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Technical Note
ASH 25 No.09
ASH 25 E No.08

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Subject: Wing separation joint 12.2 m; detachable wing tip.

Serial number applicability: All sailplanes ASH 25, all variants, Data Sheet no. L-364.
All powered sailplanes ASH 25 E, Data Sheet no. L-858.

Compliance: None, optional mod only.

Reason: For both the ASH 25 & ASH 25 E models a modification to attachable wing tip-extensions-with-winglets is under preparation. In the interest of our customers some aircraft shall be modified already partly for a wing separation joint at 12.2 m. On the issue of the Type Certification for the ASH 25 & ASH 25E in the 25.6 m-version then the time-consuming mod to the 25 m wing is no longer necessary.

Action: 1. The parts required for the mod to the wing are detailed in the drawings
250.51.S 20
250.51.S 21
250.51.1202

According to drawing 250.51.S 21 the wing tip is cut off at the aileron end. The saw cut forms an 88.3° angle with the leading edge of the outer wing. Prior to cutting place the nylon cord for the water bag further inwards and fix it afterwards approx. at 11.80 m.

The styrofoam and styrofoam glue in the wing leading edge must be removed from the cutting edge up to about 11.85 m.

Only for the ASH 25 E: the lead block in the wing leading edge must not be removed.

From the cutting edge up to the spar cap end, the inner layer and the Divinycell support foam are removed on the left & right of the spar center line over 3 cm each; transition must be well rounded off.

The entire area to be laminated (see drawing 250.51.S 20) must be sanded as well as the main spar web front & rear side over approx. 10 cm from the spar end.

Only for the following serial numbers 25151, 25152, 25155, and then as of 25164 as a standard, these works have already been done to the upper and lower wing skin in accordance with layer scheme 250.51.S 20. The carbon fabric strips KDU 1009 are laminated here between spar cap and inner layer.

Fit the webs for the wing separation joint 12.2 m (No.2). From cutting edge to web edge 165-170 mm. Cut the fabric in accordance with layer scheme drawing 250.51.S 20 and laminate them on to both wing skins. Prior to that the transitions must be well rounded off with thickened resin / hardener mixture. Cover entire area with tear-off cloth.

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In several steps the parts are now built in. Fit the end rib for wing separation joint (no. 15) at the cutting edge. For this purpose the inside bend of the turbulator channel II must be removed at a length of about 18 mm off the cutting edge. Assemble the support for wing separation joint pin (no. 9), the rib for the support box (no. 7), and the reinforcement for the support box (no. 6) in accordance with drawing 250.51.S 21, and glue the parts in.

Place the oblique side of the support for wing-separation-joint-pin towards the aileron side - with the narrow side upwards.

Fit the flanged bushing ϕ 10 mm for wing-separation-joint 12.2 m (No. 8) into the support for wing-separation-joint-pin in accordance with the drawing.

Support plate (No. 13) and end rib for wing-separation-joint (no. 15) must be adjusted to the ready-for-assembly wing tip extension. For this job either the master mold or a ready-for-assembly wing tip extension of the 25.6 m-version is required, by means of which the built-in parts are aligned and fixed during the glue process in the wing. Outside contour must be checked.

The position of the flanged bushing (No.18) of the wing tip extension must be transferred by firmly pressing it onto the end rib for wing-separation-joint (no. 15). Drill the attachment holes for support plate (No. 13) and for the flanged bushing (No. 14). Add washer (No. 16).

Fit the end rib for wing-separation-joint (no. 15) together with flanged bushing (No. 14) and support plate (No. 13) onto the ready-for-assembly wing tip extension.

Then fit the support for wing-separation-joint-pin (No. 9), align it with the wing and screw it on.

The location of the drill hole for securing pin (No. 35) must be transferred onto the support for wing-separation-joint-pin (No. 9), drilled through and the pre-assembled securing part (No.29-37) must then be fitted allowing smooth seating. Countersink the flanged bushing for securing pin into the FRP-block, glue it and screw together all the built-in parts.

