

Kind: Modification into ASW 20 CL model.

Subject: Detachable wing tip.

Affected gliders: All ASW 20 Cs, optional.

Compliance: None; optional modification.

Reason: The ASW 20 CL can be operated in its two wing span variants (15 m and 16,59 m). As the customer's interest in the ASW 20 CL model is great, some ASW 20 Cs are equipped in advance (to begin with) only with the detachable wing tips of the 15 m variant so that after the issue of the type-approval for the 16,59 m variant of the ASW 20 CL no time-consuming modification of the wings are necessary.

Action:

1. The parts for the modification of the wings are made according to the drawings (see component list on drawing 202.51/52.S14).

According to the above drawing the wingtip is cut off at the end of the aileron. The sawcut includes a 93° angle with the leading edge.

First of all, you have to check whether the fiberglass cloth 92145 is already laminated onto the inner side of the wing sandwich (in flight direction); it is possible that this is not yet the case with early serial numbers of the ASW 20C.

If the fiberglass cloth 92145 is not yet applied (this regards serial numbers 20628, 20631, 20700, and 20707), the glass layer of the inner sandwich skin is carefully sanded up to 160 mm behind the cut and 1 layer 92145 (main glass in flight direction) is laminated onto both upper and lower wing sandwich as inner skin.

The new laminate is covered by tear-off cloth and then hardens. The above explained job results in laminating the 92145 glass layer on top of the spar beams.

After removing the tear-off cloth, the job is continued.

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The glueing in of the components is made in several steps.
First of all, the items no. 1, 8, 9, 12, 16, 17, 20, 21, 23-28, and 32 (shown on drawing 202.51/52.S14) are built and installed into the wings. Now drill a hole of \emptyset 13 into items 1 and 28 for the flange bushing, item 2, and also a hole of \emptyset 8 into the wing leading edge for the locking bolt, item 7 (for their correct position see drawing 202.51/52.S14 respectively S15).
Spread the glue mixture on items 26 thru 28; align and glue in all parts with the aid of the original master jig or of an original 16,59 m wingtip, with the exception of the root rib, item 32, which must not yet be glued in.
The flange bushing, item 2, is glued in simultaneously and all items are fixed by means of an auxiliary mandrel (\emptyset 8; approx. 200 long) through the hole in the wing leading edge.

After the hardening the root rib, item 32, is dismantled; the glue joint of the inner rib, item 27, as well as the correct fit of the flange bushing, item 2, are checked and the complete locking bolt device is fitted. For this purpose, the hole in the wing leading edge is enlarged to \emptyset 17, and the item 6, complete with items 3 thru 5 and 7, is fitted and glued in. Now also the root rib, item 32, is glued in and is at the same time glued up with the FRP-guide device, item 28. To seal the blow turbulator channel, a Tesamoll tape strip is fixed onto the root rib, as described in drawing 202.51/52.S15.
For this work again an original master jig or an original 16,59 m wingtip is necessary for correct alignment and position of the built-in parts during the hardening of the glue joints.

2. The modification job for the 15 m wingtip is much easier. The parts for the modification of the 15 m wingtip are made according to the drawings (see component list on drawing 202.51/52.S14).

First of all, surplus glue is removed inside the cut off wingtip and the internal glue areas round the root rib are carefully sanded. Now the aluminium bolt, item 15, is inserted into the wing end and safetied. Some very stiff glue mixture is applied to the knurled end from below and the 15 m wingtip is fixed to the aluminium part. After hardening, the tip together with the aluminium bolt is carefully removed and the glue joint is carefully reinforced with glass laminate (approx. 2 layers 92140). As the last operation, the wingtip root rib, item 11, is glued to the tip, and the pins, items 10 + 18, with the washer, item 9, are glued into the rib.

3. The fire-proof type placard must be changed to "ASW 20 CL".

Material:

See drawings.

Glue mixture (parts in weight):

Epikote 162	100 parts
Epikure 113	38 parts
Cotton flocks	20 parts
Aerosil	max. 10 parts.

Weight & balance:

Owing to the modification the weight of the wings including the attachable 15 m wingtip, is increased by about 0,8 kg (1,76 lbs). As the additional weight is within the permissible in flight C.G. limits, the modification is not critical in this respect. However, because of the possibly changed load plan a weight & balance procedure is necessary.

Notes:

1. Because of the partly tricky glue job this modification must only be carried out by the glider manufacturer or by a licensed technical aviation repair station in cooperation with the manufacturer.
2. If the modification is carried out after the curing of the wing, then the wingtip must be cured for 12 hours at a temperature of above 55 °C.
3. In order to avoid a weakening of the wing attachment by heat of sun radiation, only the detachable 15 m wingtip must be painted with anti-collision paintwork (optional), but the inner wing must remain pure white. This measure is prescribed especially in view of the intended operation of the glider in the 16,59 m span variant at a later date.
4. The 15 m span variant is operated according to the operating limits and the Flight and Maintenance Manual of the ASW 20 C.
5. The conditions for the operation of the 16,59 m span variant of the ASW 20 CL are detailed in Technical Note no. 20b.

Sheet 4

No. of sheets: 4

ASW 20 CL
Technical Note
No. 20a

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Drawings:

For this TN no. 20a the following drawings are
new made:

202.51/52.S14 and
202.51/52.S15.

Poppenhausen, May 15, 1984

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The German original of this Technical Note has been approved by the
LBA under the date of May 16, 1984, and is signed by Mr. SCHMALJOHANN.
The translation into English has been done by best knowledge and
judgement; in any case of doubt the German original is authoritative.

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