Australian Government
Civil Aviation Safety Authority

AIRWORTHINESS BULLETIN

Hot Air Balloon Load Frame and Burner Bracket Cracking

AWB 14-004 **Issue** : 1
Date : 30 November 2012

1. Effectivity

All Type-Certified Hot Air Balloons.

2. Purpose

1. To notify and remind operators and maintainers about issues related to cracking in load frames and burner gimbal/frame assemblies;
2. To recommend specific inspection, maintenance and procedural actions.

3. Background

CASA has recently received a number of Service Difficulty Reports in relation to cracking of both load frames and burner gimbal/frame assemblies.

Cracking compromises the structural strength and integrity of structural members, potentially leading to failure. These conditions have led to instances where burner units have become dislodged on Australian registered balloons (see Figures 1 – 3). Such failures can cause catastrophic damage to the balloon and/or occupants should the burner(s) be in use.

Figure 1: Double Stratus burner unit. Note dislodged burner on the right.

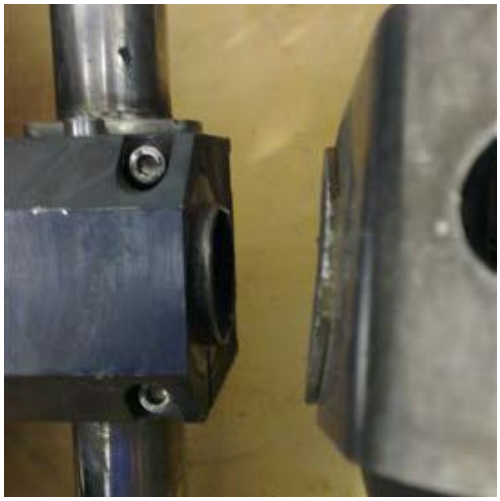

Figure 2: Close-up of weld-failure

CASA has released AD/BAL/23 and AWB 14-001 in response to specific known cracking issues on the Stratus burner product line from Cameron Balloons. However, a review of Service Difficulty Report (SDR) data reveals that cracks are an ongoing factor in managing the continuing airworthiness of all types of balloons.

Balloon manufacturers advise that the leading cause of structural cracking in load frames and burner brackets is attributed to ground handling and transportation techniques. The vibration and impact-loads induced by ground handling are more severe than normal flight loads. Some ground handling practises that are not in line with manufacturer instructions or advice has led to greater instances of cracking.

Figure 3: Failed burner gimbal mount

4. Recommendations

CASA highly recommends that all operators:

1. Undertake daily pre-flight inspections for any cracks or breakages in the frame, brackets and burner-attach points.

2. Monitor the frame, brackets and burner-attach points for any uncharacteristic structural movement or distortion. This may indicate the presence of a crack in the structure;

3. Inspect gimbal/frame assemblies during each 100-hourly scheduled maintenance or as per the manufacturer's maintenance schedule, being particularly vigilant for cracking or welding defects;

4. Repair any brackets found cracked with the manufacturer's approved repair scheme, or replace with a serviceable approved bracket assembly;

5. Review operator ground handling and transportation procedures and ensure they comply with manufacturer's instructions;

6. If required, contact the manufacturer to obtain approved ground-handling procedures, clarification of those procedures, or other ground transportation-related advice;

7. Submit a Service Difficulty Report (SDR) to CASA if cracks or other defects are discovered;

8. Report all cracks and defects to the manufacturer.

5. Enquiries

Enquiries with regard to the content of this Airworthiness Bulletin should be made via the direct link e-mail address:

AirworthinessBulletin@casa.gov.au

or in writing, to:

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