Piper PA-46-310P, N264DB	**22nm north-north-west of Guernsey**	**21 January 2019**	**Accident**

Investigation Synopsis

The accident occurred on 21 January 2019 at 2016 hrs. The wreckage was located on 3 February 2019 on the seabed approximately 22 nm north-north-west of Guernsey, within 100 m of the last secondary radar point recorded by the radar at Guernsey and at a depth of 68 m. There was one body present in the wreckage, which was recovered. The body was subsequently identified as that of the passenger.

The AAIB published Special Bulletin S1/2019 on 25 February 2019 to give preliminary information on the investigation and general information about how aircraft registered in the USA may be operated between the UK and France.

Safety Recommendation 2020-005

Justification

The CAA maintains a database of the licence details and qualifications of all pilots who hold a UK-issued flying licence as required under EASA Part ARA.GEN.220. It became clear during this investigation, however, that the CAA database for the pilot of N264DB was incomplete and contained numerous errors. The pilot had scanned a copy of his licence onto his laptop, which the investigation was able to access, but without this copy erroneous conclusions might have been reached about the pilot's qualifications and entitlements. This mismatch between database records and a pilot's licence is not unique, and previous AAIB investigations have encountered similar discrepancies. Although the authoritative document is the licence, the competent authority, in this case the CAA, should maintain accurate information as required by EASA regulation.

Therefore, the following safety recommendation was made:

> **Safety Recommendation 2020-005**
>
> It is recommended that the Civil Aviation Authority ensure that the system in place to meet the requirements of EASA Part ARA.GEN.220 is effective in maintaining accurate and up-to-date records related to personnel licenses, certificates and ratings.

Date Safety Recommendation made: 14 March 2020

LATEST RESPONSE

Response received: 29 June 2021

The CAA has reviewed its processes for maintaining and updating records related to personnel licences, certificates and ratings. CAA are recruiting additional resources to maintain accurate and up to date individual records. The additional measure of assessing these documents will continue to ensure we always give the correct information.

The “Aviation Licensing Discovery” activity will still be planned for a later date and should provide a more enhanced solution for personnel licensing. The CAA are currently focussed on improving the quality of existing application forms by moving more forms from paper to online.

Safety Recommendation Status **Closed**

AAIB Assessment **Adequate**

Action Status **Planned Action Partially Completed**

Feedback rationale

The AAIB agrees that the intended action meets the intent of the Safety Recommendation and the response is therefore assessed as 'Adequate'. As this is an ongoing project, the planned action is assessed as 'Partially Completed', but the recommendation can be closed. (EU Regulation 996/2010 article 18 refers).

RESPONSE HISTORY

Response received: 01 December 2020

Our review of the current licensing system delivered several options to allow us to meet the intent of this recommendation by maintaining accurate and up-to-date records related to personnel licences, certificates and ratings. In the current climate with resource heavily involved in both Covid-19 and BREXIT activities a two-stage solution was deemed appropriate.

In the short to mid-term, the practice of attaching a scanned copy of the examiner report forms to the Pilots record in the Pilot Information Management System (PIMS) will continue, but where we receive Freedom of Information requests or requests for information from official bodies additional checks will be added to ensure all data contained in the scanned documentation is manually entered on the pilot record as well.

The longer-term solution is for the ‘Aviation Licensing Discovery’ activity, which has been paused due to Covid-19 and BREXIT activities, to restart in February 2021. Where engagement with internal and external stakeholders will help clarify the end-to-end licensing requirements, enabling a solution to be created to meet all stakeholder needs and removing the additional burden of managing paper examiner report forms.

The discovery phase will take 8 to 12 weeks with the solution passing through Alpha and Beta testing prior to going live approximately 18 months later.

We will provide a further update when the discovery phase reports its findings and the solution has been shaped in June 2021. With additional updates at key stages of development to ensure we remain on track for implementation in December 2022.

AAIB Assessment – Adequate Open

Response received: 14 May 2020

The CAA accepts this Recommendation. A review of the current system is underway for ensuring licence records held by the Authority are updated following any changes related to personal licences, certificates and ratings to ensure the requirements of EASA Part ARA. GEN.220 are met. The intention is to complete this review by October 2020 with Recommendations implemented by January 2021. However, this timeline may be affected by operational changes required as a result of COVID19 contingency plans.

