



service bulletin

Date September 1958

No. 91. 6. 012/B

AIRCRAFT SAAB SAFIR 91B, 91B-2 AND 91C

SUBJECT: Renewal of rubber lining on plastic propeller blade leading edge.

REASON: The rubber lining should be replaced before worn through in order to prevent damage to the blade.

TIME OF COMPLIANCE: As required and recommended at propeller overhaul.

PARTS AFFECTED: Plastic blade propeller with rubber lining on leading edge, SAAB No. 6101715 (HC-12x20-8/SAAB 6101716).
Plastic blade with rubber lining on leading edge, SAAB No. 6101716 (Modified blade HC 8428-6).

PARTS REQUIRED: Rubber lining SAAB No. 1038236 ur, 2 req. per propeller (1 per blade).
Test strips of neoprene rubber 1 x 25 x 300 mm. Test specimen of phenolic plastic similar to the blade material, about 5 x 25 x 300 mm.

ALTERNATIVE I

Boscolite Primer 9247 manufactured by the Boston Blacking Chemical Company. Maximum storing time in refrigerator temperature: 4 months.

Boscoprene Cement 2413 (Part I and Part II) manufactured by the Boston Blacking Chemical Company. Maximum storing time of components in refrigerator temperature: 4 months. Prepared by mixing 10 parts by weight of cement (Part I) to 1.2 parts by weight of accelerator (Part II). Discard any of the mixture not used within four hours after mixing.

ALTERNATIVE II

EC 776 manufactured by the Minnesota Mining and Manufacturing Company. Insulating cement which may be thinned

with methyl ethyl ketone. Maximum storing time in refrigerator temperature: 6 months.

Bostic 1007 manufactured by the Boston Blacking Chemical Company. Primer cement which may be thinned with Bostic 315 or methyl ethyl ketone. Maximum storing time in refrigerator temperature: 4 months.

Bostic 1008 A cement and Bostic 1008 B accelerator manufactured by the Boston Blacking Chemical Company. Adhesive cement mixed in the following manner: To one part by weight of accelerator (Part B), mix eight parts by weight of cement (Part A). Thoroughly work in the two parts and thin if necessary with toluene to a good brushable consistency. Discard any of the mixture not used within four hours after mixing. Maximum storing time of components in refrigerator temperature: 3 months.

EC 539 cement and EC 566 accelerator manufactured by the Minnesota Mining and Manufacturing Company. Oil - and alcohol - proof compound that is prepared by mixing ten parts by weight of EC 539 with one part by weight of EC 566. Discard any of the mixture not used within two hours after mixing. Maximum storing time of components in refrigerator temperature: 4 months.

NOTE

It is recommended to carry out the work at a propeller maintenance workshop, as extreme cleanliness and carefulness when cementing is necessary to obtain a good result. It is important that surfaces cleaned are not touched with the hands or any oily or otherwise dirty cloth.

WORK PROCEDURE:

Mask off the blade leaving the lining and about 5 mm of the blade unmasked, see fig. 1

Remove the old lining and cement. Either grind off the lining from the blade or work methyl ethyl ketone under one corner and gradually loosen the lining. If grinding, avoid carefully to damage the blade and dissolve remaining cement with methyl ethyl ketone.

Wind the new lining, with the inside outwards, spirally on a wooden roller ($\phi \sim 100$ mm, $L \sim 300$ mm; $\phi \sim 4''$, $L \sim 12''$) and fasten down each end with tacks.

Roughen the lining and the unmasked area of the blade with No. 60-80 grit emery cloth.

CEMENTING, ALTERNATIVE I

Clean the roughened area of the blade and of the lining with methyl ethyl ketone.

Apply a thin coat of Boscolite Primer 9247 on the blade and allow to dry one hour minimum time.

NOTE: Stir Boscolite Primer 9247 thoroughly before application.

Apply a coat of Boscoprene Cement 2413 and allow to dry c. 45 minutes.

Apply an additional coat of Boscoprene Cement 2413
Drying time c. 45 minutes.

Apply a coat of Boscoprene Cement 2413 to the adhesion surface of the lining and allow to dry c. 45 minutes.

Apply an additional coat of Boscoprene Cement 2413 to the lining.

Drying time 25 minutes.

The end of the drying time for blade and lining should coincide.

Loosen one end of the lining from the wooden roller and apply the lining to the blade leading edge, pressing it on heavily.

Roll the lining with a rubber roller to obtain complete adhesion along the leading edge.

Press the sides of the lining against the blade by hand and roll them with a rubber roller to obtain complete adhesion and to exclude air bubbles.

Wrap linen tape hard around lining and blade to obtain contact pressure during drying. Fasten the ends of the linen tape with a toothed plate and masking tape, see fig. 2. Drying time 48 hours at + 20° C.

Remove linen tape and masking from the blade. Cut and trim the ends of the lining with No. 60-80 grit emery cloth to obtain smooth chamfering to the blade, and clean with linen cloth lightly damped in methyl ethyl ketone.

CEMENTING, ALTERNATIVE II

Clean the roughened area of the blade with methyl ethyl ketone and the roughened area of the lining with toluene. Apply a thin even coat of EC 776 on the blade and allow to dry one hour minimum time at + 20° C. Apply a coat of Bostic 1007 over the EC 776 and allow to dry one hour at + 20° C.

Directly after application of Bostic 1007 to the blade, apply a thin coat of Bostic 1008 to the adhesion surface of the lining. Allow to dry one hour at + 20° C.

Apply a thin even coat of Bostic 1008 over the Bostic 1007 on the blade and a second coat of Bostic 1008 on the lining. Allow the cements to dry one hour at + 20 ± 2° C. Loosen one end of the lining from the wooden roller and apply the lining to the blade leading edge, pressing it on heavily.

Roll the lining with a rubber roller to obtain complete adhesion along the leading edge.

Press the sides of the lining against the blade by hand and roll them with a rubber roller to obtain complete adhesion and to exclude air bubbles.

Wrap linen tape hard around lining and blade to obtain contact pressure during drying. Fasten the ends of the linen tape with a toothed plate and masking tape, see fig. 2. Drying time 48 hours at + 20° C.

Remove linen tape and masking from the blade. Cut and trim the ends of the lining with No. 60-80 grit emery cloth to obtain smooth chamfering to the blade, and clean with linen cloth lightly damped in methyl ethyl ketone.

Apply masking tape to lining and blade about 5 mm from edge of lining all around the lining. Apply EC 539 to the unmasked area to seal the lining edges and to obtain smooth filling between lining and blade.

Remove masking tape immediately after application of EC 539. Drying time 5 days at +20° C.

TESTING : Cement four test strips of neoprene rubber to test specimens of phenolic plastic, with the same cements and at the same time as the above mentioned work procedures alternative I or alternative II.

After a drying time of 5 days the test strips should be peeled off, the force required for this should be uniform and about 5 kp for 25 mm broad test strips when peeled at 180° angle. Check by visual inspection of the cemented surfaces that the adhesion has been complete. An entry of approved cementing should be made in the propeller journal.

BALANCING: Balance the propeller according to Hartzell Hydro-Selective Propeller Manual section VII E.

