CONTROL CABLES - INSPECTION/CHECK

EFFECTIVITY: ALL

1. General

   A. Different environmental conditions and forms of deterioration cause many types of damage to the control cables, such as wire strands that break, wear, corrosion, kinks, and/or distortion.

   B. Very carefully examine the critical segment on which damage and wear can occur more easily, such as those segments which go through fairleads, sealing assemblies, spacers, around pulleys, and near terminals and bellcranks.

   C. The procedures in this section are given in the sequence below. The tasks identified with (♦) are part of the Scheduled Maintenance Requirements Document (SMRD).

TASK NUMBER	*DESCRIPTION*	*EFFECTIVITY*
20-20-01-200-801-A	CONTROL CABLES - INSPECTION	ALL

TASK 20-20-01-200-801-A
EFFECTIVITY: ALL

2. CONTROL CABLES - INSPECTION

A. General

(1) This task gives the inspection/check requirements for the aircraft control cables.

B. Zones and Accesses

Not Applicable

C. Tools and Equipment

ITEM	*DESCRIPTION*	*PURPOSE*	*QTY*
Commercially Available	Magnifying Glass	To inspect the control cables	

D. Auxiliary Items

ITEM	*DESCRIPTION*	*PURPOSE*	*QTY*
Commercially Available	Dry Cloth	To do an inspection on the control cables	AR
Commercially Available	Gloves	To protect the hands	AR
Commercially Available	Brush	To apply the corrosion preventive to the cables	AR

E. Consumable Materials

SPECIFICATION (BRAND)	*DESCRIPTION*	*QTY*
MIL-C-16173 Class 1, Grade 3	Esgard PL-3	AR

F. Expandable Parts

Not Applicable

G. Persons Recommended

QTY	*FUNCTION*	*PLACE*
1	Does the task	On the aircraft

H. Inspect Control Cables (Figure 601)

SUBTASK 212-002-A

WARNING: USE GLOVES TO DO THE INSPECTION AND BE CAREFUL WITH YOUR HANDS WHILE THE CABLES ARE MOVED.

CAUTION:
- DO NOT USE ABRASIVE CLOTH OR SOLVENTS TO CLEAN THE CABLES. THIS CAN MAKE THE CORROSION PROCESS AND WEAR FASTER BY THE REMOVAL OF THE CABLE INTERNAL LUBRICANT.
- DO NOT USE GREASE OR OTHER PRODUCTS TO LUBRICATE THE CONTROL CABLES.

(1) Installed Cable Inspection.

(a) Examine the cables for broken wires with a cloth moved along the length of the cable.

1 This will clean the cable for a visual inspection and find broken wires if the cloth catches on the cable. When snags are found, use a magnifying glass to carefully examine the cable. Remove the cable and refer to the criteria described in Step (2) (a).

NOTE: Move the cable to full travel in the two directions to examine the cable around pulleys, pressure seals, and grommets.

(b) With a magnifying glass, examine the cable for external wear.

1 Replace flexible and nonflexible cables when the individual wires in each strand appear to blend together (outer wires worn 40 to 50 percent) (Figure 603).

NOTE: Move the cable to full travel in the two directions to examine the cable around pulleys, pressure seals, and grommets.

(c) Do a visual inspection of the turnbuckles. Make sure that the turnbuckles show no signs of:

- Mechanical damage.
- Unsatisfactory installation.
- Surface corrosion.
- Damage to the surface finish.
- Loose of missing items.
- Surface contamination.

(2) Visual Inspection with Removed Cable.

(a) Bend the cable to examine it for external strand broken wires (Figure 601).

1 5/32 in and 1/8 in diameter 7 x 19 control cables are removed from service when one of these conditions are found:

- Four wires are broken in 6 continuous inches of cable.
- More than six broken wires occur in the total cable between the two cable terminals.
- Corroded cable with one broken wire.

- Wear region with one broken wire.

2 3/32 and 1/16 in diameter 7 x 7 control cables are removed from service when one of the following conditions are found:

- Two wires are broken in 6 continuous inches of cable.
- More than three broken wires occur in the total cable between the two cable terminals.
- Corroded cable with one broken wire.
- Wear region with one broken wire.

(b) With a magnifying glass, visually examine the cable for internal wear and corrosion.

1 To examine the cable for internal wear , untwist the cable and move the strands lightly apart, specially in the portions of the cable which go over pulleys and bellcranks (Figure 602).

2 To examine the cable for corrosion, it is necessary to bend it and lightly move the strands apart to correctly examine it for internal strand corrosion, where this condition is most clear. Be careful specially with the cable portions in the battery compartments, wheelwells, etc. where concentrations of corrosive fumes, vapors, and liquids can accumulate.

Corrosion on the interior strands of the cable constitutes failure, and you must replace the cable.

(c) Bend the cable to examine it for external wear.

Replace flexible and nonflexible cables when the individual wires in each strand appear to blend together (outer wires worn 40 to 50 percent) (Figure 603).

(d) Stretch the cable out to make sure that there is no kink on it.

Kinks on the cable are a failure. If there are kinks, you must replace the cable (Figure 604).

(e) Examine the cable attachment at the end loops for general conditions.

(3) Check Related to Control Cable Hardware.

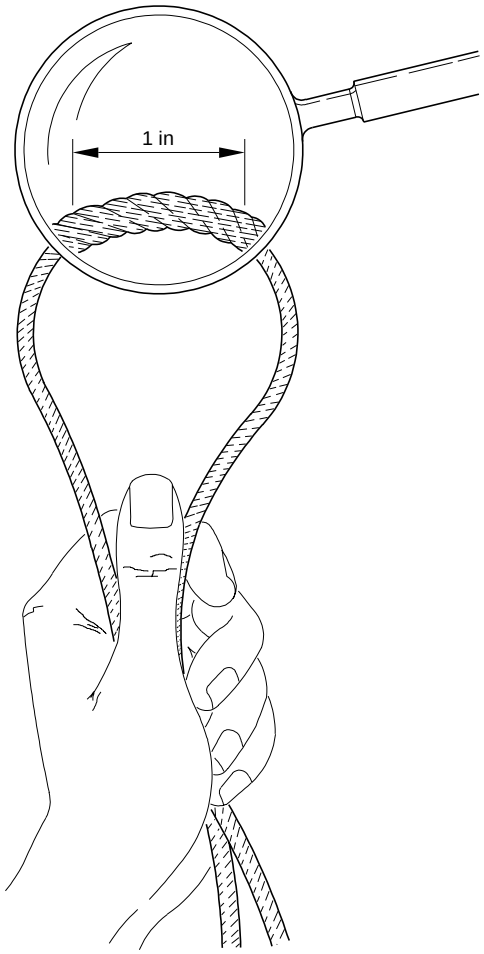
(a) Make sure that the cables do not touch the pulley or quadrant flanges for the total cable travel.

(b) Make sure that the cables are 2 degrees minimum in the plane of pulley or quadrant.

(c) Make sure that the cables are not deflected by fairleads, rub strips, air-pressure seals, or grommets from rigged or usual operation position.

(4) (ON AIRCRAFT WITH CONTROL CARBON−STEEL CABLES) Apply a thin layer of Esgard PL-3, with a brush, along the control cables.

EFFECTIVITY: ALL
Cable Inspection Technique
Figure 601



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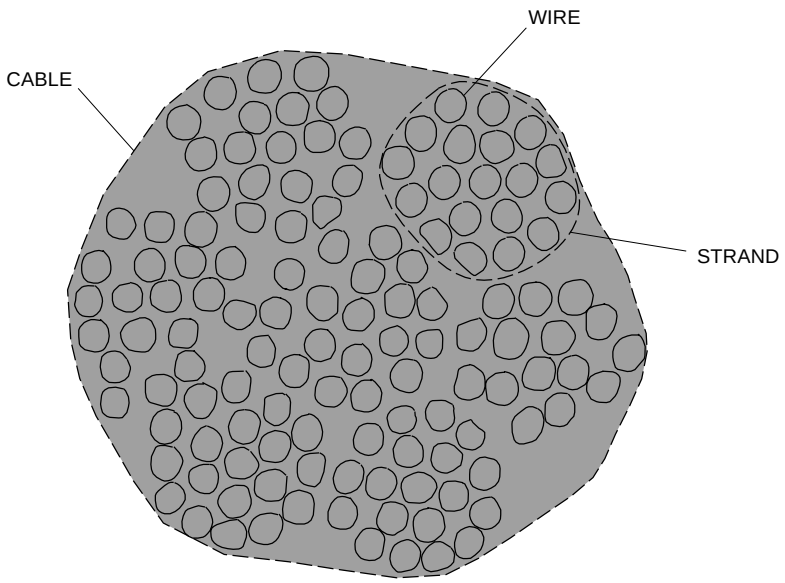
EFFECTIVITY: ALL
Internal Cable Wear
Figure 602



