

Subject: Covering the elevator to stabilizer gap on the upper side by an elastic lip seal (steel or plastic).

Serial number applicability: All ASW 20 model variants, as of serial no. 20001.

Compliance: None; optional mod only.

Reason: A continuous transition from the horizontal stabilizer to the elevator can save drag in the high speed range and therefore give an aerodynamic performance improvement.

The continuous transition is produced by means of an elastic lip which is fixed at the stabilizer and which bridges with its curvature over the gap between stabilizer and elevator and rests against the elevator due to its pre-tightened fit. It is important in this connexion that the sealing Teflon tape underneath this transition lip must be 100 % airtight.

To compensate the nose-down forces caused by this elastic lip seal, a compensating spring must be connected to the elevator control circuit.

Action:

1. The adhesive TESABAND tape fixed on the top surface of the elevator is removed; all glue residues must completely be removed using synthetic resin thinner.
If not yet extant, a recess must be milled in at the stabilizer as shown in Fig.1: this is done by excising carefully the paint coat down to the outer fiberglass layer ($\approx 0,5$ mm deep). The rivet heads at the elevator hinges are filed off a little bit so that the elastic lip seal can fit well against the elevator also in this area.

To begin with and as an auxiliary measure, a self-adhesive, 12 mm wide alignment tape (1) (e.g. Tesafilm 104, 12 mm) is applied flush with the front edge of the recess (see again Fig.1).

Note:

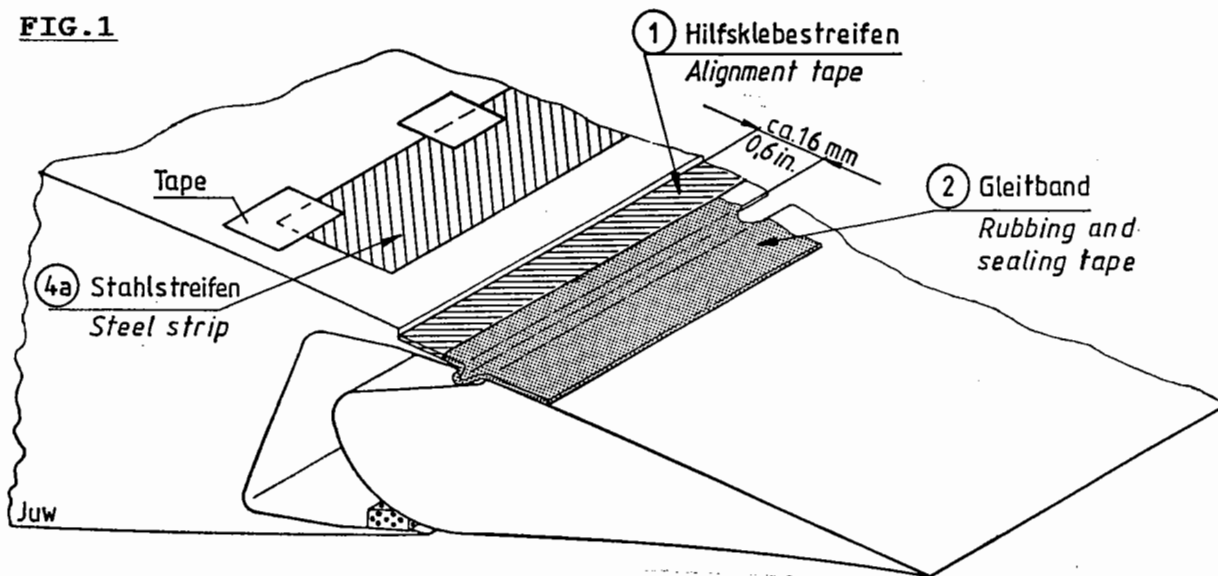
All glue areas must be completely clean, dry, and free from dust and grease !
The complete cleanness is best checked by applying a Tesafilm strip to the cleaned area, removing it again, and checking that no dust particles are sticking to the Tesafilm.

Now the sealing & friction reducing tape (3M SCOTCH Teflon tape, 30 mm wide) is applied - again flush - along the rear edge of the alignment tape. Please keep the drawn-off backing film of this Teflon tape for later use with the steel strips.

When applying the above Teflon tape, push the elevator to its maximum positive setting to ensure that the tape will not be under tension afterwards with normal positive deflections and does not hinder such positive deflections !

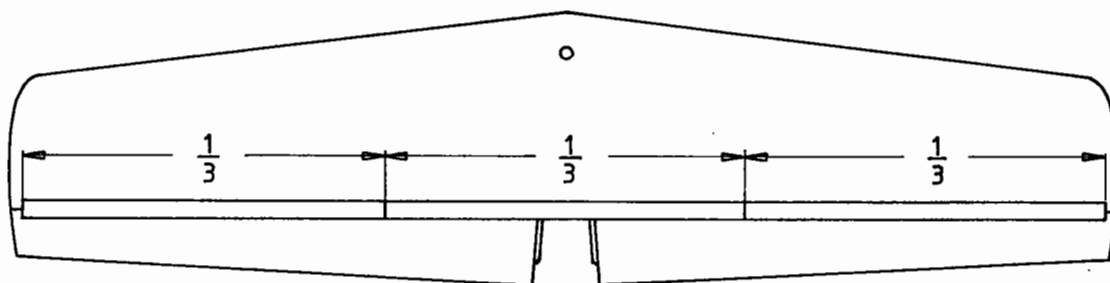
The sealing & friction-reducing Teflon tape (2) must be strongly rubbed into contact.

FIG. 1



If the steel strip (4a) is preferred as material for the elastic lip, this steel strip first must be thoroughly degreased using acetone or Tri etc. Then the whole strip is positioned - inverted - on the elevator in front of the recess where it must be held in place by several short tape strips. Using scissors the steel tape strip is easily cut into the three pieces as shown in Fig.2 hereafter.

