(No. 689.)

"RATHMORE." (S.S.)

The Merchant Shipping Acts, 1854 to 1876.

In the matter of the formal Investigation held at Westminster on the 16th and 23rd July 1880, before H. C. Rothery, Esquire, Wreck Commissioner, assisted on the 16th by Captain Forster, Captain Curling, and C. W. Merrifield, Esquire, and on the 23rd instant by Captain Curling and C. W. Merrifield, Esquire, as Assessors, into the circumstances attending the supposed loss of the British steamship "Rathmore," of Liverpool.

Report of Court.

The Court, having carefully inquired into the circumstances of the above-mentioned shipping casualty, finds, for the reasons annexed,—

1. That the vessel was properly constructed and fitted.

2. That no means were taken to ascertain the stability of the ship, and the position at which it would be proper to place the load-line, having regard to the safety of the ship when loaded down to that line.

3. That, apart from the quantity of cargo which she had on board, the vessel was properly laden and stowed.

4. That, looking to the construction of the vessel, and the depth to which she was laden, it is very doubtful whether she had sufficient stability for a winter voyage.

5. That when she left Cardiff she had not sufficient freeboard for a winter voyage across the Bay of Biscay.

6. That her load-line ought not to have been placed at 4 feet.

7. That, whilst admitting that the system of ventilation in this vessel was well adapted for the purpose for which it appears to have been intended, namely, the carriage of cattle, we are not satisfied that it was equally well suited for coal cargoes, having regard to the danger of explosion, by the gas not being sufficiently diluted before it passed into the funnel, and to the danger of its there coming in contact with a flame or a burning cinder.

8. That there is no evidence before us to show what is the cause of the vessel not having been heard of since she left Cardiff on the 3rd of January last.

The Court makes no order as to costs.

Dated this 23rd day of July 1880.

(Signed) H. C. Rothery,
Wreck Commissioner.

We concur in the above report.

(Signed) George H. Forster,
Willm. Curling,
C. W. Merrifield,
} Assessors.

Annex to the Report.

The hearing of this case was commenced at Westminster on the 16th instant, when all the three assessors who had been appointed to attend the inquiry were present; Mr. Mansel Jones appeared for the Board of Trade, and Mr. Myburgh for the owners of the "Rathmore"; and eight witnesses having been produced by the Board of Trade and examined, and the depositions of 29 witnesses taken at Malta having been put in and read, the Board of Trade asked that the further hearing might stand over to the 23rd instant, owing to the absence of an important witness. On the case again coming before the Court on the 23rd instant, Captain Forster was unavoidably absent, having been summoned to give evidence in a trial at York; it was arranged, however, that the case should proceed, but that judgment should, if necessary, be deferred until after Captain Forster's return, and until he should have had an opportunity of reading the shorthand writer's notes of the further evidence about to be given. A further witness having been then produced by the Board of Trade and examined, Mr. Mansel Jones stated that the Board of Trade desired the opinion of the Court upon the following questions:—

"1. Whether the vessel was properly constructed and fitted?

"2. Whether proper means had been taken to ascertain the stability of the ship and the proper position to place the load-line, having regard to the safety of the ship when loaded down to that load-line?

"3. Whether the vessel was properly laden?

"4. Whether, looking to the construction of the vessel and the depth to which she was loaded, she had sufficient stability, especially for a winter voyage?

"5. Whether she had sufficient freeboard for a voyage at the particular season of the year?

"6. Whether her load-line ought to have been placed at 4 feet?

"7. Whether the vessel's holds were properly ventilated, so as to ensure a system of surface ventilation, independently of the hatchways, which would be effective in all circumstances of the weather?

"8. What, in the opinion of the Court from the evidence before them, is the cause of this vessel not having been heard of since she left Cardiff on the 3rd January last?"

