

COAXIAL CABLE MAINTENANCE

PRECAUTIONS

NOTES CONCERNING THIS ADDENDUM

This addendum supplements G74. 440 to provide information on reference and tool changes, and is being reissued to cancel information on coaxial terminals that is now covered in the G61 series.

The following should be marked "See Addendum" and treated as indicated.

Paragraph 1.02	- Replaced
Paragraph 2.04	- Supplemented
Paragraph 2.05	- Supplemented
Paragraph 2.06	- Supplemented
Paragraph 2.07	- Supplemented
Paragraph 2.09	- Supplemented
Paragraph 2.10	- Supplemented
Paragraph 3.03	- Replaced
Paragraph 6.02	- Replaced
Paragraph 6.04	- Supplemented
Paragraph 6.06	- Replaced
Paragraph 8.03	- Replaced
Paragraph 8.04	- Replaced
Paragraph 8.05	- Replaced
Paragraph 8.06	- Replaced
Paragraph 9.01	- Replaced
Paragraph 11.03 (5)	- Added

1. GENERAL

1.02 The mechanics of splicing coaxial cable, opening the sheath to obtain access to the coaxials in repair operations, testing for insulation resistance and clearing trouble due to slivers are outlined in various sections of the G50 and G70 series and these sections should be considered as supplementary parts to the instructions contained in Section G74. 440.

2. DESCRIPTION OF CABLE AND ASSOCIATED APPARATUS

2.04 30B Cable Terminals are used to terminate coaxials at main repeater stations and terminal offices on the L1 system in the Southern California Area. This terminal was replaced with the 30C which is superseded by the 41A cable terminal. When converting from the L1 to the L3 system it is necessary to modify the 30B terminals or replace them with the 41A terminal. See Figure 1.

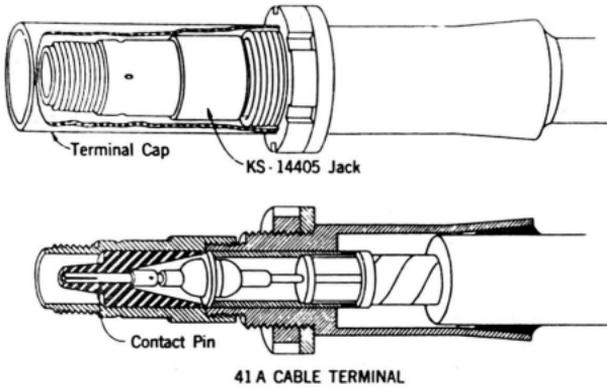


Figure 1

2.05 31A Coaxial Cable Terminal replaced by 31B which has been superseded by the 31C terminal is used to carry coaxials into and out of the associated repeaters at auxiliary repeater points. 31B cable terminals must be modified when converting L1 carrier-systems to the L3 system. Where a 31B terminal must be replaced, it should be replaced with a 31C-type and this terminal modified accordingly.

Note: 42A cable terminals are used on the more recent L3 carrier systems. See Figure 2.

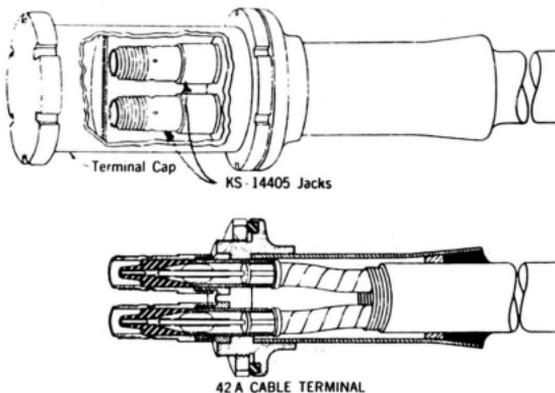


Figure 2

2.06 The stub cable of the 30 and 41A-type terminal contains one coaxial, stub cable of the 42A-type contains two coaxials, stub cable of the 31-type contains four coaxials, and the 35-type terminal is equipped with two stub cables each containing two coaxials. The outer conductors of the coaxials in these terminals are bonded together and connected to the metal shell of the terminal.

