

BELL SYSTEM PRACTICES
Outside Plant Construction
and Maintenance

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REPAIRING CABLE — AERIAL
TORCH METHOD OF REPAIRING SHEATH

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1. GENERAL

1.01 This section covers the use of the acetylene torch in repairing sheath defects in aerial cable and running seams in repairing aerial cable by the split sheath method.

1.02 Repair operations with the torch should be done only while working from a ladder, ladder platform, truck platform ladder or aerial platform. The torch apparatus should be raised and lowered in a canvas tool bag.

2. SOLDERING SHEATH DEFECTS

2.01 The area of damage due to ring cuts, etc., should be determined and the sheath marked lightly to include a border of sheath in good condition about three-quarter inch wide around the defect. The sheath in the damaged area should be removed with an H file to a depth of about one-half the thickness of the sheath, sloping the cut gradually to the outer edge of the damaged area. The three-quarter inch area of good sheath should be cleaned with a carding brush. The prepared sheath should then be coated with stearine.

2.02 Before lighting the torch, the needle valve in the torch handle should be closed and the cylinder valve opened about two turns. Then open the needle valve in the handle slowly and ignite the gas with the friction lighter, turning the valve until the flame is of the desired length. The cylinder valve should be closed at the end of each day's work.

2.03 Apply the flame to the sheath with a brushing motion, being careful to avoid concentrating the heat in one spot. Do not permit the blue tip of the flame to come in contact with the sheath.

2.04 Hold the solder in contact with the sheath and heat with a brushing motion of the flame until the solder flows and adheres to the sheath. The sheath is tinned by gentle heating around the adhered solder. After the cleaned area has been tinned, build up the repair with solder, heating the solder and sheath as required, until sufficient solder has accumulated. The center of the patch should be built up about 1/32 to 1/16 inch above the level of the good sheath, depending on the size of the cable, and tapering to the level of the good sheath at the outer limits of the solder patch. Excess solder should be removed with a small wiping cloth. Do not remove solder with a file. After the excess solder has been removed, apply heat to the patch to fill any pores that may have developed in removing the excess solder. Solder Sealer may be applied to minimize porosity.

3. RUNNING SEAMS

3.01 The top edges of the sheath along the seam should be beveled with a shave-hook, before the sheath is reformed around the core. The depth of the bevel should be about two-thirds the thickness of the sheath.

3.02 Prepare a piece of lead serving tape approximately 1/4 inch longer than the slit and from 3/8 inch to 1 inch wide, depending on the diameter of the cable. Taper the ends to facilitate inserting the tape under the sheath at the ends of the slit. Form the tape lengthwise over the strand to the approximate shape of the core.

3.03 Place the lead tape in the opening, working the ends under the sheath. Close the sheath over the tape as much as practicable with the cable pliers, working the pliers around the cable to restore the sheath to its original shape.

3.04 After the sheath has been formed around the core, a 1/4-inch strip of sheath on each side of the seam should be cleaned with a carding brush. The cleaned area should extend about one inch beyond each end of the cut. Remove all foreign matter from the slit. The cleaned area should then be coated with stearine.

3.05 Light the torch as indicated in Paragraph 2.02.

3.06 Apply the flame to the sheath at one end of the seam with a brushing motion, for a distance of about 1-1/2 inches, being careful to avoid concentrating the flame in one spot.

3.07 Hold the solder in contact with the sheath and heat with a brushing motion of the flame until the solder flows and adheres to the sheath. The sheath is tinned by gentle heating around the adhered solder. After about a one to 1-1/2-inch section of the sheath has been tinned, build up the seam with solder, heating the solder and sheath until sufficient solder has accumulated. The center of the seam should be built up about 1/32 to 1/16 inch above the level of uncleaned sheath, depending on the size of cable, and tapering to the level of the sheath at the edge of the seam. Excess solder should be removed by heating and allowing it to run off. Solder Sealer may be applied to minimize porosity. Build up one-inch to 1-1/2-inch sections progressively until the seam has been completed.