In addition, the CAA has and continues to remind examiners of their responsibility to submit the required examination documentation to the Authority within 14 working days from the skill test, proficiency check or assessment of competence.

CAA Status – Open

AAIB Assessment – Partially Adequate Open

(SRIS Reference: GB.SIA-2020-0005)

Safety Recommendation 2020-006

Justification

CO poisoning is known in the UK as the 'silent killer' as the gas cannot be seen, smelt or tasted and its effects can lead to a reduction in performance, permanent injury or death. Even the minor effects of CO poisoning can have a fatal consequence when operating an aircraft. As the existing two barriers to prevent CO poisoning (design and inspections) are not always effective, there is a need for a third barrier to alert pilots to the presence of CO in the cabin in time to take effective action. Low cost warning devices are readily available, and their carriage is actively encouraged by the regulators. Regulators have also produced specifications for CO detectors with active warnings. Although the carriage of a CO detector is at the owner's and pilot's discretion, it is unlikely that passengers, pilots under training and individuals who use cost sharing websites understand the risk.

Therefore, the following safety recommendation was made:

> **Safety Recommendation 2020-006**
>
> It is recommended that the Federal Aviation Administration require piston engine aircraft which may have a risk of carbon monoxide poisoning to have a CO detector with an active warning to alert pilots to the presence of elevated levels of carbon monoxide.

Date Safety Recommendation made: 02 March 2020

LATEST RESPONSE

Response received: 24 May 2022

While we will continue to encourage voluntary equipage of CO detectors and other safety enhancing equipment as part of our ongoing safety promotion mission, we consider our actions on this recommendation complete.

Safety Recommendation Status **Closed**

AAIB Assessment **Not Adequate**

Action Status **Planned Action Completed**

Feedback rationale

The AAIB acknowledges and supports the ongoing work by the FAA to encourage the voluntary carriage of CO detectors. However, the FAA's response is classified as Not Adequate reflecting its decision not to mandate their carriage in accordance with the intent of the SR.

RESPONSE HISTORY

Response received: 20 July 2020

The FAA is evaluating this recommendation and reviewing information related to carbon monoxide detectors that have been addressed in past issues for small airplanes.

We anticipate providing an updated response by December 31, 2020.

The FAA would like to thank the UK AAIB for submitting FAA Safety Recommendation 20.028 and its continued interest in aviation safety.

AAIB Assessment – Partially Adequate Open

(SRIS Reference: GB.SIA-2020-0006)

Safety Recommendation 2020-007

Justification

CO poisoning is known in the UK as the 'silent killer' as the gas cannot be seen, smelt or tasted and its effects can lead to a reduction in performance, permanent injury or death. Even the minor effects of CO poisoning can have a fatal consequence when operating an aircraft. As the existing two barriers to prevent CO poisoning (design and inspections) are not always effective, there is a need for a third barrier to alert pilots to the presence of CO in the cabin in time to take effective action. Low cost warning devices are readily available, and their carriage is actively encouraged by the regulators. Regulators have also produced specifications for CO detectors with active warnings. Although the carriage of a CO detector is at the owner's and pilot's discretion, it is unlikely that passengers, pilots under training and individuals who use cost sharing websites understand the risk.

Therefore, the following safety recommendation was made:

> **Safety Recommendation 2020-007**
>
> It is recommended that the European Union Aviation Safety Agency require piston engine aircraft which may have a risk of carbon monoxide poisoning to have a CO detector with an active warning to alert pilots to the presence of elevated levels of carbon monoxide.

Date Safety Recommendation made: 13 March 2020

LATEST RESPONSE

Response received: 24 August 2023

Within the framework of rulemaking task RMT.0392 'Regular update of air operations rules, the European Union Aviation Safety Agency (EASA) published the Notice of Proposed Amendment (NPA) 2022-11:

https://www.easa.europa.eu/en/document-library/notices-of-proposed-amendment/npa-2022-11

This regulatory proposal was open to public consultation until 20 March 2023.