FIG. 2



Now the alignment tape (1) which was applied at first as an auxiliary measure, is removed again; this is done step by step for each steel strip. In its place the Pattex Spezial glue is brushed on this area and also brushed on the entire width of the respective steel strip which is positioned in front of this area.

The Pattex has to dry on for about 15 minutes.

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For the following application of the steel strips it is best to put first the drawn-off backing film of the sealing & friction-reducing Teflon tape (which we kept for this purpose!) onto the stabilizer-side Pattex strip, otherwise it is impossible to align each steel strip with the necessary exactitude. It is an advantage to have the use of two pairs of hand for the glueing on of the steel strips; one person starting to remove the backing film at one end while the other person holds taut the steel strip at the other end to prevent it from rolling up. Then bit by bit the backing film is removed, the steel strip aligned and pressed into contact.

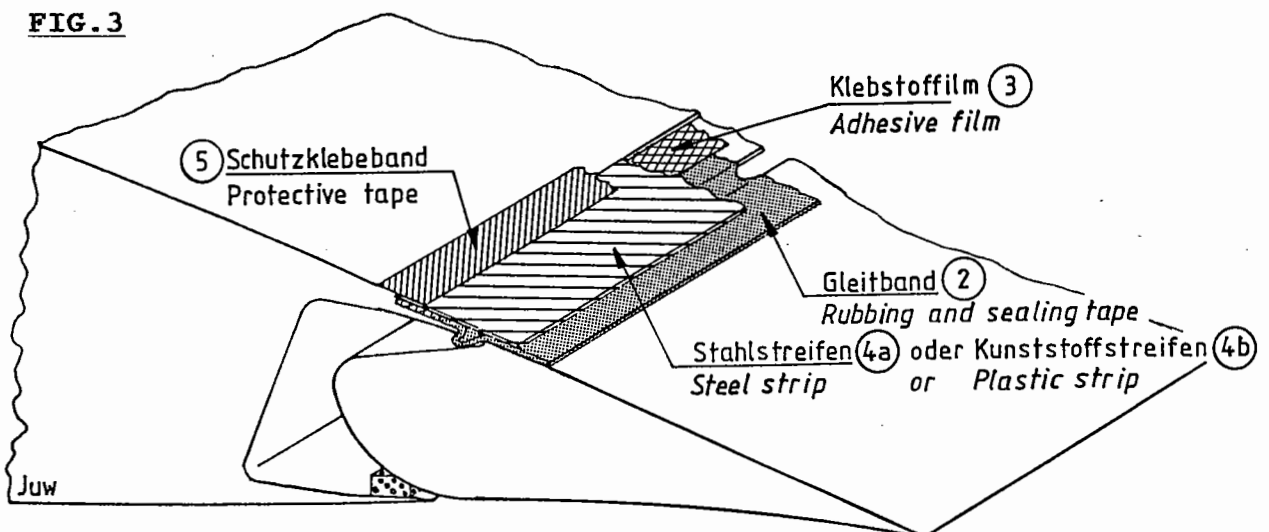
If the application of the self-adhesive plastic tape (4b) (MYLAR) is preferred as material for the elastic lip, the auxiliary alignment tape (1) can be removed at once entirely. Then the backing film is removed off the plastic strip and the latter then fixed - flush - onto the recess in the stabilizer, along the whole span length (see Fig.3).

The steel or the plastic strip respectively being applied, a soft wood block (e.g. balsa) or a hard rubber roller is used and the strip(s) - in the glue areas - pressed strongly into contact.

Then the ends of the elastic lip (plastic or steel respectively) and also the butt joints in the case of the steel lip are still covered with the sealing and friction-reducing Scotch Teflon tape (2).

At last the elevator is moved into its maximum positive position and is kept in this position for 24 hours; during this period the glue or self-adhesive film respectively will cure and reach its ultimate adhesion force.

FIG. 3



At last a protective tape (5) is still applied over the butt joint of stabilizer and elastic lip (plastic / steel respectively); the tape to be used for this purpose should be as thin as possible and moisture-resistant; e.g. Tesa-film no.104, white, 25 mm wide, is suitable. This tape is applied for safety reasons and prevents a peeling-off of the elastic lip from the front that could possibly lead to dangerous flight characteristics.

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2. According to drawing 201.49.S1 the compensating spring (201.49.0021) is fitted to the elevator pushrod II on the right side in the cockpit.
3. The following pages in the respective glider manuals must be exchanged and the accomplishment of the exchange must be documented on the page "Amendments to the Manuals" or "Index of Corrections" respectively:

ASW 20	p. 34 Flight and Operations Manual
ASW 20 L	p. 38 Flight and Operations Manual
ASW 20 B /BL/ C/ CL	p. 31 Flight Manual.

Material & drawings:

Can be obtained from Alexander Schleicher or the Schleicher agency of the country in question respectively.

Mass and C.G.:

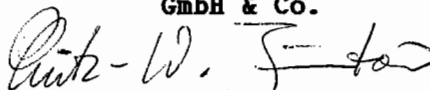
It is not necessary to redetermine the mass and C.G. data, as the influence of this mod is negligible.

Notes:

1. The compensating spring (201.49.0021) must be over-expanded according to the drawing and must not have any pre-tension.
2. The daily checks of the glider must include a check of the elastic lip seal (steel or plastic respectively) for airtight fit against the elevator and for safe and tight bonding at the stabilizer.

Poppenhausen, August 26, 1986

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L.W. Juntow.

The German original of this Technical Note has been approved by the LBA under the date of Sept.10, 1986 (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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