



## Safety Information Bulletin

### Airworthiness

SIB No.: 2018-14

Issued: 06 September 2018

#### Subject: Use of Quarter-Turn Ball Valves on Liquid Gas Cylinders in Balloon Operations

#### Applicability:

All hot air balloons and hot air airships, as referenced in the EASA [Balloons products list](#), or [Airships products list](#), as applicable.

#### Description:

Propane fuel cylinders used in hot air balloon and hot air airship operations are most commonly equipped with either a multi-turn to open or a quarter-turn to open valve for the main liquid gas outlet. Both types of valve are airworthy and approved. However, in-service experience, as well as results of investigations of severe accidents with fatal injuries due to the outbreak of fire, have shown that an easy and quick shut-off of the main liquid gas outlet increases survivability.

Several air accident investigation reports concerning balloons refer to propane leaks and subsequent fires. Common causes of propane fires were fuel hose ruptures or leaks. In these cases, quarter-turn valves, allowing a quick shut-off of the main liquid gas outlet, would have possibly prevented the outbreak of a fire, or at least would have likely reduced its effects and increased the survivability.

The advantages of quarter-turn valves compared to multi-turn valves are the quick and unambiguous operation by a 90° rotation and the obvious indication of the valve's position. The quarter-turn valve lever should be installed in such a way that it indicates its position as shown below:



Figure: Schematic of typical installation

At this time, the safety concern described in this SIB is not considered to be an unsafe condition that would warrant Airworthiness Directive (AD) action under Regulation (EU) [748/2012](#), Part 21.A.3B.

This is information only. Recommendations are not mandatory.



**Recommendation(s):**

EASA recommends operators of hot air balloons and hot air airships to use already existing approved quarter-turn valves for propane fuel cylinders, for commercial and non-commercial balloon operations.

Furthermore, EASA recommends operators to include the emergency use of these valves in the pre-flight briefing of passengers. The operation of these valves is obvious and self-explanatory. In case of emergency, even passengers could close them. In case of unauthorized usage by a passenger, the obvious indication of the valve's position is apparent to the pilot.

**Contact(s):**

For further information contact the EASA Safety Information Section, Certification Directorate.

E-mail: [ADs@easa.europa.eu](mailto:ADs@easa.europa.eu).

For anyone interested to install a quarter-turn ball valve, contact [generalaviation@easa.europa.eu](mailto:generalaviation@easa.europa.eu) or the relevant type design approval holder for assistance and further information on available approved installations.

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