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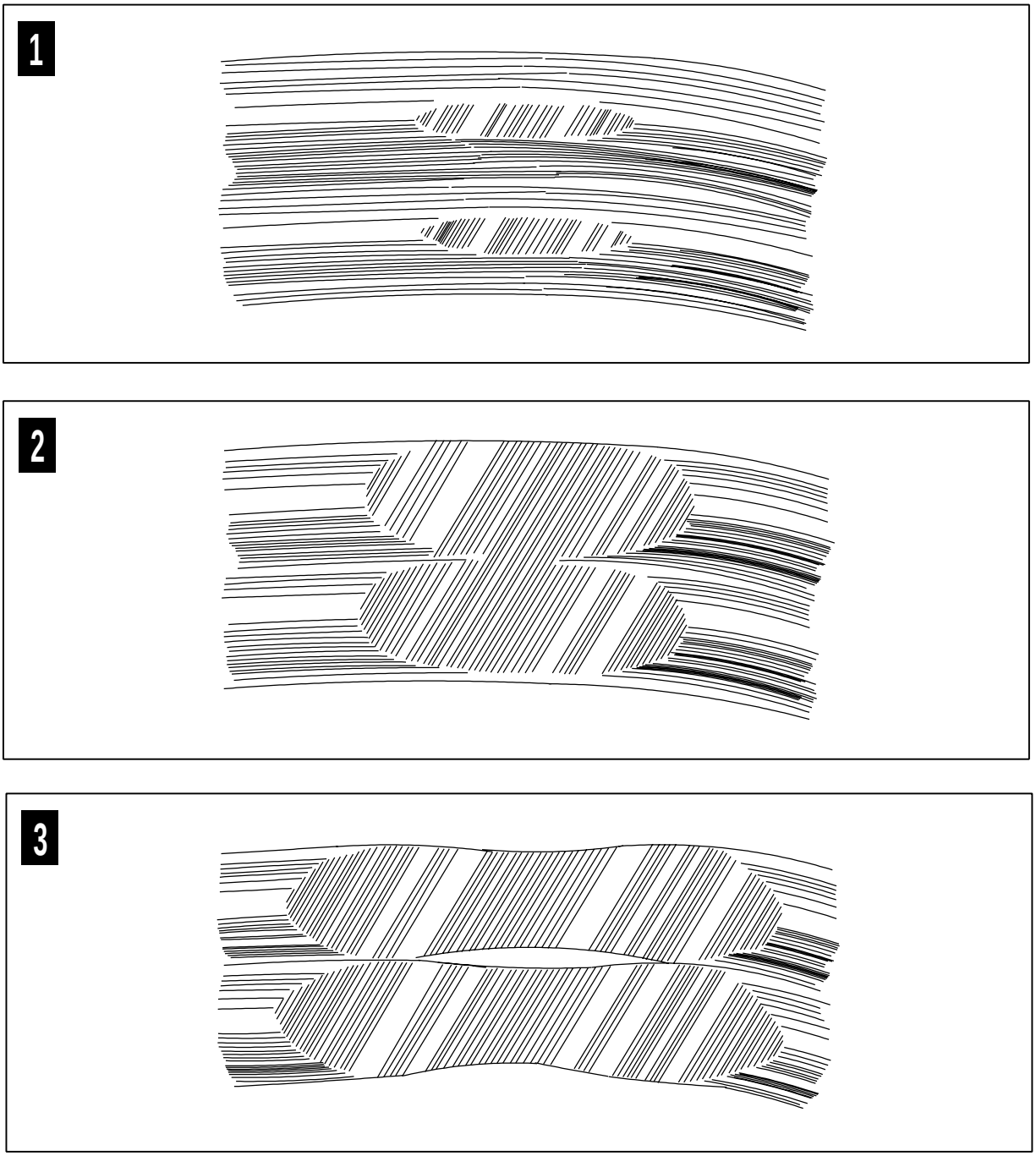
EFFECTIVITY: ALL
External Cable Wear
Figure 603



1 − WEAR OF OUTER WIRE IS LESS THAN 40% OF ITS CROSS SECTION AND THE WORN AREAS ARE NOT BLENDED.

