semmco aviation

Case Study

OXYGEN CHARGING RIG THERAPEUTIC UNIT

The Challenge

There is a need to ensure portable therapeutic Oxygen cylinders used in the aircraft for passenger assistance during flights are serviceable when they are required. There was a time factor to consider as airlines are ever more concerned with turnaround times.

The Civil Aviation Authority (CAA) Minimum Equipment Lists (MELs) require airlines to hold a certain number of cylinders on board to meet their operational demands. For example only 2 out of 20 onboard cylinders on each flight are allowed to be unserviceable.

Many airlines will not have the ability to recharge the cylinders locally and will need to ship them to another location. Not only does this take the cylinders out of service leading to the need for more stock, expenses are incurred through dangerous goods charges from freight forwarding companies.

Semmco needed to find a solution for the customers where by the cylinders could quickly be charged locally in a line station or hanger while being easy to manoeuvre and operate by one person.

Solving the Problem

A Semmco Oxygen trolley was used as the gas source and attached to the Oxygen therapy charging rig. Up to four therapeutic Oxygen cylinders are then placed in the rig's containment cabinet which is designed to prevent sudden release of gas from the therapy cylinder burst disc or over charge pressure relief valve.

Further safety precautions included finger tight connections to reduce any chance of grease contamination, a pressure relief value and an optional excess flow valve. The equipment was designed to charge cylinders that have more than 50psi residual pressure which are then topped up to a maximum working operating pressure of 1,800psi.

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Basic training was given to the engineers.

The Benefits

Significant cost and efficiency savings are made by companies when charging portable therapeutic Oxygen cylinders using the rig.

One of the main benefits is the reduction of minimum aircraft defects obligation and as a result of the Oxygen Charging Rig being in operation fewer cylinders are required in stock. Not only is the health of the fleet better as serviceable bottles are in operation rather than in transit, this results in significant cost savings.

This approved method and takes only 30 minutes so improving the turnaround time, it can be done locally, and it significantly reduces dangerous goods shipping costs.

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