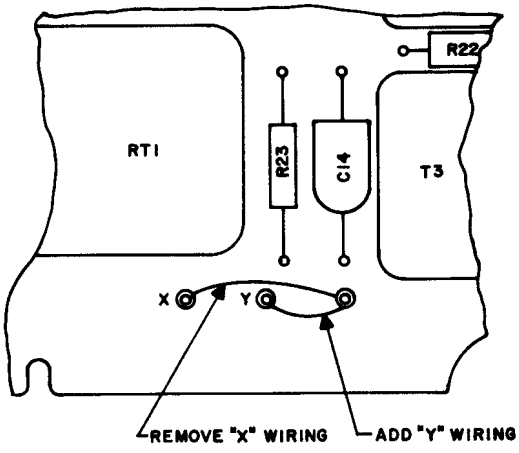
1 — J99300AU N3 Switching Set

1 — 2J Repeater Test Set J94002J

7 — 377A to G Equalizers (one of each)

2 — 1W13A Cords equipped with P-36A918 cord tips

STEP	PROCEDURE	
	Switching Group Transmitter Unit	**Switching Group Receiver Unit**
1	Determine the type of unit to be switched, HI GRP XMTR or LO GRP XMTR.	Determine the type of unit to be switched, HI GRP RCVR or LO GRP RCVR.
2	Remove the Y wiring strap on the alternate unit, as shown in Fig. 1 or 2, to increase the gain of the unit.	Remove the X wiring strap and add the Y wiring strap on the alternate unit, as shown in Fig. 3 and 4, to increase the gain of the unit.
3	Insert the same code of 377-type equalizer in the alternate unit as in the regular unit. Secure the equalizer in place by means of the two mounting screws.	Insert the same code of 377-type equalizer in the alternate unit as in the regular unit. Secure the equalizer in place by means of the two mounting screws. Set the SLOPE ADJ screws on the alternate unit to the same positions as the corresponding screws on the regular unit.
4	Plug the alternate unit into the N3 switching set as shown in Fig. 5	Plug the alternate unit into the N3 switching set as shown in Fig. 6.

STEP	PROCEDURE
	 **Fig. 1 – High-group Transmitter**
	 **Fig. 2 – Low-group Transmitter**
	 **Fig. 3 – High-group Receiver**
	 **Fig. 4 – Low-group Receiver**
5	Check that the switching key on the N3 set is in REG position.
6	Remove the switching connector from either of the two TEST POWER jacks (lower jack selected in Fig. 5) on the CHAN GRP COMB & SW unit and connect the switching set power cord to the vacated jack.
7	Remove the switching connector from either of the two GRP XMTR jacks (lower jack selected in Fig. 5) on the CHAN GRP COMB & SW unit, and connect the switching set transmission cord to the vacated jack.

STEP	PROCEDURE
5	Check that the switching key on the N3 set is in REG position.
6	Remove the switching connector from either of the two TEST POWER jacks (lower jack selected in Fig. 6) on the CHAN GRP COMB & SW unit and connect the switching set power cord to the vacated jack.
7	Remove the switching connector from either of the two GRP RCVR jacks (lower jack selected in Fig. 6) on the CHAN GRP COMB & SW unit, and connect the switching set transmission cord to the vacated jack.

STEP	PROCEDURE
8	Using the 1W13A cords, connect the DBM jacks of the 2J test set to the REG OUT jacks of the N3 switching set and measure the total power output of the regular group unit.
9	Remove the test cords from the REG OUT jacks and connect to the ALT OUT jacks and measure the total power output of the alternate group unit. Adjust the GAIN control on the N3 switching set to make the output power of the alternate unit equal to the output power of the regular unit. Remove the switching connector from the other GRP XMTR jack on the CHAN GRP COMB & SW unit (upper jack as shown in Fig. 5 and 6).
10	Operate the switching key to the ALT position and remove the regular unit from its mounting.
11	Select a spare group unit of the same type as the unit being replaced and observe that the optional wiring straps that control the gain of the unit are the same as those on the unit being replaced. Also, check that the 377-type equalizer is the same as the one in the unit being replaced and that the two mounting screws are in place to secure the equalizer. If the unit is a group receiver unit, check that the SLOPE ADJ screws are set correctly. Proceed to plug the spare group unit into the terminal mounting.
12	With the 2J test set, measure the total power output of the new regular group unit as in Step 8 to determine if the new unit has the correct output power. If the unit is a group receiver unit, allow between 10 and 20 minutes for the new unit to regulate to its nominal output. Equalize the output powers of the alternate unit and the new regular unit as in Step 9 by means of the GAIN control. The ALT OUT power adjustment should be made slowly and carefully because the alternate unit is now in service in the system.
13	Operate the switching key to the REG position and replace one switching connector in the vacant GRP XMTR or GRP RCVR switching jack on the CHAN GRP COMB & SW unit.
14	Remove the switching set cord from the GRP XMTR or GRP RCVR switching jack on the CHAN GRP COMB & SW unit and replace it with the other switching connector.
15	Disconnect the switching set power cord from the TEST POWER jack on the CHAN GRP COMB & SW unit and replace it with the switching connector.
16	Remove the alternate group unit from the N3 switching set.

