

Chapter 57

Wings

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57-00-00

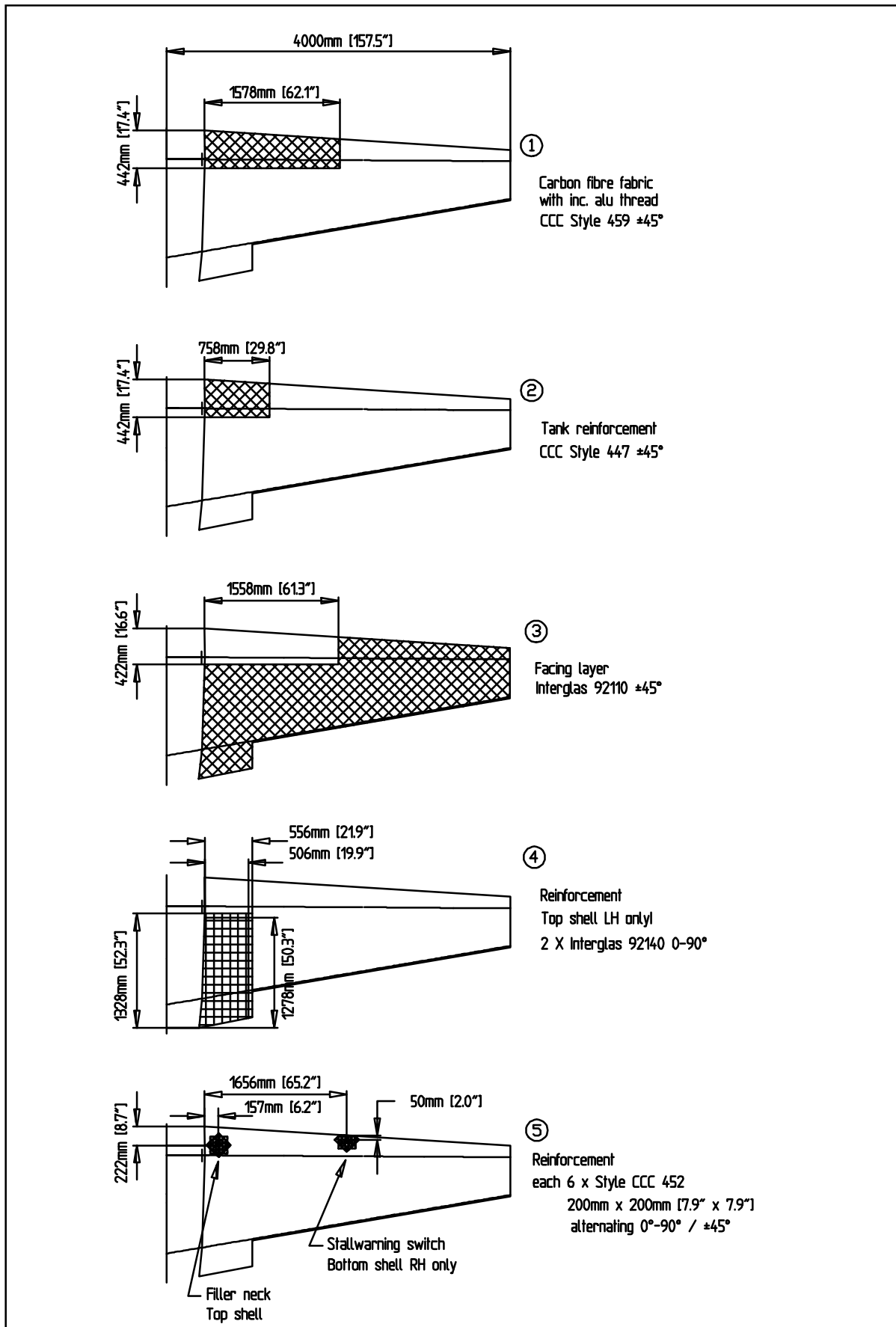
GENERAL

The wing consists of a one-piece, dual chamber main spar with carbon fibre roving caps and carbon fibre webs. For the spar core PVC foam is used. The wing shells are a honeycomb sandwich construction with carbon fibre laminates. To prevent buckling of the shells, plywood ribs are used.