Align the end rib for wing-separation-joint (no. 15) parallel to flanged bushing (No. 18). Apply Tesa tape to the glue areas of the end rib for wing-separation-joint (no.15); all other glue areas to be sanded.

Mark the location of the opening pin for securing pin on the upper skin, scale-up to min./max. movement and cut it into the area.

Glue in the web for the wing separation joint 12.2 m (No.2) at the determined distance to the cutting edge; use resin /hardener mixture thickened with Aerosil / cotton flocks.

Assemble the entire support for wing-separation-joint-pin with all pertaining built-in parts to the wing tip extension, apply the thickened glue mixture in a rich coat to all glue areas and glue them in. Watch exact fit and angle alignment.

CAUTION: Do NOT glue the end rib for wing-separation-joint (no. 15) which was covered with Tesa tape!

After the curing the end rib (no.15) is disassembled, the correct glue of the rib for support box (no.7) as well as the correct seating of the flanged bushing (no.14) is checked and where necessary re-glued. Now remove the Tesa tape from end rib (no.15) and glue in the end rib using the master model or the wing tip extension for correct alignment.

Before you have to preserve the wooden parts with resin mixture; restore the sealing towards the blow channel II.

2. The works to the wing tip are much simpler.

The parts for the wing tip are built in accordance with the part drawings (see nomenclature on drawing 250.51.1202). First remove any excess glue mixture off the wing tip inside and then sand the inside areas.

Take the aluminum pin (No.5) and sand thoroughly its knurled end by sandblasting, then insert the pin into the wing and secure. Drill a 15 mm deep opening into the center of the PMI (Poly-Methacrylimid) hard foam block 30x40x80 (No.7).

Fit and align the wing tip together with the PMI hard form block (No.7) into the wing. According to the drawing the resin-glue mixture as shown under (No.6) is applied around the knurled end of the aluminum bolt and to the PMI block and then glued to the wing tip.

After the glue mixture has hardened the wing tip is disassembled and the hard glue is carefully reinforced by two layers 92140 (in span direction, rounded off) No.4.

At last the root rib for wing tip 25 m (No.3) and the pins (No.1) with washer (No.2) are fitted and glued in. Vent holes are drilled as shown in the drawing.

Preserve, paint, and fix the nylon cord for waterbag again to the end rib for wing-separation-joint (No.15).

Drawings:

For both the ASH 25, TN no.9, and the ASH 25 E, TN no.8, the following drawings are issued new:

250.51.S 20
250.51.S 21
250.51.1202

Material:

Epikote 162	100 parts in weight
Epikure 113	38 parts in weight
Cotton flocks	20 parts in weight
Aerosil	10 parts in weight

Parts in accordance with the drawings.

Mass and C.G.:

Because of this modification the weight of the wings including their detachable 25 m-wing tip is increased by about 1.2 kg. As the additional weight is still within the permissible in flight C.G. range, the modification is not critical in this respect. However, because of the possible change of the load limits it is necessary to redetermine the mass and C.G. data.

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Notes:

1. Because of the partly tricky glue job this modification must only be accomplished by the manufacturer of the aircraft or by a technical aviation service station holding an appropriate license. For this modification only original parts from the manufacturer must be used.
2. If this modification is retrofitted (after the curing of the wings), then the detachable wing tip must be cured for 12 hours above 55° C.
3. In order to prevent a weakening of the wing separation joint owing to higher temperatures, it is only allowed to apply anti-collision paintwork to the detachable wing tip (optional), but the inner wing must remain pure white.
4. The 25 m span version is to be operated in accordance with the operational limits established for and contained in the Flight and Maintenance Manuals of the ASH 25, the ASH 25 as per TN no.1, and the ASH 25 E.

The accomplishment of this mod must be checked by a licensed aviation inspector who must certify this in the glider's inspection documents and in the log-book.

Poppenhausen, Feb.11, 1993

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i.A. Gregor Heller.

The German original of this Technical Note has been approved by the LBA under the date of March 4, 1993 (signature: SCHMALJOHANN). The translation into English has been done by best knowledge and judgement; in any case of doubt the German original is controlling.

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