

Splicing; Cable Terminal, Process for, Aircraft

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1. SCOPE AND CLASSIFICATION:

- 1.1 This specification is designed to present detailed procedure to be followed in splicing cable terminals. The types of cable to which this specification applies are listed in Section 2 and table I.

2. APPLICABLE SPECIFICATIONS AND DRAWINGS:

- 2.1 The following specifications and drawings of the issue in effect on date of invitation for bids shall form a part of this specification to the extent specified herein:

2.1.1 Specifications

Federal:

QQ-S-571	Solder; Soft (Tin, Tin-Lead, and Lead-Silver)
V-T-276	Thread; Cotton

Military

MIL-C-1511	Cable; Steel (Carbon), Flexible Preformed
MIL-C-5424	Cable; Steel (Corrosion-Resisting), Flexible Preformed (For Aeronautical Use)
MIL-C-6708	Compound; Exterior-Surface, Hard-Film, Corrosive-Preventive
MIL-C-6940	Cable, Single Strand Non-Flexible Carbon Steel (Preformed)

Air Force-Navy Aeronautical

AN-W-22	Wire; Zinc Coated, Soft Steel
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2.1.2 Drawings:

Air Force-Navy Aeronautical Standard Drawing

AN100	Thimble - Wire Cable
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3. MATERIAL AND EQUIPMENT:

3.1 Materials:

3.1.1 Thimbles: Thimbles shall conform to the requirements of Drawing AN100.

3.1.2 Serving Cord: Serving cord shall conform to Specification V-T-276, type 111A, 12-ply.

3.1.3 Preservative: The preservative shall conform to the requirements of Specification MIL-C-6708, type 1.

3.1.4 Serving Wire: Serving or wrapping wire shall be in accordance with Specification AN-W-22.

3.1.5 Solder: Solder shall conform to Specification QQ-S-571, class A.

3.1.6 Flux: Solder flux shall be a compound of stearic acid (free from mineral acids) and rosin of the following proportions:

Stearic acid	25 to 50%
Rosin	50 to 75%

3.2 Equipment:

The following tools (see figure 14) are recommended for use in the preparation of cable terminal splices.

3.2.1 Marlin Spike: This is a small pointed tool of oval cross-section with a screw driver handle.

3.2.2 Side Cutting Pliers: The side cutting pliers are required for clipping off the strands after splicing.

3.2.3 Splicing Clamp: A splicing clamp is useful for holding the cable in place in the thimble and in positioning the terminal during splicing operations.

3.2.4 Mallet: A rawhide or hardwood mallet is needed for hammering the splice after finishing and before serving, in order to produce a neat looking splice.

4. PREPARATION AND PROCEDURE:

4.1 Cutting of Cable:

4.1.1 Flexible Cable: The cable shall be cut to length by mechanical means only, such as a fine tooth hacksaw. The use of oxy-acetylene torches in any manner is not permitted.

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4.1.2 Non-Flexible Cable: Before cutting the cable the wires must be soldered or welded together to prevent slipping. The preferable process is to thoroughly tin and solder the cable for 2 to 3 inches by placing in a solder trough as shown in figure 15 and finishing smooth with a soldering tool. The cable may be cut diagonally to conform to the required taper finish shown in figure 16. The cable shall be cut to length by mechanical means, such as a fine tooth hacksaw, except as allowed in applicable subparagraphs under "Procedure."

4.2 Procedure:

4.2.1 Operations for Flexible Cable: The procedure for the preparation of terminal splices for flexible splices for flexible cable is described in the following paragraphs. The splice shall have five full tucks. For 1/16-inch 7 x 7 flexible steel cable, the procedure described herein for nonflexible cable may be used as an optional method.

4.2.1.1 Forming of Terminals: The cable shall be bent snugly around the proper size of thimble as specified in table I and clamped, the points of the thimble having previously been bent back at an angle of approximately 45 degrees to permit a close splice. If a regular splicing clamp is not available, the cable may be held in place on the thimble by binding with cord, as shown in the accompanying illustrations. The length of the free end of the cable should be about 8 inches for sizes up to and including 5/32-inch 7 x 19 cable. For cable of larger sizes the length should be slightly greater. The standing wire should be clamped in a vise with the free end to the left of the standing wire and away from the operator.

4.2.1.2 First Operation: Choose the free strand lying directly under the thimble points and separate it from the rest of the free ends by inserting the Marlin spike under it and spiralling the spike around the free end. The cable should then appear as in figure 1.

4.2.1.3 Second Operation: Insert the Marlin spike under the first three strands of standing cable to the right of the thimble points. Insert the loose free strand under the three standing strands, tucking from left to right. (Figure 2 illustrates the condition of the cable at this point.)

4.2.1.4 Third Operation: Choose the second free strand to the left of the thimble points and separate it from the others as before described. This wire should be the next to the left of the first free strand tucked. Insert the Marlin spike under the first two standing strands to the right of the thimble points and tuck the loose end under these two standing strands, tucking from left to right as in figure 3.

4.2.1.5 Fourth Operation: Choose the third free strand to the left of the thimble points and separate as before. Insert the Marlin spike under one standing strand to the right of the thimble points and tuck the loose free end under this standing strand, tucking from left to right. The cable now appears as in figure 4.