

BELL SYSTEM PRACTICES
Outside Plant Construction
and Maintenance

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AT&T Co Standard

CABLE SPLICING—GENERAL
VIDEO PAIRS

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1. GENERAL

1.01 This section describes the splicing of shielded video pairs. This pair consists of two 16-gauge conductors, each insulated with a spiral polyethylene string and a wrapping of 1/2-inch polyethylene tape. The pair is covered with a spiral layer of 7/8-inch polyethylene tape, twisted strings of the same material being used as fillers. On top of this is placed a shield consisting of one longitudinally applied copper tape followed by one spirally wrapped copper tape.

1.02 If the cable contains paper-insulated video pairs should be wrapped separately with muslin in the usual manner. If the cable contains coaxial conductors, they should be spliced first. After the video pairs are spliced they should be wrapped with polyethylene and muslin as outlined in the section on coaxial splicing.

1.03 Cables containing video pairs must not be boiled out with paraffin, as the polyethylene tapes and strings will be damaged.

1.04 This section is reissued to show the method of carrying the new longitudinal copper shield across the splice and to include the change from pressed joints to soldered joints.

2. MATERIALS

2.01 The materials listed below are required in addition to those generally carried by splicers.

Sleeve, Copper, Tinned, No. 16: Two required per pair. For joining conductors.

Strap, Lead, 1/2-in. x 1/16-in.: For fastening D Warning Tag to lead sleeve.

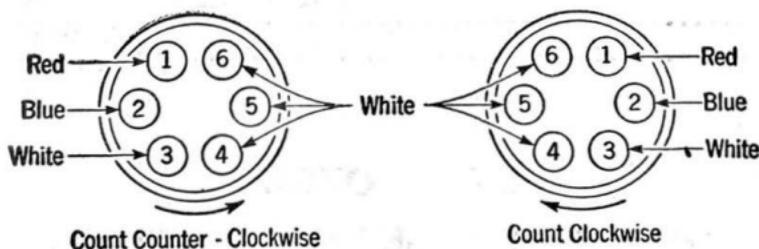
Tag, Warning, D: To be attached to sleeve to indicate that the cable contains video pairs.

Tag, Coaxial, B: The tags are stamped 1, 2, 3-8 and are supplied on clips of 50 like-numbered tags for identifying individual video pairs in splices. Orders therefore should be placed in multiples of 50.

Tubing, Transflex: Available in 3-foot lengths in No. 5 and No. 2 sizes. (The No. 5 size is used to insulate the No. 16 Tinned Copper Sleeve in straight splices and the No. 2 size is used for insulating twisted joints in butt splices.)

3. ASSOCIATING VIDEO PAIRS

3.01 The video pair count in the cable is determined from the color of the binding strings on the paper wrapper of each pair. Starting at the red binding string, the video pairs are numbered in the direction of the blue binding string as illustrated below.



3.02 The pairs should be marked on each side of the splice with B Coaxial Tags for identification purposes. If there are more than 8 video pairs linen tags can be used to mark the higher numbered pairs. *See Add*

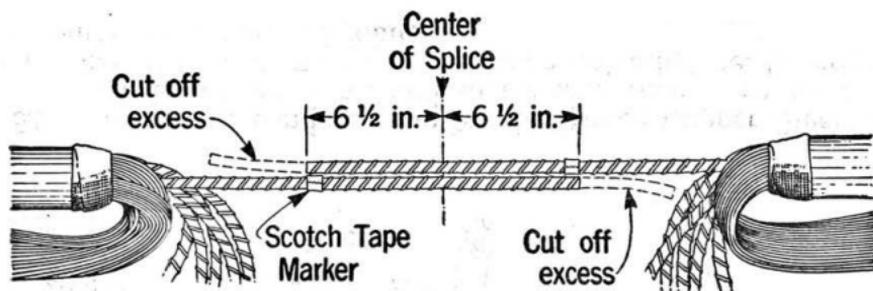
3.03 Pair No. 1 on the left-hand side should be spliced to Pair No. 1 on the right-hand side, etc. The cable should not be twisted to bring like-numbered pairs opposite each other.

