

**Extracts from
The United Kingdom
Merchant Shipping
(Accident Reporting and
Investigation) Regulations
2012**

Regulation 5:

“The sole objective of a safety investigation into an accident under these Regulations shall be the prevention of future accidents through the ascertainment of its causes and circumstances. It shall not be the purpose of such an investigation to determine liability nor, except so far as is necessary to achieve its objective, to apportion blame.”

Regulation 16(1):

“The Chief Inspector may at any time make recommendations as to how future accidents may be prevented.”

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NOTE

This bulletin is not written with litigation in mind and, pursuant to Regulation 14(14) of the Merchant Shipping (Accident Reporting and Investigation) Regulations 2012, shall be inadmissible in any judicial proceedings whose purpose, or one of whose purposes is to attribute or apportion liability or blame.

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Fire and subsequent foundering of workboat

ECC TOPAZ

11nm east of Lowestoft

on 14 January 2014



Figure 1: ECC Topaz on fire (inset: subsequent foundering)

MAIB SAFETY BULLETIN 2/2014

This document, containing safety lessons, has been produced for marine safety purposes only, on the basis of information available to date.

The Merchant Shipping (Accident Reporting and Investigation) Regulations 2012 provide for the Chief Inspector of Marine Accidents to make recommendations at any time during the course of an investigation if, in his opinion, it is necessary or desirable to do so.

The Marine Accident Investigation Branch is carrying out an investigation into the fire and subsequent foundering of a wind farm support vessel. The most likely cause of the fire was an uninsulated air heater exhaust pipe in close proximity of the plywood structure of the vessel.

The MAIB will publish a full report on completion of the investigation.



Steve Clinch
Chief Inspector of Marine Accidents

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Background

At approximately 1230 (BST) on 14 January 2014, the 14m wind farm support catamaran, *ECC Topaz*, caught fire 11nm east of Lowestoft. The three crew members on the vessel were unable to extinguish the fire, which spread rapidly throughout its GRP structure (**Figure 1**), forcing them to abandon to a liferaft. There were no passengers on board at the time of the accident.

Once in the liferaft, the skipper transmitted a “Mayday” call using a hand-held VHF radio and then activated a Search and Rescue Transponder (SART). The crew of another vessel in the vicinity alerted the coastguard when they saw thick black smoke on the horizon. The crew of *ECC Topaz* were winched from the liferaft by helicopter and taken to a nearby hospital for treatment. The fire on *ECC Topaz* continued unabated and, at 1422, the burnt out remains of the vessel foundered in 33m of water (**Figure 1: inset**).

Initial findings

There is compelling evidence to suggest the source of the fire was in way of an uninsulated section of the exhaust pipe from a diesel fired air heater that was situated in a compartment in the starboard hull, directly under the wheelhouse. A few days after the fire, the MAIB received information that crew on similar workboats had observed charring to the underside of main decks, where they were penetrated by the exhaust pipes from air heaters.

Detailed examination of one of these vessels revealed that the heater exhaust had been modified to route through a single walled, inverted U-pipe on the main deck (**Figure 2a**) to prevent sea water ingress from the exhaust overboard. As originally built, the exhaust pipe was insulated by woven glass lagging protected by an aluminium oversleeve (**Figure 3**) to prevent the hot exhaust gases (around 450°C) from heating the surrounding area. However, where the exhaust piping had been broken to route it through the main deck,

