CARBON MONOXIDE DETECTION

PILOT SURVEY SUMMARY
Q2: DECEMBER 2021 - FEBRUARY 2022

This is the second quarterly report for the year-long trial investigating how CO detectors with attention-getting capabilities (so called 'active detectors') perform over the course of a full flying season in a variety of general aviation aircraft and operating conditions. We are particularly interested in how low-cost (commercial) active CO detectors perform in the UK GA environment.

The second quarter covered the main winter period and was of particular interest given the link between cabin heater use and CO events. The trial gained an additional 12 participants in the second quarter, bringing the total to 98. Registration for the trial closed at the end of January. We would again like to thank all those who have committed to the trial and diligently completed the surveys so far.

As always, we are keen to ensure that the monthly surveys ask the right questions and are straightforward to complete. If you would like to provide any feedback on the survey, please do not hesitate to get in touch via code@caa.co.uk

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98 registered participants.
67% average response rate to our monthly survey in Q2.

70% of participants flew between 1 and 5 times a month.
12% between 6 and 10 times.
3% between 11 to 30 times.
16% did not fly in the last month.

87% of participants reported **no** CO alerts in Q2.
There were **16 reports** (10%) of **1 - 5 alerts** and **5 reports** (3%) of **more than 5 alerts**.

As seen in Q1, the number of alerts increased with aircraft age.

74% of reports were for aircraft **41+** years old.
21% for aircraft 31-40 years old.
Only **5%** of CO alerts were for aircraft 11-20 years old.

We received approximately **20** descriptions of CO occurrences in Q2 and not all resulted in an alert.

The majority involved CO readings under 50 ppm and most occurred on the ground.

Those that took place in flight tended to be during climb or approach phases rather than in the cruise.

As with Q1, there were **no** reports of CO poisoning symptoms such as dizziness, headache or fatigue.

For those who fly with an active CO detector capable of displaying readings, **45%** recorded a peak reading of zero parts per million (ppm). Approximately **40%** of participants recorded a peak CO reading of less than 50 ppm.

Two of these involved a reported CO level in excess of 400 ppm, one of which was later confirmed as a low battery error message rather than a ppm reading. The other instance involved a sustained alarm but the digital display failed to show a ppm reading and therefore the actual CO level could not be confirmed.

88% of respondents reported **no** safety issues related to their use of an active CO detector.

Of those who did report issues, **4%** identified **inaudibility** as a risk, 2% highlighted the CO detector being loose in the cockpit as an issue and 1% indicated the detector could be a distraction.

The trial is now 50% complete and the third quarter will see the final period of cold weather operations and a transition to spring, which will hopefully bring more favourable flying conditions.

Thanks to all participants who continue to include valuable insights with their survey responses.

One person reported that their active CO detector alerted them to a **cracked exhaust** while the spot type detector they were also carrying failed to change colour.

Several participants have commented on the benefits of having an active CO detector with a digital display, allowing them to monitor ppm readings in real time.

There have been more reports of people either forgetting to turn their CO detector on before flying or turn it off after flying. Although many devices are in an 'always on' state, for those that can be turned on/off, adding checks to the pre- and post-flight checklists would serve as a useful reminder to turn the detector on/off.

We kindly ask trial participants to keep providing us with data via the monthly surveys as it is being used to directly shape aviation safety.

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