A witness was then produced on behalf of the owners, and examined; and Mr. Myburgh having been heard for the owners, and Mr. Mansel Jones having replied for the Board of Trade, and all parties having declared that they were willing to take the judgment without waiting for the return of Captain Forster, the Court proceeded to state its opinion on the questions which had been laid before it. The circumstances of the case are as follow:—

The "Rathmore" was an iron screw steamship, belonging to the Port of Liverpool, of 2,136 tons gross, and 1,382 tons net register, and was fitted with compound engines of 250 horse power. She was built at Sunderland, in the year 1878, and at the time of her loss was the property of the St. Andrew's Steamship Company, Limited, William Johnston, of Cereal Court, 16, Brunswick Street, Liverpool, being the managing owner. The vessel left the Roath Dock, Cardiff, at about 10 a.m. of the 3rd of January last, for Bombay, having on board 2,039 tons of coal as cargo, and 762 tons of bunker coal, and a crew of 32 hands all told. The pilot took her down as far as Nash Point, where he left her, and from that time nothing more has been seen or heard of her. Her proper course would have been through the Suez Canal, but she never reached it; and there can now be little doubt that she has been lost with all hands.

Now the first question upon which our opinion has been asked is, "Whether the vessel was properly constructed and fitted?" On this point we have had the evidence of Mr. Esplen, a consulting engineer, under whose supervision she was built. He told us that she had two iron decks, and five water-tight bulkheads, of which three, namely, the collision bulkhead and the bulkheads fore and aft of the engine room, went to the upper deck, but that between the fore and main holds went only to the lower deck; and there was a bulkhead aft in the way of the stuffing box, having an iron deck above it running aft, forming a water-tight compartment for the stern tube. She had a ballast tank under the engine room capable of containing 203 tons of water; and immediately forward of the engine room was another water-tight compartment, 28 feet long, available either as a water tank or for cargo. She was built, we were told, in accordance with Lloyd's rules, and had a shear of 6 feet 6½ inches forward, and 1 foot 11 inches aft, and she was classed A 1 at Lloyd's. So far, therefore, as the vessel is concerned, and apart altogether from the question of her stability, or the depth to which she was laden, and the ventilation, with all of which questions we shall presently deal, we have no reason to think that, when she left Cardiff, she was not a good sound ship, properly constructed and properly fitted.

The second question upon which our opinion has been asked is, "Whether proper means had been taken to ascertain the stability of the ship, and the proper position to place the load-line, having regard to the safety of the ship when loaded down to that load-line?" It appears from Mr. Esplen that, although the vessel was built under his supervision, he made no calculations whatever as to her stability, or as to the position at which it would be proper to place the load-line. According to him he went by his experience, which we have been told is the best guide in cases of this kind. No doubt, if we found that vessels of this descrip-

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tion, built upon these lines, and loaded down to a point, at which we find the load-line on this vessel to have been placed, always arrived safely at their destinations, it would be very strong evidence that experience in this case was a good guide, and that any calculations with a view to determine the stability, and the position at which it would be proper to place the load-line, might be dispensed with. On the other hand, if a great number of these long, deep, narrow vessels, of which so many have been built within the last few years in the north-eastern ports, have disappeared with all hands, as we find to have been the case, experience would rather lead us to say that there must be something wrong in them, and that possibly they had not sufficient stability, or that the load-line had perhaps been placed somewhat too high; so that experience here would seem to cut two ways. And that there is a feeling that all is not quite right with these vessels seems clear from the fact, as I am informed, that builders are beginning to think that it would be better to build them with rather wider beam than was thought necessary some three or four years ago. It certainly is somewhat extraordinary that owners should go to the expense of building a ship at a cost of some 30,000*l.* or 40,000*l.*, and yet should grudge the 30*l.* or 40*l.* necessary to calculate her stability, and the point at which the load line might safely be placed. Mr. Esplen told us that he did not think that the stability of a ship of her size and build was ever calculated by the builders, and he had certainly never calculated it himself. Mr. Parker too, chief engineer surveyor to Lloyd's, told us that he knew this vessel, and had surveyed many vessels of her description, but that he had not the least idea what the amount of their stability was, or whether they had any stability at all, nor where the load-line ought to be placed; and that it was not a matter with which they ever concerned themselves. Now we do think that it is a matter which ought to engage the serious attention of shipowners, and that they ought, before sending a vessel to sea, to take every means in their power to ascertain its stability, and to what depth she might be safely laden. In this case the owners seem to have taken no means whatever for that purpose.