Among other measures, the NPA considered safety recommendation UNKG-2020-001 in terms of potential rulemaking as regards the carriage or installation of carbon monoxide (CO) detectors on aircraft.

In this regard, EASA conducted a more detailed impact assessment. The conclusion of the impact assessment is that Option 0 'No rulemaking' is the recommended approach to take in this respect, and that the safety issue could be more effectively addressed through other, non-regulatory means.

EASA Safety Information Bulletin (SIB) 2020-01R1 'Carbon Monoxide Risk in Small Aeroplanes and Helicopters', as revised on 19 October 2021, aims to reduce the risk to an acceptable level by informing stakeholders of the dangers of exposure to CO and by providing recommendations on the prevention of CO exposure, detection of CO and actions to take if CO is detected in flight. It also refers to a specific CO concentration check for the exhaust heat exchanger which should be included in the Minimum Inspection Programme and provides recommendations on the means to accomplish this. Additional advice is given on the use of "carry-on" detectors. It further refers to CS-SC107a which has been amended to facilitate the recommendation to use active CO detectors (See Certification Specification (CS) Standard Change (SC) CS-SC107b 'Installation of Carbon Monoxide (CO) Detectors' in Executive Director (ED) Decision 2022/009/R 'CS-STAN Issue 4' which was published on 27 April 2022).

EASA will also continue using safety promotion channels to further highlight to members of the general aviation community the dangers of CO poisoning and the safety benefit of carrying or installing CO detectors on board aircraft. Moreover, EASA will continue monitoring the data on reported occurrences and the safety risks related to CO poisoning will continue to be monitored through the safety risk monitoring programme of EASA.

In addition, the topic of CO detectors was highlighted in EASA's "General Aviation Winter Preparation Update", first published on 17 December 2021 and subsequently updated each season:

https://www.easa.europa.eu/community/topics/winter-flying

Finally, EASA has published additional Safety Promotion material on the topic, now available in multiple languages, in the form of a 'Sunny Swift' article:

https://www.easa.europa.eu/en/newsroom-and-events/news/sunny-swift-co-intoxication

Safety Recommendation Status **Closed**

AAIB Assessment **Not Adequate**

Action Status **Planned Action Completed**

Feedback rationale

The AAIB acknowledges and supports the ongoing work by EASA to mitigate the risk of CO poisoning and to encourage the voluntary carriage of CO detectors. However, EASA's response is classified as Not Adequate reflecting its decision not to mandate their carriage in accordance with the intent of the Safety Recommendation. (EU Regulation 996/2010 article 18 refers).

RESPONSE HISTORY

Response received: 17 June 2022

The European Union Aviation Safety Agency (EASA) published Safety Information Bulletin (SIB) No. 2020-01 'Carbon Monoxide Risk in Small Aeroplanes and Helicopters' on 27 January 2020, to inform stakeholders about the dangers of exposure to Carbon Monoxide (CO) and to provide recommendations on the prevention of CO exposure, detection of CO and actions to take if CO is detected in flight.

EASA has subsequently updated the SIB and the resulting SIB No. 2020-01R1 was published on 19 October 2021 (https://ad.easa.europa.eu/ad/2020-01R1). The revision refers to a specific CO concentration check for the exhaust heat exchanger which should be included in the Minimum Inspection Programme and provides recommendations on the means to accomplish this. Additional advice is given on the use of "carry-on" detectors. It also refers to CS-SC107a which has been amended to facilitate the recommendation to use active CO detectors

(See Certification Specification (CS) Standard Change (SC) CS-SC107b 'Installation of Carbon Monoxide (CO) Detectors' in Executive Director (ED) Decision 2022/009/R 'CS-STAN Issue 4' which was published on 27 April 2022).

In addition, the topic of CO detectors was highlighted in EASA's "General Aviation Winter Preparation Update" which was published on 17 December 2021:
https://www.easa.europa.eu/community/topics/winter-flying

This safety recommendation is also being assessed within the framework of EASA rulemaking task RMT.0392 ‘Regular update of air
operations rules.’ The European Plan for Aviation Safety (EPAS) 2022-2026 indicates a planning milestone of Q3 2022 for publication of the associated Notice of Proposed Amendment.