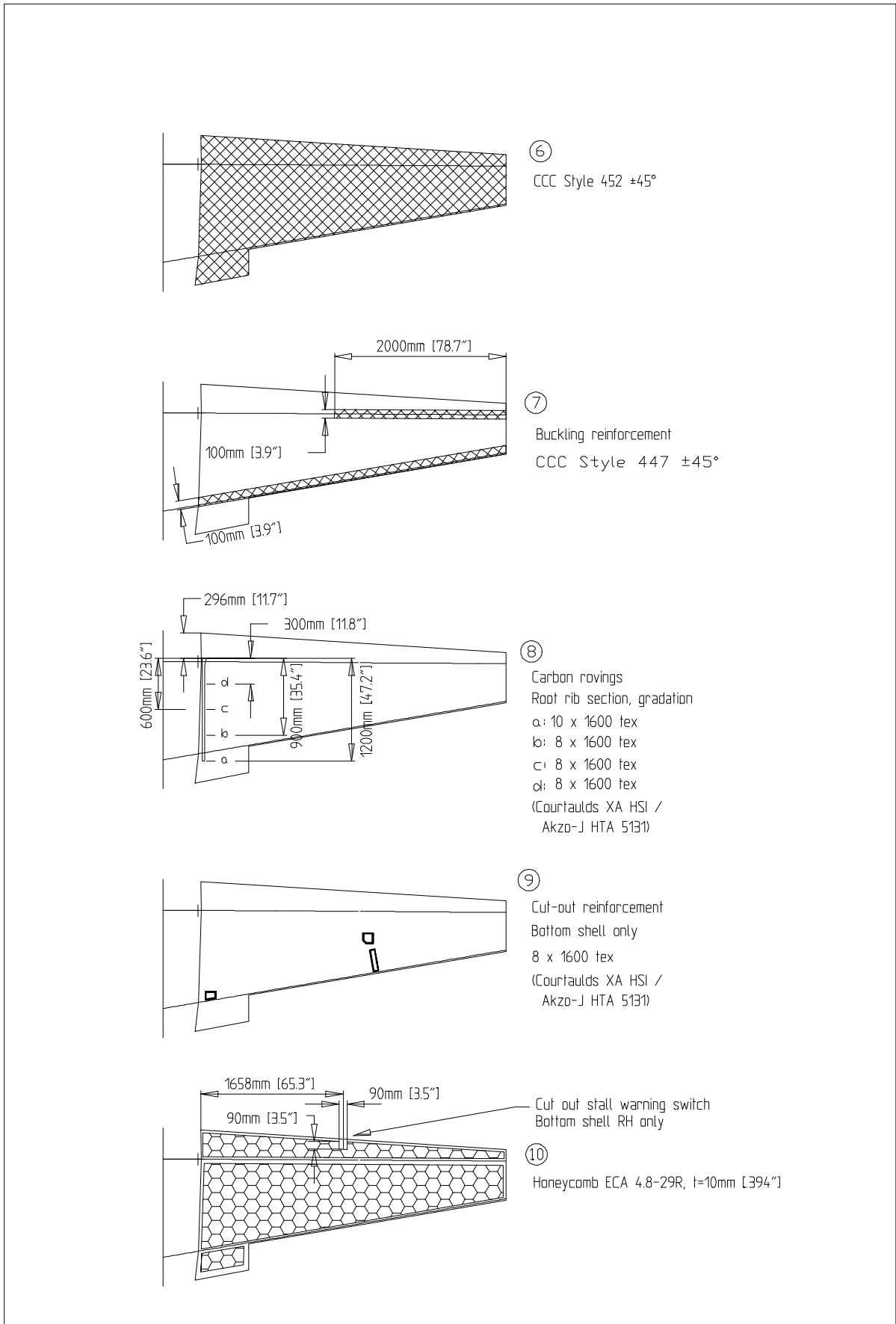
The layer sequence of the wing is shown in Figure 1.

All composite parts, as protection against moisture and UV radiation, are coated with an unsaturated polyester gel-coat, an acrylic filler and finally with an acrylic paint.

