MAIB
MARINE ACCIDENT INVESTIGATION BRANCH

ACCIDENT REPORT

VERY SERIOUS MARINE CASUALTY | REPORT NO 1/2023 | APRIL 2023

Carbon monoxide poisoning on board the sports cruiser *Emma Louise* resulting in two fatalities at Port Hamble Marina, River Hamble, England on 11 January 2022

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SUMMARY

On the morning of 12 January 2022, two men were found unconscious on board the sports cruiser, *Emma Louise*, which was berthed in Port Hamble Marina, on the River Hamble, England. It was later established that both men had died because of carbon monoxide poisoning.

The two men had boarded the boat the previous evening and had left the engine running while they remained in the boat's covered cockpit area. The MAIB investigation concluded that the boat's exhaust gas, which contained carbon monoxide, had likely been funnelled into the cockpit by an inflatable towable ski ring that was suspended from the transom of *Emma Louise*. The levels of carbon monoxide would have increased in the cockpit, rendering both men unconscious and causing their deaths. There was no means of alerting the men to the danger because a carbon monoxide alarm had not been fitted to the boat.

In November 2022, the MAIB participated in raising awareness of hazards to boat users during Carbon Monoxide Awareness Week and, in conjunction with the publication of this report, has issued a flyer to summarise this accident and highlight the key safety lessons to the boating community.

Emma Louise

FACTUAL INFORMATION

Narrative

At about 1700 on 10 January 2022, the owner of *Emma Louise* and his brother-in-law arrived at Port Hamble Marina, having travelled from their homes in Slough, England. They boarded *Emma Louise*, which was moored to a pontoon, and prepared to spend two nights on board. Shortly afterwards they went ashore to eat at a nearby restaurant and, at about 2000, returned to *Emma Louise*, where they slept on board.

On the morning of 11 January, the owner went home to attend to work matters while his brother-in-law visited Hamble. During the late afternoon they met up outside the restaurant in Port Hamble Marina and boarded *Emma Louise* at approximately 1700. It was drizzling with light, occasionally gentle, northerly wind, the air temperature was 10˚C and there was no swell; there were squally rain showers later in the evening. The men started the boat's engine and switched on a portable electric radiator, the cockpit lights, navigation lights and the entertainment radio. They then sat in the cockpit with its canopy closed and each drank a beer.

At 1727, the owner called his wife and told her that he and his brother-in-law planned to stay on board *Emma Louise* that evening and have a meal and some wine.

At about 1000 on 12 January, the owner's wife attempted to call her husband but he did not answer. She became concerned and called the Port Hamble Marina office. As a result of her call, two of the marina's staff walked to the pontoon. They found *Emma Louise* with its engine idling. They could see the two occupants through the closed cockpit canopy window and both of them were unresponsive when the marina staff called out to them. The marina staff opened the canopy and turned the boat's engine off. They then checked the two men and called the emergency services, having been unable to find a pulse on either of them.

At about 1030, ambulance staff attended and were followed shortly afterwards by officers from both the police and the fire and rescue service. At around 1050, both men were pronounced deceased.

The casualties

Emma Louise's owner, William Traynor, was 44 years old, 1.87m tall and weighed 96kg. He bought the boat in May 2020 and later named it *Emma Louise*, initially keeping it on the River Thames. In May 2021, he relocated *Emma Louise* to Port Hamble Marina, and he and his family frequently used it on the Solent.

The owner's brother-in-law, Martin Steventon, was 39 years old,1.76m tall and weighed 71kg. He had little boating experience but enjoyed spending time on board *Emma Louise* with his brother-in-law.

On 19 January, postmortems identified the primary cause of death as *Carbon monoxide* (CO) *toxicity* to both men. The levels of blood carboxyhaemoglobin (COHb)[1] saturation were recorded as 75% for the owner and 72% for his brother-in-law. The postmortems indicated blood alcohol levels of 0.5 and 1.5 times the United Kingdom's (UK) drink driving limit for the owner and his brother-in-law respectively; the postmortem report stated that the alcohol levels could possibly be attributed to putrefaction of the bodies.

Emma Louise description

Emma Louise was a 5.5m glass reinforced plastic Fletcher 18 GTS sports cruiser, built in 1996.

The boat had a cockpit area with a cushioned transverse bench seat to aft, below which the engine was fitted into a separate compartment **(Figure 1)**. The cockpit had two pedestal mounted seats; the helm and boat controls were mounted in a console in front of the starboard seat. There was a low wraparound

[1] Carboxyhaemoglobin describes the combination of CO and haemoglobin that forms in red blood cells when CO is inhaled or produced in normal metabolism.

