

Service Letter



1. General

(a) No.:	SL 1
(b) Revision / Date	A / February 2017
(b) Title:	Emptying of Burner Fuel Hoses
(c) Description:	Operators / Pilots are reminded of the importance of venting liquid fuel from the hoses of the Burner system after landing or ground test. Failure to carry out this action can result in permanent damage to the pressure gauge of the burner unit necessitating replacement.
(d) Applicability:	All burner types
(e) Effectivity:	All CNs

Note: Applicability= All types and variants to which the advice can be applied.
Effectivity= Actual CN or group of CN's to which the advice applies.

2. Accomplishment Instructions

Ref: Cameron Balloons Flight Manual, Section 4.6.3 'Action after landing'

and the instruction:

'Shut off and empty any fuel hoses not already shut down' [emphasis on 'empty' added]

Failure to follow this procedure at the end of each flight, or after any ground test of the burner system, can leave the burner hoses completely filled with liquid fuel. If they are disconnected from the fuel cylinders in this condition the self-seal poppet within the hose coupling will trap the liquid fuel within a fixed volume. Any subsequent slight increase in the temperature of the liquid within the hose or burner manifold will attempt to cause an expansion of the trapped fuel, which because it is held within a fixed volume will instead develop an increase in pressure.

This pressure increase can far exceed that which will occur in a fuel system where there is a vapour space above the liquid fuel, and can be such that only a few degrees of temperature rise can elevate the fuel pressure to above the maximum range of the burner Pressure Gauge. The gauge needle will then indicate the increasing pressure until it comes into contact with the back of the minimum reading 'stop' pin with sufficient force to either bend the needle, or cause the needle to slip on the central shaft. In either case the sensitive indicating gauge mechanism is permanently damaged and will no longer give a correct pressure indication.

The only corrective action possible is the replacement of the damaged Pressure Gauge.

This pressure rise behaviour within a trapped volume is purely a physical property of a fluid, and can affect any model of burner (or fuel system) made by any manufacturer.

Immediately after flight use, or ground testing, elements of the burner are likely to be at higher temperatures than the liquid fuel, and therefore failure to empty the fuel hoses at this time has a high probability of causing pressure gauge damage for the reasons explained above.



Example of Pressure Gauge damage

3. **Materials** none

4. **Other Publications Affected** none

5. **Remarks** none

Compiled by:

P Johnson

Notes:

Date: 1 Feb 2017

Name: Peter Johnson

6. Design Organisation Approval

Approval Statement

I hereby confirm that these instructions are in compliance with all the applicable airworthiness requirements. The technical content of this document is approved under the authority of DOA nr EASA.21J.140

Signed, for and on behalf of Cameron Balloons Ltd.

B.Bow

Head of Design



Date: 01-02-2017

Name: