

Prop Extension and Crush Plate Diameter

- Important to use extensions and crush plates that have the correct outside diameter at the prop
- Undersized (diameter) extensions and crush plates result in “cookie cutter” embossing of the hub faces
- Undersized extensions and crush plates lead to problems in service

Embossed Hub – Moisture Enters Wood at Edge of Extension Face



Embossed Hub – Moisture Enters Wood at Edge of Crush Plate



Resulting Problems

- Moisture ingress – disbonds of composites, softening of wood and wood rot
- Loss of engine-side hub face as a datum surface
- Non-uniform crush of hub perpendicular to long axis of propeller:
 - increases pitch of one blade and decreases pitch of opposite blade - aerodynamic imbalance
 - this is a challenge to correct during prop repair/refurbishment!

How to Avoid Hub Embossing

- Use prop extensions and crush plates that have the same general diameter as the prop hub!



How to Avoid Hub Embossing

- Have an undersized extension/crush plate and don't want to purchase new ones? Make “dummy bulkhead(s)” from .040” or .063” thick 2024-T3 aluminum that have the same OD as the prop hub.
- A dummy bulkhead under the crush plate can have a solid center, which protects the center hole of the prop from moisture.
- Do NOT employ the above measure if hub face(s) are appreciably embossed!

Dummy Bulkhead

- Make sure the center hole accounts for fillet radius at the base of the center boss on the extension (if one exists)