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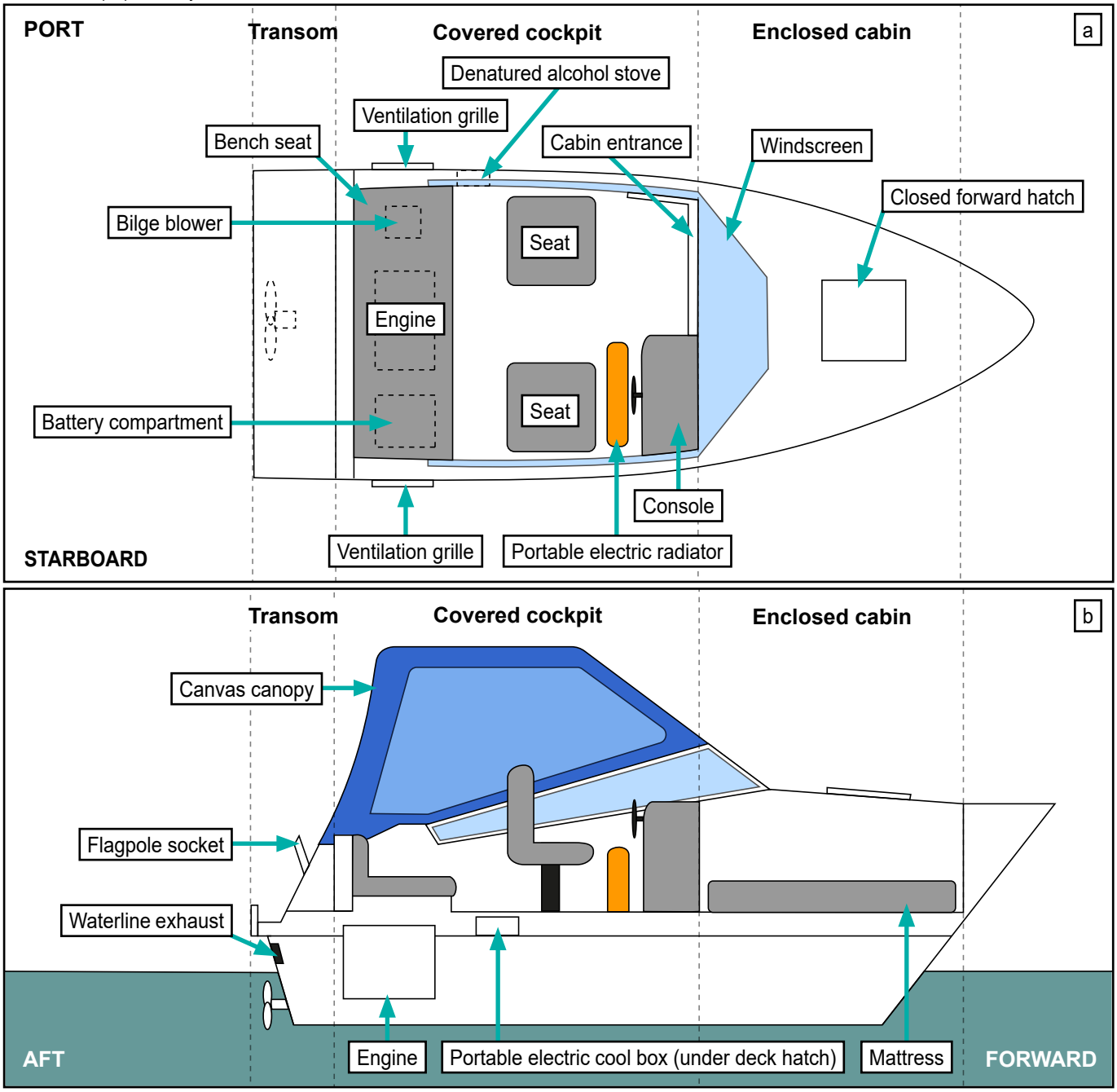

Figure 1: *Emma Louise* plan (a) and side elevation (b)

windscreen to the front of the console. A single burner denatured alcohol stove was stowed behind a hatch in the port side inner bulwark of the cockpit. A portable electric cool box was stowed below a hatch in the cockpit floor.

The cockpit area was covered by a canvas canopy, which had clear plastic windows and was supported by a tubular frame and fastened to the hull and windscreen by means of snap poppers. The canopy included panels that provided access and ventilation into the cockpit when they were open; these were secured with heavy duty zips and twist connectors when closed. There were small gaps where the canopy fitted around a railing mounted on the boat's transom. The canopy was otherwise well-fitted, with no large air gaps where it met the boat's hull and windscreen, and the canvas material was in good condition with no rips.

Forward of the cockpit area there was a small enclosed cabin with a mattress. The cabin ceiling was fitted with a hatch that opened onto the foredeck.

