



Safety Advisory Notice

To operators, owners and pilots of piston-engine aircraft

Number: AO-2017-118-SAN-002

Are you protected from carbon monoxide poisoning?

Carbon monoxide (CO) is a colourless, odourless and tasteless gas found in the exhaust gases of piston-engine aircraft. Carbon monoxide detectors provide warning to aircraft occupants of the presence of CO levels in the cabin that are above safe concentrations.

What happened

On the afternoon of 31 December 2017, the pilot and five passengers of a DHC-2 Beaver floatplane, registered VH-NOO, boarded the aircraft for a charter flight from Cottage Point to Rose Bay, New South Wales. The aircraft taxied for about 7 minutes. Shortly after take-off, the aircraft deviated from the standard flight path, stopped climbing, and entered a confined area (Jerusalem Bay) below the height of the terrain. The aircraft continued along the bay before making a very steep right turn and colliding with the water. All on board were fatally injured and the aircraft destroyed.

Why did it happen

Toxicological testing of stored blood samples found that the pilot and two of the passengers had elevated levels of carbon monoxide (CO). The levels detected were likely to have adversely affected the pilot's ability to control the aircraft during the flight.

As it is colourless, odourless and tasteless, CO is generally very difficult to detect. The aircraft was fitted with a disposable CO chemical spot detector. While these type of detectors are commonly used in general aviation aircraft, they have known limitations. They have a limited shelf-life when removed from their original packaging, which may be further affected by factors such as exposure to harsh direct sunlight, cleaning chemicals, and halogens. In addition, they are a passive device, which relies on the pilot regularly monitoring the changing colour of the detector to show elevated levels of CO. In contrast, electronic active CO detectors are designed to attract the pilot's attention through auditory and/or visual alerts when CO levels are elevated, so are more likely to be effective. These are now inexpensive and widely available. Had the pilot been made aware of the presence of CO, the pilot would have been able to take measures to reduce the risk to those on board. In addition, undetected CO in the cabin is a well-known risk that has been shown to have contributed to many fatal accidents across the world.

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AO-2017-118-SAN-002: The use of an attention attracting carbon monoxide detector in the cockpit provides pilots with the best opportunity to detect carbon monoxide exposure before it adversely affects their ability to control the aircraft or become incapacitated. The ATSB strongly encourages operators and owners of piston-engine aircraft to install a carbon monoxide detector with an active warning to alert pilots to the presence of elevated levels of carbon monoxide in the cabin. If not provided, pilots are encouraged to carry a personal carbon monoxide detection and alerting device.

Read more about this ATSB investigation: [AO-2017-118](#)

Read more about this Civil Aviation Safety Authority's airworthiness bulletin: [AWB 02-064 Issue 1](#)



Passive chemical spot detector as carried in VH-NOO (L) with example BWC2R-M1025 active digital CO detector (R) (Source: ATSB)

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