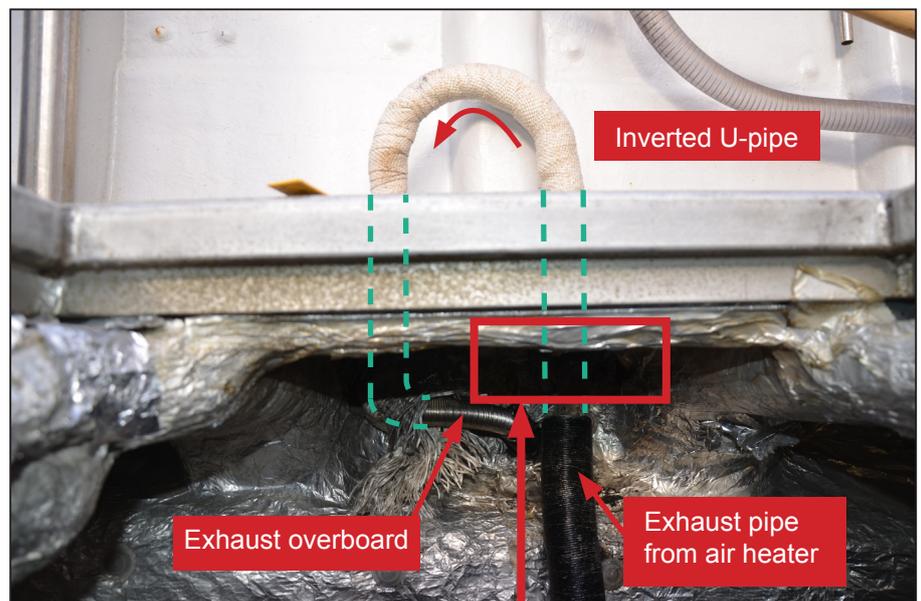


Figure 2a: Air heater exhaust pipe layout on similar vessel



Figure 2b: Scorching under deck on similar vessel

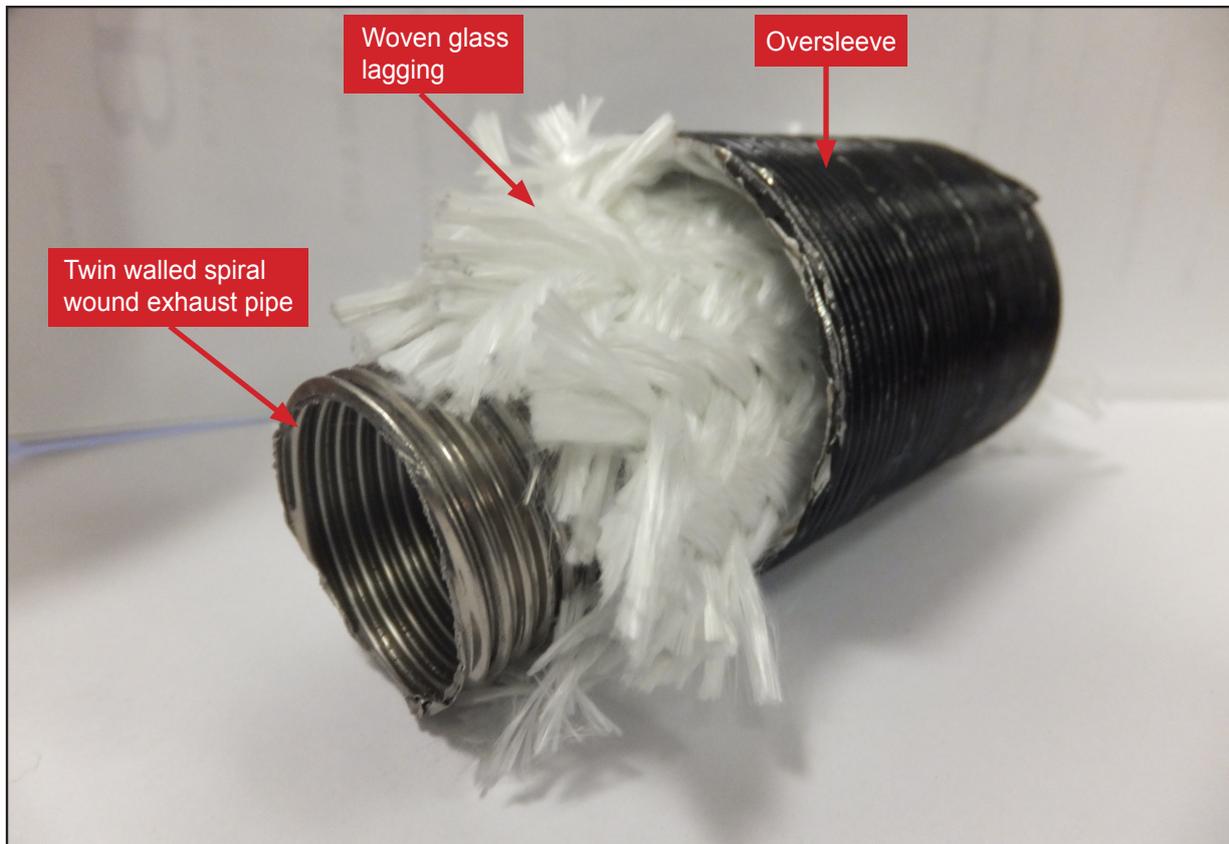


Figure 3: Heater manufacturer's supplied exhaust pipe with insulation

the connection between the heater exhaust pipe and the inverted U-pipe was not insulated. Consequently, the uninsulated section of the hot exhaust pipe in close proximity to the plywood underside of the deck, caused the charring seen in **Figure 2b**.

ECC Topaz was fitted with the same model of heater and had the same exhaust configuration. The MAIB has concluded the most likely cause of the fire on board *ECC Topaz* was the poorly insulated hot exhaust pipe igniting the plywood structure of the vessel. The compartment where the heater was situated was not fitted with any fire detection or extinguishing systems, and contained several flammable items including sacks of rags, rolls of paper towels and several small drums of oil that would have provided additional fuel for the fire once it was ignited.

Safety lessons

Uninsulated exhaust pipes will quickly reach the temperature of the exhaust gases and, when in close proximity to wood or other combustible material, the likelihood of a fire is very high. Owners and operators of vessels are strongly advised to:

- Check that all exhaust pipes on their vessels are fully insulated and do not come close to combustible material.
- Fit fire/smoke detectors in enclosed spaces where diesel-fired air heaters are installed.
- Avoid placing flammable material in compartments that contain potential heat sources. A useful reference is MGN 497 (M+F): 'Dangerous Goods – including Chemicals and other Materials – Storage and Use on Board Ships.'

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