Emma Louise was equipped with a four cylinder 3.0 litre inboard petrol engine that developed 135 horsepower through a steerable outdrive. The engine had a wet exhaust system, which vented the exhaust gases and cooling water through a hull fitting in the centre of the boat's transom at the waterline.

An electric fan, known as a bilge blower, ventilated the engine compartment through a grille in the port side of the hull's topsides. There was a separate battery compartment adjacent to the engine compartment, with a ventilation grille to the starboard side of the hull's topsides. The owner had the stern drive rebuilt and the engine replaced in August 2021.

The boat's electrical power was supplied by 12 volt direct current (VDC) batteries, which were charged by an alternator via a belt drive from the engine. The batteries operated the engine starter motor, navigation lights, cockpit lights, entertainment radio, bilge blower and portable electric cool box. A shore power cable supplied 240 volt alternating current (VAC) to a double domestic socket, into which an 800 watt portable electric radiator was plugged.

Emma Louise and crew as found condition

The marina staff found *Emma Louise* moored starboard side to a finger pontoon with its bow pointing to the north. The boat's engine was running at idle out of gear with the bilge blower turned off. The canvas canopy was zipped closed and fastened down and the cabin ceiling hatch was secured shut. The denatured alcohol stove was stowed away.

The entertainment radio, cockpit lights and navigating lights were turned on and the portable electric cool box, which contained some food and beer, was plugged in.

An inflatable towable ski ring (known as a ringo) was suspended from a flagpole socket at the transom of *Emma Louise* **(Figure 2)**. The ringo was protected by a removeable cover. The 240 VAC shore supply cable was plugged into a socket on the pontoon; the portable electric radiator was switched on and was warm.

The owner of *Emma Louise* was lying on his back on the deck, parallel to the aft bench seat, and his brother-in-law was slumped in the seat that was behind the helm, with his face against the electric radiator. Both men were fully clothed. They had each consumed half of their bottle of beer; the meal and red wine were untouched. There had been no activity on either of their mobile phones since 1800 on 11 January 2022.

Figure 2: *Emma Louise*'s transom with ringo hanging from flagpole socket

Boat inspection tests

Emma Louise was relocated to Southampton, England, where the MAIB carried out a series of tests in its as found condition; 160kg of dispersed weight was added to simulate the effect of the two men on the boat's draught and trim. There were light northerly breezes during the tests, with air temperatures of approximately 6˚C.

The initial series of tests used a forward-looking infrared (FLIR)[2], Optical Gas Imaging (OGI) camera to film the passage and direction of the engine's exhaust gas. Gas detectors[3] were also placed on the boat in the following locations:

- above the waterline exhaust on the transom outside the canopy;
- on top of the vertical cushion of the aft bench seat;

[2] The FLIR camera was supplied and operated by FLIR Systems Ltd. FLIR OGI cameras can be tuned to the wavelength of specific gases such as CO and CO_2 and make these invisible gases appear as dark smoke when filmed.

[3] Honeywell BW™ Flex series portable multiple Gas Detector, capable of measuring up to 2000ppm of CO; ppm represents the number of units of a substance present in a million parts of another substance.

- on the console;
- in the engine compartment.

A domestic CO detector[4] was also placed on the console.

The test results from the idling engine showed that:

- 2000 parts per million (ppm) of CO was detected in the atmosphere just above the waterline exhaust;
- 2000 ppm of CO and 19.5% of oxygen (O_2)[5] was detected in the atmosphere in the covered cockpit above the bench seat;
- The exhaust gas tended to funnel upwards from the waterline between the ringo and the boat's transom **(Figure 3a)** and then seeped through small gaps between the boat's canopy and transom railing **(Figures 3b** and **3c)**;
- Exhaust gas was rising on convection currents above the portable electric radiator;
- <6ppm of CO was detected in the engine compartment;
- The domestic CO detector on the console alarmed within 10 minutes of starting the test;
- Light grey engine exhaust gas was emitted just below the waterline.

The second series of tests carried out in the boat's as found condition used CO gas test detectors[6] with a greater CO measuring range than used for the initial tests. These were positioned just above the waterline engine exhaust and within the cockpit, with the following results:

- ≤7000ppm of CO was measured in the atmosphere just above the waterline exhaust;
- The CO concentration in the covered cockpit varied, with an average of 984ppm during a 120-minute test, reaching 1400ppm within 35 minutes and a peak value of 2000ppm after 100 minutes.

A further test was carried out with the covered ringo removed from the transom **(Figure 4)** using the same CO detectors. The CO levels in the cockpit reached 200ppm after about 14 minutes before settling at around 300ppm after 30 minutes.