The third question upon which our opinion has been asked is, "Whether the vessel was properly laden?" She had, it seems, a cargo of 2,039 tons of coal, all of which was placed in the lower holds, which were quite full. In addition to this she had in her side bunkers about 230 tons, in the midship bunker about 252 tons, in the after part of the forward 'tween decks about 166 tons, and in the fore part of the after 'tween decks about 113 tons, making a total of 762 tons of bunker coal. The fore and after parts of the 'tween decks were empty. So far, therefore, as the stowage of the vessel is concerned, and apart from the question of the depth to which she was laden or her stability, there seems to be no reason to think that the cargo was not properly stowed.

The next question with which I propose to deal is the fifth, namely, "Whether she had sufficient freeboard for "a voyage at the particular season of the year?" According to the evidence of Harrison, the coal foreman, the vessel would have required 40 tons more cargo to have brought her down to her load-line. Now her load-line, it is admitted, was placed at 4 feet from the deck, and as we see from her displacement scale that about 20 tons or so would sink her about an inch, this would give her a freeboard of only 4 feet 2 inches. On the other hand, Captain Grant, one of the company's overlookers, told us that on leaving the dock she drew 21 feet 2 inches forward, and 22 feet 4 inches aft, giving a mean of 21 feet 9 inches; and as her total depth at side from the top of the deck to the bottom of the keel was 26 feet 3½ inches, that would give her a freeboard of 4 feet 6½ inches. No doubt Captain Grant's evidence is more to be relied upon than that of the coal foreman Harrison, for it was his duty to ascertain what her freeboard was. It should, however, be observed that, according to Captain Grant, the disc was touching the water about 1 inch; and, if so, her freeboard would have been only 4 feet 5 inches, and not 4 feet 6½ inches, the disc being 1 foot in diameter. Let us assume, however, that her freeboard when in the Roath Dock was 4 feet 6½ inches, and that she would rise slightly, but only slightly, when she got to sea, the water in the Roath Dock being at high water about two-thirds salt. This would give her a freeboard, when she got to sea, of say 4 feet 8, or 56 inches. Now her depth of hold, as appears from the copy register, was 23·9 feet, so that a freeboard of 56 inches would give her only about 2⅓ inches for every foot of hold, which would in our opinion be quite insufficient. A vessel of her dimensions, 310 feet long, with a beam of 35 feet and a depth of hold of 23·9 feet, ought, in the opinion of the Assessors, to have had a freeboard of 2·8 to 3 inches for every foot of hold, or from 67 to 70 inches of freeboard instead of only 56 inches. So that in our opinion she was too deeply laden, more especially for a winter voyage across the Bay of Biscay.

The next question with which we propose to deal is the sixth, namely, "Whether her load-line ought to "have been placed at 4 feet?" Now, seeing that with her load-line at 4 feet the vessel, if loaded down to that point, would, with a depth of hold of 23·9 feet, have had a freeboard of only 2 inches to every foot of hold, and that she ought in our opinion to have had from 2·6 to 2·8 inches even for a summer voyage, and without making any allowance for her excessive depth, we have no doubt that the load-line ought not to have been placed at 4 feet, but should have been put considerably lower on the ship's side.

We will now return to the fourth question, in which we are asked "Whether, looking to the construction of "the vessel, and the depth to which she was loaded, "she had sufficient stability for a winter voyage." As has been already stated, we have no evidence as to the stability of this vessel, nor have we any materials before us to enable us to say what it was. Judging, however, from the relation between her breadth and the depth of her hold, namely, 35 feet to 23·9, which gives a co-efficient of ·68, we should be disposed to think that her stability was not great, and that, laden as she was, she would have a very narrow margin of safety.