AAIB Assessment – Partially Adequate Open

Response received: 03 February 2022

The European Union Aviation Safety Agency (EASA) published Safety Information Bulletin (SIB) No. 2020-01 ‘Carbon Monoxide Risk in Small Aeroplanes and Helicopters’ on 27 January 2020, to inform stakeholders about the dangers of exposure to Carbon Monoxide (CO) and to provide recommendations on the prevention of CO exposure, detection of CO and actions to take if CO is detected in flight.

EASA has subsequently updated the SIB and the resulting SIB No. 2020-01R1 was published on 19 October 2021 (https://ad.easa.europa.eu/ad/2020-01R1). The revision refers to a specific CO concentration check for the exhaust heat exchanger which should be included in the Minimum Inspection Programme, and provides recommendations on the means to accomplish this. Additional advice is given on the use of “carry-on” detectors. It also refers to an upcoming amendment to CS-SC107a which will reflect the recommendation to use active CO detectors (to be published in the next amendment to CS-STAN, which is planned for Q1 2022).

In addition, the topic of CO detectors was highlighted in EASA’s “General Aviation Winter Preparation Update” which was published on 17 December 2021:
https://www.easa.europa.eu/community/topics/winter-flying

EASA also intends to create more detailed material focussing on this safety issue for publication in Q1 2022.

This safety recommendation is also being assessed within the framework of EASA rulemaking task RMT.0392 ‘Regular update of air operations rules.’ The European Plan for Aviation Safety (EPAS) 2021-2025 indicates a planning milestone of Q1 2022 for publication of the associated Notice of Proposed Amendment.

EASA Status: Open

AAIB Assessment – Partially Adequate Open

Response received: 11 December 2020

Prompted by the preliminary results of the Air Accidents Investigation Branch (AAIB) investigation, the European Union Aviation Safety Agency (EASA) has published the Safety Information Bulletin (SIB) No. 2020-01 ‘Carbon Monoxide (CO) Risk in Small Aeroplanes and Helicopters’ on 27 January 2020.

The aim of the SIB is to inform Type Certificate and Supplemental Type Certificate holders, maintenance personnel, owners and operators of small aeroplanes (CS-LSA, CS-VLA and CS-23) and light helicopters (CS-27) with internal combustion engines or combustion heaters about the dangers of exposure to CO and to provide recommendations relating to the prevention, the detection and the reactions against CO exposure.

The SIB also refers to several related publications from the AAIB, the UK Civil Aviation Authority (CAA) and EASA.

In addition, the European Plan for Aviation Safety (EPAS 2020-2024) includes a regular update of the air operational rules (rulemaking task RMT.0392) to ensure efficiency and proportionality of the regulatory framework of Commission Regulation (EU) No 965/2012 laying down technical requirements and administrative procedures related to air operations. The associated Terms of Reference (ToR) were published on the EASA website on 07 October 2020, and, as stated on page 2 of the ToR, this safety recommendation will be considered within the framework of this RMT. See the following link to the ToR:

https://www.easa.europa.eu/document-library/terms-of-reference-and-group-compositions/tor-rmt0392

The EPAS 2020-2024 indicates a planning milestone of 2021 Q1 for the associated Notice of Proposed Amendment (NPA). It should be noted that, depending on the complexity of the topics, several NPAs may be published in steps towards that target date.

AAIB Assessment – Partially Adequate Open

Response received: 10 June 2020

Prompted by the preliminary results of the Air Accidents Investigation Branch (AAIB) investigation, the European Union Aviation Safety Agency (EASA) has published the Safety Information Bulletin (SIB) No. 2020-01 ‘Carbon Monoxide (CO) Risk in Small Aeroplanes and Helicopters’ on 27 January 2020.

The aim of the SIB is to inform Type Certificate and Supplemental Type Certificate holders, maintenance personnel, owners and operators of small aeroplanes (CS-LSA, CS-VLA and CS-23) and light helicopters (CS-27) with internal combustion engines or combustion heaters about the dangers of exposure to CO and to provide recommendations relating to the prevention, the detection and the reactions against CO exposure.