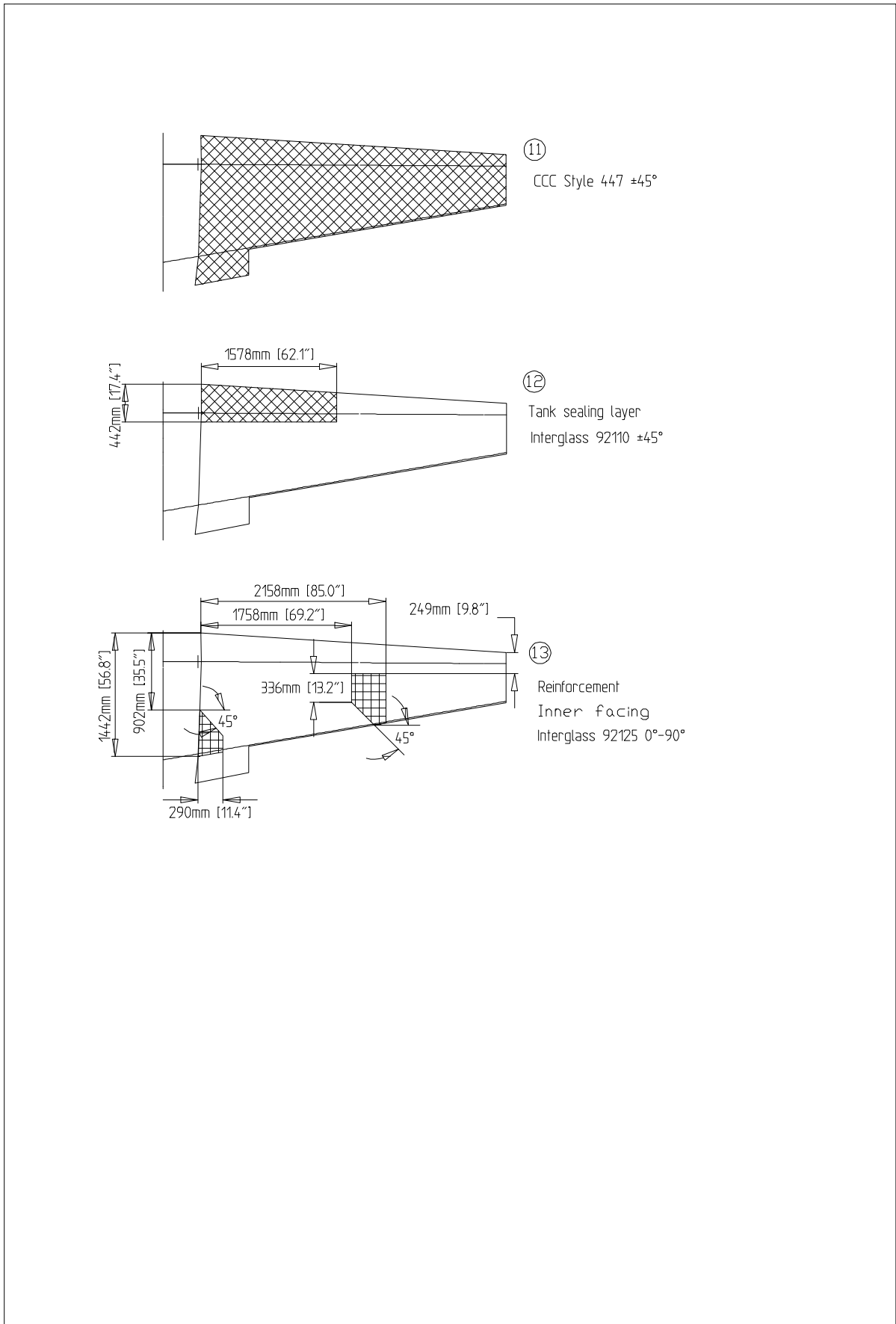
For repair of composite parts refer to Chapter 51.



Layer Sequence Wing
 Figure 1, Sheet 1



Layer Sequence Wing
Figure 1, Sheet 2



Layer Sequence Wing
Figure 1, Sheet 3

57-05-00

MAINTENANCE PRACTICES

57-05-01

Wing

Removal

Reverse procedure of installation omitting step 11.

Installation

- 1 Remove the canopy and the canopy frame per Ch. 53.
- 2 Remove the right front canopy hinge.

CAUTION

Ensure that areas in which the wing shall be slid are clear of obstructions.

CAUTION

Prevent cables and pitot/static lines for damage. Keep them at the rear of the main spar and outside of the upper longerons.

