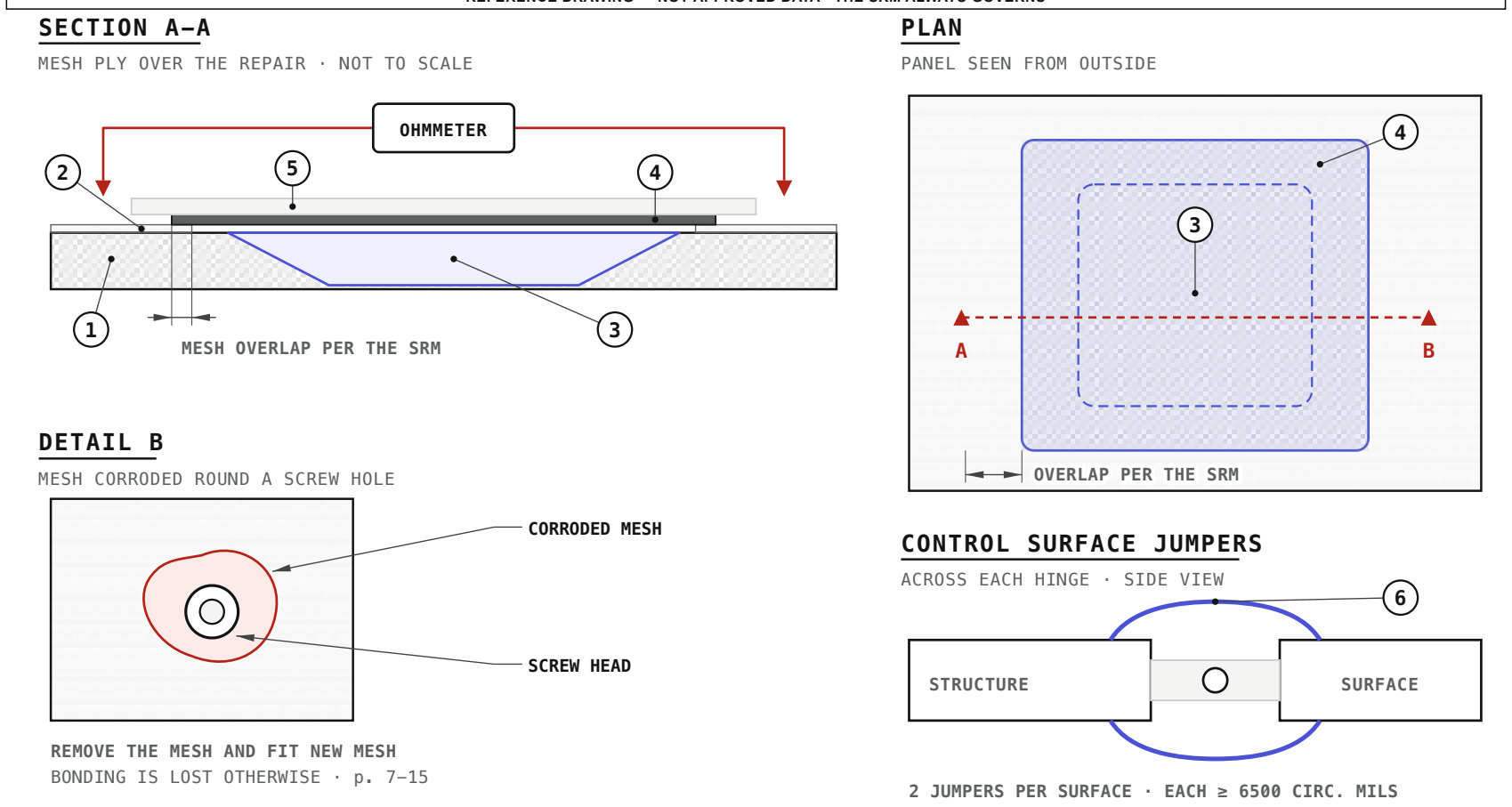
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# Lightning Strike Protection Repairs: Restoring the Conduction Path

