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## TYPE O AND ON CARRIER TELEPHONE SYSTEMS—TERMINALS AND JUNCTIONS

### PRELIMINARY TESTS—PREPARATION AND PLACEMENT OF ON1 JUNCTION

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An ON1 junction consists of from one to five similar groups differing mainly in the frequencies involved. The procedures for properly preparing an ON1 junction for test are given in this section.

This section is reissued to clarify use of the level-control oscillator and of "K" wiring in the fuse panel, and to add a note concerning "V" and "R" wiring. Since this issue is a general revision, arrows ordinarily used to indicate changes are omitted. This reissue does *not* affect Equipment Test Lists.

A pictorial representation of each unit is shown in Fig. 1. Each unit is numbered, and corresponding numbers appear on the mounting frame or fuse panel to show where the unit should be inserted. Since similar units are used in each group, the same numbers appear several times on the mounting frames. However, the units for any particular group occupy specific places in the mounting frames and these locations are designated with the group number in the figure.

Designations of equipment at the open-wire (OW) side of a junction refer to the type O terminal that would have been required had the junction point been a type O terminal point. For example, if the system being connected to a junction group would have required an OB low-group transmitting (LGT) terminal at that point, the filters on the group receiving (GR RCVG) OW unit are selected and oriented as they would be for an OB LGT terminal.

The following notes apply to the preparation of the ON1 junction:

**Note 1:** The noise generator is not required at an ON1 junction. Tube V1 in the group transmitting unit should, therefore, be replaced with a 393A plug before the unit is placed in the mounting frame. Since the substitution of the plug for the tube should be obvious upon visual inspection, the tube shield must not be replaced.

**Note 2:** The 3700-Hz oscillator is not required at an ON1 junction; therefore, tube V2 of the group oscillator unit should be removed before the unit is placed in the mounting frame.

**Note 3:** The level-control oscillator is used when four groups or less are equipped (see Table A).

**Note 4:** When performing initial turnup and rearrangements, check the "V" and "R" wiring (see SD-95197-011).

**Note 5:** The following procedure must be performed for each group being placed.

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#### APPARATUS:

1—KS-14510 Volt-Ohm-Milliammeter (VOM)

- | STEP | PROCEDURE   |
|------|---|
| 1    | Ensure that terminals C4 and C8 of the terminal strip are strapped when the group is connected to an OB system; or are not strapped when the group is connected to an OA, OC, or OD system.   |
| 2    | For an ON1 junction, "K" wiring is used; "X" and "Y" wiring are used in the repeater application. ("X" wiring is provided by the shop.)   |
| 3    | Remove the fuses from the fuse panel.   |
| 4    | Place the fuse panel part way into the position indicated.  |
| 5    | Connect the power plug to the receptacle and finish sliding the fuse panel into position.   |
| 6    | Place the proper group oscillator (GR OSC) unit, as determined in Table B, in the position indicated, with straps cut on terminal block (TB) 1 as shown. Remove tube V2 from the unit.  |
| 7    | Place the group transmitting (GR TRMTG) units in the positions indicated. For an OA system, cut the strap in the OW unit as shown. In all group transmitting units, replace tube V1 with a 393A plug. <b>Do not replace the tube shield.</b>  |
| 8    | Place the group receiving (GR RCVG) units in the positions indicated, with proper filters (see Tables C and D) located and oriented as shown. In the cable (CA) unit, a plug (determined according to ED-92309-30) is inserted in the jacks on top of the unit as shown. For an OA system, cut the strap in the OW unit as indicated and ensure that the J option shown on SD-95196-01 or SD-95197-01 is provided when the system is assigned to open wire. |
| 9    | Place the proper miscellaneous oscillator unit in the position indicated in the fuse panel (see Table E).   |
| 10   | Turn the FIL CUR and 48V FIL potentiometers to their most clockwise positions.  |
| 11   | Using the following table, measure with a VOM the resistance between ground and the innermost terminal of each fuse mounting. Keep the meter on the 300V scale until the test lead is in firm contact with the fuse mounting terminal.  |