CAUTION

Attend to the left front canopy hinge, when sliding down the wing. The wing could be damaged.

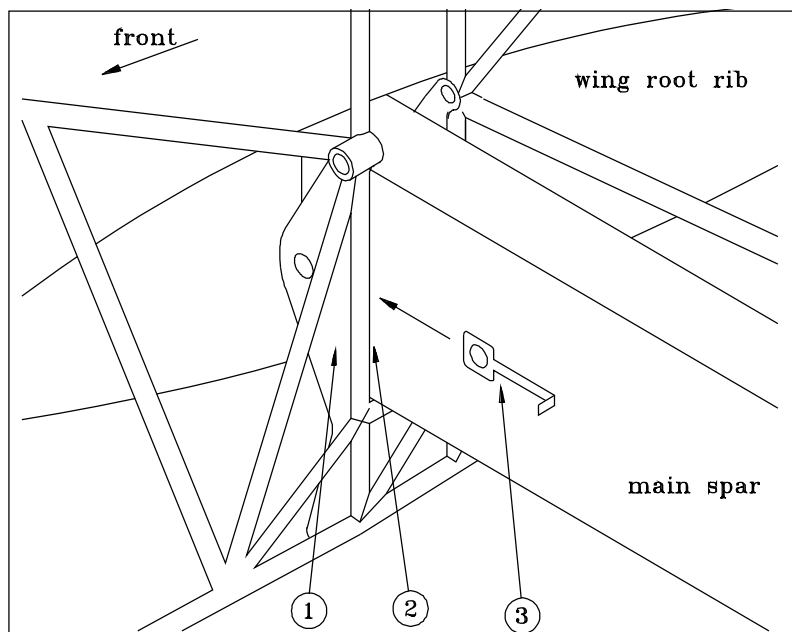
WARNING

Beware not to get jammed between wing and fuselage.

- 3 Slide wing down into fuselage attachment brackets (3).
- 4 Install LN 9037-08038 auxiliary spar attach bolts (1) from front to rear. Use two DIN 125-M8 washers and LN 9348-08 nuts at each side for fastening.