Exhaust gas and boat ventilation

Common sources of gas emissions found on pleasure boats include internal combustion engine and portable generator exhausts, cookers and cabin heaters. Typical exhaust emissions from a well-serviced petrol engine at idle can represent 50,000ppm (5%) CO, with the rest of the exhaust gas comprised mostly of carbon dioxide (CO_2). Engines running at less than optimal conditions due either to wear or poorly adjusted fuel settings tend to emit both black smoke rich in unburnt fuel and a higher than normal CO content. Insufficient ventilation in boats can lead to the accumulation of dangerous CO levels where exhaust gases had entered cabins and cockpits.

Carbon monoxide poisoning

CO is a highly poisonous gas that is 3% lighter than air. It is a colourless, odourless and tasteless product of incomplete combustion.

When CO is inhaled COHb forms, which readily replaces oxygen in the blood. Common symptoms of low exposure to CO poisoning include headache, nausea, stomach pain, difficulty breathing, tiredness and confusion. The effects become more severe as the CO concentration and duration of exposure increase **(Table 1)** and can be expedited where the atmosphere is also deficient in O_2 and rich in CO_2. The effects of a COHb level of 60 to 70% in blood include unconsciousness, convulsions, respiratory failure and death.

[4] CO detector conformed to British Standard EN 50291-1:2010+A1:2012 Electrical apparatus for the detection of carbon monoxide in domestic premises.

[5] Normal O_2 content in air is 21.5%.

[6] Dräger X-am® 5000 multi gas detectors with data-logging functionality capable of measuring up to 10,000ppm CO.