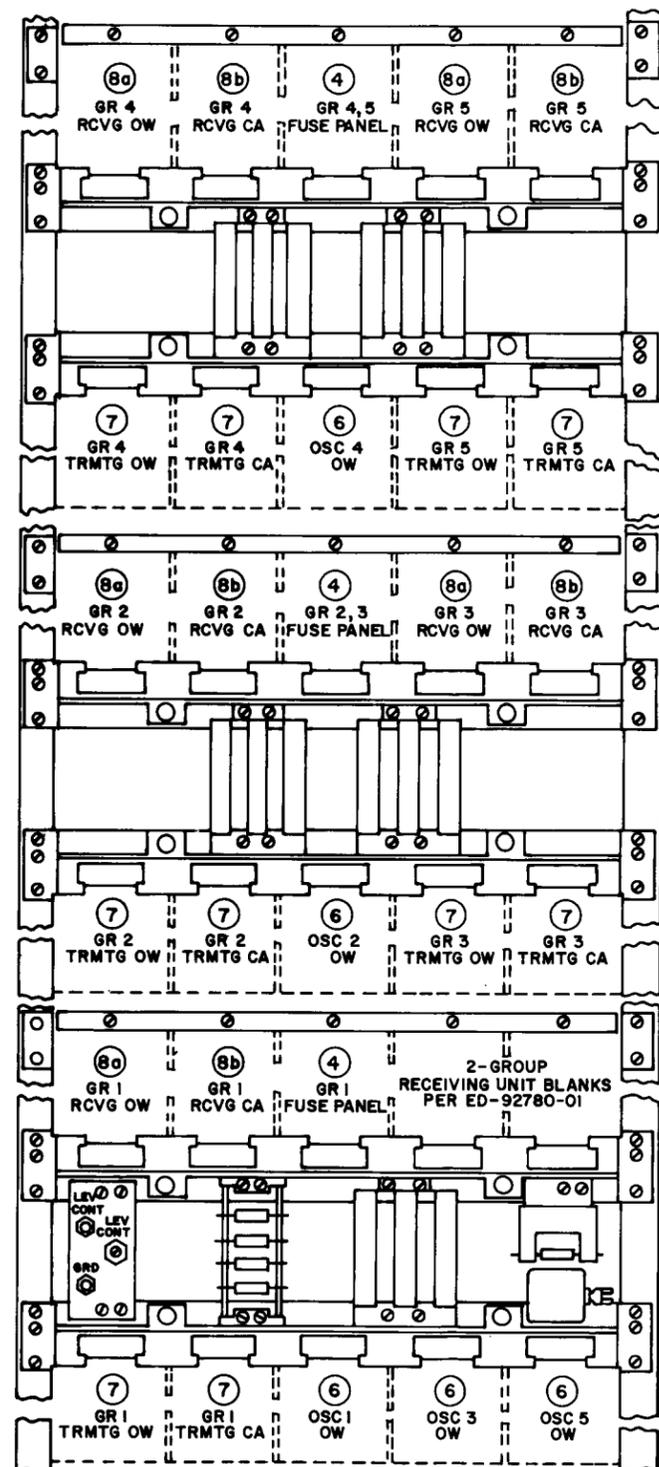
FUSE BLOCKS		MINIMUM RESISTANCE		
		GR 1	GR 2 AND 3	GR 4 AND 5
-48V	Top	20	20	20
	Bottom	450	20	20
+130V	Top*	14,000	14,000	14,000
	Bottom*	50,000	14,000	14,000

\* Measurements after meter readings become stable and after filter capacitors are charged

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STEP	PROCEDURE
12	Turn the FIL CUR and 48V FIL potentiometers to their most counterclockwise positions.
13	Replace the fuses.
14	While measuring between the -40V test jack and ground, adjust the heater voltage (see Section 362-110-502).