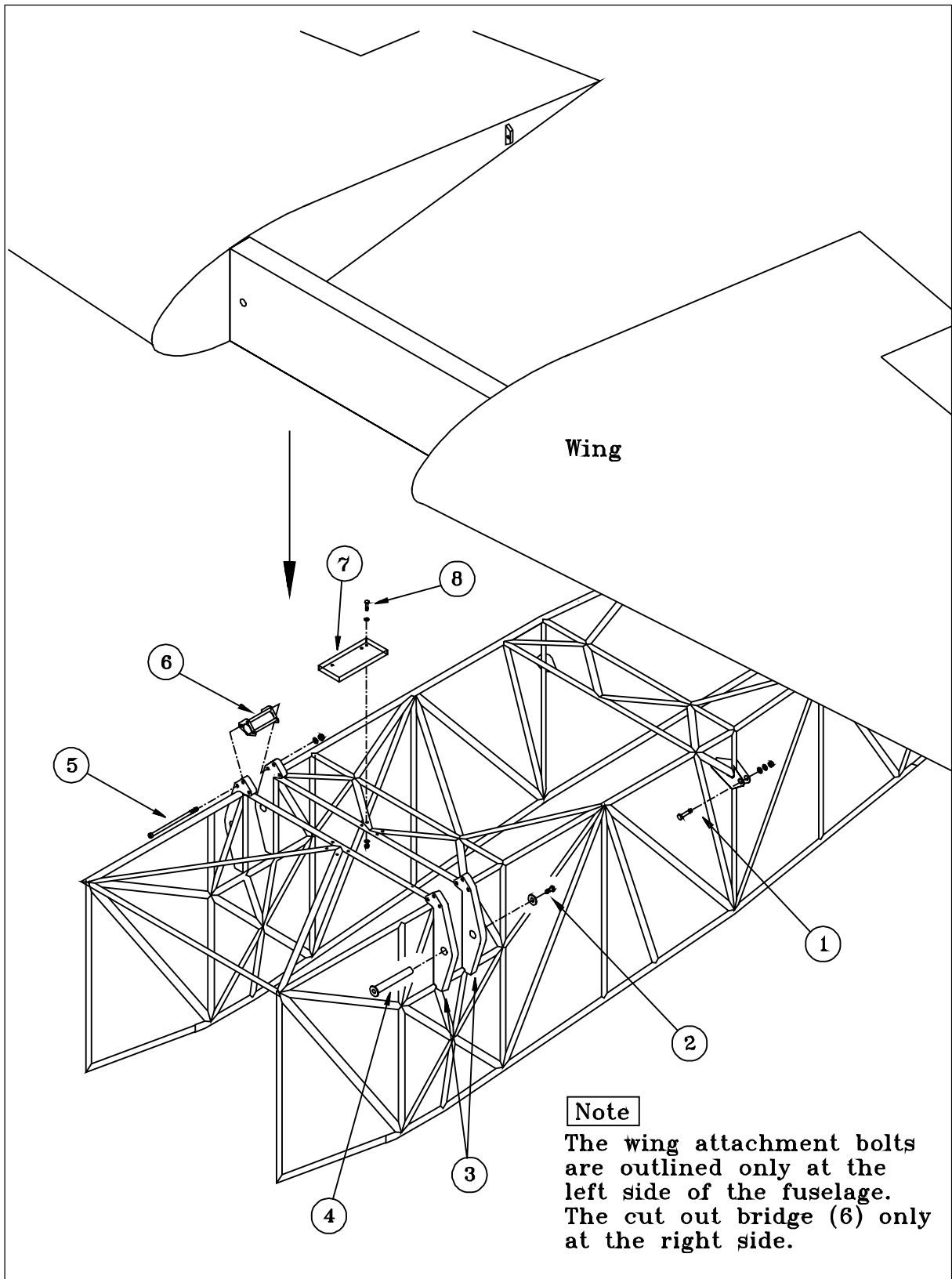
IMPORTANT

If there is clearance between the main spar and the attachment brackets (1, Figure 2), use shims (3) like shown below which are to be slid in the front gaps (2).



Shims Installation
 Figure 2

- 5 Slide in shims if necessary and install main spar tubular bolts (4) from front to rear.
- 6 Secure main spar tubular bolts with LN 9038 K-08020 bolts (2) and aluminum 30x11x4 washer. Torque security bolts for fastening and subsequently safety wire (Use the hole in the sheet below bolt).
- 7 Install upper longeron cutout bridges (6) using 2x DIN912 M8 x 180 and 1x DIN912 M8 x 190 bolts (5), 3x DIN125 M8 washers and 3x LN9348-08 stop nuts at each side (check for RH and LH marking). Install the bolts from front (firewall) to rear (aircraft tail). Torque stop nuts for fastening.
- 8 Install shear bridge (7). Use two LN 9037-06066 and six LN 9037-06038 bolts (8) with DIN 125-M6 washers and LN 9348-06 stop nuts.
- 9 Reinstall the front canopy hinge.
- 10 Install short aileron push pull rods per Ch. 27-01-01.
- 11 Perform an aileron rigging per Chapter 27-11-02.
- 12 Connect fuel system (tubes and vent lines), pitot/static system, stall warner, navigation/strobe light wires, ground bonding leads and fuel indicator wires with prefitted plugs per respective Chapters.
- 13 Reinstall canopy frame and canopy per Chapter 53.



Wing Removal/Installation
Figure 2

57-35-00

MAINTENANCE PRACTICES

57-35-01

Wing Tip Panel

Removal/Installation

Refer to Figure 1 of Chapter 33.

WARNING

High Voltage! Wait 5 minutes after shutting off before starting any work on the strobe light system.

- 1 Disconnect the battery and wait 5 minutes.
- 2 Remove the DIN 933 M6x20 bolt, the metal sheet screws, the AN 526 C 1032 R8 bolts and the washers.
- 3 Tie out the wing tip panel with the lighting unit some centimetres (Consider that the panel is sealed to the wing tip with silicone).
- 4 Disconnect the electrical wiring and the ground bonding lead by loosening the central M4 nut of the lighting unit attachment.
- 5 Remove the wing tip panel.
- 6 Clean sealing surfaces mechanically and with Acetone.
- 7 Install in reverse sequence of removal after applying Silicone to the sealing surfaces.