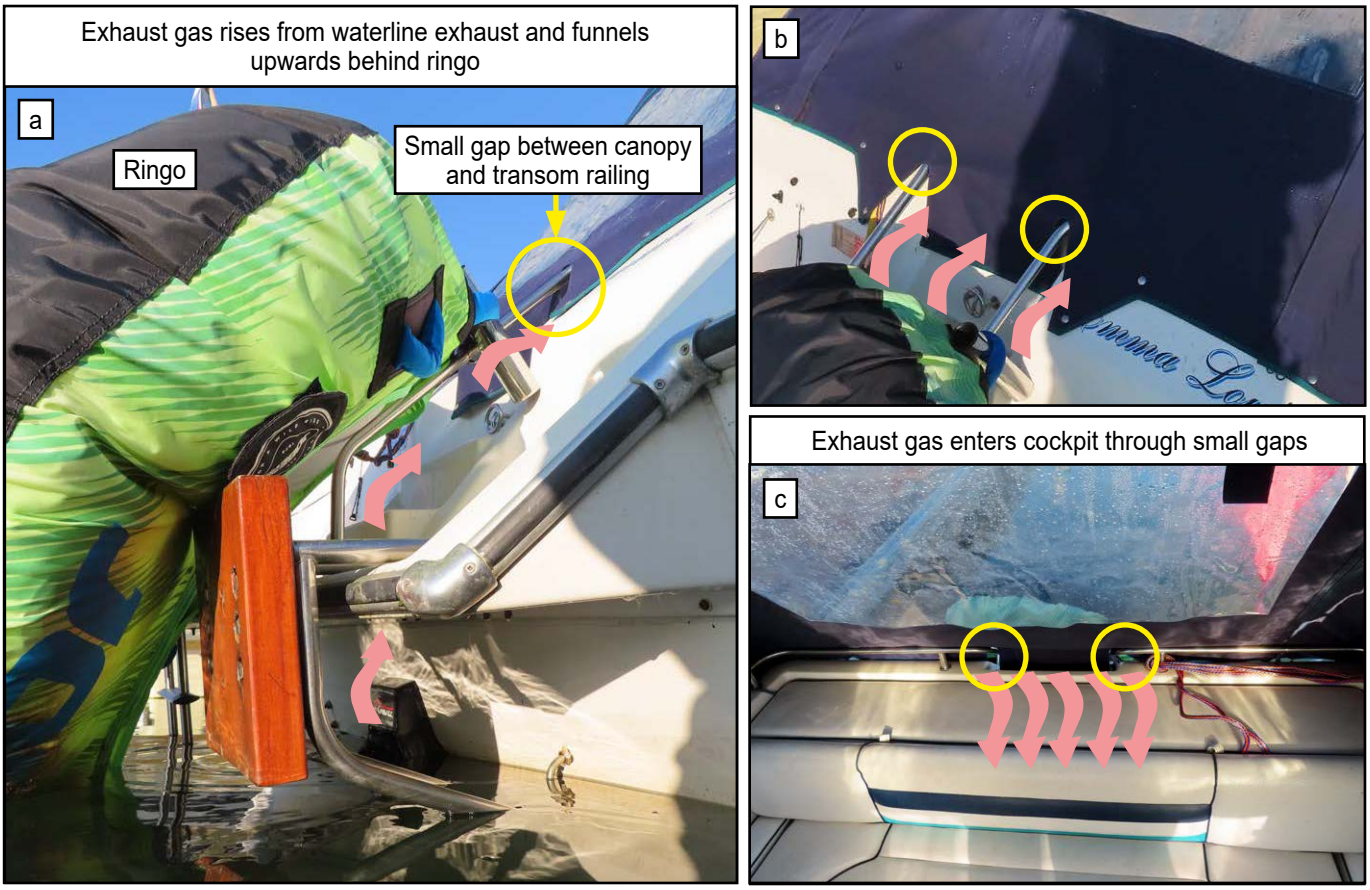

Figure 3: Representation of the likely passage of exhaust gas from waterline exhaust **(a)** into covered cockpit **(b** and **c)** based on the FLIR OGI camera

Figure 4: *Emma Louise*'s transom with ringo removed

CO (concentration)	Physiological effects
1500 ppm	Headache after 15 minutes, collapse after 30 minutes, death after 1 hour
2000 ppm	Headache after 10 minutes, collapse after 20 minutes, death after 45 minutes
3000 ppm	Maximum "safe" exposure for 5 minutes, danger of collapse in 10 minutes
6000 ppm	Headache and dizziness in 1 to 2 minutes, danger of death in 10 to 15 minutes
12800 ppm	Immediate effect, unconscious after 2 to 3 breaths, danger of death in 1 to 3 minutes

Table 1: Effects of carbon monoxide exposure (NORSOK Standard Z-013)

Carbon monoxide detectors

CO detectors are relatively inexpensive and are both easy to install and test. They are designed to sense CO levels that have accumulated over a period of time or suddenly increased, which would then trigger an audible and visual alarm. CO detectors for domestic use in the UK are required to meet BS EN 50291-1, while detectors that comply with the more stringent BS EN 50291-2 standard are best suited for boats. Both types are required to activate an alarm when predetermined levels of CO are detected **(Table 2)**.

CO (concentration)	Alarm must not activate before	Alarm must activate before
30 ppm	120 minutes	Not applicable
50 ppm	60 minutes	90 minutes
100 ppm	10 minutes	40 minutes
300 ppm	Not applicable	3 minutes

Table 2: British Standard CO detector alarm concentration and activation levels

Carbon monoxide legislation and information

At the time of the accident CO detectors were not required to be fitted on board recreational craft operating in UK coastal waters.

The Royal Yachting Association (RYA) provided guidance on the potential sources and danger of CO on its website, recommending that CO alarms were fitted on board boats and regularly tested by the owners.

Pleasure craft operating on the majority of the UK's inland waterways were expected to undergo a Boat Safety Scheme (BSS)[7] inspection every 4 years. The BSS inspection included an assessment of the boat's ventilation and, since April 2019, had required that a CO alarm was fitted on board. The BSS publication *Carbon Monoxide Safety On Boats* was produced in collaboration with the Council of Gas Detection and Environmental Monitoring (CoGDEM) and was updated in May 2019.

The publication was available on the BSS and CoGDEM websites and highlighted the hazard presented by CO, including a warning for mariners that:

> *on a moving boat and even when moored, cockpit awnings can act as a funnel to draw engine gas inside the boat.* [sic]

[7] The purpose of the BSS is to help minimise the risk of boat fires, explosions or pollution harming users of inland waterways.

On the purchase of CO detectors, it advised boat owners to:

> *… choose ones that meet the international standard BS EN 50291-2; these are best suited for boats.*

Some river and coastal marinas have voluntarily adopted the BSS inspection scheme for resident boats but this was not a requirement at Port Hamble Marina.

In 2015, the UK All-Party Parliamentary Carbon Monoxide Group published its *Carbon Monoxide: From Awareness to Action* report that highlighted many CO safety challenges, including the difficulties of raising and relying on CO awareness to ensure individuals are adequately protected from the dangers.

Similar accidents

Over the past 10 years the MAIB has investigated five accidents involving CO poisoning on pleasure vessels that (including this one) resulted in the tragic loss of nine lives.

In April 2014, two recreational boat users died of CO poisoning while sleeping on board the motor cruiser *Arniston* when gas leaked from a portable generator exhaust (MAIB Report 2/2015[8]). The occupants had not been alerted to the presence of CO because the alarms fitted on board did not work. The MAIB made a recommendation to multiple organisations, including the BSS, MCA, RYA and CoGDEM to coordinate efforts to raise awareness in the pleasure boat community about the dangers of CO and the importance of fitting CO alarms.