The next question upon which our opinion has been asked is, "Whether the vessel's holds were properly "ventilated, so as to insure a system of surface ven-"tilation independently of the hatchways, which "would be effective in all circumstances of weather." We are told that this vessel had five cowl ventilators, of which four went down to the lower holds, one of them to each hold. She had also 12 ventilating bollards; her masts were hollow, having openings into the lower holds and the 'tween decks; and she had a trunk or shaft ventilator of considerable size from the tank forward of the engine room. In addition to all this, she had immediately beneath the upper deck a box ventilator, about 6½ inches square, running the whole length of the 'tween decks, with the two ends closed up, but with openings at every 8 feet, and leading finally into the main funnel at about 10 or 12 feet up. This system of ventilation seems to have been specially provided for the conveyance of cattle, of which she had brought two cargoes, one from Baltimore, and one from Montreal, and there can be no doubt that it would be well adapted for that purpose; but the question is, whether it would be equally good for coal cargoes.

According to Mr. Wales, the very experienced inspector of coalmines for the South Wales District, the plan is well suited for coal cargoes also, but with these conditions, that only South Wales coal should be used, and that there should be a sufficient number of openings, through which an adequate amount of air would be admitted to the holds, so as to dilute the gases and to render them inexplosive. According to Mr. Wales, and no doubt his evidence is entitled to very great weight, the five cowl ventilators, which we are told were 18 inches in diameter, would admit a sufficient quantity of atmospheric air into the holds to render the gases quite innocuous; so that, even if they came in contact with any flame, they would not explode. Mr. Wales also went further, and said that with South Wales coal there was no chance of flame ever reaching so high as the place where the gases escaped from the tubes into the funnel, and that even if the lower parts of the tubes got red hot the gas would not explode, for that it requires flame to make it explode. Mr. Parker also, the chief engineer surveyor to Lloyd's, and who has had an experience of 20 years both at sea as an engineer and on land as a surveyor, told us that with South Wales coal he had never seen the flame rise beyond the top of the smoke boxes, and that it would in his opinion be impossible with South Wales coal for any flame to get up the funnel as high as where the gas issued. At the same time it must be admitted that the effect of making this box ventilator terminate in the funnel would be to create a current of air, so that all the other ventilators would become downcasts, while it alone would be an upcast; and therefore every particle of the gas given off from the coal must of necessity pass through the funnel. Mr. Wales also was obliged to admit that even with South Wales coal a live cinder might be carried up the funnel, and that on coming in contact with the air it might burst into flame, so that it would depend very

much upon whether such a quantity of air could be introduced into the hold as would be sufficient to dilute the gases and to render them innocuous. On this point we have not sufficient information to enable us to form a very decided opinion. It is obvious, however, that with other than South Wales coal, and without a sufficient admixture of atmospheric air, such a system might be attended with great danger; for if the gas, as it issued into the funnel, was not sufficiently diluted with air so as to be rendered innocuous, it might become ignited, and in that case the flame would travel back through the tubes to the reservoirs of gas in the hold, and a serious explosion might be the result.

This, then, brings us to the last question on which our opinion has been asked, namely, "What, in the "opinion of the Court, from the evidence before them, "is the cause of this vessel not having been heard of "since she left Cardiff on the 3rd of January last." To enable us to arrive at some conclusion on this point a number of depositions have been brought in from persons resident in Malta and in the island of Gozo, from which it appears that between the 5th and 15th of February various articles, which have been identified as having belonged to the "Rathmore," were picked up on the east coasts of those islands. They consist principally of hatch boards of a peculiar construction, and there were also two buoys with "S.S. Rathmore, Liverpool," painted on them. It seems, therefore, tolerably certain that the vessel must have been lost somewhere to the east of the islands of Malta and Gozo, and that those portions of the wreck which have been picked up were carried there by the prevailing easterly winds.