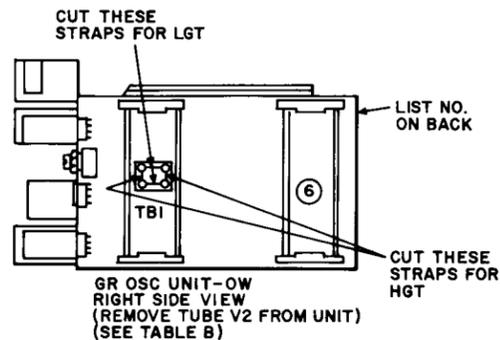
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**TABLE A**

ONI GROUPS	ALWAYS PROVIDE LEVEL-CONTROL OSCILLATOR UNIT
1	ALWAYS PROVIDE LEVEL-CONTROL OSCILLATOR UNIT
1 AND 2	ALWAYS PROVIDE LEVEL-CONTROL OSCILLATOR UNIT
1, 2, AND 3	ALWAYS PROVIDE LEVEL-CONTROL OSCILLATOR UNIT
1, 2, 3, AND 5	ALWAYS PROVIDE LEVEL-CONTROL OSCILLATOR UNIT
WHENEVER GROUP 4 IS EQUIPPED *	OMIT LEVEL-CONTROL OSCILLATOR UNIT

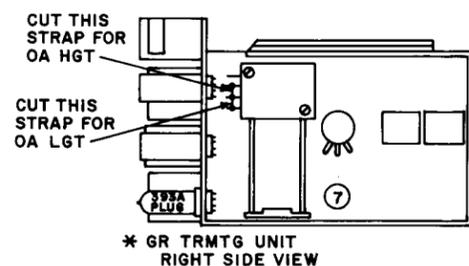
\* THE ONI JUNCTION GROUPS ARE ADDED IN THE ORDER 1, 2, 3, 5, AND 4. THEREFORE, THE LEVEL-CONTROL OSCILLATOR UNIT IS NOT REQUIRED WHEN GROUP 4 HAS BEEN ADDED.



**TABLE B**  
USE OSC UNIT WITH LIST NUMBERS AS FOLLOWS: \*

SYSTEM CONNECTING TO JUNCTION GROUP	FREQ (KHZ)		LIST NO.
	CARR L OSC	CARR H OSC	
OA	198	216	L2, L11
OB	236	256	L1, L10
OC	276	296	L3, L12
OD	316	336	L4, L13

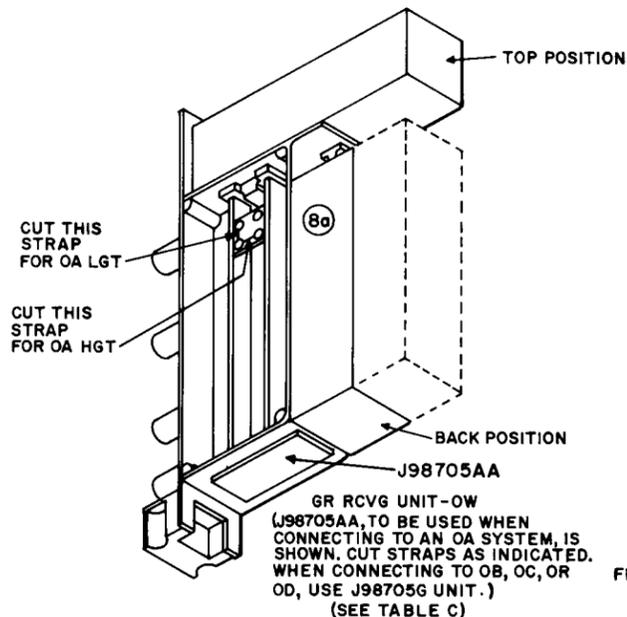
\* GROUP EQUIPMENT AT OW END OF JUNCTION IS DETERMINED BY TYPE O SYSTEM CONNECTED.