2 − WEAR OF OUTER WIRE IS FROM 40% TO 50% OF ITS CROSS SECTION AND THE WORN AREAS ARE BLENDED.

3 − WEAR OF OUTER WIRE IS MORE THAN 50% OF ITS CROSS SECTION AND THERE IS VISIBLE SPACE BETWEEN WIRES.

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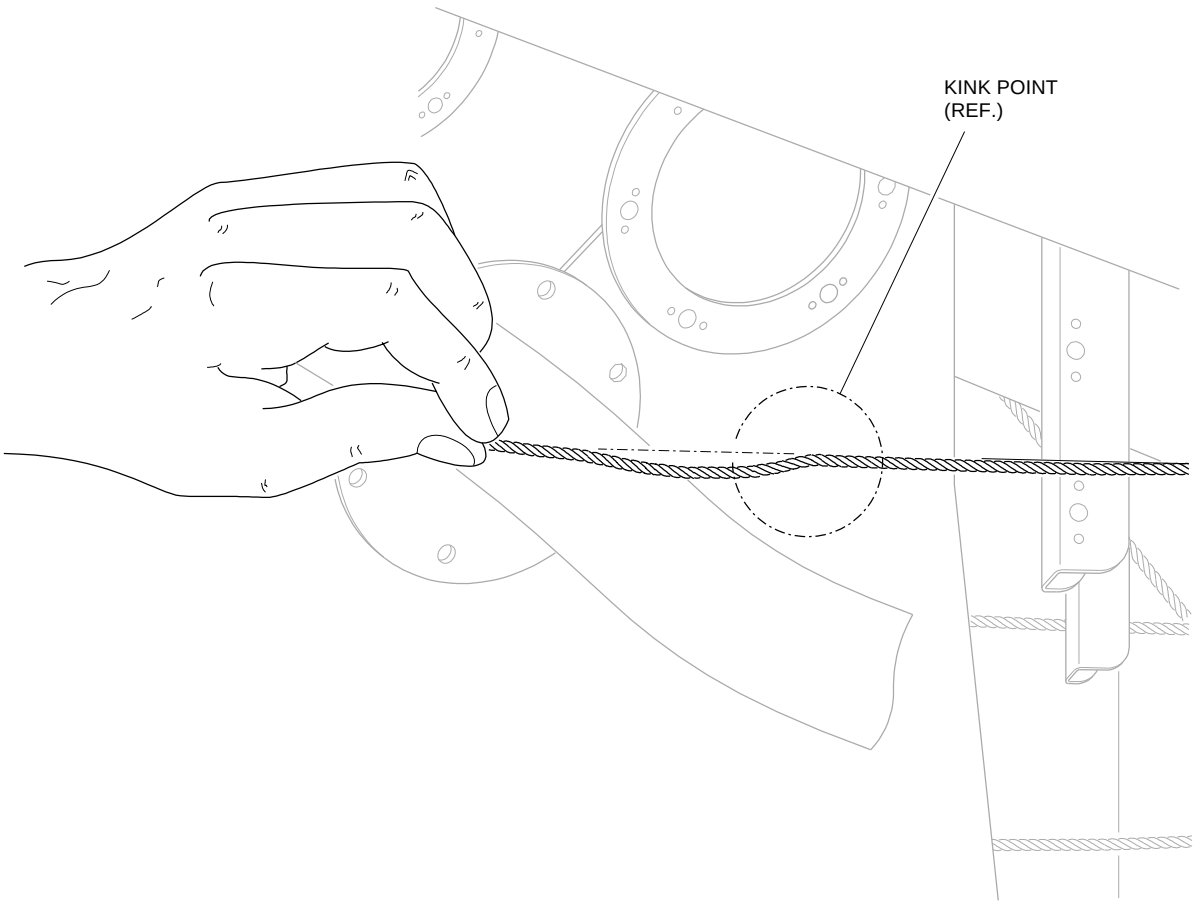
EFFECTIVITY: ALL

Cable with Kink
Figure 604



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