In June 2016, CO poisoning resulted in two fatalities on board the motor cruiser *Love for Lydia*, which was licenced to operate on an inland waterway (MAIB Report 9/2017[9]). The petrol driven inboard engine had been left running while alongside, probably to charge batteries, causing the exhaust from the engine to fill the cockpit canopy and spread into the cabin. No CO alarm was fitted on board and the occupants were overcome by the gas. The MAIB made several recommendations, including to the MCA to continue to build on current initiatives by coordinating relevant organisations to focus efforts on raising the awareness of the dangers of CO and the importance of fitting carbon monoxide alarms. It also made a recommendation to the BSS regarding the compulsory installation of CO alarms in craft participating in the BSS scheme.

In November 2016, the owner of pleasure boat *Vasquez* (MAIB Report 18/2017[10]) was overcome and died from CO poisoning when exhaust gas transferred from the engine compartment into the boat's enclosed canopy and cabin. The petrol engine's exhaust system, which had been modified during the boat's life, had leaked into the engine compartment. No CO alarm was fitted on board.

In December 2019, two men died of CO poisoning from a diesel cabin heater exhaust that was leaking into the cabin on board the motor cruiser *Diversion* (MAIB Report 4/2021[11]). The cabin heater's exhaust was not designed for marine use, its connection was not gas tight and the heater had neither been serviced nor checked by a professional heater installer. The boat's owner and his friend were preparing to go to sleep when they were overcome by the CO; they were not alerted to the danger because no CO alarm was fitted on board.

In 2020, the Office for National Statistics recorded 21 fatalities in England and Wales attributed to accidental CO poisoning in land-based scenarios.

[8] https://www.gov.uk/maib-reports/carbon-monoxide-poisoning-on-motor-cruiser-arniston-with-loss-of-2-lives

[9] https://www.gov.uk/maib-reports/carbon-monoxide-poisoning-on-board-the-motor-cruiser-love-for-lydia-with-the-loss-of-2-lives

[10] https://www.gov.uk/maib-reports/carbon-monoxide-poisoning-on-motor-cruiser-vasquez-with-loss-of-1-life

[11] https://www.gov.uk/maib-reports/carbon-monoxide-poisoning-on-motor-cruiser-diversion-with-loss-of-2-lives

ANALYSIS

The owner of *Emma Louise* and his brother-in-law died from CO poisoning due to a build-up of exhaust gas within the boat's covered cockpit while it was moored alongside. The CO was emitted as part of the exhaust gases released from the boat's running engine; it is likely that the gases seeped under the canopy at the transom into the cockpit. The CO was able to accumulate and quickly reach fatal levels because the canopy was well-fitted with no large air gaps, which resulted in a lack of ventilation.

The return to the boat

When the two men returned to *Emma Louise* on the night of the accident the weather conditions were squally. Once they were on board and had turned on the cockpit lights they secured the canopy and switched on the portable electric radiator, probably, to keep warm and dry. There was no evidence that they planned to take the boat out on the river that evening so it is probable that the navigation lights were turned on in error. As the radiator was plugged into the domestic socket supplied by the shore power cable it is likely that the engine was started to maintain power to the cockpit lights, portable cool electric box and entertainment radio, which was supplied by the boat's batteries.

The source and path of carbon monoxide

The alcohol stove had not been used on the evening of the accident and has been discounted as a potential source of CO. MAIB testing found no evidence of an exhaust leak inside the engine compartment that might have transferred into the cockpit.

The tests confirmed that the engine exhaust exited freely into the atmosphere at the waterline **(Figure 3a)**, indicating that the boat's draught and the lack of swell did not set up a back pressure on the exhaust that might have affected engine performance. The amount of CO in the atmosphere at the exhaust during the tests (≤7000ppm) and the lack of black smoke in the exhaust gas emitted did not provide any indication that the engine, which had been replaced in the year before the accident, was defective.

Although atmospheric conditions on the evening of the accident were not identical to the MAIB post-accident tests, it is likely that the passage of the exhaust gas into the boat would have been similar. When the engine was started it is probable that the warm exhaust gas rose and was funnelled between the ringo and the boat's transom up to the lower edge of the canopy, where it then seeped into the cockpit through the small gaps around the transom railing **(Figure 5)**. The CO rich and O_2 deficient atmosphere that was detected above the aft bench seat during the tests showed the potential for the incoming gas to degrade the atmosphere in the cockpit. Although CO is only slightly lighter than air, it is possible that convection currents rising from the warm portable electric radiator caused the CO' within the exhaust gas to mix with the air and distribute within the cockpit, which was fully enclosed by the canopy. The canopy was intact, fully closed up and well-fitted to the hull and windscreen, while the forward hatch was closed and the engine bilge blower was not running. Consequently, it is likely that only a small amount of the polluted atmosphere would have been refreshed with clean air.