2.07 On some of the earlier installations the 202A connector illustrated in Paragraph 2.07 of G74.440 is used to carry the pilot alarm and order circuits into the apparatus cases. In more recent installations the control circuits terminate in either a 33A or a 43A terminal installed in a cabinet which also houses a 34A or 44A terminal. The alarm pairs are cross-connected between these terminals and are brought into the repeater apparatus cases through two-pair 32B terminals, the stubs of which are spliced to the stub of the 34A or 44A terminal. All of these terminals are gas-tight. The 33A and 43A terminals are protected type terminals.

2.09 The schematic splicing arrangement shown in Paragraph 2.09 of G74.440 applies only to some of the older installations where 202A connectors were employed. On newer installations the control pairs terminate as described in Paragraph 2.07.

2.10 The talking pair associated with the gas alarm system is terminated in a 33A terminal at auxiliary repeater stations instead of a three-pair terminal as in older installations. The gas alarm pair is not terminated at the auxiliary L repeater stations.

3. SPECIAL PRECAUTIONS

3.03 Before opening a splice or the sheath of a cable containing coaxials a bonding connection shall be established to make the sheath continuous across the opening. This is covered by Bell System Practices G50.610.1. The method of removing and terminating outer protection is covered in Sections of G56. Where there is metallic protection, either armor wire, copper jacket or steel tapes, a bond should be established between such metallic protection and the sheath as soon as the sheath is exposed.

6. IDENTIFYING COAXIALS AND VERIFYING DISCONNECTION OF POWER

6.02 Identifications of coaxials should be made as outlined in Sections G50.606.2 and G50.657.1 and addendum. Before working on a coaxial, it should be verified by use of a tone and exploring coil as outlined in subsequent paragraphs.

6.04 When verifying coaxials, the coaxials should be opened at the repeaters adjacent to the faulty section, and proceed as follows:

(a) Short the inner conductor to the outer conductor at one station using a D-160114 cord.

(b) Apply tone between the inner and outer conductors at the other station using a 20C or 76-type test set. If one of the stations is a main station or central office, tone may be supplied by a 6010B oscillator adjusted as follows:

(1) Set all condensers at zero.

(2) Set amplifier scale key on 35 to 3000 scale.

(3) Set oscillating coil key at 35 to 200.

(4) Start feedback resistance at 40 and reduce.

(5) Adjust to give desired output level.

(c) Identify the coaxial at the opening by use of the 79-type test set connected to a 107-type amplifier. Some 60-cycle power induction may be heard, but no difficulty should be experienced in definitely locating the coaxial to be identified.

6.06 After the coaxials have been identified as outlined in Paragraph 6.02 and 6.04, a further test should be made on each coaxial that is to be worked on, as an additional precaution that the proper coaxial has been selected.

(a) Crimp the identified non-working coaxial with diagonal pliers near the center of the coaxial sleeve if at a splice, or at the point where the coaxial is to be opened at other than a splice. In the case of a splice, reference should be made to the practices covering the particular type of coaxial sleeve that is to be crimped to avoid contact with an insulating disc under the sleeve.

The crimping should be done firmly to insure that the outer and inner conductors of the coaxial are shorted together.

(b) Having the coaxial cleared at one repeater station and tone sent from the other station, by applying the exploring coil to the coaxial, the tone should be heard on the section between the crimped point and the source, and very little tone heard beyond the crimped point toward the cleared end.

(c) No coaxial shall be opened until it has been identified visually as indicated in Paragraph 6.02 and the condition as outlined in this Paragraph and Paragraph 6.04 met.

8. TEST CONNECTIONS AT REPEATERS

8.03 The D-159169 cord illustrated in Paragraph 8.03 is now designated as a P2AT cord.

8.04 The D-159171 cord illustrated in Paragraph 8.04 is now designated as a P2AU cord.

8.05 The cord referred to in Paragraph 8.05 is at present coded D-160114 as shown in the illustration.

8.06 The D-159172 cord illustrated in Paragraph 8.06 is now designated as a W2CT cord.

9. MAKING REPAIRS AND TESTING COAXIAL CABLE

9.01 The method of opening and closing coaxials in the splice or at points between splices, the splicing procedure, and the use of the high voltage test set in clearing slivers are covered in other sections of the practices.

11. CLOSING AND PRESSURE TESTING APPARATUS CASE

11.03 Pressure Testing

(5) After completion of the pressure test, the pressure in the apparatus case shall be released so that it cannot be read on the gauge. A pressure reading may be obtained, if a reading is made with a gauge at a later date; this is due to increases in temperature in the apparatus following restoration of power to the repeater, and should not be mistaken for a leak in a cable terminal.