



Airworthiness Bulletin

AWB 14-001 Issue 3 - 5 February 2021

Cameron Stratus Double Burner Mount - Cracking and Failure

An Airworthiness Bulletin is an advisory document that alerts, educates and makes recommendations about airworthiness matters. Recommendations in this bulletin are not mandatory.

1. Effectivity

All Cameron Stratus double burner hangers having Part Number (P/N) CB8504 Issues A, B and C. These affected hangers are part of Stratus double burner assemblies identified by P/N CB8720 and P/N CB8721.

Note 1: EASA have released AD 2021-0042 on 29 January 2021 (effective 12 February 2021) that requires any aircraft with the above Part Numbers to perform an inspection as outlined in Cameron Balloons Service Bulletin 28.

Note 2: Cameron burner assemblies are installed on balloons other than those manufactured by Cameron Balloons, including particular models produced by Kavanagh Balloons. One example is CASA Supplemental Type Certificate (STC) ASL045SY, but there may be approvals under Civil Aviation Regulation (CAR) 35 or Civil Aviation Safety Regulation (CASR) Subpart 21M.

2. Purpose

To draw the attention of Registered Operators to the possibility of significant structural failure in Stratus double burner unit mounting brackets, and to inform operators of Emergency AD 2021-0042 released by EASA.

3. Background

Cracks have been reported in the welds of burner gimbal mounting brackets fitted to Cameron Stratus double burner units. In several instances, this cracking has led to the complete failure of the weld where the burner has become detached.

The potential exists for causing catastrophic damage to the balloon and/or occupants should the burner(s) be in use. A recent example can be found in Figures 1 & 2.



Figure 1: Double Stratus Burner Unit (Note: Failed hanger circled in red)
Photo Reference: Cameron Balloons SB 28 Rev 0

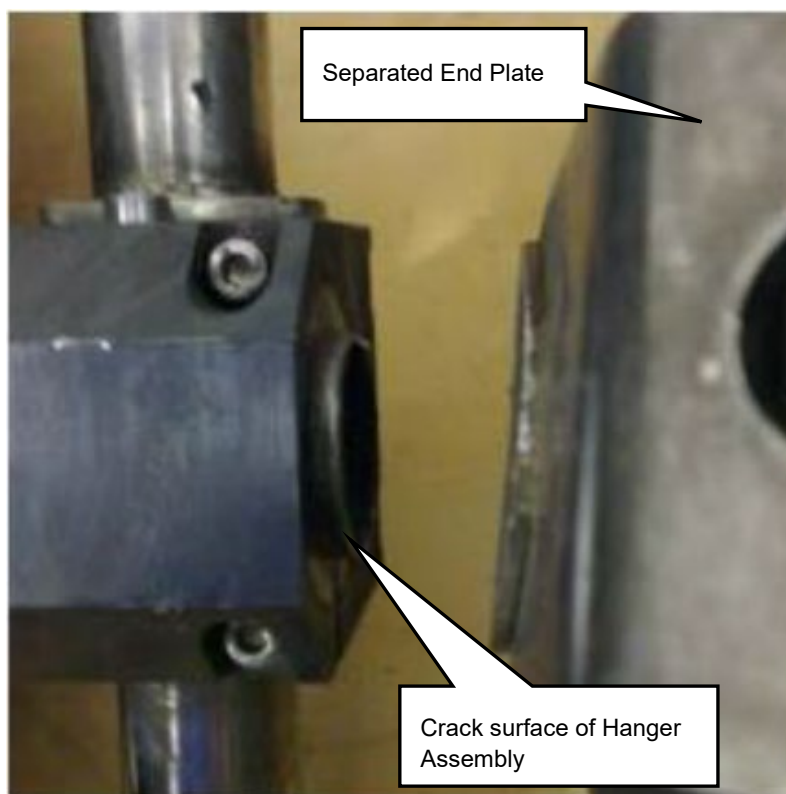


Figure 2. Close-up of weld failure.
Photo Reference: Cameron Balloons SB 28 Rev 0



Similar issues have been experienced with other members of the Stratus product line, namely the triple and quad burners which led to the release of AD/BAL/23 mandating the inspection of the gimbal mounting bracket. Whilst the root cause in those instances was a manufacturing discrepancy, it was exacerbated by loads induced during ground handling. Cameron Balloons advise that the Stratus double burner unit are not affected by the manufacturing discrepancy but are still susceptible to cracking due to inappropriate ground-handling techniques.

Poor ground-handling includes not taking the appropriate amount of care when transporting the balloon from storage to launch site, unloading the balloon from the ground transport and setting up equipment for launch, packing up the equipment after landing, re-loading the balloon onto the ground transport and then transporting the equipment back into storage. Any of the above ground-handling scenarios can cause damage or wear to the burners, including:

- Distortion, dents, scratches or gouging of the burner assembly and load frame from an impact due to dropping, dragging, snagging or striking overhead objects during ground transportation.
- Cracking in the burner assembly, load frame and at any weld due to poor ground-handling.
- Wear of gimbal fittings and load frame lugs due to ground transportation of burners installed onto baskets.

