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The Boat Safety Scheme position on the refilling of LPG cylinders

Refilling LPG cylinders intended for factory replenishment – Mar 10

The Boat Safety Scheme (BSS) and LPGUK would have deep concerns should anyone attempt to refill small capacity LPG cylinders from larger ones.

Aside from the point that many cylinders are not generally the property of the customer, but belong to the LPG company, so refilling them runs into immediate legal problems, there are also many safety issues related to the refilling of LPG cylinders intended for factory replenishment.

In general terms, filling cylinders safely is a complex and controlled process the subject of UN Recommendations, EU Directives, UK Regulations, British and European Standards and UKLPG Codes of Practice. These exist so that the employees of the LPG cylinder supply companies are not put at risk when refilling the cylinders and so that customers can use the product safely.

Attempting to refill from an inverted LPG cylinder into another cylinder is very hazardous and a completely unsafe practice as the safety devices on the cylinders may be affected and not operate correctly. This has the potential to lead to a serious incident in the event of an escape of liquefied gas. One volume of liquefied butane or propane produces approximately 250 volumes of gas and thus even a small leak of liquid poses a considerable hazard.

Cylinders designed for self-filling, but without the 80% stop-fill protection - Jun 06

The range of re-fillable gas bottles identified over the page does not have an 80% 'stop-fill' facility. It is considered vital that re-fillable LPG cylinders cannot be filled beyond the 80% of the full capacity mark as the remaining 20% of the bottle's capacity allows for the expansion of the liquefied gas as the ambient temperature rises.

Once connected, an over-filled bottle can allow liquid LPG to pass through the regulator under high-pressure and enter the low-pressure system as the ambient temperature rises. If liquid LPG passes through the regulator a catastrophic release of LPG, with the consequent risk of explosion, is highly likely.

As far as the BSS is currently aware, there was only one UK supplier of user re-fillable LPG bottles without the 80% 'stop-fill' facility. The upper part of the MTH (Gloucestershire) cylinder has a 'safety overfilling control window' with a 'LPG-level visual indicator' whereby the owner can see that the bottle is filled to the proper level. The product was not marketed for use in boats but some may have made it into marine use.

The BSS believes that there is a significant risk to examiners in carrying out an examination where a gas cylinder is overfull. We do not believe that an examiner's safety should be wholly reliant upon the correct filling by owners and that without a fail-safe feature, we believe that there are insufficient safeguards against a potentially serious hazard.

As such if a user re-fillable LPG bottle without the 80% 'stop-fill' facility is found connected to the gas system the examination will be halted and the Examiner will call the BSS team to check the identity of the cylinder as of the type presenting the potential risk.

The examination will only be resumed and completed if the gas bottle is disconnected and replaced with an appropriate replacement LPG cylinder.

Refilling LPG cylinders V1.0 2011