4. PREPARATION OF CABLE

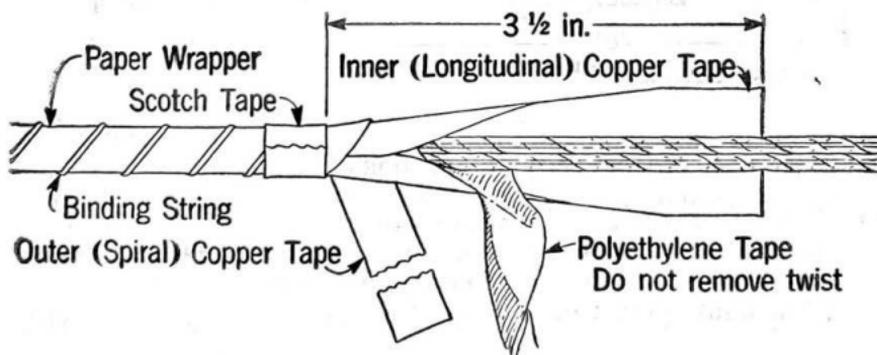
4.01 Where video pairs are combined with other conductors the size of the opening will be determined by the number and kind of other conductors but in no case should the opening be less than 17 inches. The cable should be prepared for splicing in the usual manner.

5. STRAIGHT SPLICE

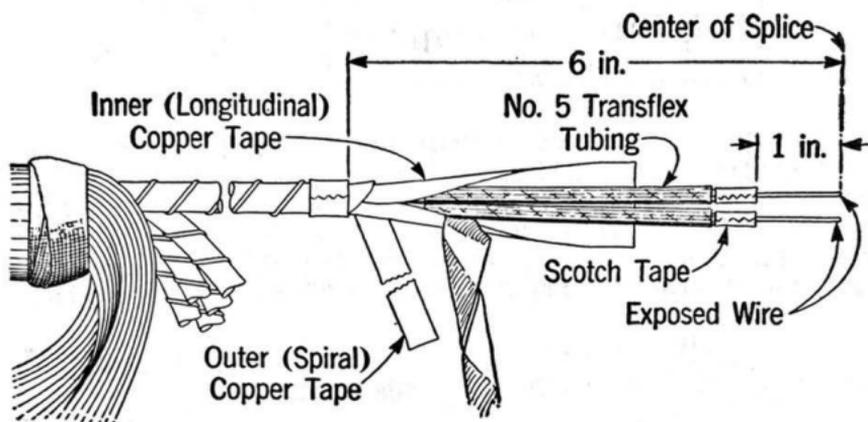
5.01 Select two like numbered pairs, place tape markers on each, and cut off the excess length of each pair as indicated below. The resultant overlap will provide the copper and polyethylene tape required for subsequent wrapping operations.



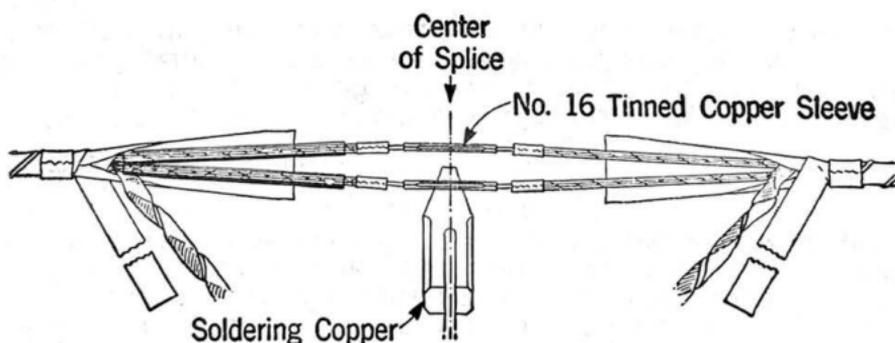
5.02 Remove the paper wrapper back to the scotch tape marker. Unwind the outer (spiral) copper tape, and open and cut off the inner (longitudinal) copper tape as indicated below. Then unwind the 7/8-inch polyethylene tape. Cut off and remove the polyethylene string fillers. Do not cut outer copper tape or 7/8-inch polyethylene tape.



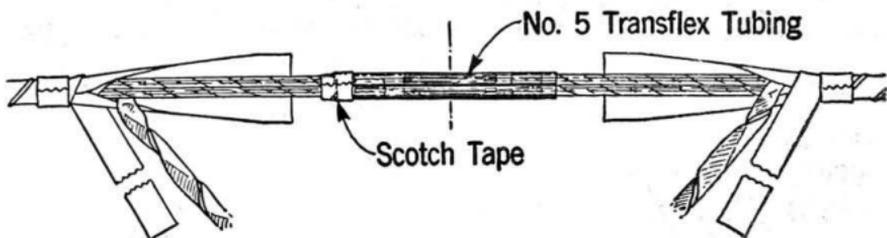
5.03 Cut off conductors 6 inches from scotch tape markers. Place two turns of 1/2-inch scotch tape over the polyethylene tape on each conductor as indicated below and remove 1 inch of the polyethylene tape and the underlying polyethylene string to the scotch tape. Place a 3-1/2-inch length of No. 5 Transflex Tubing over each conductor on the left side as illustrated.