The SIB also refers to several related publications from the AAIB, the UK Civil Aviation Authority (CAA) and EASA.

In addition, the European Plan for Aviation Safety (2020-2024) includes a regular update of the air operational rules (rulemaking task RMT.0392) to ensure efficiency and proportionality of the regulatory framework of Commission Regulation (EU) No 965/2012 laying down technical requirements and administrative procedures related to air operations. This regular update also addresses safety issues stemming from safety recommendations that are not subject of dedicated rulemaking tasks. The draft Terms of Reference (ToR) to RMT.0392 were sent for consultation to the EASA Advisory Bodies on 12 March 2020, with a provision stating that they could be further amended if new safety recommendations are published.

Therefore, EASA will amend the ToR to RMT.0392 to include safety recommendation UNKG-2020-001. The revised ToR are foreseen to be published in 2020 Q2.

AAIB Assessment – Partially Adequate Open

(SRIS Reference: GB.SIA-2020-0007)

Safety Recommendation 2020-008

Justification

CO poisoning is known in the UK as the 'silent killer' as the gas cannot be seen, smelt or tasted and its effects can lead to a reduction in performance, permanent injury or death. Even the minor effects of CO poisoning can have a fatal consequence when operating an aircraft. As the existing two barriers to prevent CO poisoning (design and inspections) are not always effective, there is a need for a third barrier to alert pilots to the presence of CO in the cabin in time to take effective action. Low cost warning devices are readily available, and their carriage is actively encouraged by the regulators. Regulators have also produced specifications for CO detectors with active warnings. Although the carriage of a CO detector is at the owner's and pilot's discretion, it is unlikely that passengers, pilots under training and individuals who use cost sharing websites understand the risk.

Therefore, the following safety recommendation was made:

> **Safety Recommendation 2020-008**
>
> It is recommended that the Civil Aviation Authority require piston engine aircraft which may have a risk of carbon monoxide poisoning to have a CO detector with an active warning to alert pilots to the presence of elevated levels of carbon monoxide.

Date Safety Recommendation made: 14 March 2020

LATEST RESPONSE

Response received: 30 November 2023

The CAA remains committed to tackling carbon monoxide (CO) in general aviation (GA) and continues to be active in this area. The findings from the CAA 12-month of low-cost commercial off-the-shelf (COTS) CO detectors with attention-getting capabilities have now been published on the CO webpage.

In June, the CAA launched a second survey to understand if the work undertaken since the 2021 survey has had a positive impact in terms of increasing awareness and uptake of active CO detectors amongst general aviation pilots. The survey closed at the end of September and the results are available on the CAA webpage.

The CAA published a revision to Safety Notice SN-2020/003 in July, highlighting some of the key findings from the aforementioned 12-month study and provided additional guidance on the use of commercial off-the-shelf active CO detectors in GA aircraft.

In August, the CAA released a podcast to promote the latest pilot survey, increase awareness around the various activities undertaken, and featured interviews with members of the GA community about flying with a CO detector. The CAA also published an information leaflet in August outlining the advantages of flying with an active CO detector and provided information on the five most popular devices used in the CAA 12-month study.

The CAA will be running a public consultation in early 2024 to garner the views of the GA community on using active CO detectors.

A further update will be provided by the end of May 2024.

Safety Recommendation Status	**Open**
AAIB Assessment	**Partially Adequate**
Action Status	**Planned Action Ongoing Update Due** 31 May 2024

Feedback rationale

The AAIB looks forward to hearing the results of the public consultation in May 2024.

RESPONSE HISTORY

Response received: 28 April 2023

The CAA has now completed its review of the safety data and evidence gathered from the 12-month study of low-cost, commercial off-the-shelf (COTS) carbon monoxide (CO) detectors with attention-getting capabilities. The results were presented internally to the CAA Executive Committee (ExCo), and the findings from the 12-month study will be published in May.

