

25 May 2007

**ADDITIONAL INFORMATION REGARDING MAIN ROTOR BLADE SKIN DEBONDING**

To: All R22 and R44 Owners, Operators, and Service Centers

RHC has recently issued Safety Alerts and Service Bulletins to address debonding at the outboard end of the main rotor blade lower skin. Although there have been several reports of blade skins beginning to debond, the problem has not been random or widespread. It has been limited to blades subject to excessive erosion and/or corrosion.

On one blade, a large area of corrosion between the lower skin and bonded-in cap at the tip of the blade caused the outboard few inches of skin to peel up. All other debonded blade skins examined by RHC were the result of excessive erosion at the skin-to-spar bond line. The bond joint is exposed when all finish (paint and primer) has been eroded at the bond line. An exposed joint can allow rain and dust particles to damage the adhesive bond at the skin's leading edge. Operators flying low in dusty environments should be particularly alert to the condition of their blades.

Pilots should look at the lower outboard surface of the blades at each preflight (at least once per refueling). It is easy to check for excessive erosion. (Erosion is always worse on the lower surface due to the angle of attack of the blade in flight.) The bond line is approximately one inch aft of the blade leading edge and is visible as a straight line when exposed. Blades with bare metal up to, or aft of, the bond line must be refinished per R22 SL-56/R44 SL-32 before further flight to prevent bond joint damage. As long as finish covers the bond line, bond damage due to erosion should not occur. If the bond line is not exposed, pilots should check that no visible crack in the paint exists along the bond line. Mechanics must check for corrosion between the skin and tip cap by performing a tap test during 100-hour inspections.

Recently manufactured blades have had production tolerances tightened to minimize the width of the bond line and reduce susceptibility to erosion damage. However, these improvements are not a substitute for appropriate maintenance and preflight inspections.