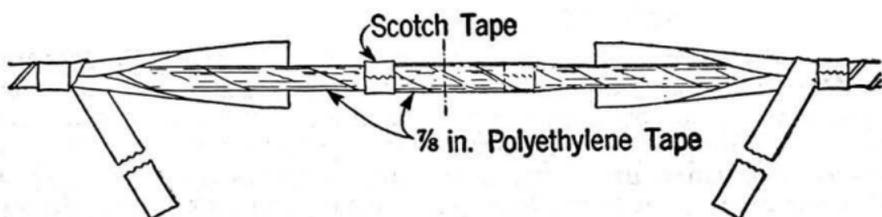
5.04 Insert the conductors in No. 16 Tinned Copper Sleeves as illustrated below and solder with rosin core solder. Avoid excessive heat which may damage polyethylene. Remove any burrs from soldered joints.



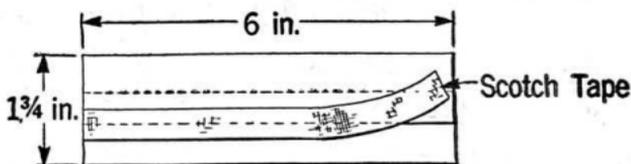
5.05 After the joints cool, slide the transflex tubing over the conductors, centered on the copper sleeves, and secure the tubing against longitudinal movement with two turns of scotch tape placed over one end as illustrated below.



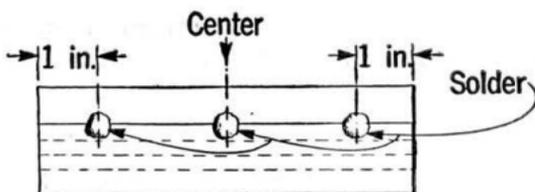
5.06 Rewind the 7/8-inch polyethylene tape on the left side smoothly over the pair to the far end of the transflex tubing and secure the end with scotch tape. Then rewind the polyethylene tape on the right side over the pair in a similar manner as shown below.



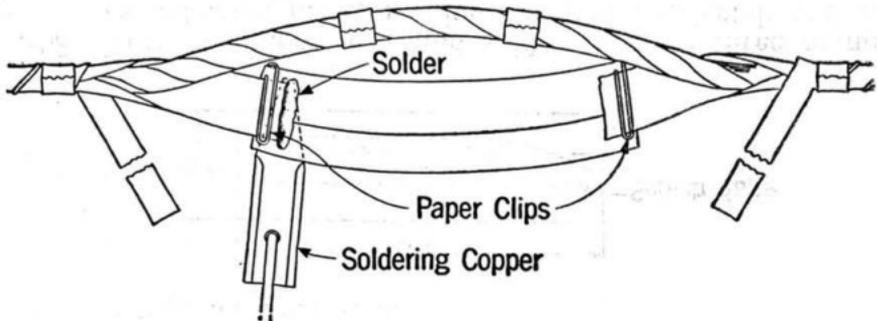
5.07 Cut two strips of the inner copper tape 6 inches long and flatten them, then lay the strips together with a 1/4-inch overlap and secure them temporarily with a length of scotch tape as illustrated.



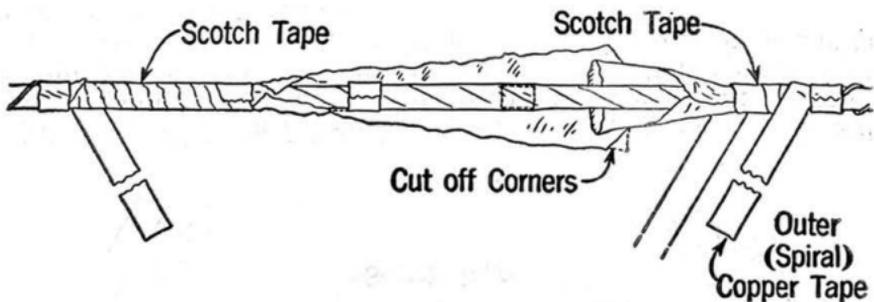
5.08 Turn the tapes over and solder them at three points as indicated below making the joints as small and as flat as practicable. Then remove the scotch tape.