It seems, however, that with the wreckage from the "Rathmore" have been picked up certain casks of grease, which it is proved did not belong to the "Rathmore," and it has been therefore suggested that the "Rathmore" may have come into collision with a vessel laden with casks of tallow, and that both may have gone down without a soul having been saved from either ship. Such a suggestion is no doubt possible, but it is in the highest degree improbable. Unless the two vessels had come together bow to bow, it is not likely that they would both have sustained such injuries as to founder at once, for if one had struck the other amidships, although one might have gone down, the other would probably have sustained very little injury. If the two vessels had come together bow to bow, it must be remembered that the "Rathmore" had a collision bulkhead going up to the upper deck, which would probably have kept her afloat, if not altogether, at all events for a sufficient time to enable her crew to get out the boats. The probability, therefore, of a collision in which both vessels had gone down with all hands is not great.

Another suggestion is that the vessel may have been blown up or burnt, but the evidence on which this rests is far from satisfactory. Amongst the depositions which have been brought in is one made by a person called Pubblio Cini, in which he says that "About noon, some "time ago in this year" (the deposition was made on the 16th of April last), he saw a steamer steering to the best of his knowledge "to the westward during a heavy gale "at the time from the north-west;" that he "saw a "great smoke, and heard her whistle blowing three "times;" that the "smoke lasted about a quarter of "an hour, and when it ceased" he did not see her again, and he "thought she was about to sink." Now, apart from the indefinite character of the words "some "time ago in this year," there are some facts connected with this vessel which seems to show that it could not have been the "Rathmore." In the first place this vessel seems to have been going to the westward, whereas the "Rathmore" was bound eastward. Moreover, we have had the logbook of another vessel belonging to the same owners, which left Cardiff on the same day as the "Rathmore," and which was bound on the same course past Malta, and according to that log book she had nothing but moderate weather till the 16th of January; and as the "Rathmore," which left Cardiff on the 3rd, would probably, if all had gone well, have passed Malta about the 13th, we can hardly believe that this vessel which was seen by Pubblio Cini, and which he believes was bound to the westward, could have been the "Rathmore."

There was another deposition brought in, made by a person called Caterina Cammilleri, in which she says: "About the month of January 1880 I saw from a "point in Gozo a great smoke on the sea in the vicinity "of Cape San Demetri, and at the middle distance from "the shore to the horizon. The smoke lasted for about "a quarter of an hour, and when it ceased I did not "see anything in that place. At the moment my im-"pression was that a ship was on fire, and I pitied the "lives that were about to be lost." Now, although this deposition is rather more precise in saying that it was "about the month of January 1880" when the occurrence spoken of happened, the evidence is much too indefinite for us to say that the vessel seen by Caterina Cammilleri was the "Rathmore."

The third suggestion that has been offered is, whether or not she foundered owing to her having been too heavily laden, or to a want of stability. Now it is to be observed that it would have taken her about ten days, we are told, to get to the neighbourhood of Malta, and as her daily consumption was about 20 tons, she would have consumed about 200 tons of coal by that time. This would have raised her at least a foot out of water, and have given her a freeboard of about 5 feet 8 or 9 inches, which would be from 2·8 to 3 inches freeboard for every foot of hold, so that we could hardly say that she would then have been overladen, or that overlading had contributed in any way to her loss. What her stability was we do not know, and it is possible that with a freeboard of 5 feet 8 or 9 inches she might still have been an unstable ship. This question, however, we have no means of determining; and all that we can say is, that we have no evidence before us to show us what is the cause of the vessel not having been heard of since she left Cardiff on the 3rd of January last.

There was no application for and no order made as to costs.

(Signed) H. C. Rothery,
Wreck Commissioner.

We concur.

(Signed) George H. Forster,
Willm. Curling,
C. W. Merrifield,
} Assessors.