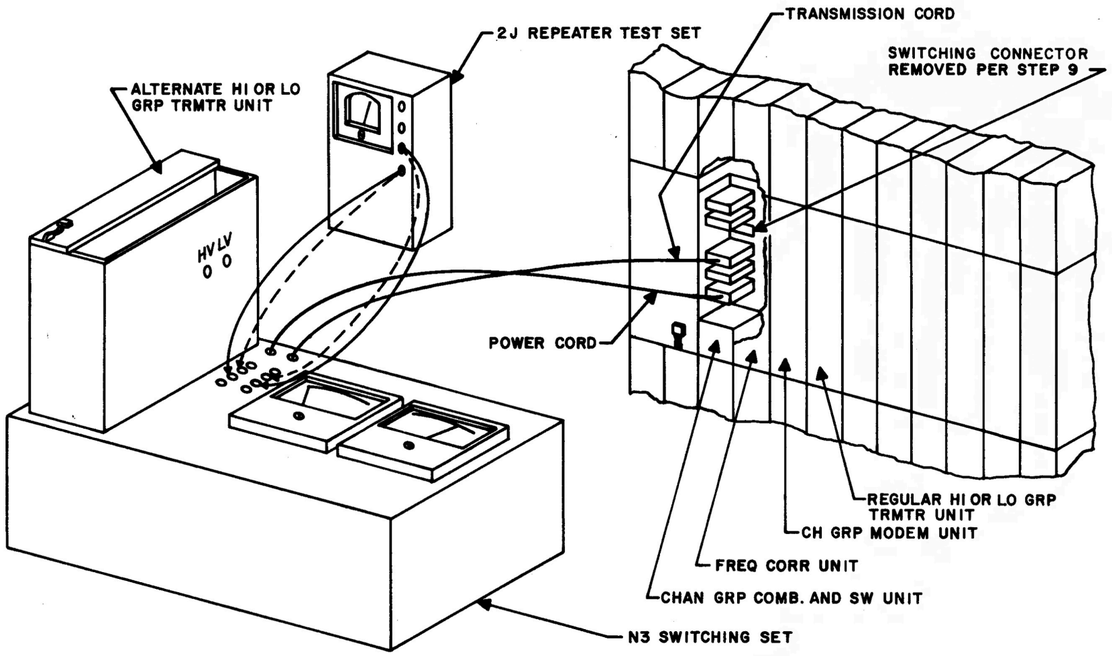


Fig. 5 – Switching N3 Group Transmitters

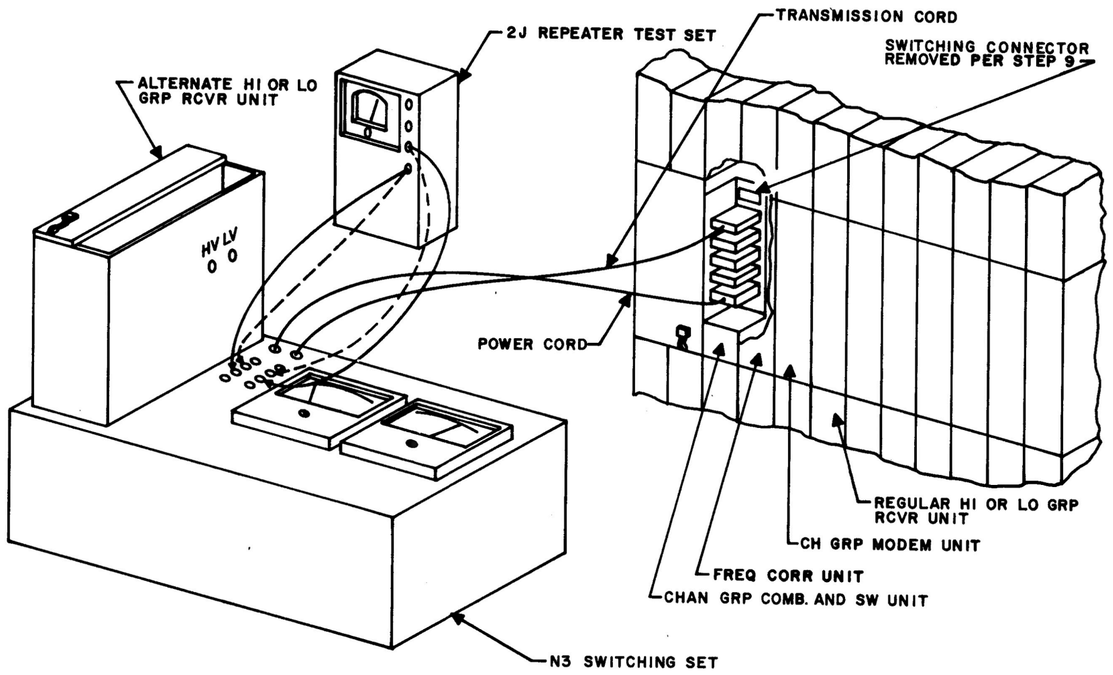


Fig. 6 – Switching N3 Group Receivers

Fig. 5 and 6