5.09 Position the prepared copper strip under the longitudinal copper tapes holding it in position at each end with a test clip or preferably with a paper clip. Then solder with the iron held as indicated below to avoid contact with the polyethylene. Keep the soldered joints flat to facilitate the subsequent folding of the tapes.



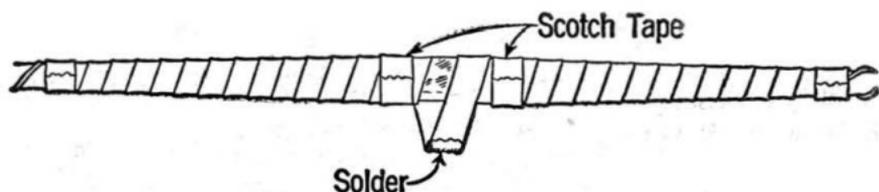
5.10 Cut off the corners of the center strip as shown below. Starting at the scotch tape marker on the left side of the splice restre the longitudinal inner tape to its original lay, in 1/2 to 1-inch steps, making as much of an overlap as practicable. The longitudinal tape on the right side should then be restored in a similar manner, as illustrated below. Care should be taken to ensure a complete closure of the copper so that the underlying polyethylene is entirely covered.



5.11 Fold the prepared center strip around the splice as smoothly as practicable as illustrated on page 7.



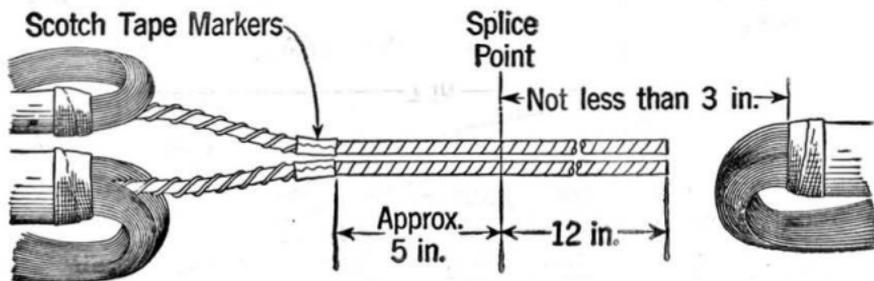
5.12 Rewind the outer (spiral) copper tapes as smoothly as practicable to the center of the splice and secure the ends with scotch tape. Cut off the tapes about 1 inch out from the splice. Then remove an additional 1/8 inch of the upper tape, fold the lower tape over the upper tape and solder as indicated below. Wrap the ends of the tape smoothly over the splice with the soldered joint to the outside and secure with scotch tape.



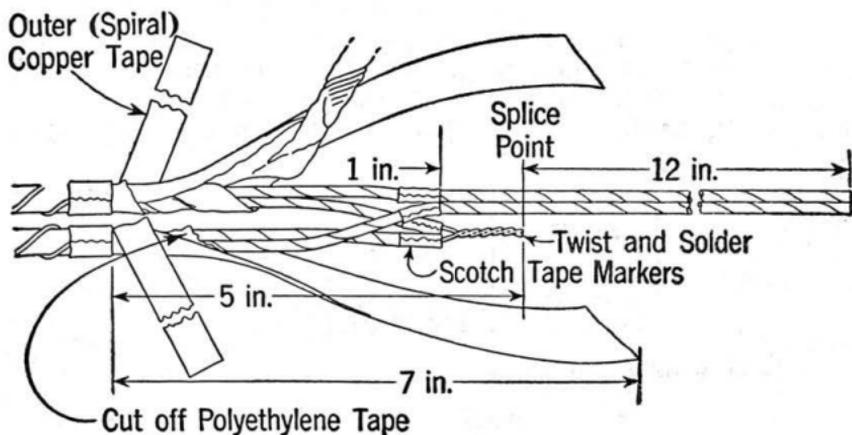
5.13 Starting at the tape collar at the left side of the splice, apply a half-lapped layer of scotch tape across the splice to the tape collar on the right side.