\* GR TRMTG UNIT RIGHT SIDE VIEW

(J98705AB, FOR USE ON OPEN-WIRE SIDE OF JUNCTION WHEN CONNECTING TO OA SYSTEM, IS SHOWN. CUT STRAPS AS INDICATED. J98705F UNIT IS USED IN ALL OTHER CASES). REPLACE TUBE V1 WITH 393A PLUG.

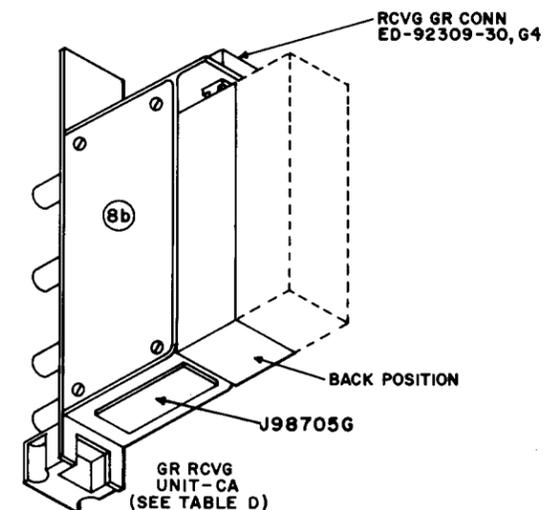
\* GROUP EQUIPMENT AT OW END OF JUNCTION IS DETERMINED BY TYPE O SYSTEM CONNECTED.



**TABLE C**  
FILTER DESIGNATION FOR GR RCVG UNIT-OW \*

TYPE O SYSTEM	FILTER IN TOP POSITION	FILTER IN BACK POSITION
OA LGT	530H	531F (MD) OR 530AH
OA HGT	530J	530J
OB LGT	530A	530R OR 531C
OB HGT	530A	530P OR 531B
OC LGT	530B	530D
OC HGT	530B	530C
OD LGT	530E	530G
OD HGT	530E	530F

\* GROUP EQUIPMENT AT OW END OF JUNCTION IS DETERMINED BY TYPE O SYSTEM CONNECTED.

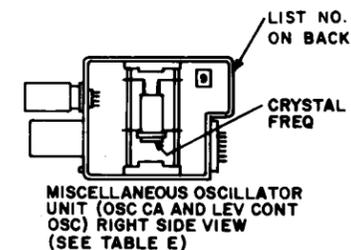
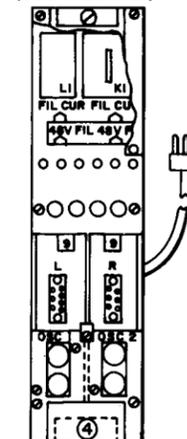


**TABLE D**  
FILTER DESIGNATION FOR GR RCVG UNIT-CA \*

GROUP NO.	FILTER IN BACK POSITION
1	530F
2	530D
3	530C
4	530A OR 531C
5	530P OR 531B

\* FOR FILTER IN TOP POSITION, PROVIDE PLUG ACCORDING TO ED-92309-30, G4.

**FUSE PANEL FRONT VIEW**  
(SEE TABLE E)



**TABLE E**  
USE OSC UNIT WITH LIST NUMBERS AS FOLLOWS (L AND R REFER TO POSITION OF OSC UNIT IN FUSE PANEL):

FUSE PANEL	L	R
GR 1	L6 (OSC 1CA-316 KHZ)	L10 (LEV CONT-76 KHZ) *
GR 2, 3	L7 (OSC 2CA-296 KHZ)	L3 (OSC 3CA-276 KHZ)
GR 4, 5	L8 (OSC 4CA-256 KHZ)	L9 (OSC 5CA-236 KHZ)

\* SEE TABLE A

Fig. 1—Preparation of ONI Junction