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## Report on carbon monoxide poisoning of two friends in York – learn the lesson from this repeated story

The Boat Safety Scheme (BSS) is asking boaters to learn the lessons when, for the second time in six years, two inland boaters have died in a craft having equipment DIY installed with improvised, unsuitable exhaust systems and no working carbon monoxide (CO) alarms, according to the Marine Accident investigation Branch report published today on the vessel *Diversion*, on which two friends died in York on 4 December 2019

The events of Easter 2013 on Lake Windermere that saw a mother and daughter die on a sports cruiser when exhaust fumes from DIY exhaust filled the cabin space were sadly repeated on *Diversion* when the wrong sized automotive silencer was fitted to a diesel-fuelled heater and then wrapped in exhaust foil hiding the problem until the MAIB investigation revealed the cause and the source of the highly toxic gas.

The report shows that lethal amounts of toxic CO were being pumped into the cabin as the leak in the exhaust was only a few millimetres away from the circulatory warm air intake on the heater and all this was happening without warning, as a CO alarm had been removed.

The BSS urges boater owners to look after themselves and their fellow crew members by ensuring that any appliances and systems used on the boat are installed safely by competent fitters, then run according to the instructions and kept in good condition with routine professional maintenance.

BSS manager, Kevin Tyson, made this reminder:

‘The last line of defence against either CO from equipment on your boat or CO caused by sources beyond your boat is a suitable working CO alarm which is compulsory for boats with cabins on most inland waterways.’

The BSS Requirements state that boats with accommodation spaces i.e. areas within a boat surrounded by a permanent boat structure, must have a CO alarm certified by an accredited third-party certification body to at least BS EN 50291 standard although the marine specific BS EN 50291-2 alarm standard remains the recommendation for any new purchases.

You can read more about what you need to do to protect yourself and your crew from the risk of being poisoned by CO on the BSS website at [www.boatsafetyscheme.org/CO](http://www.boatsafetyscheme.org/CO) and we recommend taking the self-assessment challenge to test how carbon monoxide safe you are.

### Carbon Monoxide (CO) Fact File

CO is a silent killer and staying alive can mean recognising any early signs of poisoning and knowing what to do if CO poisoning is suspected.

Any carbon-fuel burning appliance or engine can cause CO – carbon fuels include diesel, petrol, gas, coal, wood and charcoal.

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It cannot be seen, smelt, tasted, or felt and in high concentrations, CO can kill without warning, sometimes in only minutes.

Breathing-in lower levels of CO over a longer period, can have serious effects such as memory problems and difficulty concentrating.

The early symptoms of CO poisoning can be masked or mistaken for colds, flu or COVID-19. Victims might suffer headaches, suffer mood changes; feel sick and dizzy; or be tired and confused, some may have stomach pains and start vomiting.

Drinking alcohol can also mask the effects and victims may not be aware of the danger creeping up on them, unless they have a warning from a CO alarm.

More serious affects can quickly develop such as loss of balance, difficulty breathing or controlling limbs and eventually unconsciousness.

More detailed information and protection advice is available in the Carbon Monoxide Safety on Boats booklet – see [www.boatsafetyscheme.org/co](http://www.boatsafetyscheme.org/co) for details

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### NOTES FOR EDITORS

**Marine Accident Investigation Branch (MAIB)** examines and investigates all types of marine accidents to or on board UK ships worldwide, and other ships in UK territorial waters.

The role of the MAIB is to contribute to boating safety by determining the causes and circumstances of marine accidents and working with others to reduce the likelihood of such accidents recurring in the future. Accident investigations are conducted solely in the interest of future safety. The Branch does not apportion blame and it does not establish liability, enforce laws or carry out prosecutions.

MAIB Safety Bulletins are produced when urgent safety issues emerge during the course of an investigation and the Chief Inspector of the MAIB decides to disseminate this important information in advance of the main investigation report being produced.

The MAIB Report concerning the fatal CO incident on mv Diversion is to be published on the MAIB website here - <https://www.gov.uk/government/organisations/marine-accident-investigation-branch> and follow the Diversion incident link.

The MAIB report into the two deaths on motor vessel Arniston on Lake Windermere is published here <https://www.gov.uk/maib-reports/carbon-monoxide-poisoning-on-motor-cruiser-arniston-with-loss-of-2-lives>

**The BSS** is a public safety project owned jointly by the Canal & River Trust, registered as a charity with the charity number 1146792, and the Environment Agency. At least 14 other navigation and harbour authorities have also adopted it. The navigation authorities' purposes for the Scheme are to help reduce the risks of fire, explosion and pollution on small craft. This is done by promoting fire safety and pollution avoidance advice to help boat owners keep themselves and their crews' safe as well as regular examination of fuel systems, gas systems, electrical systems and appliances. The BSS is responsible for the administration and supervision of the BSS examination scheme.

**The need for a BSS examination:** Boats that are older than four years and licensed or registered on most of the UK's inland waterways must go through a BSS examination once every four years and be certified as compliant with the BSS requirements. The BSS examination makes sure that a boat meets the navigation or harbour authority's minimum safety and environmental standards.

**BSS certification** has a life span of four years. Navigation authorities using the Scheme usually require BSS certification at the time of licensing, registration, toll renewal or similar. The certification is achieved when a boat is found to be compliant with all the BSS requirements relevant for that boat. These can be freely

downloaded or read on [www.boatsafetyscheme.org](http://www.boatsafetyscheme.org) . The compliance check is carried out by authorized and independent practitioners known as BSS Examiners.

From the 1st April 2019 a carbon monoxide alarm is required on all boats in scope of the Boat Safety Scheme (BSS) requirements that have permanent accommodation spaces. BSS Certifications will not be issued to boats without suitable alarms. More details can be found on this web page

<https://www.boatsafetyscheme.org/media/296735/BSS-COAR-Handout-21Mar2019-reduced-size.pdf>

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