CASA recommends that all operators and maintainers handle burner units with the appropriate amount of care, in accordance with Cameron Balloons Hot Air Balloon Flight Manual Issue 10 – Section 7.4.2 '*Burners*', in order to minimise the risk of burner damage or wear.

Another occurrence was recently reported where a Stratus burner hanger, P/N CB8504 failed after landing, leaving one burner unit detached from the load frame. The suspected cause is fatigue cracking of the weld, caused mainly during ground transportation with the burner erect, combined with an overload event. This condition, if not detected and corrected, could lead to the burner falling on the balloon occupant's head, resulting in injury. It could also lead to an uncontrolled cold descent and hard landing, possibly resulting in injury to balloon occupants and persons on the ground.

To address this potential unsafe condition, Cameron Balloons issued Service Bulletin (SB) 28, providing inspection and replacement instructions. It was determined that some burner hangers cannot be inspected as they are covered with a doubler plate to reinforce the central part of the hanger bracket.

In response to this occurrence, EASA released AD 2021-0042 (effective 12 February 2021) that requires any aircraft with the referenced Part Numbers to perform an inspection as outlined in Cameron Balloons Service Bulletin 28, and depending on the findings, replace with a serviceable part. A drawing of the inspection locations for P/N CB8504 can be seen in Figure 3.

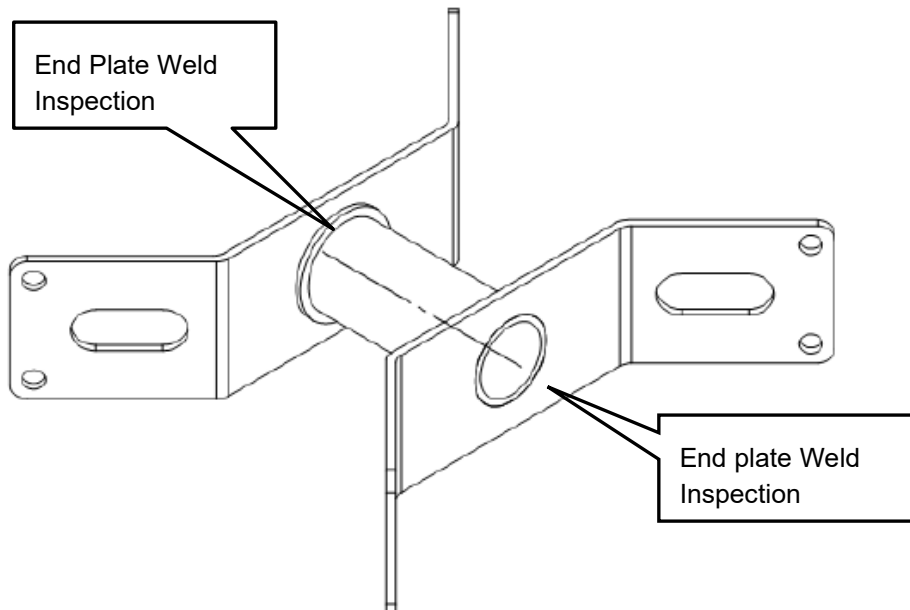


Figure 3. Isometric view of Hanger Assembly P/N CB8504 and weld inspection locations
Photo Reference: Cameron Balloons SB 28 Rev 0

This most recent release of AWB 14-001 Issue 3 builds on Issue 2, informing registered operators of EASA AD 2021-0042, as well as updating the referenced Part Numbers of potentially affected parts.

4. Recommendations

It is recommended that all Registered Operators of Hot Air Balloons Fitted with Cameron Stratus double burners carry out the requirements of EASA AD 2021-0042, which are to:

- Inspect the weld of the Stratus double burner hangers (P/N CB8504 Issues A, B and C) in accordance with the instructions outlined in Cameron Balloons SB 28, within 30 days or 10 flight cycles (FC) whichever occurs first, and thereafter at intervals not to exceed 12 months
- If cracking is detected during an inspection, replace the hanger with P/N CB8504 Issue D or later, in accordance with the instructions of CB SB 28 before the next flight.
- If it is found that the Stratus double burner assembly installed (P/N CB8720 or P/N CB8721) uses a doubler plate to reinforce the central part of the hanger bracket, replace the hanger with P/N CB8504 Issue D or later, in accordance with the instructions of CB SB 28 within 30 days or 10 flight cycles (FC) whichever occurs first.



CASA also recommends operators and maintainers take an appropriate amount of care during ground-handling of burner units, in accordance with Cameron Balloons Hot Air Balloon Flight Manual Issue 10 – Section 7.4.2 '*Burners*', in order to minimise the risk of burner damage or wear.

Report defects to Cameron Balloons Ltd.

5. Reporting

CASA encourages reporting the findings of inspections on the Stratus double burner via the [Defect Report Service](#).

6. References

EASA AD 2021-0042 (29 January 2021)

Cameron Balloons SB 28 Rev 0 (15 January 2020)

CASA Supplemental Type Certificate ASL045SY (19 November 2019)

AD/BAL/23 (4 November 2004)

Cameron Balloons Hot Air Balloon Flight Manual Issue 10, Amendment 17 (12 November 2020)

6. Enquiries

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

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