

Continuing Airworthiness Notice – 28-007



Liquefied Petroleum Gas (LPG) Fuel Cylinders used in Hot Air Balloons

25 February 2010

Issued by the Civil Aviation Authority of New Zealand in the interests of aviation safety. A Continuing Airworthiness Notice (CAN) is intended to alert, educate, and make recommendations to the aviation community. A CAN contains non-regulatory information and guidance that does not meet the criteria for an Airworthiness Directive (AD). The inspections and practices described in this CAN must still be carried out in accordance with the applicable NZCAR Parts 21, 43 and 91.

The contents of this notice are ADVISORY ONLY and are NOT MANDATORY.

CAN numbering is by ATA Chapter followed by a sequential number for the next CAN in that ATA Chapter.

Applicability:

All Liquid Petroleum Gas (LPG) fuel cylinders used in hot air balloons.

Purpose:

This Continuing Airworthiness Notice (CAN) advises operators/maintainers of hot air balloons that LPG fuel cylinders must be maintained in accordance with the cylinder and/or the balloon manufacturer Instructions for Continued Airworthiness (ICA's).

Background:

The CAA is aware that some operators/maintainers of hot air balloons may be unaware of the ICA's applicable to LPG fuel cylinders used in hot air balloons. The inspection and test requirements/standards for LPG cylinders and fittings used in New Zealand are specified in the Hazardous Substances (Compressed Gases) Regulations 2004 which incorporates the inspections and 10 yearly hydrostatic test requirements specified in Australian Standard AS 2030.1-1999 or later revision. The Hazardous Substance (Compressed Gases) Regulations 2004 specifically excludes LPG cylinders used in aviation. They are excluded not because they are immune to deterioration but because they are part of balloons approved equipment and are expected to be maintained in accordance with rules made under the Civil Aviation Act. Civil Aviation Rule 91.605 requires aircraft to be maintained in accordance with the manufacturer's maintenance schedule. This may be the balloon manufacturer's schedule, where it includes instructions for cylinder inspection, or the balloon manufacturer may refer owners to the cylinder manufacturer's instructions.

A review of common balloon and cylinder types operating in New Zealand reveals the inspection requirements meet or exceed the requirements of the compressed gases regulations. Compliance with the civil aviation rules ensures aeronautical LPG cylinders have an equivalent level of safety to those maintained under the compressed gases regulations. In some cases the aeronautical LPG cylinder are built from light alloys or in lighter gauge than their ground based equivalents and accordingly have more stringent maintenance requirements. For example some aeronautical LPG cylinders have finite lives, after which they must be discarded.

Recommendation:

The CAA recommends operators/maintainers of hot air balloons review the fuel cylinder and balloon manufacturer's ICA's, and accomplish those ICAs applicable to the fuel cylinders, burners and hoses. The applicable ICAs are those supplied with the balloon and identified in the balloon logbook. If you cannot identify the ICAs applicable to your balloon or cylinder, contact the CAA at the address below. The CAA would expect the cylinder ICAs to at least meet the requirements in the Hazardous Substances (Compressed Gases) Regulations 2004, and the inspection and test requirements specified in the Australian Standard AS 2030.1. For reference these inspections should be accomplished every 10 years from the initial date of cylinder manufacture, and include an external and internal inspection for corrosion, and a hydrostatic proof test if any internal defects are found. The gas fittings should be inspected for defects, the cylinder threads for burrs, cracks and other damage. Cylinder Pressure Relief Valves (PRVs) should be inspected/tested and/or replaced at the intervals specified by the manufacturer. Cylinders with a manufacturer service life limit must be destroyed and replaced before exceeding the life limitation.

Enquiries:

All other enquiries regarding this CAN should be made to:

Owen Olls
Airworthiness Specialist
Email: ollso@caa.govt.nz
Phone: 04 560 9569

*ICAs: Instructions for Continued Airworthiness, a term which includes Service Bulletins, Service Letters, Service Instructions and maintenance publications by which the manufacturers may provide instructions necessary to ensure airworthiness.