

Repair of Woodcomp composite propellers - Owner Repairs

General:

- a) A repair which does not influence the mechanical or aerodynamic properties of the propeller can be carried out by a suitably competent repair man i.e. minor damage caused by impact or dis-bonding of no greater than 50mm. Where dis-bonding is in the tip area, this can be repaired if it extends no further than 50mm from the tip of the propeller. Small chips caused by debris such as stones can be dressed out and filled with resin if the damage is not greater than 5mm in diameter.



- b) Cracks in the locality of damage to a propeller can indicate damage to the composite fibers, in which case the damage cannot be repaired. Additionally, a repair cannot be carried out if the original contour of the blade is not evident.
- c) It is forbidden to carry out any repair of a propeller within 150mm of the hub.

Repair procedure:

- 1) Carefully clean the damaged area and ensure that it is free of dirt, dust and grease. Needles or needle-files can be used to clean and scuff the area. After scuffing the blades should be cleaned and degreased using a suitable solvent such as acetone.



- 2) Following the instructions of the adhesive manufacturer, and using a clean container, properly mix a small amount of resin. We recommend the use of a slow curing epoxy resin such as Araldite 24 Hr. Fast cure resins or laminating resins may not be as strong and may not be sufficiently viscous (if a laminating epoxy resin is used it may need thickening up adding microfibres to the resin). Only resins that remain mechanically stable after curing should be used.



- 3) Inject the resin into the damaged area of the blade using a suitable syringe or pipette.



- 4) Lightly clamp the joint (if necessary use a small piece of card or plastic to distribute the clamp load evenly over the damaged area) and wipe off any excess resin. Allow the resin to fully harden in a dry warm environment. Check the cure times specified by the resin manufacturer and ensure any temperature or humidity levels are respected during the curing period.



- 5) Once fully hardened use a fine wet and dry paper to clean the prop blade back to its original shape.
- 6) If required refinish the area with paint.
- 7) After the prop is re-assembled and the pitch is set it must be checked for balance, and where necessary re-balanced.
- 8) All work should be recorded in the aircraft & engine logbook.