57-60-00

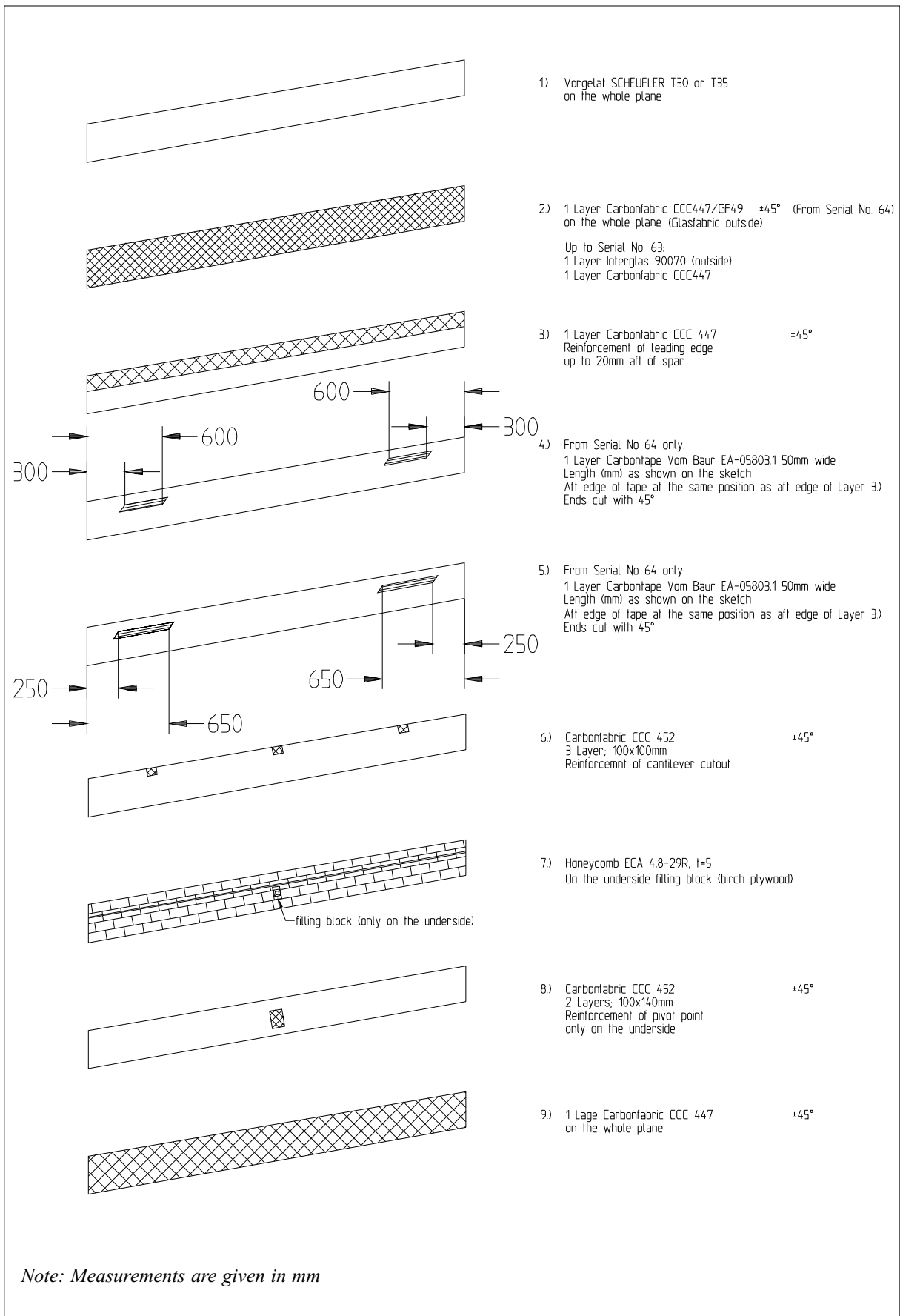
AILERONS

The ailerons are constructed in the same manner as the wing but with single chamber spar. They are supported at three points in spherical bearings pressed into aluminium brackets. Furthermore the ailerons are equipped with "glass fibre laminate spades" to decrease pilots forces.

The layer sequence of the ailerons is shown in Figure 4.

All composite parts, as protection against moisture and UV radiation, are coated with an unsaturated polyester gel-coat, an acrylic filler and finally with an acrylic paint.

For repair of composite parts refer to Chapter 51.



Layer Sequence Ailerons
 Figure 4