6. BUTT SPLICE

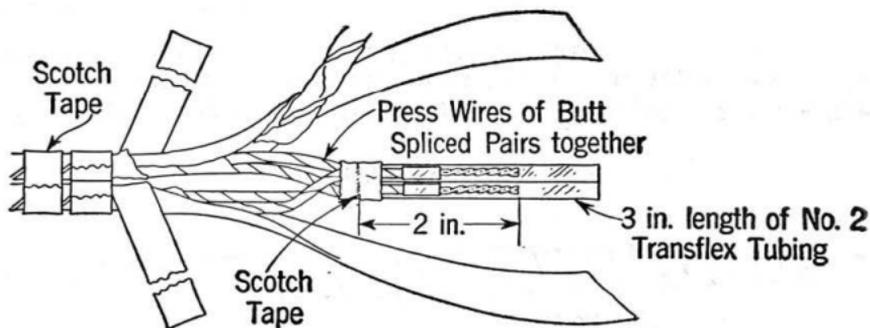
6.01 Position the pairs and place scotch tape markers as shown below.



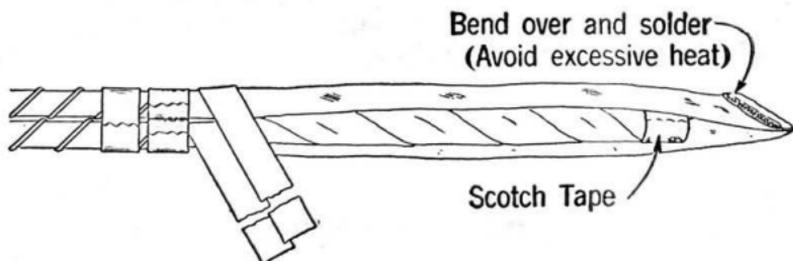
6.02 Prepare and splice each pair as shown below. Pairs should be positioned with the inner (longitudinal) tape on opposite sides of the splice. Twist the conductors together and solder as indicated on page 8. Cut off 7/8-inch polyethylene tape on lower pair at the butt.



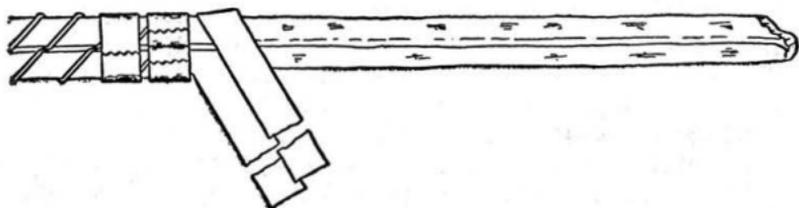
6.03 Tape pairs together at butt as indicated. Slide the transflex tubing over the spliced conductors and secure the inner ends with scotch tape as shown below.



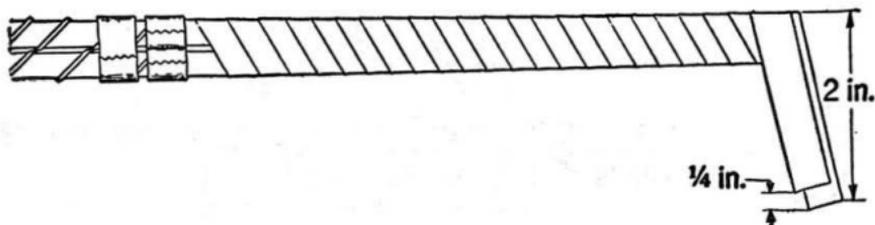
6.04 Wrap the 7/8-inch polyethylene tape over both pairs and secure with scotch tape. Lay the inner (longitudinal) tapes across the splice, cut 1/4-inch off the upper tape, fold the lower tape over the upper tape, and solder as indicated below.



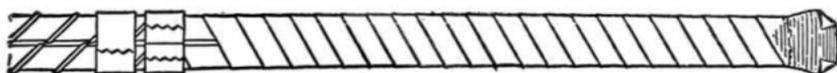
6.05 Fold the upper tape around the splice, then fold the lower tape around the splice, overlapping the upper tape on each side. Bend in corners at end.



6.06 Rewind outer (spiral) tapes to end of inner tapes, cut off ends as indicated below, fold over, and solder.



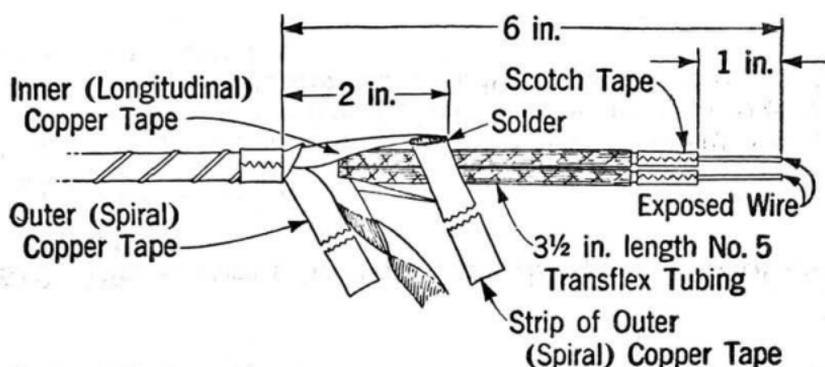
6.07 Flatten end of tube formed by copper tapes and fold in corners.