The CAA recognises that COTS active CO detectors have an important role to play in combatting CO in general aviation (GA) alongside other measures such as robust maintenance. The 12-month trial combined with anecdotal evidence suggests that COTS devices can function reasonably at typical recreational GA altitudes, making them a low-cost, practical protection measure.

The N264DB accident highlighted the risk CO poses to occupants of piston engine aircraft. Whilst this risk may be known and understood by most qualified pilots the same cannot be said for consumers and third parties generally. The CAA seeks to address this and will be working with the GA community over the coming months to do so. Additionally, the CAA will continue to raise awareness generally around CO with a focus on prevention and detection measures.

A further update will be provided by the end of November 2023.

AAIB Assessment – Partially Adequate Open

Response received: 20 December 2022

The CAA continues to be active on the issue of carbon monoxide (CO) in general aviation (GA). Since the last update the CAA released a podcast in May 2022 that featured a segment on carbon monoxide and the 12-month study that was ongoing at the time. An animation has also been uploaded to the webpage that includes guidance for GA pilots on flying with an active CO detector.

The CAA has several other initiatives planned to raise awareness around CO and promote effective prevention and detection, which will be rolled out in the coming months.

The CAA has now concluded its 12-month study of low-cost, commercial off-the-shelf CO detectors with attention-getting capabilities. By asking participants to complete monthly surveys over the course of a full flying season the CAA has gained insight into how these devices perform in GA aircraft as well as a better understanding of the pilot experience flying with them. The study also produced valuable data on CO levels in a cross-section of the UK GA fleet. Four quarterly summary reports have been produced and are available for download via the CAA webpage. A final report summarising the findings of the full 12-month study has been prepared and will be published in May 2023.

The CAA is currently reviewing the evidence gathered from the 12-month study along with the safety data. The outcome of this review will be presented to the Safety and Airspace Regulation Group Executive Committee on March 22nd 2023 followed by the CAA Board on April 5th 2023.

AAIB Assessment – Partially Adequate Open

Response received: 02 March 2022

The CAA is actively engaged in addressing the risks associated with carbon monoxide (CO) in general aviation (GA) and has undertaken several initiatives in this regard.

A CAA webpage dedicated to CO in GA was launched in July 2021 and contains useful information for pilots, including how to reduce the risk of CO poisoning as well as the benefits of carrying an active CO detector. The webpage also includes details of the various CO-related activities the CAA has undertaken and is regularly updated to ensure the information is relevant and accurate.

In July 2021, the CAA launched a survey of GA pilots to understand the extent to which active CO detectors are already used within UK GA and how these devices perform in the rugged GA environment. The survey attracted 600 respondents and the findings are available on the CAA CO webpage as an infographic.

In addition, the CAA launched a 12-month operational trial of active CO detectors in September 2021 to assess the safety and practical implications of carrying active CO detectors onboard GA aircraft. It is hoped that the trial will also yield useful data on the extent to which carbon monoxide affects UK GA. Registered participants are asked to complete monthly surveys capturing their experience of flying with an active CO detector.

A report summarising the first three months of the trial is now available for download via the CAA CO webpage, and a copy is attached for your ease of reference.

A further update will be provided once the 12-month trial concludes.

AAIB Assessment – Partially Adequate Open

Response received: 02 June 2021

The CAA recognises the risk identified by the AAIB and is therefore conducting an operational trial of active CO detectors. The CAA will use the trial to assess the safety and practical implications of carrying active CO detectors onboard general aviation aircraft and expects to publish a report on the outcomes and findings of the trial in February 2022. The trial was originally scheduled to start in December 2020 but was delayed due to restrictions from COVID-19.

In the meantime, the CAA is taking the following steps:

• SN-2020/003 has been updated (published April 30th 2021) to reflect the latest status of the CO detector trial and to reference the specific CO concentration check included in the Minimum Inspection Programme of UK Reg (EU) No 1321/2014 Annex Vb (Part-ML).

• A Safety Sense Leaflet dedicated to carbon monoxide detection and prevention is being developed and will be published after the trial concludes to reflect the latest information and recommended practices.

A further update will be provided when the trial report is published.

