Maintenance & Inspection of BarryMount Piston Engine Isolators

HUTCHINSON®

Dirt and hydrocarbons should be removed by wiping with a clean rag. Soap and water or isopropyl alcohol can be used, but any other solvents should not be used as they can damage the elastomer or the elastomer-to-metal bond. When cleaning the aircraft engine(s) during normal inspection, cover the elastomeric engine mounts to prevent damage or contamination by cleaning solvents. Any lubricants or solvents spilled onto the isolators should be removed from the isolators as soon as possible.

Inspection of Installed Mounts

The engine mounts should be inspected during annual inspection, 100-hour inspection, or scheduled inspections of an aircraft's engine(s). The inspection can be accomplished with the isolators mounted on the aircraft and the isolators supporting the weight of the engine. The criteria for inspection include:

- **Condition of the elastomer:** The elastomer should be free of damage, cracking, or other deterioration.
- **Integrity of the metal-to-elastomer bond:** The elastomer should remain bonded to the metal washers. Failure of the bond can cause excessive drift of the powerplant. If delamination is suspected, it can be investigated by probing with a blunt- edged instrument. If more than 30% of the edge of a bonded interface is debonded over ¼" in depth, the isolator should be replaced.
- **Inspect the metal washers** (as visible) for corrosion or damage such as nicks, dings, etc. Minor damage can be blended out by hand, as long as depth of rework does not exceed 10% of material thickness.
- **Check structure around engine** (such as the cowling, prop spinner) for signs of damage caused by excessive drift of the engine. If damage is found, investigate cause. Excessive drift can be caused by a too-soft isolator, delamination, or by elastomer creep that occurs over time. If any of the above conditions are noted, the isolators should be removed, disassembled, inspected, and repaired or replaced.

Bench Inspection of Mounts

Engine vibration isolators should be removed and inspected under the following circumstances:

- When an engine is removed for overhaul.
- When sudden stoppage of the propeller or engine occurs.
- When the nacelle engine bay has been exposed to excessive heat (i.e. engine fire).
- When excessive vibration is experienced or reported.
- Any circumstance not identified above that would indicate the airworthiness of the isolator(s) may have been compromised (age weathering, deterioration, etc.).

Removed isolators should be inspected to the same criteria as installed mounts. The areas not normally visible when the isolators are installed will now be available for inspection also. Two additional checks of the molded assemblies should also be performed.

- **Check the free height** of the molded assembly. This dimension should only be measured with the molded assembly in an unrestrained (off the aircraft) condition. The minimum dimension is equal to 90% of the free height of a new molded assembly.
- **Check the eccentricity.** This dimension should only be measured with the molded assembly off the aircraft. The maximum eccentricity of a molded assembly is equal to 3% of the outside diameter.