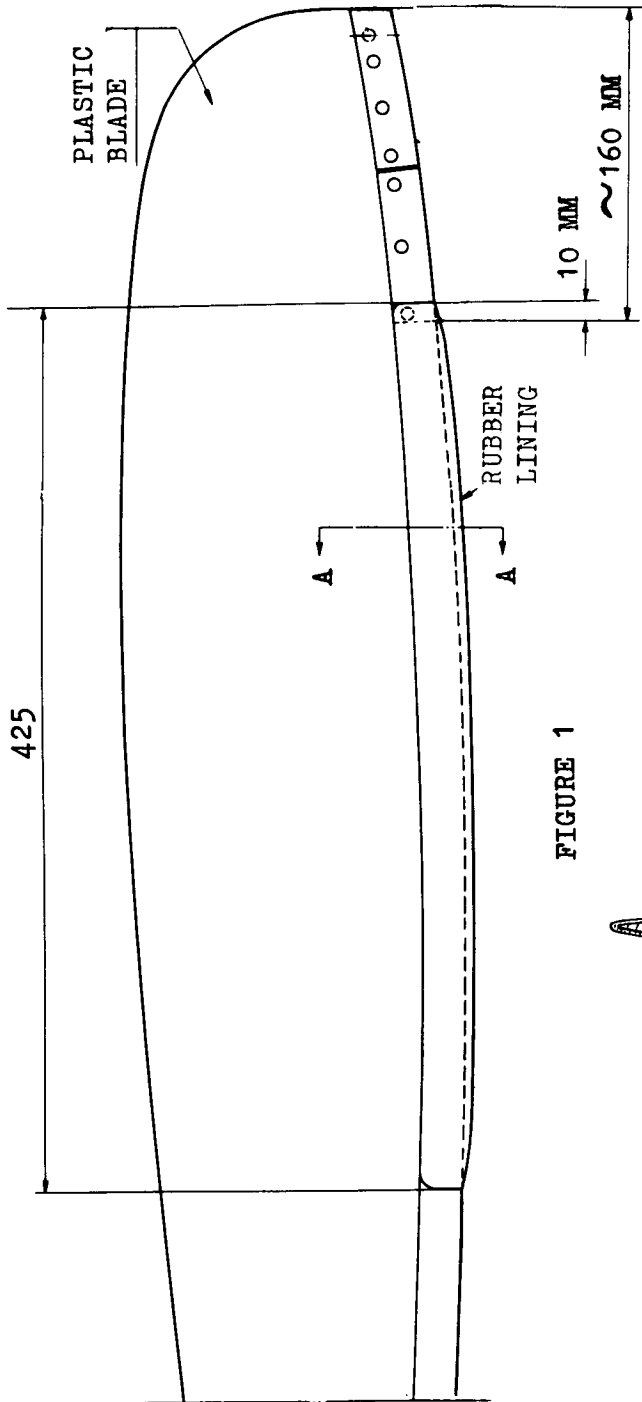


FIGURE 1

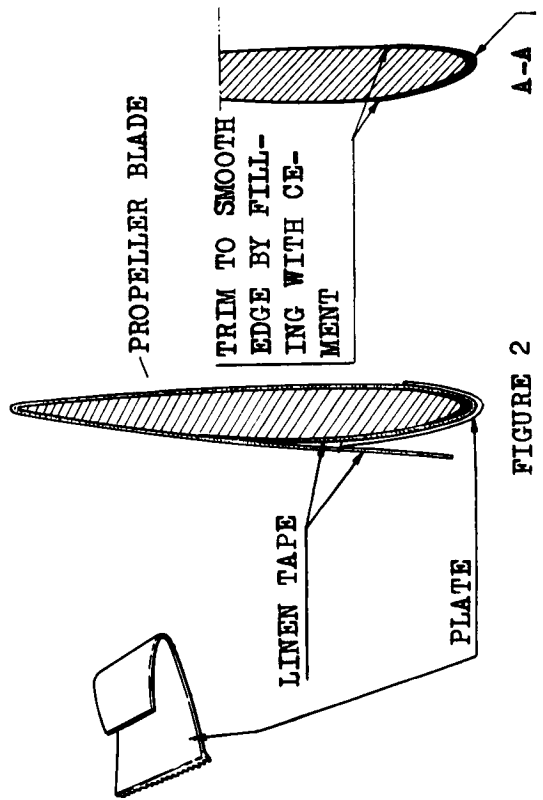


FIGURE 2

RUBBER LINING.
TO BE CEMENTED