The collapse and poisoning

The air quality in the cockpit's atmosphere is likely to have deteriorated relatively quickly. The as found position of the two men suggested that the owner of *Emma Louise* was sitting on the aft bench seat and his brother-in-law was in the seat behind the helm at the time of the accident. Neither man was significantly under the influence of alcohol, so it is unlikely that their alcohol intake had a major effect on their physiology. It is possible that the air at their head height was sufficiently saturated with CO and CO_2 and was slightly deficient in O_2; this would have likely caused both men to fall unconscious at a similar time. The absence of mobile phone activity after 1800 and the fact that the meal and wine were untouched suggest that they fell unconscious not long after they arrived on board *Emma Louise*. The levels of accumulated CO identified during the MAIB tests combined with CO_2 and air that was slightly deficient in O_2 showed that similar exposure to the two men was sufficient for them to remain unconscious and for their blood COHb to rise above 70%, thereby causing their deaths later that evening.

For illustrative purposes only: not to scale

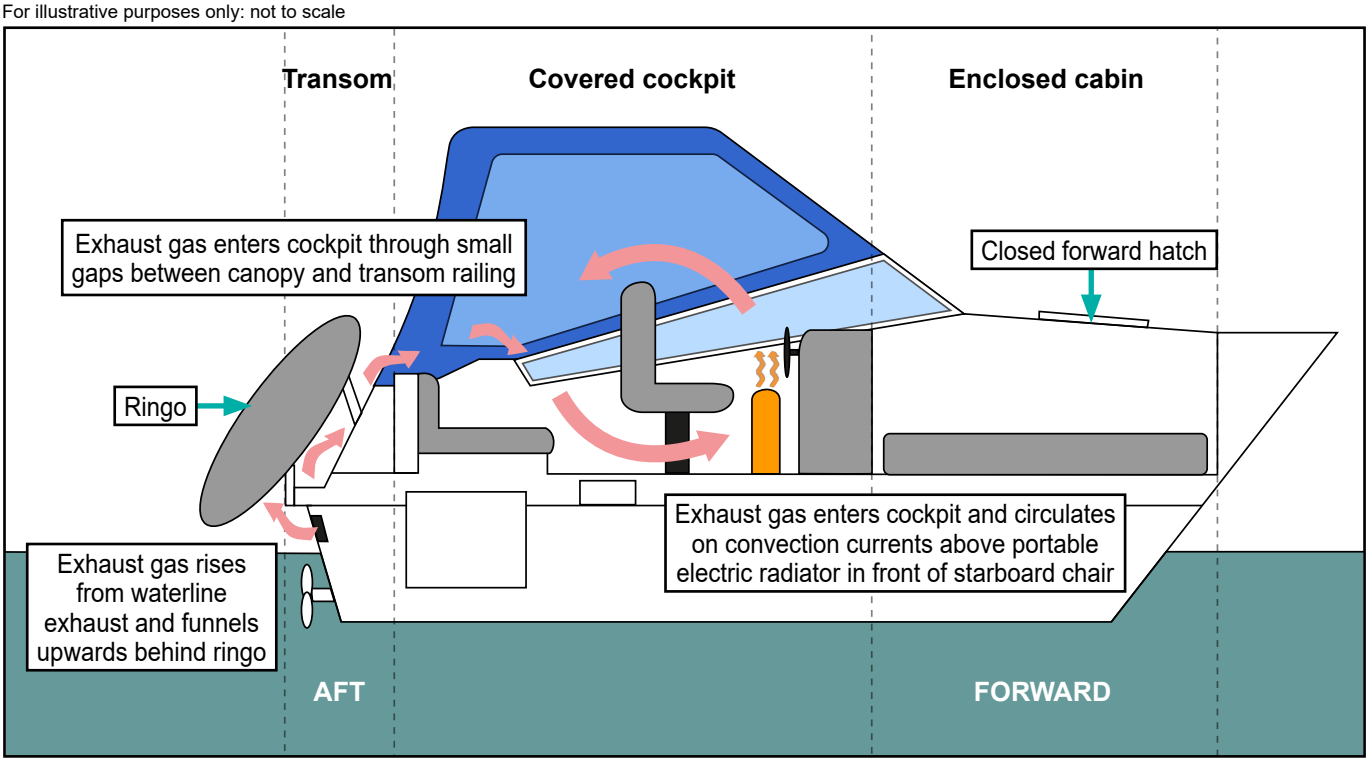

Figure 5: Representation of possible path of exhaust gas within *Emma Louise*'s covered cockpit area

Although the MAIB tests demonstrated that some exhaust gas did transfer into the cockpit when the engine was running with the ringo removed, it is likely that the two men's exposure to CO would have been at a much lower level that probably would not have resulted in their deaths. CO is always present within the exhaust of an engine that runs on fossil fuel; however, the risk of CO poisoning can be reduced if a boat's engine is not run while the vessel is stationary and canopies and cabins are well ventilated.

