



## NHS PQAC Medical Gases Information & News

### NHS PQAC Advice Note

Date of Issue: 9<sup>th</sup> February 2016

### Transporting calibration gas cylinders in your car; necessary but is it allowed?

It is a question that has been asked many times, but still gives rise to confusion and concern. The answer is YES, but with precautions. Everyone carrying gas cylinders or equipment in a vehicle in the course of their work has a duty to comply with the laws that apply and follow some basic safety requirements.

The regulation that covers this best is the The Carriage of Dangerous Goods and Use of Transportable Pressure Equipment Regulations (CDG 2009) [SI 2009, No 1348], as amended (sometimes referred to as the ADR Regs). This states that any person transporting dangerous goods is responsible for knowing and complying with all the legal requirements concerning the entire load. Pressurised cylinders are considered to be dangerous. Flammable gases are in Transport Category 2. Oxygen and gases such as carbon dioxide and argon are in Transport Category 3.

A quantity threshold level is set which if exceeded, requires full compliance with the ADR regulations. Helpfully, the British Compressed Gas Association BCGA Guidance Note 27, "*Guidance for the carriage of gas cylinders on vehicles*" can be consulted on this, but is probably unnecessary for most medical gas testers, because the 'small load threshold exemptions' usually apply; for example:

- When private individuals carry dangerous goods which are packaged for retail sale and are intended for personal use; *e.g. when you return from the shop with your patio gas container.*
- When dangerous goods are carried only incidentally to the enterprise's main activity; *e.g. a plumber carrying propane on his way to a job; or an engineer taking refrigerant gas to repair a refrigeration system; or a QC(MGPS) en route to qualify a medical gas installation.*

Nevertheless, everyone carrying gas cylinders in the course of their work in a vehicle must follow some basic safety requirements:

- **Keep the car well ventilated.** Open a window and set the ventilation to allow air to enter from outside to ensure the car is well ventilated
- Never smoke (or allow anyone else to smoke) when carrying oxygen in the car (See panel across)
- Carry gases properly stowed and locked in the boot. Cylinders should be secured with a cargo net or similar
- Ideally, your vehicle will be equipped with a dry powder fire extinguisher in good working order

When carrying medical gas cylinders or portable liquid flasks in a car, it is recommended that you also carry a readily accessible and visible copy of a **TREMCARD** for these items.

**TREMCARD = Transport Emergency Card:** This should detail what is being carried, the hazards, and what actions should be taken in the event of an emergency. It should also list a contact name and telephone number that the emergency services can contact in the event of an accident.

**It is also recommended that you inform your motor insurance company if you intend to carry oxygen or other gases in your car.**

*Our thanks to Brian Armstrong (BOC); Health and Safety Executive; BCGA and Air Liquide for material to support this article.*



Firemenwork on a car after it exploded and burned in Hackensack, New Jersey February 2012

### "I can't believe anyone survived"

An 82 year-old smoker with emphysema, caused a massive car explosion after lighting cigarette in a car beside SEVEN oxygen tanks. Three consecutive explosions occurred and four people were injured in the blast. The top of the car was blown off and landed 50 feet away, all that was left of the car - a 1987 Mercury Grand Marquis - was a charred frame.

Rachel Quigley 29 February 2012 dailymail.co.uk

## INCIDENT REPORT

# Piped Oxygen line punctured at an NHS Hospital

This happens a lot, and is a frequent reason for calling out the QC(MGPS) in unsocial hours!

In this story, the Estates team were called in by the nurses working in the 'stroke unit' at the hospital concerned to repair a bedside lamp that had broken (the board supporting it had come off the wall).

A few patients were on the piped oxygen at the time, with one in a fairly bad condition.

The Estates personnel turned up fairly promptly and proceeded to drive a screw into the wall. They had not thought to test for any wiring or pipes that could be behind the plasterboard. The screw went through the plasterboard and then a loud hissing sound was heard.

The AP(MGPS) and QC(MGPS) were both called and together they then cut around the plasterboard where the screw went through. At the time, pipeline drawings for the ward were not available.

From the close-up of the pipe you can see that the Estates chap had grazed the pipe on the first go, pulled out and went straight in the second time..... and what a screw!

As patients were actively being treated with oxygen, it was agreed not to isolate the pipeline until cylinder replacements had been brought in. After the patients transferred to this supply, the pipeline was isolated and the pressure bled down. The team then waited for 5 minutes before proceeding, in case the wrong pipeline had been isolated with potential consequences for other patients. (A lesson learnt from our previous 'Advice Note' and the national MedGas refresher day) Nothing untoward happened, so the pipeline was purged.

The nurses were warned that the local alarm would go off - but nothing happened – there wasn't a local alarm! There was a slight moment of panic when a completely unrelated alarm from outside went off and was thought to be from the adjacent ward.



After investigation it was found that the repair could not be done until evening. At around 6 p.m. the CP; AP and QC met again, this time with the drawings from 1982! Perhaps unsurprisingly, the pipe size indicated on the drawing was different from what was installed and one of the side rooms had newer, trunked terminal outlets also not on the drawings. Moreover, the pipework was laid out in a confusing manner e.g. one branch of pipework served side room 1 and half of Bay A, the other served half of Bay A and half Bay B.

The repair was difficult as space was tight and no shielding could be done. The CP used a high temperature torch, protected the wall with asbestos and doused it and the plasterboard with generous amounts of water.

Subsequently, all the outlets in the ward had to be tested because there was no local high level shut-off valve for each bay.

**Once completed, the advice to the AP was to:**

- **Ensure drawings for the medical gases pipeline were updated to reflect the current, actual installation**
- **Consider reconfiguration of the pipework so that additional valves can be put in place to enable isolation of individual bays**

**And to the workmen – use your detector!**

*This is a true story that actually happened in 2015. It is good to learn from such incidents. Please let us know your story.*

**Edited by Tim Sizer and Theresa Hughes** for the  
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