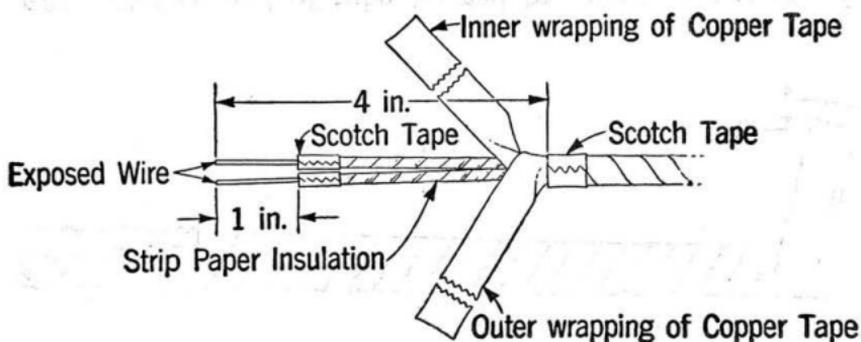
6.08 Wrap entire splice with one half-lapped layer of scotch tape.

7. TERMINAL SPLICE

7.01 Prepare cable pair as illustrated on page 10. Solder a strip of the outer (spiral) copper tape to the inner (longitudinal) tape approximately 2 inches from the scotch tape marker as indicated. *See P20*



7.02 Prepare the paper insulated 19-gauge terminal stub cable conductors as shown below.



7.03 Join and solder the conductors using No. 16 Tinned Copper Sleeves and slide the transflex tubing over the splice as illustrated in Paragraphs 5.05 and 5.06. Rewind the 7/8-inch polyethylene tape from the cable pair covering the transflex tubing. Close the exposed longitudinal tape as shown in Paragraph 5.11. Wind the inner spiral tapes across the splice as illustrated in Paragraph 5.12 and solder them about 1 inch to the left of the center of the splice. After soldering wrap the tape ends over the splice with the soldered joint on the outside, and secure with scotch tape. Rewind, solder and tape the ends of the outer spiral tapes in a similar manner terminating them 1 inch to the right of the center of the splice. Then cover the pair with one half-lapped layer of scotch electrical tape extended back to the scotch tape markers on the paper core wrapper at each end.

8. 2A PRESSURE PLUG

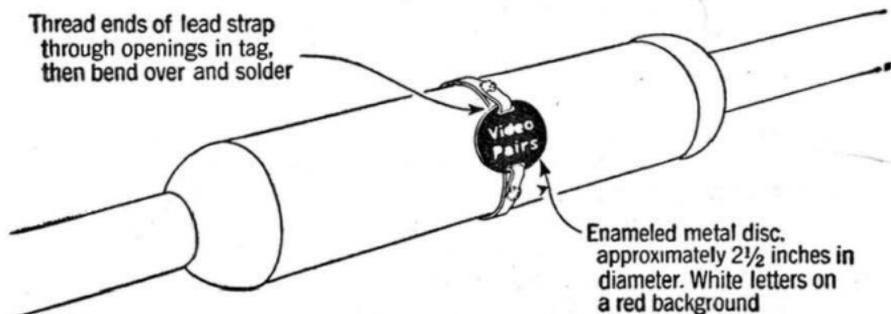
8.01 The stub cable on the 2A Pressure Plug is the same as the terminal stub cable outlined in Paragraph 7 and should be prepared and spliced to the main cable conductors in a similar manner.

9. CONNECTIONS TO SUPERSEDED VIDEO PAIRS

9.01 The original video pairs were made with two spirally wrapped copper tapes. In joining them to the present standard pair having one longitudinal and one spiral tape, follow the procedures outlined in Paragraph 5 except that the shielding should be applied spirally across the splice as illustrated in Part 7.

10. IDENTIFYING SPLICES

10.01 If the cable contains coaxial and video pairs the coaxial cable tag should be placed on the sleeve. If no coaxial pairs are in the cable the video pair tag shall be placed on the sleeve as illustrated below.



See # 1 d