BELL SYSTEM PRACTICES
Outside Plant Construction
and Maintenance

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CABLE SPLICING—GENERAL
SOLDERED TWISTED JOINTS

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1. GENERAL

1.01 This section lists the twisted joints that should be soldered, and covers the methods of soldering.

2. REASONS FOR SOLDERING

2.01 Certain twisted joints are soldered for the following reasons:

(a) To prevent resistance unbalances which would change the electrical characteristics of important circuits.

(b) Large difference in gauge which makes it difficult to obtain a tight twist.

(c) To insure a satisfactory joint where the twists may develop corrosion films because of exposure to rubber insulation.

3. LIST OF TWISTED JOINTS TO BE SOLDERED

3.01 Twisted joints shall be soldered in accordance with the following:

(a) Quadded conductors regardless of gauge. This does not apply to a quadded stub cable from a loading coil case that is spliced to a non-quadded cable that does not require soldering.

(b) All conductors, paired or quadded, that are intended for J, K or other type carrier circuits.

(c) All conductors, paired or quadded, that are associated with the control or operation of coaxials or spiral-four disc-insulated quads.

(d) All joints containing one or more 10, 13, 14 or 16-gauge conductors.

(e) All joints containing one or more rubber insulated conductors.

(f) Non-quadded low capacitance 19-gauge conductors when specified on the detailed plans.

(g) Conductors, regardless of gauge, specifically assigned to radio program or tone channel circuits if the assignment is known in advance of the splicing.

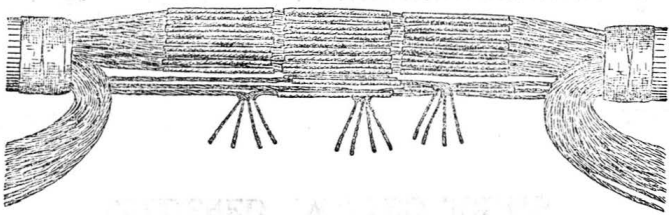
(h) Straight or butt joints between a 19-gauge conductor and a 26 or 28-gauge conductor.

(i) If a bridge wire is added to a soldered straight or butt joint, it is necessary to resolder the joint.

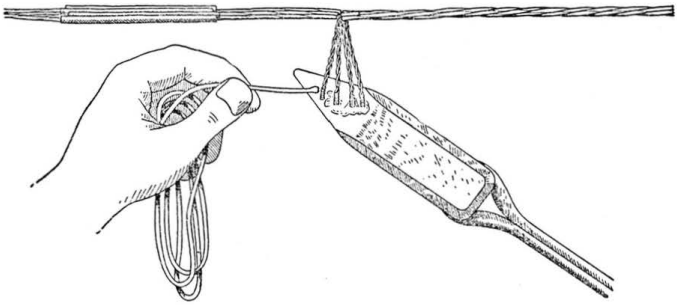
4. METHOD OF SOLDERING

4.01 If only a few conductor joints are to be soldered it can be done using High Content Rosin-core or Stearine-core solder. If a large number of joints require soldering it should be done with Low Content Rosin-core solder.

4.02 If possible, the twisted joints should be made on at least six pairs or three quads, distributed along the splice as shown in the following illustration:



4.03 The soldering should be done with a clean, well tinned soldering copper. If a large number of joints require soldering it is desirable to use the chisel point soldering copper. The solder should cover at least 1/4 inch of the end of the pigtail. It will generally be practicable to heat several pigtails as a group with the copper as shown below:



4.04 Solder should be applied to each pigtail but all of the pigtails in the group should be retained on the copper until the last one has been soldered. Excess solder is removed by raising the pigtails on the copper and allowing them to snap back. If the pigtails are located in the upper portion of the splice a muslin pad or a piece of cardboard should be placed below and behind the pigtails so that particles of solder will not be caught in the spliced conductors.