

REQUEST: Dear Sir or Madam

Reference: Summary report of the boiler explosion on the s.y. Carola - 13.06.92 - Resulting in scalding and death to two people - Ref: 943/92 - File No: MAIB 1/2/36

I wonder if you can help in finding or pointing me in the direction of further information on the above boiler explosion.

Currently we are preparing a technical document on 'Guidelines for the Competent Person - In-service examination of manhole and handhole spigot gaps in boilers and other pressure vessels'. I was made aware of the incident on the s.y. Carola and using the reference above was able to obtain a copy from the British Library. The information points to the cause of the explosion as:

*Further examination showed that a 5" section of the lower mudhole door jointing had become displaced allowing free access for the flow of water within the boiler space to the front of the boiler.*

*It was also noticed that the starboard strongback (or right hand side looking towards the boiler) was some 15mm lower than the port strongback. This indicated that the door had not been fitted in a central position.*

*The boiler door nuts were tight and had to be released using medium force on the door nut spanner. The nuts were eased and the remaining water within the boiler allowed to drain down into the engine room bilge.*

*The door was removed from the boiler and the joint examined. The impressions left on the joint showed that the door had been tightened up when not central with the result that the upper port edge of the joint was only just nipped. The normal width joint under compression should be in the order of 1/2" on the whole circumference whereas on the joint removed from the lower manhole, compression width varied between the full 1/2" and approximately 1/8". This variation in compressed area was the result of in-correct refitting of the mudhole door.*

Part of the investigation report deals with the background (technical and educational) on the individual involved with the fitting of the mudhole and concludes:

*From the above it will be seen that .. .... had considerable experience of steam machinery both in the maintenance side as well as in operation.*

*It is against this background of experience that the failure to correctly re-fit the lower mudhole has to be seen. The evidence obtained from the various declarations clearly indicates that .. ....alone was responsible for the refitting of the lower door and that he was aware that the door was leaking from a fairly early stage. An examination of the joint removed from the door after the accident confirms that the joint itself was the correct size and type, and that failure occurred due to excessive clearance between door and shell at the port upper part of the door. This excessive clearance was caused by the failure of .. ....to correctly centralize the door whilst tightening the stud bolt nuts.*

*The correction action on discovering that the door was not fitting properly would have been to drain down the boiler and refit the door. Why this course of action was not taken given*

*the extensive experience of .. .....had of steam boilers, can only be speculation. If the boiler had been drained down, the door correctly re-fitted and the boiler refilled with water, there is no doubt that it would not have been possible to have had the boiler steaming on the Saturday.*

Where I would like some help is as follows:

- Was a prosecution made and if so what was the outcome?
- Mention is made of the 'Insurance Company surveyor' but no indication is given on whether he or she had/had not contributed to the accident?
- The drawings in the report are of poor quality - Are better drawings available?
- The report references photographs but no photographs were in the report - Is it possible that they could be obtained?

It would be useful to include anonymous details of the accident to stress the importance of this aspect of boiler inspection to our Engineer Surveyors and I attach an initial draft (without any reference to s.y. Carola) in the hope that this may be helpful to you.

Please let me know if you need any further information.

Best regards -

XXXX  
Technical Manager

XXXX  
XXXX  
XXXX  
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XXXX  
Direct Dial No - XXXX  
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RESPONSE: Dear XXXX,

Re: F0007155 – Freedom of Information request regarding S/Y Carola

Thank you for your recent Freedom of Information request in which you asked the following:

- Was a prosecution made and if so what was the outcome?
- Mention is made of the 'Insurance Company surveyor' but no indication is given on whether he or she had/had not contributed to the accident?
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Following a search of our records I can advise that a prosecution was being considered by the HSE but the MAIB holds no documents/records that confirm whether a prosecution took place or not.

Our summary report (based on the evidence collected by the MAIB) makes no indication that the company insurance surveyor contributed to the accident, however you may wish to approach the HSE for their findings.

I have reviewed our records and can advise that there are no other copies of the drawings contained within the report.

With regard to the availability of the photographs referenced within the report, please find attached 6 images (contained within 4 files) that have been scanned from hard copies held by the MAIB.

If you are unhappy with the way the MAIB has handled your request or with the decisions made in relation to your request you may complain within two calendar months of the date of this letter by writing to the Department's Information Rights Unit at:

Zone D/04  
Ashdown House  
Sedlescombe Road North  
Hastings  
East Sussex TN37 7GA  
E-mail: FOI-Advice-Team-DFT@dft.gsi.gov.uk

Please see attached details of DfT's complaints procedure and your right to complain to the Information Commissioner.

