GFA AN 194
(ISSUE 1)

AIRWORTHINESS ADVICE NOTICE

TYPE AFFECTED: Powered sailplanes engine extension / retraction systems incorporating a gas strut.

SUBJECT: Miscellaneous Airworthiness Information

OVERVIEW There have been multiple defect reports pertaining to gas strut failures on both engine and airframe systems. Gas struts which augment airframe and engine systems must be fully serviceable to ensure correct system function. Correct gas pressure is essential for system performance.

DEFECTS: 1. ENGINE GAS STRUT FAILURE ON DG 800

When performing an annual inspection, the attachment fitting on the gas strut was found elongated and near failure point. The wear was discovered whilst fault diagnosing a noise whilst cycling the engine extension / retraction system. The fitting failed completely when forced. When removed, the gas strut was found with nil gas pressure and not serviceable.

Figure 1: DG 800 gas strut attachment assembly with torn fitting.

SIGNED:

CHIEF TECHNICAL OFFICER

For and on behalf of:

THE GLIDING FEDERATION OF AUSTRALIA

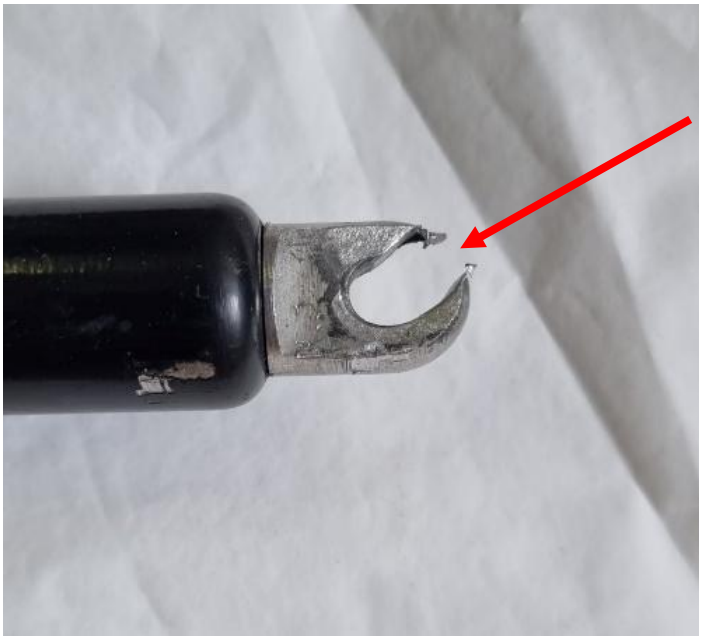

Figure 2: Close up of torn fitting.

The gas struts deterioration had been gradual and gone without notice. This added strain on the system components.

The struts attachment is not easy to inspect and access. The report states that the strut is a well-known failure point amongst DG owners. It is not known whether the gas strut had been previously replaced.

RECOMMENDATIONS: Routine maintenance of gas struts is essential for correct operation of the extension and retraction system. Routine maintenance should include the following:

1. ANNUAL INSPECTION: The gas strut and its attachments should be visually inspected every annual inspection. The piston should be wiped clean. Some pistons may require light lubrication in accordance with the maintenance manual. If the maintenance manual specifies extension and retraction times, these should be checked at every annual inspection.

2. THREAD LOCKING: Gas struts with threaded junctions should be secured against unwinding by use of a thread locking compound (recommend Loctite 243).

3. RECORD KEEPING: When performing maintenance on extension / retraction systems, cycle times should be recorded. Recording times and making logbook entry for the maintenance would assist in ascertaining system health.