AAIB Assessment – Partially Adequate Open

Response received: 14 May 2020

The Civil Aviation Authority does not currently accept this Recommendation but will revisit this position at the conclusion of an operational trial of carbon monoxide detectors.

The Authority is considering what barriers in addition to good design and maintenance practice will be both effective in further minimising the likelihood of critical CO contamination in the UK GA fleet, whilst acknowledging that any such additional measures should be both practical and proportionate.

On 3 March 2020, Safety Notice CAA SN 2020/003 was published which highlights the potential benefits of carrying low cost available commercial/domestic active detectors, as well as conventionally installed, approved aviation units. This Safety Notice will be advertised further through communication to all pilots when the current restrictions on recreational flying due to COVID-19 are lifted, to reduce the risk of this announcement being overlooked.

Importantly, the Safety Notice includes reference to a CAA-sponsored carriage trial of low-cost, widely available units which is intended to facilitate informed decisions in the future regarding recommending (or possibly mandating) specific categories of devices. This trial will establish if there are any negative safety implications (such as loose article hazard or distraction) associated with the carriage of carbon monoxide detectors. However, given the implications of COVID-19 on the 2020 flying season and stakeholder events, the timing for this trial is currently under review.

CAA Status – Open

AAIB Assessment – Not Adequate Open

(SRIS Reference: GB.SIA-2020-0008)

Safety Recommendation 2020-009

Justification

While the engine manufacturer produced guidance on how to examine its exhaust system, this guidance was not included or directly referenced in the aircraft manufacturer's 100-hour / Annual maintenance schedule. There was a warning in the introduction of the aircraft maintenance manual about consulting vendor publications, but there was no specific requirement in the 100-hour / Annual maintenance schedule for the PA-46-310P to pressurise the exhaust system to check for leaks. CO poisoning is known in the UK as the 'silent killer' as the gas cannot be seen, smelt or tasted and its effects can lead to a reduction in performance, permanent injury or death. Even the minor effects of CO poisoning can have a fatal consequence when operating an aircraft. As the existing two barriers to prevent CO poisoning (design and inspections) are not always effective, there is a need for a third barrier to alert pilots to the presence of CO in the cabin in time to take effective action. Low cost warning devices are readily available, and their carriage is actively encouraged by the regulators. Regulators have also produced specifications for CO detectors with active warnings. Although the carriage of a CO detector is at the owner's and pilot's discretion, it is unlikely that passengers, pilots under training and individuals who use cost sharing websites understand the risk

Therefore, the following safety recommendation was made:

> **Safety Recommendation 2020-009**
>
> It is recommended that Piper Aircraft Inc. ensure that the 100-hour / Annual maintenance schedule for the PA-46 variants references the engine manufacturer's guidance, where available, on inspecting and testing the exhaust system.

Date Safety Recommendation made: 02 March 2020

LATEST RESPONSE

Response received: 04 May 2021

The Airplane Maintenance Manual 761-783 (April 2, 2021) has been published and is available to subscribers. The primary purpose of this revision is the addition of a 100-hour inspection of an exhaust heater muff for the PA-46-310P and PA-46-350P model aircraft.

Safety Recommendation Status **Closed**

AAIB Assessment **Adequate**

Action Status **Planned Action Completed**

RESPONSE HISTORY

Response received: 30 June 2020

Piper Aircraft, Inc. acknowledges and agrees with Safety Recommendation 2020-009: “It is recommended that Piper Aircraft Inc. ensure that the 100-hour / Annual maintenance schedule for the PA-46 variants references the engine manufacturer’s guidance, where available, on inspecting and testing the exhaust system.”

In furtherance of and to accomplish the above safety recommendation, Piper Aircraft commits to the following:
1. Work with Original Equipment Manufacturers to determine the best way to convey the importance of thorough exhaust system inspections.
2. Review its maintenance and overhaul manuals to determine whether additional elaboration would increase the chance of a qualified mechanic finding a potentially un-airworthy condition. Piper will endeavour to complete this review to have any amplifications implemented in the aircraft maintenance manual in as timely a manner practical given the business constraints such as COVID-19, etc.

AAIB Assessment – Adequate Open

(SRIS Reference: GB.SIA-2020-0009)