If you have any queries about this email, please contact me. Please remember to quote the reference number above in any future communications.

Yours sincerely  
XXXX  
MAIB Freedom of Information Officer



No 4 Close-up view of lower mudhole door showing length of door joint blown out on port upper side of door. Note right hand side, or starboard, strongback visually lower than left hand side. Water was still in the boiler at this time but below the level of the blown joint.



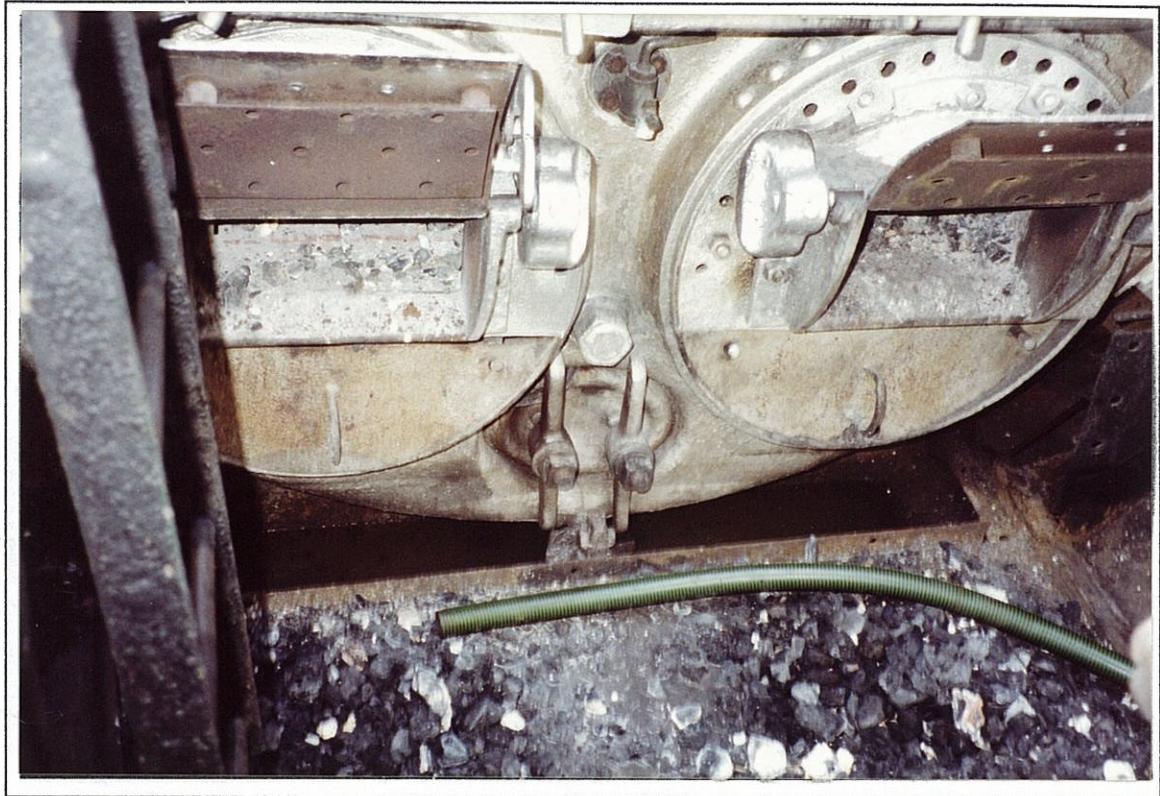
No 5 Lower mudhole door removed showing intact joint and compression marks.



No 1 General view from deck access hatch, looking to starboard, showing front of boiler, floor plates in front of boiler and forward end of main engine. Note ash on floor plates deposited when coal fires were drawn. The probable position of Mr Richard Martino at the time of the accident would have been towards the top of the picture alongside the work bench. i.e on the starboard side.



No 6 General view of lower mudhole door removed from engine room to deck. Note compression marks on joint tapering off the door cill on the left hand side. i.e. on port upper side of door.



No 2 General view of boiler front showing both boiler furnace doors open and ash pit doors on. Note proximity of vertical access ladder to boiler front and lower mudhole door.



No 3 Similar view to above. Note this was condition of boiler front on inspection and prior to opening up and removal of mudhole door.