Use of carbon monoxide detectors

The MAIB tests showed that if either a domestic or marine approved CO detector had been installed in the cockpit of *Emma Louise* it would inevitably have alarmed within 10 minutes of the boat's engine being started. This would have alerted the men to the presence of CO and provided them with an opportunity to stop the engine and ventilate the cockpit. An operational CO detector could have prevented the needless loss of lives in this case and also the tragic accidents on board the pleasure craft *Diversion*, *Vasquez*, *Love for Lydia* and *Arniston*.

It is essential that CO alarms are fitted in any areas where carbon monoxide could accumulate and pose a risk to health, including boats' cockpits and accommodation areas. Preference should be given to selecting detectors marked as meeting BS EN 50291-2, which are intended for use in a marine environment. It is critical to fit the CO alarm properly, following the manufacturer's installation instructions, and to regularly test it. Although there is no requirement for pleasure boat owners operating from most coastal marinas to install a CO detector, the value of such an inexpensive and easy to fit safety device on all pleasure craft cannot be underestimated. It also makes good sense to adhere to the BSS inspection regime, which includes a requirement for CO alarms following the MAIB's recommendation to the BSS as part of the *Love for Lydia* investigation.

Carbon monoxide awareness

The high number of MAIB investigations into CO-related fatalities involving pleasure craft over the last 10 years, coupled with the number of land-based fatalities due to CO poisoning in 2020, demonstrate the very real threat the gas poses. However, despite the range of good quality information produced by the RYA, CoGDEM and BSS, it appears that awareness of the danger of CO and how to prevent it causing harm remains low within the pleasure boat community.

Although MAIB recommendations made as part of the *Arniston* and *Love for Lydia* investigations to tackle this lack of awareness were accepted by the MCA and other stakeholders, the tragic loss of two lives in this accident demonstrates that there is further work to be done by industry stakeholders to raise CO awareness among users of coastal pleasure craft.

CONCLUSIONS

- The two men died on board *Emma Louise* as a result of CO poisoning due to a build-up of exhaust gas within the boat's covered cockpit area where they were seated.
- It is likely that the exhaust gas was funnelled into the covered cockpit of *Emma Louise* by an inflatable towable ski ring that was suspended at the transom.
- The cockpit canopy on board *Emma Louise* was intact and well fitted and the forward hatch was secured. Therefore, there was little ventilation to enable either the CO to disperse or fresh air to enter the boat.
- It is possible that convection currents rising from the warm portable electric radiator caused the CO within the exhaust gas to distribute within the cockpit.
- The two men had no means of being alerted to the rising CO level before being rendered unconscious and then succumbing, as there was no CO alarm on board *Emma Louise*.
- The increasing number of fatalities caused by CO poisoning on board pleasure craft indicates that there is further work to be done by industry stakeholders to raise CO awareness among pleasure craft users.

ACTION TAKEN

MAIB actions

- In November 2022, the MAIB participated in the UK government's Carbon Monoxide Awareness Week, released a statement from the Chief Inspector of Marine Accidents[12] and produced an information video[13] in support of the campaign.
- The MAIB has issued a safety flyer highlighting the hazards presented by carbon monoxide and distributed this to marina operators, pleasure boat trade organisations and the yachting media in conjunction with the publication of this report.

RECOMMENDATIONS

Given the recommendations issued by the MAIB as a result of its *Love for Lydia* investigation, and the subsequent actions taken during this investigation, no further recommendations are made in this report.

[12] https://www.gov.uk/government/news/carbon-monoxide-awareness-week-2022

[13] https://www.youtube.com/watch?v=jNatvhBrlqo&ab_channel=MarineAccidentInvestigationBranch

VESSEL PARTICULARS	
Vessel's name	*Emma Louise*
Flag	UK
Type	Fletcher 18 GTS sports cruiser
Registered owner	Privately owned
Manager(s)	Not applicable
Year of build	1996
Construction	Glass reinforced plastic
Length overall	5.5m
Gross tonnage	Not applicable
Minimum safe manning	Not applicable
Authorised cargo	Not applicable

VOYAGE PARTICULARS	
Port of departure	Not applicable
Port of arrival	Not applicable
Type of voyage	Moored
Cargo information	Not applicable
Manning	2

MARINE CASUALTY INFORMATION	
Date and time	11 January 2022 in the early evening
Type of marine casualty or incident	Very Serious Marine Casualty
Location of incident	Port Hamble Marina, Hampshire
Place on board	Cockpit
Injuries/fatalities	2 fatalities
Damage/environmental impact	None
Ship operation	Moored
Voyage segment	In port
External & internal environment	Light northerly wind; drizzle; 10°C.
Persons on board	2