Why the layer is there · conductive materials · restoring and checking the path · hinge jumpers

REFERENCE DRAWING — NOT APPROVED DATA · THE SRM ALWAYS GOVERNS




**PARTS LIST**

| # | PART | NOTE | SOURCE |
|---|---|---|---|
| 1 | Parent laminate | Not conductive through the ply | p. 7-6 |
| 2 | Original mesh | Copper or aluminium mesh, foil, coated cloth | p. 7-6 |
| 3 | Repair plies | Structure first, to the SRM | p. 7-37 |
| 4 | New mesh ply | Approved material, overlaps the old mesh | pp. 7-6, 7-39 |
| 5 | Finish | Conductive coating and paint, approved system | p. 7-37 |
| 6 | Jumper | Bonds a control surface across its hinge | AC 11-193 |

**NOTES**

1. Dimensions in inches. Do not scale: the SRM sets the values.
2. For reference. The applicable manual always governs.
3. Based on FAA-H-8083-31B ch. 7.

**REVISIONS**

| REV | DESCRIPTION | DATE |
|---|---|---|
| A | First issue | 2026-10-30 |

The Aviation Point. Structural repair reference

| TITLE | | | |
|---|---|---|---|
| Lightning protection | | | |
| DRAWING NO. | REV | SCALE | SHEET |
| TAP-DWG-030 | A | NTS | 1 OF 1 |
| APPLIES TO | | | |
| Composite skin | | | |

DO NOT SCALE DRAWING

Section, plan, corroded mesh, hinge jumpers and parts list, after FAA-H-8083-31B pp. 7-6, 7-15, 7-35, 7-37, 7-39 and AC 43.13-1B 11-193.

## Conductive layers you will meet

| Material | Where | Watch for |
|---|---|---|
| Copper mesh | Fabric or prepreg layer at the surface (handbook figure 7-8) | Approved material only |
| Aluminium mesh | Fine mesh in many fibreglass and aramid parts (figure 7-9) | Corrodes round bolt and screw holes |
| Nickel-coated graphite cloth | Surface ply, wet layup or prepreg | Same layup rules as the plies |
| Aluminized fibreglass | Surface ply | Check it is the specified type |
| Conductive paint or coating | Top finish over the laminate | Goes back after the repair |
| Bonded strips | Radomes: strips on the outside | High resistance from shorts in the strips or fittings; strips disbonding |

## Key points

- **Carbon is about 1,000x more resistive than aluminium;** epoxy about 1,000,000x through the skin.
- **Two jobs per repair:** strength and conductivity.
- **Approved materials only**, including sealants, potting and adhesives.
- **Strip the finish** and conductive coating 1 in or more beyond the taper.
- **Mesh ply** goes on after the plies, overlapping the old mesh as the SRM says; then finish.
- **Ohmmeter test** across the repair against the SRM minimum.
- **Hinge jumpers:** at least two per surface, each 6500 circular mils or more; 40,000 where arcing is possible.

## Step by step

1. Map the damage, including heat and burn marks round the strike point.
2. Strip finish and conductive coating beyond the taper.
3. Repair the structure to the SRM; cure.
4. Lay the approved mesh ply or conductive layer, overlapping the old one.
5. Finish coat with the approved system.
6. Ohmmeter test across the repair; record it.
7. Check hinge jumpers and strips where the part has them.

**SOURCES** · FAA-H-8083-31B, AMT Handbook — Airframe, Volume 1, Chapter 7 · AC 43.13-1B, Change 1, Chapter 11, Section 15, Grounding and Bonding

SCAN · OPEN THIS GUIDE
theaviationpoint.com/composites/lightning-protection/



Educational reference only, not approved data. Always consult the applicable SRM, AMM, or AC 43.13-1B and your certifying authority.

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